4:26:13 PM

6/29/2017

MINNESOTA DEPARTMENT OF TRANSPORTATION

CONSTRUCTION PLAN FOR GRADING, BITUMINOUS SURFACING, BITUMINOUS MILL & OVERLAY, LIGHTING, ADA IMPROVEMENTS, RETAINING WALLS, AND SIGNAL SYSTEM

LOCATED ON T.H. 28 FROM 1355' WEST OF 6TH ST NW TO 557' WEST OF 210TH AVE

LOCATED ON T.H. 104 FROM 70' SOUTH OF 6TH AVE SE TO T.H. 28

LOCATED ON T.H. 29 FROM T.H. 28 TO 440' NORTH OF 160TH ST

T.H. 28 REF. PTS.	INP. T.H. 28 STATION
76+00.000	STA. 433+66
77+00.000	STA. 571+84
78+00.000	STA. 618+62

T.H. 29 REF. PTS.	INP. T.H. 29 STATION
64+00.000	STA. 52+84
65+00.000	STA. 106+23

EQUATIONS

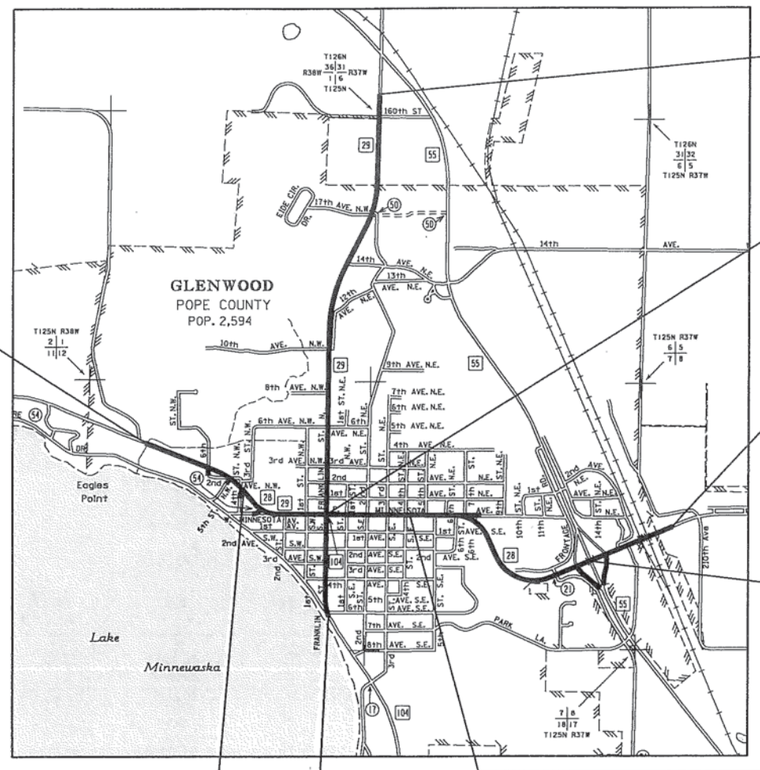
T.H. 104 STA 1192+81.02 (BK) = STA 17+61.24 (AH)

T.H. 29 STA 60+81.06 (BK) = STA 49+53.49 (AH)

T.H. 28 STA 430+42.73 (BK) = STA 430+75.35 (AH)

STA 448+03.55 (BK) = STA 538+42.51 (AH)

STA 546+40.17 (BK) = STA 546+39.75 (AH)



END S.P. 6106-23
T.H. 29 STA. 108+16.66

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58

END S.P. 6110-21
T.H. 104 STA. 34+59.58

END S.P. 6104-12
T.H. 28 STA. 615+00.00

BEGIN S.P. 6104-12
END S.P. 6103-32
T.H. 28 STA. 597+45.73

BEGIN S.P. 6103-32
T.H. 28 STA. 407+72.44

END S.P. 061-090-006
T.H. 28 STA. 554+98.49

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00

BEGIN S.P. 6110-21
T.H. 104 STA. 1189+70.00

SCALES

INDEX MAP	1500'	
GENERAL LAYOUT	400'	
PLAN	20'	50'
PROFILE	50' HORIZ.	5' VERT.
CROSS SECTION	10' HORIZ.	10' VERT.

PLAN REVISIONS		
DATE	SHEET NO.	APPROVER

S.P. 6103-32 T.H. 28 (MINNESOTA AVE)		S.P. 6104-12 T.H. 28 (MINNESOTA AVE)		S.P. 6110-21 T.H. 104 (FRANKLIN ST)		S.P. 6106-23 T.H. 29 (FRANKLIN ST)	
GROSS LENGTH	9902.13 FT 1,875 MILES	GROSS LENGTH	1754.27 FT 0.332 MILES	GROSS LENGTH	2009.36 FT 0.381 MILES	GROSS LENGTH	8484.65 FT 1,607 MILES
BRIDGE LENGTH	FT MILES	BRIDGE LENGTH	FT MILES	BRIDGE LENGTH	FT MILES	BRIDGE LENGTH	FT MILES
EXCEPTION LENGTH	FT MILES	EXCEPTION LENGTH	FT MILES	EXCEPTION LENGTH	FT MILES	EXCEPTION LENGTH	FT MILES
NET LENGTH	9902.13 FT 1,875 MILES	NET LENGTH	1754.27 FT 0.332 MILES	NET LENGTH	2009.36 FT 0.381 MILES	NET LENGTH	8484.65 FT 1,607 MILES
REF. POINT	75+00.503 TO REF. POINT 77+00.489	REF. POINT	77+00.489 TO REF. POINT 77+00.821	REF. POINT	40+00.516 TO REF. POINT 40+00.891	REF. POINT	63+00.431 TO REF. POINT 65+00.037
FUNCTIONAL CLASSIFICATION:	PRINCIPAL ARTERIAL	FUNCTIONAL CLASSIFICATION:	PRINCIPAL ARTERIAL	FUNCTIONAL CLASSIFICATION:	MAJOR COLLECTOR	FUNCTIONAL CLASSIFICATION:	MAJOR COLLECTOR
ADT (Current Year) (2015):	8,750	ADT (Current Year) (2015):	8,750	ADT (Current Year) (2015):	5,000	ADT (Current Year) (2015):	3,950
ADT (Future Year) (2035):	12,150	ADT (Future Year) (2035):	12,150	ADT (Future Year) (2035):	6,200	ADT (Future Year) (2035):	4,350
DHV (Design Hr. Vol.)	1,215	DHV (Design Hr. Vol.)	1,215	DHV (Design Hr. Vol.)	435	DHV (Design Hr. Vol.)	620
DESIGN LOADING	10.0 †	DESIGN LOADING	10.0 †	DESIGN LOADING	10.0 †	DESIGN LOADING	10.0 †
ESALS	3,240,000	ESALS	3,240,000	ESALS	514,000	ESALS	514,000
R VALUE	8 and 20	R VALUE	20	R VALUE	20	R VALUE	20
DESIGN SPEED:	30 MPH	DESIGN SPEED:	30 MPH	DESIGN SPEED:	30 MPH	DESIGN SPEED:	30 MPH
BASED ON:	STOPPING SIGHT DISTANCE	BASED ON:	STOPPING SIGHT DISTANCE	BASED ON:	STOPPING SIGHT DISTANCE	BASED ON:	STOPPING SIGHT DISTANCE
HEIGHT OF EYE: 3.5 FT HEIGHT OF OBJECT:	2.0 FT	HEIGHT OF EYE: 3.5 FT HEIGHT OF OBJECT:	2.0 FT	HEIGHT OF EYE: 3.5 FT HEIGHT OF OBJECT:	2.0 FT	HEIGHT OF EYE: 3.5 FT HEIGHT OF OBJECT:	2.0 FT
NO. OF TRAFFIC LANES:	3	NO. OF TRAFFIC LANES:	2	NO. OF TRAFFIC LANES:	2	NO. OF TRAFFIC LANES:	2
NO. OF PARKING LANES:	2	NO. OF PARKING LANES:	2	NO. OF PARKING LANES:	2	NO. OF PARKING LANES:	2

FOR PLANS AND UTILITIES SYMBOLS SEE TECHNICAL MANUAL

STATE PROJ. NO. CHARGE IDENTIFIER

PROJECT LOCATION
COUNTY : POPE
DISTRICT : 4

FED. PROJ. NO.

GOVERNING SPECIFICATIONS

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

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

INDEX

THIS PLAN CONTAINS 384 SHEETS

SHORT ELLIOTT HENDRICKSON INC.
PHONE (651) 490-2000
3535 VADNAIS CENTER DRIVE
ST. PAUL, MN. 55110

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.

PRINT NAME: HEATHER L. REDETZKE LICENSE # 44267

DATE: 06/29/2017 SIGNATURE: Heather Redetzke

DESIGN SQUAD JCR, HLR, RDH, JVO, DAC, MAW, JMG, AKF, MTT, SLS, AWH, SMN

RECOMMENDED FOR APPROVAL ..... 20 .....
CITY OF GLENWOOD ENGINEER

RECOMMENDED FOR APPROVAL ..... 20 .....
DISTRICT TRANSPORTATION ENGINEER

RECOMMENDED FOR APPROVAL ..... 20 .....
DISTRICT MATERIALS ENGINEER

RECOMMENDED FOR APPROVAL ..... 20 .....
DISTRICT WATER RESOURCES/HYDRAULICS ENGINEER

RECOMMENDED FOR APPROVAL ..... 20 .....
DISTRICT TRAFFIC ENGINEER

RECOMMENDED FOR APPROVAL ..... 20 .....
STATE PRE-LETTING ENGINEER

OFFICE OF LAND MANAGEMENT APPROVAL ..... 20 .....
DIRECTOR, LAND MANAGEMENT

APPROVED ..... 20 .....
STATE DESIGN ENGINEER

..... 20 .....
DISTRICT STATE AID ENGINEER: REVIEWED FOR COMPLIANCE WITH STATE AID RULES/POLICY

..... 20 .....
APPROVED FOR STATE AID FUNDING & FEDERAL AID FUNDING: STATE AID ENGINEER

S.P. NO. 6110-21 (T.H.104=143), S.P. NO. 061-090-006
S.P. NO. 6106-23 (T.H.29=029)
S.P. NO. 6104-12 (T.H.28=028)
S.P. NO. 6103-32 (T.H.28=028)

FILE: S:\KOW\Mnt04\134580\5-final-dsgn\51-drawings\40-Transtwy\plnsht's\CD610332_tsh.dgn
MODEL: Title Sheet

POPE COUNTY

CITY OF GLENWOOD

BEGIN S.P. 6103-32
T.H. 28 STA. 407+72.44
R.P. 75+00.503

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 29
STA. 51+00 SEE SHEET 3

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

EQUATION:
STA 17+61.24 AH =
STA 1192+81.02 BK

BEGIN S.P. 6110-21
T.H. 104 STA. 1189+70.00
R.P. 40+00.516

MATCHLINE T.H. 28
STA. 560+90 SEE SHEET 3

PROPOSED SIGNAL SYSTEM

T.H. 28 (MINNESOTA AVE)
T.H. 29 (FRANKLIN ST.)
T.H. 104 (FRANKLIN ST.)
MINNESOTA AVE
PERKINS CREEK
RET. WALL A
S. LAKE SHORE DR

1ST AVE. SW
2ND AVE. SW
3RD AVE. SW
4TH AVE. SW
1ST AVE. NW
2ND AVE. NW
3RD AVE. NW
4TH ST. NW
5TH ST. NW
10TH ST. NW
1ST ST. SW
2ND ST. SW
1ST ST. SE
2ND ST. SE
3RD ST. SE
4TH ST. SE
5TH ST. SE
1ST AVE. SE
6TH AVE. SE
5TH ST. NE

(5100) (7300) (1350) (4800) (5400) (4100) (650) (3600) (6200) (980)

400
SCALE IN FEET

LEGEND

- EXISTING PAVEMENT
- NEW CONSTRUCTION
- MILL AND OVERLAY
- INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET NO.
- REMOVAL PLAN SHEET NO.
- CONSTRUCTION PLAN SHEET NO.
- QUARTER LINE
- DRAINAGE & SUPERELEVATION PLAN SHEET NO.
- EROSION CONTROL AND TURF ESTABLISHMENT PLAN SHEET NO.
- SIGNING & PAVEMENT MARKING PLAN SHEET NO.
- (XXXX) 2015 ADT

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

GENERAL LAYOUT

FILE NO. MNT04-134590
GL1 OF GL2
2 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\C0610332_gl1.dgn
MODEL: gl1
7:55:18 AM
6/30/2017

7:55:19 AM

6/30/2017

400

SCALE IN FEET

MATCHLINE T.H. 28
STA. 560+90 SEE SHEET 2

6TH ST.

7TH ST.

6TH ST. SE

117 132 146

RET. WALL F

565

MINNESOTA AVE

234000 442000

(4900)

226 249

570

250

RET. WALL E

RET. WALL D

RET. WALL C

RET. WALL B

575

250

580

T.H. 28

585

251

590

(4900)

252

595

BR. NO. 61002

875

253

880

BEGIN S.P. 6104-12
END S.P. 6103-32
T.H. 28 STA. 597+45.73
R.P. 77+00.489

234000 443000

865

234000 444000

870

T.H. 55

(3700)

600

254

605

(4450)

610

BR. NO. 61003

254

615

620

234000 445000

234000 446000

210TH AVE

LEGEND

- EXISTING PAVEMENT
- NEW CONSTRUCTION
- MILL AND OVERLAY
- INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET NO.
- REMOVAL PLAN SHEET NO.
- CONSTRUCTION PLAN SHEET NO.
- QUARTER LINE
- DRAINAGE & SUPERELEVATION PLAN SHEET NO.
- EROSION CONTROL AND TURF ESTABLISHMENT PLAN SHEET NO.
- SIGNING & PAVEMENT MARKING PLAN SHEET NO.
- (XXXX) 2015 ADT

INSET A

400

SCALE IN FEET

MATCHLINE T.H. 29
STA. 101+00 SEE BELOW

160TH ST

439300 242300

261

105

T.H. 29

262

110

(4800)

115

439700 241900

265

439700 242800

T.H. 55

165

(3850)

END S.P. 6106-23
T.H. 29 STA. 108+16.66
R.P. 65+00.037

6TH AVE. NW

122 137 151

8TH AVE. NW

55 60 50

257

258

264

258

55

(4800)

60

10TH AVE. NW

12TH AVE. NE

T.H. 29

65

259

70

259

75

80

260

14TH AVE. NE

17TH AVE. NW

85

90

95

(4800)

100

260

261

2ND ST. NE

439000 237000

439000 238000

439000 239000

439000 241000

EQUATION:
STA 60+81.06 BK =
STA 49+53.49 AH

MATCHLINE T.H. 29
STA. 101+00
SEE INSET A ABOVE

400

SCALE IN FEET

MATCHLINE T.H. 29
STA. 51+00 SEE SHEET 2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH

PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

GENERAL LAYOUT

FILE NO. MNT04-134590
GL2 OF GL2

3 / 310

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\CD610332_gll.dgn
MODEL: gl2

STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 6103-32 T.H. 28 100% STATE (A) ESTIMATED QUANTITY	S.P. 6104-12 T.H. 28 100% STATE ESTIMATED QUANTITY	S.P. 6106-23 T.H. 29 100% STATE ESTIMATED QUANTITY	S.P. 6110-21 T.H. 104 100% STATE ESTIMATED QUANTITY	S.P. 061-090-006 80% FEDERAL/ 20% CITY (A) ESTIMATED QUANTITY	CITY OF GLENWOOD 100% CITY (A) ESTIMATED QUANTITY
		2016.601	PUBLIC INFORMATION MANAGEMENT		LUMP SUM	1	1					
		2021.501	MOBILIZATION		LUMP SUM	1	0.5		0.1	0.1	0.1	0.2
		2031.501	FIELD OFFICE TYPE D		EACH	1	0.5		0.1	0.1	0.1	0.2
		2031.503	FIELD LABORATORY TYPE D		EACH	1	0.5		0.1	0.1	0.1	0.2
		2051.501	MAINT & RESTORATION OF HAUL ROADS		LUMP SUM	1	1					
C	13	2101.501	CLEARING		ACRE	0.8	0.8					
C	13	2101.502	CLEARING		TREE	74	74					
C	13	2101.506	GRUBBING		ACRE	0.8	0.8					
C	13	2101.507	GRUBBING		TREE	74	74					
R	87	2102.502	PAVEMENT MARKING REMOVAL		LIN FT	2167	1437		310	420		
B	13	2104.501	REMOVE PIPE CULVERTS		LIN FT	423	423					
B,AK	13,U-6	2104.501	REMOVE SEWER PIPE (STORM)		LIN FT	5071	4493		242	247		89
B,R,AA,AK	13,87,U-1,U-6	2104.501	REMOVE CURB & GUTTER		LIN FT	12452	8824		1356	1811		461
B	13	2104.501	REMOVE CONCRETE RETAINING WALL		LIN FT	405	405					
B	13	2104.503	REMOVE BITUMINOUS WALK		SQ FT	116				116		
B	13	2104.503	REMOVE CONCRETE WALK		SQ FT	91456	54119		17162	20175		
B	13	2104.505	REMOVE CONCRETE DRIVEWAY PAVEMENT		SQ YD	1686	1061		303	322		
AA	U-1	2104.505	REMOVE CONCRETE PAVEMENT		SQ YD	23						23
B	13	2104.505	REMOVE BITUMINOUS DRIVEWAY PAVEMENT		SQ YD	1757	1532		154	71		
B,R,AA,AK	13,87,U-1,U-6	2104.505	REMOVE BITUMINOUS PAVEMENT	17	SQ YD	44132	39334		2813	1398		587
W	52	2104.509	REMOVE CONCRETE STEPS		EACH	30	30					
B,AF	13,U-4	2104.509	REMOVE MANHOLE OR CATCH BASIN		EACH	84	53		8	6		17
M,R	23,87	2104.509	REMOVE CURB BOX		EACH	8	1		5	2		
M,R	23,87	2104.509	REMOVE CASTING		EACH	4	1		3			
AI	U-6	2104.509	REMOVE GATE VALVE & BOX		EACH	21						21
AI	U-6	2104.509	REMOVE HYDRANT		EACH	8						8
		2104.509	REMOVE SIGN TYPE C		EACH	93						93
		2104.509	REMOVE SIGN TYPE SPECIAL		EACH	25						25
D,AA	16,U-1	2104.511	SAWING CONCRETE PAVEMENT (FULL DEPTH)		LIN FT	1321	823		120	262		116
D,AA,AK	16,U-1,U-6	2104.513	SAWING BIT PAVEMENT (FULL DEPTH)		LIN FT	6771	2428		1951	2133		259
B	13	2104.521	SALVAGE FENCE	4	LIN FT	30	30					
B	13	2104.521	SALVAGE CHAIN LINK FENCE	5	LIN FT	51	51					
B	13	2104.521	SALVAGE WOODEN FENCE	6	LIN FT	38	38					
U-2	228	2104.523	SALVAGE SIGN TYPE C		EACH	2	2					
S	297	2104.601	HAUL SALVAGED MATERIAL		LUMP SUM	1	0.50		0.25	0.25		
B	13	2104.603	ABANDON STORM SEWER	24	LIN FT	60	60					
B	13	2104.618	REMOVE BRICK PAVERS		SQ FT	50				50		
		2105.601	DEWATERING	18	LUMP SUM	1	1					
O	51	2105.603	DITCH CLEANING		LIN FT	525	525					
P	13	2105.604	SOIL STABILIZATION GEOGRID		SQ YD	11231	11231					
P	13	2105.604	GEOTEXTILE FABRIC TYPE V		SQ YD	12276	12276					
		2105.607	STRUCTURAL SOIL BORROW (CV)	3	CU YD	1063					1063	
A,R	10-12,87	2106.501	EXCAVATION - COMMON (P)		CU YD	25853	23509		458	406	1480	
A,I,K	10-12,20-23	2106.507	EXCAVATION - SUBGRADE (P)		CU YD	17904	17904					
A	12	2106.511	EXCAVATION - CHANNEL AND POND		CU YD	650	650					
A,I,K,AB,AK	10-12,20-23,U-1,U-6	2106.522	SELECT GRANULAR EMBANKMENT (CV) (P)		CU YD	18472	16857					1615
A	10-12	2106.523	COMMON EMBANKMENT (CV) (P)		CU YD	6079	6079					
F	14	2118.501	AGGREGATE SURFACING CLASS 1 MOD		TON	1057	481	187	385	4		
		2123.610	STREET SWEEPER (WITH PICKUP BROOM)		HOUR	20	20					
		2123.610	POWER BROOM		HOUR	20	20					
F,R1,AB,AK	14,87,U-1,U-6	2211.503	AGGREGATE BASE (CV) CLASS 5 (P)		CU YD	16840	14508		807	746	259	520
E	14	2232.501	MILL BITUMINOUS SURFACE (1.5")		SQ YD	17981			17981			

SEE SHEET 8 FOR TABULATION INDEX.

(P) DENOTES PLAN QUANTITY

(A) SEE LUMP SUM AGREEMENT NO. 1028556 WITH POPE COUNTY AND THE CITY OF GLENWOOD.

NOTES:

3. FOR PLANTINGS IN THE AMMENITY ZONE. SEE STREETSCAPE PLAN AND DETAILS.
4. EXISTING BLACK METAL FENCE IS APPROXIMATELY 3 FT HIGH.
5. EXISTING CHAIN LINK FENCE IS APPROXIMATELY 5 FT HIGH.
6. EXISTING WOODEN FENCE IS APPROXIMATELY 5 FT HIGH.
17. SEE TYPICAL SECTIONS FOR EXISTING PAVEMENT DEPTHS.
18. SEE SPECIAL PROVISIONS.
24. SEE SHEET RM8 AND SPECIAL PROVISIONS.

7:55:56 AM
6/30/2017
FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_est1.dgn
MODEL: EQ SHTS

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: RDH
CHECKED BY: HLR

NO.	BY	DATE	REVISIONS

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.
Certified By: Heather Redetzke Licensed Professional Engineer Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STATEMENT OF ESTIMATED QUANTITIES

FILE NO. MNT04-134590
EQ1 OF EQ5
4 / 310

STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 6103-32 T.H. 28 100% STATE (A)	S.P. 6104-12 T.H. 28 100% STATE	S.P. 6106-23 T.H. 29 100% STATE	S.P. 6110-21 T.H. 104 100% STATE	S.P. 061-090-006 80% FEDERAL/ 20% CITY (A)	CITY OF GLENWOOD 100% CITY (A)
							ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY	ESTIMATED QUANTITY
E	14	2232.501	MILL BITUMINOUS SURFACE (3.0")		SQ YD	73297	26642	11433	24944	10278		
		2232.602	MILLED RUMBLE STRIPS	16	EACH	2			2			
H	17-18	2301.602	DRILL & GROUT REINF BAR (EPOXY COATED)		EACH	1238	683		243	312		
E,AB	14,U-1	2360.501	TYPE SP 12.5 WEARING COURSE MIX (3,C)		TON	15564	4546	1938	7311	1755		14
E, AB,AK	14,U-1,U-6	2360.501	TYPE SP 12.5 WEARING COURSE MIX (4,C)		TON	13912	12552		537	465		358
W	52	2402.585	PIPE RAILING		LIN FT	35	35					
W	52	2411.507	CONCRETE STAIRWAY		EACH	4	4					
I	20-22	2411.521	GRANULAR BACKFILL (CV)		CU YD	1185	1026		86	73		
Z	19	2411.618	MODULAR BLOCK RETAINING WALL		SQ FT	2232	2232					
G	15-16	2433.618	CONCRETE SURFACE REPAIR	2	SQ FT	70	70					
I	20-22	2451.507	GRANULAR BEDDING (CV)		CU YD	158	135		12	11		
I,K	20-23	2451.515	COARSE AGGREGATE BEDDING (CV)		CU YD	1694	1694					
I	20-22	2501.515	15" RC PIPE APRON		EACH	1	1					
I	20-22	2501.515	21" RC PIPE APRON		EACH	1	1					
K	23	2501.515	24" RC PIPE APRON		EACH	4	4					
K	23	2501.515	30" RC PIPE APRON		EACH	4	4					
K	23	2501.515	60" RC PIPE APRON		EACH	2	2					
K	23	2501.521	88" SPAN RC PIPE-ARCH CULV CL IIA		LIN FT	64	64					
K	23	2501.525	88" SPAN RC PIPE-ARCH APRON		EACH	2	2					
K	23	2501.561	24" RC PIPE CULVERT DESIGN 3006 CLASS IV		LIN FT	108	108					
K	23	2501.561	30" RC PIPE CULVERT DESIGN 3006 CLASS III		LIN FT	200	200					
K	23	2501.561	60" RC PIPE CULVERT DESIGN 3006 CLASS IV		LIN FT	240	240					
K	23	2501.567	30" RC SAFETY APRON AND GRATE DESIGN 3128		EACH	2	2					
K	23	2501.567	60" RC SAFETY APRON AND GRATE DESIGN 3132		EACH	2	2					
O	51	2501.602	REPAIR CULVERT END	18	EACH	2	2					
K	23	2501.602	SAFETY GRATE FOR 88" SPAN RC PIPE-ARCH APRON		EACH	2	2					
L	23	2502.602	ROOF DRAIN DESIGN SPECIAL	19	EACH	11						11
L	23	2503.511	4" PVC PIPE SEWER		LIN FT	75						75
L	23	2503.511	6" PVC PIPE SEWER		LIN FT	319						319
AC	U-2	2503.511	8" PVC PIPE SEWER	7	LIN FT	2261						2261
AC	U-2	2503.511	10" PVC PIPE SEWER	7	LIN FT	1709						1709
I,AC	20-22,U-2	2503.511	12" PVC PIPE SEWER		LIN FT	1391	11					1380
AC	U-2	2503.511	15" PVC PIPE SEWER		LIN FT	253						253
I	20-22	2503.511	48" RC PIPE SEWER CLASS V		LIN FT	42	42					
I	20-22	2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS III	8	LIN FT	420	250		58	112		
I	20-22	2503.541	12" RC PIPE SEWER DESIGN 3006 CLASS IV	9	LIN FT	1428	1184		110	134		
AK	U-6	2503.541	12" RC PIPE SEWER DES 3006 CL V		LIN FT	26						26
I	20-22	2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS III	10	LIN FT	626	447		104	75		
I	20-22	2503.541	15" RC PIPE SEWER DESIGN 3006 CLASS IV	11	LIN FT	1000	909		91			
I	20-22	2503.541	18" RC PIPE SEWER DESIGN 3006 CLASS III	12	LIN FT	520	520					
I	20-22	2503.541	18" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT	132	132					
I	20-22	2503.541	21" RC PIPE SEWER DESIGN 3006 CL III		LIN FT	29	29					
I	20-22	2503.541	24" RC PIPE SEWER DESIGN 3006 CLASS III	13	LIN FT	557	557					
AK	U-6	2503.541	24" RC PIPE SEWER DES 3006 CL V		LIN FT	63						63
I	20-22	2503.541	30" RC PIPE SEWER DESIGN 3006 CLASS III	14	LIN FT	365	365					
I	20-22	2503.541	36" RC PIPE SEWER DESIGN 3006 CLASS III		LIN FT	316	316					
I	20-22	2503.541	48" RC PIPE SEWER DESIGN 3006 CLASS III	15	LIN FT	296	296					
I	20-22	2503.541	48" RC PIPE SEWER DESIGN 3006 CLASS IV		LIN FT	144	144					
I	20-22	2503.541	48" RC PIPE SEWER DESIGN 3006 CLASS V		LIN FT	210	210					
K	23	2503.601	CONNECT TO INPLACE CULVERT		LUMP SUM	1	1					

SEE SHEET 8 FOR TABULATION INDEX.

(P) DENOTES PLAN QUANTITY

(A) SEE LUMP SUM AGREEMENT NO. 1028556 WITH POPE COUNTY AND THE CITY OF GLENWOOD.

NOTES:

2. SEE SHEET 52 FOR DETAIL.
7. ITEM INTENDED FOR CONNECTION OF ROOF/SUMP DRAINS INTO STORM SEWER IF 4" AND 6" PVC SIZES AREN'T SUFFICIENT. ITEM IS ONLY TO BE USED WITH ENGINEER'S APPROVAL.
8. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 176 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
9. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 380 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
10. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 599 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
11. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 104 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
12. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 467 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
13. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 332 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
14. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 365 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
15. PLASTIC PIPE MAY BE USED AS AN OPTION FOR 75 LIN FT. SEE DRAINAGE TABULATION FOR SPECIFIC LOCATIONS.
16. SEE SHEET SS35 FOR MILLED RUMBLE STRIPS.
18. SEE SPECIAL PROVISIONS.
19. SEE SHEET MD7 FOR DETAIL.

STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 6103-32 T.H. 28 100% STATE (A) ESTIMATED QUANTITY	S.P. 6104-12 T.H. 28 100% STATE ESTIMATED QUANTITY	S.P. 6106-23 T.H. 29 100% STATE ESTIMATED QUANTITY	S.P. 6110-21 T.H. 104 100% STATE ESTIMATED QUANTITY	S.P. 061-090-006 80% FEDERAL/ 20% CITY (A) ESTIMATED QUANTITY	CITY OF GLENWOOD 100% CITY (A) ESTIMATED QUANTITY
AC	U-2	2503.602	CONNECT TO EXISTING SANITARY SEWER		EACH	22						22
I,AK	20-22,U-6	2503.602	CONNECT TO EXISTING STORM SEWER		EACH	15	7		2	2		4
AD	U-3,U-4	2503.602	CONNECT TO EXISTING SANITARY SEWER SER		EACH	27						27
B	13	2503.602	PLUG & ABANDON PIPE SEWER	25	EACH	1	1					
AD	U-3,U-4	2503.602	6" CLEAN-OUT ASSEMBLY		EACH	2						2
AD	U-3,U-4	2503.602	8" CLEAN-OUT ASSEMBLY		EACH	1						1
AD	U-3,U-4	2503.602	8"x4" PVC WYE		EACH	22						22
AD	U-3,U-4	2503.602	8"X6" PVC WYE		EACH	8						8
AD	U-3,U-4	2503.602	10"X4" PVC WYE		EACH	9						9
AD	U-3,U-4	2503.602	10"X6" PVC WYE		EACH	34						34
AD	U-3,U-4	2503.602	12"X4"PVC WYE		EACH	3						3
AD	U-3,U-4	2503.602	12"X6" PVC WYE		EACH	11						11
AD	U-3,U-4	2503.602	12X8" PVC WYE		EACH	1						1
L	23	2503.603	TRENCH DRAIN	21	LIN FT	20						20
AD	U-3,U-4	2503.603	4" PVC SANITARY SERVICE PIPE		LIN FT	1631						1631
AD	U-3,U-4	2503.603	6" PVC SANITARY SERVICE PIPE		LIN FT	2587						2587
AD	U-3,U-4	2503.603	8" PVC SANITARY SERVICE PIPE		LIN FT	50						50
		2504.601	IRRIGATION SYSTEM	20	LUMP SUM	1						1
AG	U-5	2504.602	CONNECT TO EXISTING WATER MAIN		EACH	21						21
AH	U-6	2504.602	CONNECT TO EXISTING WATER SERVICE		EACH	33						33
AG	U-5	2504.602	HYDRANT		EACH	10						10
AH	U-6	2504.602	1" CORPORATION STOP		EACH	55						55
AH	U-6	2504.602	2" CORPORATION STOP		EACH	3						3
AG	U-5	2504.602	6" GATE VALVE & BOX		EACH	17						17
AG	U-5	2504.602	8" GATE VALVE & BOX		EACH	7						7
AG	U-5	2504.602	12" GATE VALVE & BOX		EACH	13						13
AH	U-6	2504.602	1" CURB STOP & BOX		EACH	55						55
AH	U-6	2504.602	2" CURB STOP & BOX		EACH	3						3
AG	U-5	2504.602	LOWER WATERMAIN		EACH	21						21
AH	U-6	2504.603	1" TYPE K COPPER PIPE		LIN FT	2665						2665
AH	U-6	2504.603	2" TYPE K COPPER PIPE		LIN FT	157						157
AG	U-5	2504.603	6" PVC WATERMAIN		LIN FT	510						510
AG	U-5	2504.603	8" PVC WATERMAIN		LIN FT	1456						1456
AG	U-5	2504.603	12" PVC WATERMAIN		LIN FT	3662						3662
AJ	U-7	2504.608	WATERMAIN FITTINGS		POUND	4169						4169
AE	U-4	2506.501	CONST DRAINAGE STRUCTURE DESIGN F		LIN FT	188						188
I	20-22	2506.501	CONST DRAINAGE STRUCTURE DESIGN H		LIN FT	52	43		3	6		
I	20-22	2506.501	CONST DRAINAGE STRUCTURE DESIGN SD-48		LIN FT	81	51		22	8		
I,AK	20-22,U-6	2506.501	CONST DRAINAGE STRUCTURE DES 48-4020		LIN FT	184	149		11	16		8
I	20-22	2506.501	CONST DRAINAGE STRUCTURE DES 54-4020		LIN FT	19	19					
I	20-22	2506.501	CONST DRAINAGE STRUCTURE DES 60-4020		LIN FT	13	13					
I	20-22	2506.501	CONST DRAINAGE STRUCTURE DES 72-4020		LIN FT	35	35					
I	20-22	2506.501	CONST DRAINAGE STRUCTURE DES 84-4020		LIN FT	29	29					
J,M,R,AE	22-23,87,U-4	2506.516	CASTING ASSEMBLY		EACH	112	72		13	7		20
M,R	23,87	2506.522	ADJUST FRAME & RING CASTING		EACH	44	10	8	11	15		
		2506.602	CLEAN OUT CATCH BASIN	18	EACH	2	2					
I	20-22	2506.602	CONSTRUCT CONTROL STRUCTURE		EACH	2	2					
I	20-22	2511.501	RANDOM RIPRAP CLASS II		CU YD	8	8					
I	20-22	2511.515	GEOTEXTILE FILTER TYPE III		SQ YD	42	42					
K	23	2515.501	ARTICULATED BLOCK MAT OPEN CELL, TYPE A		SQ YD	233	233					
G	15-16	2521.501	4" CONCRETE WALK		SQ FT	78195	34867		18894	19270	5164	

SEE SHEET 8 FOR TABULATION INDEX.

(P) DENOTES PLAN QUANTITY

(A) SEE LUMP SUM AGREEMENT NO. 1028556 WITH POPE COUNTY AND THE CITY OF GLENWOOD.

NOTES:

18. SEE SPECIAL PROVISIONS.
20. SEE STREETSCAPE PLAN AND SPECIAL PROVISIONS FOR IRRIGATION SYSTEM DETAILS.
21. SEE SHEET MD6 FOR DETAIL.
25. SEE SHEET RM4 AND SPECIAL PROVISIONS.

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: RDH
CHECKED BY: HLR

NO.	BY	DATE	REVISIONS

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STATEMENT OF ESTIMATED QUANTITIES

FILE NO. MNT04-134590
EQ3 OF EQ5
6/310

STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 6103-32 T.H. 28 100% STATE (A) ESTIMATED QUANTITY	S.P. 6104-12 T.H. 28 100% STATE ESTIMATED QUANTITY	S.P. 6106-23 T.H. 29 100% STATE ESTIMATED QUANTITY	S.P. 6110-21 T.H. 104 100% STATE ESTIMATED QUANTITY	S.P. 061-090-006 80% FEDERAL/ 20% CITY (A) ESTIMATED QUANTITY	CITY OF GLENWOOD 100% CITY (A) ESTIMATED QUANTITY
G	15-16	2521.501	4" CONCRETE WALK SPECIAL		SQ FT	25605	18679				6926	
G	15-16	2521.501	4" CONCRETE WALK SPECIAL 1		SQ FT	12064	6032				6032	
G, H	15-18	2521.501	6" CONCRETE WALK		SQ FT	14532	14532					
H	17-18	2521.618	CONCRETE WALK		SQ FT	7925	1382		2838	3705		
G	15-16	2531.501	CONCRETE CURB & GUTTER DESIGN B424		LIN FT	345	345					
G	15-16	2531.501	CONCRETE CURB & GUTTER DESIGN B612		LIN FT	16	16					
G,R,AB,AK	15-16,87,U-1,U-6	2531.501	CONCRETE CURB & GUTTER DESIGN B624		LIN FT	10699	8483		861	894		461
G	15-16	2531.501	CONCRETE CURB & GUTTER DESIGN B824		LIN FT	42			42			
G	15-16	2531.502	CONCRETE CURB DESIGN V4		LIN FT	57	57					
G,AB	15-16,U-1	2531.507	8" CONCRETE DRIVEWAY PAVEMENT		SQ YD	2834	2099		326	386		23
G	15-16	2531.603	CONCRETE GUTTER DESIGN SPECIAL		LIN FT	186	186					
H	17-18	2531.603	CONCRETE CURB & GUTTER		LIN FT	1926	303		738	885		
H	17-18	2531.603	CONCRETE CURB DESIGN V		LIN FT	62	29		13	20		
H	17-18	2531.618	TRUNCATED DOMES		SQ FT	2151	1420		324	407		
Q1	186	2540.602	BICYCLE RACK		EACH	11					11	
Q1	186	2540.602	WASTE RECEPTACLE		EACH	16					16	
Q1	186	2540.602	PLANTER	1	EACH	22					22	
Q1	186	2540.602	PICNIC TABLE SPECIAL	22	EACH	6					6	
Q1	186	2540.602	METAL BENCH		EACH	14					14	
G	15-16	2540.618	BRICK PAVERS	23	SQ FT	1635					1635	
		2545.501	LIGHTING SYSTEM		LUMP SUM	1	0.1				0.3	0.6
I,K	20-23	2554.509	GUIDE POST TYPE B		EACH	8	8					
Y	19	2557.603	INSTALL FENCE		LIN FT	30	30					
Y	19	2557.603	INSTALL CHAIN LINK FENCE		LIN FT	51	51					
Y	19	2557.603	INSTALL WOODEN FENCE		LIN FT	38	38					
R	87	2563.601	TRAFFIC CONTROL SUPERVISOR		LUMP SUM	1	1					
R	87	2563.601	TRAFFIC CONTROL		LUMP SUM	1	0.5		0.1	0.1	0.1	0.2
R	87	2563.601	ALTERNATE PEDESTRIAN ROUTE		LUMP SUM	1	1					
R	87	2563.602	PORTABLE CHANGEABLE MESSAGE SIGN		EACH	6	6					
U-5	230	2564.531	SIGN PANELS TYPE SPECIAL		SQ FT	122						122
U-4	229	2564.531	SIGN PANELS TYPE C		SQ FT	247						247
U-2	228	2564.537	INSTALL SIGN TYPE C		EACH	2	2					
U-6	230	2564.552	OBJECT MARKER X4-11		EACH	3						3
U-1	228	2564.602	MEDIAN SIGN POST ANCHOR		EACH	9	6		1	2		
U-3	228	2564.602	FURNISH TYPE C SIGN		EACH	16	13		2	1		
S	297	2565.511	TRAFFIC CONTROL SIGNAL SYSTEM		SIGNAL SYSTEM	1	0.50		0.25	0.25		
S	297	2565.513	EMERGENCY VEHICLE PREEMPTION SYSTEM		LUMP SUM	1						1
Q2	186	2571.502	DECIDUOUS TREE 2" CAL B&B		TREE	13					13	
Q2	186	2571.503	ORNAMENTAL TREE 2" CAL B&B		TREE	23					23	
Q2, Q3	186, 217	2571.505	DECIDUOUS SHRUB NO 2 CONT		SHRUB	183	55				128	
Q2	186	2571.507	PERENNIAL NO 1 CONT		PLANT	720					720	
Q2	186	2571.507	ORNAMENTAL GRASS NO 1 CONT		PLANT	351					351	
Q3	217	2571.604	GEOTEXTILE WEED BARRIER FABRIC		SQ YD	55	55					
Y	19	2572.501	TEMPORARY FENCE		LIN FT	1652	1455		51	146		
T	19	2572.502	CLEAN ROOT CUTTING		LIN FT	494	406		52	36		
N	19	2573.502	SILT FENCE, TYPE MS		LIN FT	1594	1594					
N	19	2573.505	FLOTATION SILT CURTAIN TYPE STILL WATER		LIN FT	120	120					
N	19	2573.505	FLOTATION SILT CURTAIN TYPE MOVING WATER		LIN FT	40	40					
N	19	2573.515	FILTER BERM TYPE 3		LIN FT	60	60					
N	19	2573.530	STORM DRAIN INLET PROTECTION		EACH	75	62		7	6		
N	19	2573.533	SEDIMENT CONTROL LOG TYPE WOOD FIBER		LIN FT	140	140					

SEE SHEET 8 FOR TABULATION INDEX.

(P) DENOTES PLAN QUANTITY

(A) SEE LUMP SUM AGREEMENT NO. 1028556 WITH POPE COUNTY AND THE CITY OF GLENWOOD.

NOTES:

1. 10 SMALL PLANTERS AND 12 LARGE PLANTERS.
22. SEE SHEET SC10 FOR DETAIL.
23. BRICK PAVERS SHALL BE ADA COMPLIANT. SEE SPECIAL PROVISIONS.

STATEMENT OF ESTIMATED QUANTITIES

TAB	SHEET NO.	ITEM NO.	ITEM DESCRIPTION	NOTE	UNIT	TOTAL ESTIMATED QUANTITY	S.P. 6103-32 T.H. 28 100% STATE (A) ESTIMATED QUANTITY	S.P. 6104-12 T.H. 28 100% STATE ESTIMATED QUANTITY	S.P. 6106-23 T.H. 29 100% STATE ESTIMATED QUANTITY	S.P. 6110-21 T.H. 104 100% STATE ESTIMATED QUANTITY	S.P. 061-090-006 80% FEDERAL/ 20% CITY (A) ESTIMATED QUANTITY	CITY OF GLENWOOD 100% CITY (A) ESTIMATED QUANTITY
		2573.550	EROSION CONTROL SUPERVISOR		LUMP SUM	1	1					
N	19	2573.560	CULVERT END CONTROLS		EACH	8	8					
N	19	2574.508	FERTILIZER TYPE 1		POUND	278	269		5	4		
N,R	19,87	2574.508	FERTILIZER TYPE 3		POUND	2240	2165		42	33		
		2574.525	BOULEVARD TOPSOIL BORROW	3	CU YD	400					400	
N	19	2574.575	SUBSOILING		ACRE	5.5	5.5					
N	19	2574.578	SOIL BED PREPARATION		ACRE	8.0	7.8		0.1	0.1		
N	19	2575.501	SEEDING		ACRE	6.8	6.6		0.1	0.1		
N	19	2575.502	SEED MIXTURE 21-112		POUND	137	133		2	2		
N,R	19, 87	2575.502	SEED MIXTURE 25-131		POUND	1250	1203		26	21		
N	19	2575.502	SEED MIXTURE 34-261		POUND	39	39					
		2575.513	MULCH MATERIAL TYPE 6	3	CU YD	88					88	
N,R	19,87	2575.523	EROSION CONTROL BLANKETS CATEGORY 3N		SQ YD	5020	5020					
N	19	2575.541	MOWING		ACRE	13.2	13.2					
N	19	2575.547	WEED SPRAY MIXTURE		GALLON	10	10					
N	19	2575.560	HYDRAULIC MULCH MATRIX		POUND	40083	38649		804	630		
H	17-18	2575.602	SITE RESTORATION		EACH	45	17		14	14		
N	19	2575.605	WEED SPRAYING SPECIAL		ACRE	3.4	3.4					
R	87	2580.603	INTERIM PAVEMENT MARKING		LIN FT	2167	1437		310	420		
U-7	231	2582.501	PAVT MSSG PREF TAPE GR IN (WR)		SQ FT	1232	764	45	128			295
U-7	231	2582.502	4" SOLID LINE EPOXY GR IN (WR)		LIN FT	44455	24340	5555	11335	3225		
U-7	231	2582.502	12" SOLID LINE EPOXY GR IN (WR)		LIN FT	61	61					
U-7	231	2582.502	24" SOLID LINE EPOXY GR IN (WR)		LIN FT	30		30				
U-7	231	2582.502	4" BROKEN LINE EPOXY GR IN (WR)		LIN FT	5171	2384	337	2090	360		
U-7	231	2582.502	8" DOTTED LINE EPOXY GR IN (WR)		LIN FT	117	117					
U-7	231	2582.502	4" DBLE SOLID LINE EPOXY GR IN (WR)		LIN FT	5300	1850		3450			
U-7	231	2582.503	CROSSWALK PREF TAPE GR IN		SQ FT	10708	3684		1566	1938	240	3280

(P) DENOTES PLAN QUANTITY

(A) SEE LUMP SUM AGREEMENT NO. 1028556 WITH POPE COUNTY AND THE CITY OF GLENWOOD.

NOTES:

3. FOR PLANTINGS IN THE AMMENITY ZONE. SEE STREETSCAPE PLAN AND DETAILS.

TABULATION INDEX

TABULATION INDEX

TABULATION INDEX

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STATEMENT OF ESTIMATED QUANTITIES

FILE NO. MNT04-134590
EQ5 OF EQ5

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

MNDOT STANDARD PLATES	
PLATE NO.	PLATE TITLE
3000L	REINFORCED CONCRETE PIPE (5 SHEETS)
3006G	GASKET JOINT FOR R.C. PIPE (2 SHEETS)
3007E	SHEAR REINFORCEMENT FOR PRECAST DRAINAGE STRUCTURES
3014J	REINFORCED CONCRETE PIPE ARCH (2 SHEETS)
3022C	PRECAST CONCRETE SAFETY APRON (3 SHEETS)
3100G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE
3110G	CONCRETE APRON FOR REINFORCED CONCRETE PIPE-ARCH
3128H	METAL SAFETY APRON & GRATE
3132A	GRATE FOR 1:4 PRECAST CONCRETE APRONS (FOR CROSS DRAINS WITH 42" TO 72" DIA. PIPE)
3133D	RIPRAP AT RCP OUTLETS
3145G	CONCRETE PIPE OR PRECAST BOX CULVERT TIES
4005M	MANHOLE OR CATCH BASIN TYPE A & B CONE SECTIONS PRECAST - DESIGN F
4006L	MANHOLE OR CATCH BASIN PRECAST - DESIGNS G & H
4007C	PRECAST MECHANICAL JOINT SEWER MANHOLE
4010H	CONCRETE SHORT CONE & ADJUSTING RING (SECTIONAL CONCRETE)
4011E	PRECAST CONCRETE BASE
4020J	MANHOLE OR CATCH BASIN (FOR USE WITH OR WITHOUT TRAFFIC LOADS) (2 SHEETS)
4024A	48" DIA. PRECAST SHALLOW DEPTH CATCH BASIN - DESIGN SD
4026A	CONCRETE ENCASED CONCRETE ADJUSTING RINGS
4101D	RING CASTING FOR MANHOLE OR CATCH BASIN
4108F	ADJUSTING RINGS FOR CATCH BASINS AND MANHOLES
4110F	COVER CASTING FOR MANHOLE (FOR USE IN ALL TRAFFIC AREAS) - CASTING NO. 715 & 716
4125D	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 806
4132F	CATCH BASIN FRAME CASTING (FOR SQUARE GRATE) - CASTING NO. 805
4133A	CURB BOX CASTING FOR CATCH BASIN - CASTING NO. 824
4134A	CURB BOX CASTING FOR CATCH BASIN (FOR DESIGN B CURBS) - CASTING NO. 825
4143E	STOOL GRATE & CONCRETE FRAME (MEDIAN DRAINS) - CASTING NO. 731
4152C	CATCH BASIN GRATE CASTING - CASTING NO. 814A
4180J	MANHOLE OR CATCH BASIN STEP
7020K	CONCRETE CURB (DESIGN B, V, S, DR & BR) (2 SHEETS)
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7100H	CONCRETE CURB AND GUTTER (DESIGN B & V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS (CONCRETE CURB & GUTTER)
7113A	CONCRETE APPROACH NOSE DETAIL
8000J	CHANNELIZERS - TYPE A, TYPE B, TYPE C (3 SHEETS)
8150C	INSTALLATION OF CULVERT MARKERS
8400E	PIPE RAILING
9000E	APPROACHES & ENTRANCES - RECOMMENDED STANDARDS

SEE SHEET 297 FOR SIGNAL SYSTEM STANDARD PLATES.

SOIL AND CONSTRUCTION NOTES

1. ANY EXTRA MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND BE DISPOSED OF OUTSIDE OF THE RIGHT OF WAY IN ACCORDANCE WITH SPECIFICATION 2104.
2. REUSE EXISTING AGGREGATE AND TOPSOIL IN NEW CONSTRUCTION WHERE POSSIBLE.
3. EXCAVATED MATERIALS MEETING THE PROJECT REQUIREMENTS MUST BE USED TO THE FULLEST EXTENT POSSIBLE.
4. ALL EXCAVATION AND EMBANKMENT SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION 2106.
5. MATERIALS NOT MEETING THE DEFINITION OF SELECT GRADING MATERIAL MUST BE REMOVED FROM THE EMBANKMENT FOUNDATION.
6. WHERE MATCHING INTO EXISTING ROADS, CUT VERTICALLY TO THE BOTTOM OF THE EXISTING SURFACE OR TO THE BOTTOM OF THE NEW SURFACING DESIGN, WHICHEVER IS GREATER, AND THEN USE A 1(V):4(H) SLOPE TO THE BOTTOM OF THE SUBGRADE EXCAVATION.
7. WHEN CONNECTING TO EXISTING ROADWAYS AT THE TERMINI OF PROPOSED NEW CONSTRUCTION, CUT VERTICALLY TO THE BOTTOM OF THE EXISTING AGGREGATE BASE OR TO THE BOTTOM OF THE NEW AGGREGATE BASE, WHICHEVER IS DEEPER; THEN AT A 1(V):20(H) TAPER TO THE BOTTOM OF THE RECOMMENDED SUBGRADE EXCAVATION.
8. TRAFFIC LANES TO BE USED DURING CONSTRUCTION MUST BE DELINEATED TO KEEP VEHICLES A SAFE DISTANCE AWAY FROM THE ADJACENT EXCAVATION. THE DELINEATION SHOULD COINCIDE WITH POINTS ESTABLISHED BY PROJECTING A 1:2 OR FLATTER SLOPE BETWEEN THE EDGE OF THE TRAFFIC SURFACE AND THE NEAR EDGE OF THE BOTTOM OF EXCAVATION.
9. ALL SLOPES ARE SHOWN AS 1 VERTICAL TO X HORIZONTAL, I.E. 1:X IN THIS PLAN.
10. ALL TOPSOIL STRIPPING WILL BE CONSIDERED TO BE EXCAVATION - COMMON.
11. DITCH BOTTOMS, TOE AND FILL, CUT RUNOUTS, AND THE TOP EDGE OF THE BACKSLOPES SHALL BE ROUNDED REGARDLESS OF THE SECTION USED ON THE CROSS SECTION SHEETS.
12. PROVIDE FOR A UNIFORM BITUMINOUS TACK COAT BETWEEN ALL BITUMINOUS COURSES. TACK COAT SHALL BE INCIDENTAL.
13. 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.
14. MOWING SCHEDULE (TO THE EXTENT POSSIBLE WITHIN THE PROJECT TIME FRAME): MOW AFTER SEEDING AND STARTING WHEN MAJORITY OF VEGETATION IS 12"-18" HIGH. SET MOWER TO A HEIGHT OF 6"-10". MOW NON-NATIVE SEEDING AREAS ONCE OR TWICE TO CONTROL WEEDS. MOW NATIVE SEEDING AREAS APPROXIMATELY 3 TIMES AT 1-MONTH INTERVALS IN THE FIRST GROWING SEASON AFTER PLANTING, AND 2 TIMES AT 1-MONTH INTERVALS IN THE SECOND GROWING SEASON.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STANDARD PLATES AND SOIL AND CONSTRUCTION NOTES

FILE NO. MNT04-134590
SCN1 OF SCN1

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EMBANKMENT (CV)
				CU YD	CU YD	CU YD	CU YD
S.P. 6103-32	T.H. 28						
	407+72.44 R 1	TO	409+00.00 R 1	①			
	409+00.00 R 1	TO	409+50.00 R 1	193			
	409+50.00 R 1	TO	410+00.00 R 1	236		54	
	410+00.00 R 1	TO	410+50.00 R 1	474		101	
	410+50.00 R 1	TO	411+00.00 R 1	251		58	
	411+00.00 R 1	TO	411+50.00 R 1	265		71	
	411+50.00 R 1	TO	412+00.00 R 1	221		68	
	412+00.00 R 1	TO	412+50.00 R 1	170		51	
	412+50.00 R 1	TO	413+00.00 R 1	152		39	
	413+00.00 R 1	TO	413+50.00 R 1	168		43	
	413+50.00 R 1	TO	414+00.00 R 1	195		48	
	414+00.00 R 1	TO	414+81.91 R 1	242		49	
	414+81.91 R 1	TO	415+00.00 R 1	163	57	37	60
	415+00.00 R 1	TO	415+50.00 R 1	523	155	113	165
	415+50.00 R 1	TO	416+00.00 R 1	577	152	129	165
	416+00.00 R 1	TO	416+50.00 R 1	565	149	142	165
	416+50.00 R 1	TO	417+00.00 R 1	455	164	174	243
	417+00.00 R 1	TO	417+50.00 R 1	471	166	170	243
	417+50.00 R 1	TO	418+00.00 R 1	609	153	138	165
	418+00.00 R 1	TO	418+50.00 R 1	615	155	131	165
	418+50.00 R 1	TO	419+00.00 R 1	599	155	126	165
	419+00.00 R 1	TO	419+50.00 R 1	601	157	125	165
	419+50.00 R 1	TO	420+00.00 R 1	656	163	118	168
	420+00.00 R 1	TO	420+50.00 R 1	619	165	124	172
	420+50.00 R 1	TO	421+00.00 R 1	465	235	101	243
	421+00.00 R 1	TO	421+50.00 R 1	376	224	59	228
	421+50.00 R 1	TO	422+00.00 R 1	417	153	79	157
	422+00.00 R 1	TO	422+50.00 R 1	465	161	103	172
	422+50.00 R 1	TO	423+00.00 R 1	399	157	99	172
	423+00.00 R 1	TO	423+50.00 R 1	348	152	98	172
	423+50.00 R 1	TO	424+00.00 R 1	328	146	91	174
	424+00.00 R 1	TO	424+50.00 R 1	281	143	92	183
	424+50.00 R 1	TO	425+00.00 R 1	251	157	87	191
	425+00.00 R 1	TO	425+50.00 R 1	248	179	74	191
	425+50.00 R 1	TO	426+00.00 R 1	182	169	52	171
	426+00.00 R 1	TO	426+50.00 R 1	183	160	49	162
	426+50.00 R 1	TO	427+00.00 R 1	212	172	64	175
	427+00.00 R 1	TO	427+50.00 R 1	121	177	60	190
	427+50.00 R 1	TO	428+00.00 R 1	73	182	65	222
	428+00.00 R 1	TO	428+50.00 R 1	59	183	67	245
	428+50.00 R 1	TO	429+00.00 R 1	71	178	69	250
	429+00.00 R 1	TO	429+50.00 R 1	60	245	46	365
	429+50.00 R 1	TO	430+00.00 R 1	58	254	93	385
	430+00.00 R 1	TO	430+42.73 R 1	71	172	156	246
	430+42.73 R 1	TO	431+00.00 R 2	36	109	92	146
	431+00.00 R 2	TO	431+50.00 R 2	66	234	166	305
	431+50.00 R 2	TO	432+00.00 R 2	70	235	131	282
	432+00.00 R 2	TO	432+50.00 R 2	87	235	104	249
	432+50.00 R 2	TO	433+00.00 R 2	80	206	91	208
	433+00.00 R 2	TO	433+50.00 R 2	73	178	81	178
	433+50.00 R 2	TO	434+00.00 R 2	94	177	67	177
	434+00.00 R 2	TO	434+50.00 R 2	136	191	50	191
	434+50.00 R 2	TO	435+00.00 R 2	165	185	34	185
	435+00.00 R 2	TO	435+50.00 R 2	183	170	44	170
	435+50.00 R 2	TO	436+00.00 R 2	182	173	62	173
	436+00.00 R 2	TO	436+50.00 R 2	189	172	44	172
	436+50.00 R 2	TO	437+00.00 R 2	182	172	62	172
	437+00.00 R 2	TO	437+25.00 R 2	80	86	32	86
	437+25.00 R 2	TO	437+50.00 R 2	79	86	30	86
	437+50.00 R 2	TO	438+00.00 R 2	147	172	62	172
	438+00.00 R 2	TO	438+50.00 R 2	127	172	67	172
	438+50.00 R 2	TO	439+00.00 R 2	113	172	66	172
	439+00.00 R 2	TO	439+50.00 R 2	116	172	57	172
	440+00.00 R 2	TO	440+25.00 R 2	67	67		67

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EMBANKMENT (CV)
S.P. 6103-32	440+25.00 R 2	TO	440+50.00 R 2	57	55	2	55
	440+50.00 R 2	TO	440+75.00 R 2	48	46	2	46
	440+75.00 R 2	TO	441+00.00 R 2	49	49	2	49
	441+00.00 R 2	TO	441+25.00 R 2	49	51	2	51
	441+25.00 R 2	TO	441+50.00 R 2	52	51		51
	441+50.00 R 2	TO	441+75.00 R 2	51	51		51
	441+75.00 R 2	TO	442+00.00 R 2	50	51		51
	442+00.00 R 2	TO	442+25.00 R 2	51	51		51
	442+25.00 R 2	TO	442+50.00 R 2	52	51		51
	442+50.00 R 2	TO	442+75.00 R 2	53	51		51
	442+75.00 R 2	TO	443+00.00 R 2	54	51		51
	443+00.00 R 2	TO	443+10.00 R 2	22	20		20
	443+10.00 R 2	TO	443+25.00 R 2	34	30		30
	443+25.00 R 2	TO	443+35.00 R 2	22	20		20
	443+35.00 R 2	TO	443+50.00 R 2	32	30		30
	443+50.00 R 2	TO	443+75.00 R 2	51	47		47
	443+75.00 R 2	TO	444+00.00 R 2	81	82		82
	444+00.00 R 2	TO	444+25.00 R 2	110	120		120
	444+25.00 R 2	TO	444+50.00 R 2	74	82		82
	444+50.00 R 2	TO	444+75.00 R 2	44	47		47
	444+75.00 R 2	TO	445+00.00 R 2	45	51		51
	445+00.00 R 2	TO	445+25.00 R 2	46	51		51
	445+25.00 R 2	TO	445+50.00 R 2	46	51		51
	445+50.00 R 2	TO	445+75.00 R 2	47	51		51
	445+75.00 R 2	TO	446+00.00 R 2	49	51		51
	446+00.00 R 2	TO	446+25.00 R 2	51	51		51
	446+25.00 R 2	TO	446+50.00 R 2	48	51		51
	446+50.00 R 2	TO	446+63.00 R 2	23	26		26
	446+63.00 R 2	TO	446+75.00 R 2	21	24		24
	446+75.00 R 2	TO	447+00.00 R 2	42	51		51
	447+00.00 R 2	TO	447+08.50 R 2	14	17		17
	447+08.50 R 2	TO	447+21.00 R 2	21	25		25
	447+21.00 R 2	TO	447+25.00 R 2	6	8		8
	447+25.00 R 2	TO	447+50.00 R 2	44	57		57
	447+50.00 R 2	TO	447+68.00 R 2	36	46		46
	447+68.00 R 2	TO	447+75.00 R 2	15	19		18
	447+75.00 R 2	TO	448+00.00 R 2	28	34		34
	448+00.00 R 2	TO	538+50.00 R 3	29	34		34
	538+50.00 R 3	TO	538+75.00 R 3	31	34		34
	538+75.00 R 3	TO	538+95.00 R 3	47	53		52
	538+95.00 R 3	TO	539+00.00 R 3	11	13		13
	539+00.00 R 3	TO	539+16.00 R 3	31	37		37
	539+16.00 R 3	TO	539+25.00 R 3	15	18		18
	539+25.00 R 3	TO	539+50.00 R 3	41	51		51
	539+50.00 R 3	TO	539+57.00 R 3	12	14		14
	539+57.00 R 3	TO	539+75.00 R 3	29	37		37
	539+75.00 R 3	TO	539+88.00 R 3	21	27		27
	539+88.00 R 3	TO	539+91.00 R 3	5	6		6
	539+91.00 R 3	TO	540+00.00 R 3	14	18		18
	540+00.00 R 3	TO	540+09.50 R 3	15	19		19
	540+09.50 R 3	TO	540+19.00 R 3	15	19		19
	540+19.00 R 3	TO	540+25.00 R 3	9	12		12
	540+25.00 R 3	TO	540+45.00 R 3	31	41		41
	540+45.00 R 3	TO	540+50.00 R 3	8	10		10
	540+50.00 R 3	TO	540+64.50 R 3	22	30		30
	540+64.50 R 3	TO	540+75.00 R 3	16	21		21
	540+75.00 R 3	TO	540+77.00 R 3	3	4		4
	540+77.00 R 3	TO	540+85.00 R 3	12	16		16
	540+85.00 R 3	TO	541+00.00 R 3	23	31		31
	541+00.00 R 3	TO	541+07.50 R 3	12	15		15
	541+07.50 R 3	TO	541+21.50 R 3	28	29		29
	541+21.50 R 3	TO	541+25.00 R 3	8	7		7
	541+25.00 R 3	TO	541+29.00 R 3	9	8		8
	541+29.00 R 3	TO	541+50.00 R 3	39	43		43
	541+50.00 R 3	TO	541+63.00 R 3	20	26		26

NOTES:

① SEE EARTHWORK SUMMARY ON SHEET 12 FOR PERKINS CREEK VOLUMES.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EARTHWORK TABULATION AND SUMMARY

FILE NO. MNT04-134590 EW1 OF EW3

10 / 310

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EMBANKMENT (CV)
S.P. 6103-32	T.H. 28 (CONTINUED)						
	541+63.00 R 3	TO	541+75.00 R 3	17	25		25
	541+75.00 R 3	TO	541+84.00 R 3	12	18		18
	541+84.00 R 3	TO	541+97.50 R 3	17	25		25
	541+97.50 R 3	TO	542+00.00 R 3	3	4		4
	542+00.00 R 3	TO	542+25.00 R 3	16	22		22
	542+25.00 R 3	TO	542+50.00 R 3	18	22		22
	542+50.00 R 3	TO	542+75.00 R 3	22	22		22
	542+75.00 R 3	TO	543+00.00 R 3	50	48	2	48
	543+00.00 R 3	TO	543+25.00 R 3	60	51	3	51
	543+25.00 R 3	TO	543+50.00 R 3	70	51	5	51
	543+50.00 R 3	TO	543+75.00 R 3	76	51	7	51
	543+75.00 R 3	TO	544+00.00 R 3	65	51	3	51
	544+00.00 R 3	TO	544+25.00 R 3	56	51		51
	544+25.00 R 3	TO	544+50.00 R 3	59	51	1	51
	544+50.00 R 3	TO	544+75.00 R 3	66	51	4	51
	544+75.00 R 3	TO	545+00.00 R 3	70	51	5	51
	545+00.00 R 3	TO	545+25.00 R 3	67	51	5	51
	545+25.00 R 3	TO	545+50.00 R 3	69	51	2	51
	545+50.00 R 3	TO	545+75.00 R 3	55	51		51
	545+75.00 R 3	TO	546+00.00 R 3	33	47		47
	546+00.00 R 3	TO	546+25.00 R 3	52	78		78
	546+25.00 R 3	TO	546+39.75 R 4	45	68		68
	546+39.75 R 4	TO	546+50.00 R 4	30	46		46
	546+50.00 R 4	TO	546+75.00 R 4	49	78	15	78
	546+75.00 R 4	TO	547+00.00 R 4	24	47	25	47
	547+00.00 R 4	TO	547+25.00 R 4	29	51	18	51
	547+25.00 R 4	TO	547+50.00 R 4	32	51	17	51
	547+50.00 R 4	TO	547+75.00 R 4	40	51	12	51
	547+75.00 R 4	TO	548+00.00 R 4	47	51	12	51
	548+00.00 R 4	TO	548+25.00 R 4	48	51	17	51
	548+25.00 R 4	TO	548+50.00 R 4	51	51	12	51
	548+50.00 R 4	TO	548+75.00 R 4	55	51	11	51
	548+75.00 R 4	TO	549+00.00 R 4	57	51	16	51
	549+00.00 R 4	TO	549+25.00 R 4	60	51	14	51
	549+25.00 R 4	TO	549+50.00 R 4	63	51	9	51
	549+50.00 R 4	TO	549+75.00 R 4	64	51	10	51
	549+75.00 R 4	TO	550+00.00 R 4	61	48	18	48
	550+00.00 R 4	TO	550+25.00 R 4	92	71	10	71
	550+25.00 R 4	TO	550+50.00 R 4	121	97		97
	550+50.00 R 4	TO	550+75.00 R 4	89	71	8	71
	550+75.00 R 4	TO	551+00.00 R 4	67	47	13	47
	551+00.00 R 4	TO	551+25.00 R 4	72	51	12	51
	551+25.00 R 4	TO	551+50.00 R 4	71	51	13	51
	551+50.00 R 4	TO	551+75.00 R 4	67	51	13	51
	551+75.00 R 4	TO	552+00.00 R 4	62	51	12	51
	552+00.00 R 4	TO	552+25.00 R 4	56	51	10	51
	552+25.00 R 4	TO	552+50.00 R 4	53	51	7	51
	552+50.00 R 4	TO	552+75.00 R 4	56	51	6	51
	552+75.00 R 4	TO	553+00.00 R 4	61	51	10	51
	553+00.00 R 4	TO	553+25.00 R 4	66	51	12	51
	553+25.00 R 4	TO	553+50.00 R 4	66	51	12	51
	553+50.00 R 4	TO	553+75.00 R 4	66	51	13	51
	553+75.00 R 4	TO	554+00.00 R 4	55	47	14	47
	554+00.00 R 4	TO	554+25.00 R 4	64	68	8	68
	554+25.00 R 4	TO	554+50.00 R 4	75	80	8	80
	554+50.00 R 4	TO	554+75.00 R 4	65	55	14	55
	554+75.00 R 4	TO	554+98.49 R 4	60	43	12	43
	SUBTOTALS			21226	13987	5513	15101

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EXCAVATION (CV)
				CU YD	CU YD	CU YD	CU YD
S.P. 6103-32	6TH STREET NW						
	10+12.20	TO	10+25.00	5			
	10+25.00	TO	10+50.00	4		9	
	10+50.00	TO	10+75.00	5		24	
	10+75.00	TO	11+00.00	6		45	
	11+00.00	TO	11+25.00	9		68	
	11+25.00	TO	11+35.00	7		40	
	SUBTOTALS			36		186	

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EMBANKMENT (CV)
				CU YD	CU YD	CU YD	CU YD
S.P. 6103 -32	5TH STREET NW						
	10+30.00	TO	10+50.00	19	26	10	26
	10+50.00	TO	10+75.00	23	32	13	32
	10+75.00	TO	11+00.00	16	30	23	32
	SUBTOTALS			58	88	46	90

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EMBANKMENT (CV)
				CU YD	CU YD	CU YD	CU YD
S.P. 6103-32	4TH STREET NW						
	10+41.00	TO	10+50.00	17	14	2	14
	10+50.00	TO	10+75.00	35	39	9	39
	10+75.00	TO	11+00.00	28	34	16	39
	11+00.00	TO	11+25.00	21	20	45	39
	11+25.00	TO	11+37.18	11	4	39	19
	11+37.18	TO	11+50.00	13	3	51	20
	11+50.00	TO	11+56.21	6	1	28	10
	SUBTOTALS			131	115	190	180

EARTHWORK TABULATION — A

PROJECT	LOCATION			EXCAVATION		EMBANKMENT	
				EXCAVATION - COMMON	EXCAVATION - SUBGRADE	COMMON EMBANKMENT (CV)	SELECT GRANULAR EMBANKMENT (CV)
				CU YD	CU YD	CU YD	CU YD
S.P. 6103-32	MINNESOTA AVE						
	10+00.00	TO	10+15.00	40	34	10	34
	10+15.00	TO	10+25.00	26	22	7	22
	10+25.00	TO	10+50.00	61	56	28	56
	10+50.00	TO	10+65.00	41	34	12	34
	10+65.00	TO	10+75.00	29	22	11	22
	10+75.00	TO	11+00.00	98	56	28	56
	11+00.00	TO	11+25.00	132	58	16	58
	11+25.00	TO	11+50.00	136	65	25	65
	SUBTOTALS			563	347	137	347

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EARTHWORK TABULATION AND SUMMARY

FILE NO. MNT04-134590
EW2 OF EW3
11 / 310

EARTHWORK TABULATION — A

PROJECT		LOCATION			EXCAVATION: EXCAVATION - COMMON (CU YD)
S.P. 6103-32	①	T.H. 28			
		440+12	TO	444+50	230
		444+50	TO	539+00	230
		539+00	TO	543+00	212
		543+00	TO	547+00	190
		547+00	TO	551+00	97
		551+00	TO	554+99	90
		554+99	TO	561+00	123
		561+00	TO	569+00	170
		SUBTOTALS			1342
S.P. 6110-21	①	T.H. 104			
		1189+96	TO	21+30	138
		21+30	TO	24+80	61
		24+80	TO	27+80	62
		27+80	TO	30+80	60
		30+80	TO	33+89	85
		SUBTOTALS			406
S.P. 6106-23	①	T.H. 29			
		35+42	TO	38+30	63
		38+30	TO	41+50	68
		41+50	TO	44+80	133
		44+80	TO	52+50	105
		52+50	TO	60+00	89
		SUBTOTALS			458
S.P. 061-090-006	①	T.H. 28			
		440+12	TO	444+50	39
		444+50	TO	539+00	43
		539+00	TO	543+00	50
		543+00	TO	547+00	37
		547+00	TO	551+00	22
		551+00	TO	554+99	19
		440+00	TO	547+00	④1207
		T.H. 104			
		1189+96	TO	21+30	8
		27+80	TO	30+80	6
		30+80	TO	33+89	9
		T.H. 29			
		35+42	TO	38+30	17
		38+30	TO	41+50	10
		44+80	TO	52+50	6
		52+50	TO	60+00	7
		SUBTOTALS			1480
		TOTALS			3686

EARTHWORK SUMMARY — A

PROJECT	LOCATION	EXCAVATION: EXCAVATION - COMMON (CU YD)	EXCAVATION: EXCAVATION - SUBGRADE (CU YD)	EXCAVATION: EXCAVATION - CHANNEL AND POND (CU YD)	EMBANKMENT: COMMON EMBANKMENT (CV) (CU YD)	EMBANKMENT: SELECT GRANULAR EMBANKMENT (CV) (CU YD)
S.P. 6103-32	T.H. 28 - MAINLINE	21226	13987		5513	15101
	T.H. 28 - SIDEWALK	1342				
	6TH STREET NW	36			186	
	2ND AVE NW ③	145			7	
	5TH STREET NW	58	88		46	90
	4TH STREET NW	131	115		190	180
	MINNESOTA AVE	563	347		137	347
	PERKINS CREEK ②③			650		
	SUBTOTALS	23501	14537	650	6079	15718
S.P. 6106-23	T.H. 29	458				
	SUBTOTALS	458				
S.P. 6110-21	T.H. 104	406				
	SUBTOTALS	406				
S.P. 061-090-006	T.H. 28	1417				
	T.H. 104	23				
	T.H. 29	40				
	SUBTOTALS	1480				
	TOTALS	25845	14537	650	6079	15718

NOTES:

① THESE EXCAVATION VOLUMES ARE FOR CURB REPLACEMENT AND CONCRETE WALK WORK.

② PERKINS CREEK EARTHWORK WILL RESULT IN MINIMUM ALTERATION OF THE EXISTING CREEK CHANNEL.

③ VOLUMES ARE COMPUTED INDEPENDENTLY, AND NOT INCLUDED IN CROSS SECTIONS OR EARTHWORK TABULATIONS.

④ VOLUMES ARE FOR STREETSCAPE EXCAVATION UNDER AMENITY ZONE.

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ew1.dgn
MODEL: SHEET 3

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EARTHWORK TABULATION AND SUMMARY

FILE NO. MNT04-134590
EW3 OF EW3
12 / 310

MISCELLANEOUS REMOVALS — B

PROJECT	ALIGNMENT & STATION	LOCATION	REMOVE PIPE CULVERTS ①	REMOVE SEWER PIPE (STORM)	REMOVE CURB & GUTTER	REMOVE CONCRETE RETAINING WALL	REMOVE CONCRETE WALK	REMOVE BITUMINOUS WALK	REMOVE CONCRETE DRIVEWAY PAVEMENT	REMOVE BITUMINOUS DRIVEWAY PAVEMENT	REMOVE BITUMINOUS PAVEMENT	REMOVE MANHOLE OR CATCH BASIN	SALVAGE FENCE	SALVAGE CHAIN LINK FENCE	SALVAGE WOODEN FENCE	REMOVE BRICK PAVERS	ABANDON STORM SEWER	PLUG AND ABANDON PIPE SEWER
			LIN FT	LIN FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ YD	SQ YD	SQ YD	EACH	LIN FT	LIN FT	LIN FT	SQ FT	LIN FT	EACH
S.P. 6103-32	T.H. 28																	
	414+81 - 422+00	LT & RT	363							656	2749							
	422+00 - 430+00	LT & RT	60	225	815		577		76	68	5569	4						
	430+00 - 436+00	LT & RT		406	1706		2230		110	50	5011	7						1
	436+00 - 440+50	LT & RT		548	907		3797		292	19	3761	6						
	440+50 - 444+50	LT & RT		1097	865		1698			609	3360	14						
	444+50 - 539+00	LT & RT		960	866		8967		120		3668	6						
	539+00 - 543+00	LT & RT		607	820		9437				3486	5						
	543+00 - 547+00	LT & RT			840		5355		142		3192							
	547+00 - 551+00	LT & RT		153	841		3968		94	53	2768	3						
	551+00 - 554+99	LT & RT		497	806		4173		155	26	2402	8					60	
	554+99 - 561+00	LT & RT			112	93	6215		30	14	803		30		38			
	561+00 - 569+00	LT & RT			221	312	7702		42	37	71			51				
	SUBTOTALS		423	4493	8799	405	54119		1061	1532	36840	53	30	51	38		60	1
S.P. 6106-23	T.H. 29																	
	35+42 - 38+30	LT & RT		242	284		4353		17	10	504	8						
	38+30 - 41+50	LT & RT			312		3296		58	49	150							
	41+50 - 44+80	LT & RT			310		3206		18		265							
	44+80 - 52+50	LT & RT			221		3696		106	26	110							
	52+50 - 60+00	LT & RT			229		2611		104	69	46							
	60+00 - 108+17	LT & RT																
	SUBTOTALS			242	1356		17162		303	154	1075	8						
S.P. 6110-21	T.H. 104																	
	1189+70 - 21+30	LT & RT			427		5482	116	205		102							
	21+30 - 24+80	LT & RT			277		3284		25	17	89							
	24+80 - 27+80	LT & RT			228		2820		34	4	53					50		
	27+80 - 30+80	LT & RT			362		3502		27	26	102							
	30+80 - 33+89	LT & RT		247	517		5087		31	24	562	6						
	SUBTOTALS			247	1811		20175	116	322	71	908	6				50		
	TOTALS		423	4982	11966	405	91456	116	1686	1757	38823	67	30	51	38	50	60	1

CLEARING & GRUBBING — C

PROJECT	ALIGNMENT & STATION	LOCATION	CLEARING		GRUBBING	
			ACRE	TREE	ACRE	TREE
S.P. 6103-32	T.H. 28					
	407+72 - 422+00	LT & RT	0.8	8	0.8	8
	422+00 - 430+00	LT & RT		4		4
	430+00 - 436+00	LT & RT		2		2
	436+00 - 440+50	LT & RT		1		1
	440+50 - 444+50	LT & RT		5		5
	444+50 - 539+00	LT & RT		1		1
	539+00 - 543+00	LT & RT		7		7
	543+00 - 547+00	LT & RT		3		3
	547+00 - 551+00	LT & RT		2		2
	551+00 - 554+99	LT & RT		5		5
	554+99 - 561+00	LT & RT		4		4
	561+00 - 569+00	LT & RT		32		32
	SUBTOTALS		0.8	74	0.8	74
	TOTALS		0.8	74	0.8	74

GEOTEXTILE & GEOGRID — P

PROJECT	ALIGNMENT & STATION	LOCATION	SOIL STABILIZATION GEOGRID		GEOTEXTILE FABRIC TYPE V	
			WIDTH	SQ YD	WIDTH	SQ YD
S.P. 6103-32	T.H. 28					
	414+81 - 422+00	LT & RT	36	2872	39	3112
	422+00 - 430+00	LT & RT	36	3200	39	3467
	430+00 - 436+00	LT & RT	48	3026	51 ②	3341
	436+00 - 440+50	LT & RT	48	2133	51 ②	2356
	SUBTOTALS			11231		12276
	TOTALS			11231		12276

NOTES:

① CULVERT REMOVAL LENGTH INCLUDES APRONS.

② GEOTEXTILE FABRIC TYPE V SHALL EXTEND 1 FOOT UP TAPER ON BOTH SIDES.

MISCELLANEOUS REMOVALS
CLEARING & GRUBBING
GEOTEXTILE & GEOGRID

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB1 OF TB11
13 / 310

BITUMINOUS PAVEMENT

PROJECT	ALIGNMENT & STATION	LOCATION	DESCRIPTION	MILL BITUMINOUS SURFACE (1.5")	MILL BITUMINOUS SURFACE (3.0")	TYPE SP 12.5 WEARING COURSE MIX (3,C)	E TYPE SP 12.5 WEARING COURSE MIX (4,C)
						(SPWEB340C)	(SPWEB440C)
				SQ YD	SQ YD	TON	TON
S.P. 6103-32	T.H. 28						
	414+81 - 422+00	LT & RT	ROADWAY				② 1277
	414+81 - 429+17	LT & RT	SHOULDER				273
	422+00 - 430+00	LT & RT	ROADWAY				1081
	430+00 - 436+00	LT & RT	ROADWAY				1044
	436+00 - 440+50	LT & RT	ROADWAY				981
	437+00 - 439+25	RT	DRIVEWAYS			11	
	440+50 - 444+50	LT & RT	ROADWAY				1057
	444+50 - 539+00	LT & RT	ROADWAY				1170
	539+00 - 543+00	LT & RT	ROADWAY				1047
	543+00 - 547+00	LT & RT	ROADWAY				1027
	547+00 - 551+00	LT & RT	ROADWAY				990
	551+00 - 554+99	LT & RT	ROADWAY				978
	554+99 - 591+00	LT & RT	ROADWAY				313
	552+00 - 568+20	LT & RT	DRIVEWAYS			7	
	554+98 - 597+46	LT & RT	MILL & OVERLAY		24661	4180	
	554+98 - 569+00	LT & RT	BIT PATCHING				30
	6TH STREET NW	LT & RT	ROADWAY				106
	2ND AVE NW	LT & RT	ROADWAY				71
	5TH STREET NW	LT & RT	ROADWAY				85
	4TH STREET NW						
	10+41 - 11+80	LT & RT	ROADWAY				144
	10+88 - 11+06	LT & RT	DRIVEWAY			12	
	MINNESOTA AVE	LT & RT	ROADWAY				311
	T.H. 55 SB RAMP	LT & RT	MILL & OVERLAY		1981	336	
	SUBTOTALS				26642	4546	11985
S.P. 6104-12	T.H. 28						
	597+46 - 615+00	LT & RT	MILL & OVERLAY		9706	1645	
	T.H. 55 NB RAMP	LT & RT	MILL & OVERLAY		1727	293	
	SUBTOTALS				11433	1938	
S.P. 6106-23	T.H. 29						
	35+42 - 73+00	LT & RT	MILL & OVERLAY		24433	4141	
	73+00 - 108+17	LT & RT	MILL & OVERLAY	17981	511	3135	
	35+42 - 60+00	LT & RT	BIT PATCHING				363
	35+42 - 73+00	LT & RT	DRIVEWAYS			35	
	SUBTOTALS			17981	24944	7311	363
S.P. 6110-21	T.H. 104						
	1189+70 - 33+89	LT & RT	MILL & OVERLAY		10278	1742	
	1189+70 - 33+89	LT & RT	BIT PATCHING				347
	1189+70 - 33+89	LT & RT	DRIVEWAYS			13	
	SUBTOTALS				10278	1755	347
	TOTALS			17981	73297	15550	12695

AGGREGATE

PROJECT	ALIGNMENT & STATION	LOCATION	AGGREGATE BASE (CV) CLASS 5 CU YD	F AGGREGATE SURFACING CLASS 1 MOD TON
S.P. 6103-32	T.H. 28			
	414+81 - 422+00	LT & RT	1402	70
	422+00 - 430+00	LT & RT	1424	70
	430+00 - 436+00	LT & RT	1312	
	436+00 - 440+50	LT & RT	1145	
	440+50 - 444+50	LT & RT	1301	
	444+50 - 539+00	LT & RT	1194	
	539+00 - 543+00	LT & RT	1068	
	543+00 - 547+00	LT & RT	1264	
	547+00 - 551+00	LT & RT	1098	
	551+00 - 554+99	LT & RT	1050	
	554+99 - 561+00	LT & RT	125	2
	561+00 - 569+00	LT & RT	168	2
	569+00 - 597+46	LT & RT		247
	557+86 - 568+89	LT & RT	① 38	
	6TH STREET NW	LT & RT	148	16
	2ND STREET NW	LT & RT	112	9
	5TH STREET NW	LT & RT	121	
	4TH STREET NW	LT & RT	224	
	MINNESOTA AVE	LT & RT	483	
	T.H. 55 NB RAMP	LT & RT		65
	SUBTOTALS		13677	481
S.P. 6104-12	T.H. 28			
	597+46 - 615+00	LT & RT		126
	T.H. 55 SB RAMP	LT & RT		61
	SUBTOTALS			187
S.P. 6106-23	T.H. 29			
	35+42 - 38+30	LT & RT	80	
	38+30 - 41+50	LT & RT	75	
	41+50 - 44+80	LT & RT	65	
	44+80 - 52+50	LT & RT	112	
	52+50 - 60+00	LT & RT	96	
	60+00 - 108+17	LT & RT		385
	36+22 - 59+20	LT & RT	① 126	
	SUBTOTALS		554	385
S.P. 6110-21	T.H. 104			
	1189+70 - 21+30	LT & RT	145	
	21+30 - 24+80	LT & RT	62	
	24+80 - 27+80	LT & RT	64	4
	27+80 - 30+80	LT & RT	64	
	30+80 - 33+89	LT & RT	95	
	1190+48 - 32+99	LT & RT	① 145	
	SUBTOTALS		575	4
S.P. 061-090-006	T.H. 28			
	414+81 - 422+00	LT & RT		
	422+00 - 430+00	LT & RT		
	430+00 - 436+00	LT & RT	22	
	436+00 - 440+50	LT & RT	28	
	440+50 - 444+50	LT & RT	34	
	444+50 - 539+00	LT & RT	45	
	539+00 - 543+00	LT & RT	51	
	543+00 - 547+00	LT & RT	33	
	547+00 - 551+00	LT & RT	22	
	551+00 - 554+99	LT & RT	19	
	554+99 - 561+00	LT & RT		
	561+00 - 569+00	LT & RT		
	569+00 - 597+26	LT & RT		
	MINNESOTA AVE	LT & RT	5	
	SUBTOTALS		259	
	TOTALS		15065	1057

NOTES:

① AGGREGATE ASSOCIATED WITH BITUMINOUS PATCHING.

② RURAL ENTRANCES INCLUDED.

BITUMINOUS PAVEMENT
AGGREGATE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB2 OF TB11
14/310

PROJECT	STATION	LOCATION	4" CONCRETE WALK	4" CONCRETE WALK SPECIAL ①	4" CONCRETE WALK SPECIAL 1 ②	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B424	CONCRETE CURB & GUTTER DESIGN B612	CONCRETE CURB & GUTTER DESIGN B624	CONCRETE CURB & GUTTER DESIGN B824	CONCRETE CURB DESIGN V4	CONCRETE GUTTER DESIGN SPECIAL	8" CONCRETE DRIVEWAY PAVEMENT	CONCRETE SURFACE REPAIR ⑥	BRICK PAVERS
			SQ FT	SQ FT	SQ FT	SQ FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ YD	SQ FT	SQ FT
S.P. 6103-32	T.H. 28														
	422+00 - 430+00	LT							84						
		RT													
	430+00 - 436+00	LT	4816④			39			800						
		RT	397 ④			39			689						
	436+00 - 440+50	LT	2186	565	93				441				67		
		RT	1495	145					475				422		
	440+50 - 444+50	LT	259	1814	806				461		57		158		
		RT	293	2110	667				461				153		
	444+50 - 539+00	LT	310	2944	741		20		436				74		
		RT		2569	565		20		411				191		
	539+00 - 543+00	LT	185	2717	897		295		156					20	
		RT	229	2691	877		10		436					50	
	543+00 - 547+00	LT	268	1266	494			4	455				252		
		RT	508	1858	892				427						
	547+00 - 551+00	LT	1554					12	423				168		
		RT	2195						422						
	551+00 - 554+99	LT	1626						422				111		
		RT	1815						416				45		
	554+99 - 561+00	LT	3156										15		
		RT	3198										10		
	560+70 - 562+80	RT	105 ⑤												
	561+00 - 569+00	LT	4241						27				66		
		RT	4022												
	6TH ST SW	RT										108			
	2ND AVE NW	RT	135						93			78			
	5TH ST NW														
	10+30 - 11+30	LT & RT							225				9		
	4TH ST NW														
	10+63 - 11+64	LT & RT	600						300				48		
	MINNESOTA AVE														
	10+00 - 11+50	LT & RT	1274						398				310		
	SUBTOTALS		34867	18679	6032	78	345	16	8458		57	186	2099	70	
S.P. 6106-23	T.H. 29														
	35+42 - 38+30	LT	2118						27				15		
		RT	1935												
	38+30 - 41+50	LT	1821							42					
		RT	1482						117				60		
	41+50 - 44+80	LT	1431						27				16		
		RT	1861						59						
	44+80 - 52+50	LT	804						298				23		
		RT	3908						130				99		
	52+50 - 60+00	RT	3534						203				113		
	SUBTOTALS		18894						861	42			326		

NOTES:

① COLORED CONCRETE.

② BIKE LANE COLORED CONCRETE.

③ SEE TABULATION H FOR CONCRETE ITEMS ASSOCIATED WITH ALL ADA PEDESTRIAN RAMPS.

④ MEDIAN NOSE.

⑤ SIDEWALK STUBS TO PRIVATE WALKS.

⑥ SEE ALCOVE REPAIR DETAIL ON SHEET MD5.

CONCRETE ITEMS

③ CONCRETE ITEMS (CONTINUED) — G

PROJECT	STATION	LOCATION	4" CONCRETE WALK	4" CONCRETE WALK SPECIAL ①	4" CONCRETE WALK SPECIAL 1 ②	6" CONCRETE WALK	CONCRETE CURB & GUTTER DESIGN B424	CONCRETE CURB & GUTTER DESIGN B612	CONCRETE CURB & GUTTER DESIGN B624	CONCRETE CURB & GUTTER DESIGN B824	CONCRETE CURB DESIGN V4	CONCRETE GUTTER DESIGN SPECIAL	8" CONCRETE DRIVEWAY PAVEMENT	CONCRETE SURFACE REPAIR	BRICK PAVERS
			SQ FT	SQ FT	SQ FT	SQ FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	SQ YD	SQ FT	SQ FT
S.P. 6110-21	T.H. 104														
	1189+70 - 21+30	LT	2289						123				145		
		RT	3403						179				90		
	21+30 - 24+80	LT	1483						26				14		
		RT	1466						38				22		
	24+80 - 27+80	LT	1245						39				26		
		RT	1623						34				22		
	27+80 - 30+80	LT	1439						113				15		
		RT	1744						115				17		
	30+80 - 33+89	LT	2320						114				18		
		RT	2258						113				17		
	SUBTOTALS		19270						894				386		
S.P. 061-090-006	T.H. 28														
	430+00 - 436+00	LT	1061												
		RT	137												
	436+00 - 440+50	LT	831		93										129
		RT	506												
	440+50 - 444+50	LT		762	806										394
		RT		677	667										
	444+50 - 539+00	LT		1174	741										72
		RT		689	565										
	539+00 - 543+00	LT		1361	897										215
		RT		1101	877										375
	543+00 - 547+00	LT	74	650	494										
		RT	74	512	892										450
	547+00 - 551+00	LT	513												
		RT	683												
	551+00 - 554+99	LT	493												
		RT	542												
	MINNESOTA AVE														
	10+00 - 11+50	LT & RT	250												
	SUBTOTALS		5164	6926	6032										1635
	TOTALS		78195	25605	12064	78	345	16	10213	42	57	186	2811	70	1635

PAVEMENT SAWING — D

PROJECT	ALIGNMENT & STATION	LOCATION	SAWING CONCRETE PAVEMENT (FULL DEPTH)	SAWING BIT PAVEMENT (FULL DEPTH)
			LIN FT	LIN FT
S.P. 6103-32	T.H. 28			
	414+81 - 422+00	LT & RT		164
	422+00 - 430+00	LT & RT	17	152
	430+00 - 436+00	LT & RT	91	89
	436+00 - 440+50	LT & RT	113	71
	440+50 - 444+50	LT & RT	30	748
	444+50 - 539+00	LT & RT	40	256
	539+00 - 543+00	LT & RT	230	109
	543+00 - 547+00	LT & RT	130	83
	547+00 - 551+00	LT & RT	49	118
	551+00 - 554+99	LT & RT	66	82
	④ 554+99 - 561+00	LT & RT	32	152
	④ 561+00 - 569+00	LT & RT	25	404
	569+00 - 597+26	LT & RT		
	SUBTOTALS		823	2428
S.P. 6106-23	T.H. 29			
	④ 35+42 - 38+30	LT & RT	34	111
	④ 38+30 - 41+50	LT & RT	6	316
	41+50 - 44+80	LT & RT	32	325
	44+80 - 52+50	LT & RT	48	689
	52+50 - 60+00	LT & RT		403
	SUBTOTALS		120	1844
S.P. 6110-21	T.H. 104			
	1189+70 - 21+30	LT & RT	177	448
	21+30 - 24+80	LT & RT	15	416
	24+80 - 27+80	LT & RT	8	301
	④ 27+80 - 30+80	LT & RT	15	542
	④ 30+80 - 33+89	LT & RT	47	382
	SUBTOTALS		262	2089
	TOTALS		1205	6361

NOTES:

① COLORED CONCRETE.

② BIKE LANE COLORED CONCRETE.

③ SEE TABULATION H FOR CONCRETE ITEMS ASSOCIATED WITH ALL ADA PEDESTRIAN RAMPS.

④ SEE TABULATION AB FOR ADDITIONAL SAWCUT LENGTHS ASSOCIATED WITH THE CITY UTILITY WORK.

CONCRETE ITEMS
PAVEMENT SAWING

ADA PEDESTRIAN RAMPS

H

PROJECT	TRUNK HIGHWAY	CROSS STREET	QUADRANT	STATION	LOCATION	DRILL & GROUT REINF BAR (EPOXY COATED)		6" CONCRETE WALK	CONCRETE WALK	CONCRETE CURB & GUTTER	CONCRETE CURB DESIGN V	TRUNCATED DOMES				SITE RESTORATION	NOTES
						SIDEWALK TIE-IN 12"	CURB TIE-IN 18"					SQUARE		RADIAL			
												T.H.	SIDE STREET				
						EACH	EACH	SQ FT	SQ FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT	RADIUS	EACH	
S.P. 6103-32	28	4TH ST. NW	NE	429+98	LT	9		228				16	16				
			SE	429+98	RT	9		136				16	12				
	28	MINNESOTA AVE	NW	434+17	LT	9		137				16					
			CUT THRU	434+17				146				32					
			SW	434+17	RT	12		193				16					
				434+53	RT	12		204					16				
			SE	435+35	RT	12		176					16				
				435+55	RT	12		166				16					
			NE	434+55	LT	12		137				16					
	28	2ND ST. NW & SW	NW	439+65	LT	14		294				20					
			SW	439+65	RT	20		647				20	20				
			SE	440+35	RT	16		428					20				
	28	1ST ST. SW	NW	443+75	LT	20		594				20	28				
			SW	443+75	RT	18		548				20	28				
			NE	444+40	LT	20		498				20	28				
			SE	444+40	RT	18		550				20	28				
	28	FRANKLIN ST (TH 29/TH 104)	NW	447+40	LT			38				12					(1)
				447+71	LT	14		378						37	15		
			SW	447+40	RT			38				12					(1)
				447+71	RT	14		405			15			37	15		
			NE	538+75	LT	16		320						37	15		
				539+07	LT			38				12					(1)
			SE	539+07	RT			38				12					(1)
				538+75	RT	14		389			14			37	15		
	28	1ST ST. NE & SE	NW	542+17	LT	18		764				12	20				
			SW	542+17	RT	18		695				12	20				
			NE	542+75	LT	14		707				12	20				
			SE	542+75	RT	18		667				12	20				
	28	2ND ST. NE & SE	NW	546+10	LT	18		743				20	24				
			SW	546+10	RT	18		593				20	24				
			NE	546+70	LT	18		393				20	24				
			SE	546+70	RT	21		490				20	24				
	28	3RD ST. NE & SE	NW	550+07	LT	14		316				16	16				
			SW	550+07	RT	14		274				16	16				
			NE	550+65	LT	14		307				16	16				
			SE	550+65	RT	16		271				16	16				
	28	4TH ST. NE & SE	NW	554+00	LT	9		360				16	16				
			SW	554+00	RT	9		384				16	16				
			NE	554+64	LT	9		410				16	16				
			SE	554+64	RT	9		354				16	16				
	28	5TH ST. NE	NW	557+95	LT	6	2		111	46		12				1	
				558+00	LT	12	2		96				12			1	
			SW	557+95	RT	15	4		137	16		12				1	
			NE	558+50	LT		4		36	16			12			1	
	28	5TH ST. SE	SW	559+68	RT	3	4		26	16			12			1	
			SE	560+15	RT		4		37	16			12			1	
	28	6TH ST. NE	NW	561+98	LT	3	4		38	16			12			1	
			NE	562+45	LT		4		37	16			12			1	
	28	6TH ST. SE	SW	563+87	RT	3	4		38	16			12			1	
			SE	564+32	RT	6	4		62	16			12			1	
	28	7TH ST. NE	NW	565+50	LT	6	4		62	16			12			1	
			NE	565+92	LT	6	4		62	16			12			1	
	28			566+93	LT	6	4		82	16		12				1	
	28			566+94	RT	21	4		229	30		12				1	
		MINNESOTA AVE		567+07	LT	9	4		153	16			12			1	
		MINNESOTA AVE		567+76	LT	6	4		78	16			12			1	
	28			568+83	RT	9	4		98	19		12				1	
	SUBTOTALS					619	64	14454	1382	303	29	612	660	148		17	

NOTES:

(1) BIKE RAMP.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB5 OF TB11
17 / 310

ADA PEDESTRIAN RAMPS (CONTINUED) — H

PROJECT	TRUNK HIGHWAY	CROSS STREET	QUADRANT	STATION	LOCATION	DRILL & GROUT REINF BAR (EPOXY COATED)		6" CONCRETE WALK	CONCRETE WALK	CONCRETE CURB & GUTTER	CONCRETE CURB DESIGN V	TRUNCATED DOMES				SITE RESTORATION	NOTES
						SIDEWALK TIE-IN 12"	CURB TIE-IN 18"					SQUARE		RADIAL			
												T.H.	SIDE STREET				
						EACH	EACH	SQ FT	SQ FT	LIN FT	LIN FT	SQ FT	SQ FT	SQ FT	RADIUS	EACH	
S.P. 6106-23	29	1ST AVE NW	SW	37+66	LT	12	4		185	96	13	12	12				
			SE	37+66	RT	12	4		270	76		12	12			1	
			NW	38+20	LT	12	4		234	97		12	12			1	
			NE	38+20	RT	14	4		281	52		12	12			1	
	29	2ND AVE NW	SW	40+80	LT	6	4		218	26				18	10	1	
			SE	40+80	RT	6	4		155	32				21	10	1	
			NW	41+32	LT	9	4		122	31				21	10	1	
			NE	41+32	RT	9	4		130	30		4		21	10	1	
	29	3RD AVE NW	SW	44+00	LT	16	4		171	36				21	10	1	
			SE	44+00	RT	12	4		176	79				21	10	1	
			NW	44+50	LT	18	4		194	30		8		21	10	1	
			NE	44+50	RT	12	4		243	74		12	12			1	
	29	6TH AVE NE	SE	51+85	RT	12	4		110	24				18	10	1	
			NE	52+35	RT	12	4		140	29				18	10	1	
	29			58+50	RT	21	4		209	26		12				1	
	SUBTOTALS					183	60		2838	738	13	84	60	180		14	
S.P. 6110-21	104			1190+00	RT				116				20			1	
	104			1190+60	RT	21	4		160	35				15	20	1	
	104			1192+04	LT	12	4		86	25				12	20	1	
	104	4TH AVE SW	SW	21+55	LT	12	4		134	35				21	10	1	
			SE	21+65	RT	12	4		170	37				29	15	1	
			NW	22+10	LT	9	4		155	65		4		21	10	1	
			NE	22+10	RT	16	4		187	36				25	10	1	
	104	3RD AVE SW	SW	24+72	LT	18	4		183	33		4		21	10	1	
			SE	24+73	RT	9	2		142	36		12				1	
			NW	25+28	LT	16	4		175	33		4		21	10	1	
			NE	25+28	RT	9	2		120	34		12				1	
	104	2ND AVE SW	SW	27+86	LT	18	4		203	37		8		21	10	1	
			SE	27+86	RT	9	4		167	73				18	10		
			NW	28+40	LT	18	4		161	35		4		21	10	1	
			NE	28+40	RT	18	4		169	32				18	10	1	
	104	1ST AVE SW	SW	31+00	LT	12	2		349	85		12	12				
			SE	31+00	RT	16	2		357	84		12	12				
			NW	31+55	LT	12	2		313	85		12	12				
			NE	31+55	RT	15	2		358	85	20	12	12				
	SUBTOTALS					252	60		3705	885	20	96	68	243		14	
	TOTALS					1054	184	14454	7925	1926	62	792	788	571		45	

ADA PEDESTRIAN RAMPS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB6 OF TB11
18 / 310

TURF ESTABLISHMENT AND EROSION CONTROL — N

PROJECT	STATION	LOCATION	FERTILIZER TYPE 3 ①	SUBSOILING	SEEDING	SOIL BED PREPARATION	SEED MIXTURE 25-131	SEED MIXTURE 34-261	EROSION CONTROL BLANKETS CATEGORY 3N (WOOD FIBER)	SILT FENCE, TYPE MS	FLOTATION SILT CURTAIN TYPE STILL WATER ④	FLOTATION SILT CURTAIN TYPE MOVING WATER ⑧	WEED SPRAYING SPECIAL ⑦	WEED SPRAY MIXTURE	FERTILIZER TYPE 1 ②③	SEED MIXTURE 21-112 ③	HYDRAULIC MULCH MATRIX ⑥	SEDIMENT CONTROL LOG TYPE WOOD FIBER	FILTER BERM TYPE 3	MOWING	STORM DRAIN INLET PROTECTION	CULVERT END CONTROLS
			POUND	ACRE	ACRE	ACRE	POUND	POUND	SQ YD	LIN FT	LIN FT	LIN FT	ACRE	GALLON	POUND	POUND	POUND	LIN FT	LIN FT	ACRE	EACH	EACH
S.P. 6103-32	TH 28																					
	407+57 - 408+51	RT	104	0.5	0.6	0.6		16	624	845	120	40	0.3	1	21	10	2682			1.2		
	408+51 - 421+70	RT	420	1.5	1.8	1.8	171	23	1883				0.9	1	61	30	7749	20	60	3.6		1
	421+70 - 426+12	RT	182	0.5	0.6	0.6	115		449				0.3	1	21	10	2914	20		1.2	2	1
	426+15 - 430+00	RT	100	0.3	0.4	0.3	63		292				0.2	1	11	6	1531	20		0.8		1
	430+00 - 434+97	RT	72	0.2	0.2	0.2	45			516			0.1	1	8	4	1374			0.4	3	
	434+97 - 439+91	RT	99	0.3	0.4	0.3	62						0.2	1	11	6	1900			0.8	4	
	439+91 - 568+89	RT	269	0.2	0.2	0.9	169						0.1	1	31	15	5164			0.4	16	
	408+05 - 429+44	LT	498	1.4	1.7	1.7	313		1404				0.9	1	57	28	7741	60		3.4	1	3
	429+77 - 542+52	LT	158	0.4	0.5	0.5	99		360	233			0.3	1	18	9	2560	20		1	24	2
	542+74 - 568+23	LT	262	0.2	0.2	0.9	165						0.1	1	30	15	5034			0.4	12	
	SUBTOTALS		2164	5.5	6.6	7.8	1202	39	5012	1594	120	40	3.4	10	269	133	38649	140	60	13.2	62	8
S.P. 6110-21	TH 104																					
	1189+70 - 33+89	LT & RT	33		0.1	0.1	21								4	2	630					
	31+00 - 32+00	LT & RT																			6	
	SUBTOTALS		33		0.1	0.1	21								4	2	630				6	⑤
S.P. 6106-23	TH 29																					
	35+42 - 60+00	LT & RT	42		0.1	0.1	26								5	2	804					
	37+30 - 38+15	LT & RT																			7	
	SUBTOTALS		42		0.1	0.1	26								5	2	804				7	⑤
	TOTALS		2239	5.5	6.8	8.0	1249	39	5012	1594	120	40	3.4	10	278	137	40083	140	60	13.2	75	8

MODULAR BLOCK RETAINING WALLS — Z

PROJECT	STATION	LOCATION	DESCRIPTION	MODULAR BLOCK RETAINING WALL
				SQ FT
S.P. 6103-32	T.H. 28			
	560+25 - 560+78	RT	RETAINING WALL A	400
	560+82 - 561+51	RT	RETAINING WALL B	479
	561+55 - 562+11	RT	RETAINING WALL C	439
	562+15 - 562+74	RT	RETAINING WALL D	479
	562+78 - 563+26	RT	RETAINING WALL E	279
	563+56 - 563+84	LT	RETAINING WALL F	156
	SUBTOTALS			2232
	TOTALS			2232

CLEAN ROOT CUTTING — T

PROJECT	STATION	LOCATION	CLEAN ROOT CUTTING
			LIN FT
S.P. 6103-32	T.H. 28		
	546+90 - 547+09	RT	40
	549+25 - 549+41	LT	32
	549+79 - 549+95	LT	32
	550+72 - 550+92	RT	50
	553+78 - 553+90	LT	12
	554+67 - 554+90	RT	32
	555+00 - 555+19	LT & RT	73
	556+76 - 556+93	LT	44
	561+34 - 561+63	LT	28
	562+86 - 563+04	LT	19
	564+96 - 565+15	LT	44
	SUBTOTALS		406
S.P. 6106-23	T.H. 29		
	43+00 - 43+14	LT	14
	43+42 - 43+61	LT	19
	44+58 - 44+77	LT	19
	SUBTOTALS		52
S.P. 6110-21	T.H. 104		
	20+55 - 20+72	LT	16
	26+62 - 26+82	LT	20
	27+80 - 30+80	LT & RT	
	SUBTOTALS		36
	TOTALS		494

FENCING — Y

PROJECT	STATION	LOCATION	INSTALL FENCE	INSTALL CHAIN LINK FENCE	INSTALL WOODEN FENCE	TEMPORARY FENCE
			LIN FT	LIN FT	LIN FT	LIN FT
S.P. 6103-32	T.H. 28					
	543+00 - 547+00	LT & RT				101
	547+00 - 551+00	LT & RT				167
	551+00 - 554+99	LT & RT				150
	554+99 - 561+00	LT & RT	30	51	38	590
	561+00 - 569+00	LT & RT				447
	SUBTOTALS		30	51	38	1455
S.P. 6106-23	T.H. 29					
	41+50 - 44+80	LT & RT				51
	SUBTOTALS					51
S.P. 6110-21	T.H. 104					
	1189+70 - 21+30	LT & RT				16
	24+80 - 27+80	LT & RT				19
	27+80 - 30+80	LT & RT				111
	SUBTOTALS					146
	TOTALS		30	51	38	1652

NOTES:

① COMMERCIAL FERTILIZER ANALYSIS 22-5-10 (350 LB/ACRE FOR SEED 25-131 AND 200 LB/ACRE FOR SEED 34-261).

② COMMERCIAL FERTILIZER ANALYSIS 10-10-20 (200 LB/ACRE).

③ TEMPORARY SEEDING AREAS SHALL BE DETERMINED BY THE ENGINEER. QUANTITY BASED ON 20% OF PERMANENT SEEDING AREA.

④ PLACE FLOTATION SILT CURTAIN TYPE STILL WATER AROUND LAKE OUTLET AT 40 FT. MIN. DISTANCE FROM EXISTING BOX CULVERT. EXPECTED AVERAGE DEPTH IS 4 FEET.

⑤ STORM DRAIN INLET PROTECTION ON FRANKLIN, 1ST AVE NE, AND 1ST AVE SE.

⑥ QUANTITY BASED ON 3 APPLICATIONS FOR PERMANENT SEEDING AREAS AND 1 APPLICATION FOR TEMPORARY SEEDING AREAS AT 2100 LB/ACRE.

⑦ WEED SPRAYING TO BE DONE THROUGHOUT THE PROJECT TO CONTROL AND PREVENT THE SPREAD OF WEEDS. SUBMIT A PESTICIDE APPLICATION RECORD TO THE ENGINEER FOR EACH APPLICATION. WEED SPRAYING WILL BE MEASURED BY THE AREA COVERED OR AREA SPOT SPRAYED BY HERBICIDE AND SUCCESSFULLY APPLIED AS INDICATED BY DEAD NOXIOUS WEEDS. WEED SPRAY MIXTURE WILL BE MEASURED BY VOLUME OF HERBICIDE FURNISHED AND USED.

⑧ PLACE FLOTATION SILT CURTAIN TYPE MOVING WATER, AVERAGE EXPECTED DEPTH TO BE 2 FEET. VARIES SEASONALLY.

TURF ESTABLISHMENT AND EROSION CONTROL
MODULAR BLOCK RETAINING WALLS
CLEAN ROOT CUTTING
FENCING

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB7 OF TB11
19/310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_tbl.dgn
MODEL: Tabulations
6/30/2017 7:56:28 AM

PROJECT	STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		DRAINAGE STRUCTURES TYPE	PAY HEIGHT H	SD-48	48-4020	54-4020	60-4020	72-4020	84-4020	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	INLET ELEV.	DESIGN 3006 PIPE SEWER 12" RC CLASS III	12" RC CLASS IV	15" RC CLASS III	15" RC CLASS IV	18" RC CLASS III	18" RC CLASS IV	21" RC CLASS III	24" RC CLASS III	30" RC CLASS III	36" RC CLASS III	48" RC CLASS III	48" RC CLASS IV	48" RC CLASS V	48" RC PIPE SEWER CLASS V	12" PVC PIPE SEWER	PLASTIC OPTION	EXCAVATION SUBGRADE	SELECT GRAN EMBANKMENT (CV)	COARSE AGGREGATE BEDDING (CV)	GRANULAR BEDDING	GRANULAR BACKFILL	15" RC PIPE APRON	21" RC PIPE APRON	GEO TEXTILE FILTER TYPE III	RANDOM RIPRAP CLASS II	GUIDE POSTS TYPE B	NOTES
								LIN FT												LIN FT																	CU YD	CU YD	CU YD	CU YD	CU YD	EACH	EACH	SQ YD	CU YD	EACH	
	CB-819	SEE NOTE	28	420+50.00	62.0'	LT									M - 11		1142.50																												
		SEE NOTE	28	420+50.03	62.8'	LT	CB		2.9									1139.66	1139.51														11												③
	CB-352	CB-353	5TH	10+70.44	13.0'	RT									B - 11		1141.89																												
		CB-353	5TH	10+70.44	13.8'	RT	CB		3.0									1138.82	1138.73				26														13	4	7								
	CB-353	APR-357	5TH	10+70.44	13.0'	LT									B - 11		1141.89																												
		APR-357	5TH	10+69.88	12.4'	LT	CB		3.1									1138.71	1138.58				29														14	4	8								
	APR-357		5TH	10+88.66	35.0'	LT												1138.58																									1		18.0	3.2	1	⑦
	APR-331		28	430+76.50	57.4'	LT												1139.15																										1	24.1	4.7	1	⑦
	CB-327	APR-331	28	430+76.50	23.1'	LT									B - 11		1143.00																												
		APR-331	28	430+76.53	22.3'	LT	CB		3.6									1139.31	1139.15							29											19	5	10								
	CB-326	CB-327	28	430+76.50	19.0'	RT									B - 11		1143.08																												
		CB-327	28	430+76.50	19.8'	RT	CB		3.4									1139.67	1139.34						42												24	7	13								
	CB-325	CB-327	28	430+86.50	22.4'	LT									B - 11		1143.00																												
		CB-327	28	430+87.29	22.4'	LT	CB		3.6									1139.36	1139.33			11															5	2	3								
	CB-323	CB-325	28	431+97.34	27.1'	LT									B - 11		1143.03																												
		CB-325	28	431+98.13	27.1'	LT	CB		3.3									1139.67	1139.37				111														54	16	30								
	CB-321	CB-323	28	432+55.00	23.0'	LT									B - 11		1143.14																												
		CB-323	28	432+55.79	23.0'	LT	CB		3.2									1139.83	1139.68				58														28	8	16								
	CB-318	CB-319	28	432+54.00	29.0'	RT									B - 11		1143.07																												
		CB-319	28	432+54.00	29.8'	RT	CB		3.0									1140.02	1139.87				54														26	8	15								
	CB-319	CB-321	28	432+65.42	23.0'	LT									B - 11		1143.13																												
		CB-321	28	432+66.21	23.0'	LT	CB		3.2									1139.86	1139.84				10														5	1	3								
	CB-315	CB-319	28	434+32.02	23.0'	LT									B - 11		1143.51																												
		CB-319	28	434+32.02	23.8'	LT	CB		3.1									1140.35	1139.87				162														79	23	44								
	CB-28A	CB-28B	MN AVE	10+93.61	25.0'	LT									B - 11		1142.99																												
		CB-28B	MN AVE	10+92.93	25.6'	LT	CB		2.8									1140.18	1139.97		59																24	7	14								
	CB-28B	MH-28C	MN AVE	11+26.00	25.0'	RT									B - 11		1142.92																												
		MH-28C	MN AVE	11+26.00	24.2'	RT	CB		3.4									1139.42	1139.19						36												20	6	11								
	MH-28C	EXIST.	MN AVE	11+08.21	50.3'	RT									A - 4D		1142.92																												
			MN AVE	11+09.67	51.5'	RT	MH							9.8		YES		1137.48	1137.42														42				77	18	30								④⑤⑧
	CB-284	CB-28B	28	435+85.87	27.0'	RT	CB	3.2							B - 11		1143.95	1140.73	1139.94		101																42	12	24								
	CB-311	CB-315	28	437+05.00	23.0'	LT									B - 11		1144.30																												
		CB-315	28	437+05.71	22.6'	LT	CB		3.1									1141.14	1140.36				260														127	36	70								
	CB-280	MH-28C	28	437+05.00	27.0'	RT									B - 11		1144.30																												
		MH-28C	28	437+06.48	26.1'	RT	CB						6.4			YES		1137.82	1137.49														210				384	92	149								②⑧
	CB-276	CB-280	28	438+18.28	27.0'	RT									B - 11		1144.63																												
		CB-280	28	438+20.02	27.0'	RT	CB						6.6			YES		1137.99	1137.83																												⑧
	CB-307	CB-311	28	439+51.00	23.0'	LT									B - 11		1145.09																												
		CB-311	28	439+51.00	23.8'	LT	CB		2.6									1142.39	1141.41		240																99	29	58								
	MH-274	CB-276	28	439+95.21	26.9'	RT									A - 7D		1145.10																												
		CB-276	28	439+97.00	26.9'	RT	MH						7.0			YES		1138.24	1137.99																												①⑧
	CB-272	MH-274	28	440+41.50	23.0'	RT									B - 11		1144.94																												
		MH-274	28	440+39.71	23.0'	RT	CB						6.6			YES		1138.29	1138.24																												⑧
	CB-270	CB-272	28	440+63.00	27.0'	RT									B - 11		1144.82																												
		CB-272	28	440+65.29	27.0'	RT	CB							6.4		YES		1138.33	1138.30																												⑧
	CB-269	CB-270	28	440+68.00	23.0'	LT									B - 11		1145.79																												
		CB-270	28	440+68.00	23.8'	LT	CB			5.2						YES		1140.49	1140.36																			51									
	CB-267	CB-269	28	441+02.00	27.0'	LT									B - 11		1145.81																												
		CB-269	28	441+02.79	27.0'	LT	CB			5.2						YES		1140.59	1140.50																			35									
	CB-265	CB-267	28	441+43.45	27.0'	LT									B - 11		1145.93																												
		CB-267	28	441+44.24	27.0'	LT	CB			5.2						YES		1140.71	1140.60																			41									
	CB-263	CB-265	28	441+63.00	27.0'	LT									B - 11		1145.99																												
		CB-265	28	441+63.79	27.0'	LT	CB			5.2						YES		1140.77	1140.72																			20									
	CB-259	CB-263	28	442+03.00	27.0'	LT									B - 11		1146.10																												
		CB-263	28	442+03.79	27.0'	LT	CB			5.2						YES		1140.88	1140.78																			40									
	CB-255	CB-259	28	442+40.80	27.0'	LT									B - 11		1146.23																												
		CB-259	28	442+41.59	27.0'	LT	CB			5.2						YES		1141.00	1140.89																			38									
	CB-251	CB-255	28	442+93.51	27.0'	LT									B - 11		1146.73																												
		CB-255	28	442+94.30	27.0'	LT	CB			4.7						YES		1142.01	1141.53								53																			
	CB-249	CB-251	28	443+47.95	27.0'	LT									B - 11		1147.76																												
		CB-251	28	443+48.74	27.0'	LT	CB			4.4								1143.26	1142.32				54														26	8	15								

SP 6103-32

NOTES:

① CONNECT MANHOLE TO EXISTING STORM SEWER PIPE. VERIFY INVERTS IN THE FIELD PRIOR TO PLACEMENT. PAID FOR AS CONNECT TO EXISTING STORM SEWER.
② CONNECT ROOF/SUMP DRAIN INTO PIPE OR STRUCTURE. SEE TAB ON SHEET 23 FOR LOCATIONS. SEE DETAIL ON SHEET 54. PAID FOR AS ROOF DRAIN DESIGN SPECIAL.
③ CONNECT PIPE INTO 60" CULVERT. SEE DETAIL ON SHEET 55. PAID FOR AS CONNECT TO INPLACE CULVERT.
④ CONNECT 48" RC PIPE TO EXISTING PIPE. VERIFY INVERTS IN THE FIELD PRIOR TO PLACEMENT. PAID FOR AS CONNECT TO EXISTING STORM SEWER.
⑤ FURNISH & INSTALL SPECIAL POLLUTION CONTROL DEVICE. PAID FOR AS CONSTRUCT CONTROL STRUCTURE. 4' SUMP INCLUDED IN STRUCTURE PAY HEIGHT.

SPECIFIC NOTES:

⑥ LENGTH OF 48" PIPE & LOCATION OF STRUCTURE WILL VARY DEPENDING ON LENGTH OF EXISTING PIPE REMOVED UNDER ITEM "ABANDON STORM SEWER". STRUCTURE LOCATION TO BE DETERMINED BY ENGINEER.
⑦ TIE ALL JOINTS (INCIDENTAL).
⑧ CONTRACTOR HAS OPTION TO BUILD MASONRY STYLE STRUCTURE IN THE FIELD IF PRECAST STRUCTURE CANNOT BE MANUFACTURED AND/OR SAFELY PLACED.

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JVO
CHECKED BY: DAC

NO.	BY	DATE	REVISIONS

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.
Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB8 OF TB11
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PROJECT	STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		DRAINAGE STRUCTURES TYPE	PAY HEIGHT H	SD-48	48-4020	54-4020	60-4020	72-4020	84-4020	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	INLET ELEV.	DESIGN 3006 PIPE SEWER 12" RC III	12" RC IV	15" RC III	15" RC IV	18" RC III	18" RC IV	21" RC III	24" RC III	30" RC III	36" RC III	48" RC III	48" RC IV	48" RC V	48" RC PIPE SEWER V	12" PVC PIPE SEWER	PLASTIC OPTION	EXCAVATION SUBGRADE CU YD	SELECT GRAN EMBANKMENT (CV) CU YD	COARSE AGGREGATE BEDDING (CV) CU YD	GRANULAR BEDDING CU YD	GRANULAR BACKFILL CU YD	15" RC PIPE APRON EACH	21" RC PIPE APRON EACH	GEO TEXTILE FILTER TYPE III SQ YD	RANDOM RIPRAP CLASS II CU YD	GUIDE POSTS TYPE B EACH	NOTES
								LIN FT												PIPE CLASS LIN FT																								
SP 6103-32	MH-245	CB-249	28	443+83.34	31.1'	LT									A - 7D		1149.05																										
		CB-249	28	443+84.03	31.4'	LT	MH			5.0						YES		1144.18	1143.35			36											CP/PP/PVC				1.3	9.0						
	CB-25B	MH-245	28	443+88.08	63.1'	LT									B - 11		1149.40																										
		MH-245	28	443+88.08	63.9'	LT	CB			4.4								1144.89	1144.28			33											CP/PP/PVC				1.2	8.3						
	CB-25A	CB-25B	28	444+29.15	61.6'	LT	CB	3.5							B - 11		1149.76	1146.24	1145.00			41																1.5	10.3						②
	CB-26A	CB-26B	28	444+27.98	63.4'	RT	CB	3.3							B - 11		1148.64	1145.31	1143.58		42																	1.3	9.2						
	CB-26B	MH-244	28	443+85.63	63.5'	RT									B - 11		1147.50																										
		MH-244	28	443+85.63	64.3'	RT	CB			4.2								1143.21	1142.82				33										PVC				1.2	8.3						
	MH-244	CB-270	28	443+82.48	30.8'	RT									A - 7D		1148.25																										
		CB-270	28	443+81.56	31.7'	RT	MH					7.4				YES		1141.00	1139.37										316								19.3	164.3						②
	CB-240	MH-244	28	444+62.00	27.0'	RT									B - 11		1149.56																										
		MH-244	28	444+63.08	27.0'	RT	CB				6.2					YES		1143.27	1141.58								82						CP/PP/PVC				4.4	36.1						
	CB-239	CB-240	28	444+64.00	27.0'	LT									B - 11		1150.49																										
		CB-240	28	444+64.39	27.7'	LT	CB			4.1								1146.31	1144.88		55												CP/PP/PVC				1.8	12.1						
	MH-237	CB-239	28	444+82.72	43.3'	LT									A - 7D		1151.42																										
		CB-239	28	444+82.72	44.1'	LT	MH			4.7						YES		1146.84	1146.41		25												CP/PP/PVC				0.8	5.5						①
	CB-230	CB-240	28	445+82.67	27.0'	RT									B - 11		1152.39																										
		CB-240	28	445+83.96	27.0'	RT	CB					5.6				YES		1146.72	1143.88								121						CP/PP/PVC				5.6	43.6						①②
	CB-229	CB-230	28	446+06.00	27.0'	LT	CB	3.4							B - 11		1153.82	1150.38	1147.88	58																	1.9	12.8						
	MH-228	CB-230	28	447+93.92	27.0'	RT									A - 7D		1158.09																										
		CB-230	28	447+94.71	27.0'	RT	MH			7.7						YES		1150.46	1146.83								211						CP/PP/PVC				9.7	76.0						②
	CB-225	CB-226	28	539+11.00	27.0'	LT									B - 15		1159.96																										
		CB-226	28	539+11.00	27.8'	LT	CB			5.7						YES		1154.19	1153.99	55													CP/PP/PVC				1.8	12.1						②
	CB-226	MH-228	28	539+11.00	27.0'	RT									B - 11		1160.16																										
		MH-228	28	539+11.79	27.0'	RT	CB			6.7						YES		1153.41	1151.06					78									CP/PP/PVC				3.1	22.6						
	CB-221	CB-222	28	540+64.00	27.0'	LT	CB	3.8							B - 15		1164.93	1161.05	1160.63	54																	1.7	11.9						
	CB-222	CB-226	28	540+64.00	27.0'	RT									B - 11		1164.99																										
		CB-226	28	540+64.79	27.0'	RT	CB			4.9						YES		1160.02	1153.56					153									CP/PP/PVC				6.1	44.4						
	CB-21A	CB-21B	28	542+19.82	60.5'	LT	CB	3.2							B - 11		1172.23	1169.02	1168.82		44																	1.4	9.7						
	CB-21B	MH-21C	28	542+64.41	60.5'	LT									B - 11		1174.90																										
		MH-21C	28	542+64.41	61.3'	LT	CB			6.0						YES		1168.79	1168.63	28													CP/PP/PVC				0.9	6.2						
	MH-21C	CB-217	28	542+66.86	32.6'	LT									A - 7D		1174.80																										
		CB-217	28	542+66.18	33.0'	LT	MH			6.3						YES		1168.61	1168.43	32													CP/PP/PVC				1.0	7.0						
	CB-217	CB-218	28	542+98.00	27.0'	LT									B - 11		1175.41																										
		CB-218	28	542+98.00	27.8'	LT	CB			7.2						YES		1168.16	1167.96				55										CP/PP/PVC				2.0	13.8						
	CB-218	CB-222	28	543+00.00	27.0'	RT									B - 11		1174.53																										
		CB-222	28	543+00.79	27.0'	RT	CB			6.8						YES		1167.65	1160.17						236								CP/PP/PVC				9.4	68.4						②
	CB-213	CB-217	28	543+79.00	27.0'	LT	CB	3.3							B - 11		1178.66	1175.34	1168.62		81																	2.6	17.8						
	CB-210	CB-218	28	544+60.00	27.0'	RT									B - 11		1180.90																										
		CB-218	28	544+60.79	27.0'	RT	CB			4.4								1176.44	1168.06				160										PVC				5.8	40.0						
	CB-209	CB-210	28	544+67.20	27.0'	LT	CB	3.4							B - 11		1181.27	1177.84	1176.83		54																	1.7	11.9						
	CB-143	CB-139	28	547+54.00	27.0'	LT	CB	3.2							B - 11		1183.28	1180.05	1179.00		76																	2.4	16.7						
	CB-139	CB-140	28	548+30.00	27.0'	LT									B - 11		1183.08																										
		CB-140	28	548+29.60	27.7'	LT	CB			4.1								1178.96	1178.70		58												CP/PP/PVC				1.9	12.8						
	CB-140	CB-136	28	548+50.00	27.0'	RT									B - 11		1182.79																										
		CB-136	28	548+49.21	27.0'	RT	CB			4.0								1178.68	1178.15		131												CP/PP/PVC				4.2	28.8						
	CB-137	CB-135	28	549+04.00	27.0'	LT	CB	3.2							B - 11		1182.77	1179.52	1178.27		77																	2.5	16.9						
	CB-136	CB-134	28	549+81.00	27.0'	RT									B - 11		1182.24																										
		CB-134	28	549+80.21	27.0'	RT	CB			4.4								1177.78	1177.66					35									CP/PP/PVC				1.3	8.8						
	CB-135	CB-136	28	549+81.31	27.0'	LT									B - 11		1182.34																										
		CB-136	28	549+81.31	27.8'	LT	CB			4.1								1178.23	1178.03		55												CP/PP/PVC				1.8	12.1						
	CB-134	CB-130	28	550+16.33	29.7'	RT									B - 7		1182.20																										
		CB-130	28	550+15.56	29.5'	RT	CB			4.5						YES		1177.63	1175.71				164										CP/PP/PVC				5.9	41.0						
	CB-133	CB-135	28	550+15.94	29.2'	LT	CB	3.2							B - 7		1182.15	1178.91	1178.28		35																	1.1	7.7						
	CB-129	MH-121	28	551+80.00	27.0'	LT	CB	3.2							B - 11		1181.41	1178.10	1177.25	23																	0.7	5.1						
	CB-130	MH-122	28	551+80.00	27.0'	RT									B - 11		1181.41																										
		MH-122	28	551+79.32	26.6'	RT	CB			5.7						YES		1175.66	1175.37				24										CP/PP/PVC				0.9	6.0						
	MH-121	MH-122	28	552+02.19	32.4'	LT									A - 7D		1182.10																										
		MH-122	28	552+02.20	34.2'	LT	MH						8.4			YES		1173.80	1173.36											67			CP/PP/PVC				5.0	51.6						①⑥
	MH-122	EXIST.	28	552+02.34	35.1'	RT									A - 7D		1182.10																										
		EXIST.	28	552+02.34	32.8'	RT	MH							12.9		YES		1173.33												8			CP/PP/PVC				0.6	6.2						①⑤⑥
	CB-117	CB-118	28	553+08.72	27.0'	LT	CB		3.7						B - 11		1180.93	1177.16	1175.70						54												2.2	15.7						

NOTES:
① CONNECT MANHOLE TO EXISTING STORM SEWER PIPE. VERIFY INVERTS IN THE FIELD PRIOR TO PLACEMENT. PAID FOR AS CONNECT TO EXISTING STORM SEWER.
② CONNECT ROOF/SUMP DRAIN INTO PIPE OR STRUCTURE. SEE TAB ON SHEET 23 FOR LOCATIONS. SEE DETAIL ON SHEET 54. PAID FOR AS ROOF DRAIN DESIGN SPECIAL.
③ CONNECT PIPE INTO 60" CULVERT. SEE DETAIL ON SHEET 55. PAID FOR AS CONNECT TO INPLACE CULVERT.
④ CONNECT 48" RC PIPE TO EXISTING PIPE. VERIFY INVERTS IN THE FIELD PRIOR TO PLACEMENT. PAID FOR AS CONNECT TO EXISTING STORM SEWER.
⑤ FURNISH & INSTALL SPECIAL POLLUTION CONTROL DEVICE. PAID FOR AS CONSTRUCT CONTROL STRUCTURE. 4' SUMP INCLUDED IN STRUCTURE PAY HEIGHT.

SPECIFIC NOTES:
⑥ LENGTH OF 48" PIPE & LOCATION OF STRUCTURE WILL VARY DEPENDING ON LENGTH OF EXISTING PIPE REMOVED UNDER ITEM "ABANDON STORM SEWER". STRUCTURE LOCATION TO BE DETERMINED BY ENGINEER.
⑦ TIE ALL JOINTS (INCIDENTAL).
⑧ CONTRACTOR HAS OPTION TO BUILD MASONRY STYLE STRUCTURE IN THE FIELD IF PRECAST STRUCTURE CANNOT BE MANUFACTURED AND/OR SAFELY PLACED.

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JVO
CHECKED BY: DAC

NO.	BY	DATE	REVISIONS

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.
Certified By: Dan Cazanacli Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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3535 VADNAIS CENTER DR.
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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB9 OF TB11
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PROJECT	STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		DRAINAGE STRUCTURES TYPE	PAY HEIGHT H	SD-48	48-4020	54-4020	60-4020	72-4020	84-4020	CASTING ASSEMBLY TYPE	STEPS REQ'D	TOP OF CASTING ELEV.	OUTLET ELEV.	INLET ELEV.	DESIGN 3006 PIPE SEWER 12" RC PIPE CLASS III	12" RC IV	15" RC III	15" RC IV	18" RC III	18" RC IV	21" RC III	24" RC III	30" RC III	36" RC III	48" RC III	48" RC IV	48" RC V	48" RC PIPE SEWER V	12" PVC PIPE SEWER	PLASTIC OPTION	EXCAVATION SUBGRADE	SELECT GRAN EMBANKMENT (CV)	COARSE AGGREGATE BEDDING (CV)	GRANULAR BEDDING	GRANULAR BACKFILL	15" RC PIPE APRON	21" RC PIPE APRON	GEO TEXTILE FILTER TYPE III	RANDOM RIPRAP CLASS II	GUIDE POSTS TYPE B	NOTES
								LIN FT												LIN FT																		CU YD	CU YD	CU YD	CU YD	CU YD	EACH	EACH	SQ YD	CU YD	EACH	
SP 6103-32	CB-118	MH-122	28	553+08.72	27.0'	RT									B - 11		1180.93																													
		MH-122	28	553+09.80	27.0'	RT	CB			6.1						YES		1174.73	1174.08								108						CP/PP/PVC				5.8	47.5							
	CB-109	MH-114	28	554+81.50	25.0'	LT	CB	3.2							B - 11		1183.15	1179.91	1179.05		41																1.3	9.0							
	MH-114	CB-118	28	554+83.65	16.1'	RT									A - 7D		1183.52																												(1)
		CB-118	28	554+84.73	16.1'	RT	MH				6.3					YES		1177.30	1174.78								175						CP/PP/PVC				9.5	77.0							
	CB-110	MH-114	28	554+85.50	24.9'	RT									B - 11		1183.25																													
		MH-114	28	554+85.49	25.7'	RT	CB			4.2								1179.00	1178.89		10												CP/PP/PVC				0.3	2.2							
SP 6106-23	CB-23A	MH-23B	29	35+28.50	22.2'	LT	CB	3.2							B - 11		1157.55	1154.31	1154.00		13																	0.4	2.9							
	MH-23B	MH-228	29	35+27.75	9.5'	LT									A - 7D		1158.15																												(1)
		MH-228	29	35+28.54	9.5'	LT	MH			5.8						YES		1152.48	1151.28			96																3.5	24.0							
	CB-405	CB-404	29	37+36.00	24.2'	RT									B - 11		1158.00																													
		CB-404	29	37+35.21	24.2'	RT	CB		2.7									1155.19	1155.02		47																	1.5	10.3							
	CB-404	CB-408	29	37+34.00	22.5'	LT									B - 11		1158.02																													
		CB-408	29	37+33.21	22.5'	LT	CB		3.0									1155.00	1154.93		21																	0.7	4.6							
	CB-408	CB-412	29	37+53.50	18.4'	LT									B - 11		1158.05																													
		CB-412	29	37+54.29	18.4'	LT	CB		3.1									1154.92	1154.82		29																	0.9	6.4							
	CB-412	CB-416	29	37+75.31	38.0'	LT									B - 11		1158.19																													
		CB-416	29	37+76.10	38.0'	LT	CB		3.3									1154.80	1154.68	32																		1.0	7.0							
	CB-413	CB-417	29	37+76.94	41.4'	RT									B - 11		1158.40																													
		CB-417	29	37+76.15	41.4'	RT	CB		3.2									1155.19	1154.92				34															1.2	8.5							
	CB-417	MH-424	29	38+09.77	41.4'	RT									B - 11		1158.15																													
		MH-424	29	38+09.77	42.2'	RT	CB		3.2									1154.87	1154.02				57															2.1	14.3							
	CB-416	MH-424	29	38+09.18	38.0'	LT									B - 11		1158.25																													
		MH-424	29	38+08.39	38.0'	LT	CB		3.6									1154.64	1154.27	26																		0.8	5.7							
	MH-424	EXIST.	29	38+19.55	13.9'	LT									A - 7D		1158.67																													(1)
			29	38+18.76	13.9'	LT	MH			4.8						YES		1153.99				8																0.3	2.0							
SP 6110-21	CB-522	MH-526	104	31+05.66	59.0'	LT									B - 11		1155.40																													
		MH-526	104	31+05.66	59.8'	LT	CB		3.8									1151.58	1151.32	51																		1.6	11.2							
	CB-523	CB-533	104	31+05.60	60.0'	RT	CB	3.2							B - 11		1154.79	1151.57	1151.37		43																	1.4	9.5							
	MH-526	EXIST.	104	31+11.62	9.6'	LT									A - 7D		1156.02																													(1)
			104	31+12.41	9.6'	LT	MH			6.2						YES		1149.97				8																0.3	2.0							
	CB-533	MH-526	104	31+46.68	47.0'	RT									B - 11		1155.74																													
		MH-526	104	31+47.24	47.6'	RT	CB			4.6						YES		1151.07	1150.01			67																2.4	16.8							
	CB-528	CB-522	104	31+50.32	60.0'	LT	CB	3.2							B - 11		1157.02	1153.79	1152.55		45																	1.4	9.9							
	CB-536	MH-526	104	31+72.00	19.0'	LT									B - 11		1156.95																													
		MH-526	104	31+72.79	18.9'	LT	CB			4.9						YES		1151.99	1151.76	61																		2.0	13.4							
	CB-545	CB-536	104	31+88.00	23.6'	RT									B - 11		1156.29																													(1)
		CB-536	104	31+88.56	24.2'	RT	CB		4.1									1152.18	1152.01		46																	1.5	10.1							
	SP 6103-32 SUBTOTALS:							43	51	149	19	13	35	29						250	1184	447	909	520	132	29	557	365	316	296	144	210	42	11		1934	499	878	135	1026	1	1	42	8	2	
	SP-6106-23 SUBTOTALS:							3	22	11										58	110	104	91														12	86							
	SP 6110-21 SUBTOTALS:							6	8	16										112	134	75															11	73							
	TOTALS:							52	81	176	19	13	35	29						420	1428	626	1000	520	132	29	557	365	316	296	144	210	42	11		1934	499	878	158	1185	1	1	42	8	2	

GENERAL NOTES:
THE OUTLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS FROM STRUCTURE.
THE INLET ELEVATION IS THE INVERT ELEVATION OF THE PIPE AT THE INSIDE EDGE OF THE FLOWS TO STRUCTURE.
THE INVERT ELEVATIONS ON THE PROFILES ARE AT THE CENTER OF THE STRUCTURE.

THE CASTING ELEVATION AND LOCATION ARE AT THE CENTER OF THE GRATE/COVER.
FOR OFFSET STRUCTURES, THE STRUCTURE LOCATION IS AT THE CENTER OF THE STRUCTURE.

FOR CONCRETE PIPES WITH APRONS:
THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON.
THE PROFILE LENGTH OF PIPE IS TO THE OUTLET INVERT END OF THE APRON.
THE PIPE LENGTH IN THE TABUATION DOES NOT INCLUDE THE APRON LENGTH.

FOR STRUCTURES WITH SUMPS WHERE THE INVERT OF THE STRUCTURE IS BELOW THE INVERT OF THE OUTLET PIPE,
THE PAY HEIGHT IS CALCULATED TO INCLUDE THE SUMP DISTANCE.

NOTES:
(1) CONNECT MANHOLE TO EXISTING STORM SEWER PIPE. VERIFY INVERTS IN THE FIELD PRIOR TO PLACEMENT. PAID FOR AS CONNECT TO EXISTING STORM SEWER.
(2) CONNECT ROOF/SUMP DRAIN INTO PIPE OR STRUCTURE. SEE TAB ON SHEET 23 FOR LOCATIONS. SEE DETAIL ON SHEET 54 . PAID FOR AS ROOF DRAIN DESIGN SPECIAL.
(3) CONNECT PIPE INTO 60" CULVERT. SEE DETAIL ON SHEET 55 . PAID FOR AS CONNECT TO INPLACE CULVERT.
(4) CONNECT 48" RC PIPE TO EXISTING PIPE. VERIFY INVERTS IN THE FIELD PRIOR TO PLACEMENT. PAID FOR AS CONNECT TO EXISTING STORM SEWER.
(5) FURNISH & INSTALL SPECIAL POLLUTION CONTROL DEVICE. PAID FOR AS CONSTRUCT CONTROL STRUCTURE. 4' SUMP INCLUDED IN STRUCTURE PAY HEIGHT.
(6) LENGTH OF 48" PIPE & LOCATION OF STRUCTURE WILL VARY DEPENDING ON LENGTH OF EXISTING PIPE REMOVED UNDER ITEM "ABANDON STORM SEWER". STRUCTURE LOCATION TO BE DETERMINED BY ENGINEER.
(7) TIE ALL JOINTS (INCIDENTAL).
(8) CONTRACTOR HAS OPTION TO BUILD MASONRY STYLE STRUCTURE IN THE FIELD IF PRECAST STRUCTURE CANNOT BE MANUFACTURED AND/OR SAFELY PLACED.

CASTING SUMMARY J

CASTING ASSEMBLY	ITEM	CASTING NO.	STANDARD PLATE	SP 6103-32	SP 6106-23	SP 6110-21	TOTALS
A - 4D	RING	700-4	4101	1			1
	COVER	715	4110				
A - 7D	RING	700-7	4101	9	2	1	12
	COVER	715	4110				
B - 7	FRAME	805	4132	2			2
	GRATE	814A	4152				
B - 11	FRAME	806	4125	56	8	6	70
	CURB BOX	824	4133				
	GRATE	814A	4152				
B - 15	FRAME	806	4125	2			2
	CURB BOX	825	4134				
	GRATE	814A	4152				
M - 11	FRAME	ROUND CONC.	4143	1			1
	COVER	731	4143				
			TOTALS:	71	10	7	88

DRAINAGE
CASTING SUMMARY

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.
Certified By: Dan Cazanacli Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB10 OF TB11
22 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_dr_tbl.dgn
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CULVERTS — K

PROJECT	STRUCTURE NO. FLOWS FROM	STRUCTURE NO. FLOWS TO	STRUCTURE LOCATION ALIGN.	STRUCTURE LOCATION STATION	STRUCTURE LOCATION OFFSET	DRAINAGE STRUCTURES TYPE	DRAINAGE STRUCTURES INLET ELEV.	DRAINAGE STRUCTURES OUTLET ELEV.	DESIGN 3006 24" RC PIPE CULVERT CLASS IV LIN FT	DESIGN 3006 30" RC PIPE CULVERT CLASS III LIN FT	DESIGN 3006 60" RC PIPE CULVERT CLASS IV LIN FT	88" SPAN RC PIPE-ARCH CULVERT CLASS IIA LIN FT	24" RC PIPE APRON EACH	30" RC PIPE APRON EACH	60" RC PIPE APRON EACH	88" SPAN RC PIPE ARCH APRON EACH	60" RC SAFETY APRON AND GRATE DESIGN 3132 EACH	30" RC SAFETY APRON AND GRATE DESIGN 3128 EACH	SAFETY GRATE FOR 88" SPAN RC PIPE-ARCH APRON EACH	PLASTIC OPTION	EXCAVATION - SUBGRADE CU YD	SELECT GRANULAR EMBANKMENT (CV) CU YD	COARSE AGGREGATE BEDDING (CV) CU YD	ARTICULATED BLOCK MAT OPEN CELL, TYPE A SQ YD	GUIDE POST TYPE B EACH	NOTES
SP-6103-32	CVRT-842	CVRT-843	28	415+37.96	37.2' LT	APRON	1136.00	1135.80				64				1			1		191	105	86		1	①
	CVRT-843		28	415+39.14	42.5' RT	APRON										1			1					233	1	
	CVRT-836	CVRT-837	28	417+42.81	52.7' LT	APRON	1136.44	1136.18			52						1				182	137	117			①
	CVRT-837		28	416+56.02	53.5' LT	APRON											1									
	CVRT-830	CVRT-831	28	418+14.85	59.1' RT	APRON	1136.25	1136.11		46								1			53	81	66			①②
	CVRT-831		28	417+42.94	59.6' RT	APRON												1								
	CVRT-816	CVRT-817	28	421+49.70	53.3' LT	APRON	1137.66	1137.06			188				1						545	496	271			①②③
	CVRT-817		28	419+46.47	50.3' LT	APRON									1											
	CVRT-814	CVRT-815	28	422+04.73	54.7' RT	APRON	1137.03	1136.82		92				1							167	133	95		1	①
	CVRT-815		28	421+02.12	57.6' RT	APRON								1											1	
	CVRT-810	CVRT-811	28	426+35.52	44.6' RT	APRON	1137.89	1137.74		62				1							119	90	67		1	①
	CVRT-811		28	425+60.71	49.9' RT	APRON								1											1	
	CVRT-804	CVRT-805	28	429+89.07	60.2' LT	APRON	1139.44	1139.31	54				1								88	69	57			①
	CVRT-805		28	429+27.32	43.2' LT	APRON							1													
	CVRT-806	CVRT-807	28	429+89.38	55.8' LT	APRON	1139.44	1139.31	54				1								88	69	57			①
	CVRT-807		28	429+27.21	38.7' LT	APRON							1													
TOTALS:									108	200	240	64	4	4	2	2	2	2	2		1433	1180	816	233	6	

PLASTIC PIPE IS NOT A FEASIBLE OPTION FOR ANY OF THE CULVERTS DUE TO EITHER CULVERT SIZE, STANDING WATER, LOCATION IN CLEAR ZONE, OR LACK OF REQUIRED COVER.

GENERAL NOTES FOR CONCRETE PIPES WITH APRONS:
THE LOCATION OF THE APRON IS THE OUTLET, INVERT END OF THE APRON.
THE PROFILE LENGTH OF PIPE IS TO THE OUTLET INVERT END OF THE APRON.
THE PIPE LENGTH IN THE TABULATION DOES NOT INCLUDE THE APRON LENGTH.

EXISTING STORM & SANITARY STRUCTURES — M

PROJECT	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		ADJUST FRAME & RING CASTING EACH	REMOVE CURB BOX EACH	REMOVE CASTING EACH	CASTING ASSEMBLY (ADA) EACH
SP 6103-32	28	567+01.87	25.9	LT	1			
	4TH	10+63.26	10.6	LT	1			
	4TH	10+98.05	28.4	RT	1			
	28	557+00.63	16.1	RT	1			
	28	558+59.49	16.1	RT	1			
	28	559+57.14	15.9	RT	1			
	28	561+90.40	16.7	RT	1			
	28	564+43.81	17.0	RT	1			
	28	565+80.60	28.7	LT	1			
SP 6103-32 SUBTOTALS:					9			
SP 6104-12	28	602+10.11	6.1	RT	1			
	28	604+10.35	5.5	RT	1			
	28	606+08.62	5.7	RT	1			
	28	607+59.32	6.2	RT	1			
	28	608+56.83	5.8	RT	1			
	28	609+59.42	5.6	RT	1			
	28	610+59.64	5.5	RT	1			
	28	612+52.63	5.7	RT	1			
SP 6104-12 SUBTOTALS:					8			
SP 6106-23	29	36+14.57	8.8	LT	1			
	29	36+47.83	23.5	LT	1			
	29	40+73.73	24.3	LT	1	1		
	29	40+74.35	23.6	RT	1	1		
	29	40+88.51	36.8	RT	1	1		
	29	41+06.06	1.9	RT	1			
	29	41+28.12	32.6	RT	1	1		
	29	41+29.97	18.1	LT	1			
	29	41+36.84	24.4	LT			1	1
	29	41+37.51	23.6	RT			1	1
	29	44+30.06	0.5	LT	1			
	29	52+07.64	18.6	LT	1			
	29	52+29.08	32.2	RT			1	1
	29	52+39.21	23.7	RT	1	1		
SP-6106-23 SUBTOTALS:					11	5	3	3

EXISTING STORM & SANITARY STRUCTURES — M

PROJECT	STRUCTURE LOCATION ALIGN.	STATION	OFFSET		ADJUST FRAME & RING CASTING EACH	REMOVE CURB BOX EACH	REMOVE CASTING EACH	CASTING ASSEMBLY (ADA) EACH
SP 6110-21	104	18+20.03	0.8	RT	1			
	104	19+10.44	23.5	RT	1			
	104	21+74.14	22.5	RT	1			
	104	21+86.39	0.3	RT	1			
	104	21+98.28	36.9	RT	1			
	104	24+02.45	2.9	RT	1			
	104	27+77.77	24.2	LT	1	1		
	104	27+81.57	23.9	RT	1	1		
	104	27+98.72	7.7	LT	1			
	104	28+13.11	3.5	LT	1			
	104	28+50.98	24.7	LT	1			
	104	28+51.09	8.5	LT	1			
	104	32+80.76	0.1	LT	1			
	104	32+84.20	22.1	RT	1			
	104	1190+39.92	24.3	RT	1			
SP 6110-21 SUBTOTALS:					15	2		
TOTALS:					43	7	3	3

ROOF/SUMP DRAIN CONNECTIONS TO STORM SEWER — L

PROJECT	ALIGNMENT	STATION	OFFSET	4" PVC PIPE SEWER LIN FT	6" PVC PIPE SEWER LIN FT	ROOF/SUMP CONNECTION ④ EACH	TRENCH DRAIN LIN FT
CITY OF GLENWOOD	28	435+80	77' RT		24	1	
	28	442+12	25' RT		21	1	
	28	442+49	23' RT		20	1	
	28	443+22	23' RT	19		1	
	28	444+29	62' LT	8		1	
	28	445+51	27' RT		68	1	
	28	446+41	27' RT	24		1	
	28	446+61	27' RT	24		1	
	28	446+98	27' RT		74	1	
	28	539+11	28' LT		33	1	
	28	541+67	27' RT		79	1	
	104	30+06	28' RT				10
	104	30+44	29' RT				10
TOTALS:				75	319	11	20

GENERAL ROOF/SUMP DRAIN NOTES:
ROOF/SUMP DRAIN CONNECTION LOCATIONS LISTED IN TAB ARE ESTIMATED POINT OF CONNECTION TO THE PROPOSED STORM SEWER PIPE OR STRUCTURE. VERIFY PIPES' SIZES, LOCATIONS & ELEVATIONS IN THE FIELD.
SEE ROOF/SUMP CONNECTION DETAIL ON DETAIL PLANSHEET 54.
SEE TRENCH DRAIN DETAIL ON PLANSHEET 53.

SPECIFIC NOTES:
① TIE ALL JOINTS (INCIDENTAL)
② SAFETY APRON LENGTH OF 8' ASSUMED FROM STANDARD PLATE 3022.
③ CONNECT PIPE FROM CB-819 INTO THE CULVERT. SEE STORM TABULATION FOR LOCATION & ELEVATION. SEE DETAIL ON SHEET 55. PAID FOR AS CONNECT TO INPLACE CULVERT.
④ ROOF/SUMP DRAIN CONNECTIONS PAID FOR AS ROOF DRAIN DESIGN SPECIAL.

CULVERTS
ROOF/SUMP DRAIN CONNECTIONS
EXISTING STORM & SANITARY STRUCTURES

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JVO
CHECKED BY: DAC

NO.	BY	DATE	REVISIONS

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

QUANTITY TABULATIONS

FILE NO. MNT04-134590
TB11 OF TB11
23 / 310

FILE: S:\KO\W\Mnt04\134590\5-final-dsgn\5j-drawings\40-Transhwy\plnshts\CD610332_dr_tbl.dgn
MODEL: dr tabs

GENERAL NOTES:

ALL UTILITY WORK SHOWN ON THESE SHEETS SHALL BE DONE BY OTHERS UNLESS NOTED.

ALL RELOCATES AND ADJUSTMENTS SUBJECT TO MNDOT RIGHT OF WAY.

THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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".

THE REMARKS COLUMN IS BASED UPON THE BEST INFORMATION AVAILABLE AND MAY NOT REFLECT THE ACTUAL EFFECTS ON THE UTILITIES BY CONSTRUCTION. ACTUAL DETERMINATIONS WILL BE MADE IN THE FIELD DURING CONSTRUCTION.

ALL POWER LINES ARE DISTRIBUTION UNLESS NOTED.

UTILITIES

THE FOLLOWING LIST SHOWS THE UTILITY COMPANIES INVOLVED ON THIS PROJECT.

AMERICAN SOLUTIONS FOR BUSINESS
ARVIG ENTERPRISES
CENTERPOINT ENERGY MINNESOTA GAS
CENTURYLINK
CHARTER COMMUNICATIONS
CITY OF GLENWOOD
CITY OF LONG BEACH
POPE COUNTY
XCEL ENERGY

UTILITIES		
CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP	
ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

PUBLIC UTILITIES - SANITARY X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
1189+37 R 24	1190+40 R 24	TH 104	234 RT	24 RT	PIP	X			CITYGLENWOOD	
1190+40 R 24		TH 104	24 RT		MH		X		CITYGLENWOOD	(3)
1190+40 R 24	1191+52 R 24	TH 104	24 RT	27 RT	PIP	X			CITYGLENWOOD	
1191+52 R 24		TH 104		27 RT	MH	X			CITYGLENWOOD	
1191+52 R 24	1192+67 R 24	TH 104	27 RT	30 RT	PIP	X			CITYGLENWOOD	
1192+63 R 24	1192+67 R 24	TH 104	170 RT	30 RT	PIP	X			CITYGLENWOOD	
1192+67 R 24		TH 104	30 RT		MH	X			CITYGLENWOOD	
1192+67 R 24	17+71 R 25	TH 104	30 RT	168 RT	PIP	X			CITYGLENWOOD	
1192+67 R 24	1192+74 R 24	TH 104	30 RT	29 RT	PIP	X			CITYGLENWOOD	
1192+74 R 24	18+20 R 25	TH 104	29 RT	0 RT	PIP	X			CITYGLENWOOD	
18+20 R 25		TH 104	0 RT		MH		X		CITYGLENWOOD	(3)
18+20 R 25	21+86 R 25	TH 104	0 RT	0 LT	PIP	X			CITYGLENWOOD	
21+86 R 25		TH 104	0 LT		MH		X		CITYGLENWOOD	(3)
21+86 R 25	21+86 R 25	TH 104	62 RT	0 LT	PIP	X			CITYGLENWOOD	
21+86 R 25	21+87 R 25	TH 104	0 LT	85 LT	PIP	X			CITYGLENWOOD	
21+86 R 25	24+02 R 25	TH 104	0 LT	2 RT	PIP	X			CITYGLENWOOD	
24+02 R 25		TH 104	2 RT		MH		X		CITYGLENWOOD	(3)
27+80 R 25	28+13 R 25	TH 104	37 RT	4 LT	PIP	X			CITYGLENWOOD	
27+90 R 25	28+13 R 25	TH 104	46 RT	47 RT	SS	X			CITYGLENWOOD	
27+90 R 25	28+14 R 25	TH 104	72 LT	72 LT	SS	X			CITYGLENWOOD	
28+13 R 25		TH 104	4 LT		MH		X		CITYGLENWOOD	(3)
28+13 R 25	31+26 R 25	TH 104	4 LT	1 LT	PIP	X			CITYGLENWOOD	
28+13 R 25	28+14 R 25	TH 104	4 LT	93 LT	PIP	X			CITYGLENWOOD	
28+13 R 25	28+13 R 25	TH 104	114 RT	4 LT	PIP	X			CITYGLENWOOD	
28+14 R 25	28+55 R 25	TH 104	89 LT	89 LT	SS	X			CITYGLENWOOD	
28+48 R 25	28+49 R 25	TH 104	44 RT	4 LT	SS	X			CITYGLENWOOD	
29+18 R 25	29+19 R 25	TH 104	47 RT	3 LT	SS	X			CITYGLENWOOD	
29+63 R 25	29+64 R 25	TH 104	2 LT	49 LT	SS	X			CITYGLENWOOD	
29+68 R 25	29+68 R 25	TH 104	48 RT	2 LT	SS	X			CITYGLENWOOD	
29+89 R 25	29+89 R 25	TH 104	2 LT	49 LT	SS	X			CITYGLENWOOD	
30+54 R 25	30+55 R 25	TH 104	43 RT	2 LT	SS	X			CITYGLENWOOD	
31+14 R 25	31+14 R 25	TH 104	1 LT	40 LT	SS	X			CITYGLENWOOD	
31+25 R 25	31+26 R 25	TH 104	107 RT	1 LT	PIP	X			CITYGLENWOOD	
31+26 R 25		TH 104	1 LT		MH			X	CITYGLENWOOD	
31+26 R 25	32+81 R 25	TH 104	1 LT	0 LT	PIP	X			CITYGLENWOOD	
31+26 R 25	31+27 R 25	TH 104	1 LT	98 LT	PIP	X			CITYGLENWOOD	
32+81 R 25		TH 104	0 LT		MH		X		CITYGLENWOOD	(3)
32+81 R 25	32+81 R 25	TH 104	88 LT	0 LT	PIP	X			CITYGLENWOOD	
388+65	419+63	TH 28	50 LT	50 LT	FM			X	CITYLONGBEACH	
419+63	421+62	TH 28	50 LT	75 LT	FM			X	CITYLONGBEACH	
421+62	422+90	TH 28	75 LT	70 LT	FM			X	CITYLONGBEACH	
422+90	426+88	TH 28	70 LT	97 LT	FM			X	CITYLONGBEACH	
423+98	424+59	TH 28	106 RT	74 RT	PIP		X		CITYGLENWOOD	(7)
424+59	425+33	TH 28	74 RT	29 RT	PIP			X	CITYGLENWOOD	
425+33	425+96	TH 28	29 RT	14 LT	PIP			X	CITYGLENWOOD	
425+96		TH 28	14 LT		MH			X	CITYGLENWOOD	(1)

SPECIFIC NOTES:
(1) REMOVE
(3) ADJUST CASTING (SEE SHEETS U-1 - U-22)
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT1 OF UT18

6:00:26 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (04)\Design\Sheets\CD610332_ut1.dgn
MODEL: default

PUBLIC UTILITIES - SANITARY

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
425+96	425+97	TH 28	14 LT	61 RT	PIP	X			CITYGLENWOOD	(2)
425+96	426+64	TH 28	14 LT	85 LT	PIP	X			CITYGLENWOOD	(2)
425+97	426+00	TH 28	61 RT	228 RT	PIP	X			CITYGLENWOOD	(2)
426+64	427+01	TH 28	85 LT	128 LT	PIP	X			CITYGLENWOOD	(2)
426+88	427+34	TH 28	97 LT	137 LT	FM			X	CITYLONGBEACH	
427+01	427+28	TH 28	128 LT	161 LT	PIP	X			CITYGLENWOOD	(2)
427+28		TH 28	161 LT		MH	X			CITYGLENWOOD	
427+28	427+34	TH 28	161 LT	137 LT	PIP	X			CITYGLENWOOD	(2)
427+34		TH 28	137 LT		MH	X			CITYGLENWOOD	
427+34	427+68	TH 28	137 LT	485 LT	PIP	X			CITYGLENWOOD	
427+34	427+67	TH 28	137 LT	96 LT	PIP	X			CITYGLENWOOD	(2)
427+67	429+01	TH 28	96 LT	44 RT	PIP	X			CITYGLENWOOD	(2)
428+91	429+07	TH 28	65 RT	49 RT	SS			X	CITYGLENWOOD	(1)
429+01	429+39	TH 28	44 RT	77 RT	PIP		X		CITYGLENWOOD	(7)
429+02		TH 28	44 RT		MH			X	CITYGLENWOOD	
429+39	432+81 R 2	TH 28	77 RT	346 RT	PIP	X			CITYGLENWOOD	
432+21 R 2	432+81 R 2	TH 28	407 RT	346 RT	PIP	X			CITYGLENWOOD	
432+74 R 2	432+96 R 2	TH 28	405 RT	378 RT	PIP	X			CITYGLENWOOD	
432+81 R 2		TH 28	346 RT		MH	X			CITYGLENWOOD	
432+81 R 2	433+04 R 2	TH 28	346 RT	368 RT	PIP	X			CITYGLENWOOD	
432+81 R 2	433+36 R 2	TH 28	267 RT	325 RT	SS			X	CITYGLENWOOD	(1)
432+96 R 2	433+04 R 2	TH 28	378 RT	368 RT	PIP	X			CITYGLENWOOD	
433+04 R 2	434+37 R 2	TH 28	368 RT	198 RT	PIP	X			CITYGLENWOOD	
433+72 R 2	434+15 R 2	TH 28	164 RT	224 RT	SS			X	CITYGLENWOOD	(1)
434+37 R 2	434+58 R 2	TH 28	198 RT	236 RT	SS			X	CITYGLENWOOD	(1)
434+37 R 2	435+65 R 2	TH 28	198 RT	98 RT	PIP	X			CITYGLENWOOD	(2)
434+60 R 2	434+80 R 2	TH 28	176 RT	213 RT	SS			X	CITYGLENWOOD	(1)
435+30 R 2	435+47 R 2	TH 28	119 RT	159 RT	SS			X	CITYGLENWOOD	(1)
435+65 R 2		TH 28	98 RT		MH			X	CITYGLENWOOD	(1)
435+65 R 2	437+21 R 2	TH 28	98 RT	42 RT	PIP	X			CITYGLENWOOD	(2)
435+87 R 2	436+01 R 2	TH 28	87 RT	128 RT	SS			X	CITYGLENWOOD	(1)
436+59 R 2	436+70 R 2	TH 28	57 RT	103 RT	SS			X	CITYGLENWOOD	(1)
437+21 R 2	440+09 R 2	TH 28	42 RT	31 RT	PIP	X			CITYGLENWOOD	(2)
437+21 R 2	437+28 R 2	TH 28	42 RT	86 RT	SS			X	CITYGLENWOOD	(1)
439+41 R 2	439+41 R 2	TH 28	75 RT	31 RT	SS			X	CITYGLENWOOD	(1)
440+09 R 2		TH 28	30 RT		MH			X	CITYGLENWOOD	(1)
440+09 R 2	444+06 R 2	TH 28	30 RT	5 LT	PIP	X			CITYGLENWOOD	(2)
440+20 R 2	440+21 R 2	TH 28	77 RT	30 RT	SS			X	CITYGLENWOOD	(1)
440+28 R 2	440+28 R 2	TH 28	74 RT	29 RT	SS			X	CITYGLENWOOD	(1)
440+34 R 2		TH 28	69 LT		MH	X			CITYGLENWOOD	
440+34 R 2	441+08 R 2	TH 28	69 LT	68 LT	PIP	X			CITYGLENWOOD	
440+46 R 2	440+74 R 2	TH 28	79 LT	41 LT	SS		X		CITYGLENWOOD	(7)
440+73 R 2	440+74 R 2	TH 28	25 RT	41 LT	SS			X	CITYGLENWOOD	(1)
440+74 R 2		TH 28	41 LT		MH			X	CITYGLENWOOD	
441+08 R 2		TH 28	68 LT		MH	X			CITYGLENWOOD	
442+72 R 2	442+73 R 2	TH 28	67 RT	7 RT	SS			X	CITYGLENWOOD	(1)
443+00 R 2	443+00 R 2	TH 28	5 RT	77 LT	SS			X	CITYGLENWOOD	(1)
443+57 R 2	444+08 R 2	TH 28	99 RT	99 RT	SS	X			CITYGLENWOOD	

PUBLIC UTILITIES - SANITARY

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
444+06 R 2		TH 28	5 LT		MH			X	CITYGLENWOOD	(1)
444+06 R 2	444+07 R 2	TH 28	5 LT	56 RT	PIP	X			CITYGLENWOOD	
444+06 R 2	538+43 R 3	TH 28	5 LT	3 LT	PIP	X			CITYGLENWOOD	(2)
444+06 R 2	444+07 R 2	TH 28	5 LT	55 LT	PIP	X			CITYGLENWOOD	(2)
444+07 R 2	444+08 R 2	TH 28	142 LT	331 LT	PIP	X			CITYGLENWOOD	
444+07 R 2	444+07 R 2	TH 28	55 LT	142 LT	PIP		X		CITYGLENWOOD	(7)
444+07 R 2	444+08 R 2	TH 28	56 RT	99 RT	PIP		X		CITYGLENWOOD	(7)
444+08 R 2		TH 28	331 LT		MH	X			CITYGLENWOOD	
444+08 R 2	444+09 R 2	TH 28	99 RT	169 RT	PIP	X			CITYGLENWOOD	
444+52 R 2	444+52 R 2	TH 28	4 LT	52 LT	SS			X	CITYGLENWOOD	(1)
445+20 R 2	445+20 R 2	TH 28	4 LT	54 LT	SS			X	CITYGLENWOOD	(1)
445+28 R 2	445+28 R 2	TH 28	63 RT	4 LT	SS			X	CITYGLENWOOD	(1)
445+30 R 2	445+30 R 2	TH 28	49 LT	49 LT	CO	X			CITYGLENWOOD	
445+73 R 2	445+73 R 2	TH 28	3 LT	54 LT	SS			X	CITYGLENWOOD	(1)
446+36 R 2	446+71 R 2	TH 28	3 LT	53 RT	SS			X	CITYGLENWOOD	(1)
447+35 R 2	538+44 R 3	TH 28	332 LT	331 LT	PIP	X			CITYGLENWOOD	(2)
446+66 R 2	446+66 R 2	TH 28	3 LT	51 LT	SS			X	CITYGLENWOOD	(1)
447+31 R 2	447+31 R 2	TH 28	3 LT	51 LT	SS			X	CITYGLENWOOD	(1)
447+61 R 2	538+44 R 3	TH 28	253 LT	253 LT	SS			X	CITYGLENWOOD	(1)
447+71 R 2	538+43 R 3	TH 28	134 LT	133 LT	SS			X	CITYGLENWOOD	(1)
447+71 R 2	538+43 R 3	TH 28	159 LT	159 LT	SS			X	CITYGLENWOOD	(1)
447+72 R 2	538+43 R 3	TH 28	87 LT	87 LT	SS			X	CITYGLENWOOD	(1)
538+43 R 3		TH 28	2 LT		MH			X	CITYGLENWOOD	(1)
538+43 R 3	538+44 R 3	TH 28	159 LT	331 LT	PIP	X			CITYGLENWOOD	(2)
538+43 R 3	542+41 R 3	TH 28	3 LT	0 RT	PIP	X			CITYGLENWOOD	(2)
538+43 R 3	538+43 R 3	TH 28	2 LT	73 LT	PIP	X			CITYGLENWOOD	(2)
538+43 R 3	538+43 R 3	TH 28	73 LT	159 LT	PIP	X			CITYGLENWOOD	(2)
538+44 R 3		TH 28	331 LT		MH			X	CITYGLENWOOD	(1)
538+44 R 3	538+88 R 3	TH 28	331 LT	331 LT	PIP	X			CITYGLENWOOD	(2)
538+44 R 3	538+88 R 3	TH 28	265 LT	265 LT	SS			X	CITYGLENWOOD	(1)
539+19 R 3	539+19 R 3	TH 28	2 LT	49 LT	SS			X	CITYGLENWOOD	(1)
539+20 R 3	539+21 R 3	TH 28	49 RT	2 LT	SS			X	CITYGLENWOOD	(1)
539+44 R 3	539+44 R 3	TH 28	2 LT	48 LT	SS			X	CITYGLENWOOD	(1)
539+46 R 3	539+46 R 3	TH 28	49 RT	2 LT	SS			X	CITYGLENWOOD	(1)
539+88 R 3	539+88 R 3	TH 28	2 LT	48 LT	SS			X	CITYGLENWOOD	(1)
540+12 R 3	540+12 R 3	TH 28	49 RT	1 LT	SS			X	CITYGLENWOOD	(1)
540+14 R 3	540+14 R 3	TH 28	1 LT	48 LT	SS			X	CITYGLENWOOD	(1)
540+34 R 3	540+34 R 3	TH 28	49 RT	1 LT	SS			X	CITYGLENWOOD	(1)
540+45 R 3	540+45 R 3	TH 28	1 LT	52 LT	SS			X	CITYGLENWOOD	(1)
540+74 R 3	540+74 R 3	TH 28	1 LT	48 LT	SS			X	CITYGLENWOOD	(1)
540+76 R 3	540+76 R 3	TH 28	49 RT	1 LT	SS			X	CITYGLENWOOD	(1)
540+92 R 3	540+92 R 3	TH 28	1 LT	48 LT	SS			X	CITYGLENWOOD	(1)
541+16 R 3	541+16 R 3	TH 28	51 RT	1 LT	SS			X	CITYGLENWOOD	(1)
541+17 R 3	541+17 R 3	TH 28	1 LT	47 LT	SS			X	CITYGLENWOOD	(1)
541+72 R 3	541+72 R 3	TH 28	0 LT	48 LT	SS			X	CITYGLENWOOD	(1)
541+83 R 3	541+83 R 3	TH 28	49 RT	0 LT	SS			X	CITYGLENWOOD	(1)
542+41 R 3		TH 28	0 RT		MH			X	CITYGLENWOOD	(1)

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
	OHC = OVERHEAD CABLE	WAT = WATERMAIN
FM = FORCEMAIN	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(2) ABANDON
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT2 OF UT18

25/310

6:00:27 PM 6/27/2017
FILE: R:\1521_TH 28 Glenwood (04)\Design\Sheets\CD610332_ut2.dgn
MODEL: tp3

PUBLIC UTILITIES - SANITARY

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
542+41 R 3	546+37 R 3	TH 28	0 RT	2 RT	PIP	X			CITYGLENWOOD	(2)
542+76 R 3	542+76 R 3	TH 28	0 RT	53 LT	SS			X	CITYGLENWOOD	(1)
542+98 R 3	542+99 R 3	TH 28	0 RT	52 LT	SS			X	CITYGLENWOOD	(1)
543+41 R 3	543+41 R 3	TH 28	1 RT	52 LT	SS			X	CITYGLENWOOD	(1)
543+76 R 3	543+77 R 3	TH 28	1 RT	51 LT	SS			X	CITYGLENWOOD	(1)
544+09 R 3	544+10 R 3	TH 28	1 RT	51 LT	SS			X	CITYGLENWOOD	(1)
544+73 R 3	544+73 R 3	TH 28	1 RT	50 LT	SS			X	CITYGLENWOOD	(1)
545+16 R 3	545+16 R 3	TH 28	57 RT	2 RT	SS			X	CITYGLENWOOD	(1)
546+37 R 3		TH 28	2 RT		MH			X	CITYGLENWOOD	(1)
546+37 R 3	549+74 R 4	TH 28	2 RT	4 RT	PIP	X			CITYGLENWOOD	(2)
546+38 R 3	546+39 R 3	TH 28	266 RT	173 RT	PIP	X			CITYGLENWOOD	
546+39 R 3		TH 28	173 RT		MH	X			CITYGLENWOOD	
546+88 R 4	546+88 R 4	TH 28	2 RT	50 LT	SS			X	CITYGLENWOOD	(1)
547+42 R 4	547+42 R 4	TH 28	84 LT	84 LT	CO	X			CITYGLENWOOD	
547+53 R 4	547+53 R 4	TH 28	52 RT	3 RT	SS			X	CITYGLENWOOD	(1)
548+08 R 4	548+08 R 4	TH 28	3 RT	55 LT	SS			X	CITYGLENWOOD	(1)
548+12 R 4	548+13 R 4	TH 28	54 RT	3 RT	SS			X	CITYGLENWOOD	(1)
548+96 R 4	548+96 R 4	TH 28	3 RT	54 LT	SS			X	CITYGLENWOOD	(1)
549+71 R 4	549+71 R 4	TH 28	55 RT	4 RT	SS			X	CITYGLENWOOD	(1)
549+74 R 4		TH 28	4 RT		MH			X	CITYGLENWOOD	(1)
549+74 R 4	551+44 R 4	TH 28	4 RT	8 RT	PIP	X			CITYGLENWOOD	(2)
550+72 R 4	550+72 R 4	TH 28	6 RT	58 LT	SS			X	CITYGLENWOOD	(1)
550+74 R 4	550+74 R 4	TH 28	57 RT	6 RT	SS			X	CITYGLENWOOD	(1)
551+35 R 4	551+35 R 4	TH 28	7 RT	56 LT	SS			X	CITYGLENWOOD	(1)
551+44 R 4		TH 28	8 RT		MH			X	CITYGLENWOOD	(1)
551+44 R 4	551+44 R 4	TH 28	8 RT	55 LT	SS			X	CITYGLENWOOD	(1)
551+44 R 4	551+44 R 4	TH 28	52 RT	8 RT	SS			X	CITYGLENWOOD	(1)
553+29 R 4	553+30 R 4	TH 28	97 RT	3 RT	SS			X	CITYGLENWOOD	(1)
554+31 R 4	554+32 R 4	TH 28	185 LT	52 LT	PIP		X		CITYGLENWOOD	(7)
554+32 R 4		TH 28	0 RT		MH			X	CITYGLENWOOD	(2)
554+32 R 4	554+33 R 4	TH 28	0 RT	56 RT	PIP	X			CITYGLENWOOD	(2)
554+32 R 4	554+32 R 4	TH 28	52 LT	0 RT	PIP	X			CITYGLENWOOD	(2)
554+32 R 4	558+28 R 4	TH 28	0 RT	3 RT	PIP	X			CITYGLENWOOD	(2)
554+33 R 4	554+36 R 4	TH 28	56 RT	187 RT	PIP		X		CITYGLENWOOD	(7)
554+80 R 4	554+81 R 4	TH 28	1 RT	56 LT	SS			X	CITYGLENWOOD	(1)
555+34 R 4	555+34 R 4	TH 28	51 RT	1 RT	SS			X	CITYGLENWOOD	(1)
555+42 R 4	555+42 R 4	TH 28	1 RT	57 LT	SS			X	CITYGLENWOOD	(1)
555+98 R 4	555+98 R 4	TH 28	52 RT	1 RT	SS			X	CITYGLENWOOD	(1)
556+01 R 4	556+01 R 4	TH 28	1 RT	56 LT	SS			X	CITYGLENWOOD	(1)
556+32 R 4	556+32 R 4	TH 28	2 RT	56 LT	SS			X	CITYGLENWOOD	(1)
556+50 R 4	556+50 R 4	TH 28	52 RT	2 RT	SS			X	CITYGLENWOOD	(1)
556+73 R 4	556+73 R 4	TH 28	2 RT	56 LT	SS			X	CITYGLENWOOD	(1)
557+24 R 4	557+24 R 4	TH 28	53 RT	2 RT	SS			X	CITYGLENWOOD	(1)
558+17 R 4	558+17 R 4	TH 28	53 RT	3 RT	SS			X	CITYGLENWOOD	(1)
558+28 R 4		TH 28	3 RT		MH			X	CITYGLENWOOD	(1)
558+28 R 4	562+24 R 4	TH 28	3 RT	2 RT	PIP	X			CITYGLENWOOD	(2)
558+58 R 4	558+59 R 4	TH 28	3 RT	57 LT	SS			X	CITYGLENWOOD	(1)
559+37 R 4	559+37 R 4	TH 28	47 RT	3 RT	SS			X	CITYGLENWOOD	(1)

PUBLIC UTILITIES - SANITARY

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
559+39 R 4	559+39 R 4	TH 28	3 RT	58 LT	SS			X	CITYGLENWOOD	(1)
560+05 R 4	560+05 R 4	TH 28	3 RT	90 LT	SS			X	CITYGLENWOOD	(1)
561+18 R 4	561+18 R 4	TH 28	48 RT	2 RT	SS			X	CITYGLENWOOD	(1)
561+25 R 4	561+25 R 4	TH 28	2 RT	59 LT	SS			X	CITYGLENWOOD	(1)
561+80 R 4	561+80 R 4	TH 28	48 RT	2 RT	SS			X	CITYGLENWOOD	(1)
562+24 R 4		TH 28	2 RT		MH			X	CITYGLENWOOD	(1)
562+24 R 4	565+81 R 4	TH 28	2 RT	29 LT	PIP			X	CITYGLENWOOD	
562+55 R 4	562+55 R 4	TH 28	2 RT	56 LT	SS	X			CITYGLENWOOD	
562+64 R 4	562+64 R 4	TH 28	87 LT	87 LT	CO	X			CITYGLENWOOD	
562+67 R 4	562+68 R 4	TH 28	2 RT	55 LT	SS	X			CITYGLENWOOD	
562+84 R 4	562+84 R 4	TH 28	58 RT	2 RT	SS	X			CITYGLENWOOD	
563+25 R 4	563+25 R 4	TH 28	55 RT	2 RT	SS	X			CITYGLENWOOD	
564+09 R 4	564+09 R 4	TH 28	72 LT	72 LT	CO	X			CITYGLENWOOD	
564+88 R 4	564+97 R 4	TH 28	65 LT	9 LT	SS	X			CITYGLENWOOD	
565+15 R 4	565+25 R 4	TH 28	12 LT	40 RT	SS	X			CITYGLENWOOD	
565+54 R 4	565+69 R 4	TH 28	21 LT	36 RT	SS	X			CITYGLENWOOD	
565+81 R 4		TH 28	29 LT		MH		X		CITYGLENWOOD	(3)
565+81 R 4	569+04 R 4	TH 28	29 LT	247 LT	PIP			X	CITYGLENWOOD	
37+91	39+54	TH 29	2 RT	2 RT	PIP	X			CITYGLENWOOD	(2)
39+54	41+06	TH 29	2 RT	2 RT	PIP	X			CITYGLENWOOD	
39+49	39+50	TH 29	2 RT	31 RT	PIP	X			CITYGLENWOOD	
41+06		TH 29	2 RT		MH		X		CITYGLENWOOD	(3)
41+06	42+73	TH 29	2 RT	0 RT	PIP	X			CITYGLENWOOD	
44+29	44+30	TH 29	137 LT	1 LT	PIP	X			CITYGLENWOOD	
44+29	44+30	TH 29	114 RT	1 LT	PIP	X			CITYGLENWOOD	
44+30		TH 29	1 LT		MH		X		CITYGLENWOOD	(3)
52+05	52+08	TH 29	387 RT	19 LT	PIP	X			CITYGLENWOOD	
52+08		TH 29	19 LT		MH		X		CITYGLENWOOD	(3)
52+08	52+10	TH 29	19 LT	396 LT	PIP	X			CITYGLENWOOD	

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(2) ABANDON
(3) ADJUST CASTING (SEE SHEETS U-1 - U-22)
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT3 OF UT18
26 / 310

6:00:27 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut3.dgn
MODEL: Tp3

6:00:28 PM

6/27/2017

PUBLIC UTILITIES - WATER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
1190+44 R 24		TH 104	56 RT	56 RT	GV	X			CITYGLENWOOD	
1190+44 R 24	1190+60 R 24	TH 104	56 RT	13 RT	WAT	X			CITYGLENWOOD	
1190+46 R 24	1190+56 R 24	TH 104	50 RT	53 RT	WAT	X			CITYGLENWOOD	
1190+56 R 24		TH 104	53 RT		GV	X			CITYGLENWOOD	
1190+56 R 24	1190+59 R 24	TH 104	53 RT	55 RT	WAT	X			CITYGLENWOOD	
1190+59 R 24		TH 104	55 RT		HYD	X			CITYGLENWOOD	
1190+60 R 24	1192+25 R 24	TH 104	13 RT	10 RT	WAT	X			CITYGLENWOOD	
1192+25 R 24	21+91 R 25	TH 104	10 RT	13 RT	WAT	X			CITYGLENWOOD	
18+24 R 25	18+24 R 25	TH 104	12 RT	26 RT	WS	X			CITYGLENWOOD	
18+24 R 25		TH 104	26 RT		CS	X			CITYGLENWOOD	
18+49 R 25	18+49 R 25	TH 104	12 RT	28 LT	WS	X			CITYGLENWOOD	
18+49 R 25		TH 104	28 LT		CS	X			CITYGLENWOOD	
19+46 R 25	19+46 R 25	TH 104	31 RT	34 RT	WAT	X			CITYGLENWOOD	
19+46 R 25		TH 104	34 RT		HYD	X			CITYGLENWOOD	
19+46 R 25	19+46 R 25	TH 104	12 RT	31 RT	WAT	X			CITYGLENWOOD	
19+46 R 25		TH 104	31 RT		GV	X			CITYGLENWOOD	
21+91 R 25		TH 104	13 RT		GV	X			CITYGLENWOOD	
21+91 R 25	22+27 R 25	TH 104	13 RT	9 RT	WAT	X			CITYGLENWOOD	
21+96 R 25	21+96 R 25	TH 104	13 RT	30 RT	WAT	X			CITYGLENWOOD	
21+96 R 25		TH 104	30 RT		GV	X			CITYGLENWOOD	
22+24 R 25	22+25 R 25	TH 104	28 RT	31 RT	WAT	X			CITYGLENWOOD	
22+25 R 25		TH 104	31 RT		HYD	X			CITYGLENWOOD	
22+24 R 25	22+24 R 25	TH 104	9 RT	27 RT	WAT	X			CITYGLENWOOD	
22+24 R 25		TH 104	27 RT		GV	X			CITYGLENWOOD	
22+27 R 25		TH 104	9 RT		GV	X			CITYGLENWOOD	
22+27 R 25	27+41 R 25	TH 104	9 RT	7 RT	WAT	X			CITYGLENWOOD	
24+15 R 25		TH 104	24 RT		CS	X			CITYGLENWOOD	
24+15 R 25	24+15 R 25	TH 104	24 RT	8 RT	WS	X			CITYGLENWOOD	
25+12 R 25		TH 104	50 LT		GV	X			CITYGLENWOOD	
25+12 R 25	25+12 R 25	TH 104	50 LT	8 RT	WAT	X			CITYGLENWOOD	
25+47 R 25		TH 104	24 RT		CS	X			CITYGLENWOOD	
25+47 R 25	25+47 R 25	TH 104	24 RT	8 RT	WS	X			CITYGLENWOOD	
25+47 R 25		TH 104	24 RT		CS	X			CITYGLENWOOD	
26+03 R 25	26+03 R 25	TH 104	24 RT	8 RT	WS	X			CITYGLENWOOD	
27+04 R 25		TH 104	25 RT		CS	X			CITYGLENWOOD	
27+04 R 25	27+04 R 25	TH 104	25 RT	7 RT	WS	X			CITYGLENWOOD	
27+41 R 25	28+19 R 25	TH 104	7 RT	9 RT	WAT	X			CITYGLENWOOD	
28+19 R 25		TH 104	9 RT		GV	X			CITYGLENWOOD	
28+19 R 25	28+22 R 25	TH 104	9 RT	5 RT	WAT	X			CITYGLENWOOD	
27+64 R 25	27+64 R 25	TH 104	8 RT	26 LT	WS	X			CITYGLENWOOD	
27+64 R 25		TH 104	26 LT		CS	X			CITYGLENWOOD	
27+71 R 25	27+71 R 25	TH 104	8 RT	27 RT	WS	X			CITYGLENWOOD	
27+71 R 25		TH 104	27 RT		CS	X			CITYGLENWOOD	
28+22 R 25	28+22 R 25	TH 104	114 RT	93 LT	WAT	X			CITYGLENWOOD	
28+22 R 25	28+54 R 25	TH 104	82 LT	82 LT	WS	X			CITYGLENWOOD	
28+45 R 25		TH 104	36 LT		HYD	X			CITYGLENWOOD	
28+45 R 25	28+27 R 25	TH 104	36 LT	38 LT	WAT	X			CITYGLENWOOD	
28+27 R 25		TH 104	38 LT		GV	X			CITYGLENWOOD	
28+27 R 25	28+22 R 25	TH 104	38 LT	38 LT	WAT	X			CITYGLENWOOD	
28+22 R 25	28+47 R 25	TH 104	46 RT	45 RT	WS	X			CITYGLENWOOD	
28+22 R 25		TH 104	5 RT		GV	X			CITYGLENWOOD	
28+22 R 25	28+26 R 25	TH 104	5 RT	9 RT	WAT	X			CITYGLENWOOD	
28+26 R 25		TH 104	9 RT		GV	X			CITYGLENWOOD	
28+26 R 25	33+06 R 25	TH 104	9 RT	15 RT	WAT	X			CITYGLENWOOD	

PUBLIC UTILITIES - WATER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
29+61 R 25	29+61 R 25	TH 104	11 RT	25 RT	WS	X			CITYGLENWOOD	
29+61 R 25		TH 104	25 RT		CS	X			CITYGLENWOOD	
30+57 R 25	30+57 R 25	TH 104	12 RT	28 RT	WS	X			CITYGLENWOOD	
30+57 R 25		TH 104	28 RT		CS	X			CITYGLENWOOD	
31+66 R 25	31+66 R 25	TH 104	13 RT	27 RT	WAT	X			CITYGLENWOOD	
31+66 R 25		TH 104	27 RT		HYD			X	CITYGLENWOOD	(1)
33+01 R 25	33+01 R 25	TH 104	15 RT	18 RT	WAT	X			CITYGLENWOOD	
33+01 R 25		TH 104	18 RT		GV	X			CITYGLENWOOD	
32+25 R 25		TH 104	26 RT		GV	X			CITYGLENWOOD	
31+44 R 25	31+45 R 25	TH 104	386 LT	33 LT	WAT	X			CITYGLENWOOD	
31+45 R 25		TH 104	33 LT		GV	X			CITYGLENWOOD	
31+45 R 25	31+43 R 25	TH 104	33 LT	295 RT	WAT	X			CITYGLENWOOD	
31+44 R 25	31+55 R 25	TH 104	68 RT	68 RT	WS	X			CITYGLENWOOD	
31+55 R 25		TH 104	68 RT		CS	X			CITYGLENWOOD	
38+23	38+23	TH 29	26 RT	13 RT	WAT			X	CITYGLENWOOD	(1)
38+23		TH 29	26 RT		GV	X			CITYGLENWOOD	
38+23		TH 29	18 RT		GV	X			CITYGLENWOOD	
38+26		TH 29	26 RT		HYD			X	CITYGLENWOOD	(1)
40+82	44+38	TH 29	14 RT	17 RT	WAT	X			CITYGLENWOOD	
44+36	44+38	TH 29	114 RT	38 RT	WAT	X			CITYGLENWOOD	
44+38	46+33	TH 29	17 RT	17 RT	WAT	X			CITYGLENWOOD	
44+38	44+39	TH 29	38 RT	135 LT	WAT	X			CITYGLENWOOD	
44+38		TH 29	14 RT		GV	X			CITYGLENWOOD	
44+38		TH 29	38 RT		GV	X			CITYGLENWOOD	
44+55		TH 29	26 RT		HYD	X			CITYGLENWOOD	
44+56	44+56	TH 29	27 RT	17 RT	WAT	X			CITYGLENWOOD	
44+56		TH 29	20 RT		GV	X			CITYGLENWOOD	
46+31		TH 29	27 RT		CS	X			CITYGLENWOOD	
46+31	46+31	TH 29	27 RT	17 RT	WS	X			CITYGLENWOOD	
46+33	52+19	TH 29	17 RT	16 RT	WAT	X			CITYGLENWOOD	
46+33		TH 29	17 RT		GV	X			CITYGLENWOOD	
52+14	52+14	TH 29	35 LT	120 RT	WAT	X			CITYGLENWOOD	
52+14	52+21	TH 29	37 RT	37 RT	WAT	X			CITYGLENWOOD	
52+14		TH 29	35 LT		GV	X			CITYGLENWOOD	
52+21		TH 29	37 RT		GV	X			CITYGLENWOOD	
421+49		TH 28	68 LT		HYD			X	CITYGLENWOOD	
426+94	427+62	TH 28	221 LT	130 LT	WAT			X	CITYGLENWOOD	
427+62	429+26	TH 28	130 LT	38 RT	WAT			X	CITYGLENWOOD	
427+62		TH 28	130 LT		GV			X	CITYGLENWOOD	
428+94	429+30	TH 28	67 RT	42 RT	WS		X		CITYGLENWOOD	(7)
429+26	429+59	TH 28	38 RT	72 RT	WAT			X	CITYGLENWOOD	
429+26		TH 28	38 RT		GV			X	CITYGLENWOOD	
429+59	432+82 R 2	TH 28	72 RT	324 RT	WAT			X	CITYGLENWOOD	
429+59	429+70	TH 28	72 RT	60 RT	WAT		X		CITYGLENWOOD	(7)
429+59		TH 28	72 RT		GV			X	CITYGLENWOOD	
429+70		TH 28	60 RT		HYD		X		CITYGLENWOOD	(7)
432+17 R 2	432+82 R 2	TH 28	400 RT	324 RT	WAT			X	CITYGLENWOOD	
432+70 R 2	432+80 R 2	TH 28	314 RT	303 RT	WAT		X		CITYGLENWOOD	(7)
432+77 R 2		TH 28	320 RT		GV			X	CITYGLENWOOD	
432+78 R 2		TH 28	329 RT		GV			X	CITYGLENWOOD	
432+79 R 2		TH 28	302 RT		HYD		X		CITYGLENWOOD	(7)

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(7) ADJUST TO RELOCATED SYSTEM

FILE: R:\1521_TH 28 Glenwood (04)\Design\Sheets\CD610332_ut4.dgn
MODEL: tp3

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT4 OF UT18

PUBLIC UTILITIES - WATER

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
432+82 R 2	433+97 R 2	TH 28	324 RT	178 RT	WAT			X	CITYGLENWOOD	
432+85 R 2		TH 28	320 RT		GV			X	CITYGLENWOOD	
433+90 R 2	433+97 R 2	TH 28	168 RT	178 RT	WAT		X		CITYGLENWOOD	(7)
433+90 R 2	433+98 R 2	TH 28	168 RT	180 RT	WAT		X		CITYGLENWOOD	(7)
433+90 R 2		TH 28	168 RT		GV		X		CITYGLENWOOD	(7)
433+97 R 2	436+57 R 2	TH 28	178 RT	3 RT	WAT			X	CITYGLENWOOD	
434+19 R 2	434+83 R 2	TH 28	153 RT	283 RT	WS		X		CITYGLENWOOD	(7)
434+21 R 2	434+69 R 2	TH 28	151 RT	209 RT	WS		X		CITYGLENWOOD	(7)
434+69 R 2		TH 28	209 RT		CS		X		CITYGLENWOOD	(7)
436+16 R 2	436+31 R 2	TH 28	220 RT	281 RT	WS		X		CITYGLENWOOD	(7)
436+57 R 2	439+74 R 2	TH 28	3 RT	24 LT	WAT			X	CITYGLENWOOD	
436+57 R 2	436+74 R 2	TH 28	3 RT	65 RT	WS			X	CITYGLENWOOD	(1)
436+74 R 2		TH 28	65 RT		CS		X		CITYGLENWOOD	(7)
437+39 R 2	437+48 R 2	TH 28	15 LT	49 RT	WS			X	CITYGLENWOOD	(1)
437+48 R 2		TH 28	49 RT		CS		X		CITYGLENWOOD	(7)
438+29 R 2	438+32 R 2	TH 28	57 LT	57 LT	WAT		X		CITYGLENWOOD	(7)
438+29 R 2		TH 28	57 LT		HYD		X		CITYGLENWOOD	(7)
438+32 R 2	438+33 R 2	TH 28	57 LT	22 LT	WAT		X		CITYGLENWOOD	(7)
438+32 R 2		TH 28	57 LT		GV		X		CITYGLENWOOD	(7)
439+65 R 2		TH 28	24 LT		GV			X	CITYGLENWOOD	
439+74 R 2	440+13 R 2	TH 28	24 LT	24 LT	WAT			X	CITYGLENWOOD	
439+74 R 2	439+74 R 2	TH 28	24 LT	41 RT	WS			X	CITYGLENWOOD	(1)
440+12 R 2	440+12 R 2	TH 28	98 LT	24 LT	WS		X		CITYGLENWOOD	(7)
440+13 R 2	446+08 R 2	TH 28	24 LT	29 LT	WAT			X	CITYGLENWOOD	
440+13 R 2		TH 28	24 LT		GV			X	CITYGLENWOOD	
441+21 R 2	441+21 R 2	TH 28	25 LT	40 RT	WS			X	CITYGLENWOOD	(1)
441+21 R 2		TH 28	40 RT		CS		X		CITYGLENWOOD	(7)
442+63 R 2	442+63 R 2	TH 28	26 LT	44 RT	WS			X	CITYGLENWOOD	(1)
442+63 R 2		TH 28	44 RT		CS		X		CITYGLENWOOD	(7)
442+90 R 2	442+90 R 2	TH 28	43 LT	26 LT	WS			X	CITYGLENWOOD	(1)
442+90 R 2		TH 28	43 LT		CS		X		CITYGLENWOOD	(7)
443+28 R 2	443+29 R 2	TH 28	75 RT	27 LT	WS			X	CITYGLENWOOD	(1)
443+97 R 2	443+97 R 2	TH 28	59 LT	275 LT	WAT	X			CITYGLENWOOD	
444+32 R 2	444+34 R 2	TH 28	39 LT	42 LT	WAT		X		CITYGLENWOOD	(7)
444+32 R 2	444+32 R 2	TH 28	28 LT	39 LT	WAT		X		CITYGLENWOOD	(7)
444+32 R 2		TH 28	39 LT		GV		X		CITYGLENWOOD	(7)
444+34 R 2		TH 28	42 LT		HYD			X	CITYGLENWOOD	(1)
444+49 R 2	444+49 R 2	TH 28	28 LT	39 LT	WS			X	CITYGLENWOOD	(1)
444+49 R 2		TH 28	39 LT		CS		X		CITYGLENWOOD	(7)
445+31 R 2	445+31 R 2	TH 28	43 LT	28 LT	WS			X	CITYGLENWOOD	(1)
445+31 R 2		TH 28	43 LT		CS		X		CITYGLENWOOD	(7)
446+08 R 2	447+87 R 2	TH 28	29 LT	27 LT	WAT			X	CITYGLENWOOD	
446+08 R 2		TH 28	29 LT		GV			X	CITYGLENWOOD	
446+43 R 2	446+43 R 2	TH 28	28 LT	39 LT	WS			X	CITYGLENWOOD	(1)
446+43 R 2		TH 28	39 LT		CS		X		CITYGLENWOOD	(7)
447+30 R 2	538+55 R 3	TH 28	342 LT	342 LT	WAT	X			CITYGLENWOOD	
447+41 R 2	447+41 R 2	TH 28	28 LT	41 LT	WS			X	CITYGLENWOOD	(1)
447+41 R 2		TH 28	41 LT		CS		X		CITYGLENWOOD	(7)
447+61 R 2	538+56 R 3	TH 28	263 LT	263 LT	WS	X			CITYGLENWOOD	

PUBLIC UTILITIES - WATER

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
447+70 R 2		TH 28	342 LT		GV	X			CITYGLENWOOD	
447+71 R 2	538+57 R 3	TH 28	149 LT	149 LT	WS	X			CITYGLENWOOD	
447+71 R 2	538+58 R 3	TH 28	108 RT	108 RT	WS	X			CITYGLENWOOD	
447+72 R 2	538+58 R 3	TH 28	77 LT	77 LT	WS	X			CITYGLENWOOD	
447+76 R 2	538+57 R 3	TH 28	102 LT	102 LT	WS	X			CITYGLENWOOD	
447+76 R 2		TH 28	102 LT		CS	X			CITYGLENWOOD	
447+79 R 2	538+57 R 3	TH 28	128 LT	128 LT	WS	X			CITYGLENWOOD	
447+79 R 2		TH 28	128 LT		CS	X			CITYGLENWOOD	
447+87 R 2	538+58 R 3	TH 28	27 LT	26 LT	WAT			X	CITYGLENWOOD	
447+87 R 2		TH 28	27 LT		GV			X	CITYGLENWOOD	
538+55 R 3	538+59 R 3	TH 28	335 LT	51 RT	WAT	X			CITYGLENWOOD	
538+55 R 3		TH 28	335 LT		GV	X			CITYGLENWOOD	
538+58 R 3	538+59 R 3	TH 28	153 RT	51 RT	WAT	X			CITYGLENWOOD	
538+58 R 3	538+81 R 3	TH 28	26 LT	26 LT	WAT			X	CITYGLENWOOD	
538+58 R 3	538+86 R 3	TH 28	130 RT	130 RT	WS	X			CITYGLENWOOD	
538+58 R 3		TH 28	153 RT		GV	X			CITYGLENWOOD	
538+59 R 3	538+70 R 3	TH 28	52 RT	52 RT	WS	X			CITYGLENWOOD	
538+59 R 3		TH 28	51 RT		GV	X			CITYGLENWOOD	
538+70 R 3		TH 28	52 RT		CS	X			CITYGLENWOOD	
538+81 R 3	539+33 R 3	TH 28	26 LT	28 LT	WAT			X	CITYGLENWOOD	
538+81 R 3		TH 28	26 LT		GV			X	CITYGLENWOOD	
538+83 R 3	538+83 R 3	TH 28	39 LT	26 LT	WAT		X		CITYGLENWOOD	(7)
538+83 R 3		TH 28	39 LT		HYD			X	CITYGLENWOOD	(1)
539+33 R 3	542+01 R 3	TH 28	28 LT	25 LT	WAT			X	CITYGLENWOOD	
539+33 R 3		TH 28	28 LT		GV			X	CITYGLENWOOD	
539+37 R 3	539+37 R 3	TH 28	27 LT	38 LT	WS			X	CITYGLENWOOD	(1)
539+37 R 3		TH 28	39 LT		CS		X		CITYGLENWOOD	(7)
539+38 R 3	539+38 R 3	TH 28	51 RT	27 LT	WS			X	CITYGLENWOOD	(1)
539+62 R 3	539+63 R 3	TH 28	40 RT	27 LT	WS			X	CITYGLENWOOD	(1)
539+62 R 3		TH 28	40 RT		CS		X		CITYGLENWOOD	(7)
539+67 R 3	539+67 R 3	TH 28	41 RT	27 LT	WS			X	CITYGLENWOOD	(1)
539+67 R 3		TH 28	41 RT		CS		X		CITYGLENWOOD	(7)
539+98 R 3	539+98 R 3	TH 28	27 LT	52 LT	WS			X	CITYGLENWOOD	(1)
540+17 R 3	540+17 R 3	TH 28	40 RT	27 LT	WS			X	CITYGLENWOOD	(1)
540+17 R 3		TH 28	40 RT		CS		X		CITYGLENWOOD	(7)
540+20 R 3	540+20 R 3	TH 28	27 LT	58 LT	WS			X	CITYGLENWOOD	(1)
540+33 R 3	540+34 R 3	TH 28	26 LT	52 LT	WS			X	CITYGLENWOOD	(1)
540+61 R 3	540+61 R 3	TH 28	41 RT	26 LT	WS			X	CITYGLENWOOD	(1)
540+61 R 3		TH 28	41 RT		CS		X		CITYGLENWOOD	(7)
540+64 R 3	540+64 R 3	TH 28	26 LT	55 LT	WS			X	CITYGLENWOOD	(1)
540+93 R 3	540+93 R 3	TH 28	26 LT	37 LT	WS			X	CITYGLENWOOD	(1)
540+93 R 3		TH 28	37 LT		CS		X		CITYGLENWOOD	(7)
541+06 R 3	541+06 R 3	TH 28	43 RT	26 LT	WS			X	CITYGLENWOOD	(1)
541+06 R 3		TH 28	43 RT		CS		X		CITYGLENWOOD	(7)
541+15 R 3	541+15 R 3	TH 28	26 LT	44 LT	WS			X	CITYGLENWOOD	(1)
541+15 R 3		TH 28	44 LT		CS		X		CITYGLENWOOD	(7)
541+77 R 3	541+77 R 3	TH 28	51 RT	25 LT	WS			X	CITYGLENWOOD	(1)
541+78 R 3		TH 28	39 LT		CS		X		CITYGLENWOOD	(7)
541+79 R 3	541+79 R 3	TH 28	25 LT	39 LT	WS			X	CITYGLENWOOD	(1)
541+87 R 3	541+88 R 3	TH 28	39 RT	25 LT	WS			X	CITYGLENWOOD	(1)

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
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COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT5 OF UT18
28 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut5.dgn
MODEL: tp3
6:00:29 PM
6/27/2017

PUBLIC UTILITIES - WATER

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
541+87 R 3		TH 28	39 RT		CS		X		CITYGLENWOOD	(7)
542+01 R 3	542+08 R 3	TH 28	25 LT	25 LT	WAT			X	CITYGLENWOOD	
542+01 R 3		TH 28	25 LT		GV			X	CITYGLENWOOD	
542+08 R 3	542+56 R 3	TH 28	25 LT	23 LT	WAT			X	CITYGLENWOOD	
542+08 R 3	542+08 R 3	TH 28	42 LT	25 LT	WAT		X		CITYGLENWOOD	(7)
542+08 R 3		TH 28	42 LT		HYD			X	CITYGLENWOOD	(1)
542+08 R 3		TH 28	34 LT		GV		X		CITYGLENWOOD	(7)
542+54 R 3	542+57 R 3	TH 28	52 RT	64 LT	WAT		X		CITYGLENWOOD	(7)
542+54 R 3	542+56 R 3	TH 28	52 RT	177 RT	WAT		X		CITYGLENWOOD	(7)
542+54 R 3		TH 28	52 RT		GV		X		CITYGLENWOOD	(7)
542+56 R 3	543+66 R 3	TH 28	31 LT	31 LT	WAT			X	CITYGLENWOOD	
542+57 R 3	542+57 R 3	TH 28	184 LT	64 LT	WAT		X		CITYGLENWOOD	(7)
542+57 R 3		TH 28	64 LT		GV		X		CITYGLENWOOD	(7)
543+02 R 3	543+02 R 3	TH 28	31 LT	33 LT	WS		X		CITYGLENWOOD	(7)
543+02 R 3		TH 28	34 LT		CS		X		CITYGLENWOOD	(7)
543+66 R 3	545+26 R 3	TH 28	31 LT	30 LT	WAT			X	CITYGLENWOOD	
543+66 R 3	543+66 R 3	TH 28	31 LT	40 LT	WS			X	CITYGLENWOOD	(1)
544+11 R 3	544+11 R 3	TH 28	31 LT	35 LT	WS			X	CITYGLENWOOD	(1)
544+11 R 3		TH 28	35 LT		CS		X		CITYGLENWOOD	(7)
545+25 R 3	545+26 R 3	TH 28	48 LT	30 LT	WS			X	CITYGLENWOOD	(1)
545+25 R 3	545+28 R 3	TH 28	49 LT	49 LT	WAT		X		CITYGLENWOOD	(7)
545+25 R 3		TH 28	49 LT		CS		X		CITYGLENWOOD	(7)
545+26 R 3	546+22 R 3	TH 28	30 LT	31 LT	WAT			X	CITYGLENWOOD	
545+27 R 3	545+28 R 3	TH 28	30 LT	49 LT	WS			X	CITYGLENWOOD	(1)
545+28 R 3		TH 28	49 LT		CS		X		CITYGLENWOOD	(7)
546+03 R 3	546+03 R 3	TH 28	38 LT	31 LT	WAT		X		CITYGLENWOOD	(7)
546+03 R 3		TH 28	39 LT		HYD			X	CITYGLENWOOD	(1)
546+22 R 3	548+72 R 4	TH 28	31 LT	30 LT	WAT			X	CITYGLENWOOD	
546+22 R 3	546+26 R 3	TH 28	31 LT	191 LT	WAT		X		CITYGLENWOOD	(7)
546+22 R 3		TH 28	48 LT		GV		X		CITYGLENWOOD	(7)
547+77 R 4	547+77 R 4	TH 28	43 RT	31 LT	WS		X		CITYGLENWOOD	(7)
547+77 R 4		TH 28	43 RT		CS		X		CITYGLENWOOD	(7)
547+97 R 4	548+42 R 4	TH 28	74 RT	88 RT	WS			X	CITYGLENWOOD	(1)
548+72 R 4	549+55 R 4	TH 28	30 LT	30 LT	WAT			X	CITYGLENWOOD	
548+72 R 4	548+72 R 4	TH 28	40 RT	30 LT	WS			X	CITYGLENWOOD	(1)
548+72 R 4		TH 28	40 RT		CS		X		CITYGLENWOOD	(7)
549+55 R 4	550+67 R 4	TH 28	30 LT	28 LT	WAT			X	CITYGLENWOOD	
549+55 R 4	549+55 R 4	TH 28	37 LT	30 LT	WS			X	CITYGLENWOOD	(1)
549+55 R 4		TH 28	37 LT		CS		X		CITYGLENWOOD	(7)
549+98 R 4	549+98 R 4	TH 28	39 RT	29 LT	WS			X	CITYGLENWOOD	(1)
549+98 R 4		TH 28	39 RT		CS		X		CITYGLENWOOD	(7)
550+67 R 4	551+68 R 4	TH 28	28 LT	28 LT	WAT			X	CITYGLENWOOD	
550+67 R 4	550+67 R 4	TH 28	36 LT	28 LT	WAT		X		CITYGLENWOOD	(7)
550+67 R 4		TH 28	36 LT		GV		X		CITYGLENWOOD	(7)
550+68 R 4		TH 28	39 LT		HYD			X	CITYGLENWOOD	(1)
550+84 R 4	550+84 R 4	TH 28	40 RT	28 LT	WS			X	CITYGLENWOOD	(1)
550+84 R 4		TH 28	40 RT		CS		X		CITYGLENWOOD	(7)
550+91 R 4	550+92 R 4	TH 28	77 RT	28 LT	WS			X	CITYGLENWOOD	(1)
551+67 R 4	551+68 R 4	TH 28	42 RT	28 LT	WS			X	CITYGLENWOOD	(1)
551+67 R 4		TH 28	42 RT		CS		X		CITYGLENWOOD	(7)
551+68 R 4	553+76 R 4	TH 28	28 LT	28 LT	WAT			X	CITYGLENWOOD	
552+51 R 4	552+51 R 4	TH 28	39 LT	28 LT	WS			X	CITYGLENWOOD	(1)

PUBLIC UTILITIES - WATER

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
552+51 R 4		TH 28	39 LT		CS		X		CITYGLENWOOD	(7)
553+04 R 4	553+05 R 4	TH 28	28 LT	78 LT	WS			X	CITYGLENWOOD	(1)
553+39 R 4	553+40 R 4	TH 28	97 RT	28 LT	WS		X		CITYGLENWOOD	(7)
553+76 R 4	555+05 R 4	TH 28	28 LT	28 LT	WAT			X	CITYGLENWOOD	
553+76 R 4	553+77 R 4	TH 28	28 LT	85 LT	WS			X	CITYGLENWOOD	(1)
554+00 R 4	554+00 R 4	TH 28	28 LT	35 LT	WAT		X		CITYGLENWOOD	(7)
554+00 R 4		TH 28	35 LT		HYD			X	CITYGLENWOOD	(1)
554+00 R 4		TH 28	31 LT		GV		X		CITYGLENWOOD	(7)
554+45 R 4	558+82 R 4	TH 28	14 LT	14 LT	WAT			X	CITYGLENWOOD	
554+45 R 4	554+46 R 4	TH 28	184 LT	163 RT	WAT		X		CITYGLENWOOD	(7)
554+45 R 4		TH 28	51 RT		GV		X		CITYGLENWOOD	(7)
554+45 R 4		TH 28	52 LT		GV		X		CITYGLENWOOD	(7)
554+70 R 4	554+70 R 4	TH 28	43 LT	28 LT	WAT		X		CITYGLENWOOD	(7)
554+71 R 4		TH 28	43 LT		HYD			X	CITYGLENWOOD	(1)
555+05 R 4	557+35 R 4	TH 28	28 LT	29 LT	WAT			X	CITYGLENWOOD	
555+05 R 4	555+05 R 4	TH 28	28 LT	43 LT	WS			X	CITYGLENWOOD	(1)
555+05 R 4		TH 28	43 LT		CS		X		CITYGLENWOOD	(7)
555+23 R 4	555+23 R 4	TH 28	41 RT	14 LT	WS			X	CITYGLENWOOD	(1)
555+23 R 4		TH 28	41 RT		CS		X		CITYGLENWOOD	(7)
555+46 R 4	555+46 R 4	TH 28	43 RT	14 LT	WS			X	CITYGLENWOOD	(1)
555+46 R 4		TH 28	43 RT		CS		X		CITYGLENWOOD	(7)
555+69 R 4	555+70 R 4	TH 28	29 LT	44 LT	WS			X	CITYGLENWOOD	(1)
555+69 R 4		TH 28	44 LT		CS		X		CITYGLENWOOD	(7)
556+19 R 4	556+19 R 4	TH 28	29 LT	45 LT	WS			X	CITYGLENWOOD	(1)
556+19 R 4		TH 28	45 LT		CS		X		CITYGLENWOOD	(7)
556+40 R 4	556+40 R 4	TH 28	52 RT	14 LT	WS		X		CITYGLENWOOD	(7)
556+62 R 4	556+62 R 4	TH 28	29 LT	52 LT	WS			X	CITYGLENWOOD	(1)
556+62 R 4		TH 28	51 LT		CS		X		CITYGLENWOOD	(7)
557+30 R 4	557+30 R 4	TH 28	41 RT	14 LT	WS			X	CITYGLENWOOD	(1)
557+30 R 4		TH 28	41 RT		CS		X		CITYGLENWOOD	(7)
557+35 R 4	558+64 R 4	TH 28	29 LT	30 LT	WAT			X	CITYGLENWOOD	
557+35 R 4	557+35 R 4	TH 28	54 LT	29 LT	WS			X	CITYGLENWOOD	(1)
557+35 R 4		TH 28	54 LT		CS		X		CITYGLENWOOD	(7)
558+24 R 4	558+24 R 4	TH 28	43 RT	14 LT	WS			X	CITYGLENWOOD	(1)
558+24 R 4		TH 28	43 RT		CS		X		CITYGLENWOOD	(7)
558+37 R 4	558+38 R 4	TH 28	14 LT	153 LT	WAT		X		CITYGLENWOOD	(7)
558+37 R 4		TH 28	53 LT		GV		X		CITYGLENWOOD	(7)
558+41 R 4		TH 28	30 LT		GV			X	CITYGLENWOOD	
558+64 R 4	558+64 R 4	TH 28	30 LT	43 LT	WAT		X		CITYGLENWOOD	(7)
558+64 R 4		TH 28	43 LT		HYD		X		CITYGLENWOOD	(7)
558+82 R 4	559+99 R 4	TH 28	14 LT	13 LT	WAT			X	CITYGLENWOOD	
558+82 R 4	558+82 R 4	TH 28	14 LT	74 LT	WS		X		CITYGLENWOOD	(7)
559+32 R 4	559+33 R 4	TH 28	42 RT	13 LT	WS		X		CITYGLENWOOD	(7)
559+32 R 4		TH 28	42 RT		CS		X		CITYGLENWOOD	(7)
559+72 R 4	559+73 R 4	TH 28	13 LT	40 LT	WS		X		CITYGLENWOOD	(7)
559+73 R 4		TH 28	40 LT		CS		X		CITYGLENWOOD	(7)
559+97 R 4	562+31 R 4	TH 28	26 LT	24 LT	WAT			X	CITYGLENWOOD	
559+97 R 4	559+97 R 4	TH 28	26 LT	148 RT	WAT		X		CITYGLENWOOD	(7)
559+97 R 4	559+97 R 4	TH 28	21 LT	21 LT	GV			X	CITYGLENWOOD	
559+99 R 4	568+52 R 4	TH 28	23 LT	215 LT	WAT			X	CITYGLENWOOD	
559+99 R 4	559+99 R 4	TH 28	13 LT	23 LT	WAT			X	CITYGLENWOOD	

SPECIFIC NOTES:
(1) REMOVE
(7) ADJUST TO RELOCATED SYSTEM

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
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OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT6 OF UT18
29/310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut6.dgn
MODEL: tp3
6/27/2017 6:00:30 PM

PUBLIC UTILITIES - WATER X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
560+00 R 4	560+00 R 4	TH 28	23 LT	23 LT	GV			X	CITYGLENWOOD	
560+02 R 4	560+02 R 4	TH 28	26 LT	26 LT	GV			X	CITYGLENWOOD	
560+07 R 4	560+08 R 4	TH 28	26 LT	43 LT	WS		X		CITYGLENWOOD	(7)
560+08 R 4		TH 28	43 LT		CS		X		CITYGLENWOOD	(7)
560+77 R 4	560+77 R 4	TH 28	26 LT	45 LT	WS		X		CITYGLENWOOD	(7)
560+77 R 4		TH 28	45 LT		CS		X		CITYGLENWOOD	(7)
560+84 R 4	560+84 R 4	TH 28	40 RT	23 LT	WS		X		CITYGLENWOOD	(7)
560+84 R 4		TH 28	40 RT		CS		X		CITYGLENWOOD	(7)
561+69 R 4	561+69 R 4	TH 28	42 RT	22 LT	WS		X		CITYGLENWOOD	(7)
561+69 R 4		TH 28	42 RT		CS		X		CITYGLENWOOD	(7)
562+09 R 4	562+09 R 4	TH 28	43 RT	22 LT	WS		X		CITYGLENWOOD	(7)
562+09 R 4		TH 28	43 RT		CS		X		CITYGLENWOOD	(7)
562+31 R 4	562+31 R 4	TH 28	24 LT	148 LT	WAT		X		CITYGLENWOOD	(7)
562+31 R 4	562+43 R 4	TH 28	40 LT	40 LT	WAT		X		CITYGLENWOOD	(7)
562+31 R 4		TH 28	53 LT		GV			X	CITYGLENWOOD	
562+43 R 4		TH 28	40 LT		HYD		X		CITYGLENWOOD	(7)
565+59 R 4	565+88 R 4	TH 28	169 LT	53 LT	WAT		X		CITYGLENWOOD	(7)
565+81 R 4		TH 28	76 LT		GV		X		CITYGLENWOOD	(7)
567+56 R 4	567+67 R 4	TH 28	163 LT	142 LT	WS		X		CITYGLENWOOD	(7)
567+56 R 4	567+56 R 4	TH 28	163 LT	163 LT	CS		X		CITYGLENWOOD	(7)
568+56 R 4		TH 28	208 LT		GV		X		CITYGLENWOOD	(7)

UTILITIES

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	OHC = OVERHEAD CABLE	WAT = WATERMAIN
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SPECIFIC NOTES:
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT7 OF UT18
30 / 310

6:00:31 PM

6/27/2017

PUBLIC UTILITIES - STORM

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
1191+67 R 24	1192+21 R 24	TH 104	24 RT	26 LT	PIP	X			CITYGLENWOOD	
1191+68 R 24	17+63 R 25	TH 104	24 RT	24 RT	PIP	X			CITYGLENWOOD	
1191+68 R 24		TH 104	24 RT		CB	X			CITYGLENWOOD	
1191+78 R 24	1192+21 R 24	TH 104	103 LT	26 LT	PIP	X			CITYGLENWOOD	
1192+21 R 24		TH 104	26 LT		CB	X			CITYGLENWOOD	
17+63 R 25	19+10 R 25	TH 104	24 RT	23 RT	PIP	X			CITYGLENWOOD	
17+63 R 25		TH 104	24 RT		CB	X			CITYGLENWOOD	
19+10 R 25	19+10 R 25	TH 104	49 RT	23 RT	PIP	X			CITYGLENWOOD	
19+10 R 25	21+74 R 25	TH 104	23 RT	22 RT	PIP	X			CITYGLENWOOD	
19+10 R 25		TH 104	49 RT		CB	X			CITYGLENWOOD	
19+10 R 25		TH 104	23 RT		CB	X			CITYGLENWOOD	
21+34 R 25	21+64 R 25	TH 104	37 RT	37 RT	PIP	X			CITYGLENWOOD	
21+64 R 25	21+64 R 25	TH 104	59 RT	37 RT	PIP	X			CITYGLENWOOD	
21+64 R 25	21+74 R 25	TH 104	37 RT	22 RT	PIP	X			CITYGLENWOOD	
21+64 R 25	21+75 R 25	TH 104	37 RT	43 RT	PIP	X			CITYGLENWOOD	
21+64 R 25		TH 104	37 RT		MH	X			CITYGLENWOOD	
21+74 R 25	21+75 R 25	TH 104	22 RT	43 RT	PIP	X			CITYGLENWOOD	
21+74 R 25	23+31 R 25	TH 104	22 RT	23 RT	PIP	X			CITYGLENWOOD	
21+74 R 25	21+98 R 25	TH 104	22 RT	36 RT	PIP	X			CITYGLENWOOD	
21+74 R 25		TH 104	22 RT		MH	X			CITYGLENWOOD	
21+75 R 25		TH 104	43 RT		CB	X			CITYGLENWOOD	
21+98 R 25		TH 104	36 RT		MH	X			CITYGLENWOOD	
27+77 R 25	27+99 R 25	TH 104	25 LT	8 LT	PIP	X			CITYGLENWOOD	
27+78 R 25		TH 104	25 LT		CB	X			CITYGLENWOOD	
27+81 R 25	27+95 R 25	TH 104	23 RT	39 RT	PIP	X			CITYGLENWOOD	
27+82 R 25		TH 104	24 RT		CB	X			CITYGLENWOOD	
27+95 R 25	28+05 R 25	TH 104	39 RT	38 RT	PIP	X			CITYGLENWOOD	
27+95 R 25		TH 104	39 RT		CB	X			CITYGLENWOOD	
27+99 R 25	28+05 R 25	TH 104	8 LT	38 RT	PIP	X			CITYGLENWOOD	
27+99 R 25	27+99 R 25	TH 104	8 LT	118 LT	PIP	X			CITYGLENWOOD	
27+99 R 25	28+51 R 25	TH 104	8 LT	9 LT	PIP	X			CITYGLENWOOD	
27+99 R 25		TH 104	8 LT		MH	X			CITYGLENWOOD	
28+05 R 25	28+05 R 25	TH 104	114 RT	38 RT	PIP	X			CITYGLENWOOD	
28+05 R 25	28+31 R 25	TH 104	38 RT	39 RT	PIP	X			CITYGLENWOOD	
28+05 R 25		TH 104	38 RT		MH	X			CITYGLENWOOD	
28+31 R 25		TH 104	39 RT		CB	X			CITYGLENWOOD	
28+51 R 25	28+51 R 25	TH 104	25 LT	9 LT	PIP	X			CITYGLENWOOD	
28+51 R 25	28+86 R 25	TH 104	25 LT	57 LT	PIP	X			CITYGLENWOOD	
28+51 R 25	31+12 R 25	TH 104	9 LT	10 LT	PIP	X			CITYGLENWOOD	
28+51 R 25		TH 104	25 LT		CB	X			CITYGLENWOOD	
28+51 R 25		TH 104	9 LT		MH	X			CITYGLENWOOD	
28+76 R 25		TH 104	49 LT		MH	X			CITYGLENWOOD	
31+04 R 25	31+12 R 25	TH 104	37 RT	10 LT	PIP			X	CITYGLENWOOD	(1)
31+04 R 25		TH 104	37 RT		CB			X	CITYGLENWOOD	(1) 4.25'
31+04 R 25	31+12 R 25	TH 104	37 LT	10 LT	PIP			X	CITYGLENWOOD	(1)
31+05 R 25		TH 104	36 LT		CB			X	CITYGLENWOOD	(1) 4.8'
31+12 R 25		TH 104	10 LT		MH			X	CITYGLENWOOD	(1) 6.21'

PUBLIC UTILITIES - STORM

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
31+12 R 25	31+52 R 25	TH 104	10 LT	37 RT	PIP			X	CITYGLENWOOD	(1)
31+12 R 25	31+62 R 25	TH 104	10 LT	24 LT	PIP			X	CITYGLENWOOD	(1)
31+52 R 25		TH 104	37 RT		CB			X	CITYGLENWOOD	(1) 4.17'
31+52 R 25	31+63 R 25	TH 104	37 RT	24 RT	PIP			X	CITYGLENWOOD	(1)
31+62 R 25		TH 104	24 LT		CB			X	CITYGLENWOOD	(1) 4.18'
31+63 R 25		TH 104	24 RT		CB			X	CITYGLENWOOD	(1) 3.85'
31+63 R 25	32+04 R 25	TH 104	24 RT	23 RT	PIP			X	CITYGLENWOOD	(1)
32+44 R 25	32+84 R 25	TH 104	23 RT	23 RT	PIP	X			CITYGLENWOOD	
32+84 R 25	32+84 R 25	TH 104	61 RT	24 RT	PIP	X			CITYGLENWOOD	
32+84 R 25		TH 104	23 RT		CB	X			CITYGLENWOOD	
408+73	408+73	TH 28	46 RT	16 RT	PIP	X			CITYGLENWOOD	
410+87	410+88	TH 28	17 RT	34 RT	PIP	X			CITYGLENWOOD	
415+38	415+39	TH 28	39 LT	41 RT	CMP			X	CITYGLENWOOD	(1)
417+56	417+94	TH 28	47 RT	47 RT	CMP			X	CITYGLENWOOD	(1)
418+01	418+54	TH 28	45 LT	43 LT	CMP			X	CITYGLENWOOD	(1)
419+57	420+11	TH 28	42 LT	41 LT	CMP			X	CITYGLENWOOD	(1)
420+91	421+43	TH 28	41 LT	41 LT	CMP			X	CITYGLENWOOD	(1)
421+20	421+71	TH 28	45 RT	46 RT	CMP			X	CITYGLENWOOD	(1)
424+87	425+19	TH 28	35 RT	59 RT	CMP			X	CITYGLENWOOD	(1)
425+20		TH 28	60 RT		CB			X	CITYGLENWOOD	(1) 3'
425+20	426+11	TH 28	60 RT	65 RT	PIP			X	CITYGLENWOOD	(1)
425+46	425+70	TH 28	871 LT	895 LT	PIP	X			CITYGLENWOOD	
425+46	425+71	TH 28	864 LT	890 LT	PIP	X			CITYGLENWOOD	
425+88	426+07	TH 28	718 LT	719 LT	PIP	X			CITYGLENWOOD	
426+09		TH 28	720 LT		MH	X			CITYGLENWOOD	
426+10	426+42	TH 28	720 LT	729 LT	PIP	X			CITYGLENWOOD	
426+11		TH 28	65 RT		CB			X	CITYGLENWOOD	(1) 3'
427+57	427+77	TH 28	524 LT	491 LT	PIP	X			CITYGLENWOOD	
430+00	430+00	TH 28	29 LT	30 RT	PIP			X	CITYGLENWOOD	(1)
430+00	430+03	TH 28	29 RT	78 RT	PIP			X	CITYGLENWOOD	(1)
430+00		TH 28	29 LT		CB			X	CITYGLENWOOD	(1) 3'
430+00		TH 28	30 RT		CB			X	CITYGLENWOOD	(1) 3'
430+03	431+10 R 2	TH 28	78 RT	147 RT	PIP			X	CITYGLENWOOD	(1)
430+03		TH 28	78 RT		MH			X	CITYGLENWOOD	(1)
430+79 R 2		TH 28	180 RT		CB	X			CITYGLENWOOD	
430+81 R 2	432+42 R 2	TH 28	178 RT	330 RT	PIP	X			CITYGLENWOOD	
431+02 R 2	431+10 R 2	TH 28	155 RT	147 RT	PIP	X			CITYGLENWOOD	
431+03 R 2		TH 28	153 RT		CB	X			CITYGLENWOOD	
431+10 R 2	432+73 R 2	TH 28	147 RT	293 RT	PIP	X			CITYGLENWOOD	
431+10 R 2		TH 28	147 RT		MH	X			CITYGLENWOOD	
432+28 R 2	432+52 R 2	TH 28	406 RT	350 RT	PIP	X			CITYGLENWOOD	
432+42 R 2	432+73 R 2	TH 28	330 RT	293 RT	PIP	X			CITYGLENWOOD	
432+42 R 2	432+52 R 2	TH 28	330 RT	350 RT	PIP	X			CITYGLENWOOD	
432+42 R 2		TH 28	331 RT		MH	X			CITYGLENWOOD	
432+51 R 2		TH 28	349 RT		CB	X			CITYGLENWOOD	

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

GENERAL NOTES:
MEASUREMENTS AFTER NOTE 1 INDICATE PAY HEIGHT OF STRUCTURE TO BE REMOVED.

SPECIFIC NOTES:
(1) REMOVE

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut8.dgn
MODEL: tp3

DESIGN TEAM
DRAWN BY: SMN
DESIGNER: AWH
CHECKED BY: AWH

NO.	BY	DATE	REVISIONS

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT8 OF UT18

PUBLIC UTILITIES - STORM

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
432+68 R 2	435+02 R 2	TH 28	405 RT	131 RT	PIP	X			CITYGLENWOOD	
432+73 R 2	432+95 R 2	TH 28	293 RT	300 RT	PIP	X			CITYGLENWOOD	
432+73 R 2		TH 28	293 RT		MH	X			CITYGLENWOOD	
432+94 R 2		TH 28	299 RT		CB	X			CITYGLENWOOD	
434+61 R 2		TH 28	49 LT		CB			X	CITYGLENWOOD	(8) (1) 5.5'
434+61 R 2	434+62 R 2	TH 28	49 LT	29 LT	PIP			X	CITYGLENWOOD	(8)
434+62 R 2		TH 28	30 LT		CB			X	CITYGLENWOOD	(8) (1) 4.8'
434+62 R 2	434+98 R 2	TH 28	30 LT	28 LT	PIP		X		CITYGLENWOOD	(7)
434+62 R 2	434+95 R 2	TH 28	30 LT	77 RT	PIP			X	CITYGLENWOOD	(8)
434+64 R 2		TH 28	104 RT		CB			X	CITYGLENWOOD	(1) 3.86'
434+64 R 2	435+02 R 2	TH 28	104 RT	131 RT	PIP			X	CITYGLENWOOD	
434+95 R 2	435+02 R 2	TH 28	77 RT	131 RT	PIP			X	CITYGLENWOOD	
434+95 R 2		TH 28	77 RT		MH			X	CITYGLENWOOD	(1) 6.47'
435+02 R 2	437+49 R 2	TH 28	131 RT	30 RT	PIP		X		CITYGLENWOOD	(7)
435+02 R 2	435+04 R 2	TH 28	131 RT	141 RT	PIP			X	CITYGLENWOOD	
435+02 R 2		TH 28	131 RT		MH			X	CITYGLENWOOD	(1) 5.6'
435+04 R 2		TH 28	140 RT		CB			X	CITYGLENWOOD	(1) 2.8'
435+16 R 2		TH 28	188 LT		CB	X			CITYGLENWOOD	
435+82 R 2	435+86 R 2	TH 28	81 RT	91 RT	PIP			X	CITYGLENWOOD	
435+86 R 2		TH 28	91 RT		CB			X	CITYGLENWOOD	(1) 2.45'
435+86 R 2	435+86 R 2	TH 28	91 RT	111 RT	PIP			X	CITYGLENWOOD	
436+91 R 2		TH 28	55 LT		CB	X			CITYGLENWOOD	
436+96 R 2	436+98 R 2	TH 28	40 RT	50 RT	PIP			X	CITYGLENWOOD	
436+98 R 2		TH 28	50 RT		CB			X	CITYGLENWOOD	(1) 2.67'
437+49 R 2	439+97 R 2	TH 28	30 RT	24 RT	PIP		X		CITYGLENWOOD	(7)
437+49 R 2		TH 28	30 RT		MH			X	CITYGLENWOOD	(1) 6.7'
437+96 R 2	437+97 R 2	TH 28	26 RT	38 RT	PIP	X			CITYGLENWOOD	
437+97 R 2		TH 28	37 RT		CB			X	CITYGLENWOOD	(1) 4.53'
439+94 R 2	439+97 R 2	TH 28	54 RT	24 RT	PIP			X	CITYGLENWOOD	(1)
439+97 R 2	440+30 R 2	TH 28	24 RT	24 RT	PIP			X	CITYGLENWOOD	(1)
439+97 R 2		TH 28	24 RT		MH			X	CITYGLENWOOD	(1) 7.16'
440+30 R 2	443+54 R 2	TH 28	24 RT	23 RT	PIP		X		CITYGLENWOOD	(7)
440+30 R 2	440+40 R 2	TH 28	24 RT	35 RT	PIP			X	CITYGLENWOOD	
440+30 R 2	440+76 R 2	TH 28	24 RT	25 LT	PIP			X	CITYGLENWOOD	
440+30 R 2		TH 28	24 RT		MH			X	CITYGLENWOOD	(1) 7.4'
440+40 R 2		TH 28	35 RT		CB			X	CITYGLENWOOD	(1) 3.8'
440+76 R 2	440+93 R 2	TH 28	25 LT	34 LT	PIP	X			CITYGLENWOOD	
440+76 R 2	444+14 R 2	TH 28	25 LT	33 LT	PIP			X	CITYGLENWOOD	
440+76 R 2		TH 28	25 LT		MH			X	CITYGLENWOOD	(1) 5.73'
440+93 R 2		TH 28	34 LT		CB			X	CITYGLENWOOD	(1) 2.65'
442+12 R 2	442+12 R 2	TH 28	23 RT	36 RT	PIP	X			CITYGLENWOOD	
442+12 R 2		TH 28	36 RT		CB			X	CITYGLENWOOD	(1) 3.33'
442+12 R 2	442+12 R 2	TH 28	23 RT	60 RT	PIP			X	CITYGLENWOOD	
442+35 R 2		TH 28	48 LT		MH	X			CITYGLENWOOD	
442+49 R 2	442+49 R 2	TH 28	23 RT	59 RT	PIP			X	CITYGLENWOOD	
442+91 R 2		TH 28	33 LT		CB			X	CITYGLENWOOD	(1) 2.8'

PUBLIC UTILITIES - STORM

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
442+91 R 2	442+91 R 2	TH 28	33 LT	29 LT	PIP			X	CITYGLENWOOD	
443+22 R 2	443+22 R 2	TH 28	23 RT	66 RT	PIP			X	CITYGLENWOOD	
443+54 R 2	444+06 R 2	TH 28	23 RT	17 RT	PIP			X	CITYGLENWOOD	
443+54 R 2	443+85 R 2	TH 28	23 RT	52 RT	PIP			X	CITYGLENWOOD	
443+54 R 2		TH 28	23 RT		MH			X	CITYGLENWOOD	(1) 6.08'
443+85 R 2		TH 28	52 RT		CB			X	CITYGLENWOOD	(1) 4.65'
443+85 R 2	444+28 R 2	TH 28	52 RT	50 RT	PIP			X	CITYGLENWOOD	
443+89 R 2		TH 28	51 LT		CB			X	CITYGLENWOOD	(1) 4.2'
443+89 R 2	444+14 R 2	TH 28	51 LT	33 LT	PIP			X	CITYGLENWOOD	
444+06 R 2	445+84 R 2	TH 28	17 RT	20 RT	PIP		X		CITYGLENWOOD	(7)
444+06 R 2		TH 28	17 RT		MH			X	CITYGLENWOOD	(1) 6.82'
444+14 R 2	444+36 R 2	TH 28	33 LT	37 LT	PIP		X		CITYGLENWOOD	(7)
444+14 R 2	444+29 R 2	TH 28	33 LT	49 LT	PIP			X	CITYGLENWOOD	
444+14 R 2		TH 28	33 LT		MH			X	CITYGLENWOOD	(1) 6.38'
444+28 R 2		TH 28	50 RT		CB			X	CITYGLENWOOD	(1) 4.25'
444+28 R 2	444+43 R 2	TH 28	50 RT	36 RT	PIP			X	CITYGLENWOOD	
444+29 R 2		TH 28	49 LT		CB			X	CITYGLENWOOD	(1) 6'
444+29 R 2	444+42 R 2	TH 28	49 LT	73 LT	PIP			X	CITYGLENWOOD	
444+36 R 2		TH 28	37 LT		CB			X	CITYGLENWOOD	(1) 4.4'
444+36 R 2	444+42 R 2	TH 28	37 LT	43 LT	PIP		X		CITYGLENWOOD	(7)
444+42 R 2		TH 28	43 LT		MH			X	CITYGLENWOOD	(1) 4.55'
444+42 R 2	444+83 R 2	TH 28	43 LT	43 LT	PIP		X		CITYGLENWOOD	(7)
444+43 R 2		TH 28	36 RT		CB			X	CITYGLENWOOD	(1) 4.63'
444+83 R 2	444+84 R 2	TH 28	43 LT	56 LT	PIP	X			CITYGLENWOOD	
444+83 R 2		TH 28	43 LT		MH			X	CITYGLENWOOD	(1) 4.17'
444+84 R 2		TH 28	57 LT		CB	X			CITYGLENWOOD	
445+52 R 2	445+53 R 2	TH 28	19 RT	49 LT	PIP			X	CITYGLENWOOD	
445+82 R 2	445+84 R 2	TH 28	96 RT	20 RT	PIP		X		CITYGLENWOOD	(7)
445+83 R 2		TH 28	96 RT		CB	X			CITYGLENWOOD	
445+84 R 2	447+93 R 2	TH 28	20 RT	17 RT	PIP		X		CITYGLENWOOD	(7)
445+84 R 2		TH 28	20 RT		MH			X	CITYGLENWOOD	(1) 5.95'
446+42 R 2	446+42 R 2	TH 28	61 RT	19 RT	PIP			X	CITYGLENWOOD	
446+61 R 2	446+61 R 2	TH 28	19 RT	53 RT	PIP			X	CITYGLENWOOD	
446+97 R 2	446+98 R 2	TH 28	55 LT	18 RT	PIP			X	CITYGLENWOOD	
38+14		TH 29	37 LT		CB			X	CITYGLENWOOD	(1) 2.15'
38+15	38+93	TH 29	37 LT	37 LT	PIP			X	CITYGLENWOOD	(1)
37+70		TH 29	37 LT		CB			X	CITYGLENWOOD	(1) 1.65'
37+62		TH 29	24 LT		CB			X	CITYGLENWOOD	(1) 1.60'
37+62	38+19	TH 29	24 LT	14 LT	PIP			X	CITYGLENWOOD	(1)
36+47	36+14	TH 29	23 LT	9 LT	PIP	X			CITYGLENWOOD	
36+47		TH 29	23 LT		CB	X			CITYGLENWOOD	
447+80 R 2		TH 28	57 LT		CB			X	CITYGLENWOOD	(1) 4.15'
447+80 R 2	447+81 R 2	TH 28	57 LT	6 LT	PIP			X	CITYGLENWOOD	(1)
447+81 R 2	447+93 R 2	TH 28	6 LT	17 RT	PIP			X	CITYGLENWOOD	(1)
447+89 R 2	538+80 R 3	TH 28	359 LT	352 LT	PIP			X	CITYGLENWOOD	(1)
447+93 R 2	447+95 R 2	TH 28	17 RT	155 LT	PIP	X			CITYGLENWOOD	
447+93 R 2	538+81 R 3	TH 28	17 RT	37 LT	PIP	X			CITYGLENWOOD	

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

GENERAL NOTES:
MEASUREMENTS AFTER SPECIFIC NOTE 1 INDICATE PAY HEIGHT OF STRUCTURE TO BE REMOVED.

SPECIFIC NOTES:
(1) REMOVE
(7) ADJUST TO RELOCATED SYSTEM
(8) CONNECTING PIPE LOCATIONS ARE UNKNOWN. VERIFY STORM SEWER IMPACTS PRIOR TO REMOVAL.

DESIGN TEAM
DRAWN BY: SMN
DESIGNER: AWH
CHECKED BY: AWH

NO.	BY	DATE	REVISIONS

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT9 OF UT18
32 / 310

6:00:32 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut9.dgn
MODEL: tp3

PUBLIC UTILITIES - STORM

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
447+93 R 2	538+81 R 3	TH 28	17 RT	37 RT	PIP			X	CITYGLENWOOD	(1)
447+93 R 2	542+30 R 3	TH 28	17 RT	10 RT	PIP			X	CITYGLENWOOD	(1)
447+93 R 2		TH 28	17 RT		MH			X	CITYGLENWOOD	(1) 6.59'
36+14	36+48	TH 29	9 LT	25 RT	PIP	X			CITYGLENWOOD	
36+14		TH 29	9 LT		MH	X			CITYGLENWOOD	
36+48		TH 29	25 RT		CB	X			CITYGLENWOOD	
37+62		TH 29	25 RT		CB			X	CITYGLENWOOD	(1) 2.72'
37+62	37+74	TH 29	25 RT	37 RT	PIP		X		CITYGLENWOOD	(7)
37+74		TH 29	37 RT		CB			X	CITYGLENWOOD	(1) 3.05'
38+11		TH 29	38 RT		CB			X	CITYGLENWOOD	(1) 3.15'
37+74	38+11	TH 29	37 RT	38 RT	PIP		X		CITYGLENWOOD	(7)
538+81 R 3		TH 28	37 LT		CB			X	CITYGLENWOOD	(1) 4.55'
538+81 R 3		TH 28	37 RT		CB			X	CITYGLENWOOD	(1) 4.10'
538+81 R 3	538+94 R 3	TH 28	37 LT	61 LT	PIP			X	CITYGLENWOOD	
541+66 R 3	541+67 R 3	TH 28	52 LT	11 RT	PIP			X	CITYGLENWOOD	
542+20 R 3		TH 28	54 LT		CB			X	CITYGLENWOOD	(1) 4.35'
542+20 R 3	542+30 R 3	TH 28	54 LT	10 RT	PIP			X	CITYGLENWOOD	
542+30 R 3	542+65 R 3	TH 28	10 RT	49 LT	PIP			X	CITYGLENWOOD	
542+30 R 3	542+80 R 3	TH 28	10 RT	37 RT	PIP			X	CITYGLENWOOD	
542+30 R 3		TH 28	10 RT		MH			X	CITYGLENWOOD	(1) 5.40'
542+65 R 3		TH 28	49 LT		CB			X	CITYGLENWOOD	(1) 3.97'
542+65 R 3	542+80 R 3	TH 28	49 LT	31 LT	PIP			X	CITYGLENWOOD	
542+80 R 3		TH 28	31 LT		CB			X	CITYGLENWOOD	(1) 3.87'
542+80 R 3		TH 28	36 RT		CB			X	CITYGLENWOOD	(1) 2.97'
550+03 R 4		TH 28	31 RT		CB			X	CITYGLENWOOD	(1) 2.65'
550+03 R 4	550+13 R 4	TH 28	31 RT	16 RT	PIP			X	CITYGLENWOOD	
550+06 R 4		TH 28	31 LT		CB			X	CITYGLENWOOD	(1) 2.50'
550+06 R 4	550+13 R 4	TH 28	32 LT	16 RT	PIP			X	CITYGLENWOOD	
550+13 R 4	552+02 R 4	TH 28	16 RT	16 RT	PIP			X	CITYGLENWOOD	
550+13 R 4		TH 28	16 RT		MH			X	CITYGLENWOOD	(1) 3.15'
551+24 R 4		TH 28	102 LT		MH	X			CITYGLENWOOD	
552+02 R 4	552+02 R 4	TH 28	67 RT	16 RT	PIP		X		CITYGLENWOOD	(7)
552+02 R 4	552+02 R 4	TH 28	28 LT	16 RT	PIP		X		CITYGLENWOOD	(7)
552+02 R 4	552+02 R 4	TH 28	78 LT	28 LT	PIP		X		CITYGLENWOOD	(7)
552+02 R 4	553+22 R 4	TH 28	16 RT	16 RT	PIP			X	CITYGLENWOOD	(1)
552+02 R 4		TH 28	16 RT		MH			X	CITYGLENWOOD	(1) 8.36'
552+02 R 4		TH 28	28 LT		MH			X	CITYGLENWOOD	(1) 8.25'
552+45 R 4		TH 28	103 LT		CB	X			CITYGLENWOOD	
553+21 R 4		TH 28	26 LT		CB			X	CITYGLENWOOD	(1) 3.22'
553+21 R 4	553+22 R 4	TH 28	26 LT	16 RT	PIP			X	CITYGLENWOOD	
553+22 R 4		TH 28	16 RT		MH			X	CITYGLENWOOD	(1) 4.52'
553+22 R 4		TH 28	26 RT		CB			X	CITYGLENWOOD	(1) 3.15'
553+22 R 4	554+68 R 4	TH 28	16 RT	16 RT	PIP			X	CITYGLENWOOD	(1)
553+22 R 4	553+22 R 4	TH 28	26 RT	16 RT	PIP			X	CITYGLENWOOD	
554+68 R 4	557+01 R 4	TH 28	16 RT	16 RT	PIP	X			CITYGLENWOOD	
554+68 R 4	554+70 R 4	TH 28	16 RT	26 LT	PIP			X	CITYGLENWOOD	
554+68 R 4	554+70 R 4	TH 28	16 RT	26 RT	PIP			X	CITYGLENWOOD	
554+68 R 4		TH 28	16 RT		MH			X	CITYGLENWOOD	(1) 3.95'

PUBLIC UTILITIES - STORM

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
554+70 R 4		TH 28	26 RT		CB			X	CITYGLENWOOD	(1) 3.2'
554+70 R 4		TH 28	26 LT		CB			X	CITYGLENWOOD	(1) 3.42'
557+01 R 4	557+01 R 4	TH 28	16 RT	26 LT	PIP	X			CITYGLENWOOD	
557+01 R 4	557+01 R 4	TH 28	26 RT	16 RT	PIP	X			CITYGLENWOOD	
557+01 R 4	559+57 R 4	TH 28	16 RT	16 RT	PIP	X			CITYGLENWOOD	
557+01 R 4		TH 28	26 LT		CB	X			CITYGLENWOOD	
557+01 R 4		TH 28	26 RT		CB	X			CITYGLENWOOD	
557+01 R 4		TH 28	16 RT		MH	X			CITYGLENWOOD	
558+60 R 4	558+60 R 4	TH 28	16 RT	26 LT	PIP	X			CITYGLENWOOD	
558+60 R 4		TH 28	26 LT		CB	X			CITYGLENWOOD	
559+57 R 4	561+90 R 4	TH 28	16 RT	17 RT	PIP	X			CITYGLENWOOD	
559+57 R 4	559+57 R 4	TH 28	26 RT	16 RT	PIP	X			CITYGLENWOOD	
559+57 R 4	560+27 R 4	TH 28	26 RT	26 RT	PIP	X			CITYGLENWOOD	
559+57 R 4		TH 28	26 RT		CB	X			CITYGLENWOOD	
559+57 R 4		TH 28	16 RT		MH	X			CITYGLENWOOD	
560+27 R 4		TH 28	26 RT		CB	X			CITYGLENWOOD	
561+87 R 4	562+55 R 4	TH 28	26 LT	26 LT	PIP	X			CITYGLENWOOD	
561+87 R 4	561+90 R 4	TH 28	26 LT	17 RT	PIP	X			CITYGLENWOOD	
561+87 R 4		TH 28	26 LT		CB	X			CITYGLENWOOD	
561+90 R 4	564+44 R 4	TH 28	17 RT	17 RT	PIP	X			CITYGLENWOOD	
561+90 R 4	561+91 R 4	TH 28	17 RT	26 RT	PIP	X			CITYGLENWOOD	
561+90 R 4		TH 28	17 RT		MH	X			CITYGLENWOOD	
561+91 R 4		TH 28	26 RT		CB	X			CITYGLENWOOD	
562+55 R 4		TH 28	26 LT		CB	X			CITYGLENWOOD	
564+40 R 4	564+44 R 4	TH 28	30 LT	17 RT	PIP	X			CITYGLENWOOD	
564+40 R 4		TH 28	29 LT		CB	X			CITYGLENWOOD	
564+44 R 4	564+44 R 4	TH 28	17 RT	26 RT	PIP	X			CITYGLENWOOD	
564+44 R 4		TH 28	26 RT		CB	X			CITYGLENWOOD	
564+44 R 4		TH 28	17 RT		MH	X			CITYGLENWOOD	
566+54 R 4	566+72 R 4	TH 28	85 LT	38 LT	PIP	X			CITYGLENWOOD	
566+54 R 4		TH 28	85 LT		CB	X			CITYGLENWOOD	
566+72 R 4	567+02 R 4	TH 28	38 LT	26 LT	PIP	X			CITYGLENWOOD	
566+72 R 4	567+02 R 4	TH 28	26 RT	26 LT	PIP	X			CITYGLENWOOD	
566+72 R 4	567+01 R 4	TH 28	26 RT	48 RT	PIP	X			CITYGLENWOOD	
566+72 R 4		TH 28	38 LT		CB	X			CITYGLENWOOD	
566+72 R 4		TH 28	26 RT		CB	X			CITYGLENWOOD	
567+02 R 4		TH 28	26 LT		CB	X			CITYGLENWOOD	
569+00 R 4	569+00 R 4	TH 28	137 RT	46 LT	PIP	X			CITYGLENWOOD	
38+14	38+24	TH 29	37 LT	23 LT	PIP			X	CITYGLENWOOD	(7)
38+19	41+30	TH 29	14 LT	18 LT	PIP	X			CITYGLENWOOD	
38+19		TH 29	14 LT		MH			X	CITYGLENWOOD	(1) 4.7'
38+19	38+24	TH 29	14 LT	23 LT	PIP		X		CITYGLENWOOD	(7)
38+24		TH 29	23 LT		CB			X	CITYGLENWOOD	(1) 3.1'
39+61	39+64	TH 29	55 RT	24 RT	PIP	X			CITYGLENWOOD	
39+61		TH 29	55 RT		CB	X			CITYGLENWOOD	
39+65	39+81	TH 29	24 RT	4 LT	PIP	X			CITYGLENWOOD	
39+65		TH 29	24 RT		CB	X			CITYGLENWOOD	
40+73	41+18	TH 29	24 LT	89 LT	PIP	X			CITYGLENWOOD	

GENERAL NOTES:
MEASUREMENTS AFTER SPECIFIC NOTE 1 INDICATE PAY HEIGHT OF STRUCTURE TO BE REMOVED.

SPECIFIC NOTES:
(1) REMOVE
(7) ADJUST TO RELOCATED SYSTEM

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
	OHC = OVERHEAD CABLE	WAT = WATERMAIN
FM = FORCEMAIN	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

DESIGN TEAM
DRAWN BY: SMN
DESIGNER: AWH
CHECKED BY: AWH

NO.	BY	DATE	REVISIONS

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.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590 UT10 OF UT18

33 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut10.dgn
MODEL: tp3

6:00:32 PM
6/27/2017

PUBLIC UTILITIES - STORM

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
40+74	40+89	TH 29	24 RT	37 RT	PIP	X			CITYGLENWOOD	
40+74		TH 29	24 RT		CB	X			CITYGLENWOOD	
40+74		TH 29	24 LT		CB	X			CITYGLENWOOD	
40+89	41+28	TH 29	37 RT	33 RT	PIP	X			CITYGLENWOOD	
40+89		TH 29	37 RT		CB	X			CITYGLENWOOD	
41+28	41+38	TH 29	33 RT	24 RT	PIP	X			CITYGLENWOOD	
41+28		TH 29	33 RT		CB	X			CITYGLENWOOD	
41+30	41+30	TH 29	239 LT	18 LT	PIP	X			CITYGLENWOOD	
41+30	41+37	TH 29	18 LT	24 LT	PIP	X			CITYGLENWOOD	
41+30	41+38	TH 29	18 LT	24 RT	PIP	X			CITYGLENWOOD	
41+30		TH 29	18 LT		MH	X			CITYGLENWOOD	
41+37		TH 29	24 LT		CB	X			CITYGLENWOOD	
41+38		TH 29	24 RT		CB	X			CITYGLENWOOD	
48+93	48+94	TH 29	24 LT	74 LT	PIP	X			CITYGLENWOOD	
48+93		TH 29	24 LT		CB	X			CITYGLENWOOD	
48+93		TH 29	24 LT		CB	X			CITYGLENWOOD	
49+11		TH 29	54 LT		CB	X			CITYGLENWOOD	
49+12	49+12	TH 29	59 RT	27 RT	PIP	X			CITYGLENWOOD	
49+12		TH 29	42 RT		CB	X			CITYGLENWOOD	
49+13	49+32	TH 29	34 RT	24 RT	PIP	X			CITYGLENWOOD	
49+13		TH 29	34 RT		CB	X			CITYGLENWOOD	
49+32	49+66	TH 29	24 RT	44 RT	PIP	X			CITYGLENWOOD	
49+32		TH 29	24 RT		CB	X			CITYGLENWOOD	
49+48	49+78	TH 29	24 RT	24 RT	PIP	X			CITYGLENWOOD	
49+78		TH 29	24 RT		CB	X			CITYGLENWOOD	
51+23	51+65	TH 29	41 LT	41 LT	PIP	X			CITYGLENWOOD	
51+52	51+52	TH 29	22 RT	50 RT	PIP	X			CITYGLENWOOD	
51+52		TH 29	50 RT		CB	X			CITYGLENWOOD	
51+59 R 2		TH 29	25 RT		CB	X			CITYGLENWOOD	
51+65	52+29	TH 29	41 LT	32 RT	PIP	X			CITYGLENWOOD	
51+65		TH 29	41 LT		CB	X			CITYGLENWOOD	
51+92	52+29	TH 29	37 RT	32 RT	PIP	X			CITYGLENWOOD	
51+92		TH 29	36 RT		CB	X			CITYGLENWOOD	
52+29	52+29	TH 29	116 RT	32 RT	PIP	X			CITYGLENWOOD	
52+29	52+39	TH 29	32 RT	23 RT	PIP	X			CITYGLENWOOD	
52+29		TH 29	32 RT		CB	X			CITYGLENWOOD	
52+30	52+89	TH 29	32 RT	32 RT	PIP	X			CITYGLENWOOD	
52+39		TH 29	24 RT		CB	X			CITYGLENWOOD	
55+16	55+64	TH 29	83 RT	99 RT	PIP	X			CITYGLENWOOD	
55+58	55+59	TH 29	24 LT	53 LT	PIP	X			CITYGLENWOOD	
55+58		TH 29	24 LT		CB	X			CITYGLENWOOD	
55+70	55+72	TH 29	95 RT	24 RT	PIP	X			CITYGLENWOOD	
55+72		TH 29	24 RT		CB	X			CITYGLENWOOD	

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POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

DESIGN TEAM
DRAWN BY: SMN
DESIGNER: AWH
CHECKED BY: AWH

NO.	BY	DATE	REVISIONS

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT11 OF UT18

34/310

6:00:34 PM 6/27/2017

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_utl1.dgn
MODEL: tp3

PUBLIC UTILITIES - GAS

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
20+13 R 25	21+63 R 25	TH 104	32 LT	82 LT	GAS	X			CENTERPOINT	
29+69 R 25	29+71 R 25	TH 104	66 LT	67 RT	GAS	X			CENTERPOINT	
421+21	421+76	TH 28	102 LT	38 RT	GAS			X	CENTERPOINT	
422+55	424+92	TH 28	175 RT	82 RT	GAS	X			CENTERPOINT	
424+92	425+81	TH 28	82 RT	63 RT	GAS		X		CENTERPOINT	(7)
425+81	425+86	TH 28	63 RT	235 RT	GAS	X			CENTERPOINT	
427+59	427+86	TH 28	96 LT	50 LT	GAS		X		CENTERPOINT	(7)
427+86	428+01	TH 28	50 LT	35 RT	GAS			X	CENTERPOINT	
428+01	428+98	TH 28	35 RT	23 RT	GAS			X	CENTERPOINT	
428+98	429+31	TH 28	23 RT	51 RT	GAS			X	CENTERPOINT	
429+31	429+25	TH 28	51 RT	57 RT	GAS		X		CENTERPOINT	(7)
429+25	430+33	TH 28	57 RT	152 RT	GAS	X			CENTERPOINT	
432+80 R 2	434+28 R 2	TH 28	293 RT	119 RT	GAS	X			CENTERPOINT	
434+28 R 2	434+58 R 2	TH 28	119 RT	91 RT	GAS		X		CENTERPOINT	(7)
434+58 R 2	435+40 R 2	TH 28	91 RT	35 RT	GAS			X	CENTERPOINT	
435+40 R 2	443+83 R 2	TH 28	35 RT	118 LT	GAS			X	CENTERPOINT	
439+81 R 2	440+25 R 2	TH 28	57 LT	44 LT	GAS			X	CENTERPOINT	
433+90 R 2	434+63 R 2	TH 28	262 RT	181 RT	GAS	X			CENTERPOINT	
434+63 R 2	434+97 R 2	TH 28	181 RT	152 RT	GAS		X		CENTERPOINT	(7)
434+97 R 2	436+93 R 2	TH 28	152 RT	57 RT	GAS			X	CENTERPOINT	
443+08 R 2	443+77 R 2	TH 28	39 RT	78 RT	GAS			X	CENTERPOINT	
443+10 R 2	443+10 R 2	TH 28	39 RT	68 RT	GAS			X	CENTERPOINT	
447+71 R 2	538+71 R 3	TH 28	178 LT	180 LT	GAS	X			CENTERPOINT	
546+34 R 3	546+34 R 3	TH 28	258 RT	173 RT	GAS	X			CENTERPOINT	
550+19 R 4	550+20 R 4	TH 28	36 LT	49 RT	GAS			X	CENTERPOINT	
550+19 R 4	554+53 R 4	TH 28	36 LT	36 LT	GAS			X	CENTERPOINT	
553+28 R 4	553+28 R 4	TH 28	52 LT	33 LT	GAS			X	CENTERPOINT	
553+57 R 4	553+57 R 4	TH 28	32 LT	52 LT	GAS			X	CENTERPOINT	
552+31 R 4		TH 28	66 RT		LP			X	CENTERPOINT	
558+01 R 4	558+06 R 4	TH 28	32 LT	31 RT	GAS			X	CENTERPOINT	
558+06 R 4	559+65 R 4	TH 28	31 RT	33 RT	GAS			X	CENTERPOINT	
559+65 R 4	559+66 R 4	TH 28	33 RT	176 RT	GAS		X		CENTERPOINT	(7)
558+45 R 4	558+46 R 4	TH 28	55 LT	34 LT	GAS			X	CENTERPOINT	
562+00 R 4	562+42 R 4	TH 28	32 LT	32 LT	GAS			X	CENTERPOINT	
565+75 R 4	565+90 R 4	TH 28	115 LT	68 LT	GAS			X	CENTERPOINT	
565+90 R 4	568+85 R 4	TH 28	68 LT	269 LT	GAS			X	CENTERPOINT	
52+31	52+32	TH 29	31 LT	37 RT	GAS	X			CENTERPOINT	
54+93	54+97	TH 29	42 RT	29 LT	GAS	X			CENTERPOINT	
58+86	59+71	TH 29	27 LT	28 LT	GAS	X			CENTERPOINT	

UTILITIES

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XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT12 OF UT18

PUBLIC UTILITIES - POWER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
414+61	416+20	TH 28	65 LT	71 LT	OHP	X			XCEL	
416+20		TH 28	71 LT		P			X	XCEL	
416+20	418+46	TH 28	71 LT	70 LT	OHP			X	XCEL	
416+20	416+82	TH 28	71 LT	76 LT	OHP		X		XCEL	(7)
416+82		TH 28	76 LT		LP	X			XCEL	
416+82	418+15	TH 28	76 LT	76 LT	OHP	X			XCEL	
418+15		TH 28	76 LT		LP	X			XCEL	
418+15	418+41	TH 28	76 LT	75 LT	OHP	X			XCEL	
418+41		TH 28	75 LT		LP	X			XCEL	
418+41	418+46	TH 28	75 LT	70 LT	OHP		X		XCEL	(7)
418+46		TH 28	70 LT		P			X	XCEL	
418+46	419+55	TH 28	70 LT	70 LT	OHP			X	XCEL	
419+55		TH 28	70 LT		P			X	XCEL	
419+55	419+61	TH 28	70 LT	75 LT	OHP	X			XCEL	
419+55	420+73	TH 28	70 LT	73 LT	OHP		X		XCEL	(7)
419+61		TH 28	75 LT		LP	X			XCEL	
419+61	420+73	TH 28	75 LT	73 LT	OHP	X			XCEL	
420+73		TH 28	73 LT		P		X		XCEL	(6)
420+73	422+30	TH 28	73 LT	68 LT	OHP		X		XCEL	(7)
422+30		TH 28	68 LT		P		X		XCEL	(6)
422+30	422+92	TH 28	68 LT	87 LT	OHP	X			XCEL	
422+30	423+90	TH 28	68 LT	67 LT	OHP	X			XCEL	(4)
422+92		TH 28	87 LT		P	X			XCEL	
422+92	423+90	TH 28	87 LT	67 LT	OHP	X			XCEL	
423+09		TH 28	111 RT		P	X			XCEL	
423+09	424+10	TH 28	111 RT	71 RT	OHP	X			XCEL	
423+13		TH 28	118 RT		LP	X			XCEL	
423+90		TH 28	67 LT		P	X			XCEL	
423+90	424+10	TH 28	67 LT	71 RT	OHP	X			XCEL	
423+90	425+31	TH 28	67 LT	49 LT	OHP	X			XCEL	
424+10		TH 28	71 RT		P	X			XCEL	
425+31		TH 28	49 LT		P			X	XCEL	
425+31	426+91	TH 28	49 LT	43 LT	OHP			X	XCEL	
425+66		TH 28	917 LT		P	X			XCEL	
425+66	426+45	TH 28	917 LT	745 LT	OHP	X			XCEL	
426+45		TH 28	745 LT		P	X			XCEL	
426+45	427+09	TH 28	745 LT	630 LT	OHP	X			XCEL	
426+91		TH 28	43 LT		P			X	XCEL	
426+91	428+63	TH 28	43 LT	48 LT	OHP			X	XCEL	
427+03	427+77	TH 28	224 LT	146 LT	OHP	X			XCEL	
427+09		TH 28	630 LT		P	X			XCEL	
427+09	427+88	TH 28	630 LT	506 LT	OHP	X			XCEL	
427+76		TH 28	143 LT		P	X			XCEL	
427+77	428+63	TH 28	146 LT	48 LT	OHP	X			XCEL	
427+77	429+30	TH 28	146 LT	329 LT	OHP	X			XCEL	
427+88		TH 28	506 LT		P	X			XCEL	
427+88	429+30	TH 28	506 LT	329 LT	OHP	X			XCEL	
428+63		TH 28	34 LT		LP			X	XCEL	(1)
428+63		TH 28	48 LT		P	X			XCEL	
428+63	429+63	TH 28	48 LT	55 RT	OHP	X			XCEL	(4)

PUBLIC UTILITIES - POWER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
428+63	431+46 R 2	TH 28	48 LT	46 LT	OHP	X			XCEL	
429+63		TH 28	55 RT		P			X	XCEL	(1)
429+63	430+80 R 2	TH 28	55 RT	131 RT	OHP	X			XCEL	
430+80 R 2		TH 28	131 RT		P	X			XCEL	
431+46 R 2		TH 28	27 LT		LP			X	XCEL	(1)
431+46 R 2		TH 28	46 LT		P		X		XCEL	(6)
431+46 R 2	433+98 R 2	TH 28	46 LT	44 LT	OHP		X		XCEL	(7)
433+98 R 2		TH 28	26 LT		LP			X	XCEL	(1)
433+98 R 2		TH 28	44 LT		P		X		XCEL	(6)
433+98 R 2	434+32 R 2	TH 28	44 LT	43 LT	OHP	X			XCEL	
434+32 R 2	435+42 R 2	TH 28	43 LT	45 LT	OHP	X			XCEL	
434+32 R 2		TH 28	43 LT		P	X			XCEL	
434+58 R 2		TH 28	186 RT		P			X	XCEL	
434+58 R 2	434+78 R 2	TH 28	186 RT	76 RT	OHP			X	XCEL	
434+63 R 2		TH 28	187 RT		LP			X	XCEL	(1)
434+78 R 2		TH 28	76 RT		P			X	XCEL	(1)
434+85 R 2		TH 28	78 RT		LP			X	XCEL	(1)
435+42 R 2		TH 28	45 LT		P	X			XCEL	
435+42 R 2	436+72 R 2	TH 28	45 LT	43 LT	OHP	X			XCEL	
436+72 R 2		TH 28	29 LT		LP			X	XCEL	(1)
436+72 R 2		TH 28	43 LT		P			X	XCEL	
438+50 R 2		TH 28	39 RT		LP	X			XCEL	
438+50 R 2	439+82 R 2	TH 28	39 RT	39 RT	PBUR	X			XCEL	
439+82 R 2		TH 28	39 RT		LP	X			XCEL	
439+82 R 2	440+96 R 2	TH 28	39 RT	38 RT	PBUR	X			XCEL	
440+96 R 2		TH 28	38 RT		LP	X			XCEL	
440+96 R 2	442+08 R 2	TH 28	38 RT	39 RT	PBUR	X			XCEL	
441+07 R 2		TH 28	40 LT		PBOX	X			XCEL	
442+08 R 2		TH 28	39 RT		LP	X			XCEL	
442+08 R 2	443+35 R 2	TH 28	39 RT	39 RT	PBUR	X			XCEL	
442+49 R 2		TH 28	37 LT		LP	X			XCEL	
442+49 R 2	443+68 R 2	TH 28	37 LT	40 LT	OHP	X			XCEL	
443+35 R 2		TH 28	39 RT		LP	X			XCEL	
443+68 R 2		TH 28	40 LT		LP	X			XCEL	
443+68 R 2	443+81 R 2	TH 28	40 LT	40 LT	OHP			X	XCEL	
443+78 R 2	443+81 R 2	TH 28	304 LT	40 LT	OHP			X	XCEL	
443+81 R 2		TH 28	40 LT		P			X	XCEL	
443+81 R 2		TH 28	81 RT		P	X			XCEL	
443+81 R 2	443+81 R 2	TH 28	40 LT	81 RT	OHP			X	XCEL	(4)
443+81 R 2	444+45 R 2	TH 28	40 LT	40 LT	OHP			X	XCEL	
443+81 R 2	444+47 R 2	TH 28	81 RT	38 RT	OHP	X			XCEL	
444+45 R 2		TH 28	40 LT		LP	X			XCEL	
444+45 R 2	445+53 R 2	TH 28	40 LT	40 LT	OHP	X			XCEL	
444+47 R 2		TH 28	38 RT		LP	X			XCEL	
445+51 R 2		TH 28	39 RT		LP	X			XCEL	
445+51 R 2	446+40 R 2	TH 28	39 RT	39 RT	PBUR	X			XCEL	
445+53 R 2		TH 28	40 LT		LP	X			XCEL	
445+53 R 2	446+50 R 2	TH 28	40 LT	39 LT	OHP	X			XCEL	
446+40 R 2		TH 28	39 RT		LP	X			XCEL	
446+40 R 2	447+69 R 2	TH 28	39 RT	48 RT	PBUR	X			XCEL	

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
	OHC = OVERHEAD CABLE	WAT = WATERMAIN
FM = FORCEMAIN	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(4) OVERHEAD CROSSINGS OF MNDOT HIGHWAYS MUST MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 22'
(6) ADJUST ANCHOR
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT13 OF UT18

36/310

6:00:37 PM 6/27/2017

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut13.dgn
MODEL: tp3

PUBLIC UTILITIES - POWER

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
446+50 R 2		TH 28	39 LT		LP	X			XCEL	
447+60 R 2		TH 28	40 LT		SGL			X	MNDOT	
447+60 R 2	447+65 R 2	TH 28	40 LT	44 LT	PBUR			X	MNDOT	
447+65 R 2		TH 28	183 LT		P		X		XCEL	(7)
447+65 R 2		TH 28	44 LT		PBOX			X	MNDOT	
447+65 R 2	538+68 R 3	TH 28	183 LT	184 LT	OHP		X		XCEL	(4)
447+65 R 2	447+79 R 2	TH 28	44 LT	138 LT	PBUR			X	XCEL	
447+65 R 2	538+75 R 3	TH 28	44 LT	48 LT	PBUR			X	MNDOT	
447+69 R 2		TH 28	48 RT		PBOX			X	MNDOT	
447+69 R 2	538+77 R 3	TH 28	48 RT	48 RT	PBUR			X	MNDOT	
447+69 R 2	447+77 R 2	TH 28	48 RT	58 RT	PBUR			X	MNDOT	
447+71 R 2	538+68 R 3	TH 28	77 LT	184 LT	OHP		X		XCEL	(4)
447+71 R 2	538+68 R 3	TH 28	102 LT	184 LT	OHP		X		XCEL	(4)
447+77 R 2		TH 28	58 RT		SGL			X	MNDOT	
447+78 R 2		TH 28	294 LT		LP			X	XCEL	
447+78 R 2		TH 28	138 LT		LP			X	XCEL	
447+78 R 2	447+79 R 2	TH 28	294 LT	138 LT	PBUR			X	XCEL	
538+68 R 3		TH 28	184 LT		P			X	XCEL	
538+68 R 3	538+69 R 3	TH 28	184 LT	216 LT	OHP			X	XCEL	
538+68 R 3	539+41 R 3	TH 28	184 LT	196 LT	OHP		X		XCEL	(7)
538+68 R 3	538+71 R 3	TH 28	184 LT	187 LT	PBUR			X	XCEL	
538+69 R 3		TH 28	216 LT		LP			X	XCEL	
538+69 R 3		TH 28	137 RT		LP			X	XCEL	
538+69 R 3		TH 28	58 LT		SGL			X	MNDOT	
538+69 R 3	538+70 R 3	TH 28	137 RT	124 RT	PBUR			X	XCEL	
538+69 R 3	538+75 R 3	TH 28	58 LT	48 LT	PBUR			X	MNDOT	
538+70 R 3	538+77 R 3	TH 28	124 RT	48 RT	PBUR			X	XCEL	
538+71 R 3		TH 28	187 LT		PBOX			X	XCEL	
538+71 R 3	538+75 R 3	TH 28	187 LT	48 LT	PBUR			X	MNDOT	
538+75 R 3		TH 28	48 LT		PBOX			X	MNDOT	
538+75 R 3	539+89 R 3	TH 28	48 LT	39 LT	PBUR	X			XCEL	
538+75 R 3	538+77 R 3	TH 28	48 LT	48 RT	PBUR			X	MNDOT	
538+77 R 3		TH 28	48 RT		PBOX			X	MNDOT	
538+77 R 3	538+85 R 3	TH 28	48 RT	40 RT	PBUR			X	MNDOT	
538+85 R 3		TH 28	40 RT		SGL			X	MNDOT	
538+90 R 3		TH 28	40 RT		PBOX			X	MNDOT	
538+90 R 3	539+89 R 3	TH 28	40 RT	39 RT	PBUR	X			XCEL	
539+89 R 3		TH 28	39 LT		LP	X			XCEL	
539+89 R 3		TH 28	39 RT		LP	X			XCEL	
539+89 R 3	540+95 R 3	TH 28	39 RT	39 RT	PBUR	X			XCEL	
539+89 R 3	540+95 R 3	TH 28	39 LT	39 LT	PBUR	X			XCEL	
540+95 R 3		TH 28	39 LT		LP	X			XCEL	
540+95 R 3		TH 28	39 RT		LP	X			XCEL	
540+95 R 3	542+02 R 3	TH 28	39 RT	39 RT	PBUR	X			XCEL	
540+95 R 3	542+01 R 3	TH 28	39 LT	39 LT	PBUR	X			XCEL	
542+01 R 3		TH 28	39 LT		LP	X			XCEL	
542+02 R 3		TH 28	39 RT		LP	X			XCEL	
542+78 R 3		TH 28	39 LT		LP	X			XCEL	
542+78 R 3		TH 28	39 RT		LP	X			XCEL	
542+78 R 3	543+86 R 3	TH 28	38 LT	39 LT	PBUR	X			XCEL	

PUBLIC UTILITIES - POWER

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
542+79 R 3	543+86 R 3	TH 28	39 RT	39 RT	PBUR	X			XCEL	
543+86 R 3		TH 28	39 LT		LP	X			XCEL	
543+86 R 3		TH 28	39 RT		LP	X			XCEL	
543+86 R 3	544+94 R 3	TH 28	39 RT	40 RT	PBUR	X			XCEL	
543+86 R 3	545+99 R 3	TH 28	39 LT	38 LT	PBUR	X			XCEL	
544+94 R 3		TH 28	40 RT		LP	X			XCEL	
544+94 R 3	546+02 R 3	TH 28	40 RT	39 RT	PBUR	X			XCEL	
545+99 R 3		TH 28	38 LT		LP	X			XCEL	
546+02 R 3		TH 28	39 RT		LP	X			XCEL	
546+59 R 4		TH 28	92 RT		P	X			XCEL	
546+59 R 4	546+65 R 4	TH 28	92 RT	50 LT	OHP	X			XCEL	(4)
546+65 R 4		TH 28	50 LT		P	X			XCEL	
546+65 R 4	546+69 R 4	TH 28	50 LT	136 LT	OHP	X			XCEL	
546+69 R 4		TH 28	140 LT		P	X			XCEL	
546+69 R 4		TH 28	136 LT		P	X			XCEL	
546+69 R 4	546+69 R 4	TH 28	136 LT	140 LT	OHP	X			XCEL	
546+75 R 4		TH 28	39 RT		LP	X			XCEL	
546+75 R 4	547+83 R 4	TH 28	39 RT	39 RT	PBUR	X			XCEL	
546+76 R 4		TH 28	39 LT		LP	X			XCEL	
546+76 R 4	549+16 R 4	TH 28	39 LT	38 LT	PBUR	X			XCEL	
547+83 R 4		TH 28	39 RT		LP	X			XCEL	
547+83 R 4	548+56 R 4	TH 28	39 RT	68 RT	PBUR	X			XCEL	
548+12 R 4		TH 28	94 LT		LP	X			XCEL	
548+56 R 4		TH 28	68 RT		LP	X			XCEL	
549+16 R 4		TH 28	38 LT		LP	X			XCEL	
550+51 R 4		TH 28	32 RT		LP			X	XCEL	(1)
550+57 R 4		TH 28	37 LT		P	X			XCEL	
550+57 R 4	550+59 R 4	TH 28	37 LT	37 RT	OHP	X			XCEL	(4)
550+59 R 4		TH 28	37 RT		P	X			XCEL	
550+76 R 4		TH 28	113 LT		LP	X			XCEL	
552+40 R 4		TH 28	54 RT		LP	X			XCEL	
552+46 R 4		TH 28	53 LT		LP	X			XCEL	
554+02 R 4		TH 28	111 RT		LP	X			XCEL	
554+10 R 4		TH 28	162 RT		P	X			XCEL	
554+47 R 4		TH 28	30 LT		LP			X	XCEL	(1)
554+55 R 4		TH 28	38 LT		P	X			XCEL	
554+55 R 4	554+55 R 4	TH 28	38 LT	133 LT	OHP	X			XCEL	
555+09 R 4		TH 28	78 LT		LP	X			XCEL	
558+04 R 4		TH 28	37 LT		P		X		XCEL	(6)
558+04 R 4	558+49 R 4	TH 28	37 LT	71 LT	OHP	X			XCEL	
558+04 R 4	558+51 R 4	TH 28	37 LT	35 LT	OHP	X			XCEL	
558+45 R 4		TH 28	27 LT		LP	X			XCEL	
558+49 R 4		TH 28	71 LT		P	X			XCEL	
558+49 R 4	558+51 R 4	TH 28	71 LT	35 LT	OHP	X			XCEL	
558+51 R 4		TH 28	35 LT		P	X			XCEL	
558+51 R 4	559+76 R 4	TH 28	35 LT	29 LT	OHP	X			XCEL	
559+76 R 4		TH 28	29 LT		P	X			XCEL	
559+76 R 4	560+93 R 4	TH 28	29 LT	29 LT	OHP	X			XCEL	
560+32 R 4		TH 28	53 LT		LP	X			XCEL	
560+32 R 4	560+93 R 4	TH 28	53 LT	29 LT	PBUR	X			XCEL	

UTILITIES

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COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
	OHC = OVERHEAD CABLE	WAT = WATERMAIN
FM = FORCEMAIN	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
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CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
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XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(4) OVERHEAD CROSSINGS OF MNDOT HIGHWAYS MUST MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 22'
(6) ADJUST ANCHOR
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590

UT14 OF UT18

37/310

6:00:37 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut14.dgn
MODEL: tp3

PUBLIC UTILITIES - POWER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
560+93 R 4		TH 28	29 LT		P	X			XCEL	
560+93 R 4	562+46 R 4	TH 28	29 LT	32 LT	OHP	X			XCEL	
562+41 R 4		TH 28	24 LT		LP	X			XCEL	
562+46 R 4		TH 28	32 LT		P	X			XCEL	
562+46 R 4	563+32 R 4	TH 28	32 LT	29 LT	OHP	X			XCEL	
563+32 R 4		TH 28	29 LT		P	X			XCEL	
563+32 R 4	564+23 R 4	TH 28	29 LT	30 LT	OHP	X			XCEL	
564+23 R 4		TH 28	30 LT		P	X			XCEL	
564+23 R 4	564+31 R 4	TH 28	30 LT	85 RT	OHP	X			XCEL	(4)
564+23 R 4	565+50 R 4	TH 28	30 LT	53 LT	OHP	X			XCEL	
564+31 R 4		TH 28	85 RT		P	X			XCEL	
565+50 R 4		TH 28	53 LT		P	X			XCEL	
565+50 R 4	566+72 R 4	TH 28	53 LT	96 LT	OHP	X			XCEL	
565+53 R 4		TH 28	43 LT		LP	X			XCEL	
566+58 R 4		TH 28	117 LT		LP	X			XCEL	
566+58 R 4	566+72 R 4	TH 28	117 LT	96 LT	PBUR	X			XCEL	
566+72 R 4		TH 28	96 LT		P	X			XCEL	
566+72 R 4	567+73 R 4	TH 28	96 LT	160 LT	OHP	X			XCEL	
567+73 R 4		TH 28	160 LT		P	X			XCEL	
567+77 R 4		TH 28	152 LT		LP	X			XCEL	
1189+91 R 24		TH 104	33 RT		P			X	XCEL	(5)
1189+91 R 24	1191+71 R 24	TH 104	33 RT	25 RT	OHP			X	XCEL	
1189+99 R 24		TH 104	25 RT		LP			X	XCEL	
1191+71 R 24		TH 104	18 RT		LP			X	XCEL	
1191+71 R 24		TH 104	25 RT		P			X	XCEL	(5)
1191+71 R 24	17+97 R 25	TH 104	25 RT	25 RT	OHP			X	XCEL	
17+97 R 25		TH 104	25 RT		P			X	XCEL	(5)
17+97 R 25	19+02 R 25	TH 104	25 RT	26 RT	OHP			X	XCEL	
19+02 R 25		TH 104	26 RT		P			X	XCEL	(5)
19+02 R 25	19+67 R 25	TH 104	26 RT	25 RT	OHP			X	XCEL	
19+67 R 25		TH 104	25 RT		P			X	XCEL	(5)
19+67 R 25	20+90 R 25	TH 104	25 RT	26 RT	OHP			X	XCEL	
19+67 R 25	20+11 R 25	TH 104	25 RT	24 LT	OHP		X		XCEL	(4)
20+11 R 25		TH 104	24 LT		P		X		XCEL	(7)
20+11 R 25	20+90 R 25	TH 104	24 LT	26 RT	OHP		X		XCEL	(4)
20+90 R 25		TH 104	26 RT		P			X	XCEL	(5)
20+90 R 25	22+15 R 25	TH 104	26 RT	24 RT	OHP			X	XCEL	
22+11 R 25		TH 104	17 RT		LP			X	XCEL	
22+13 R 25	22+15 R 25	TH 104	56 LT	24 RT	OHP			X	XCEL	(4)
22+14 R 25	22+15 R 25	TH 104	55 RT	24 RT	OHP			X	XCEL	
22+15 R 25		TH 104	24 RT		P			X	XCEL	(5)
22+15 R 25	23+45 R 25	TH 104	24 RT	24 RT	OHP			X	XCEL	
23+45 R 25		TH 104	24 RT		P			X	XCEL	(5)
23+45 R 25	23+60 R 25	TH 104	24 RT	23 RT	OHP			X	XCEL	
23+45 R 25	23+48 R 25	TH 104	26 RT	42 RT	PBUR		X		XCEL	(7)
23+60 R 25		TH 104	23 RT		P			X	XCEL	(5)
23+60 R 25	24+83 R 25	TH 104	23 RT	24 RT	OHP			X	XCEL	
24+83 R 25		TH 104	24 RT		P			X	XCEL	(5)
24+83 R 25		TH 104	17 RT		LP			X	XCEL	
24+83 R 25	25+64 R 25	TH 104	24 RT	24 RT	OHP			X	XCEL	

PUBLIC UTILITIES - POWER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
25+64 R 25		TH 104	24 RT		P			X	XCEL	(5)
25+64 R 25	26+45 R 25	TH 104	24 RT	24 RT	OHP			X	XCEL	
26+45 R 25		TH 104	24 RT		P			X	XCEL	(5)
26+45 R 25	27+78 R 25	TH 104	24 RT	24 RT	OHP			X	XCEL	
27+74 R 25		TH 104	27 LT		LP			X	XCEL	
27+74 R 25	29+28 R 25	TH 104	27 LT	26 LT	PBUR			X	XCEL	
27+78 R 25		TH 104	24 RT		P			X	XCEL	(5)
27+78 R 25	28+80 R 25	TH 104	24 RT	24 RT	OHP			X	XCEL	
27+78 R 25	27+93 R 25	TH 104	24 RT	48 LT	OHP		X		XCEL	(4)
27+93 R 25		TH 104	48 LT		P		X		XCEL	(7)
27+93 R 25	28+80 R 25	TH 104	48 LT	24 RT	OHP		X		XCEL	(4)
28+52 R 25		TH 104	24 RT		LP			X	XCEL	
28+52 R 25	30+10 R 25	TH 104	24 RT	26 RT	PBUR			X	XCEL	
28+80 R 25		TH 104	24 RT		P			X	XCEL	(5)
28+80 R 25	29+84 R 25	TH 104	24 RT	26 RT	OHP			X	XCEL	
29+28 R 25		TH 104	26 LT		LP			X	XCEL	
29+28 R 25	30+90 R 25	TH 104	26 LT	25 LT	PBUR			X	XCEL	
29+84 R 25		TH 104	26 RT		P			X	XCEL	(5)
29+84 R 25	29+84 R 25	TH 104	84 RT	84 LT	OHP			X	XCEL	(4)
30+10 R 25		TH 104	26 RT		LP			X	XCEL	
30+10 R 25	31+63 R 25	TH 104	26 RT	26 RT	PBUR			X	XCEL	
30+90 R 25		TH 104	25 LT		LP			X	XCEL	
30+90 R 25	32+41 R 25	TH 104	25 LT	26 LT	PBUR			X	XCEL	
31+63 R 25		TH 104	26 RT		LP			X	XCEL	
31+63 R 25	33+22 R 25	TH 104	26 RT	26 RT	PBUR			X	XCEL	
32+41 R 25		TH 104	26 LT		LP			X	XCEL	
32+41 R 25	34+02 R 25	TH 104	26 LT	26 LT	PBUR			X	XCEL	
32+77 R 25		TH 104	42 RT		P		X		XCEL	(7)
32+77 R 25	32+77 R 25	TH 104	42 RT	90 LT	OHP		X		XCEL	(4)
38+31		TH 29	27 RT		LP			X	XCEL	
38+31	38+49	TH 29	27 RT	26 RT	OHP			X	XCEL	
38+49		TH 29	26 RT		P			X	XCEL	
38+49	39+70	TH 29	26 RT	26 RT	OHP			X	XCEL	
39+51		TH 29	26 LT		LP		X		XCEL	(7)
39+51	39+70	TH 29	26 LT	26 RT	OHP		X		XCEL	(4)
39+70		TH 29	26 RT		P			X	XCEL	
39+70	40+78	TH 29	26 RT	26 RT	OHP			X	XCEL	
40+77	40+78	TH 29	127 RT	26 RT	OHP			X	XCEL	
40+78		TH 29	26 RT		P			X	XCEL	
40+78	42+73	TH 29	26 RT	24 RT	OHP			X	XCEL	
40+78	40+85	TH 29	26 RT	81 LT	OHP		X		XCEL	(4)
40+83		TH 29	18 RT		LP			X	XCEL	(1)
40+85		TH 29	81 LT		P		X		XCEL	(7)
42+72	42+73	TH 29	46 LT	24 RT	OHP			X	XCEL	(4)
42+73		TH 29	24 RT		P			X	XCEL	
42+73	43+98	TH 29	24 RT	25 RT	OHP			X	XCEL	
43+98		TH 29	25 RT		P			X	XCEL	
43+98	45+01	TH 29	25 RT	26 RT	OHP			X	XCEL	
43+98	43+99	TH 29	25 RT	98 RT	OHP			X	XCEL	
43+98	44+04	TH 29	25 RT	91 LT	OHP		X		XCEL	(4)

UTILITIES

CAB = CABLE	GAS = GAS	P = POLE
CB = CATCH BASIN	GV = GATE VALVE	PBOX = PULL BOX
CO = CLEANOUT	HH = HAND HOLE	PBUR = POWER, BURIED
CS = CURB STOP	HYD = HYDRANT	PIP = PIPE
COMM = COMMUNICATION	LP = LIGHT POLE	SGL = SIGNAL
F/O BUR = FIBER OPTIC, BURIED	MH = MANHOLE	SS = SANITARY SERVICE
FM = FORCEMAIN	OHC = OVERHEAD CABLE	WAT = WATERMAIN
	OHP = OVERHEAD POWER	WS = WATER SERVICE

OWNERSHIP

ARVIG	= ARVIG ENTERPRISES
ASFB	= AMERICAN SOLUTIONS FOR BUSINESS
CENTERPOINT	= CENTERPOINT ENERGY
CENTURY	= CENTURYLINK
CHARTER COMM	= CHARTER COMMUNICATIONS
CITYGLENWOOD	= CITY OF GLENWOOD
CITYLONGBEACH	= CITY OF LONG BEACH
POPE	= POPE COUNTY
XCEL	= XCEL ENERGY

SPECIFIC NOTES:
(1) REMOVE
(4) OVERHEAD CROSSINGS OF MNDOT HIGHWAYS MUST MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 22'
(5) RELOCATE TO BACK OF WALK
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM
DRAWN BY: SMN
DESIGNER: AWH
CHECKED BY: AWH

NO.	BY	DATE	REVISIONS

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.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590
UT15 OF UT18

38 / 310

6:00:38 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut15.dgn
MODEL: tp3

PUBLIC UTILITIES - POWER

X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
44+03		TH 29	19 RT		LP			X	XCEL	
45+01		TH 29	26 RT		P			X	XCEL	
45+01	46+00	TH 29	26 RT	25 RT	OHP			X	XCEL	
45+65	46+00	TH 29	63 LT	25 RT	OHP			X	XCEL	(4)
46+00		TH 29	25 RT		P			X	XCEL	
46+00	47+64	TH 29	25 RT	25 RT	OHP			X	XCEL	
46+00	46+01	TH 29	25 RT	74 LT	OHP			X	XCEL	(4)
47+62	47+64	TH 29	19 RT	25 RT	OHP			X	XCEL	(4)
47+64		TH 29	17 RT		LP			X	XCEL	
47+64		TH 29	25 RT		P			X	XCEL	
47+64		TH 29	31 LT		P			X	XCEL	
47+64	49+76	TH 29	25 RT	25 RT	OHP			X	XCEL	
47+64	48+28	TH 29	25 RT	42 RT	PBUR		X		XCEL	(7)
48+28		TH 29	42 RT		LP		X		XCEL	(7)
49+76		TH 29	25 RT		P			X	XCEL	
49+76	52+45	TH 29	25 RT	25 RT	OHP			X	XCEL	
49+76	49+76	TH 29	80 LT	25 RT	OHP			X	XCEL	(4)
49+76	49+86	TH 29	26 RT	38 RT	PBUR		X		XCEL	(7)
52+29		TH 29	93 RT		P		X		XCEL	(7)
52+29	52+45	TH 29	93 RT	25 RT	OHP			X	XCEL	
52+29	52+45	TH 29	93 RT	25 RT	PBUR		X		XCEL	(7)
52+42	52+45	TH 29	20 RT	25 RT	OHP			X	XCEL	(4)
52+44		TH 29	18 RT		LP			X	XCEL	
52+45		TH 29	25 RT		P			X	XCEL	
52+45	53+78	TH 29	25 RT	25 RT	OHP			X	XCEL	
53+76		TH 29	25 RT		P			X	XCEL	
53+76	53+78	TH 29	25 RT	25 RT	PBUR		X		XCEL	(7)
53+78		TH 29	25 RT		P			X	XCEL	
53+78	54+86	TH 29	25 RT	25 RT	OHP			X	XCEL	
54+82		TH 29	19 LT		LP			X	XCEL	
54+86		TH 29	25 RT		P			X	XCEL	
54+86	56+10	TH 29	25 RT	26 RT	OHP			X	XCEL	
54+86	54+87	TH 29	25 RT	28 LT	OHP			X	XCEL	(4)
54+86	54+86	TH 29	42 RT	27 RT	PBUR		X		XCEL	(7)
54+87		TH 29	28 LT		P			X	XCEL	
56+08	56+10	TH 29	108 LT	26 RT	OHP		X		XCEL	(4)
56+10		TH 29	26 RT		P			X	XCEL	
56+10	57+25	TH 29	26 RT	25 RT	OHP			X	XCEL	
57+25		TH 29	25 RT		P			X	XCEL	
57+25	58+59	TH 29	25 RT	26 RT	OHP			X	XCEL	
57+25	58+04	TH 29	25 RT	111 LT	OHP		X		XCEL	(4)
58+59		TH 29	18 RT		LP			X	XCEL	
58+59		TH 29	26 RT		P			X	XCEL	
58+59	60+38	TH 29	26 RT	26 RT	OHP			X	XCEL	

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SPECIFIC NOTES:
(4) OVERHEAD CROSSINGS OF MNDOT HIGHWAYS MUST MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 22'
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590

UT16 OF UT18

39/310

6:00:38 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut16.dgn
MODEL: Tp3

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6/27/2017

PUBLIC UTILITIES - COMMUNICATION LINES — X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
1191+15 R 24		TH 104	33 RT		HH	X			CENTURY	
1191+16 R 24	1192+37 R 24	TH 104	34 RT	35 RT	COMM	X			CENTURY	
1192+13 R 24		TH 104	40 LT		HH	X			CENTURY	
1192+37 R 24	1192+72 R 24	TH 104	36 RT	32 RT	COMM	X			CENTURY	
1192+37 R 24		TH 104	35 RT		HH	X			CENTURY	
1192+38 R 24	19+68 R 25	TH 104	35 RT	26 RT	COMM	X			CENTURY	
19+68 R 25		TH 104	26 RT		HH	X			CENTURY	
20+13 R 25	20+18 R 25	TH 104	24 LT	39 LT	COMM	X			CENTURY	
20+92 R 25	20+95 R 25	TH 104	26 RT	35 RT	COMM	X			CENTURY	
32+77 R 25	32+77 R 25	TH 104	63 LT	90 LT	COMM	X			CENTURY	
32+85 R 25	32+86 R 25	TH 104	34 LT	40 RT	COMM	X			CENTURY	
405+74	413+33	TH 28	59 LT	58 LT	COMM	X			CENTURY	
406+33	406+51	TH 28	88 LT	70 LT	COMM			X	CENTURY	
406+52		TH 28	70 LT		HH	X			CENTURY	
413+29	413+65	TH 28	82 LT	57 LT	COMM	X			CENTURY	
413+65	432+74 R 2	TH 28	57 LT	38 LT	COMM			X	CENTURY	(2)
416+20	418+46	TH 28	74 LT	73 LT	OHC			X	CHARTER COMM	
418+46	419+55	TH 28	73 LT	73 LT	OHC			X	CHARTER COMM	
418+47		TH 28	69 LT		HH	X			CENTURY	
419+55	420+73	TH 28	73 LT	76 LT	OHC		X		CHARTER COMM	(7)
420+63		TH 28	68 LT		HH			X	CENTURY	
420+68		TH 28	70 LT		HH			X	CENTURY	(1)
420+68	420+74	TH 28	70 LT	71 LT	COMM			X	CENTURY	(2)
420+68	432+73 R 2	TH 28	69 LT	37 LT	COMM			X	CENTURY	(2)
420+74		TH 28	72 LT		HH			X	CENTURY	
420+74	422+30	TH 28	76 LT	71 LT	OHC		X		CHARTER COMM	(7)
422+30	423+90	TH 28	71 LT	70 LT	OHC	X			CHARTER COMM	
423+91	425+31	TH 28	70 LT	52 LT	OHC	X			CHARTER COMM	
424+50	425+31	TH 28	55 RT	49 LT	OHC			X	CHARTER COMM	(4)
425+31	426+91	TH 28	52 LT	46 LT	OHC			X	CHARTER COMM	
426+91	428+63	TH 28	46 LT	51 LT	OHC			X	CHARTER COMM	
428+61	429+61	TH 28	46 LT	57 RT	OHC			X	CHARTER COMM	(4)
428+63	429+34	TH 28	51 LT	49 LT	OHC	X			CHARTER COMM	
428+89	429+88	TH 28	239 LT	235 LT	COMM			X	CENTURY	
429+34	431+46 R 2	TH 28	49 LT	49 LT	OHC	X			CHARTER COMM	
429+61	430+78 R 2	TH 28	57 RT	133 RT	OHC		X		CHARTER COMM	(4)(7)
431+46 R 2	432+78 R 2	TH 28	49 LT	50 LT	OHC		X		CHARTER COMM	(7)
432+73 R 2		TH 28	37 LT		HH			X	CENTURY	
432+73 R 2	432+80 R 2	TH 28	38 LT	67 LT	COMM	X			CENTURY	
432+73 R 2	443+79 R 2	TH 28	37 LT	69 LT	COMM	X			CENTURY	
432+78 R 2	433+98 R 2	TH 28	50 LT	47 LT	OHC		X		CHARTER COMM	(7)
433+63 R 2	433+92 R 2	TH 28	197 RT	253 RT	COMM	X			CENTURY	
433+88 R 2	434+99 R 2	TH 28	48 LT	51 LT	CAB	X			CHARTER COMM	
433+97 R 2	434+33 R 2	TH 28	47 LT	46 LT	OHC	X			CHARTER COMM	
434+32 R 2	435+43 R 2	TH 28	46 LT	48 LT	OHC	X			CHARTER COMM	
435+42 R 2	436+72 R 2	TH 28	48 LT	46 LT	OHC	X			CHARTER COMM	
436+72 R 2	438+15 R 2	TH 28	43 LT	52 LT	CAB	X			CHARTER COMM	

PUBLIC UTILITIES - COMMUNICATION LINES — X

STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
438+08 R 2	438+15 R 2	TH 28	194 LT	52 LT	CAB	X			CHARTER COMM	
443+70 R 2		TH 28	46 LT		HH		X		CENTURY	(7)
443+75 R 2	443+77 R 2	TH 28	304 LT	123 LT	CAB	X			CHARTER COMM	
443+77 R 2	443+78 R 2	TH 28	123 LT	40 LT	CAB		X		CHARTER COMM	(7)
443+78 R 2	443+78 R 2	TH 28	40 LT	81 RT	COMM			X	CENTURY	
546+11 R 3	546+12 R 3	TH 28	85 LT	79 RT	COMM			X	CENTURY	
546+12 R 3	546+13 R 3	TH 28	84 LT	79 RT	COMM			X	CENTURY	
546+12 R 3	546+14 R 3	TH 28	84 LT	78 RT	COMM			X	CENTURY	
546+60 R 4	546+62 R 4	TH 28	161 RT	60 RT	CAB		X		CHARTER COMM	(7)
546+62 R 4	546+68 R 4	TH 28	60 RT	53 LT	CAB			X	CHARTER COMM	
546+68 R 4	546+71 R 4	TH 28	53 LT	140 LT	CAB		X		CHARTER COMM	(7)
554+55 R 4	554+57 R 4	TH 28	38 LT	37 RT	OHC			X	CHARTER COMM	(4)
554+57 R 4	554+57 R 4	TH 28	150 RT	58 RT	OHC		X		CHARTER COMM	(7)
554+58 R 4	554+58 R 4	TH 28	38 LT	133 LT	OHC		X		CHARTER COMM	(7)
558+04 R 4	558+51 R 4	TH 28	40 LT	38 LT	OHC			X	CHARTER COMM	
558+51 R 4	559+76 R 4	TH 28	38 LT	32 LT	OHC			X	CHARTER COMM	
559+76 R 4	560+93 R 4	TH 28	32 LT	32 LT	OHC			X	CHARTER COMM	
560+93 R 4	562+46 R 4	TH 28	32 LT	35 LT	OHC			X	CHARTER COMM	
562+46 R 4	563+32 R 4	TH 28	35 LT	32 LT	OHC			X	CHARTER COMM	
563+33 R 4	564+23 R 4	TH 28	32 LT	33 LT	OHC			X	CHARTER COMM	
564+23 R 4	565+50 R 4	TH 28	33 LT	55 LT	OHC			X	CHARTER COMM	
565+38 R 4	565+46 R 4	TH 28	153 LT	117 LT	COMM	X			CENTURY	
565+46 R 4	565+54 R 4	TH 28	117 LT	78 LT	COMM	X			CENTURY	
565+50 R 4	566+71 R 4	TH 28	55 LT	99 LT	OHC			X	CHARTER COMM	
565+54 R 4	565+66 R 4	TH 28	78 LT	32 LT	COMM	X			CENTURY	
565+66 R 4	567+76 R 4	TH 28	32 LT	138 LT	COMM	X			CENTURY	
566+71 R 4	567+72 R 4	TH 28	99 LT	163 LT	OHC			X	CHARTER COMM	
567+72 R 4	568+41 R 4	TH 28	163 LT	222 LT	OHC			X	CHARTER COMM	
567+76 R 4	569+44 R 4	TH 28	138 LT	14 LT	COMM	X			CENTURY	
567+79 R 4	569+45 R 4	TH 28	152 LT	24 LT	COMM	X			CENTURY	
38+20	38+30	TH 29	41 RT	39 LT	COMM	X			ARVIG	
38+30	38+30	TH 29	84 LT	39 LT	COMM	X			ARVIG	
39+67	39+69	TH 29	23 RT	27 RT	COMM	X			CENTURY	
39+70	49+76	TH 29	26 RT	25 RT	OHC			X	CHARTER COMM	
42+62	42+74	TH 29	25 RT	24 RT	COMM	X			CENTURY	
46+00	46+02	TH 29	25 RT	74 LT	OHC			X	CENTURY	(4)
52+34	52+37	TH 29	28 RT	25 RT	COMM		X		CENTURY	(7)
51+86		TH 29	55 LT		HH	X			ARVIG	
51+86	51+86	TH 29	55 LT	104 LT	COMM	X			ARVIG	
51+86	51+88	TH 29	55 LT	34 RT	COMM	X			ARVIG	
52+37	49+74 R 2	TH 29	25 RT	26 RT	COMM	X			CENTURY	
52+38	52+39	TH 29	46 RT	26 RT	COMM		X		CENTURY	(7)
52+39		TH 29	25 RT		HH		X		CENTURY	(7)

UTILITIES

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SPECIFIC NOTES:
(1) REMOVE
(2) ABANDON
(4) OVERHEAD CROSSINGS OF MNDOT HIGHWAYS MUST MAINTAIN A MINIMUM VERTICAL CLEARANCE OF 22'
(7) ADJUST TO RELOCATED SYSTEM

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer — Lic. No. 45407

Printed Name: ANDREW W. HELMERS — Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

FILE NO. MNT04-134590 UT17 OF UT18

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut17.dgn
MODEL: tp3

PUBLIC UTILITIES - FIBER OPTICS										X
STATION TO STATION		ROADWAY NAME	OFFSET TO OFFSET (FT)		ITEM INPLACE	LEAVE AS IS	REMARKS			NOTES
							ADJUST	RELOCATE	OWNER	
20+91 R 25	20+93 R 25	TH 104	27 RT	34 RT	F/O BUR	X			CENTURY	
23+44 R 25	23+45 R 25	TH 104	40 RT	26 RT	F/O BUR	X			CENTURY	
405+76	413+68	TH 28	46 LT	50 LT	F/O BUR	X			CENTURY	
413+68	420+83	TH 28	50 LT	51 LT	F/O BUR			X	CENTURY	(2)
420+83		TH 28	51 LT		HH			X	CENTURY	
420+83	432+96 R 2	TH 28	51 LT	38 LT	F/O BUR			X	CENTURY	(2)
432+97 R 2		TH 28	40 LT		HH			X	CENTURY	
432+97 R 2		TH 28	38 LT		HH			X	CENTURY	
432+96 R 2	443+78 R 2	TH 28	38 LT	53 RT	F/O BUR	X			CENTURY	
433+97 R 2	438+20 R 2	TH 28	43 LT	56 LT	F/O BUR	X			CENTURY	
438+21 R 2		TH 28	54 LT		HH	X			CENTURY	
447+70 R 2	538+70 R 3	TH 28	176 LT	175 LT	F/O BUR	X			CENTURY	
542+13 R 3	542+14 R 3	TH 28	93 RT	102 LT	F/O BUR			X	ASFB	
545+23 R 3	547+01 R 4	TH 28	113 RT	196 LT	F/O BUR	X			POPE	
546+13 R 3	546+15 R 3	TH 28	84 LT	78 RT	F/O BUR	X			CENTURY	
546+71 R 4	557+19 R 4	TH 28	52 LT	42 LT	F/O BUR	X			CENTURY	
557+19 R 4	567+60 R 4	TH 28	42 LT	164 LT	F/O BUR	X			CENTURY	
53+75	53+76	TH 29	25 RT	37 LT	F/O BUR	X			CENTURY	

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SPECIFIC NOTES:
(2) ABANDON

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY TABULATIONS

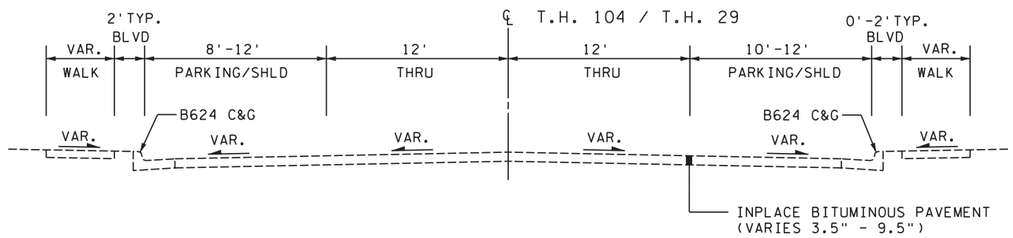
FILE NO. MNT04-134590
UT18 OF UT18

41 / 310

6:00:40 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_ut18.dgn
MODEL: tp3

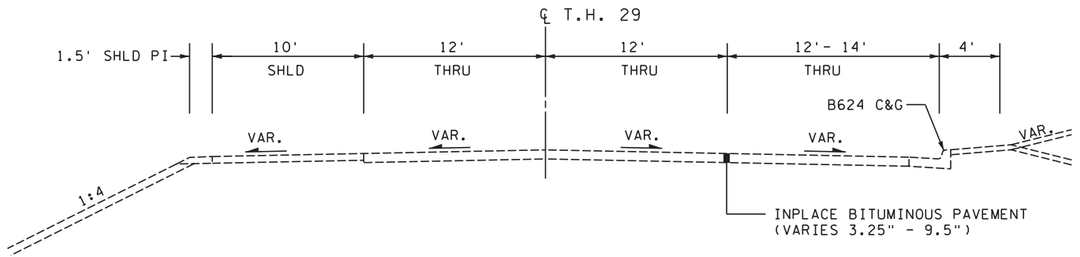
INPLACE TYPICAL SECTION 1

T.H. 104 (FRANKLIN ST. S.) STA. 1189+70.0 TO 34+59.5
T.H. 29 (FRANKLIN ST. N.) STA. 34+59.5 TO 59+00.0



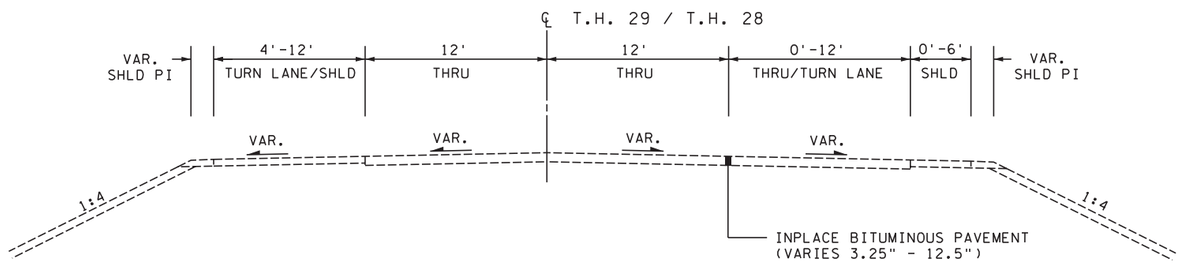
INPLACE TYPICAL SECTION 2

T.H. 29 (FRANKLIN ST. N.) STA. 59+00.0 TO 73+00.0



INPLACE TYPICAL SECTION 3

T.H. 29 (FRANKLIN ST. N.) STA. 73+00.0 TO 108+16.6
T.H. 28 STA. 414+81.9 TO 430+00.0
T.H. 28 (MINNESOTA AVE) STA. 568+80.0 TO 601+00.0



GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

ROADWAY CROSS SLOPES ARE TYPICAL, SEE DRAINAGE AND SUPERELEVATION PLAN FOR VARIATIONS.

MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.

UNLESS OTHERWISE SPECIFIED THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

SEE REMOVAL PLAN FOR LIMITS OF PAVEMENT REMOVAL.

7:56:30 AM
6/30/2017
FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_tsl.dgn
MODEL: Default

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
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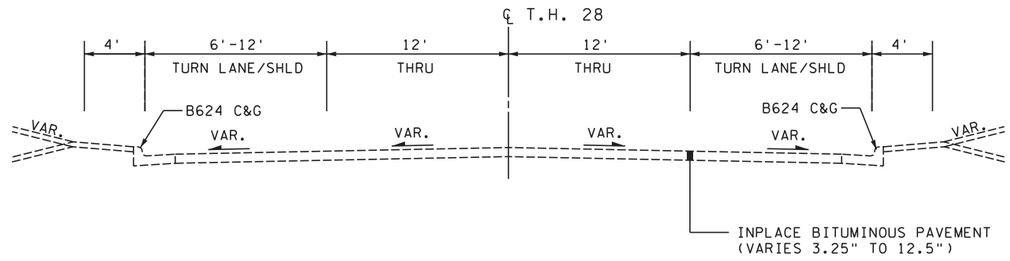
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TYPICAL SECTIONS

FILE NO. MNT04-134590
TS1 OF TS6
42 / 310

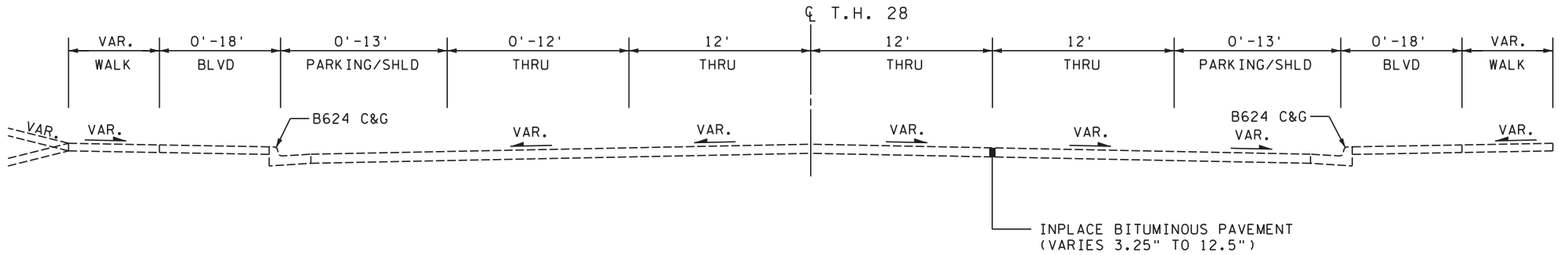
INPLACE TYPICAL SECTION 4

T.H. 28 (MINNESOTA AVE) STA. 430+00.0 TO 440+00.0
T.H. 28 STA. 601+00.0 TO STA. 615+00.0



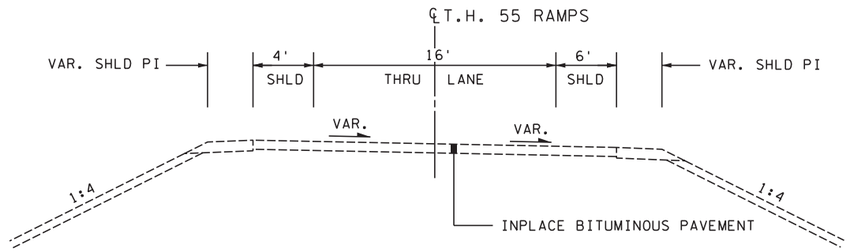
INPLACE TYPICAL SECTION 5

T.H. 28 (MINNESOTA AVE) STA. 440+00.0 TO 568+80.0



INPLACE TYPICAL SECTION 6

T.H. 55 RAMPS



GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

ROADWAY CROSS SLOPES ARE TYPICAL, SEE DRAINAGE AND SUPERELEVATION PLAN FOR VARIATIONS.

MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.

UNLESS OTHERWISE SPECIFIED THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

SEE REMOVAL PLAN FOR LIMITS OF PAVEMENT REMOVAL.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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ST. PAUL, MN 55110

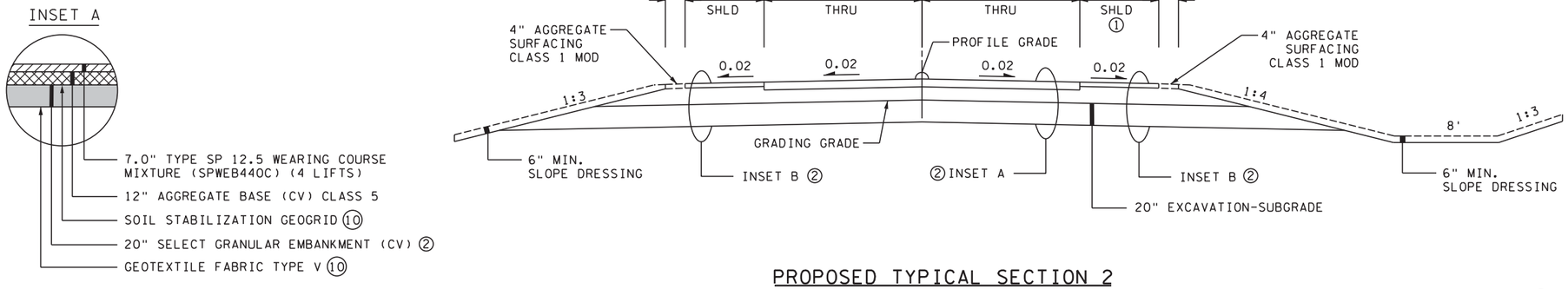
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TYPICAL SECTIONS

FILE NO. MNT04-134590
TS2 OF TS6
43 / 310

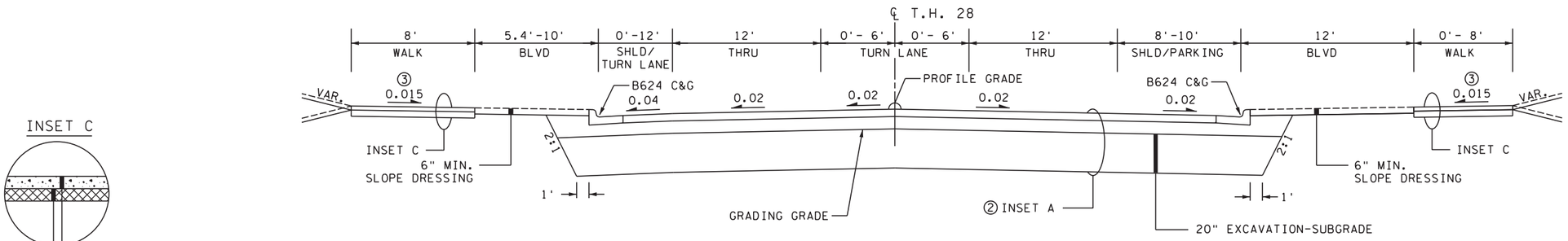
PROPOSED TYPICAL SECTION 1

T.H. 28 STA. 414+81.9 - 429+17.4



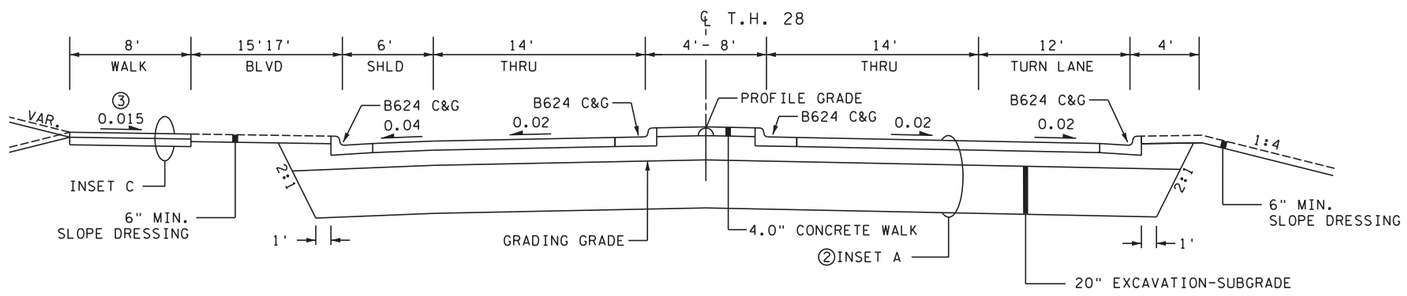
PROPOSED TYPICAL SECTION 2

T.H. 28 STA. 429+17.4 - 431+95.2
T.H. 28 STA. 434+40.7 - 440+00.0



PROPOSED TYPICAL SECTION 3

T.H. 28 (MINNESOTA AVE) STA. 431+95.2 - 434+40.7



SPECIFIC NOTES:

(1) 12' RIGHT TURN LANE FROM STA. 424+50 TO STA. 425+70.

(2) SELECT GRANULAR DEPTHS SHALL VARY FROM STA. 425+00 TO STA. 433+00 TO MAINTAIN A 39" EXCAVATION DEPTH FROM THE EXISTING T.H. 28 GROUND PROFILE.

(3) FINISHED SURFACE SHALL NOT EXCEED 2.0%.

(10) SEE TABULATIONS FOR GEOTEXTILE AND GEOGRID WIDTHS.

GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

ROADWAY CROSS SLOPES ARE TYPICAL, SEE DRAINAGE AND SUPERELEVATION PLAN FOR VARIATIONS.

MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.

UNLESS OTHERWISE SPECIFIED THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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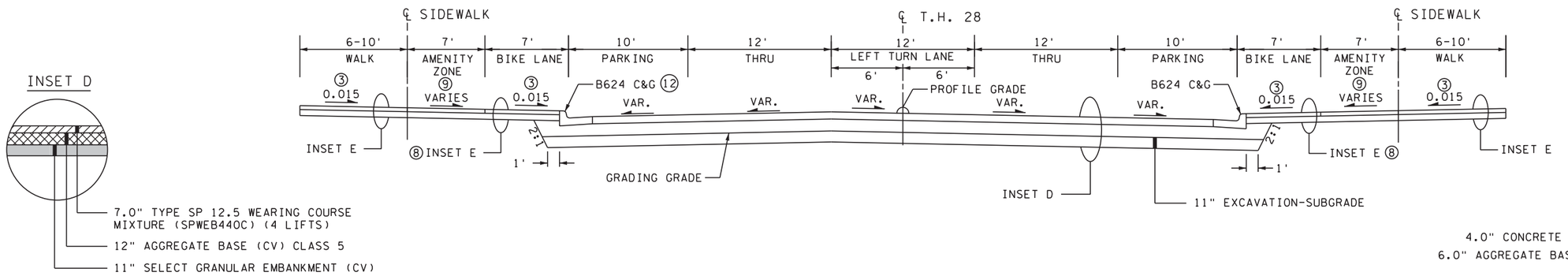
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TYPICAL SECTIONS

FILE NO. MNT04-134590
TS3 OF TS6
44 / 310

PROPOSED TYPICAL SECTION 4

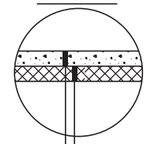
T.H. 28 (MINNESOTA AVE) STA. 440+00.0 - 546+00.0



INSET D

7.0" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440C) (4 LIFTS)
12" AGGREGATE BASE (CV) CLASS 5
11" SELECT GRANULAR EMBANKMENT (CV)

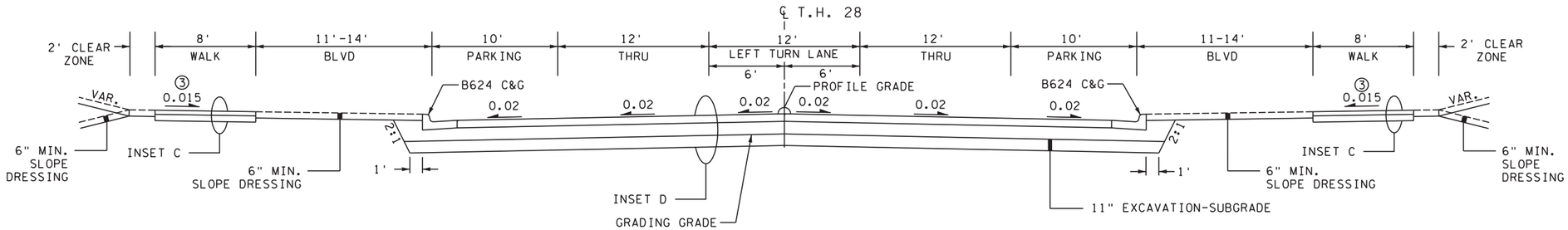
INSET E



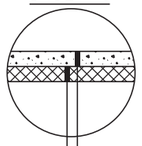
4.0" CONCRETE WALK SPECIAL ⑧
6.0" AGGREGATE BASE (CV) CLASS 5

PROPOSED TYPICAL SECTION 5

T.H. 28 (MINNESOTA AVE) STA. 546+00.0 - 554+98.5



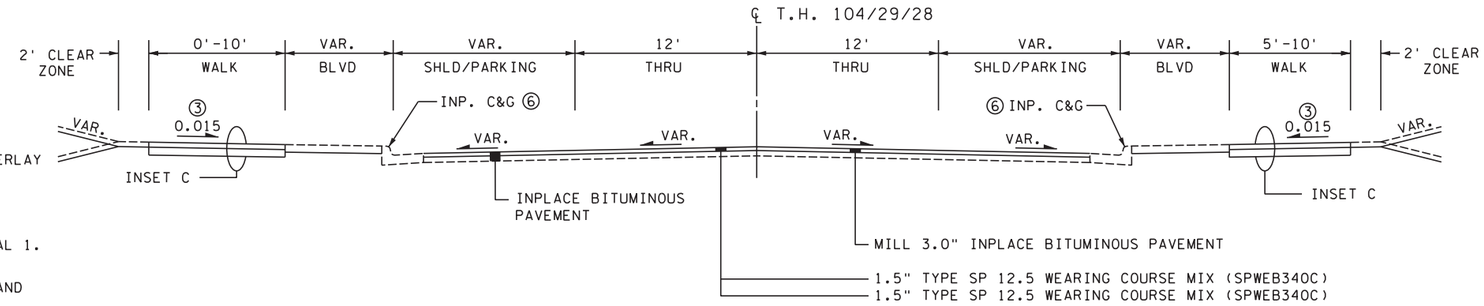
INSET C



4.0" CONCRETE WALK
6.0" AGGREGATE BASE (CV) CLASS 5

PROPOSED TYPICAL SECTION 6 ④

T.H. 104 (FRANKLIN ST. S.) MILL & OVERLAY STA. 1189+70.0 - 33+88.4
T.H. 29 (FRANKLIN ST. N.) MILL & OVERLAY STA. 35+42.3 - 59+00.0
T.H. 28 MILL & OVERLAY STA. 554+98.5 - 568+86.5



SPECIFIC NOTES:

③ FINISHED SURFACE SHALL NOT EXCEED 2.0%.

④ MATCH EXISTING CROSS SLOPE IN MILL & OVERLAY LOCATIONS.

⑥ SEE CONSTRUCTION PLAN FOR LOCATIONS OF CURB & GUTTER REPLACEMENT.

⑧ BIKE LANE SHALL USE CONCRETE WALK SPECIAL 1. SEE SPECIAL PROVISIONS FOR DETAILS.

⑨ SEE STREETSCAPE PLAN FOR SURFACE TYPES AND VARIATIONS THROUGH THE AMMENITY ZONE.

⑫ B424 C&G FROM STA. 538+77 TO STA. 542+00.

GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

ROADWAY CROSS SLOPES ARE TYPICAL, SEE DRAINAGE AND SUPERELEVATION PLAN FOR VARIATIONS.

MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.

UNLESS OTHERWISE SPECIFIED THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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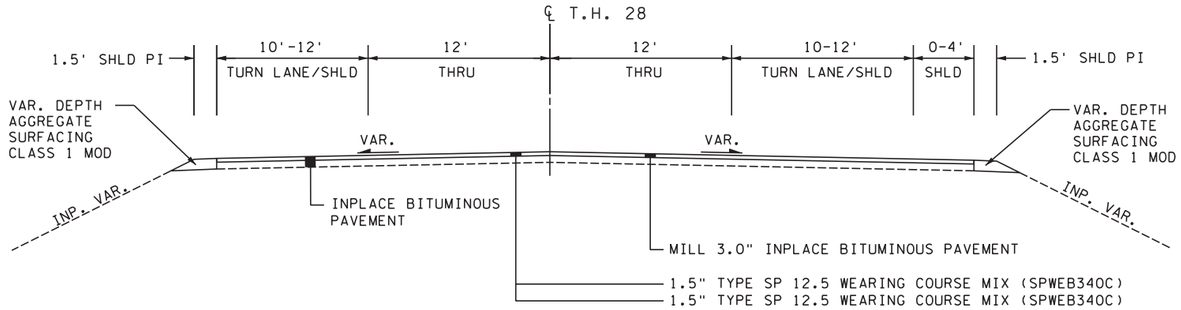
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TYPICAL SECTIONS

FILE NO. MNT04-134590
TS4 OF TS6
45 / 310

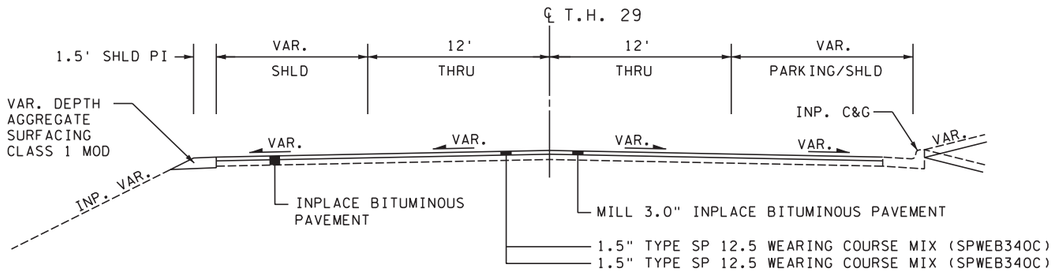
PROPOSED TYPICAL SECTION 7④

T.H. 28 STA. 568+86.5 - 615+00.0



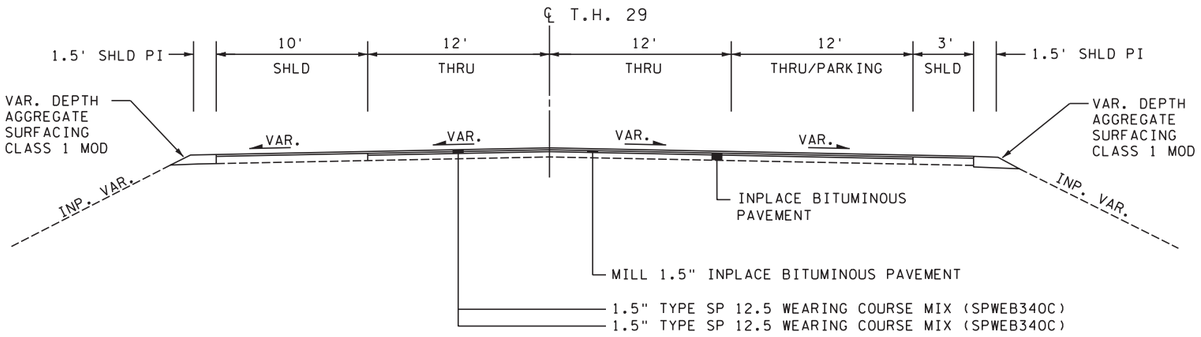
PROPOSED TYPICAL SECTION 8 ④

T.H. 29 (FRANKLIN ST. N.) MILL & OVERLAY STA. 59+00.0 - 73+00.0



PROPOSED TYPICAL SECTION 9 ④

T.H. 29 (FRANKLIN ST. N.) MILL & OVERLAY STA. 73+00.0 - 108+16.7 ⑦



GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

ROADWAY CROSS SLOPES ARE TYPICAL, SEE DRAINAGE AND SUPERELEVATION PLAN FOR VARIATIONS.

MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.

UNLESS OTHERWISE SPECIFIED THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

SPECIFIC NOTES:

④ MATCH EXISTING CROSS SLOPE IN MILL & OVERLAY LOCATIONS.

⑦ 3.0" MILL & OVERLAY FROM STA. 73+00 TO STA. 74+00.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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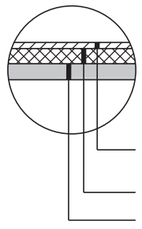
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TYPICAL SECTIONS

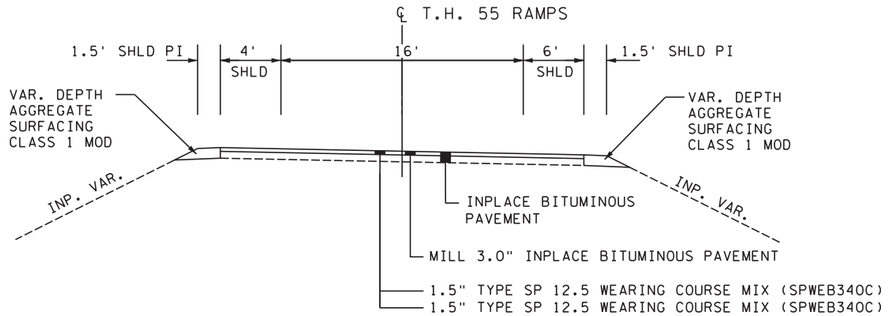
FILE NO. MNT04-134590
TS5 OF TS6
46 / 310

INSET D

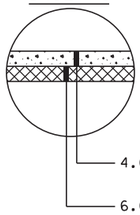


PROPOSED TYPICAL SECTION 10 ④

T.H. 55 RAMPS MILL & OVERLAY

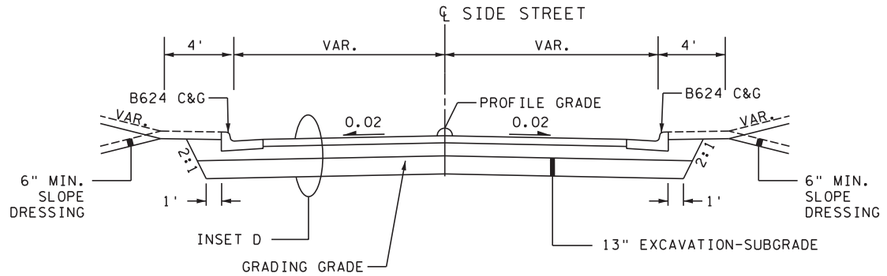


INSET C



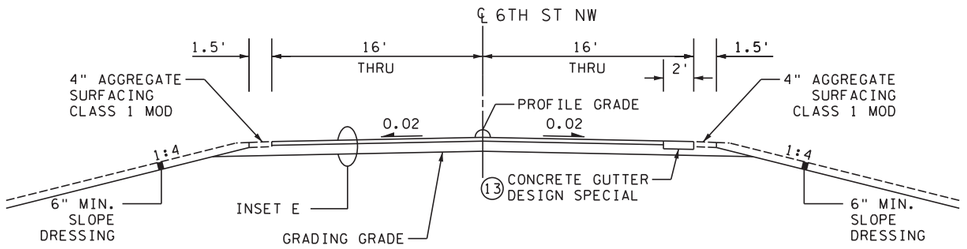
PROPOSED TYPICAL SECTION 11

4TH ST NW, 5TH ST NW, MINNESOTA AVE

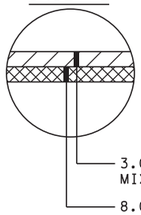


PROPOSED TYPICAL SECTION 12

6TH ST NW

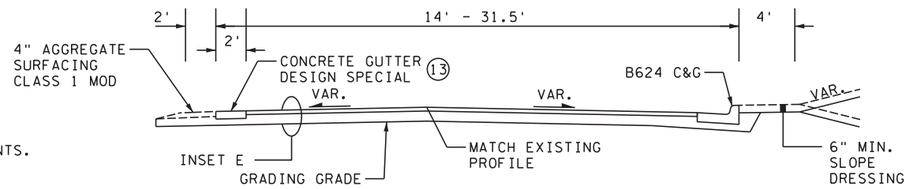


INSET E



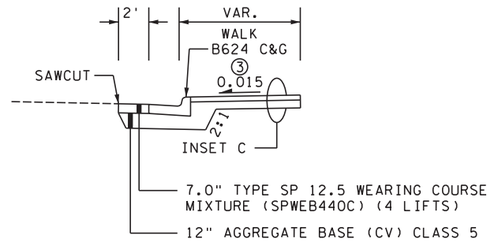
PROPOSED TYPICAL SECTION 13

(11) 2ND AVE NW



PROPOSED TYPICAL SECTION 14

BITUMINOUS STREET REPAIR AND PATCHING ⑥



SPECIFIC NOTES:

③ FINISHED SURFACE SHALL NOT EXCEED 2.0%

④ MATCH EXISTING CROSS SLOPE IN MILL & OVERLAY LOCATIONS.

⑥ SEE CONSTRUCTION PLAN FOR LOCATIONS OF BITUMINOUS STREET REPAIR AND PATCHING.

⑪ SEE SHEET 48 FOR BEGIN AND END LOCATIONS OF VARIOUS ROADWAY ELEMENTS.

⑬ SEE SHEET 52 FOR CONCRETE GUTTER DESIGN SPECIAL.

GENERAL NOTES:

ALL CROSS SLOPES ARE IN FOOT PER FOOT.

ROADWAY CROSS SLOPES ARE TYPICAL, SEE DRAINAGE AND SUPERELEVATION PLAN FOR VARIATIONS.

MAXIMUM ROLLOVER 0.07 FOOT PER FOOT.

UNLESS OTHERWISE SPECIFIED THE GRADING GRADE CROSS SLOPES SHALL BE THE SAME AS THE FINISHED SURFACE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TYPICAL SECTIONS

FILE NO. MNT04-134590 | TS6 OF TS6 | 47/310

7:56:33 AM

6/30/2017

20

SCALE IN FEET

2ND AVE. NW DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
140	436419.81	234764.02	1142.27
141	436419.81	234795.50	1142.52
142	436457.01	234795.47	1142.34
143	436467.01	234806.42	1142.25
144	436491.01	234806.64	1141.78
145	436491.01	234800.47	1141.90
146	436511.33	234780.47	1142.34
147	436542.89	234780.74	1141.60
148	436542.88	234766.74	1141.88
149	436503.71	234764.34	1141.73
150	436496.40	234764.23	1141.77
151	436489.35	234761.16	1141.81
152	436449.11	234744.70	1142.66
153	436428.99	234760.99	1142.22
154	436421.81	234764.02	1142.26
155	436419.81	234759.65	1142.71

425

℄ T.H. 28

① CONCRETE GUTTER DESIGN SPECIAL

2ND AVE. NW

31.5'

R10'

R20'

14'

R42'

4' WALK

B624 C&G

SPECIFIC NOTE:

① SEE SHEET 52 FOR CONCRETE GUTTER DESIGN SPECIAL.

10' BLVD

6' SHLD

12'

1:5

1:30

℄ T.H. 28

433

434

14'

8' CONC. MEDIAN

8' SHLD

15' BLVD

8' WALK

20

SCALE IN FEET

SPECIFIC NOTE:

① CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STANDARD PLATE 7113. (PAID FOR AS 6" CONCRETE WALK)

MEDIAN DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
160	437107.29	234381.42	1143.67
161	437145.31	234341.45	1143.71
162	437271.80	234214.33	1144.12
163	437266.88	234208.03	1144.12
164	437139.34	234336.13	1143.71
165	437104.15	234378.44	1143.67

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DESIGNER: RDH				
CHECKED BY: HLR				

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS

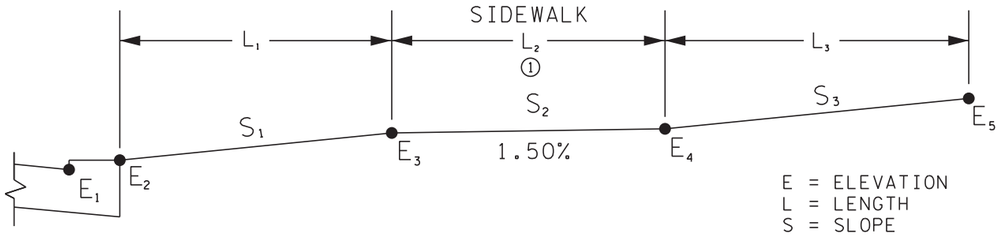
2ND AVE NW & T.H. 28 RAISED MEDIAN

FILE NO. MNT04-134590

MD1 OF MD10

48 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_md1.dgn
MODEL: MD1



E = ELEVATION
L = LENGTH
S = SLOPE

T.H. 28		APRON WIDTH	DRIVEWAY SURFACE MATERIAL	CURB TYPE ④	GUTTER	BACK OF CURB	BLVD		FRONT OF WALK	WALK		BACK OF WALK	DRIVEWAY BEHIND WALK		
STATION	SIDE	FT			E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	E5
436+59.6	RT	36	CONCRETE	2	1144.21	1144.38	11.33	-3.61%	1143.97	8.00	1.50%	1144.09	27.30	0.30%	1144.17
437+27.5	RT	24	BIT	1	1144.39	1144.47	11.33	-0.04%	1144.47	8.00	1.50%	1144.59	12.05	1.50%	1144.77
437+97.2	RT	32	BIT	2	1144.60	1144.77	11.33	-1.68%	1144.58	8.00	1.50%	1144.70	4.25	1.50%	1144.76
439+01.8	RT	20	BIT	2	1144.91	1145.08	11.33	-3.22%	1144.71	8.00	1.50%	1144.83	3.24	1.50%	1144.88
440+00.4	LT	23	CONCRETE	1	1145.51	1145.59	9.33	4.25%	1145.99	10.00	1.50%	1146.14	5.35	1.50%	1146.22
547+76.3	LT	25	②	2	1183.22	1183.39	11.50	8.61%	1184.38	8.00	1.50%	1184.50	-	-	-
548+47.6	LT	25	②	3	1183.04	1183.29	11.50	9.71%	1184.41	8.00	1.50%	1184.53	-	-	-
549+49.6	LT	25	BIT	3	1182.61	1182.86	11.50	8.87%	1183.88	8.00	1.50%	1184.00	0.50	5.90%	1184.03
552+28.7	LT	32	BIT	1	1181.24	1181.33	13.50	2.13%	1181.61	8.00	1.50%	1181.73	1.05	1.50%	1181.75
552+52.4	RT	20	BIT	2	1181.14	1181.31	11.50	2.61%	1181.61	8.00	1.50%	1181.73	4.02	1.50%	1181.79
552+73.6	LT	12	BIT	1	1181.05	1181.14	13.50	-1.28%	1180.97	8.00	1.50%	1181.09	1.00	1.50%	1181.10
566+75.9	LT	11	BIT	1		1256.11	17.7	-1.69%	1255.81	6.00	1.50%	1255.9	2.00	7.96%	1256.06

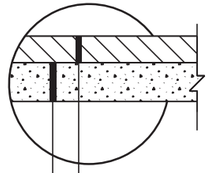
MINNESOTA		APRON WIDTH	DRIVEWAY SURFACE MATERIAL	CURB TYPE ④	GUTTER	BACK OF CURB	BLVD		FRONT OF WALK	WALK		BACK OF WALK	DRIVEWAY BEHIND WALK		
STATION	SIDE	FT			E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	E5
10+16.0	RT	16	CONCRETE	1	1143.21	1143.29	12.97	4.02%	1143.82	8.00	1.50%	1143.94	0.240	1.50%	1143.94
10+63.3	RT	24	CONCRETE	1	1143.10	1143.19	11.33	2.28%	1143.45	8.00	1.50%	1143.57	7.630	1.50%	1143.68
11+04.9	RT	31.5	CONCRETE	2	1143.01	1143.18	11.33	-3.35%	1142.80	8.00	0.50%	1142.84	16.840	1.50%	1143.09

1ST ST. W.		APRON WIDTH	DRIVEWAY SURFACE MATERIAL	CURB TYPE	GUTTER	BACK OF CURB	DRIVEWAY APRON		BACK OF APRON	SIDEWALK (PAR)		BACK OF WALK	DRIVEWAY BEHIND WALK		
STATION	SIDE	FT			E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	E5
1ST ST. NW	LT	16	CONCRETE	1	1149.00	1149.08	7.70	6.15%	1149.56	5.00	1.50%	1149.63	-	-	-
1ST ST. SW	LT	16	CONCRETE	1	1147.72	1147.80	5.30	6.50%	1148.15	5.00	1.50%	1148.22	-	-	-

T.H. 104		APRON WIDTH	DRIVEWAY SURFACE MATERIAL	CURB TYPE ④	GUTTER	BACK OF CURB	DRIVEWAY APRON		BACK OF APRON	SIDEWALK (PAR)		BACK OF WALK	DRIVEWAY BEHIND WALK		
STATION	SIDE	FT			E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	E5
18+10.4	RT	24	CONCRETE	1	1146.82	1146.90	3.00	7.00%	1147.11	5.00	1.50%	1147.19	4.00	9.09%	1147.55
18+51.4	LT	29.5	CONCRETE	1	1147.81	1147.89	3.00	4.00%	1148.01	5.00	1.50%	1148.08	10.00	5.74%	1148.66
18+77.4	LT	12	③	1	1148.39	1148.47	3.00	6.00%	1148.65	5.00	1.50%	1148.73	-	-	-
19+17.9	RT	28	CONCRETE	1	1149.48	1149.56	4.00	5.54%	1149.79	5.00	1.50%	1149.86	2.30	3.48%	1149.94
19+92.1	LT	14.4	CONCRETE	3	1151.23	1151.48	3.00	8.00%	1151.72	5.00	1.50%	1151.79	10.00	13.60%	1153.15
20+28.4	LT	22.7	CONCRETE	3	1151.85	1152.10	3.00	8.00%	1152.34	5.00	1.50%	1152.42	13.00	16.98%	1154.62
20+69.7	RT	25.7	②	3	1151.99	1152.24	7.00	7.64%	1152.78	5.00	1.50%	1152.85	-	-	-
23+42.0	LT	15.7	BIT	3	1156.08	1156.33	3.00	8.00%	1156.57	5.00	1.50%	1156.64	7.00	11.43%	1157.44
23+78.7	RT	24	BIT	1	1155.57	1155.65	3.00	8.00%	1155.89	5.00	1.50%	1155.97	-	-	-
25+45.0	RT	23.5	BIT	1	1152.11	1152.19	3.00	8.00%	1152.43	5.00	1.50%	1152.51	-	-	-
26+48.4	LT	28.8	GRAVEL	1	1149.78	1149.86	3.00	6.00%	1150.04	5.00	1.50%	1150.12	10.00	5.56%	1150.67
29+69.5	RT	19	BIT	1	1150.14	1150.22	3.00	4.00%	1150.34	5.00	1.50%	1150.42	3.00	6.36%	1150.61
29+70.8	LT	17	BIT	1	1150.20	1150.28	3.00	4.00%	1150.40	5.00	1.50%	1150.48	2.00	2.13%	1150.52
32+84.5	LT	20.6	BIT	1	1157.71	1157.79	3.00	5.00%	1157.94	4.65	1.50%	1158.01	4.50	7.80%	1158.36
32+84.7	RT	19.5	BIT	2	1157.30	1157.47	3.00	10.00%	1157.77	4.70	1.50%	1157.84	9.00	10.08%	1158.74

T.H. 29		APRON WIDTH	DRIVEWAY SURFACE MATERIAL	CURB TYPE ④	GUTTER	BACK OF CURB	DRIVEWAY APRON		BACK OF APRON	SIDEWALK (PAR)		BACK OF WALK	DRIVEWAY BEHIND WALK		
STATION	SIDE	FT			E1	E2	L1 FT	S1 %	E3	L2 FT	S2 %	E4	L3 FT	S3 %	E5
36+35.4	LT	16.5	BIT	1	1158.36	1158.44	3.00	8.00%	1158.68	5.00	1.50%	1158.76	5.00	7.61%	1159.14
38+79.6	RT	42	BIT	3	1157.99	1158.24	4.00	8.00%	1158.56	7.00	1.50%	1158.67	-	-	-
40+07.9	RT	24	BIT	1	1157.47	1157.55	3.00	4.00%	1157.67	5.40	1.50%	1157.75	6.00	8.04%	1158.24
42+61.2	LT	17.4	BIT	1	1161.98	1162.06	3.00	4.00%	1162.18	5.00	1.50%	1162.26	4.00	-10.21%	1161.85
46+15.1	RT	16	BIT	3	1168.25	1168.50	3.00	10.00%	1168.80	4.00	1.50%	1168.86	10.00	13.80%	1170.24
46+24.3	LT	27.7	②	1	1167.93	1168.01	3.00	4.00%	1168.13	5.00	1.50%	1168.21	-	-	-
47+26.6	RT	24.2	CONCRETE	3	1164.09	1164.34	3.00	8.00%	1164.58	4.00	1.50%	1164.64	10.00	10.53%	1165.69
47+90.4	RT	18.6	BIT	1	1161.54	1161.63	3.00	4.00%	1161.75	5.00	1.50%	1161.82	2.00	3.28%	1161.89
49+56.0	RT	32	BIT	1	1158.34	1158.42	3.00	4.00%	1158.54	5.00	1.50%	1158.62	5.00	7.69%	1159.00
53+03.8	RT	24	BIT	2	1165.00	1165.08	3.00	6.00%	1165.26	5.00	1.50%	1165.34	10.00	10.89%	1166.43
53+59.5	RT	24	BIT	1	1167.80	1167.88	3.00	4.00%	1168.00	5.00	1.50%	1168.08	6.00	8.36%	1168.58
54+69.5	RT	28.5	BIT	1	1173.56	1173.64	3.00	6.00%	1173.82	4.40	1.50%	1173.89	10.00	8.23%	1174.71
55+95.9	RT	16	GRAVEL	1	1180.81	1180.89	3.00	4.00%	1181.01	5.00	1.50%	1181.09	5.00	7.65%	1181.47
59+04.2	RT	15.7	BIT	1	1196.36	1196.44	3.00	10.00%	1196.74	5.00	1.50%	1196.82	5.00	4.01%	1197.02

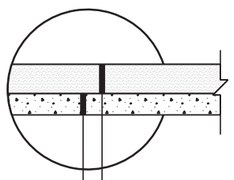
BITUMINOUS



4.0" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB340C) (2 LIFTS)

6.0" AGGREGATE BASE, CLASS 5

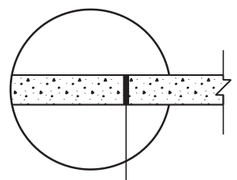
CONCRETE



8.0" CONCRETE DRIVEWAY PAVEMENT

6.0" AGGREGATE BASE, CLASS 5

GRAVEL



6.0" AGGREGATE SURFACING, CLASS 1 MOD

SPECIFIC NOTES:

① SIDEWALK THROUGH DRIVEWAYS SHALL BE 8" CONCRETE DRIVEWAY PAVEMENT.

② NOT APPLICABLE. DRIVEWAY TIES IN AT BACK OF SIDEWALK.

③ NOT APPLICABLE. GRASS BEHIND DRIVEWAY.

④ SEE MNDOT STANDARD PLAN 5-297.254 FOR DRIVEWAY CURB TYPES.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
DRIVEWAY DETAILS

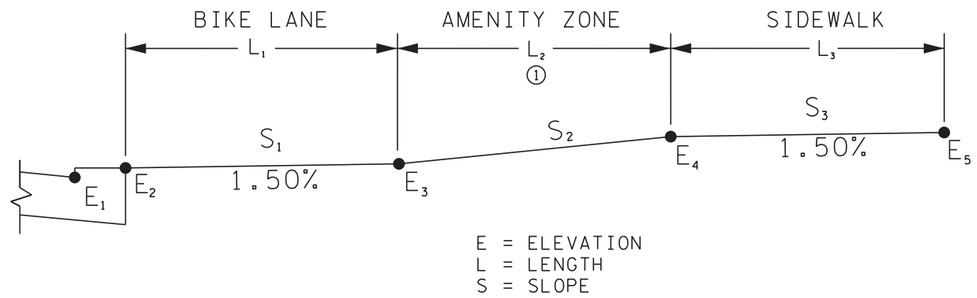
FILE NO. MNT04-134590
MD2 OF MD10

49 / 310

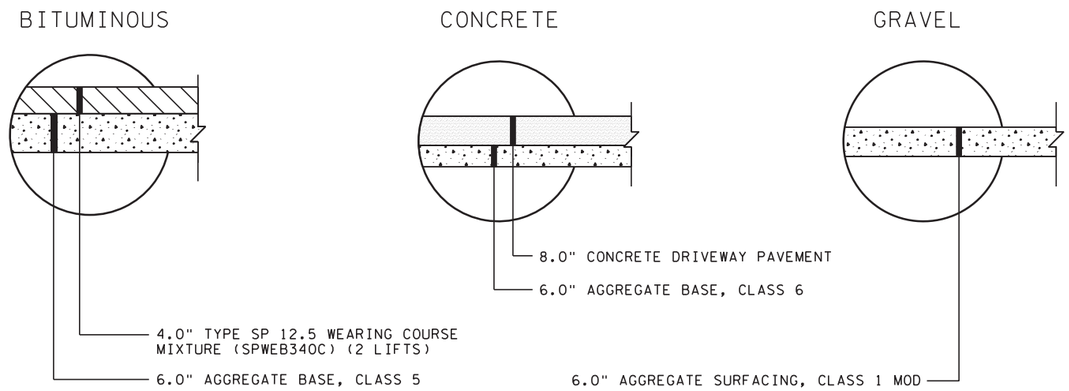
FILE: S:\X0\W\Mnt04\134590\5-final-dsgn\5]-drawings\40-TransHwy\plnshts\CD610332_md1.dgn
MODEL: MD2

6/30/2017 7:56:43 AM

TH 28		APRON WIDTH	DRIVEWAY SURFACE MATERIAL	CURB TYPE ②	GUTTER	BACK OF CURB	BIKEWAY		BACK OF BIKEWAY	AMENITY ZONE		BACK OF AMENITY ZONE	SIDEWALK		
STATION	SIDE				E1	E2	L1	S1	E3	L2	S2	E4	L3	S3	E5
		FT					FT	%		FT	%		FT	%	
441+92.9	RT	32	CONCRETE	1	1145.23	1145.31	6.33	1.50%	1145.41	7.00	5.31	1145.78	6.00	1.50%	1145.87
442+69.2	LT	34	CONCRETE	1	1146.48	1146.56	6.33	1.50%	1146.66	7.00	7.02	1147.15	6.00	1.50%	1147.24
443+08.1	LT	16	CONCRETE	1	1147.00	1147.08	6.33	1.50%	1147.18	7.00	9.45	1147.84	6.00	1.50%	1147.93
443+34.6	RT	16	CONCRETE	1	1146.62	1146.70	6.33	1.50%	1146.80	7.00	9.45	1147.46	6.00	1.50%	1147.55
444+81.1	RT	16	CONCRETE	1	1150.05	1150.13	6.33	1.50%	1150.23	7.00	0.09	1150.23	8.35	1.50%	1150.36
444+91.4	LT	24	CONCRETE	1	1151.17	1151.25	6.33	1.50%	1151.35	7.00	3.76	1151.61	9.25	1.50%	1151.75
445+92.3	RT	16	CONCRETE	1	1152.66	1152.74	6.33	1.50%	1152.84	7.00	-0.66	1152.79	8.52	1.50%	1152.92
446+39.7	RT	30	CONCRETE	3	1153.77	1154.02	6.33	1.50%	1154.12	7.00	9.73	1154.80	8.67	1.50%	1154.93
544+43.1	LT	36	CONCRETE	1	1180.66	1180.75	6.33	1.50%	1180.84	7.00	9.24	1181.49	6.00	1.50%	1181.58
545+08.4	LT	70	CONCRETE	2	1182.24	1182.40	6.33	1.50%	1182.50	7.00	8.76	1183.11	6.00	1.50%	1183.2



E = ELEVATION
L = LENGTH
S = SLOPE



NOTES:

① SIDEWALK THROUGH ENTRANCES SHALL BE 8" CONCRETE DRIVEWAY PAVEMENT.

② SEE MNDOT STANDARD PLAN 5-297.254 FOR DRIVEWAY CURB TYPES.

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: RDH
CHECKED BY: HLR

NO.	BY	DATE	REVISIONS

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.
Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
DRIVEWAY DETAILS

FILE NO. MNT04-134590
MD3 OF MD10
50 / 310

40

SCALE IN FEET

SPECIFIC NOTES:
(PERKINS CREEK STA. 100+00 TO 104+25)

① WIDENING OF THE LOWER CHANNEL SHALL BE LIMITED TO LOCATIONS WHERE THE ACTIVE FLOW WIDTH IS LESS THAN 14-FEET.

② PROVIDE A 1V:10H BENCH AND 1V:2H SIDE SLOPES IN CHANNEL WIDENING LOCATIONS OR WHEN THE EXISTING SLOPE ABOVE THE TOP OF BANKS IS STEEPER THAN 1V:2H.

③ PLACE FLOTATION SILT CURTAIN AROUND LAKE OUTLET AT A MINIMUM DISTANCE OF 40 FEET FROM THE EXISTING BOX CULVERT.

LEGEND

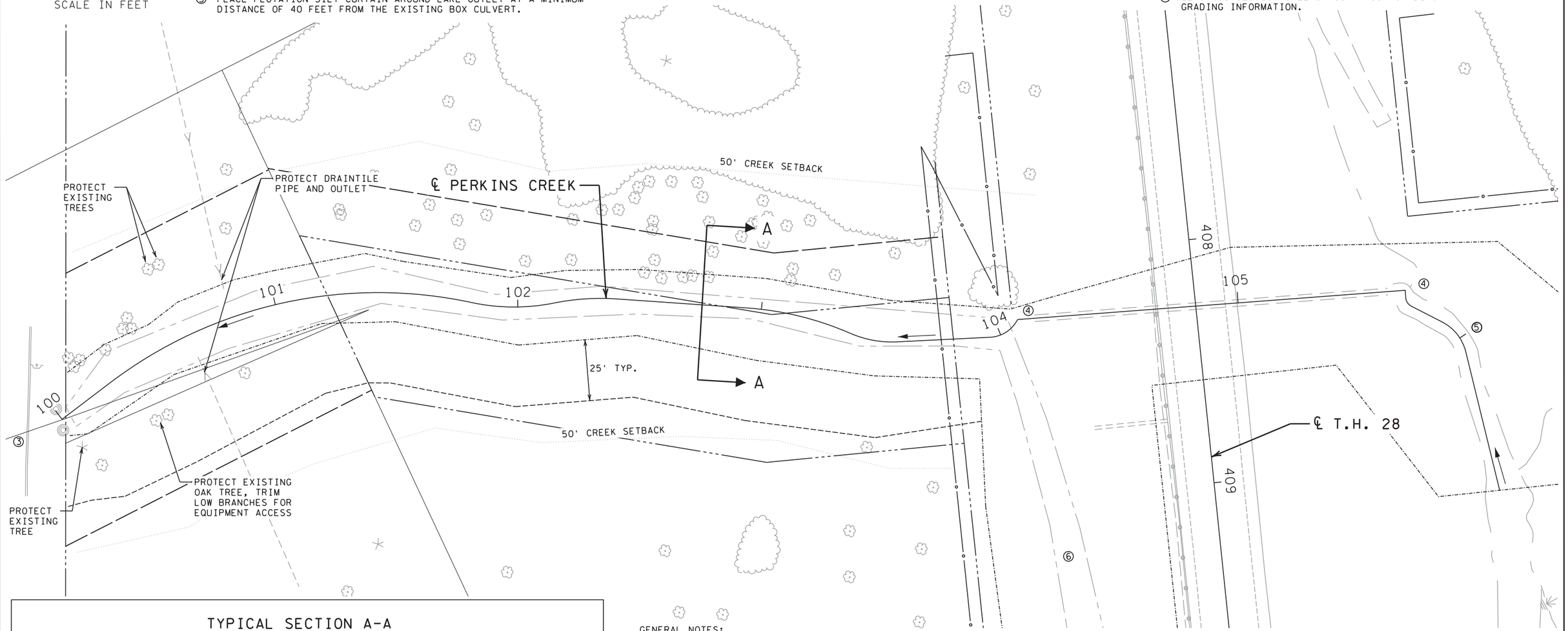
- INPLACE RIGHT-OF-WAY
- INPLACE ACCESS CONTROL
- CONSTRUCTION LIMITS
- WORK AREA LIMITS

SPECIFIC NOTES (CONTINUED):
(PERKINS CREEK STA. 104+25 TO 106+60)

④ REPAIR CULVERT ENDS TO RESTORE ROUND SHAPE OF OPENINGS, AND REMOVE ANY SEDIMENT AND/OR DEBRIS OBSTRUCTING THE CULVERT ENDS. PAID FOR AS REPAIR CULVERT END.

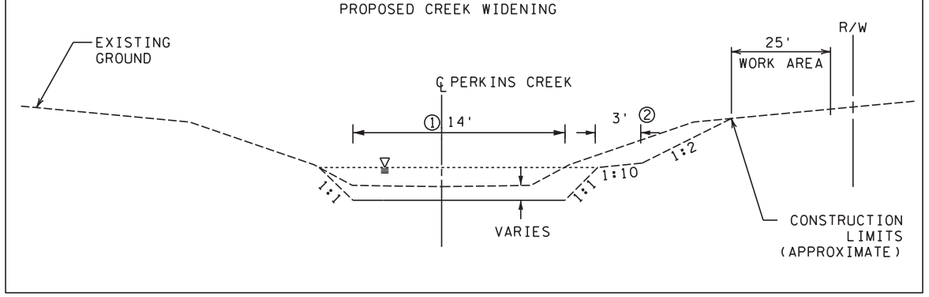
⑤ EXCAVATE EXCESS SEDIMENT ACCUMULATION FROM THE CHANNEL BOTTOM FOR A DISTANCE OF APPROXIMATELY 100 FEET UPSTREAM OF CULVERT END. PAID FOR AS EXCAVATION CHANNEL AND POND.

⑥ SEE CROSS SECTION SHEETS XS1 - XS3 FOR DITCH GRADING INFORMATION.



TYPICAL SECTION A-A

PROPOSED CREEK WIDENING



GENERAL NOTES:

SEE SHEET 217 FOR PLANTING DETAILS AND SCHEDULE, AND EROSION CONTROL AND TURF ESTABLISHMENT PLAN.

SEE SHEET 123 FOR CLEARING AND GRUBBING.

SEE EARTHWORK SUMMARY ON SHEET 12 FOR EXCAVATION - CHANNEL AND POND. THIS EARTHWORK SHALL RESULT IN MINIMUM ALTERATION OF THE EXISTING CHANNEL FROM STA. 100+00 TO 106+60. PAID FOR AS EXCAVATION - CHANNEL AND POND.

REMOVE EXISTING DEBRIS AND VEGETATION ALONG ACTIVE CHANNEL BOTTOM AS NEEDED. PAID FOR AS DITCH CLEANING.

AQUATIC USE GLYPHOSATE SPRAYING SHALL BE APPLIED ONE TO FOUR WEEKS PRIOR TO ANY DISTURBANCE OR VEHICLE TRAFFIC. PAID FOR AS WEED SPRAYING SPECIAL.

CONTRACTOR EQUIPMENT TRAFFIC SHALL BE KEPT TO THE EAST SIDE OF THE CREEK. CONSTRUCTION MATS TO BE PLACED FOR ALL EQUIPMENT TRAVEL AND WORK AREAS (INCIDENTAL).

PERKINS CREEK CLEANING				0
PROJECT	ALIGNMENT & STATION	LOCATION	REPAIR CULVERT END	DITCH CLEANING
			EACH	LIN FT
S.P. 6103-32	PERKINS CREEK			
	100+00 - 104+25	LT & RT	1	425
	105+65 - 106+65	LT & RT	1	100
	SUBTOTALS		2	525
	TOTALS		2	525

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

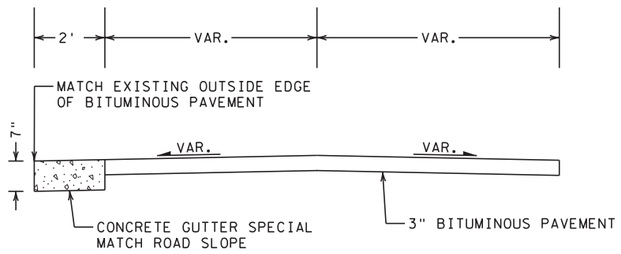
I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
Certified By: _____ Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

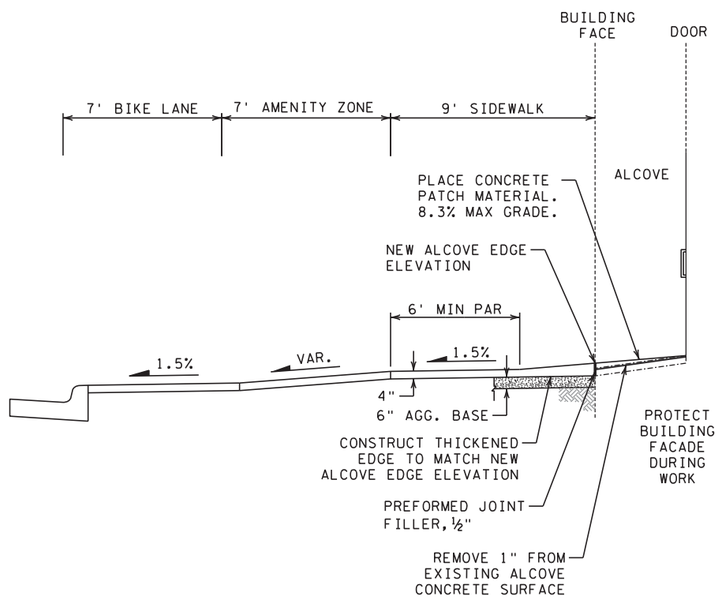
MISCELLANEOUS DETAILS
PERKINS CREEK MODIFICATIONS

FILE NO. MNT04-134590
MD4 OF MD10
51 / 310



CONCRETE GUTTER DESIGN SPECIAL

6TH ST NW & 2ND AVE NW



ALCOVE REPAIR

(2433) CONCRETE SURFACE REPAIR
SEE INTERSECTION AND SIDEWALK DETAIL
PLAN FOR LOCATIONS

GENERAL NOTES:

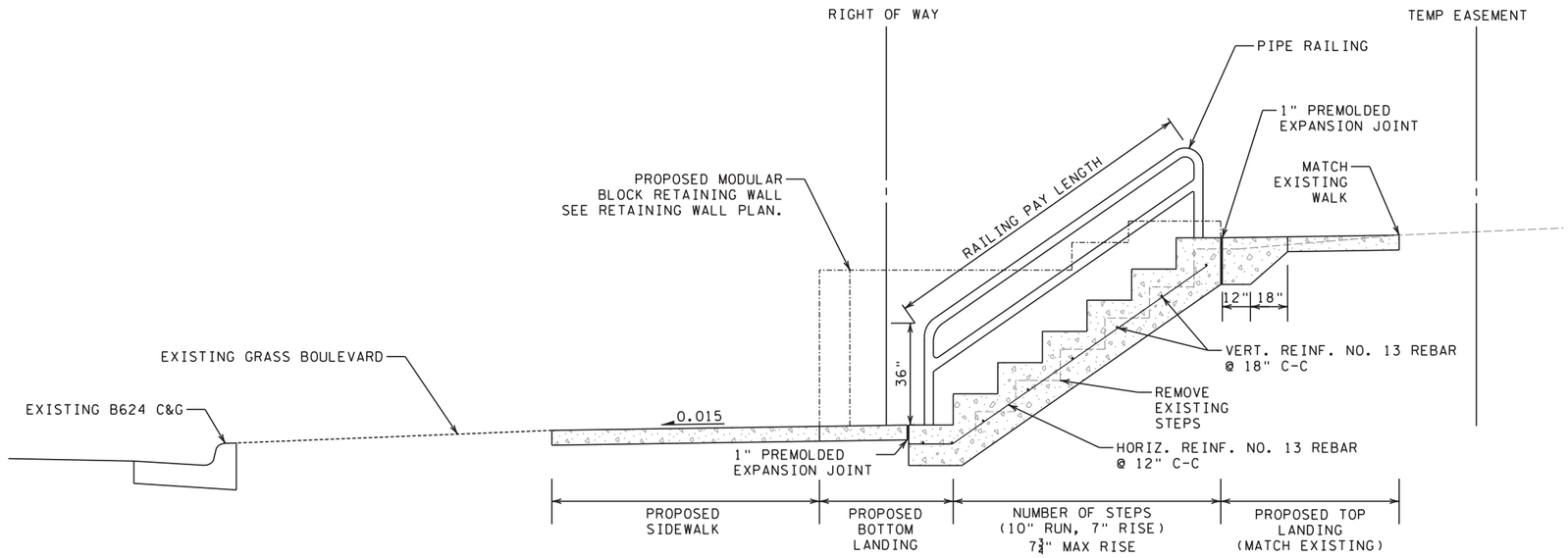
CONCRETE STAIRWAY DETAIL AND STEP SCHEDULE ARE FOR INFORMATION ONLY. THE EXACT LANDING WIDTHS AND STEP CONFIGURATIONS SHALL MATCH CLOSELY TO THE EXISTING CONDITIONS AND MAY BE ADJUSTED BY THE ENGINEER IN THE FIELD.

SEE MNDOT STANDARD PLATE 8400 FOR RAILING DETAIL.

STEPS ARE PAID FOR BY EACH COMPLETE CONCRETE STAIRWAY. THIS SHALL INCLUDE ALL ASSOCIATED WORK AS SHOWN IN THIS DETAIL.

LANDINGS ARE PAID FOR AS 4" CONCRETE WALK OVER 6" AGGREGATE BASE (CV) CLASS 5. SEE QUANTITY TABULATIONS.

REMOVAL OF THE EXISTING STEPS SHALL BE PAID FOR AS REMOVE CONCRETE STEPS BY THE EACH. (EACH TREAD)



STEP SCHEDULE — W

STATION	LOCATION	EXISTING STEPS AVGERAGE RISE	REMOVE CONCRETE STEPS	PROPOSED TOP LANDING LENGTH	PROPOSED TOP LANDING ELEVATION	CONCRETE STAIRWAY	PROPOSED STEPS PER CONCRETE STAIRWAY	STAIRWAY LENGTH	PROPOSED BOTTOM LANDING LENGTH	PROPOSED BOTTOM LANDING ELEVATION	BOTTOM WALK WIDTH	EXISTING TOP LANDING ELEVATION	EXISTING BOTTOM OF STEP ELEVATION	PIPE RAILING
		INCHES	EACH	LIN FT		EACH	EACH	LIN FT	LIN FT		LIN FT			LIN FT
560+80	RT	7.2	8	4	1224.87	1	9	7.5	3	1219.795	6	1224.7	1219.93	9
561+53	RT	6.8	6	4	1228.49	1	5	4.2	3	1225.395	6	1228.28	1225.43	7
562+15	RT	8.0	8	4	1235.39	1	10	8.3	3	1229.455	6	1234.76	1229.4	11
562+75	RT	5.3	8	4	1238.49	1	8	6.7	3	1234.015	6	1237.94	1234.42	8
TOTALS			30			4								35

CONCRETE STAIRWAY & PIPE RAILING

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
CONCRETE GUTTER DESIGN SPECIAL,
ALCOVE REPAIR, CONCRETE STAIRWAY & RAILING

FILE NO. MNT04-134590 | MD5 OF MD10 | 52/310

7:56:49 AM
6/30/2017
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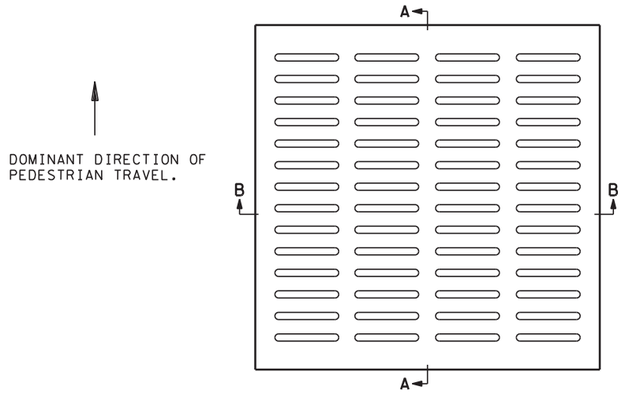
GENERAL NOTES:

GRATE CASTING IS ADA COMPLIANT.

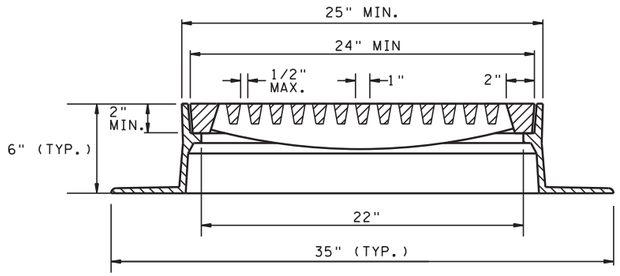
PLACE GRATE PERPENDICULAR TO THE DOMINANT DIRECTION OF PEDESTRIAN TRAVEL.

ADA SAFE GRATE CASTING NEEDS TO BE USED WITH A NEW FRAME CASTING DUE TO THE NON-STANDARD GRATE SIZE.

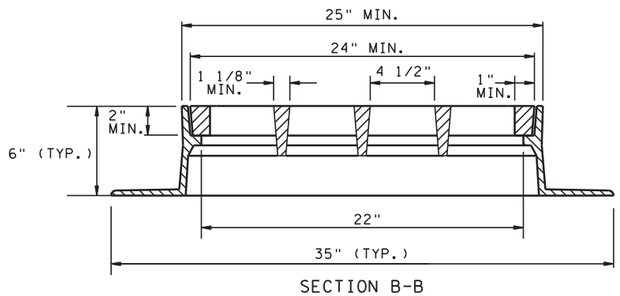
MINIMUM OPEN AREA 0.79 SQ FT.



TOP VIEW



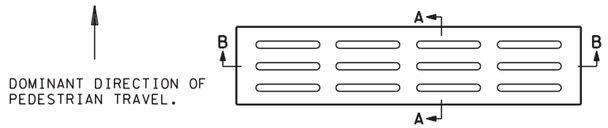
SECTION A-A



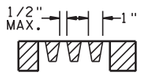
SECTION B-B

ADA CATCH BASIN FRAME AND GRATE CASTING

TOP VIEW



SECTION A-A



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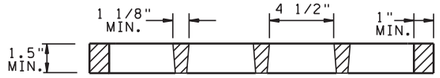

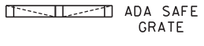

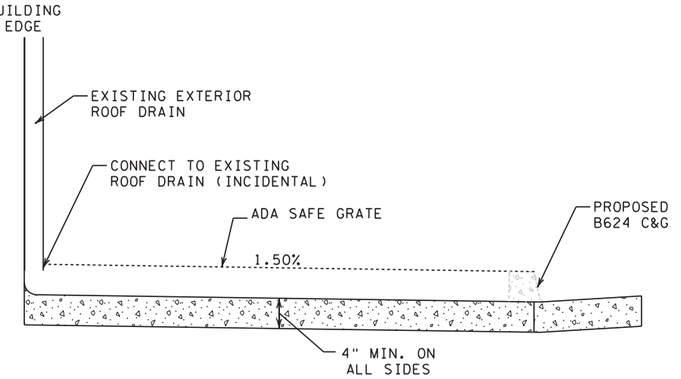

NOTES:

GRATE CASTING IS ADA COMPLIANT.

OKACE GRATE PERPENDICULAR TO THE DOMINANT DIRECTION OF PEDESTRIAN TRAVEL

INCLUDES ALL ASSOCIATED WORK.

ADA SAFE TRENCH DRAIN

(2503) TRENCH DRAIN

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
ADA CATCH BASIN FRAME AND GRATE CASTING, ADA SAFE TRENCH DRAIN

FILE NO. MNT04-134590
MD6 OF MD10
53 / 310

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_md1.dgn
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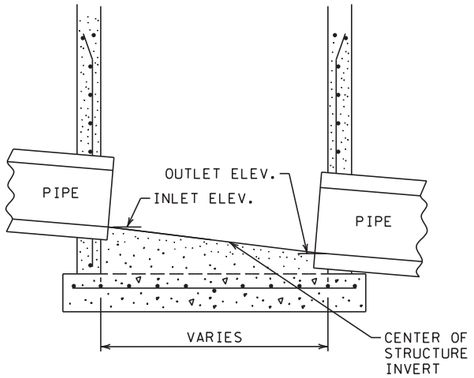


INLET ELEVATION = PIPE INVERT (AT CENTER OF STRUCTURE) +
PIPE SLOPE X STRUCTURE RADIUS

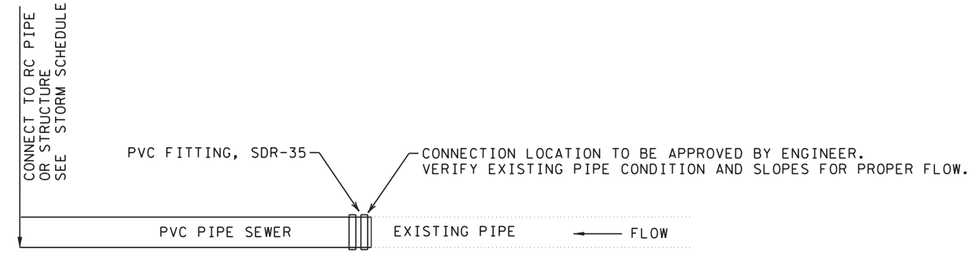
OUTLET ELEVATION = PIPE INVERT (AT CENTER OF STRUCTURE) -
PIPE SLOPE X STRUCTURE RADIUS

PIPE INVERTS SHOWN ON PROFILES ARE GIVEN AT THE CENTER OF
THE STRUCTURE

PIPE SLOPE IS CALCULATED FROM STRUCTURE CENTER INVERTS AND
LENGTHS FROM CENTER OF STRUCTURE

FOR PIPES WITH APRONS, PIPE SLOPE IS CALCULATED USING THE
APRON OUTLET INVERT AND THE APRON LENGTH. THE APRON LENGTH
IS NOT INCLUDED IN THE TABBED PIPE LENGTH.

INVERT EXPLANATION



MATCH PIPE SIZE TO EXISTING PIPE.
PVC PIPE PAID FOR AS LIN FT OF
4" OR 6" PVC PIPE

CONNECTION PAID FOR AS ROOF DRAIN DESIGN SPECIAL BY THE EACH
(FITTINGS, BENDS, AND ALL OTHER MATERIAL & LABOR REQUIRED
TO CONNECT TO THE EXISTING PIPE & TO PROPOSED CONCRETE PIPE
OR STRUCTURE ARE INCIDENTAL)

NOTE: PLACE CEMENT SOLVENT ON ALL JOINTS (INCIDENTAL)

ROOF DRAIN/SUMP CONNECTION

(2502) ROOF DRAIN DESIGN SPECIAL

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_mdl.dgn
MODEL: MD7

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

I hereby certify that this plan was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.
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Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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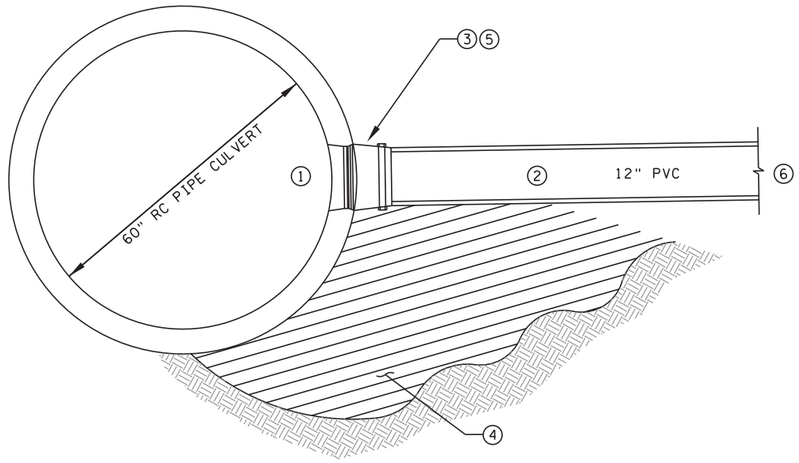
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
INVERT EXPLANATION,
AND ROOF DRAIN/SUMP CONNECTION

FILE NO. MNT04-134590
MD7 OF MD10

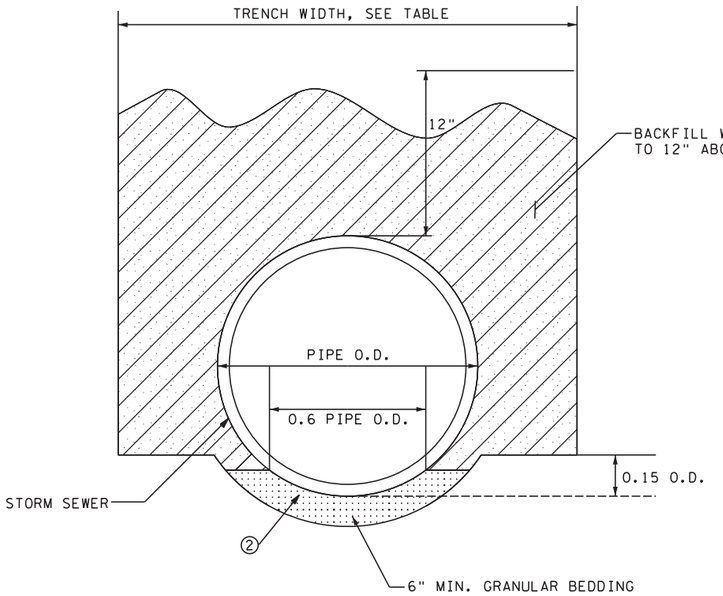


KEYNOTES:

1. CORE DRILL RC CULVERT FOR PROPOSED CONNECTION.
2. PIPE SHALL BE 12" DIAMETER SDR 26 PVC. VERIFY PIPE SLOPES TO DRAIN INTO CULVERT (PAID FOR BY THE LIN FT AS ITEM 12" PVC PIPE SEWER).
3. CONNECTOR SHALL NOT BE ENCASED IN CONCRETE (ALLOW FLEXIBILITY IN JOINT).
4. COMPACTED BEDDING (INCIDENTAL).
5. WATERTIGHT PIPE CONNECTION.
6. CONNECT TO CB-819 (INCIDENTAL). SEE STORM SEWER TAB FOR LOCATION & ELEVATIONS.

LATERAL PVC CONNECTION

(2503) CONNECT TO INPLACE CULVERT



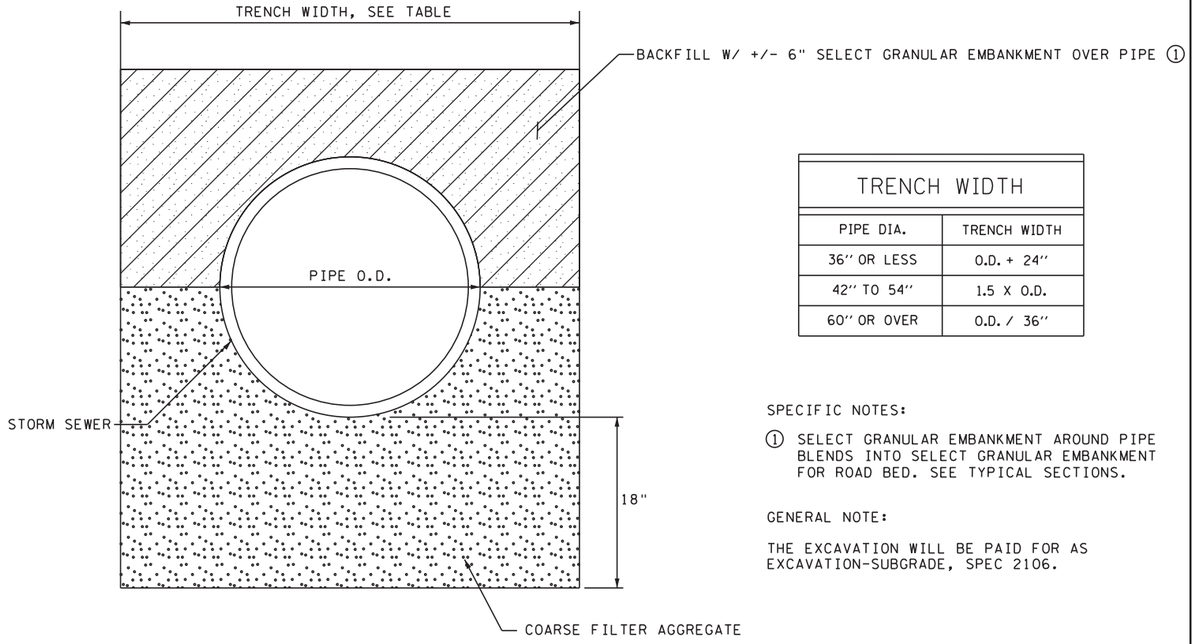
TRENCH WIDTH	
PIPE DIA.	TRENCH WIDTH
36" OR LESS	O.D. + 24"
42" TO 54"	1.5 X O.D.
60" OR OVER	O.D. / 36"

SPECIFIC NOTES:

1. PLASTIC PIPE (CP, PP, OR PVC) MUST USE APPLICALBLE BEDDING DETAIL FROM TECH MEMO 17-05-B-02.
2. THE GRANULAR BEDDING SHALL BE SHAPED TO MATCH THE OUTSIDE DIAMETER OF PIPE TO BE PLACED. THIS SHAPING SHALL BE DONE USING A TEMPLATE WITH THE SAME DIMENSIONS AS THE PIPE BEING PLACED (INCIDENTAL).

STORM PIPE TRENCH DETAIL 1 ①

ALL STORM PIPES EXCEPT TH 28 STA 430+75 TO 443+80, 5TH ST NW, AND MINNESOTA AVE STA 10+50 TO 11+20



TRENCH WIDTH	
PIPE DIA.	TRENCH WIDTH
36" OR LESS	O.D. + 24"
42" TO 54"	1.5 X O.D.
60" OR OVER	O.D. / 36"

SPECIFIC NOTES:

1. SELECT GRANULAR EMBANKMENT AROUND PIPE BLENDS INTO SELECT GRANULAR EMBANKMENT FOR ROAD BED. SEE TYPICAL SECTIONS.

GENERAL NOTE:

THE EXCAVATION WILL BE PAID FOR AS EXCAVATION-SUBGRADE, SPEC 2106.

STORM PIPE TRENCH DETAIL 2

TH 28 STA 430+75 TO 443+80, 5TH ST NW,
AND MINNESOTA AVE STA 10+50 TO 11+20

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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

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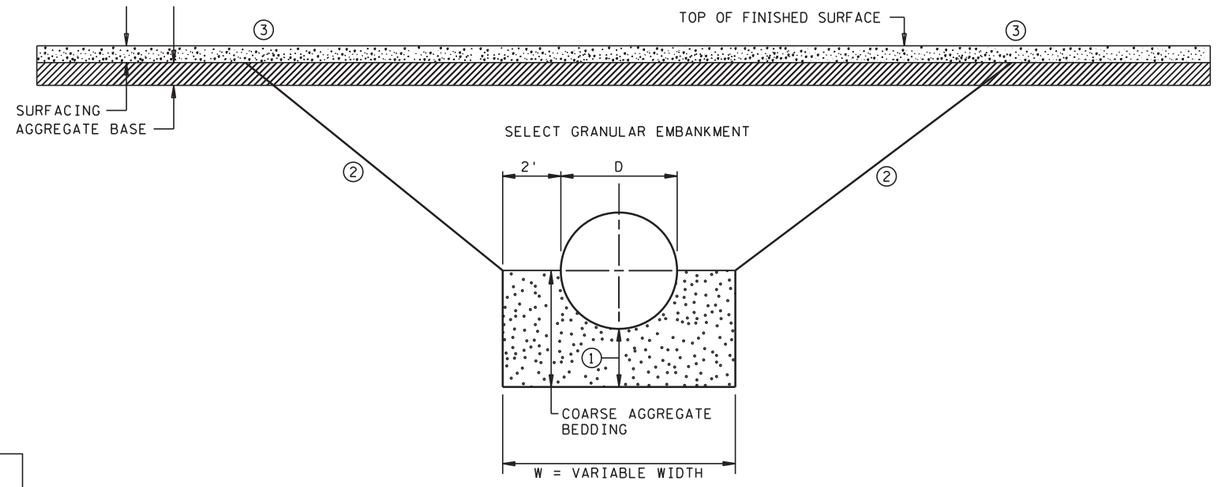
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
LATERAL PVC CONNECTION, AND PIPE TRENCH

FILE NO. MNT04-134590
MD8 OF MD10



TREATMENT OF DITCH CULVERTS

LEGEND:

D = OUTSIDE DIAMETER OF ROUND PIPE

SPECIFIC NOTES:

(1) DEPTH SHALL BE 2.0' UNLESS MODIFIED BY THE SOILS ENGINEER

(2) TAPER SHALL BE MIN. 1:2 UNLESS MODIFIED BY SOILS ENGINEER

(3) TAPER SHALL END AT BOTTOM OF PAVEMENT.

GENERAL NOTES:

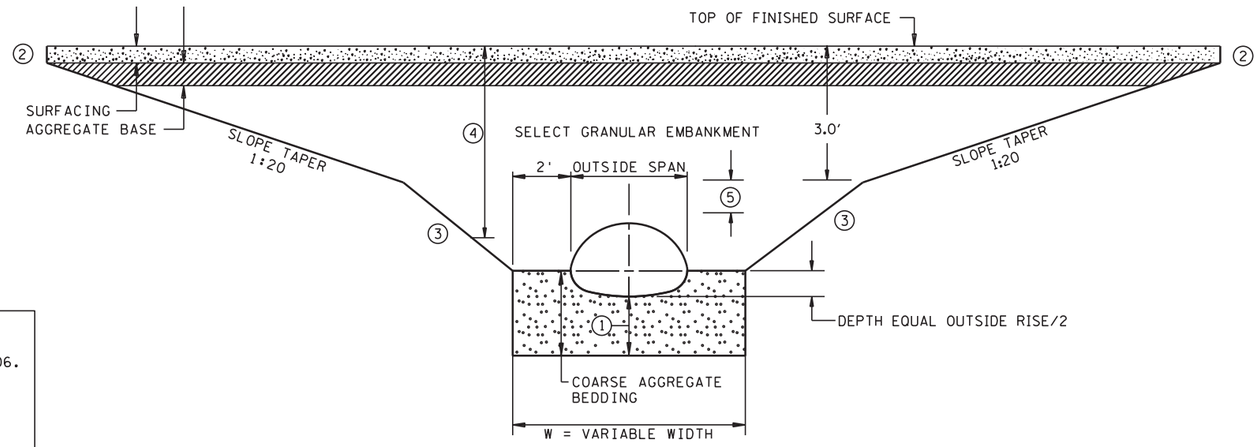
THE EXCAVATION WILL BE PAID FOR AS EXCAVATION-SUBGRADE, SPEC 2106.

SPEC. 2451 SHALL APPLY TO BEDDING AND BACKFILL CONSTRUCTION.

SELECT GRANULAR EMBANKMENT MATERIAL ITEM SHALL BE MEASURED ON THE BASIS OF COMPACTED VOLUME.

AGGREGATE BEDDING SHALL BE PLACED TO THE END OF THE APRONS.

GRANULAR TREATMENT SHALL BE PLACED TO THE END OF THE BARREL AND TAPER TO THE GRADING GRADE P.I. WITHIN THE LIMITS OF THE AGGREGATE BEDDING.



TREATMENT OF CENTER LINE CULVERT

TH 28 STA 415+38

SPECIFIC NOTES:

(1) DEPTH SHALL BE 2.0' UNLESS MODIFIED BY THE SOILS ENGINEER.

(2) TAPER SHALL END AT BOTTOM OF PAVEMENT.

(3) TAPER SHALL BE MIN. 1:4 UNLESS MODIFIED BY SOILS ENGINEER.

(4) AVERAGE FROST DEPTH TO BE DETERMINED BY THE SOILS ENGINEER.

(5) IF THE DISTANCE FROM 3.0' BELOW THE PROFILE GRADE TO THE TOP OF THE PIPE IS GREATER THAN OR EQUAL TO 4.0' THEN COMMON EMBANKMENT (SELECT GRADING) MAY BE USED IN THIS AREA AT THE DISCRETION OF THE ENGINEER.

GENERAL NOTES:

THE EXCAVATION WILL BE PAID FOR AS EXCAVATION-SUBGRADE, SPEC 2106.

SPEC. 2451 SHALL APPLY TO BEDDING AND BACKFILL CONSTRUCTION.

SELECT GRANULAR EMBANKMENT MATERIAL ITEM SHALL BE MEASURED ON THE BASIS OF COMPACTED VOLUME.

AGGREGATE BEDDING SHALL BE PLACED TO THE END OF THE APRONS.

GRANULAR TREATMENT SHALL BE PLACED TO THE END OF THE BARREL AND TAPER TO THE GRADING GRADE P.I. WITHIN THE LIMITS OF THE AGGREGATE BEDDING.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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CITY OF GLENWOOD
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S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
TREATMENT OF CULVERTS AND CENTER LINE CULVERT

FILE NO. MNT04-134590
MD9 OF MD10
56 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_md1.dgn
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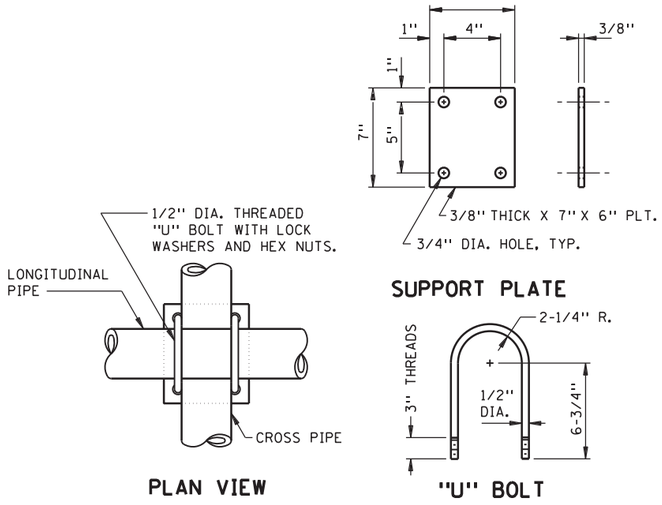
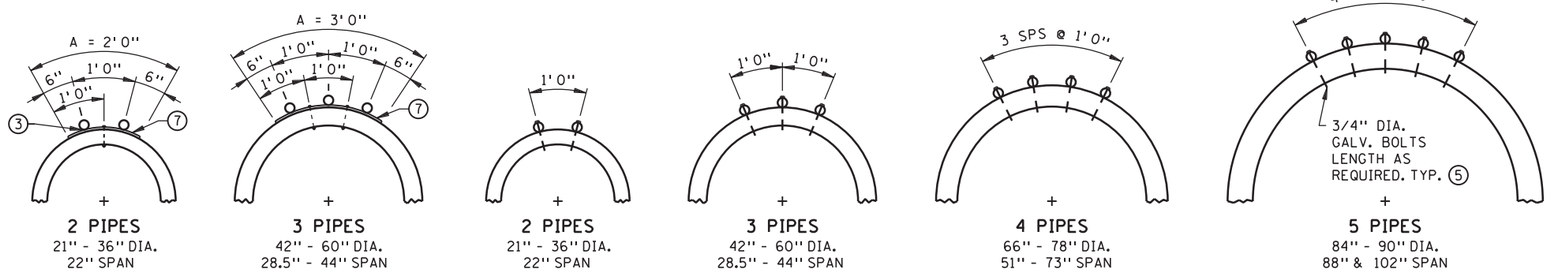


PLAN VIEW

"U" BOLT

PIPE CLAMP DETAILS ⑤

(GALVANIZE AS PER SPEC. 3392)

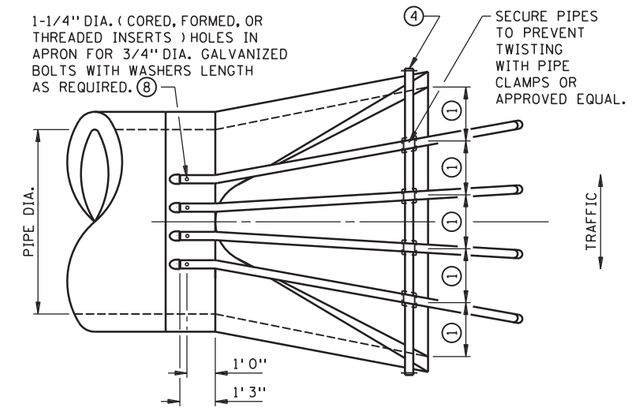


CURVED PLATE OPTION 1

BOLT OPTION 2

END VIEW OF TOP OF PIPE

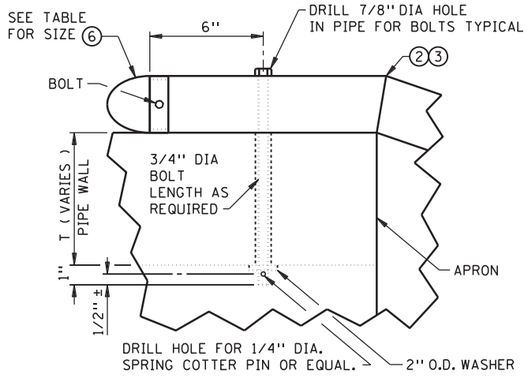
(ROUND PIPE SHOWN)



TOP VIEW

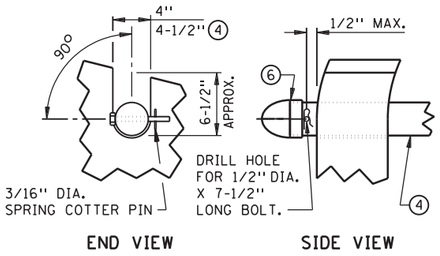
(78" DIA. SHOWN)

GRATE PIPE SIZE TABLE		
DIA.	SPAN	PIPE SIZES
21"	22"	2" DIA. - 3.65 LBS./FT.
24" - 48"	28 1/2" - 65"	2-1/2" DIA. - 5.79 LBS./FT.
54" - 90"	73" - 102"	3" DIA. - 7.58 LBS./FT. ④



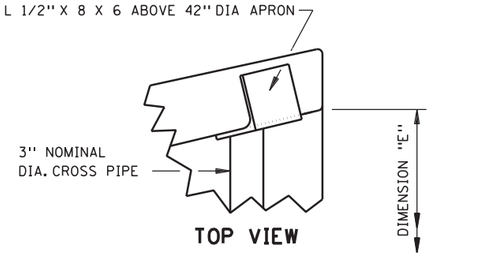
ENLARGED DETAIL "A"

PLATE NOT SHOWN

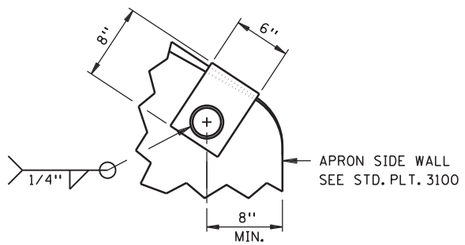


ENLARGED DETAIL "B"

OPTION 1



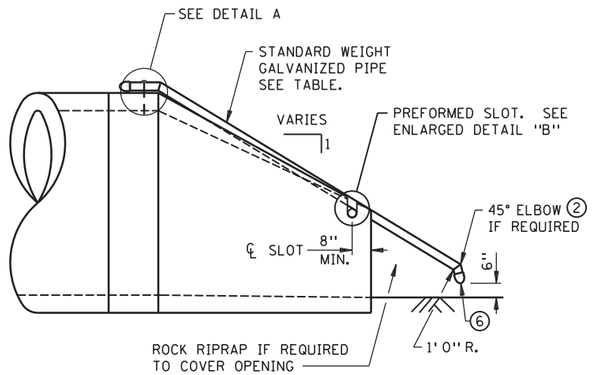
TOP VIEW



SIDE VIEW

CROSS PIPE FOR FLARED APRONS

OPTION 2



SIDE VIEW

NOTES:

SEE STD. PLATE 3100 AND 3110 FOR APRON DETAILS.

IF A GRATE IS USED ON AN OUTLET OF A STRUCTURE, A SIMILAR SAFETY GRATE SHOULD BE PLACED ON THE INLET TO PREVENT PLUGGING OF THE PIPE.

ALL PIPE IS SCHEDULE 40 GALVANIZED PIPE AS PER SPEC. 3362.

GALVANIZE ALL HARDWARE AFTER FABRICATION AS PER SPEC. 2471.3L.

GALVANIZE FASTENERS AS PER SPEC. 3392.

① EQUAL SPACING OF LONGITUDINAL PIPE, NOT TO EXCEED 2 FT.

② BEND PIPE OR APPROVED SPLICES MAY BE USED.

③ WELDING AS PER SPEC. 2471 MAY BE USED AT ALL PIPE CONNECTIONS.

④ CROSS PIPE:
3" NOMINAL DIA. X 7.58 LBS./FT. EXCEPT,
3-1/2" NOMINAL DIA. X 9.11 LBS./FT. PIPE FOR 102" SPAN.

⑤ OTHER METHODS OF SUPPORTING GRATES WHICH ARE EQUAL IN STRENGTH MAY BE USED IF APPROVED BY THE ENGINEER IN FIELD.

⑥ CAP ENDS OF ALL PIPE IN FIELD WITH PRESSED STEEL GALVANIZED PIPE CAPS. SECURE WITH SELF TAPPING BOLT.

⑦ CURVED PLATE CAN BE USED ON ANY SIZE APRONS. 3/8" THICK X 1'0" WIDE X LENGTH REQUIRED GALVANIZED STEEL PLATE. FORM OR CORED HOLES IN APRON FOR ATTACHING CURVED PLATE WITH 3/4" DIA. BOLTS AND WASHERS. SEE DETAIL "A" FOR BOLT DETAILS.

⑧ ELIMINATING COMPOUND BEND ON THE OUTSIDE PIPES IS A OPTION, NEW HOLE LOCATION IS FABRICATORS RESPONSIBILITY.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: Dan Cazanacli Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

MISCELLANEOUS DETAILS
ARCHED CONCRETE CULVERT SAFETY GRATE

FILE NO. MNT04-134590
MD10 OF MD10
57 / 310

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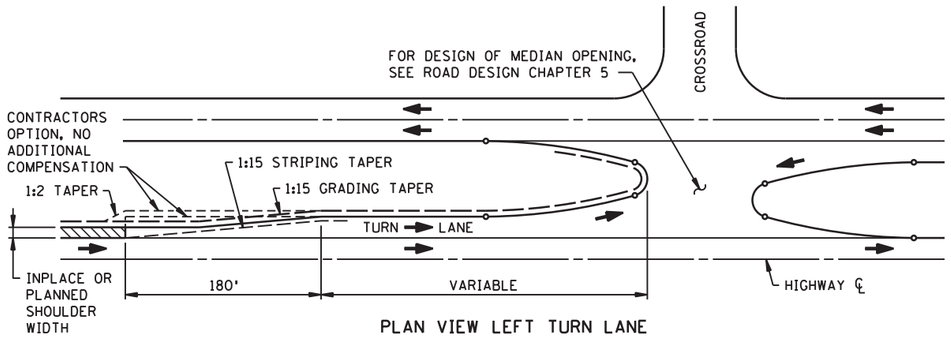
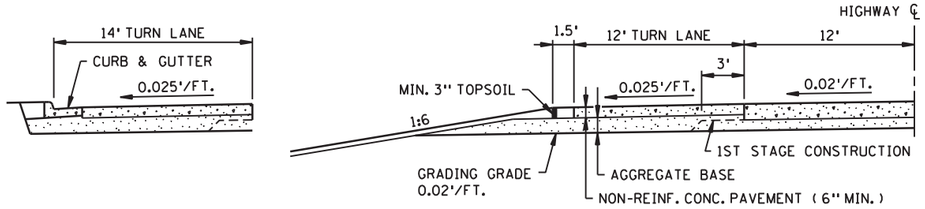
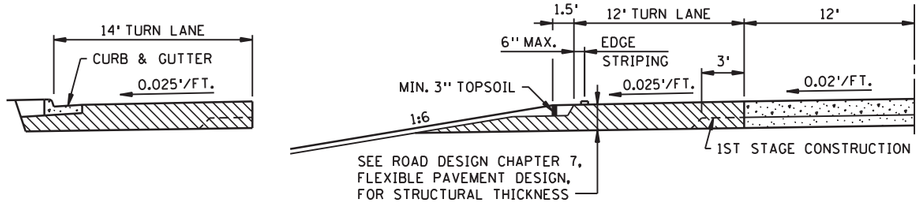


PLAN VIEW LEFT TURN LANE



RIGID MAINLINE AND RIGID TURN LANE



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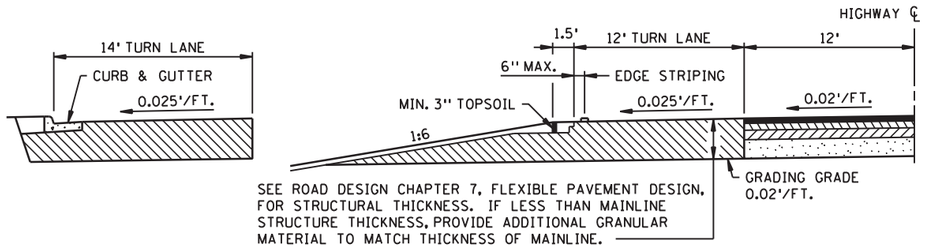

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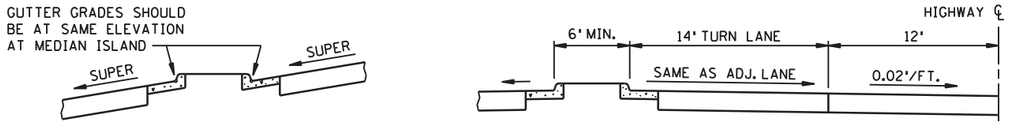
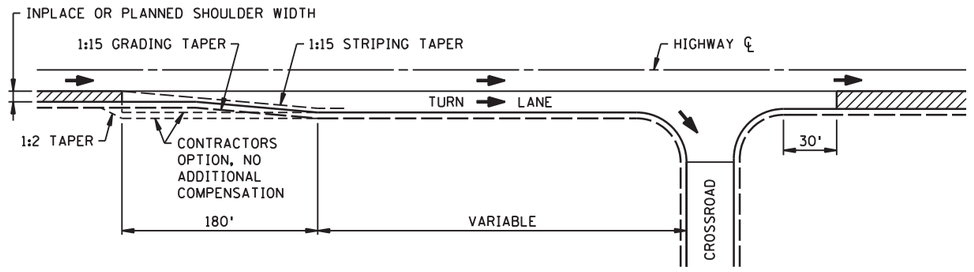


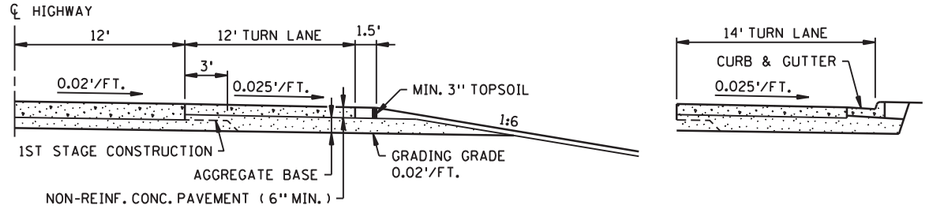
ROADWAY ON SUPER

ROADWAY SLOPING AWAY FROM MEDIAN

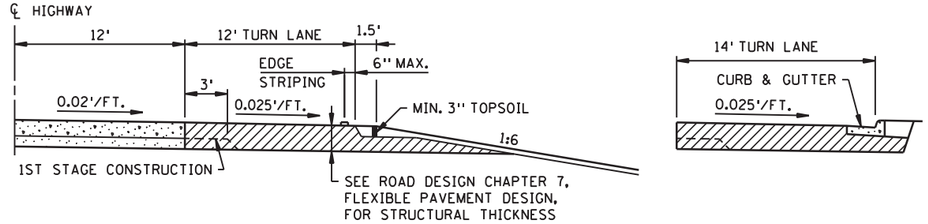
LEFT TURN LANES



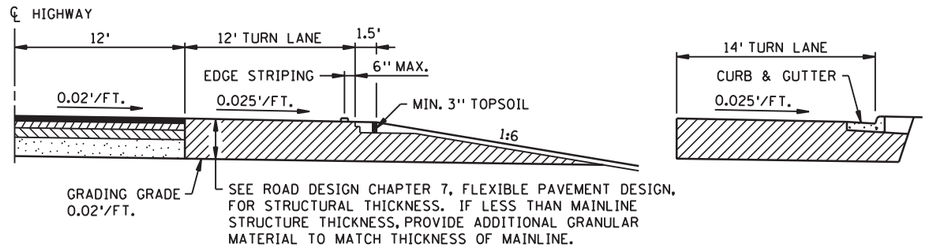
PLAN VIEW RIGHT TURN LANE



RIGID MAINLINE AND RIGID TURN LANE



RIGID MAINLINE AND FLEXIBLE TURN LANE



FLEXIBLE MAINLINE AND FLEXIBLE TURN LANE

RIGHT TURN LANES

SPN1
OF SPN28

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

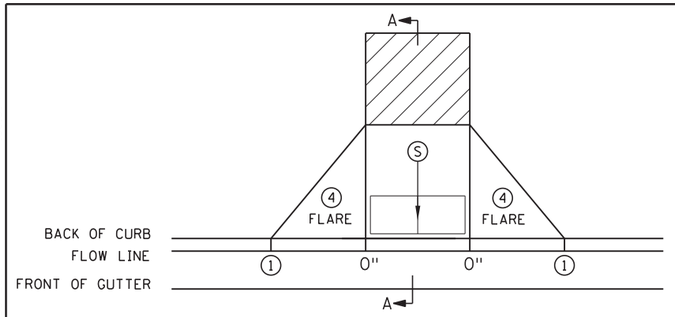
STATE DESIGN ENGINEER

APPROVED: 5-27-2014

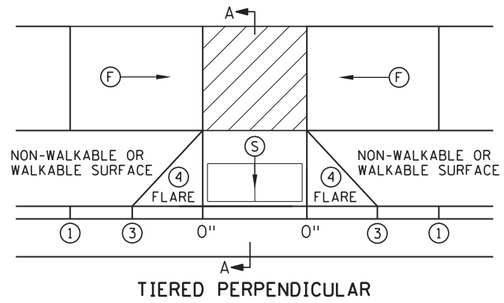
RIGHT AND LEFT TURN LANES

STANDARD PLAN 5-297.111 | 1 OF 1

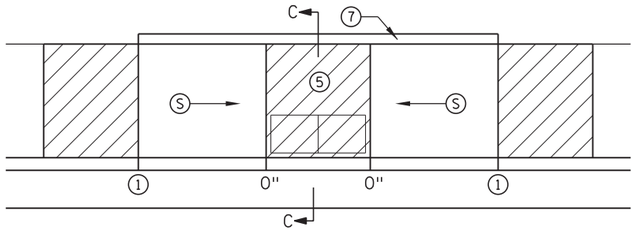
S.P. NO. 6103-32 (T.H. 28) SHEET NO. 58 OF 310 SHEETS



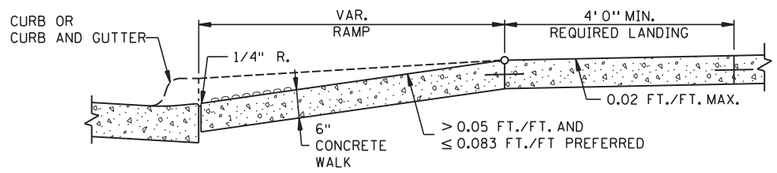
PERPENDICULAR



TIERED PERPENDICULAR

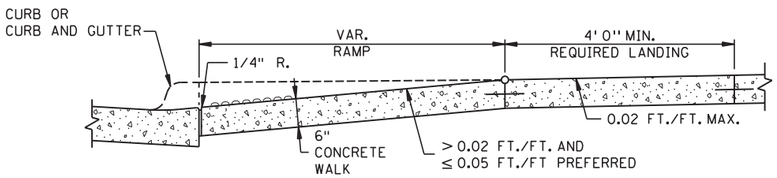


PARALLEL



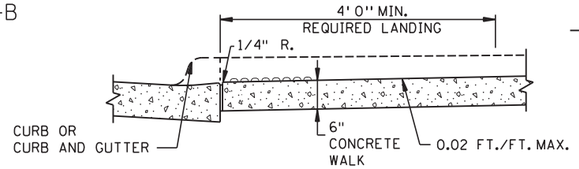
SECTION A-A

PERPENDICULAR/TIERED/DIAGONAL



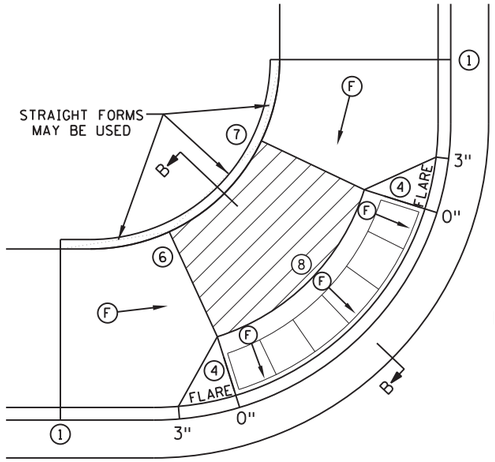
SECTION B-B

FAN

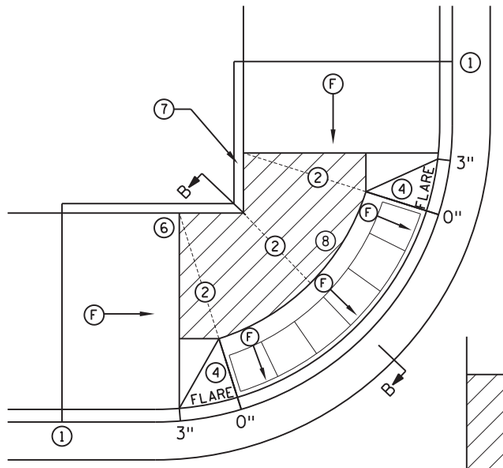


SECTION C-C

PARALLEL/DEPRESSED CORNER

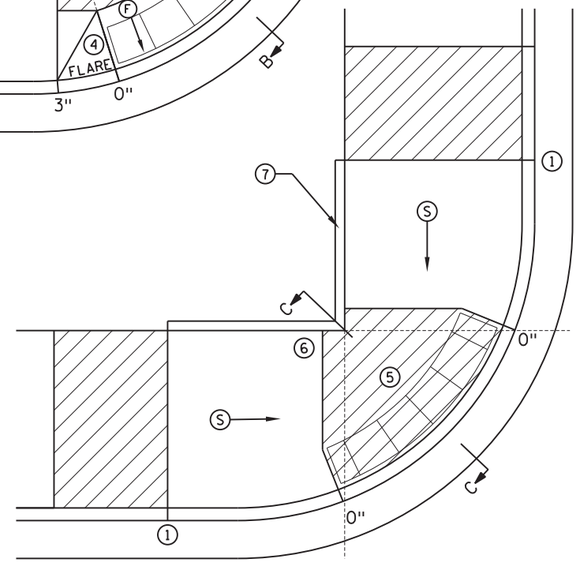


FAN (10)

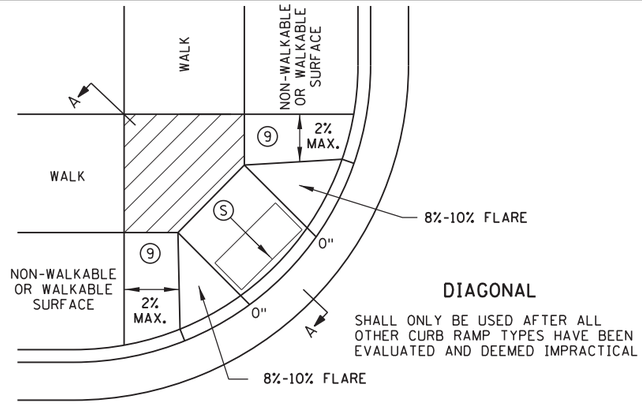


MODIFIED FAN (10)

USED WHEN RIGHT-OF-WAY IS CONSTRAINED



DEPRESSED CORNER



DIAGONAL

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

NOTES:

LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.

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

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

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

ALL GRADE BREAKS WITHIN THE PAR SHALL BE PERPENDICULAR TO THE PATH OF TRAVEL, THUS BOTH SIDES OF A SLOPED WALKING SURFACE MUST BE EQUAL LENGTH. (EXCEPT AS STATED IN (6) BELOW.

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

RECTANGULAR DETECTABLE WARNINGS SHALL BE SETBACK 3" FROM THE BACK OF CURB. RADIAL DETECTABLE WARNINGS SHALL BE SETBACK 3" MINIMUM TO 6" MAXIMUM FROM THE BACK OF CURB.

(1) MATCH FULL HEIGHT CURB.
(2) 4' MINIMUM DEPTH LANDING REQUIRED ACROSS TOP OF RAMP.
(3) 3" HIGH CURB WHEN USING A 3' LONG RAMP, 4" HIGH CURB WHEN USING A 4' LONG RAMP.
(4) SEE SHEET 4 OF 6, TYPICAL SIDE TREATMENT OPTIONS, FOR DETAILS ON FLARES AND RETURNED CURBS, WHEN INITIAL LANDING IS AT FULL CURB HEIGHT.
(5) DETECTABLE WARNINGS MAY BE PART OF THE 4' X 4' MIN. LANDING AREA IF IT IS NOT FEASIBLE TO CONSTRUCT THE LANDING OUTSIDE OF THE DETECTABLE WARNING AREA.
(6) THE GRADE BREAK SHALL BE PERPENDICULAR TO THE BACK OF WALK. THIS WILL ENSURE THAT THE GRADE BREAK IS PERPENDICULAR TO THE DIRECTION OF TRAVEL. (TYPICAL FOR ALL)
(7) WHEN ADJACENT TO GRASS, GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
(8) A 7' MIN TOP RADIUS GRADE BREAK REQUIRED TO BE CONSTRUCTIBLE.
(9) PAVE FULL WALK WIDTH.
(10) "S" SLOPES ON FANS SHALL ONLY BE USED WHEN ALL OTHER FEASIBLE OPTIONS HAVE BEEN EVALUATED AND DEEMED IMPRACTICAL.

LEGEND

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

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

(F) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%.

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

X" CURB HEIGHT

SPN2
OF SPN28

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED:
1-23-2017

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 1 OF 6

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 59 OF 310 SHEETS

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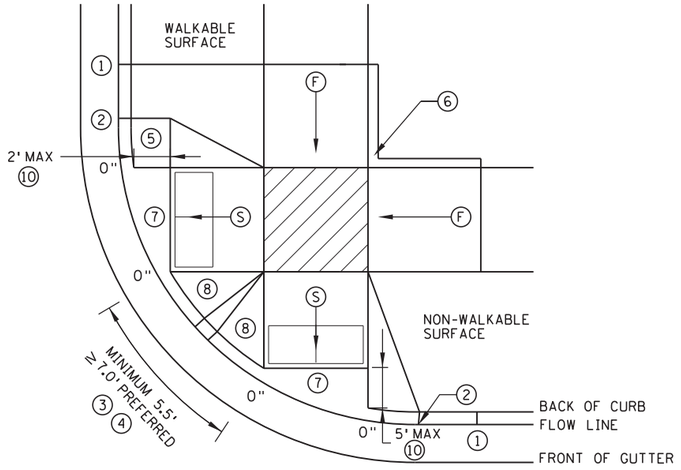
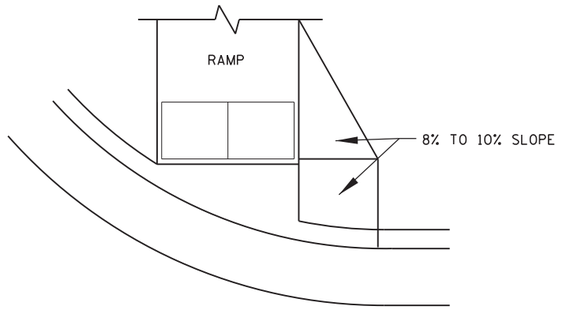


COMBINED DIRECTIONAL ⑨



DIRECTIONAL RAMP WALKABLE FLARE

NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

① MATCH FULL CURB HEIGHT.

② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.

③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).

④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.

⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHOULD BE USED. SEE THE DETAIL ON THIS SHEET.

⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.

⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.

⑧ 8% TO 10% WALKABLE FLARE.

⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.

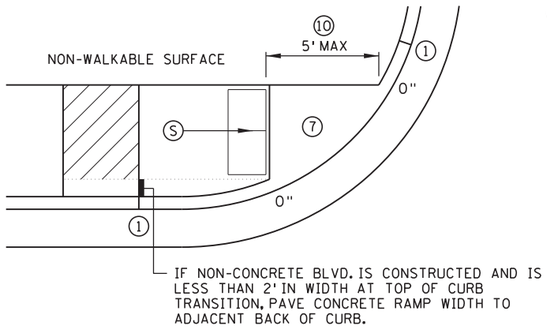
⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.

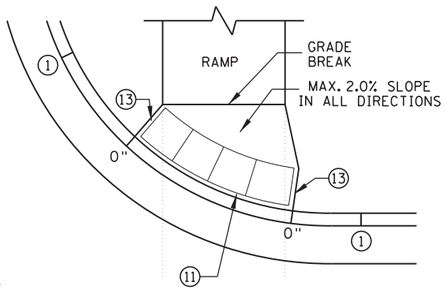
⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.

⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

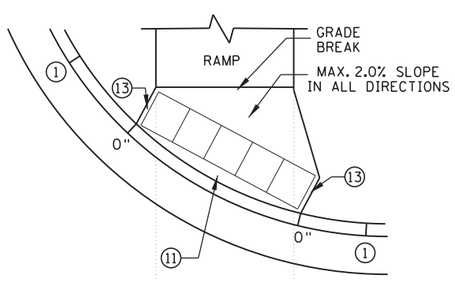


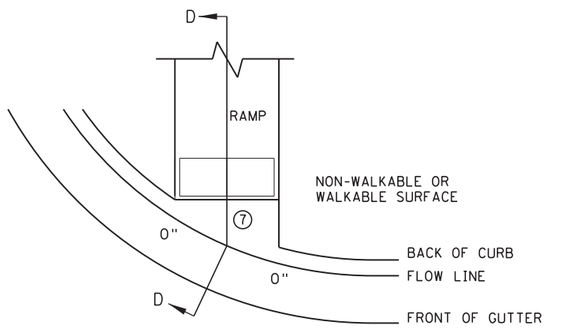
STANDARD ONE-WAY DIRECTIONAL ⑨



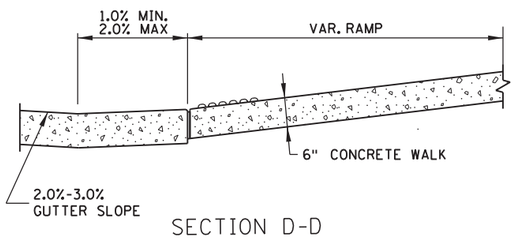
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫

ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB

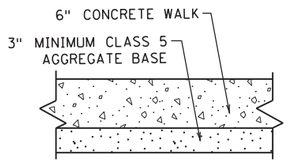




CURB FOR DIRECTIONAL RAMPS ⑭



SECTION D-D



TYPICAL SIDEWALK SECTION WITHIN INTERSECTION CORNER

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

SPN3
OF SPN28

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 1-23-2017

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 2 OF 6

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 60 OF 310 SHEETS

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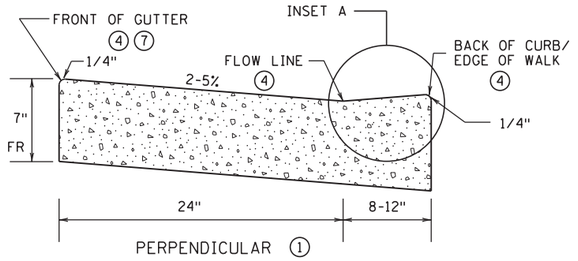
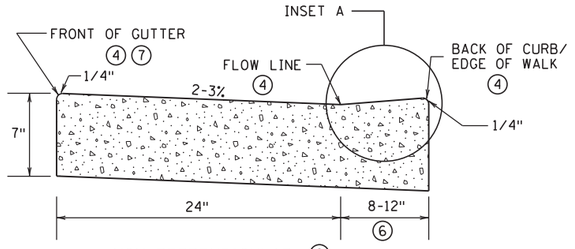
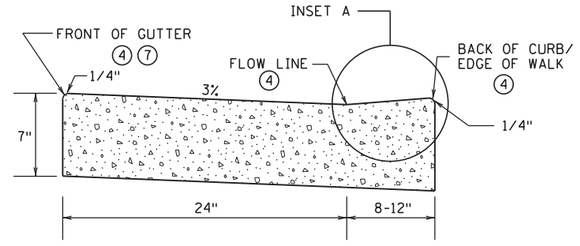


PERPENDICULAR ①

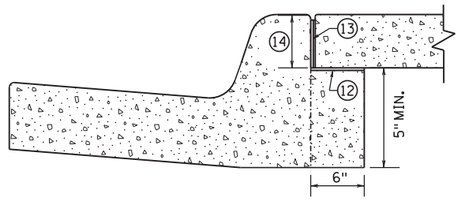


NON PERPENDICULAR ②

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

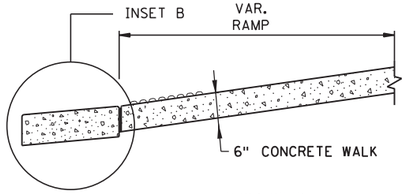


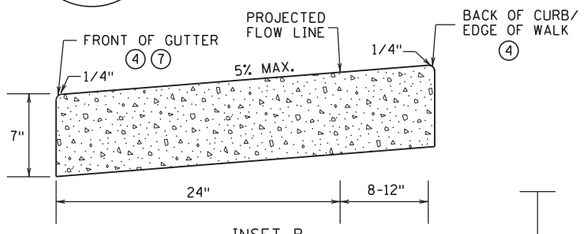
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

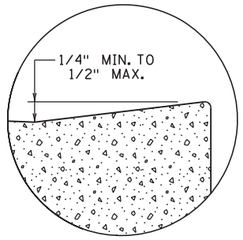
CONCRETE SILL TO BE USED ONLY WHEN SPECIFIED IN THE PLAN.



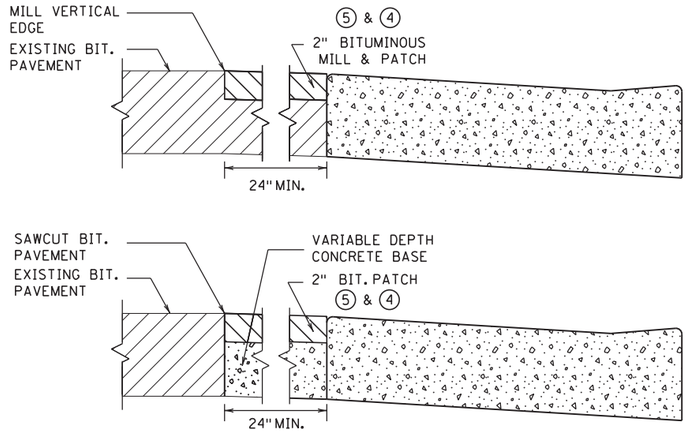


INSET B

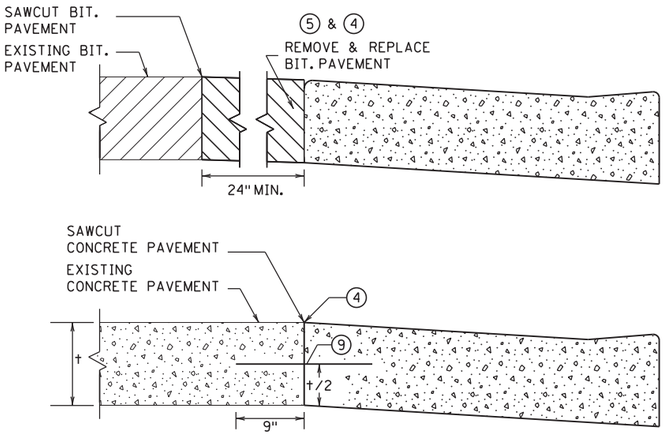
OUTFLOW GUTTER ⑧



INSET A

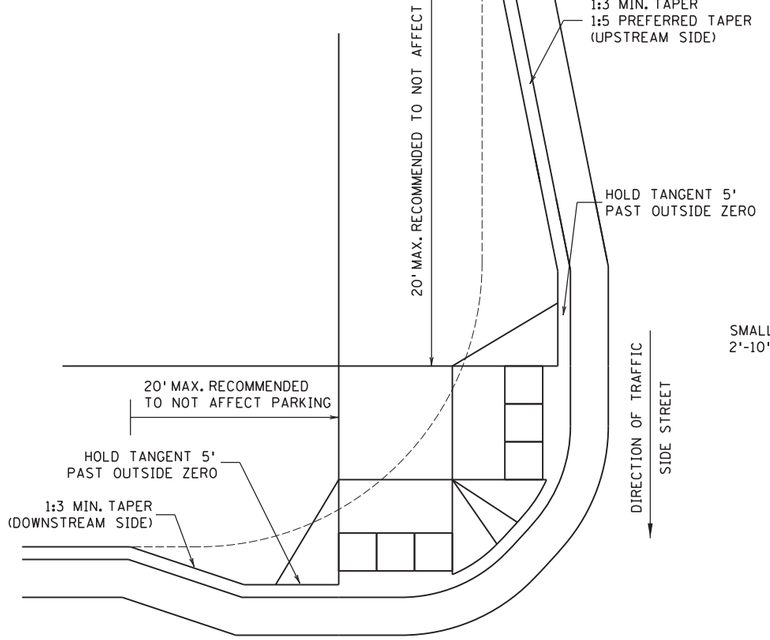


ONLY ALLOWED PER ENGINEER'S APPROVAL



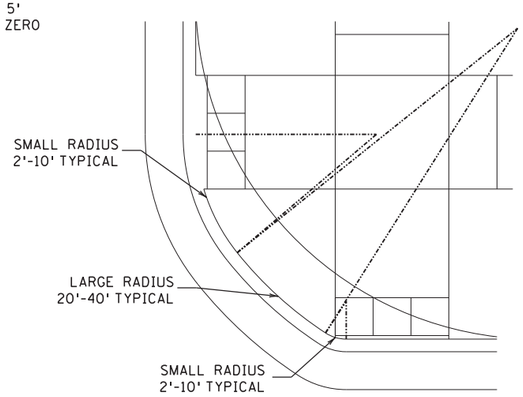
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER

FOR USE ON CURB RAMP RETROFITS



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪

DIRECTION OF TRAFFIC
MAIN STREET



COMBINED DIRECTIONAL ⑩
(COMPOUND RADIUS)

NOTES:

POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM.

NO PONDING SHALL BE PRESENT IN THE PAR.

ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.

① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMPS.

② FOR USE AT CURB RAMPS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED NON PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: FANS & DEPRESSED CORNERS.

③ BEGIN GUTTER SLOPE TRANSITION 10' OUTSIDE OF ALL CURB RAMPS.

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

⑤ ELEVATION CHANGE TAKES PLACE FROM THE EXISTING TO NEW FRONT OF GUTTER. PATCH IS USED TO MATCH THE NEW GUTTER FACE INTO THE EXISTING ROADWAY.

⑥ VARIABLE WIDTH FOR DIRECTIONAL CURB APPLICATIONS. SEE SHEET 2 FOR DIRECTIONAL CURB SLOPE REQUIREMENTS.

⑦ TOP FRONT OF GUTTER SHALL BE CONSTRUCTED FLUSH WITH PROPOSED ADJACENT PAVEMENT ELEVATION. TOP 1.5" OF THE GUTTER FACE MUST BE A FORMED EDGE. PAR GUTTER SHALL NOT BE OVERLAID.

⑧ SHOULD BE USED AT VERTICALLY CONSTRAINED AREAS WHEN AT A DRAINAGE HIGH POINT OR SUPER ELEVATED ROADWAY SEGMENTS.

⑨ DRILL AND GROUT NO. 4 EPOXY-COATED 18" LONG TIE BARS AT 30" CENTER TO CENTER INTO EXISTING CONCRETE PAVEMENT 1' MINIMUM FROM ALL JOINTS.

⑩ HELPS PROVIDE TWO SEPARATE RAMPS, REDUCES THE DOME SETBACK LENGTH AND MINIMIZES DIRECTIONAL CURB. THIS RADIUS DESIGN CLOSELY FOLLOWS THE TURNING VEHICLE PATH WHILE OPTIMIZING CURB RAMP LENGTH.

⑪ CURB EXTENSIONS SHOULD BE USED IN VERTICALLY CONSTRAINED AREAS, USUALLY IN DOWNTOWN ROADWAY SEGMENTS WHERE ON-STREET PARKING IS AVAILABLE. CURB EXTENSIONS SHOULD BE CONSIDERED FOR APS INTERSECTIONS WHERE SPACE IS LIMITED. PUSH BUTTONS MUST MEET APS CRITERIA AS DESCRIBED IN THE PUSH BUTTON LOCATION DETAIL SHEET.

⑫ PLACE BOND BREAKER BETWEEN WALK AND TOP OF SILL.

⑬ 1/2" PREFORMED JOINT FILLER PER MNDOT SPEC. 3702.

⑭ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

SPN4
OF SPN28

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

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

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 3 OF 6

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 61 OF 310 SHEETS

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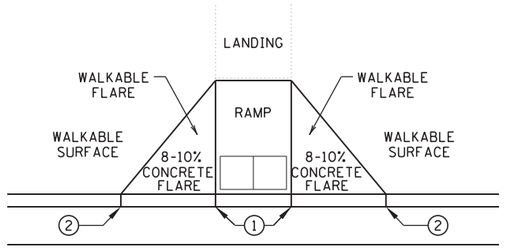
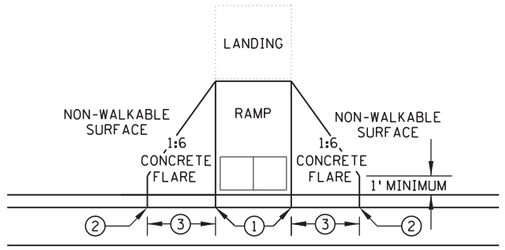
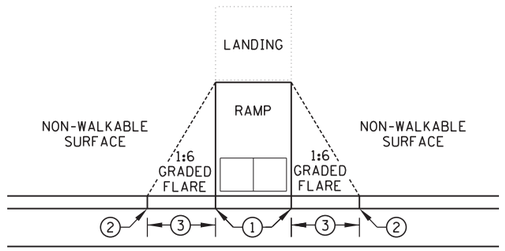


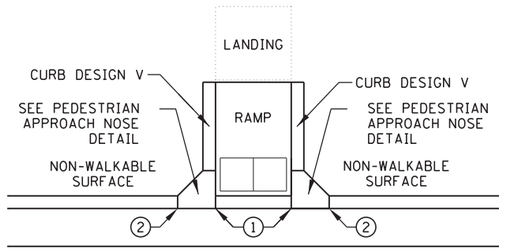
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

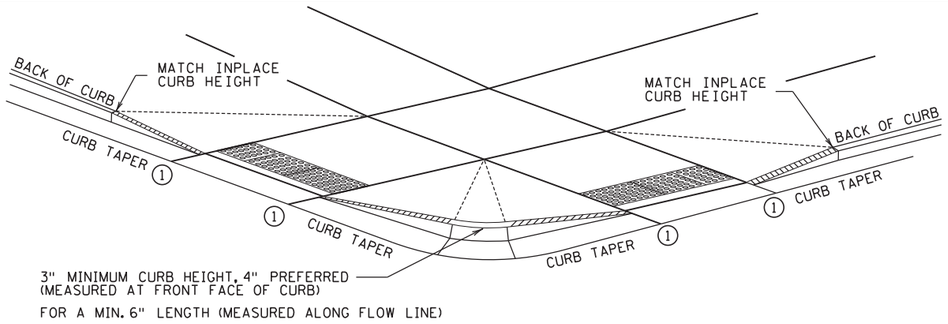


GRADED FLARES

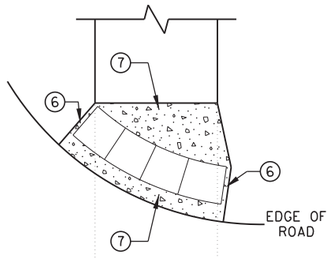


RETURNED CURB ⑤

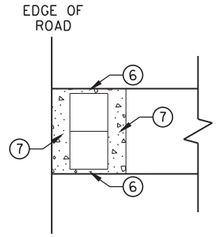
TYPICAL SIDE TREATMENT OPTIONS ④ ⑪



DETECTABLE EDGE WITH ⑧
CURB AND GUTTER

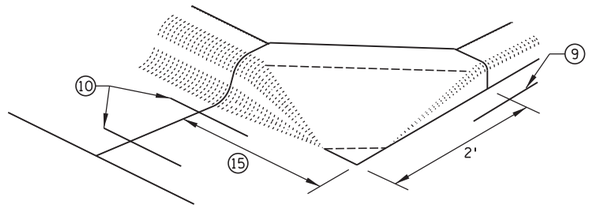


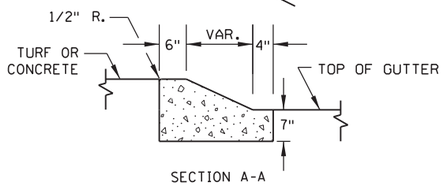
RADIAL DETECTABLE WARNING



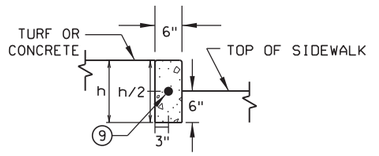
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

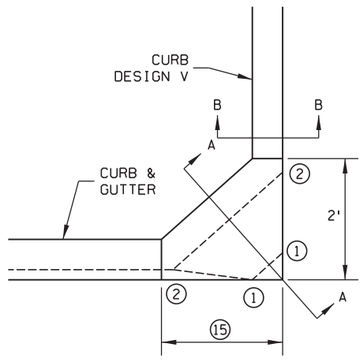


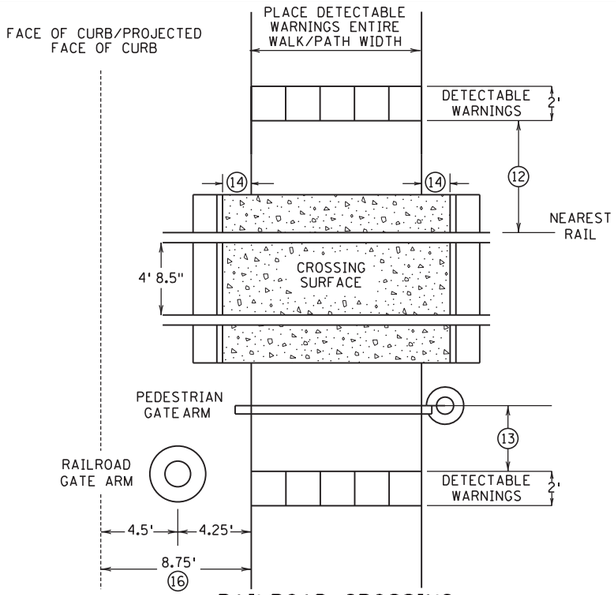


SECTION A-A



SECTION B-B





RAILROAD CROSSING
PLAN VIEW

NOTES:

SEE STANDARD PLATE 7038 AND THIS SHEET FOR ADDITIONAL DETAILS ON DETECTABLE WARNING.

A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.

CONCRETE FLARE LENGTHS ADJACENT TO NON-WALKABLE SURFACES SHOULD BE LESS THAN 8' LONG MEASURED ALONG THE RAMPS FROM THE BACK OF CURB.

(1) 0" CURB HEIGHT.

(2) FULL CURB HEIGHT.

(3) 2' FOR 4" HIGH CURB AND 3' FOR 6" HIGH CURB.

(4) SIDE TREATMENTS ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENTS BASED ON MAINTENANCE OF BOTH ROADWAY AND SIDEWALK, ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

(5) TYPICALLY USED FOR MEDIANS AND ISLANDS.

(6) WHEN NO CONCRETE FLARES ARE PROPOSED, THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE EDGE OF ROADWAY. MAINTAIN 3" MAX. BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.

(7) IF NO CURB AND GUTTER IS PLACED IN RURAL SECTIONS, DETECTABLE WARNINGS SHALL BE PLACED 1' FROM THE EDGE OF BITUMINOUS ROADWAY AND/OR BITUMINOUS SHARED-USE PATH TO PROVIDE VISUAL CONTRAST.

(8) ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHEREVER THERE IS ZERO-INCH HIGH CURB. CURB TAPERS ARE CONSIDERED A DETECTABLE EDGE WHEN THE TAPER STARTS WITHIN 3" OF THE EDGE OF THE DETECTABLE WARNINGS AND UNIFORMLY RISES TO A 3-INCH MINIMUM CURB HEIGHT. ANY CURB NOT PART OF A CURB TAPER AND LESS THAN 3 INCHES IN HEIGHT IS NOT CONSIDERED A DETECTABLE EDGE AND THEREFORE IS NOT COMPLIANT WITH ACCESSIBILITY STANDARDS.

(9) DRILL AND GROUT 1 - NO. 4 12" LONG REINFORCEMENT BAR (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE V CURB.

(10) DRILL AND GROUT 2 - NO. 4 12" LONG REINFORCEMENT BARS (EPOXY COATED) WITH 3" MIN. COVER. REINFORCEMENT BARS ARE NOT NEEDED IF THE APPROACH NOSE IS POURED INTEGRAL WITH THE CURB AND GUTTER.

(11) SIDE TREATMENT EXAMPLES SHOWN ARE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E. 6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INITIAL LANDING IS MORE THAN 1" BELOW FULL HEIGHT CURB REFER TO SHEETS 1 & 2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE.

(12) NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTANCE SHALL THE DETECTABLE WARNING BE CLOSER THAN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

(13) WHEN PEDESTRIAN GATES ARE PROVIDED, DETECTABLE WARNING SURFACES SHALL BE PLACED ON THE SIDE OF THE GATES OPPOSITE THE RAIL, 2' FROM THE APPROACHING SIDE OF THE GATE ARM. THIS CRITERIA GOVERNS OVER NOTE (12).

(14) CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

(15) 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLANDS.

(16) SIDEWALK TO BE PLACED 8.75' MIN. FROM THE FACE OF CURB/PROJECTED FACE OF CURB. THIS ENSURES MIN. CLEARANCE BETWEEN THE SIDEWALK AND GATE ARM COUNTERWEIGHT SUPPORTS.

SPN5
OF SPN28

REVISION:

APPROVED: JANUARY 23, 2017

OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED:
1-23-2017

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 4 OF 6

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 62 OF 310 SHEETS

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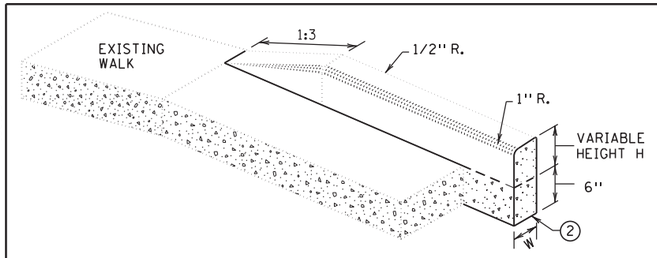
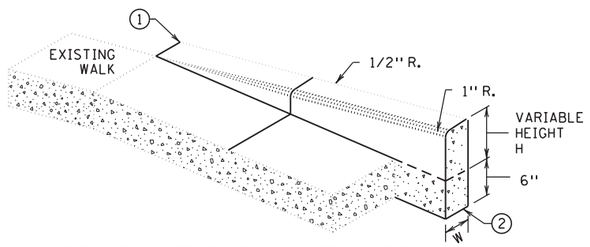


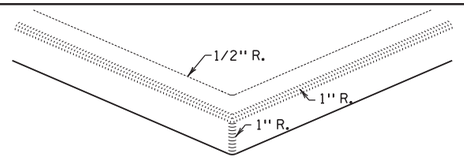
V CURB ADJACENT TO LANDSCAPE

CURB WITHIN SIDEWALK LIMITS

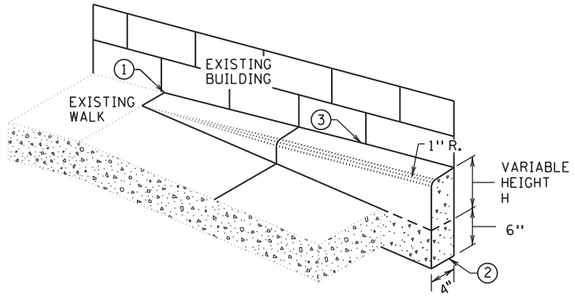


V CURB ADJACENT TO LANDSCAPE

CURB OUTSIDE SIDEWALK LIMITS

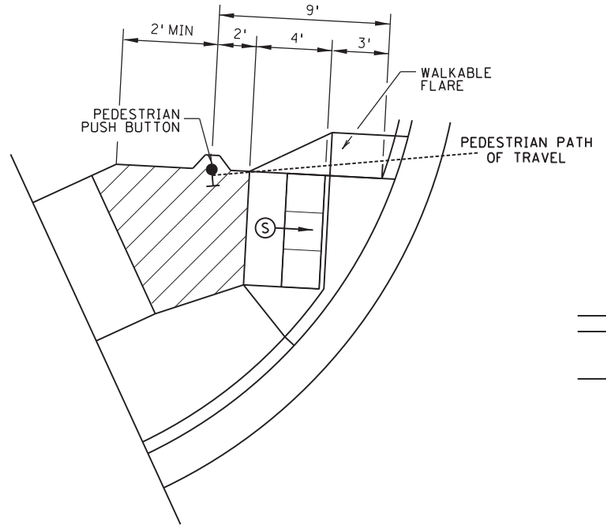


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING OR BARRIER

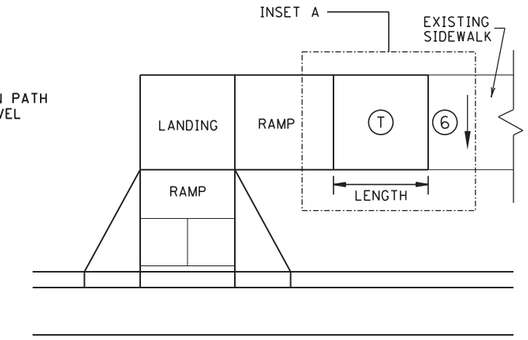
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"

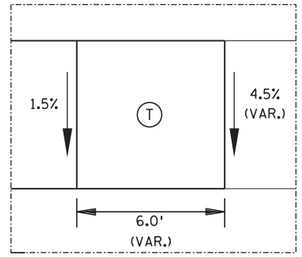


SEMI-DIRECTIONAL RAMP (3,4,9)

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

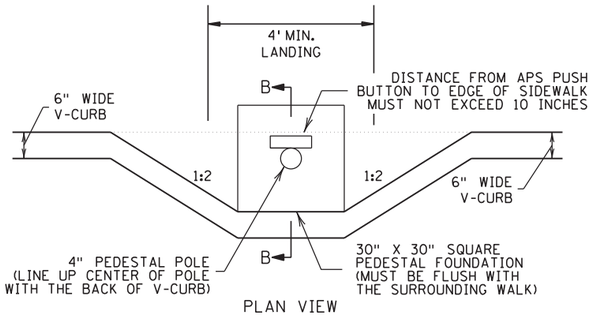
PRIMARILY USED FOR APS APPLICATIONS WHERE THE PAR DOES NOT CONTINUE PAST THE PUSH BUTTON (DEAD-END SIDEWALK)



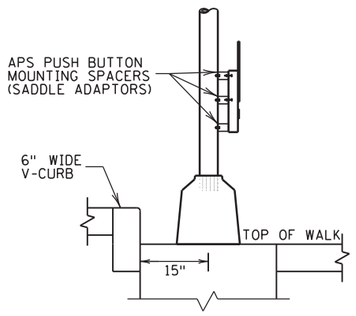


INSET A

TRANSITION PANEL ④⑤

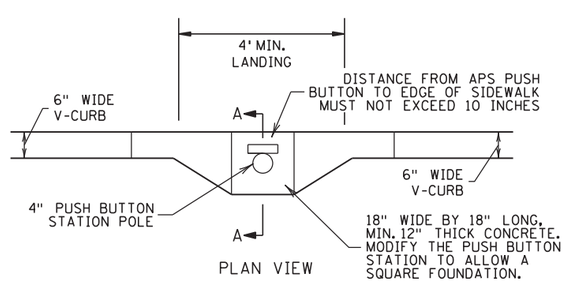


PLAN VIEW

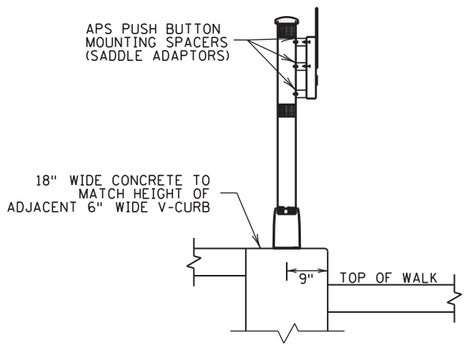


SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



PLAN VIEW



SECTION A-A

PUSH BUTTON STATION (V-CURB)

NOTES:

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

ALL V CURB CONTRACTION JOINTS SHALL MATCH CONCRETE WALK JOINTS.

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

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

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

① END TAPERS AT TRANSITION SECTION SHALL MATCH INPLACE SIDEWALK GRADES.

② ALL V CURB SHALL MATCH BOTTOM OF ADJACENT WALK.

③ EDGE BETWEEN NEW V CURB AND INPLACE STRUCTURE SHALL BE SEALED AND BOND BREAKER SHALL BE USED BETWEEN EXISTING STRUCTURE AND PLACED V-CURB.

④ THE MAX. RATE OF CROSS SLOPE TRANSITIONING IS 1' LINEAR FOOT OF SIDEWALK PER HALF PERCENT CROSS SLOPE. WHEN PAR WIDTH IS GREATER THAN 6' OR THE RUNNING SLOPE IS GREATER THAN 5%, DOUBLE THE CALCULATED TRANSITION LENGTH.

⑤ TRANSITION PANELS ARE TO ONLY BE USED AFTER THE RAMP, OR IF NEEDED, LANDING ARE AT THE FULL CURB HEIGHT (TYPICAL SECTION).

⑥ EXISTING CROSS SLOPE GREATER THAN 2.0%.

LEGEND

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

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

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

Ⓣ TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1 LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

SPN6
OF SPN28

REVISION:

APPROVED: JANUARY 23, 2017

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APPROVED: 1-23-2017

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 5 OF 6

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 63 OF 310 SHEETS

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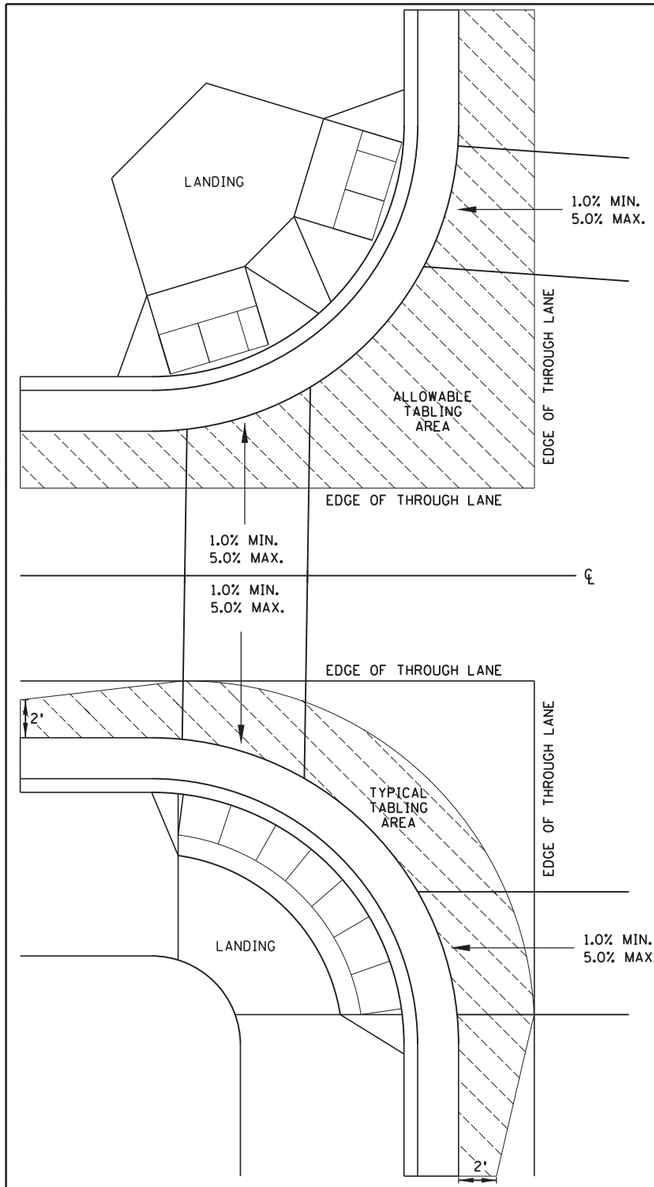
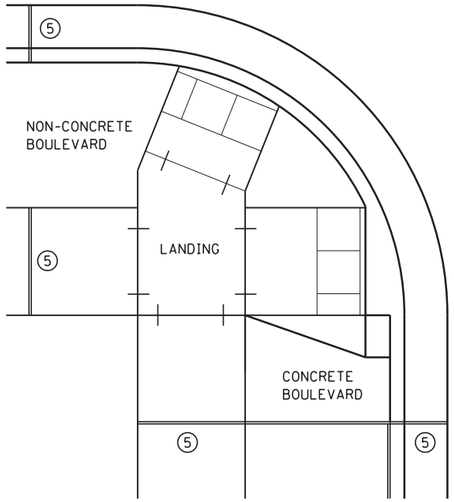
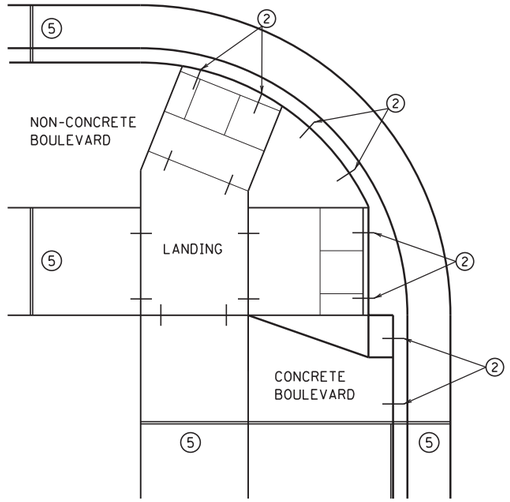


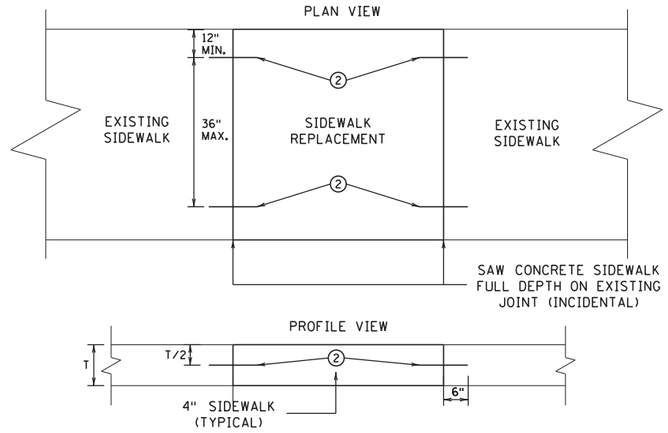
CURB LINE AND ROAD CROSSING ADJUSTMENTS



EXPANSION MATERIAL PLACEMENT FOR CONCRETE AND BITUMINOUS ROADWAYS

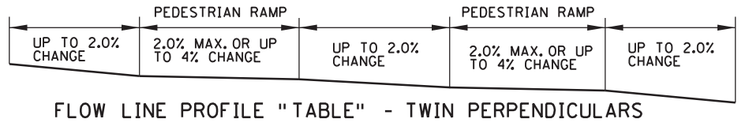


OPTIONAL CURB LINE REINFORCEMENT PLACEMENT ON BITUMINOUS ROADWAYS ④

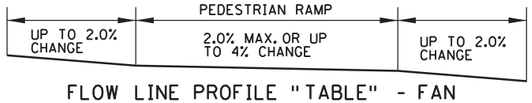


OPTIONAL SIDEWALK REINFORCEMENT

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



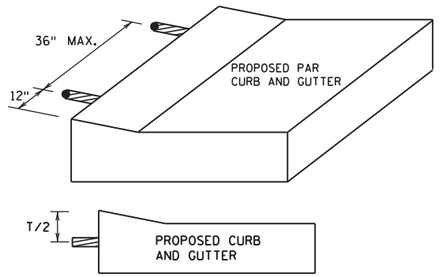
FLOW LINE PROFILE "TABLE" - TWIN PERPENDICULARS

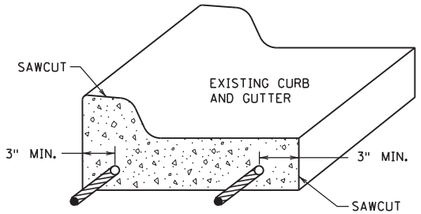


FLOW LINE PROFILE "TABLE" - FAN

FLOW LINE PROFILE RAISE - TWIN PERPENDICULARS

FLOW LINE PROFILE RAISE - FAN

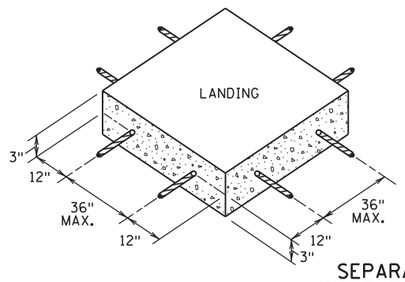


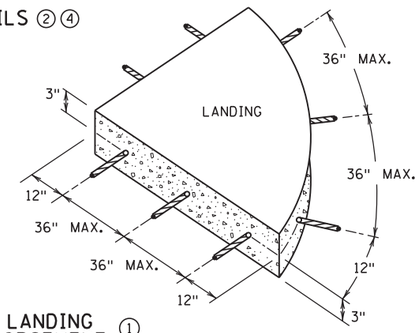


FOR USE ON CURB RAMP RETROFITS

CURB AND GUTTER REINFORCEMENT ③

OPTIONAL CURB LINE REINFORCEMENT DETAILS ②④





SEPARATE LANDING POUR REINFORCEMENT ①

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

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

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

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

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

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

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

NOTES:

① TO ENSURE RAMPS AND LANDINGS ARE PROPERLY CONSTRUCTED, ALL INITIAL LANDINGS AT A TOP OF A RAMPED SURFACE (RUNNING SLOPE GREATER THAN 2%) SHALL BE FORMED AND PLACED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. FOLLOW SIDEWALK REINFORCEMENT DETAILS ON THIS SHEET FOR ALL SEPARATELY POURED INITIAL LANDINGS.

② DRILL AND GROUT NO. 4 12" LONG REINFORCEMENT BARS AT 36" MAXIMUM CENTER TO CENTER (EPOXY COATED). BARS TO BE ADJUSTED TO MATCH RAMP GRADE.

③ DRILL AND GROUT 2 - NO. 4 X 12" LONG REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS WITHIN RADIUS.

④ THIS OPTIONAL CURB LINE REINFORCEMENT DETAIL SHOULD ONLY BE USED ON BITUMINOUS ROADWAYS WHEN SPECIFIED IN THE PLAN.

⑤ 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MNDOT SPEC. 3702.

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PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250 | 6 OF 6

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 64 OF 310 SHEETS

SPN7 OF SPN28

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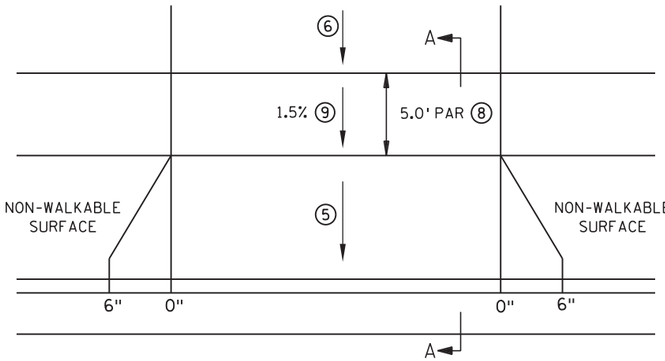
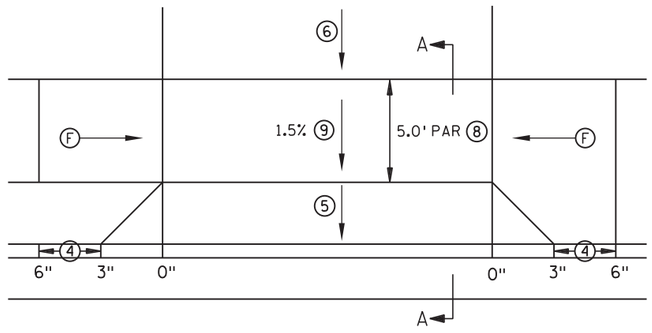
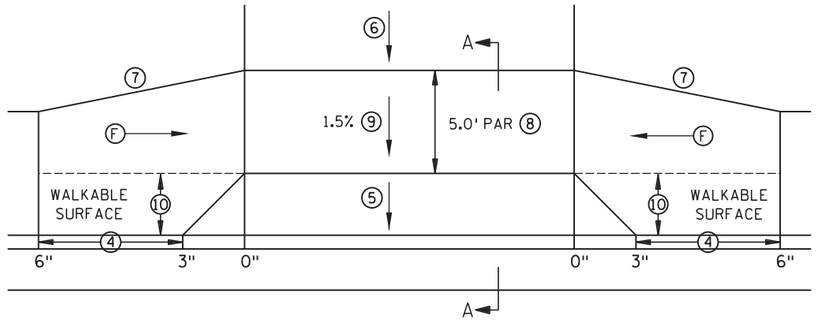


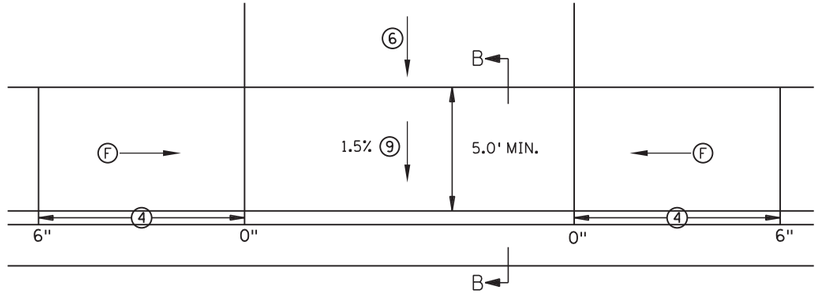
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR DRIVEWAY ②



TIERED PERPENDICULAR OFFSET DRIVEWAY



PARALLEL DRIVEWAY ③

NOTES:

IN NO CASE SHALL SIDEWALK PROFILES EXCEED 5.0%, EXCEPT SIDEWALK PROFILES CAN MATCH ROADWAY GRADE IF ROADWAY GRADE IS GREATER THAN 5.0%. RAMPS FOR DRIVEWAYS ARE REQUIRED TO FOLLOW THE ABOVE SIDEWALK CRITERIA.

CONTRACTION JOINTS SHALL BE CONSTRUCTED ALONG ALL GRADE BREAKS WITHIN THE PEDESTRIAN ACCESS ROUTE (PAR). 1/4" DEEP VISUAL JOINTS SHALL BE USED AT THE TOPS OF CONCRETE FLARES ADJACENT TO WALKABLE SURFACES.

DRIVEWAY TYPES FROM MOST PREFERRED TO LEAST PREFERRED ARE AS FOLLOWS: PERPENDICULAR, TIERED PERPENDICULAR, TIERED PERPENDICULAR OFFSET & PARALLEL.

① TO BE USED WHEN THE DRIVEWAY PAR IS LEVEL WITH OR ABOVE THE TOP OF CURB, RESULTING IN A CONTINUOUS PAR PROFILE.

② TO BE USED WHEN THE DRIVEWAY PAR IS BELOW THE ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ SHOULD BE USED FOR NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 CURB SHOULD BE USED TO RAISE PAR ABOVE GUTTER AND REDUCE "ROLLER COASTER" EFFECT. 4" HIGH ROADWAY CURB SHOULD BE USED TO REDUCE "ROLLER COASTER" EFFECT ESPECIALLY WHEN MULTIPLE DRIVEWAYS ARE PRESENT.

④ TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

⑤ 8% MAX. PREFERRED, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ 8% MAX. PREFERRED, SEE SHEET 2 FOR MORE INFORMATION.

⑦ 1:3 MIN. 1:5 PREFERRED FOR DRIVEWAY RETROFIT PROJECTS. 1:10 PREFERRED FOR SIDEWALK REPLACEMENT PROJECTS.

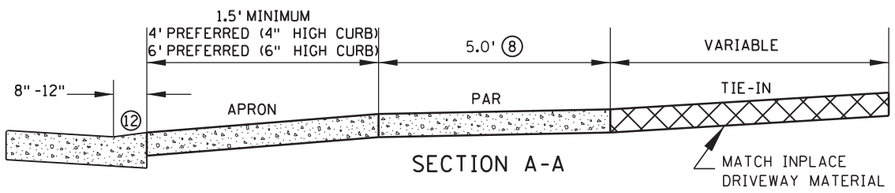
⑧ 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.

⑨ THE PEDESTRIAN ACCESS ROUTE, MAY NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

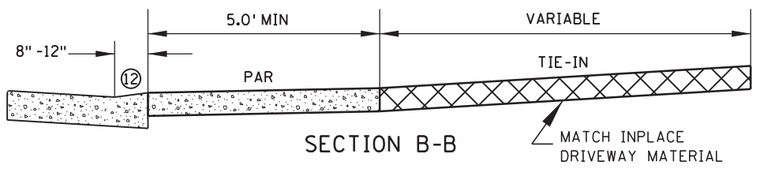
⑩ SIDEWALK OFFSET TO BE LESS THAN OR EQUAL TO HALF THE APPROACHING SIDEWALK WIDTH.

⑪ VALLEY GUTTER APRON TO BE POURED INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.



SECTION A-A



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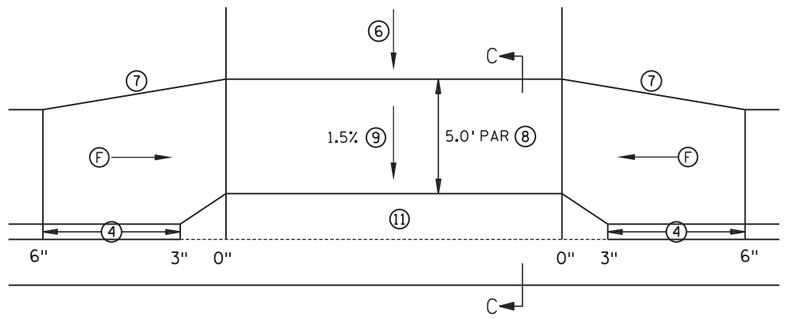
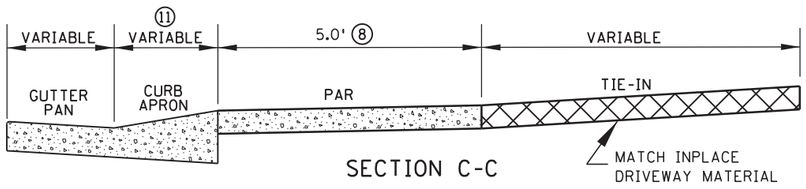


VALLEY GUTTER DRIVEWAY



SECTION C-C

LEGEND	
(F)	INDICATES DRIVEWAY 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%
X"	CURB HEIGHT (INCHES)

SPN8
OF SPN28

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DRIVEWAY AND SIDEWALK DETAILS

STANDARD PLAN 5-297.254 | 1 OF 4

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 65 OF 310 SHEETS

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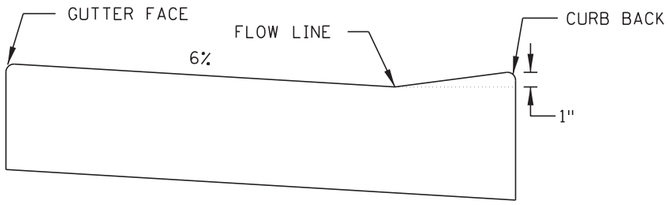
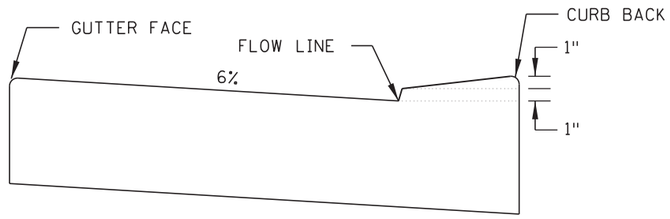


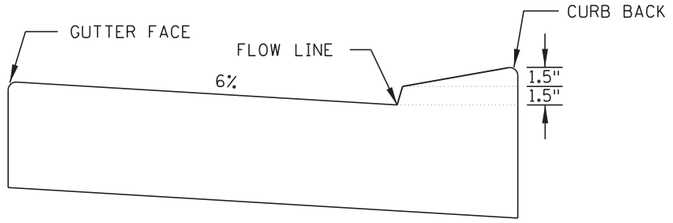
DW CURB STANDARD

STANDARD CURB AT DRIVEWAY



DW CURB TYPE 2

VERTICALLY CONSTRAINED



DW CURB TYPE 3

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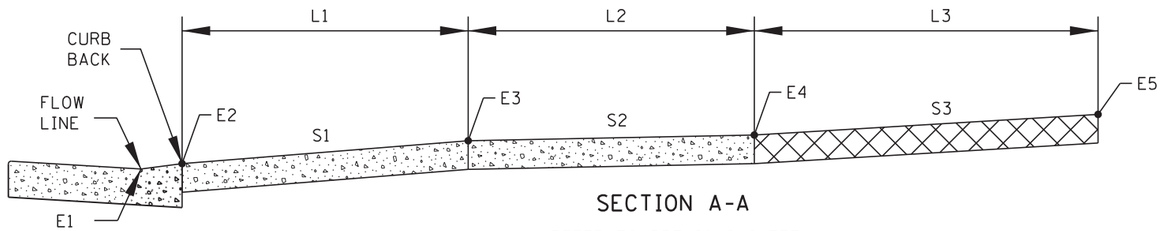

SECTION A-A

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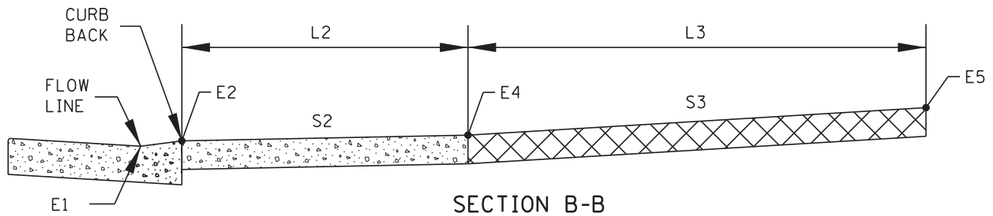

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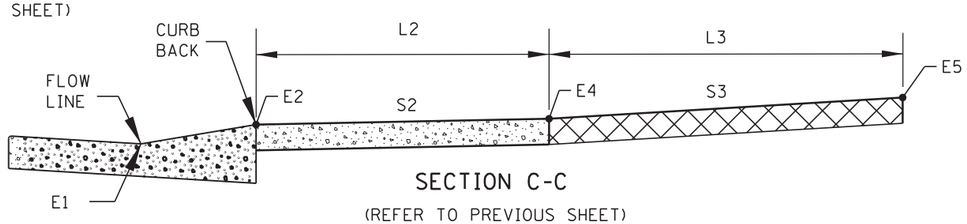
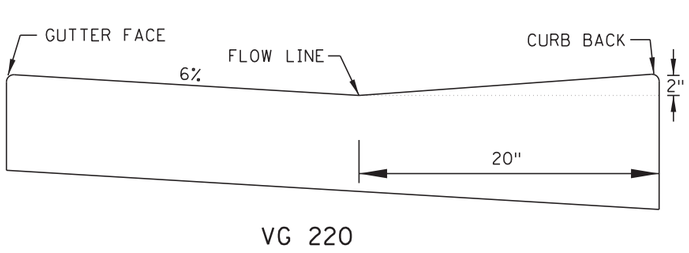


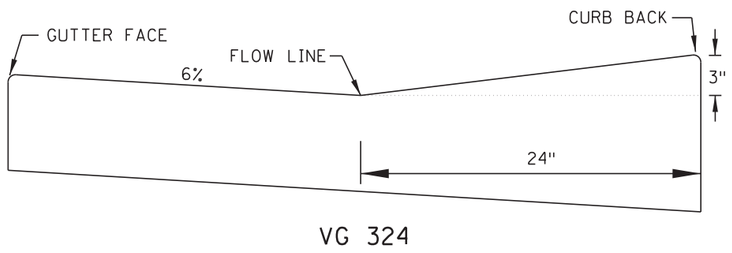
SECTION C-C

(REFER TO PREVIOUS SHEET)

DRIVEWAY TABULATION ①																
STATION	SIDE	DRIVEWAY TYPE	CURB TYPE ③	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 ② %	E4	L3 FT	S3 %	EXISTING %	E5	COMMENTS



VG 220



VG 324

VALLEY GUTTER CURB

OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED

NOTES:

DW CURB STANDARD SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB STANDARD SHOULD BE USED IF THERE IS ON STREET PARKING.

WHERE ROADWAY DRAINAGE IS A CONCERN (NEGATIVE SLOPED APRON) DW CURB TYPE 2 CAN BE USED TO HELP KEEP THE WATER ON PUBLIC RIGHT OF WAY.

S1 8% MAX PREFERRED, 10% MAX. COMMERCIAL AND 12% MAX. RESIDENTIAL. IF EXISTING GRADES ARE STEEPER DO NOT MAKE GRADES APPRECIABLY WORSE BY USING BEST PRACTICES SUCH AS DRIVEWAY CURB HEIGHTS, EXTENDING L3 AND/ OR STEEPEN S3.

DW CURB TYPE 3 SHALL ONLY BE USED IN EXTREME TIE-IN CASES.

S3 8% MAX PREFERRED, IF THIS SLOPE IS EXCEEDED OR IS CONTINUED FOR MORE THAN 5' ANALYZE THE NEED FOR VERTICAL CURVE(S). SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

① EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY.

② SHOULD BE DESIGNED AT 1.5%.

③ DW CURB STANDARD SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPES 2 AND 3 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

SPN9
OF SPN28

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DRIVEWAY AND SIDEWALK DETAILS

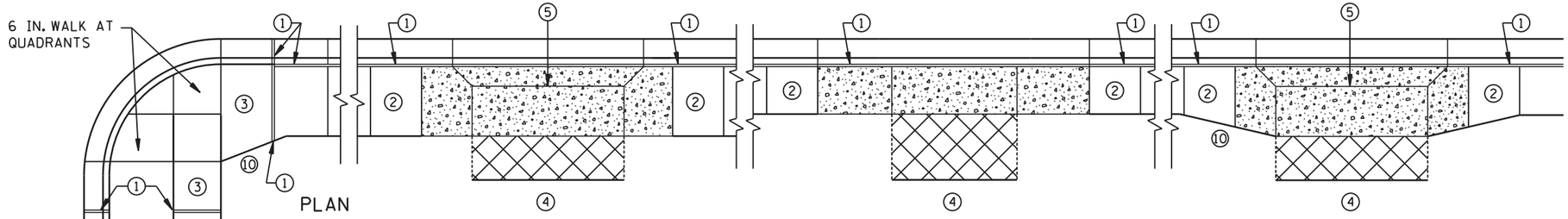
STANDARD PLAN 5-297.254 | 2 OF 4

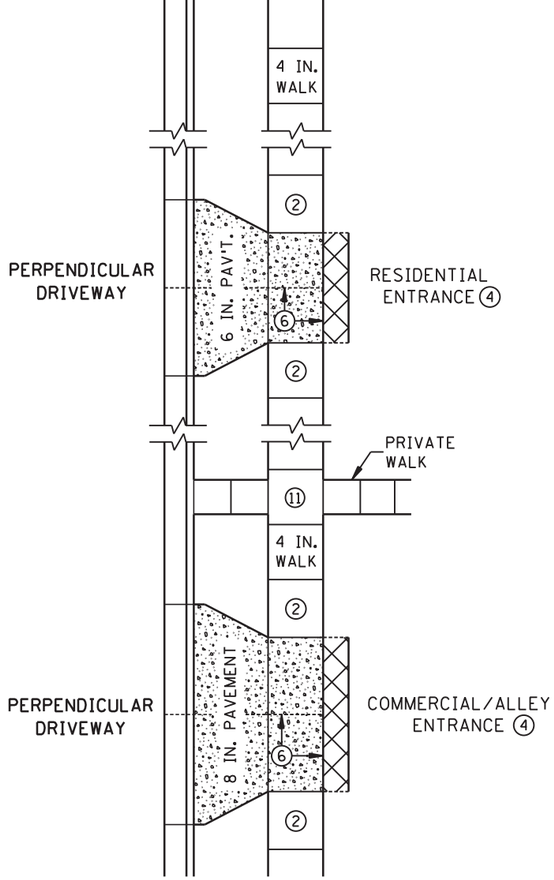
S.P. NO. 6103-32 (T.H. 28) SHEET NO. 66 OF 310 SHEETS

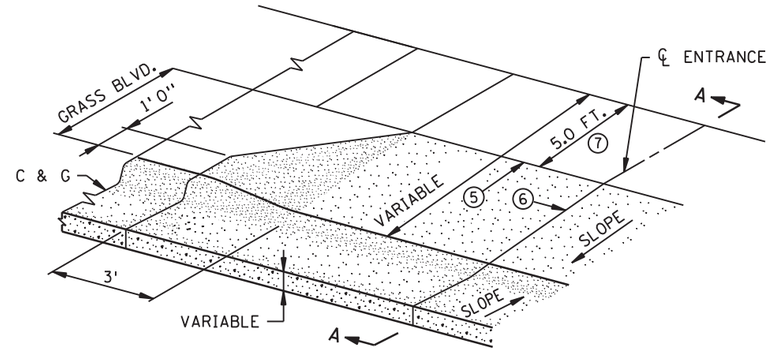
TIERED PERPENDICULAR DRIVEWAY

PARALLEL DRIVEWAY

TIERED PERPENDICULAR OFFSET DRIVEWAY

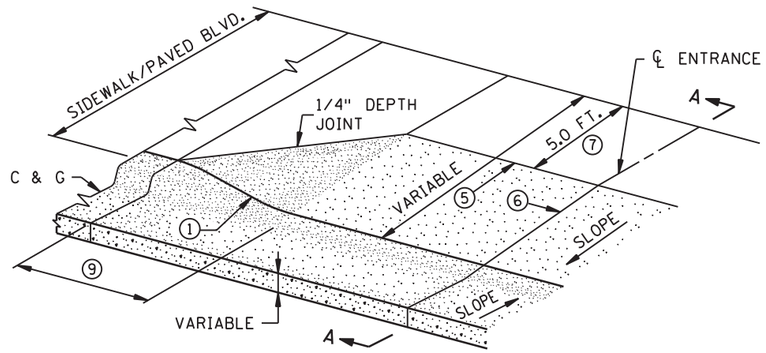






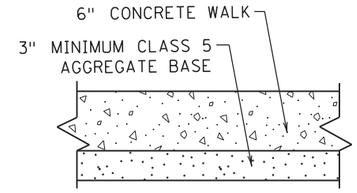
HALF PLAN PERSPECTIVE

PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS

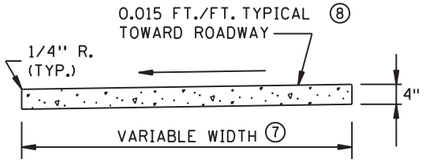


HALF PLAN PERSPECTIVE

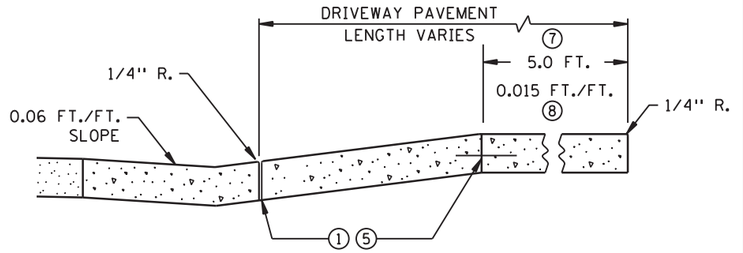
PERPENDICULAR DRIVEWAYS WITH CONCRETE BOULEVARDS AND ALL TIERED DRIVEWAYS



SECTION THRU CURB RAMP



SECTION THRU WALK



SECTION A-A

SECTION THRU DRIVEWAY

NOTES:

TO MINIMIZE SIDEWALK "ROLLER COASTER" EFFECT IT IS DESIRABLE TO KEEP THE PAR ELEVATION CONTINUOUS OR AT LEAST IN THE UPPER HALF OF CURB HEIGHT. 4" HIGH CURB SHOULD BE USED INSTEAD OF 6" HIGH CURB TO HELP THIS PROBLEM WHEN APPLICABLE.

4" HIGH ADJACENT CURB IS PREFERRED WHEN BOULEVARDS 4' OR LESS ARE PRESENT MEASURED FROM THE BACK OF CURB. WHEN THE DRIVEWAY IS SLOPING DOWN FROM THE ROADWAY (NEGATIVE) 4" HIGH ADJACENT CURB SHOULD ALSO BE USED.

SEE ROAD DESIGN MANUAL, CHAPTER 5, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

(1) 1/2 IN. PREFORMED JOINT FILLER MATERIAL PER MnDOT SPEC. 3702, EXCEPT AT GRASS BOULEVARDS.
(2) TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS.
(3) TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.
(4) MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.
(5) TIE ONLY IF ADJACENT SECTIONS ARE NOT POURED MONOLITHICALLY. SEE SECTION A-A.
(6) FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS (MAXIMUM WIDTH 15 FT. BETWEEN JOINTS).
(7) 5.0' MIN. PAR WIDTH IS THE STANDARD THROUGH DRIVEWAYS. IF FEASIBLE WIDEN DRIVEWAY PAR WIDTH TO MATCH APPROACHING SIDEWALK PAR WIDTHS. IN VERTICALLY CONSTRAINED AREAS PAR WIDTHS CAN INCREMENTALLY BE REDUCED TO 4.5' OR 4' MIN AFTER ALL OTHER OPTIONS HAVE BEEN APPLIED.
(8) THE PEDESTRIAN ACCESS ROUTE CROSS-SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.
(9) 8% TO 10% FLARES SHALL BE USED WHEN ADJACENT TO WALKABLE SURFACES AND FOR ALL TIERED DRIVEWAYS WITH GRASS BOULEVARDS.
(10) 1:10 MIN. SIDEWALK OFFSET TAPER REQUIRED FOR SIDEWALK REPLACEMENT PROJECTS. 1:3 MIN. AND 1:5 MIN. PREFERRED SIDEWALK OFFSET TAPER FOR DRIVEWAY REPLACEMENT.
(11) LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

SPN10
OF SPN28

REVISION:

APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

REVISED:

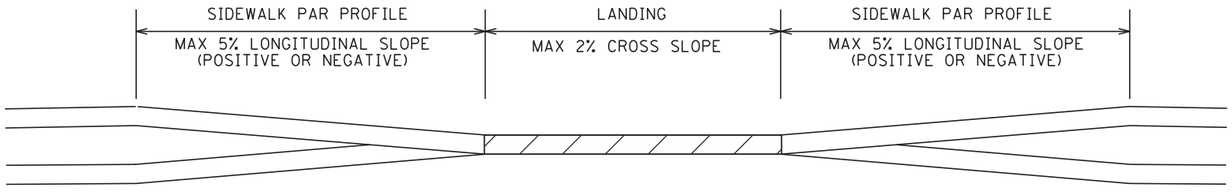
STATE DESIGN ENGINEER

APPROVED: 1-23-2017

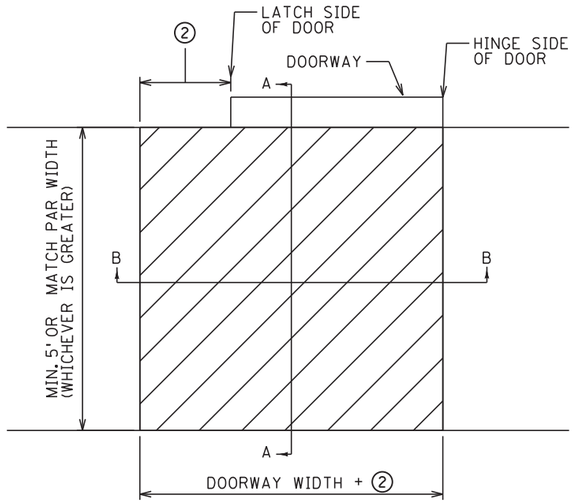
DRIVEWAY AND SIDEWALK DETAILS

STANDARD PLAN 5-297.254 | 3 OF 4

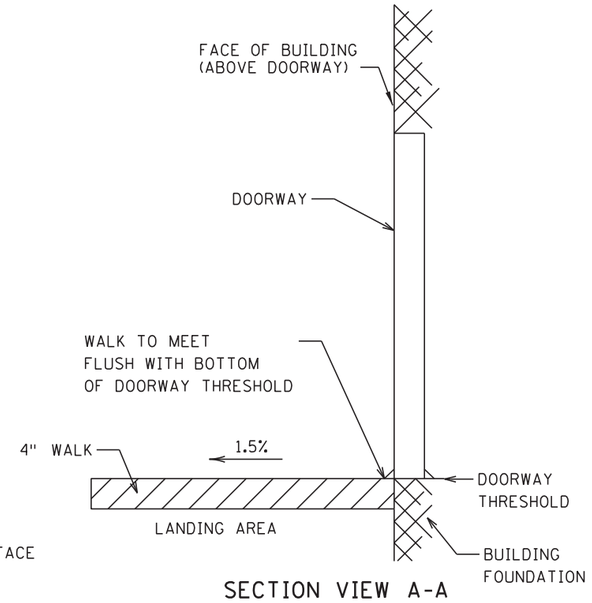
S.P. NO. 6103-32 (T.H. 28) SHEET NO. 67 OF 310 SHEETS



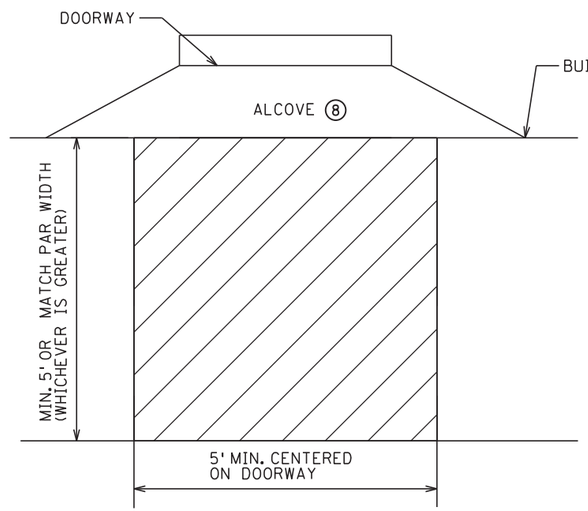
SECTION VIEW B-B



PLAN VIEW DOORWAY

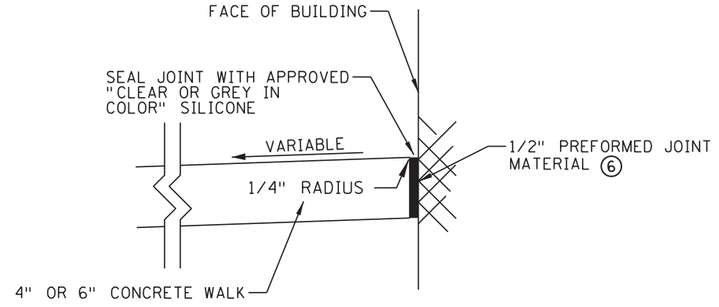


SECTION VIEW A-A

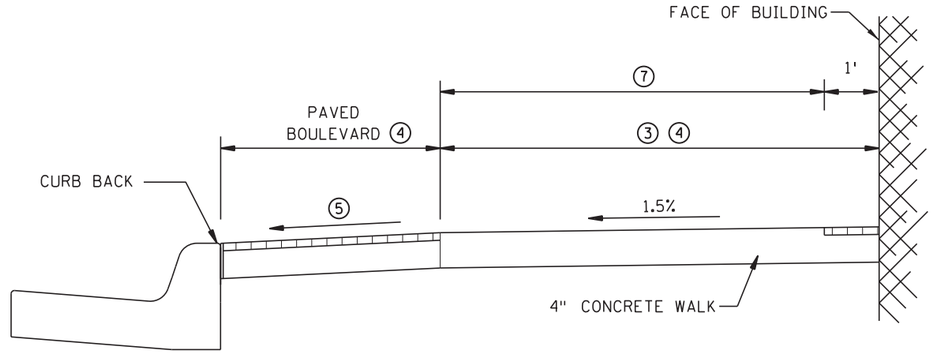


PLAN VIEW DOORWAY WITH ALCOVE

SIDEWALK LANDING REQUIREMENTS ①



BUILDING JOINT SEAL (INCIDENTAL)



DOWNTOWN SIDEWALK TYPICAL SECTION

NOTES:

FIELD ADJUST SIDEWALK PROFILES TO MEET ALL DOORWAY THRESHOLDS.

SIDEWALK MUST MAINTAIN POSITIVE DRAINAGE AWAY FROM THE BUILDING TO THE ROADWAY.

SEE SPECIAL PROVISIONS FOR SILICONE SPECIFICATIONS.

① LANDING CRITERIA IS REQUIRED FOR ALL DOORS, PRIVATE WALKS AND STEPS.

② 18" MIN. WHEN DOOR SWINGS OUTWARD FROM BUILDING.
12" MIN WHEN DOOR SWINGS INWARD FROM BUILDING.

③ 6' MIN. PAR REQUIRED WHEN ADJACENT TO BUILDINGS.

④ 2/3 PAR TO 1/3 BOULEVARD SHOULD BE USED WHEN FEASIBLE.

⑤ 1%-5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS. 10% MAX. FOR SHORT SECTIONS ALLOWED TO ACCOUNT FOR FIELD TOLERANCES.

⑥ FURNISH AND INSTALL BACKER ROD OF APPROPRIATE DIAMETER.

⑦ TO MINIMIZE VIBRATION AND ROLLING RESISTANCE, AREA SHOULD BE FREE OF PAVERS, STAMPED CONCRETE, AND/OR EXCESSIVE JOINTING.

⑧ 2% MAX. PER BUILDING CODE. IF GREATER THAN 2%, FLATTEN AS FEASIBLE.

LEGEND	
	LANDING - ALL SLOPES TO BE LESS THAN 2%
	OPTIONAL AESTHETIC TREATMENT

SPN11
OF SPN28

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 1-23-2017

DRIVEWAY AND SIDEWALK DETAILS

STANDARD PLAN 5-297.254 | 4 OF 4

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 68 OF 310 SHEETS

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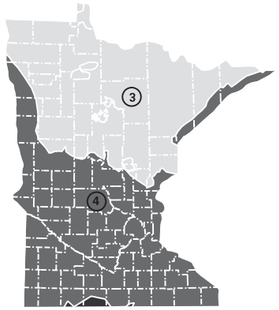
GENERAL NOTES

SEE SPECIAL PROVISIONS FOR SPECIFIC PROJECT REQUIREMENTS.	
REFER TO MnDOT SPECIFICATIONS 2571, 2572, 3861, FOR GENERAL REQUIREMENTS.	
COMPLETE PREPARATORY WORK BEFORE STARTING INITIAL PLANTING OPERATIONS.	
ACCEPT ALL PLANT STOCK IN ACCORDANCE WITH (MnDOT 3861) PRIOR TO PLANTING.	
THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR SOIL CULTIVATION OPERATIONS IN ACCORDANCE WITH (MnDOT 2571.3D.2)	
THE CONTRACTOR WILL DEMONSTRATE COMPETENCY FOR ALL PLANT INSTALLATION OPERATIONS IN ACCORDANCE WITH (MnDOT 2571.3F1)	
RODENT PROTECTION	SEE SPECIAL PROVISIONS AND STANDARD PLANTING DETAILS (3 OF 3)
FERTILIZER	SEE SPECIAL PROVISIONS
COMPOST	MnDOT 3890 COMPOST GRADE 2 UNLESS OTHERWISE SPECIFIED.
MULCH MATERIAL	MnDOT 3882 MULCH MATERIAL TYPE 6 UNLESS OTHERWISE SPECIFIED.
MASS PLANTING BEDS	PREPARE MASS PLANTING BEDS FOR PLANTS PLACED AT 15′ OR LESS, UNLESS OTHERWISE SPECIFIED ON SHEETS. PLANT BEDS IN STAGGERED ROWS ON THE PERIMETER FIRST, THEN UNIFORMLY FILL IN WITH REMAINING PLANTS. USE TRIANGULAR SPACING, UNLESS SPECIFIED OTHERWISE. PROVIDE 5′ RADIUS CLEAR OF SHRUBS AROUND EACH DECIDUOUS TREE AND 8′ CLEAR RADIUS AROUND EACH CONIFER TREE. RADIUS WILL BE MEASURED FROM THE CENTER OF THE TREE TO THE CENTER OF THE SHRUB. NOTIFY ENGINEER OF GROSS PLANT QUANTITY SURPLUS OR DEFICIENCY IMMEDIATELY. MULCH ENTIRE MASS PLANTING BED. SEE STANDARD PLANTING DETAILS (3 OF 3)
TREE PAINTING (FROST CRACK PREVENTION)	PAINT OAK, LINDEN, LOCUST, MAPLE, CRABAPPLE AND MOUNTAIN ASH. ONLY UNDILUTED EXTERIOR WHITE LATEX PAINT IS ACCEPTABLE. PAINT TREE CIRCUMFERENCE FROM GROUND LINE TO FIRST MAJOR BRANCH.
PLANTING PLAN DIMENSIONS	STATED DIMENSIONS SUPERCEDE SCALING FROM PLAN.

WATERING GUIDELINES (MnDOT 2571.3G)

PLANT TYPE	AVERAGE GALLONS OF WATER PER APPLICATION
MACHINE TRANSPLANTED TREES	50–100
BALLED AND BURLAPPED TREES	20
BARE ROOT AND CONTAINER TREES	15
BALLED AND BURLAPPED SHRUBS	10
BARE ROOT AND CONTAINER SHRUBS	7
WOODY SEEDLINGS	4
PERENNIALS AND VINES	3

IT IS THE CONTRACTOR'S RESPONSIBILITY TO MONITOR AND MAINTAIN SOIL MOISTURE AT ADEQUATE BUT NOT EXCESSIVE LEVELS. THE AMOUNTS LISTED ABOVE ARE GUIDELINES, NOT REQUIREMENTS.



1. BARE ROOT PERENNIALS MUST BE PLACED IN THE SPRING NO LATER THAN JUNE 1ST OR FOLLOW THE FALL DECIDUOUS PLANTING DATES.
2. ACTUAL DATES MAY CHANGE DEPENDING UPON SEASONAL CONDITIONS, AS DETERMINED BY THE ENGINEER.
3. FALL PLANTING IS NOT ALLOWED FOR BARE ROOT FORM OF THE FOLLOWING SPECIES: HAWTHORN, DOGWOOD, POPLAR, HACKBERRY, LINDEN, IRONWOOD, HONEYLOCUST, BIRCH, MOUNTAIN ASH, MAPLE, WILLOW, CRABAPPLE, PLUM/CHERRY, OAKS, AND SUMAC.
4. ALL REPLACEMENT PLANTS MUST BE PLACED DURING THE MONTH OF MAY (SPRING PLANTING) AND SEPTEMBER (FALL PLANTING) DURING THE FIRST YEAR OF THE PLANT ESTABLISHMENT PERIOD.
5. MACHINE MOVED PLANTING DATES WILL BE SPECIFIED IN THE SPECIAL PROVISIONS.

PLANTING DATES BY ZONE

			3	4
SPRING	DECIDUOUS	BARE ROOT	APRIL 21 TO JUNE 1	APRIL 7 TO JUNE 1
		CONTAINER B&B	APRIL 21 TO JUNE 30	APRIL 7 TO JUNE 30
	CONIFEROUS		APRIL 21 TO JUNE 1	APRIL 7 TO MAY 17
	PERENNIALS		MAY 1 TO JUNE 30	MAY 1 TO JUNE 30
	SEEDLINGS		APRIL 21 TO JUNE 1	APRIL 7 TO JUNE 1
FALL	DECIDUOUS	BARE ROOT	OCT. 1 TO NOV. 1	OCT. 10 TO NOV. 15
		CONTAINER B&B	AUG. 25 TO OCT. 15	AUG. 25 TO NOV. 1
	CONIFEROUS		AUG. 25 TO SEPT. 15	AUG. 25 TO SEPT. 15
	PERENNIALS		AUG. 25 TO SEPT. 15	AUG. 25 TO SEPT. 15

PLANT INSTALLATION PERIOD

ACCEPTABLE ZONES		
ZONES	LEGEND	MIN. TEMP.
3		–34.4° TO –40 F
4		–28.9° TO –34.4 F
5a		–26.1° TO –28.9 F

UNACCEPTABLE ZONES	
ZONES	LEGEND
0, 1, 2, 5b and 6	

FOR ALL PLANT STOCK, DOCUMENT ACCEPTABILITY FOR HARDINESS IN THE MINNESOTA ZONE WHERE THE PROJECT SITE IS LOCATED, AS FOLLOWS:

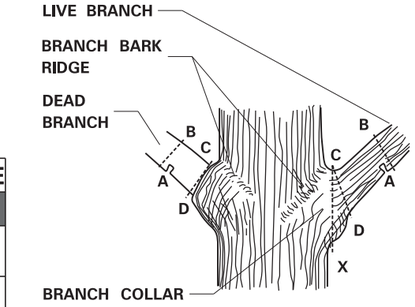
A. PLANT STOCK CONTINUOUSLY GROWN FOR AT LEAST THE LAST TWO YEARS WITHIN THE ACCEPTABLE LIMITS SHOWN.

OR

B. PLANT STOCK, GROWN OUTSIDE THE ACCEPTABLE GROWING RANGE LIMITS, HAVING SEED SOURCE OR ROOT AND GRAFT STOCK ORIGINATING FROM THE ACCEPTABLE LIMITS SHOWN.

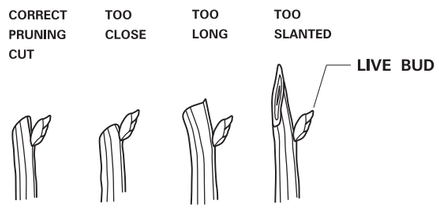
ACCEPTABLE PLANT STOCK GROWING RANGE LIMITS

SOURCE: USDA PLANT HARDINESS ZONE MAP (MnDOT 3861.2C)



BRANCHES PRUNED AT TRUNK

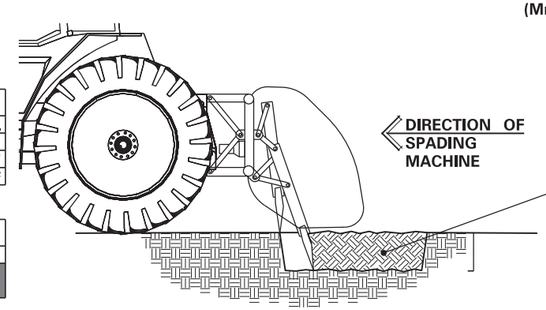
(SHIGO METHOD)



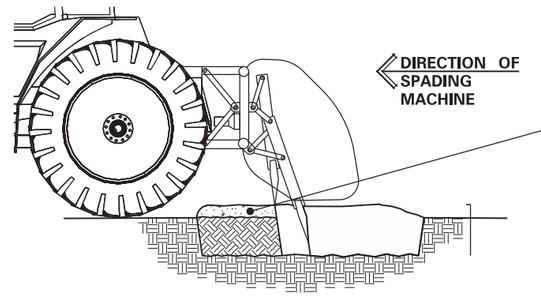
BRANCHES PRUNED TO LIVE BUD

PRUNING

(MnDOT 2571.3E.1 and 2571.3K.2.a(9))



PRIMARY TILLAGE – PASS 1



INCORPORATION TILLAGE – PASS 2

PLANTING SOIL

(MnDOT 2571.3D)

STEPS TO PRUNING WITH PRUNING SAW:

1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

PRUNING NOTES:

1. PRUNE USING CLEAN AND SHARP SCISSOR-TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

(MnDOT 2571.3E.1 and 2571.3K.2.a(9))

SPN12 OF SPN28

REVISION:

APPROVED: DECEMBER 11, 2015

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED: 12-11-2015

STANDARD PLANTING DETAILS

STANDARD PLAN 5-297.301 | 1 OF 3

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 69 OF 310 SHEETS

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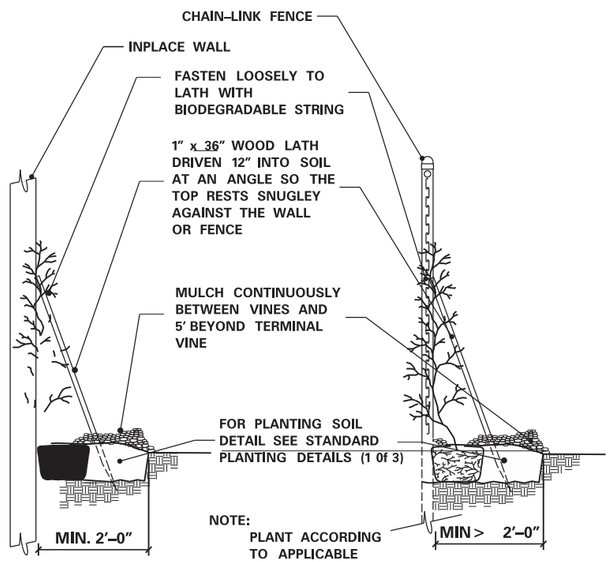
PLANTING HOLE DIMENSIONS

HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLAIR TO BOTTOM OF SOIL BALL.

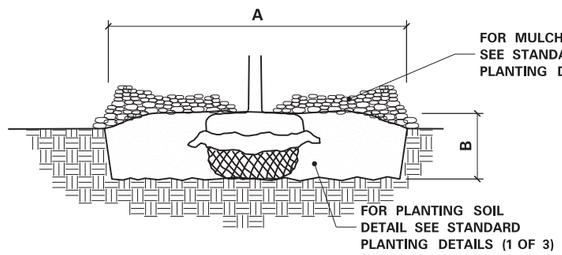
PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
DECIDUOUS & ORNAMENTAL TREES	3′ B.R.	46″	13″
	4′ B.R	46″	14″
	5′ B.R.	48″	14″
	6′ B.R.	54″	15″
	7′ B.R	60″	16″
	8′ B.R.	66″	19″
	0.75″ B.R.	48′	12″
	1″ B.R.	54″	14″
	1.25″ B.R.	60″	14″
	1.5 B.R.	66″	15″
	1.75″ B.R	72″	16″
	2″ B.R.	84″	19″
	4′ B.B.	42″	11″
	5′ B.B.	48″	12″
	6′ B.B.	52″	14″
	8′ B.B.	66″	16″
	10′ B.B.	66″	16″
	12′ B.B.	48″	16″
	1″ B.B.	54″	14″
	1.25″ B.B.	56″	15″
	1.5″ B.B.	61″	15″
	1.75″ B.B.	66″	16″
	2″ B.B.	72″	16″
	2.5″ B.B.	84″	19″
	3″ B.B.	96″	20″
	3.5″ B.B.	114″	23″
	4″ B.B.	126″	25″
DECIDUOUS SHRUBS, ROSES AND PERENNIALS	12″ B.R.	24″	7″
	15″ B.R.	28″	8″
	18″ B.R.	30″	8″
	2′ B.R.	33″	9″
	3′ B.R.	42″	11″
	4′ B.B.	48″	12″
	5′ B.R.	54″	14″
	6′ B.R.	60″	14″
PERENNIAL HOLE DEPTH AND WIDTH SHALL BE BASED UPON ON–CENTER SPACING IN A CONTINUOUS TRENCH.	18″ B.B.	27″	7″
	2′ B.B.	30″	8″
	3′ B.B.	36″	9″
	4′ B.B.	42″	11″
	5′ B.B.	48″	12″
	6′ B.B.	54″	14″



WALL INSTALLATION

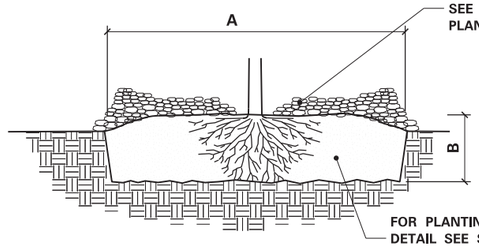
FENCE INSTALLATION

INSTALLATION OF VINES



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. PLACE PLANT SO THE ROOT FLARE IS AT OR UP TO 2″ ABOVE THE FINISHED GRADE WITH BURLAP AND WIRE BASKET, (IF USED), INTACT.
4. SLIT REMAINING TREATED BURLAP AT 6″ INTERVALS.
5. BACKFILL TO WITHIN APPROXIMATELY 12″ OF THE TOP OF THE ROOTBALL, THEN WATER PLANT.
6. REMOVE THE TOP 1/3 OF THE BASKET OR THE TOP TWO HORIZONTAL RINGS WHICHEVER IS GREATER. REMOVE ALL BURLAP AND NAILS FROM THE TOP 1/3 OF THE BALL. REMOVE ALL TWINE. REMOVE OR CORRECT STEM GIRDLING ROOTS.
7. PLUMB AND BACKFILL WITH PLANTING SOIL.
8. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
9. BACK FILL VOIDS AND WATER A SECOND TIME.
10. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

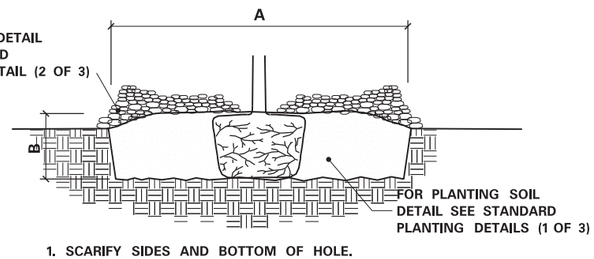
BALLED & BURLAPPED STOCK



1. SOAK ROOTS IN WATER FOR AT LEAST ONE HOUR BUT NOT MORE THAN 24 HOURS PRIOR TO PLANTING.
2. SCARIFY SIDES AND BOTTOM OF HOLE.
3. PROCEED WITH CORRECTIVE PRUNING OF THE TOP AND ROOTS.
4. TRANSFER PLANT DIRECTLY FROM WATER TO HOLE. SET PLANT SO THE ROOT FLARE IS AT THE FINISHED SOIL ELEVATION. SPREAD ROOTS OUT EVENLY. PLUMB AND IMMEDIATELY BACKFILL WITH PLANTING SOIL.
5. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANTS AND FILL VOIDS.
6. BACK FILL VOIDS AND WATER A SECOND TIME.
7. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

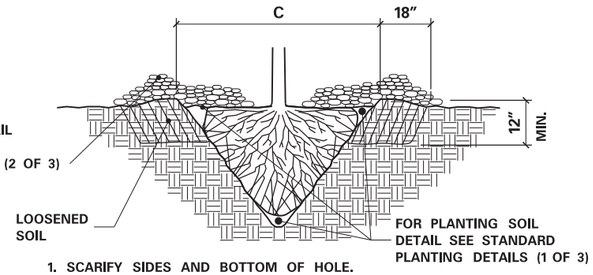
BARE ROOT STOCK

INSTALLATION OF PLANTS



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING OF TOP AND ROOT.
3. REMOVE CONTAINER AND SCORE OUTSIDE OF SOIL MASS TO REDIRECT AND PREVENT CIRCLING FIBROUS ROOTS. REMOVE OR CORRECT STEM GIRDLING ROOTS.
4. SET PLANT ON UNDISTURBED NATIVE SOIL OR THOROUGHLY COMPACTED PLANTING SOIL. INSTALL PLANT SO THE TOP OF THE ROOT FLARE IS AT OR UP TO 2″ ABOVE THE FINISHED GRADE.
5. PLUMB AND BACKFILL WITH PLANTING SOIL.
6. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7. BACK FILL VOIDS AND WATER A SECOND TIME.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

CONTAINER STOCK



1. SCARIFY SIDES AND BOTTOM OF HOLE.
2. PROCEED WITH CORRECTIVE PRUNING.
3. SET PLANT ON NATIVE SOIL AT SAME DEPTH AS IT WAS PREVIOUSLY GROWN.
4. PLUMB AND BACKFILL WITH PLANTING SOIL.
5. AFTER PLANTING, LOOSEN THE SOIL IMMEDIATELY ADJACENT TO THE ROOT BALL TO A MINIMUM DISTANCE OF 18″ AND A MINIMUM DEPTH OF 12″.
6. WATER THOROUGHLY WITHIN 2 HOURS TO SETTLE PLANT AND FILL VOIDS.
7. BACK FILL VOIDS AND WATER A SECOND TIME.
8. PLACE MULCH WITHIN 48 HOURS OF THE SECOND WATERING UNLESS SOIL MOISTURE IS EXCESSIVE.

MINIMUM TREE SPADE SIZE REQUIREMENTS

(C) SPADE DIAMETER SIZE	OAK TREE, CALIPER	DECIDUOUS / ORNAMENTAL TREE,CALIPER	CONIFEROUS TREE, HEIGHT
42″	1″ to 1.5″	2″ to 3″	5′ to 7′
60″	1.5″ to 2.5″	3″ to 4″	7′ to 9′
78″	2.5″ to 3.5″	4″ to 6″	9′ to 14′
85″	3.5″ to 5″	6″ to 8″	14′ to 18′

MACHINE MOVED STOCK

PLANTING HOLE DIMENSIONS

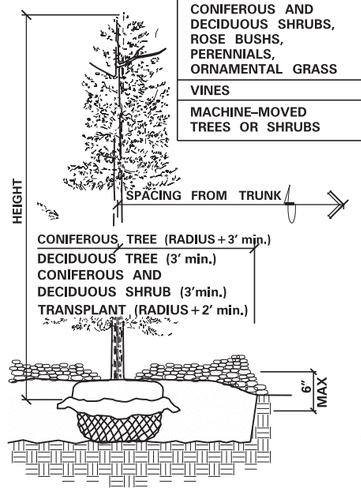
HOLE DEPTH FOR B&B AND CONTAINER PLANTS SHALL NOT EXCEED MEASUREMENT FROM ROOT FLAIR TO BOTTOM OF SOIL BALL.

PLANT TYPE	PLANT SIZE UP TO AND INCLUDING	(A) MINIMUM HOLE WIDTH	(B) APPROXIMATE HOLE DEPTH
CONIFEROUS TREES	2′ B.B	36″	10″
	3′ B.B	42″	11″
	4′ B.B	51″	13″
	5′ B.B	60″	13″
	6′ B.B	66″	15″
AT LEAST 2/3 OF ALL CONIFER BRANCHES WILL CONTAIN TERMINAL BUDS	7′ B.B	72″	16″
	8′ B.B	81″	18″
	9′ B.B	90″	20″
	10′ B.B	102″	21″
	12′ B.B	114″	24″
CONIFEROUS SHRUBS (UPRIGHT)	18″ B.B.	24″	7″
	3′ B.B.	48″	12″
CONIFEROUS SHRUBS (SPREADING)	18″ SPR B.B.	30″	8″
	2′ SPR B.B.	36″	9″
CONTAINER GROWN PLANTS	CELLPACKS / PLUGS	6″	2.5″
	2.25″ CONT.	7″	3″
	3.5″ CONT.	10″	3″
	4″ CONT.	11″	4″
	4.5″ CONT.	13″	4″
	6″/1 QT CONT.	15″	5.5″
	1# CONT.	18″	6″
	2# CONT.	23″	7.5″
	3# CONT.	29″	8.5″
	5# CONT.	30″	11″
	7# CONT.	37″	11″
	15# CONT.	44″	14″
	10# CONT.	45″	15″
	20# CONT.	60″	16″
	25# CONT.	72″	17″
SEEDLINGS	6″ SEEDLING	15″	14″
	9″ SEEDLING	18″	14″
	12″ SEEDLING	23″	16″
	18″ SEEDLING	30″	16″
	2′ SEEDLING	36″	18″
VINES	1 YR. MED B.R.	15″	11″
	1 YR. NO. 1 B.R.	17″	14′
	2 YR. MED. B.R.	33″	12″
	2 YR. NO. 1 B.R.	42″	15″

MULCH AREA CALCULATOR

TYPE OF PLANT	SQ. FT. PER PLANT
CONIFEROUS TREES	$\left[\left(\frac{3/5 \times \text{HEIGHT}}{2}\right)+3\right]^2 \times \pi$
DECIDUOUS AND ORNAMENTAL TREES	$3^2 \times \pi$
CONIFEROUS AND DECIDUOUS SHRUBS, ROSE BUSHS, PERENNIALS, ORNAMENTAL GRASS	SPACING x SPACING
VINES	SPACING x 2
MACHINE–MOVED TREES OR SHRUBS	$\left[\left(\frac{\text{SPADE DIAMETER}}{2}\right)+1\right]^2 \times \pi$

$\pi = 3.1416$



1. PULL MULCH BACK NO LESS THAN 3″ AND NO MORE THAN 6″ FROM TREES AND SHRUBS AT THE TRUNK OR MAIN STEM.
2. SUBSIDING OR DETERIORATING MULCH IS ACCEPTABLE THROUGHOUT THE ESTABLISHED PERIOD IF THE MULCH DEPTH IS MAINTAINED AT A MINIMUM 3″ DEPTH.
3. ADD MULCH WHEN BELOW THE 3″ MINIMUM DEPTH; DO NOT EXCEED THE 6″ MAXIMUM DEPTH.
4. MULCH CONTAMINATED WITH SOIL MUST BE REMOVED AND REPLACED.

MULCH

(MnDOT 2571.3F) (MnDOT 2571.3H)

SPN13 OF SPN28

REVISION:

APPROVED: DECEMBER 11, 2015
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

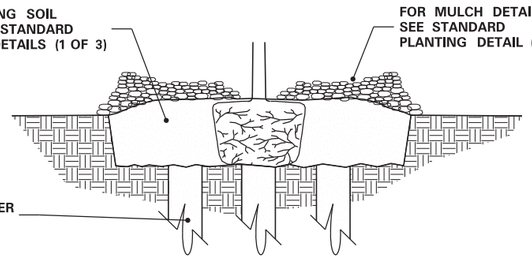
REVISED:

APPROVED: 12-11-2015

STANDARD PLANTING DETAILS

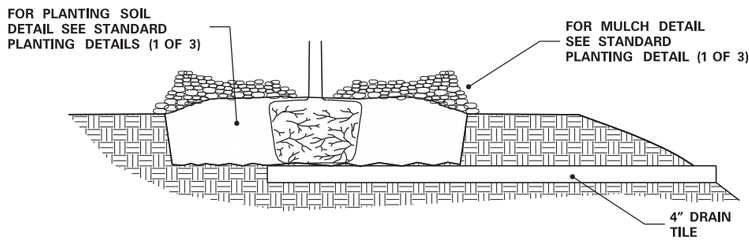
STANDARD PLAN 5-297.301 | 2 OF 3

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 70 OF 310 SHEETS



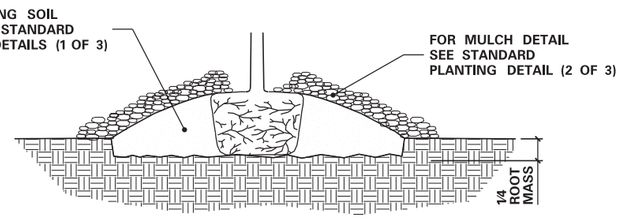
1. EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF ROOT MASS 1"–3" HIGHER THAN FINISHED GRADE.
2. AUGER 8" DIAMETER HOLES ENTIRELY THROUGH IMPERVIOUS OR POORLY DRAINED HARD PAN SOIL LAYER TO ADEQUATELY DRAIN SUBSOIL.
3. TEST FOR POSITIVE DRAINAGE. RE–AUGER AN ADDITIONAL 8" IF NECESSARY FOR POSITIVE DRAINAGE.
4. THOROUGHLY BACKFILL AUGER HOLES WITH A UNIFORM INCORPORATED MIXTURE OF 50% SAND AND 50% INPLACE SOIL.
5. COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

GRANULAR FILTER



1. EXCAVATE HOLE OR BED TO ALLOW PLACING THE TOP OF THE ROOT MASS 1"–3" HIGHER THAN FINISHED GRADE.
2. INSTALL 4" MINIMUM DIAMETER DRAIN TILE DAYLIGHTING AT A LOWER GRADE.
3. COMPLETE PLANTING ACCORDING TO ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

TILE DRAINAGE



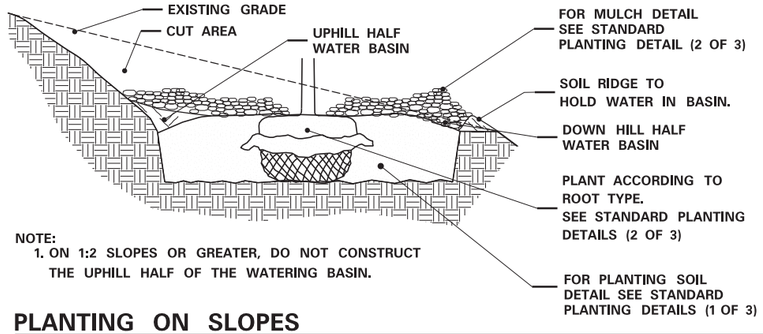
1. EXCAVATE HOLE OR BED 1/4 THE DEPTH OF THE ROOT MASS.
2. SET ROOT MASS IN HOLE.
3. CONSTRUCT BERM WITH PLANTING SOIL. EXTEND THE BERM BASE TO A WIDTH OF 3 TIMES THE BERM HEIGHT.
4. COMPLETE PLANTING ACCORDING ROOT TYPE. SEE STANDARD PLANTING DETAILS (2 OF 3).

MINI–BERM

NOTE:
1. THE NEED FOR USING PLANTING DETAILS FOR POORLY DRAINED SOILS AND WHICH TYPE TO USE ARE DETERMINED BY THE CONTRACTOR, SUBJECT TO ENGINEER APPROVAL.

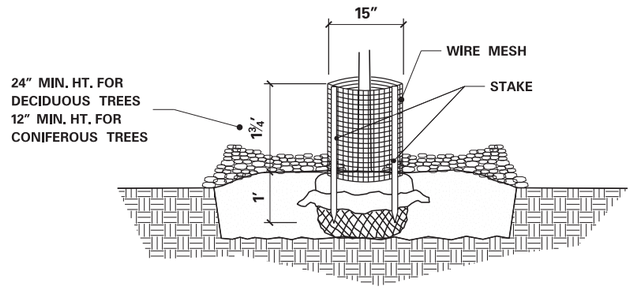
PLANTING DETAIL FOR POORLY DRAINED SOILS

(MnDOT 2571.3D.2(8))



NOTE:
1. ON 1:2 SLOPES OR GREATER, DO NOT CONSTRUCT THE UPHILL HALF OF THE WATERING BASIN.

PLANTING ON SLOPES

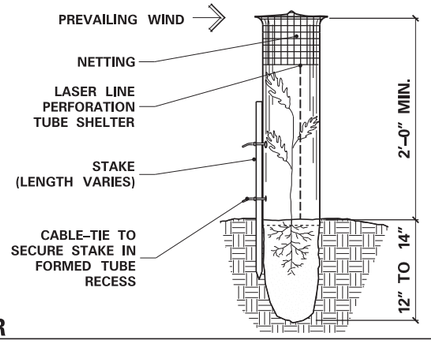


1. FORM A DOUBLE–LAYERED CYLINDER USING 0.25" GRID GALVANIZED WELDED WIRE MESH (HARDWARE CLOTH). OVERLAP THE CUT END 2".
2. DRIVE TWO 1" x 1" OPPOSING HEARTWOOD WHITE OAK STAKES INTO THE GROUND, 7" FROM THE CENTER OF THE TREE STEM.
3. SECURE THE MESH CYLINDER TO THE OUTSIDE OF THE STAKES USING EITHER, SCREWS AND WASHERS OR CABLE–TIES ALONG THE OVERLAP. SPACE APPROXIMATELY 4" ON CENTER ALONG THE OVERLAP.
   a. SCREWS SHALL BE ROUND HEAD GALVANIZED 1/8" DIA. x 3/4" LONG WITH WASHERS.
   OR
   b. CABLE–TIES SHALL BE NYLON, AT LEAST 8" LONG AND BETWEEN 75LB TO 120LB TENSILE STRENGTH.
4. EMBED THE LOWER EDGE OF THE MESH CYLINDER 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.
5. CUT EDGES WILL NOT BE PERMITTED AT THE TOP OF THE CYLINDER. STAKE WILL BE FLUSH WITH THE TOP OF THE CYLINDER.
6. MULCH WITHIN THE CYLINDER SHALL NOT EXCEED 3" DEPTH AND SHALL BE PULLED BACK FROM THE TRUNK AS SPECIFIED IN MULCH PLACEMENT DETAIL.
7. THE BOTTOM WHORL OF PINE AND LARCH BRANCHES MAY HAVE TO BE REMOVED TO PERMIT INSTALLATION OF 12" MIN. HEIGHT RODENT GUARDS.
8. INSTALL ON ALL DECIDUOUS, PINE AND LARCH TREES, DO NOT PLACE ON SPRUCE TREES.

RODENT PROTECTION

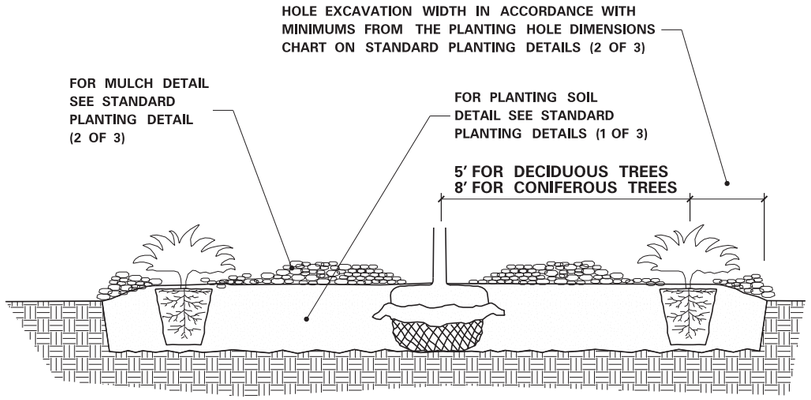
(MnDOT 2571.3I.2)

1. USE SEAMLESS, EXTRUDED, TWIN–WALL, RIGID AND SEMI TRANSLUCENT POLYPROPYLENE TUBES WITH A LASER LINE PERFORATION AND AN OUTWARD–FLARED TOP RIM.
2. SECURE SHELTER WITH NYLON CABLE–TIES ATTACHED TO A 1" x 1" WHITE OAK STAKE TO PREVENT DISLODGING OR TWISTING.
3. EMBED THE BOTTOM OF THE TUBE A MINIMUM OF 1" BELOW THE SOIL SURFACE WITHOUT DISTURBING THE TREE ROOTS.
4. PLACE A PLASTIC PHOTODEGRADABLE NETTING COVER AND SLEEVE OVER THE TOP OF THE TUBE. PULL NETTING DOWN AS SHOWN.

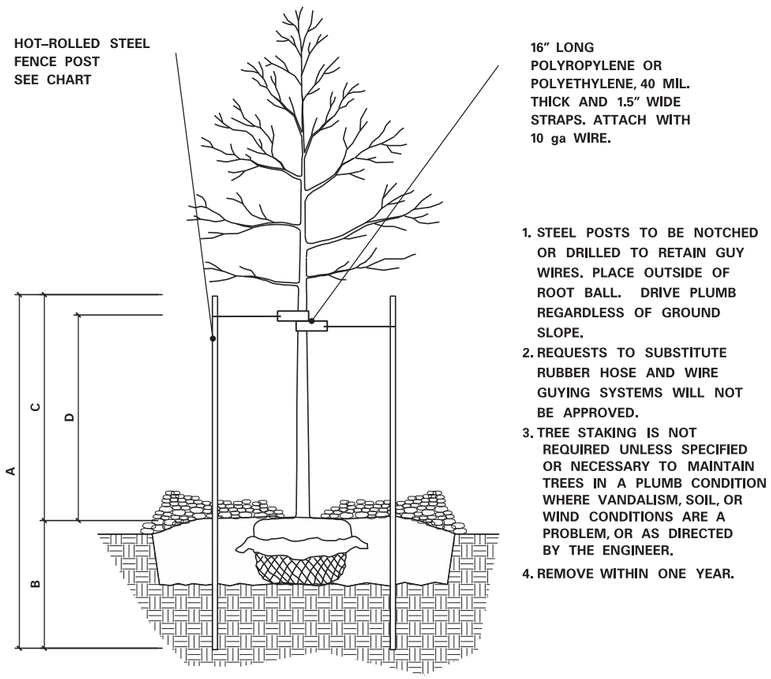


SEEDLING TREE SHELTER

(MnDOT 2571.3I.4)



PLANT SPACING IN MASS BEDS



1. STEEL POSTS TO BE NOTCHED OR DRILLED TO RETAIN GUY WIRES. PLACE OUTSIDE OF ROOT BALL. DRIVE PLUMB REGARDLESS OF GROUND SLOPE.
2. REQUESTS TO SUBSTITUTE RUBBER HOSE AND WIRE GUYING SYSTEMS WILL NOT BE APPROVED.
3. TREE STAKING IS NOT REQUIRED UNLESS SPECIFIED OR NECESSARY TO MAINTAIN TREES IN A PLUMB CONDITION WHERE VANDALISM, SOIL, OR WIND CONDITIONS ARE A PROBLEM, OR AS DIRECTED BY THE ENGINEER.
4. REMOVE WITHIN ONE YEAR.

STEEL POST SIZING					
CALIPER	STEEL POST TYPE	A	B	C	D
LESS THAN 4 INCHES	HOT–ROLLED STEEL FENCE POST (MnDOT 3403) OR APPROVED EQUAL.	7'–0"	3'–0" MIN.	4'–0"	3'–0"
GREATER THAN 4 INCHES	10', 2.2 LB. FLANGED CHANNEL SIGN POST (MnDOT 3401) OR APPROVED EQUAL.	10'–0"	4'–0" MIN.	6'–0"	5'–0"

STAKING AND GUYING

(MnDOT 2571.3I.1)

SPN14 OF SPN28

REVISION:

APPROVED: DECEMBER 11, 2015

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

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APPROVED: 12-11-2015

STANDARD PLANTING DETAILS

STANDARD PLAN 5-297.301 | 3 OF 3

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 71 OF 310 SHEETS

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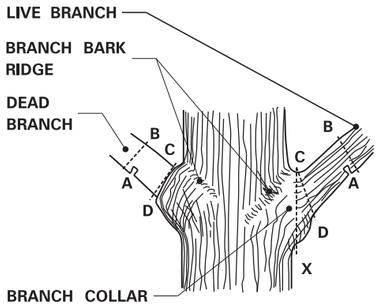


BRANCHES PRUNED AT TRUNK

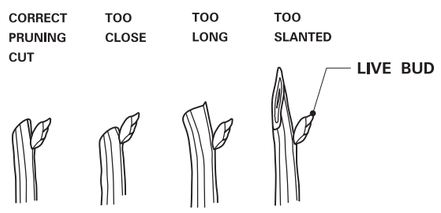
(SHIGO METHOD)

STEPS TO PRUNING WITH PRUNING SAW:

1. CUT PART WAY THROUGH THE BRANCH AT POINT A.
2. CUT COMPLETELY THROUGH BRANCH FROM POINT B TO A.
3. AT BRANCH COLLAR CUT FROM POINT C TO D.

INCORRECT CUT FROM POINT C TO X (TOO CLOSE) WILL RESULT IN DISCONTINUOUS CALLUS FORMATION AFTER ONE SEASON OF GROWTH.

CORRECT CUT FROM POINT C TO D (LEAVING BRANCH COLLAR BUT NOT THE STUB FROM POINT B TO A) WILL RESULT IN CONTINUOUS DOUGHNUT SHAPED CALLUS FORMATION AFTER ONE SEASON OF GROWTH.



BRANCHES PRUNED TO LIVE BUD

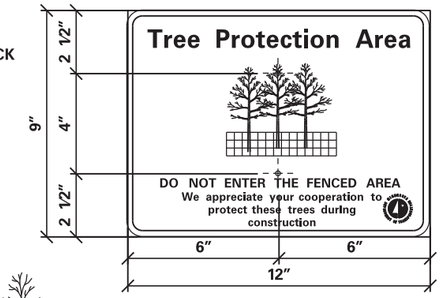
PRUNING NOTES:

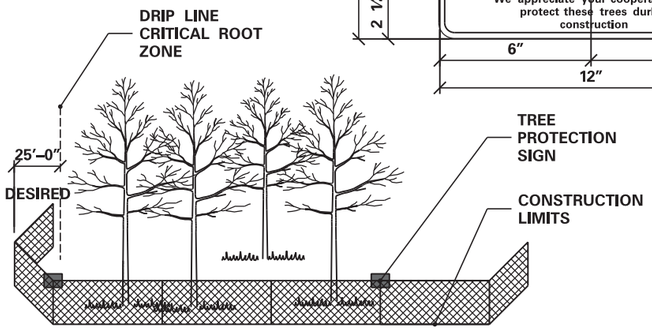
1. PRUNE USING CLEAN AND SHARP SCISSOR–TYPE PRUNER OR PRUNING SAW.
2. THE BEST TIME TO PRUNE IS LATE DORMANT SEASON OR EARLY SPRING.
3. AVOID PRUNING OAKS IN APRIL, MAY, JUNE OR JULY.
4. IF PRUNING IS NECESSARY OR IF WOUNDS OCCUR TO OAK TREES IN APRIL, MAY, JUNE OR JULY, IMMEDIATELY PAINT CUT SURFACE OR WOUND WITH LATEX PAINT OR SHELLAC.

PRUNING

(MnDOT 2571.3E.1 and 2571.3K.2.a(9))

1. FABRICATE 12″ X 9″ X 3⁄8″ SIGN WITH 0.75″ RADIUS CORNERS.
2. SIGN SHALL BE WHITE WITH BLACK LETTERING.
3. ATTACH SIGN TO POST USING 1″ LENGTH WOOD SCREWS.

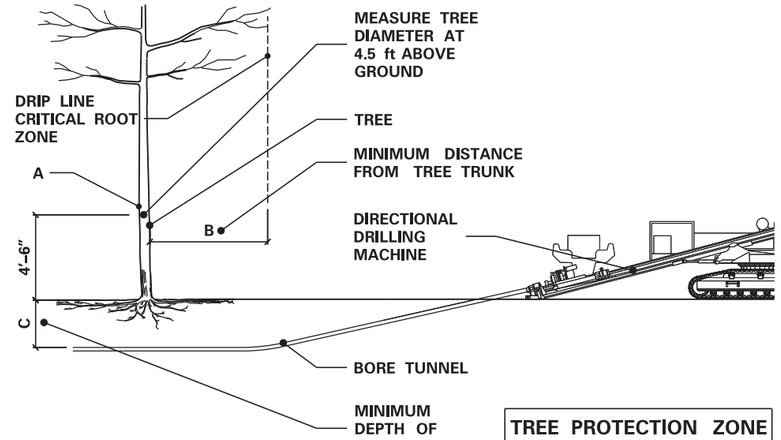




1. FURNISH AND INSTALL TEMPORARY FENCE AT THE TREE'S DRIPLINE OR CONSTRUCTION LIMITS AS SPECIFIED, PRIOR TO ANY CONSTRUCTION.
2. WHEN POSSIBLE PLACE FENCE 25 FEET BEYOND THE DRIP LINE.
3. PLACE TREE PROTECTION SIGNS ALONG FENCE AT 50′ INTERVALS.

TEMPORARY FENCE

(MnDOT 2572.3A.1)



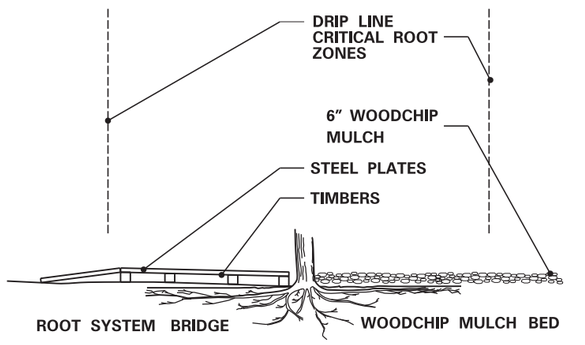
NOTE:

1. (A) IS THE DIAMETER OF TREES MEASURED 4′–6″ FEET ABOVE THE GROUND AND IS TERMED THE "DIAMETER AT BREAST HEIGHT," (DBH).
2. USING A TREE DIAMETER TAPE, WRAP THE TAPE AROUND THE GIRTH OF THE TREE, AT THE DBH, BEING CAREFUL NOT TO TWIST THE TAPE.

TREE PROTECTION ZONE		
A	B	C
< 2″	2′	2′
2–4″	4′	2.5′
> 4–9″	6′	2.5′
> 9–14″	10′	3′
> 14–19″	12′	3.25′
> 19″	15′	4′

UTILITY CONSTRUCTION

(MnDOT 2572.3A.5)



IF CONSTRUCTION VEHICLES MUST PASS OVER ROOT ZONES, THE CONTRACTOR MUST EITHER:

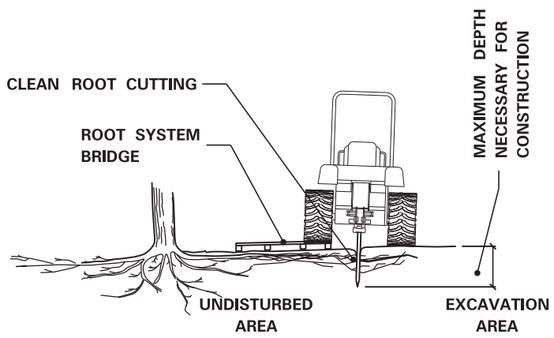
1. CONSTRUCT ROOT SYSTEM BRIDGES WITH STEEL PLATE SUPPORTED ON WOOD TIMBERS PLACED RADIALLY TO THE TREE TRUNK.

OR

2. PLACE A 6 INCH LAYER OF WOODCHIP MULCH OVER A TYPE III GEOTEXTILE (MnDOT 3733).

OTHER VEGETATION PROTECTION MEASURES

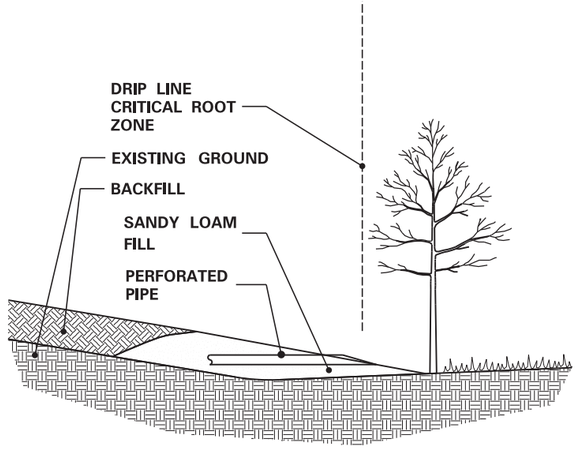
(MnDOT 2572.3A.12)



1. WHEN DESIGNATED IN THE PLAN OR DIRECTED BY THE ENGINEER, PRIOR TO EXCAVATION, ALL TREE ROOTS WILL BE CLEANLY CUT BY A VIBRATORY PLOW OR OTHER APPROVED ROOT CUTTER.
2. THE TREE ROOTS WILL BE CUT CLEANLY TO THE MINIMUM DEPTH NECESSARY FOR CONSTRUCTION.
3. IMMEDIATELY, AND CLEANLY CUT DAMAGED AND EXPOSED ROOTS.
4. ROOT ENDS EXPOSED BY EXCAVATION ACTIVITIES SHALL BE IMMEDIATELY COVERED WITH A 6″ LAYER OF ADJACENT SOIL.
5. EXPOSED CUT OAK ROOTS SHALL BE IMMEDIATELY (WITHIN 5 MINUTES) TREATED WITH A WOUND DRESSING MATERIAL CONSISTING OF LATEX PAINT OR SHELLAC.

CLEAN ROOT CUTTING

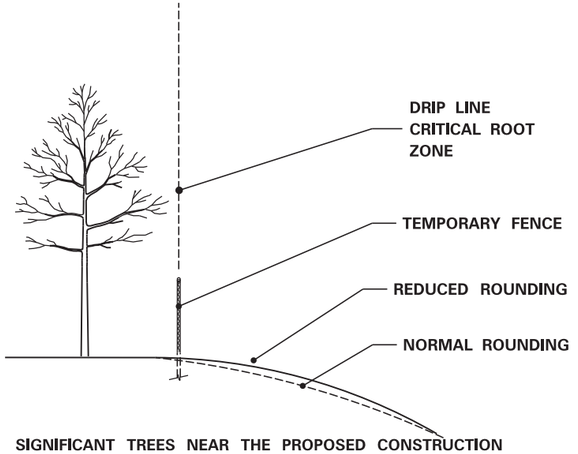
(MnDOT 2572.3A.2)



1. ANY FILL REQUIRED WITHIN THE DRIP LINE OF TREES, IS UNCOMPACTED ROOTING TOPSOIL BORROW.
2. EXCESSIVE FILL MAY REQUIRE PLACING PERFORATED PIPE WITH AT LEAST ONE DAYLIGHTED END OPENING AS AN AERATION SYSTEM.

ROOTING TOPSOIL BORROW

(MnDOT 2572.3A.4)



SIGNIFICANT TREES NEAR THE PROPOSED CONSTRUCTION LIMITS WILL BE IDENTIFIED IN THE PLAN OR BY THE ENGINEER AND WILL BE PRESERVED BY THE CONTRACTOR.

1. PLACE THE TEMPORARY FENCE.
2. REDUCE SLOPE ROUNDING WHERE ROOT ZONES ARE DISTURBED BY NORMAL SLOPE ROUNDING.
3. VARY BACKSLOPE STEEPNESS TO AVOID TREE LOSS OR UNNECESSARY ROOT DAMAGE.

SLOPE ROUNDING

SPN15
OF SPN28

REVISION:

APPROVED: DECEMBER 11, 2015
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED: 12-11-2015

PROTECTION AND RESTORATION OF VEGETATION

STANDARD PLAN 5-297.302 | 1 OF 1

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 72 OF 310 SHEETS

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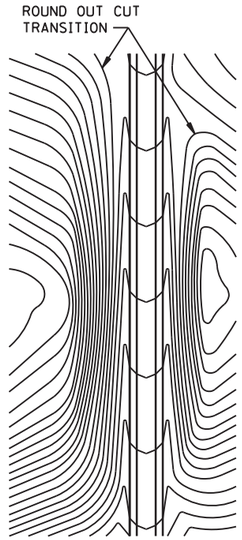
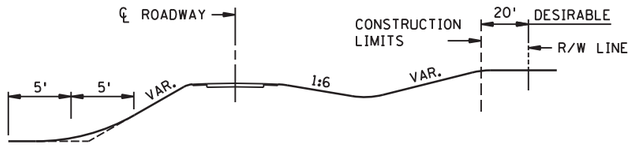
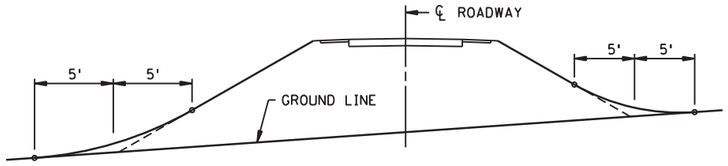


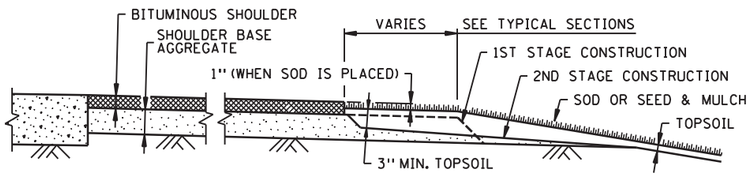
CONTOURING ROAD CUTS



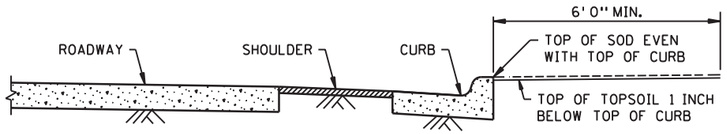
ROUNDING SHOULDERS AND BACKSLOPES



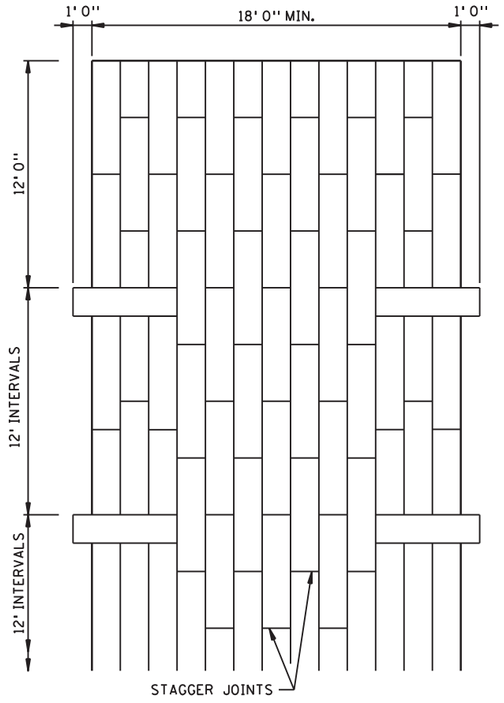
SHAPING FOR DRAINAGE ALONG THE TOE OF FILL SLOPES



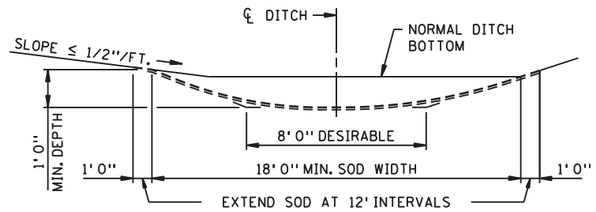
SHAPING AND TOPSOILING INSLOPES



SHAPING ADJACENT TO CURBS WHEN SOD IS PLACED

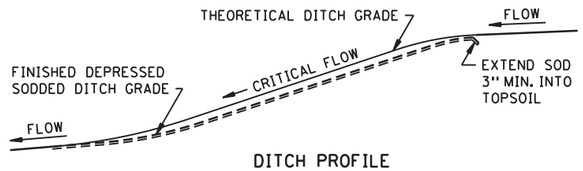


PLAN VIEW



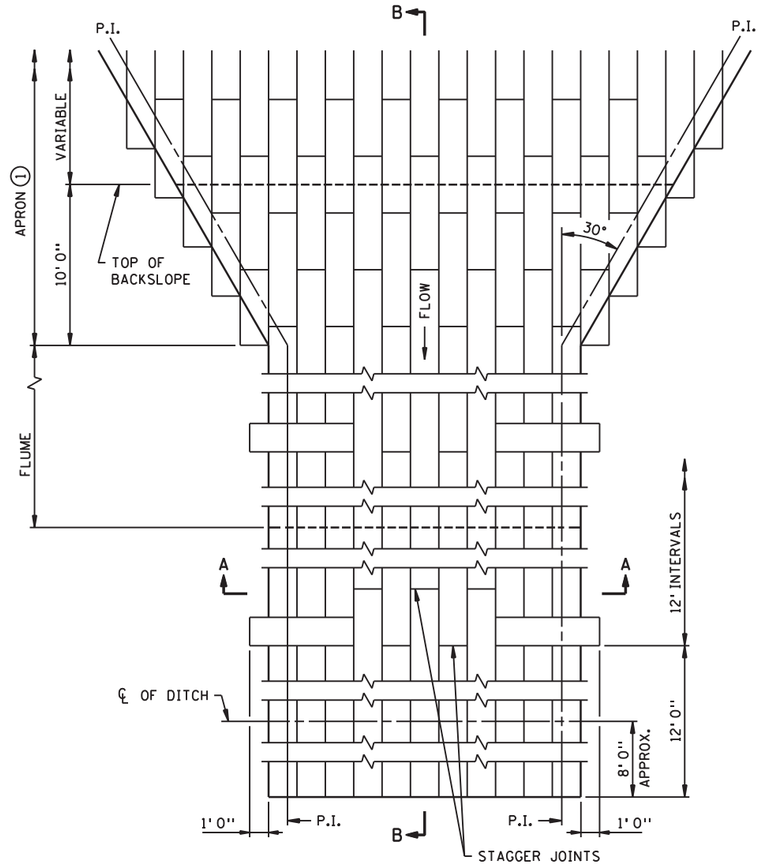
SODDED DITCH CROSS SECTION

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

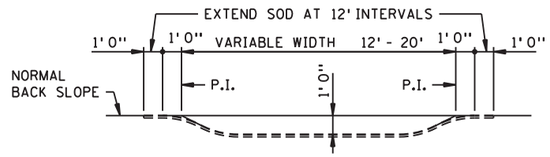


DITCH PROFILE

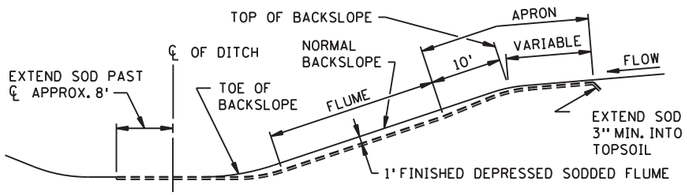
SODDED DITCH DETAILS



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: 2-28-2017

CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

PERMANENT EROSION CONTROL

ALONG ROADWAYS, DITCHES AND FLUMES

STANDARD PLAN 5-297.404 | 1 OF 3

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 73 OF 310 SHEETS

SPN16
OF SPN28

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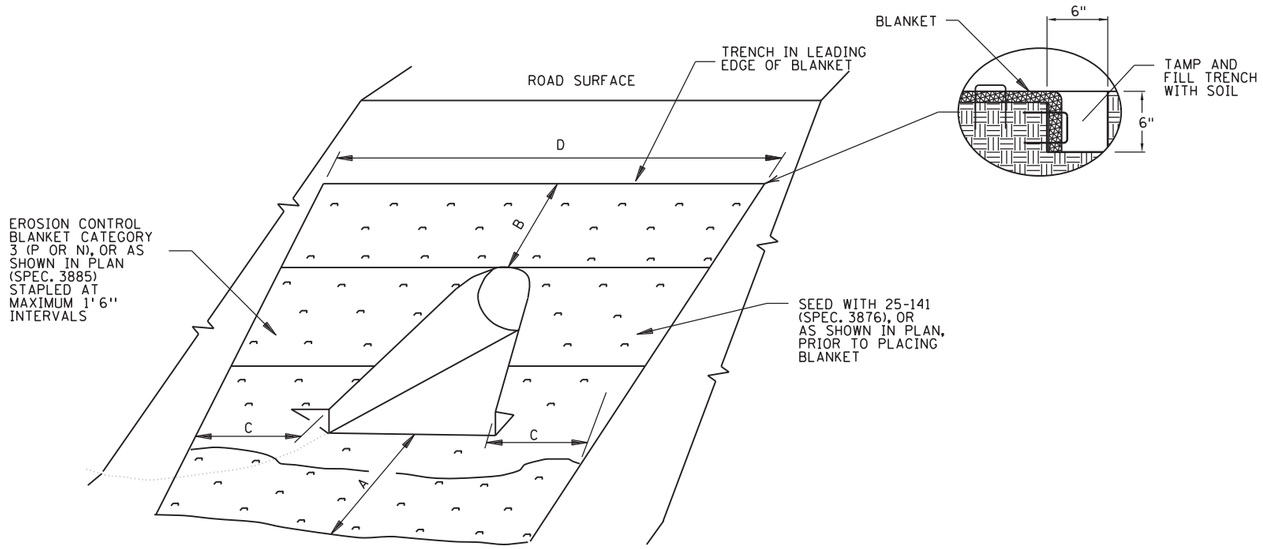
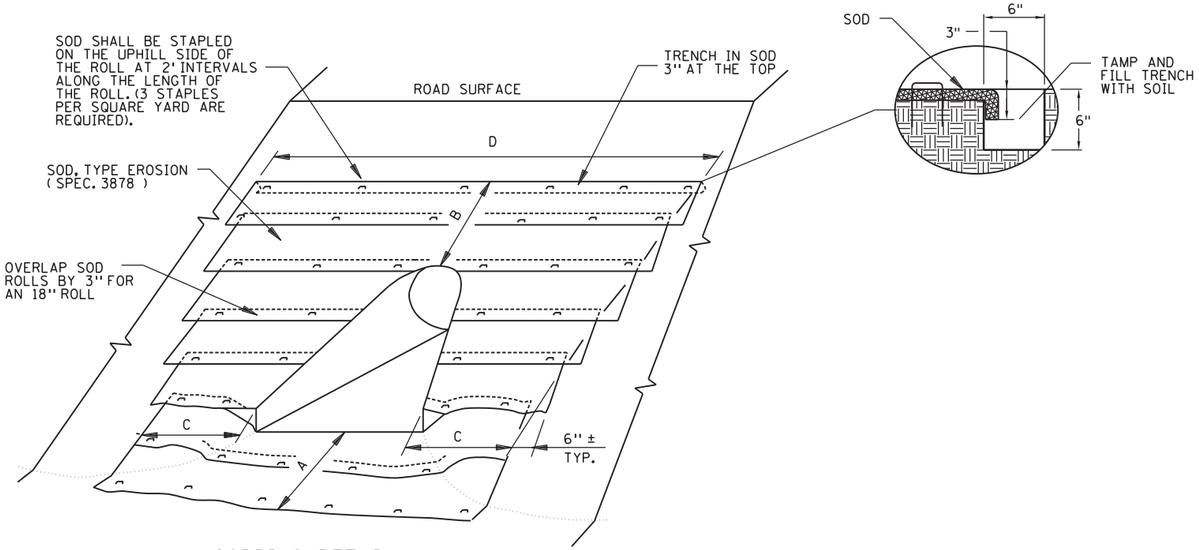


EROSION CONTROL BLANKET & SEED DETAIL



SODDING DETAIL

CULVERT INLET APRON ①

CULVERT DIAMETER ②	SOD OR EROSION CONTROL BLANKET (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	9	9	8	8	N/A	N/A	3'	1.5'	3'	13'
18"	13	12	12	14	16	N/A	3'	3'	3'	16'
21"	14	14	14	16	18	14	3'	3'	3'	17'
24"	16	15	16	19	21	17	3'	3'	3'	18'
27"	N/A	20	N/A	N/A	N/A	N/A	3'	4.5'	3'	20'
30"	23	22	25	30	32	N/A	3'	4.5'	3'	22'
36"	34	34	39	48	51	37	4.5'	4.5'	4.5'	27'
42"	43	40	51	64	N/A	N/A	4.5'	6'	4.5'	30'
48"	54	50	66	82	N/A	N/A	4.5'	7.5'	4.5'	34'
54"	65	58	81	102	N/A	N/A	4.5'	9'	4.5'	37'
60"	69	59	91	115	N/A	N/A	4.5'	9'	4.5'	39'
66"	69	63	N/A	N/A	N/A	N/A	4.5'	9'	4.5'	39'
72"	78	72	99	122	N/A	N/A	4.5'	10.5'	4.5'	41'

CULVERT OUTLET APRON ①

CULVERT DIAMETER ②	SOD OR EROSION CONTROL BLANKET (SQ. YDS.)						"A"	"B"	"C"	"D"
	CIRCULAR AND ARCH PIPE METAL APRON (PLATE 3123, PLATE 3122)	CIRCULAR AND ARCH PIPE CONCRETE APRON (PLATE 3100, PLATE 3110)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:4 SLOPE (PLATE 3148)	CIRCULAR AND ARCH PIPE METAL SAFETY APRON 1:6 SLOPE (PLATE 3148)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:6 SLOPE (PLATE 3128)	CIRCULAR CORRUGATED METAL PIPE SAFETY APRON 1:4 SLOPE (PLATE 3128)				
15"	10	10	9	10	N/A	N/A	4.5'	1.5'	3'	13'
18"	13	13	12	14	15	N/A	6'	1.5'	3'	14'
21"	16	14	16	18	19	15	6'	1.5'	3'	15'
24"	18	18	18	21	22	18	7.5'	1.5'	3'	16'
27"	N/A	19	N/A	N/A	N/A	N/A	7.5'	1.5'	3'	17'
30"	23	23	24	28	29	N/A	9'	1.5'	3'	18'
36"	36	35	38	47	48	37	10.5'	1.5'	4.5'	23'
42"	43	40	47	58	N/A	N/A	12'	1.5'	4.5'	25'
48"	50	46	57	70	N/A	N/A	13.5'	1.5'	4.5'	27'
54"	57	50	67	84	N/A	N/A	15'	1.5'	4.5'	29'
60"	74	63	90	113	N/A	N/A	16.5'	1.5'	6'	33'
66"	75	67	N/A	N/A	N/A	N/A	16.5'	1.5'	6'	33'
72"	77	70	92	114	N/A	N/A	16.5'	1.5'	6'	34'

NOTES:

AREA SHOWN IN SQUARE YARDS IS FOR ONE CULVERT END.

QUANTITIES ARE CALCULATED TO INCLUDE SOD REQUIRED TO PROVIDE A 3" OVERLAP ON ALL 18" WIDE ROLLS. THIS ALLOWS FOR SHRINKAGE OF THE SOD.

FOR PIPE ARCHES USE EQUIVALENT PIPE DIAMETER TO APPROXIMATE AREA.

FOR CORRUGATED POLYETHYLENE PIPE METAL APRON (PLATE 3129), USE THE METAL APRON COLUMN (PLATE 3123).

AREAS AND DIMENSIONS ARE APPROXIMATE AND ARE BASED ON APRON SIDE SLOPES OF NO STEEPER THAN 1:2, UNLESS INDICATED AS FOR SAFETY APRONS.

CARE SHOULD BE TAKEN IN SELECTING SOD TO STABILIZE THE APRON. RIP-RAP SHOULD BE USED FOR FLOW VELOCITIES GREATER THAN 6 FPS.

① ADDITIONAL QUANTITIES MAY BE SHOWN IN THE PLAN OR REQUIRED BY THE ENGINEER.

② FOR ARCH PIPE USE CLOSEST CIRCULAR PIPE DIAMETER AND APRON SLOPE. (DIAMETERS LARGER THAN 72" REQUIRE SPECIAL DESIGNS.)

SPN17
OF SPN28

REVISION:

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MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

PERMANENT EROSION CONTROL
TURF ESTABLISHMENT DETAIL AT CULVERT ENDS

STANDARD PLAN 5-297.404 | 2 OF 3

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 74 OF 310 SHEETS

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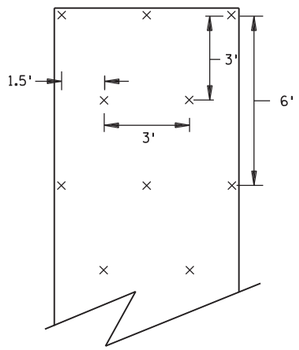
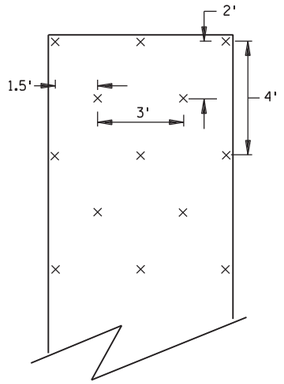
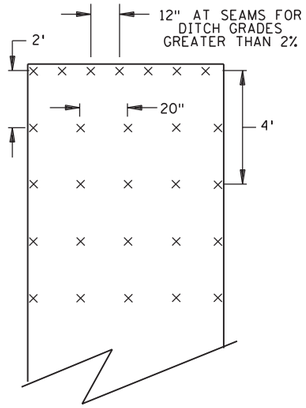


SLOPES FLATTER THAN 1:2
(120 STAPLES PER 100 SQ YD)

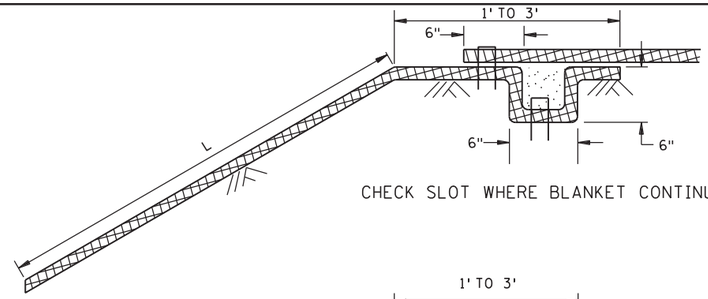


SLOPES 1:2 TO 1:1
(170 STAPLES PER 100 SQ YD)

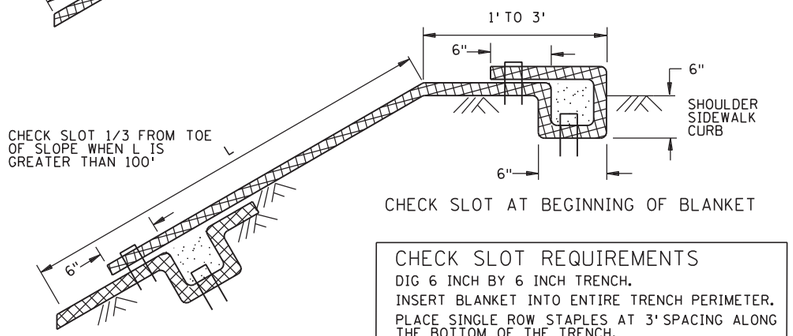
BLANKET STAPLE PATTERN



CHANNEL AND DITCH APPLICATIONS
(350 STAPLES PER 100 SQ YD)



CHECK SLOT WHERE BLANKET CONTINUES



CHECK SLOT AT BEGINNING OF BLANKET

CHECK SLOT REQUIREMENTS

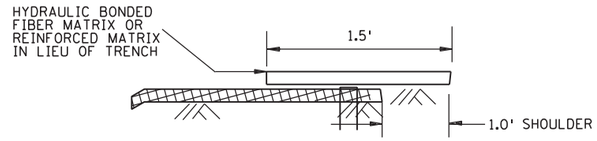
DIG 6 INCH BY 6 INCH TRENCH.

INSERT BLANKET INTO ENTIRE TRENCH PERIMETER.

PLACE SINGLE ROW STAPLES AT 3' SPACING ALONG THE BOTTOM OF THE TRENCH.

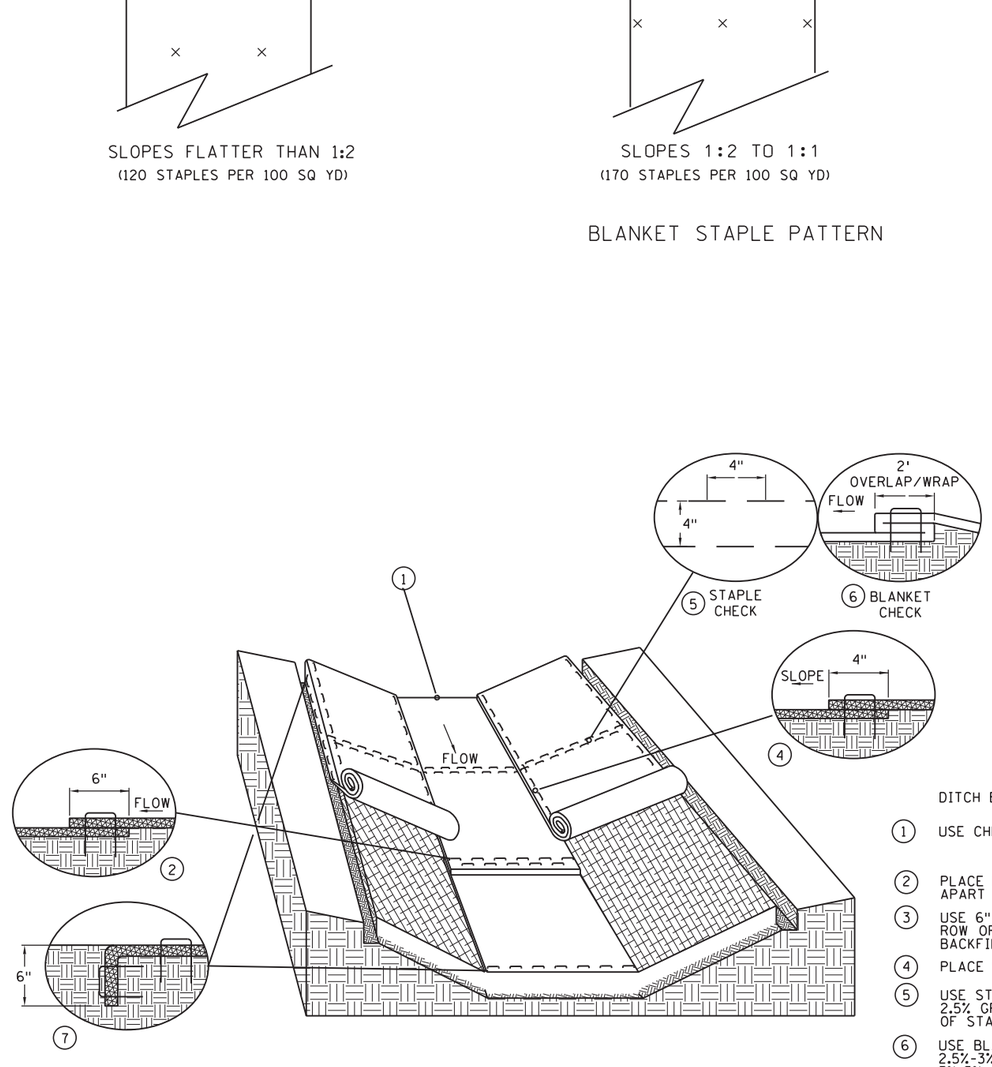
BACKFILL TRENCH WITH SOIL AND TAMP.

PLACE SINGLE ROW STAPLES AT 3' SPACING ON OVERLAP.

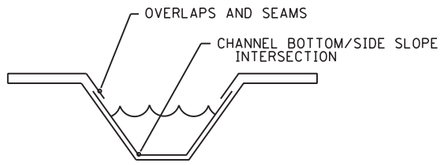


CHECK SLOT ALTERNATIVE
PLACE SINGLE ROW STAPLES AT 12" SPACING

CHECK SLOT DETAILS



DITCH BLANKET STAPLE DETAIL



DITCH BLANKET CRITICAL POINTS (7)

DITCH BLANKET STAPLE DETAIL NOTES

(1) USE CHECK SLOT DETAIL (NO ALTERNATES).

(2) PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND 4" ON CENTER.

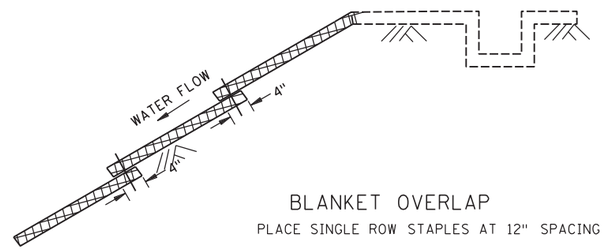
(3) USE 6" X 6" TRENCH TO PLACE BLANKET. PLACE SINGLE ROW OF STAPLES ON TOP AND TRENCH SIDES AT 12" SPACING. BACKFILL TRENCH WITH SOIL AND TAMP.

(4) PLACE SINGLE ROW OF STAPLES AT 12" SPACING.

(5) USE STAPLE CHECK FOR CHANNEL SLOPES LESS THAN 2.5% GRADE AT 100 FOOT INTERVALS. PLACE DOUBLE ROW OF STAPLES STAGGERED 4" APART AND AT 4" SPACING.

(6) USE BLANKET CHECKS FOR THE FOLLOWING SLOPES:
2.5%-3% 100 FT INTERVALS
3%-5% 50 FT INTERVALS
5%-7% 25 FT INTERVALS

(7) CRITICAL POINTS SHALL BE SECURED WITH PROPER STAPLE PATTERNS.



BLANKET OVERLAP
PLACE SINGLE ROW STAPLES AT 12" SPACING

GENERAL BLANKET INSTALLATION REQUIREMENTS

PREPARE SOIL AS PER SPECIFICATION 2574.

LAY PARALLEL OR PERPENDICULAR TO THE DIRECTION OF WATER FLOW.

OVERLAP ADJACENT STRIP EDGES A MINIMUM OF 4 INCHES.

OVERLAP BLANKET 6" (MIN.) AT EACH END. OVERLAP BOTTOM END OF UPPER BLANKET OVER TOP END OF LOWER BLANKET. STAPLE ALONG OVERLAP EVERY 1.5'.

THE UPPERMOST BLANKET OF ALL SLOPE APPLICATIONS MUST START IN A CHECK SLOT. IF SLOPE LENGTH (L) IS 100' OR GREATER, INSERT BLANKET INTO A CHECK SLOT 1/3 FROM THE BOTTOM OF THE SLOPE.

SPN18
OF SPN28

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MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

PERMANENT EROSION CONTROL
BLANKET STAPLE PATTERN FOR SLOPES

STANDARD PLAN 5-297.404 | 3 OF 3

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 75 OF 310 SHEETS

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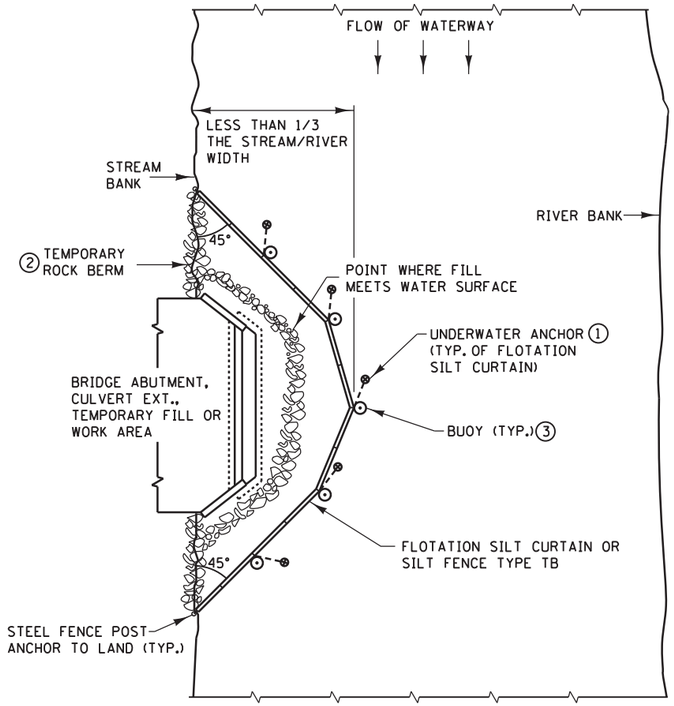
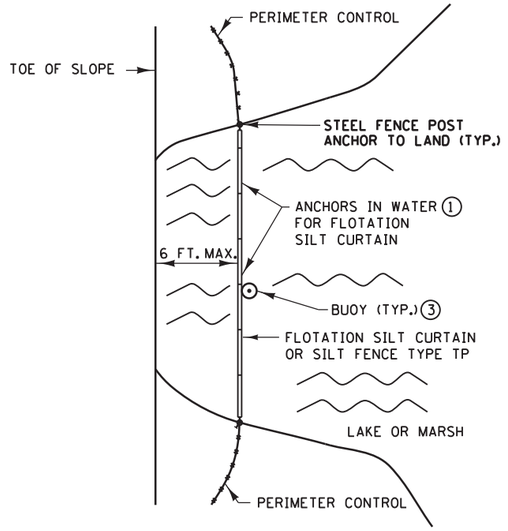
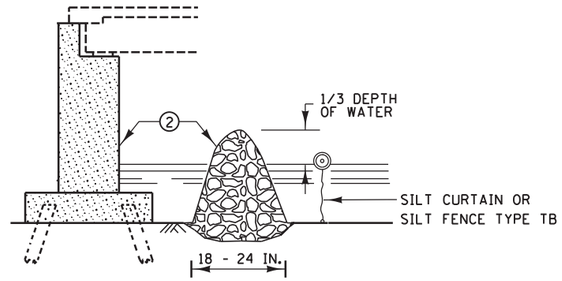


PLAN VIEW FOR STREAM ⑤



PLAN VIEW FOR LAKE OR MARSH ⑤

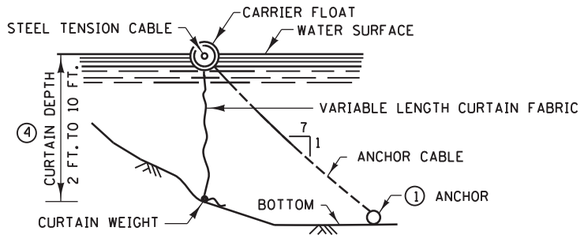


TEMPORARY ROCK BERM
FOR SEDIMENT CONTROL

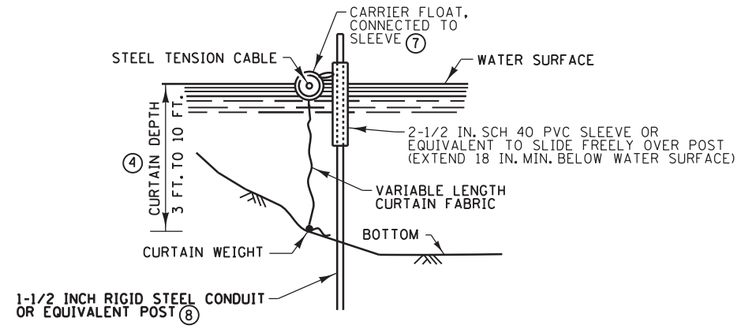
INSTALLATION GUIDELINES
SILT FENCE TYPE TB
MINIMUM WATER DEPTH: 1 FT.
MAXIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.

INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: STILL WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 2 FT./SEC.
MAXIMUM WAVE HEIGHT: 1 FT

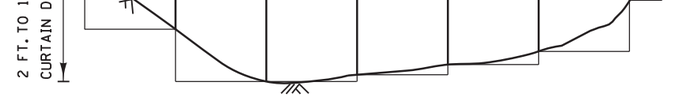
INSTALLATION GUIDELINES ④
FLOTATION SILT CURTAIN
TYPE: MOVING WATER
MINIMUM WATER DEPTH: 3 FT.
MAXIMUM WATER DEPTH: 10 FT.
MAXIMUM WATER VELOCITY: 5 FT./SEC.
MAXIMUM WAVE HEIGHT: 2 FT.



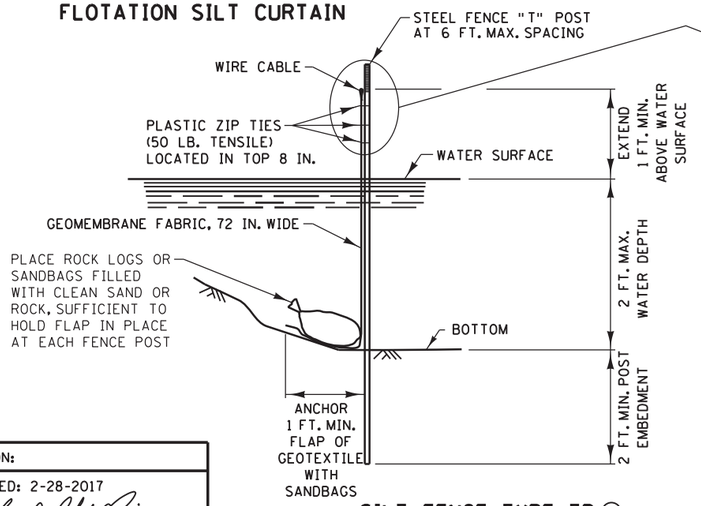
FLOTATION SILT CURTAIN



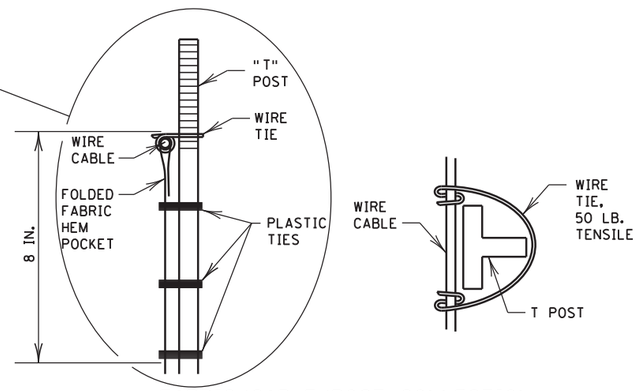
ALTERNATE FLOTATION SILT CURTAIN



FRONT VIEW FOR FLOTATION SILT CURTAIN



SILT FENCE TYPE TB ⑥



FABRIC/CABLE/POST CONNECTION

NOTES:

SEE SPECS. 2573, 3886, 3887 & 3893.

① FOR ANCHOR SPACING AND WEIGHT REQUIREMENTS, SEE SPEC. 2573.

② IN AREAS WHERE THE PLAN CALLS FOR RIPRAP AT A BRIDGE, CULVERT, OR SLOPE, A TEMPORARY ROCK BERM CONSTRUCTED FROM THE RIPRAP CAN BE USED TO PROVIDE ADDITIONAL PROTECTION. WHEN THE WORK IS COMPLETE THE RIPRAP CAN THEN BE MOVED TO THE PERMANENT LOCATION INDICATED IN THE PLANS. THE TEMPORARY ROCK BERM IS INCIDENTAL.

③ ON U.S. COAST GUARD OR OTHER MOTORIZED WATERWAYS, BUOYS ARE REQUIRED TO MARK THE ENDS AND SPECIAL AREAS FOR VISIBILITY. PLACE BUOYS AS REQUIRED FOR NAVIGATIONAL PURPOSES.

④ MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB FOR DETERMINING APPLICABILITY OF FLOTATION SILT CURTAIN OR SILT FENCE TYPE TB.

⑤ SILT CURTAIN SHOULD BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF HAS BEEN TEMPORARILY OR PERMANENTLY STABILIZED. SILT CURTAIN SHOULD ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.

⑥ EMBED POST INTO BOTTOM A MINIMUM OF 40% OF THE WATER DEPTH (INCLUDING WAVE HEIGHT), BUT IN NO CASE SHALL EMBEDMENT BE LESS THAN 2 FEET.

⑦ ANCHOR FLOAT MUST BE CONNECTED SECURELY TO SLEEVE WITH A MINIMUM TENSILE STRENGTH OF 100 LBS. CONNECTION METHOD MUST ALLOW FOR SLEEVE TO MOVE FREELY ON POST.

⑧ PROVIDE SUFFICIENT NUMBER OF POST ANCHORS TO MAINTAIN SILT CURTAIN POSITION.

SPN19
OF SPN28

REVISION:
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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED:
2-28-2017

TEMPORARY SEDIMENT CONTROL
SILT CURTAIN OR SILT FENCE TYPE TB

STANDARD PLAN 5-297.405 | 1 OF 8

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 76 OF 310 SHEETS

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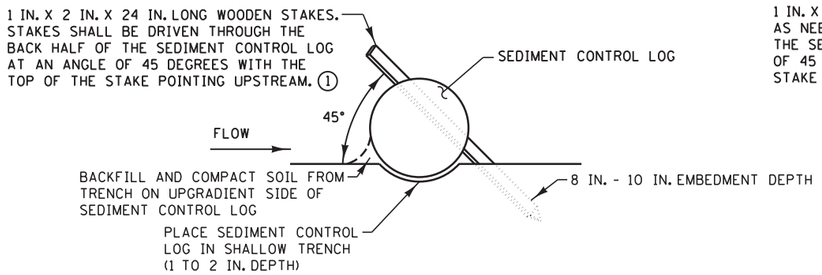
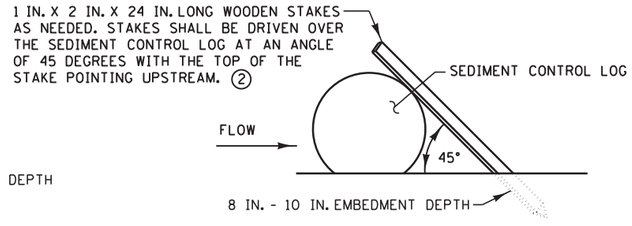
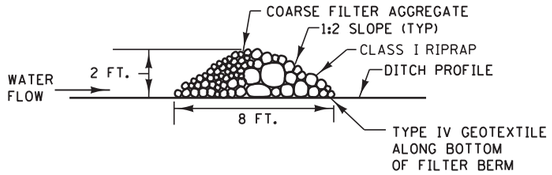


TYPES: STRAW, WOOD FIBER, OR COIR

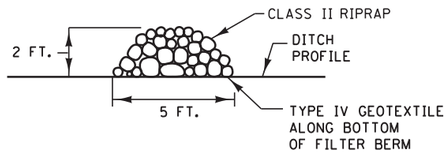


TYPES: WOOD CHIP, COMPOST, OR ROCK

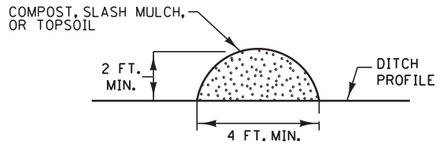
SEDIMENT CONTROL LOGS



TYPE 3 (ROCK WEEPER)

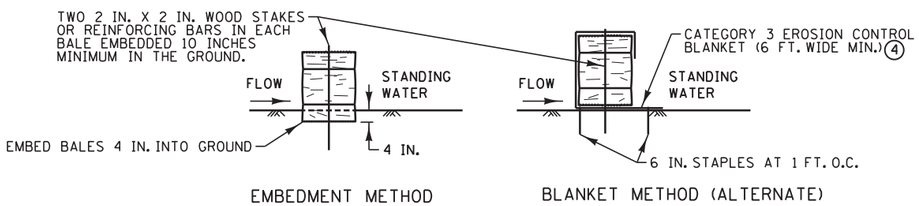


TYPE 5 (ROCK)



TYPE 1 (COMPOST), TYPE 2 (SLASH MULCH), OR TYPE 4 (TOPSOIL)

FILTER BERMS



EMBEDMENT METHOD

BLANKET METHOD (ALTERNATE)

BALE BARRIERS (3)

NOTES:

SEE SPECS. 2573, 3149, 3874, 3882, 3886, & 3897.

(1) SPACE BETWEEN STAKES SHALL BE A MAXIMUM OF 1 FOOT FOR DITCH CHECKS OR 2 FEET FOR OTHER APPLICATIONS.

(2) PLACE STAKES AS NEEDED TO PREVENT MOVEMENT OF SEDIMENT CONTROL LOGS PLACED ON SLOPES OR AS NEEDED DUE TO OTHER FACTORS. STAKES SHALL BE INCIDENTAL.

(3) TO BE USED FOR CRITICAL PERIMETER CONTROL AREAS WHERE STANDING WATER OCCURS (6 INCH MAX. DEPTH). BALES SHALL CONSIST OF TYPE 1 MULCH OF APPROXIMATELY 14 IN. X 18 IN. X 36 IN. LONG. BALES SHALL BE PLACED ON EDGE AND BUTTED TIGHT TO ADJACENT BALES.

(4) INSTEAD OF TRENCHING, PLACE BALE ON THE BLANKET AND WRAP BLANKET AROUND THE BALE. PLACE STAKE THROUGH BALE AND BLANKET.

SPN20
OF SPN28

REVISION:

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL
FILTER BERMS, SEDIMENT CONTROL LOGS, AND BALE BARRIERS

STANDARD PLAN 5-297.405 | 2 OF 8

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 77 OF 310 SHEETS

7:57:00 AM 6/30/2017 rhoefs

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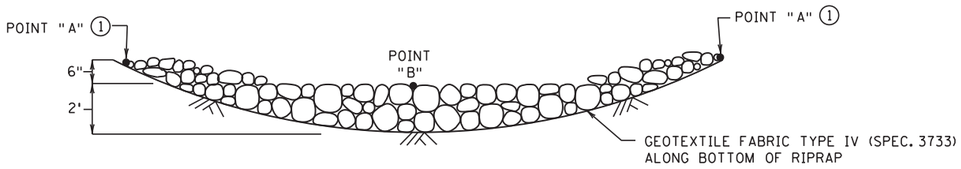
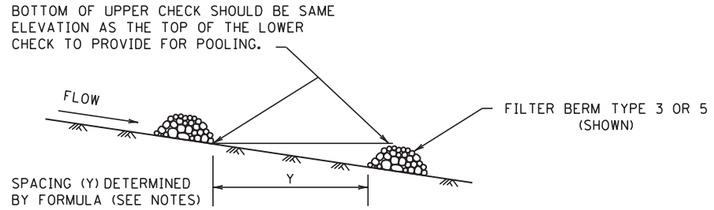
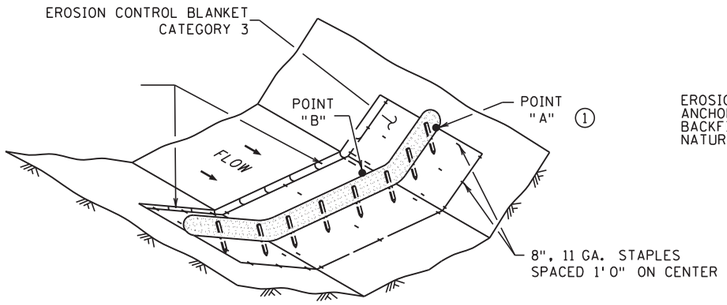
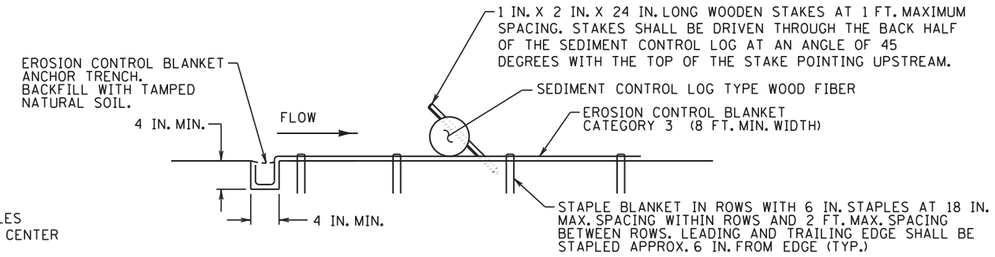


ROCK DITCH CHECKS
FILTER BERMS TYPE 3 (ROCK WEEPER) OR FILTER TYPE 5 (ROCK) ②③
(FOR USE ON ROUGH GRADED AREAS)

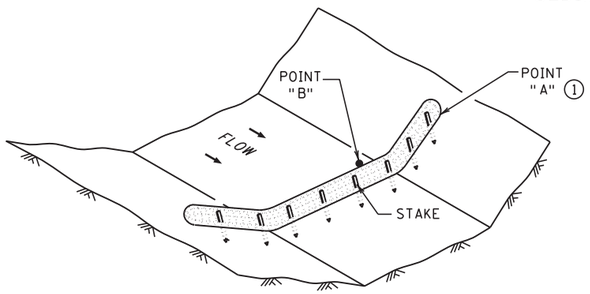


DITCH CHECK SPACING
(FOR ALL FILTER BERM TYPES)





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..

SPN21
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REVISION:

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MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL
DITCH CHECK

STANDARD PLAN 5-297.405 | 3 OF 8

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 78 OF 310 SHEETS

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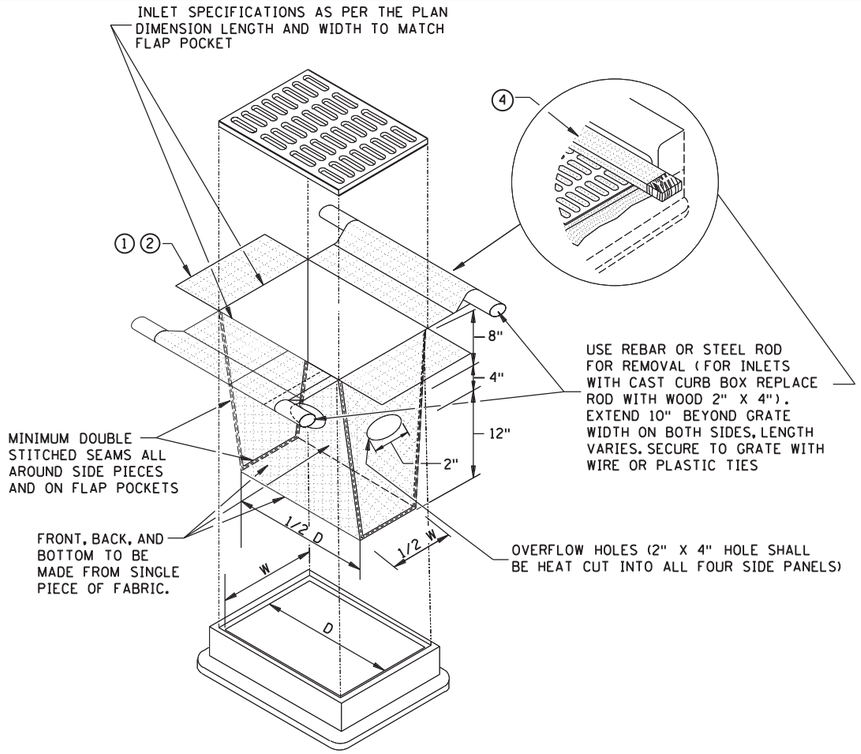
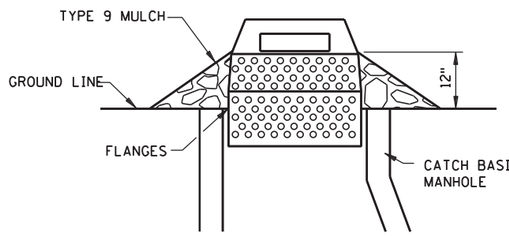


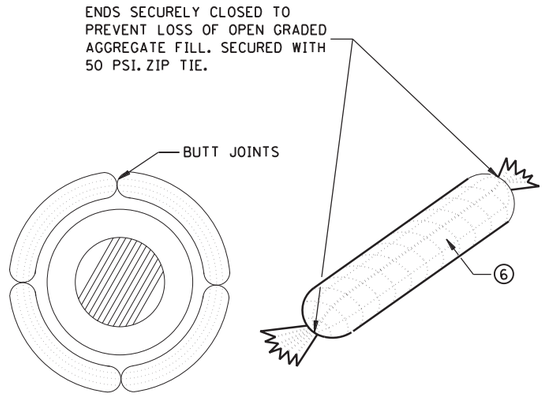
FILTER BAG INSERT ③

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

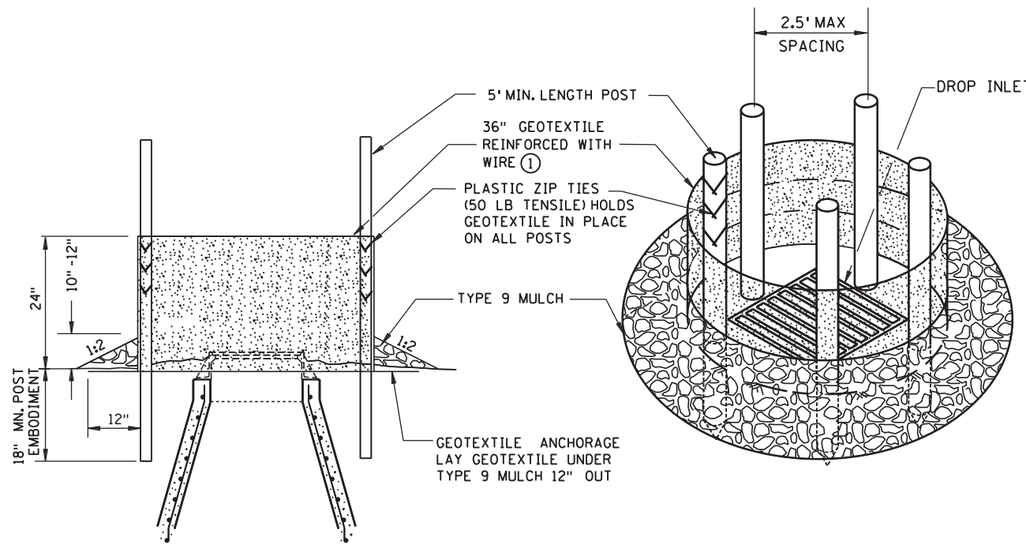


SEDIMENT CONTROL INLET HAT

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.

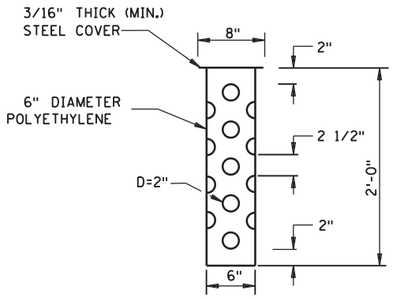


ROCK LOG/COMPOST LOG

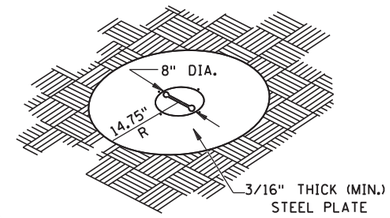


SILT FENCE RING AND ROCK FILTER BERM

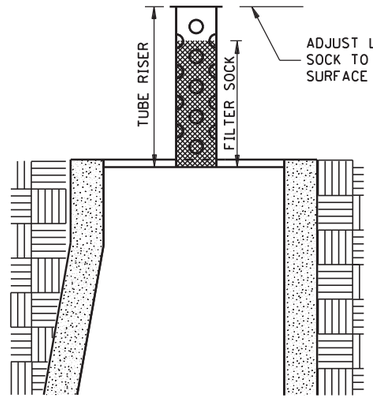
USE WHERE INLET DRAINS IN AN AREA WITH SLOPES AT 1:3 or LESS



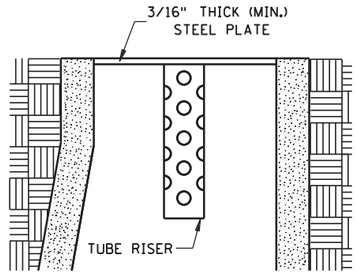
TUBE RISER



PERSPECTIVE VIEW



SECTION
(UP POSITION)



SECTION
(DOWN POSITION)

POP-UP HEAD

NOTES:
SEE SPECS. 2573, 3137, & 3886.

DEVICES MUST BE ADJUSTED ACCORDINGLY AS TO NOT CAUSE FLOODING ON ROADWAY THAT WOULD IMPEED 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.

SPN22
OF SPN28

REVISION:

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MINNESOTA
DEPARTMENT
OF
TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED:
2-28-2017

TEMPORARY SEDIMENT CONTROL
STORM DRAIN INLET PROTECTION

STANDARD PLAN 5-297.405 | 4 OF 8

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 79 OF 310 SHEETS

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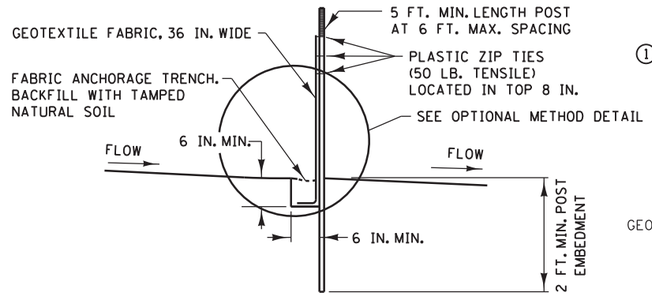
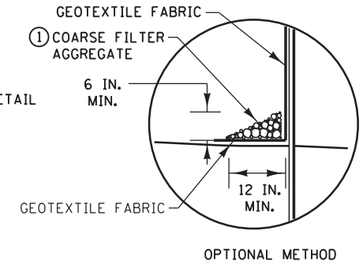
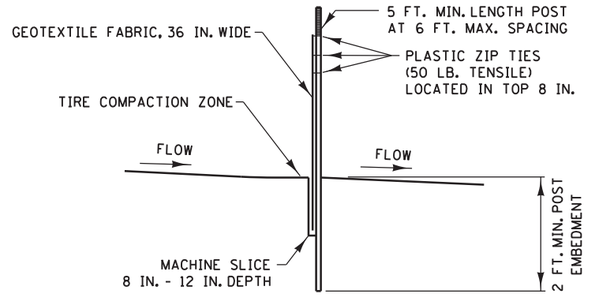
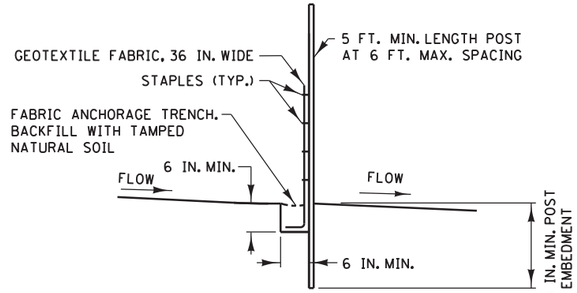




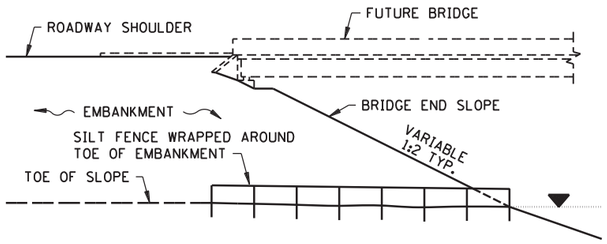
SILT FENCE TYPE HI ②
(HAND INSTALLED)



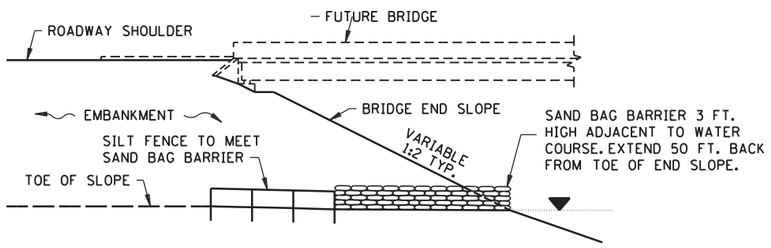
SILT FENCE TYPE MS ②
(MACHINE SLICED)



SILT FENCE TYPE PA ③
(PREASSEMBLED)

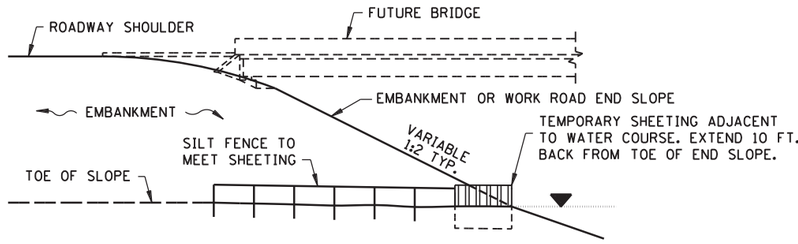


SILT FENCE ONLY ④



SILT FENCE WITH SAND BAGS ⑤

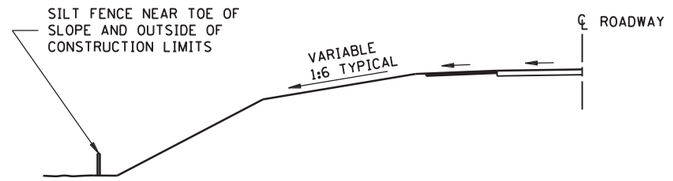
INSTALLATION AT BRIDGE EMBANKMENT ADJACENT TO WATER



SILT FENCE WITH SHEETING ⑥

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: STANDING.
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.

SPN23
OF SPN28

REVISION:

APPROVED: 2-28-2017
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA
DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

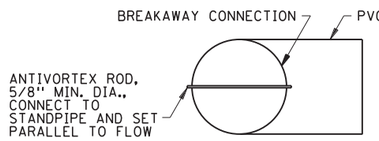
REVISED:

APPROVED:
2-28-2017

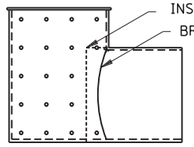
TEMPORARY SEDIMENT CONTROL
SILT FENCE

STANDARD PLAN 5-297.405 | 6 OF 8

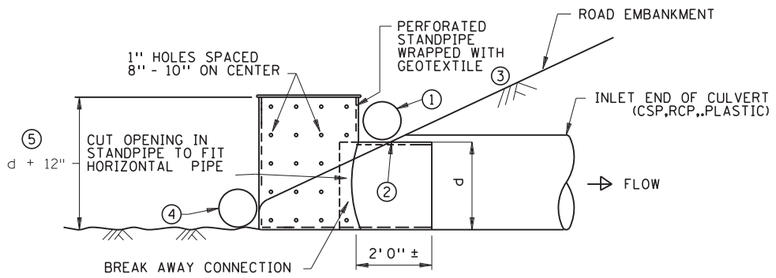
S.P. NO. 6103-32 (T.H. 28) SHEET NO. 80 OF 310 SHEETS



PLAN VIEW



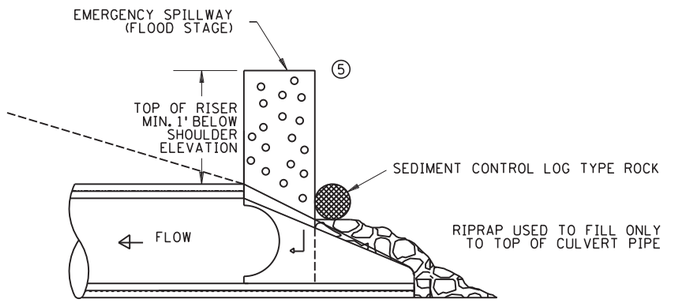
CULVERT STANDPIPE



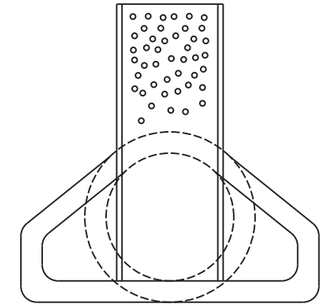
ELEVATION VIEW OF CULVERT INSTALLATION

CULVERT STANDPIPE INSERT (D-RISER)

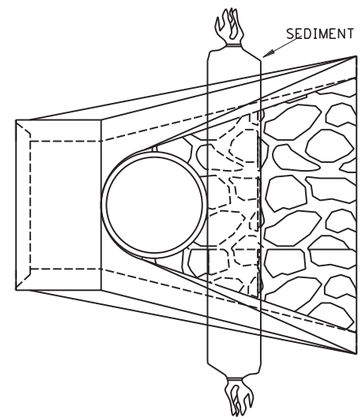
d= CULVERT SIZE: 12" - 36"



LONGITUDINAL SECTION



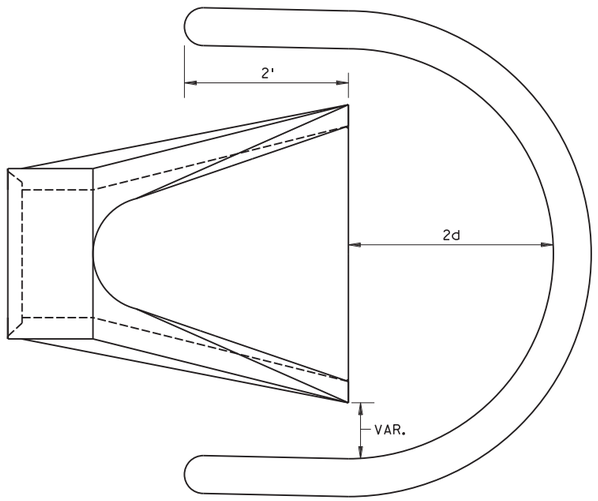
END VIEW



NOTE: SEDIMENT CONTROL LOG TYPE ROCK MAY BE WRAPPED AROUND RISER

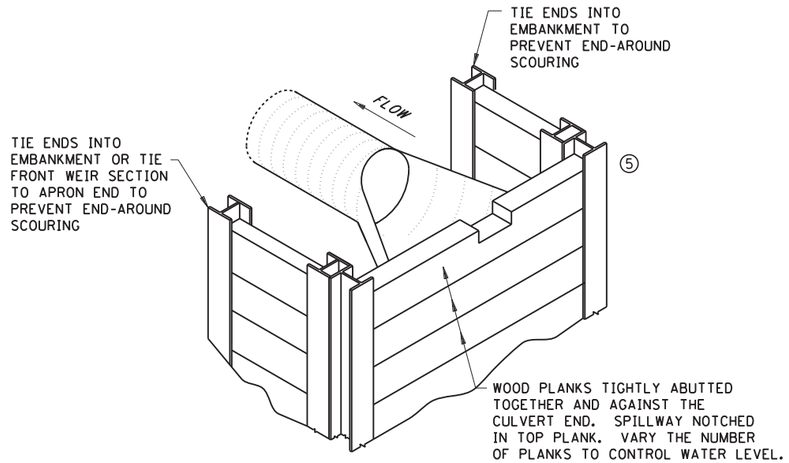
TOP VIEW

CULVERT STANDPIPE INSERT (D-RISER)



SEDIMENT CONTROL LOG WEIR
(COMPOST, WOOD CHIP, OR ROCK)

d = CULVERT SIZE: 12"-36"



WOOD PLANK WEIR

NOTES:

SEE SPECS. 2573, 3891 & 3893.

FOR USE WHEN TEMPORARY PONDING IS NEEDED IN DITCH SECTIONS FOR SEDIMENT CONTROL.

MANUFACTURED ALTERNATIVES LISTED ON MnDOT'S APPROVED PRODUCTS LIST MAY BE SUBSTITUTED AT NO ADDITIONAL COST.

1. ROCK LOG OR SANDBAG TO HOLD STANDPIPE AND ACT AS A SEAL BETWEEN RISER PIPE AND CULVERT.
2. PLACE CULVERT APRON AND SLIDE TEMPORARY STANDPIPE INTO CSP OR RCP CULVERT.
3. ALL GEOTEXTILE USED FOR CULVERT PROTECTION SHALL BE MONOFILAMENT IN BOTH DIRECTIONS, MEETING SPEC. 3886 FOR MACHINE SLICED.
4. ROCK LOG OR RIP RAP TO HOLD STANDPIPE AND ACT AS A FILTER BETWEEN RISER PIPE AND CULVERT.
5. HEIGHT OVERFLOW NOT TO CAUSE FLOODING OF ROAD OR ADJACENT PROPERTIES.

SPN24
OF SPN28

REVISION:

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CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

STATE DESIGN ENGINEER

REVISED:

APPROVED: 2-28-2017

TEMPORARY SEDIMENT CONTROL
CULVERT END CONTROLS

STANDARD PLAN 5-297.405 | 8 OF 8

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 81 OF 310 SHEETS

7:57:01 AM 6/30/2017 rhoefs

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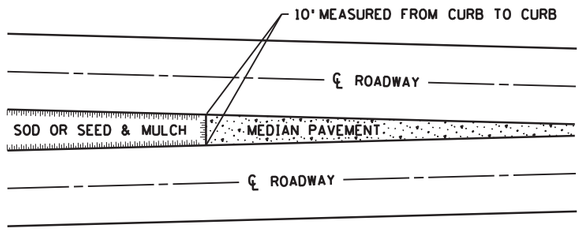
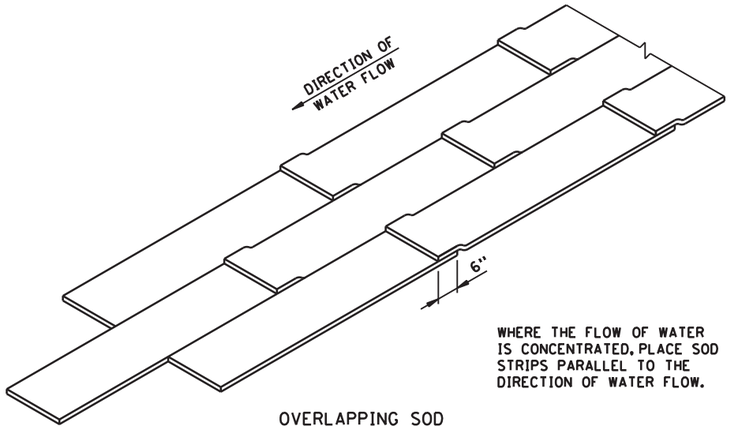
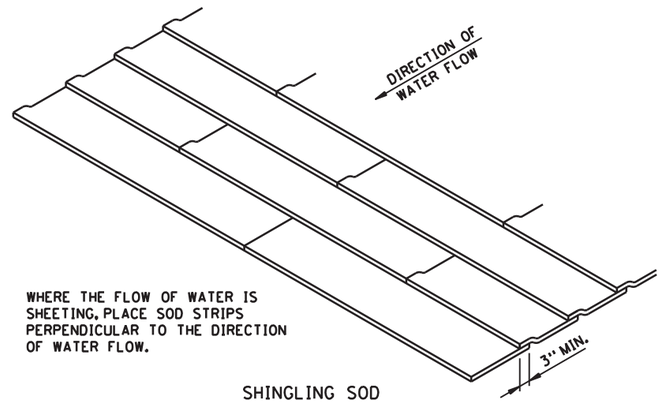


SODDING LIMITS AT GORE AREA

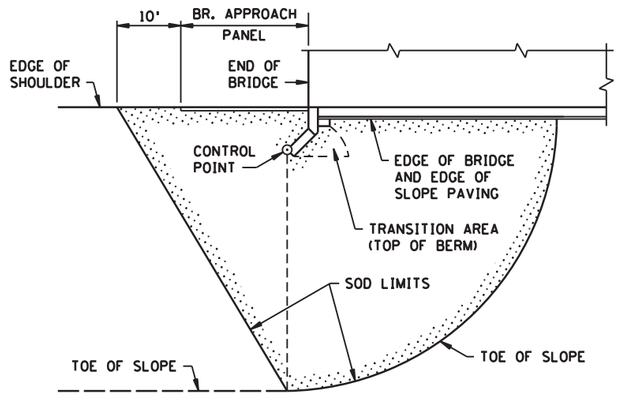


OVERLAPPING SOD



SHINGLING SOD

SPECIAL SOD PLACEMENT TECHNIQUES



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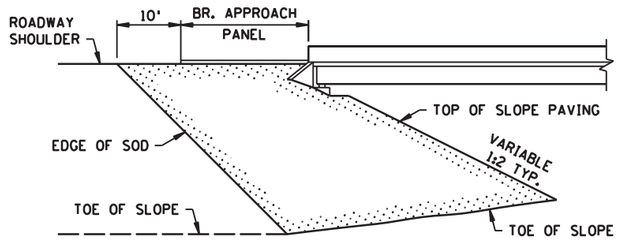
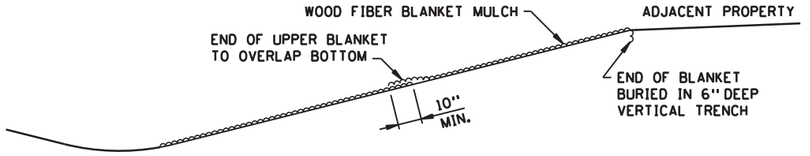
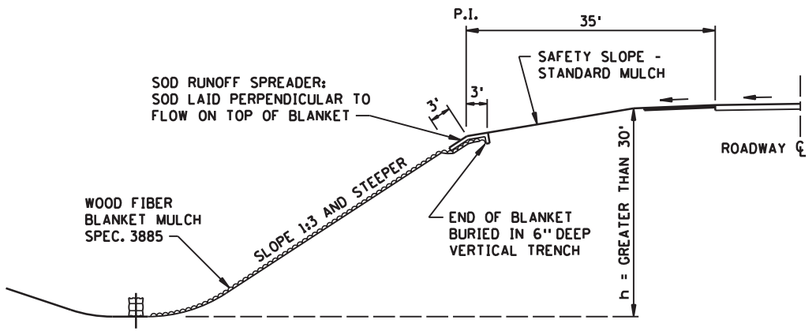


ELEVATION

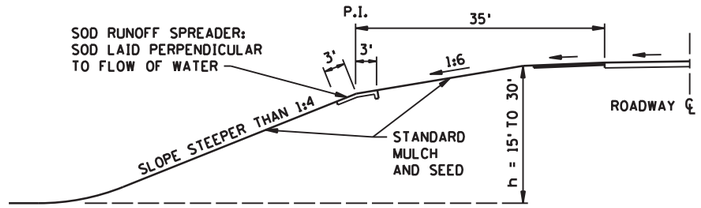
SODDING LIMITS AT BRIDGE APPROACH FILLS



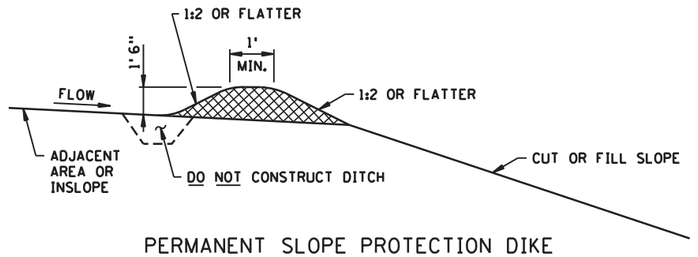
WOOD FIBER BLANKET INSTALLATION ON A CUT SLOPE



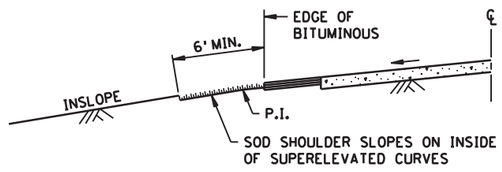
WOOD FIBER BLANKET INSTALLATION ON AN INSLOPE
(WHEN REQUIRED)



BROKEN-BACK SAFETY FILL SLOPE



PERMANENT SLOPE PROTECTION DIKE



SODDING INSLOPES OF SUPERELEVATED CURVES

REVISION:

APPROVED: 8-6-2014
CHIEF ENVIRONMENTAL OFFICER

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

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

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 82 OF 310 SHEETS

SPN25
OF SPN28

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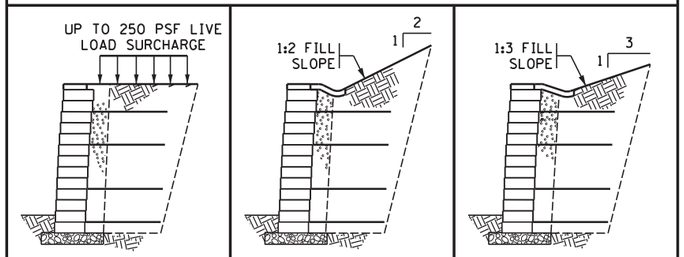
LOADING CASES



250 PSF - LL SURCHARGE	1:2 SLOPED FILL	1:3 SLOPED FILL
CASE 1	CASE 3	CASE 4

CASE 2 IS OMITTED INTENTIONALLY

NOTES TO CONTRACTOR:

APPROVED COMBINATIONS OF MODULAR BLOCK UNIT AND SOIL REINFORCEMENT PRODUCTS LIST WITH MBW REINFORCEMENT CLASS NOTED ARE HELD AND MAINTAINED BY THE FOUNDATIONS UNIT, AND POSTED AT http://www.mrr.dot.state.mn.us/geotechnical/foundations/foundations.asp UNDER FOUNDATIONS UNIT. ONLY APPROVED PRODUCT COMBINATIONS, INCLUDING BLOCK PRODUCED FROM APPROVED SOURCES MEETING DURABILITY AND QUALITY CONTROL REQUIREMENTS, MAY BE USED IN STANDARD DESIGNS.

PROVIDE DETAILED DRAWINGS FOR CONSTRUCTION CONTAINING:

- SUBMIT, WITH THE DETAILED DRAWINGS, A COPY OF Mn/DOT STANDARD SHEETS FOR LOADING CASE(S) USED WITH OPTIONS USED MARKED IN THE TABLE.
- ELEVATION VIEW WITH REINFORCEMENT PLACEMENT REQUIREMENTS, WALL FACING LAYOUT, AND GEOMETRIC INFORMATION. TOP OF WALL MAY EXTEND UP TO 4" ABOVE PLAN TOP OF WALL ELEVATION.
- PLAN VIEW WITH BOTTOM AND TOP OF WALL ALIGNMENT, AND PLAN LIMITS OF WALL ALIGNMENT.
- CROSS SECTIONS DETAILING BATTER, REINFORCEMENT, VERTICAL SPACING, REINFORCEMENT LENGTHS, SUBSURFACE DRAINAGE, SURFACE DRAINAGE, AND WATER RUNOFF COLLECTION ABOVE WALL.
- REINFORCEMENT LAYOUT: REINFORCEMENT SHALL BE PLACED AT 100% COVERAGE RATIO. REINFORCEMENT ELEVATIONS SHALL BE CONSISTENT ACROSS LENGTH OF WALL STRUCTURE.
- NOTE BLOCK, REINFORCEMENT, AND FILL PLACEMENT METHODS AND REQUIREMENTS.
- DETAIL ALL WALL FILL PENETRATIONS AND WALL FACE PENETRATIONS. DETAIL REINFORCEMENT AND/OR WALL FACING UNIT PLACEMENT AROUND PENETRATIONS.
- DETAILS THAT ARE SPECIFIC TO VENDOR PRODUCTS AND THEIR INTERACTION WITH OTHER PROJECT COMPONENTS.
- LIST INFORMATION ON APPROVED COMBINATION OF MBW UNIT AND GEOSYNTHETIC REINFORCEMENT, INCLUDING Mn/DOT CLASSIFICATION CODE, NOMINAL BLOCK WIDTH, PROPERTIES FOR FIELD IDENTIFICATION, AND INSTALLATION INSTRUCTIONS.
- DETAILS OF CAP UNITS AND INSTALLATION/FASTENING INSTRUCTIONS FOR THE CAPS. CAP UNITS SHALL BE SET IN A BED OF ADHESIVE DESIGNED TO WITHSTAND MOISTURE AND TEMPERATURE EXTREMES, REMAIN FLEXIBLE, AND SHALL BE SPECIFICALLY FORMULATED FOR BONDING MASONRY TO MASONRY.
- CERTIFICATION BY PROFESSIONAL ENGINEER THAT THE CONSTRUCTION LAYOUT MEETS THE REQUIREMENTS OF PLANS AND Mn/DOT MSEW STANDARDS. DEVIATION FROM STANDARD DESIGN TABLES ARE PERMITTED BY VALUE ENGINEERING SUBMITTAL ONLY ON PROJECTS WITH OVER 5000 SQ. FT. OF WALL.

DEFINITION OF TERMS

MBW	=	MODULAR BLOCK WALL
LL	=	LIVE LOAD
C.I.P.	=	CAST-IN-PLACE
H	=	WALL HEIGHT
S	=	VERTICAL REINFORCEMENT SPACING
REINFORCEMENT COVERAGE RATIO	=	WIDTH OF SOIL REINFORCEMENTS TO HORIZONTAL SPACING (100% COVERAGE RATIO REQUIRED)

DESIGN CRITERIA

DESIGN CRITERIA FOLLOWS THE AASHTO SPECIFICATION FOR HIGHWAY BRIDGES (16TH EDITION WITH 1998 INTERIMS) EXCEPT FOR THE DEVIATIONS NOTED BELOW. DESIGN CRITERIA ARE IN ACCORDANCE WITH Mn/DOT POLICY, AS RECORDED IN THE Mn/DOT ROAD DESIGN MANUAL.

A. THE MINIMUM REINFORCEMENT LENGTH IS 4 FT. OR 0.7H, WHICHEVER IS GREATER.
B. THE REINFORCEMENT FILL FRICTION ANGLE IS 35°.
C. THE ALLOWABLE CONNECTION LOAD, AT A GIVEN NORMAL LOAD, IS COMPUTED AS THE ULTIMATE CONNECTION STRENGTH REDUCED BY A SAFETY FACTOR EQUAL TO 2.0.
D. THE LATERAL EARTH PRESSURE COMPUTATION FOR EXTERNAL STABILITY CALCULATIONS USES AN INTERFACE ANGLE SET EQUAL TO THE RETAINED BACKFILL ANGLE.
E. THE LATERAL EARTH PRESSURE COMPUTATION FOR INTERNAL STABILITY CALCULATIONS INCORPORATES THE EFFECTS OF WALL FACE BATTER.

MINIMUM FACTORS OF SAFETY:
OVERTURNING: 2.0
SLIDING: 1.5
ECCENTRICITY: $e < L/6$
BEARING CAPACITY: 2.5
DEEP SEATED STABILITY: 1.3

BEARING:
A. SEE FOUNDATION REPORT FOR ALLOWABLE SOIL BEARING PRESSURE.
B. CASES 1 AND 4 - ALLOWABLE SOIL BEARING CAPACITY (ULTIMATE BEARING CAPACITY REDUCED BY A SAFETY FACTOR OF 2.5) OF 2000 PSF IS REQUIRED FOR WALLS UP TO 10 FT. IN HEIGHT. FOR WALLS GREATER THAN 10 FT. IN HEIGHT, THE REQUIRED ALLOWABLE BEARING CAPACITY IS EQUAL TO: 2000 PSF + (H-10)(625 PSF) WITH H IN FEET.
C. CASE 3 - ALLOWABLE SOIL BEARING CAPACITY (ULTIMATE BEARING CAPACITY REDUCED BY A SAFETY FACTOR OF 2.5) OF 2500 PSF IS REQUIRED FOR WALLS UP TO 10 FT. IN HEIGHT. FOR WALLS GREATER THAN 10 FT. IN HEIGHT, THE REQUIRED ALLOWABLE BEARING CAPACITY IS EQUAL TO: 2500 PSF + (H-10)(850 PSF) WITH H IN FEET.

REINFORCED WALL FILL CHARACTERISTICS:
A. SELECT GRANULAR MATERIAL MODIFIED FOLLOWING SPEC. 3149.2B.2. MODIFICATION: SELECT GRANULAR MATERIAL MODIFIED, FOR SPECIAL USE IN EMBANKMENT OR BACKFILL CONSTRUCTION OR OTHER SPECIFIED PURPOSES, MAY BE ANY PIT-RUN OR CRUSHER-RUN MATERIAL THAT IS GRADED FROM COARSE TO FINE, SUCH THAT 100% OF THE MATERIAL MUST PASS THE 2" SIEVE, AND THAT THE RATIO OF THE PORTION PASSING THE #200 SIEVE DIVIDED BY THE PORTION PASSING THE 1" SIEVE MAY NOT EXCEED 10% BY MASS (THAT IS: #200/1" RATIO)
B. INTERNAL ANGLE OF FRICTION (Φ_r) = 35°
C. COHESION (C) = 0
D. MOIST UNIT WEIGHT (γ_r) = 125 PSF

COARSE FILTER AGGREGATE CHARACTERISTICS:
A. COARSE FILTER AGGREGATE TO MEET SPEC. 3149.2H. INCIDENTAL, NO DIRECT PAYMENT WILL BE MADE.

RETAINED BACKFILL CHARACTERISTICS:
A. INTERNAL ANGLE OF FRICTION (Φ_b) = 30°
B. COHESION (C) = 0
C. MOIST UNIT WEIGHT (γ_b) = 120 PSF

FOUNDATION SOILS CHARACTERISTICS:
A. INTERNAL ANGLE OF FRICTION (Φ_f) = 30°
B. COHESION (C) = 0
C. UNIT WEIGHT (γ_f) = 120 PSF

SAMPLE ESTIMATED QUANTITIES FOR MODULAR BLOCK WALLS

		UNIT	QUANTITY
	STRUCTURE EXCAVATION CLASS ---	CU. YD.	
	SELECT GRANULAR MATERIAL MODIFIED (CV)	CU. YD.	
	STRUCTURAL CONCRETE (1A43)	CU. YD.	
(1)(2)	MODULAR BLOCK RETAINING WALL	SQ. FT.	
	TYPE I GEOTEXTILE FABRIC	SQ. YD.	

(1) VERTICAL FACE AREA OF MODULAR BLOCK AS MEASURED FROM PLAN TOP OF WALL TO 2 FT. BELOW FINISHED GRADE AT BOTTOM OF WALL.

(2) PAY ITEM FOR MBW WALLS SHALL BE 2411.

NOTES TO DESIGNER:

HEIGHT AND LOCATION RESTRICTIONS FOR ISSUES SUCH AS FREEZE-THAW DURABILITY ARE GOVERNED BY APPROPRIATE TECHNICAL MEMORANDUMS. CURRENT GOVERNING TECH. MEMO. NO.: 14-03-MAT-01.

IN ADDITION TO THE STANDARD SHEETS, PLAN AND FRONT ELEVATION VIEWS OF THE MODULAR BLOCK RETAINING WALLS SHALL BE INCLUDED IN THE PLANS. THE PLAN VIEW MUST SHOW ALIGNMENT BASELINE, LIMITS OF BOTTOM OF WALL ALIGNMENT, AND LIMITS OF TOP OF WALL ALIGNMENT AS ALIGNMENTS VARY WITH BATTER OF WALL SYSTEM ACTUALLY SUPPLIED. THE FRONT ELEVATION MUST IDENTIFY BOTTOM AND TOP OF WALL ELEVATIONS, EXISTING GRADES, AND FINISHED GRADES.

IF THE WALL IS CURVED, THE RADIUS AT THE BOTTOM AND THE TOP OF EACH WALL SEGMENT AND THE P.C. AND P.T. STATION POINTS OFF OF BASELINE AND LIMITS OF BOTTOM AND TOP OF WALL ALIGNMENT MUST BE SHOWN.

REFERENCE STANDARD PLATES AND PROVIDE DETAILS FOR TRAFFIC BARRIERS, CURB AND GUTTER, HANDRAILS AND FENCING AS REQUIRED BY PROJECT CONDITIONS. SEE AASHTO AND Mn/DOT DESIGN MANUALS, STANDARD PLATES AND DETAILS FOR REQUIREMENTS.

SURFACE DRAINAGE PATTERNS SHALL BE SHOWN IN THE PLAN VIEW. PROVIDE DIMENSIONS FOR WIDTH AND DEPTH OF THE DRAINAGE SWALE AS WELL AS THE TYPE OF IMPERVIOUS LINER MATERIAL. SURFACE WATER RUNOFF SHOULD BE COLLECTED ABOVE AND DIVERTED AROUND WALL FACE.

DETAIL LINES AND GRADES OF THE INTERNAL DRAINAGE COLLECTION PIPE. DETAIL OR NOTE THE DESTINATION OF INTERNAL WALL DRAINS AS WELL AS THE METHOD OF TERMINATION (DAYLIGHT END OF PIPE OR CONNECTION INTO HYDRAULIC STRUCTURE). THE SPACING FOR DRAIN PIPE OUTLET SHALL NOT BE MORE THAN 250 FT.

SOFT SOILS AND/OR HIGH WATER CONDITIONS (DEFINED AS GROUNDWATER WITHIN A DEPTH EQUAL TO THE WALL HEIGHT H) MAY NOT BE SUITABLE FOR APPLICATION OF STANDARD DESIGNS AND REQUIRE SPECIAL CONSIDERATION BY THE FOUNDATIONS UNIT.

STANDARD DESIGN CHARTS ARE NOT APPLICABLE TO:
- PROJECT/SITES WHERE FOUNDATION SOILS SHEAR STRENGTH AND/OR BEARING CAPACITY DO NOT MEET OR EXCEED VALUES USED IN THE DEVELOPMENT OF STANDARD DESIGN CHARTS.
- PROJECTS WITH A LARGE QUANTITY OF FACE AREA WHERE PROJECT SPECIFIC DESIGNS ARE RECOMMENDED, AS DEFINED IN Mn/DOT ROAD DESIGN MANUAL.
- WHERE SLOPES IN FRONT OF WALL ARE STEEPER THAN 1:3.
- WHERE MAXIMUM WALL HEIGHT EXCEEDS 12 FT.
- WHERE WALLS ARE TIERED.
- WALLS WITH NOISE WALLS.

IF USING CONCRETE RAILING, INCLUDE STANDARD BRIDGE DETAIL "CONCRETE RAILING (TYPE F)" IN PLAN SET.

PROVIDE PROJECT SPECIFIC AESTHETIC REQUIREMENTS INCLUDING COLOR AND FASCIA SURFACING IN THE SPECIAL PROVISIONS.

CHAPTER 9 OF THE Mn/DOT "ROAD DESIGN MANUAL" CONTAINS GUIDELINES, TRAFFIC SAFETY AND OTHER ASPECTS.

GENERAL NOTES:

UTILITIES:

EXISTING AND PROPOSED UTILITIES ARE SHOWN IN THE GRADING PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION OF EXISTING FACILITIES AND SHALL EXERCISE CARE IN ADJACENT CONSTRUCTION.

EXCAVATION AND EARTHWORK:

ALL EXCAVATION AND EMBANKMENT WORK SHALL CONFORM TO Mn/DOT 2451.

CAST-IN-PLACE CONCRETE:

ALL CONCRETE SHALL CONFORM TO Mn/DOT 2461, EXCEPT AS NOTED.

CONSTRUCTION:

CONSTRUCTION SHALL BE IN ACCORDANCE WITH Mn/DOT 2411, EXCEPT AS NOTED.

GEOMETRICS AND GRADES:

DATA FOR BASELINE GEOMETRY IS TABULATED FOR WALL ALIGNMENT, SEE LAYOUT SHEETS. WALL ALIGNMENT REFERENCE IS ALONG FRONT FACE OF WALL.

THE FILL SLOPE CONVENTION OF 1 VERTICAL TO HORIZONTAL IS USED IN THIS PLAN.

COMPACTION REQUIREMENTS:

COMPACT REINFORCED WALL FILL IN ACCORDANCE WITH Mn/DOT SPEC. 2105.3F1 UNLESS RECOMMENDED OTHERWISE BY THE SOILS ENGINEER.

REVISION:

APPROVED: DECEMBER 1, 2014

DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MODIFIED

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

APPROVED: 12-1-2014

STATE DESIGN ENGINEER

SPN26 OF SPN28

MODULAR BLOCK RETAINING WALL
GENERAL NOTES

STANDARD PLAN 5-297.640 | 1 OF 1

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 83 OF 310 SHEETS

MODULAR BLOCK WALL REINFORCEMENT LAYOUT

CASE 4 - 1:3 FILL SLOPE

MBW REINFORCEMENT CLASS	STRENGTH OF SOIL REINF. (PLF)		① MINIMUM REINFORCEMENT LENGTH, L (FT.)	MAXIMUM WALL HEIGHT (FT.)	② NOMINAL BLOCK WIDTH (IN.)	WALL BATTER RANGE (DEGREES)		③ MAXIMUM UNREINFORCED WALL HT, A (IN.)	ZONE 1		ZONE 2		ZONE 3	
	LG. TERM (T_{al})	DESIGN (T_a)				≥	<		H1 (FT.)	$S1_{MAX}$ (IN.)	H2 (FT.)	$S2_{MAX}$ (IN.)	H3 (FT.)	$S3_{MAX}$ (IN.)
MBW-700	1050	700	0.7 H	12.0	12	0	3	24	8.5	24	3.5	16		
						3	7	24	9.2	24	2.8	16		
						7	10	24	11.2	24	0.8	16		
						10	15	24	12.0	24				
					21	0	3	32	4.6	32	3.9	24	3.5	16
						3	7	32	5.2	32	3.9	24	2.9	16
						7	10	32	5.2	32	5.9	24	0.9	16
						10	15	32	5.9	32	6.1	24		
MBW-1050	1575	1050	0.7 H	12.0	12	0	3	24	12.0	24				
						3	7	24	12.0	24				
						7	10	24	12.0	24				
						10	15	24	12.0	24				
					21	0	3	42	5.6	42	3.3	32	3.1	24
						3	7	42	8.2	42	2.6	32	1.2	24
						7	10	42	8.5	42	3.5	32		
						10	15	42	9.8	42	2.2	32		
MBW-1400	2100	1400	0.7 H	12.0	12	0	3	24	12.0	24				
						3	7	24	12.0	24				
						7	10	24	12.0	24				
						10	15	24	12.0	24				
					21	0	3	42	8.9	42	3.1	32		
						3	7	42	10.8	42	1.2	32		
						7	10	42	12.0	42				
						10	15	42	12.0	42				

NOTES TO CONTRACTOR:

① OR 4 FT. MINIMUM, WHICHEVER IS GREATER.

② WIDTH - AS MEASURED FROM FRONT TO BACK FACE OF BLOCK UNIT.

③ MAXIMUM DISTANCE FROM TOP OF WALL TO FIRST REINFORCEMENT LAYER. UNREINFORCED WALLS ARE NOT INCLUDED IN THIS STANDARD BUT MAY BE CONSTRUCTED UP TO AT LEAST THE HEIGHT GIVEN IN THE TABLE FOR A GIVEN NOMINAL BLOCK WIDTH AND THE SPECIFIED FILL MATERIALS CONTAINED IN THIS STANDARD.

④ PAY LIMITS OF STRUCTURAL EXCAVATION. ACTUAL EXCAVATION SLOPE IS DETERMINED BY OSHA REGULATIONS AND IN-SITU SOILS; EXCAVATION BEYOND "LIMITS OF STRUCTURAL EXCAVATION" AT CONTRACTOR'S EXPENSE.

⑤ THE WRAP LENGTH FOR GEOTEXTILE FABRIC SHALL NOT BE MORE THAN 6".

⑥ INSPECT EXCAVATION SLOPES FOR ACTIVE SEEPAGE AND PLACE ADDITIONAL DRAINS WHERE SEEPAGE OCCURS AS DIRECTED BY THE ENGINEER.

⑦ PLACE DRAIN AT BOTTOM OF REINFORCED SOIL IF PIPE CAN BE SLOPED TO OUTLET. DO NOT OUTLET ONTO A SIDEWALK.

⑧ IF PIPE AT THIS ELEVATION CANNOT BE SLOPED TO DRAIN, OMIT DRAIN AND USE "CONCRETE PAD WITHOUT DRAIN" DETAIL.

⑨ 4" THERMOPLASTIC PERFORATED PIPE, SPEC. 3245, WRAP WITH TYPE I GEOTEXTILE, SPEC. 3733 (TYP.) INSTALLATION AS PER SPEC. 2502, WITH PRECAST CONCRETE HEAD WALL AT OUTLET.

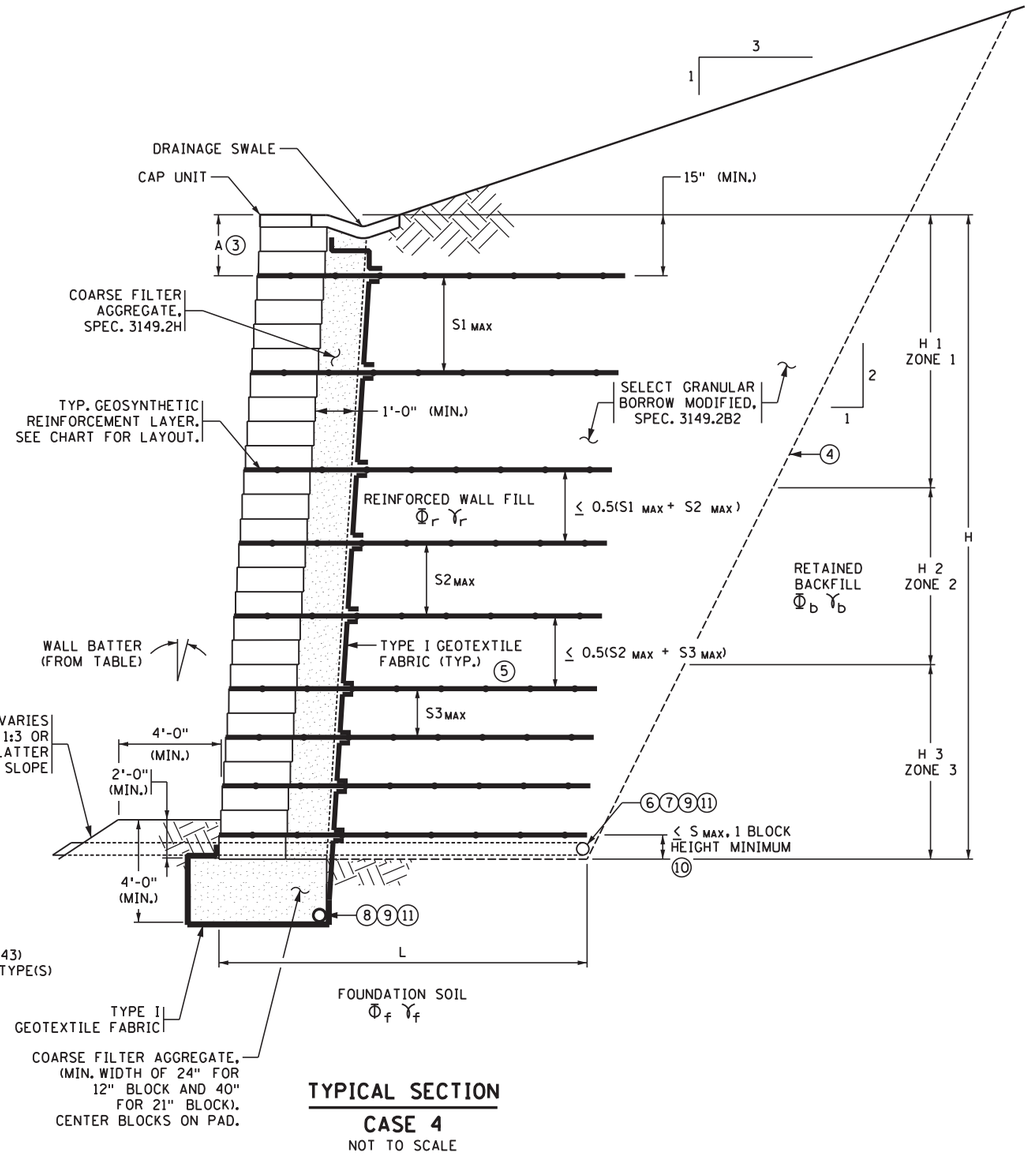
⑩ S_{MAX} = 0.5 $S1_{MAX}$ IF THE WALL HEIGHT IS WITHIN ZONE 1.
S_{MAX} = 0.5 $S2_{MAX}$ IF THE WALL HEIGHT IS WITHIN ZONE 2.
S_{MAX} = 0.5 $S3_{MAX}$ IF THE WALL HEIGHT IS WITHIN ZONE 3.

⑪ THE REINFORCED WALL FILL DRAIN MAY BE CONNECTED INTO FOOTING DRAIN, INSTEAD OF OUT LETTING THROUGH THE WALL, IF CAPACITY IS ADEQUATE TO TRANSMIT THE FLOW.

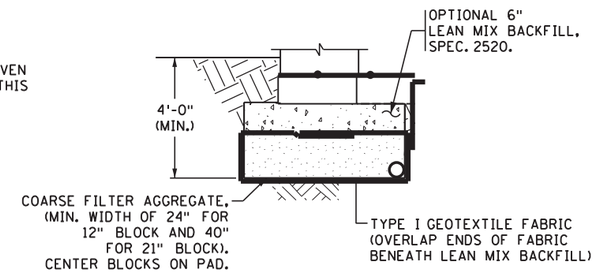
INSTRUCTIONS TO CONTRACTOR:

USE AS MANY ZONES AS WALL HEIGHT REQUIRES, STARTING WITH ZONE 1 AND ADDING ADDITIONAL ZONES TO THE BOTTOM OF THE WALL AS NEEDED TO MAKE UP THE TOTAL WALL HEIGHT (H) NEEDED.

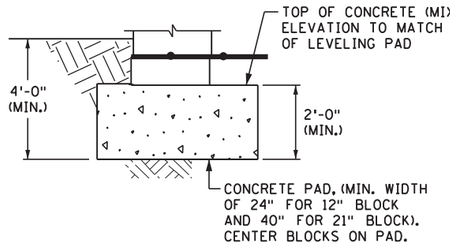
REINFORCEMENT CLASS, NOMINAL BLOCK WIDTH AND WALL BATTER ARE GENERALLY THE CONTRACTOR'S OPTION TO SELECT FROM Mn/DOT APPROVED PRODUCTS LISTS LOCATED AT www.mrr.dot.state.mn.us/geotechnical/foundations/foundations.asp.



TYPICAL SECTION
CASE 4
NOT TO SCALE



OPTIONAL CONCRETE LEVELING PAD
NOT TO SCALE



CONCRETE PAD WITHOUT DRAIN
NOT TO SCALE

SPN27
OF SPN28

REVISION:

APPROVED: 8-6-2014
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED: 8-6-2014

MODULAR BLOCK RETAINING WALL
SOIL REINFORCEMENT FOR 1:3 FILL SLOPE, CASE 4

STANDARD PLAN 5-297.644 | 1 OF 1

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 84 OF 310 SHEETS

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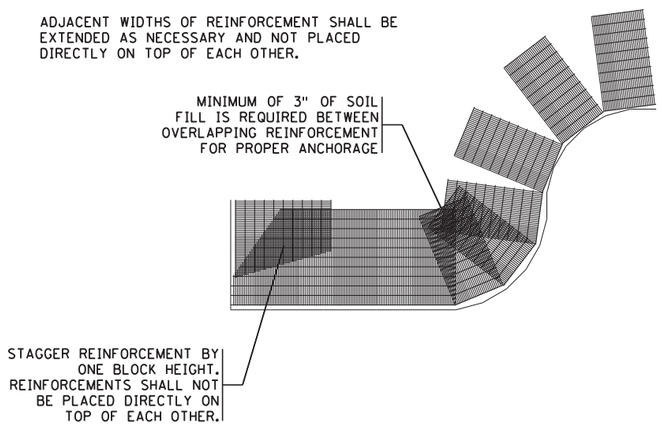
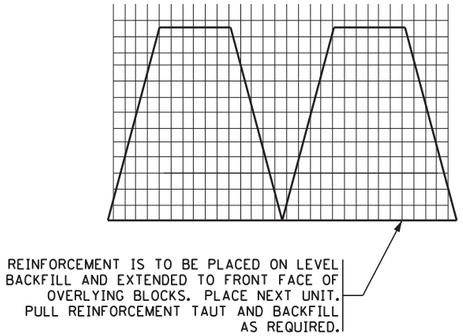
NOTES:

CORRECT ORIENTATION OF GEOSYNTHETIC TO OBTAIN PROPER STRENGTH SHALL BE DETAILED ON CONTRACTOR DRAWINGS.

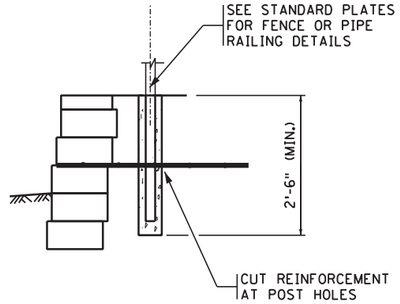
ADJACENT WIDTHS OF REINFORCEMENT SHALL BE EXTENDED AS NECESSARY AND NOT PLACED DIRECTLY ON TOP OF EACH OTHER.



REINFORCEMENT PLACEMENT AROUND CURVES AND CORNERS

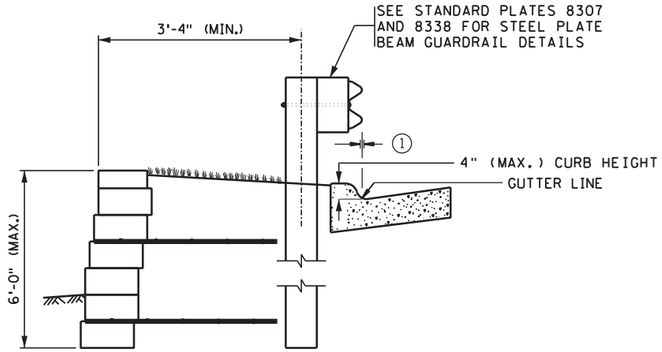


REINFORCEMENT PLACEMENT BETWEEN BLOCK UNITS

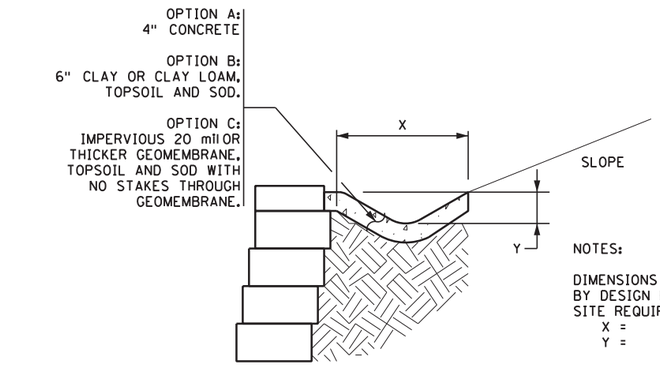


POST DETAIL

TYPICAL HANDRAIL AND/OR FENCE POST



STEEL PLATE BEAM GUARDRAIL DETAIL 1

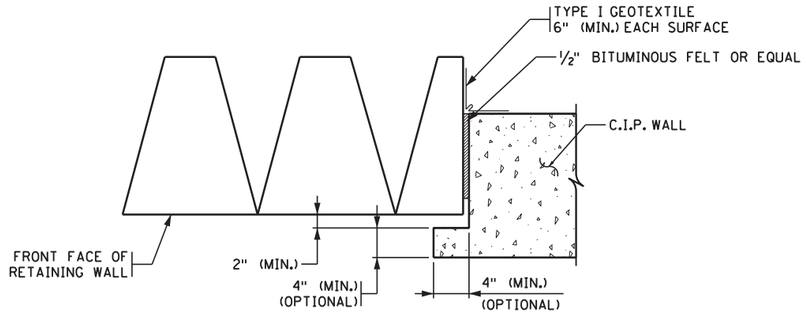


NOTES:

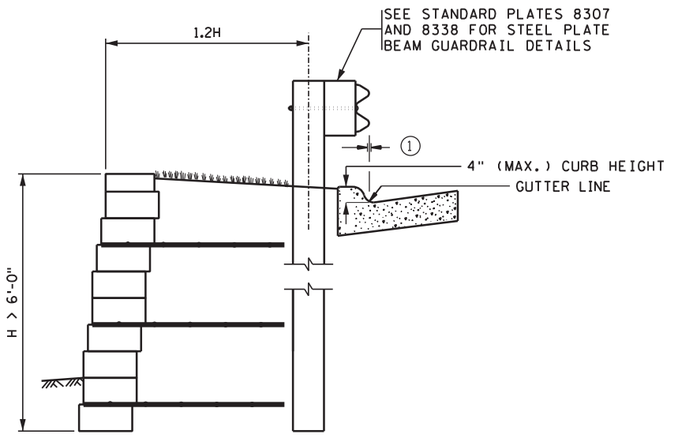
DIMENSIONS TO BE DETERMINED BY DESIGN ENGINEER BASED ON SITE REQUIREMENTS.
X =
Y =

SEE PLAN VIEW FOR SURFACE DRAINAGE PATTERNS.

TYPICAL DRAIN SWALE DETAIL



CONNECTION DETAIL AT JUNCTURE OF MSEW AND C.I.P. STRUCTURE



STEEL PLATE BEAM GUARDRAIL DETAIL 2

(AADT SHALL BE LESS THAN 5000)
STEEL PLATE BEAM GUARDRAIL SHOWN.

NOTES:

(1) USE CAUTION WHEN PLACING CURB WITH GUARDRAIL. CURBS ADVERSELY AFFECT THE PERFORMANCE OF THE GUARDRAIL. GENERALLY PLACE CURB DIRECTLY BELOW GUARDRAIL. SEE PLANS OR REFER TO STANDARD PLAN 5-297.601 (2). FOR CURB LOCATIONS ON NCHRP REPORT NO. 350 APPROVED BRIDGE TRANSITIONS, SEE STANDARD PLANS 5-297.603, .605, .606 ETC..

REVISION:

APPROVED: 8-6-2014
DIRECTOR, OFFICE OF MATERIALS AND ROAD RESEARCH

MINNESOTA DEPARTMENT OF TRANSPORTATION

REVISED:

STATE DESIGN ENGINEER

APPROVED: 8-6-2014

SPN28
OF SPN28

MODULAR BLOCK RETAINING WALL
DETAILS

STANDARD PLAN 5-297.645 | 1 OF 1

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 85 OF 310 SHEETS

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6/29/2017

NOTES & GUIDELINES

GENERAL INFORMATION:

1. THE CONTRACTOR SHALL FURNISH, PLACE AND MAINTAIN THE DEVICES IN THIS TRAFFIC CONTROL PLAN UNLESS OTHERWISE NOTED.
2. FIELD CONDITIONS MAY REQUIRE MODIFICATIONS OF THIS LAYOUT AS DEEMED NECESSARY BY THE ENGINEER.
3. ALL DISTANCES ARE APPROXIMATE.
4. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ANY WORK AREAS NEAR TRAFFIC IN ACCORDANCE WITH THE MN MUTCD.
5. AN ANNUAL FALL REVIEW OF ALL TRAFFIC CONTROLS WILL BE MADE TO PREPARE FOR WINTER MAINTENANCE OF THE PROJECT. THIS MAY INCLUDE ADJUSTMENTS OR EXCHANGE OF ONE TRAFFIC CONTROL DEVICE FOR ANOTHER. READJUSTMENTS MAY AGAIN BE REQUIRED IN THE SPRING.
6. IF THE CONTRACTOR DECIDES TO PERFORM THE CONSTRUCTION WORK IN A SEQUENCE OTHER THAN SHOWN IN THIS TRAFFIC CONTROL PLAN THE CONTRACTOR SHALL PROVIDE COMPLETE REVISED TRAFFIC CONTROL PLANS TO BE APPROVED BY THE ENGINEER.
7. SOME AREAS MAY APPEAR ON MULTIPLE SHEETS FOR PLAN CONFORMANCE. THE CONTRACTOR SHALL NOTE THIS AND NOT DUPLICATE QUANTITIES OR DEVICES USED IN THE FIELD.

SIGNING:

1. ALL TRAFFIC CONTROL DEVICES, INCLUDING OVERHEAD SIGNS, ON ROADS OPEN TO TRAFFIC THAT ARE NOT CONSISTENT WITH TRAFFIC OPERATION SHALL BE COVERED, REMOVED OR REVISED AS DIRECTED BY THE ENGINEER.
2. WHEN SIGNS ARE PLACED, THEY SHALL BE MOUNTED ON POSTS DRIVEN INTO THE GROUND AT THE PROPER HEIGHT AND LATERAL OFFSET AS SHOWN IN THE "TYPICAL TEMPORARY SIGN FRAMING & INSTALLATION DETAILS" IN THE PLAN. IF THIS IS NOT POSSIBLE, THEY WILL BE MOUNTED ON PORTABLE SUPPORTS AS APPROVED BY THE ENGINEER. WHEN THE SIGNS ARE REMOVED THE SIGN POSTS SHALL ALSO BE REMOVED AS SOON AS POSSIBLE.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY EXTRA SIGNING NEEDED TO FACILITATE TRAFFIC SWITCHES OR FOR TRANSITIONING TRAFFIC FROM ONE PHASE TO ANOTHER.
4. ALL ORANGE WARNING AND ORANGE GUIDE SIGNS SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MNDOT APPROVED PRODUCT LIST FOR "SHEETING FOR RIGID TEMPORARY WORK ZONE SIGNS, DELINEATORS, AND MARKERS".
5. BARRICADES SHALL BE FABRICATED WITH SIGN SHEETING MATERIAL AS LISTED ON THE MNDOT APPROVED PRODUCT LIST FOR "BARRICADE SHEETING".
6. LONGITUDINAL DROPOFFS SHALL BE SIGNED AS SHOWN IN THE "TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS" FIELD MANUAL UNLESS OTHERWISE SPECIFIED IN THESE PLANS.
7. THE CONTRACTOR SHALL COORDINATE THE PLACEMENT OF THE FINAL SIGNS TO ASSURE THAT THE FINAL SIGNS ARE PLACED AS NEEDED, OR PROVIDE TEMPORARY SIGNING AT THEIR EXPENSE UNTIL THE FINAL SIGNING IS PLACED.
8. THE CONTRACTOR SHALL HAVE SIX OR LESS PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) FOR THE PROJECT PER PHASE, SEE SHEET 87 . CONTRACTOR SHALL FURNISH, PLACE, AND RELOCATE THESE SIGNS TO THE SATISFACTION OF THE ENGINEER.

PAVEMENT MARKING:

1. THE ENGINEER'S INVOLVEMENT IN THE APPLICATION OF THE MATERIAL SHALL BE LIMITED TO FIELD CONSULTATION AND INSPECTION. THE CONTRACTOR WILL PLACE NECESSARY "SPOTTING" AT APPROPRIATE POINTS TO PROVIDE HORIZONTAL CONTROL FOR STRIPING AND TO DETERMINE NECESSARY STARTING AND CUTOFF POINTS. LONGITUDINAL JOINTS, PAVEMENT EDGES AND EXISTING MARKINGS MAY SERVE AS HORIZONTAL CONTROL WHEN SO DIRECTED.
2. OBLITERATE ANY CONFLICTING PAVEMENT MARKINGS AS DIRECTED BY THE ENGINEER.
3. TRANSITIONS AND TAPERS FOR TEMPORARY STRIPING SHALL BE WET REFLECTIVE OR SUPPLEMENTED WITH TEMPORARY RAISED PAVEMENT MARKERS.
4. INTERIM STRIPING SHALL CONSIST OF ALL CENTERLINE, NO PASSING ZONES, PAINTED ISLANDS, AND LANE LINES (INCLUDING TURN LANE LINES).
5. TRPM'S (TEMPORARY RAISED PAVEMENT MARKERS) SHOULD BE USED TO SUPPLEMENT THE LONG TERM (MORE THAN 3 DAYS) EDGELINES ON ALL TRANSITION AREAS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION AND PLACEMENT OF TEMPORARY AND FINAL STRIPING. MNDOT TRAFFIC PERSONNEL WILL ASSIST IN THE SPOTTING OF TRANSITION AREAS, GORES AND TAPERS.

BARRIER & DELINEATION:

1. THE CONTRACTOR SHALL FURNISH, PLACE AND MAINTAIN TOP MOUNTED BARRIER DELINEATORS WITH A MINIMUM OF 24 SQ. IN. OF REFLECTIVE SURFACE AREA AND BE PLACED AT 25' SPACES ON TOP OF THE BARRIER WHEN THE BARRIER IS WITHIN 10' OF TRAFFIC UNLESS OTHERWISE NOTED OR AS DIRECTED BY THE ENGINEER. IF THE TRAFFIC ENGINEER REQUIRES SIDE MOUNTED BARRIER DELINEATORS, THEY WILL HAVE A MINIMUM OF 12 SQ. IN. OF REFLECTIVE SURFACE AREA AND BE PLACED AT 12.5' SPACES. IF A SMALLER APPROVED BARRIER DELINEATOR IS USED IT SHALL BE AT ONE HALF THE SPACING AND ONE HALF THE BID PRICE.
2. FURNISHING, PLACING, RELOCATING, AND REPLACING TUBULAR DELINEATORS SHALL BE CONSIDERED PART OF THE LUMP SUM TRAFFIC CONTROL PAY ITEM.

CONSTRUCTION INFORMATION SIGNING:

1. THE CONTRACTOR SHALL USE CONSTRUCTION INFORMATION SIGNING AS SHOWN IN THE PLAN AND WHICH ARE TO BE USED AS FOLLOWS:
2. G20-X1 CLOSURE NOTICE SIGNS PAIRED WITH G20-X3 WORK ENDS SIGNS TO DISPLAY THE CORRECT START DATE AND AN ESTIMATED FINISH DATE AS APPROVED BY THE PROJECT ENGINEER.
3. G20-X2 WORK ZONE ADVANCE NOTICE SIGNS WITH THE CORRECT STARTING DATE DISPLAYED BEFORE WORK BEGINS. ONCE WORK BEGINS, THE START DATE LEGEND SHALL BE COVERED BY THE SUGGESTED PLAQUE CONTAINED IN THIS PLAN. IF NO ALTERNATE MESSAGE IS SUGGESTED OR IF DIRECTED BY THE PROJECT ENGINEER, THE CORRECT ESTIMATED FINISH DATE, MONTH, OR SEASON SHALL BE DISPLAYED.
4. CONSTRUCTION INFORMATION SIGNING NOT VISIBLE TO THE MOTORING PUBLIC ONCE WORK BEGINS WILL BE MOVED BY THE CONTRACTOR TO A SITE IN ADVANCE OF THE WORK ZONE OR CLOSURE AS DIRECTED BY THE PLAN OR PROJECT ENGINEER.

TRAFFIC CONTROL DEVICES & SYMBOLS LEGEND

SYMBOL	DESCRIPTION
	PERMANENT CONSTRUCTION THIS PHASE
	TEMPORARY CONSTRUCTION THIS PHASE
	MILL AND OVERLAY
⊢	TRAFFIC CONTROL SIGN
⌊⌋	TYPE C BARRICADE =
Ⓕ	TYPE A FLASHING WARNING LIGHT
*	INPLACE SIGN
	TRAFFIC SIGNAL

INDEX

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: OJD				
DESIGNER: GNG				
CHECKED BY: JCR				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
TITLE SHEET

FILE NO. MNT04-134590
TC1 OF TC17

86 / 310

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6/29/2017

TRAFFIC CONTROL

PROJECT	PHASE	DURATION	PAVEMENT MARKING REMOVAL	REMOVE CURB & GUTTER	REMOVE BITUMINOUS PAVEMENT	REMOVE CURB BOX	REMOVE CASTING	EXCAVATION - COMMON	AGGREGATE BASE (CV) CLASS 5	CASTING ASSEMBLY	ADJUST FRAME & RING CASTING	CONCRETE CURB & GUTTER DESIGN B624	TRAFFIC CONTROL	TRAFFIC CONTROL SUPERVISOR	PORTABLE CHANGEABLE MESSAGE SIGN	ALTERNATE PEDESTRIAN ROUTE	FERTILIZER TYPE 3	BOULEVARD TOPSOIL BORROW	SEED MIXTURE 25-131	EROSION CONTROL BLANKETS CATEGORY 3N	R INTERIM PAVEMENT MARKING
		DAYS	LIN FT	LIN FT	SQ YD	EACH	EACH	CU YD	CU YD	EACH	EACH	LIN FT	LUMP SUM	LUMP SUM	EACH	LUMP SUM	POUND	CU YD	POUND	SQ YD	LIN FT
S.P. 6103-32 (TH 28)	1	30		25		1		4	3		1		0.1	0.2	6	0.2					
	2	75	530		8		1	4		1		25	0.1	0.2		0.2	0.3	1	0.4	8	530
	3	30											0.1	0.2		0.2					
	4	150	907										0.1	0.2		0.2					907
	5	20											0.1	0.2		0.2					
	SUBTOTALS		1437	25	8	1	1	8	3	1	1	25	0.5	1.0	6	1.0	1	1	1	8	1437
S.P. 6106-23 (TH 29)	1	30																			
	2	75																			
	3	30	310																		310
	4	150																			
	5	20											0.1								
	SUBTOTALS		310										0.1								310
S.P. 6110-21 (TH 104)	1	30	420																		420
	2	75																			
	3	30																			
	4	150																			
	5	20											0.1								
	SUBTOTALS		420										0.1								420
S.P. 061-090-006	1	30																			
	2	75																			
	3	30																			
	4	150																			
	5	20											0.1								
	SUBTOTALS												0.1								
CITY OF GLENWOOD	1	30																			
	2	75																			
	3	30																			
	4	150											0.1								
	5	20											0.1								
	SUBTOTALS												0.2								
	TOTALS		2167	25	8	1	1	8	3	1	1	25	1	1	6	1	1	1	1	8	2167
				①	①	①	①	①	①	①	①	①			③		①	①	①	①	②

SPECIFIC NOTES:

① PAY ITEM FOR TEMPORARY PAVEMENT WIDENING, SEE SHEET90

② INTERIM PAVEMENT MARKING BREAKDOWN
PHASE 1:
70 FT 24" SOLID WHITE
350 FT 4" BROKEN YELLOW
PHASE 2:
30 FT 24" SOLID WHITE
500 FT 4" BROKEN YELLOW
PHASE 3:
310 FT 4" BROKEN YELLOW
PHASE 4:
357 FT 24" SOLID WHITE
550 FT 4" BROKEN YELLOW

③ PCMS ARE NEEDED SEVEN DAYS PRIOR TO CONSTRUCTION FOR EACH PHASE
PHASE 1: 6 PCMS
PHASE 2: 2 PCMS
PHASE 3: 4 PCMS
PHASE 4: 2 PCMS
PHASE 5: 5 PCMS

ASSUMPTIONS:
-4 FLAGGERS WILL WORK 10 HOURS EVERY WEEKDAY FOR PHASE 5
-ALL SIGNING WILL USE PORTABLE SUPPORTS WITH SANDBAGS
-CONTRACTOR WILL NOT BE WORKING ON WEEKENDS
-POLICE OFFICERS WILL BE USED AT CRITICAL INTERSECTIONS FOR AM/PM PEAK HOUR
-BREAKDOWN:
-PHASE 1 (4 OFFICERS, 2 HOURS, 20 WORKING DAYS)
-PHASE 2 (2 OFFICERS, 2 HOURS, 50 WORKING DAYS)
-PHASE 3 (4 OFFICERS, 2 HOURS, 20 WORKING DAYS)
-PHASE 4 (4 OFFICERS, 2 HOURS, 100 WORKING DAYS)
-PHASE 5 (4 OFFICERS, 6 HOURS, 20 WORKING DAYS)
-NO ATTENUATORS ARE NEEDED WITH PPCB IN TOWN BECAUSE LOW SPEED OF ROAD
-UTILIZE EXISTING CROSSING FOR AS LONG AS POSSIBLE UNTIL CROSSING IS CLOSED FOR CONSTRUCTION.
-NO RAMPS NEEDED WHEN BARRIER IS PROVIDED.

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CMK				
DESIGNER: CMK				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
TRAFFIC CONTROL QUANTITIES

FILE NO. MNT04-134590
TC2 OF TC17

87 / 310

R SERIES

SIGN	CODE NO.	COLOR	SIZE (IN)
STOP	R1-1	WHITE ON RED	36 x 36
ROAD CLOSED / RAMP CLOSED	R11-2	BLACK ON WHITE	48 x 30
ROAD CLOSED TO THRU TRAFFIC	R11-4	BLACK ON WHITE	60 x 30

W SERIES

SIGN	CODE NO.	COLOR	SIZE (IN)
	W3-1	BLACK AND RED ON YELLOW	48 x 48
ROAD WORK AHEAD	W20-1	BLACK ON ORANGE	36 x 36 48 x 48
DETOUR AHEAD	W20-2	BLACK ON ORANGE	36 x 36 48 x 48
ROAD CLOSED AHEAD	W20-3	BLACK ON ORANGE	36 x 36 48 x 48
250 FEET / 2 MILES	W20-100P	BLACK ON ORANGE	30 x 24 42 x 24

M SERIES

SIGN	CODE NO.	COLOR	SIZE (IN)
MINNESOTA 28	M1-5a	WHITE AND GOLD ON BLUE	24x24
MINNESOTA 104	M1-5b	WHITE AND GOLD ON BLUE	30x24
NORTH	M3-1a	WHITE ON BLUE	24x12
EAST	M3-2a	WHITE ON BLUE	24x12
SOUTH	M3-3a	WHITE ON BLUE	24x12
WEST	M3-4a	WHITE ON BLUE	24x12
DETOUR	M4-8	BLACK ON ORANGE	24x12
END DETOUR	M4-8a	BLACK ON ORANGE	24x18
DETOUR	M4-10L	BLACK ON ORANGE	48X18
DETOUR	M4-10R	BLACK ON ORANGE	48x18
	M5-1aL	WHITE ON BLUE	21x15
	M5-1aR	WHITE ON BLUE	21x15
	M5-2aL	WHITE ON BLUE	21x15
	M5-2aR	WHITE ON BLUE	21x15
	M6-1aL	WHITE ON BLUE	21x15
	M6-1aR	WHITE ON BLUE	21x15
	M6-2aL	WHITE ON BLUE	21x15
	M6-2aR	WHITE ON BLUE	21x15
	M6-3a	WHITE ON BLUE	21x15

G SERIES

SIGN	CODE NO.	COLOR	SIZE (IN)
BUSINESS ACCESS ⇦	G20-X6L	BLACK ON ORANGE	48 x 36
BUSINESS ACCESS ⇨	G20-X6R	BLACK ON ORANGE	48 x 36

D SERIES

SIGN	CODE NO.	COLOR	SIZE (IN)
⇦ H	D9-2bL	WHITE ON BLUE	48 x 24
H ⇨	D9-2bR	WHITE ON BLUE	48 x 24

DEVICES

DEVICE	DESIGNATION	COLOR	TYPE
	TYPE III BARRICADE	WHITE ON ORANGE	8 FT LONG
	PCMS		

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: OJD				
DESIGNER: GNG				
CHECKED BY: JCR				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

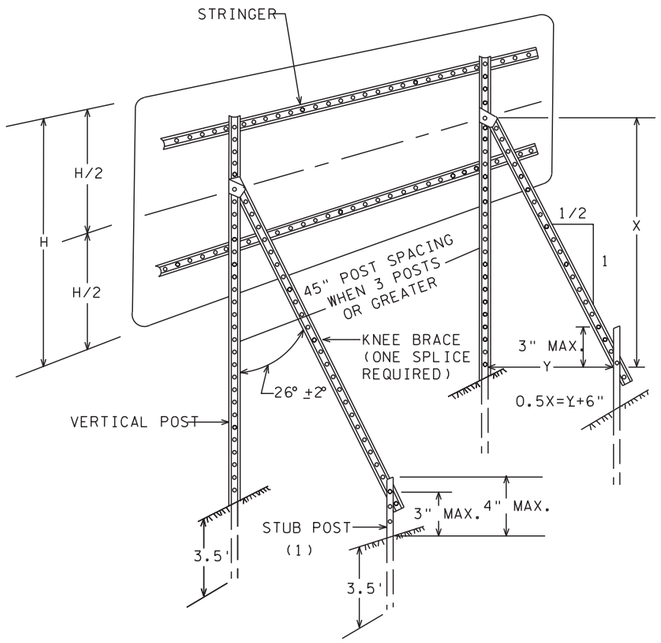
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

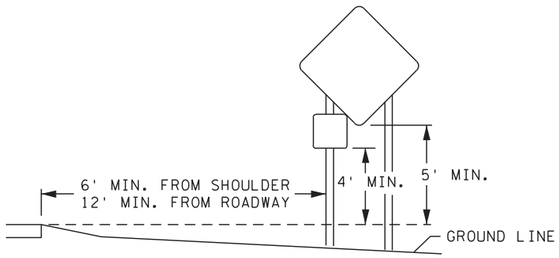
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
TRAFFIC CONTROL AND DETOUR SIGNS

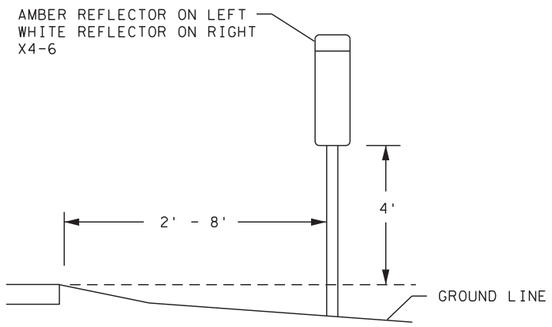
FILE NO. MNT04-134590
TC3 OF TC17



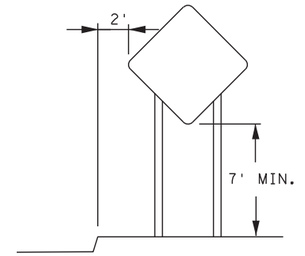
TYPICAL "A-FRAME" INSTALLATION
TYPE "D" SIGNS



TYPICAL RURAL DESIGN



DELINEATION MOUNTING



TYPICAL URBAN DESIGN

SIGN DATA

SIGNS TO BE PLACED ON DRIVEN U-POSTS, SHALL BE PLACED IN ACCORDANCE WITH TABLE 1 OR TABLE 2 BELOW. IF THE TTC PLAN PLACES TTC DEVICES ADJACENT TO EXISTING STRUCTURES, THEN THEY SHOULD BE PLACED SLIGHTLY BEYOND THAT STRUCTURE, SO AS TO NOT COMPROMISE THAT STRUCTURE AND THE NEW DEVICE'S CRASHWORTHINESS (NO MORE THAN TWO U-POSTS WITHIN 84 INCHES, ALIGNED IN THE SAME PLANE). SIGN PANELS SHALL BE PLACED ON SIGN STRUCTURES TO MEET THE 5' MIN DEPICTED ON THE TYPICAL RURAL DESIGN DETAIL, THE 7' MIN DEPICTED ON THE TYPICAL URBAN DESIGN DETAIL, OR 7' MIN AND 9' MIN DEPICTED ON THE TYPICAL MOUNTING DETAIL ON THIS SHEET.

TABLE 1

STANDARD CONSTRUCTION SIGNS IN MnDOT STANDARD SIGNS AND MARKINGS MANUAL

PANEL SIZE (IN.)	POSTS			
	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
24 x 24	2-U	18		13
30 x 24	2-U	18		13
36 x 30	2-U	24		13
36 x 36	2-U	18		14
42 x 36	2-U	30		14
48 x 48	2-U	30		15
60 x 60	2-U	42	1	16
72 x 72	2-U	42	2	17
96 x 54	2-U	54	2	16
168 x 132	4-U	48	4	20

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MnDOT STANDARD SIGNS AND MARKINGS MANUAL FOR PUNCHING HOLES.

TABLE 2

SPECIAL DESIGN CONSTRUCTION SIGNS

PANEL SIZE		POSTS			
LENGTH (IN.)	HEIGHT (IN.)	NO. & TYPE	SPACING (IN.)	KNEE BRACES QUANT.	LENGTH (FT.)
54 - 96	78	2-U	42	2	20
102 - 138	78	3-U	45	3	20
144 - 180	78	4-U	45	4	20

DESIGNER NOTE:

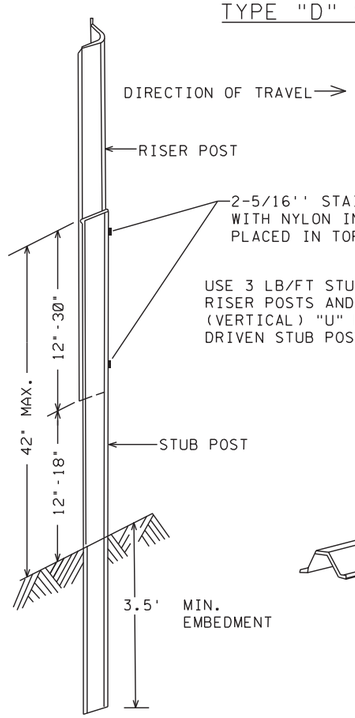
INCLUDE SPECIAL SIGN DETAILS IN THE TRAFFIC CONTROL PLAN IN TABLE TWO.

NOTES:

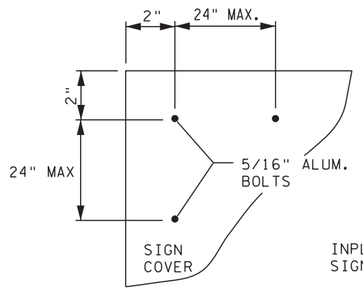
FOR TEMPORARY CONSTRUCTION SIGN FRAMING, THE CONTRACTOR MAY USE GRADE 5 ZINC PLATED BOLTS FOR ALL BOLTED CONNECTIONS, EXCEPT FOR THE KNEE BRACE CONNECTION TO THE REAR STUB POST, WHICH SHALL UTILIZE A 5/16 INCH STAINLESS STEEL BOLT AND NYLON INSERT LOCK NUT. ADDITIONAL SIGN FRAMING DETAILS CAN BE FOUND IN THE TRAFFIC ENGINEERING MANUAL PART 6.

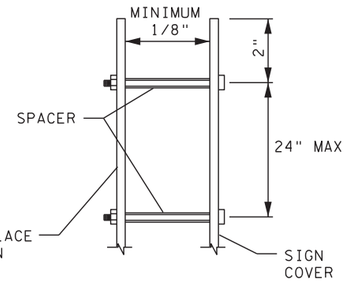
IF THE CONTRACTOR ELECTS TO USE SOME OTHER TYPE OF SIGN SUPPORT (OTHER THAN U-CHANNEL SIGN POSTS) FOR MOUNTING CONSTRUCTION SIGNS, DETAILS OF THE PROPOSED SIGN STRUCTURE SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE SIGN STRUCTURE COMPONENTS. ANY SIGN STRUCTURE TO BE SUBMITTED TO THE ENGINEER SHALL BE AN FHWA ACCEPTED BREAKAWAY SIGN SUPPORT. SIGN STRUCTURE SHALL ALSO BE APPROVED FOR 90 MPH WIND LOAD.

GUIDE SIGNS SHOWN TO BE COVERED SHALL BE COVERED WITH THE SAME COLOR AS THE SIGN BACKGROUND. THE CONTRACTOR SHALL PLACE COVERS OR ADDITIONAL SIGNS USING A MINIMUM 1/8" PLASTIC SPACER BETWEEN THE INPLACE SIGN AND THE COVERING MATERIAL. HOLES WILL BE DRILLED IN THE COVER AND THE INPLACE SIGN AND SHALL BE PLACED IN ACCORDANCE TO THE SIGN PANEL DETAIL. SPACERS ARE REQUIRED. MID-PANEL SPACING SHALL BE NO GREATER THAN 24".



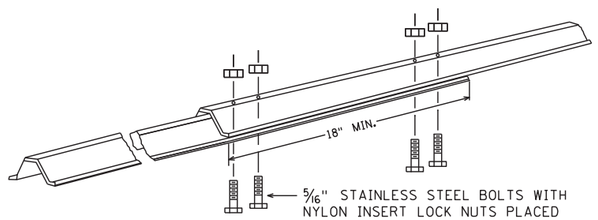
"U" POST BREAKAWAY SPLICE



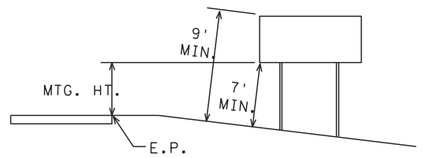


SPACER SHALL BE A MATERIAL THAT DOES NOT HARM THE SIGN SHEETING FACE (SUCH AS PLASTIC OR RUBBER).
REFER TO TRAFFIC ENGINEERING MANUAL CHAPTER 8 FOR MORE INFORMATION ON COVERING SIGNS

SIGN PANEL OVERLAY



KNEE BRACE STRUCTURAL SPLICE



TYPICAL MOUNTING

(1) OFFSET STUB POST 1' TOWARD ROADWAY RELATIVE TO VERTICAL POST.

TYPICAL TEMPORARY SIGN FRAMING AND INSTALLATION DETAILS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: GNG				
DESIGNER: GNG				
CHECKED BY: JCR				

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.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
SIGN FRAMING AND INSTALLATION DETAILS

FILE NO. MNT04-134590
TC4 OF TC17
89 / 310

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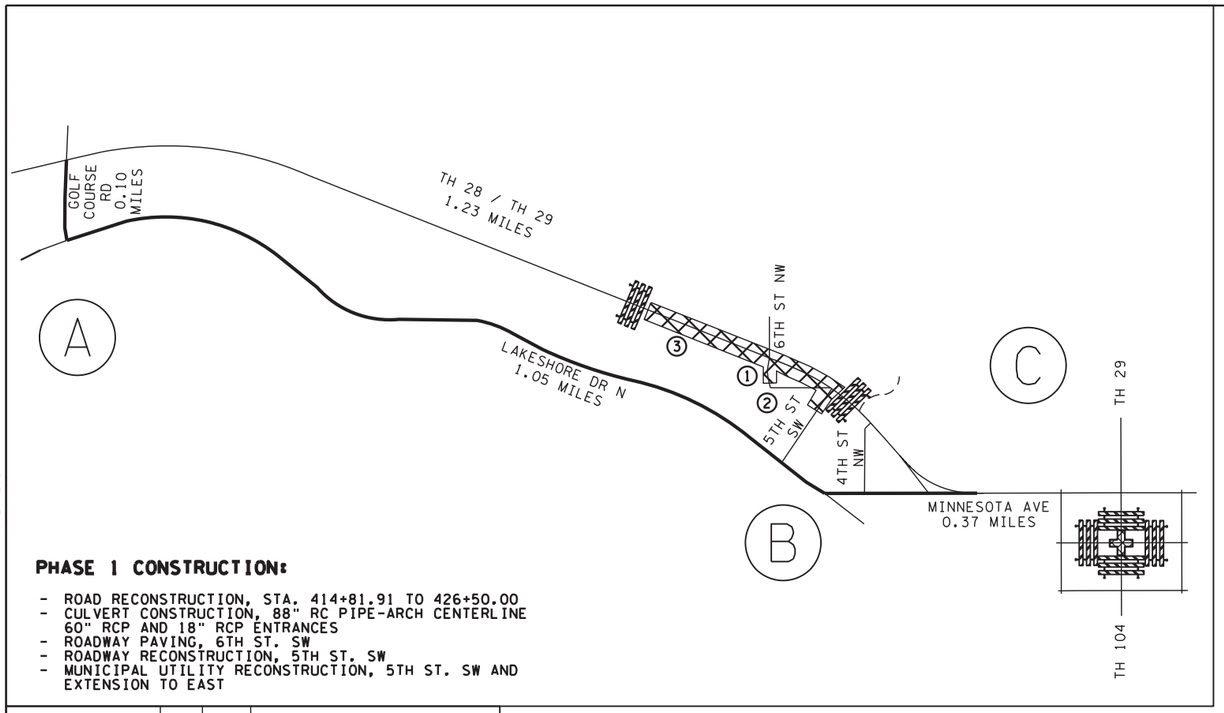

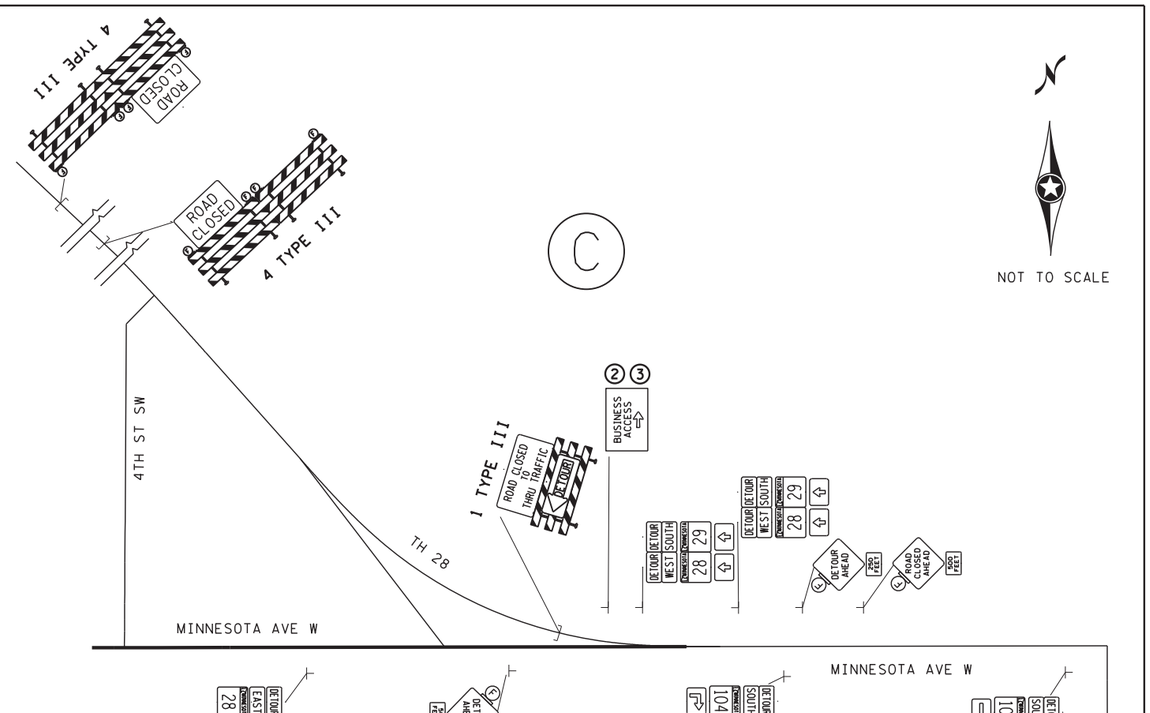

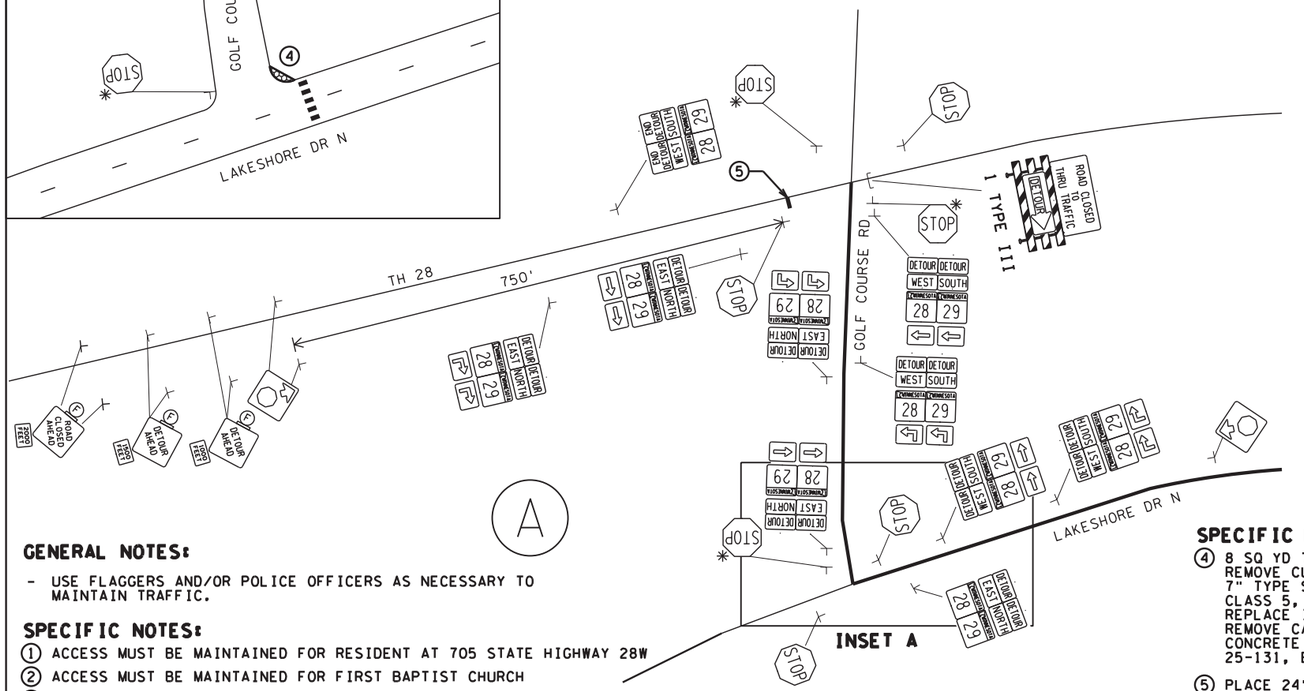

GENERAL NOTES:

- USE FLAGGERS AND/OR POLICE OFFICERS AS NECESSARY TO MAINTAIN TRAFFIC.

SPECIFIC NOTES:

1. ACCESS MUST BE MAINTAINED FOR RESIDENT AT 705 STATE HIGHWAY 28W
2. ACCESS MUST BE MAINTAINED FOR FIRST BAPTIST CHURCH
3. ACCESS MUST BE MAINTAINED FOR BROWNIE'S TIRE SERVICE

SPECIFIC NOTES (CONTINUED):

4. 8 SQ YD TEMPORARY PAVEMENT WIDENING INVOLVES THE FOLLOWING IN PHASE 1:
   REMOVE CURB & GUTTER, REMOVE CURB BOX, EXCAVATION - COMMON, ADJUST FRAME & RING CASTING, 7" TYPE SP 12.5 WEARING COURSE MIXTURE (SPWEB440C) 4 LIFTS INCIDENTAL TO AGGREGATE BASE (CV) CLASS 5, 12" AGGREGATE BASE (CV) CLASS 5.
   REPLACE IN KIND INVOLVES THE FOLLOWING IN PHASE 2:
   REMOVE CASTING, REMOVE BITUMINOUS PAVEMENT, EXCAVATION - COMMON, CASTING ASSEMBLY (MNDOT B-8), CONCRETE CURB & GUTTER DESIGN B624, BOULEVARD TOPSOIL BORROW, FERTILIZER TYPE 3, SEED MIXTURE 25-131, EROSION CONTROL BLANKETS CATEGORY 3N.
5. PLACE 24" SOLID WHITE STOP BAR INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING WHERE SHOWN.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	DISTANCE BETWEEN ADVANCE WARNING SIGNS (FEET)
0 - 30	250
35 - 40	325
45 - 50	600
55	750
60 - 65	1000
70 - 75	1200

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: OJD				
DESIGNER: GNG				
CHECKED BY: JCR				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 1

FILE NO. MNT04-134590
TC5 OF TC17
90 / 310

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6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_detour_1A1.dgn
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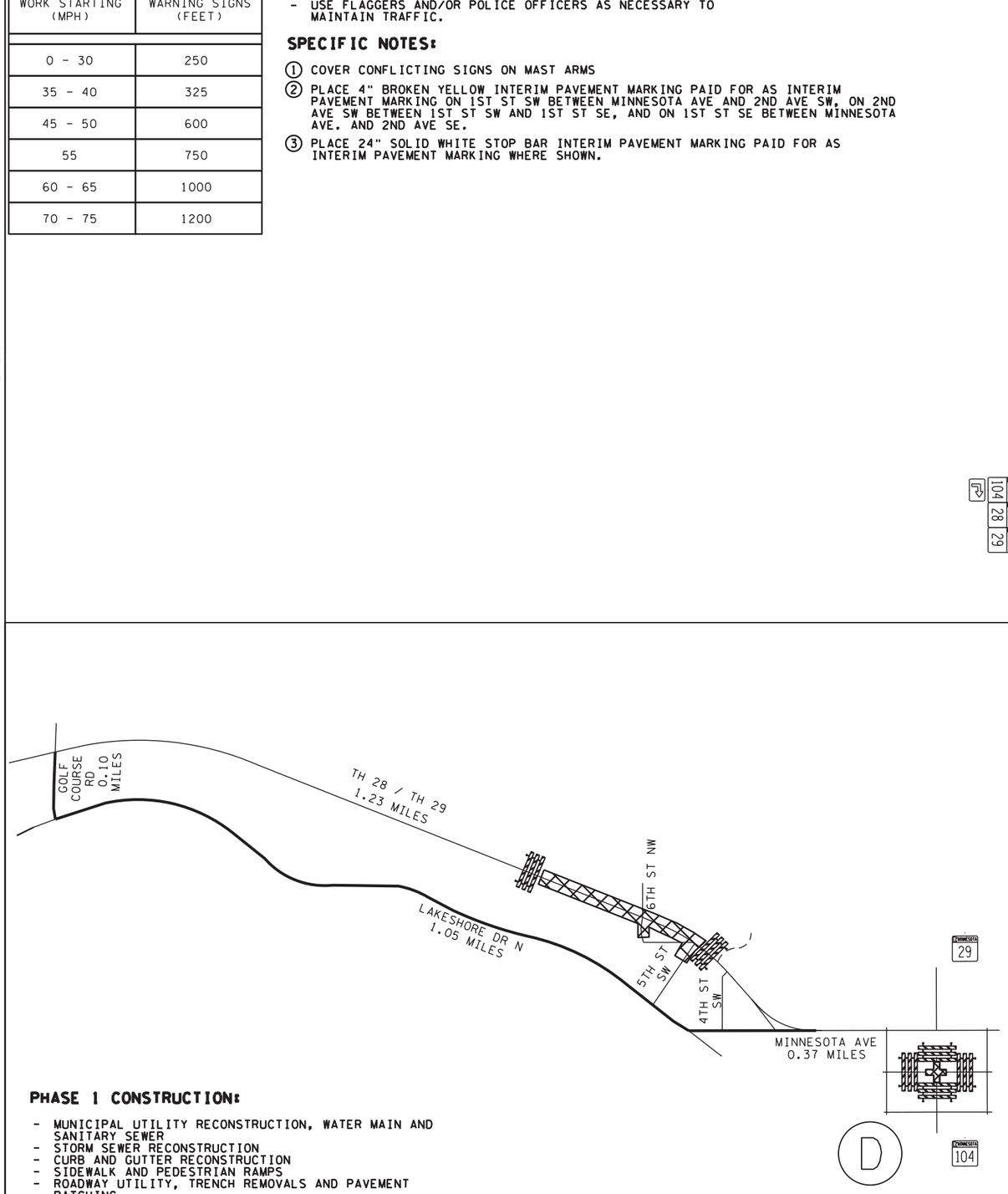
POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	DISTANCE BETWEEN ADVANCE WARNING SIGNS (FEET)
0 - 30	250
35 - 40	325
45 - 50	600
55	750
60 - 65	1000
70 - 75	1200

GENERAL NOTES:

- USE FLAGGERS AND/OR POLICE OFFICERS AS NECESSARY TO MAINTAIN TRAFFIC.

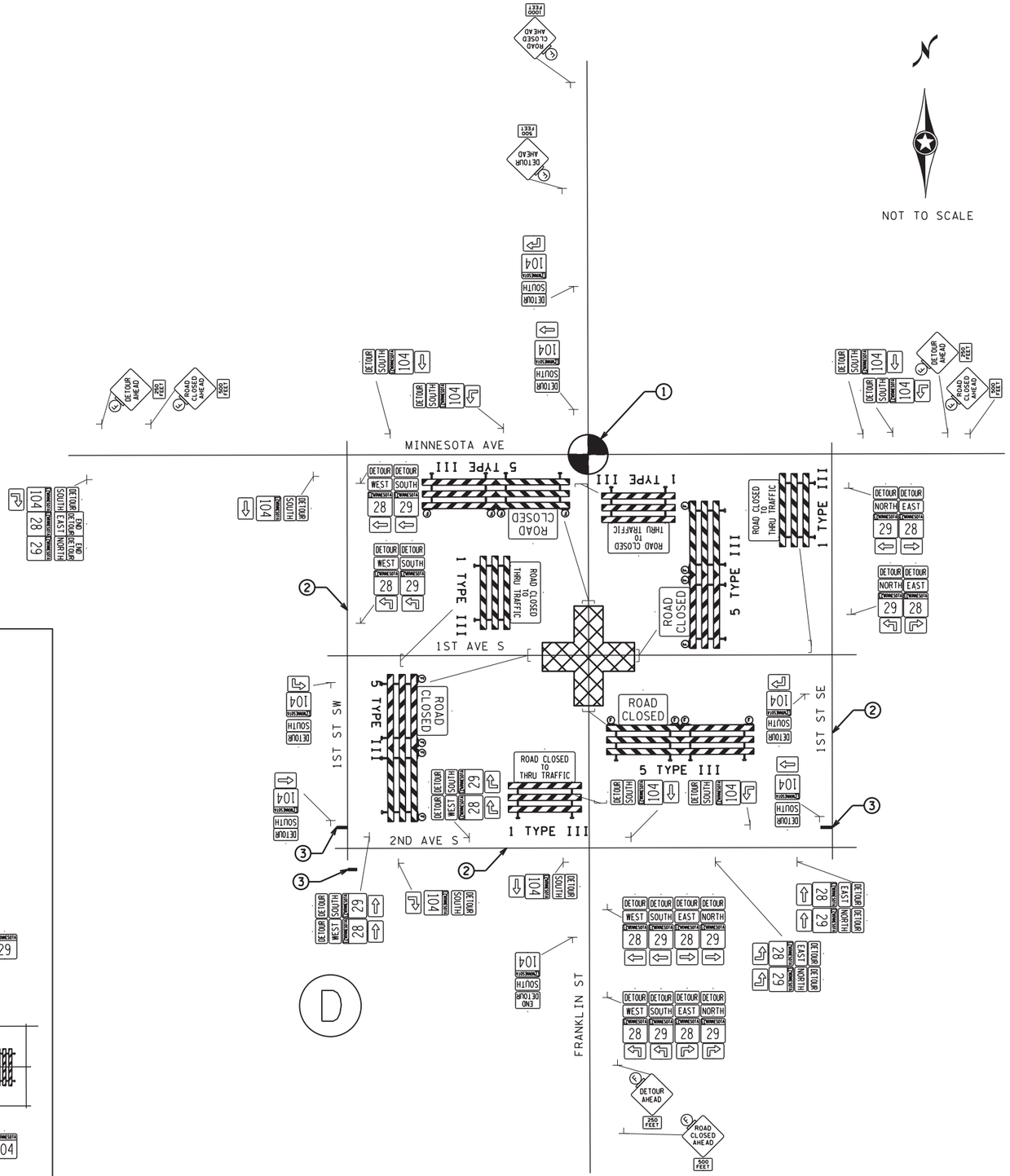
SPECIFIC NOTES:

1. COVER CONFLICTING SIGNS ON MAST ARMS
2. PLACE 4" BROKEN YELLOW INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING ON 1ST ST SW BETWEEN MINNESOTA AVE AND 2ND AVE SW, ON 2ND AVE SW BETWEEN 1ST ST SW AND 1ST ST SE, AND ON 1ST ST SE BETWEEN MINNESOTA AVE. AND 2ND AVE SE.
3. PLACE 24" SOLID WHITE STOP BAR INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING WHERE SHOWN.



PHASE 1 CONSTRUCTION:

- MUNICIPAL UTILITY RECONSTRUCTION, WATER MAIN AND SANITARY SEWER
- STORM SEWER RECONSTRUCTION
- CURB AND GUTTER RECONSTRUCTION
- SIDEWALK AND PEDESTRIAN RAMPS
- ROADWAY UTILITY, TRENCH REMOVALS AND PAVEMENT PATCHING



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DESIGNER: GNG				
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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 1

FILE NO. MNT04-134590
TC6 OF TC17
91 / 310

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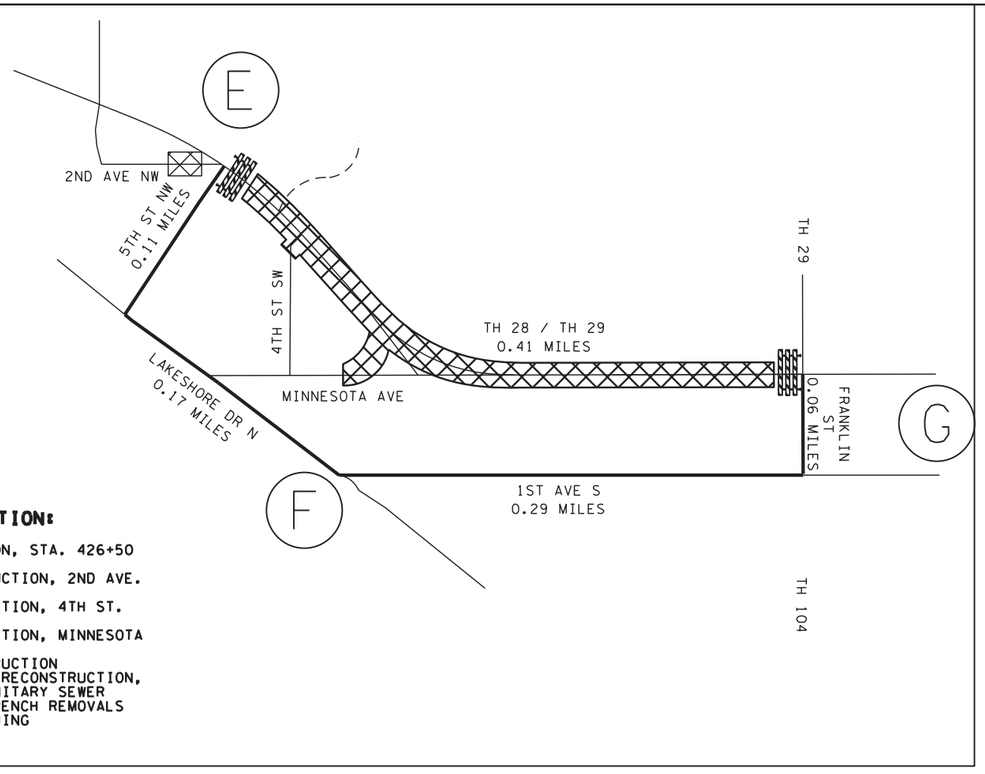
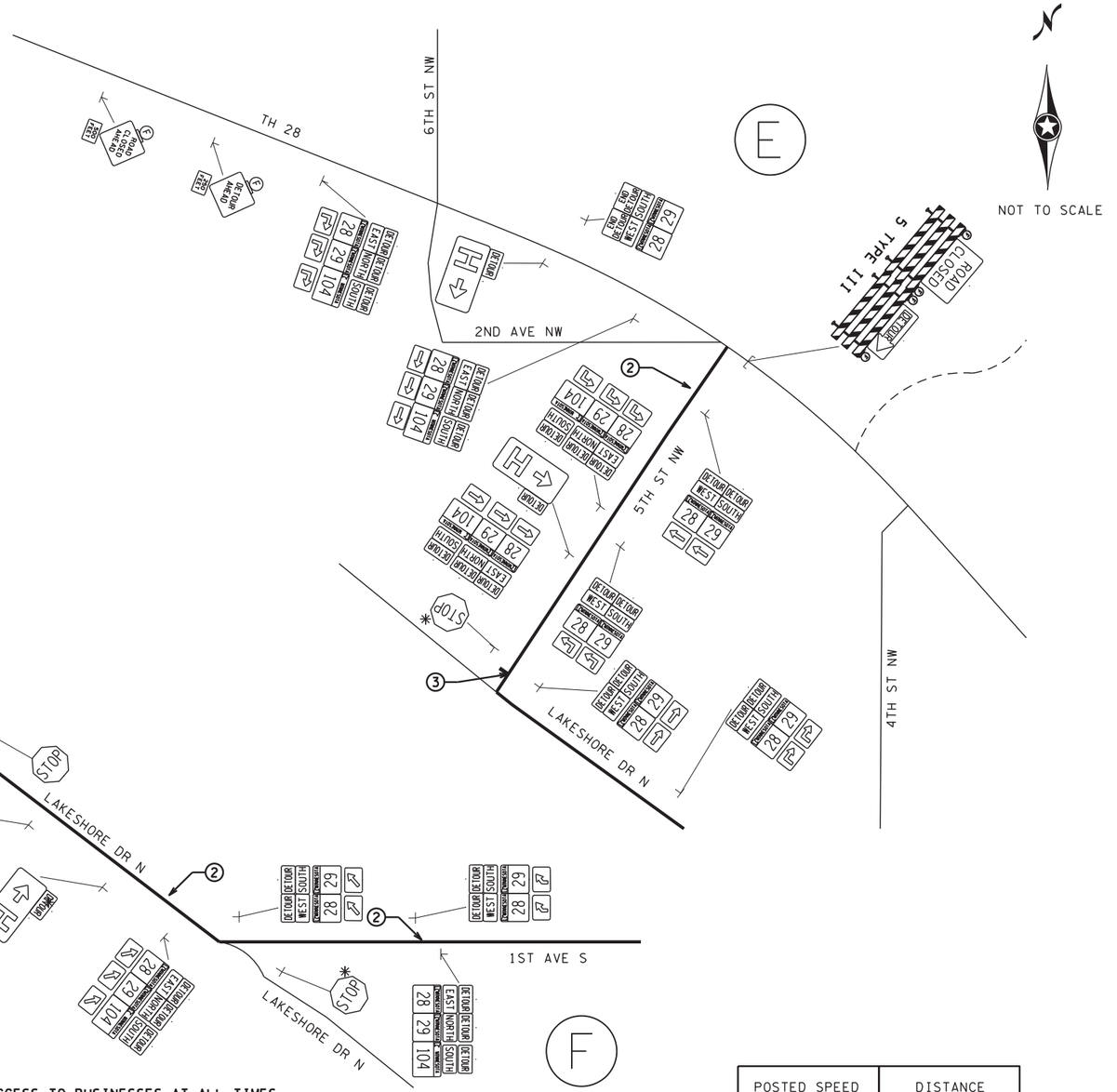
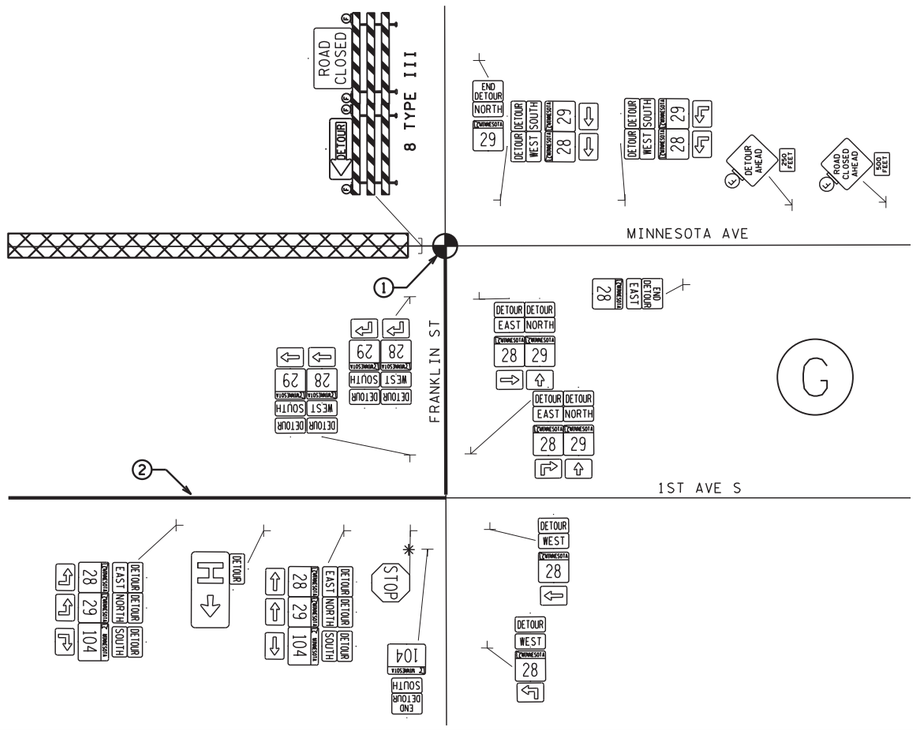


PHASE 2 CONSTRUCTION:

- ROAD RECONSTRUCTION, STA. 426+50 TO 447+00
- CUL-DE-SAC CONSTRUCTION, 2ND AVE. SW
- ROADWAY RECONSTRUCTION, 4TH ST. SW
- ROADWAY RECONSTRUCTION, MINNESOTA AVE.
- STORM SEWER CONSTRUCTION
- MUNICIPAL UTILITY RECONSTRUCTION, WATER MAIN AND SANITARY SEWER
- ROADWAY UTILITY TRENCH REMOVALS AND PAVEMENT PATCHING





GENERAL NOTES:

- MUST MAINTAIN ACCESS TO BUSINESSES AT ALL TIMES
- AN ALTERNATE ENTRANCE MAY HAVE TO BE CONSTRUCTED FOR GRANDSTAY HOTEL AND SUITES
- BUSINESSES MUST COORDINATE WITH ENGINEER ON SITE REGARDING DELIVERIES OF GOODS AND MATERIALS.
- CONSUMER ACCESS MUST BE MAINTAINED AT ALL TIMES FOR ALL BUSINESS LOCATED ON MINNESOTA AVE FROM 5TH ST SW TO FRANKLIN ST
- PUBLIC PARKING LOTS LOCATED AT THE CORNER OF 1ST AVE NE AND FRANKLIN ST N, ON 1ST AVE SE BETWEEN 1ST ST S AND FRANKLIN ST S, AND AT THE CORNER OF MINNESOTA AVE AND 2ND ST N
- USE FLAGGERS AND/OR POLICE OFFICERS AS NECESSARY TO MAINTAIN TRAFFIC.

SPECIFIC NOTES:

① COVER CONFLICTING SIGNS ON MAST ARMS

② PLACE 4" BROKEN YELLOW INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING ON 1ST AVE S BETWEEN FRANKLIN ST N AND LAKESHORE DR N, ALSO ON LAKESHORE DRIVE FROM 1ST AVE S TO MINNESOTA AVE W, ALSO ON 5TH ST NW FROM LAKESHORE DR N TO TH 28.

③ PLACE 24" SOLID WHITE STOP BAR INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING WHERE SHOWN.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	DISTANCE BETWEEN ADVANCE WARNING SIGNS (FEET)
0 - 30	250
35 - 40	325
45 - 50	600
55	750
60 - 65	1000
70 - 75	1200

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: OJD				
DESIGNER: GNG				
CHECKED BY: JCR				

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Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 2

FILE NO. MNT04-134590
TC7 OF TC17

92 / 310

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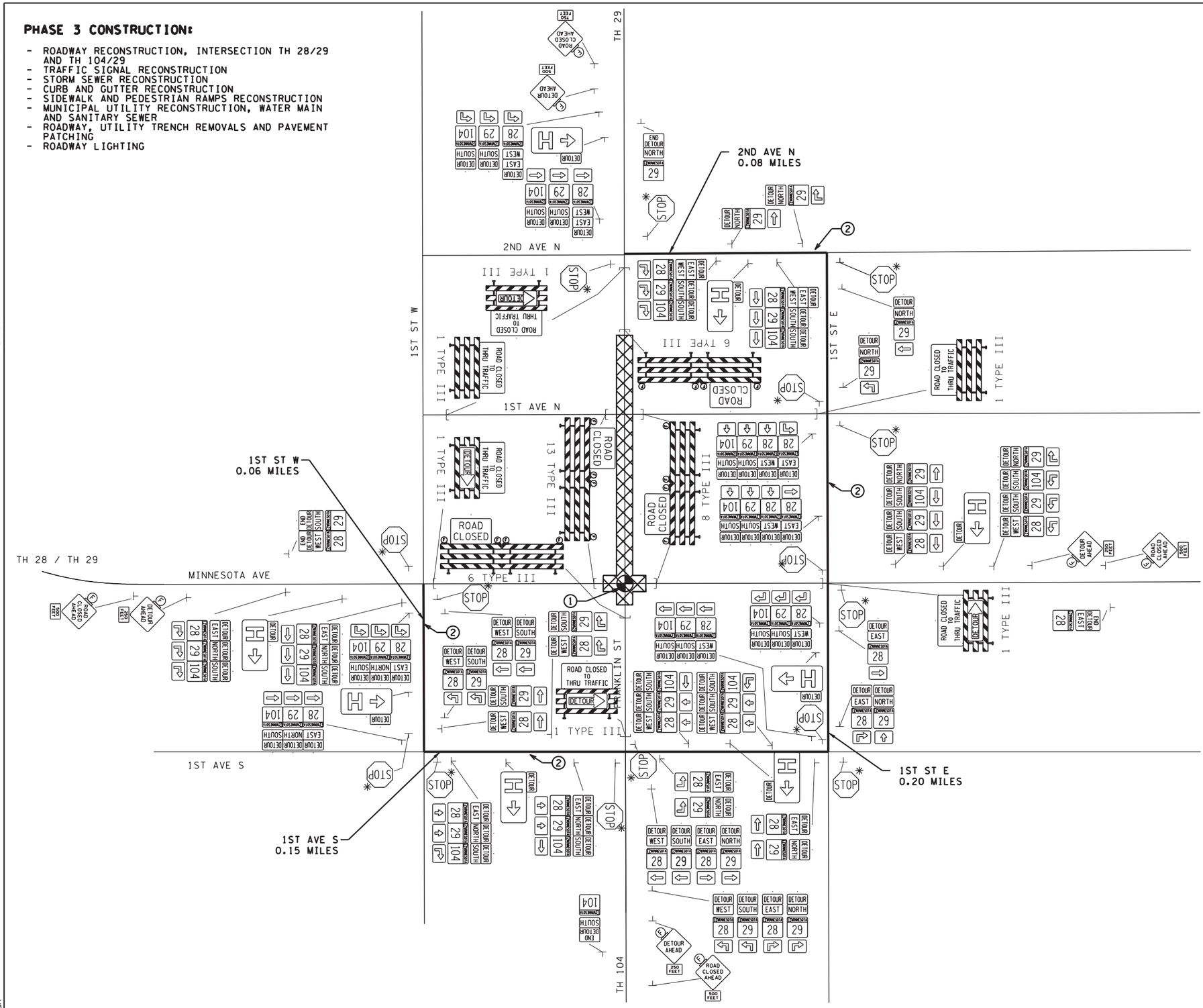
PHASE 3 CONSTRUCTION:

- ROADWAY RECONSTRUCTION, INTERSECTION TH 28/29 AND TH 104/29
- TRAFFIC SIGNAL RECONSTRUCTION
- STORM SEWER RECONSTRUCTION
- CURB AND GUTTER RECONSTRUCTION
- SIDEWALK AND PEDESTRIAN RAMPS RECONSTRUCTION
- MUNICIPAL UTILITY RECONSTRUCTION, WATER MAIN AND SANITARY SEWER
- ROADWAY, UTILITY TRENCH REMOVALS AND PAVEMENT PATCHING
- ROADWAY LIGHTING



NOT TO SCALE

GENERAL NOTES:

- NO PARKING SIGNS TO BE PLACED ALONG 1ST ST E FROM 1ST AVE S TO 2ND AVE N. (3 SIGNS PER BLOCK OR AS NEEDED)
- NO PARKING SIGNS TO BE PLACED ALONG 1ST AVE S FROM 1ST ST W TO 1ST ST E. (3 SIGNS PER BLOCK OR AS NEEDED)
- NO PARKING SIGNS TO BE PLACED ALONG 1ST ST W FROM MINNESOTA AVE TO 1ST AVE S (3 SIGNS PER BLOCK OR AS NEEDED)
- NO PARKING SIGNS TO BE PLACED ALONG 2ND AVE N FROM 1ST ST E TO FRANKLIN ST (3 SIGNS PER BLOCK OR AS NEEDED)
- BUSINESSES MUST COORDINATE WITH ENGINEER ON SITE REGARDING DELIVERIES OF GOODS AND MATERIALS.
- CUSTOMER ACCESS MUST BE MAINTAINED AT ALL TIMES FOR ALL BUSINESSES LOCATED ON FRANKLIN ST FROM MINNESOTA AVE TO 2ND AVE N. PEDESTRIAN ACCESS MUST BE MAINTAINED AT ALL TIMES.
- PUBLIC PARKING LOTS PROVIDED AT THE CORNER OF 1ST AVE NE AND FRANKLIN ST N, ON 1ST AVE SE BETWEEN 1ST ST S AND FRANKLIN ST S, AND AT THE CORNER OF MINNESOTA AVE AND 2ND ST N. MNDOT PUBLIC INFORMATION OFFICER WILL PROVIDE ADDITIONAL PUBLIC PARKING INFORMATION.
- APPROPRIATE DETOURS WILL BE PROVIDED TO ACCOMODATE FOR UTILITY DISRUPTIONS IDENTIFIED BY OTHERS.
- USE FLAGGERS AND/OR POLICE OFFICERS AS NECESSARY TO MAINTAIN TRAFFIC.

SPECIFIC NOTES:

(1) COVER CONFLICTING SIGNS ON MAST ARMS

(2) PLACE 4" BROKEN YELLOW INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING ON 1ST ST W BETWEEN MINNESOTA AVE AND 1ST AVE S, ALSO ON 1ST AVE S BETWEEN 1ST ST W AND 1ST ST E, ALSO ON 1ST ST E BETWEEN 1ST AVE S AND 2ND AVE N, ALSO ON 2ND AVE N BETWEEN 1ST ST E AND FRANKLIN ST N

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	DISTANCE BETWEEN ADVANCE WARNING SIGNS (FEET)
0 - 30	250
35 - 40	325
45 - 50	600
55	750
60 - 65	1000
70 - 75	1200

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: OJD				
DESIGNER: GNG				
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Printed Name: ANDREW W. HELMERS Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 3

FILE NO. MNT04-134590
TC8 OF TC17
93 / 310

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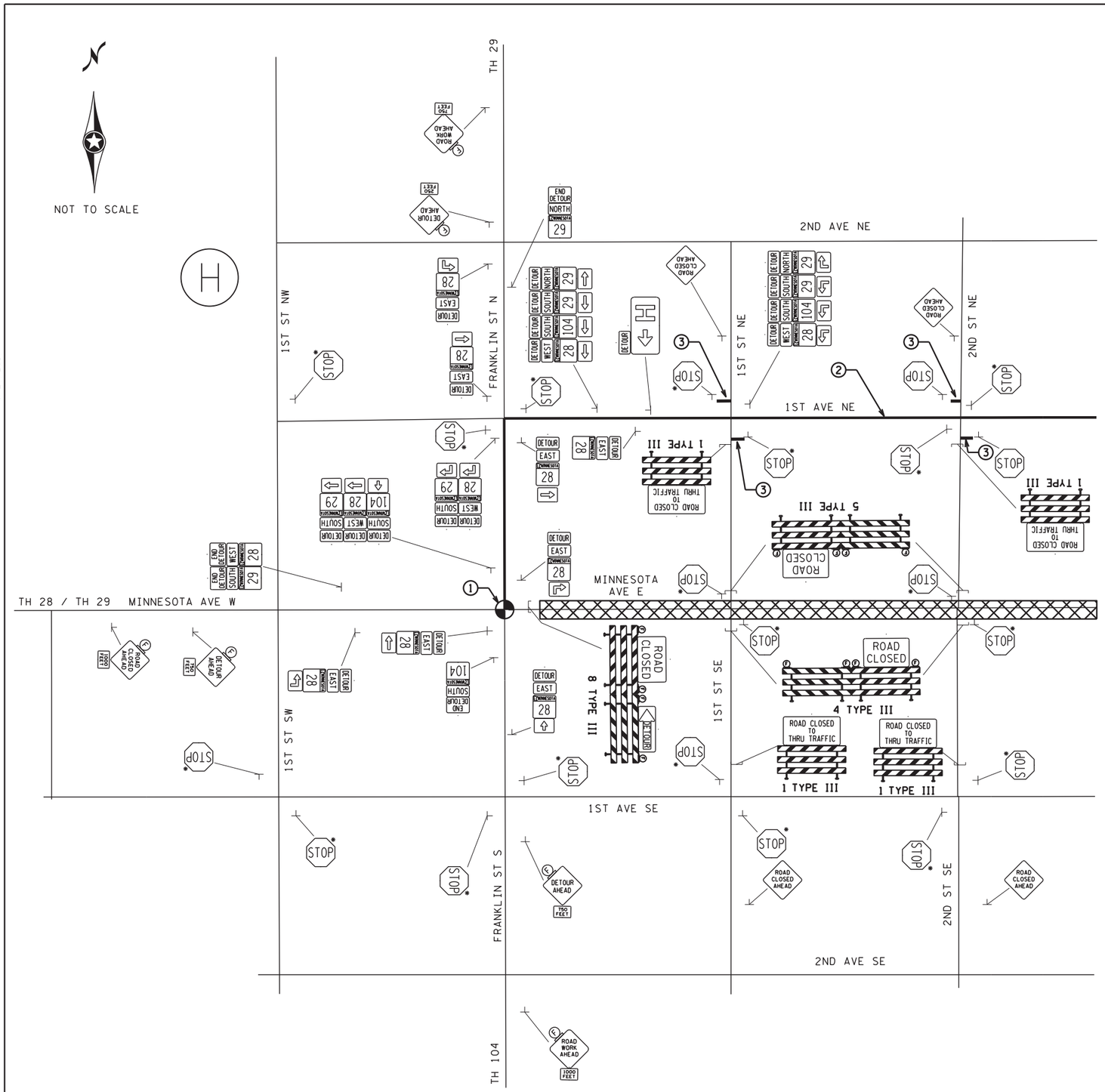

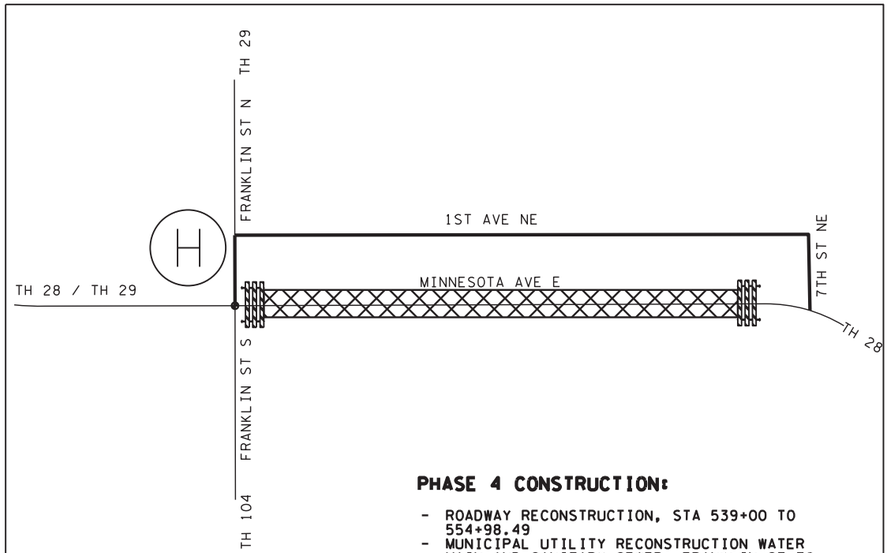

PHASE 4 CONSTRUCTION:

- ROADWAY RECONSTRUCTION, STA 539+00 TO 554+98.49
- MUNICIPAL UTILITY RECONSTRUCTION WATER MAIN AND SANITARY SEWER, FRANKLIN ST TO 6TH ST NE
- STORM SEWER RECONSTRUCTION
- ROADWAY LIGHTING
- SIDEWALK AND PEDESTRIAN RAMPS RECONSTRUCTION, STREETSCAPE PLANTINGS, PAVERS, AMENITIES AND TRAIL

GENERAL NOTES:

- NO PARKING SIGNS TO BE PLACED ALONG 1ST AVE NE FROM FRANKLIN ST TO 7TH ST NE AND ON 7TH ST NE FROM TH 28 TO 1ST AVE NE
- BUSINESSES MUST COORDINATE WITH ENGINEER ON SITE REGARDING DELIVERIES OF GOODS AND MATERIALS.
- CUSTOMER ACCESS MUST BE MAINTAINED AT ALL TIMES FOR ALL BUSINESS ON MINNESOTA AVE FROM FRANKLIN ST TO 6TH ST. PEDESTRIAN ACCESS MUST BE MAINTAINED AT ALL TIMES.
- PUBLIC PARKING LOTS LOCATED AT THE CORNER OF 1ST AVE NE AND FRANKLIN ST N, ON 1ST AVE SE BETWEEN 1ST ST S AND FRANKLIN ST S, AND ON THE CORNER OF 2ND ST N AND MINNESOTA AVE. MNDOT PUBLIC INFORMATION OFFICER WILL PROVIDE ADDITIONAL PUBLIC PARKING INFORMATION.
- APPROPRIATE DETOURS WILL BE PROVIDED TO ACCOMODATE FOR UTILITY DISRUPTIONS IDENTIFIED BY OTHERS.
- USE FLAGGERS AND/OR POLICE OFFICERS AS NECESSARY TO MAINTAIN TRAFFIC.

SPECIFIC NOTES:

(1) COVER CONFLICTING SIGNS ON MAST ARMS

(2) PLACE 4" BROKEN YELLOW INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING ON 1ST ST N BETWEEN FRANKLIN ST N AND 7TH ST NE

(3) PLACE 24" SOLID WHITE STOP BAR INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING WHERE SHOWN.

POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	DISTANCE BETWEEN ADVANCE WARNING SIGNS (FEET)
0 - 30	250
35 - 40	325
45 - 50	600
55	750
60 - 65	1000
70 - 75	1200

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CMK				
DESIGNER: GNG				
CHECKED BY: JCR				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 4

FILE NO. MNT04-134590
TC9 OF TC17
94 / 310

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NOT TO SCALE

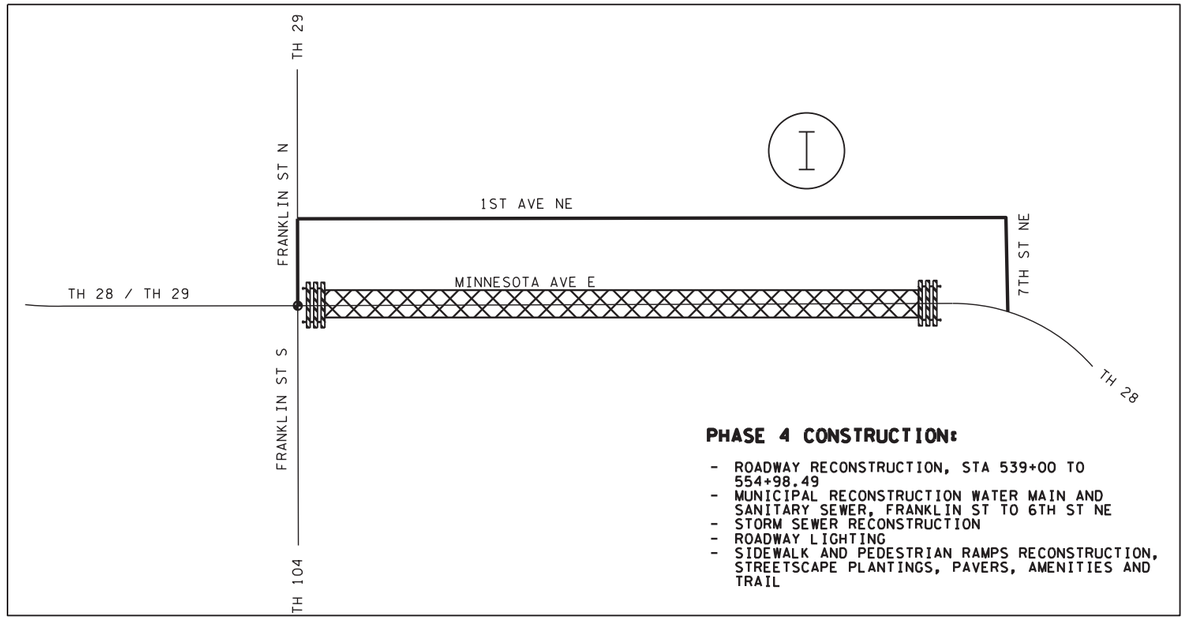
GENERAL NOTES:

- NO PARKING SIGNS TO BE PLACED ALONG 1ST AVE NE FROM FRANKLIN ST TO 7TH ST NE AND ON 7TH ST NE FROM TH 28 TO 1ST AVE NE
- BUSINESSES MUST COORDINATE WITH ENGINEER ON SITE REGARDING DELIVERIES OF GOODS AND MATERIALS.
- CONSUMER ACCESS MUST BE MAINTAINED AT ALL TIMES FOR ALL BUSINESS ON MINNESOTA AVE FROM FRANKLIN ST TO 6TH ST. PEDESTRIAN ACCESS MUST BE MAINTAINED AT ALL TIMES.
- PUBLIC PARKING LOTS LOCATED AT THE CORNER OF 1ST AVE NE AND FRANKLIN ST N, ON 1ST AVE SE BETWEEN 1ST ST S AND FRANKLIN ST S, AND ON THE CORNER OF 2ND ST N AND MINNESOTA AVE. MNDOT PUBLIC INFORMATION OFFICER WILL PROVIDE ADDITIONAL PUBLIC PARKING INFORMATION.
- APPROPRIATE DETOURS WILL BE PROVIDED TO ACCOMODATE FOR UTILITY DISRUPTIONS IDENTIFIED BY OTHERS.
- USE FALGGERS AND/OR POLICE OFFICERS AS NECESSARY TO MAINTAIN TRAFFIC.

SPECIFIC NOTES:

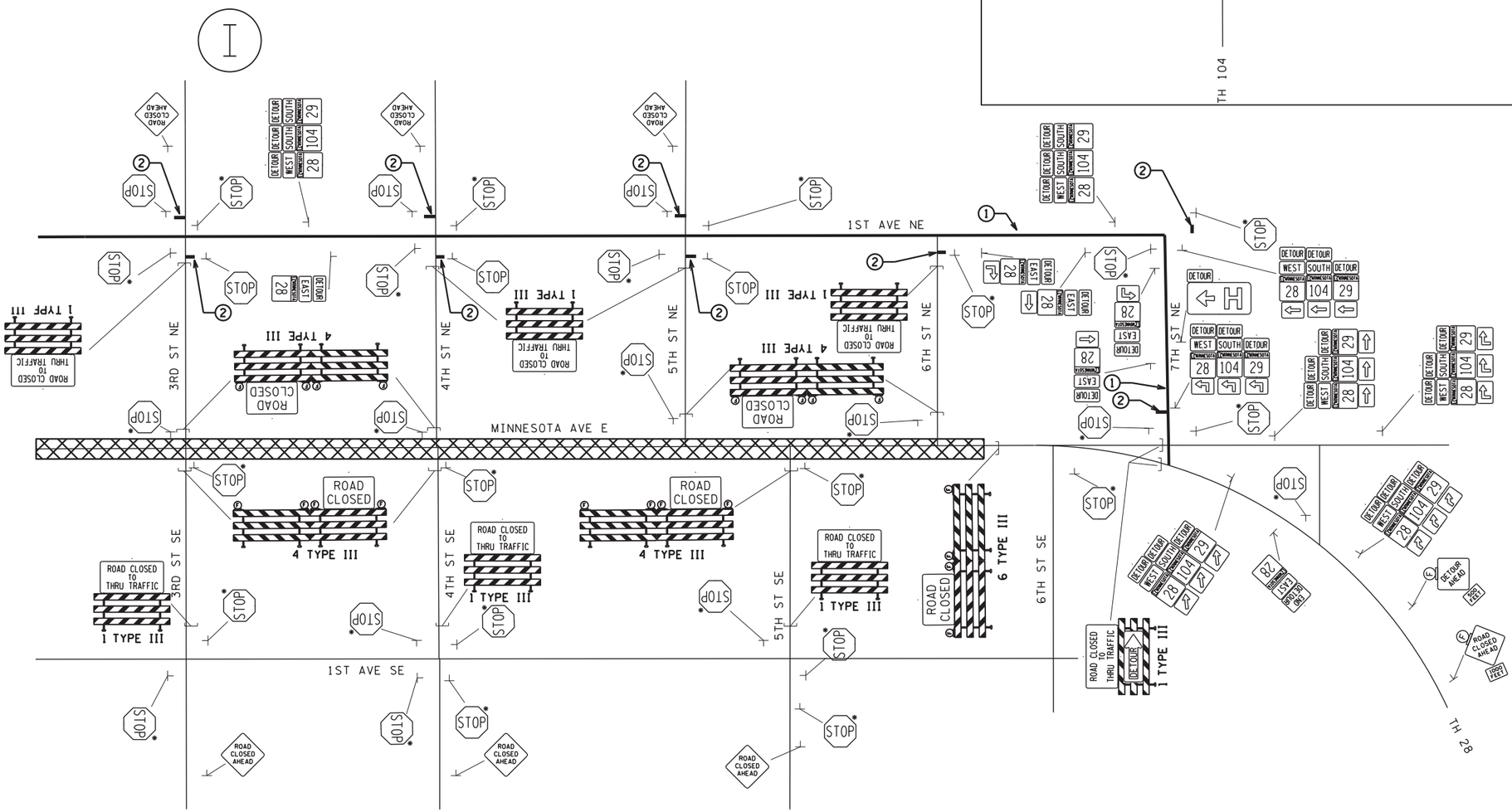
① PLACE 4" BROKEN YELLOW INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING ON 7TH ST NE BETWEEN 1ST ST NE AND MINNESOTA AVE E, ALSO ON 1ST ST NE BETWEEN FRANKLIN ST N AND 7TH ST NE

② PLACE 24" SOLID WHITE STOP BAR INTERIM PAVEMENT MARKING PAID FOR AS INTERIM PAVEMENT MARKING WHERE SHOWN.



PHASE 4 CONSTRUCTION:

- ROADWAY RECONSTRUCTION, STA 539+00 TO 554+98.49
- MUNICIPAL RECONSTRUCTION WATER MAIN AND SANITARY SEWER, FRANKLIN ST TO 6TH ST NE
- STORM SEWER RECONSTRUCTION
- ROADWAY LIGHTING
- SIDEWALK AND PEDESTRIAN RAMPS RECONSTRUCTION, STREETSCAPE PLANTINGS, PAVERS, AMENITIES AND TRAIL



POSTED SPEED LIMIT PRIOR TO WORK STARTING (MPH)	DISTANCE BETWEEN ADVANCE WARNING SIGNS (FEET)
0 - 30	250
35 - 40	325
45 - 50	600
55	750
60 - 65	1000
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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 4

FILE NO. MNT04-134590
TC10 OF TC17
95 / 310

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MATCHLINE T.H. 29
STA. 53+00.00 SEE SHEET 97

POPE COUNTY

CITY OF GLENWOOD

TH 28 / TH 29

TH 29

6TH AVE NW | 6TH AVE NE

3RD AVE NW | 3RD AVE NE

2ND AVE NE

1ST ST NW | 1ST ST NE

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
END S.P. 6110-21
T.H. 104 STA. 34+59.58

1ST AVE NW

1ST AVE NE

5TH ST SW | 4TH ST SW

S LAKE SHORE DR

MINNESOTA AVE

2ND ST SW

1ST AVE SW

2ND ST NE | 3RD ST NE | 4TH ST NE | 5TH ST NE | 6TH ST NE | 7TH ST NE

2ND ST SE | 3RD ST SE | 4TH ST SE | 5TH ST SE | 6TH ST SE

1ST AVE SE

ROAD WORK AHEAD 500 FEET

TH 28

MATCHLINE T.H. 28
STA. 575+00.00 SEE SHEET 97

2ND AVE SW | 2ND AVE SE

3RD AVE SW

4TH AVE SW | 4TH AVE SE

1ST ST SW | 1ST ST SE

TH 104

BEGIN S.P. 6110-21
T.H. 104 STA. 1189+70.00

ROAD WORK AHEAD 500 FEET

400

SCALE IN FEET

PHASE 5 CONSTRUCTION:

- ROADWAY MILL AND OVERLAY
- CURB AND GUTTER REPAIRS
- SIDEWALK, DRIVEWAY AND PEDESTRIAN RAMPS RECONSTRUCTION

GENERAL NOTE:

- STAGE MILL AND OVERLAY SUCH THAT ONE POLICE OFFICER CAN FLAG AND ONE CAN MANAGE TRAFFIC. SEE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FLAGGING HANDBOOK PAGES 6K-107 TO 6K-118.

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_phase_4a.dgn
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DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: GNG				
CHECKED BY: JCR				

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Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

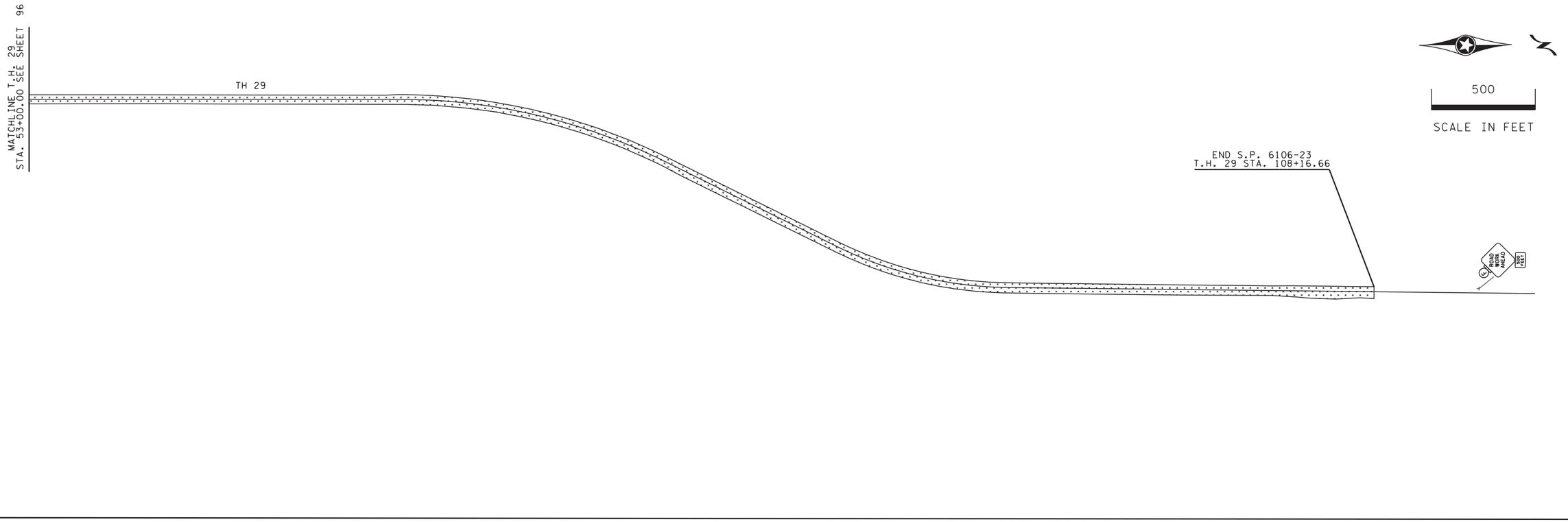
S.P. NO. 6103-32 (T.H. 28)

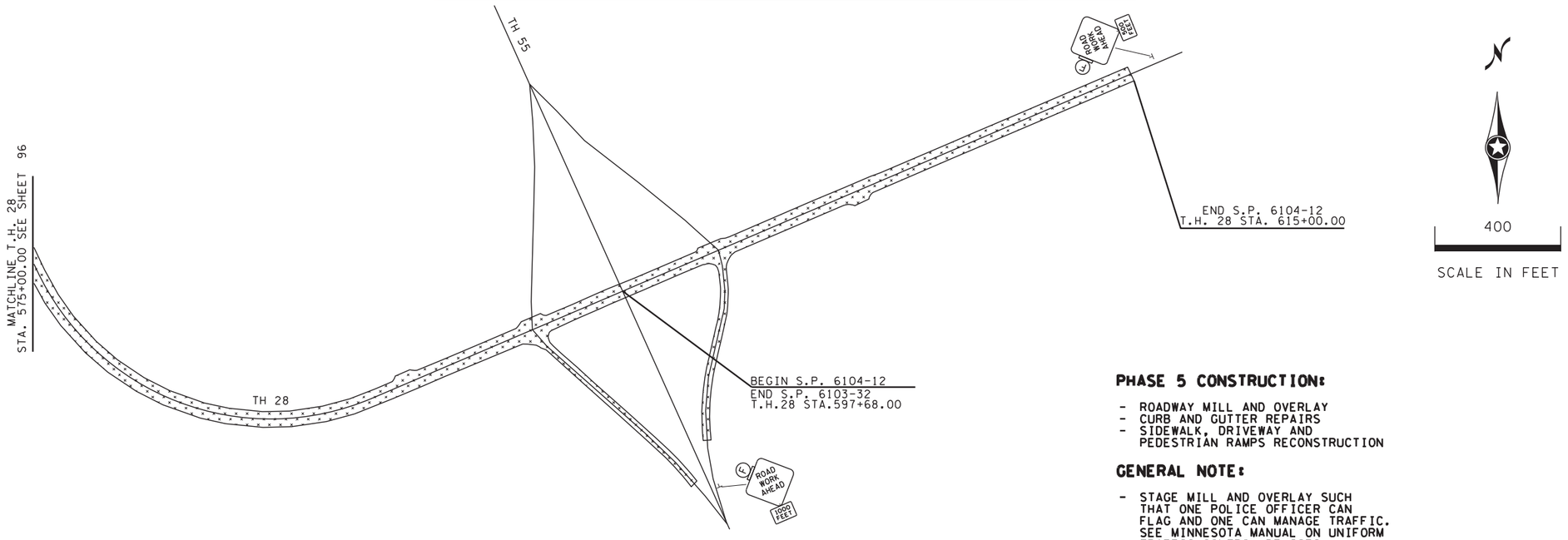
TRAFFIC CONTROL PLANS PHASE 5

FILE NO. MNT04-134590

TC11 OF TC17

96 / 310





PHASE 5 CONSTRUCTION:

- ROADWAY MILL AND OVERLAY
- CURB AND GUTTER REPAIRS
- SIDEWALK, DRIVEWAY AND PEDESTRIAN RAMPS RECONSTRUCTION

GENERAL NOTE:

- STAGE MILL AND OVERLAY SUCH THAT ONE POLICE OFFICER CAN FLAG AND ONE CAN MANAGE TRAFFIC. SEE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FLAGGING HANDBOOK PAGES 6K-107 TO 6K-118.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: OJD				
DESIGNER: GNG				
CHECKED BY: JCR				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL PLANS
PHASE 5

FILE NO. MNT04-134590
TC12 OF TC17
97 / 310

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TPAR NARRATIVE:

BUSINESS AREAS

1. PEDESTRIAN ACCESS TO ALL BUSINESSES WILL BE PROVIDED DURING NORMAL BUSINESS HOURS AT ALL TIMES WHERE WALKS OR TRAILS EXIST.
2. TEMPORARY PEDESTRIAN ACCESS ROUTES (TPAR) CAN BE DIRECTED INTO PARKING LANES AND TRAFFIC LANES IF PROTECTED APPROPRIATELY WITH BARRIER.
3. EXISTING SIDEWALK OR TRAILS CAN ALSO BE USED AS PART OF THE TPAR ROUTE WHEN FEASIBLE.
4. WHEN THE TPAR IS LOCATED IN PARKING LANES OR DRIVING LANES APPROPRIATE TEMPORARY PEDESTRIAN RAMPS AND OR BRIDGES MAY BE REQUIRED.
5. IF THE TEMPORARY PEDESTRIAN ACCESS ROUTES ARE NEAR LARGE EXCAVATIONS CHAIN LINK FENCE EQUIPPED WITH A DETECTABLE EDGE SHOULD BE USED TO SEPARATE PEDESTRIAN ROUTE FROM THE WORK ZONE.
6. IF THE PEDESTRIAN ACCESS ROUTE IS NEAR SIDEWALK OR PAVEMENT REMOVAL ONLY HANDRAILS AND/OR DETECTABLE EDGES ARE REQUIRED.
7. PEDESTRIAN RAMPS SHALL BE RECONSTRUCTED IN SUCH A WAY THAT THEY CORRESPOND WITH THE SIDEWALK RECONSTRUCTION AND THAT ONLY ONE CROSSING CAN BE CLOSED PER INTERSECTION AT A TIME.
8. TEMPORARY PEDESTRIAN ACCESS ROUTES SHALL BE A MINIMUM OF 5 FT WIDTH.
9. CONTRACTOR'S TPAR PLAN MUST BE APPROVED BY THE ENGINEER PRIOR TO THE CONTRACTOR IMPLEMENTING IT IN THE FIELD.

RESIDENTIAL / NON-BUSINESS AREAS

10. IN NON-BUSINESS AREAS, TPAR IS ONLY REQUIRED WHERE SIDEWALKS OR TRAILS EXIST.
11. ONLY ONE PEDESTRIAN ACCESS ROUTE PER BLOCK MUST BE MAINTAINED AT ALL TIMES WHERE THERE ARE EITHER SIDEWALKS OR TRAILS, BUT THAT ROUTE CAN BE ON EITHER SIDE OF THE ROAD OR IN THE ROAD WHEN ADEQUATELY PROTECTED BY BARRIER.
12. THE TPAR ROUTE MUST ALSO MAINTAIN CONNECTION TO PEDESTRIAN ROUTES OR TRAILS THAT EXIST UNLESS APPROVED BY THE ENGINEER.
13. TEMPORARY PEDESTRIAN ACCESS ROUTES SHALL BE A MINIMUM OF 5 FT WIDTH.
14. IF THE TPAR ROUTE USES THE OPPOSITE SIDE OF THE ROAD ADDITIONAL TEMPORARY CROSSINGS MAY BE REQUIRED.

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DRAWN BY: GNG				
DESIGNER: GNG				
CHECKED BY: JCR				

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Certified By: _____ (Licensed Professional Engineer) Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

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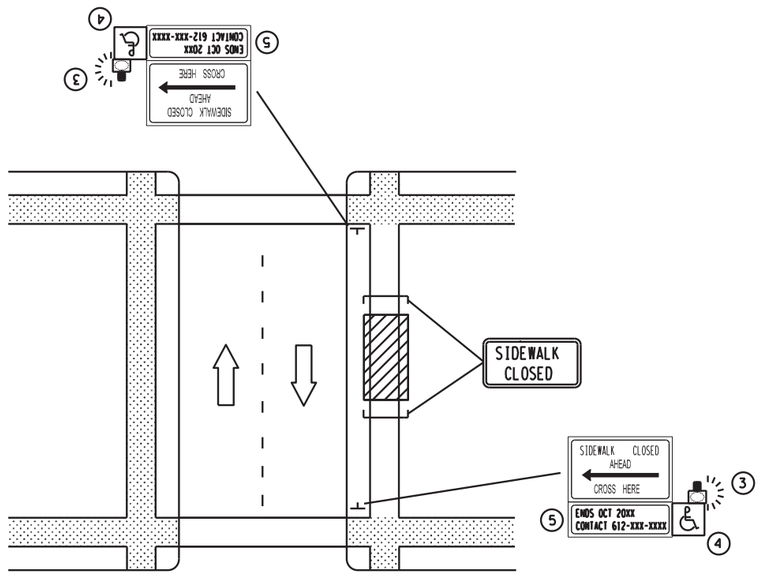
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

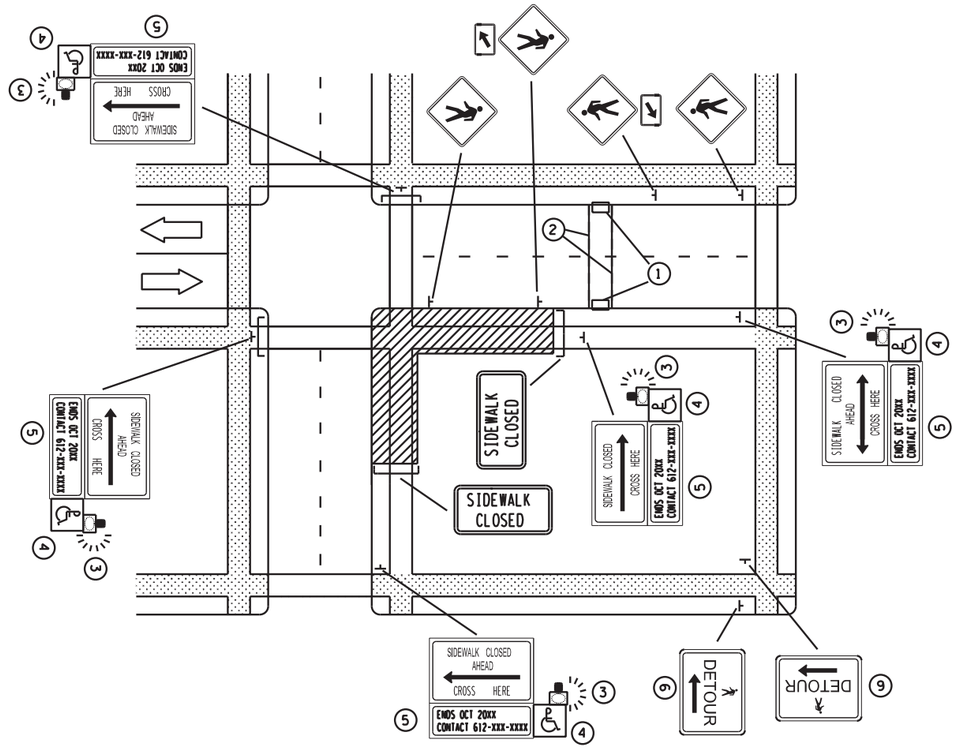
TRAFFIC CONTROL PLANS
TRAFFIC CONTROL TPAR

FILE NO. MNT04-134590
TC13 OF TC17

98 / 310



OTHER SIDE OF STREET DETOUR
(FOR MID-BLOCK CLOSURE)



OTHER SIDE OF STREET DETOUR OR DETOUR WITH TRAILBLAZING SIGNS
(FOR CORNER SIDEWALK CLOSURE WITH OPTIONAL TEMPORARY CROSSWALK)

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE AN ALTERNATE PEDESTRIAN ROUTE (apr) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE detours, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, AND SLIP RESISTANT TEMPORARY WALKWAY SURFACE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO TRAFFIC (BIKES, PEDESTRIANS) IS REDUCED ENOUGH TO CAUSE HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

SPECIFIC NOTES

(1) TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.

(2) TEMPORARY PAVEMENT MARKING FOR CROSSWALK LINES.

(3) AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHOULD BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.

(4) THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHOULD BE POSTED AND AN ALTERNATE ROUTE SHOULD BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.

(5) TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.

(6) PEDESTRIAN DETOUR TRAILBLAZING SIGNS SHOULD BE USED IF THE PEDESTRIAN DETOUR IS LOCATED SOMEPLACE OTHER THAN ACROSS THE STREET FROM THE SIDEWALK CLOSURE.

LEGEND

- SIGN
- DIRECTION OF TRAFFIC
- EXISTING PEDESTRIAN SURFACE
- TRAFFIC CONTROL DEVICE
- WORK AREA
- PEDESTRIAN CHANNELIZATION DEVICE
- SIDEWALK BARRICADE

REVISION DATE: 6 JAN 2016

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CMK				
DESIGNER: CMK				
CHECKED BY: AWH				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL DETAILS ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

FILE NO. MNT04-134590 TC14 OF TC17

99 / 310

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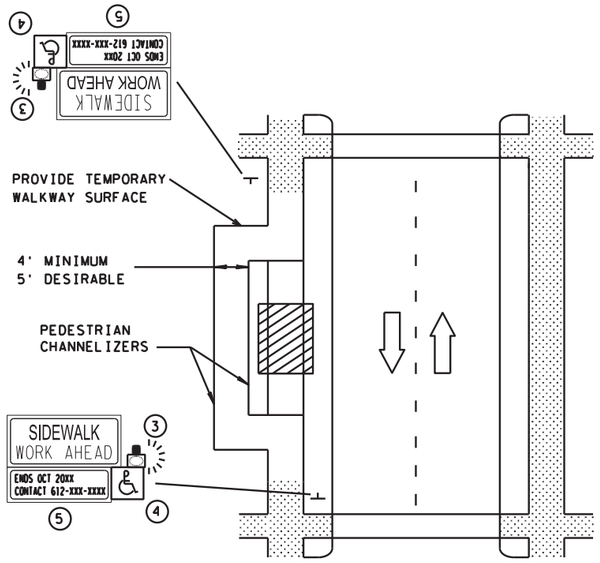
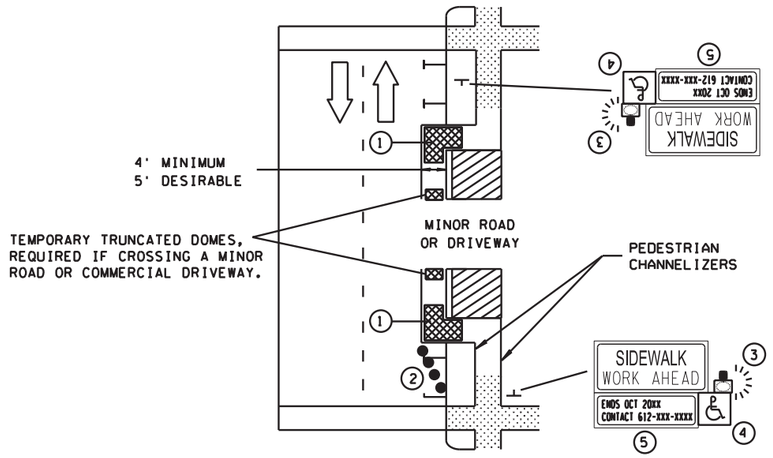


BYPASS ON ADJACENT AVAILABLE RIGHT OF WAY

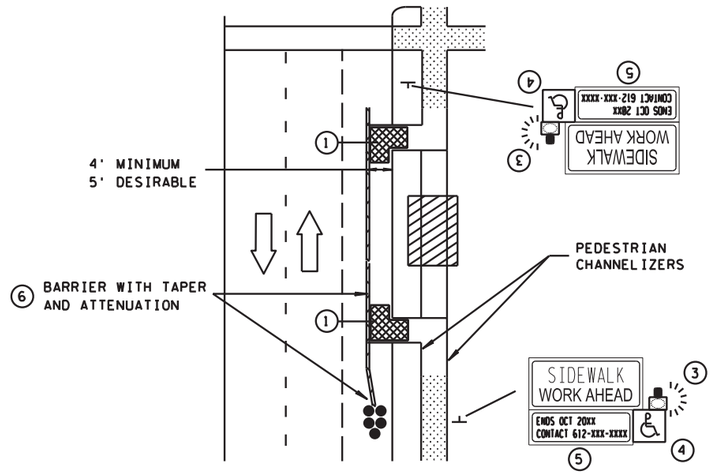
BYPASS TYPE A

NOTE: MAY ONLY BE USED ON ROADWAY WITH POSTED SPEED OF 45 MPH OR LESS.



SIDEWALK BYPASS USING PARKING OR SHOULDER ON LOW SPEED ROADWAY

BYPASS TYPE B



SIDEWALK BYPASS USING SHOULDER OR PARKING LANE HIGH SPEED ROADWAY

BYPASS TYPE C

GENERAL NOTES

WHEN CLOSING OR RELOCATING CROSSWALKS OR SIDEWALKS, PROVIDE DETECTABLE TEMPORARY FACILITIES AND INCLUDE ACCESSIBILITY FEATURES CONSISTENT WITH EXISTING PEDESTRIAN FACILITIES.

TEMPORARY TRAFFIC CONTROL DEVICES FOR PEDESTRIANS ARE SHOWN. OTHER DEVICES MAY BE NECESSARY TO CONTROL VEHICULAR TRAFFIC. STAGE WORK, AS NECESSARY, TO PROVIDE An alternate pedestrian ROUTE (apr) AT ALL TIMES. FOR ROADWAYS WITH NO AVAILABLE detours, MAINTAIN ONE OPEN SIDEWALK AT ALL TIMES.

PROVIDE A SMOOTH, CONTINUOUS, HARD SURFACE THROUGH THE LENGTH OF THE APR. PROVIDE A FIRM, STABLE, AND SLIP RESISTANT TEMPORARY WALKWAY SURFACE TO COVER SHORT SEGMENTS OF ROUGH, SOFT, OR UNEVEN GROUND.

THE PEDESTRIAN TRAFFIC SIGNALS CONTROLLING CLOSED CROSSWALKS SHALL BE COVERED OR DEACTIVATED.

POST MOUNTED SIGNS LOCATED ADJACENT TO A SIDEWALK SHALL HAVE A 7 FOOT MINIMUM CLEARANCE FROM THE BOTTOM OF THE SIGN TO THE SIDEWALK SURFACE.

WHEN A SIGN OR BARRICADE IS ORIENTED SUCH THAT VISIBILITY TO TRAFFIC (BIKES, PEDESTRIANS) IS REDUCED ENOUGH TO CAUSE HAZARD, DELINEATE THE SIGN/BARRICADE WITH APPROPRIATE DEVICES.

MINIMIZE DISRUPTION TO PEDESTRIANS TO THE MAXIMUM EXTENT FEASIBLE BY PROVIDING AN APR IN THE FOLLOWING ORDER OF PREFERENCE:

1. PROVIDE THE APR ON THE SAME SIDE OF THE STREET AS THE DISRUPTED ROUTE UTILIZING BYPASSES.
2. WHERE IT IS NOT FEASIBLE TO PROVIDE A SAME SIDE APR, PROVIDE A DETOUR ON THE OTHER SIDE OF THE STREET.
3. WHERE IT IS NOT FEASIBLE TO PROVIDE AN APR ON THE OTHER SIDE OF THE ROADWAY, PROVIDE AN APR DETOUR WITH TRAILBLAZING SIGNS.

SPECIFIC NOTES

1. TEMPORARY CURB RAMPS WITH DETECTABLE WARNINGS.
2. 5 DEVICE TAPER 25 FEET LONG, RECOMMENDED WHEN THE CLOSED AREA WAS USED AS AN INTERMITTENT TRAFFIC LANE OR BYPASS LANE. STREET PARKING SHALL BE PROHIBITED FOR AT LEAST 50 FEET IN ADVANCE OF THE MID-BLOCK CROSSWALK.
3. AN APPROVED AUDIBLE MESSAGE DEVICE OR TACTILE MESSAGE SHOULD BE PROVIDED FOR SIGHT-IMPAIRED PEDESTRIANS.
4. THE INTERNATIONAL SYMBOL OF ACCESSIBILITY SHOULD BE DISPLAYED WHEN ANY WALKWAY THROUGH A WORK ZONE HAS BEEN DETERMINED TO BE TPAR COMPLIANT. THE SYMBOL OF ACCESSIBILITY SHALL NOT BE DISPLAYED IF PERSONS WITH DISABILITIES SHOULD NOT USE THE PRIMARY TEMPORARY PEDESTRIAN DETOUR. THE REASON FOR THE NON-COMPLIANCE SHOULD BE POSTED AND AN ALTERNATE ROUTE SHOULD BE POSTED WHEN THE PRIMARY TEMPORARY PEDESTRIAN DETOUR IS NON-COMPLIANT TO TPAR STANDARDS.
5. TYPICAL SIGN MESSAGE FOR A TEMPORARY PEDESTRIAN DETOUR SHOULD INCLUDE INFORMATION SUCH AS THE DURATION OF THE WALKWAY RESTRICTIONS (BEGINNING AND/OR END DATES) AND A PROJECT CONTACT NUMBER FOR 24 / 7 QUESTIONS OR REPORTING HAZARDS.
6. SEE MN MUTCD FOR GUIDANCE ON PLACEMENT AND USAGE OF BARRIER.

LEGEND

- SIGN
- DIRECTION OF TRAFFIC
- EXISTING PEDESTRIAN SURFACE
- TRAFFIC CONTROL DEVICE
- WORK AREA
- SIDEWALK BARRICADE
- PEDESTRIAN CHANNELIZATION DEVICE
- BARRIER

REVISION DATE: 6 JAN 2016

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CMK				
DESIGNER: CMK				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL DETAILS ALTERNATE PEDESTRIAN ROUTE (APR) DETOUR

FILE NO. MNT04-134590 | TC15 OF TC17 | 100/310

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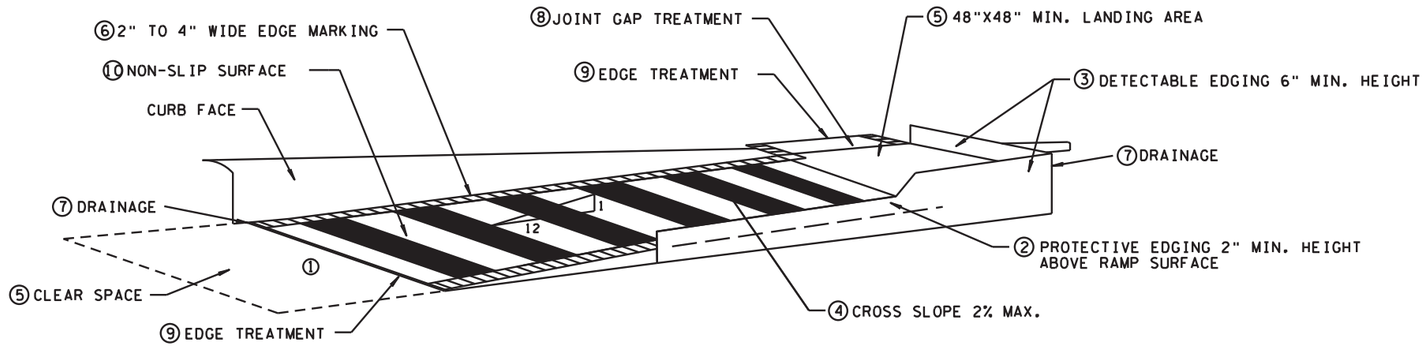


TEMPORARY CURB RAMP
PARALLEL TO CURB

SPECIFIC NOTES

① CURB RAMPS SHALL BE 48" MIN. WIDTH WITH A FIRM, STABLE AND SLIP RESISTANT SURFACE.

② PROTECTIVE EDGING WITH A 2' MIN. HEIGHT SHALL BE PLACED WHEN A CURB RAMP OR LANDING PLATFORM HAS A VERTICAL DROP OF 6" OR GREATER OR HAS A SIDE APRON SLOPE STEEPER THAN 1:3. PROTECTIVE EDGING SHOULD BE CONSIDERED WHEN CURB RAMPS OR LANDING PLATFORMS HAVE A VERTICAL DROP OF 3" OR MORE.

③ DETECTABLE EDGING WITH 6" MIN. HEIGHT AND CONTRASTING COLOR SHALL BE PLACED ON ALL CURB RAMP LANDINGS WHERE THE WALKWAY CHANGES DIRECTION (TURNS).

④ CURB RAMPS AND LANDINGS SHALL HAVE A 2% MAX. CROSS SLOPE.

⑤ CLEAR SPACE OF 48"X48" MIN. SHALL BE PROVIDED ABOVE AND BELOW THE CURB RAMP.

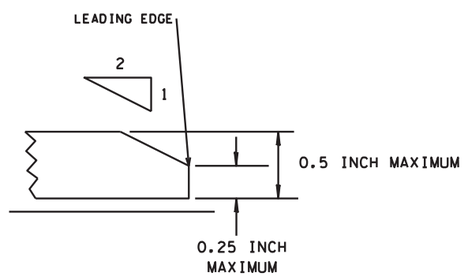
⑥ THE CURB RAMP WALKWAY EDGE SHALL BE MARKED WITH A CONTRASTING COLOR, 2" TO 4" WIDE MARKING. The MARKING IS OPTIONAL WHERE COLOR CONTRASTING EDGING IS USED.

⑦ WATER FLOW IN THE GUTTER SYSTEM SHALL NOT BE IMPEDED.

⑧ LATERAL JOINTS OR GAPS BETWEEN SURFACES SHALL BE LESS THAN 1/2" WIDTH.

⑨ CHANGES BETWEEN SURFACE HEIGHTS SHALL NOT EXCEED 1/2". LATERAL EDGES SHOULD BE VERTICAL UP TO 1/4" HIGH, AND BEVELED AT 1:2 BETWEEN 1/4" AND 1/2" HEIGHT.

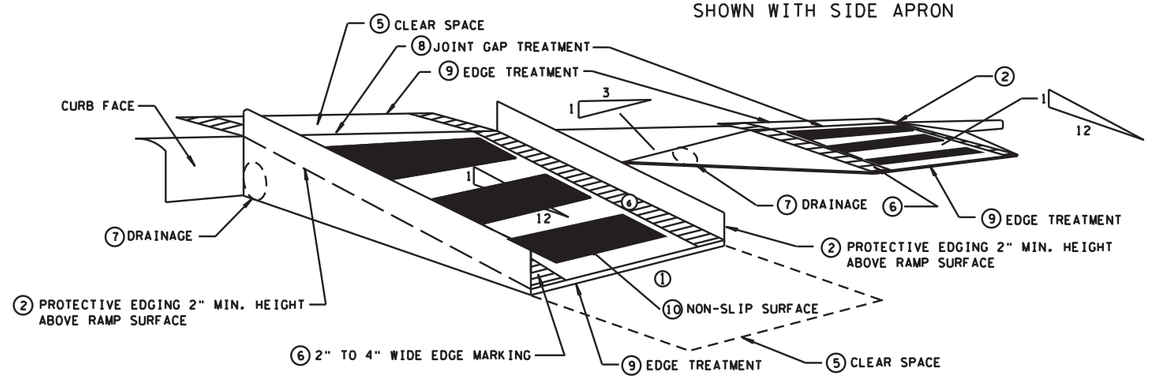
⑩ THE SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT.



⑨ EDGE TREATMENT

SHOWN WITH PROTECTIVE EDGE

SHOWN WITH SIDE APRON



TEMPORARY CURB RAMP
PERPENDICULAR TO CURB

REVISION DATE: 6 JAN 2016

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TRAFFIC CONTROL DETAIL
TPAR - RAMPS

FILE NO. MNT04-134590
TC16 OF TC17
101 / 310

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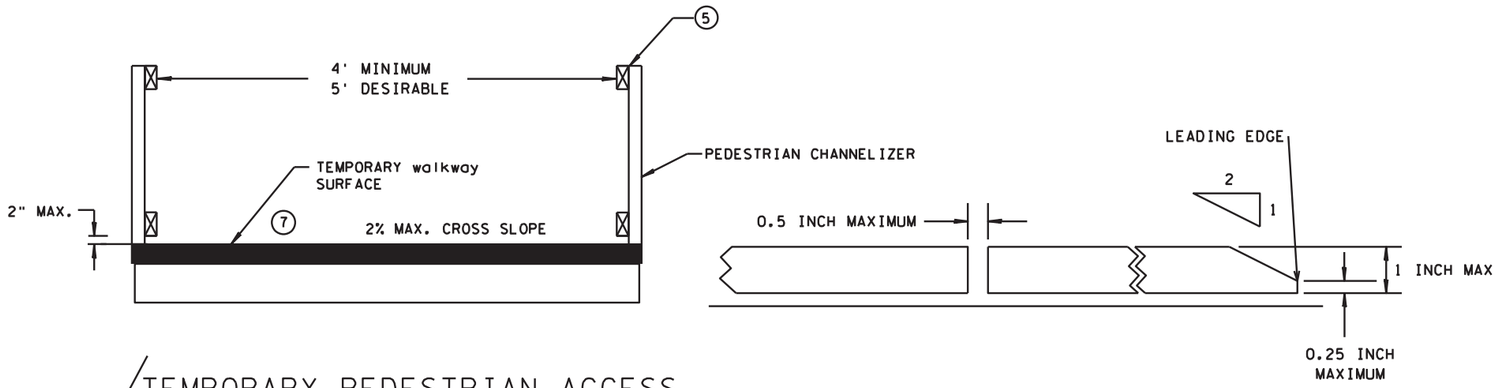


TEMPORARY PEDESTRIAN ACCESS

TEMPORARY WALKWAY SURFACE

GENERAL NOTES

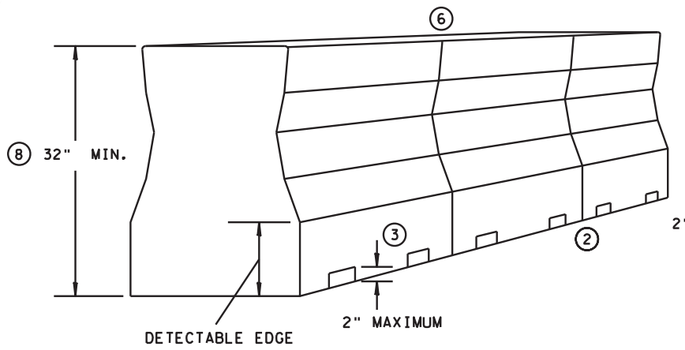
RAILINGS OR OTHER OBJECTS MAY PROTRUDE A MAXIMUM OF 4 INCHES INTO THE WALKWAY CLEAR SPACE WHEN LOCATED A MINIMUM OF 27 INCHES ABOVE THE WALKWAY SURFACE.

ANY PEDESTRIAN DEVICES USED TO PROVIDE POSITIVE PROTECTION FOR PEDESTRIANS OR WORKERS SHALL MEET CRASHWORTHY REQUIREMENTS APPROPRIATE FOR THE BARRIERS APPLICATION.

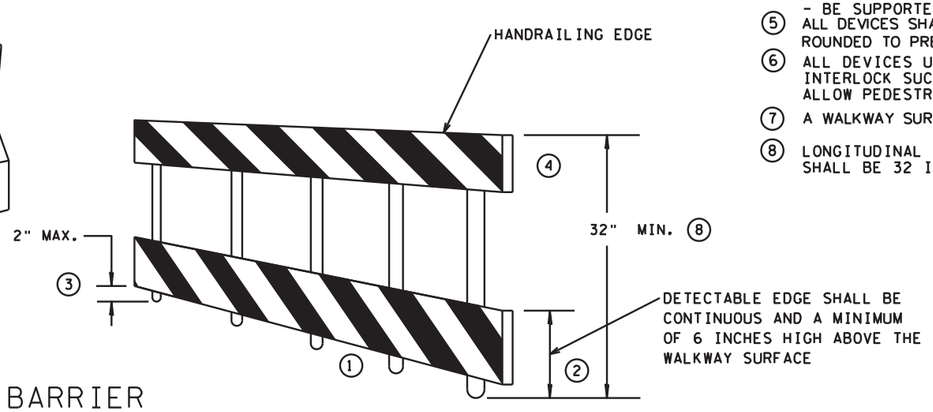
BARRICADES SHALL BE PLACED ACROSS THE ENTIRE WIDTH OF THE WALKWAY SURFACE.

SPECIFIC NOTES

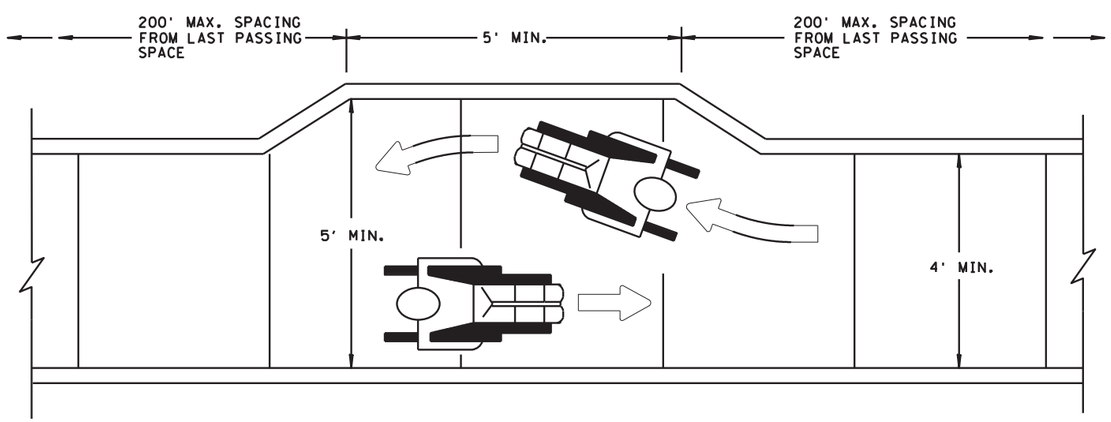
1. ANY TRIPPING HAZARD IN THE WALKWAY NEEDS A DETECTABLE EDGE. BALLAST SHALL BE LOCATED BEHIND OR INTERNAL TO THE DEVICE. ANY SUPPORT ON THE FRONT OF THE DEVICE SHALL NOT EXTEND INTO THE 48 INCH MINIMUM WALKWAY CLEAR SPACE AND SHALL NOT EXCEED 0.5 INCHES IN HEIGHT ABOVE THE WALKWAY SURFACE.
2. DETECTABLE EDGES SHALL BE CONTINUOUS AND 6 INCHES MIN. HIGH ABOVE WALKWAY SURFACE AND HAVE COLOR MARKINGS CONTRASTING WITH THE WALKWAY SURFACE.
3. DEVICES SHALL NOT BLOCK WATER DRAINAGE FROM THE WALKWAY. A GAP HEIGHT OR OPENING FROM THE WALKWAY SURFACE UP TO A MAXIMUM OF 2 INCHES IS ALLOWED FOR DRAINAGE PURPOSES.
4. WHEN HAND GUIDANCE IS REQUIRED, THE TOP RAIL OR TOP SURFACE SHALL:
   - BE IN A VERTICAL PLANE PERPENDICULAR TO THE WALKWAY ABOVE THE DETECTABLE EDGE,
   - BE CONTINUOUS AT A HEIGHT OF 34 TO 38 INCHES ABOVE THE WALKWAY SURFACE, AND
   - BE SUPPORTED WITH MINIMAL INTERFERENCE TO THE PEDESTRIAN'S HANDS OR FINGERS.
5. ALL DEVICES SHALL BE FREE OF SHARP OR ROUGH EDGES, AND FASTENERS (BOLTS) SHALL BE ROUNDED TO PREVENT HARM TO HANDS, ARMS OR CLOTHING OF PEDESTRIANS.
6. ALL DEVICES USED TO CHANNELIZE PEDESTRIAN FLOW SHOULD INTERLOCK SUCH THAT GAPS DO NOT ALLOW PEDESTRIANS TO STRAY FROM THE CHANNELIZED PATH.
7. A WALKWAY SURFACE SHALL BE FIRM, STABLE, AND SLIP RESISTANT.
8. LONGITUDINAL CHANNELIZING DEVICES FOR PEDESTRIANS SHALL BE 32 INCHES HIGH OR GREATER.



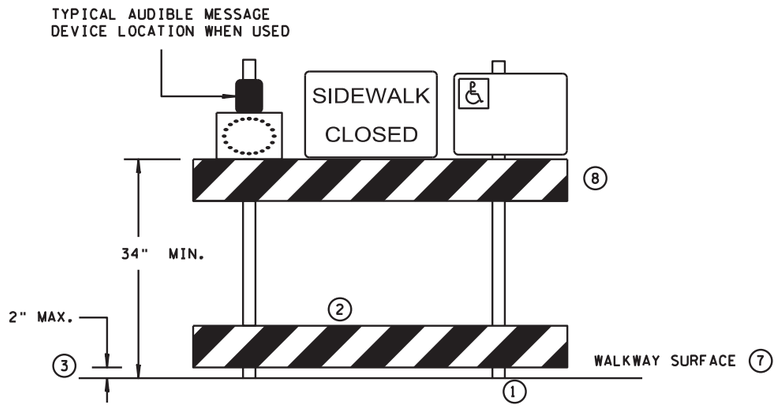
PEDESTRIAN CHANNELIZER USING A BARRIER (MINIMUM REQUIREMENTS)



PEDESTRIAN CHANNELIZER (MINIMUM REQUIREMENTS)



NARROW TEMPORARY PEDESTRIAN ACCESS ROUTE PASSING DETAIL



SIDEWALK BARRICADE

REVISION DATE: 6 JAN 2016

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: CMK				
DESIGNER: CMK				
CHECKED BY: AWH				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC CONTROL DETAILS TPAR - RAMPS

FILE NO. MNT04-134590 TC17 OF TC17

102 / 310

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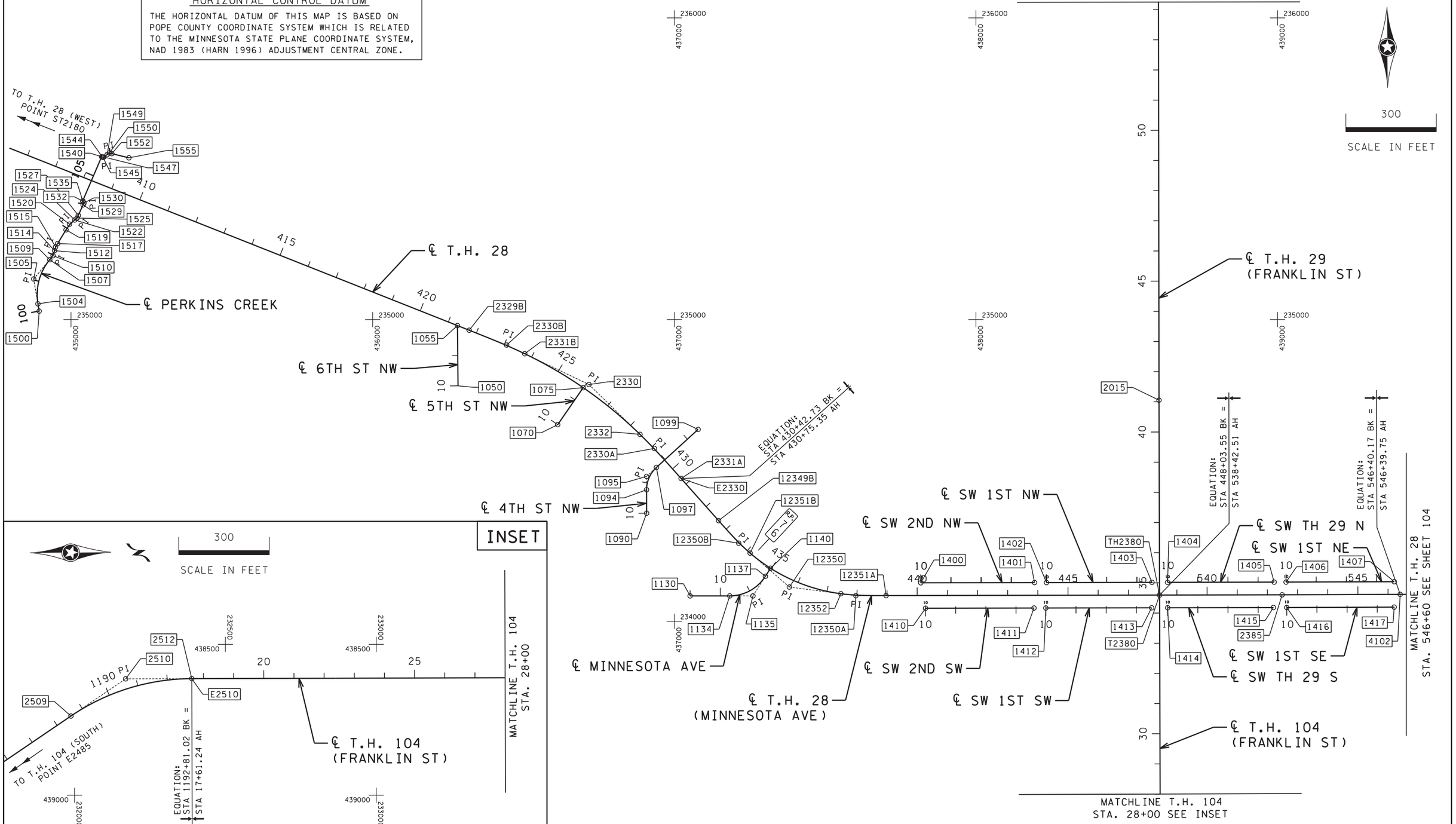
6/30/2017

HORIZONTAL CONTROL DATUM

THE HORIZONTAL DATUM OF THIS MAP IS BASED ON POPE COUNTY COORDINATE SYSTEM WHICH IS RELATED TO THE MINNESOTA STATE PLANE COORDINATE SYSTEM, NAD 1983 (HARN 1996) ADJUSTMENT CENTRAL ZONE.



INSET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Licensed Professional Engineer Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

ALIGNMENT PLAN

FILE NO. MNT04-134590

AL 1 OF AL6

103 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_all.dgn
MODEL: all

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6/30/2017

MATCHLINE T.H. 28
STA. 546+60 SEE SHEET 103

550 555 560 565 570 575 580 585 590 595 865 870 875

12384 12385 P1 12387 2399 2402

234000 440000 234000 442000 234000 443000

℄ T.H. 28

℄ INP. T.H. 55

TO INP. T.H. 55 (NORTH)
POINTS 2608 TO 2045

TO INP. T.H. 55 (SOUTH)
POINT 2046

MATCHLINE T.H. 28
STA. 598+50 SEE INSET

R.P. 7-7

234200 440800 234200 441000 234200 441200

℄ RET. WALL B
℄ RET. WALL D
℄ RET. WALL F
℄ RET. WALL E
℄ RET. WALL A
℄ RET. WALL C
℄ T.H. 28

1900 1905 1910 1915 1920 1925 1930 1935 1940 1945 1950 1955 1960 1965 1970 1975 1980 1985 1990 1995 1997 1999

10 20 30 40 50 60

234000 441200

100
SCALE IN FEET

N

INSET

2434 2435 P1 2437 2400

620 625 600 605 610 615

234000 444000 234000 445000 234000 446000

℄ T.H. 28

R.P. 7-8

233500 446000

MATCHLINE T.H. 28
STA. 598+50

TO T.H. 28 (EAST)
POINT 2450

232000 443000

N

300
SCALE IN FEET

300
SCALE IN FEET

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_all.dgn
MODEL: al2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

ALIGNMENT PLAN

FILE NO. MNT04-134590
AL2 OF AL6

104 / 310

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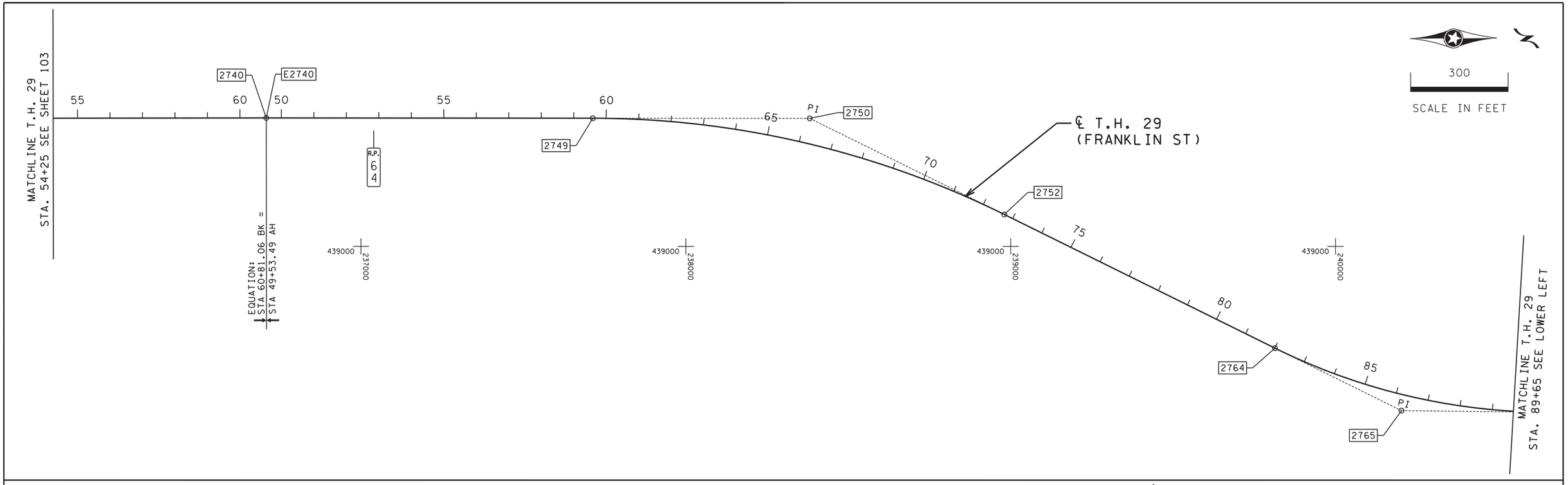
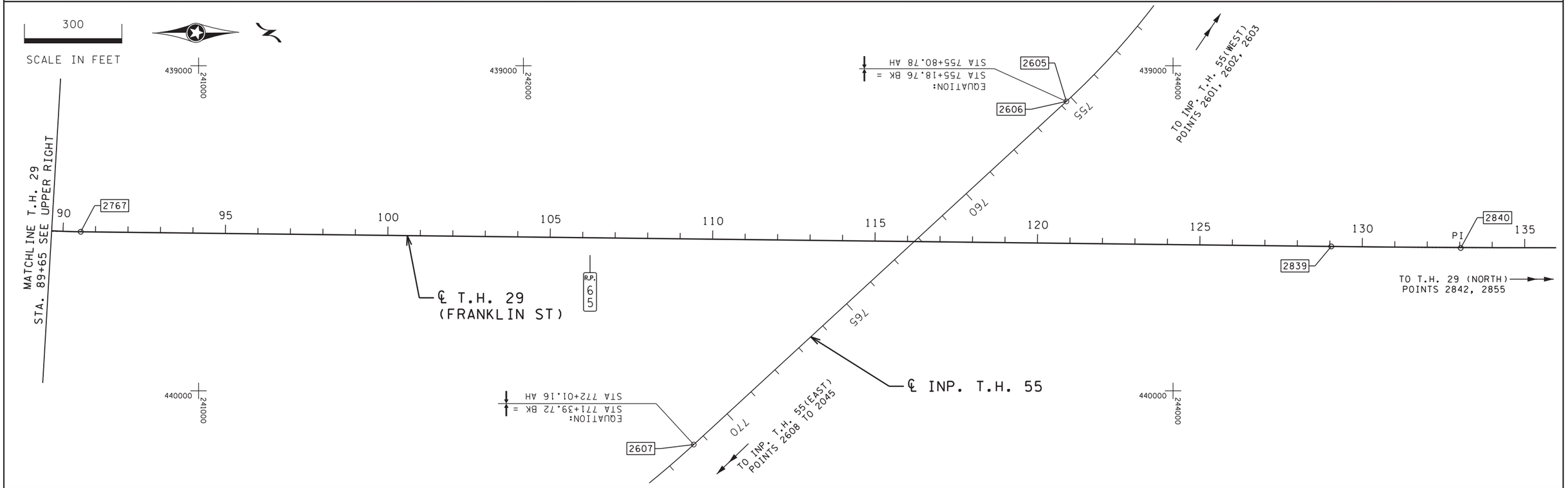
6/30/2017





DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

ALIGNMENT PLAN

FILE NO. MNT04-134590
AL3 OF AL6
105 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_all.dgn
MODEL: all

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
℄ T.H. 28 (CHAIN: 28)										
ST2180	POT	① 388+65.134						433,243.2978	236,183.1688	
2329B	TS	421+74.400						436,320.0813	234,964.7087	111° 36' 15.96"
2330B	PI	423+07.767	4° 00' 00.00"	4° 00' 00.00"	66.698'	133.367'	200.000'	436,444.0793	234,915.6033	PI
2331B	SC	423+74.400						436,504.2272	234,886.7796	115° 36' 15.96"
2330	PI	426+10.675	18° 44' 00.00" RT	4° 00' 00.00"	1,432.394'	236.275'	468.333'	436,717.3000	234,784.6719	PI
2331	CC							435,885.2100	233,595.0475	
2332	CS	428+42.733						436,886.2917	234,619.5422	134° 20' 15.96"
2330A	PI	429+09.431	4° 00' 00.00"	4° 00' 00.00"	66.698'	133.367'	200.000'	436,933.9960	234,572.9281	PI
2331A	ST	430+42.733						437,022.6504	234,473.2925	138° 20' 15.96"
E2330	POT	⊣ EQU. 430+75.351						437,022.6504	234,473.2925	
12349B	TS	432+62.300						437,146.9227	234,333.6271	138° 20' 15.96"
12350B	PI	433+62.390	7° 30' 00.00"	10° 00' 00.00"	50.082'	100.090'	150.000'	437,213.4562	234,258.8523	PI
12351B	SC	434+12.300						437,251.3463	234,226.1029	130° 50' 15.96"
12350	PI	435+84.475	33° 27' 04.67" LT	10° 00' 00.00"	572.958'	172.175'	334.513'	437,381.6079	234,113.5142	PI
12351	CC							437,626.0145	234,659.5822	
12352	CS	437+46.813						437,552.3543	234,091.3791	97° 23' 11.29"
12350A	PI	437+96.895	7° 30' 00.00"	10° 00' 00.00"	50.082'	100.090'	150.000'	437,602.0204	234,084.9405	PI
12351A	ST	438+96.813						437,702.1101	234,085.1388	89° 53' 11.29"
TH2380	POT	448+03.554						438,608.8500	234,086.9360	
		⊣ EQU. 538+42.505						438,608.8500	234,086.9360	
2385	POT	542+48.868						439,015.2127	234,087.7407	
4102	POT	546+40.168						439,406.5100	234,089.1970	
		⊣ EQU. 546+39.750						439,406.5100	234,089.1970	
12384	PC	563+76.154						441,142.9024	234,095.6593	89° 47' 12.35"
12385	PI	568+35.000	65° 17' 34.43" RT	8° 00' 00.00"	716.197'	458.846'	816.161'	441,601.7450	234,097.3670	PI
12386	CC							441,145.5679	233,379.4670	
12387	PT	571+92.315						441,795.0832	233,681.2423	155° 04' 46.78"
2399	PC	576+20.377						441,975.4504	233,293.0353	155° 04' 46.78"
2400	PI	584+13.726	88° 12' 40.54" LT	7° 00' 00.00"	818.511'	793.348'	1,260.161'	442,309.7340	232,573.5520	PI
2401	CC							442,717.7537	233,637.9214	
2402	PT	588+80.538						443,039.3012	232,885.2145	66° 52' 06.24"
2434	PC	616+77.354						445,611.2665	233,983.9277	66° 52' 06.24"
2435	PI	621+43.427	22° 59' 24.59" RT	2° 30' 00.00"	2,291.831'	466.073'	919.607'	446,039.8700	234,167.0220	PI
2436	CC							446,511.5995	231,876.3483	
2437	PT	625+96.960						446,505.9420	234,168.1725	89° 51' 30.83"
2450	POT	① 661+06.926						450,015.8970	234,176.8370	
℄ T.H. 104 (CHAIN:104)										
E2485	POT	① 1173+28.437						439,596.1458	230,725.2072	
2509	PC	1188+55.396						438,737.5957	231,987.9413	325° 47' 15.65"
2510	PI	1190+74.700	34° 02' 59.23" RT	8° 00' 00.00"	716.197'	219.304'	425.622'	438,614.2897	232,169.2966	PI
2511	CC							439,329.8619	232,390.6312	
2512	PT	1192+81.019						438,613.6676	232,388.5995	359° 50' 14.88"
E2510	POT	⊣ EQU. 17+61.236						438,613.6676	232,388.5995	
T2380	POT	34+59.580						438,608.8500	234,086.9360	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
℄ T.H. 29 (CHAIN: 29)										
T2380	POT	34+59.580						438,608.8500	234,086.9360	
2015	POT	41+05.631						438,606.9952	234,732.9849	
2740	POT	60+81.057						438,604.4970	236,708.4090	
		⊣ EQU.								
E2740	POT	49+53.492						438,604.4970	236,708.4090	
2749	PC	59+58.886						438,605.3082	237,713.8021	0° 02' 46.42"
2750	PI	66+26.690	26° 14' 36.64" RT	2° 00' 00.00"	2,864.789'	667.804'	1,312.176'	438,605.8470	238,381.6060	PI
2751	CC							441,470.0962	237,711.4907	
2752	PT	72+71.062						438,901.6245	238,980.3363	26° 17' 23.07"
2764	PC	82+00.684						439,313.3641	239,813.8037	26° 17' 23.07"
2765	PI	86+34.913	25° 37' 05.75" LT	3° 00' 00.00"	1,909.859'	434.230'	853.942'	439,505.6890	240,203.1190	PI
2766	CC							437,601.0497	240,659.7007	
2767	PT	90+54.626						439,510.7778	240,637.3187	0° 40' 17.32"
2839	PC	129+04.638						439,555.8970	244,487.0661	0° 40' 17.32"
2840	PI	133+03.216	0° 47' 49.72" LT	0° 06' 00.00"	57,295.780'	398.578'	797.144'	439,560.5680	244,885.6170	PI
2841	CC							382,264.0521	245,158.5280	
2842	PT	① 137+01.781						439,559.6938	245,284.1943	359° 52' 27.60"
2855	POT	① 169+62.546						439,552.5420	248,544.9510	
℄ 6TH STREET NW (CHAIN: 6TH)										
1050	POT	10+00.000						436,283.1002	234,780.3784	
1055	POT	11+99.763						436,281.1360	234,980.1317	
℄ 5TH STREET NW (CHAIN: 5TH)										
1070	POT	10+00.000						436,613.5147	234,651.7095	
1075	POT	11+49.054						436,698.1041	234,774.4360	
℄ 4TH STREET NW (CHAIN: 4TH)										
1090	POT	10+00.000						436,908.2707	234,358.2093	
1094	PC	10+77.692						436,908.1528	234,435.9016	359° 54' 46.96"
1095	PI	11+21.952	47° 44' 54.28" RT	57° 17' 44.81"	100.000'	44.260'	83.337'	436,908.0856	234,480.1616	PI
1096	CC							437,008.1527	234,436.0534	
1097	PT	11+61.029						436,940.8017	234,509.9712	47° 39' 41.24"
1099	PC	13+47.932						437,078.9561	234,635.8520	47° 39' 41.24"

NOTE:
① ALIGNMENT POINT IS BEYOND PROJECT LIMIT AND DOES NOT SHOW ON ALIGNMENT PLAN VIEW.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

ALIGNMENT TABULATIONS

FILE NO. MNT04-134590
AL 4 OF AL6
106 / 310

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6/30/2017
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MODEL: al4-al6

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
℄ MINNESOTA AVE (CHAIN: MINNESOTA)										
1130	POT	9+00.000						437,052.4926	234,084.1705	
1134	PC	10+31.366						437,183.8583	234,084.1705	90° 00' 00.00"
1135	PI	11+08.328	57° 35' 53.31" LT	40° 55' 32.00"	140.000'	76.963'	140.739'	437,260.8210	234,084.1705	PI
1136	CC							437,183.8583	234,224.1705	
1137	PT	11+72.105						437,302.0618	234,149.1510	32° 24' 06.69"
1140	POT	12+03.701						437,318.9927	234,175.8279	
℄ PERKINS CREEK (CHAIN: PERKINS_CREEK)										
1500	POT	100+00.000						434,894.4740	235,028.0160	
1504	PC	100+24.546						434,890.3239	235,052.2082	350° 15' 57.11"
1505	PI	101+07.968	49° 24' 20.08" RT	31° 35' 38.98"	181.349'	83.422'	156.376'	434,876.2192	235,134.4292	PI
1506	CC							435,069.0623	235,082.8701	
1507	PRC	101+80.921						434,929.4745	235,198.6406	39° 40' 17.19"
1509	PRC	101+80.921						434,929.4745	235,198.6406	39° 40' 17.19"
1510	PI	101+98.174	23° 35' 36.65" LT	69° 21' 34.86"	82.607'	17.253'	34.016'	434,940.4883	235,211.9203	PI
1511	CC							434,865.8906	235,251.3755	
1512	PRC	102+14.937						434,945.2663	235,228.4980	16° 04' 40.53"
1514	PRC	102+14.937						434,945.2663	235,228.4980	16° 04' 40.53"
1515	PI	102+27.884	15° 23' 51.89" RT	59° 49' 32.22"	95.771'	12.947'	25.738'	434,948.8518	235,240.9385	PI
1516	CC							435,037.2916	235,201.9747	
1517	PT	102+40.675						434,955.6119	235,251.9804	31° 28' 32.42"
1519	PC	102+94.009						434,983.4595	235,297.4669	31° 28' 32.42"
1520	PI	103+16.127	19° 37' 39.89" RT	44° 48' 33.27"	127.866'	22.118'	43.803'	434,995.0082	235,316.3306	PI
1521	CC							435,092.5115	235,230.7034	
1522	PRC	103+37.812						435,012.2224	235,330.2190	51° 06' 12.31"
1524	PRC	103+37.812						435,012.2224	235,330.2190	51° 06' 12.31"
1525	PI	103+47.807	26° 25' 09.32" LT	134° 33' 12.39"	42.582'	9.995'	19.635'	435,020.0014	235,336.4951	PI
1526	CC							434,985.4843	235,363.3599	
1527	PT	103+57.447						435,024.1755	235,345.5769	24° 41' 02.99"
1529	PC	103+95.616						435,040.1156	235,380.2585	24° 41' 02.99"
1530	PI	104+02.545	55° 16' 52.02" LT	433° 01' 49.76"	13.231'	6.929'	12.766'	435,043.0093	235,386.5545	PI
1531	CC							435,028.0933	235,385.7841	
1532	PT	104+08.382						435,039.4824	235,392.5188	329° 24' 10.97"
1535	POT	104+09.580						435,038.8729	235,393.5496	
1540	POT	105+68.603						435,101.5131	235,539.7161	
1544	PC	105+71.505						435,104.1481	235,538.5006	114° 45' 46.18"
1545	PI	105+73.984	60° 03' 30.77" LT	1336° 13' 05.45"	4.288'	2.479'	4.495'	435,106.3987	235,537.4624	PI
1546	CC							435,105.9441	235,542.3942	
1547	PT	105+76.000						435,108.4217	235,538.8945	54° 42' 15.41"
1549	PC	105+90.225						435,120.0323	235,547.1140	54° 42' 15.41"
1550	PI	105+98.757	49° 04' 04.53" RT	306° 31' 33.09"	18.692'	8.532'	16.008'	435,126.9958	235,552.0436	PI
1551	CC							435,130.8324	235,531.8579	
1552	PT	106+06.233						435,135.2823	235,550.0125	103° 46' 19.94"
1555	POT	106+64.56						435,191.9348	235,536.1265	
℄ SW 2ND NW (CHAIN: SW_2ND_NW)										
1400	POT	10+00.000						437,817.2184	234,127.5337	
1401	POT	13+77.171						438,194.3883	234,128.2810	

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA DELTA	DEGREE	RADIUS	TANGENT	LENGTH	COORDINATES X	Y	AZIMUTH
℄ SW 1ST NW (CHAIN: SW_1ST_NW)										
1402	POT	10+00.000						438,233.8927	234,128.3593	
1403	POT	13+49.644						438,583.5365	234,129.0521	
℄ SW TH 29 N (CHAIN: SW_TH29_N)										
1404	POT	10+00.000						438,635.4784	234,129.1551	
1405	POT	13+53.259						438,988.7364	234,129.8550	
℄ SW 1ST NE (CHAIN: SW_1ST_NE)										
1406	POT	10+00.000						439,028.2626	234,129.9563	
1407	POT	13+58.532						439,386.7920	234,131.2906	
℄ SW 2ND SW (CHAIN: SW_2ND_SW)										
1410	POT	10+00.000						437,832.9116	234,043.2312	
1411	POT	13+59.632						438,192.5433	234,043.9438	
℄ SW 1ST SW (CHAIN: SW_1ST_SW)										
1412	POT	10+00.000						438,231.8032	234,044.0216	
1413	POT	13+50.808						438,582.6105	234,044.7167	
℄ SW TH 29 S (CHAIN: SW_TH29_S)										
1414	POT	10+00.000						438,635.7295	234,044.8220	
1415	POT	13+50.490						438,986.2193	234,045.5165	
℄ SW 1ST SE (CHAIN: SW_1ST_SE)										
1416	POT	10+00.000						439,030.4721	234,045.6305	
1417	POT	13+56.261						439,386.7306	234,046.9564	
℄ INP. T.H. 55 (CHAIN: 55)										
2601	POT	① 732+66.809						437,140.8230	244,721.9170	
2602	PC	① 745+31.124						438,307.2829	244,234.2054	112° 41' 25.51"
2603	PI	① 750+32.730	24° 41' 27.46" RT	2° 30' 00.00"	2,291.831'	501.606'	987.638'	438,770.0660	244,040.7100	PI
2604	CC	①						437,423.2050	242,119.7560	
2605	PT	┼ EQU. 755+18.762						439,109.7111	243,671.5896	137° 22' 52.97"
2606	POT	┼ EQU. 755+80.776						439,109.7111	243,671.5896	
2607	PC	┼ EQU. 771+39.715						440,165.2924	242,524.4019	
		772+01.155						440,165.2924	242,524.4019	137° 22' 52.97"
2608	PI	① 783+15.300	42° 30' 11.22" RT	2° 00' 00.00"	2,864.789'	1,114.145'	2,125.156'	440,919.6970	241,704.5280	PI
2609	CC	①						438,057.1599	240,584.6099	
2610	PT	① 793+26.311						440,921.9430	240,590.3851	179° 53' 04.19"
2611	POT	① 792+66.541						440,921.9430	240,590.3851	
2612	PC	① 808+90.841						440,925.2175	238,966.0884	179° 53' 04.19"
2613	PI	① 815+20.100	36° 28' 18.98" LT	3° 00' 00.00"	1,909.859'	629.259'	1,215.731'	440,926.4860	238,336.8310	PI
2614	CC	①						442,835.0729	238,969.9385	
2615	PT	① 821+06.572						441,301.5549	237,831.5689	143° 24' 45.21"
2616	POT	① 821+08.931						441,301.5549	237,831.5689	
2617	PC	① 834+57.541						442,105.3922	236,748.7054	143° 24' 45.21"
2618	PI	① 840+79.600	12° 23' 33.53" RT	1° 00' 00.00"	5,729.578'	622.059'	1,239.265'	442,476.1700	236,249.2240	PI
2619	CC	①						437,504.8383	233,333.5967	
2620	PT	① 846+96.805						442,731.1149	235,681.8080	155° 48' 18.73"
2245	POT	① 858+41.700						443,199.0292	234,640.3913	
2045	POT	① 858+96.853						443,221.6330	234,590.0830	
2046	TS	① 883+21.409						444,215.3159	232,378.5076	

NOTE:

① ALIGNMENT POINT IS BEYOND PROJECT LIMIT AND DOES NOT SHOW ON ALIGNMENT PLAN VIEW.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

ALIGNMENT TABULATIONS

FILE NO. MNT04-134590 AL5 OF AL6

107 / 310

ALIGNMENT TABULATION

POINT NUMBER	POINT	STATION	CIRCULAR CURVE DATA					COORDINATES		AZIMUTH
			DELTA	DEGREE	RADIUS	TANGENT	LENGTH	X	Y	
℄ RETAINING WALL A (CHAIN: RET_A)										
1900	POT	10+00.000						440,791.4576	234,044.7635	
1905	POT	10+53.076						440,844.5326	234,045.1268	
1910	POT	10+63.553						440,844.6043	234,034.6504	
℄ RETAINING WALL B (CHAIN: RET_B)										
1915	POT	20+00.000						440,848.6043	234,034.6504	
1920	POT	20+10.504						440,848.5324	234,045.1542	
1925	POT	20+79.751						440,917.7773	234,045.6282	
1930	POT	20+87.305						440,917.8290	234,038.0736	
℄ RETAINING WALL C (CHAIN: RET_C)										
1935	POT	30+00.000						440,921.8290	234,038.0736	
1940	POT	30+07.582						440,921.7771	234,045.6556	
1945	POT	30+64.071						440,978.2649	234,046.0394	
1950	POT	30+76.308						440,978.2493	234,033.8027	
℄ RETAINING WALL D (CHAIN: RET_D)										
1955	POT	40+00.000						440,982.2493	234,033.8027	
1960	POT	40+12.232						440,982.2649	234,046.0343	
1965	POT	40+71.333						441,041.3664	234,045.9587	
1970	POT	40+81.345						441,041.3536	234,035.9469	
℄ RETAINING WALL E (CHAIN: RET_E)										
1975	POT	50+00.000						441,045.3536	234,035.9469	
1980	POT	50+10.007						441,045.3664	234,045.9536	
1985	POT	50+57.133						441,092.4929	234,045.9339	
℄ RETAINING WALL F (CHAIN: RET_F)										
1990	POT	60+00.000						441,122.8292	234,151.1891	
1995	POT	60+05.552						441,123.7221	234,145.7098	
1997	POT	60+32.835						441,151.0054	234,145.7765	
1999	POT	60+38.436						441,151.0568	234,151.3773	

7:57:03 AM

6/30/2017

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_al1.dgn
MODEL: al4-al6

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

ALIGNMENT TABULATIONS

FILE NO. MNT04-134590
AL6 OF AL6

6:00:42 PM

6/27/2017

50

SCALE IN FEET

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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."
3. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

415

420

T.H. 28

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 110

BEGIN FULL WIDTH CONSTRUCTION
T.H.28 STA.414+81.91
R.P. 75+640

LEGEND

INPLACE R/W	INPLACE DRAINAGE PIPE
CONSTRUCTION LIMITS	INPLACE SANITARY SEWER
P-BUR — INPLACE BURIED POWER	SS — INPLACE SANITARY SERVICE
F/O -BUR — INPLACE FIBER OPTIC LINE	INPLACE WATERMAIN
INPLACE COMMUNICATION LINE	WS WS — INPLACE WATERMAIN SERVICE
OHU — INPLACE OVERHEAD COMM LINE	EXISTING ROADWAY
OHP — INPLACE OVERHEAD POWER LINE	PROPOSED CONSTRUCTION

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITIES AND TOPOGRAPHY PLAN

T.H. 28 STA 413+00 - 420+65

FILE NO. MNT04-134590

TP1 OF TP14

109/310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp1.dgn
MODEL: tp1

50
SCALE IN FEET

GENERAL NOTES:

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3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 109

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 111

T.H.28

6TH ST NW

2ND AVE NW

5TH ST NW

421 425 427

11 10

515
FIRST BAPTIST
CHURCH

OHP OHU G F/O -BUR CM UMH

FILE: R:\1521_TH 28 Glenwood (04)\Design\Sheets\CD610332_tp2.dgn
MODEL: tp2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY
AND TOPOGRAPHY PLAN
T.H. 28 STA 420+65 - 428+20

FILE NO. MNT04-134590
TP2 OF TP14

110 / 310

50

SCALE IN FEET

GENERAL NOTES:

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3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

BEGIN S.P. 061-090-006
T.H.28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 110

MATCHLINE T.H. 28
STA. 435+75 SEE SHEET 112

T.H.28

4TH ST NW

MINNESOTA AVE

430

435

F/O -BUR

OHP

OHU

SS

WS

SM

DAIRY QUEEN

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 28 STA 428+20 - 435+75

FILE NO. MNT04-134590
TP3 OF TP14
111 / 310

6:00:43 PM
6/27/2017
FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp3.dgn
MODEL: tp3

50

SCALE IN FEET

GENERAL NOTES:

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3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

MATCHLINE T.H. 28
STA. 435+75 SEE SHEET 111

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 113

436 438 440

10 12

T.H. 28

2ND ST SW

HOTEL

237
GAS MART

AUTORAMA

202
THE GROG
SHOP

109
AUTO VALUE

125
FAMILY DOLLAR

6:00:44 PM
6/27/2017

FILE: R:\152_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp4.dgn
MODEL: tp4

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Lic. No. 45407
Licensed Professional Engineer
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY
AND TOPOGRAPHY PLAN
T.H. 28 STA 435+75 - 442+90

FILE NO. MNT04-134590
TP4 OF TP14

112 / 310

6:00:45 PM

6/27/2017

GENERAL NOTES:

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2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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."
3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

50

SCALE IN FEET

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 120

1ST ST NW

T.H. 29

104 SUBWAY

30 NAPA AUTO PARTS

24 ACE HARDWARE

WORLD OF WELLNESS

SCREEN PRINTS PLUS

GINGER BREAD CAFE

PASTRY SHOPPE BAKERY

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

GLENWOOD STATE BANK

5 GLENWOOD STATE BANK

LANE STUDIO

15 LICENSE BUREAU

AMERICAN BUSINESS FORMS

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 112

T.H. 28

103 MINNEWASKA ABSTRACT & TITLE

1ST ST SW

2 EAGLE STATE BANK

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431
END S.P. 6110-21
T.H.104 STA. 34+59.58
R.P. 40+00.891

T.H. 104

2 THE VALLEY TROI

8 CHINESE RESTAURANT

14 PIZZA RANCH

CURVES FOR WOMEN

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 119

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 114

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590
TP5 OF TP14
113 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp5.dgn
MODEL: tp5

6:00:45 PM

6/27/2017

50

SCALE IN FEET

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 113

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 115

1ST ST NE

1ST ST SE

2ND ST NE

2ND ST SE

T.H. 28

STUDIO ARCHITECTS

STRECKER AGENCY

31
AMERICAN BUSINESS FORMS

107
PALMER CREATIONS

MAINLY CUTS

131
POPE COUNTY FAMILY COLLABORATIVE

CITY OF GLENWOOD

137
GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

28
THE WALK IN CLOSET

ACCOUNTANTS
JEERY WANSNESS

130
POPE COUNTY COURT HOUSE

206
GLENWOOD LUTHERAN

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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."
3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 28 STA 540+80 - 548+30

FILE NO. MNT04-134590
TP6 OF TP14

114 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp6.dgn
MODEL: tp6

6:00:46 PM

6/27/2017

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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."
3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

50

SCALE IN FEET

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 114

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 116

3RD ST NE

4TH ST NE

307
CASEY'S GENERAL STORE

3RD ST SE

4TH ST SE

EXTREME GAS AND AUTO

T.H. 28

550

555

BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590
TP7 OF TP14

115 / 310

FILE: R:\1521_TH 28 Glenwood (04)\Design\Sheets\CD610332_tp7.dgn
MODEL: tp7

6:00:47 PM

6/27/2017

50

SCALE IN FEET

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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."
3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 115

5TH ST NE

6TH ST NE

556

558

560

T.H. 28

5TH ST SE

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 117

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp8.dgn
MODEL: tp8

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 28 STA 555+80 - 563+30

FILE NO. MNT04-134590
TP8 OF TP14

116 / 310

50
SCALE IN FEET

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 116

7TH ST NE

6TH ST SE

MINNESOTA AVE E

T.H. 28

565

570

F/O -BUR
OHU
OHP
SS
OHP
UMH

GENERAL NOTES:

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45407
Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 28 STA 563+30 - 570+00

FILE NO. MNT04-134590
TP9 OF TP14
117 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp9.dgn
MODEL: tp9

6:00:48 PM

6/27/2017

50

SCALE IN FEET

4TH AVE SW

3RD AVE SW

MATCHLINE T.H. 104
STA. 17+70 SEE INSET

MATCHLINE T.H. 104
STA. 25+00 SEE SHEET 119

20

23

24

T.H. 104

GLENWOOD
MEDICAL CENTER

4TH AVE SE

INSET

BEGIN S.P. 6110-21
T.H. 104 STA. 1189+70.00
R.P. 40+00.516

T.H. 104

1190

1192

EQUATION:
STA 1192+81.02 BK =
STA 17+61.24 AH

MATCHLINE T.H. 104
STA. 17+70
SEE SHEET ABOVE

50

SCALE IN FEET

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY
AND TOPOGRAPHY PLAN

T.H. 104 STA 11+90.00 - 25+00

FILE NO. MNT04-134590

TP10 OF TP14

118 / 310

FILE: R:\1521_TH 28 Glenwood 104\Design\Sheets\CD610332_tp10.dgn
MODEL: tp10

6:00:50 PM

6/27/2017

50

SCALE IN FEET

2ND AVENUE SW

1ST AVENUE SW

11
MINEWASKA MEATS

T.H. 104

MATCHLINE T.H. 104
STA. 25+00 SEE SHEET 118

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 113

115
COUNSELOR REALTY

VILLAGE INN

2ND AVENUE SE

1ST AVENUE SE

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
2. THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS UTILITY 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."
3. FOR LEGEND INFORMATION, SEE INPLACE UTILITY AND TOPOGRAPHY PLAN SHEET 109.
4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Lic. No. 45407
Licensed Professional Engineer

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN

T.H. 104 STA 25+00 - 32+50

FILE NO. MNT04-134590

TP11 OF TP14

119 / 310

FILE: R:\1521_TH 28 Glenwood (04)\Design\Sheets\CD610332_tp11.dgn
MODEL: tp11

6:00:50 PM

6/27/2017

50

SCALE IN FEET

1ST AVENUE NW

SACRED HEART CATHOLIC CHURCH

2ND AVENUE NW

3RD AVENUE NW

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 113

MATCHLINE T.H. 29
STA. 44+30 SEE SHEET 121

P-BUR

SS

WS

OHP

OHU

40

43

44

T.H. 29

1ST AVENUE NE

GLENWOOD COLLISION CENTER
110

2ND AVENUE NE

3RD AVENUE NE

GENERAL NOTES:

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4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp12.dgn
MODEL: tp12

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITIES AND TOPOGRAPHY PLAN

T.H. 29 STA 36+80 - 44+30

FILE NO. MNT04-134590 TP12 OF TP14

120 / 310

6:00:51 PM

6/27/2017

50

SCALE IN FEET

3RD AVENUE NW

3RD AVENUE NE

MATCHLINE T.H. 29
STA. 44+30 SEE SHEET 120

MATCHLINE T.H. 29
STA. 51+70 SEE SHEET 122

45

50

T.H. 29

US POST OFFICE

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
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4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM				
DRAWN BY: SMN				
DESIGNER: AWH				
CHECKED BY: AWH	NO.	BY	DATE	REVISIONS

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Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN

T.H. 29 STA 44+30 - 51+70

FILE NO. MNT04-134590

TP13 OF TP14

121 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp13.dgn
MODEL: tp13

6:00:52 PM

6/27/2017

50

SCALE IN FEET

6TH AVENUE NW

6TH AVENUE NE

MATCHLINE T.H. 29
STA. 51+70 SEE SHEET 121

T.H. 29

55

57

59

GENERAL NOTES:

1. ALL UTILITY WORK SHOWN SHALL BE DONE BY OTHERS UNLESS NOTED.
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4. SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

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DESIGNER: AWH				
CHECKED BY: AWH				

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Certified By: _____ Licensed Professional Engineer Lic. No. 45407

Printed Name: ANDREW W. HELMERS Date: 06/29/2017

HZUNITED

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE UTILITY AND TOPOGRAPHY PLAN
T.H. 29 STA 51+70 - 59+40

FILE NO. MNT04-134590
TP14 OF TP14

122 / 310

FILE: R:\1521_TH 28 Glenwood (D4)\Design\Sheets\CD610332_tp14.dgn
MODEL: tp14

7:57:08 AM

6/30/2017

10TH ST. NW

F/O -BUR

FM

6" HDPE FM

℄ T.H. 28

105

410

104

MATCHLINE T.H. 28
STA. 413+30 SEE SHEET 124

BEGIN S.P. 6103-32
T.H. 28 STA. 407+72.44
R.P. 75+00.503

102

℄ PERKINS CREEK ④

MATCHLINE PERKINS CREEK
STA. 101+25 SEE INSET A

SPECIFIC NOTES:

① PAID FOR AS EXCAVATION-COMMON.

② SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

③ SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

④ SEE MISCELLANEOUS DETAIL SHEETS FOR PERKINS CREEK MODIFICATION DETAILS.

50

SCALE IN FEET

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE ①
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS

LEGEND

- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE ③
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) ②
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

INSET A

MATCHLINE PERKINS CREEK
STA. 101+25

101

℄ PERKINS CREEK ④

100

50

SCALE IN FEET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 406+00 - 413+30

FILE NO. MNT04-134590

RM1 OF RM15

123 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_rem1.dgn
MODEL: rm1

7:57:08 AM

6/30/2017

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SCALE IN FEET

N

BROWNIES TIRE SERVICE

MATCHLINE T.H. 28
STA. 413+30 SEE SHEET 123

EX. 24" X 81' CMP
+ 2 APRONS (REMOVE)

℄ T.H. 28

EX. 18" X 53' CMP
+ 2 APRONS (REMOVE)

EX. 18" X 54' CMP
+ 2 APRONS (REMOVE)

415

420

EX. 18" X 38' CMP
+ 2 APRONS (REMOVE)

EX. 18" X 34' CMP
+ 2 APRONS (REMOVE)

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 125

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

SPECIFIC NOTES:

① PAID FOR AS EXCAVATION-COMMON.

② SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

③ SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE ①
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE ③
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) ②
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 413+30 - 420+65

FILE NO. MNT04-134590 RM2 OF RM15

124 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_rem1.dgn
MODEL: rm2

50

SCALE IN FEET

SPECIFIC NOTES:

1. PAID FOR AS EXCAVATION-COMMON.
2. SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.
3. SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

PLUG EXISTING SANITARY AT MH

12+40 PLUG EXISTING SANITARY

℄ T.H. 28

425

427

EX. 18" X 52' CMP + 2 APRONS (REMOVE)

EX. 18" X 51' CMP + 2 APRONS (REMOVE)

MATCHLINE T.H. 28 STA. 420+65 SEE SHEET 124

MATCHLINE T.H. 28 STA. 428+20 SEE SHEET 126

℄ 5TH ST NW

℄ 6TH ST NW

2ND AVE. NW

DISCONNECT SUMP LINE FROM STRUCTURE (INCIDENTAL)

515 FIRST BAPTIST CHURCH

11

10

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 420+65 - 428+20

FILE NO. MNT04-134590

RM3 OF RM15

125 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_rem1.dgn
MODEL: rm3

6/30/2017 7:57:09 AM

50

SCALE IN FEET

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

VERIFY STORM SYSTEM IMPACTS PRIOR TO REMOVAL. SEE INPLACE UTILITY TAB NOTE.

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 125

MATCHLINE T.H. 28
STA. 435+75 SEE SHEET 127

430

435

PLUG AND ABANDON STORM SEWER

℄ T.H. 28

℄ 4TH ST NW

℄ MINNESOTA AVE

4TH ST. NW

MATCH LINE MINNESOTA AVE
STA 9+00 SEE INSET B

INSET B

50

SCALE IN FEET

4TH ST. NW

MINNESOTA AVE

MATCH LINE
MINNESOTA AVE
STA 9+00

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 428+20 - 435+75

FILE NO. MNT04-134590

RM4 OF RM15

126 / 310

7:57:10 AM
6/30/2017
FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_rem1.dgn
MODEL: rm4

7:57:10 AM

6/30/2017

50

SCALE IN FEET

SPECIFIC NOTES:

1. PAID FOR AS EXCAVATION-COMMON.
2. SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.
3. SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
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- TEMPORARY FENCE
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- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
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- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

℄ T.H. 28
(MINNESOTA AVE)

MATCHLINE T.H. 28
STA. 435+75 SEE SHEET 126

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 128

HOTEL

237
GAS MART

AUTORAMA

202
THE GROG
SHOP

2ND ST. SW

125
FAMILY DOLLAR

109
AUTO VALUE

438

440

10

12

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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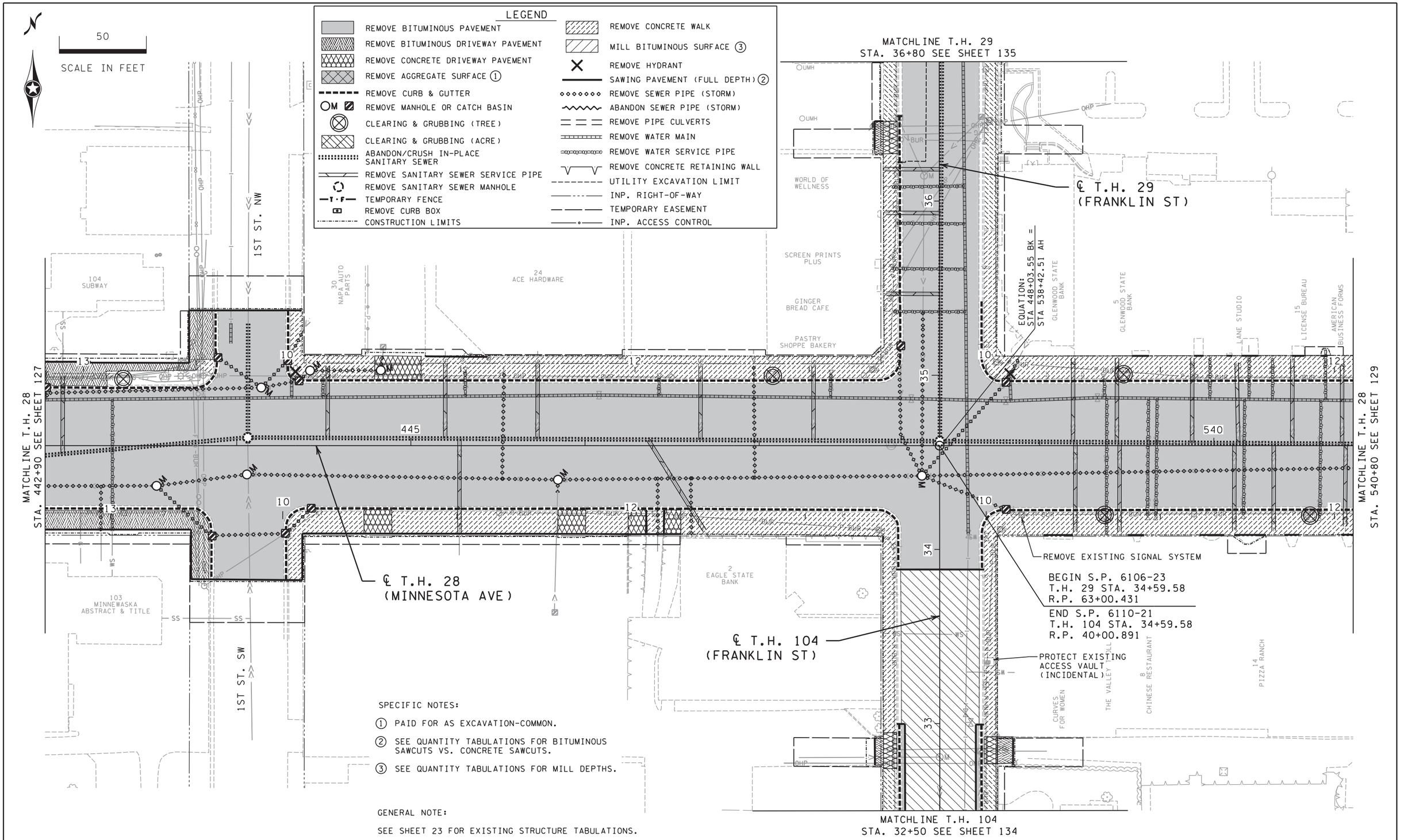
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN
T.H. 28 STA 435+75 - 442+90

FILE NO. MNT04-134590 RM5 OF RM15

127 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-rem1.dgn
MODEL: rm5



SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: RDH				
CHECKED BY: HLR				

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590
RM6 OF RM15
128 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_rem1.dgn
MODEL: rm6
6/30/2017 7:57:11 AM

50
SCALE IN FEET

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- T·F TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 128

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 130

1ST ST. NE

2ND ST. NE

1ST ST. SE

2ND ST. SE

STUDIO ARCHITECTS
STRECKER AGENCY
31 AMERICAN BUSINESS FORMS
107 PALMER CREATIONS
MAINLY CUTS
FAM
CITY GLENW
137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING
28 THE WALK IN CLOSET
ACCOUNTANTS JERRY WANSNESS
130 POPE COUNTY COURT HOUSE
206 GLENWOOD LUTHERAN

PROTECT TREE (TO BE RELOCATED BY OTHERS)

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

℄ T.H. 28
(MINNESOTA AVE)

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 540+80 - 548+30

FILE NO. MNT04-134590
RM7 OF RM15

129 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_rem1.dgn
MODEL: rm7

7:57:12 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD ST. NE

4TH ST. NE

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 129

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 131

550

555

ABANDON STORM SEWER

PROTECT WOOD FENCE (INCIDENTAL)

℄ T.H. 28
(MINNESOTA AVE)

BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

3RD ST. SE

4TH ST. SE

EXTREME GAS AND AUTO

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590 RM8 OF RM15

130 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\CD610332_rem1.dgn
MODEL: rm8

7:57:12 AM

6/30/2017

50

SCALE IN FEET

SPECIFIC NOTES:

① PAID FOR AS EXCAVATION-COMMON.

② SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

③ SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE ①
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE ③
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) ②
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

5TH ST. NE

6TH ST. NE

SALVAGE FENCE

SALVAGE WOOD FENCE

PROTECT WOOD FENCE (INCIDENTAL)

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 130

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 132

558

560

℄ T.H. 28
(MINNESOTA AVE)

5TH ST. SE

REMOVE (8) CONCRETE STEPS

REMOVE (6) CONCRETE STEPS

REMOVE (8) CONCRETE STEPS

REMOVE (8) CONCRETE STEPS

SALVAGE CHAIN LINK FENCE

GENERAL NOTE:

SEE SHEET U-1 FOR MISCELLANEOUS STREET REMOVALS RESULTING FROM CITY UTILITY WORK.

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_rem1.dgn
MODEL: rm9

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 28 STA 555+80 - 563+30

FILE NO. MNT04-134590
RM9 OF RM15

50
SCALE IN FEET

SPECIFIC NOTES:

1. PAID FOR AS EXCAVATION-COMMON.
2. SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.
3. SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

7TH ST. NE

PROTECT STAIRS

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 131

565

MINNESOTA AVE

6TH ST. SE

℄ T.H. 28

570

NOTE: MILL BITUMINOUS EXTENDS TO STA. 615+00.00

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN
T.H. 28 STA 563+30 - 570+00

FILE NO. MNT04-134590
RM10 OF RM15
132 / 310

FILE: S:\KO\MNT04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_rem1.dgn
MODEL: rm10

50
SCALE IN FEET

S. LAKE SHORE DR

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

4TH AVE. SW

MATCHLINE T.H. 104
STA. 17+70 SEE INSET BELOW

20

23

MATCHLINE T.H. 104
STA. 25+00 SEE SHEET 134

℄ T.H. 104
(FRANKLIN ST)

GLENWOOD
MEDICAL CENTER

4TH AVE. SE

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

INSET

50
SCALE IN FEET

BEGIN S.P. 6110-21
T.H. 104
STA. 1189+70.00
R.P. 40+00.516

1190

1192

EQUATION:
STA 1192+81.02 BK =
STA 17+61.24 AH

MATCHLINE T.H. 104
STA. 17+70
SEE SHEET ABOVE

REMOVE
BIT
WALK

℄ T.H. 104
(FRANKLIN ST)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN
T.H. 104 STA 1189+00 - 25+00

FILE NO. MNT04-134590
RM11 OF RM15
133 / 310

FILE: S:\KO\MX\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_rm1.dgn
MODEL: rm11

50
SCALE IN FEET

3RD AVE. SW
2ND AVE. SW
1ST AVE. SW

MATCHLINE T.H. 104
STA. 25+00 SEE SHEET 133

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 128

℄ T.H. 104
(FRANKLIN ST)

PROTECT EXISTING PATIO (INCIDENTAL)

REMOVE BRICK PAVERS

11
MINEWASKA MEATS

115
COUNSELOR REALTY

VILLAGE INN

2ND AVE. SE
1ST AVE. SE

27
30

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

(4) REMOVAL OF TRENCH DRAINS SHALL BE INCLUDED IN REMOVAL OF CONCRETE WALK.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN
T.H. 104 STA 25+00 - 32+50

FILE NO. MNT04-134590
RM12 OF RM15
134 / 310

7:57:14 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

1ST AVE. NW

2ND AVE. NW

3RD AVE. NW

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 128

MATCHLINE T.H. 29
STA. 44+30 SEE SHEET 136

40

43

℄ T.H. 29
(FRANKLIN ST)

GLENWOOD COLLISION CENTER
110

1ST AVE. NE

2ND AVE. NE

3RD AVE. NE

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\CD610332_rem1.dgn
MODEL: rm13

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN
T.H. 29 STA 36+80 - 44+30

FILE NO. MNT04-134590
RM13 OF RM15

135/310

50

SCALE IN FEET

LEGEND

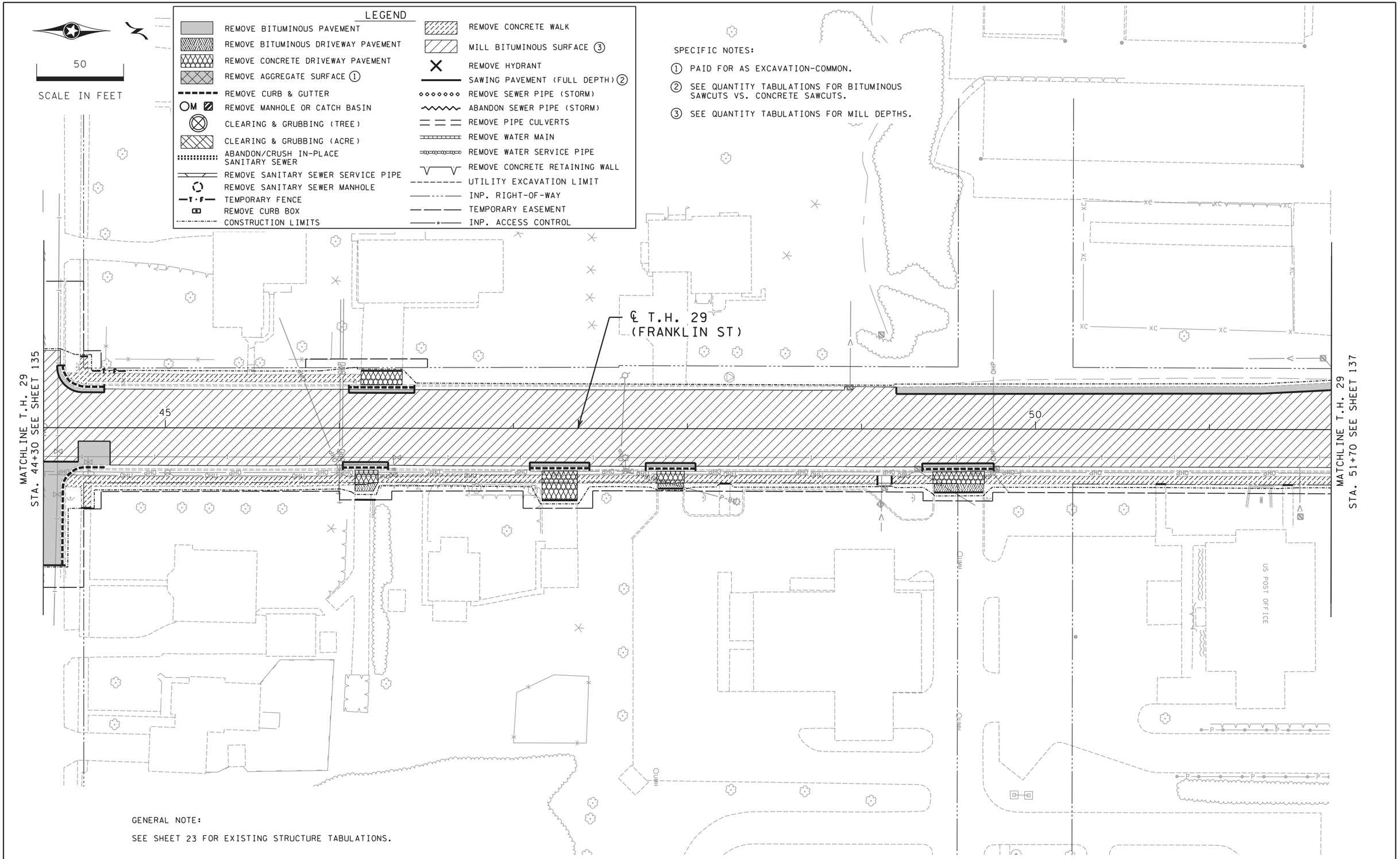
- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.



GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 29 STA 44+30 - 51+70

FILE NO. MNT04-134590
RM14 OF RM15
136 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_rm1.dgn
MODEL: rm14

50

SCALE IN FEET

LEGEND

- REMOVE BITUMINOUS PAVEMENT
- REMOVE BITUMINOUS DRIVEWAY PAVEMENT
- REMOVE CONCRETE DRIVEWAY PAVEMENT
- REMOVE AGGREGATE SURFACE (1)
- REMOVE CURB & GUTTER
- REMOVE MANHOLE OR CATCH BASIN
- CLEARING & GRUBBING (TREE)
- CLEARING & GRUBBING (ACRE)
- ABANDON/CRUSH IN-PLACE SANITARY SEWER
- REMOVE SANITARY SEWER SERVICE PIPE
- REMOVE SANITARY SEWER MANHOLE
- TEMPORARY FENCE
- REMOVE CURB BOX
- CONSTRUCTION LIMITS
- REMOVE CONCRETE WALK
- MILL BITUMINOUS SURFACE (3)
- REMOVE HYDRANT
- SAWING PAVEMENT (FULL DEPTH) (2)
- REMOVE SEWER PIPE (STORM)
- ABANDON SEWER PIPE (STORM)
- REMOVE PIPE CULVERTS
- REMOVE WATER MAIN
- REMOVE WATER SERVICE PIPE
- REMOVE CONCRETE RETAINING WALL
- UTILITY EXCAVATION LIMIT
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

SPECIFIC NOTES:

(1) PAID FOR AS EXCAVATION-COMMON.

(2) SEE QUANTITY TABULATIONS FOR BITUMINOUS SAWCUTS VS. CONCRETE SAWCUTS.

(3) SEE QUANTITY TABULATIONS FOR MILL DEPTHS.

6TH AVE. NW

6TH AVE. NE

8TH AVE. NW

℄ T.H. 29 (FRANKLIN ST)

MATCHLINE T.H. 29 STA. 51+70 SEE SHEET 136

55

57

NOTE: MILL BITUMINOUS EXTENDS TO STA. 108+16.66

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

REMOVAL PLAN

T.H. 29 STA 51+70 - 59+40

FILE NO. MNT04-134590 RM15 OF RM15

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_rem1.dgn
MODEL: rm15

7:57:18 AM

6/30/2017

50

SCALE IN FEET

NOTE:
THE RIGHT OF WAY AND EASEMENTS SHOWN ON THIS PLAN GIVE A GRAPHICAL LOCATION WITH RESPECT TO THE GEOMETRIC DESIGN AND MAP DATA. THE EXACT RIGHT OF WAY, EASEMENTS, AND BOUNDARY CORNERS ARE LOCATED BY REFERENCE TO THE RIGHT OF WAY PLATS AND ARE IDENTIFIED ON THE RIGHT OF WAY MAP.

BROWNIES TIRE SERVICE

STA. 417+00.0
℄ 32' ENTRANCE
76.9' LT

STA. 419+82.8
℄ 32' ENTRANCE
76.4' LT

℄ T.H. 28

+81.9
+29.0
+71.0
+11.8
+14.3
+39.7

INP. 6' SHLD
INP. 12'
INP. 12'
INP. 6' SHLD
6' SHLD
12'
12'
12'
12'
30'
30'
30'
30'
30'
6' SHLD
6' SHLD

R=25'
R=25'
R=25'
R=25'
R=25'

415
420
18'

②
②

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 139

STA. 417+77.1
℄ 16' ENTRANCE
37.5' RT

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

(2) MAINTAIN 1.75' COVER OVER NEW CULVERT.

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-cp1.dgn
MODEL: cp1

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 28 STA 413+00 - 420+65

FILE NO. MNT04-134590
CP1 OF CP14

138 / 310

7:57:18 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.
2. MAINTAIN 1.75' COVER OVER NEW CULVERT.
3. SEE SHEET 48 FOR 2ND AVE NW DETAILS.
4. SEE SHEET 52 FOR CONCRETE GUTTER DESIGN SPECIAL.

℄ T.H. 28

+52.1 75.0' LT

+84.8 75.0' LT

MATCHLINE T.H. 28 STA. 420+65 SEE SHEET 138

MATCHLINE T.H. 28 STA. 428+20 SEE SHEET 140

425

427

6' SHLD

12'

30'

40'

R =25'

+92.6

+24.4

+30.0

+90.0

+50.0

1:10

+75.8

+69.3

+55.6

+30.0

+12.2 40.6' RT

+12.5 9.1' LT

R =57'

R =20'

R =10'

31.5'

14'

16'

10'

CONCRETE GUTTER DESIGN SPECIAL

CONCRETE GUTTER DESIGN SPECIAL

B624 C&G

4' CONCRETE WALK

℄ 6TH ST NW

2ND AVE. NW

℄ 5TH ST NW

INP. 14'

INP. 14'

℄ 20' DRIVEWAY 18.7' RT

STA. 10+55.6

515 FIRST BAPTIST CHURCH

XC

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 28 STA 420+65 - 428+20

FILE NO. MNT04-134590

CP2 OF CP14

139 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_cp1.dgn
MODEL: cp2

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 139

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 141

R.P. 76

430

435

℄ T.H. 28

℄ MINNESOTA AVE

℄ 4TH ST NW

4TH ST. NW

B624 C&G

6' SHLD

8' SHLD

10' BLVD

8' CONC. WALK

8' CONC. MEDIAN

12' BLVD

15' BLVD

17' BLVD

3' CONC. WALK

5' CONC. WALK

6' CONC. WALK

R=25'

R=20'

R=14'

R=48'

R=43'

1:30

1:5

+90.3

+87.4

+42.4

+63.9

+41.9

+12.2

+39.1

+95.2

+95.4

+55.3

+40.7

+28.4

+52.7

+41.0

+00.0

+09.8

+11.5
69.0' RT

+14.3
71.7' RT

+82.3
61.7' RT

STA. 11+35.5
℄ 11' DRIVEWAY
47.9' RT

STA. 10+94.1
℄ 20' DRIVEWAY
46' RT

STA. 10+16.0
℄ 16' DRIVEWAY
47.6' RT

STA. 10+63.3
℄ 24' DRIVEWAY
53.1' RT

INP. 18'

INP. 12' PARKING

INP. 14'

INP. 14'

INP. 12' PARKING

OMH

DAIRY QUEEN

NOTES:

1. PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.
2. 4TH ST WORK TO BE DONE BY OTHERS.
3. CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PLATE 7113. (PAID FOR AS 6" CONCRETE WALK)
4. SEE SHEET 48 FOR CONCRETE MEDIAN DETAILS.
5. CONSTRUCTION OF GRADES IN THIS AREA IS CRITICAL.

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

50
SCALE IN FEET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN
T.H. 28 STA 428+20 - 436+00

FILE NO. MNT04-134590
CP3 OF CP14
140 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_cp1.dgn
MODEL: cp3
6/30/2017 7:57:18 AM

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SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:
(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 140

℄ T.H. 28
(MINNESOTA AVE)

STA. 440+00.4
℄ 23' DRIVEWAY
49.4' LT

℄ SW 2ND NW

STA. 442+69.2
℄ 34' DRIVEWAY
48.2' LT

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 142

6' SHLD
12'
12'
12'
10' SHLD
8' CONC. WALK
12' BLVD
B624 C&G
438
440
12'
12'
12'
10' PARKING
+43.7
68.6' RT
+41.1
77.3' RT
R=15'
+43.7
82.0' RT
+45.6
+88.7
1:7
10
8' CONC. WALK
10' BLVD
6' SHLD
+69.9
1:7.5
+99.9
6' CONC. WALK
7' AMENITY ZONE
7' BIKE LANE
12
B624 C&G
+59.3
19'
1:2
12' BLVD
8' CONC. WALK
+33.3
+52.3
1:5
R=13'
+64.1
+44.0
INP. 12'
INP. 12'
INP. 10' PARKING
+54.4
15'
1:2
B624 C&G
10
+61.3
7' BIKE LANE
7' AMENITY ZONE
6' CONC. WALK
12
R=13'
+42.3
52.1' RT
℄ SW 2ND SW
STA. 441+92.9
℄ 32' DRIVEWAY
48.2' RT
237
GAS MART
STA. 436+59.6
℄ 36' DRIVEWAY
76.5' RT
+06.0
63.7' RT
AUTORAMA
STA. 437+27.5
℄ 24' DRIVEWAY
59.6' RT
STA. 437+97.2
℄ 32' DRIVEWAY
51.7' RT
STA. 439+01.8
℄ 20' DRIVEWAY
50.0' RT
202
THE GROG
SHOP
125
FAMILY DOLLAR
109
AUTO VALUE
HOTEL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN
T.H. 28 STA 436+00 - 442+90

FILE NO. MNT04-134590
CP4 OF CP14
141 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\C0610332.cp1.dgn
MODEL: cp4

7:57:19 AM

6/30/2017

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SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 149

℄ SW 2ND NW

℄ T.H. 28
(MINNESOTA AVE)

℄ SW 1ST NW

℄ T.H. 29
(FRANKLIN ST)

℄ SW TH 29 N

℄ SW 1ST SW

℄ T.H. 104
(FRANKLIN ST)

℄ SW TH 29 S

104 SUBWAY

103 MINNEWASKA ABSTRACT & TITLE

30 NAPA AUTO PARTS

24 ACE HARDWARE

2 EAGLE STATE BANK

WORLD OF WELLNESS

SCREEN PRINTS PLUS

GINGER BREAD CAFE

PASTRY SHOPPE BAKERY

5 GLENWOOD STATE BANK

15 LICENSE BUREAU

AMERICAN BUSINESS FORMS

2 THE VALLEY

8 CHINESE RESTAURANT

14 PIZZA RANCH

RETAIL

CURVES FOR WOMEN

LANE STUDIO

ALCOVE REPAIR

STA. 443+08.1
℄ 16' DRIVEWAY
48.2' LT

STA. 443+34.6
℄ 16' DRIVEWAY
48.2' RT

STA. 444+91.4
℄ 24' DRIVEWAY
51.4' LT

STA. 444+81.1
℄ 16' DRIVEWAY
50.5' RT

STA. 445+92.3
℄ 16' DRIVEWAY
50.7' RT

STA. 446+39.7
℄ 30' DRIVEWAY
50.8' RT

STA. 36+35.4
℄ 16.5' DRIVEWAY
32.1' LT

+45.7
37.1' LT

+29.4
37.1' LT

+48.8

+22.3

+42.3

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

STA. 32+84.5
℄ 20.6' DRIVEWAY
32.3' LT

+91.3
37.4' LT

+99.8

+99.4

+76.1
37.2' LT

STA. 32+84.65
℄ 19.5' DRIVEWAY
33.1' RT

+90.7
42' RT

+76.1
42' RT

+88.4

V4 CURB

V-CURB

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

1ST ST. NW

1ST ST. SW

INP. 10' PARKING

INP. 12' PARKING

INP. 12'

8' CONC. WALK

9' CONC. WALK

7' AMENITY ZONE

7' BIKE LANE

10' PARKING

B624 C&G

B424 C&G

445

540

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 141

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 143

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 148

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-cp1.dgn
MODEL: cp5

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590

CP5 OF CP14

142 / 310

50
SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 142

℄ SW TH 29 N

℄ SW TH 29 S

1ST ST. NE

1ST ST. SE

2ND ST. NE

2ND ST. SE

℄ SW 1ST NE

℄ SW 1ST SE

℄ T.H. 28
(MINNESOTA AVE)

INP. 12' PARKING

INP. 8' PARKING

INP. 10'

9' CONC. WALK
7' AMENITY ZONE
7' BIKE LANE
10' PARKING
6' CONC. WALK
8' CONC. WALK
11.5' BLVD

B424 C&G
B624 C&G
B612 C&G

GUTTER OUT
(MAX 5%)

STA. 544+43.1
℄ 36' DRIVEWAY
48.2' LT

STA. 545+08.4
℄ 70' DRIVEWAY
48.2' LT

STA. 547+76.3
℄ 25' DRIVEWAY
48.2' LT

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

+95.7
+88.8
+95.8
+88.9
+94.7
+87.8
+93.0
+97.7
+86.5
+93.7
+90.8
+93.4
+83.5
+90.5
+15.0
+15.1

543
545

STUDIO ARCHITECTS
STRECKER AGENCY
31 AMERI BUSINESS
31 AMERICAN BUSINESS FORMS
107 PALMER CREATIONS
MAINLY CUTS
131 POPE COUNTY FAMILY COLLABORATIVE
CITY OF GLENWOOD
137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING
AMERICAN BUSINESS SOLUTIONS
28 LINE WALK IN CLOSET
ACCOUNTANTS JERRY MANGNESS
130 POPE COUNTY COURT HOUSE
206 GLENWOOD LUTHERAN
UMH

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 144

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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PHONE: (651)490-2000
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN
T.H. 28 STA 540+80 - 548+30

FILE NO. MNT04-134590
CP6 OF CP14
143 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_cp1.dgn
MODEL: cp6

7:57:20 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 143

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 145

307 CASEY'S GENI STORE

3RD ST. NE

4TH ST. NE

3RD ST. SE

4TH ST. SE

STA. 548+47.6
℄ 25' DRIVEWAY
48.2' LT

STA. 549+49.6
℄ 25' DRIVEWAY
48.7' LT

STA. 552+28.7
℄ 32' DRIVEWAY
51.2' LT

STA. 552+73.6
℄ 12' DRIVEWAY
51.2' LT

STA. 552+52.4
℄ 20' DRIVEWAY
52.2' RT

INP. 8' PARKING
INP. 10'
INP. 10'
INP. 8' PARKING

8' CONC. WALK
6' CONC. WALK
13.5' BLVD
11.5' BLVD
10' PARKING
B624 C&G
R=13'
1:2
12'
14'
15'
550
555
+82.9
+89.8
+87.4
+80.5
+78.9
+85.9
+79.8
+76.3
+89.9
+81.9
+88.8
+89.8
+82.8
+80.3
+83.5
+83.0

PROTECT EXISTING RETAINING WALL (INCIDENTAL)

℄ T.H. 28
(MINNESOTA AVE)

EXTREME GAS AND AUTO

BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590

CP7 OF CP14

144 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_cp1.dgn
MODEL: cp7

7:57:20 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.
2. SEE RETAINING WALL PLANS.
3. SEE SHEET 52 FOR CONCRETE STAIRWAY.

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 144

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 146

5TH ST. NE

6TH ST. NE

5TH ST. SE

℄ T.H. 28
(MINNESOTA AVE)

INP. 8' PARKING
INP. 10'
INP. 10'
INP. 8' PARKING
INP. 14' PARKING
INP. 12'
INP. 12'
INP. 14' PARKING
INP. 8' PARKING
INP. 10'
INP. 10'
INP. 8' PARKING

6' CONC. WALK

R=1.0'

+86.4

+86.2

+02.2

558

560

C&G (ADA)

GUTTER OUT
(MAX 5%)

INSTALL FENCE

INSTALL WOOD FENCE

RET. WALL A (2)

RET. WALL B (2)

RET. WALL C (2)

RET. WALL D (2)

RET. WALL E (2)

INSTALL CHAIN LINK FENCE

XC

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_cp1.dgn
MODEL: cp8

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 28 STA 555+80 - 563+30

FILE NO. MNT04-134590

CP8 OF CP14

50
SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.
2. SEE RETAINING WALL PLANS.
3. DRIVEWAY SHALL MEET CURB RAMP SLOPE REQUIREMENTS.

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 145

7TH ST. NE

INP. 8' PARKING
INP. 10'
INP. 10'
INP. 8' PARKING

RET. WALL F (2)

6' CONC. WALK

C&G (ADA)

STA. 566+75.9
℄ 11' DRIVEWAY
52.7' LT

(3)

6' CONC. WALK

B624 C&G

MINNESOTA AVE

565

+96.7
+10.0
C&G (ADA)
C&G (ADA)
6' CONC. WALK
R=16'

+86.0
+01.5
C&G (ADA)

+80.4
C&G (ADA)
+11.5

℄ T.H. 28

+69.7
C&G (ADA)
+89.3

570

INP. 15'
INP. 15'

GUTTER OUT
(MAX 5%)

6TH ST. SE

XC
XC

UMH

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN
T.H. 28 STA 563+30 - 570+00

FILE NO. MNT04-134590 CP9 OF CP14
146 / 310

7:57:21 AM

6/30/2017

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

50

SCALE IN FEET

S. LAKE SHORE DR

4TH AVE. SW

MATCHLINE T.H. 104 STA. 17+70 SEE INSET

STA. 18+51.4 ℄ 29.5' DRIVEWAY 41.7' LT

STA. 18+77.4 ℄ 12' DRIVEWAY 31.6' LT

STA. 19+92.1 ℄ 14.4' DRIVEWAY 41.5' LT

STA. 20+28.4 ℄ 22.7' DRIVEWAY 44.4' LT

STA. 23+42.0 ℄ 15.7' DRIVEWAY 39.6' LT

+36.7 31.8' LT; +16.6 29.8' LT; +85.1 31.6' LT; +06.8 29.5' LT; +84.9 31.5' LT; +64.3 29.5' LT; +58.1 31.4' LT; +58.1 29.6' LT; +42.4 31.4' LT; +24.4 29.6' LT; +34.2 32.6' LT; +11.6 30.6' LT; +49.9 32.5' LT; +68.1 30.5' LT

1:10

6' CONC. WALK

INP. 8' PARKING

INP. 10'

GUTTER OUT 5% MAX

R=11'

+31.6; +90.0 B624 C&G; +79.9 B624 C&G; +44.7 B624 C&G; +40.3 C&G (ADA); +40.0; +29.2; +54.9 B624 C&G; +57.9 C&G (ADA)

20

23

B624 C&G +93.4; +27.4; +92.2; B624 C&G +47.2; B624 C&G +22.8; +48.4 20.4' RT; +88.3 20.7' RT; +46.9; +11.9; C&G (ADA); +27.5; B624 C&G +59.6; +97.6; C&G (ADA) +61.8

1:5

8' CONC. WALK

+77.3; +96.4 37.3' RT; +20.1 37.3' RT; +91.8 31.3 RT; +06.9 34.4 RT; +28.9 33.3 RT; +35.2 31.2 RT; +44.8 33.1 RT; +46.5; +66.6; +09.6; +90.6; +49.9; +69.8

STA. 18+10.4 ℄ 24' DRIVEWAY 32.3' RT

STA. 19+17.9 ℄ 28' DRIVEWAY 36.7' RT

STA. 20+69.7 ℄ 25.7' DRIVEWAY 33.2' RT

R=16'

R=11'

GLENWOOD MEDICAL CENTER

℄ T.H. 104 (FRANKLIN ST)

STA. 23+78.7 ℄ 24' DRIVEWAY 32.4' RT

MATCHLINE T.H. 104 STA. 25+00 SEE SHEET 148

INSET

50

SCALE IN FEET

BEGIN S.P. 6110-21
T.H. 104
STA. 1189+70.00
R.P. 40+00.516

1190

1192

R=21'

EQUATION: STA 1192+81.02 BK = STA 17+61.24 AH

C&G (ADA) +12.2; +76.0; +64.0 31.4' RT; +61.0 31.5' RT; +67.2 37.5' RT; +77.8 37.5' RT

6' CONC. WALK

6TH AVE. SE

4TH AVE. SE

℄ T.H. 104 (FRANKLIN ST)

MATCHLINE T.H. 104 STA. 17+70 SEE SHEET ABOVE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 104 STA 1189+00 - 25+00

FILE NO. MNT04-134590

CP10 OF CP14

147 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_cp1.dgn
MODEL: cp10

7:57:21 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD AVE. SW

2ND AVE. SW

1ST AVE. SW

MINEWASKA MEATS 11

115 COUNSELOR REALTY

VILLA INN

MATCHLINE T.H. 104
STA. 25+00
SEE SHEET 147

MATCHLINE T.H. 104
STA. 32+50
SEE SHEET 142

INP. 10' PARKING
INP. 8' PARKING
INP. 13' PARKING

STA. 25+45.0
℄ 23.5' DRIVEWAY
32.4' RT

STA. 26+48.4
℄ 28.8' DRIVEWAY
40.5' LT

STA. 29+69.5
℄ 19' DRIVEWAY
35.3' RT

STA. 29+70.1
℄ 17' DRIVEWAY
34.7' LT

℄ T.H. 104
(FRANKLIN ST)

PROTECT EXISTING PATIO (INCIDENTAL)

GUTTER OUT (MAX 5%)

6' CONC. WALK
5' CONC. WALK
7' CONC. WALK
8' CONC. WALK
10' CONC. WALK
VAR. CONC. WALK

B624 C&G
C&G (ADA)
V-CURB

1:10
1:2
R=11'
R=13'

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

(2) PLACE TRENCH DRAIN AND CONNECT TO INPLACE EXTERIOR ROOF DRAIN. SEE SHEET 53 FOR TRENCH DRAIN DETAIL.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 104 STA 25+00 - 32+50

FILE NO. MNT04-134590

CP11 OF CP14

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\5j-drawings\40-TransHwy\plnshts\C06103 32_cp11.dgn
MODEL: cp11

50
SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

(2) 10' CURB TRANSITION BETWEEN B624 TO B824 C&G. PAID FOR AS B824 C&G.

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 142

1ST AVE. NW
5' CONC. WALK
INP. 10' PARKING
INP. 12'
INP. 12'
INP. 10' PARKING
5' CONC. WALK
SACRED HEART CATHOLIC CHURCH
2ND AVE. NW
INP. 8' PARKING
INP. 10'
INP. 10'
INP. 8' PARKING
3RD AVE. NW
INP. 8' PARKING
INP. 10'
INP. 10'

R=13'
V-CURB
8' CONC. WALK
+36.0
+24.4
1:2
18'
+42.9
C&G (ADA)
18'
1:2
+41.8
18'
1:2
R=13'
+48.5
VAR. CONC. WALK
+60.4
B824 C&G
+81.6
+91.6
+13.6
40
+23.6
+66.2
R=11'
C&G (ADA)
+47.8
STA. 42+61.2
℄ 17.4' DRIVEWAY
37.2LT
1:10
1:10
6' CONC. WALK
+47.5
B624 C&G
+74.9
43
6' CONC. WALK
R=11'
+85.7
C&G (ADA)

+44.7
18'
+26.2
1:2
C&G (ADA)
8' CONC. WALK
+37.8
R=13'
85'
+11.7
B624 C&G
1:2
+23.6
+18.5
7' CONC. WALK
+00.6
31.8' RT
+58.6
31.9' RT
R=13'
STA. 38+79.6
℄ 42' DRIVEWAY
31.9' RT
+56.0
8' CONC. WALK
+93.8
38.9' RT
+19.9
38.9' RT
STA. 40+07.9
℄ 24' DRIVEWAY
32.9' RT
R=11'
B624 C&G
+90.8
+24.8
+66.1
C&G (ADA)
B624 C&G
+10.0
6' CONC. WALK
C&G (ADA)
+85.6
R=11'
R=11'

INP. 8' PARKING
INP. 10'
INP. 10'
INP. 8' PARKING
1ST AVE. NE
TO COLLISION WITH POWER POLE
2ND AVE. NE
INP. 4' SHOULDER
INP. 12'
INP. 12'
INP. 4' SHOULDER
℄ T.H. 29
(FRANKLIN ST)
INP. 8' PARKING
INP. 10'
INP. 10'
3RD AVE. NE

MATCHLINE T.H. 29
STA. 44+30 SEE SHEET 150

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\C06103 32_cp1.dgn
MODEL: cp12

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN
T.H. 29 STA 36+80 - 44+30

FILE NO. MNT04-134590
CP12 OF CP14

7:57:22 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

MATCHLINE T.H. 29
STA. 44+30 SEE SHEET 149

MATCHLINE T.H. 29
STA. 51+70 SEE SHEET 151

INP. 8' PARKING

R=11'

1:10

6' CONC. WALK

+64.8
C&G (ADA)

45

STA. 46+24.3
℄ 27.7' DRIVEWAY
33' LT

+05.4
B624 C&G

+43.1

℄ T.H. 29
(FRANKLIN ST)

1:20

+20.0

50

B624 C&G

+30.6

C&G (ADA)
+65.2

+02.0

B624 C&G
+28.0

B624 C&G
+09.5

+43.7

+76.1

B624 C&G
+04.7

+35.0

B624 C&G
+76.0

7' CONC. WALK

7' CONC. WALK

6' CONC. WALK

6' CONC. WALK

1:10

+83.3

+09.0
41.2' RT

+21.0
41.2' RT

+16.5
41.3' RT

+36.7
41.3' RT

+83.2
34.5' RT

+97.6
34.5' RT

+41.9
37.5' RT

+70.0
37.3' RT

STA. 46+15.1
℄ 16' DRIVEWAY
41.2' RT

STA. 47+26.6
℄ 24.2' DRIVEWAY
31.3' RT

STA. 47+90.4
℄ 18.6' DRIVEWAY
32.5' RT

STA. 49+56.0
℄ 32' DRIVEWAY
32.4' RT

INP. 8' PARKING

HWY 0

US POST OFFICE

FILE: S:\KOV\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_cp1.dgn
MODEL: cp13

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN
T.H. 29 STA 44+30 - 51+70

FILE NO. MNT04-134590
CP13 OF CP14

150 / 310

7:57:28 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- 4" CONCRETE WALK SPECIAL
- 4" CONCRETE WALK SPECIAL 1
- 4" CONCRETE WALK
- 6" CONCRETE WALK (1)
- 8" CONCRETE DRIVEWAY PAVEMENT
- MILL & OVERLAY
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTE:

(1) PAID FOR AS CONCRETE WALK (ADA) IN MILL AND OVERLAY AREAS.

6TH AVE. NW

8TH AVE. NW

℄ T.H. 29
(FRANKLIN ST)

MATCHLINE T.H. 29
STA. 51+70 SEE SHEET 150

+80.0

55

57

+74.3 C&G (ADA)

+44.5 B624 C&G

+86.7

+20.7

+42.4 B624 C&G

+76.5

+50.3

+17.6 B624 C&G

+73.7

+09.4 B624 C&G

+37.3 C&G (ADA)

+63.3 B624 C&G

+88.3

+20.0

7' CONC. WALK

6' CONC. WALK

R=11'

R=11'

1:10

1:10

1:10

1:10

INP. 8' PARKING

INP. 10'

INP. 10'

INP. 8' PARKING

+93.0
42.7' RT

+18.5
42.5' RT

+47.6
38.6' RT

+73.5
38.7' RT

+53.2
42.0' RT

+87.7
42.3' RT

+89.9
37.7' RT

+01.9
37.8' RT

+97.0
37.6' RT

+11.0
37.6' RT

STA. 53+03.8
℄ 24' DRIVEWAY
32.6' RT

STA. 53+59.5
℄ 24' DRIVEWAY
32.6' RT

STA. 54+69.5
℄ 28.5' DRIVEWAY
32.1' RT

STA. 55+95.9
℄ 16' DRIVEWAY
32.7' RT

STA. 59+04.2
℄ 15.7' DRIVEWAY
32.6' RT

6TH AVE. NE

XC

XC

FILE: S:\KOV\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_cp1.dgn
MODEL: cp14

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CONSTRUCTION PLAN

T.H. 29 STA 51+70 - 59+40

FILE NO. MNT04-134590

CP14 OF CP14

151 / 310

VERTICAL CONTROL NOTE:

ELEVATIONS FOR THIS PLAN ARE NAVD 88 ADJUSTED.
FOR INFORMATION ON VERTICAL CONTROL POINTS CONTACT MN/DOT'S OFFICE OF LAND MANAGEMENT OR DISTRICT SURVEYS OFFICE

MNDOT B.M. 6108 E (IN THE SE CORNER OF HWY 55 BRIDGE OVER HWY 28)
ELEV = 1375.539

T.H. 28

PROFILE GRADE - TOP OF FINISHED PROFILE
1.58' TO GRADING GRADE
℄ ENTRANCE N.
℄ ENTRANCE S.
EL. 1,147.05
+44.00
VPI
EL. 1,147.04
-0.01%
-0.50%
℄ ENTRANCE N.
EL. 1,146.54
EXISTING GROUND LINE
℄ 6TH ST NW
1,150
1,145
1,140
1,135
1:20
STA. 414+81.91
BEGIN FULL WIDTH CONSTRUCTION
MATCH EXISTING
1,147.09
1,140.46
6.30%
1,135.66
+0.05%
+0.30%
+0.20%
1.67' SELECT GRANULAR EMBANKMENT
SSD = 230'
ex = -0.12'
K = 409
200.00' V.C.
VPC
+44.00
+44.00
VPT
+0.30%
+0.20%
415+30 SDG LT
EL. 1,135.80
415+38 SDG RT
EL. 1,135.70
1,147.10 1,147.09
1,146.85 1,147.08
1,146.76 1,147.07
1,147.16 1,147.06
1,147.11 1,147.01
1,146.91 1,146.74
1,146.77 1,146.26
415
416
417
418
419
420
421

T.H. 28

ex = 0.03'
K = 522
120.00' V.C.
EXISTING GROUND LINE
1.58' TO GRADING GRADE
EL. 1,144.71
VPI
+70.00
EL. 1,144.41
EL. 1,144.25
EL. 1,144.14
℄ 5TH ST NW
PROFILE GRADE - TOP OF FINISHED PROFILE
-0.50%
-0.27%
1.67' SELECT GRANULAR EMBANKMENT
+10.00
+30.00
+71.00
+0.30%
+0.20%
+0.20%
+0.20%
+0.64%
VAR. SELECT GRANULAR EMBANKMENT ①
VPC
VPT
VPC
422+55 SDG LT
EL. 1,137.97
427+00 SDG RT
EL. 1,138.02
1,146.51 1,145.76
1,145.59 1,145.26
1,144.73 1,144.76
1,144.21 1,144.34
1,143.65 1,144.06
1,143.31 1,143.84
1,142.27 1,143.69
1,141.88 1,143.61
422
423
424
425
426
427
428
429

SPECIFIC NOTE:

① SELECT GRANULAR EMBANKMENT DEPTHS SHALL VARY FROM T.H. 28 STA. 425+00 TO T.H. 28 STA. 433+00. MAINTAIN A 39" EXCAVATION DEPTH FROM THE EXISTING T.H.28 GROUND PROFILE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

PROFILES
T.H. 28

FILE NO. MNT04-134590
PR1 OF PR9
152 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pr1.dgn
MODEL: pr1
6/30/2017 7:57:30 AM

7:57:31 AM

6/30/2017

ex = 0.59'
K = 1500
840.00' V.C.

℄ 4TH ST NW

1.58' TO GRADING GRADE

EQUATION: BK 430+42.73 = AH 430+75.35

PROFILE GRADE - TOP OF FINISHED PROFILE

-0.27%

+0.29%

LOW POINT
STA. 429+76
EL. 1143.59

+0.64%

+0.80%

+0.20%

VAR. SELECT GRANULAR EMBANKMENT①

VPI +91.00
EL. 1,143.00
430+00 SDG LT
EL. 1,139.46

1,139.81

1,140.21

1.67' SELECT GRANULAR EMBANKMENT

1.58' TO GRADING GRADE

EL. 1,144.22

+43.62

VPT

℄ MINNESOTA AVE

EXISTING GROUND LINE

℄ DWY S.

SPECIFIC NOTE:

① SELECT GRANULAR EMBANKMENT DEPTHS SHALL VARY FROM T.H. 28 STA. 425+00 TO T.H. 28 STA. 433+00. MAINTAIN A 39" EXCAVATION DEPTH FROM THE EXISTING T.H.28 GROUND PROFILE.

② CONSTRUCTION OF GRADES IN THIS AREA IS CRITICAL.

1,141.89 1,143.59 — 430
1,142.05 1,143.62 — 431
1,142.71 1,143.71 — 432
1,143.60 1,143.87 — 433
1,144.09 1,144.10 — 434
1,145.45 1,144.38 — 435
1,145.02 1,144.67 — 436

1,145.21 1,144.96 — 437
1,145.47 1,145.25 — 438
1,145.56 1,145.54 — 439
1,145.98 1,145.83 — 440
1,146.35 1,146.12 — 441
1,146.66 1,146.41 — 442
1,147.43 1,147.15 — 443
1,149.47 1,149.30 — 444

1,150
1,145
1,140
1,135

T.H. 28

℄ 2ND ST SW

℄ DWY S.

℄ DWY N.

EXISTING GROUND LINE

1.58' TO GRADING GRADE

PROFILE GRADE - TOP OF FINISHED PROFILE

1:100

1.67' SELECT GRANULAR EMBANKMENT

0.92' SELECT GRANULAR EMBANKMENT

EL. 1,146.50

+28.00

VPC

ex = 0.31
K = 58
120.00' V.C.

℄ DWY N.

℄ DWY N.

℄ DWY S.

EL. 1,148.08

VPI +88.00
EL. 1,146.67

+2.35%

+0.29%

+48.00

VPT

℄ 1ST ST SW

1,150
1,145
1,140
1,135

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke — Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

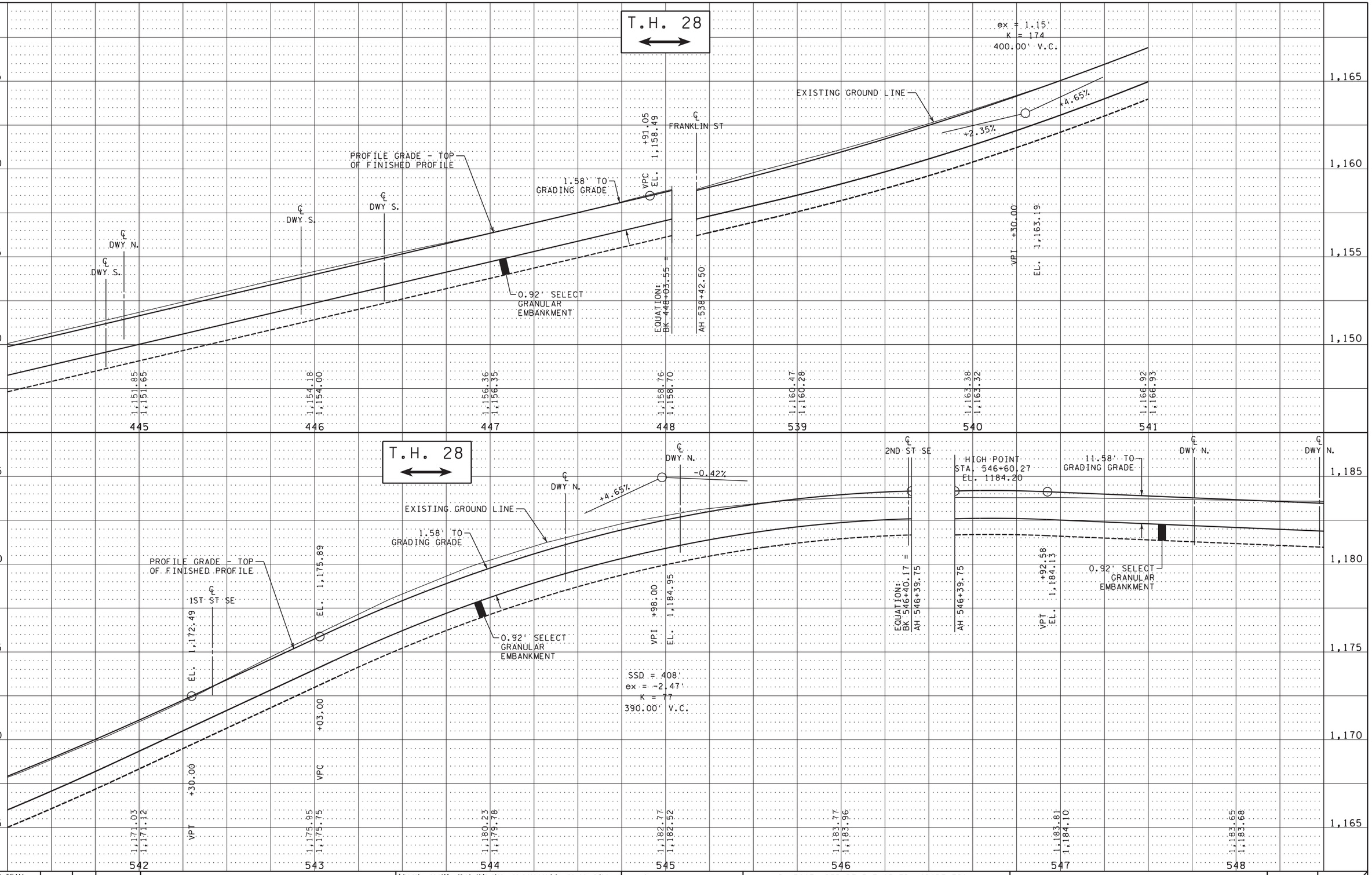
PROFILES
T.H. 28

FILE NO. MNT04-134590
PR2 OF PR9

153 / 310

7:57:31 AM

6/30/2017



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MODEL: pr3

DESIGN TEAM					
DRAWN BY: MTT					
DESIGNER: RDH					
CHECKED BY: HLR	NO.	BY	DATE	REVISIONS	

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

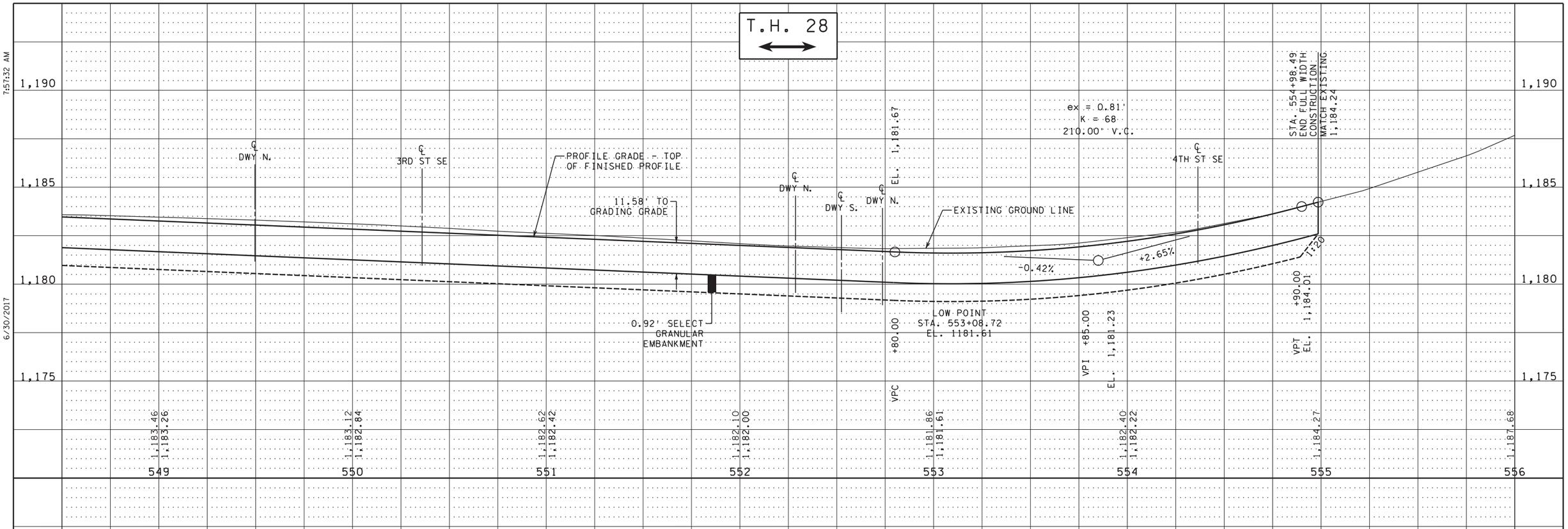
S.P. NO. 6103-32 (T.H. 28)

PROFILES

T.H. 28

FILE NO. MNT04-134590

PR3 OF PR9



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MODEL: pr4

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

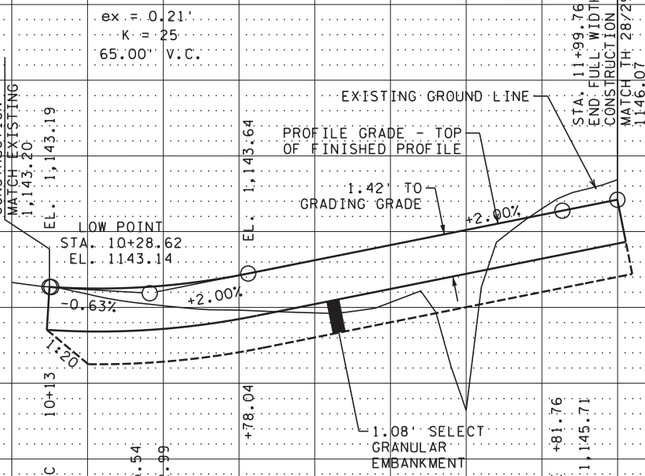
SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

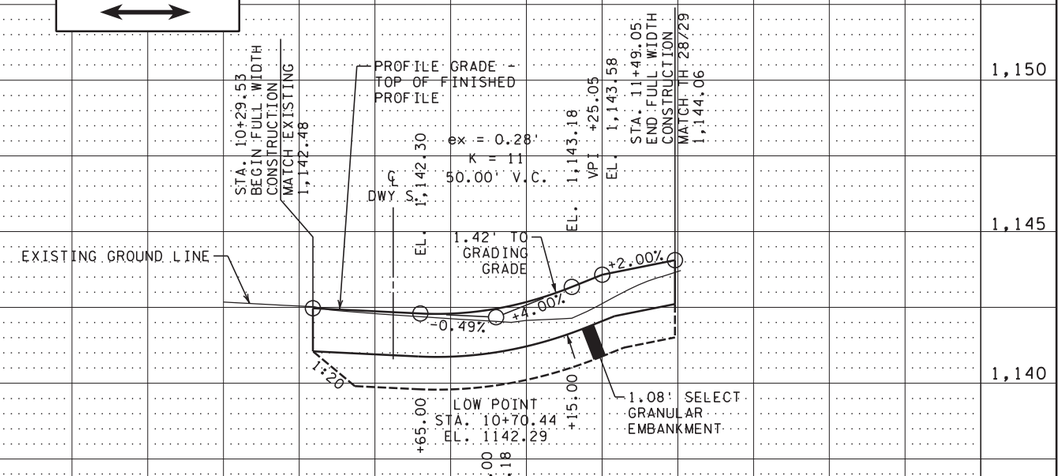
PROFILES
T.H. 28

FILE NO. MNT04-134590
PR4 OF PR9
155 / 310

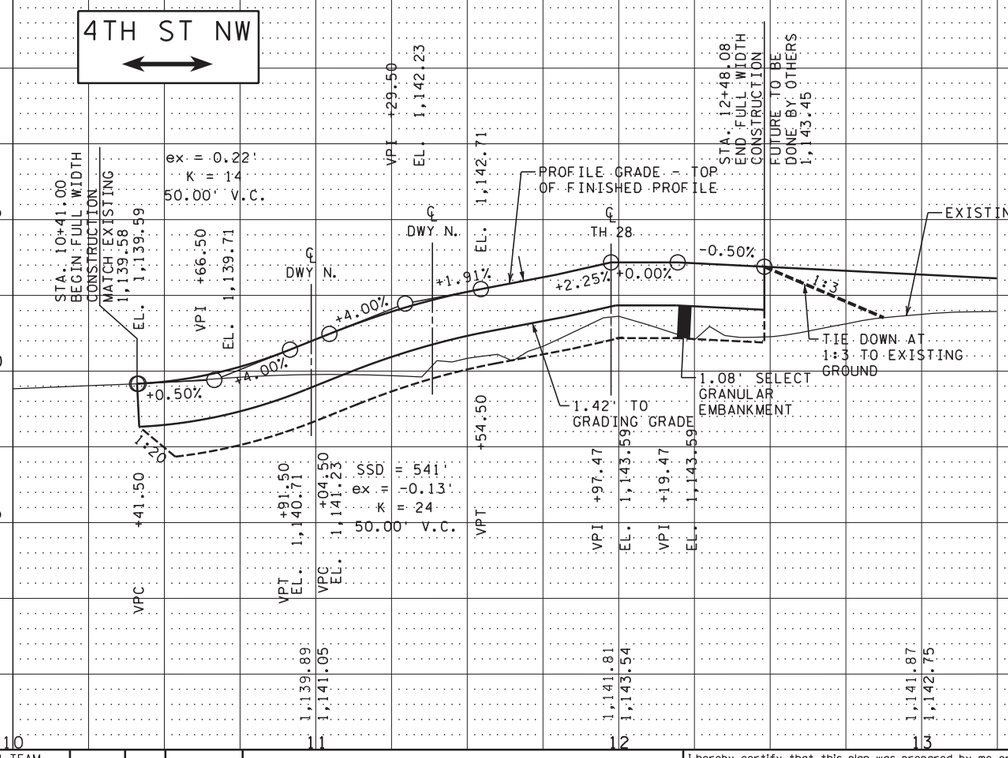
6TH ST NW



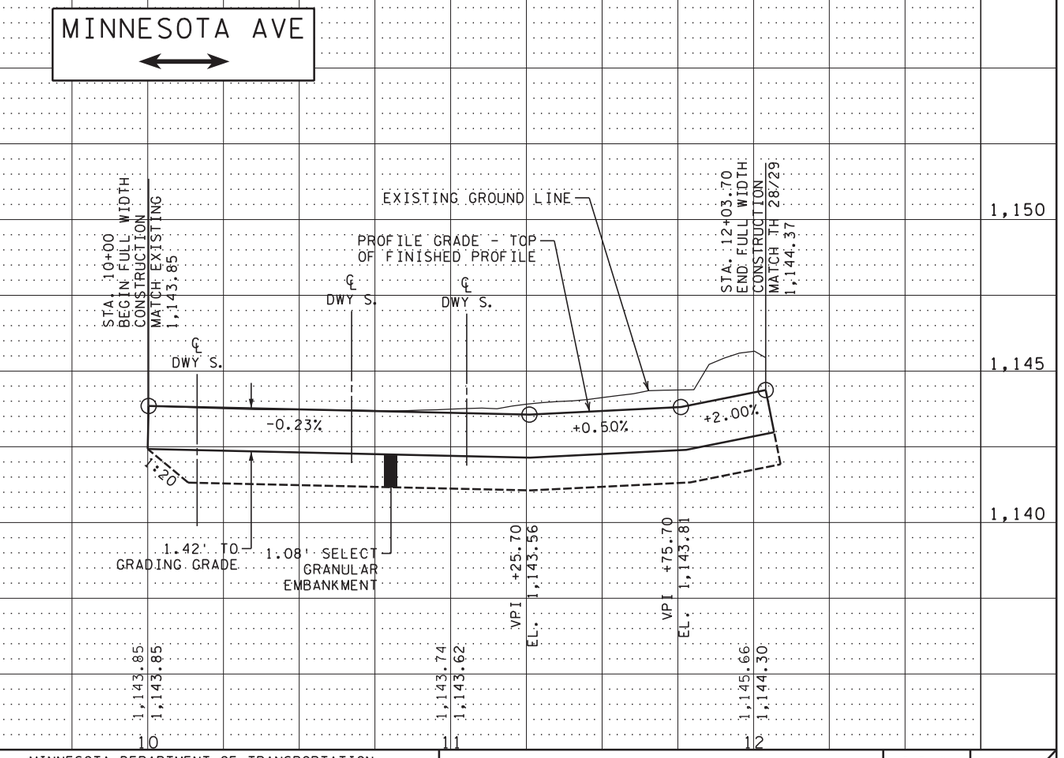
5TH ST NW



4TH ST NW



MINNESOTA AVE



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

PROFILES

4TH STREET NW, 5TH STREET NW, 6TH STREET NW, AND MINNESOTA AVE

FILE NO. MNT04-134590
PR5 OF PR9
156 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pr1.dgn
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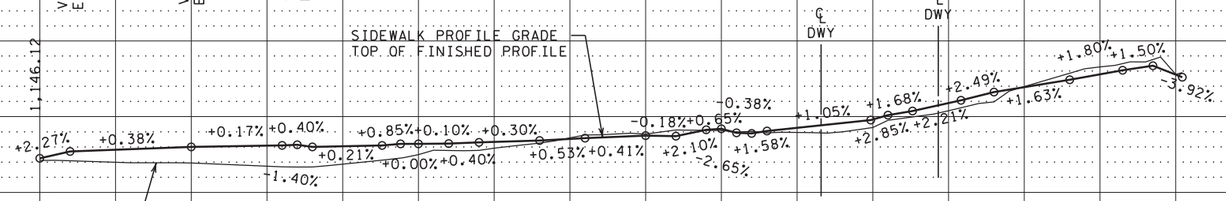
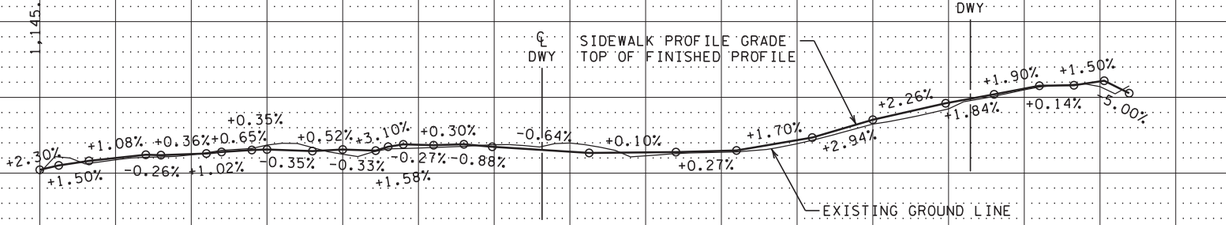
6/30/2017

SW 2ND NW



SW 2ND SW



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIDEWALK PROFILES
SW 2ND NW, SW 2ND SW

FILE NO. MNT04-134590
PR6 OF PR9
157 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_pr1.dgn
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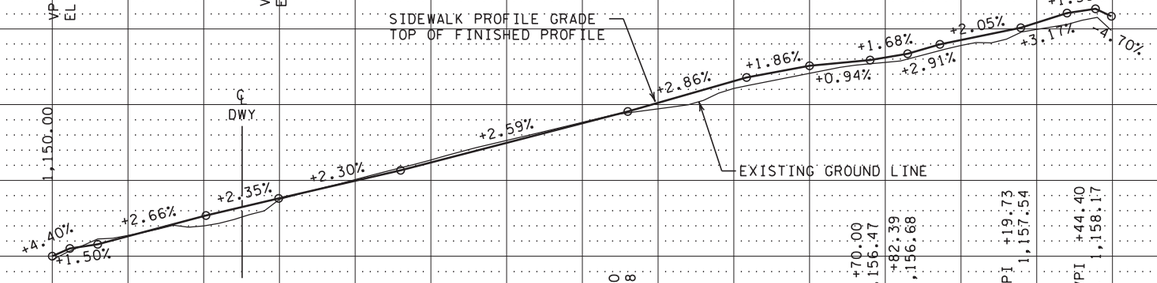
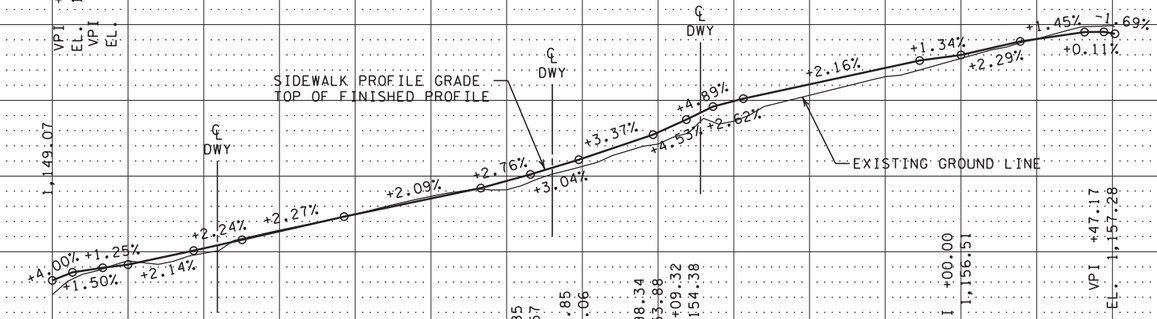
6/30/2017

SW 1ST NW



VPI +05.00, EL. 1,150.26
VPI +74.75, EL. 1,151.91
VPI +29.21, EL. 1,155.90
VPI +50.00, EL. 1,156.29
VPI +93.04, EL. 1,156.99
VPI +35.00, EL. 1,158.03
1,157.92
1,150.00
VPI +15.00, EL. 1,150.39
VPI +50.75, EL. 1,151.34
VPI +15.00, EL. 1,152.84
VPI +90.00, EL. 1,154.78
VPI +70.00, EL. 1,156.47
VPI +82.39, EL. 1,156.68
VPI +19.73, EL. 1,157.54
VPI +44.40, EL. 1,158.17
1,149.88
1,150.19
1,152.53
1,152.49
1,154.86
1,155.06
1,156.96
1,157.14
10
11
12
13

SW 1ST SW



VPI +06.67, EL. 1,149.34
VPI +16.67, EL. 1,149.49
VPI +96.34, EL. 1,151.18
VPI +18.12, EL. 1,154.81
VPI +28.14, EL. 1,155.07
VPI +86.35, EL. 1,156.33
VPI +19.56, EL. 1,156.96
VPI +40.78, EL. 1,157.27
1,157.22
1,149.07
VPI +25.00, EL. 1,149.59
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VPI +09.32, EL. 1,154.38
VPI +00.00, EL. 1,156.51
VPI +47.17, EL. 1,157.28
1,148.60
1,149.01
1,151.26
1,151.25
1,153.57
1,153.96
1,156.40
1,156.51
10
11
12
13

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIDEWALK PROFILES

SW 1ST NW, SW 1ST SW

FILE NO. MNT04-134590

PR7 OF PR9

158 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pr1.dgn
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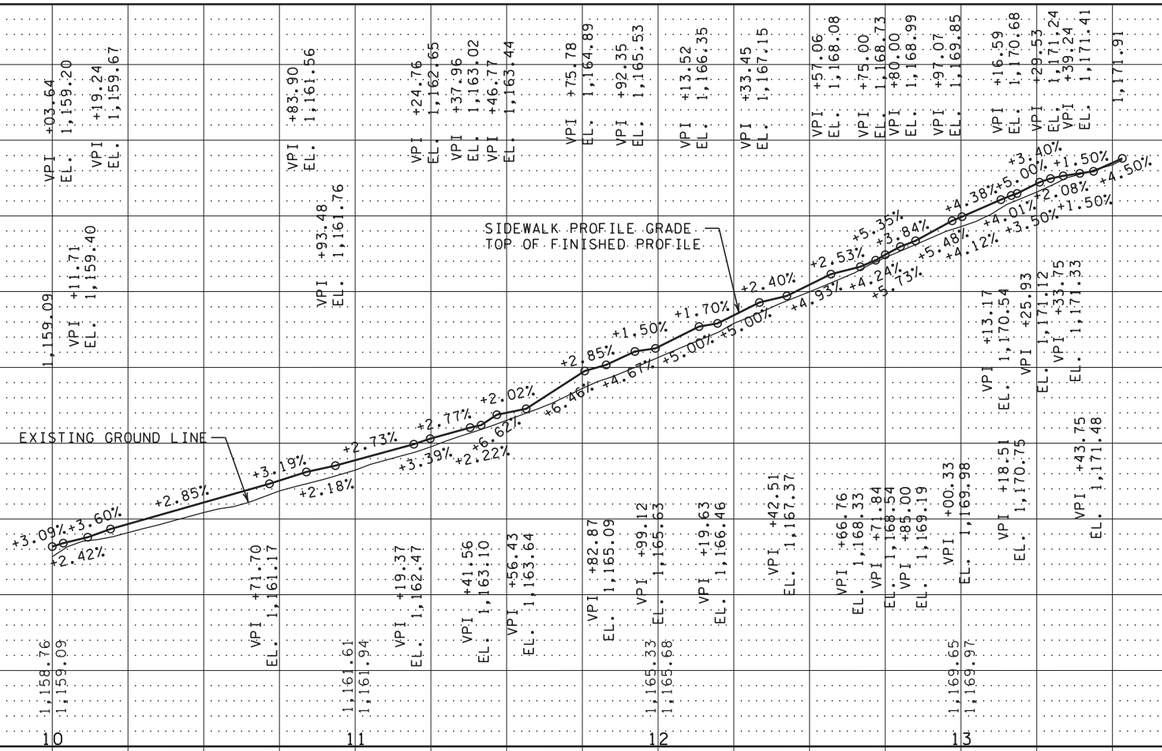
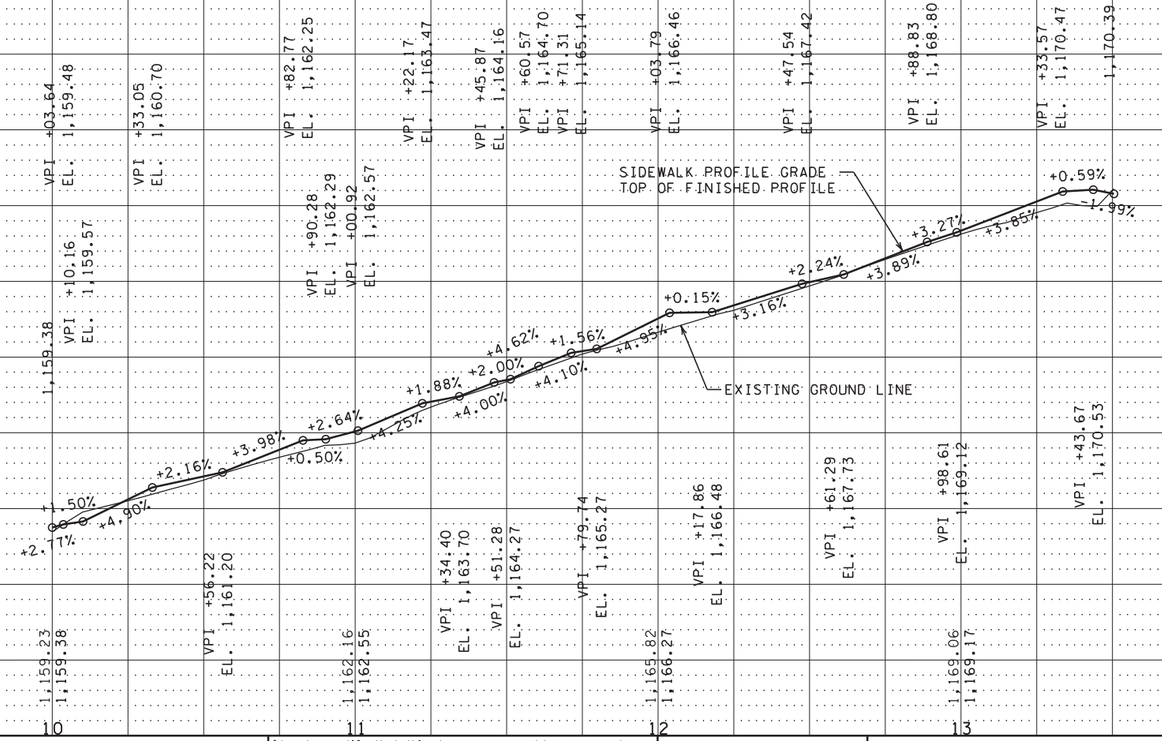
6/30/2017

SW TH 29 N



SW TH 29 S



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH

PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIDEWALK PROFILES

SW TH 29 N, SW TH 29 S

FILE NO. MNT04-134590

PR8 OF PR9

159 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pr1.dgn
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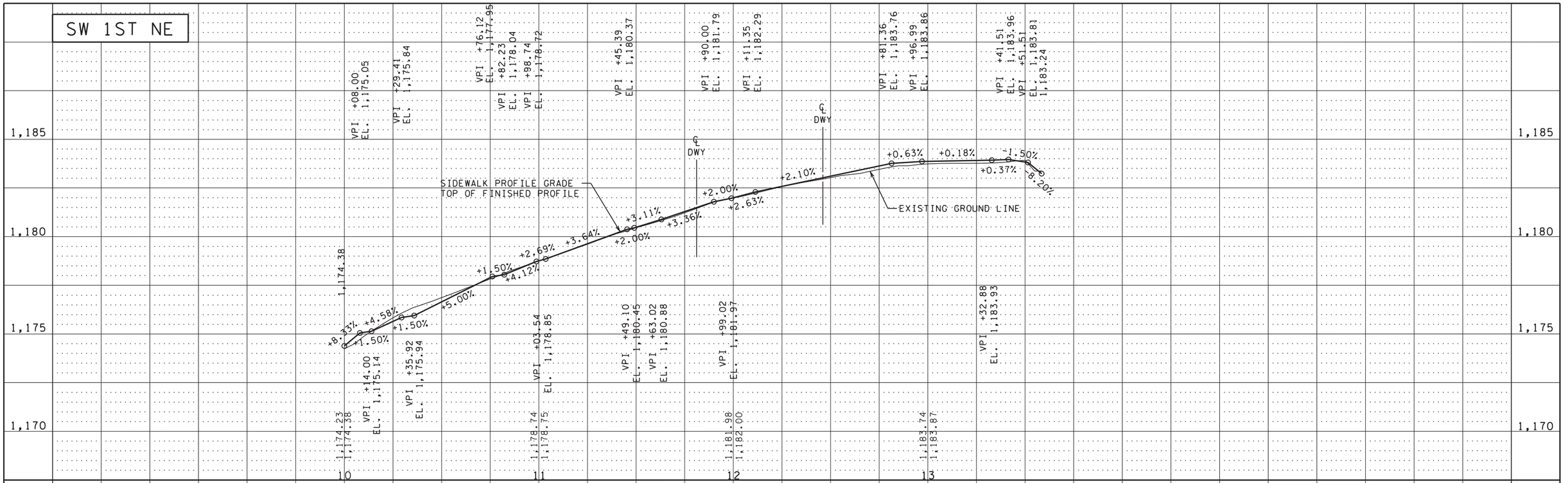
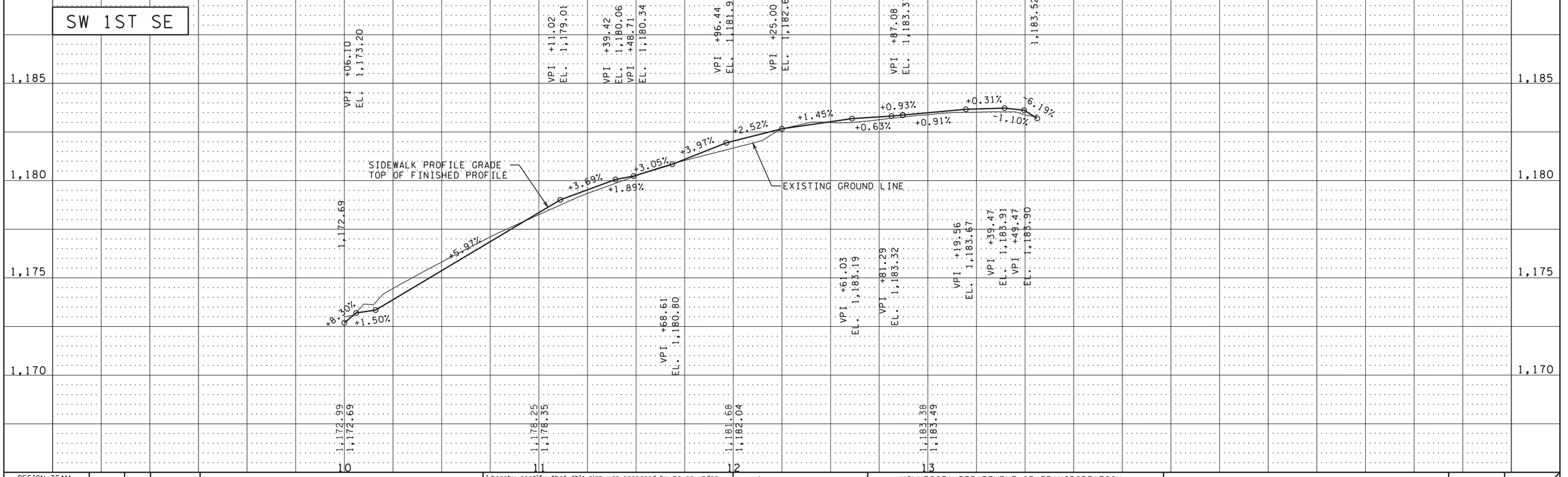
6/30/2017

SW 1ST NE



SW 1ST SE



DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				
	NO.	BY	DATE	REVISIONS

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIDEWALK PROFILES

SW 1ST NE, SW 1ST SE

FILE NO. MNT04-134590

PR9 OF PR9

160 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pr1.dgn
MODEL: pr9

7:57:38 AM

6/30/2017

20

SCALE IN FEET

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE (MH)

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

℄ T.H. 28

℄ 4TH ST NW

BEGIN S.A.P. 061-090-006
T.H. 28 STA. 429+75.00

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

8' WALK

8' SHLD

6' SHLD

12'

16'

R=25'

B624 C&G

MATCH EXISTING WALK

17.3'

11'

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
200	234576.57	436953.40	1143.72
201	234568.70	436970.49	1143.56
202	234574.98	436988.23	1143.30
203	234556.01	437015.07	1143.26
204	234549.71	437010.61	1143.29
205	234546.62	437013.45	1143.36
206	234541.27	437007.50	1143.31
207	234532.25	437015.61	1143.57
208	234526.71	437009.41	1143.34
209	234520.07	437013.99	1143.35
210	234520.75	437014.75	1143.37
211	234553.64	436925.55	1143.16
212	234537.04	436932.33	1142.75
213	234518.87	436925.04	1142.34
214	234488.00	436943.80	1142.11
215	234495.78	436957.00	1142.71
216	234492.39	436960.03	1142.79
217	234496.40	436964.50	1142.85
218	234494.24	436973.14	1143.18
219	234489.80	436980.16	1143.23
220	234488.28	436978.47	1143.27
221	234484.95	436974.75	1143.54
222	234484.42	436985.95	1143.03
223	234513.71	437018.79	1143.03

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: RDH				
CHECKED BY: HLR				

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Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 4TH ST NW

FILE NO. MNT04-134590
PD1 OF PD25
161 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn
MODEL: pd1

7:57:38 AM

6/30/2017

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

20

SCALE IN FEET

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE

8' WALK
10' BLVD
6' SHLD
14'
8' CONC. MEDIAN
B624 C&G
℄ T.H. 28
℄ MINNESOTA AVE
12'
10' BLVD
10' SHLD
12' BLVD
15' BLVD
17' BLVD
14' SHLD
8' WALK
6' WALK
R=43'
R=48'
434
435
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249

NOTES:

(1) CONSTRUCT CONCRETE APPROACH NOSE PER MNDOT STD. PLATE 7113. (PAID FOR AS 6" CONCRETE WALK)

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
224	234241.44	437285.97	1144.51
225	234239.40	437273.78	1143.86
226	234234.30	437279.95	1143.88
227	234223.10	437259.63	1144.26
228	234218.37	437255.67	1144.26
229	234213.27	437261.83	1144.28
230	234217.99	437265.81	1144.28
231	234197.10	437237.85	1143.74
232	234193.91	437242.99	1143.49
233	234192.08	437244.09	1143.76
234	234187.52	437240.19	1144.16
235	234156.02	437247.62	1143.60
236	234153.33	437257.36	1142.92
237	234145.62	437255.23	1142.96
238	234122.26	437234.95	1143.03
239	234110.24	437304.59	1143.03
240	234111.12	437306.39	1143.17
241	234110.41	437317.35	1143.69
242	234116.22	437312.56	1143.20
243	234122.69	437352.92	1143.98
244	234119.16	437360.10	1144.02
245	234120.37	437360.69	1143.92
246	234112.65	437356.89	1144.51
247	234171.21	437376.79	1144.07
248	234167.62	437383.94	1144.09
249	234176.00	437388.06	1144.72

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MODEL: pd2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke — Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE — Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT MINNESOTA AVE

FILE NO. MNT04-134590

PD2 OF PD25

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

20

SCALE IN FEET

LEGEND

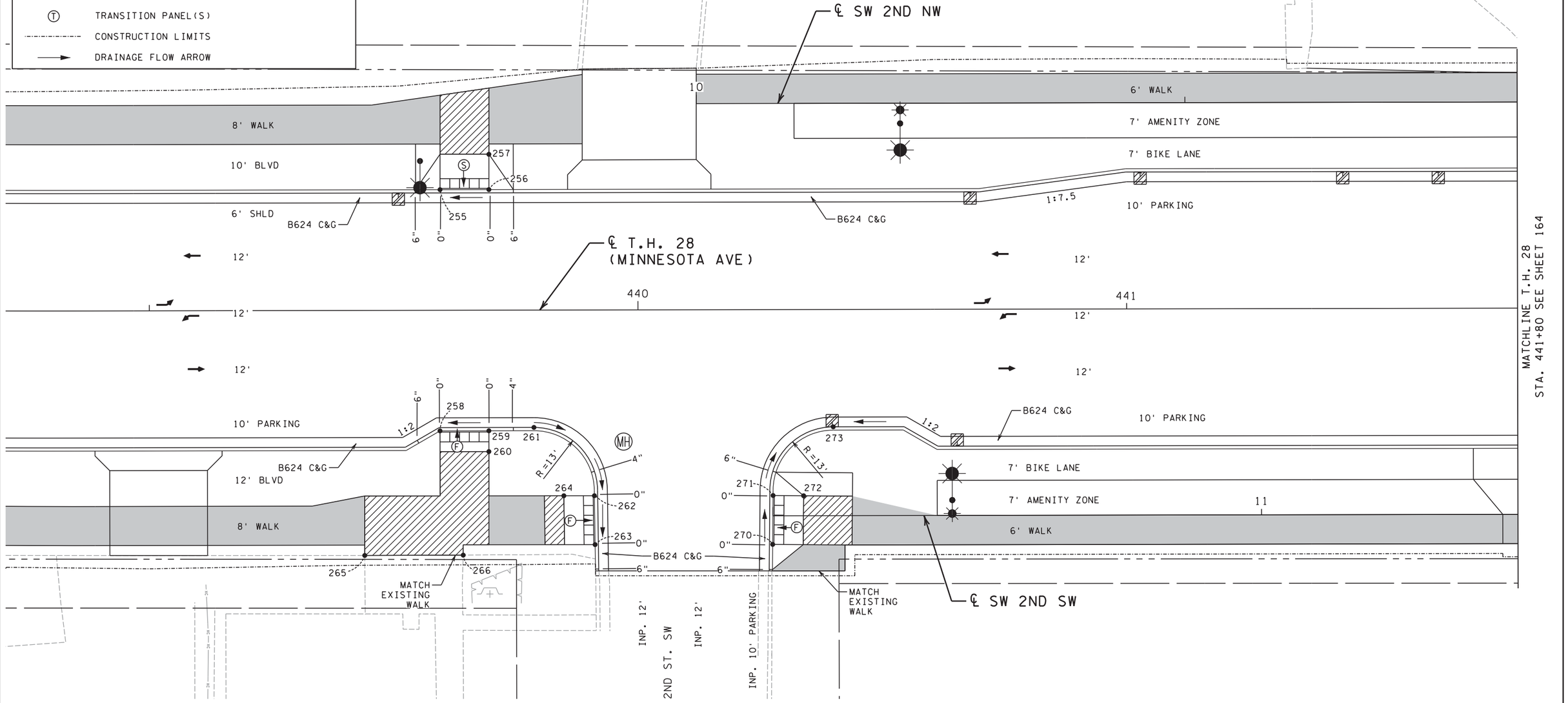
- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
255	234109.93	437764.79	1145.30
256	234109.95	437774.79	1145.40
257	234117.20	437774.79	1145.89
258	234060.60	437764.79	1145.10
259	234060.62	437774.79	1145.04
260	234056.37	437774.79	1145.13
261	234061.30	437784.01	1145.01
262	234047.33	437796.38	1144.95
263	234037.33	437796.53	1144.90
264	234047.33	437790.13	1145.16
265	234035.11	437749.39	1145.40
266	234035.18	437769.54	1145.23
270	234037.38	437832.87	1145.13
271	234047.38	437832.94	1145.03
272	234047.33	437839.19	1145.33
273	234061.42	437845.26	1144.98



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 2ND ST SW

FILE NO. MNT04-134590

PD3 OF PD25

163 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn
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6/30/2017

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	LANDING AREA - LANDING AREA NON-COMPLIANT
	PEDESTRIAN ACCESS ROUTE (ADA)
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

LEGEND

	INPLACE RIGHT-OF-WAY
	TEMPORARY EASEMENT
o	INPLACE ACCESS CONTROL

20

SCALE IN FEET

30 NAPA AUTO PARTS

INP. 10' PARKING | INP. 12' | 1ST ST. NW | INP. 12' | INP. 10' PARKING

MATCH EXISTING WALK

B624 C&G

℄ SW 1ST NW

7' WALK

MATCH BOTTOM OF EXISTING DOOR

℄ SW 2ND NW

V4 CURB

12 | 13

6' WALK

6' AMENITY ZONE

7' BIKE LANE

10' PARKING

B624 C&G

1:2

R=13'

℄ T.H. 28 (MINNESOTA AVE)

12'

443 | 444

MATCHLINE T.H. 28 STA. 441+80 SEE SHEET 163

MATCHLINE T.H. 28 STA. 444+75 SEE SHEET 165

℄ SW 2ND SW

10' PARKING

B624 C&G

7' BIKE LANE

7' AMENITY ZONE

6' WALK

12 | 13

8' WALK

℄ SW 1ST SW

MATCH EXISTING WALK

INP. 10' PARKING | INP. 12' | 1ST ST. SW | INP. 12' | INP. 10' PARKING

MATCH EXISTING WALK

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
274	234111.03	438174.73	1148.47
275	234111.05	438184.73	1148.57
276	234120.27	438194.07	1148.71
277	234134.28	438194.05	1148.85
278	234120.26	438187.13	1149.18
279	234061.41	438174.41	1147.67
280	234060.76	438174.40	1147.69
281	234060.70	438184.40	1147.88
282	234051.92	438184.34	1148.20
283	234051.94	438191.98	1147.70
284	234037.94	438191.89	1147.63
290	234038.02	438232.25	1149.03

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
291	234052.02	438232.07	1149.10
292	234052.03	438238.52	1149.35
293	234060.24	438238.56	1149.15
294	234060.20	438248.56	1149.25
295	234061.55	438248.56	1149.23
296	234110.89	438248.81	1150.21
297	234113.29	438248.82	1150.25
298	234113.34	438238.82	1150.15
299	234120.40	438238.85	1150.26
300	234120.39	438234.20	1150.06
301	234134.39	438234.27	1149.92
800	234137.88	438257.50	1150.90

LEGEND

	PEDESTRIAN PUSH BUTTON STATION
	PROPOSED PEDESTAL (WITH PUSH BUTTON)
	PROPOSED LIGHT POLE
	PROPOSED SIGNAL CABINET
	PROPOSED HANDHOLE
	PROPOSED FIRE HYDRANT
	PROPOSED CATCH BASIN
(MH)	PROPOSED MANHOLE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke — Lic. No. 44267

Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE — Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 1ST ST NW/SW

FILE NO. MNT04-134590

PD4 OF PD25

164 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-pd1.dgn
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LEGEND

XXX — CONTROL POINTS AT GUTTER FLOW LINE	Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
TRUNCATED DOMES (SEE STANDARD PLATE 7038)	Ⓕ 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%
CONSTRUCT CONCRETE CURB & GUTTER	Ⓣ TRANSITION PANEL(S)
X" CURB HEIGHT	CONSTRUCTION LIMITS
LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS	DRAINAGE FLOW ARROW
LANDING AREA - LANDING AREA NON-COMPLIANT	
PEDESTRIAN ACCESS ROUTE (ADA)	

20

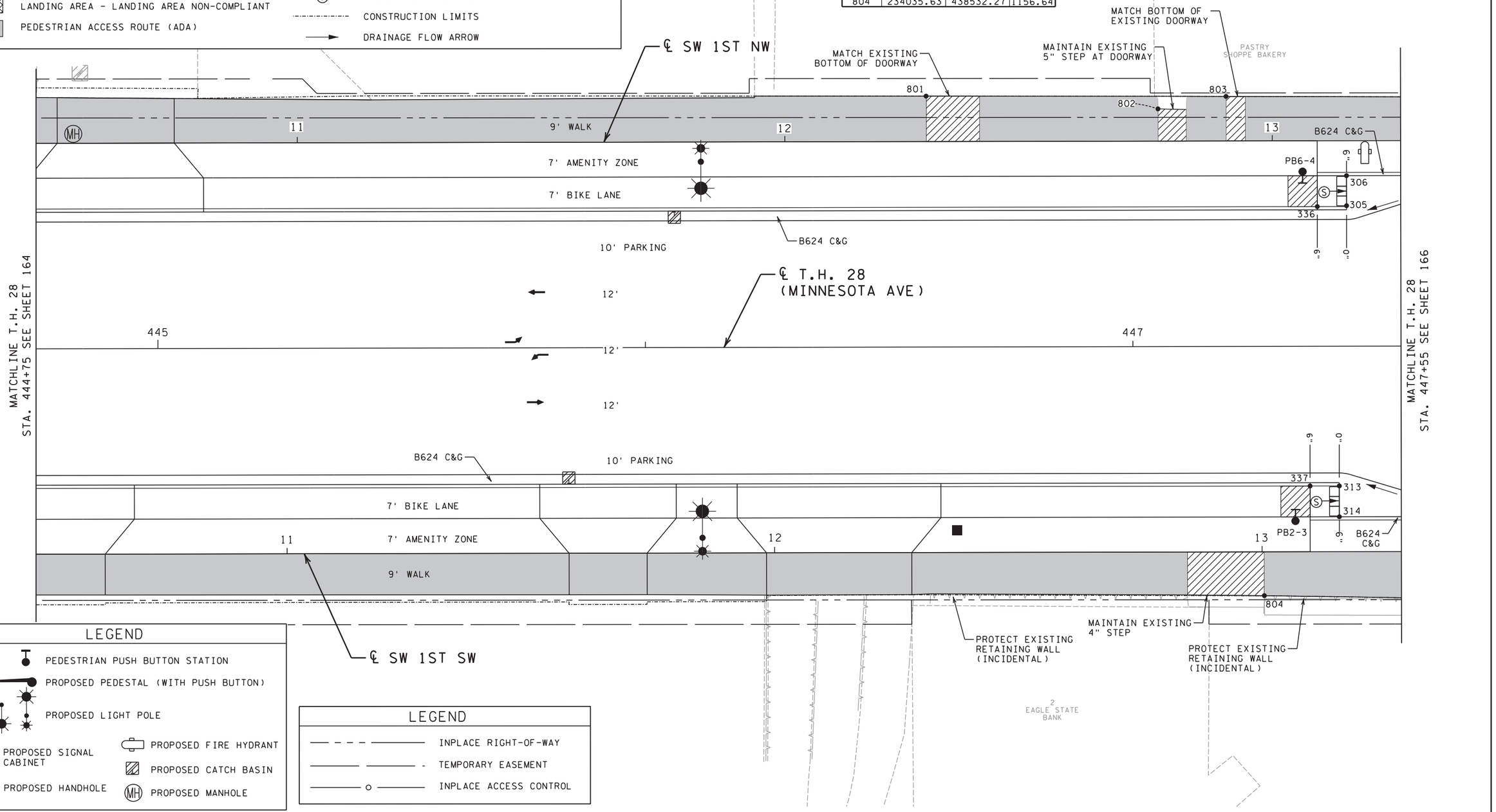
SCALE IN FEET

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
305	234115.65	438549.12	1157.24
306	234121.82	438549.11	1157.31
313	234058.15	438547.64	1156.53
314	234051.81	438547.65	1156.60
801	234138.13	438462.87	1155.77
336	234115.47	438543.12	1157.66
337	234058.14	438541.64	1156.95
802	234135.52	438510.44	1156.68
803	234138.08	438524.40	1157.08
804	234035.63	438532.27	1156.64

SIGNAL CONTROL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
PB2-3	438538.65	234050.96	3.0	3.0
PB6-4	438540.11	234122.65	3.0	3.0



LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE (MH)

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 BETWEEN 1ST ST AND FRANLKIN ST

FILE NO. MNT04-134590

PD5 OF PD25

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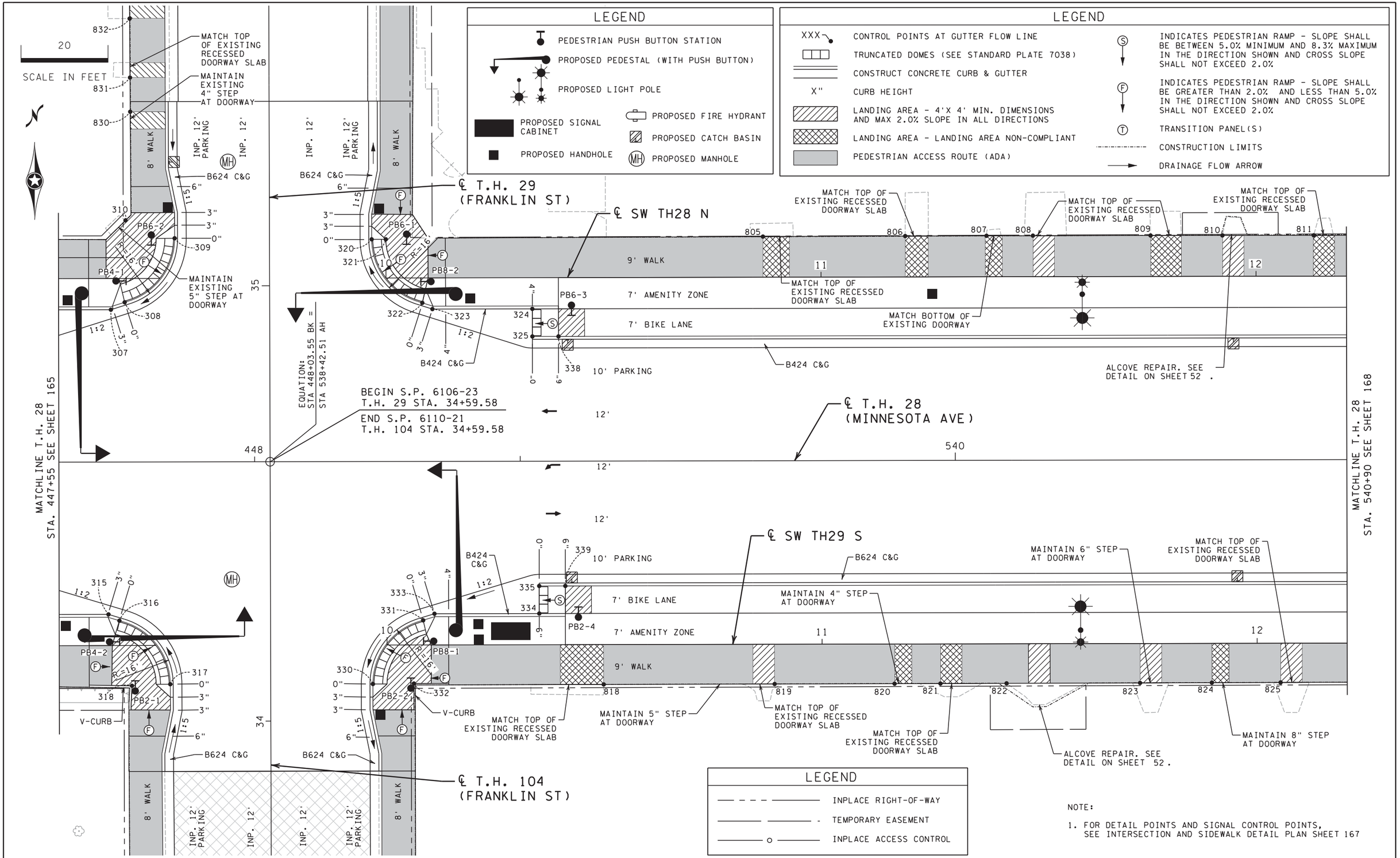

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT T.H. 29/T.H. 104/FRANKLIN ST

FILE NO. MNT04-134590 PD6 OF PD25

166 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-pd1.dgn
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SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
POINT	POINT COORDINATES X	POINT COORDINATES Y		
PB2-1	438577.85	234034.26	4.8	0.8
PB2-2	438641.21	234034.90	5.5	0.7
PB2-4	438679.72	234051.21	3.0	3.0
PB4-1	438573.41	234128.47	0.8	10.0
PB4-2	438571.93	234045.55	1.8	10.0
PB6-1	438640.22	234139.23	4.8	4.2
PB6-2	438581.53	234139.05	1.1	7.1
PB6-3	438678.12	234122.91	3.0	3.0
PB8-1	438646.46	234045.72	1.8	9.8
PB8-2	438645.84	234128.33	1.7	10.0

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
307	234121.86	438572.24	1157.79
308	234123.57	438575.42	1157.88
309	234138.27	438586.90	1158.18
310	234142.39	438575.61	1158.50
315	234051.86	438571.70	1157.08
316	234050.42	438574.21	1157.18
317	234035.82	438585.91	1157.28
318	234035.46	438577.10	1157.55
320	234138.04	438632.19	1159.18
321	234138.04	438635.44	1159.29
322	234123.44	438643.84	1159.28
323	234122.01	438646.15	1159.19
324	234122.06	438669.12	1159.96
325	234115.72	438669.13	1159.89
330	234035.87	438632.48	1159.19
331	234050.50	438644.03	1159.29
332	234035.98	438641.90	1159.48
333	234052.01	438646.63	1159.36
334	234052.06	438670.72	1160.18
335	234058.39	438670.71	1160.11
338	234115.73	438675.14	1160.31
339	234058.40	438676.71	1160.53
805	234138.66	438722.13	1161.73
806	234138.78	438754.83	1162.61
807	234138.84	438773.52	1163.16
808	234138.88	438784.19	1163.62
809	234138.91	438811.23	1165.03
810	234138.93	438827.75	1165.48
811	234138.96	438848.74	1166.31
818	234035.77	438685.53	1161.20
819	234035.87	438724.82	1162.40
820	234035.94	438752.40	1163.48
821	234035.97	438762.93	1163.69
822	234036.02	438778.13	1164.21
823	234036.12	438808.82	1165.54
824	234036.17	438825.32	1166.04
825	234036.22	438841.12	1166.51
830	234167.35	438576.69	1158.45
831	234175.19	438576.64	1158.50
832	234188.75	438576.55	1158.55

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6/30/2017

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MODEL: pd7

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: RDH
CHECKED BY: HLR

NO.	BY	DATE	REVISIONS

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN
T.H. 28 AT T.H. 29/T.H. 104/FRANKLIN ST

FILE NO. MNT04-134590
PD7 OF PD25

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
340	234062.99	438973.36	1170.49
341	234061.69	438973.36	1170.51
342	234061.70	438979.36	1170.69
343	234049.50	438979.39	1170.69
344	234049.52	438986.21	1170.55
345	234039.52	438986.23	1170.35
346	234036.65	438973.56	1170.60
347	234039.65	439030.49	1172.63
348	234049.65	439030.46	1172.73
349	234049.66	439036.56	1173.23
350	234061.46	439036.52	1173.53
351	234063.18	439042.52	1173.68
352	234061.49	439042.52	1173.71
353	234031.05	439041.74	1173.21
354	234035.45	439045.97	1173.30
360	234112.32	438973.26	1171.37
361	234112.64	438979.26	1171.55

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
362	234125.81	438988.82	1172.31
363	234135.81	438988.61	1172.51
364	234125.78	438979.24	1171.87
365	234139.56	438972.15	1171.74
368	234135.96	439028.24	1174.47
369	234125.96	439028.28	1174.27
370	234125.99	439036.29	1174.94
371	234113.27	439036.33	1174.40
372	234112.51	439042.34	1174.56
373	234113.29	439042.33	1174.58
374	234136.01	439042.25	1175.19
812	234138.97	438860.39	1166.76
813	234138.99	438870.16	1167.18
814	234139.01	438892.94	1168.14
815	234138.39	438932.53	1169.98
816	234139.61	438952.55	1171.18
817	234139.59	438960.99	1171.20
826	234036.37	438885.47	1167.63
827	234036.47	438925.70	1169.00
829	234136.07	439057.65	1175.90

20

SCALE IN FEET

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- LANDING AREA - LANDING AREA NON-COMPLIANT
- PEDESTRIAN ACCESS ROUTE (ADA)
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

MATCH EXISTING WALK
INP. 12' PARKING
INP. 12'
1ST ST. NE
INP. 12'
INP. 12' PARKING
MATCH TOP OF EXISTING RECESSED DOORWAY SLAB
MATCH BOTTOM OF EXISTING DOORWAY
812 813 814 815 816 817 365
9' WALK
MAINTAIN EXISTING 4" STEP AT DOORWAY
13
MAINTAIN EXISTING 5" STEP AT DOORWAY
7' AMENITY ZONE
7' BIKE LANE
10' PARKING
MAINTAIN EXISTING 6" STEP AT DOORWAY
MATCH TOP OF EXISTING RECESSED DOORWAY SLAB
B424 C&G
B624 C&G
1:2
6"
363 362 364 360 361
0" 4" 5.0% 3.0%
R=13'
℄ SW TH29 N
℄ T.H. 28 (MINNESOTA AVE)
12'
542
543
CONSTRUCT RAMP AT 8.3% INTO NEW 6" STEP
MATCH EXISTING WALK
℄ SW 1ST NE
LEVEL OUT BOTTOM STEP, MATCH EXISTING.
MATCH EXISTING WALK
374 829
6' WALK
11
7' AMENITY ZONE
7' BIKE LANE
10' PARKING
GUTTER OUT (5% MAX)
368 369 370 373 371 372
2.6%
MATCHLINE T.H. 28
STA. 540+90 SEE SHEET 166
MATCHLINE T.H. 28
STA. 543+90 SEE SHEET 169

℄ SW TH29 S
10' PARKING
B624 C&G
7' BIKE LANE
7' AMENITY ZONE
13
9' WALK
826 827
MATCH TOP OF EXISTING RECESSED DOORWAY SLAB
MATCH TOP OF EXISTING RECESSED DOORWAY SLAB
MATCH BOTTOM OF EXISTING DOORWAY
346
340 341 342 343 344 345
3.3%
5.0%
R=13'
B624 C&G
MATCH EXISTING WALK
INP. 12' PARKING
INP. 12'
1ST ST. SE
INP. 12'
INP. 12' PARKING
MATCH EXISTING WALK
℄ SW 1 ST SE
10' PARKING
B624 C&G
7' BIKE LANE
7' AMENITY ZONE
11
6' WALK
GUTTER OUT (5% MAX)
347 348 349 350 351 352 353 354
2.5%
MAINTAIN EXISTING 5" STEP
PROTECT EXISTING RETAINING WALL

NOTES:

① COURTHOUSE STAIRS TO BE CONSTRUCTED BY OTHERS.

② TABLE FLOWLINES THROUGH SHOULDER. SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- (MH) PROPOSED MANHOLE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 1ST ST NE/SE

FILE NO. MNT04-134590
PD8 OF PD25
168 / 310

FILE: S:\KO\MNt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn
MODEL: pd8

7:57:40 AM
6/30/2017

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- LANDING AREA - LANDING AREA NON-COMPLIANT
- PEDESTRIAN ACCESS ROUTE (ADA)
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
380	234064.39	439369.91	1183.36
381	234063.10	439369.91	1183.40
382	234063.12	439379.91	1183.44
383	234052.93	439379.93	1183.48
384	234052.96	439386.75	1183.06
385	234040.96	439386.71	1182.81
386	234035.61	439373.95	1183.75
387	234035.40	439317.69	1184.99
390	234041.09	439423.58	1182.87
391	234053.09	439423.60	1183.10
392	234041.12	439429.87	1183.29
393	234064.47	439433.87	1183.60
394	234064.66	439441.87	1183.56
395	234060.21	439433.88	1183.51
396	234113.73	439369.81	1183.60

20
SCALE IN FEET

2ND ST. NE

MATCH EXISTING WALK

℄ SW 1ST NE

MATCH EXISTING WALK

MATCH EXISTING WALK

12

13

6' WALK

7' AMENITY ZONE

7' BIKE LANE

10' PARKING

3" 3"

B624 C&G

B624 C&G

B612 C&G

1:2

1:10

R=13'

6"
0"
400
399
0"
401
4"
397
396
398
0"
4"
9"
4"
4"
0"

6"
0"
405
406
0"
407
4"
409
410
408
0"
4"
4"
1:2
9"

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

℄ T.H. 28
(MINNESOTA AVE)

545

546

12'

MATCHLINE T.H. 28
STA. 543+90 SEE SHEET 168

MATCH EXISTING LANDING
MAINTAIN INPLACE BRICK PAVERS

℄ SW 1ST SE

MATCH INTO
EXISTING LANDING

828

387

386

B624 C&G

380
382
4"
0"
0"
381
383
384
0"
385
0"
6"

393
394
395
391
392
390
0"
6"

MATCH EXISTING WALK

2ND ST. SE

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- (MH) PROPOSED MANHOLE

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
397	234114.99	439369.81	1183.60
398	234115.01	439379.81	1183.68
399	234125.29	439386.67	1183.70
400	234137.29	439386.90	1183.58
401	234125.28	439379.79	1184.02
405	234137.44	439427.72	1183.31
406	234125.44	439427.58	1183.55
407	234125.47	439433.75	1183.99
408	234115.61	439433.77	1183.79
409	234115.62	439441.77	1183.75
410	234114.00	439441.78	1183.72
828	234042.50	439179.10	1180.29

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- o INPLACE ACCESS CONTROL

DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR	NO.	BY	DATE	REVISIONS

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 2ND ST NE/SE

FILE NO. MNT04-134590

PD9 OF PD25

169 / 310

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6/30/2017
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6/30/2017

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	LANDING AREA - LANDING AREA NON-COMPLIANT
	PEDESTRIAN ACCESS ROUTE (ADA)
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- (MH) PROPOSED MANHOLE

20

SCALE IN FEET

3RD ST. NE

MATCH EXISTING WALK

B624 C&G

8' WALK

11.5' BLVD

13.5' BLVD

10' PARKING

12'

1:2

R=13'

℄ T.H. 28 (MINNESOTA AVE)

550

551

MATCH BOTTOM EXISTING STEP

PROTECT EXISTING RETAINING WALL (INCIDENTAL)

MATCH V-CURB AT BOTTOM OF EXISTING RETAINING WALL

3RD ST. SE

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
415	234065.88	439769.41	1182.37
416	234064.22	439769.41	1182.39
417	234064.24	439777.41	1182.32
418	234054.24	439777.43	1182.99
419	234050.43	439783.64	1182.57
420	234042.43	439783.78	1182.73
421	234042.41	439777.47	1183.17
422	234042.40	439773.83	1183.91
425	234042.58	439821.92	1182.28
426	234050.58	439821.95	1182.20
427	234042.60	439827.98	1182.58
428	234054.35	439827.94	1182.40
429	234064.35	439827.92	1182.09
430	234064.36	439835.92	1182.20

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
431	234066.13	439835.92	1182.07
435	234115.21	439769.31	1182.37
436	234116.98	439769.31	1182.39
437	234117.00	439777.31	1182.28
438	234127.00	439777.29	1182.62
439	234138.77	439783.33	1182.38
440	234130.77	439783.28	1182.34
441	234138.75	439778.40	1182.80
442	234140.90	439820.39	1181.93
443	234132.90	439820.33	1181.97
444	234140.93	439827.72	1182.54
445	234126.43	439827.78	1182.32
446	234116.43	439827.81	1182.10
447	234115.46	439835.82	1182.09

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd10

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH

PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 3RD ST NE/SE

FILE NO. MNT04-134590

PD10 OF PD25

170 / 310

LEGEND

XXX — CONTROL POINTS AT GUTTER FLOW LINE	Ⓢ INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
TRUNCATED DOMES (SEE STANDARD PLATE 7038)	Ⓕ 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%
CONSTRUCT CONCRETE CURB & GUTTER	Ⓣ TRANSITION PANEL(S)
X" CURB HEIGHT	CONSTRUCTION LIMITS
LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS	DRAINAGE FLOW ARROW
PEDESTRIAN ACCESS ROUTE (ADA)	
MILL AND OVERLAY	

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
452	234116.69	440164.65	1181.72
453	234118.05	440164.65	1181.75
454	234118.08	440172.65	1181.81
455	234128.08	440172.61	1182.01
456	234134.30	440179.25	1181.36
457	234142.30	440179.18	1181.28
458	234142.22	440172.56	1181.83
460	234142.78	440216.09	1181.84
461	234134.78	440216.07	1182.00
462	234142.91	440226.14	1182.68
463	234127.10	440226.26	1182.44
464	234117.10	440226.28	1182.80
465	234116.94	440234.28	1182.96

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
466	234067.35	440164.75	1181.70
467	234067.27	440172.75	1181.81
468	234057.27	440172.77	1182.31
469	234051.90	440177.64	1182.46
470	234051.92	440183.49	1182.14
471	234043.92	440183.52	1182.06
475	234043.71	440220.51	1182.22
476	234051.71	440220.41	1182.38
477	234043.69	440226.38	1182.72
478	234065.86	440226.38	1182.80
479	234067.61	440234.38	1182.96
480	234065.88	440234.38	1182.99
481	234057.77	440226.40	1183.00

20
SCALE IN FEET

7:57:41 AM
6/30/2017

4TH ST. NE
4TH ST. SE
MATCH EXISTING WALK
8' WALK
6' WALK
10' PARKING
B624 C&G
1:2
1:10
R =13'
12'
℄ T.H. 28
(MINNESOTA AVE)
554
555
BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.A.P. 061-090-006
T.H. 28 STA. 554+98.49

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke — Licensed Professional Engineer — Lic. No. 44267
Printed Name: HEATHER L. REDETZKE — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN
T.H. 28 AT 4TH ST NE/SE

FILE NO. MNT04-134590
PD11 OF PD25
171 / 310

FILE: S:\KO\MX\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332.pd1.dgn
MODEL: pd11

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6/30/2017

20

SCALE IN FEET

N

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
500	234120.49	440558.08	1197.84
501	234120.49	440564.08	1197.95
502	234126.49	440564.08	1197.86
503	234066.91	440558.08	1198.00
504	234066.94	440564.08	1198.09
505	234058.69	440564.08	1198.36
506	234145.06	440564.08	1198.06
507	234145.07	440574.08	1198.84
508	234139.08	440574.11	1198.80
509	234145.13	440611.31	1200.49
510	234139.13	440611.28	1200.53
511	234145.14	440617.31	1200.97
512	234044.72	440735.77	1211.90
513	234050.71	440740.02	1211.77
514	234044.71	440740.07	1211.88
515	234044.71	440776.97	1214.00
516	234050.71	440776.95	1213.89
517	234050.71	440783.22	1214.37

MATCH EXISTING WALK

MATCH EXISTING WALK

INP. 8' PARKING

INP. 10'

5TH ST. NE

INP. 10'

INP. 8' PARKING

MATCH EXISTING WALK

MATCH EXISTING WALK

MATCH EXISTING WALK

6' WALK

6' WALK

6' WALK

506 507 508 509 510 511

6" 0" 0" 6"

GUTTER OUT (5% MAX)

R=14'

502 501 500

C&G (ADA)

℄ T.H. 28 (MINNESOTA AVE)

INP. 14' PARKING

INP. 12'

558 559 560

C&G (ADA)

503 504 505

MATCH EXISTING WALK

6' WALK

513 512 514 516 515 517

GUTTER OUT (5% MAX)

C&G (ADA)

RETAINING WALL A

MATCH EXISTING WALK

MATCH EXISTING WALK

INP. 8' PARKING

INP. 10'

5TH ST. SE

INP. 10'

INP. 8' PARKING

NOTE:

① TABLE FLOWLINES, SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

LEGEND

	INPLACE RIGHT-OF-WAY
	TEMPORARY EASEMENT
o	INPLACE ACCESS CONTROL

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn

MODEL: pd12

DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				
	NO.	BY	DATE	REVISIONS

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 5TH ST NE/SE

FILE NO. MNT04-134590

PD12 OF PD25

172 / 310

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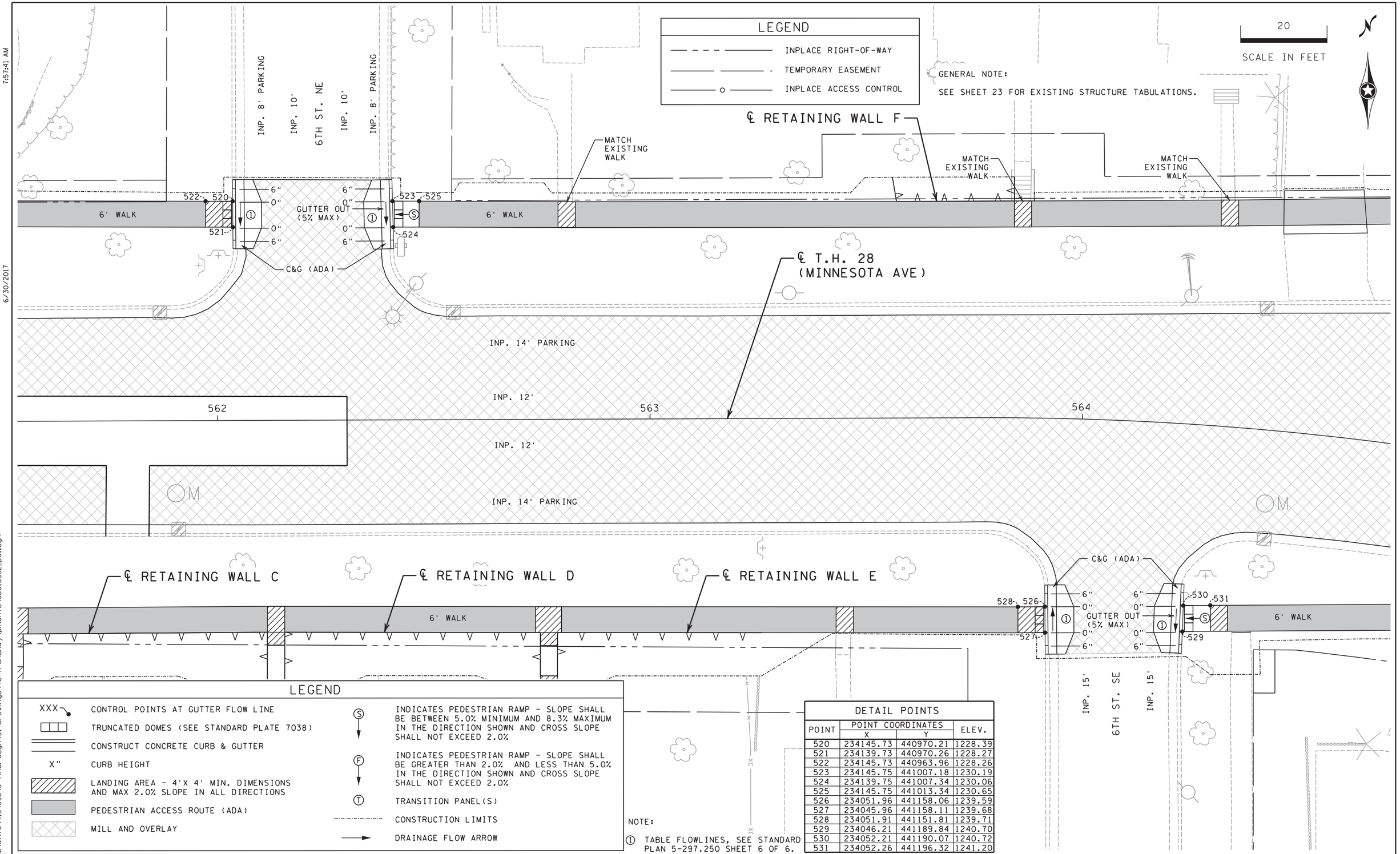
6/30/2017



LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓣ	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

NOTE:

① TABLE FLOWLINES, SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
520	234145.73	440970.21	1228.39
521	234139.73	440970.26	1228.27
522	234145.73	440963.96	1228.26
523	234145.75	441007.18	1230.19
524	234139.75	441007.34	1230.06
525	234145.75	441013.34	1230.65
526	234051.96	441158.06	1239.59
527	234045.96	441158.11	1239.68
528	234051.91	441151.81	1239.71
529	234046.21	441189.84	1240.70
530	234052.21	441190.07	1240.72
531	234052.26	441196.32	1241.20

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 6TH ST NE/SE

FILE NO. MNT04-134590

PD13 OF PD25

FILE: S:\KOVM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
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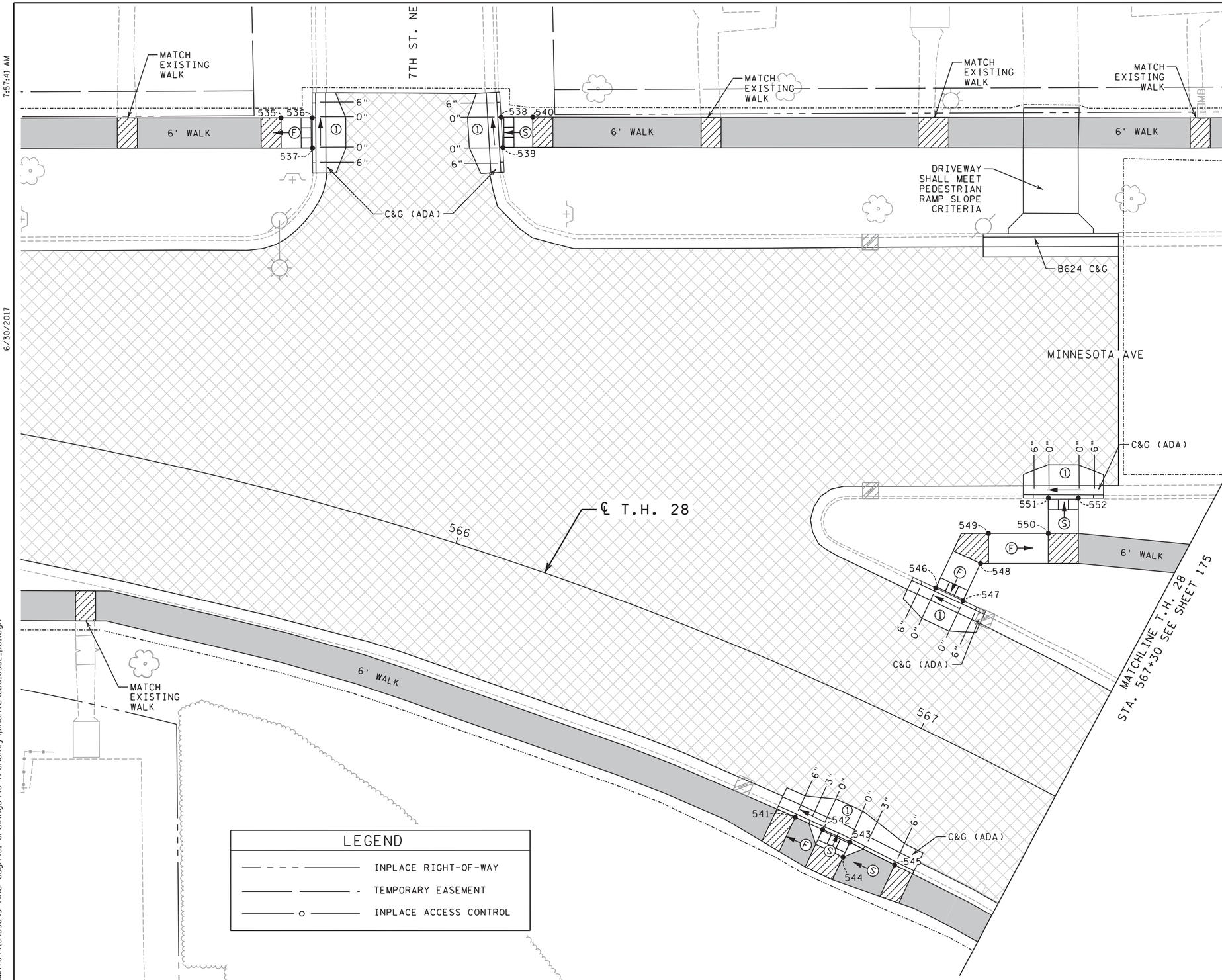

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- MILL AND OVERLAY
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

20

SCALE IN FEET

NOTE:

① TABLE FLOWLINES, SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
535	234146.63	441328.35	1247.92
536	234146.65	441334.60	1248.16
537	234140.65	441334.64	1248.26
538	234146.77	441372.26	1249.69
539	234140.77	441372.61	1249.77
540	234146.79	441378.61	1250.09
541	234007.14	441430.96	1255.48
542	234004.64	441436.42	1255.75
543	234002.12	441441.86	1255.84
544	233999.18	441440.48	1256.08
545	233997.62	441450.79	1256.64
546	234052.86	441459.01	1256.94
547	234050.32	441464.44	1257.06
548	234057.74	441467.92	1257.22
549	234063.74	441469.53	1257.13
550	234063.74	441481.46	1256.69
551	234070.79	441481.46	1256.13
552	234070.77	441487.46	1256.23

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6/30/2017

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pdl.dgn
MODEL: pdl4

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.
Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT 7TH ST NE AND MINNESOTA AVE

FILE NO. MNT04-134590
PD14 OF PD25
174 / 310

7:57:42 AM

6/30/2017

20

SCALE IN FEET

DETAIL POINTS			
POINT	POINT COORDINATES		ELEV.
553	234057.53	441571.37	1261.93
554	234051.53	441571.47	1262.05
555	234051.52	441565.47	1261.81
556	233910.67	441585.12	1265.14
557	233906.87	441589.78	1264.78
558	233903.08	441594.43	1264.90

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- MILL AND OVERLAY
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

NOTE:

(1) TABLE FLOWLINES.

MINNESOTA AVE

MATCHLINE T.H. 28
STA. 567+30 SEE SHEET 174

6' WALK

R=16'

6"
0"
553
0"
6"
C&G (ADA)
554
555

℄ T.H. 28

568

569

C&G (ADA)
6"
0"
0"
(1)
556
557
558
(S)

6' WALK

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- o — INPLACE ACCESS CONTROL

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn
MODEL: pd15

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 28 AT MINNESOTA AVE

FILE NO. MNT04-134590
PD15 OF PD25

7:57:42 AM

6/30/2017

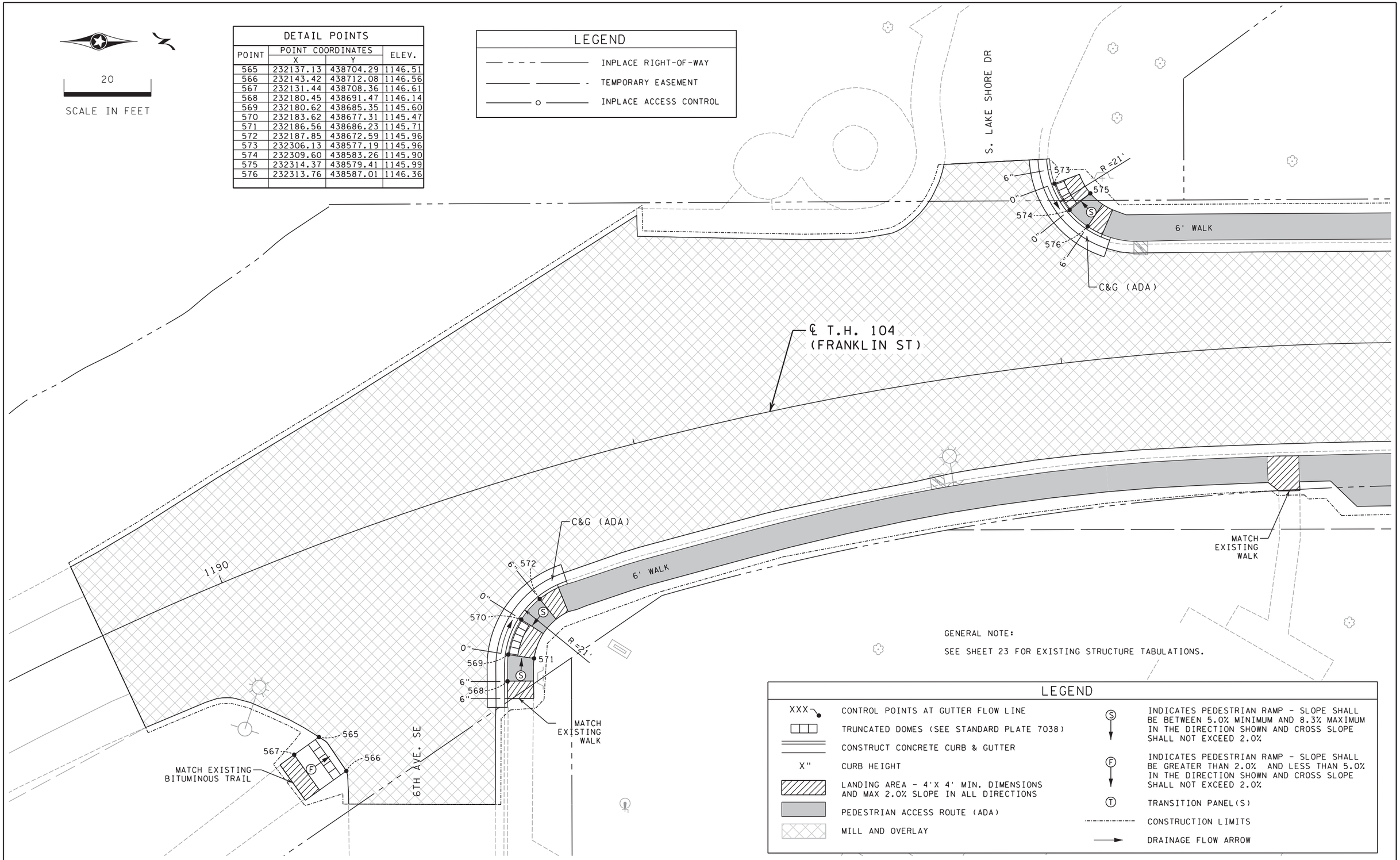
20

SCALE IN FEET

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
565	232137.13	438704.29	1146.51
566	232143.42	438712.08	1146.56
567	232131.44	438708.36	1146.61
568	232180.45	438691.47	1146.14
569	232180.62	438685.35	1145.60
570	232183.62	438677.31	1145.47
571	232186.56	438686.23	1145.71
572	232187.85	438672.59	1145.96
573	232306.13	438577.19	1145.96
574	232309.60	438583.26	1145.90
575	232314.37	438579.41	1145.99
576	232313.76	438587.01	1146.36

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL



GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- MILL AND OVERLAY
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

FILE: S:\KO\MN\t04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn
MODEL: pd16

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 104 AT 6TH AVE SE & S. LAKE SHORE DRIVE

FILE NO. MNT04-134590

PD16 OF PD25

7:57:42 AM

6/30/2017

20

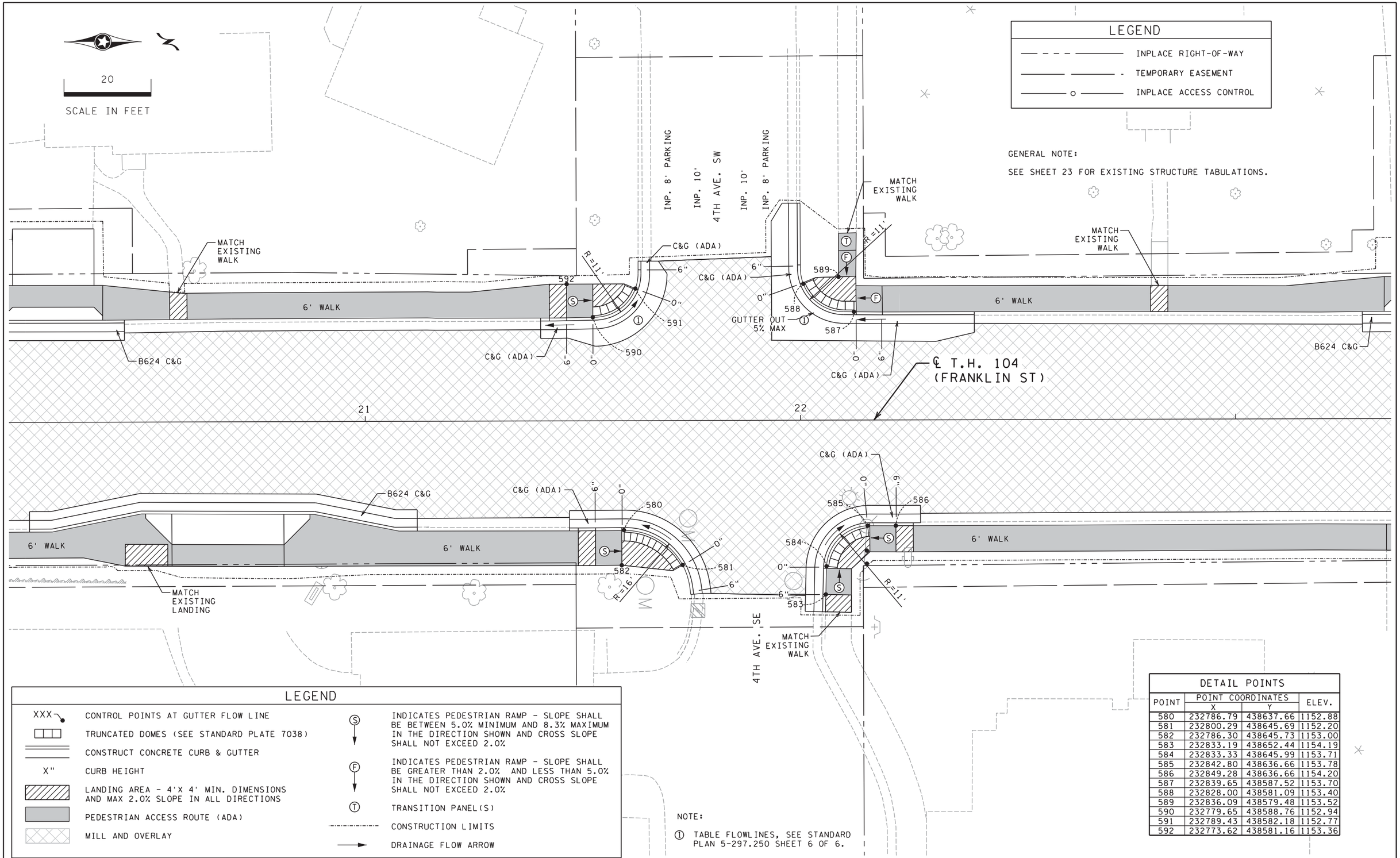
SCALE IN FEET

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.



LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

NOTE:

① TABLE FLOWLINES, SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
580	232786.79	438637.66	1152.88
581	232800.29	438645.69	1152.20
582	232786.30	438645.73	1153.00
583	232833.19	438652.44	1154.19
584	232833.33	438645.99	1153.71
585	232842.80	438636.66	1153.78
586	232849.28	438636.66	1154.20
587	232839.65	438587.52	1153.70
588	232828.00	438581.09	1153.40
589	232836.09	438579.48	1153.52
590	232779.65	438588.76	1152.94
591	232789.43	438582.18	1152.77
592	232773.62	438581.16	1153.36

FILE: S:\KOV\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd17

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 104 AT 4TH AVE SE/SW

FILE NO. MNT04-134590

PD17 OF PD25

7:57:43 AM

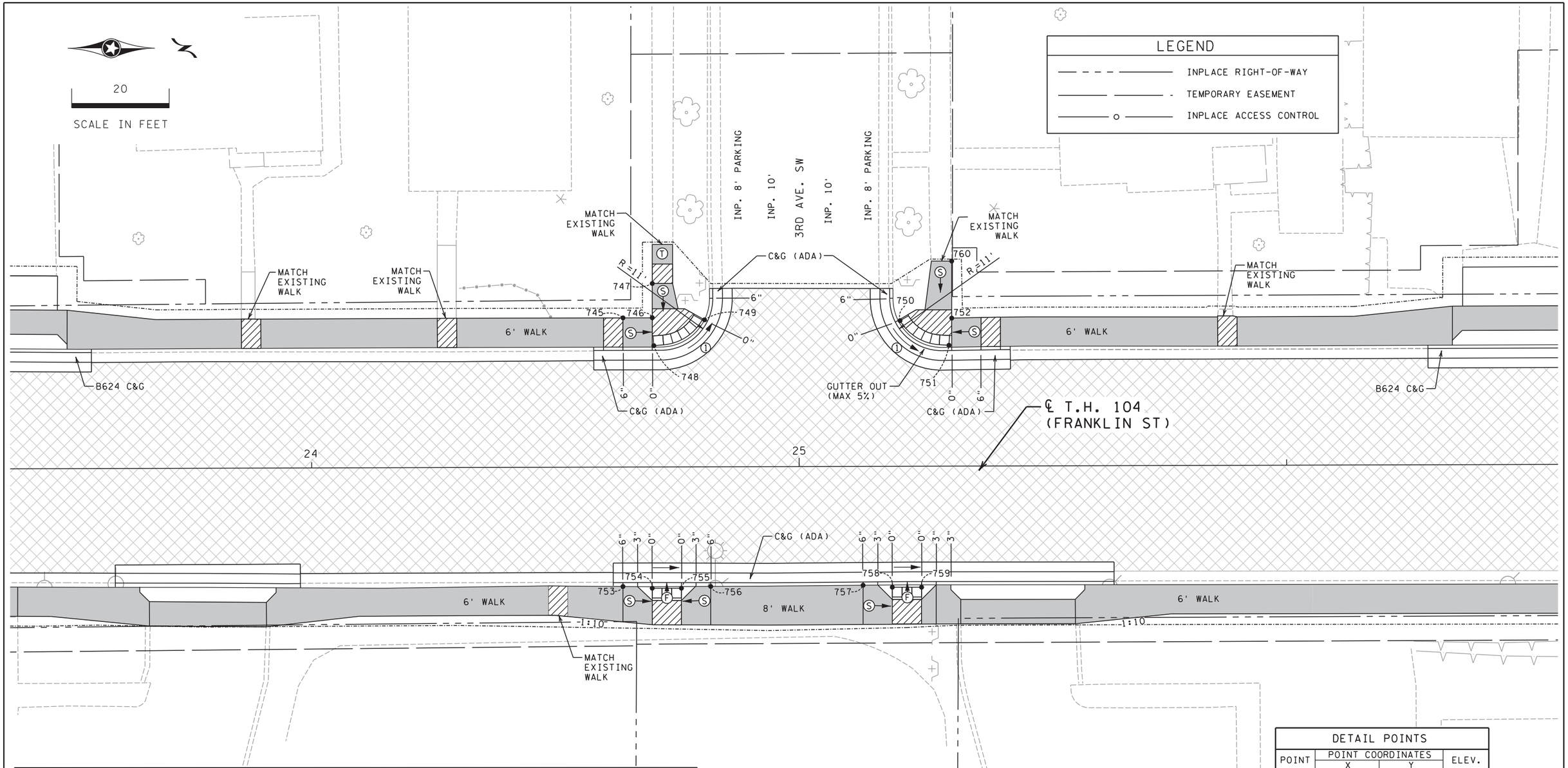
6/30/2017

20

SCALE IN FEET

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL



LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

NOTE:

① TABLE FLOWLINES, SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
745	233091.22	438581.08	1155.60
746	233097.22	438581.07	1155.18
747	233097.22	438574.02	1155.68
748	233097.55	438586.77	1154.93
749	233107.95	438581.48	1155.03
750	233148.06	438581.65	1154.13
751	233158.09	438586.70	1154.02
752	233158.66	438581.12	1154.17
753	233091.22	438636.18	1154.92
754	233097.22	438636.52	1154.50
755	233103.22	438636.52	1154.39
756	233109.22	438636.16	1154.81
757	233140.47	438635.91	1153.40
758	233146.47	438636.30	1152.98
759	233152.47	438636.32	1152.83
760	233158.65	438569.42	1154.97

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 104 AT 3RD AVE SW

FILE NO. MNT04-134590

PD18 OF PD25

178 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd18

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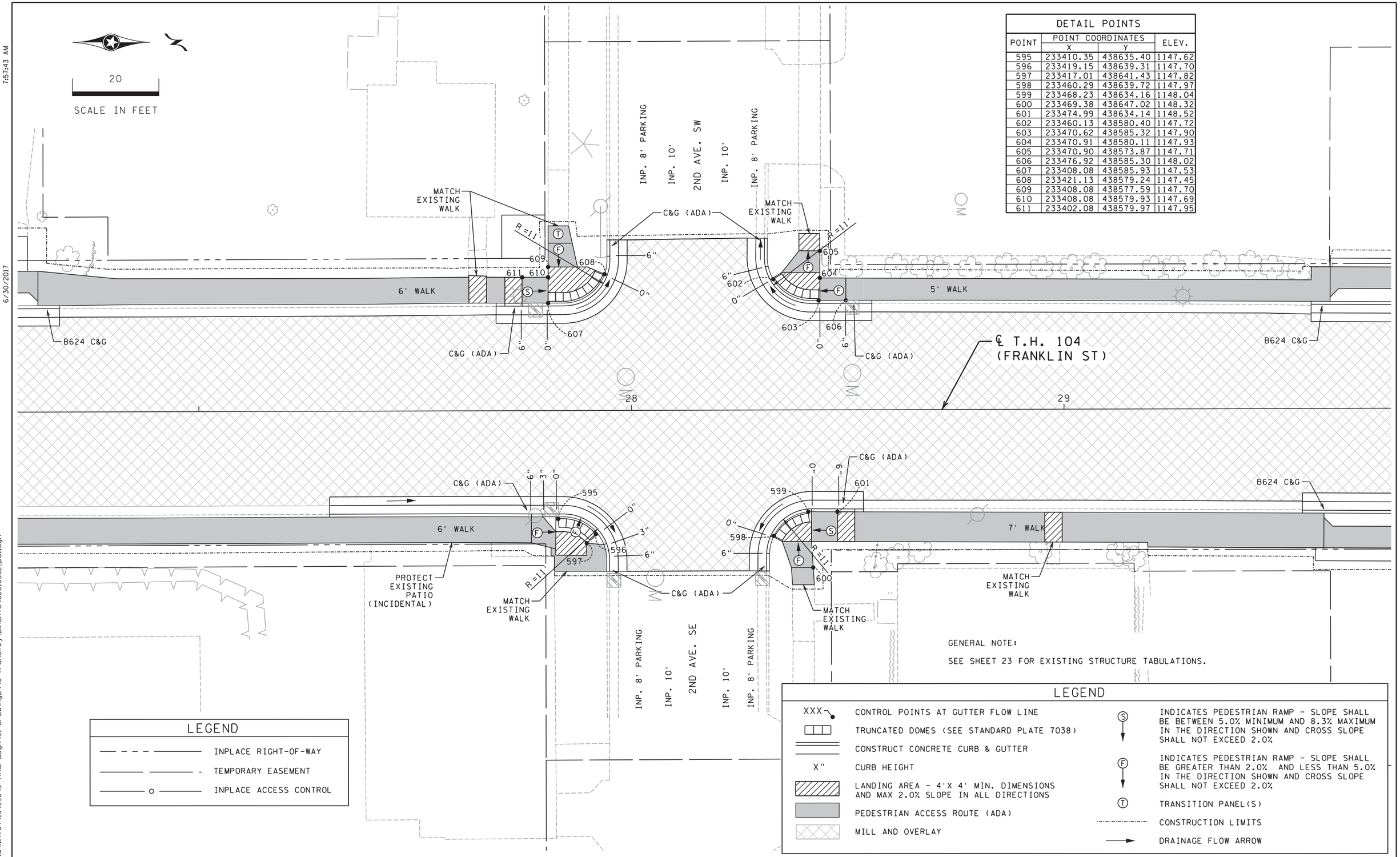
6/30/2017

20

SCALE IN FEET

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
595	233410.35	438635.40	1147.62
596	233419.15	438639.31	1147.70
597	233417.01	438641.43	1147.82
598	233460.29	438639.72	1147.97
599	233468.23	438634.16	1148.04
600	233469.38	438647.02	1148.32
601	233474.99	438634.14	1148.52
602	233460.13	438580.40	1147.72
603	233470.62	438585.32	1147.90
604	233470.91	438580.11	1147.93
605	233470.90	438573.87	1147.71
606	233476.92	438585.30	1148.02
607	233408.08	438585.93	1147.53
608	233421.13	438579.24	1147.45
609	233408.08	438577.59	1147.70
610	233408.08	438579.93	1147.69
611	233402.08	438579.97	1147.95



GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- MILL AND OVERLAY
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR	NO.	BY	DATE	REVISIONS

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 104 AT 2ND AVE SE/SW

FILE NO. MNT04-134590

PD19 OF PD25

179 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\CD610332_pd1.dgn
MODEL: pd19

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6/30/2017

20

SCALE IN FEET

LEGEND

INPLACE RIGHT-OF-WAY

TEMPORARY EASEMENT

INPLACE ACCESS CONTROL

LEGEND

PEDESTRIAN PUSH BUTTON STATION

PROPOSED PEDESTAL (WITH PUSH BUTTON)

PROPOSED LIGHT POLE

PROPOSED SIGNAL CABINET

PROPOSED HANDHOLE

PROPOSED FIRE HYDRANT

PROPOSED CATCH BASIN

PROPOSED MANHOLE

MATCH EXISTING WALK

INP. 10' PARKING

INP. 13'

1ST AVE. SW

INP. 13'

INP. 10' PARKING

MATCH EXISTING WALK

B624 C&G

MAINTAIN EXISTING STEP

8' WALK

VAR. WALK

C&G (ADA)

B624 C&G

B624 C&G

℄ T.H. 104 (FRANKLIN ST)

30

31

B624 C&G

10' WALK

VAR. WALK

B624 C&G

MATCH EXISTING WALK

V-CURB

115
COUNSELOR REALTY

VILLAGE INN

B624 C&G

MATCH EXISTING WALK

INP. 10' PARKING

INP. 13'

1ST AVE. SE

INP. 13'

INP. 10' PARKING

MATCH EXISTING WALK

LEGEND

XXX — CONTROL POINTS AT GUTTER FLOW LINE

TRUNCATED DOMES (SEE STANDARD PLATE 7038)

CONSTRUCT CONCRETE CURB & GUTTER

X" — CURB HEIGHT

LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS

PEDESTRIAN ACCESS ROUTE (ADA)

MILL AND OVERLAY

(S) INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%

(T) TRANSITION PANEL(S)

CONSTRUCTION LIMITS

DRAINAGE FLOW ARROW

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
700	233721.16	438590.10	1154.89
701	233721.16	438589.07	1154.90
702	233727.16	438589.07	1155.02
703	233733.59	438583.35	1155.33
704	233733.58	438577.34	1155.34
705	233735.17	438577.32	1155.33
706	233727.20	438583.46	1155.35
707	233704.40	438590.77	1153.86
708	233735.83	438559.43	1155.38
709	233774.51	438558.37	1157.17
710	233775.18	438576.58	1157.01
711	233776.78	438576.55	1157.02
712	233776.89	438582.55	1156.90
713	233781.91	438587.71	1156.84
714	233788.00	438589.05	1156.94
715	233787.89	438587.11	1156.95
716	233781.62	438582.46	1157.12
717	233805.82	438589.72	1157.09
718	233704.34	438629.87	1153.81

DETAIL POINTS			
POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
719	233720.86	438630.53	1154.65
720	233720.85	438631.50	1154.66
721	233726.85	438631.25	1154.78
722	233734.02	438638.56	1154.97
723	233734.03	438644.60	1154.91
724	233735.05	438644.63	1154.90
725	233726.80	438638.42	1155.19
726	233735.71	438660.93	1154.97
727	233775.16	438661.68	1155.85
728	233775.82	438645.66	1155.86
729	233776.62	438645.68	1155.88
730	233776.36	438639.67	1155.98
731	233784.40	438631.78	1156.31
732	233790.36	438630.94	1156.25
733	233790.41	438631.78	1156.26
734	233784.67	438636.55	1156.33
735	233806.49	438630.28	1156.39
736	233781.37	438639.80	1156.24

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd20

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 104 AT 1ST AVE SE/SW

FILE NO. MNT04-134590

PD20 OF PD25

180 / 310

7:57:43 AM

6/30/2017

SCALE IN FEET

20

WORLD OF WELLNESS

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE (MH)

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

MATCH BOTTOM OF EXISTING DOORWAY

MATCH EXISTING RAMP

MATCH EXISTING WALK

MATCH EXISTING LANDING

5' WALK

10' PARKING

INP. 12'

1ST AVE. NW

INP. 12'

INP. 10' PARKING

5' WALK

6' WALK

8' WALK

VAR. WALK

11' WALK

V-CURB

C&G (ADA)

1:10

1:2

R=13'

833

638 639 640 641 642 643 644 645

637 636 635 634 633 632

620 621 622 623 624 625 626 627 628 629 630 631

℄ T.H. 29 (FRANKLIN ST)

36 37 38

MATCH EXISTING BOTTOM OF STAIRS

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

INP. 8' PARKING

INP. 10'

1ST AVE. NE

INP. 10'

INP. 8' PARKING

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- MILL AND OVERLAY
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
620	234387.15	438629.79	1158.31
621	234393.05	438630.07	1158.33
622	234393.06	438636.05	1158.69
623	234401.17	438636.05	1158.43
624	234401.16	438642.05	1158.49
625	234402.76	438642.05	1158.46
626	234438.91	438640.88	1158.24
627	234440.53	438640.88	1158.27
628	234440.54	438634.88	1158.30
629	234448.11	438629.08	1158.37
630	234454.11	438628.67	1158.40
631	234454.09	438633.37	1158.52
632	234451.34	438587.89	1158.52
633	234451.35	438586.83	1158.54
634	234445.35	438586.79	1158.50
635	234440.01	438582.15	1158.43
636	234440.00	438576.15	1158.40
637	234438.10	438576.15	1158.37
638	234400.89	438575.81	1158.29
639	234399.22	438575.81	1158.32
640	234399.23	438581.81	1158.22
641	234394.94	438581.82	1158.50
642	234386.90	438582.86	1158.42
643	234386.86	438587.13	1158.18
644	234386.86	438587.95	1158.17
645	234392.86	438587.18	1158.19

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 29 AT 1ST AVE NE/NW

FILE NO. MNT04-134590

PD21 OF PD25

181 / 310

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd21

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6/30/2017

20

SCALE IN FEET

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

MATCH BOTTOM EXISTING STEP

MATCH EXISTING WALK

MATCH EXISTING WALK

MATCH EXISTING WALK

INP. 8' PARKING

INP. 10'

2ND AVE. NW

INP. 10'

INP. 8' PARKING

VAR. WALK

6' WALK

8' WALK

8' WALK

6' WALK

2ND AVE. NE

C&G (ADA)

C&G (ADA)

C&G (ADA)

C&G (ADA)

B824 C&G

B624 C&G

B624 C&G

R=11'

R=11'

+81.6

+91.6

+13.6

+23.6

650

651

652

653

654

655

656

657

658

659

660

661

662

663

664

6"

3"

0"

℄ T.H. 29
(FRANKLIN ST)

40

41

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓣ	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

NOTE:

① 2' CONCRETE BOULEVARD. PAID FOR AS 4" CONCRETE WALK.

② 10' CURB TRANSITION BETWEEN B624 TO B824 C&G. PAID FOR AS B824 C&G.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
650	234699.52	438631.48	1157.89
651	234706.31	438631.51	1157.80
652	234714.63	438639.20	1157.95
653	234711.73	438639.98	1158.07
654	234756.69	438637.83	1158.69
655	234768.42	438631.10	1158.74
656	234774.42	438630.40	1159.22
657	234752.37	438575.12	1158.05
658	234762.01	438581.79	1158.35
659	234769.13	438581.79	1158.82
660	234713.99	438575.77	1157.56
661	234710.88	438574.49	1157.68
662	234705.19	438568.37	1157.73
663	234699.52	438582.08	1157.84
664	234706.42	438581.91	1157.66

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 29 AT 2ND AVE NE/NW

FILE NO. MNT04-134590

PD22 OF PD25

182 / 310

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd22

7:57:44 AM

6/30/2017

SCALE IN FEET

20

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE

INP. 8' PARKING
INP. 10'
3RD AVE. NW
INP. 10'
INP. 8' PARKING

MATCH EXISTING WALK
MATCH EXISTING WALK
MATCH EXISTING WALK
MATCH EXISTING WALK
MATCH EXISTING WALK

6' WALK
6' WALK
7' WALK

R=11'
R=11'
R=11'

C&G (ADA)
C&G (ADA)
C&G (ADA)
C&G (ADA)

6"
0"
6"
0"
6"
0"
6"
0"
4"
0"
0"
3"
6"

670
671
672
673
675
676
677
678
679
680
681
682
683
684
685
686
687

1:10

℄ T.H. 29
(FRANKLIN ST)

44
45

LEGEND

- XXX — CONTROL POINTS AT GUTTER FLOW LINE
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- X" — CURB HEIGHT
- LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- PEDESTRIAN ACCESS ROUTE (ADA)
- MILL AND OVERLAY
- (S) — INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
- (T) — TRANSITION PANEL(S)
- CONSTRUCTION LIMITS
- DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
670	235018.98	438581.48	1167.19
671	235023.97	438581.38	1167.10
672	235032.35	438573.65	1166.97
673	235032.57	438568.32	1166.55
674	235070.38	438575.01	1168.00
675	235083.81	438581.51	1168.40
676	235090.18	438581.52	1168.82
677	235078.36	438569.51	1167.80
678	235018.99	438630.78	1167.80
679	235025.85	438631.31	1167.92
680	235032.61	438640.43	1168.15
681	235032.69	438647.51	1168.63
682	235070.04	438640.30	1169.22
683	235072.38	438640.31	1169.23
684	235072.39	438634.31	1169.11
685	235078.92	438634.32	1169.21
686	235078.91	438630.82	1168.94
687	235084.91	438630.77	1168.90

NOTE:

① TABLE FLOWLINES, SEE STANDARD PLAN 5-297.250 SHEET 6 OF 6.

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

MATCH EXISTING WALK

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd23

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke (Licensed Professional Engineer) Lic. No. 44267

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 29 AT 3RD AVE NE/NW

FILE NO. MNT04-134590
PD23 OF PD25
183 / 310

7:57:45 AM

6/30/2017

20

SCALE IN FEET

xc xc xc

LEGEND

- PEDESTRIAN PUSH BUTTON STATION
- PROPOSED PEDESTAL (WITH PUSH BUTTON)
- PROPOSED LIGHT POLE
- PROPOSED SIGNAL CABINET
- PROPOSED HANDHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED CATCH BASIN
- PROPOSED MANHOLE

LEGEND

- INPLACE RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INPLACE ACCESS CONTROL

6TH AVE. NW

B624 C&G

℄ T.H. 29
(FRANKLIN ST)

52

53

C&G (ADA)

6" 0" 688 689 690 0" 6"

R=11'

6' WALK

MATCH EXISTING WALK

MATCH EXISTING WALK

C&G (ADA)

692 0" 9" C&G (ADA)

691 0" 6" R=11' 693

8' WALK

B624 C&G

B624 C&G

6TH AVE. NE

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
Ⓢ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓕ	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE GREATER THAN 2.0% AND LESS THAN 5.0% IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%
Ⓣ	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
688	235803.74	438630.09	1161.29
689	235810.70	438630.29	1160.87
690	235817.96	438636.59	1161.14
691	235856.22	438636.23	1162.30
692	235863.83	438630.17	1162.39
693	235869.90	438630.13	1162.81

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 29 AT 6TH AVE NE/NW

FILE NO. MNT04-134590

PD24 OF PD25

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_pd1.dgn
MODEL: pd24

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6/30/2017

20

SCALE IN FEET

8TH AVE. NW

℄ T.H. 29
(FRANKLIN ST)

58

60

694 | 695 | 696 | 697

6" | 0" | 0" | 6"

C&G (ADA)

B624 C&G

6' WALK

8' WALK

1:10

LEGEND

XXX	CONTROL POINTS AT GUTTER FLOW LINE
	TRUNCATED DOMES (SEE STANDARD PLATE 7038)
	CONSTRUCT CONCRETE CURB & GUTTER
X"	CURB HEIGHT
	LANDING AREA - 4'X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
	PEDESTRIAN ACCESS ROUTE (ADA)
	MILL AND OVERLAY
(S)	INDICATES PEDESTRIAN RAMP - SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND 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%
(T)	TRANSITION PANEL(S)
	CONSTRUCTION LIMITS
	DRAINAGE FLOW ARROW

DETAIL POINTS

POINT	POINT COORDINATES X	POINT COORDINATES Y	ELEV.
694	236468.65	438629.62	1194.05
695	236474.65	438629.63	1193.55
696	236480.65	438629.63	1193.67
697	236486.65	438629.61	1194.17

LEGEND

	INPLACE RIGHT-OF-WAY
	TEMPORARY EASEMENT
o	INPLACE ACCESS CONTROL

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_pd1.dgn
MODEL: pd25

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

INTERSECTION AND SIDEWALK DETAIL PLAN

T.H. 29 AT 8TH AVE NE/NW

FILE NO. MNT04-134590

PD25 OF PD25

185 / 310

STREETSCAPE ITEMS — Q1

PROJECT	STATION	LOCATION	BICYCLE RACK	WASTE RECEPTACLE	PLANTER		PICNIC TABLE SPECIAL	METAL BENCH
					LARGE	SMALL		
			EACH	EACH	EACH	EACH	EACH	EACH
S.P. 061-090-006	T.H. 28							
	436+00 - 440+50	LT		1				
		RT						
	440+50 - 444+50	LT	2	1	3			2
		RT	1	2	1	1		2
	444+50 - 539+00	LT	2	3	3	1	1	2
		RT	1	3			1	
	539+00 - 543+00	LT	2	2	3		1	3
		RT	2	2	2	4	1	2
	543+00 - 547+00	LT		1		1	1	1
		RT	1	1		3	1	2
	SUBTOTALS		11	16	12	10	6	14
	TOTALS		11	16	12	10	6	14

PLANTING SCHEDULE — Q2

PROJECT	TOTALS	SUBTOTALS BY TYPE	COMMON NAME	SCIENTIFIC NAME	ABBREVIATED NAME	SIZE	ROOT	SPACING
	EACH	EACH						
S.P. 061-090-006	13	DECIDUOUS TREE 2" CAL B&B						
		2	COLUMMAR WHITE OAK	QUERCUS ALBA	WO	2"	B&B	SEE PLAN
		8	HACKBERRY	CELTIS OCCIDENTALIS	HB	2"	B&B	SEE PLAN
		3	HONEYLOCUST	GLEDITSIA TRIACANTHOS VAR. INERMIS	HL	2"	B&B	SEE PLAN
	23	ORNAMENTAL TREE 2" CAL B&B						
		13	AMUR CHERRY	PRUNUS MAACKI	AC	2"	B&B	SEE PLAN
		10	JAPANESE TREE LILAC	SYRINGA RETICULATA	JT	2"	B&B	SEE PLAN
	128	DECIDUOUS SHRUB NO 2 CONT						
		16	BURGUNDY CANDY NINEBARK	PHYSOCARPUS OPULIFOLIUS 'PODARAS'	BN	#2	CONT.	3' O.C.
		44	DOGWOOD	CORNUS STOLONIFERA 'ARCTIC FIRE'	DW	#2	CONT.	4' O.C.
		14	FRAGRANT SUMAC	RHUS AROMATICA 'GRO LOW'	FS	#2	CONT.	4' O.C.
		26	ROCK COTONEASTER	COTONEATER HORIZONTALIS VAR. PERSPUSILLUS	RC	#2	CONT.	4' O.C.
		28	WINTERBERRY	ILEX VERTICILLATA 'RED SPRITE'	WB	#2	CONT.	4' O.C.
	720	PERENNIAL NO 1 CONT						
		146	BLACK EYED SUSAN	RUDBECKIA FULGIDA	BE	#1	CONT.	2' O.C.
		49	BLAZING STAR	LIATRIS SPICATA 'KOBOLD'	BS	#1	CONT.	2' O.C.
		79	ORANGE STONECROP SEDUM	SEDUM KAMTSCHATICUM VAR. ELLACOMBEANUM	SS	#1	CONT.	2' O.C.
		130	PURPLE CONEFLOWER	ECHINACEA PURPUREA	PC	#1	CONT.	2' O.C.
		128	RUSSIAN SAGE	PEROVSKIA ATRIPLICIFOLIA	RS	#1	CONT.	2' O.C.
		54	VARIEGATED SWEET IRIS	IRIS PALLIDA 'VARIEGATE'	SI	#1	CONT.	2' O.C.
		134	VERA JAMISON	HYLOTELEPHIUM 'VERA JAMISION'	VJ	#1	CONT.	2' O.C.
	351	ORNAMENTAL GRASS NO 1 CONT						
		86	CORD GRASS	SPARTINA PECTINATA VAR. AUREOMARGINATA	CG	#1	CONT.	2.5' O.C.
		99	FEATHER REED GRASS	CALAMAGROSTIS X. ACUTIFLORA	FR	#1	CONT.	2.5' O.C.
		88	LITTLE BLUESTEM	SCHIZACHYRIUM SCOPARIUM 'STANDING OVATION'	LB	#1	CONT.	2.5' O.C.
		50	PRIARIE DROPSEED	SPOROBOLUS HETEROLEPIS	PD	#1	CONT.	2.5' O.C.
		28	PURPLE MILLET	PENNISETUM GLAUCUM	PM	#1	CONT.	2' O.C.

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: SLS
CHECKED BY: KEW

NO.	BY	DATE	REVISIONS

I hereby certify that this plan 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.
Certified By: _____ Lic. No. 23817
Licensed Professional Engineer
Printed Name: KARL E. WEISSENBORN Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN
TABULATIONS

FILE NO. MNT04-134590
SC1 OF SC11
186/310

7:58:02 AM

6/30/2017

30

SCALE IN FEET

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

℄ T.H. 28

℄ 4TH ST NW

429 12 430 431 432 433

MATCHLINE T.H. 28
STA. 433+50 SEE SHEET 188

NOTE: EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

LEGEND

- BRICK PAVERS
- 4" CONC. WALK SPECIAL
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- LIGHTING UNIT
- SIGNAL LUMINAIRE
- (W) WASTE RECEPTACLE
- (R) BICYCLE RACK
- (B) METAL BENCH
- SIGNAL CABINET
- (PL) PLANTER-LARGE
- (PS) PLANTER-SMALL
- PICNIC TABLE SPECIAL
- HANDHOLE
- T TURF IRRIGATION AREAS

30

SCALE IN FEET

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 188

437 438 439 44

℄ T.H. 28
(MINNESOTA AVE)

MATCHLINE T.H. 28
STA. 440+00 SEE SHEET 189

FILE: S:\KO\MX\Mnt04\134590\5-final-dgn\51-drawings\40-TransHwy\plnshts\C0610332_sc1.dgn

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

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Certified By: _____ Licensed Professional Engineer Lic. No. 23817

Printed Name: KARL E. WEISSENBORN Date: 06/29/2017

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PHONE: (651)490-2000
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

FILE NO. MNT04-134590
SC2 OF SC11

187/310

7:58:03 AM

6/30/2017

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sc1.dgn
MODEL: SC3

LEGEND

- BRICK PAVERS
- 4" CONC. WALK SPECIAL
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- LIGHTING UNIT
- SIGNAL LUMINAIRE
- (W) WASTE RECEPTACLE
- (R) BICYCLE RACK
- (B) METAL BENCH
- SIGNAL CABINET
- T TURF IRRIGATION AREAS
- (PL) PLANTER-LARGE
- (PS) PLANTER-SMALL
- PICNIC TABLE SPECIAL
- HANDHOLE

N

30

SCALE IN FEET

NOTE: EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

MATCHLINE T.H. 28
STA. 433+50 SEE SHEET 187

℄ T.H. 28

434

435

12

11

9

10

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 187

℄ MINNESOTA AVE

243
IRY QUEEN

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

FILE NO. MNT04-134590
SC3 OF SC11

188 / 310

30

SCALE IN FEET

LEGEND

- BRICK PAVERS
- 4" CONC. WALK SPECIAL
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- LIGHTING UNIT
- SIGNAL LUMINAIRE
- (W) WASTE RECEPTACLE
- (R) BICYCLE RACK
- (B) METAL BENCH
- SIGNAL CABINET
- (PL) PLANTER-LARGE
- (PS) PLANTER-SMALL
- PICNIC TABLE SPECIAL
- HANDHOLE
- (T) TURF IRRIGATION AREAS

NOTE: PERENNIAL AND TREE AREAS TO BE IRRIGATED
EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

MATCHLINE T.H. 28
STA. 440+00 SEE SHEET 189

MATCHLINE T.H. 28
STA. 444+10 SEE SHEET 190

1ST ST. NW

104
SUBWAY

℄ SW 2ND NW

℄ T.H. 28
(MINNESOTA AVE)

℄ SW 2ND SW

2ND ST. SW

1ST ST. SW

125
FAMILY DOLLAR

109
AUTO VALUE

103
MINNEWASKA
ABSTRACT & TITLE

10 12 13

441 542 443 444

+32.0 +80.0 +10.0 +70.0 +85.0 +10.0 +35.0 +55.6

27-RS 4-DW 28-VJ 1-AC 2-HB 4-PC 6-PM 9-FR 1-HL 4-FS

10-PC 12-BE 10-BE 10-BE

+61.2 +85.0 +55.0 +30.0 +90.0 +53.7

11-FR 9-PD 22-LB 4-WB 20-SI 4-RC 48-SS

4-BN 1-AC 1-JT 1-HL 22-CG 18-BS 1-HB 1-AC

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DESIGNER: SLS				
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

FILE NO. MNT04-134590
SC4 OF SC11

189 / 310

FILE: S:\K0\W\Mnt04\134590\5-final-dsgn\5j-drawings\40-TransHwy\plnshts\C06103 32_sc1.dgn
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6/30/2017 7:58:03 AM

7:58:04 AM

6/30/2017

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transitway\plnshts\CD610332_sc1.dgn

MODEL: SC5

LEGEND

- BRICK PAVERS
- 4" CONC. WALK SPECIAL
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- LIGHTING UNIT
- SIGNAL LUMINAIRE
- (W) WASTE RECEPTACLE
- (R) BICYCLE RACK
- (B) METAL BENCH
- SIGNAL CABINET
- (T) TURF IRRIGATION AREAS
- (PL) PLANTER-LARGE
- (PS) PLANTER-SMALL
- PICNIC TABLE SPECIAL
- HANDHOLE

NOTE: PERENNIAL AND TREE AREAS TO BE IRRIGATED
EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

30
SCALE IN FEET

1ST ST. NW

℄ SW 1ST NW

T.H. 29 (FRANKLIN ST)

GINGER BREAD CAFE

PASTRY SHOPPE BAKERY

MATCHLINE T.H. 28 STA. 444+10 SEE SHEET 189

MATCHLINE T.H. 28 STA. 447+95 SEE SHEET 191

10 11 12 13

+62.2 +50.0 +00.0 +30.0 +65.0 +80.0 +15.0 +25.0 +37.9

4-DW 1-JT 8-RS 20-BE 10-CG 1-JT 4-PD 1-AC 4-DW

14-PC 14-VJ 1-AC 8-RS 8-WB 6-FR 10-LB 4-BN 17-BS 13-SS 18-SI

445 546 447

℄ T.H. 28 (MINNESOTA AVE)

+60.2 +97.0 +76.0 +65.0 +11.0 +36.3

4-DW 12-FR 25-LB 12-PM 27-FR

25-CG 1-AC 1-HB 11-PD 4-RC 2-BN 1-AC 1-JT 2-DW

℄ SW 1ST SW

1ST ST. SW

2 EAGLE STATE BANK

T.H. 104 (FRANKLIN ST)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

I hereby certify that this plan 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.

Certified By: _____ Licensed Professional Engineer Lic. No. 23817

Printed Name: KARL E. WEISSENBORN Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

FILE NO. MNT04-134590
SC5 OF SC11

190 / 310

LEGEND

- BRICK PAVERS
- 4" CONC. WALK SPECIAL
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- LIGHTING UNIT
- SIGNAL LUMINAIRE
- (W) WASTE RECEPTACLE
- (R) BICYCLE RACK
- (B) METAL BENCH
- SIGNAL CABINET
- T TURF IRRIGATION AREAS
- (PL) PLANTER-LARGE
- (PS) PLANTER-SMALL
- PICNIC TABLE SPECIAL
- HANDHOLE

NOTE: PERENNIAL AND TREE AREAS TO BE IRRIGATED
EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

SCALE IN FEET 30

℄ T.H. 29 (FRANKLIN ST)

℄ SW TH28 N

℄ T.H. 28 (MINNESOTA AVE)

℄ SW TH29 S

℄ T.H. 104 (FRANKLIN ST)

1ST ST. NE

1ST ST. SE

EQUATION: STA 448+03.55 BK = STA 538+42.51 AH

MATCHLINE T.H. 28 STA. 447+95 SEE SHEET 190

MATCHLINE T.H. 28 STA. 542+50 SEE SHEET 192

GLENWOOD STATE BANK

LANE STUDIO

AMERICAN BUSINESS FORMS

STUDIO ARCHITECTS

STRECKER AGENCY

31 AMERICAN BUSINESS FORMS

2 THE VALLEY TROLL

8 CHINESE RESTAURANT

14 PIZZA RANCH

RETAIL

AMERICAN BUSINESS SOLUTIONS

28 THE WALK IN CLOSET

ACCOUNTANTS, JEERY WANGSNESS

KIOSK (FUTURE BY OTHERS)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

FILE NO. MNT04-134590
SC6 OF SC11
191 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-sc1.dgn
MODEL: SC6

6/30/2017 7:58:04 AM

7:58:05 AM

6/30/2017

30

SCALE IN FEET

LEGEND

BRICK PAVERS	(W) WASTE RECEPTACLE	(PL) PLANTER-LARGE
4" CONC. WALK SPECIAL	(R) BICYCLE RACK	(PS) PLANTER-SMALL
CONSTRUCTION LIMITS	(B) METAL BENCH	PICNIC TABLE SPECIAL
INP. RIGHT-OF-WAY	SIGNAL CABINET	HANDHOLE
TEMPORARY EASEMENT	(T) TURF IRRIGATION AREAS	
LIGHTING UNIT		
SIGNAL LUMINAIRE		

NOTE: PERENNIAL AND TREE AREAS TO BE IRRIGATED
EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

1ST ST. NE

107 PALMER CREATIONS

MAIN CUTS

137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

2ND ST. NE

℄ SW 1ST NE

MATCHLINE T.H. 28
STA. 542+50 SEE SHEET 191

10 11 12 13

3-PD 1-AC 3-LB 4-WB 1-WO 11-CG 2-BN 4-PM 2-DW 2-WB

+95.6 +10.6 +25.6 +47.0 3-CG 4-FS 15-LB 14-PD 7-FR 1-HB +90.0 +53.0 1-AC 9-FR +75.0 +86.9

543 545 546

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

MATCHLINE T.H. 28
STA. 546+45 SEE SHEET 193

℄ T.H. 28
(MINNESOTA AVE)

+97.8 +08.0 16-BE 19-PC 4-RC 12-BE 1-HB +85.0 +95.0 +10.0 +35.0 4-WB +60.0 24-PC 12-RS 1-HL 14-BE +35.0 +45.0 +86.6

4-DW 1-JT 12-VJ 13-RS 1-WO 12-VJ 9-PC 11-RS 4-WB 11-RS 12-BE 4-RC 24-VJ 2-HB 4-DW

℄ SW 1 ST SE

KIOSK (FUTURE BY OTHERS)

1ST ST. SE

2ND ST. SE

130 POPE COUNTY COURT HOUSE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

I hereby certify that this plan 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.

Certified By: _____ Lic. No. 23817
Licensed Professional Engineer

Printed Name: KARL E. WEISSENBORN Date: 06/29/2017

SEH
PHONE: (651)490-2000
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

FILE NO. MNT04-134590
SC7 OF SC11
192 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_sc1.dgn
MODEL: SC7

30

SCALE IN FEET

2ND ST. NE

3RD ST. NE

MATCHLINE T.H. 28
STA. 546+45 SEE SHEET 192

547 548 549 550

℄ T.H. 28
(MINNESOTA AVE)

2ND ST. SE

3RD ST. SE

MATCHLINE T.H. 28
STA. 550+70 SEE LOWER LEFT

T

LEGEND

BRICK PAVERS	(W) WASTE RECEPTACLE	(PL) PLANTER-LARGE	
4" CONC. WALK SPECIAL	(R) BICYCLE RACK	(PS) PLANTER-SMALL	
CONSTRUCTION LIMITS	(B) METAL BENCH	PICNIC TABLE SPECIAL	
INP. RIGHT-OF-WAY	SIGNAL CABINET	HANDHOLE	
TEMPORARY EASEMENT	T TURF IRRIGATION AREAS		
LIGHTING UNIT			
SIGNAL LUMINAIRE			

NOTE: EACH LIGHT POLE HANGING BASKETS (2) TO BE DRIP IRRIGATED
EACH PLANTER BOX (LARGE AND SMALL) TO BE DRIP IRRIGATED
SEE SPECIAL PROVISIONS FOR IRRIGATION REQUIREMENTS

30

SCALE IN FEET

MATCHLINE T.H. 28
STA. 550+70 SEE UPPER RIGHT

551 552 553 554 555

℄ T.H. 28
(MINNESOTA AVE)

4TH ST. NE

4TH ST. SE

T

7:58:05 AM

6/30/2017

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_sc1.dgn

MODEL: SC8

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN

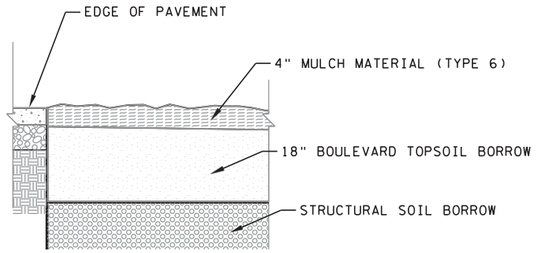
FILE NO. MNT04-134590

SC8 OF SC11

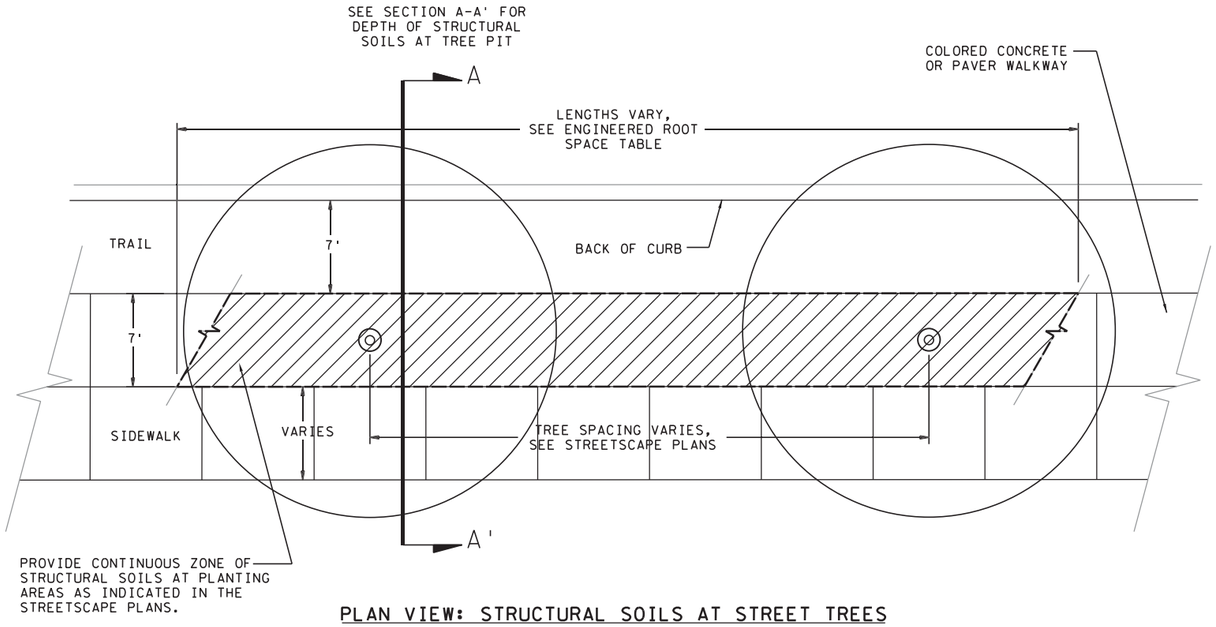
193 / 310

PLANTING BED DEPTH NOTE:

PROVIDE CONTINUOUS 18" DEPTH OF PLANTING SOIL MIX (TYP) FOR MASS PLANTING BEDS (SHRUBS AND PERENNIALS) AT THE LANDSCAPE PLANTING BED LOCATIONS INDICATED IN STREETSCPAE PLANS. EXCAVATION FOR PLANTING SOIL IS INCIDENTAL.

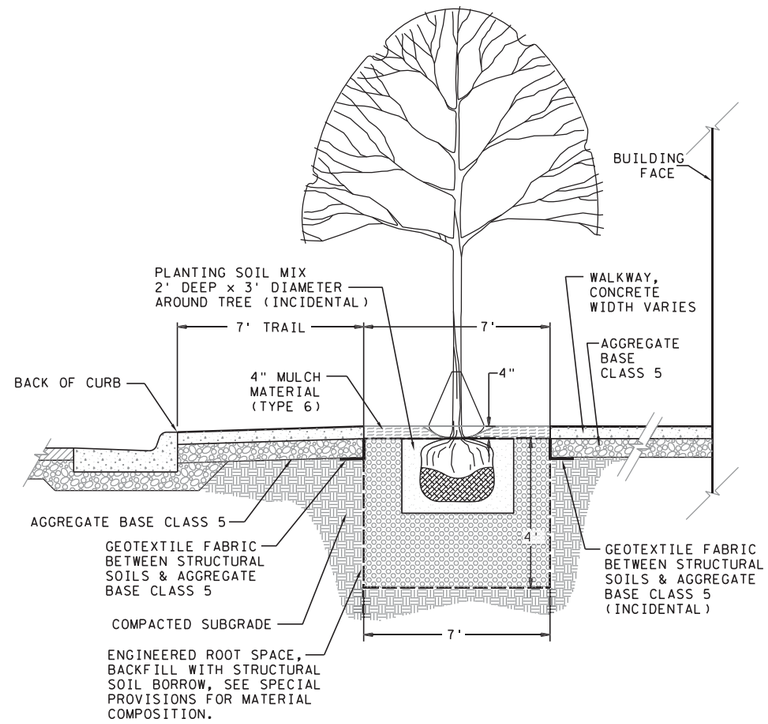


PLANTING BEDS



PLAN VIEW: STRUCTURAL SOILS AT STREET TREES

PAVER DETAIL



SECTION A-A'
ENGINEERED ROOT SPACE AT TREE PIT

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN
DETAILS

FILE NO. MNT04-134590
SC9 OF SC11

194 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sc1.dgn
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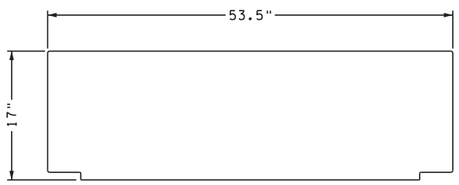
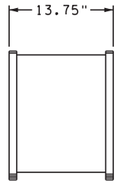
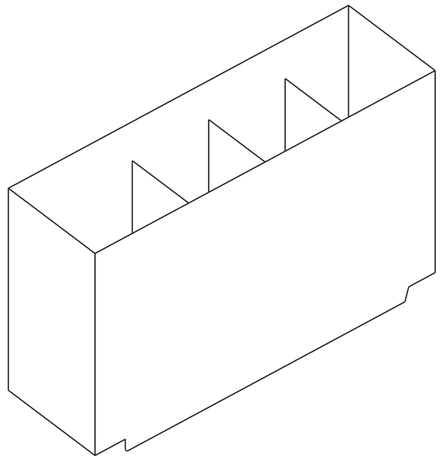


FRONT VIEW



SIDE VIEW

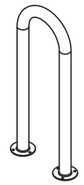


ISOMETRIC

* PROVIDE DRIP IRRIGATION FOR 4 CELLS WITHIN PLANTER BOX.

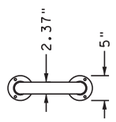
PLANTER (LARGE - 50 GAL) DETAIL

(NOT TO SCALE)



ISOMETRIC

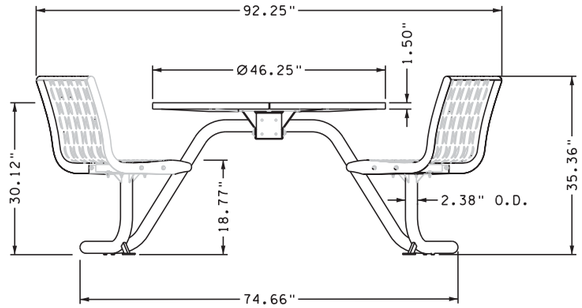
FRONT VIEW



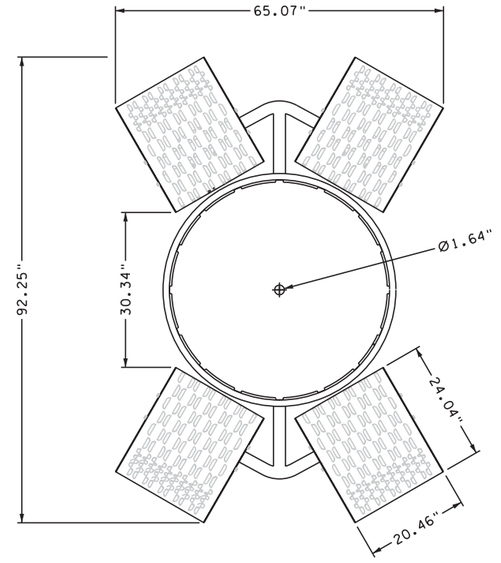
TOP VIEW

BICYCLE RACK DETAIL

(NOT TO SCALE)



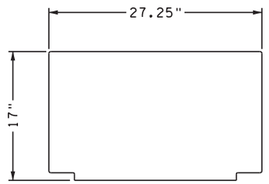
SIDE ELEVATION



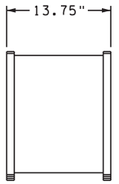
PLAN

PICNIC TABLE SPECIAL DETAIL

(NOT TO SCALE)



FRONT VIEW



SIDE VIEW

* PROVIDE DRIP IRRIGATION FOR 2 CELLS WITHIN PLANTER BOX.

PLANTER (SMALL - 28 GAL) DETAIL

(NOT TO SCALE)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

I hereby certify that this plan 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.

Certified By: _____ Licensed Professional Engineer Lic. No. 23817

Printed Name: KARL E. WEISSENBORN Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN
DETAILS

FILE NO. MNT04-134590
SC10 OF SC11

195/310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sc1.dgn
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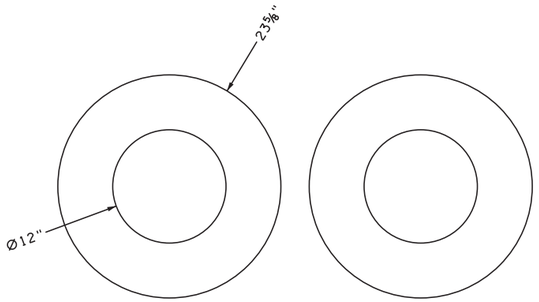
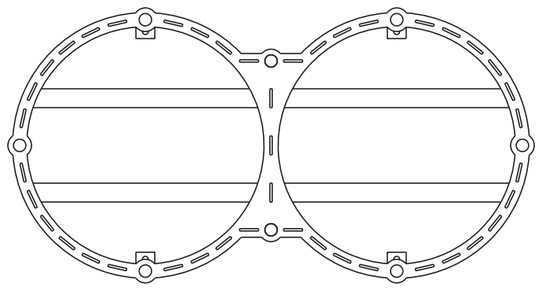
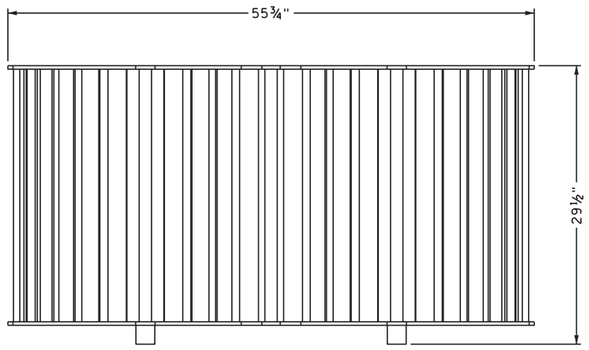


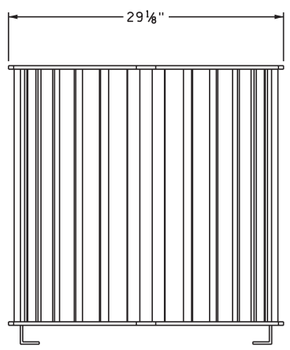
FLAT SPUN LID DETAILS



TOP VIEW



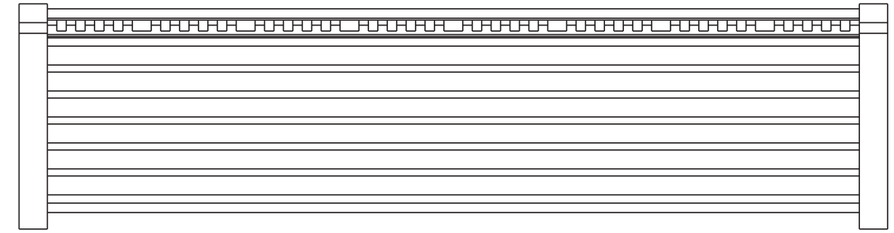
FRONT VIEW



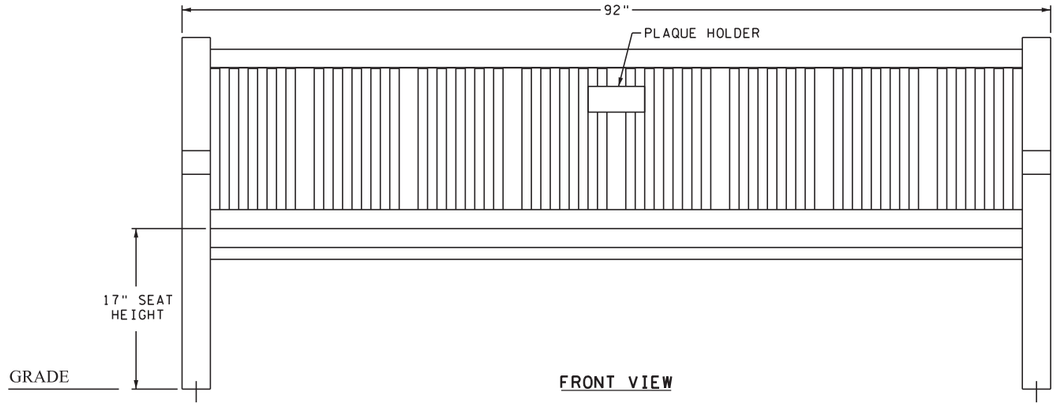
SIDE VIEW

WASTE RECEPTACLE DETAIL

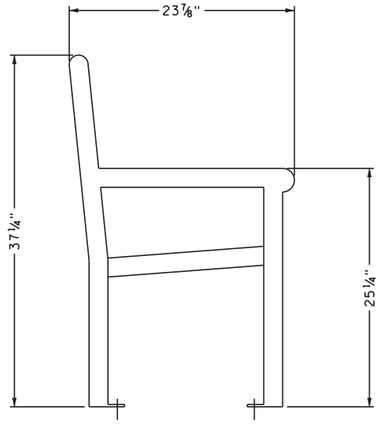
(NOT TO SCALE)



TOP VIEW



FRONT VIEW



SIDE VIEW

METAL BENCH DETAIL

(NOT TO SCALE)

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: SLS				
CHECKED BY: KEW				

I hereby certify that this plan 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.

Certified By: _____ Lic. No. 23817
Licensed Professional Engineer

Printed Name: KARL E. WEISSENBORN Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STREETSCAPE PLAN
DETAILS

FILE NO. MNT04-134590
SC11 OF SC11
196 / 310

7:58:08 AM

6/30/2017

GENERAL NOTES:

RETAINING WALL ALIGNMENT LOCATION IS AT THE BOTTOM FINISHED FACE OF WALL.

WALL ELEVATIONS ARE BASED ON A BLOCK HEIGHT OF 12 INCHES. IF BLOCKS OF DIFFERENT HEIGHT ARE PROPOSED, TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 2 FEET ALONG ENTIRE WALL ALIGNMENT.

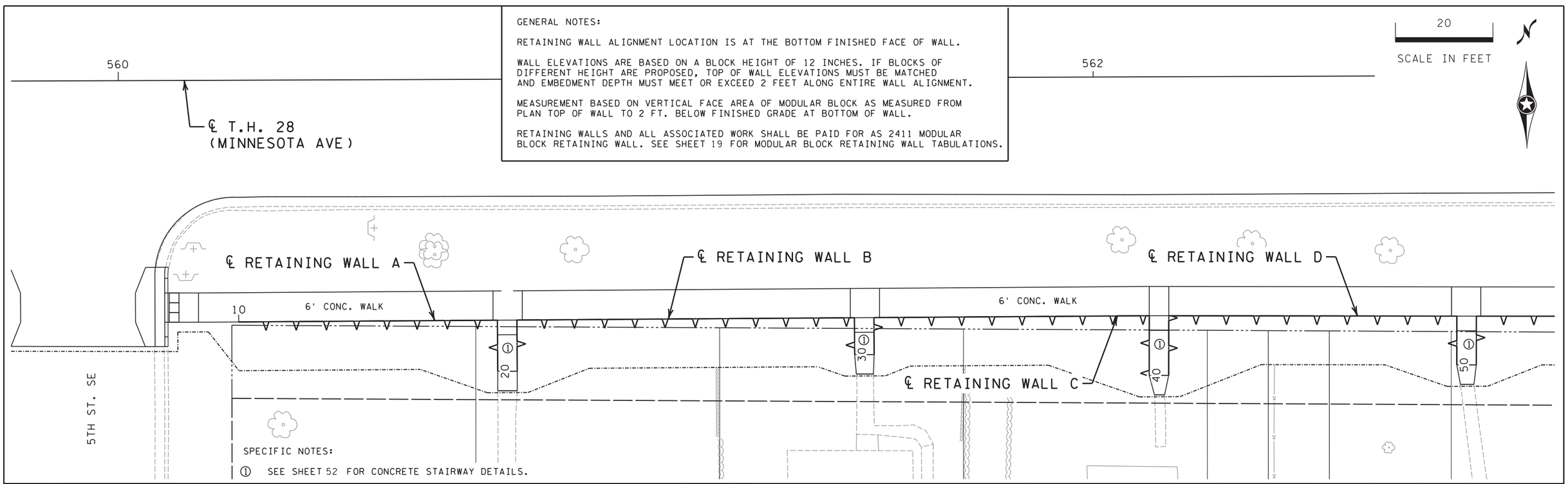
MEASUREMENT BASED ON VERTICAL FACE AREA OF MODULAR BLOCK AS MEASURED FROM PLAN TOP OF WALL TO 2 FT. BELOW FINISHED GRADE AT BOTTOM OF WALL.

RETAINING WALLS AND ALL ASSOCIATED WORK SHALL BE PAID FOR AS 2411 MODULAR BLOCK RETAINING WALL. SEE SHEET 19 FOR MODULAR BLOCK RETAINING WALL TABULATIONS.

20

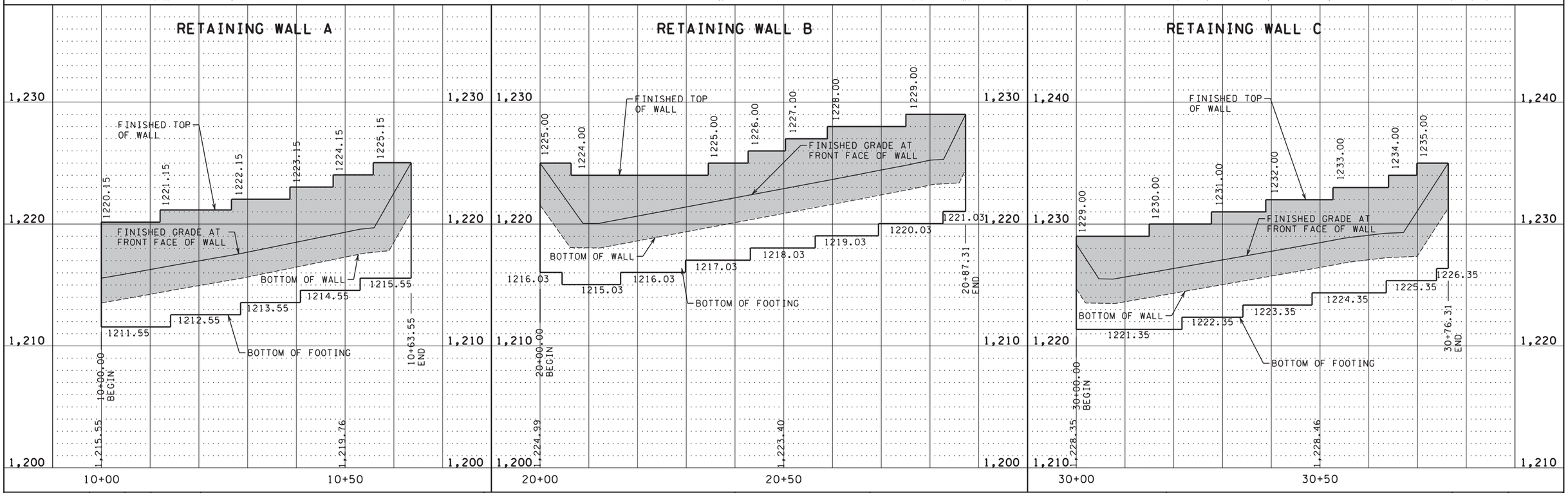
SCALE IN FEET

N



SPECIFIC NOTES:

① SEE SHEET 52 FOR CONCRETE STAIRWAY DETAILS.



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

RETAINING WALL PLAN

PLAN AND ELEVATION

FILE NO. MNT04-134590

RW1 OF RW2

197 / 310

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_wrl.dgn
MODEL: RW1

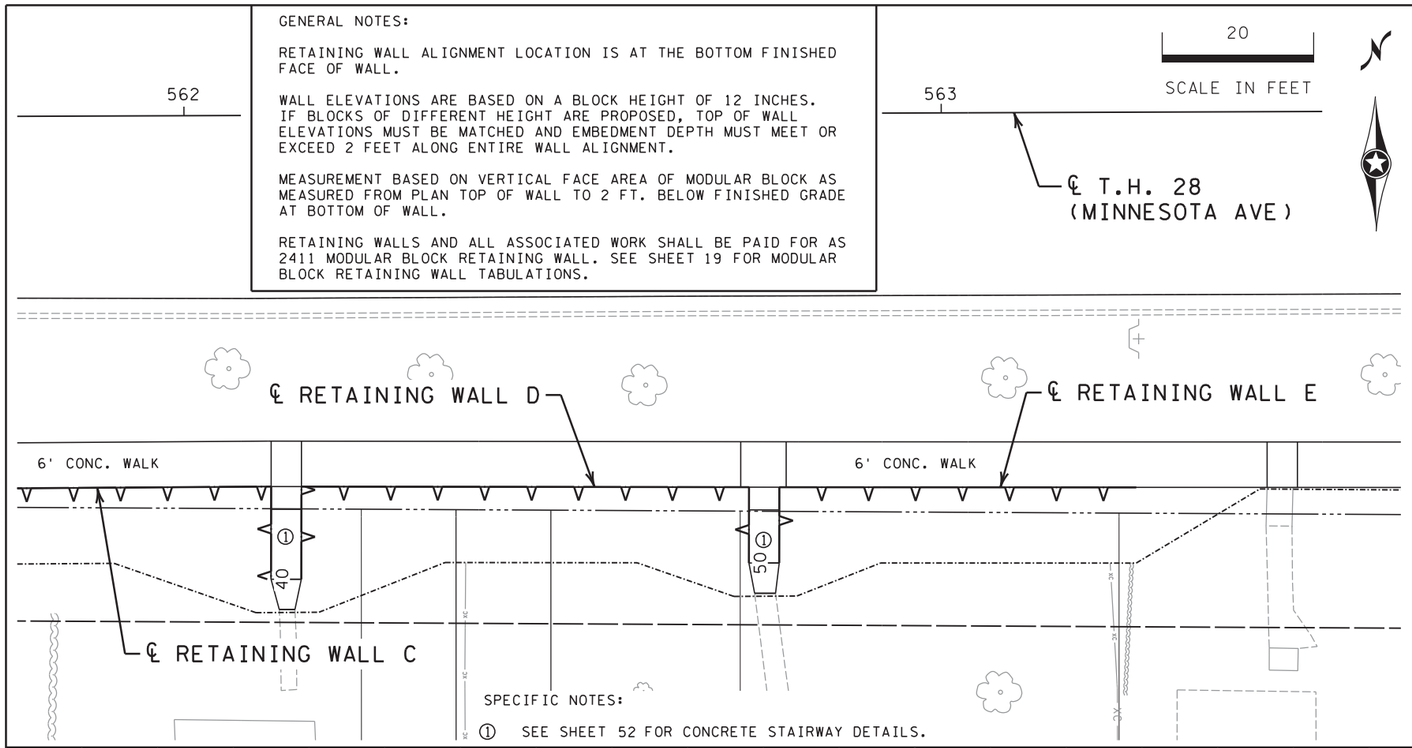
GENERAL NOTES:

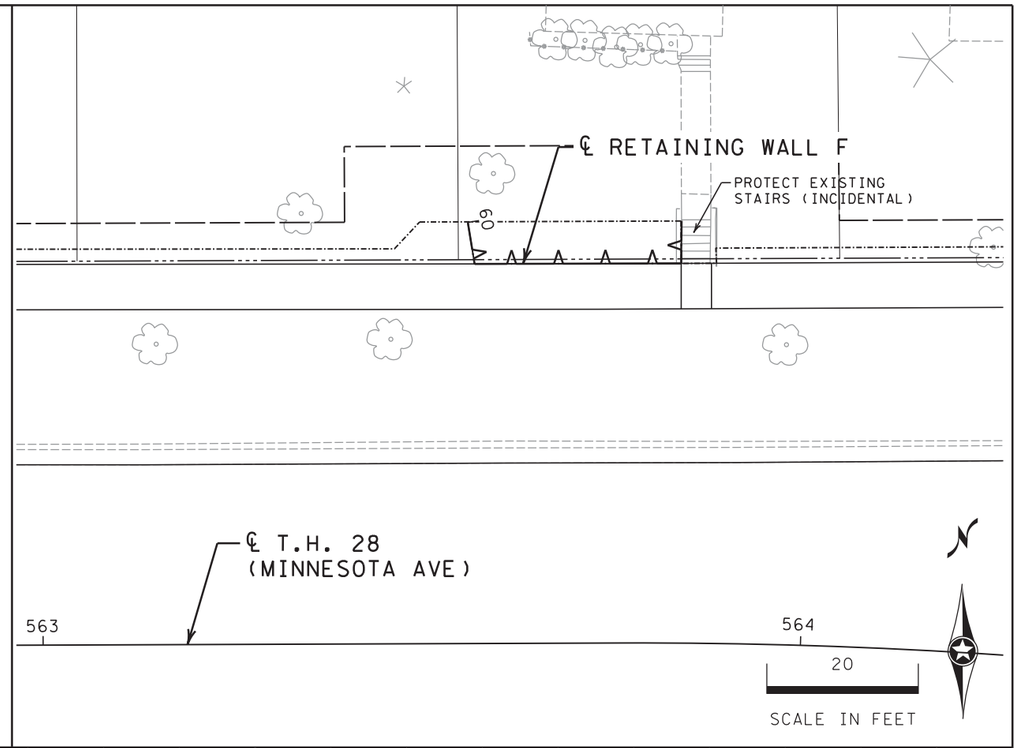
RETAINING WALL ALIGNMENT LOCATION IS AT THE BOTTOM FINISHED FACE OF WALL.

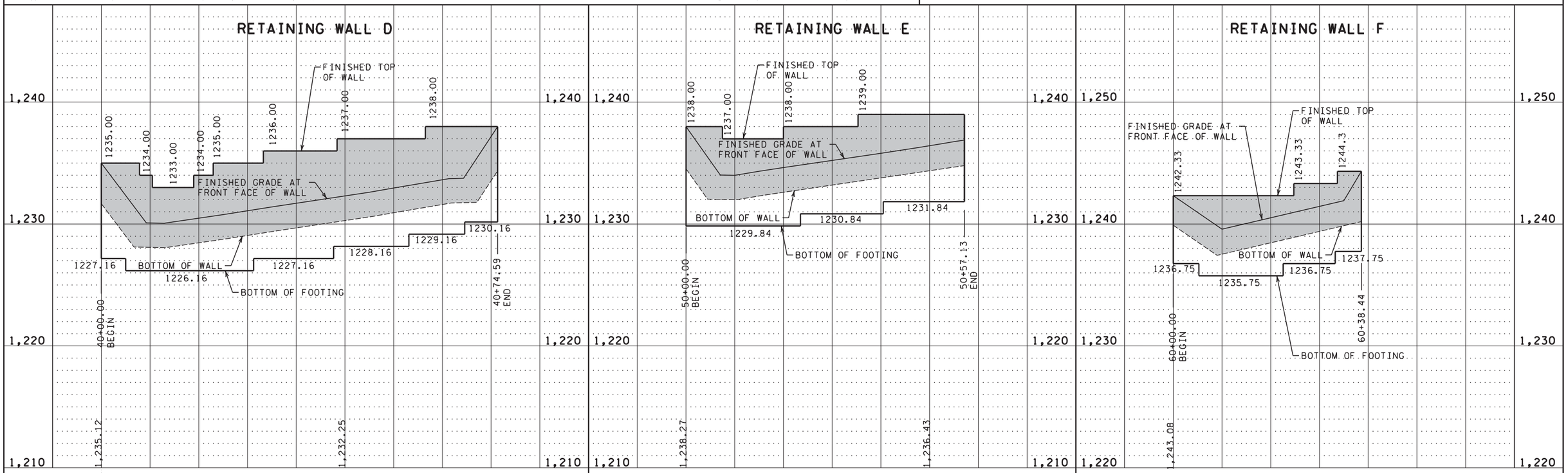
WALL ELEVATIONS ARE BASED ON A BLOCK HEIGHT OF 12 INCHES. IF BLOCKS OF DIFFERENT HEIGHT ARE PROPOSED, TOP OF WALL ELEVATIONS MUST BE MATCHED AND EMBEDMENT DEPTH MUST MEET OR EXCEED 2 FEET ALONG ENTIRE WALL ALIGNMENT.

MEASUREMENT BASED ON VERTICAL FACE AREA OF MODULAR BLOCK AS MEASURED FROM PLAN TOP OF WALL TO 2 FT. BELOW FINISHED GRADE AT BOTTOM OF WALL.

RETAINING WALLS AND ALL ASSOCIATED WORK SHALL BE PAID FOR AS 2411 MODULAR BLOCK RETAINING WALL. SEE SHEET 19 FOR MODULAR BLOCK RETAINING WALL TABULATIONS.







DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer
Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

RETAINING WALL PLAN
PLAN AND ELEVATION

FILE NO. MNT04-134590
RW2 OF RW2
198 / 310

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6/30/2017
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7:58:11 AM

6/30/2017

50

SCALE IN FEET

BROWNIES TIRE SERVICE

P. 60" X 52' RCP + 2 SAFETY APRONS W/GRATES

837

836

P. 60" X 188' RCP + 2 APRONS

819

817

SEE DETAIL ON SHEET 55.

℄ T.H. 28

842

415

420

P. 88" SP X 64' RCP-A + 2 APRONS W/GRATES

843

P. 30" X 46' RCP + 2 SAFETY APRONS W/GRATES

831

830

MATCHLINE T.H. 28 STA. 420+65 SEE SHEET 200

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

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MODEL: dr1

DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				
	NO.	BY	DATE	REVISIONS

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.

Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 413+00 - 420+65

FILE NO. MNT04-134590

DP1 OF DP15

199 / 310

7:58:11 AM
6/30/2017

50
SCALE IN FEET

℄ T.H. 28

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 199

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 201

425
427

816
815
814
811
810
357
353
352

0.02
0.005
0.029
0.0027
+74.4
+56.0
+11.1
+66.1
+34.4
+03.5
+75.5
+54.4
+20.5
+19.3
+73.0
+86.0
10.02

P. 30" X 92' RCP + 2 APRONS

P. 30" X 62' RCP + 2 APRONS

℄ 6TH ST NW

℄ 5TH ST NW

2ND AVE. NW

515
FIRST BAPTIST
CHURCH

FM
OHW
XC

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Lic. No. 42687
Licensed Professional Engineer

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 420+65 - 428+20

FILE NO. MNT04-134590
DP2 OF DP15
200 / 310

FILE: S:\KO\MN\nt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_dr1.dgn
MODEL: dr2

50

SCALE IN FEET

ALL SLOPES SHOWN IN FT PER FT

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 200

MATCHLINE T.H. 28
STA. 435+75 SEE SHEET 202

P. (2) 24" X 54' RCP + 2 APRONS 807

804 805 806 331 327 325 323 321 319 315 318 326

+60.8 ① 430 +75.4 +42.7 +06.0

0.029 0.029 0.001 0.001 0.02 0.02 0.02 0.02 435 0.003 0.003

+72.8 +21.1 +14.9 0.021 0.02

+67.8 +26.2 +93.6 0.02 0.02 28B 28A 28C

℄ T.H. 28

℄ 4TH ST NW

10 4TH ST. NW

℄ MINNESOTA AVE

CONNECT TO EXISTING 48" PIPE

10 48" PIPE

243 DAIRY QUEEN

NOTES:

① CONSTRUCTION OF GRADES IN THIS AREA IS CRITICAL.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Lic. No. 42687
Licensed Professional Engineer

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 428+20 - 435+75

FILE NO. MNT04-134590

DP3 OF DP15

201 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_dr1.dgn
MODEL: dr3
6/30/2017 7:58:11 AM

7:58:12 AM

6/30/2017

50

SCALE IN FEET

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

MATCHLINE T.H. 28 STA. 435+75 SEE SHEET 201

MATCHLINE T.H. 28 STA. 442+90 SEE SHEET 203

℄ T.H. 28 (MINNESOTA AVE)

HOTEL

237 GAS MART

AUTORAMA

202 THE GROG SHOP

2ND ST. SW

125 FAMILY DOLLAR

109 AUTO VALUE

6" PIPE

+39.0 0.04 0.02 0.02 0.02 +39.0

+71.0 +63.0 +87.0 +35.0

0.02 0.04 0.04 0.04 0.04

284 280 276 438 311 307 440 274 272 270 269 267 265 263 259 255

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332.dr1.dgn
MODEL: dr4

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 435+75 - 442+90

FILE NO. MNT04-134590

DP4 OF DP15

202 / 310

ALL SLOPES SHOWN IN FT PER FT

50

SCALE IN FEET

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 207

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 202

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 204

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 206

℄ T.H. 28
(MINNESOTA AVE)

℄ T.H. 29
(FRANKLIN ST)

℄ T.H. 104
(FRANKLIN ST)

1ST ST. NW

1ST ST. SW

104 SUBWAY

30 NAPA AUTO PARTS

24 ACE HARDWARE

WORLD OF WELLNESS

SCREEN PRINTS PLUS

GINGER BREAD CAFE

PASTRY SHOPPE BAKERY

5 GLENWOOD STATE BANK

GLENWOOD STATE BANK

LANE STUDIO

15 LICENSE BUREAU

AMERICAN BUSINESS FORMS

2 EAGLE STATE BANK

103 MINNEWASKA ABSTRACT & TITLE

CURVES FOR WOMEN

2 THE VALLEY

8 CHINESE RESTAURAN

14 PIZZA RANCH

RETAIL

12" PIPE

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590

DP5 OF DP15

203 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_dr1.dgn
MODEL: dr5
6/30/2017 7:58:12 AM

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

50

SCALE IN FEET

MATCHLINE T.H. 28 STA. 540+80 SEE SHEET 203

MATCHLINE T.H. 28 STA. 548+30 SEE SHEET 205

1ST ST. NE

2ND ST. NE

1ST ST. SE

2ND ST. SE

STUDIO ARCHITECTS

STRECKER AGENCY

31 AMERICAN BUSINESS FORMS

31 AMERICAN BUSINESS FORMS

107 PALMER CREATIONS

MAINLY CUTS

131 POPE COUNTY FAMILY COLLABORATIVE

CITY OF GLENWOOD

137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

EQUATION: STA 546+40.17 BK = STA 546+39.75 AH

℄ T.H. 28 (MINNESOTA AVE)

AMERICAN BUSINESS SOLUTIONS

28 THE WALK IN CLOSET

ACCOUNTANTS JERY WANGNESS

130 POPE COUNTY COURT HOUSE

206 GLENWOOD LUTHERAN

UMH

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 540+80 - 548+30

FILE NO. MNT04-134590

DP6 OF DP15

204 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_dr1.dgn
MODEL: dr6

6/30/2017 7:58:12 AM

7:58:13 AM

6/30/2017

50

SCALE IN FEET

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD ST. NE

307 CASEY'S GENERAL STORE

4TH ST. NE

48" PIPE

MATCHLINE T.H. 28 STA. 548+30 SEE SHEET 204

139 137 135 133 121 129 117 109

140 136 134 130 122 118 114 110

+63.0 +71.0 +95.0

0.01 0.02 550 555

15" PIPE

℄ T.H. 28 (MINNESOTA AVE)

BEGIN MILL AND OVERLAY

END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

EXTREME GAS AND AUTO

3RD ST. SE

4TH ST. SE

XC

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332.dr1.dgn
MODEL: dr7

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: JVO				
CHECKED BY: DAC				

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590

DP7 OF DP15

7:58:13 AM

6/30/2017

50

SCALE IN FEET

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD AVE. SW

2ND AVE. SW

1ST AVE. SW

11
HINEWASKA MEATS

522

528

536

526

545

10" PIPE

533

523

25

27

30

15" PIPE

℄ T.H. 104
(FRANKLIN ST)

115
COUNSELOR REALTY

VILLAGE INN

2ND AVE. SE

1ST AVE. SE

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 203

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN
T.H. 104 STA 25+00 - 32+50

FILE NO. MNT04-134590
DP8 OF DP15

ALL SLOPES SHOWN IN FT PER FT

LEGEND

- EXISTING ROADWAY
- NEW CONSTRUCTION
- PROPOSED STORM SEWER PIPE
- PROPOSED STORM SEWER STRUCTURES
- CONSTRUCTION LIMITS
- SUPERELEVATION TRANSITION (FT/FT)
- DRAINAGE FLOW ARROW
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

50

SCALE IN FEET

1ST AVE. NW

2ND AVE. NW

3RD AVE. NW

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 203

404 408 412 416 424 405 413 417

15" PIPE

40

43

GLENWOOD COLLISION CENTER 110

1ST AVE. NE

2ND AVE. NE

3RD AVE. NE

℄ T.H. 29
(FRANKLIN ST)

GENERAL NOTE:

SEE SHEET 23 FOR EXISTING STRUCTURE TABULATIONS.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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Certified By: Dan Cazanacli Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE AND SUPERELEVATION PLAN

T.H. 29 STA 36+80 - 44+30

FILE NO. MNT04-134590 DP9 OF DP15

207 / 310

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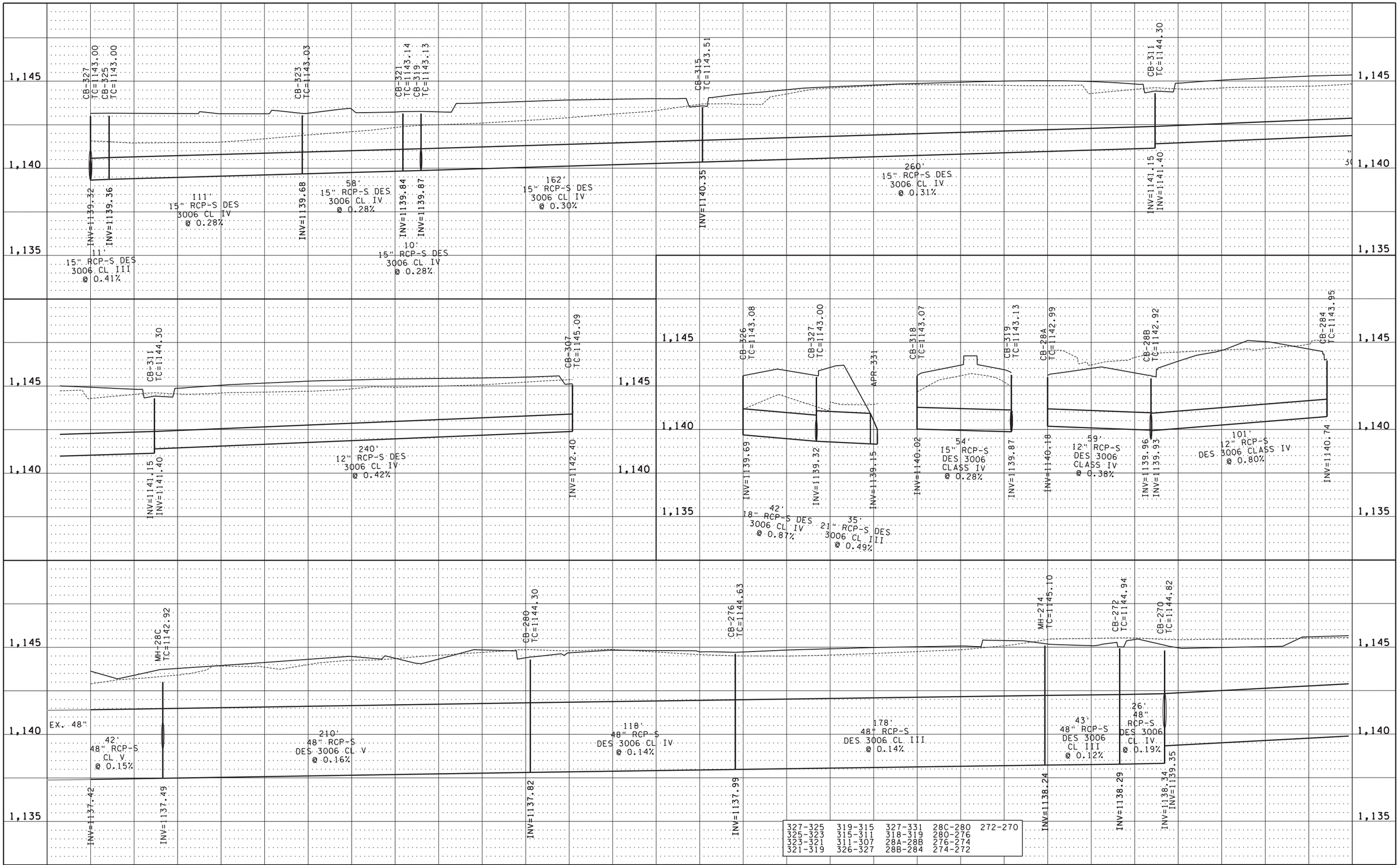
6/30/2017



327-325	319-315	327-331	28C-280 272-270
325-323	315-311	318-319	280-276
323-321	311-307	28A-28B	276-274
321-319	326-327	28B-284	274-272

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MODEL: dr10

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

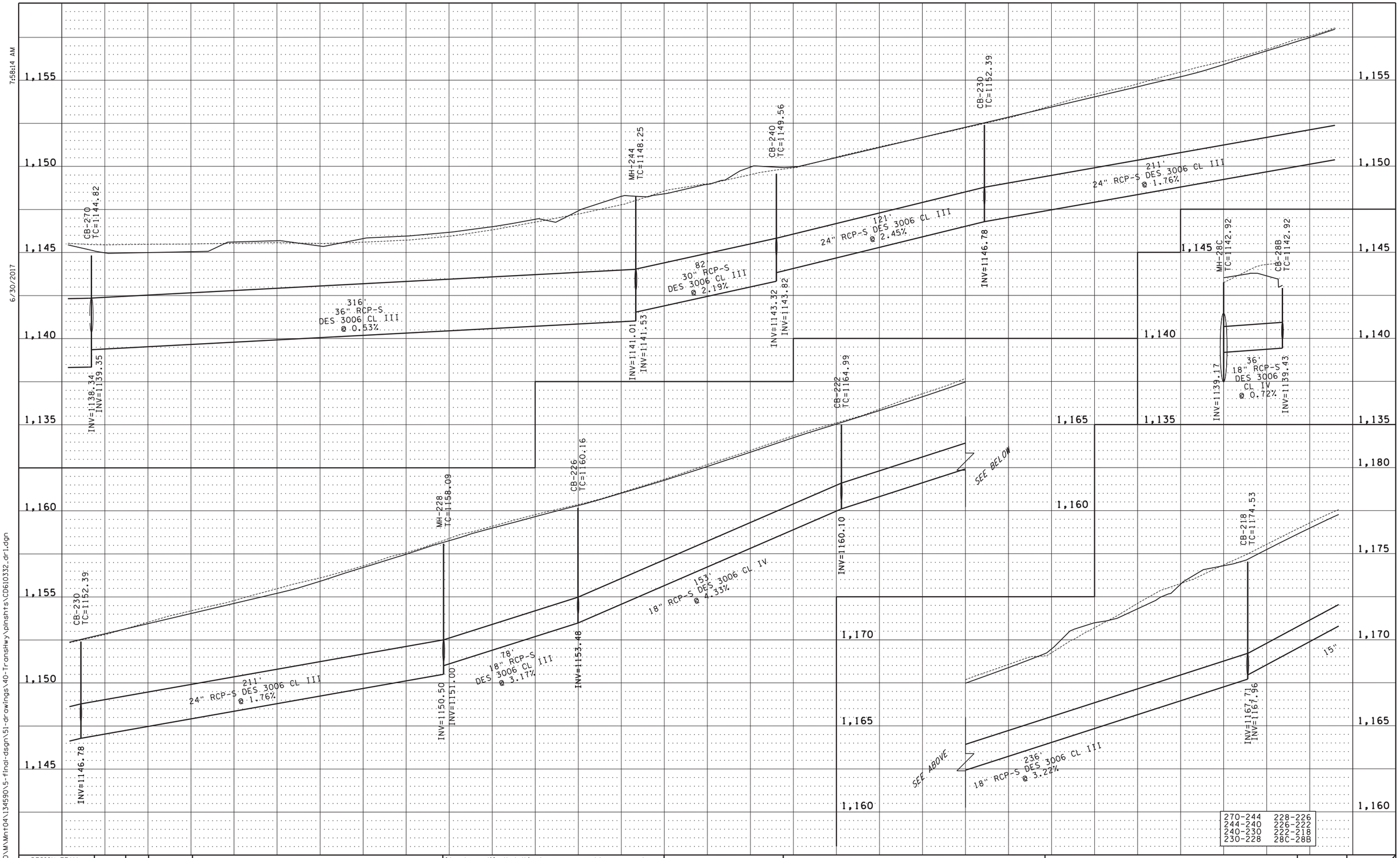
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE PROFILES

FILE NO. MNT04-134590

DP10 OF DP15

208 / 310



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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

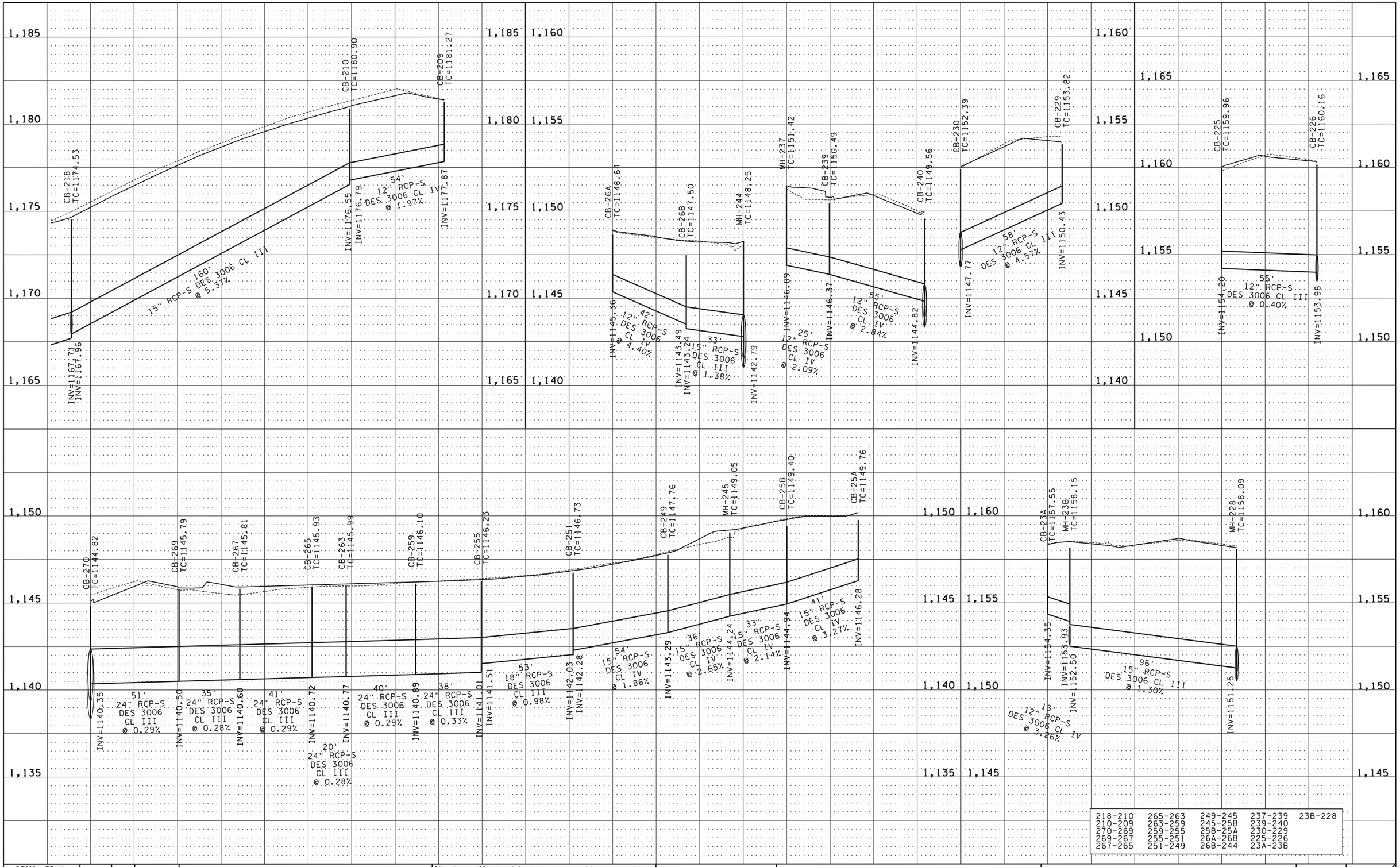
T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE PROFILES

FILE NO. MNT04-134590

DP11 OF DP15



218-210	265-263	249-245	237-239	23B-228
210-209	263-259	245-25B	239-240	
270-269	259-255	25B-25A	230-229	
269-267	255-251	26A-26B	225-226	
267-265	251-249	26B-244	23A-23B	

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JVO
CHECKED BY: DAC

NO.	BY	DATE	REVISIONS

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Certified By: Dan Cazanacli — Licensed Professional Engineer — Lic. No. 42687
Printed Name: DAN A. CAZANACLI — Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
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T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE PROFILES

FILE NO. MNT04-134590
DP12 OF DP15
210 / 310

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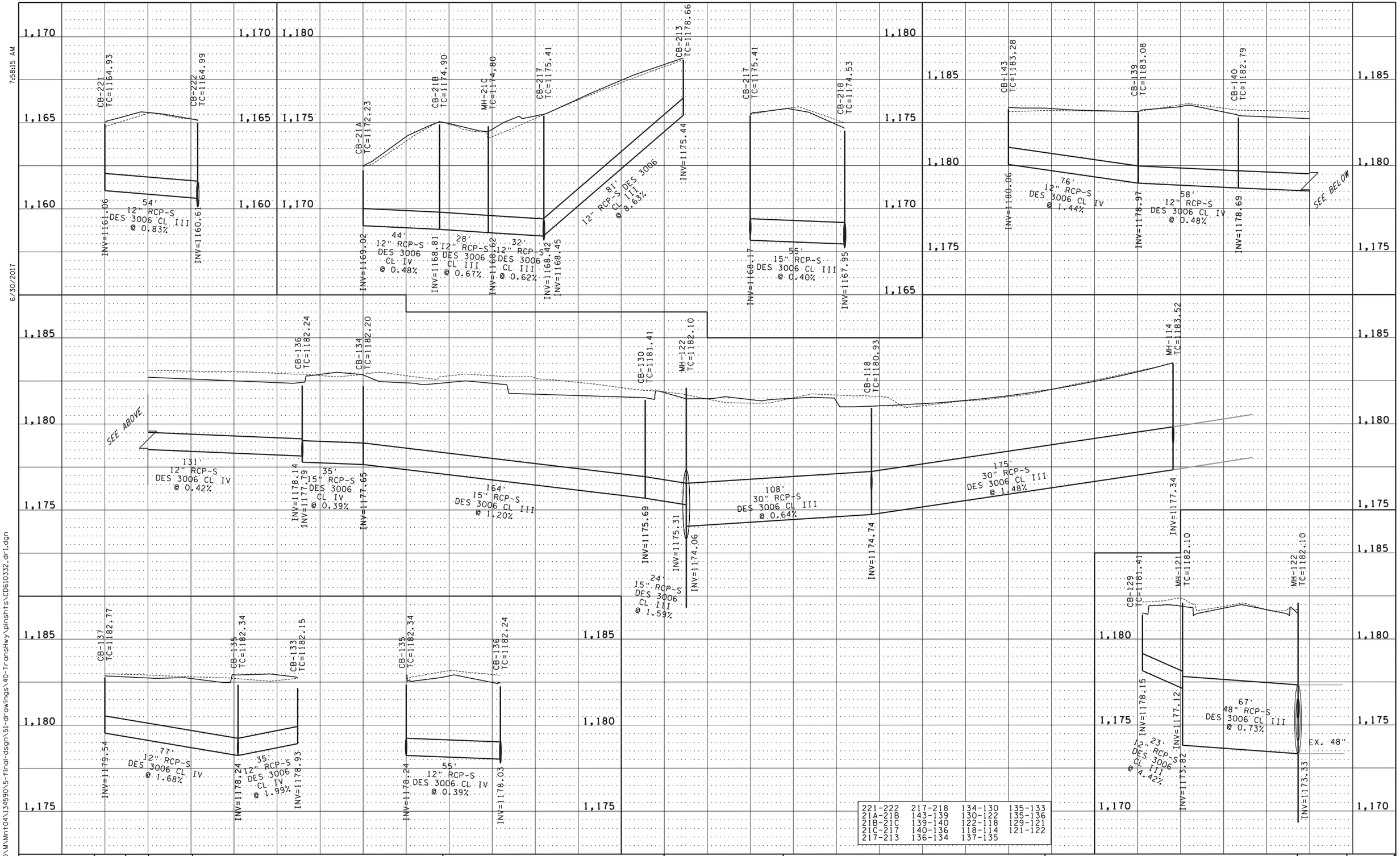

221-222	217-218	134-130 135-133
21A-21B	143-139	130-122 135-136
21B-21C	139-140	122-118 129-121
21C-217	140-136	118-114 121-122
217-213	136-134	137-135

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6/30/2017

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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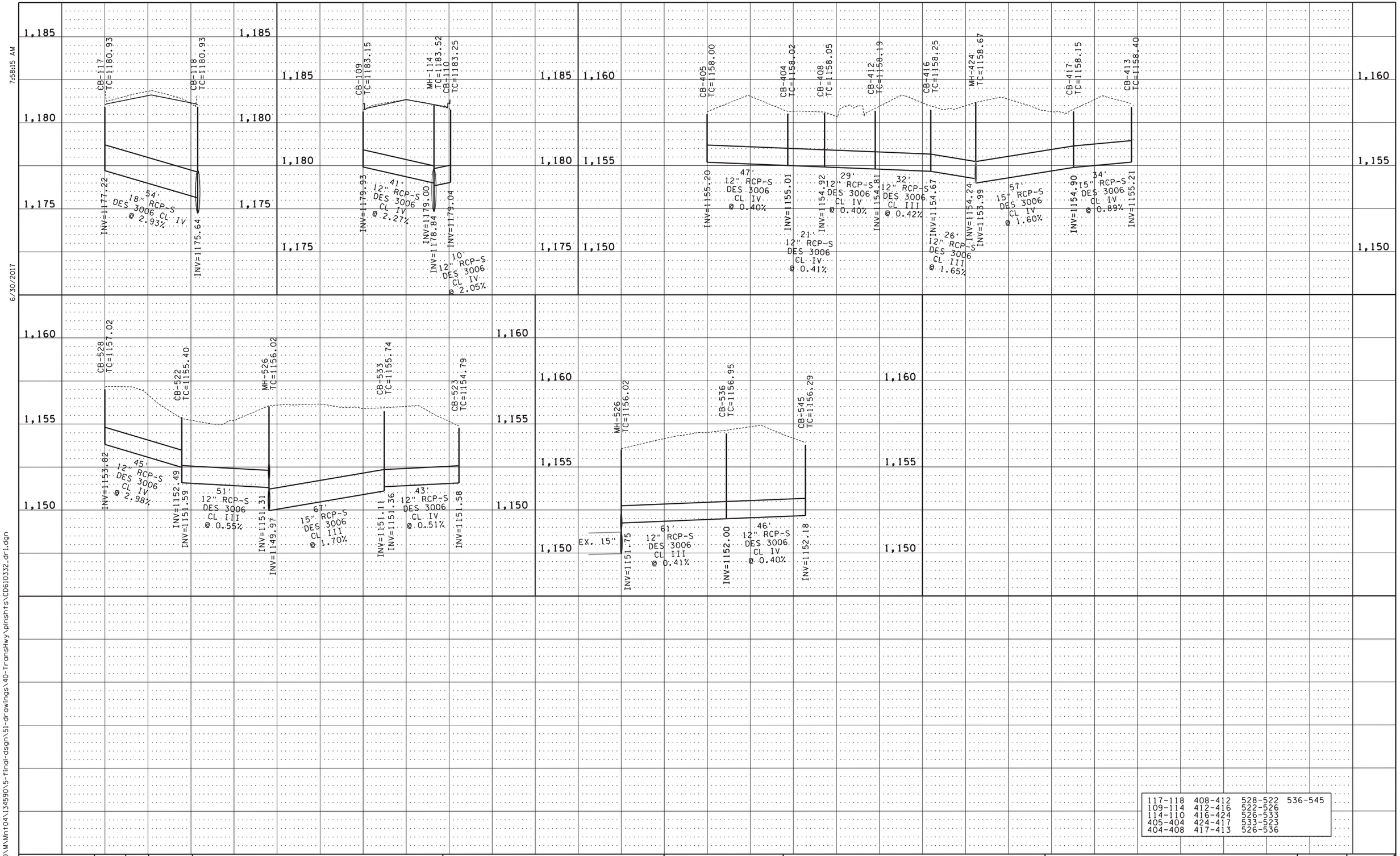
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

DRAINAGE PROFILES

FILE NO. MNT04-134590 DP13 OF DP15

211 / 310



117-118	408-412	528-522	536-545
109-114	412-416	522-526	
114-110	416-424	526-533	
405-404	424-417	533-523	
404-408	417-413	526-536	

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: JVO				
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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

DRAINAGE PROFILES

FILE NO. MNT04-134590

DP14 OF DP15

212 / 310

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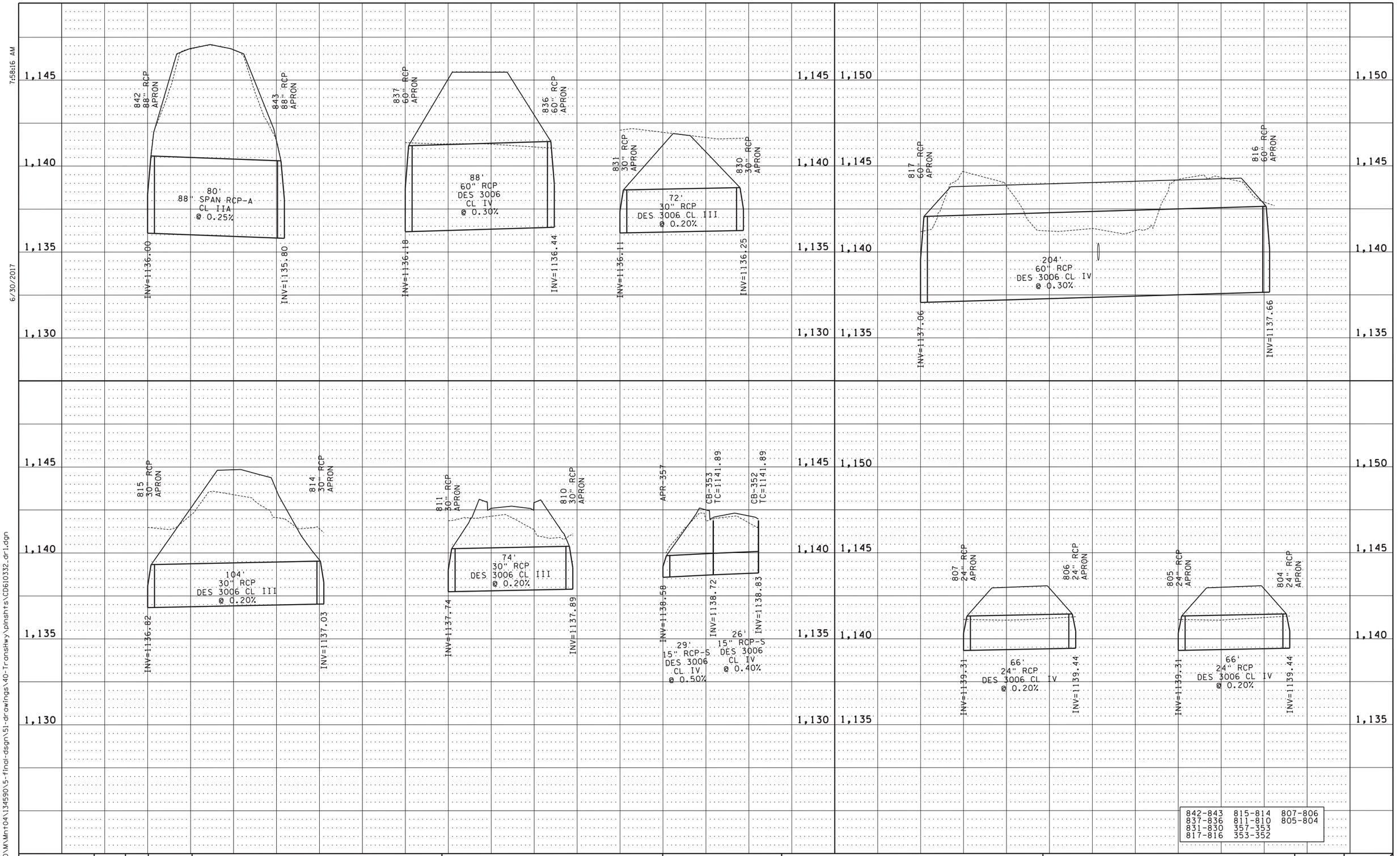
6/30/2017



842-843	815-814	807-806
837-836	811-810	805-804
831-830	357-353	
817-816	353-352	

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S.P. NO. 6103-32 (T.H. 28)

DRAINAGE PROFILES

FILE NO. MNT04-134590

DP15 OF DP15

213 / 310

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_dr1.dgn
MODEL: dr15

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6/30/2017

STORM WATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT DESCRIPTION/LOCATION

STATE PROJ. NO. 6103-32, STATE PROJ. NO. 6104-12, STATE PROJ. NO. 6106-23, AND STATE PROJ. NO. 6110-21, ARE LOCATED IN THE CITY OF GLENWOOD IN POPE COUNTY.

THE PLANNED SCOPE OF THE PROJECT INCLUDES:

GRADING, BITUMINOUS SURFACING, BITUMINOUS MILL & OVERLAY, LIGHTING, ADA IMPROVEMENTS, AND SIGNAL SYSTEM.

AREAS OF ENVIRONMENTAL SENSITIVITY (AES) AND INFESTED WATERS

THERE ARE NO WETLANDS WITHIN THE PROJECT BOUNDARY.

SOIL TYPES

SOIL TYPES TYPICALLY FOUND ON THIS PROJECT ARE SALIDA SANDY LOAM (HSG A), HOKANS-BUSE (HSG B), AND MARYSLAND LOAM (HSG D).

LONG TERM MAINTENANCE AND OPERATION

DISTRICT 4 STAFF ARE RESPONSIBLE FOR THE LONG TERM MAINTENANCE AND OPERATION OF THE PERMANENT STORMWATER SYSTEMS LOCATED ON TH 28, 29 & 104. THE CITY OF GLENWOOD IS RESPONSIBLE FOR MAINTENANCE FOR THE SIDE STREET STORMWATER SYSTEMS.

PROJECT PERSONNEL AND TRAINING

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

PROVIDE A CERTIFIED EROSION CONTROL SUPERVISOR IN GOOD STANDING WHO IS KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES. THE EROSION CONTROL SUPERVISOR WILL WORK WITH THE PROJECT ENGINEER TO OVERSEE THE IMPLEMENTATION OF THE SWPPP AND THE PLACEMENT, 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. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

PROVIDE AT LEAST ONE CERTIFIED INSTALLER FOR EACH CONTRACTOR OR SUBCONTRACTOR THAT PLACES THE PRODUCTS LISTED IN SPECIFICATION SECTION 2573.3.A.2. PROVIDE PROOF OF CERTIFICATION AT THE PRECONSTRUCTION MEETING. WORK WILL NOT BE ALLOWED TO COMMENCE UNTIL PROOF OF CERTIFICATION HAS BEEN PROVIDED TO THE PROJECT ENGINEER.

CHAIN OF RESPONSIBILITY

THE CONTRACTOR ARE COPERMITEES FOR THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) CONSTRUCTION PERMIT. THE CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL ASPECTS OF THE NPDES CONSTRUCTION PERMIT AT ALL TIMES UNTIL THE NOTICE OF TERMINATION (NOT) HAS BEEN FILED WITH THE MPCA. THE CONTRACTOR WILL DEVELOP A CHAIN OF COMMAND WITH ALL OPERATORS ON THE SITE TO ENSURE THAT THE SWPPP WILL BE IMPLEMENTED AND STAY IN EFFECT UNTIL THE CONSTRUCTION PROJECT IS COMPLETE, THE ENTIRE SITE HAS UNDERGONE FINAL STABILIZATION, AND A NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

PROJECT CONTACTS

THE PROJECT ENGINEER AND CONTRACTOR ARE RESPONSIBLE FOR IMPLEMENTATION OF THE SWPPP AND PLACEMENT, 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
SEH WATER RESOURCES (WRE) DESIGN	DAN CAZANACLI	651-765-2981
SEH PROJECT MANAGER	JEFF RHODA	651-490-2033

ID	NAME	TYPE OF WATERBODY	SPECIAL WATER CLASSIFICATION
61013000	MINNEWASKA	LAKE	N/A
ADDITIONAL BMP OR ACTIONS REQUIED: SEE APPENDIX A (C1 - C2) OF NPDES PERMIT			

MPCA DUTY OFFICER 24 HOUR EMERGENCY NOTIFICATION:
651-649-5451 OR 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), OR ON FILE WITH MNDOT. 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.

LOCATION OF SWPPP REQUIREMENTS IN PROJECT PLAN

DESCRIPTION	LOCATION
EROSION CONTROL MEASURES	SHEETS NO. 217-226
DIRECTION OF FLOW	SHEETS NO. 199-207
FINAL STABILIZATION	SHEETS NO. 217-226
SOIL AND CONSTRUCTION NOTES	SHEETS NO. 9
DRAINAGE STRUCTURES	SHEETS NO. 199-207
DRAINAGE TABULATION	SHEETS NO. 20-23
STORM SEWER PROFILE SHEETS	SHEETS NO. 208-213
STORM SEWER TABULATION	SHEETS NO. 20-23
EROSION AND SEDIMENT CONTROL DETAILS	SHEETS NO. 73- 82
TURF ESTABLISHMENT TABULATION	SHEETS NO. 19
SITE MAP	SHEETS NO. 2-3

STORMWATER CALCULATIONS AND ADDITIONAL HYDRAULIC DESIGN INFORMATION IS STORED IN THE PROJECT'S FOLDER. THIS INFORMATION IS AVAILABLE UPON REQUEST.

SITE INSPECTION AND MAINTENANCE

INSPECT THE ENTIRE CONSTRUCTION SITE 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. INSPECT ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT, EROSION PREVENTION AND SEDIMENT CONTROL BMPS UNTIL THE SITE HAS UNDERGONE FINAL STABILIZATION AND THE NOT HAS BEEN SUBMITTED. INSPECT SURFACE WATER INCLUDING DRAINAGE DITCHES FOR SIGNS OF EROSION AND SEDIMENT DEPOSITION. INSPECT CONSTRUCTION SITE VEHICLE EXIT LOCATIONS FOR EVIDENCE OF TRACKING ONTO PAVED SURFACES. INSPECT SURROUNDING PROPERTIES FOR EVIDENCE OF OFF SITE SEDIMENT ACCUMULATION. INSPECT INFILTRATION AREAS FOR SIGNS OF SEDIMENT DEPOSITION AND COMPACTION (TO ENSURE THAT EQUIPMENT IS NOT BEING DRIVEN ACROSS THE AREA).

RECORD ALL INSPECTIONS AND MAINTENANCE ACTIVITIES IN WRITING WITHIN 24 HOURS. SUBMIT INSPECTION REPORTS IN A FORMAT THAT IS ACCEPTABLE TO THE PROJECT ENGINEER. INCLUDE THE FOLLOWING IN THE RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY:

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 PARTY COMPLETING MAINTENANCE ACTIVITIES
E. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 0.5 INCH IN 24 HOURS
F. DOCUMENTS AND CHANGES MADE TO THE SWPPP

REPLACE, REPAIR OR SUPPLEMENT ALL NONFUNCTIONAL BMPS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY UNLESS LISTED DIFFERENTLY BELOW:

A. REPAIR, REPLACE, OR SUPPLEMENT PERIMETER CONTROL DEVICES WHEN IT BECOMES NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT OF THE DEVICE. COMPLETE REPAIRS BY THE END OF THE NEXT BUSINESS DAY FOLLOWING DISCOVERY.
B. REPAIR OR REPLACE INLET PROTECTION DEVICES WHEN THEY BECOME NONFUNCTIONAL OR SEDIMENT REACHES 1/2 THE HEIGHT AND/OR DEPTH OF THE DEVICE.
C. DRAIN AND REMOVE SEDIMENT FROM TEMPORARY AND PERMANENT SEDIMENT BASINS ONCE THE SEDIMENT HAS REACHED 1/2 THE STORAGE VOLUME. COMPLETE WORK WITHIN 72 HOURS OF DISCOVERY.
D. REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. RESTABILIZE ANY AREAS THAT ARE DISTURBED BY SEDIMENT REMOVAL OPERATIONS. SEDIMENT REMOVAL AND STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS OF DISCOVERY. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR WORKING IN SURFACE WATERS. CONTACT ALL APPROPRIATE AUTHORITIES PRIOR TO WORKING IN SURFACE WATERS.
E. REMOVE TRACKED SEDIMENT FROM PAVED SURFACES BOTH ON AND OFF SITE WITHIN 24 HOURS OF DISCOVERY. STREET SWEEPING MAY HAVE TO OCCUR MORE OFTEN TO MINIMIZE OFF SITE IMPACTS. LIGHTLY WET THE PAVEMENT PRIOR TO SWEEPING.
F. MAINTAIN ALL BMPS UNTIL WORK HAS BEEN COMPLETED, SITE HAS GONE UNDER FINAL STABILIZATION, AND THE NOTICE OF TERMINATION (NOT) HAS BEEN SUBMITTED TO THE MPCA.

ENVIRONMENTAL REVIEW

THERE ARE NO STORMWATER MITIGATION MEASURES REQUIRED AS A RESULT OF AN ENVIRONMENTAL, ARCHEOLOGICAL OR AGENCY REVIEW. ALL MITIGATION MEASURES HAVE BEEN ADDRESSED IN THIS PLAN SET OR THE SPECIAL PROVISIONS.

THIS PROJECT IS NOT LOCATED IN A WELL HEAD PROTECTION AREA.

THIS PROJECT IS NOT LOCATED IN A DRINKING WATER SUPPLY MANAGEMENT AREA (DWSMA).

LAND FEATURE CHANGES

TOTAL DISTURBED AREA	36.7 ACRES
TOTAL EXISTING IMPERVIOUS SURFACE AREA	9.4 ACRES
TOTAL PROPOSED IMPERVIOUS SURFACE AREA	9.4 ACRES
TOTAL PROPOSED NET CHANGE IN IMPERVIOUS SURFACE AREA	0.0 ACRES

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FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_swppp.dgn
MODEL: SWP1

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JVO
CHECKED BY: DAC

NO.	BY	DATE	REVISIONS

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.
Certified By: Dan Cazanacli Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STORM WATER POLLUTION PREVENTION PLAN

FILE NO. MNT04-134590
SWP1 OF SWP3

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

STABILIZATION TIME FRAMES

AREA	TIME FRAME	NOTES
LAST 200 LINEAL FEET OF DRAINAGE DITCH OR SWALE	WITHIN 24 HOURS OF CONNECTION TO SURFACE WATER OR PROPERTY EDGE	1, 2, 3
REMAINING PORTIONS OF DRAINAGE DITCH OR SWALE	14 DAYS	1, 3
PIPE AND CULVERT OUTLETS	24 HOURS	
EXPOSED SOILS AND STOCKPILES	14 DAYS	1
WITHIN 200 FEET OF A PUBLIC WATER	24 HOURS	7

1. INITIATE STABILIZATION IMMEDIATELY WHEN CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED ON ANY PORTION OF THE SITE. COMPLETE STABILIZATION WITHIN THE TIME FRAME LISTED. IN MANY INSTANCES THIS WILL REQUIRE STABILIZATION TO OCCUR MORE THAN ONCE DURING THE COURSE OF THE PROJECT. TEMPORARY SOIL STOCKPILES WITHOUT SIGNIFICANT CLAY OR SILT AND STOCKPILED AND CONSTRUCTED ROAD BASE ARE EXEMPT FROM THE STABILIZATION REQUIREMENT.
2. STABILIZE WETTED PERIMETER OF DITCH (I.E. WHERE THE DITCH GETS WET).
3. APPLICATION OF MULCH, HYDROMULCH, TACKIFIER AND POLYACRYLAMIDE ARE NOT ACCEPTABLE STABILIZATION METHODS IN THESE AREAS.
4. STABILIZE ALL AREAS OF THE SITE PRIOR TO THE ONSET OF WINTER. ANY WORK STILL BEING PERFORMED WILL BE SNOW MULCHED, SEEDED, AND BLANKETED WITHIN THE TIME FRAMES IN THE NPDES PERMIT.
5. TOPSOIL BERMS MUST BE STABILIZED IN ORDER TO BE CONSIDERED PERIMETER CONTROL BMPS.
6. KEEP DITCHES AND EXPOSED SOILS IN AN EVEN ROUGH GRADED CONDITION IN ORDER TO BE ABLE TO APPLY EROSION CONTROL MULCHES, HYDROMULCHES AND BLANKETS.
7. SEE WATER RESOURCES NOTES FOR A LIST OF PUBLIC WATER EXCLUSION DATES. TWENTY FOUR HOUR STABILIZATION REQUIREMENT ONLY APPLIES DURING THE EXCLUSION DATES.

GENERAL SWPPP NOTES FOR CONSTRUCTION ACTIVITY

1. AMEND THE SWPPP AND DOCUMENT ANY AND ALL CHANGES TO THE SWPPP AND ASSOCIATED PLAN SHEETS IN A TIMELY MANNER. STORE THE SWPPP AND ALL AMENDMENTS ON SITE AT ALL TIMES.
2. PREPARE AND SUBMIT A SITE MANAGEMENT PLAN FOR THE ENGINEER'S ACCEPTANCE FOR CONCRETE MANAGEMENT, CONCRETE SLURRY APPLICATION AREAS, WORK IN AND NEAR AREAS OF ENVIRONMENTAL SENSITIVITY, AREAS IDENTIFIED IN THE PLANS AS "SITE MANAGEMENT PLAN AREA", ANY WORK THAT WILL REQUIRE DEWATERING, AND AS REQUESTED BY THE ENGINEER. SUBMIT ALL SITE MANAGEMENT PLANS TO THE ENGINEER IN WRITING. ALLOW A MINIMUM OF 7 DAYS FOR MNDOT TO REVIEW AND ACCEPT SITE MANAGEMENT PLAN SUBMITTALS. WORK WILL NOT BE ALLOWED TO COMMENCE IF A SITE MANAGEMENT PLAN IS REQUIRED UNTIL ACCEPTANCE HAS BEEN GRANTED BY THE ENGINEER. THERE WILL BE NO EXTRA TIME ADDED TO THE CONTRACT DUE TO THE UNTIMELY SUBMITTAL.
3. IT IS THE DESIGNER'S INTENT THAT THE CONTRACTOR BUILD PONDS AND PLACE EROSION CONTROL BMPS BEFORE PUTTING THEM INTO ACTIVE SERVICE TO THE MAXIMUM EXTENT PRACTICABLE.
4. BURNING OF ANY MATERIAL IS NOT ALLOWED WITHIN PROJECT BOUNDARY.
5. 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 FROM THE PROJECT ENGINEER PRIOR TO PROCEEDING. PRESERVE ALL NATURAL BUFFERS SHOWN ON THE PLANS.
6. ROUTE STORMWATER AROUND UNSTABILIZED AREAS OF THE SITE WHENEVER FEASIBLE. PROVIDE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES AS NEEDED TO KEEP CHANNELS FROM ERODING AND TO PREVENT NUISANCE CONDITIONS AT THE OUTLET.
7. DIRECT DISCHARGES FROM BMPS TO VEGETATED AREAS WHENEVER FEASIBLE. PROVIDE VELOCITY DISSIPATION DEVICES AS NEEDED TO PREVENT EROSION.
8. THE EROSION PREVENTION AND SEDIMENT CONTROL BMPS SHALL BE PLACED AS NECESSARY TO MINIMIZE EROSION FROM DISTURBED SURFACES AND TO CAPTURE SEDIMENT ON SITE. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO COMMENCEMENT OF ANY REMOVAL WORK AND/OR GROUND DISTURBING ACTIVITIES COMMENCE.
9. ESTABLISH SEDIMENT CONTROL DEVICES ON ALL DOWN GRADIENT PERIMETERS AND UPGRADIENT OF ANY BUFFER ZONES BEFORE ANY UP GRADIENT LAND DISTURBING ACTIVITIES BEGIN. MAINTAIN SEDIMENT CONTROL DEVICES UNTIL CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
10. LOCATE PERIMETER CONTROL ON THE CONTOUR TO CAPTURE OVERLAND, LOW- VELOCITY SHEET FLOWS DOWN GRADIENT OF ALL EXPOSED SOILS AND PRIOR TO DISCHARGING TO SURFACE WATERS. PLACE J-HOOKS AT A MAXIMUM OF 100 FOOT INTERVALS.
11. PROVIDE PERIMETER CONTROL AROUND ALL STOCKPILES. PLACE BMP A MINIMUM 5 FEET FROM THE TOE OF SLOPE WHERE FEASIBLE. DO NOT PLACE STOCKPILES IN NATURAL BUFFER AREAS, SURFACE WATERS OR STORMWATER CONVEYANCES.
12. FLOATING SILT CURTAIN IS ALLOWED AS PERIMETER CONTROL FOR IN WATER WORK ONLY. PLACE THE FLOATING SILT CURTAIN AS CLOSE TO SHORE AS POSSIBLE. PLACE PERIMETER CONTROL BMP ON LAND IMMEDIATELY AFTER THE IN WATER WORK IS COMPLETED.
13. DITCH CHECKS WILL BE PLACED AS INDICATED ON THE PLANS DURING ALL PHASES OF CONSTRUCTION.
14. PROTECT STORM SEWER INLETS 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. SILT FENCE PLACED IN THE GRATE IS ONLY ALLOWED 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 WILL BE PAID FOR ONCE PER INLET REGARDLESS OF THE NUMBER OF TIMES THE BMP IS PLACED. KEEP ALL STORM SEWER INLET PROTECTION DEVICES IN GOOD FUNCTIONAL CONDITION AT ALL TIMES. REPLACE INLET PROTECTION DEVICE WITH A SUITABLE ALTERNATIVE IF THE PROJECT ENGINEER DEEMS AN INLET PROTECTION DEVICE TO BE NONFUNCTIONAL, IN POOR CONDITION, INEFFECTIVE, OR NOT APPROPRIATE FOR THE CURRENT CONSTRUCTION ACTIVITIES. THERE WILL BE NO COST TO MNDOT FOR REPLACEMENT OF INLET PROTECTION DEVICES.
15. PLACE CONSTRUCTION EXITS, AS NECESSARY, TO PREVENT TRACKING OF SEDIMENT ONTO PAVED SURFACES BOTH ON AND OFF THE PROJECT SITE. PROVIDE CONSTRUCTION EXITS OF SUFFICIENT SIZE TO PREVENT TRACK OUT. MAINTAIN CONSTRUCTION EXITS WHEN EVIDENCE OF TRACKING IS DISCOVERED. REGULAR STREET SWEEPING IS NOT AN ACCEPTABLE ALTERNATIVE TO PROPER CONSTRUCTION EXIT INSTALLATION AND MAINTENANCE.
16. WHERE 5 OR MORE ACRES OF DISTRUBED SOIL DRAIN TO A COMMON LOCATION, PROVIDE A TEMPORARY SEDIMENT BASIN. PREPARE AND SUBMIT PLAN FOR ENGINEER'S ACCEPTANCE FOR THE TEMPORARY SEDIMENT BASIN. IN THE EVENT THAT IT IS NOT FEASIBLE TO DISCHARGE THE SEDIMENT LADEN WATER TO A TEMPORARY SEDIMENT BASIN, THE WATER MUST BE TREATED SO THAT IT DOES NOT CAUSE A NUISANCE CONDITION IN THE RECEIVING WATERS OR TO DOWNSTREAM LANDOWNERS.CLEAN OUT ALL PERMANENT STORMWATER BASINS REGARDLESS OF WHETHER USED AS TEMPORARY SEDIMENT BASINS OR TEMPORARY SEDIMENT TRAPS TO THE DESIGN CAPACITY AFTER ALL UPGRADIENT LAND DISTURBING ACTIVITY IS COMPLETED.
17. PROVIDE SCOUR PROTECTION AT ANY OUTFALL OF DEWATERING ACTIVITIES.
18. PROVIDE STABILIZATION IN ANY TRENCHES CUT FOR DEWATERING OR SITE DRAINING PURPOSES.
19. REMOVE SEDIMENT FROM STORMWATER SYSTEM AT THE END OF PROJECT.
20. PRESERVE A 50 FOOT NATURAL BUFFER OR (IF BUFFER IS INFEASIBLE) PROVIDE REDUNDANT SEDIMENT CONTROLS WHEN A SURFACE WATER IS LOCATED WITHIN 50 FEET OF LAND DISTURBANCE AND STORMWATER FLOWS TO THE SURFACE WATER.

POLLUTION PREVENTION

1. PROVIDE A SPILL KIT AT EACH WORK LOCATION ON THE SITE.
2. STORE ALL BUILDING MATERIALS THAT HAVE THE POTENTIAL TO LEACH POLLUTANTS, PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS UNDER COVER AND WITH SECONDARY CONTAINMENT.
3. PROVIDE A SECURE STORAGE AREA WITH RESTRICTED ACCESS FOR ALL HAZARDOUS MATERIALS AND TOXIC WASTE. RETURN ALL HAZARDOUS MATERIALS AND TOXIC WASTE TO THE DESIGNATED STORAGE AREA AT THE END OF THE BUSINESS DAY UNLESS INFEASIBLE. STORE ALL HAZARDOUS MATERIALS AND TOXIC WASTE (INCLUDING BUT NOT LIMITED TO OIL, DIESEL FUEL, GASOLINE, HYDRAULIC FLUIDS, PAINT, PETROLEUM BASED PRODUCTS, WOOD PRESERVATIVES, ADDITIVES, CURING COMPOUNDS AND ACIDS) IN SEALED CONTAINERS WITH SECONDARY CONTAINMENT. CLEAN UP SPILLS IMMEDIATELY.
4. STORE, COLLECT AND DISPOSE OF ALL SOLID WASTE.
5. POSITION ALL PORTABLE TOILETS SO THAT THEY ARE SECURE AND CANNOT BE TIPPED OR KNOCKED OVER. PROPERLY DISPOSE OF ALL SANITARY WASTE.
6. FUEL AND MAINTAIN VEHICLES IN A DESIGNATED CONTAINED AREA WHENEVER FEASIBLE. USE DRIP PANS OR ABSORBENT MATERIALS TO PREVENT SPILLS OR LEAKED CHEMICALS FROM DISCHARGING TO SURFACE WATER OR STORMWATER CONVEYANCES. PROVIDE A SPILL KIT AT EACH LOCATION THAT VEHICLES AND EQUIPMENT ARE FUELED OR MAINTAINED AT.
7. LIMIT VEHICLE AND EQUIPMENT WASHING TO A DEFINED AREA OF THE SITE. CONTAIN RUNOFF FROM THE WASHING AREA TO A TEMPORARY SEDIMENT BASIN OR OTHER EFFECTIVE CONTROL. PROPERLY DISPOSE OF ALL WASTE GENERATED BY VEHICLE AND EQUIPMENT WASHING. ENGINE DEGREASING IS NOT ALLOWED ON THE SITE.
8. PROVIDE EFFECTIVE CONTAINMENT FOR ALL LIQUID AND SOLID WASTES GENERATED BY WASHOUT OF CONCRETE, STUCCO, PAINT, FORM RELEASE OILS, CURING COMPOUNDS AND OTHER CONSTRUCTION MATERIALS. LIQUID AND SOLID WASHOUT WASTES MUST NOT CONTACT THE GROUND. DESIGN THE CONTAINMENT SO THAT IT DOES NOT RESULT IN RUNOFF FROM THE WASHOUT OPERATIONS OR CONTAINMENT AREA.
9. CREATE AND FOLLOW A WRITTEN DISPOSAL PLAN FOR ALL WASTE MATERIALS. INCLUDE IN THE PLAN HOW THE MATERIAL WILL BE DISPOSED OF AND THE LOCATION OF THE DISPOSAL SITE. SUBMIT PLAN TO THE ENGINEER.
10. 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 FROM ALL WATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES.
11. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT CONCRETE DUST, PARTICLES, CONCRETE WASH OUT, AND OTHER CONCRETE WASTES FROM LEAVING MNDOT RIGHT OF WAY, DEPOSITING IN EXISTING OR FUTURE VEGETATED AREAS, AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS, INCLUDING INLETS, DITCHES AND CURB FLOW LINES. USE METHODS AND OPERATIONAL PROCEDURES THAT PREVENT SAW CUT SLURRY AND PLANING WASTE FROM LEAVING MNDOT RIGHT OF WAY AND FROM ENTERING STORMWATER CONVEYANCE SYSTEMS INCLUDING DITCHES AND CULVERTS.

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MODEL: SWP2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.
Certified By: Dan Cazanacli Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

STORM WATER POLLUTION PREVENTION PLAN

FILE NO. MNT04-134590
SWP2 OF SWP3

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

WATER RESOURCES NOTES

THESE NOTES ALONG WITH THE STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE ARE INTENDED TO GIVE INFORMATION ON CRITICAL DRAINAGE FEATURES, NATURAL RESOURCES AND CONTRACTOR OPERATIONS THAT MAY IMPACT DRAINAGE AND NATURAL RESOURCES.

1. THE SIZE AND ELEVATION OF CULVERTS, STORM SEWER PIPES, CATCH BASINS, PONDS, INFILTRATION/FILTRATION BASINS, PERMEABLE DITCH BLOCKS AND OVERFLOW DEVICES HAVE BEEN SPECIFICALLY DESIGNED TO CONFORM TO MNDOT DESIGN STANDARDS, MINNESOTA POLLUTION CONTROL AGENCY (MPCA) AND WATERSHED DISTRICT PERMIT REQUIREMENTS. THE DESIGN COMPUTATIONS ARE ON FILE WITH MNDOT METRO WATER RESOURCES. CHANGING THESE ITEMS OR THE DIRECTION OF FLOW FROM WHAT IS SHOWN ON THE PLANS MAY CAUSE PROBLEMS OFF THE PROJECT AND COULD MEAN THE PROJECT IS OUT OF COMPLIANCE WITH APPROVED DRAINAGE PERMITS. ANY CHANGES TO THE SIZE, ELEVATION OR DIRECTION OF FLOW OF THE DRAINAGE SYSTEM MUST BE APPROVED BY THE WATER RESOURCES DESIGNER.

2. SUBSOIL ALL DISTURBED GREEN SPACES EXCEPT AS LISTED IN 2574.3A.2.

3. PERFORM POST INSTALLATION MANDREL TESTING OF ALL PLASTIC PIPE.

4. ANY SUBSURFACE DRAINAGE TILES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED, REPLACED OR REROUTED, AND CONNECTED TO THE EXISTING TILE OR DRAINAGE SYSTEM TO ENSURE THAT EXISTING UPLAND DRAINAGE IS PERPETUATED. THIS SHOULD BE DONE TO THE APPROVAL AND SATISFACTION OF THE ENGINEER.

5. THE FOLLOWING WATER RELATED PERMITS APPLY TO THIS PROJECT:

AGENCY	TYPE OF PERMIT
MINNESOTA POLLUTION CONTROL AGENCY (MPCA)	NPDES CONSTRUCTION PERMIT

REVIEW ALL PERMITS FOR ANY SPECIAL CONDITIONS THAT WILL EFFECT CONSTRUCTION OF THE PROJECT.

TEMPORARY DEWATERING ACTIVITIES MAY BE REQUIRED FOR ROADWAY CONSTRUCTION AND UTILITY WORK. THEREFORE IT IS POSSIBLE THAT A PERMIT FOR THE TEMPORARY APPROPRIATION OF WATERS OF THE STATE, NON-IRRIGATION FROM MNDNR WILL BE REQUIRED FOR THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING THIS PERMIT PRIOR TO COMMENCING DEWATERING ACTIVITIES. ALL TEMPORARY DEWATERING SHALL BE DISCHARGED TO AN APPROVED LOCATION FOR TREATMENT PRIOR TO DISCHARGE TO THE RECEIVING WATER. SUBMIT A SITE MANAGEMENT PLAN TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

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MODEL: SWP3

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JVO
CHECKED BY: DAC

NO.	BY	DATE	REVISIONS

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Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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S.P. NO. 6103-32 (T.H. 28)

STORM WATER POLLUTION PREVENTION PLAN

FILE NO. MNT04-134590
SWP3 OF SWP3
216 / 310

PLANTING SCHEDULE — Q3

PROJECT	TOTALS	SUBTOTALS BY TYPE	COMMON NAME	SCIENTIFIC NAME	ABBREVIATED NAME	SIZE	SPACING	GEOTEXTILE WEED BARRIER FABRIC	NOTES
	EACH	EACH						SQ YD	
S.P. 6103-32	55	DECIDUOUS SHRUB NO 2 CONT						12	
		12	PUSSY WILLOW ⬢	SALIX SICOLOR	PW	#2	10' O.C.	12	③
		12	FALSE INDIGO △	AMORPHA FRUTICOSA	FI	#2	10' O.C.	12	③
		11	BLACK LACE ELDERBERRY □	SAMBUCUS CANADENSIS	BE	#2	10' O.C.	11	③
		12	RED OSIER DOGWOOD ◎	CORNUS STOLONIFERA	RD	#2	10' O.C.	12	③
		8	NANNYBERRY ○	VIBURNUM LENTAGO	NB	#2	10' O.C.	8	③
							TOTAL	55	

10TH ST. NW

℄ T.H. 28

105

410

MATCHLINE T.H. 28
STA. 413+30 SEE SHEET 218

BEGIN S.P. 6103-32
T.H. 28 STA. 407+72.44
R.P. 75+00.503

℄ PERKINS CREEK

MS

CP

MATCHLINE PERKINS CREEK
STA. 101+25 SEE INSET A

SPECIFIC NOTES:

① PLACE FLOTATION SILT CURTAIN AROUND LAKE OUTLET AT A MINIMUM DISTANCE OF 40 FEET FROM THE EXISTING BOX CULVERT. AVERAGE DEPTH IS EXPECTED TO BE 4 FEET.

② AVERAGE DEPTH IS EXPECTED TO BE 2 FEET. VARIES SEASONALLY.

③ USE WILD TYPE STOCK. USE CONTAINERIZED PLANTS IN THE FALL, BARE ROOT STOCK IN THE SPRING. PLACE 3'X3' COCONUT WEED BARRIER MAT INPLACE OF MULCH. PAID FOR AS GEOTEXTILE WEED BARRIER FABRIC.

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
- EROSION CONTROL BLANKETS
- ARTICULATED BLOCK MAT OPEN CELL TYPE A
- FILTER BERM TYPE 3
- PROPOSED STORM SEWER

LEGEND

- DRAINAGE FLOW DIRECTION
- CONSTRUCTION LIMITS
- STORM DRAIN INLET PROTECTION
- MS — SILT FENCE, TYPE MS
- CP — CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

MOWING SHALL BE PERFORMED AS NEEDED WITHIN CREEK AREA TO RECEIVE SEED MIX 34-261.

SEE SHEET 51 FOR PERKINS CREEK MODIFICATIONS DETAILS.

50
SCALE IN FEET

INSET A

MATCHLINE PERKINS CREEK
STA. 101+25

℄ PERKINS CREEK

MS

CP

①

50
SCALE IN FEET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: JVO				
CHECKED BY: DAC				

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Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 406+00 - 413+30

FILE NO. MNT04-134590 | EC1 OF EC10 | 217/310

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SCALE IN FEET

BROWNIES TIRE SERVICE

℄ T.H. 28

MATCHLINE T.H. 28
STA. 413+30 SEE SHEET 217

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 219

415

420

837

836

817

819

842

843

831

830

CP

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
- EROSION CONTROL BLANKETS
- ARTICULATED BLOCK MAT OPEN CELL TYPE A
- FILTER BERM TYPE 3
- PROPOSED STORM SEWER
- DRAINAGE FLOW DIRECTION
- CONSTRUCTION LIMITS
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

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CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 413+30 - 420+65

FILE NO. MNT04-134590

EC2 OF EC10

218 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ec1.dgn
MODEL: ec2

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SCALE IN FEET

℄ T.H. 28

425

427

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 218

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 220

816 QCP

814 QCP

815

810 QCP

811

357

353

352

℄ 5TH ST NW

℄ 6TH ST NW

2ND AVE. NW

11

10

10

515
FIRST BAPTIST
CHURCH

UMH

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
- EROSION CONTROL BLANKETS
- ARTICULATED BLOCK MAT OPEN CELL TYPE A
- FILTER BERM TYPE 3
- PROPOSED STORM SEWER
- DRAINAGE FLOW DIRECTION
- CONSTRUCTION LIMITS
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- QCP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 420+65 - 428+20

FILE NO. MNT04-134590

EC3 OF EC10

219 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332-ec1.dgn
MODEL: ec3

6/30/2017 7:58:21 AM

50

SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
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- CONSTRUCTION LIMITS
- STORM DRAIN INLET PROTECTION
- MS — SILT FENCE, TYPE MS
- CP — CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 219

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 221

804 CP 805 806 807 331 327 325 323 321 319 315 326 318 284 28A 28B 28C

430 435

MS SW

℄ T.H. 28

℄ 4TH ST NW

4TH ST. NW

℄ MINNESOTA AVE

10 11

DAKOTA 243 OUTLET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: Dan Cazanacli — Licensed Professional Engineer — Lic. No. 42687

Printed Name: DAN A. CAZANACLI — Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 428+20 - 436+00

FILE NO. MNT04-134590

EC4 OF EC10

220 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ec1.dgn
MODEL: ec4
6/30/2017 7:58:21 AM

7:58:21 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
- EROSION CONTROL BLANKETS
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- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

HOTEL

℄ T.H. 28
(MINNESOTA AVE)

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 220

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 222

438

440

MS

311 307 269 267 265 263 259 255

280 276 274 272 270

237
GAS MART

AUTORAMA

202
THE GROG
SHOP

2ND ST. SW

125
FAMILY DOLLAR

109
AUTO VALUE

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ec1.dgn
MODEL: ec5

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: Dan Cazanacli (Licensed Professional Engineer) Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 436+00 - 442+90

FILE NO. MNT04-134590

EC5 OF EC10

221 / 310

7:58:22 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
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- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 221

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 223

1ST ST. NW

1ST ST. SW

℄ T.H. 28
(MINNESOTA AVE)

℄ T.H. 29
(FRANKLIN ST)

℄ T.H. 104
(FRANKLIN ST)

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

104 SUBWAY
30 NAPA AUTO PARTS
24 ACE HARDWARE
WORLD OF WELLNESS
SCREEN PRINTS PLUS
GINGER BREAD CAFE
PASTRY SHOPPE BAKERY
5 GLENWOOD STATE BANK
GLENWOOD STATE BANK
LANE STUDIO
15 LICENSE BUREAU
AMERICAN BUSINESS FORMS
103 MINNEWASKA ABSTRACT & TITLE
2 EAGLE STATE BANK
CURVES FOR WOMEN
2 THE VALLEY
8 CHINESE RESTAURANT
14 PIZZA RANCH
RETAIL

445

540

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Lic. No. 42687
Licensed Professional Engineer

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590
EC6 OF EC10
222 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_ec1.dgn
MODEL: ec6

50
SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
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- CONSTRUCTION LIMITS
- STORM DRAIN INLET PROTECTION
- MS SILT FENCE, TYPE MS
- CP CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 222

1ST ST. NE

STUDIO ARCHITECTS
STRECKER AGENCY
31 AMERICAN BUSINESS FORMS
31 AMERICAN BUSINESS FORMS
107 PALMER CREATIONS
MAINLY CUTS
131 POPE COUNTY FAMILY COLLABORATIVE
CITY OF LENWOOD
137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

℄ T.H. 28
(MINNESOTA AVE)

2ND ST. NE

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

UMH

21A 21B 21C 217 213 209 143

543 545

218 210

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 224

AMERICAN BUSINESS SOLUTIONS
28 LINE WALK IN CLOSET
ACCOUNTANTS JERRY WANGNESS

1ST ST. SE

130 POPE COUNTY COURT HOUSE

2ND ST. SE

206 GLENWOOD LUTHERAN

UMH

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ec1.dgn
MODEL: ec7

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 42687
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 540+80 - 548+30

FILE NO. MNT04-134590
EC7 OF EC10
223 / 310

7:58:22 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
- EROSION CONTROL BLANKETS
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- SILT FENCE, TYPE MS
- CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD ST. NE

4TH ST. NE

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 223

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 225

550

555

139 137 135 133 129 121 117 109

140 136 134 130 122 118 114 110

℄ T.H. 28
(MINNESOTA AVE)

BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

EXTREME GAS AND AUTO

3RD ST. SE

4TH ST. SE

XC

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_ec1.dgn
MODEL: ec8

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590

EC8 OF EC10

7:58:22 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
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- SILT FENCE, TYPE MS
- CULVERT END CONTROLS
- FLOTATION SILT CURTAIN TYPE MOVING WATER
- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

5TH ST. NE

6TH ST. NE

558

560

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 224

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 226

℄ T.H. 28
(MINNESOTA AVE)

5TH ST. SE

XC

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ec1.dgn
MODEL: ec9

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 42687

Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 555+80 - 563+30

FILE NO. MNT04-134590

EC9 OF EC10

225 / 310

50
SCALE IN FEET

LEGEND

- SEED MIX 34-261 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 HYDRAULIC MULCH MATRIX
- SEED MIX 25-131 FERTILIZER TYPE 3 EROSION CONTROL BLANKETS CATEGORY 3N
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- SEDIMENT CONTROL LOG TYPE WOOD FIBER
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

7TH ST. NE

MINNESOTA AVE

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 225

565

6TH ST. SE

℄ T.H. 28

570

UMH

XC

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ec1.dgn
MODEL: ec10

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JVO				
CHECKED BY: DAC				

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.

Certified By: Dan Cazanacli Lic. No. 42687
Licensed Professional Engineer
Printed Name: DAN A. CAZANACLI Date: 06/29/2017

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PHONE: (651)490-2000
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EROSION CONTROL AND TURF ESTABLISHMENT PLAN

T.H. 28 STA 563+30 - 570+00

FILE NO. MNT04-134590
EC10 OF EC10

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.

REFER TO SPECIAL PROVISIONS OR SPEC BOOK FOR GROUND IN/RECESSED PAVEMENT MARKING APPLICATION REQUIREMENTS.

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, AND WRITTEN CERTIFICATION SHALL BE PRESENTED AT ANYTIME UPON REQUEST OF ENGINEER OR OTHER STATE PERSONAL.

DO NOT USE LINE MATERIAL TO PIECE TOGETHER INDIVIDUAL LETTERS, SYMBOLS, OR CROSSWALKS BLOCKS. UTILIZE PRECUT KITS PROVIDED BY THE MANUFACTURER. TWO STRIPS OF 18" LINE MATERIAL MAY BE USED TO FORM CROSSWALK BLOCKS OF 36" WIDTH.

DO NOT USE NARROWER LINE MATERIAL TO PIECE TOGETHER WIDER LINES.

IF THERE IS A CRACK OR JOINT IN ROAD SURFACE. (FOR TAPE LAY OVER CRACK OR JOINT THEN CUT TAPE 1" ON EACH SIDE OF CRACK OR JOINT). (FOR THERMO MAKE A DEEP SCORE IN THE MATERIAL ONCE IT HAS SET UP BUT NOT ENTIRELY COOLED DOWN).

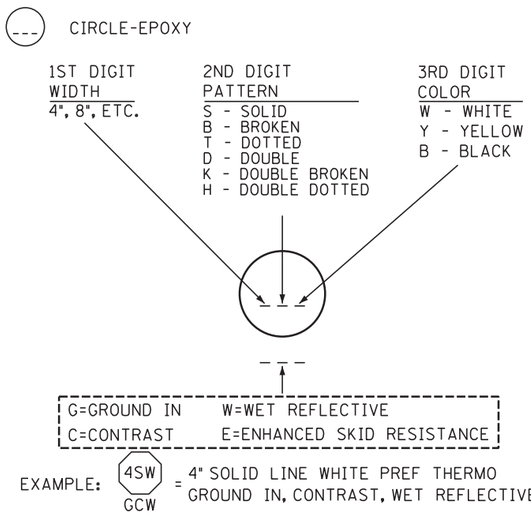
SEE SHEET 231 FOR PAVEMENT MARKING TABULATIONS.

PERMANENT SIGNING AND PAVEMENT MARKING PLAN INDEX

SYMBOLS & MATERIALS LEGEND

- CROSSWALK (3'X6', 3'X8', OR 3'X10') (MATCH WIDTH OF APPROACHING PATH/SIDEWALK) PREF TAPE GR IN
- BIKE — PAVEMENT MESSAGE (BIKE) PREF TAPE GR IN
- PED — PAVEMENT MESSAGE (PED) PREF TAPE GR IN
- PAVEMENT MESSAGE (BIKE THRU ARROW) (26.5"X72") PREF TAPE GR IN
- PAVEMENT MESSAGE (LT ARROW) PREF TAPE GR IN
- PAVEMENT MESSAGE (RT ARROW) PREF TAPE GR IN
- PAVEMENT MESSAGE (BIKE SYMBOL) PREF TAPE GR IN
- PAVEMENT MESSAGE (SHARED LANE MARKING) PREF TAPE GR IN

STRIPING KEY



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTI				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING
TITLE SHEET

FILE NO. MNT04-134590
SS1 OF SS46
227/310

6/30/2017 7:58:24 AM

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_sgnl_tabs.dgn
MODEL: SS1

MEDIAN SIGN POST ANCHOR (1)			U-1
S.P. 6103-32 T.H. 28 100% STATE FUNDS QUANTITY	S.P. 6106-23 T.H. 29 100% STATE FUNDS QUANTITY	S.P. 6110-21 T.H. 104 100% STATE FUNDS QUANTITY	TOTAL
6	1	2	9

SPECIFIC NOTES:
(1) KLEEN-BREAK BASES. FURNISH TO MNDOT.

SALVAGE & INSTALL SIGN TYPE C								U-2
SIGN NO.	S.P. 6103-32 T.H. 28 100% STATE FUNDS	QTY	POSTS			MTG HT (2)	PANEL SIZE	PANEL LEGEND
	EACH	EACH	NO & TYPE	KNEE QTY	LENGTH FEET	FEET	INCH	
C-201	1	1	1-U		13	7	24 x 24	POPE COUNTY 54
C-202	1	1	2-U		13	7	48 x 12	HUNTS RESORT THRU ARROW
							48 x 12	WOODLAWN RESORT THRU ARROW
TOTAL	2	2						

SPECIFIC NOTES:
(2) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE). SEE SHEET 266 FOR TYPICAL MOUNTING.
(3) MOUNTED ON POLE.

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE SHEETS 265 TO 267 FOR STRUCTURAL DETAILS.
3. SEE MNDOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGN PANELS.

FURNISH TYPE C (INSTALLED BY OTHERS)																U-3
SIGN NO.	S.P. 6103-32 T.H. 28 100% STATE FUNDS QUANTITY	S.P. 6106-23 T.H. 29 100% STATE FUNDS QUANTITY	S.P. 6110-21 T.H. 104 100% STATE FUNDS QUANTITY	TOTAL QUANTITY	POSTS				SIGN PANEL		S.P. 6103-32 T.H. 28 100% STATE FUNDS QUANTITY	S.P. 6106-23 T.H. 29 100% STATE FUNDS QUANTITY	S.P. 6110-21 T.H. 104 100% STATE FUNDS QUANTITY	TOTAL AREA (SQFT)	SIGN CODE	PANEL LEGEND
					NO. & TYPE	KNEE BRACES QTY	LEN. (FT.)	MTG HT. (FT.) (4)	SIZE (IN.)	AREA (SQ. FT.)						
C-2	3	1		4	2-U		13	7	30 X 30	6.25	18.75	6.25		25.00	R3-7R	RIGHT LANE MUST TURN RIGHT
C-3	4			4	2-U	1	16	7	30 X 30	6.25	25.00			25.00	W11-15	PEDESTRIAN CROSSING
									24 X 18	3.00	12.00			12.00	W16-7MPL	DOWN-LEFT ARROW FOR CROSSING
C-6	1			1	2-U	1	14	7	24 X 36	6.00	6.00			6.00	R3-9B	CENTER LANE ONLY
(6) C-12	1			1	1-ST		14	8	30 X 24	5.00	5.00			5.00	D7-X12R	COUNTY MUSEUM RIGHT ARROW
C-16	1			1	1-ST		11	7	24 X 48	8.00	8.00			8.00	D7-X12L	COUNTY MUSEUM LEFT ARROW
C-20	1			1	2-U	1	14	7	24 X 36	6.00	6.00			6.00	R3-9B	CENTER LANE ONLY
C-21	1			1	2-U	2	15	7	64 X 64 X 48	10.67	10.67			10.67	W14-3	NO PASSING ZONE
C-22			1	1	1-ST	1	14	7	30 X 30	6.25			6.25	6.25	W11-9	DISABLED CROSSING
									24 X 12	2.00			2.00	2.00	W16-9P	AHEAD
C-24		1		1	1-ST		13	7	30 X 24	5.00		5.00		5.00	D7-X12T	COUNTY MUSEUM THRU ARROW
C-26	1			1	1-ST		14	7	30 X 30	6.25	6.25			6.25	R1-1	STOP
TOTAL	13	2	1	16							97.67	11.25	8.25	117.17		

GENERAL NOTES:
1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MNDOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGNS.
3. SEE SHEETS 265 TO 267 FOR STRUCTURAL DETAILS.

SPECIFIC NOTES:
(4) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE). SEE SHEET 266 FOR TYPICAL MOUNTING.
(5) MOUNT IN CONCRETE (BY OTHERS) WITH KLEEN-BREAK BASES. SEE SHEET 268 . CONTRACTOR WILL FURNISH AND INSTALL KLEEN-BREAK BASES, PAID FOR UNDER 2564 MEDIAN SIGN POST ANCHOR.
(6) MOUNT ABOVE C-11.

DESIGN TEAM
DRAWN BY: MTI
DESIGNER: MAW
CHECKED BY: MAW

NO.	BY	DATE	REVISIONS

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.
Certified By: Mark Wag — Licensed Professional Engineer — Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING
SIGNING TABULATIONS

FILE NO. MNT04-134590
SS2 OF SS46
228 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_sgnl_tabs.dgn
MODEL: SS2-SS5

6/30/2017 7:58:28 AM

SIGN PANELS TYPE C (100% CITY FUNDS)

	SIGN NO.	100% CITY OF GLENWOOD QUANTITY	POSTS NO. & TYPE	POSTS KNEE BRACES QTY	POSTS LEN. (FT.)	POSTS MTG HT. (FT.) (1)	SIGN PANEL SIZE (IN.)	SIGN PANEL AREA (SQ. FT.)	QUANTITY	SIGN CODE	PANEL LEGEND
	C-1	1	1-ST		11	5	24 X 24	4.00	5.00	W14-1	DEAD END
	C-4	1	1-U		11	5	12 X 18	1.50	1.50	(2)	NO PARKING HERE TO CORNER
							12 X 9	0.75	0.75	(2)	VEHICLES WILL BE TOWED
	C-5	4	1-U		11	5	12 X 18	1.50	6.00	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	3.00	(2)	VEHICLES WILL BE TOWED
	C-7	10	1-ST		9	5	12 X 18	1.50	15.00	R9-7R	KEEP LEFT BIKE RIGHT PED
(3)							12 X 18	1.50	15.00	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	7.50	(2)	VEHICLES WILL BE TOWED
(3)	C-8	5	1-ST		11	5	24 X 30	5.00	25.00	R1-X1	STOP FOR PEDESTRIANS IN CROSSWALK
(3)	C-9	6	1-ST		10	5	12 X 18	1.50	9.00	R9-7R	KEEP LEFT PED RIGHT BIKE
(3)	C-10	20	1-ST		11	5	12 X 18	1.50	30.00	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	15.00	(2)	VEHICLES WILL BE TOWED
(3)	C-11	1	(4)			5	12 X 18	1.50	1.50	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	0.75	(2)	VEHICLES WILL BE TOWED
	C-13	5	1-ST		9	5	12 X 18	1.50	7.50	(2)	15 MINUTE PARKING
(3)							12 X 18	1.50	7.50	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	3.75	(2)	VEHICLES WILL BE TOWED
	C-14	12	1-ST		9	5	12 X 18	1.50	18.00	R7-108	2 HR PARKING 8AM-5PM
(3)							12 X 18	1.50	18.00	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	9.00	(2)	VEHICLES WILL BE TOWED
(3)	C-15	1	1-ST		10	5	12 X 18	1.50	1.50	R7-8m	ACCESSABILITY PARKING ONLY
(3)	C-17	1	1-ST		7	5	12 X 18	1.50	1.50	(2)	15 MINUTE PARKING
	C-18	8	2-U		13	5	12 X 18	1.50	12.00	R7-108	2 HR PARKING 8AM-5PM
							12 X 18	1.50	12.00	(2)	NO PARKING THIS BLOCK 2AM-6AM
							12 X 9	0.75	6.00	(2)	VEHICLES WILL BE TOWED
	C-19	3	1-U		10	5	12 X 18	1.50	4.50	R7-8m	ACCESSIBILITY PARKING ONLY
(3)	C-23	1	1-ST		11	5	12 X 18	1.50	1.50	(2)	RAINBOW RYDER BUS PARKING ONLY
							12 X 9	0.75	0.75	R8-3MP	7:30AM TO 12:30PM
(3)	C-25	9	1-ST		7	5	12 X 18	1.50	13.50	(2)	NO PARKING THIS BLOCK 2AM-6AM
	TOTAL								247		

GENERAL NOTES:

1. POST LENGTHS ARE APPROXIMATE AND INCLUDE EMBEDMENT, BUT DO NOT INCLUDE ADDITIONAL LENGTH REQUIRED FOR SPLICE.
2. SEE MNDOT STANDARD SIGNS MANUAL FOR PUNCHING CODE AND DETAILED DRAWINGS OF TYPE C SIGNS.
3. SEE SHEETS 265TO 267FOR STRUCTURAL DETAILS.

SPECIFIC NOTES:

(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE). SEE SHEET 266 FOR TYPICAL MOUNTING.
(2) SEE SHEET 232 FOR SIGN PANEL DETAILS.
(3) MOUNT IN CONCRETE WITH "KLEEN BREAK BASES"(INCIDENTAL). SEE SHEET 268 .
(4) MOUNT ON STRUCTURE C-12 BELOW PRIMARY PANELS.

SIGN PANELS TYPE SPECIAL (100% CITY FUNDS) — U-5

	SIGN NO.	100% CITY OF GLENWOOD QUANTITY	POSTS NO & TYPE	POSTS KNEE BRACES QTY	POSTS LENGTH FEET	MTG HT (1) FEET	PANEL SIZE (2) INCH	PANEL AREA SQ FT	PANEL TOTAL AREA SQ FT	PANEL LEGEND
	S-1	1	1-U		8	7	36 x 9	2.25	2.25	5TH ST NW
	S-2	1	1-U		8	7	36 x 9	2.25	2.25	4TH ST NW
(3)	S-3	1	1-ST		9	7	66 x 9	4.13	4.13	WEST MINNESOTA AVE
							36 x 9	2.25	2.25	2ND ST SW
(3)	S-4	1	1-ST		9	7	66 x 9	4.13	4.13	WEST MINNESOTA AVE
							36 x 9	2.25	2.25	1ST ST NW
(3)	S-5	1	1-ST		8	7	36 x 9	2.25	2.25	1ST ST SW
(3)	S-6	1	1-ST		8	7	36 x 9	2.25	2.25	1ST ST SE
(3)	S-7	1	1-ST		9	7	66 x 9	4.13	4.13	EAST MINNESOTA AVE
							36 x 9	2.25	2.25	1ST ST NE
(3)	S-8	1	1-ST		8	7	36 x 9	2.25	2.25	2ND ST SE
(3)	S-9	1	1-ST		9	7	66 x 9	4.13	4.13	EAST MINNESOTA AVE
							36 x 9	2.25	2.25	2ND ST NE
	S-10	1	1-U		8	7	36 x 9	2.25	2.25	3RD ST SE
	S-11	1	1-U		9	7	66 x 9	4.13	4.13	EAST MINNESOTA AVE
							36 x 9	2.25	2.25	3RD ST NE
	S-12	1	1-U		8	7	36 x 9	2.25	2.25	4TH ST SE
(3)	S-13	1	1-U		9	7	66 x 9	4.13	4.13	EAST MINNESOTA AVE
							36 x 9	2.25	2.25	4TH ST NE
	S-14	1	1-U		9	7	60 x 9	3.75	3.75	SOUTH FRANKLIN
							36 x 9	2.25	2.25	4TH AVE SW
	S-15	1	1-U		9	7	60 x 9	3.75	3.75	SOUTH FRANKLIN
							36 x 9	2.25	2.25	3RD AVE SW
	S-16	1	1-U		9	7	60 x 9	3.75	3.75	SOUTH FRANKLIN
							36 x 9	2.25	2.25	2ND AVE SW
(3)	S-17	1	1-ST		9	7	60 x 9	3.75	3.75	SOUTH FRANKLIN
							36 x 9	2.25	2.25	2ND AVE SE
(3)	S-18	1	1-U		9	7	60 x 9	3.75	3.75	SOUTH FRANKLIN
							36 x 9	2.25	2.25	1ST AVE SW
(3)	S-19	1	1-ST		9	7	60 x 9	3.75	3.75	SOUTH FRANKLIN
							36 x 9	2.25	2.25	1ST AVE SE
	S-20	1	1-U		8	7	36 x 9	2.25	2.25	1ST AVE NE
(3)	S-21	1	1-ST		9	7	60 x 9	3.75	3.75	NORTH FRANKLIN
							36 x 9	2.25	2.25	1ST AVE NW
	S-22	1	1-U		9	7	60 x 9	3.75	3.75	NORTH FRANKLIN
							36 x 9	2.25	2.25	2ND AVE NE
	S-23	1	1-U		9	7	60 x 9	3.75	3.75	NORTH FRANKLIN
							36 x 9	2.25	2.25	2ND AVE NW
	S-24	1	1-U		9	7	60 x 9	3.75	3.75	NORTH FRANKLIN
							36 x 9	2.25	2.25	3RD AVE NE
	S-25	1	1-U		9	7	60 x 9	3.75	3.75	NORTH FRANKLIN
							36 x 9	2.25	2.25	3RD AVE NW
	TOTAL								122.25	

GENERAL NOTES:
1. CONTACT CITY OF GLENWOOD FOR STREET NAME SIGN PANEL DETAILS.

SPECIFIC NOTES:
(1) MOUNTING HEIGHT IS MINIMUM (WITH A +6 INCH TOLERANCE) SEE SHEET 266 FOR TYPICAL MOUNTING.
(2) SIZES ARE APPROXIMATE.
(3) MOUNT IN CONCRETE WITH "KLEEN BREAK BASES"(INCIDENTAL). SEE SHEET 268 .

DELINEATORS & MARKERS (100% CITY FUNDS) — U-6

	CODE NO.	CITY OF GLENWOOD 100% CITY FUNDS QUANTITY	LOCATION
(1)	OBJECT MARKER X4-11	3	MOUNTED ON STRUCTURE C-11
	TOTAL	3	

GENERAL NOTES:
1. FOR DELINEATOR AND MARKER PLACEMENT, SEE SHEET 264 .
2. SEE STANDARD SIGNS MANUAL FOR DELINEATOR AND MARKER SIGN DESIGN.

SPECIFIC NOTES:
(1) RED ON RED.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING
SIGNING TABULATIONS

FILE NO. MNT04-134590
SS4 OF SS46
230 / 310

PAVEMENT MARKING QUANTITIES

U-7

	ITEM	UNIT	S.P. 6103-32 T.H. 28 100% STATE FUNDS QUANTITY			S.P. 6104-12 T.H. 28 100% STATE FUNDS QUANTITY			S.P. 6106-23 T.H. 29 100% STATE FUNDS QUANTITY			S.P. 6110-21 T.H. 104 100% STATE FUNDS QUANTITY			S.P. 061-090-006 80% FED, 20% CITY QUANTITY			CITY OF GLENWOOD 100% CITY FUNDS			TOTAL QUANTITY
			YELLOW	WHITE	TOTAL	YELLOW	WHITE	TOTAL	YELLOW	WHITE	TOTAL	YELLOW	WHITE	TOTAL	YELLOW	WHITE	TOTAL	YELLOW	WHITE	TOTAL	
(1)	PAVT MSSG PREF TAPE GR IN (WR)	SQ FT		763.75	763.75		45	45		128.04	128.04								295.34	295.34	1232
	4" SOLID LINE EPOXY GR IN (WR)	LIN FT	8065	16275	24340	1080	4475	5555	3125	8210	11335		3225	3225							44455
(2)	4" BROKEN LINE EPOXY GR IN (WR)	LIN FT	1709	675	2384		337	337	965	1125	2090	360		360							5171
	12" SOLID LINE EPOXY GR IN (WR)	LIN FT	61		61																61
	24" SOLID LINE EPOXY GR IN (WR)	LIN FT					30	30													30
(3)	8" DOTTED LINE EPOXY GR IN (WR)	LIN FT		117	117																117
	4" DOUBLE SOLID LINE EPOXY GROUND IN (WR)	LIN FT	1850		1850				3450		3450										5300
	CROSSWALK PREF TAPE GR IN	SQ FT		3684	3684					1566	1566		1938	1938		240	240		3280	3280	10708

GENERAL NOTES:
1. LENGTHS ARE APPROXIMATE AND DO NOT INCLUDE GAPS.

SPECIFIC NOTES:
(1) PAVEMENT MESSAGE BREAKDOWN
  S.P. 6103-32: 5 BIKE MSSG (106.50 SQ FT); 5 PED MSSG (87.25 SQ FT); 32 LT ARROW (480 SQ FT); 6 RT ARROW (90 SQ FT)
  S.P. 6104-12: 3 RT ARROW (45 SQ FT)
  S.P. 6106-23: 2 AHEAD MSSG (57.16 SQ FT); 2 STOP MSSG (40.88 SQ FT); 2 RT ARROW (30 SQ FT)
  CITY OF GLENWOOD: 16 BIKE THRU ARROW (80 SQ FT); 16 BIKE SYMBOL (139.04 SQ FT); 10 SHARED LANE MARKINGS (76.3 SQ FT)
(2) 10' STRIPE, 40' GAP
(3) 3' STRIPE, 12' GAP

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: MAW
CHECKED BY: MAW

NO.	BY	DATE	REVISIONS

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.
Certified By: Mark Wagner (Licensed Professional Engineer) Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

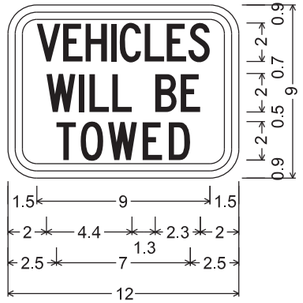
SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

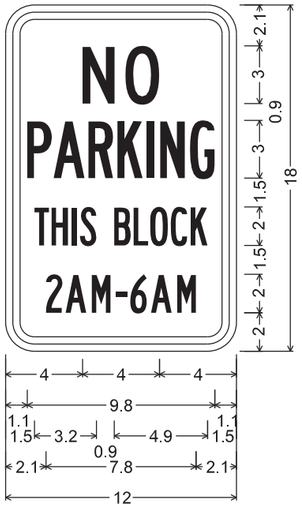
SIGNING AND PAVEMENT MARKING
SIGNING TABULATIONS

FILE NO. MNT04-134590
SS5 OF SS46

Identifier : C-14;
1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
[NO] C 2K specified length;
[PARKING] B 2K specified length;
[HERE TO] B 2K specified length;
[CORNER] B 2K;

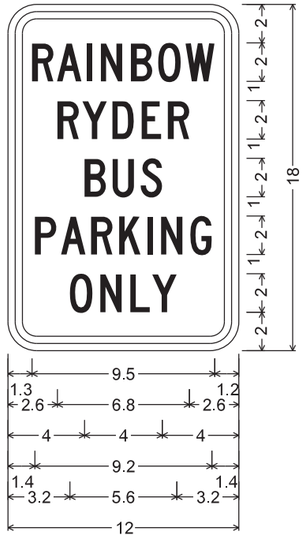


Identifier : C-14, C-16, C-17, C-21, C-24, C-25, C-26, C-31;
1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
[VEHICLES] C 2K specified length;
[WILL BE] C 2K specified length;
[TOWED] C 2K;



Identifier : C-16, C-17, C-21, C-24, C-25, C-26, C-31;
1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
[NO] C 2K specified length;
[PARKING] B 2K specified length;
[THIS BLOCK] B 2K specified length;
[2AM-6AM] B 2K;

Identifier : C-25, C-31;
1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
[15] C 2K;
[MINUTE] B 2K specified length;
[PARKING] B 2K specified length;



Identifier : C-41;
1.5" Radius, 0.4" Border, 0.4" Indent, Red on White;
[RAINBOW] C 2K;
[RYDER] C 2K;
[BUS] C 2K;
[PARKING] C 2K;
[ONLY] C 2K;

NOTE:
DIMENSIONS SHOWN IN INCHES UNLESS OTHERWISE NOTED.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: Mark Wag — Licensed Professional Engineer — Lic. No. 51660
Printed Name: MARK A. WAGNER — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING
SIGN PANEL LAYOUTS

FILE NO. MNT04-134590
SS6 OF SS46
232 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl_sign panel.dgn
MODEL: SS6 (sign panel details)
6/30/2017 7:58:29 AM

7:58:32 AM

6/30/2017

50

SCALE IN FEET

BROWNIES TIRE SERVICE

SPEED LIMIT 55 (8)

STOP (8)

STOP (8)

415

420

T.H. 28

SPEED LIMIT 30 (8)

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 234

NOTES:

(8) SALVAGE-BY OTHERS

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD6103332_sgnl_es.dgn
MODEL: esl

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTI				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 28 STA. 411+00 - 420+65

FILE NO. MNT04-134590

SS7 OF SS46

233 / 310

7:58:33 AM

6/30/2017

50

SCALE IN FEET

T.H. 28

425

427

STOP

SOUTH DAKOTA 29

WEST DAKOTA 28

SPEED LIMIT 30

YIELD

STOP

STOP

5TH ST NW

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 233

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 235

6TH ST. NW

2ND AVE. NW

5TH ST. NW

11

10

515
FIRST BAPTIST
CHURCH

UMH

NOTES:

(4) REMOVE

(8) SALVAGE-BY OTHERS

(10) REMOVE SIGN TYPE C-BY OTHERS

FILE: S:\KOW\Mnt04\134590\5-final-dsgn\5j-drawings\40-TransHwy\plnshts\CD610332_sgnl_es.dgn
MODEL: es2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 28 STA. 420+65 - 428+20

FILE NO. MNT04-134590

SS8 OF SS46

234 / 310

50
SCALE IN FEET

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 234

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 236

NO PASSING ZONE

SPEED LIMIT 30

DO NOT ENTER

HWY 28 MILE 6 7 HWY 28

TWIN CITIES 62 TWIN CITIES 82

TWIN CITIES 28 TWIN CITIES 29

STOP

T.H. 28

430

435

4TH ST. NW

MINNESOTA AVE

HUNTS RESORT
WOODLAWN RESORT
C-202

C-201

54 COUNTY

SPEED LIMIT 30 RADAR PATROLLED

DAIRY QUEEN

NOTES:
(2) INPLACE
(3) SALVAGE
(8) SALVAGE-BY OTHERS
(10) REMOVE SIGN TYPE C-BY OTHERS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 28 STA. 428+20 - 436+00

FILE NO. MNT04-134590
SS9 OF SS46
235 / 310

50
SCALE IN FEET

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 235

HOTEL

Starbuck
Morris
Benson
8

ONLY ONLY
8

MINNESOTA 29
MINNESOTA 28
8

NO PARKING 220' AM TO 6:00 AM WHEN SIGNED
VEHICLES MAY BE TOWED
5

T.H. 28

438

440

237
GAS MART

AUTORAMA

2ND ST SW
WEST MINNESOTA AVE
4

202
THE GROG SHOP

2ND ST. SW

STOP
8

NO PARKING 2:00 AM TO 6:00 AM
5

MATCHLINE T.H. 28
STA. 442+90 SEE LOWER LEFT

NOTES:
2 INPLACE
4 REMOVE
5 REMOVE SIGN TYPE C
8 SALVAGE-BY OTHERS
10 REMOVE SIGN TYPE C-BY OTHERS

50
SCALE IN FEET

104
SUBWAY

STOP
8

1ST ST. NW

30
NAPA AUTO PARTS

24
ACE HARDWARE

GINGER BREAD CAFE
PASTRY SHOPPE BAKERY

MATCHLINE T.H. 29
STA. 35+70 SEE SHEET 241

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

15 MINUTE PARKING

GLENWOOD STATE BANK

5
GLENWOOD STATE BANK

4 BLKS

COUNTY MUSEUM
10

LIBRARY BUREAU
5

AMERICAN BUSINESS FORMS

MATCHLINE T.H. 28
STA. 442+90 SEE UPPER RIGHT

WEST MINNESOTA AVE
4

T.H. 28

445

540

35

34

WEST MINNESOTA AVE
4

1ST ST. SW

103
MINNEWASKA ABSTRACT & TITLE

STOP
8

JCT
MINNESOTA 104
8

2
EAGLE STATE BANK

COUNTY MUSEUM
10

4 BLKS
8

MATCHLINE T.H. 104
STA. 33+65 SEE SHEET 241

5 BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 237

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: _____ Licensed Professional Engineer
Lic. No. 51660
Printed Name: MARK A. WAGNER
Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 28 STA. 436+00 - 540+80

FILE NO. MNT04-134590
SS10 OF SS46
236 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl_es.dgn
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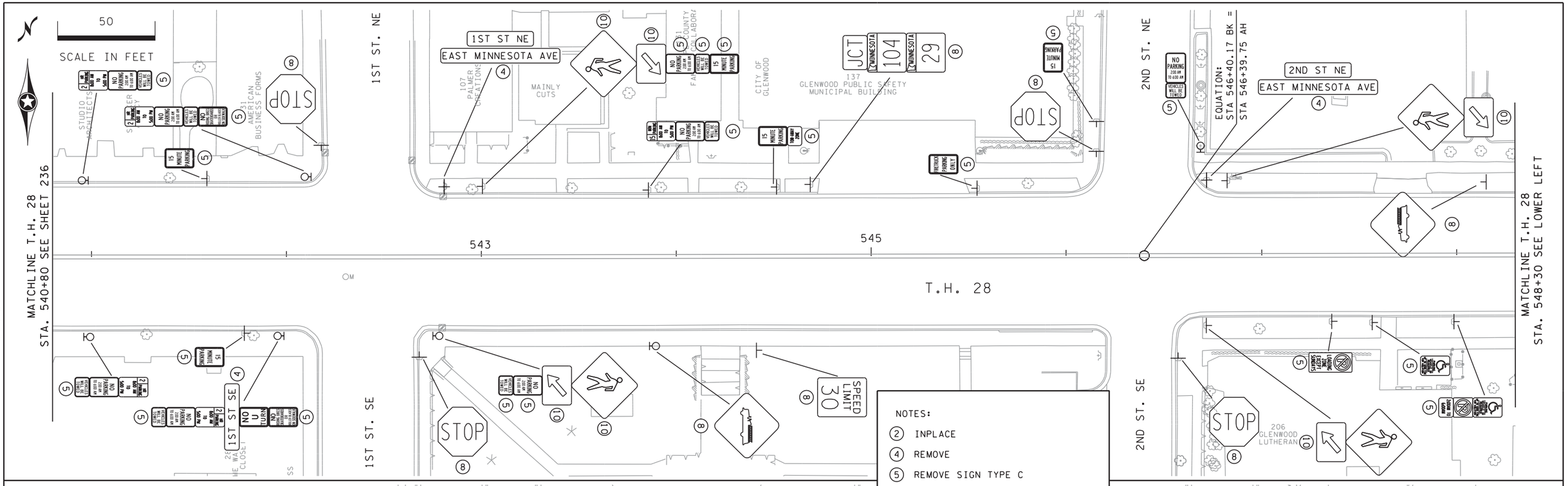
7:58:36 AM
6/30/2017



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN
T.H. 28 STA. 540+80 - 555+80

FILE NO. MNT04-134590
SS11 OF SS46
237/310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_sgnl_es.dgn
MODEL: es5

50
SCALE IN FEET

5TH ST. NE

6TH ST. NE

AHEAD

STOP

5TH ST NE
EAST MINNESOTA AVE

6TH ST NE
EAST MINNESOTA AVE

MATCHLINE T.H. 28
STA. 555+80 SEE SHEET 237

MATCHLINE T.H. 28
STA. 563+30 SEE SHEET 239

558

560

SPEED LIMIT 30

T.H. 28

STOP

5TH ST SE
EAST MINNESOTA AVE

5TH ST. SE

NOTES:
(2) INPLACE
(8) SALVAGE-BY OTHERS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: Mark Wagner (Licensed Professional Engineer) Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 28 STA. 555+80 - 563+30

FILE NO. MNT04-134590
SS12 OF SS46
238 / 310

50

SCALE IN FEET

7TH ST NE

EAST MINNESOTA AVE (2)

WEST MINNESOTA 28 (2)

STOP (8)

7TH ST. NE

STOP (2)

MINNESOTA AVE

T.H. 28

565

MATCHLINE T.H. 28
STA. 563+30
SEE SHEET 238

SPEED LIMIT 30 (2)

STOP (2)

6TH ST SE

EAST MINNESOTA AVE (2)

SLOWER TRAFFIC KEEP RIGHT (2)

STOP (8)

6TH ST. SE

SPEED LIMIT 40 (8)

EAST MINNESOTA 28 (8)

T.H. 28

570

NOTES:

(2) INPLACE

(8) SALVAGE-BY OTHERS

DESIGN TEAM				
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				
	NO.	BY	DATE	REVISIONS

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 28 STA. 563+30 - 570+80

FILE NO. MNT04-134590
SS13 OF SS46
239/310

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6/30/2017 7:58:39 AM

7:58:41 AM

6/30/2017

50

SCALE IN FEET

T.H. 104

1190

1192

BEGIN S.P. 6110-21
T.H. 104
STA. 1189+70.00
R.P. 40+00.516

6TH AVE. SE

SOUTH FRANKLIN
6TH AVE SE

SOUTH FRANKLIN
4TH AVE SW

EQUATION:
STA 1192+81.02 BK =
STA 17+61.24 AH

NO PARKING 7:00 AM - 9:00 AM

STOP

AHEAD

MATCHLINE T.H. 104
STA. 18+75 SEE LOWER LEFT

NOTES:

(2) INPLACE
(4) REMOVE
(5) REMOVE SIGN TYPE C
(8) SALVAGE-BY OTHERS
(10) REMOVE SIGN TYPE C-BY OTHERS

MATCHLINE T.H. 104
STA. 18+75 SEE UPPER RIGHT

4TH AVE. SW

SOUTH FRANKLIN
4TH AVE SW

3RD AVE. SW

SOUTH FRANKLIN
3RD AVE SW

20

23

25

GLENWOOD
MEDICAL CENTER

4TH AVE. SE

T.H. 104

SPEED LIMIT 30

NO PARKING ANYTIME

MATCHLINE T.H. 104
STA. 26+15 SEE SHEET 241

50

SCALE IN FEET

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\C0610332_sgnl_es.dgn
MODEL: es8

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 104 STA. 1189+00 - 26+15

FILE NO. MNT04-134590
SS14 OF SS46

240 / 310

MATCHLINE T.H. 104
STA. 26+15 SEE SHEET 240

MATCHLINE T.H. 104
STA. 33+65 SEE SHEET 236

27 30 33

T.H. 104

2ND AVE. SW
2ND AVE. SE
1ST AVE. SW
1ST AVE. SE

SOUTH FRANKLIN
2ND AVE SW
2ND AVE SE
1ST AVE SE
SOUTH
MINNESOTA
104
JCT
28
29
STOP
115 COUNSELOR REALTY
CURVES FOR WOMEN

50
SCALE IN FEET

NOTES:
(4) REMOVE
(5) REMOVE SIGN TYPE C
(8) SALVAGE-BY OTHERS
(10) REMOVE SIGN TYPE C-BY OTHERS

MATCHLINE T.H. 29
STA. 35+70 SEE SHEET 236

MATCHLINE T.H. 29
STA. 43+15 SEE SHEET 242

36 40 43

1ST AVE. NW
2ND AVE. NW
1ST AVE. NE
2ND AVE. NE
NORTH FRANKLIN
1ST AVE NW
2ND AVE NW
1ST AVE NE
2ND AVE NE
T.H. 29
NORTH
29
GLACIAL RIDGE TRAIL
COUNTY MUSEUM
Sunburg
Sauk Centre
Morris
4 BLKS
110 GLENWOOD COLLISION CENTER

50
SCALE IN FEET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 104 STA. 26+15 - 33+65
T.H. 29 STA. 35+70 - 43+15

FILE NO. MNT04-134590
SS15 OF SS46
241 / 310

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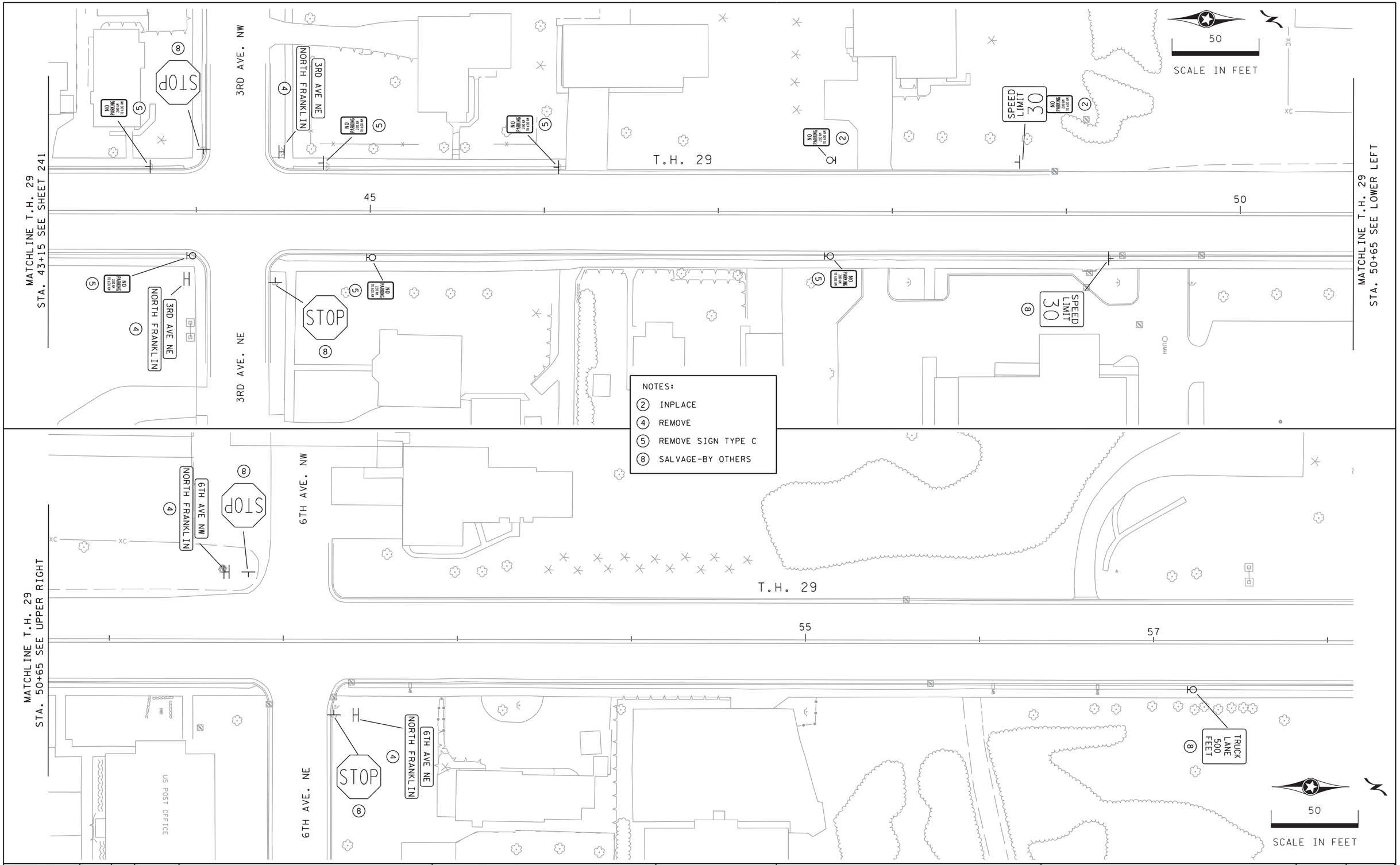

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MODEL: esl0

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

EXISTING SIGNING PLAN

T.H. 29 STA. 43+15 - 58+15

FILE NO. MNT04-134590
SS16 OF SS46
242 / 310

7:58:48 AM

6/30/2017

50

SCALE IN FEET

BROWNIES TIRE SERVICE

STOP (11)

SPEED LIMIT 55 (11)

STOP (11)

4BY
GW

415

420

T.H. 28

4SW
GW

SPEED LIMIT 30 (11)

MATCHLINE T.H. 28
STA. 420+65 SEE SHEET 244

BEGIN FULL WIDTH CONSTRUCTION
T.H. 28 STA. 414+81.91
R.P. 75+00.640

NOTES:

(11) INSTALL-BY OTHERS

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhiwy\plnshts\CD6103332_sgn1.dgn
MODEL: sn1

DESIGN TEAM				
DRAWN BY: MTI				
DESIGNER: MAW				
CHECKED BY: MAW				
	NO.	BY	DATE	REVISIONS

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 411+00 - 420+65

FILE NO. MNT04-134590
SS17 OF SS46

6/30/2017 7:58:48 AM

50
SCALE IN FEET

T.H. 28

425

427

4BY
GW

4SW
GW

STOP

SOUTH WEST
MINNESOTA
MINNESOTA
28
29

RIGHT LANE MUST TURN RIGHT
C-2

S-1

5TH ST NW

5TH ST. NW

61H ST. NW

2ND AVE. NW

DEAD END
C-1

MATCHLINE T.H. 28
STA. 420+65
SEE SHEET 243

MATCHLINE T.H. 28
STA. 428+20
SEE SHEET 245

515
FIRST BAPTIST CHURCH

UMH

XC

NOTES:
1. (1) FURNISH & INSTALL
2. (7) FURNISH SIGN
3. (11) INSTALL-BY OTHERS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN
T.H. 28 STA. 420+65 - 428+20

FILE NO. MNT04-134590
SS18 OF SS46
244 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgn1.dgn
MODEL: sn2

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

MATCHLINE T.H. 28
STA. 428+20 SEE SHEET 244

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 246

T.H. 28

4TH ST. NW

MINNESOTA AVE

50
SCALE IN FEET

NOTES:

(1) FURNISH & INSTALL
(6) INSTALL
(7) FURNISH SIGN
(11) INSTALL-BY OTHERS
(13) INSTALL KLEEN-BREAK BASE. SEE MEDIAN SIGN POST ANCHOR TABULATION.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

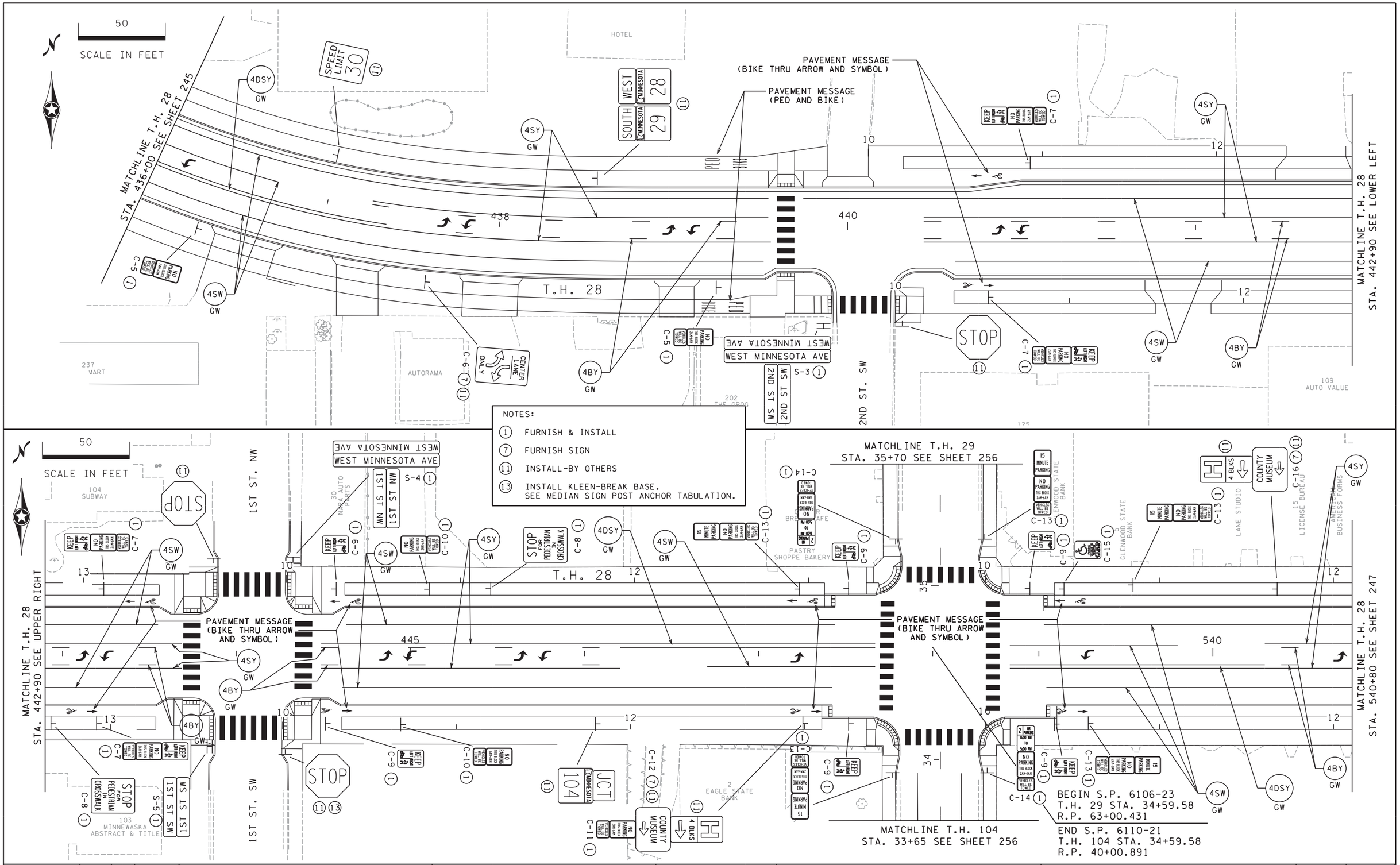
SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 428+20 - 436+00

FILE NO. MNT04-134590
SS19 OF SS46
245 / 310



NOTES:

1. FURNISH & INSTALL
7. FURNISH SIGN
11. INSTALL-BY OTHERS
13. INSTALL KLEEN-BREAK BASE. SEE MEDIAN SIGN POST ANCHOR TABULATION.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Licensed Professional Engineer — Lic. No. 51660

Printed Name: MARK A. WAGNER — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 436+00 - 540+80

FILE NO. MNT04-134590

SS20 OF SS46

246 / 310

FILE: S:\KO\MX\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl.dgn
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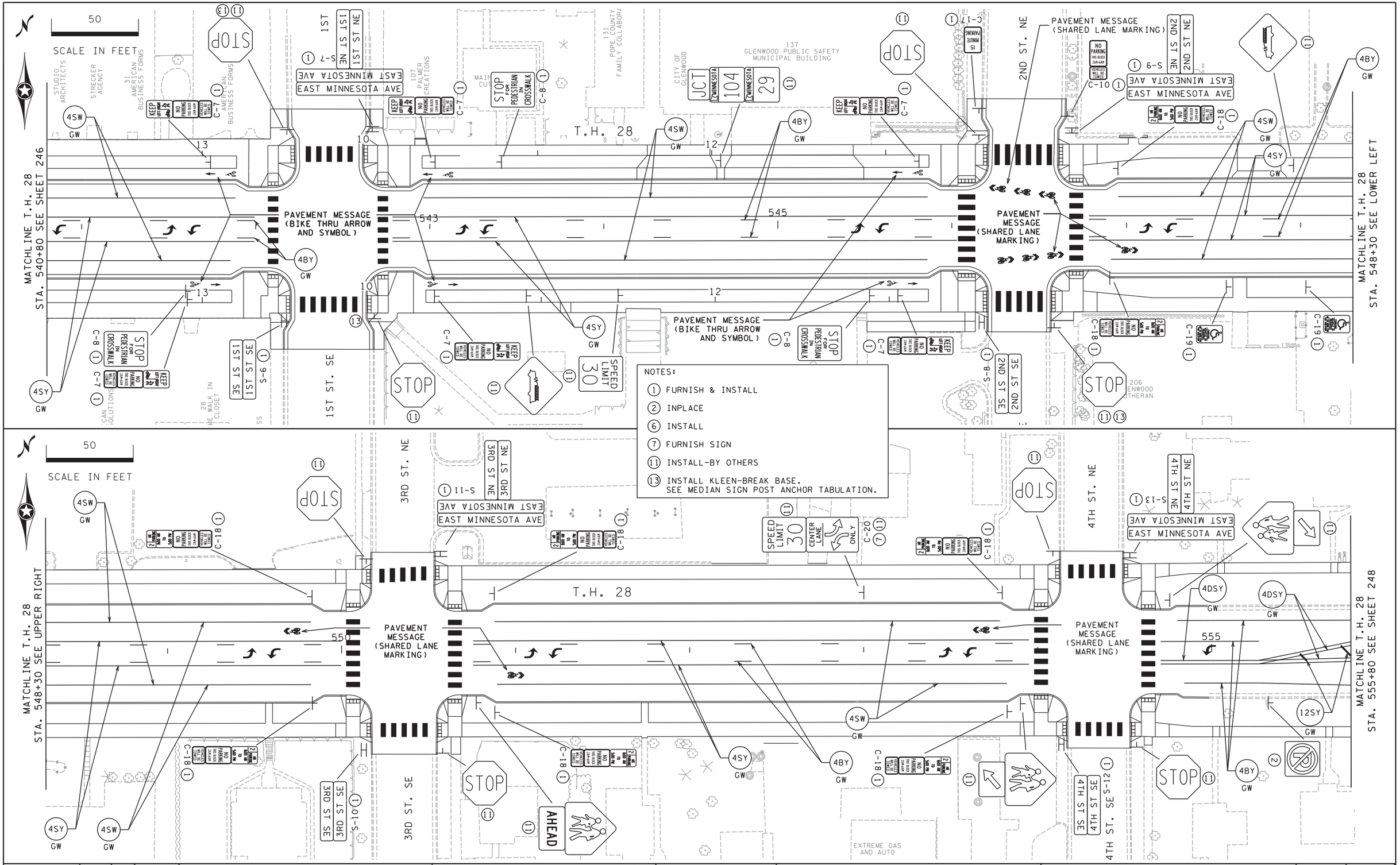

NOTES:

1. FURNISH & INSTALL
2. INPLACE
6. INSTALL
7. FURNISH SIGN
11. INSTALL-BY OTHERS
13. INSTALL KLEEN-BREAK BASE. SEE MEDIAN SIGN POST ANCHOR TABULATION.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTI				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Licensed Professional Engineer — Lic. No. 51660

Printed Name: MARK A. WAGNER — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 540+80 - 555+80

FILE NO. MNT04-134590

SS21 OF SS46

247 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_sgnl.dgn
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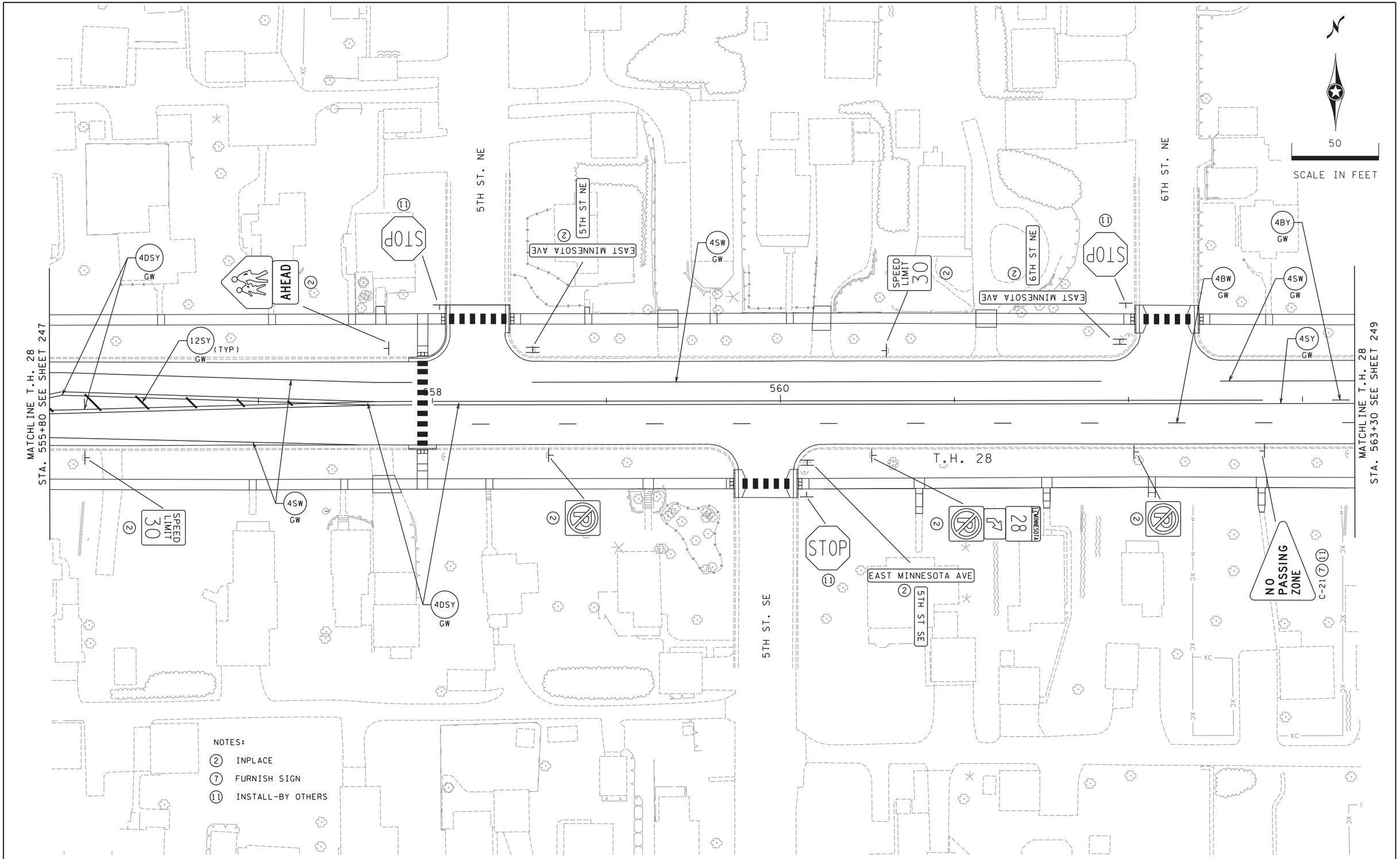

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTI				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN
T.H. 28 STA. 555+80 - 563+30

FILE NO. MNT04-134590
SS22 OF SS46
248 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transtwy\plnshts\CD610332_sgn1.dgn
MODEL: sn6

7:58:54 AM

6/30/2017

50

SCALE IN FEET

MATCHLINE T.H. 28
STA. 563+30
SEE SHEET 248

T.H. 28

565

7TH ST. NE

EAST MINNESOTA AVE

WEST MINNESOTA 28

STOP

4BW GW

MINNESOTA AVE

SPEED LIMIT 30

4BY GW

4SW GW

SLOWER TRAFFIC KEEP RIGHT

EAST MINNESOTA AVE

6TH ST SE

STOP

SPEED LIMIT 40

6TH ST. SE

4SY GW

4BW GW

T.H. 28

EAST 28

4SW GW

570

MATCHLINE T.H. 28
STA. 570+80
SEE SHEET 250

NOTES:

(2) INPLACE

(11) INSTALL-BY OTHERS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 563+30 - 570+80

FILE NO. MNT04-134590

SS23 OF SS46

249 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_sgn1.dgn
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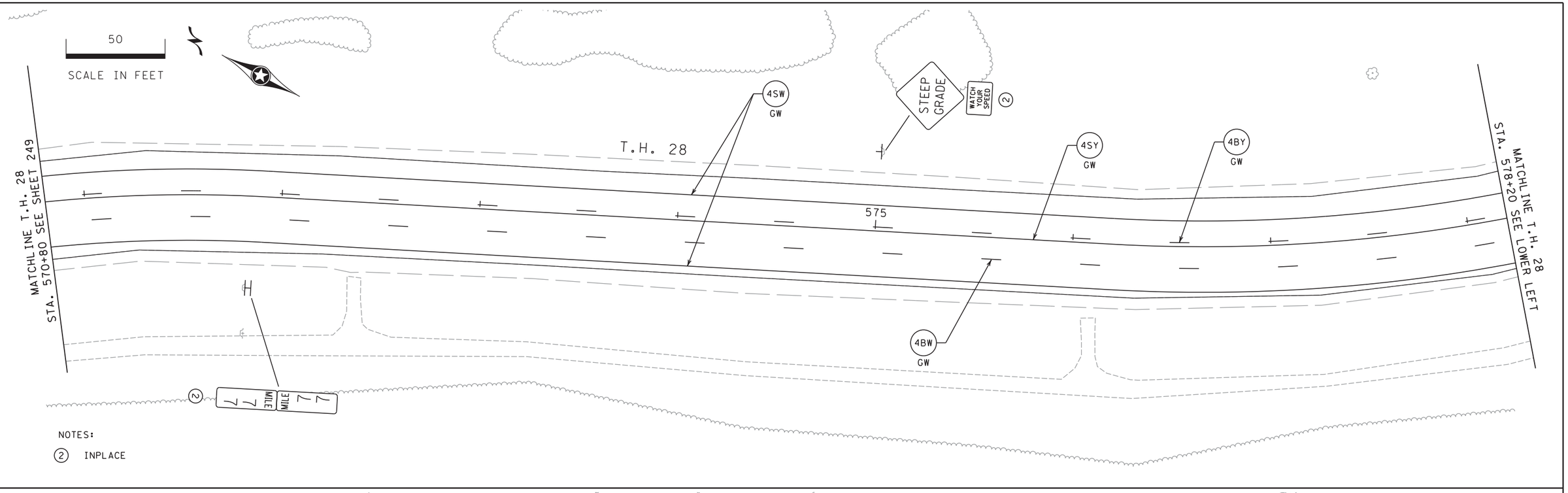

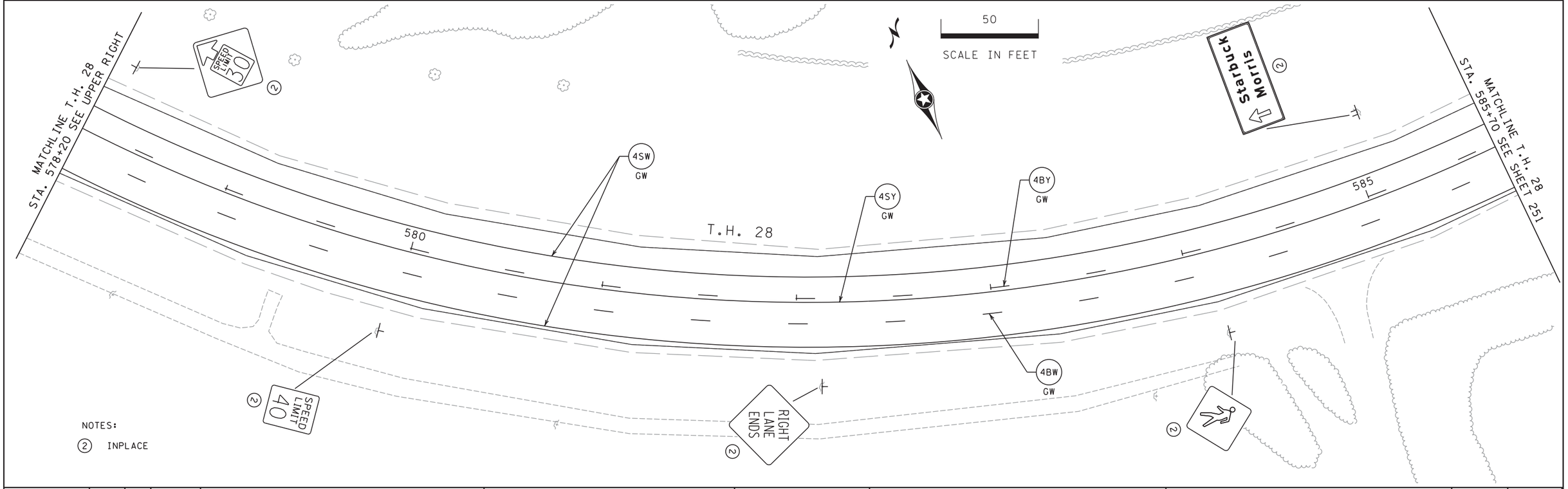

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Printed Name: MARK A. WAGNER Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 570+80 - 585+70

FILE NO. MNT04-134590
SS24 OF SS46
250 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\C0610332_sgnl.dgn
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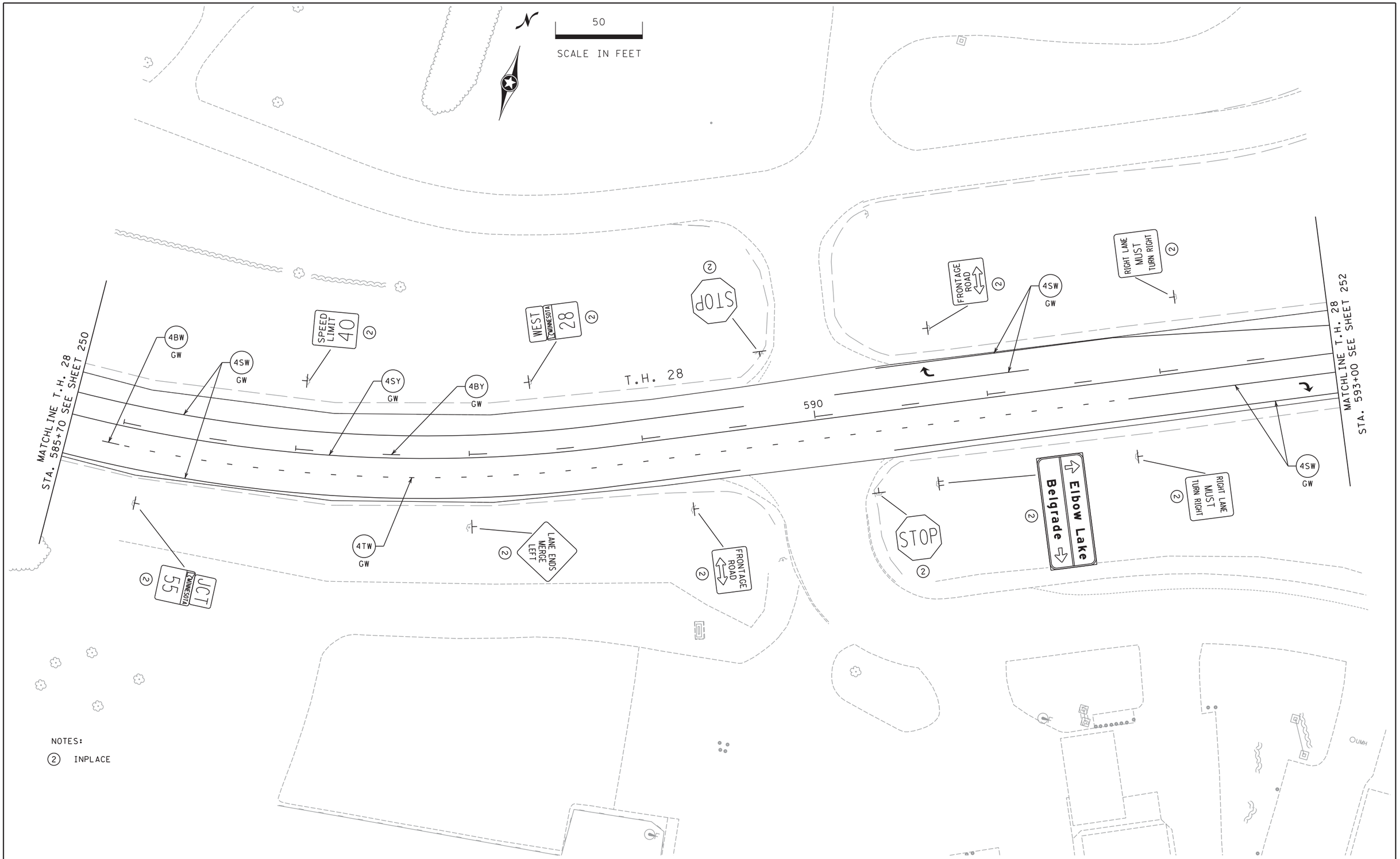

NOTES:

(2) INPLACE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Certified By: _____ (Licensed Professional Engineer) Lic. No. 51660

Printed Name: MARK A. WAGNER Date: 06/29/2017

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PHONE: (651)490-2000
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 585+70 - 593+00

FILE NO. MNT04-134590

SS25 OF SS46

251 / 310

7:59:02 AM

6/30/2017

MATCHLINE T.H. 28
STA. 597+30 SEE SHEET 253

T.H. 55

T.H. 28

SW RAMP

NW RAMP

595

4SW
GW

Elbow Lake
(2)

4SY
GW

4BY
GW

(2)
55
MINNESOTA
EAST

ONE WAY
ONE WAY
(2)

(2)
STOP

(2)
BUSINESS DISTRICT

(2)
WEST MINNESOTA 55
EAST MINNESOTA 55

MATCHLINE T.H. 28
STA. 593+00 SEE SHEET 251

50
SCALE IN FEET

NOTES:
(2) INPLACE

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MODEL: sn10

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 06/29/2017

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PHONE: (651)490-2000
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 593+00 - 597+30

FILE NO. MNT04-134590
SS26 OF SS46

252 / 310

MATCHLINE T.H. 28
STA. 601+45 SEE SHEET 254

50
SCALE IN FEET

BUSINESS DISTRICT (2)

4SW GW

STOP (2)

(2) ONE WAY

NE RAMP

600

(2) 1.5 MILES

WEST MINNESOTA 55 (2)

4SW GW

4SY GW

SE RAMP

4BY GW

4SW GW

(2) Belgrade

T.H. 28

BEGIN S.P. 6104-12
T.H. 28 STA. 597+45.73
R.P. 077+00.489

END S.P. 6103-32
T.H. 28 STA. 597+45.73
R.P. 077+00.489

BR. NO. 61002

873

875

T.H. 55

880

MATCHLINE T.H. 28
STA. 597+30 SEE SHEET 252

NOTES:
(2) INPLACE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Certified By: _____ Licensed Professional Engineer Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

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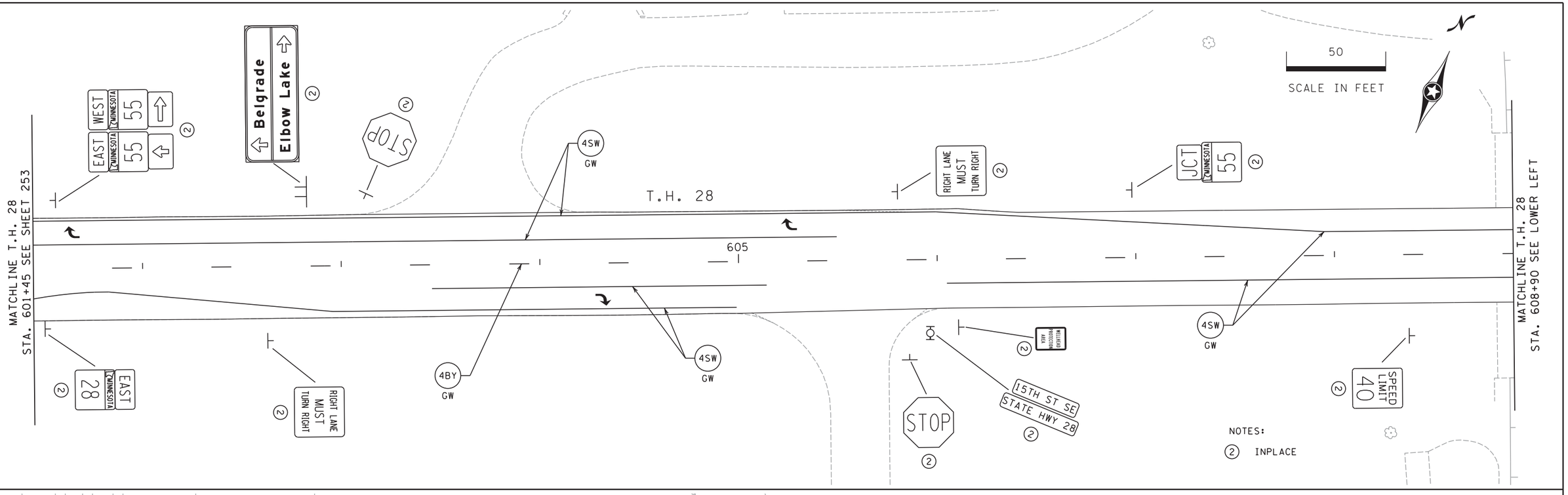
ST. PAUL, MN 55110

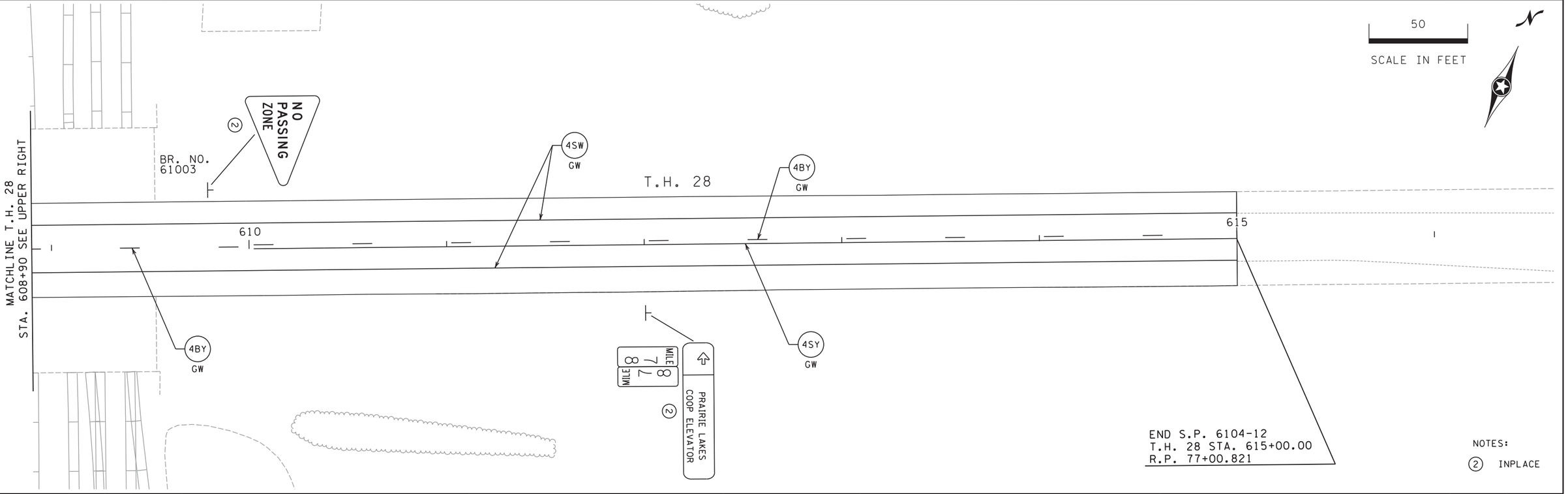
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 597+30 - 601+45

FILE NO. MNT04-134590
SS27 OF SS46





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DESIGNER: MAW				
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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 28 STA. 570+80 - 585+70

FILE NO. MNT04-134590
SS28 OF SS46

50

SCALE IN FEET

T.H. 104

1190

1192

BEGIN S.P. 6110-21
T.H. 104
STA. 1189+70.00
R.P. 40+00.516

6TH AVE. SE

6TH AVE SE
SOUTH FRANKLIN

4TH AVE SW
SOUTH FRANKLIN

STOP

AHEAD

4SW GW

4BY GW

C-5

MATCHLINE T.H. 104
STA. 18+75 SEE LOWER LEFT

NOTES:

(1) FURNISH & INSTALL
(2) INPLACE
(7) FURNISH SIGN
(11) INSTALL-BY OTHERS

50

SCALE IN FEET

AHEAD C-22 (7) (11)

STOP (11)

4TH AVE. SW

4TH AVE SW
SOUTH FRANKLIN
S-14 (1)

C-10 (1)

T.H. 104

20

23

25

4TH AVE. SE

STOP (11)

GLENWOOD
MEDICAL CENTER

SPEED LIMIT 30 (11)

3RD AVE SW
SOUTH FRANKLIN
S-15 (1)

3RD AVE. SW

4BY GW

4SW GW

MATCHLINE T.H. 104
STA. 18+75 SEE UPPER RIGHT

MATCHLINE T.H. 104
STA. 26+15 SEE SHEET 256

NOTES:

(1) FURNISH & INSTALL
(7) FURNISH SIGN
(11) INSTALL-BY OTHERS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 104 STA. 1189+00 - 26+15

FILE NO. MNT04-134590
SS29 OF SS46
255 / 310

FILE: S:\KO\MX\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\C0610332_sgn1.dgn
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6/30/2017 7:59:04 AM

MATCHLINE T.H. 104
STA. 26+15 SEE SHEET 255

MATCHLINE T.H. 104
STA. 33+65 SEE SHEET 246

T.H. 104

2ND AVE. SW

1ST AVE. SW

2ND AVE. SE

1ST AVE. SE

27

30

33

SOUTH FRANKLIN

2ND AVE SW

1ST AVE SW

1ST AVE SE

2ND AVE SE

STOP

4BY GW

4SW GW

C-10 (1)

C-14 (1)

C-23 (1)

S-16 (1)

S-17 (1)

S-18 (1)

S-19 (1)

115 COUNSELOR REALTY

CURVES FOR WOMEN

2 THE VALLEY

8 CHINESE RESTAL

NOTES:

(1) FURNISH & INSTALL
(7) FURNISH SIGN
(11) INSTALL-BY OTHERS
(13) INSTALL KLEEN-BREAK BASE. SEE MEDIAN SIGN POST ANCHOR TABULATION.

50
SCALE IN FEET

MATCHLINE T.H. 29
STA. 35+70 SEE SHEET 246

MATCHLINE T.H. 29
STA. 43+15 SEE SHEET 257

T.H. 29

1ST AVE. NW

2ND AVE. NW

1ST AVE. NE

2ND AVE. NE

NORTH FRANKLIN

1ST AVE NW

2ND AVE NW

1ST AVE NE

2ND AVE NE

36

40

43

C-24 (11)(7)

4 BLKS

COUNTY MUSEUM

WORLD OF WELLNESS

GLACIAL RIDGE TRAIL

NORTH 29 MINNESOTA

JCT 28 MINNESOTA 104

MINNESOTA 29

C-10 (1)

C-14 (1)

C-19 (1)

C-25 (1)

S-20 (1)

S-21 (1)

S-22 (1)

S-23 (1)

110 GLENWOOD COLLISION CENTER

NOTES:

(1) FURNISH & INSTALL
(7) FURNISH SIGN
(11) INSTALL-BY OTHERS
(13) INSTALL KLEEN-BREAK BASE. SEE MEDIAN SIGN POST ANCHOR TABULATION.

50
SCALE IN FEET

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer
Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN
T.H. 104 STA. 26+15 - 33+65
T.H. 29 STA. 35+70 - 43+15

FILE NO. MNT04-134590
SS30 OF SS46
256 / 310

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Licensed Professional Engineer Lic. No. 51660

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 29 STA. 43+15 - 58+15

FILE NO. MNT04-134590
SS31 OF SS46
257 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgn1.dgn
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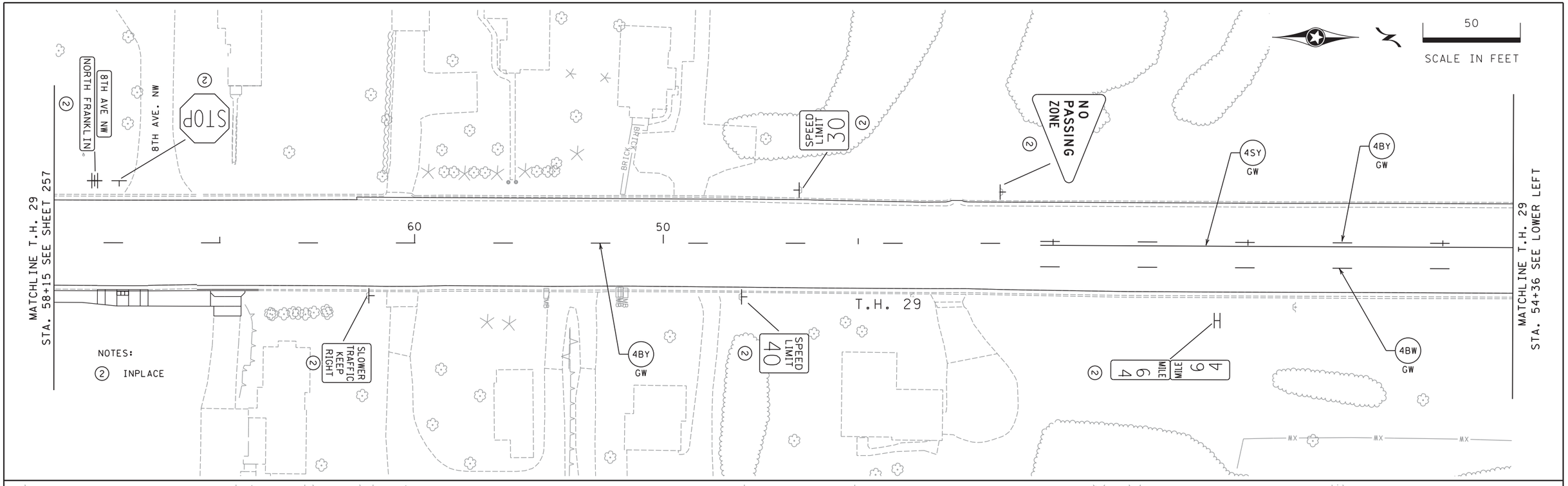

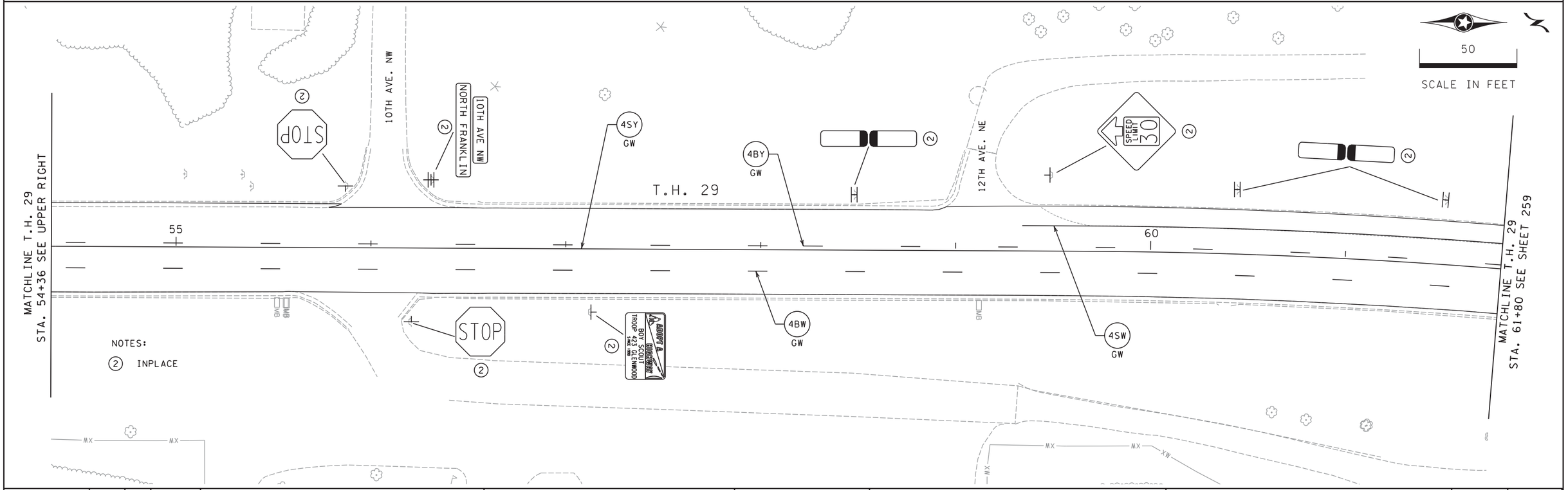

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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Certified By: _____ Licensed Professional Engineer Lic. No. 51660

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 29 STA. 58+15 - 61+80

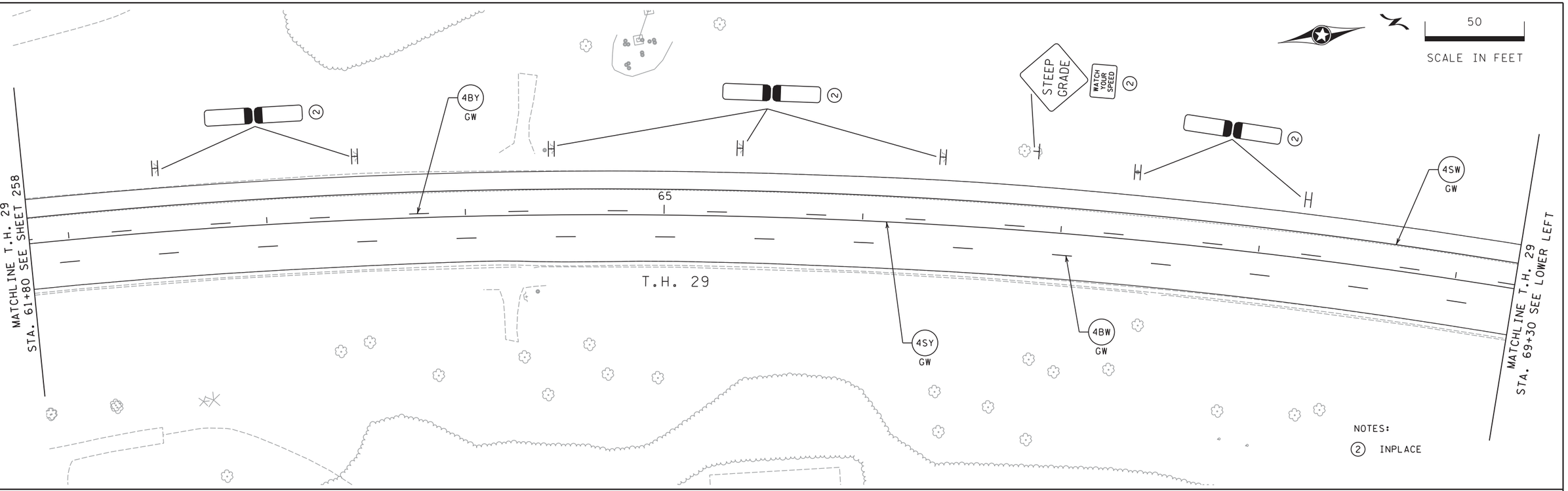
FILE NO. MNT04-134590

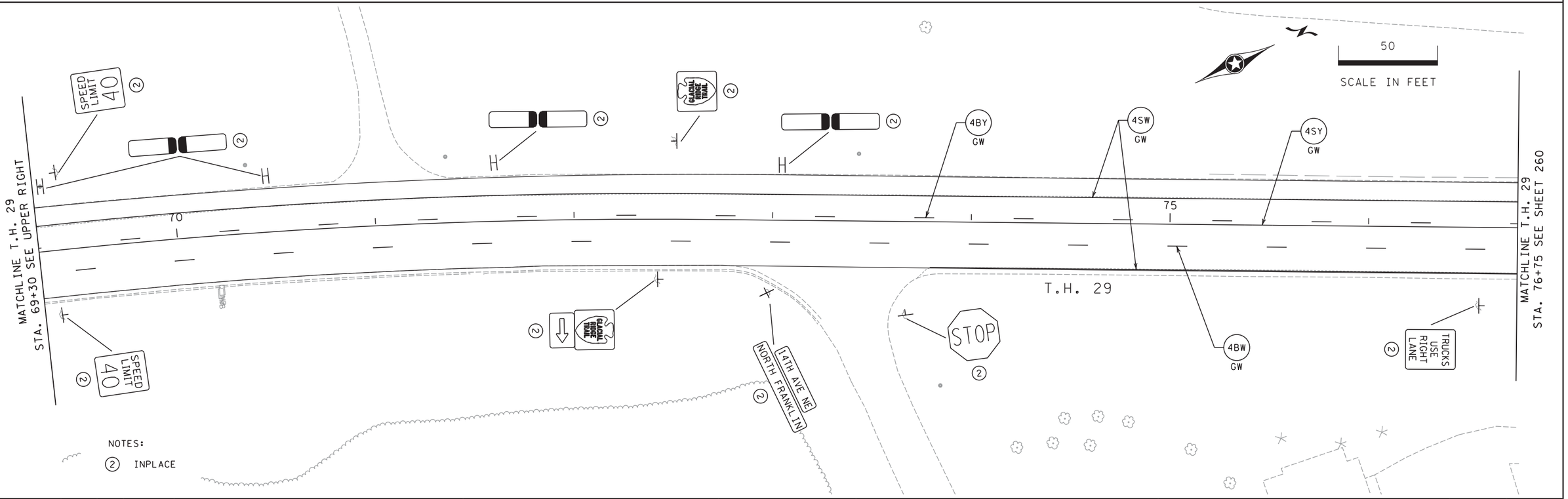
SS32 OF SS46

258 / 310

7:59:08 AM

6/30/2017





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MODEL: sn17

DESIGN TEAM						
DRAWN BY: MTI						
DESIGNER: MAW						
CHECKED BY: MAW	NO.	BY	DATE	REVISIONS		

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.

Certified By: Mark Wag (Licensed Professional Engineer) Lic. No. 51660

Printed Name: MARK A. WAGNER Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

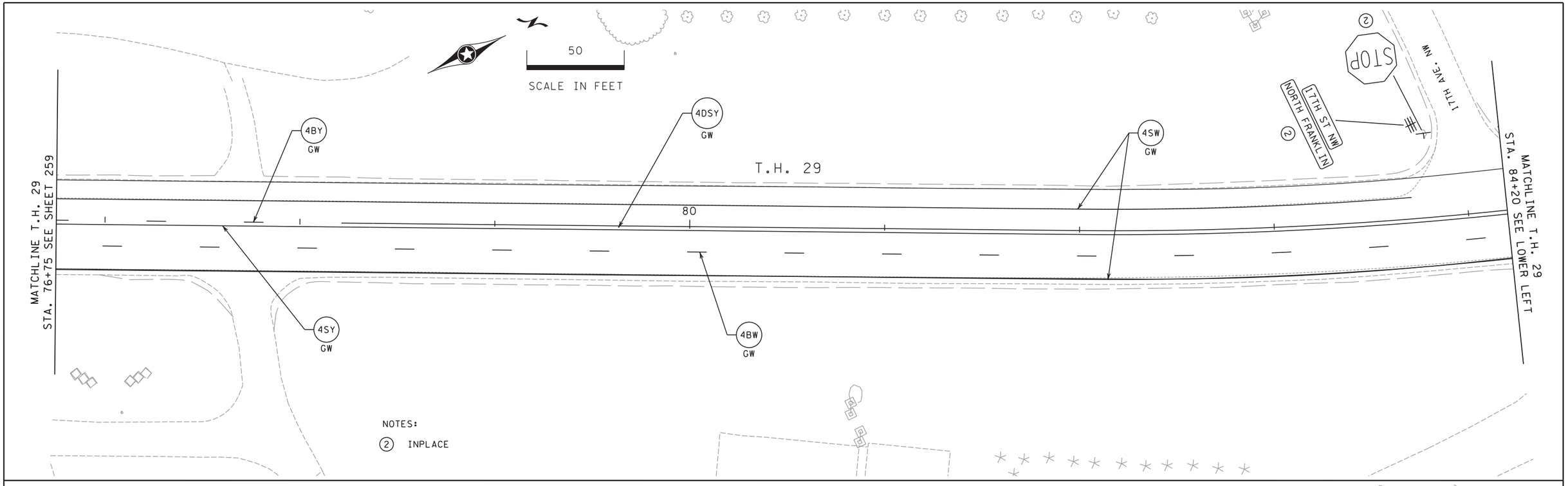
SIGNING AND PAVEMENT MARKING PLAN

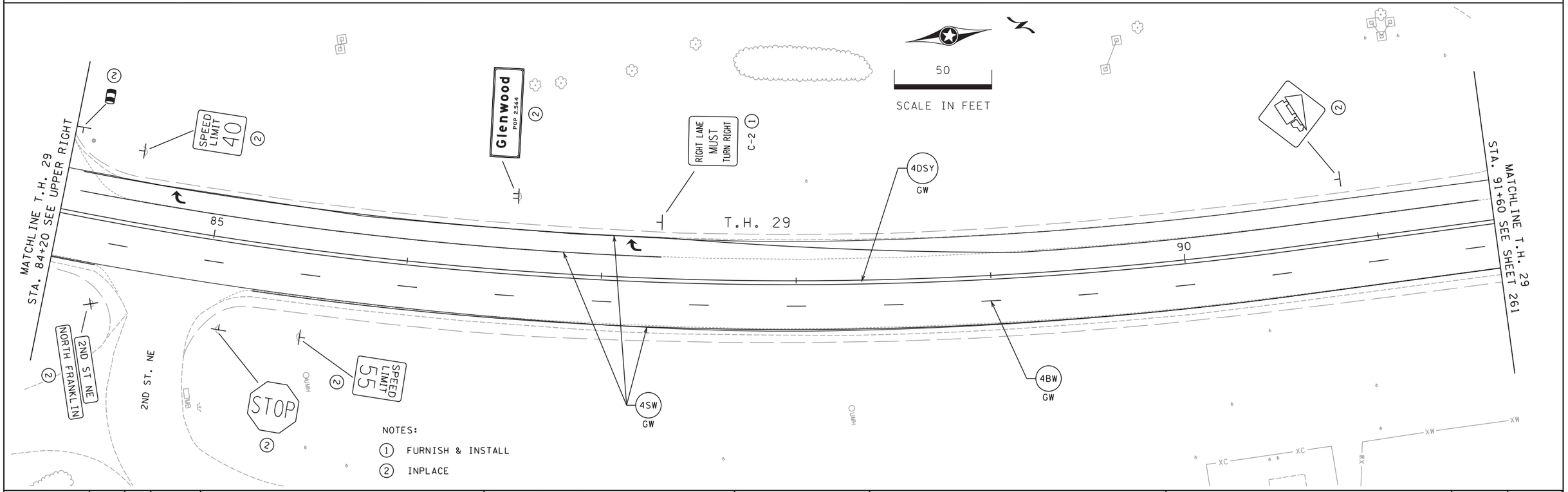
T.H. 29 STA. 61+80 - 76+75

FILE NO. MNT04-134590

SS33 OF SS46

259 / 310





DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: MAW				
CHECKED BY: MAW				

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN

T.H. 29 STA. 76+75 - 91+60

FILE NO. MNT04-134590
SS34 OF SS46
260 / 310

6/30/2017 7:59:09 AM

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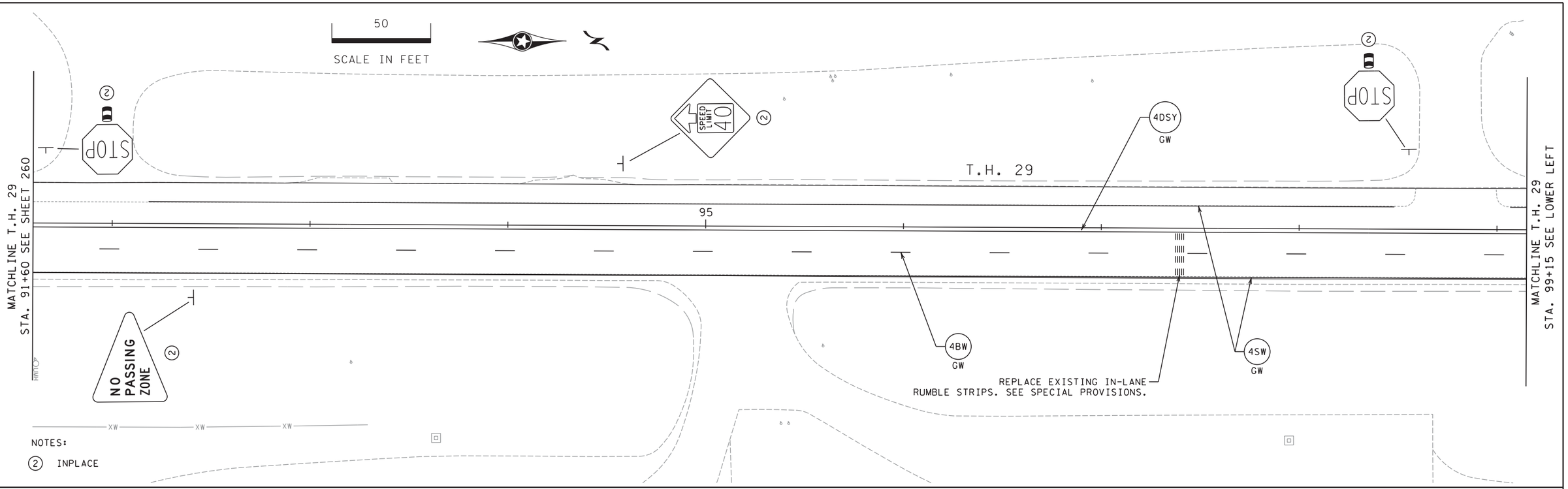

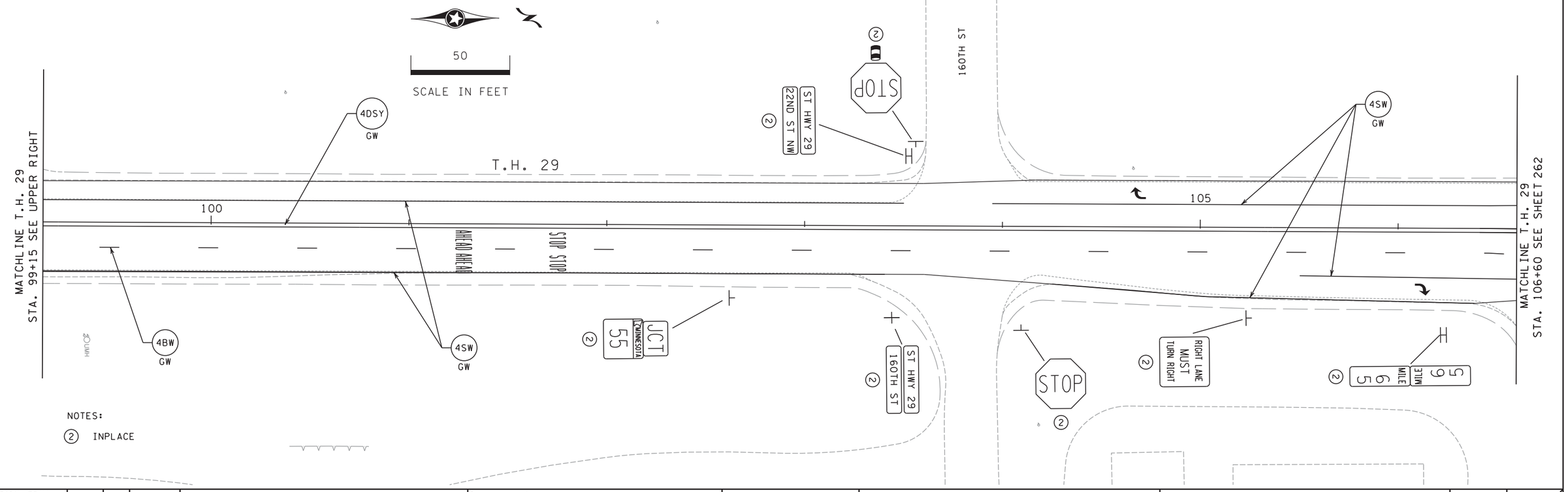

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

SIGNING AND PAVEMENT MARKING PLAN
T.H. 29 STA. 91+60 - 106+60

FILE NO. MNT04-134590
SS35 OF SS46
261 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\pinshts\CD610332_sgn1.dgn
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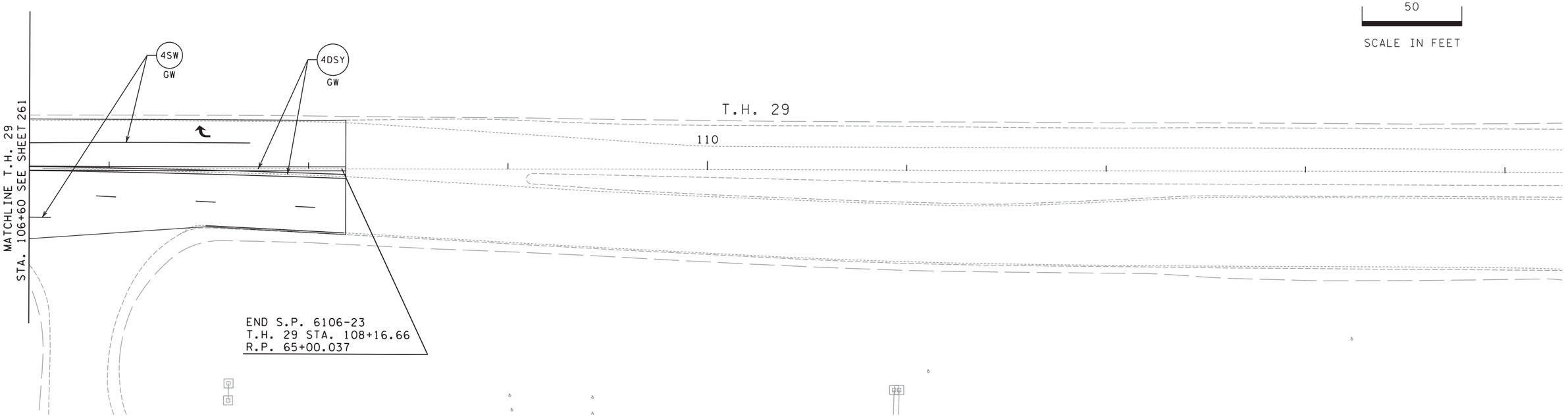

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6/30/2017

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgn1.dgn
MODEL: sn20

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: _____ Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

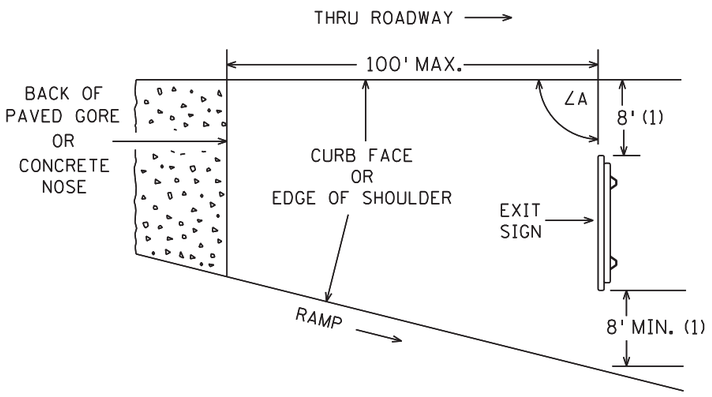
SIGNING AND PAVEMENT MARKING PLAN

T.H. 29 STA. 106+60 - 114+00

FILE NO. MNT04-134590

SS36 OF SS46

GORE PLACEMENT

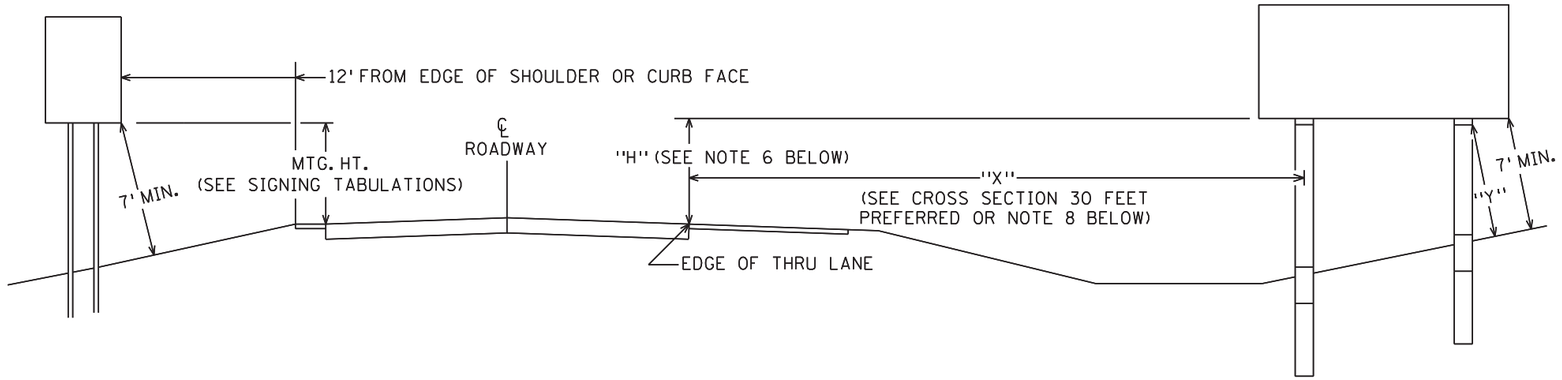


SPECIFIC NOTES:

(1) EXIT SIGNS
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 100 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

(2) MERGE SIGNS
IF THESE OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, A 4 FOOT OFFSET IS ACCEPTABLE. IF THE 4 FOOT OFFSETS CANNOT BE ATTAINED WITHIN 200 FEET OF THE PAVED GORE, CONTACT THE PROJECT ENGINEER.

ROADSIDE PLACEMENT



ROUTE MARKER, REGULATORY & WARNING SIGNS - TYPE C
GUIDE SIGNS - TYPE D

GUIDE SIGN - TYPE A

NOTES:

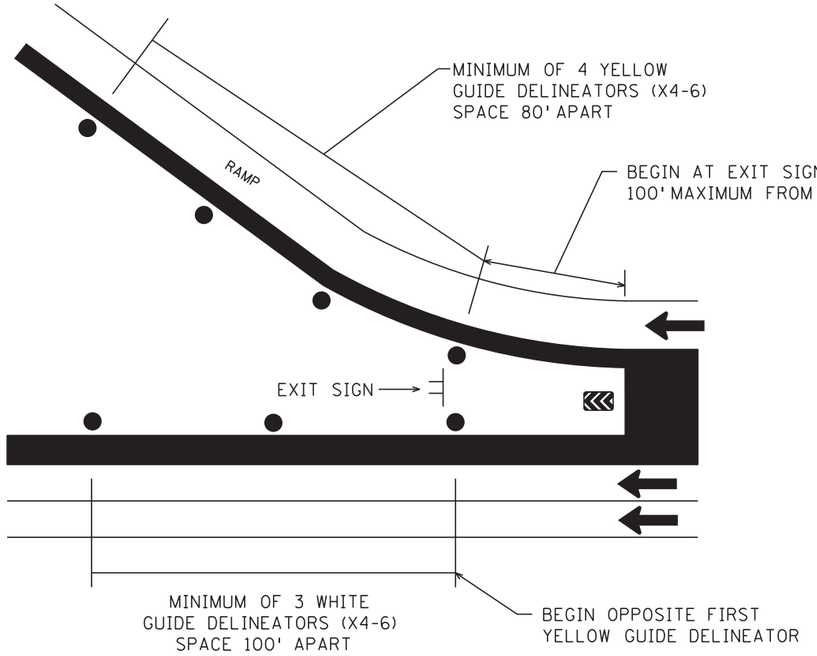
1. ALL TYPE C AND D MOUNTING HEIGHTS ARE MEASURED VERTICALLY FROM THE BOTTOM OF THE SIGN TO THE ELEVATION OF THE NEAR EDGE OF PAVEMENT IN RURAL AREAS OR TO THE TOP OF THE CURB OR IN THE ABSCENCE OF CURB, TO THE NEAR EDGE OF THE TRAVELED WAY.
2. SIGN FACES SHALL BE VERTICAL.
3. OVERHEAD SIGNS SHALL BE POSITIONED AT RIGHT ANGLES TO THE THRU ROADWAY UNLESS OTHERWISE NOTED.
4. TO AVOID SPECULAR GLARE, ∠A SHALL BE APPROXIMATELY 93° FOR SIGNS LOCATED LESS THAN 30' FROM THE EDGE OF THRU LANE AND APPROXIMATELY 92° FOR SIGNS LOCATED 30' OR MORE FROM EDGE OF THRU LANE. THIS APPLIES TO SIGNS TYPE A, C, & D AND INCLUDES SIGNS IN THE GORE.
5. "Y" IS THE PERPENDICULAR DISTANCE FROM THE GROUND LINE TO THE FRICTION FUSE ON THE POST. THIS DISTANCE SHALL BE AT LEAST 7'.
6. WHERE "X" IS LESS THAN 30', "H" SHALL BE 7'. WHERE "X" IS 30' OR GREATER, MINIMUM AND PREFERRED "H" IS 5'.
7. LATERAL CLEARANCES GIVEN APPLY TO RIGHT AND OR LEFT SIDE INSTALLATION.
8. WHEN A TYPE A SIGN IS INSTALLED DIRECTLY BEHIND TRAFFIC BARRIER, THE LEFT EDGE OF THE SIGN PANEL SHALL BE LOCATED A MINIMUM OF 8 FEET BEHIND THE FACE OF THE TRAFFIC BARRIER.

SIGN PLACEMENT

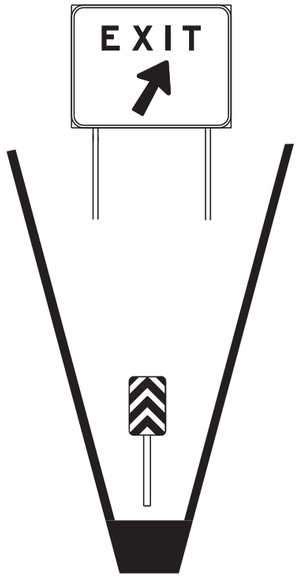
SS37
OF SS46

REVISED: 7-23-15

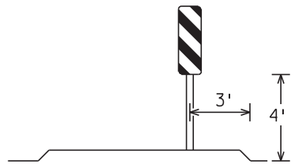
S.P. NO. 6103-32 (T.H. 28) SHEET NO. 263 OF 310 SHEETS



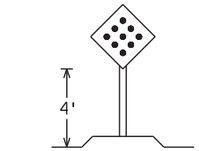
PLAN A
RAMP DELINEATION



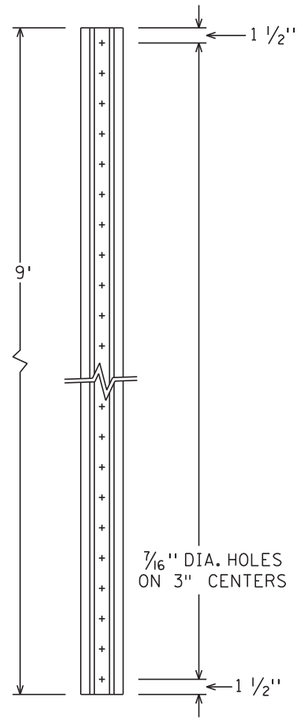
TYPE 3 OBJECT MARKER
12" X 24" (X4-4C)



RAISED ISLAND
TYPE 3 OBJECT MARKER
(X4-4)

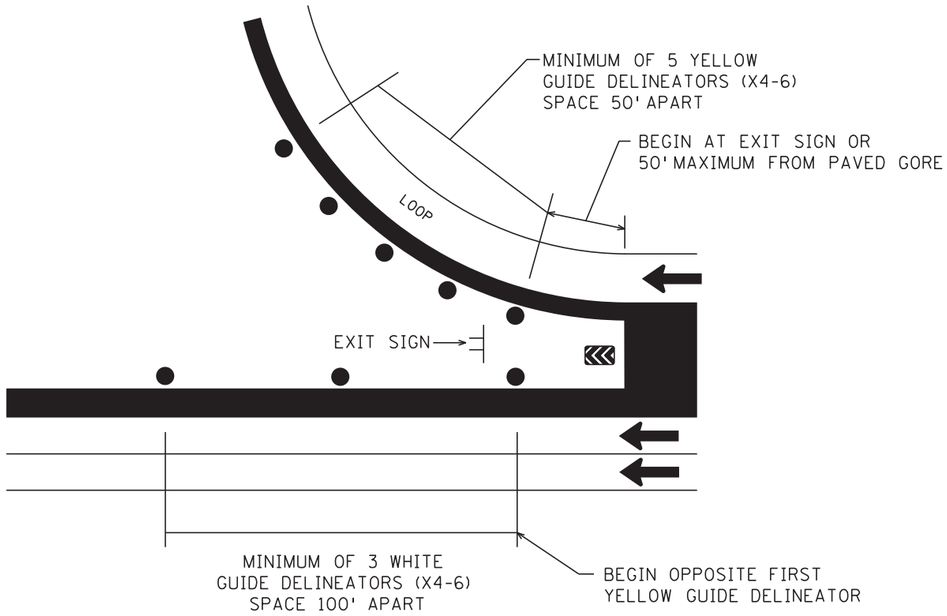


RAISED ISLAND
TYPE 2 OBJECT MARKER
(X4-2)

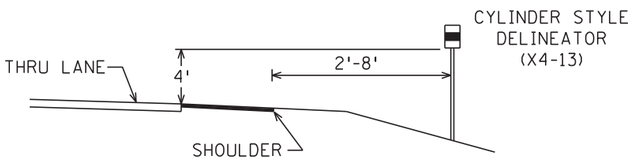


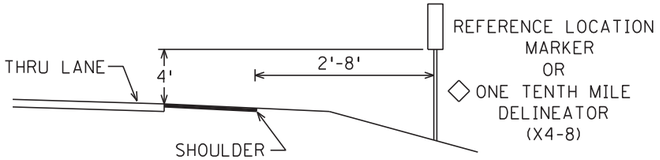
MNDOT 3401
NORMAL WEIGHT= 2 LB./FT.

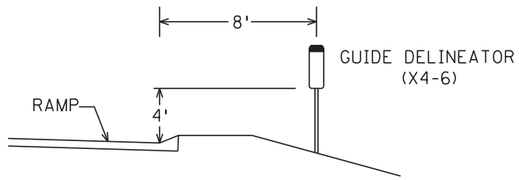
DELINEATOR POST



PLAN B
LOOP DELINEATION





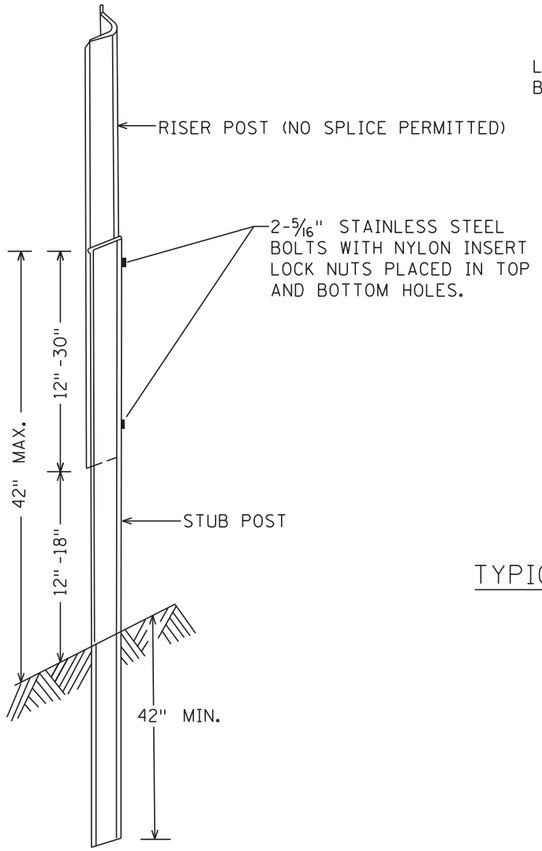


TYPICAL PLACEMENT

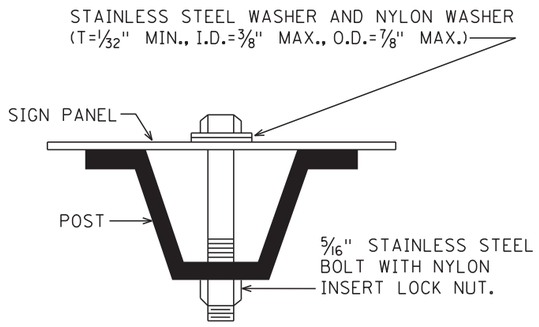
DELINEATORS AND MARKERS

REVISED: 10-2-2013

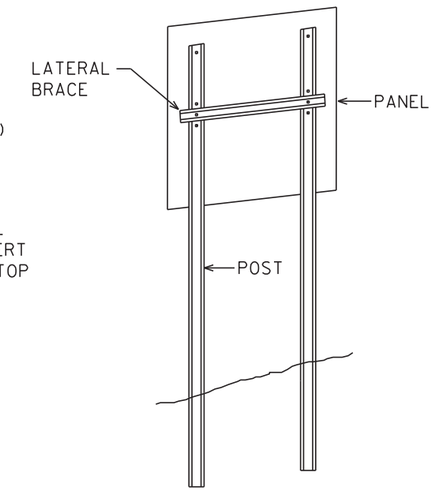
TYPE C & D POST



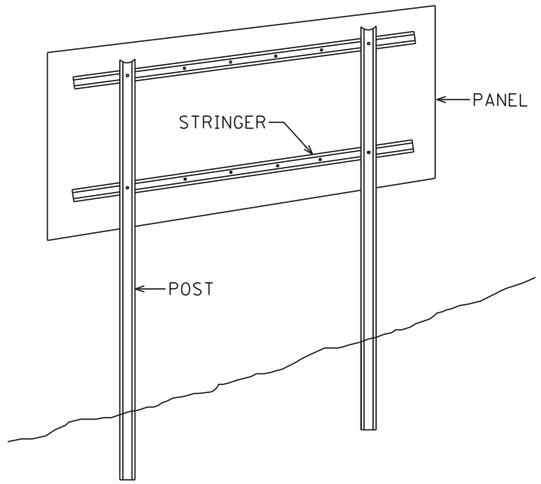
U POST BREAKAWAY SPLICE



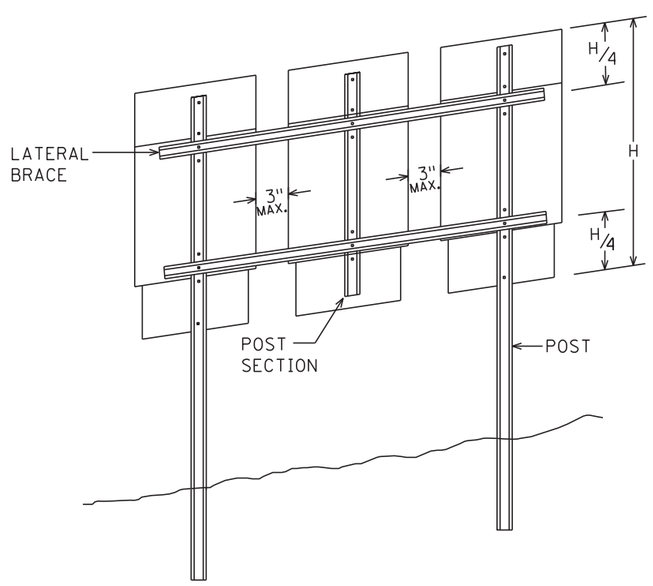
U POST MOUNTING
TYPE C SIGNS



TYPICAL TYPE C INSTALLATION



TYPICAL TYPE D INSTALLATION



MODIFIED TYPE C INSTALLATION

NOTES:

1. USE 3 LB/FT STUB POSTS. 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 MNDOT STANDARD SIGNS AND MARKINGS MANUAL).
6. MOUNTING (PUNCH CODE) FOR TYPE C SIGN PANELS SHALL BE AS INDICATED IN THE MNDOT STANDARD SIGNS AND MARKINGS 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.

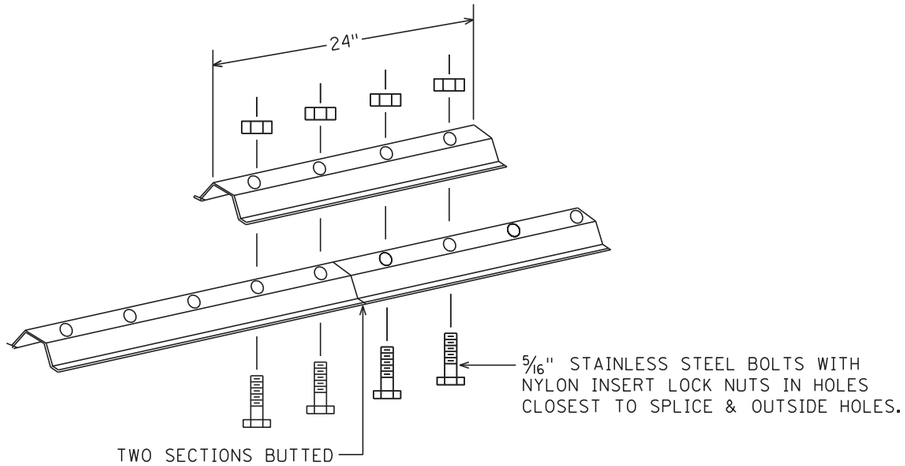
TYPE C & D SIGN
STRUCTURAL DETAILS

Sheet 1 of 3

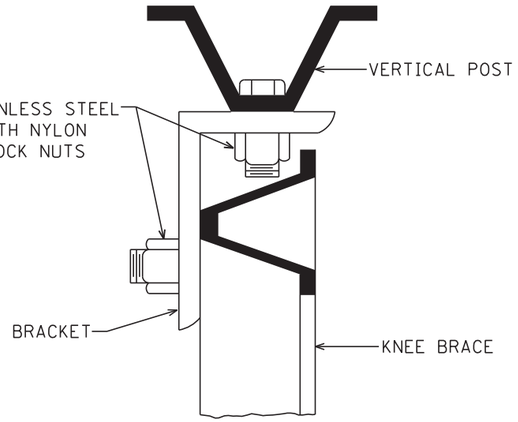
SS39
OF SS46

FILE: S:\KO\MN\Mn104\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl_details.dgn
MODEL: 2 C D Sign StructuralDetails

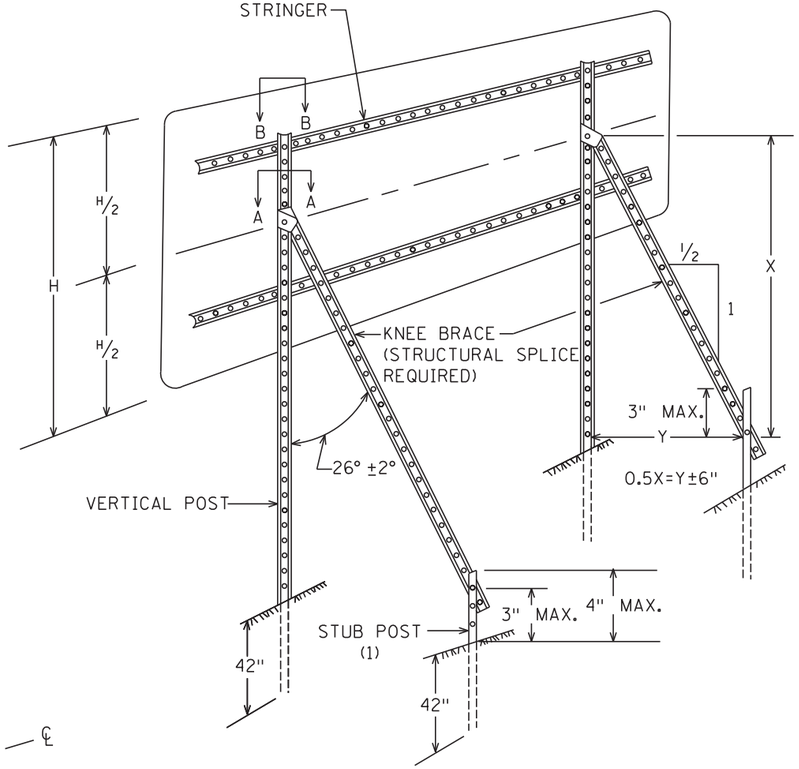
REVISED: 1-25-2016



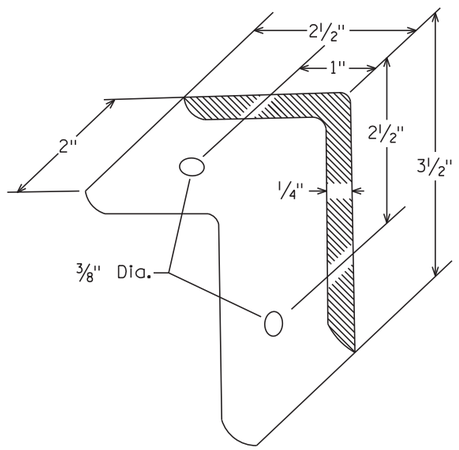
LATERAL BRACE OR STRINGER SPLICE DETAIL (EXPLODED VIEW)



SECTION A-A

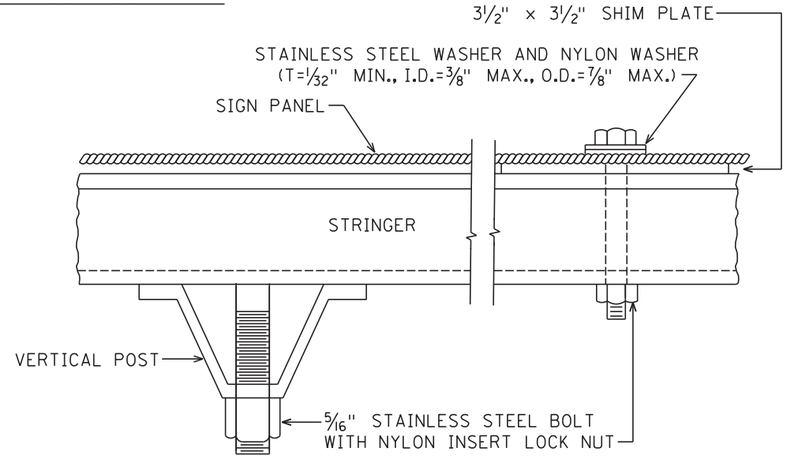


TYPICAL "A-FRAME" INSTALLATION TYPE "D" SIGNS

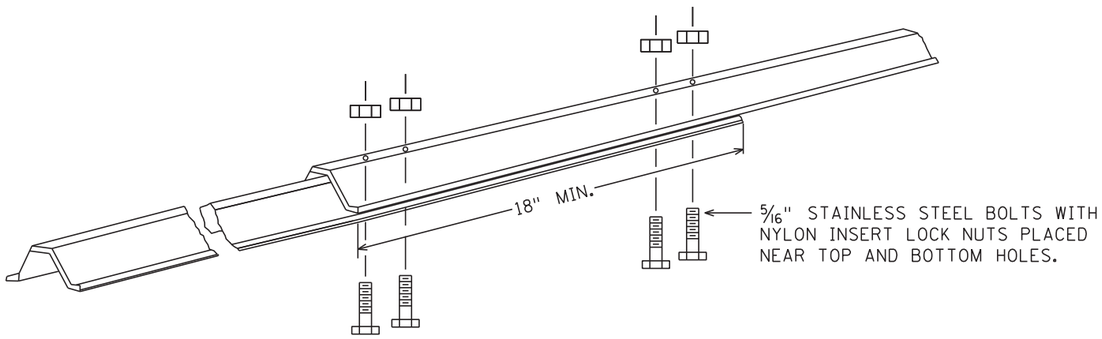


A-FRAME BRACKET

(STEEL MNDOT 3306 GALVANIZED PER MNDOT 3394)

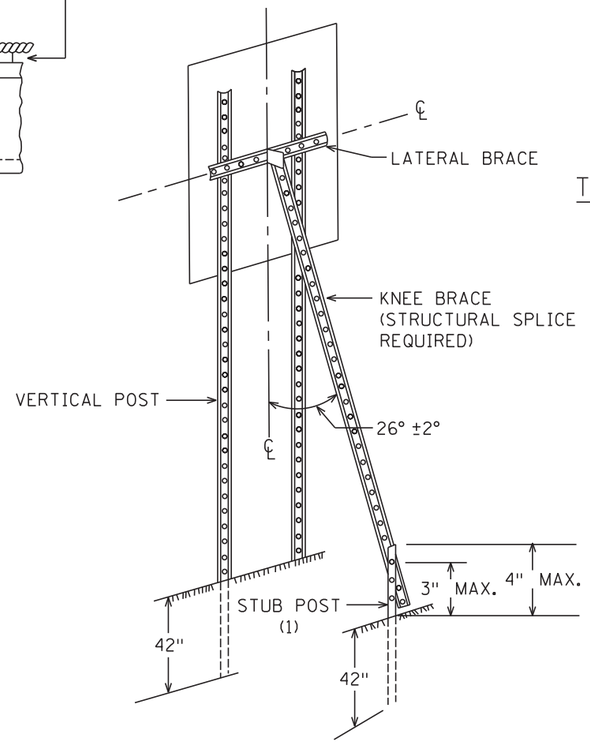


SECTION B-B

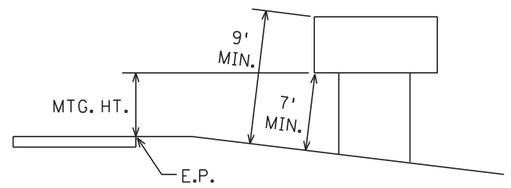


STRUCTURAL SPLICE

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



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



TYPICAL MOUNTING

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

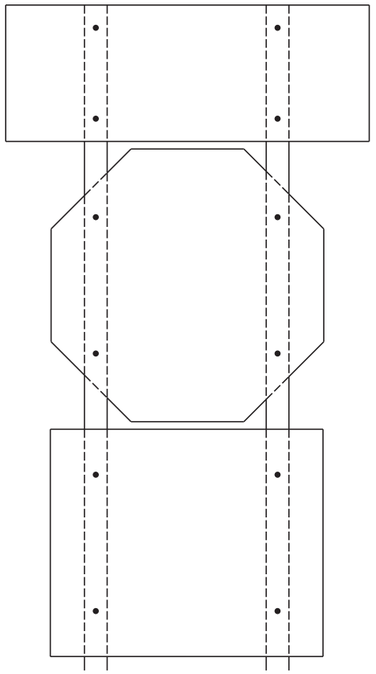
TYPE C & D SIGN STRUCTURAL DETAILS

Sheet 2 of 3

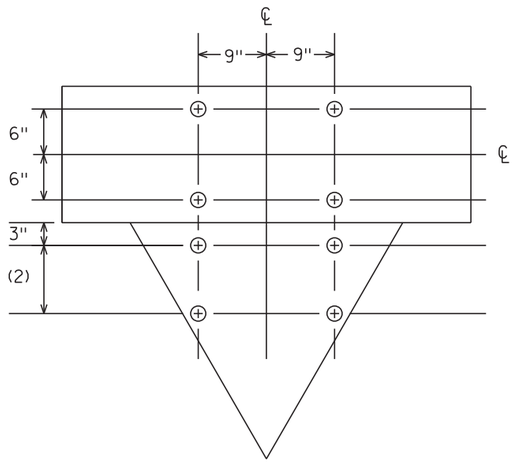
SS40
OF SS46

REVISED: 12-4-2013

S.P. NO. 6103-32 (T.H. 28) SHEET NO. 266 OF 310 SHEETS

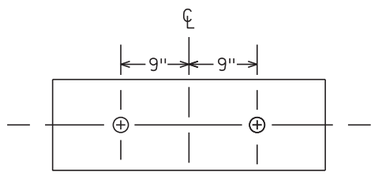


R6-1, R1-1 & (R6-3 OR R6-3a)
MOUNTING

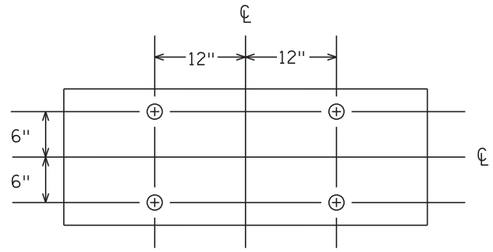


PUNCHING FOR R6-1 (54"x18") AND
R1-2 (36"x36"x36" OR 48"x48"x48")

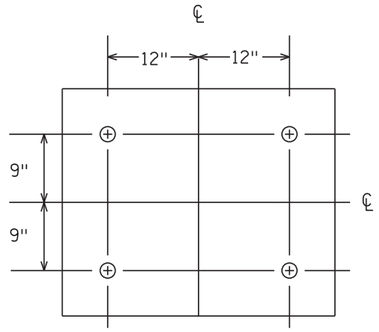
(2) 9" FOR 36"x36"x36"
18" FOR 48"x48"x48"



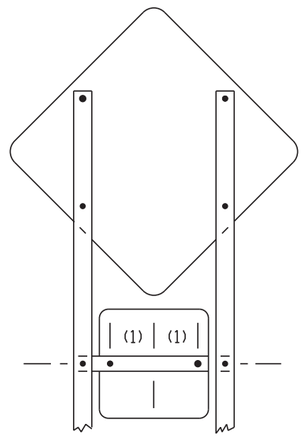
PUNCHING FOR R6-1 (36"x12")



PUNCHING FOR R6-1 (54"x18")

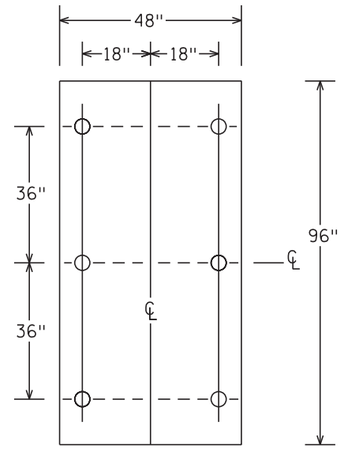


PUNCHING FOR R6-3 OR R6-3a (36"x30")

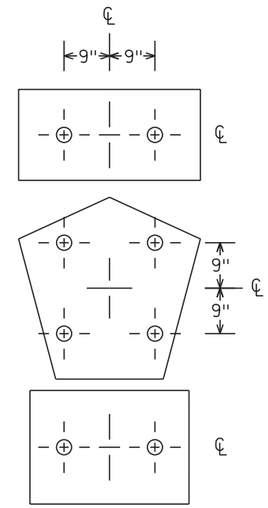


WARNING SIGN [30"x30 OR 48"X48"] AND
WARNING PLAQUE [18"x18" OR 30"x30"]
PUNCHING AND MOUNTING

(1) 6" FOR WARNING PLAQUE (18"x18")
12" FOR WARNING PLAQUE (30"x30")



PUNCHING FOR R2-4b
SPEED LIMIT



(M3-1A, M3-2A, M3-3A OR M3-4A) [36"x18"] AND
M1-6 [36"x36"] AND
(M5-1A, M5-2A, M6-1A, M6-2A, M6-3A M6-4A, M6-5A OR M6-6A) [30"x24"]
PUNCHING

TYPE C & D SIGN

STRUCTURAL DETAILS

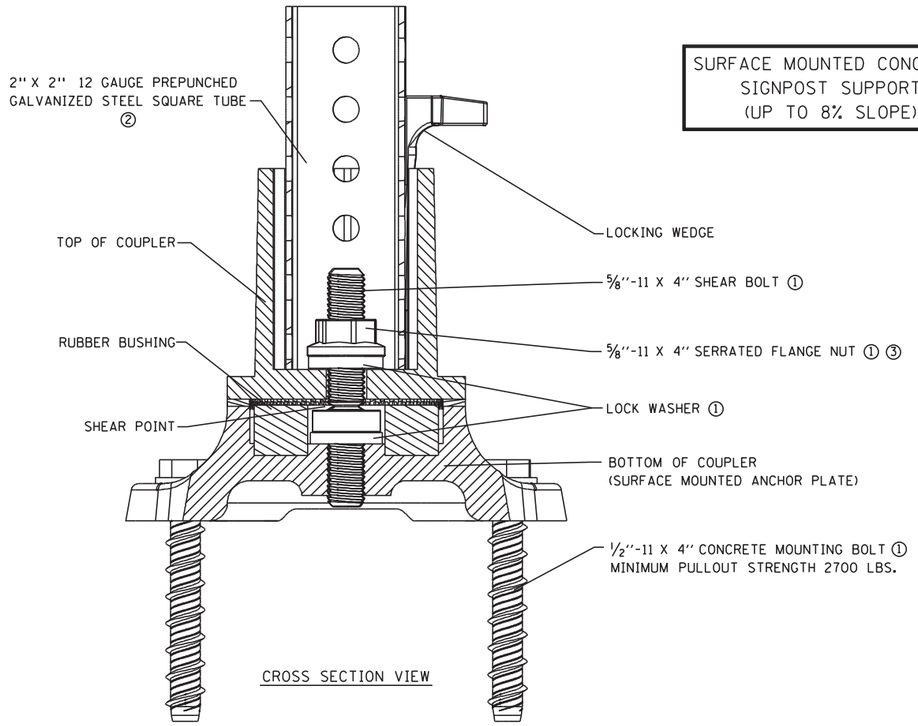
Sheet 3 of 3

SS41
OF SS46

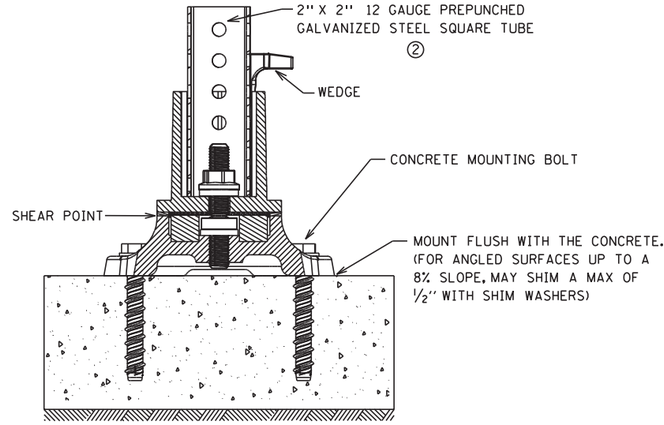
S.P. NO. 6103-32 (T.H. 28) SHEET NO. 267 OF 310 SHEETS

REVISED: 2-13-2015

SURFACE MOUNTED CONCRETE SIGNPOST SUPPORT (UP TO 8% SLOPE)



CROSS SECTION VIEW



INSTALL VIEW

GENERAL NOTES:

1. CONCRETE SIGNPOST SUPPORTS WILL BE FURNISHED & INSTALLED BY THE SIGNING CONTRACTOR. NO DIRECT PAYMENT SHALL BE MADE. THEY ARE CONSIDERED INCIDENTAL. (SEE APPROVED PRODUCTS LIST FOR DEVICES)

2. SIGNPOST SUPPORTS SHALL BE PLACED PLUMB ON TOP OF THE CONCRETE SURFACE.

   1/2" OF SHIM WASHERS (SEE SPECIFIC NOTE 1), MAY BE USED TO PLUMB THE SIGN ON ANGLED CONCRETE SURFACES; UP TO A MAX SLOPE OF 8%.

   IF THE SLOPE EXCEEDS 8% USE THE MOUNT IN CONCRETE DEVICE.

3. INSTALLATION SHALL BE NO EARLIER THAN 3 DAYS AFTER CONCRETE IS POURED; TO ACHIEVE PROPER CONCRETE STRENGTH.

4. BOLT DOWN STYLE IS PREFERRED, BUT IN FIELD SLOPE MEASUREMENT WILL DETERMINE THE TYPE.

SPECIFIC NOTES:

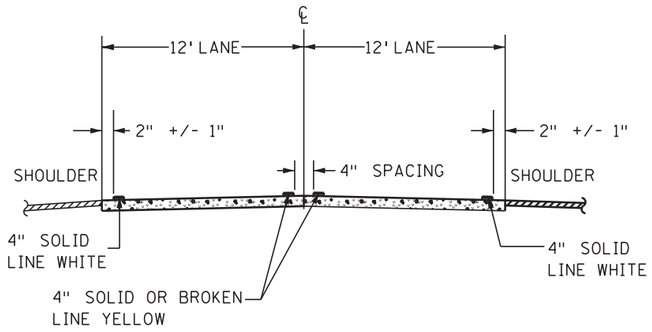
① ALL SHEAR BOLT HARDWARE (INCLUDING SHEAR BOLT, FLANGE NUT & LOCK WASHERS) AND CONCRETE SURFACE MOUNTING BOLTS & SHIM WASHERS IF NEEDED, TO BE MECHANICALLY GALVANIZED ASTM B695 CLASS 50 TYPE 1, OR ZINC PLATED IN ACCORDANCE WITH ASTM B633 SERVICE CONDITION 4. (SEE MNDOT'S APPROVED PRODUCTS LIST)

② ENTIRE SIGN POST SHALL BE 2" X 2" 12 GAUGE PREPUNCHED GALVANIZED STEEL SQUARE TUBE (SPLICING IS NOT ALLOWED). A U-POST SHALL NOT BE BOLTED ONTO A SQUARE TUBE STUB. (SEE MNDOT'S APPROVED PRODUCTS LIST)

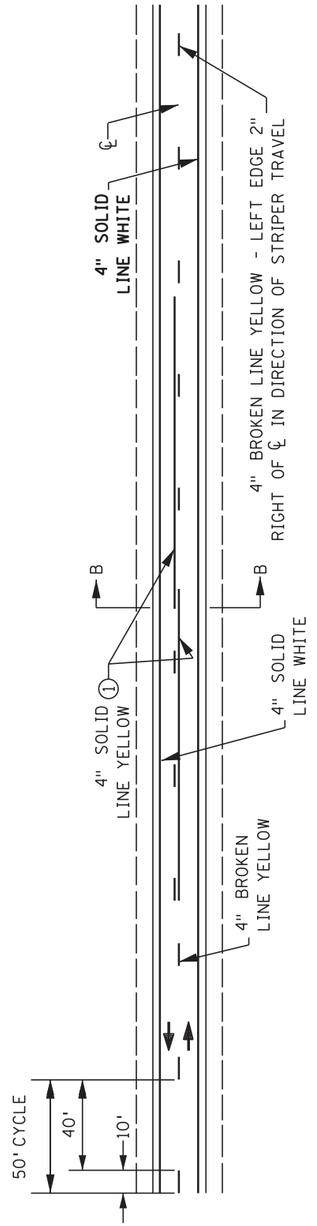
③ TIGHTEN SERRATED FLANGE NUT TO MANUFACTURER'S SPECIFICATIONS.

Revised 5-1-15

TWO-LANE, TWO-WAY



SECTION B-B

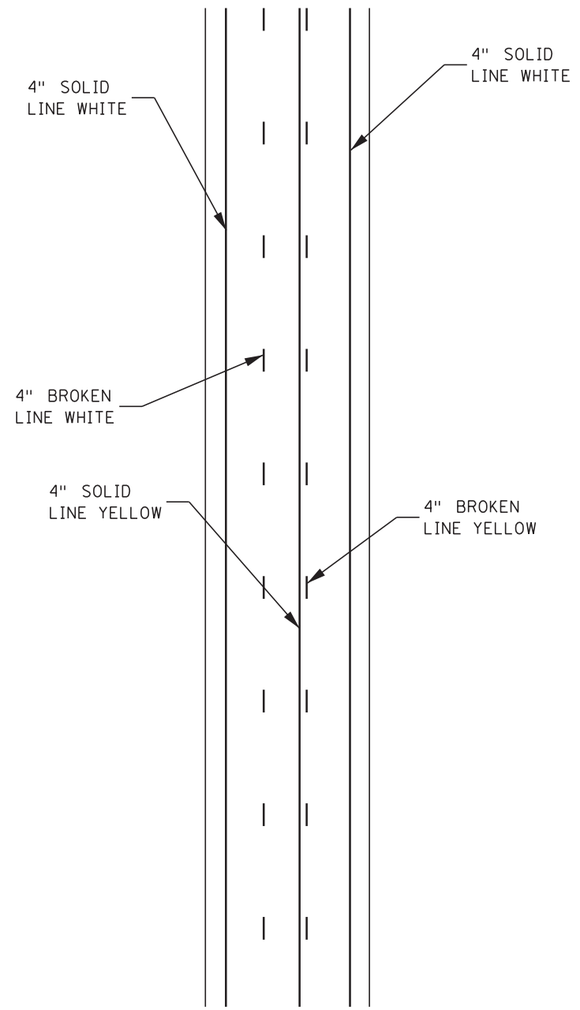


NOTES:

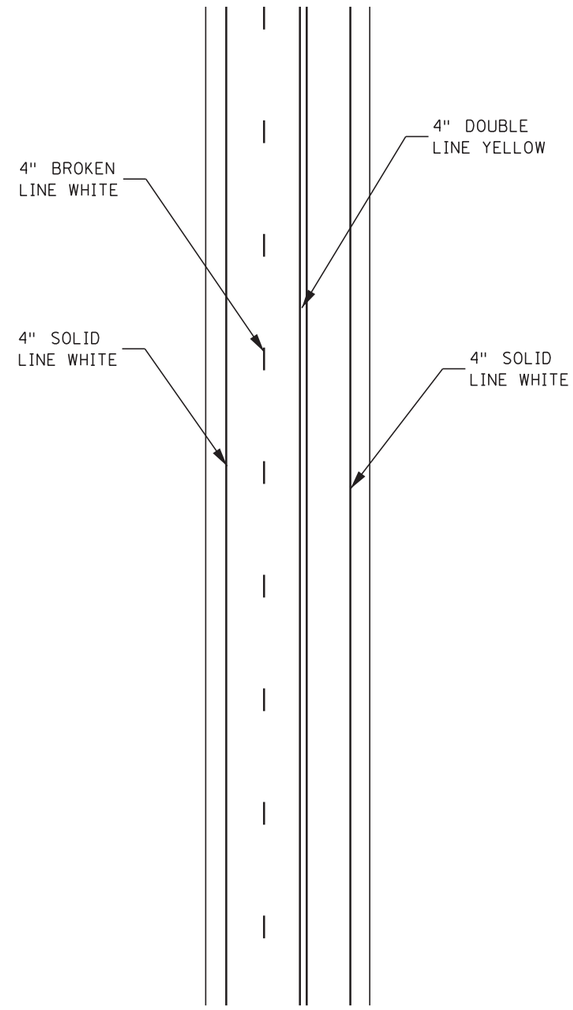
(1) CONTACT TRAFFIC ENGINEER FOR NO PASSING ZONE SURVEY.

THREE-LANE, TWO-WAY

PASSING PERMITTED IN SINGLE-LANE DIRECTION



PASSING PROHIBITED IN SINGLE-LANE DIRECTION



PUBLISHED BY OTST: 20 NOV 2015

PUBLISHED BY OTST: 20 NOV 2015

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTI				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: Mark Wag — Licensed Professional Engineer — Lic. No. 51660

Printed Name: MARK A. WAGNER — Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

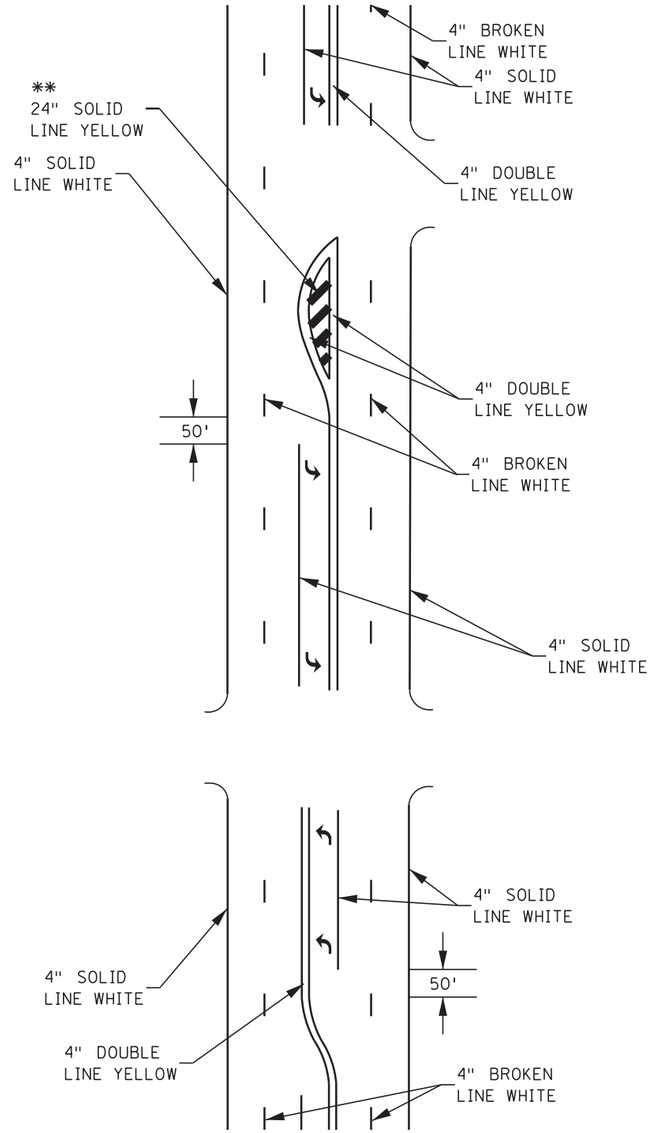
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

PAVEMENT MARKING TYPICALS

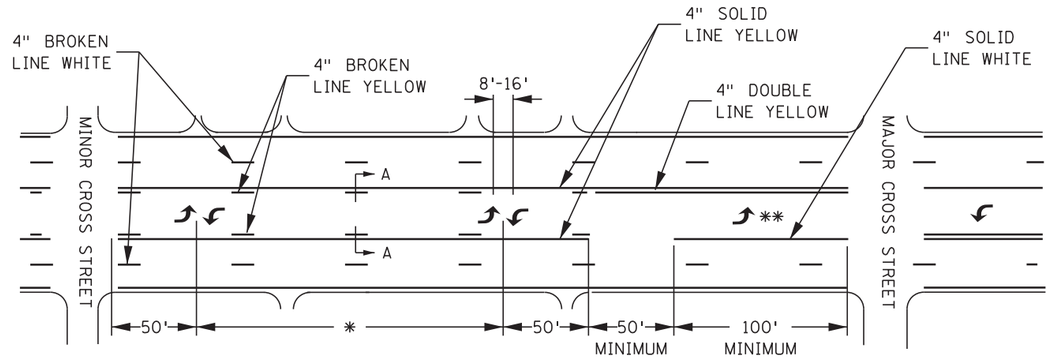
FILE NO. MNT04-134590
SS43 OF SS46
269 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl_details.dgn
MODEL: 4 Freeway Ent Exit Ramps
6/30/2017 7:59:14 AM

MULTI -LANE, TWO-WAY UNDIVIDED ROADWAY WITH SINGLE LANE LEFT TURN CHANNELIZATION



TWO-WAY LEFT-TURN LANE

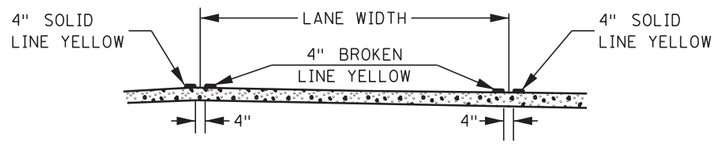


DESIGNER'S NOTES:

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

* INSERT SPACING, BASED ON FIELD CONDITIONS.

** SEE "TURN LANE WITH ARROW MESSAGE, OR WITH DOTTED LINE EXTENSION" TYPICALS FOR PLACEMENT AND NUMBER OF ARROWS OR OPTIONAL LANE LINE EXTENSIONS. (MNMUTCD SECTION 3B.20)



SECTION A-A
TWO WAY LEFT TURN LANE

PUBLISHED BY OTST: 14 OCT 2016

PUBLISHED BY OTST: 14 OCT 2016

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: Mark Wag (Licensed Professional Engineer) Lic. No. 51660
Printed Name: MARK A. WAGNER Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

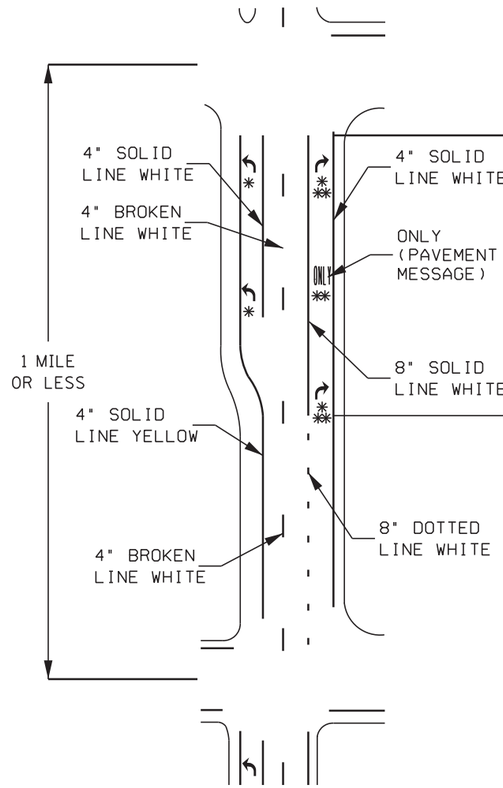
PAVEMENT MARKING TYPICALS

FILE NO. MNT04-134590 SS44 OF SS46

270 / 310

7:59:14 AM
6/30/2017
FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl_details.dgn
MODEL: 4 Freeway Ent Exit Ramps

APPLICATION OF AUXILIARY LANE-DROP
1 MILE OR LESS BETWEEN INTERSECTIONS



DESIGNER'S NOTES:

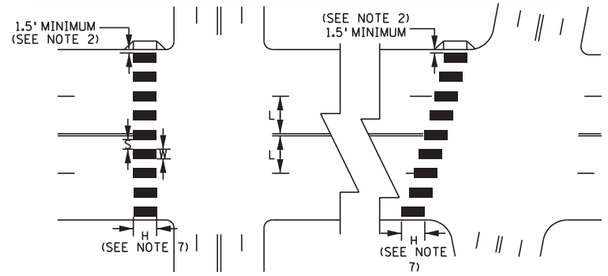
* SEE "TURN LANE WITH ARROW MESSAGE, OR WITH DOTTED LINE EXTENSION" TYPICALS FOR PLACEMENT AND NUMBER OF ARROWS OR OPTIONAL LANE LINE EXTENSIONS. (MNMUTCD SECTION 3B.20)

** TURN ARROWS REQUIRED, "ONLY" PAVEMENT MESSAGE RECOMMENDED. MNMUTCD 3B.20 PLACE "ONLY" PAVEMENT MESSAGE EQUAL DISTANCE BETWEEN TURN ARROWS

PUBLISHED BY OTST: 14 OCT 2016

PEDESTRIAN CROSSWALK MARKINGS

(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'	—	—

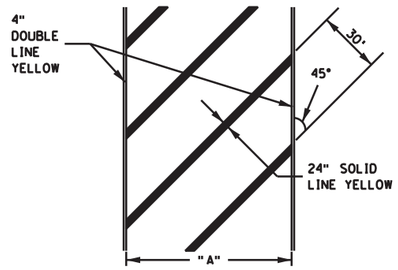


NOTES:

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.

PUBLISHED BY OTST: 20 NOV 2015

CROSSHATCHING



NOTES:

1. IF "A" IS LESS THAN 4' NO CROSSHATCHING REQUIRED.
2. AT SPEEDS LESS THAN 45 MPH THE WIDTH OF THE CROSSHATCH LINE MAY BE REDUCED TO 12" AND SPACING MAY BE REDUCED TO 20'.

PUBLISHED BY OTST: 20 NOV 2015 MODIFIED:

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.
Certified By: Mark Wag — Licensed Professional Engineer — Lic. No. 51660
Printed Name: MARK A. WAGNER — Date: 06/29/2017

SEH
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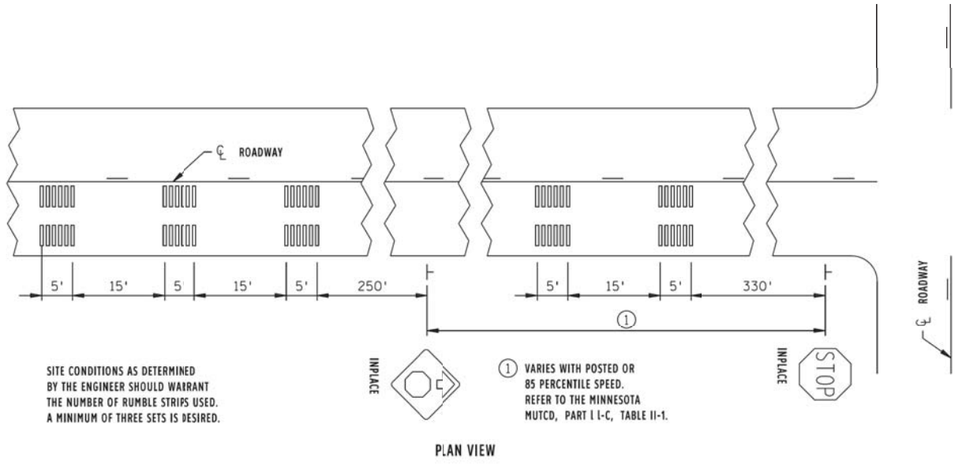
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

PAVEMENT MARKING TYPICALS

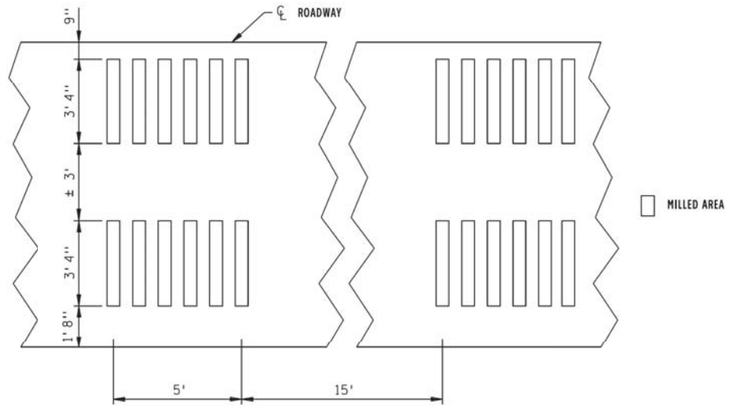
FILE NO. MNT04-134590 SS45 OF SS46

271 / 310

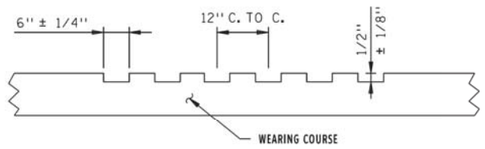
6/30/2017 7:59:14 AM
FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgnl_details.dgn
MODEL: 4 Freeway Ent Exit Ramps



PLAN VIEW



ENLARGED PLAN VIEW



SECTION

IN-LANE RUMBLE STRIP TYPICAL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: MAW				
CHECKED BY: MAW				

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.

Certified By: Mark Wag — Lic. No. 51660
Licensed Professional Engineer

Printed Name: MARK A. WAGNER Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

PAVEMENT MARKING TYPICALS

FILE NO. MNT04-134590
SS46 OF SS46
272 / 310

7:59:23 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- EXISTING LIGHTING UNIT
- EXISTING POWER POLE
- OHP — EXISTING OVERHEAD POWER LINE
- P-BUR — EXISTING UNDERGROUND POWER LINE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. REMOVE UNDERGROUND WIRE.
2. REMOVE LIGHTING UNIT & LIGHT FOUNDATION.
3. REMOVE SERVICE CABINET.
4. REMOVE OVERHEAD CABLE.

HOTEL

LIGHTING UNIT REMOVED BY OTHERS

℄ T.H. 28 (MINNESOTA AVE)

135

438

440

MATCHLINE T.H. 28 STA. 442+90 SEE SHEET 274

237 GAS MART

AUTORAMA

202 THE GROG SHOP

2ND ST. SW

125 FAMILY DOLLAR

109 AUTO VALUE

FILE: S:\KO\M\Mn104\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_lt remi.dgn
MODEL: LRM1

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

REMOVAL PLAN
T.H. 28 STA 435+75 - 442+90

FILE NO. MNT04-134590
LT1 OF LT24

273 / 310

50

SCALE IN FEET

LEGEND

- EXISTING LIGHTING UNIT
- EXISTING POWER POLE
- OHP — EXISTING OVERHEAD POWER LINE
- P-BUR — EXISTING UNDERGROUND POWER LINE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 278

℄ T.H. 29
(FRANKLIN ST)

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

1ST ST. NW

104 SUBWAY

30 NAPA AUTO PARTS

24 ACE HARDWARE

WORLD OF WELLNESS

SCREEN PRINTS PLUS

GINGER BREAD CAFE

PASTRY SHOPPE BAKERY

GLENWOOD STATE BANK

5 GLENWOOD STATE BANK

LANE STUDIO

15 LICENSE BUREAU

AMERICAN BUSINESS FORMS

445

540

36

35

34

33

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 273

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 275

℄ T.H. 28
(MINNESOTA AVE)

103 MINNEWASKA ABSTRACT & TITLE

1ST ST. SW

2 EAGLE STATE BANK

℄ T.H. 104
(FRANKLIN ST)

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

CURVES FOR WOMEN

2 THE VALLEY TROLL

8 CHINESE RESTAURANT

14 PIZZA RANCH

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 277

NOTES:

1. REMOVE UNDERGROUND WIRE.
2. REMOVE LIGHTING UNIT & LIGHT FOUNDATION.
3. REMOVE SERVICE CABINET.
4. REMOVE OVERHEAD CABLE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
REMOVAL PLAN
T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590
LT2 OF LT24

274 / 310

FILE: S:\K0\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_lt reml.dgn
MODEL: LRM2

6/30/2017 7:59:23 AM

7:59:24 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- EXISTING LIGHTING UNIT
- EXISTING POWER POLE
- OHP —— EXISTING OVERHEAD POWER LINE
- P-BUR —— EXISTING UNDERGROUND POWER LINE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

1ST ST. NE

2ND ST. NE

STUDIO ARCHITECTS

STRECKER AGENCY

31 AMERICAN BUSINESS FORMS

107 PALMER CREATIONS

MAINLY CUTS

131 POPE COUNTY FAMILY COLLABORATIVE

CITY OF GLENWOOD

137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 274

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 276

543

545

℄ T.H. 28
(MINNESOTA AVE)

28 THE WALK IN CLOSET

ACCOUNTANTS JEERY WANGSNESS

130 POPE COUNTY COURT HOUSE

206 GLENWOOD LUTHERAN

P-BUR

OHP

UMH

NOTES:

1. REMOVE UNDERGROUND WIRE.
2. REMOVE LIGHTING UNIT & LIGHT FOUNDATION.
3. REMOVE SERVICE CABINET.
4. REMOVE OVERHEAD CABLE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

REMOVAL PLAN
T.H. 28 STA 540+80 - 548+30

FILE NO. MNT04-134590

LT3 OF LT24

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MODEL: LRM3

7:59:24 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- EXISTING LIGHTING UNIT
- EXISTING POWER POLE
- OHP — EXISTING OVERHEAD POWER LINE
- P-BUR — EXISTING UNDERGROUND POWER LINE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD ST. NE

307
CASEY'S GENERAL
STORE

4TH ST. NE

OHP

XC

P-BUR

P-BUR

1

2

MATCHLINE T.H. 28
STA. 548+30 SEE SHEET 275

550

555

OHP

1

P-BUR

℄ T.H. 28
(MINNESOTA AVE)

BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

EXTREME GAS
AND AUTO

3RD ST. SE

4TH ST. SE

XC

NOTES:

1. REMOVE UNDERGROUND WIRE.
2. REMOVE LIGHTING UNIT & LIGHT FOUNDATION.
3. REMOVE SERVICE CABINET.
4. REMOVE OVERHEAD CABLE.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

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PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

REMOVAL PLAN
T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590
LT4 OF LT24

276 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332.lt reml.dgn
MODEL: LRM4

50
SCALE IN FEET

LEGEND
- EXISTING LIGHTING UNIT
- EXISTING POWER POLE
- OHP — EXISTING OVERHEAD POWER LINE
- P-BUR — EXISTING UNDERGROUND POWER LINE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD AVE. SW
2ND AVE. SW
1ST AVE. SW
2ND AVE. SE
1ST AVE. SE
11 MINEWASKA MEATS
115 COUNSELOR REALTY
VILLAGE INN
℄ T.H. 104 (FRANKLIN ST)
5
27
30
OHP
P-BUR

NOTES:
1. REMOVE UNDERGROUND WIRE.
2. REMOVE LIGHTING UNIT & LIGHT FOUNDATION.
3. REMOVE SERVICE CABINET.
4. REMOVE OVERHEAD CABLE.

MATCHLINE T.H. 104
STA. 32+50 SEE SHEET 274

FILE: S:\KOVM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_lt rem1.dgn
MODEL: LRM5

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.
Certified By: _____ Lic. No. 45519
Licensed Professional Engineer
Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
REMOVAL PLAN
T.H. 104 STA 25+00 - 32+50

FILE NO. MNT04-134590
LT5 OF LT24
277 / 310

7:59:24 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- EXISTING LIGHTING UNIT
- EXISTING POWER POLE
- OHP — EXISTING OVERHEAD POWER LINE
- P-BUR — EXISTING UNDERGROUND POWER LINE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

1ST AVE. NW

SACRED HEART CATHOLIC CHURCH

2ND AVE. NW

3RD AVE. NW

MATCHLINE T.H. 29
STA. 36+80 SEE SHEET 274

P-BUR

OHP

40

43

1ST AVE. NE

GLENWOOD COLLISION CENTER
110

2ND AVE. NE

3RD AVE. NE

℄ T.H. 29
(FRANKLIN ST)

NOTES:

1. REMOVE UNDERGROUND WIRE.
2. REMOVE LIGHTING UNIT & LIGHT FOUNDATION.
3. REMOVE SERVICE CABINET.
4. REMOVE OVERHEAD CABLE.

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332.it rem1.dgn
MODEL: LRM6

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

REMOVAL PLAN
T.H. 29 STA 36+80 - 44+30

FILE NO. MNT04-134590
LT6 OF LT24

7:59:28 AM

6/30/2017

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. ALL CONDUIT SHALL BE 2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. LIGHTING UNITS SHALL BE SET BACK AS DIRECTED BY THE ENGINEER.
3. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#8 (LIGHTING), (3)#4 (RECEPTACLES), & (1)#4 GND UNLESS OTHERWISE NOTED.
4. COORDINATE SERVICE CONNECTION WITH XCEL ENERGY DESIGNER, RILEY BECKMAN AT 320.656.2428.

50

SCALE IN FEET

BEGIN S.P. 061-090-006
T.H. 28 STA. 429+75.00
R.P. 75+00.923

EQUATION:
STA 430+42.73 BK =
STA 430+75.35 AH

MATCHLINE T.H. 28
STA. 436+00 SEE SHEET 280

430

435

℄ T.H. 28

2" NMC,
#12 LOCATOR WIRE W/ PULL STRING

℄ 4TH ST NW

4TH ST. NW

℄ MINNESOTA AVE

A1 A2 A3 A4 A45 A46 A47 A48 A49 A50

11 11 10 10

DAIRY QUEEN

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_lt1.dgn
MODEL: lt1

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

T.H. 28 STA 428+20 - 436+00

FILE NO. MNT04-134590
LT7 OF LT24

279 / 310

7:59:28 AM

6/30/2017

LIGHTING STANDARDS AND BASES						
NO.	LOCATION	STATION	LT.	RT.	TYPE	TOP OF FOUNDATON ELELVATION
A1	T.H. 28	430+10		X	SPECIAL	1143.95
A2	T.H. 28	434+15		X	SPECIAL	1144.28
A3	MINNESOTA AVE	11+45		X	SPECIAL	1144.12
A4	T.H. 28	435+66		X	SPECIAL	1144.11
A5	T.H. 28	436+96		X	SPECIAL	1145.03
A6	T.H. 28	438+26		X	SPECIAL	1145.53
A7	T.H. 28	432+25		X	SPECIAL	1145.65
A8	T.H. 28	440+54		X	SPECIAL	1145.67
A9	T.H. 28	442+20		X	SPECIAL	1145.74
A10	T.H. 28	443+52		X	SPECIAL	1147.84
A11	T.H. 28	444+65		X	SPECIAL	1150.21
A12	T.H. 28	446+13		X	SPECIAL	1153.59
A13	T.H. 28	540+30		X	SPECIAL	1164.78
A14	T.H. 28	541+78		X	SPECIAL	1169.65
A15	T.H. 28	543+01		X	SPECIAL	1175.00
A16	T.H. 28	544+40		X	SPECIAL	1181.21
A17	T.H. 28	545+79		X	SPECIAL	1183.75
A18	T.H. 28	546+91		X	SPECIAL	1183.68
A19	T.H. 28	548+30		X	SPECIAL	1184.04
A20	T.H. 28	549+90		X	SPECIAL	1183.70
A21	T.H. 28	550+85		X	SPECIAL	1182.67
A22	T.H. 28	552+32		X	SPECIAL	1181.34

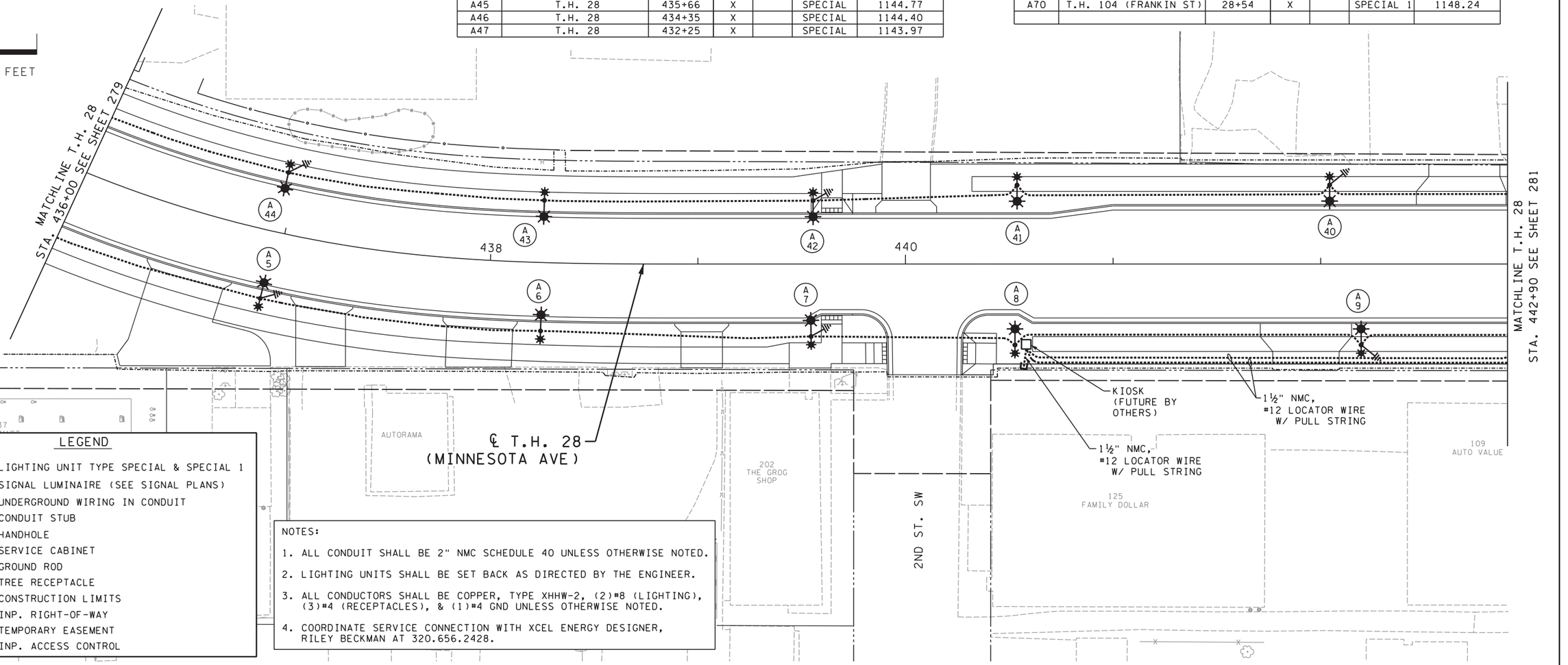
LIGHTING STANDARDS AND BASES						
NO.	LOCATION	STATION	LT.	RT.	TYPE	TOP OF FOUNDATON ELELVATION
A23	T.H. 28	553+80		X	SPECIAL	1182.17
A24	T.H. 28	554+85		X	SPECIAL	1183.64
A25	T.H. 28	554+85	X		SPECIAL	1183.50
A26	T.H. 28	553+80	X		SPECIAL	1181.92
A27	T.H. 28	552+56	X		SPECIAL	1181.58
A28	T.H. 28	550+85	X		SPECIAL	1182.76
A29	T.H. 28	549+90	X		SPECIAL	1183.62
A30	T.H. 28	548+30	X		SPECIAL	1184.44
A31	T.H. 28	546+91	X		SPECIAL	1184.16
A32	T.H. 28	545+79	X		SPECIAL	1183.98
A33	T.H. 28	544+68	X		SPECIAL	1181.94
A34	T.H. 28	543+05	X		SPECIAL	1176.41
A35	T.H. 28	541+77	X		SPECIAL	1170.40
A36	T.H. 28	540+30	X		SPECIAL	1164.12
A37	T.H. 28	446+12	X		SPECIAL	1154.77
A38	T.H. 28	444+70	X		SPECIAL	1151.37
A39	T.H. 28	443+48	X		SPECIAL	1148.65
A40	T.H. 28	442+05	X		SPECIAL	1147.00
A41	T.H. 28	440+55	X		SPECIAL	1146.62
A42	T.H. 28	439+56	X		SPECIAL	1145.95
A43	T.H. 28	438+26	X		SPECIAL	1145.67
A44	T.H. 28	436+96	X		SPECIAL	1145.26
A45	T.H. 28	435+66	X		SPECIAL	1144.77
A46	T.H. 28	434+35	X		SPECIAL	1144.40
A47	T.H. 28	432+25	X		SPECIAL	1143.97

LIGHTING STANDARDS AND BASES						
NO.	LOCATION	STATION	LT.	RT.	TYPE	TOP OF FOUNDATON ELELVATION
A48	T.H. 28	429+14	X		SPECIAL	1142.47
A49	MINNESOTA AVE	10+35	X		SPECIAL	1143.94
A50	MINNESOTA AVE	10+35		X	SPECIAL	1143.97
A51	T.H. 104 (FRANKIN ST)	28+54		X	SPECIAL 1	1148.32
A52	T.H. 104 (FRANKIN ST)	29+57		X	SPECIAL 1	1149.91
A53	T.H. 104 (FRANKIN ST)	30+82		X	SPECIAL 1	1154.21
A54	T.H. 104 (FRANKIN ST)	31+70		X	SPECIAL 1	1156.53
A55	T.H. 104 (FRANKIN ST)	32+67		X	SPECIAL 1	1157.43
A56	T.H. 29 (FRANKIN ST)	36+53		X	SPECIAL 1	1158.51
A57	T.H. 29 (FRANKIN ST)	37+53		X	SPECIAL 1	1158.47
A58	T.H. 29 (FRANKIN ST)	38+37		X	SPECIAL 1	1158.42
A59	T.H. 29 (FRANKIN ST)	39+59		X	SPECIAL 1	1157.81
A60	T.H. 29 (FRANKIN ST)	40+66		X	SPECIAL 1	1157.47
A61	T.H. 29 (FRANKIN ST)	40+66	X		SPECIAL 1	1157.52
A62	T.H. 29 (FRANKIN ST)	39+59	X		SPECIAL 1	1158.00
A63	T.H. 29 (FRANKIN ST)	38+37	X		SPECIAL 1	1158.52
A64	T.H. 29 (FRANKIN ST)	37+53	X		SPECIAL 1	1158.34
A65	T.H. 29 (FRANKIN ST)	36+53	X		SPECIAL 1	1158.72
A66	T.H. 104 (FRANKIN ST)	32+67	X		SPECIAL 1	1157.82
A67	T.H. 104 (FRANKIN ST)	31+70	X		SPECIAL 1	1157.52
A68	T.H. 104 (FRANKIN ST)	30+82	X		SPECIAL 1	1154.26
A69	T.H. 104 (FRANKIN ST)	29+57	X		SPECIAL 1	1150.19
A70	T.H. 104 (FRANKIN ST)	28+54	X		SPECIAL 1	1148.24

50

SCALE IN FEET

N



LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. ALL CONDUIT SHALL BE 2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. LIGHTING UNITS SHALL BE SET BACK AS DIRECTED BY THE ENGINEER.
3. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#8 (LIGHTING), (3)#4 (RECEPTACLES), & (1)#4 GND UNLESS OTHERWISE NOTED.
4. COORDINATE SERVICE CONNECTION WITH XCEL ENERGY DESIGNER, RILEY BECKMAN AT 320.656.2428.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

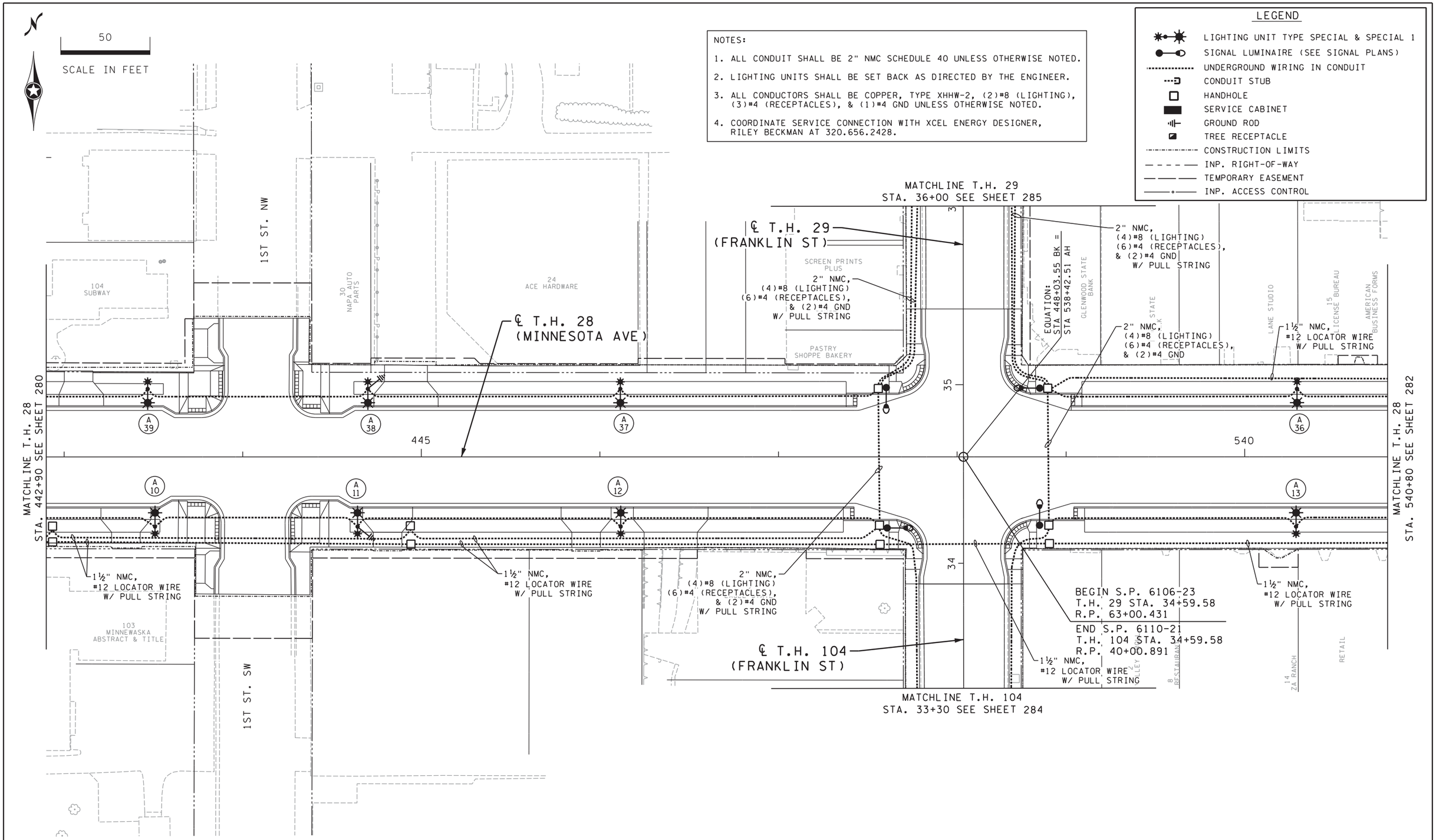
T.H. 28 STA 436+00 - 442+90

FILE NO. MNT04-134590

LT8 OF LT24

280 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_lt1.dgn
MODEL: H2



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Certified By: _____ Licensed Professional Engineer Lic. No. 45519
Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590
LT9 OF LT24
281 / 310

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnsht\CD610332_lt1.dgn
MODEL: lt3
6/30/2017 7:59:28 AM

50

SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

1. ALL CONDUIT SHALL BE 2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. LIGHTING UNITS SHALL BE SET BACK AS DIRECTED BY THE ENGINEER.
3. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#8 (LIGHTING), (3)#4 (RECEPTACLES), & (1)#4 GND UNLESS OTHERWISE NOTED.
4. COORDINATE SERVICE CONNECTION WITH XCEL ENERGY DESIGNER, RILEY BECKMAN AT 320.656.2428.

MATCHLINE T.H. 28 SEE SHEET 281
STA. 540+80

MATCHLINE T.H. 28 SEE SHEET 283
STA. 548+20

1ST ST. NE

2ND ST. NE

1ST ST. SE

2ND ST. SE

1½" NMC, #12 LOCATOR WIRE W/ PULL STRING

KIOSK (FUTURE BY OTHERS)

EQUATION: STA 546+40.17 BK = STA 546+39.75 AH

4" NMC, #12 LOCATOR WIRE W/ PULL STRING

℄ T.H. 28 (MINNESOTA AVE)

543

545

STUDIO ARCHITECTS

STRECKER AGENCY

31 AMERICAN BUSINESS FORMS

107 PALMER CREATIONS

MAINLY CUTS

131 POPE COUNTY FAMILY COLLABORATIVE

CITY OF GLENWOOD

137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

AMERICAN BUSINESS SOLUTIONS

28 LINE WALK CLOSET

ACCOUNTANTS JERRY WANGNESS

130 POPE COUNTY COURT HOUSE

206 GLENWOOD LUTHERAN

UMH

A 35 · A 34 · A 33 · A 32 · A 31

A 14 · A 15 · A 16 · A 17 · A 18

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

T.H. 28 STA 540+80 - 548+20

FILE NO. MNT04-134590 LT10 OF LT24

282 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_lt1.dgn
MODEL: lt4

6/30/2017 7:59:29 AM

7:59:29 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

3RD ST. NE

4TH ST. NE

XC

MATCHLINE T.H. 28
STA. 548+20 SEE SHEET 282

A 30 A 29 A 28 A 27 A 26 A 25

550 555

A 19 A 20 A 21 A 22 A 23 A 24

℄ T.H. 28
(MINNESOTA AVE)

3RD ST. SE

4TH ST. SE

EXTREME GAS
AND AUTO

BEGIN MILL AND OVERLAY
END FULL WIDTH CONSTRUCTION
END S.P. 061-090-006
T.H. 28 STA. 554+98.49
R.P. 76+00.586

NOTES:

1. ALL CONDUIT SHALL BE 2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. LIGHTING UNITS SHALL BE SET BACK AS DIRECTED BY THE ENGINEER.
3. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#8 (LIGHTING), (3)#4 (RECEPTACLES), & (1)#4 GND UNLESS OTHERWISE NOTED.
4. COORDINATE SERVICE CONNECTION WITH XCEL ENERGY DESIGNER, RILEY BECKMAN AT 320.656.2428.

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332.it1.dgn
MODEL: HS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

T.H. 28 STA 548+30 - 555+80

FILE NO. MNT04-134590
LT11 OF LT24

283 / 310

7:59:29 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

2ND AVE. SW

1ST AVE. SW

2" NMC,
#12 LOCATOR WIRE W/ PULL STRING

27 30 33

A 70 A 69 A 68 A 67 A 66

A 51 A 52 A 53 A 54 A 55

℄ T.H. 104
(FRANKLIN ST)

2" NMC,
#12 LOCATOR WIRE W/ PULL STRING

115
COUNSELOR REALTY

VILLAGE INN

CURVES FOR WOMEN

THE

CHINESE

PIZZ

2ND AVE. SE

1ST AVE. SE

MATCHLINE T.H. 104
STA. 33+30 SEE SHEET 281

NOTES:

1. ALL CONDUIT SHALL BE 2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. LIGHTING UNITS SHALL BE SET BACK AS DIRECTED BY THE ENGINEER.
3. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#8 (LIGHTING), (3)#4 (RECEPTACLES), & (1)#4 GND UNLESS OTHERWISE NOTED.
4. COORDINATE SERVICE CONNECTION WITH XCEL ENERGY DESIGNER, RILEY BECKMAN AT 320.656.2428.

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_lt1.dgn
MODEL: lt6

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

T.H. 104 STA 26+00 - 33+30

FILE NO. MNT04-134590

LT12 OF LT24

7:59:29 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

2" NMC,
(4)#8 (LIGHTING)
(6)#4 (RECEPTACLES),
& (2)#4 GND
W/ PULL STRING

3" RSC,
(3)#350 MCM TYPE USE-2
SERVICE CODUCTORS TO
XCEL ENGERGY POLE MOUNTED
TRANSFORMER

SERVICE CABINETS SHALL BE MOUNTED ON SAME EQUIPMENT PAD. CABINETS SHALL HAVE MINIMUM 12" SEPARATION. SEE DETAILS ON SHEET 291.

SERVICE CABINET "A"
120/240 VOLT, 1-PHASE, METERED
EQUIPMENT PAD REQUIRED

S.O.P.

1ST AVE. NW

2ND AVE. NW

WORLD OF WELLNESS

HMNO

HMNO

HEART CHURCH

2" NMC,
#12 LOCATOR WIRE W/ PULL STRING

MATCHLINE T.H. 29
STA. 36+00 SEE SHEET 281

A 65 | A 64 | A 63 | A 62 | A 61

6 | 40 | 43

A 56 | A 57 | A 58 | A 59 | A 60

2" NMC,
(4)#8 (LIGHTING)
(6)#4 (RECEPTACLES),
& (2)#4 GND

2" NMC,
(4)#8 (LIGHTING)
(6)#4 (RECEPTACLES),
& (2)#4 GND
W/ PULL STRING

℄ T.H. 29
(FRANKLIN ST)

GLENWOOD COLLISION CENTER
110

2" NMC,
#12 LOCATOR WIRE W/ PULL STRING

1ST AVE. NE

2ND AVE. NE

NOTES:

1. ALL CONDUIT SHALL BE 2" NMC SCHEDULE 40 UNLESS OTHERWISE NOTED.
2. LIGHTING UNITS SHALL BE SET BACK AS DIRECTED BY THE ENGINEER.
3. ALL CONDUCTORS SHALL BE COPPER, TYPE XHHW-2, (2)#8 (LIGHTING), (3)#4 (RECEPTACLES), & (1)#4 GND UNLESS OTHERWISE NOTED.
4. COORDINATE SERVICE CONNECTION WITH XCEL ENERGY DESIGNER, RILEY BECKMAN AT 320.656.2428.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
T.H. 29 STA 36+00 - 43+30

FILE NO. MNT04-134590
LT13 OF LT24
285 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\C0610332_lt1.dgn
MODEL: lt7

50

SCALE IN FEET

HOTEL

¾" NMC SCH. 80
(2)#12 &
(1)#12 GND.
(TYP.)

2" NMC,
(3)#6 & (1)#8 GND

B T36 B T35 B T34 B T33

438 440

B T1 B T2 B T3 B T4 B T5

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 287

237
GAS MART

AUTORAMA

℄ T.H. 28
(MINNESOTA AVE)

202
THE GROG
SHOP

2ND ST. SW

125
FAMILY DOLLAR

2" NMC,
(3)#6 & (1)#8 GND

2" NMC,
(3)#6 & (1)#8 GND

109
AUTO VALUE

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

HANDHOLES SHOWN IN SIDEWALK FOR CLARITY. COORDINATE WITH ENGINEER FOR FINAL HANHOLE LOCATIONS.

6/30/2017 7:59:30 AM

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_lt1.dgn
MODEL: ltB

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.

Certified By: _____ Lic. No. 45519
Licensed Professional Engineer

Printed Name: THOMAS D. HONER Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
TREE RECEPTACLE
T.H. 28 STA 436+00 - 442+90

FILE NO. MNT04-134590
LT14 OF LT24
286 / 310

7:59:30 AM

6/30/2017

50

SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
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- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

HANDHOLES SHOWN IN SIDEWALK FOR CLARITY. COORDINATE WITH ENGINEER FOR FINAL HANHOLE LOCATIONS.

MATCHLINE T.H. 28
STA. 442+90 SEE SHEET 286

MATCHLINE T.H. 29
STA. 36+00 SEE SHEET 289

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 288

1ST ST. NW

1ST ST. SW

℄ T.H. 28
(MINNESOTA AVE)

℄ T.H. 29
(FRANKLIN ST)

℄ T.H. 104
(FRANKLIN ST)

104 SUBWAY

30 NAPA AUTO PARTS

24 ACE HARDWARE

SCREEN PRINTS PLUS

GINGER BREAD CAFE

SHOPTE BAKERY

EAGLE STATE BANK

103 MINNEWASKA ABSTRACT & TITLE

GLENWOOD STATE BANK

LANE STUDIO

15 LICENSE BUREAU

AMERICAN BUSINESS FORMS

CURVES FOR WOMEN

2 THE VALLEY

8 CHINESE RESTAURAN

14 PIZZA RANCH

RETAIL

2" NMC, (3)#6 & (1)#8 GND

2" NMC, (6)#6 & (2)#8 GND

EQUATION:
STA 448+03.55 BK =
STA 538+42.51 AH

445

540

35

34

33

B T6 B T7 B T8 B T9 B T10 B T11 B T12 B T27 B T28 B T29 B T30 B T31 B T32

BEGIN S.P. 6106-23
T.H. 29 STA. 34+59.58
R.P. 63+00.431

END S.P. 6110-21
T.H. 104 STA. 34+59.58
R.P. 40+00.891

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DESIGNER: AKF				
CHECKED BY: TDH				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

TREE RECEPTACLE
T.H. 28 STA 442+90 - 540+80

FILE NO. MNT04-134590
LT15 OF LT24

287 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_lt1.dgn
MODEL: lt9

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SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

HANDHOLES SHOWN IN SIDEWALK FOR CLARITY. COORDINATE WITH ENGINEER FOR FINAL HANHOLE LOCATIONS.

MATCHLINE T.H. 28
STA. 540+80 SEE SHEET 287

1ST ST. NE

2ND ST. NE

STUDIO ARCHITECTS

STRECKER AGENCY

31 AMERICAN BUSINESS FORMS

31 AMERICAN BUSINESS FORMS

107 PALMER CREATIONS

MAINLY CUTS

131 POPE COUNTY FAMILY COLLABORATIVE

CITY OF GLENWOOD

137 GLENWOOD PUBLIC SAFETY MUNICIPAL BUILDING

UMH

UMH

2" NMC, (3)#6 & (1)#8 GND

2" NMC, (3)#6 & (1)#8 GND

2" NMC, (3)#6 & (1)#8 GND

EQUATION:
STA 546+40.17 BK =
STA 546+39.75 AH

B T26 B T25 B T24 B T23 B T22 B T21 B T20

543

545

B T13 B T14 B T15 B T16 B T17 B T18 B T19

2" NMC, (3)#6 & (1)#8 GND

2" NMC, (3)#6 & (1)#8 GND

℄ T.H. 28
(MINNESOTA AVE)

AMERICAN BUSINESS SOLUTIONS

28 THE WALK IN CLOSET

ACCOUNTANTS JERRY WANGNESS

1ST ST. SE

130 POPE COUNTY COURT HOUSE

2ND ST. SE

206 GLENWOOD LUTHERAN

UMH

UMH

UMH

UMH

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_lt1.dgn
MODEL: lt10

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Certified By: _____ Lic. No. 45519
Licensed Professional Engineer
Printed Name: THOMAS D. HONER Date: 06/29/2017

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ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

T.H. 28 STA 540+80 - 548+20

FILE NO. MNT04-134590
LT16 OF LT24

50

SCALE IN FEET

LEGEND

- LIGHTING UNIT TYPE SPECIAL & SPECIAL 1
- SIGNAL LUMINAIRE (SEE SIGNAL PLANS)
- UNDERGROUND WIRING IN CONDUIT
- CONDUIT STUB
- HANDHOLE
- SERVICE CABINET
- GROUND ROD
- TREE RECEPTACLE
- CONSTRUCTION LIMITS
- INP. RIGHT-OF-WAY
- TEMPORARY EASEMENT
- INP. ACCESS CONTROL

NOTES:

HANDHOLES SHOWN IN SIDEWALK FOR CLARITY. COORDINATE WITH ENGINEER FOR FINAL HANHOLE LOCATIONS.

1ST AVE. NW

2ND AVE. NW

WORLD OF WELLNESS

HEART CHURCH

HMO

HMO

2" NMC, (6)#6 & (2)#8 GND

SERVICE CABINET "B" 120/240 VOLT, 1-PHASE, METERED EQUIPMENT PAD REQUIRED

36

40

43

MATCHLINE T.H. 29 STA. 36+00 SEE SHEET 287

2" NMC, (6)#6 & (2)#8 GND

℄ T.H. 29 (FRANKLIN ST)

GLENWOOD COLLISION CENTER 110

1ST AVE. NE

2ND AVE. NE

6/30/2017 7:59:31 AM

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MODEL: lt11

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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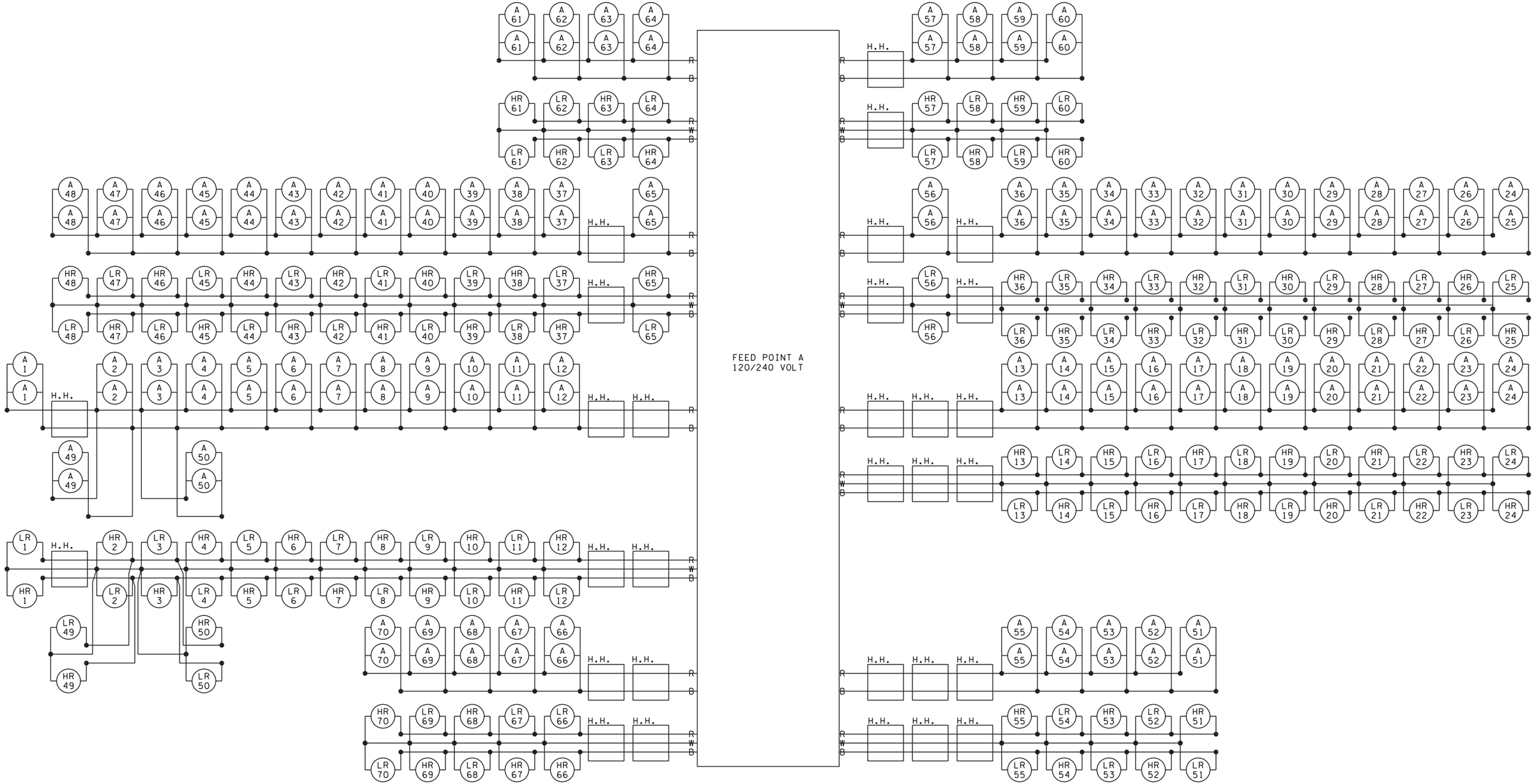
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

TREE RECEPTACLE
T.H. 29 STA 36+00 - 43+30

FILE NO. MNT04-134590
LT17 OF LT24



B AND R DENOTE CURRENT CARRYING CONDUCTORS
W DENOTES NEUTRAL CONDUCTOR
LR DENOTES LOW RECEPTACLE
HR DENOTES HIGH RECEPTACLE
HH DENOTES HANDHOLES

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
CIRCUIT DIAGRAM

FILE NO. MNT04-134590
LT18 OF LT24
290 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332.lt1.dgn
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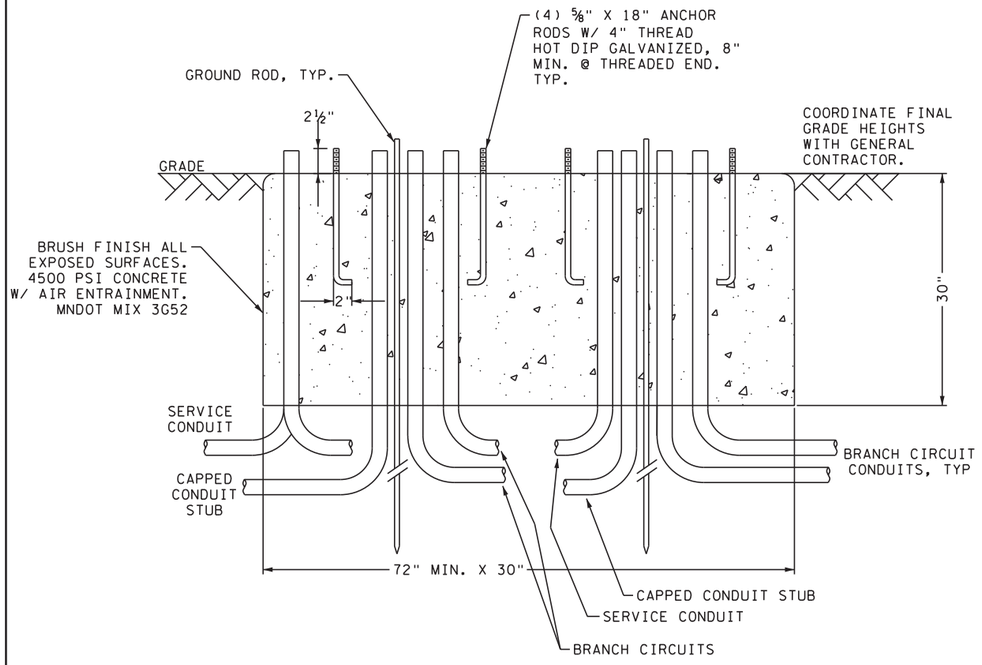
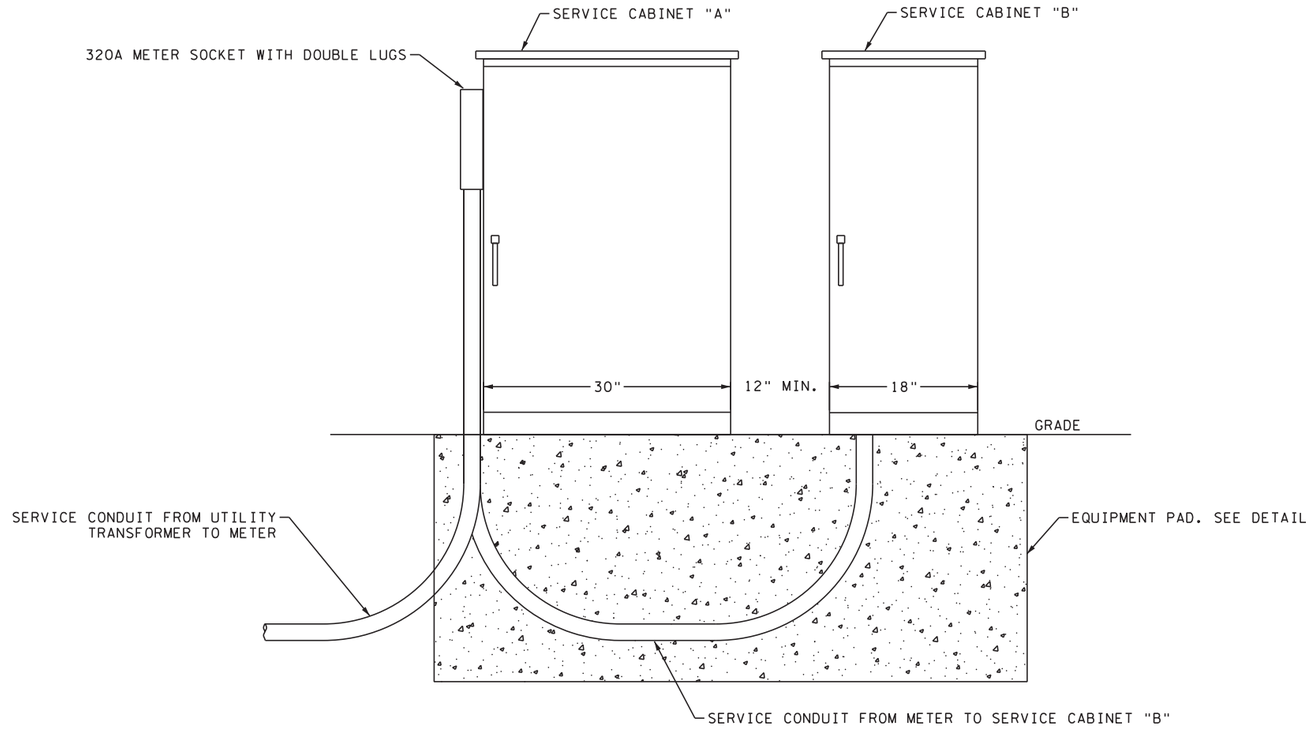
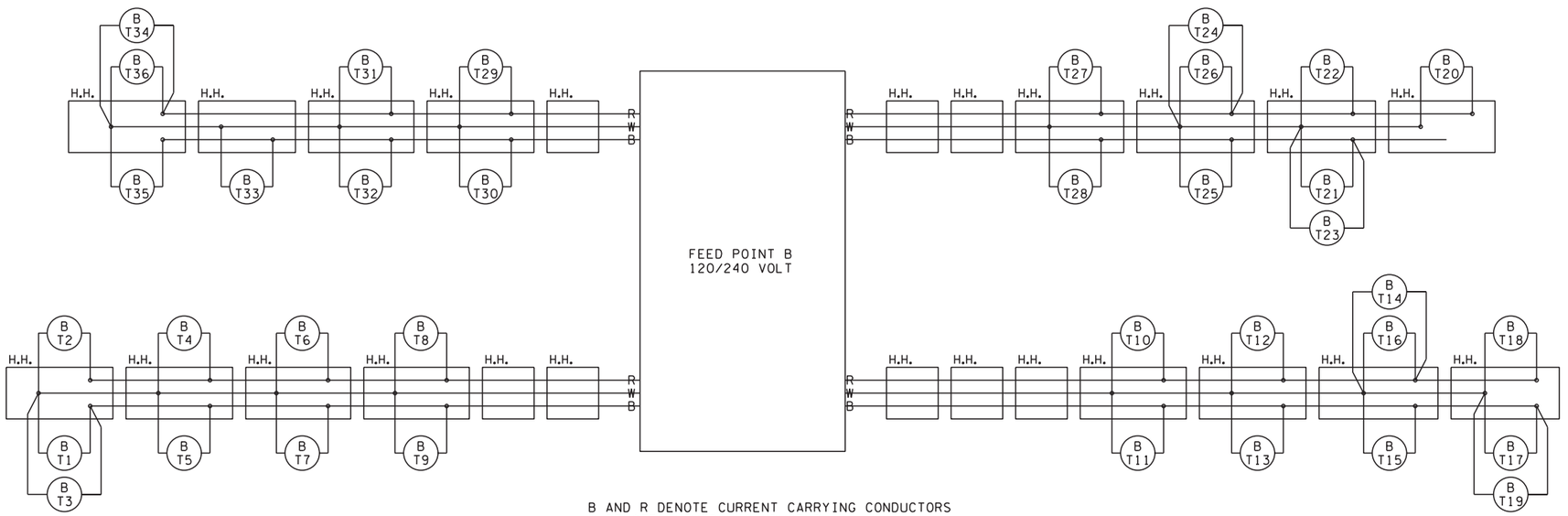


EQUIPMENT PAD DETAILS

(SERVICE CABINET FOUNDATION)
NOT TO SCALE



SERVICE CABINET AND EQUIPMENT PAD DETAILS



B AND R DENOTE CURRENT CARRYING CONDUCTORS
W DENOTES NEUTRAL CONDUCTOR
T(#) DENOTES TREE RECEPTACLE
H.H. DENOTES HANDHOLE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
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DESIGNER: AKF				
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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
CIRCUIT DIAGRAM AND LIGHTING DETAILS

FILE NO. MNT04-134590 LT19 OF LT24
291 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_lt1.dgn
MODEL: lt13
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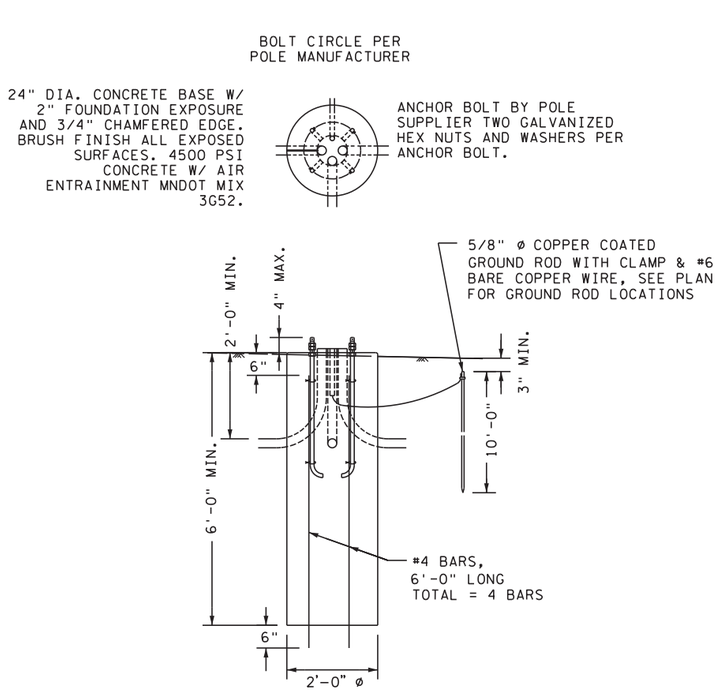
6/30/2017

7:59:31 AM

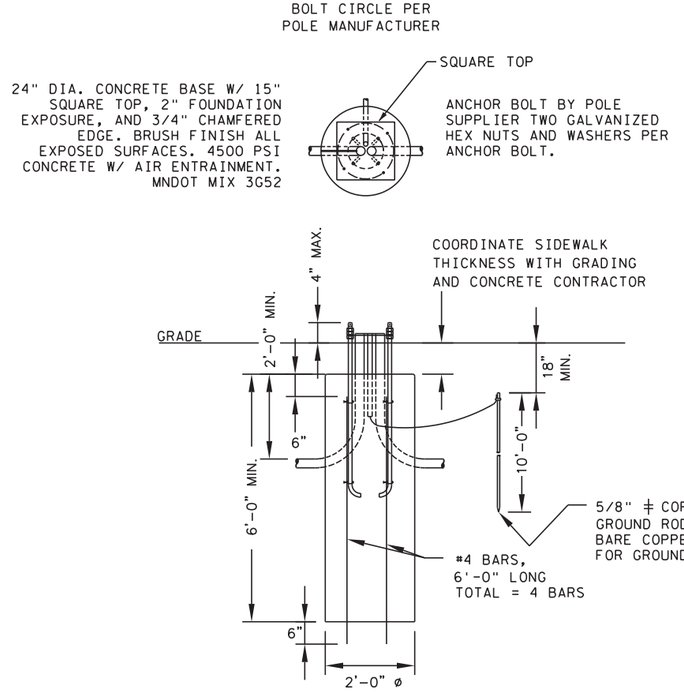
6/30/2017

EQUIPMENT SCHEDULE

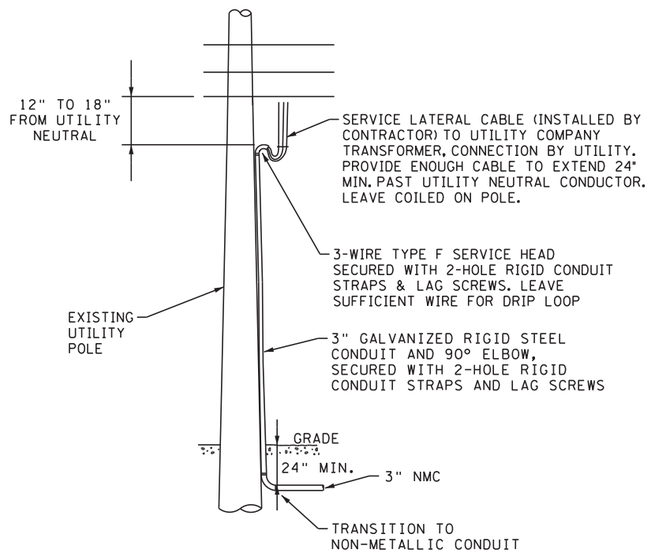
SYMBOL	DESCRIPTION	LAMP SOURCE	MOUNTING	OPTICS	MANUFACTURER & SERIES #
✱	LIGHTING UNIT TYPE SPECIAL LED ROADWAY LUMINAIRE AND LED PENDANT LUMINAIRE ON ROUND BOTTLENECK STEEL POLE W/ FLAG HOLDER, BANNER ARMS, PLANT HANGER ARMS, SEASONAL DECORATION BRACKETS, AND (2)20A WR-RATED GFI RECEPTACLES	ROADWAY - 54W 6 LED 4000K PENDANT - 38W LED 4000K	30' POLE ON LIGHT FOUNDATION DESIGN E MODIFIED	TYPE III	LEOTEK - LUMINAIRE: AR13-6M2-MV-NW-3-DB-700-PCR7-SC-RPADB CYCLONE - LUMINAIRE: CN12P1-GCPP-3-34W-4K-240-BZ-TX-CP5084 BRACKET: M202-MP-PTDR-BZ-TX-CP5159 POLE: PV69-30-SA-BM19-GFIC2(2)-CA1AP-BH055620AP/D1-FH10-BZ-TX-CP5082
✱	LIGHTING UNIT TYPE SPECIAL 1 LED ROADWAY LUMINAIRE AND LED PENDANT LUMINAIRE ON ROUND BOTTLENECK STEEL POLE W/ FLAG HOLDER, BANNER ARMS, PLANT HANGER ARMS, SEASONAL DECORATION BRACKETS, AND (2)20A WR-RATED GFI RECEPTACLES	ROADWAY - 36W 4 LED 4000K PENDANT - 38W LED 4000K	30' POLE ON LIGHT FOUNDATION DESIGN SPECIAL	TYPE III	LEOTEK - LUMINAIRE: AR13-4M2-MV-NW-3-DB-700-PCR7-SC-RPADB CYCLONE - LUMINAIRE: CN12P1-GCPP-3-34W-4K-240-BZ-TX-5084 BRACKET: M202-MP-PTDR-BZ-TX-CP5159 POLE: PV69-30-SA-BM19-GFIC2(2)-CA1AP-BH055620AP/D1-FH10-BZ-TX-CP5082
	WIRELESS CONTROLLER WIRELESS 7-PIN LIGHTING CONTROLLER, BRONZE IN COLOR	N/A	7-PIN PHOTOCELL RECEPTACLE	N/A	ECHELON - WIRELESS CONTROLLER: 100125 (TOP900TLX-BRONZE)
	BASE STATION DEVICE TO CONNECT THE INSTALLED WIRELESS LUMINAIRE CONTROLLERS WITH THE CENTRAL MANAGEMENT SYSTEM VIA INTERNET CONNECTION	N/A	AT CITY DESIGNATED LOCATION	N/A	ECHELON - BASE STATION (ETHERNET): 100142
	DESKTOP SOFTWARE DESKTOP SOFTWARE TO MONITOR AND CONTROL INDIVIDUAL LUMINAIRES	N/A	N/A	N/A	ECHELON - DESKTOP SOFTWARE: 38800-50 (LUMINSIGHT)



LIGHT FOUNDATION DESIGN E MODIFIED DETAIL



LIGHT FOUNDATION DESIGN SPECIAL DETAIL



SERVICE EQUIPMENT DETAIL

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MODEL: lt14

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Certified By: _____ Lic. No. 45519
Licensed Professional Engineer
Printed Name: THOMAS D. HONER Date: 06/29/2017

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PHONE: (651)490-2000
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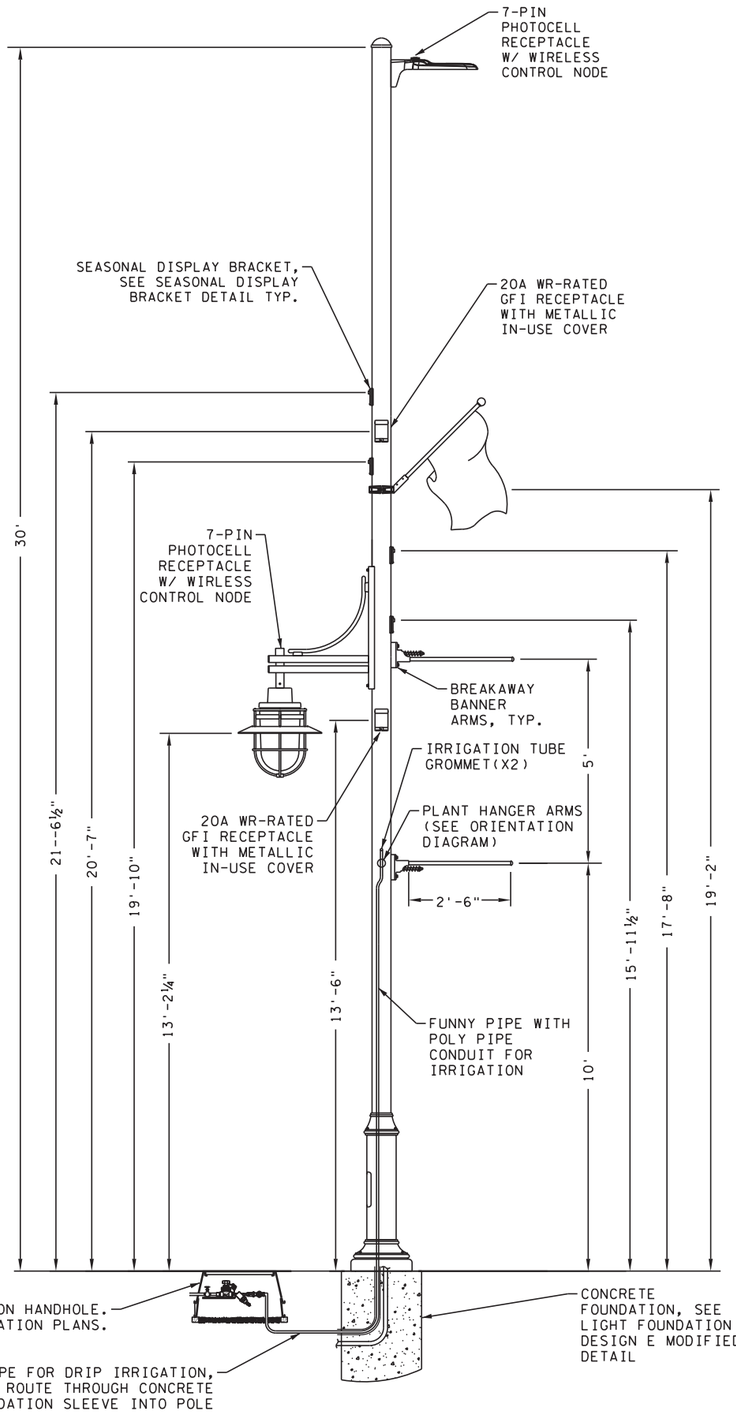
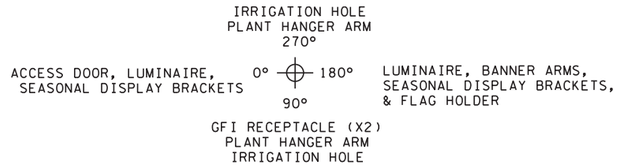
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
LIGHTING DETAILS

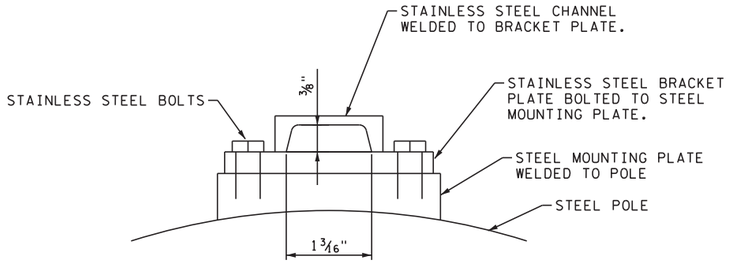
FILE NO. MNT04-134590
LT20 OF LT24
292 / 310

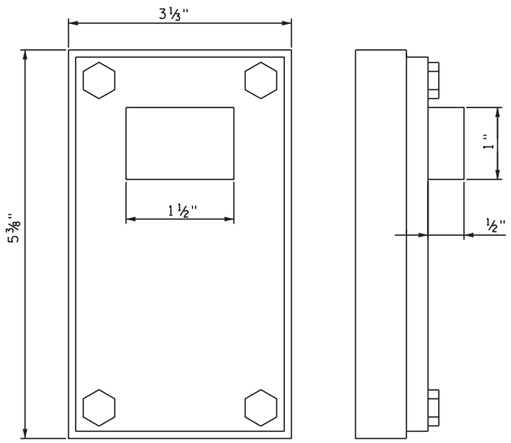


LIGHTING UNIT TYPE SPECIAL & SPECIAL 1 DETAIL



ORIENTATION DIAGRAM





SEASONAL DISPLAY BRACKET DETAIL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
LIGHTING DETAILS

FILE NO. MNT04-134590
LT21 OF LT24
293 / 310

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_lt1.dgn
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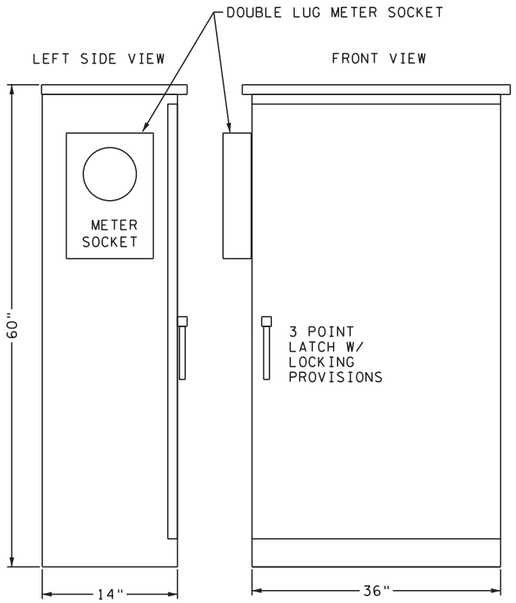
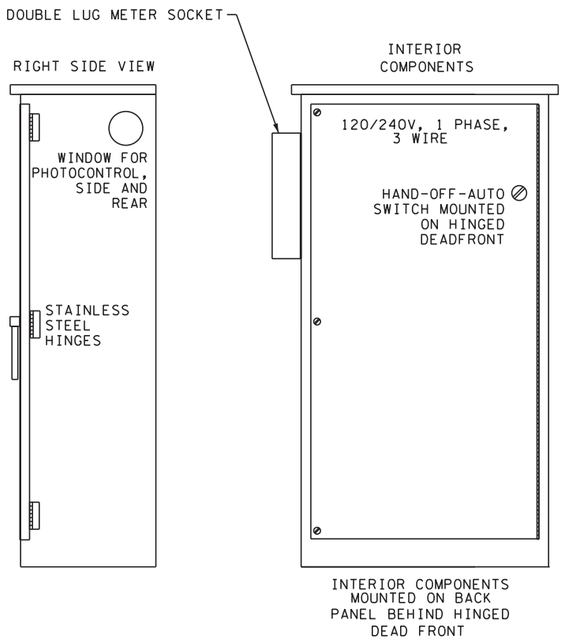
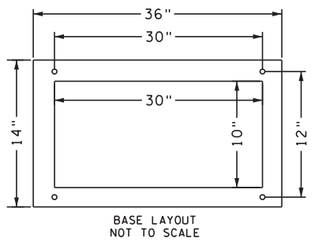






CABINET CONSTRUCTION

-NEMA 3R
-INTERIOR COMPONENTS MOUNTED ON BACK PANEL
BEHIND DEAD FRONT
-1/8" ANODIZED ALUMINUM (DURANODIC #314)
-NEOPRENE GASKETED DOORS
-STAINLESS STEEL HARDWARE
-ETL LISTED IN ACCORDANCE WITH UL508A

SERVICE CABINET NOTES:

A. PROVIDE METER SOCKET PER UTILITY COMPANY REQUIREMENTS.

B. CIRCUIT BREAKERS SHALL HAVE DOUBLE LUG METER SOCKETS TO FEED SECOND CABINET, AND SHALL BE 120/240 VOLT AC, 60Hz AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING.

C. SHORT CIRCUIT RATING - 22,000 AIC SYMMETRICAL.CONTRACTOR SHALL VERIFY TRANSFORMER FAULT CURRENT AND UPSIZE PANEL RATING IF FAULT CURRENT RATING IS HIGHER THAN 22,000 AIC.

D. THREE POSITION TYPE 800T-J2A NON-ILLUMINATED SELECTOR SWITCH WITH 1-N.O. AND 1-N.C. MAINTAINED CONTACTS. SHALL HAVE TYPE 4/13 OPERATORS.

E. CIRCUIT CONTACTORS SHALL HAVE A 240 VOLT RATING, WITH 120 VOLT COIL.

F. PROVIDE PANEL WITH DIMENSIONS AS REQUIRED TO FIT EQUIPMENT PROPOSED. PROVIDE 50KA SURGE PROTECTOR.

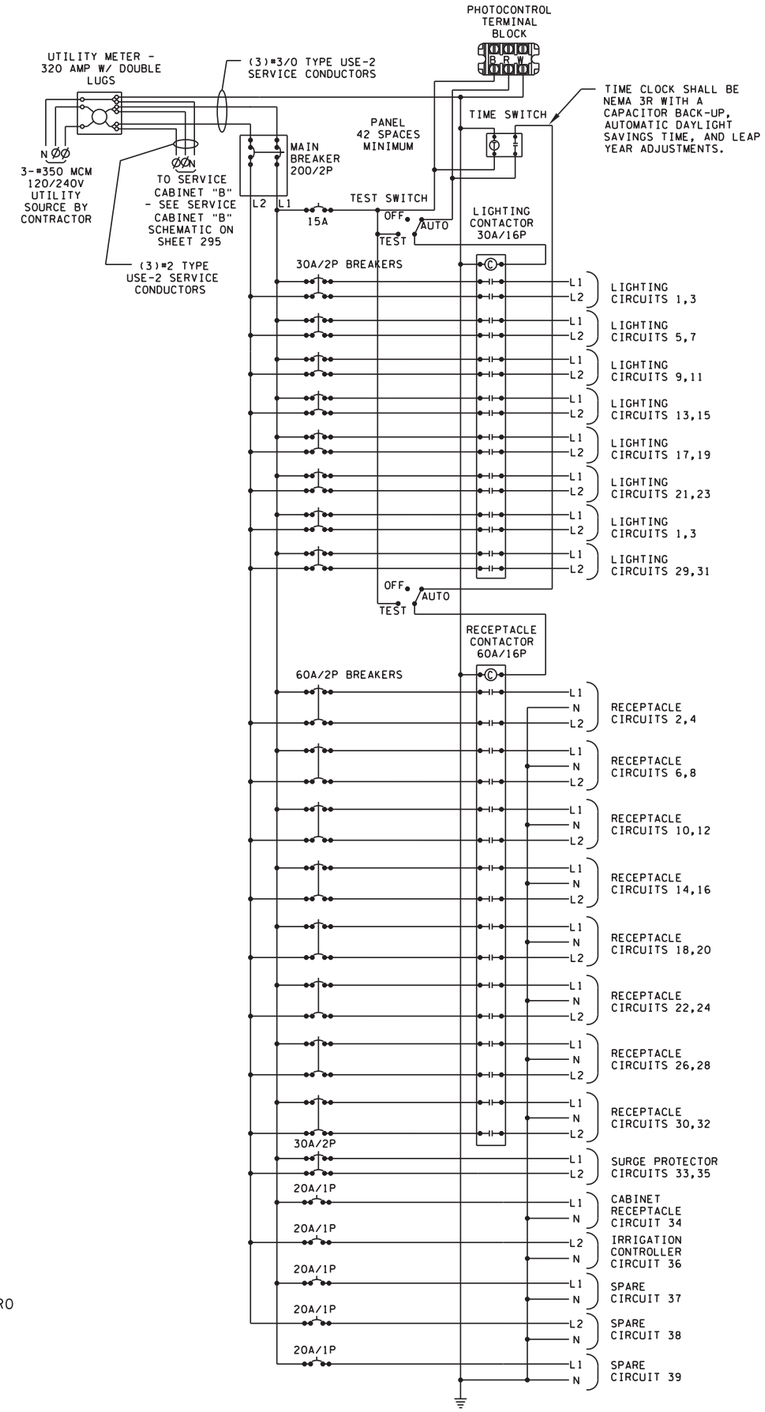
G. PROVIDE A 25-OHM GROUND AT CABINET AS PER NEC.

H. TIME CLOCK SHALL BE NEMA 3R WITH A CAPACITOR BACK-UP, AUTOMATIC DAYLIGHT SAVINGS TIME, AND LEAP YEAR ADJUSTMENTS.

I. PROVIDE 20A WR-RATED GFCI RECEPTACLE MOUNTED TO CABINET DEAD-FRONT.

J. BOTH PHOTOELCONTROL AND ITS SOCKET SHALL BE 3 TERMINAL, POLARIZED, TWIST-LOCK TYPE. IT SHALL BE EQUIPPED WITH A MOVRO TYPE LIGHTNING ARRESTER.

K. COORDINATE XCEL ENERGY SERVICE CONNECTIONS WITH RILEY BECKMAN AT 320.656.2428.



SERVICE CABINET "A" DETAILS

SERVICE CABINET "A" SCHEMATIC

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN
LIGHTING DETAILS

FILE NO. MNT04-134590
LT22 OF LT24
294 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332.lt1.dgn
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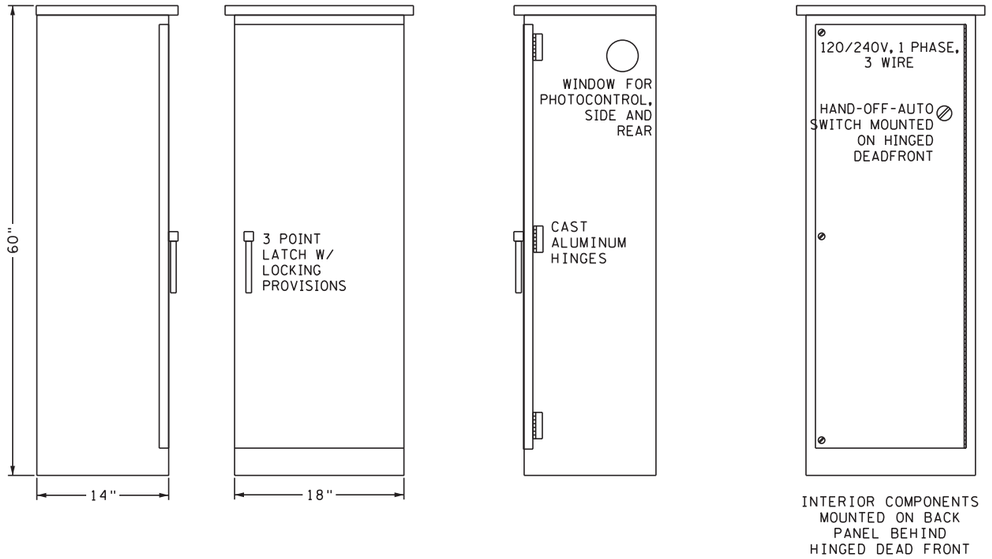
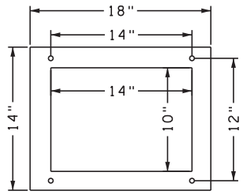


INTERIOR COMPONENTS MOUNTED ON BACK PANEL BEHIND HINGED DEAD FRONT



BASE LAYOUT
NOT TO SCALE

CABINET CONSTRUCTION

- NEMA 3R
- INTERIOR COMPONENTS MOUNTED ON BACK PANEL BEHIND DEAD FRONT
- 1/8" ANODIZED ALUMINUM (DURANODIC #314)
- NEOPRENE GASKETED DOORS
- STAINLESS STEEL HARDWARE
- ETL LISTED IN ACCORDANCE WITH UL508A

SERVICE CABINET NOTES:

A. CIRCUIT BREAKERS SHALL BE 120/240 VOLT AC, 60Hz AND SHALL BE CLEARLY MARKED WITH THE "ON" AND "OFF" POSITIONS AND IDENTIFIED WITH THE LOAD WHICH IT IS CARRYING.

B. SHORT CIRCUIT RATING - 22,000 AIC SYMMETRICAL.CONTRACTOR SHALL VERIFY TRANSFORMER FAULT CURRENT AND UPSIZE PANEL RATING IF FAULT CURRENT RATING IS HIGHER THAN 22,000 AIC.

C. THREE POSITION TYPE 800T-J2A NON-ILLUMINATED SELECTOR SWITCH WITH 1-N.O. AND 1-N.C. MAINTAINED CONTACTS. SHALL HAVE TYPE 4/13 OPERATORS.

D. CIRCUIT CONTACTORS SHALL HAVE A 240 VOLT RATING, WITH 120 VOLT COIL.

E. PROVIDE PANEL WITH DIMENSIONS AS REQUIRED TO FIT EQUIPMENT PROPOSED.

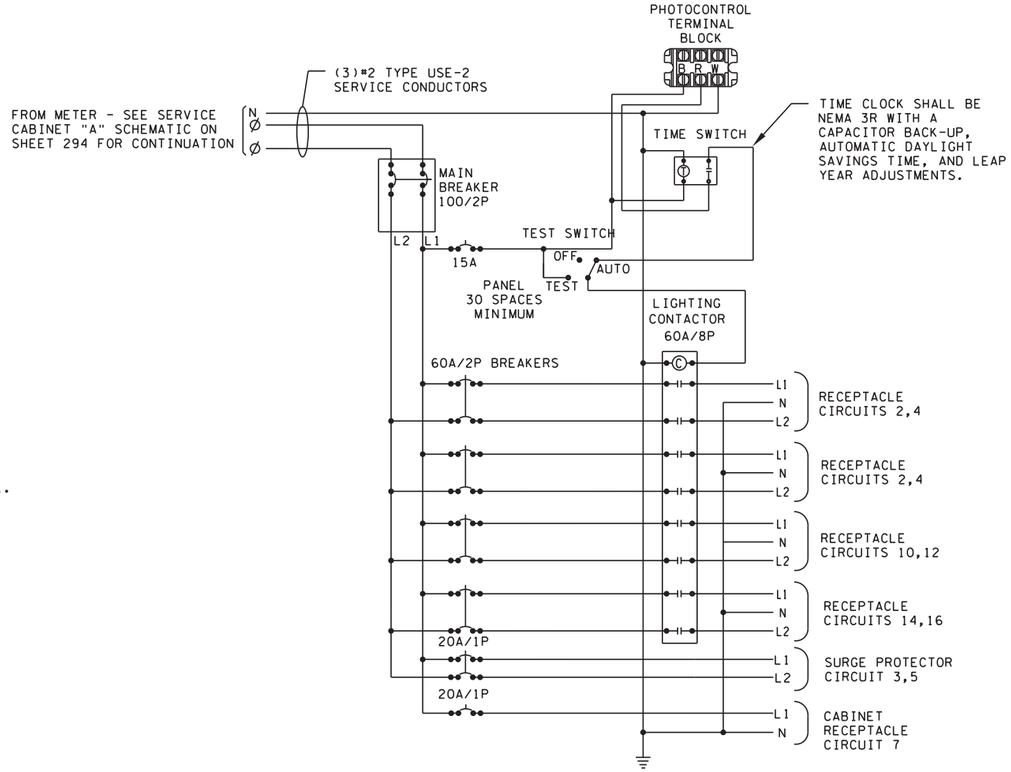
F. PROVIDE A 25-OHM GROUND AT CABINET AS PER NEC.

G. TIME CLOCK SHALL BE NEMA 3R WITH A CAPACITOR BACK-UP, AUTOMATIC DAYLIGHT SAVINGS TIME, AND LEAP YEAR ADJUSTMENTS.

H. PROVIDE 20A WR-RATED GFCI RECEPTACLE MOUNTED TO CABINET DEAD-FRONT.

I. BOTH PHOTOELCONTROL AND ITS SOCKET SHALL BE 3 TERMINAL, POLARIZED, TWIST-LOCK TYPE. IT SHALL BE EQUIPPED WITH A MOVRO TYPE LIGHTNING ARRESTER.

J. COORDINATE XCEL ENERGY SERVICE CONNECTIONS WITH RILEY BECKMAN AT 320.656.2428.



SERVICE CABINET "B" DETAILS

SERVICE CABINET "B" DETAILS

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 45519
Printed Name: THOMAS D. HONER Date: 06/29/2017

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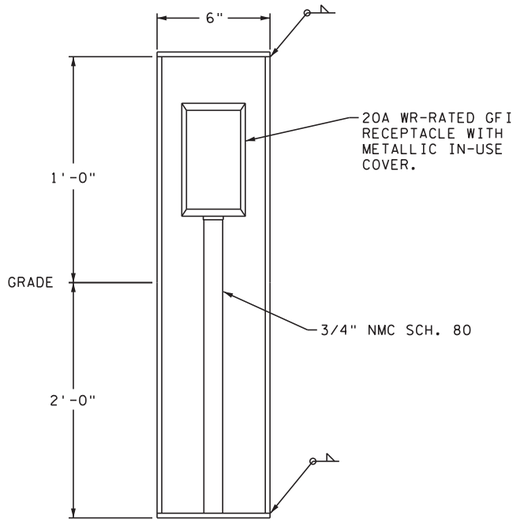
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

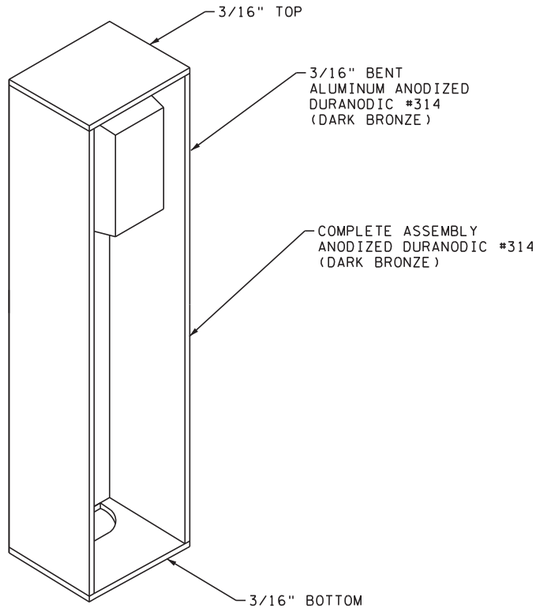
LIGHTING PLAN
LIGHTING DETAILS

FILE NO. MNT04-134590
LT23 OF LT24
295 / 310



RECEPTACLE STANCHION FRONT VIEW DETAIL

NOT TO SCALE



RECEPTACLE STANCHION ISOMETRIC DETAIL

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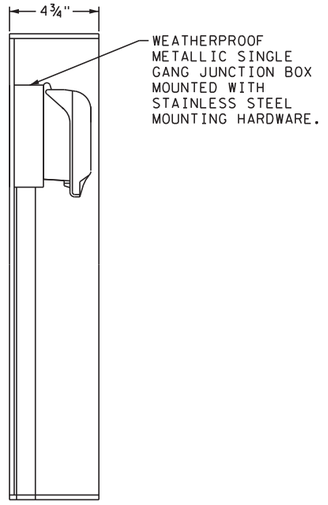

RECEPTACLE STANCHION SIDE VIEW DETAIL

NOT TO SCALE

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: AKF				
CHECKED BY: TDH				

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Licensed Professional Engineer

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

LIGHTING PLAN

LIGHTING DETAILS

FILE NO. MNT04-134590
LT24 OF LT24
296 / 310

ABBREVIATIONS

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

SYMBOLS

- HANDHOLE
- EQ. G CONNECTION
- EVP CONFIRMATORY LIGHT
- EVP DETECTOR
- EVP DETECTOR & CONFIRMATORY LIGHT
- FO — FIBER OPTIC VAULT
- 2 — LUMINAIRE NO.
- 3 — SIGNAL BASE NO.
- 3-2 — SIGNAL FACE NO./FLASHER FACE NO.
- SPLICE
- V- — VIDEO DETECTION
- M- — MICROWAVE DETECTION
- S- — SONIC DETECTION

FOR PLANS AND UTILITIES SYMBOLS
SEE TECHNICAL MANUAL

TABULATION OF SIGNAL QUANTITIES [S]

	ITEM NO	ITEM	UNIT	TOTAL ESTIMATED QUANTITY	PARTICIPATION			
					SP 6103-32	SP 6106-23	SP 6110-21	CITY OF GLENWOOD
(1)	2104	HAUL SALVAGED MATERIAL	LUMP SUM	1	0.5	0.25	0.25	
(2)	2565	TRAFFIC CONTROL SIGNAL SYSTEM	SIG SYS	1	0.48	0.24	0.24	0.04
	2565	EMERGENCY VEHICLE PREEMPTION SYSTEM	LUMP SUM	1				1

(1) INCLUDES ALL TRAFFIC SIGNAL MATERIALS AND ELECTRICAL EQUIPMENT REMOVED FROM THE EXISTING SIGNAL SYSTEM THAT ARE SALVAGED AND DELIVERED BY CONTRACTOR TO DEPARTMENT, (SEE SPECIAL PROVISIONS FOR FURTHER INFORMATION).

(2) INCLUDES PAINTING OF SIGNAL SYSTEM (AT CITY COST).

STANDARD PLATES - SIGNAL SYSTEMS

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

PLATE NO.	DESCRIPTION
► 8118D	SERVICE EQUIPMENT & POLE-TRAFFIC CONTROL SIGNALS
► 8119C	GROUND MOUNTED CABINET FOUNDATION
► 8121H	TRANSFORMER BASE & POLE BASE PLATE (2 SHEETS)
► 8123G	POLE & MAST ARM-LUMINAIRES & TRAFFIC LIGHTS ASSEMBLY (2 SHEETS)
► 8126L	POLE FOUNDATION (PA90 & PA100)
► 8129A	SHIM AND WASHER (TRAFFIC CONTROL SIGNALS AND ROADWAY LIGHTING)
► 8132B	PREFORMED RIGID PVC CONDUIT LOOP DETECTOR (3 SHEETS)

►STANDARD PLATES APPLICABLE TO THIS PROJECT

SIGNAL SYSTEMS PLAN INDEX

I hereby certify that sheets SGL1 through SGL11 of this plan were 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.

JOHN M. GRAY, PE
Date: 06/29/2017 Lic. No. 22457
DESIGNER: JMG, MTT

DESIGN TEAM
DRAWN BY: MTT
DESIGNER: JMG
CHECKED BY: HLR

NO.	BY	DATE	REVISIONS

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Certified By: Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

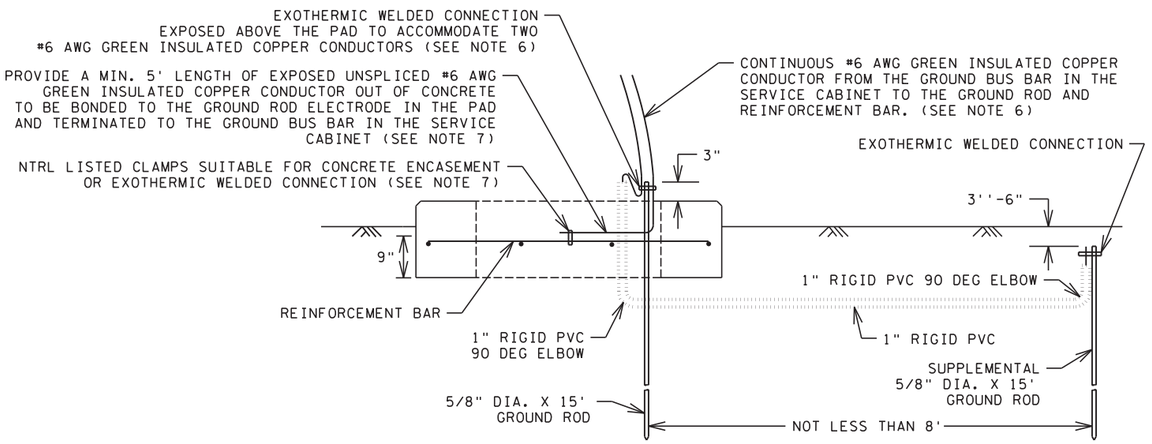
TRAFFIC SIGNAL SYSTEM
DETAILS AND STANDARD PLATES
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL1 OF SGL11
297 / 310

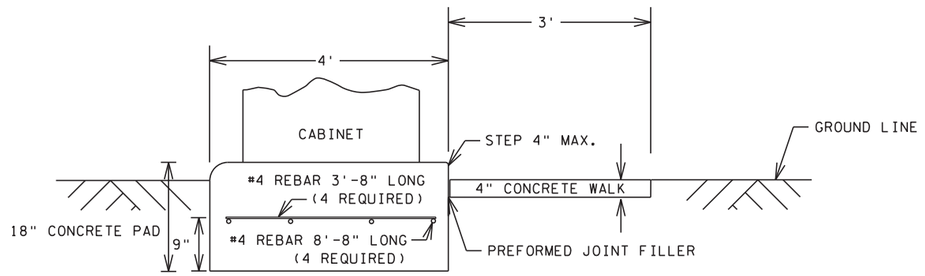
TYPICAL PAD WITH CONTROLLER CABINET AND SERVICE CABINET

SEE INTERSECTION LAYOUT FOR CABLE INFORMATION (NOT TO SCALE)

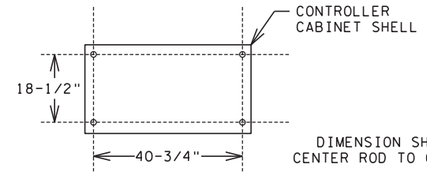
GROUNDING ELECTRODE SYSTEM



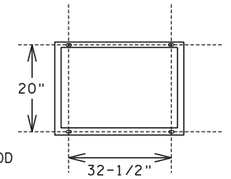
SIDE VIEW



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

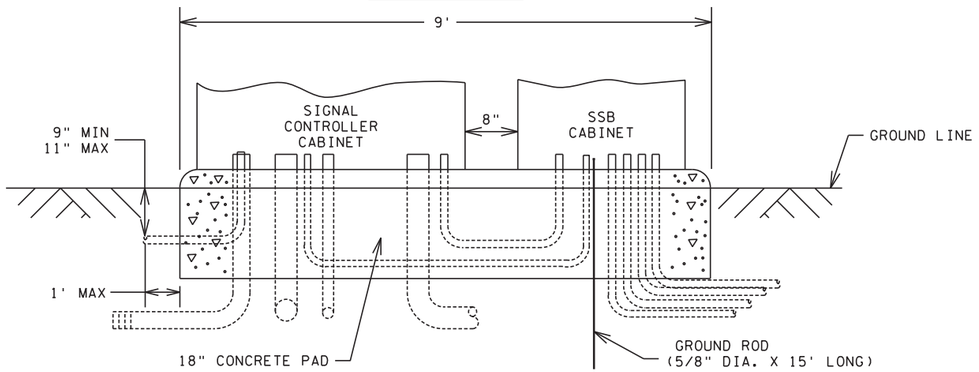


S.S.B. SERVICE CABINET BOLT PATTERN

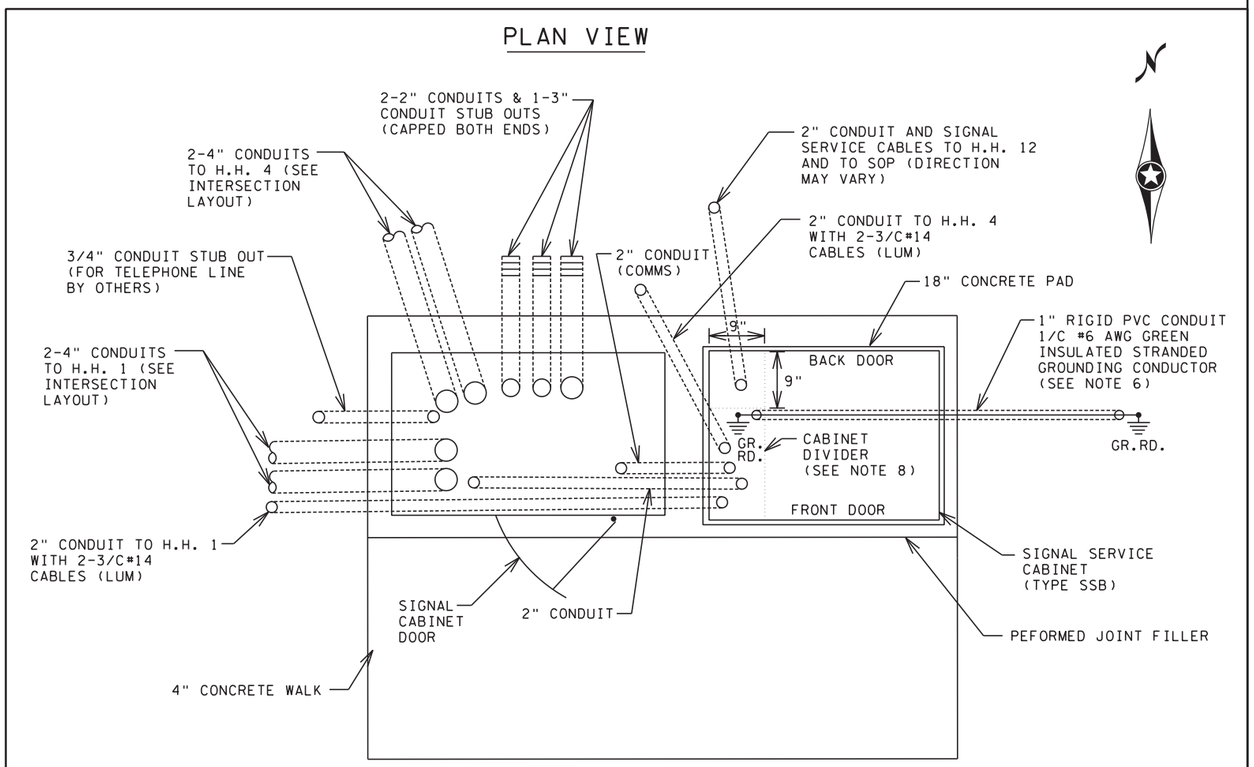


DIMENSION SHOWN ARE CENTER ROD TO CENTER ROD

FRONT VIEW



PLAN VIEW



NOTES:

1. THE ANCHOR RODS, NUTS, WASHERS AND RUBBER GASKET FOR THE CONTROLLER CABINET SHALL BE FURNISHED BY MNDOT.
2. THE OUTER EDGE OF THE ENTIRE EQUIPMENT PAD AND CONCRETE WALK SHALL BE BEVELED OR CHAMFERED IN A NEAT MANNER AS DIRECTED BY THE ENGINEER.
3. THE TOP OF THE CONDUITS SHALL BE CAPPED UNTIL CABLES ARE PULLED IN.
4. CONDUIT SHALL PROJECT A MINIMUM OF 2" ABOVE THE CONCRETE AND SHALL BE LOCATED INSIDE THE CABINET WHERE DIRECTED BY THE ENGINEER, BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
5. CONCRETE MIX 3F52 OR EQUAL SHALL BE USED FOR THE EQUIPMENT PAD AND SIDEWALK.
6. SUPPLY TWO 15 FOOT GROUND ROD ELECTRODES IN ACCORDANCE WITH 2545.3R. PROVIDE ONE GROUND ROD IN THE EQUIPMENT PAD IN ACCORDANCE WITH 2545.3 F.3 AND THE OTHER OUTSIDE OF THE PAD WITH A MINIMUM OF 8 FEET OF SEPARATION BETWEEN ELECTRODES. BOND THE TWO GROUND RODS TOGETHER WITH ONE CONTINUOUS LENGTH UNSPLICED CONDUCTOR FROM THE OUTER MOST GROUND ROD TO THE GROUND BUS BAR IN THE CABINET. EXOTHERMICALLY WELD THE 6 AWG STRANDED GREEN INSULATED CONDUCTOR TO THE GROUND RODS. PLACE THE BONDING CONNECTION TO THE EQUIPMENT PAD GROUND ROD ABOVE THE CONCRETE. APPLY DE-OX COMPOUND TO THE GROUNDING CONNECTIONS AFTER FINAL ASSEMBLY.
7. BOND A #6 AWG GREEN INSULATED GROUNDING CONDUCTOR TO THE REBAR GRID PRIOR TO CONCRETE POURING OPERATIONS. ENSURE THE CONDUCTOR IS PLACED IN THE LOAD SIDE OF THE CABINET. TERMINATE THE GREEN INSULATED 6 AWG GROUND CONDUCTOR ON THE GROUND BUS IN THE SERVICE CABINET WITHOUT SPLICES.
8. CONDUITS WITH BOTH ENDS TERMINATING WITHIN THE PAD SHALL NOT BE PLACED BELOW THE CONCRETE.
9. THE EXACT LOCATION OF CONDUITS WITHIN THE PAD SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD.
10. CORRECT PLACEMENT OF CONDUIT TO THE LEFT OF THE S.S.B. CABINET DIVIDER IS CRITICAL.
11. ANCHOR RODS SHALL PROJECT A MINIMUM OF 3" ABOVE THE CONCRETE BUT SHALL NOT INTERFERE WITH THE CABINET FUNCTIONS (SUPPORTING MEMBERS, ETC.).
12. CABINETS TO BE CENTERED (LEFT & RIGHT) ON THE PAD.
13. BRUSH ON ANTI-SEIZE LUBRICANT MUST BE APPLIED TO ALL ANCHOR ROD THREADS PROTRUDING ABOVE THE CONCRETE PAD BEFORE THE CABINET IS SET.
14. CENTER THE 8', 8" X 3', 8" #4 REINFORCEMENT REBAR GRID IN THE 9' X 4' X 18" CONCRETE PAD.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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Certified By: _____ Licensed Professional Engineer Lic. No. 22457

Printed Name: JOHN M. GRAY Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM EQUIPMENT PAD DETAILS
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL2 OF SGL11
298 / 310

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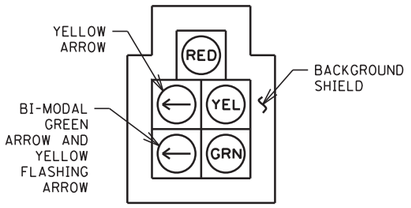
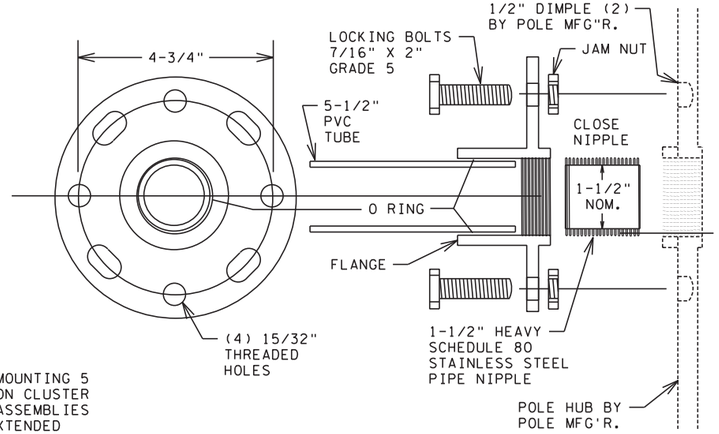
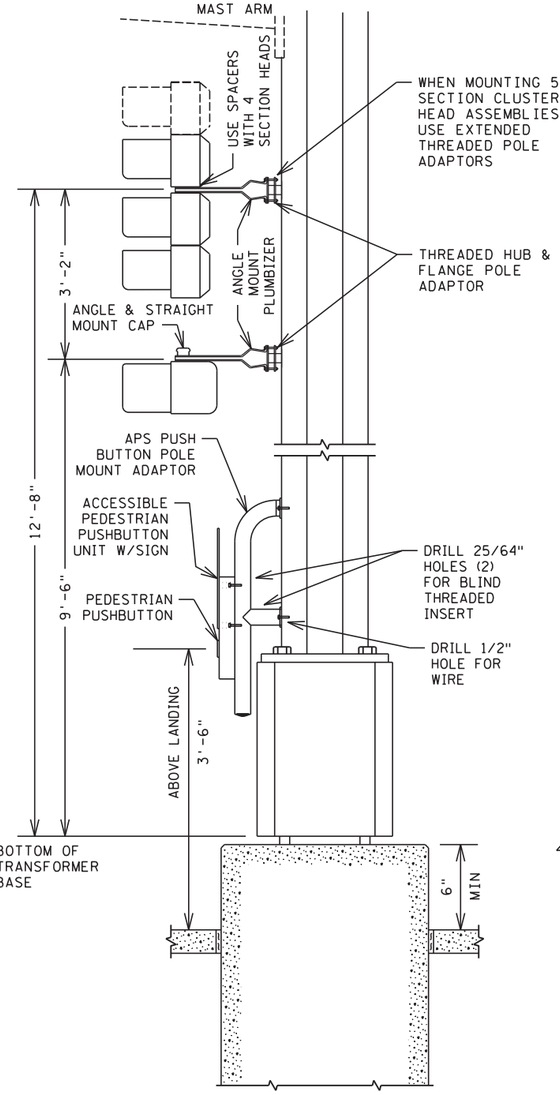


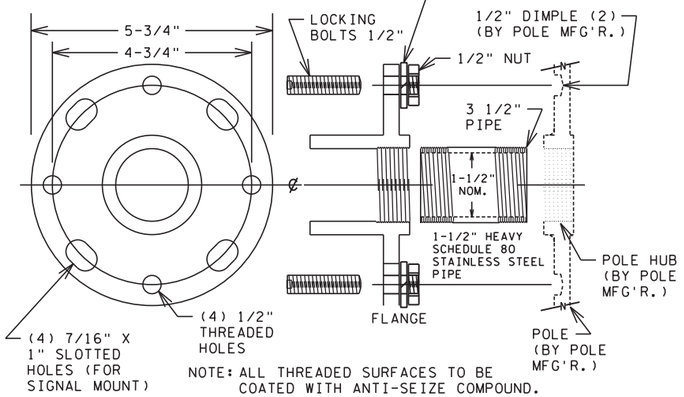
5 SECTION FYA CLUSTER HEAD DETAIL



THREADED HUB AND FLANGE POLE ADAPTOR



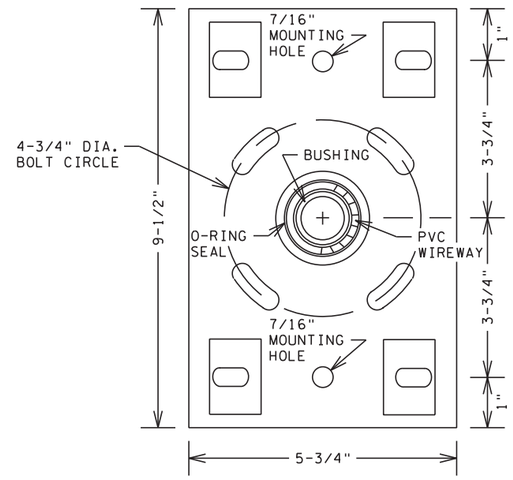
TYPICAL SIGNAL POLE MOUNTING



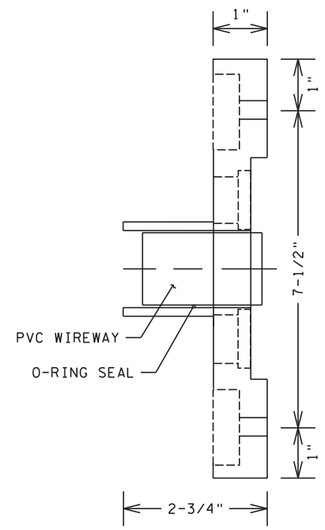
NOTE: ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.

EXTENDED THREADED POLE ADAPTER

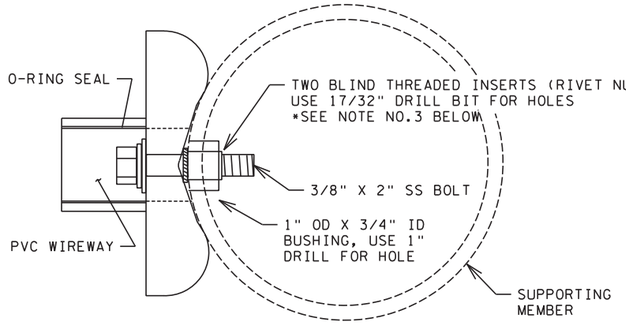
NOTES:
1. ALL THREADED SURFACES TO BE COATED WITH ANTI-SEIZE COMPOUND.
2. USE SIGNAL HEAD MOUNTED SPACERS FOR 4 SECTION POLY HEADS.
3. SEE STANDARD PLATE NUMBER 8123 FOR ADDITIONAL SIGNAL POLE DETAILS.
4. EXTENDED THREADED POLE ADAPTOR ONLY USED WITH 5 SECTION CLUSTER HEADS.



BOLT ON HUB & FLANGE

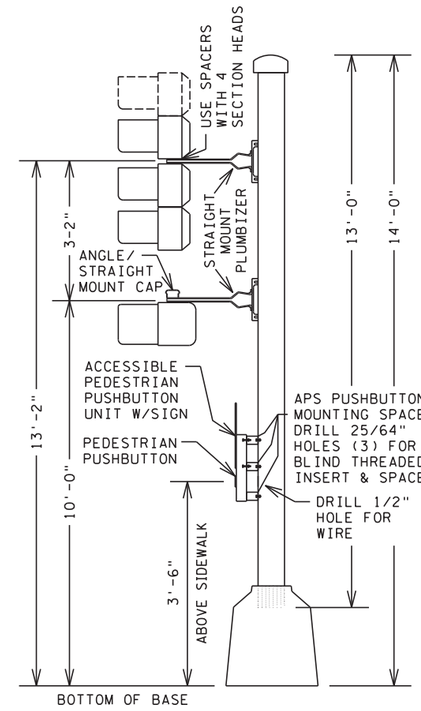


SIDE VIEW



TOP VIEW

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



TYPICAL PEDESTAL MOUNTING

NOT TO SCALE

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DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM
POLE MOUNT DETAIL
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL3 OF SGL11
299/310

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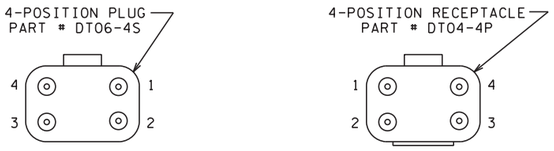
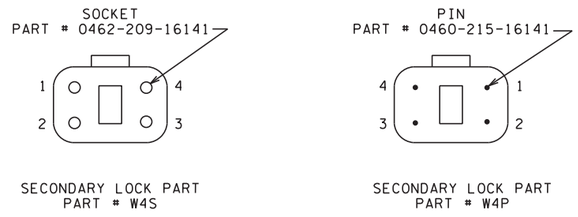
6/30/2017

4-POSITION CONNECTOR

(BACK VIEW)

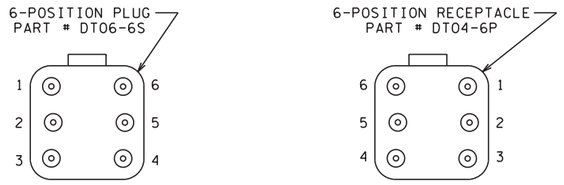


(FRONT VIEW)

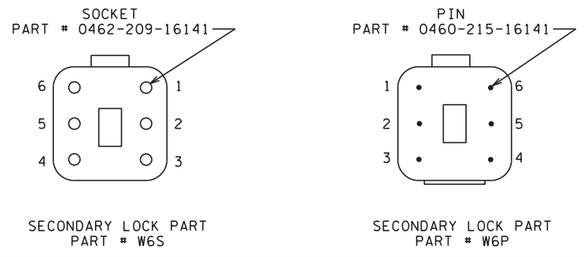


6-POSITION CONNECTOR

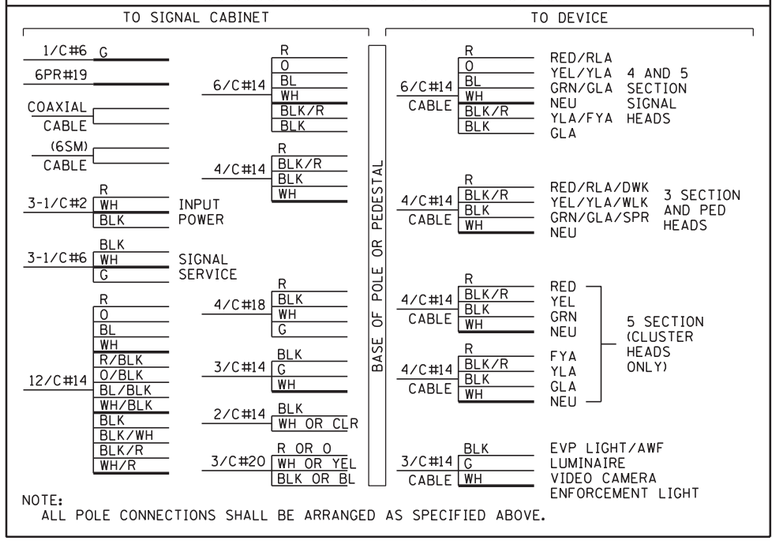
(BACK VIEW)



(FRONT VIEW)



CONDUCTOR COLOR CODE (14 GAUGE)



NOTE:
ALL POLE CONNECTIONS SHALL BE ARRANGED AS SPECIFIED ABOVE.

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

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

4 Position DT Connector

(Used with 3 Conductor Cable Only) (EVP LHT/LUM/AWF/ VID CAM/ENF LHT)

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

4 Position DT Connectors

(Use Two Connectors for 5 Section FYA Cluster Heads)

12 Conductor Wire to Control Cabinet	Connector pin #	4 Conductor to Signal Indication	Signal Indication
R	1	R	RED
O	2	BLK/R	YEL
BL	3	BLK	GRN
WH	4	WH	NEU
R/BLK	1	R	FYA
O/BLK	2	BLK/R	YLA
BL/BLK	3	BLK	GLA
WH/BLK	4	WH	NEU

6 Position DT Connector (4 and 5 Section Heads)

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

WIRE COLOR CODE KEY

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

WIRE SPECIFICATION CHART

Type	Name	Specification Number
1/C#2	Power Conductors	3815.2B.1
1/C#6	Power Conductors	3815.2B.1
1/C#6 INS.GR.	Grounding Conductors	3815.2B.5
2/C#14	Loop Detector Lead-In Cable	3815.2C.4
3/C#14	Signal Control Cable	3815.2C.3
4/C#14	Signal Control Cable	3815.2C.3
6/C#14	Signal Control Cable	3815.2C.3
12/C#14	Signal Control Cable	3815.2C.3
6PR#19	Telephone Cables Outdoor	3815.2C.6.b
3/C#20	EVP Detector Cable	3815.2C.5

NOTES:

1. DT04-P RECEPTACLE SHALL BE TERMINATED TO THE WIRING HARNESS RUNNING FROM THE BASE/JUNCTION BOX OF THE POLE TO SIGNAL INDICATIONS.
2. DT06-_S PLUG SHALL BE TERMINATED TO THE CABLES RUNNING FROM THE TRAFFIC SIGNAL CABINET TO THE BASE/JUNCTION BOX OF THE POLE.
3. THERE SHALL BE A MINIMUM OF 24 INCHES OF SLACK ON EACH CABLE IN EVERY POLE BASE /JUNCTION BOX.
4. STRIP A MAXIMUM OF 6 INCHES OF THE OUTER JACKET OF EACH SIGNAL CABLE.
5. STRIP 0.250 INCHES OF INSULATION FROM EACH INDIVIDUAL CONDUCTOR.
6. CRIMP PINS OR SOCKETS USING RATCHETING TYPE CRIMPING TOOL HDT-48-00. NO OTHER CRIMPING TOOL WILL BE ALLOWED.
7. WIRES MUST BE TERMINATED AS DETAILED IN TABLES DEPENDING ON WIRE COUNT.
8. ANY UNUSED PIN MUST HAVE A SEALING PLUG PLACED IN BOTH THE PLUG & RECEPTACLE (PART # 114017).
9. LABEL EACH HALF OF THE CONNECTOR (PLUG AND RECEPTACLE) WITH THE DEVICE DESIGNATION (AS INDICATED IN THE WIRING DIAGRAM) USING A PERMANENT BLACK MARKER.

FILE: S:\KO\MN\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgl1.dgn
MODEL: SGL4

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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.
Certified By: _____ (Licensed Professional Engineer) Lic. No. 22457
Printed Name: JOHN M. GRAY Date: 06/29/2017

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3535 VADNAIS CENTER DR.
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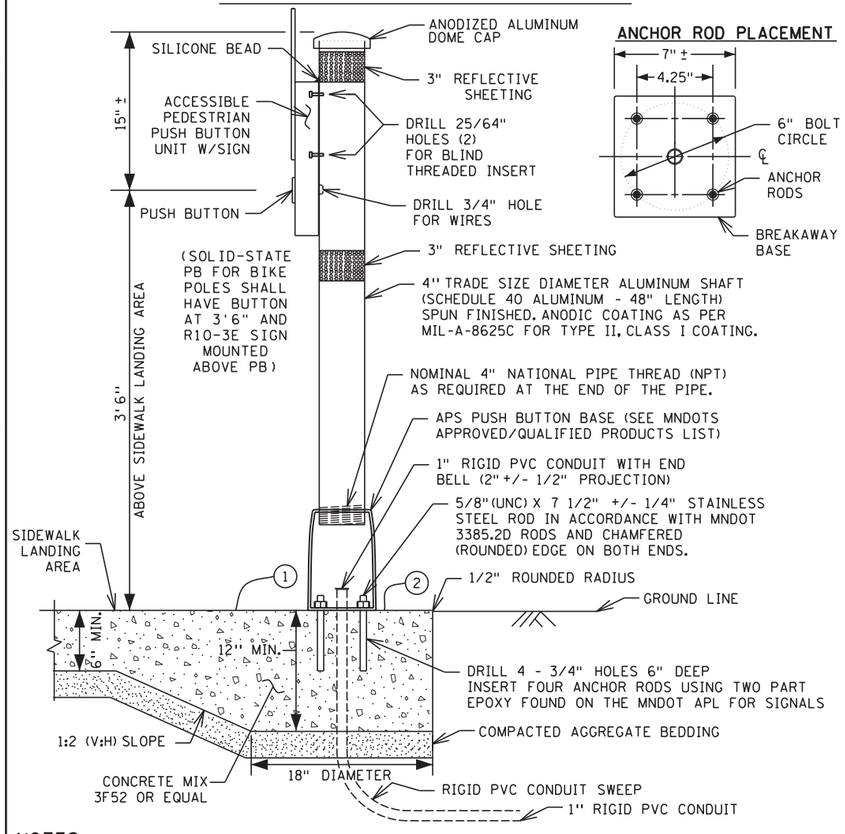
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM WIRING CONNECTOR DETAIL

T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL4 OF SGL11
300/310

APS/BIKE PUSH BUTTON STATION



NOTES:

PLACEMENT AND ORIENTATION OF THE PUSH BUTTON STATION IS CRITICAL. MOUNT THE BUTTON SO THAT THE FACE IS PARALLEL WITH THE ASSOCIATED CROSSWALK. SCREW IN SHAFT TO A TIGHTENED POSITION BEFORE MOUNTING ACCESSIBLE PEDESTRIAN PUSH BUTTON UNIT TO THE SHAFT.

ORIENT ACCESS OPENING ON THE BREAKAWAY PEDESTAL DIRECTLY BELOW THE APS BUTTON.

PLUMB THE PUSH BUTTON STATION WITH LEVELING SHIMS IN ACCORDANCE WITH STANDARD PLATE 8129.

INSTALL BLIND THREADED INSERTS USING MANUFACTURER'S SPECIFIC INSERTION TOOL.

USE ZINC PLATED STEEL 1/4 - 20 UNC BLIND THREADED INSERTS SUITABLE FOR MOUNTING ON SURFACE WALL THICKNESS OF .337. APPROVED BLIND INSERTS ARE LISTED ON MNDOT'S APPROVED/QUALITY PRODUCTS LIST WEBSITE FOR TRAFFIC SIGNALS.

USE APS 1/4 - 20 STAINLESS STEEL MOUNTING BOLTS. APPLY BRUSH ON ANTI SEIZE COMPOUND TO BOLTS PRIOR TO ASSEMBLY.

APPLY A BEAD OF 100% SILICONE SEALANT ALONG THE TOP OF THE PUSH BUTTON UNIT WHERE IT COMES IN CONTACT WITH THE 4" SHAFT.

USE WHITE REFLECTIVE SHEETING AT INTERSECTION CORNERS AND YELLOW REFLECTIVE SHEETING IN CENTER MEDIANS. APPROVED TUBE DELINEATOR SHEETING IS LISTED ON MNDOT'S APPROVED/QUALIFIED PRODUCTS LIST WEBSITE FOR SIGNING.

AN 18" X 6" FIBER FORMING TUBE MAY BE USED FOR THE LOWER HALF OF THE FOUNDATION WHEN CONDITIONS DO NOT ALLOW FOR THE 18" X 6" HOLE TO STAND OPEN.

(1) THE PUSH BUTTON STATION FOUNDATION IS MONOLITHIC (POURED AT ONE TIME) WITH THE SIDEWALK. PROVIDE A 1:2 (V:H) SLOPE GRADE WHERE THE 6" MIN SIDEWALK DEPTH TRANSITIONS TO THE 12" MIN FOUNDATION DEPTH. MAINTAIN THE COMPACTED AGGREGATE BEDDING AND THICKNESS USED FOR THE SIDEWALK THROUGHOUT THE SLOPE AND FOUNDATION GRADING. PROVIDE 1:2 (V:H) SLOPE GRADING 360 DEGREES FOR THE TRANSITION FROM THE SIDEWALK TO THE FOUNDATION WHEN THE FOUNDATION IS NOT LOCATED NEAR EDGE OF SIDEWALK AND IS SURROUNDED BY CONCRETE WALK.

(2) ENSURE CONCRETE CONTROL JOINTS AND EDGE OF CONCRETE WALK ARE A MINIMUM 9" FROM THE CENTER OF THE PUSH BUTTON FOUNDATION.

TYPICAL APS PEDESTRIAN PUSH BUTTON LOCATION

THIS IS A GENERAL DETAIL INTENDED TO SHOW THE REQUIREMENTS OF APS PUSH BUTTON LOCATION. FOR PROJECT SPECIFIC INFORMATION REGARDING PEDESTRIAN RAMP LAYOUT AND PUSH BUTTON LOCATIONS, SEE THE PLAN.

SUPPLEMENTAL GUIDANCE FOR CONSTRUCTING COMPLIANT APS PUSH BUTTONS:

(1) THE FACE OF THE BUTTON SHALL BE PARALLEL WITH THE OUTSIDE EDGE OF CROSSWALK.

(2) A MINIMUM 4 FT X 4 FT LANDING AREA SHALL BE PROVIDED ADJACENT TO EACH BUTTON, WITH A 2 PERCENT MAXIMUM SLOPE IN ALL DIRECTIONS.

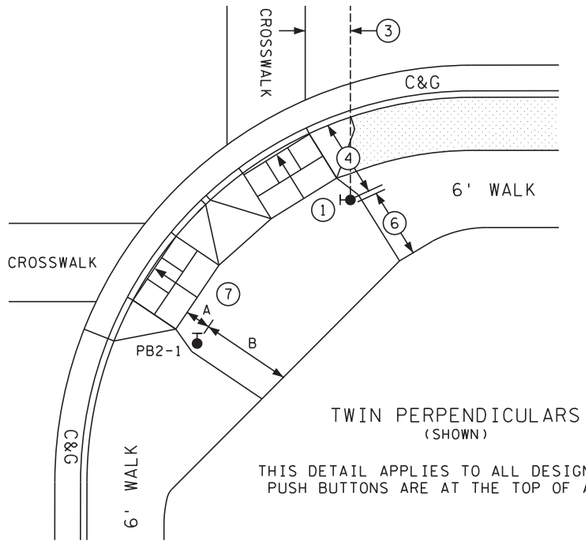
(3) BUTTONS SHALL BE WITHIN 5 FT OF THE OUTSIDE EDGE OF THE CROSSWALK.

(4) BUTTONS SHALL BE BETWEEN 1.5 FT AND 10 FT FROM THE BACK OF CURB OR EDGE OF ROADWAY, MEASURED IN THE DIRECTION OF TRAVEL. STANDALONE PUSH BUTTON STATIONS SHOULD BE 4' MINIMUM FROM THE BACK OF CURB TO AVOID KNOCKDOWNS.

(5) BUTTONS SHALL BE AT LEAST 10 FT APART.

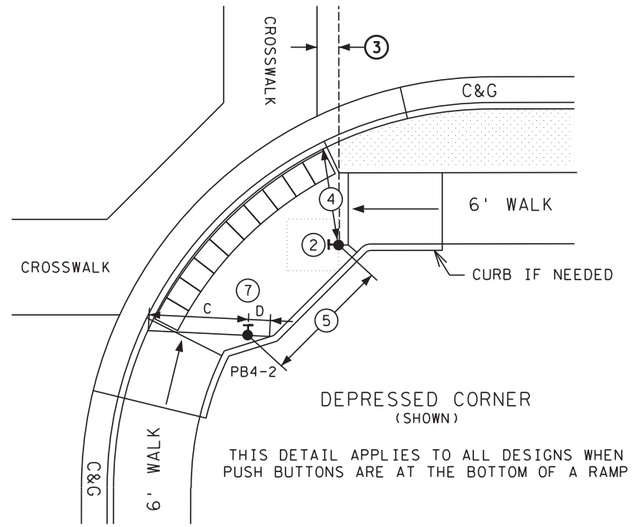
(6) PROVIDE A MAINTENANCE ACCESS ROUTE (MAR) WHEREVER POSSIBLE FOR SNOW REMOVAL PURPOSES. A MAR REQUIRES A 6 FT MINIMUM CLEAR DISTANCE BETWEEN A PUSH BUTTON AND ANY OBSTRUCTIONS, INCLUDING BUILDINGS, V-CURB, ELECTRICAL FOUNDATIONS, SIGNAL CABINETS, OR ANOTHER PUSH BUTTON.

(7) BUTTON SHOULD BE 2 FT MINIMUM FROM RAMP GRADE BREAK AND BACK OF WALK.



TWIN PERPENDICULARS
(SHOWN)

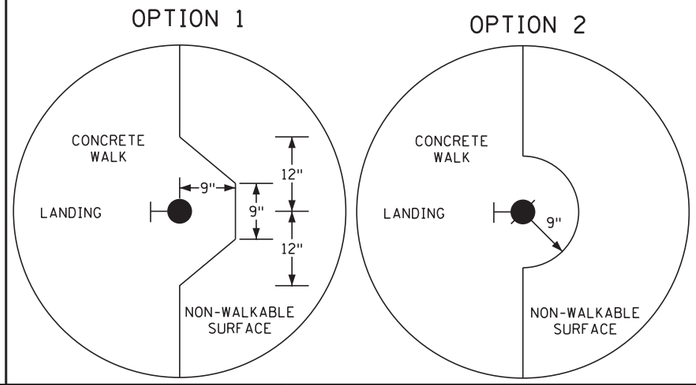
THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE TOP OF A RAMP



DEPRESSED CORNER
(SHOWN)

THIS DETAIL APPLIES TO ALL DESIGNS WHEN PUSH BUTTONS ARE AT THE BOTTOM OF A RAMP

CONTRACTOR MUST USE OPTION 1 OR 2 WHEN THE APS PUSH BUTTON IS SHOWN AT THE EDGE OF WALK. OPTION USED (OR SELECTED) MUST BE THE SAME THROUGHOUT THE ENTIRE PROJECT.



SIGNAL CONTROL POINTS			DISTANCE TO FRONT OF LANDING (FT)	DISTANCE TO BACK OF LANDING (FT)
SIGNAL NO.	X	Y		
PB2-1	-	-	A	B
PB4-2	-	-	C	D

A - DISTANCE MEASURED FROM THE PUSH BUTTON TO THE FRONT OF LANDING/TOP OF RAMP

B - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE BACK OF LANDING/EDGE OF WALK

C - CLEAR DISTANCE MEASURED FROM THE PUSH BUTTON TO THE OUTSIDE EDGE OF DOMES IN THE DIRECTION OF TRAVEL

D - CLEAR DISTANCE FROM THE PUSH BUTTON TO THE BACK OF LANDING MEASURED IN THE OPPOSITE DIRECTION OF TRAVEL

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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.

Certified By: _____ (Licensed Professional Engineer) Lic. No. 22457

Printed Name: JOHN M. GRAY Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM
APS/BIKE PUSH BUTTON DETAILS
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL5 OF SGL11

301 / 310

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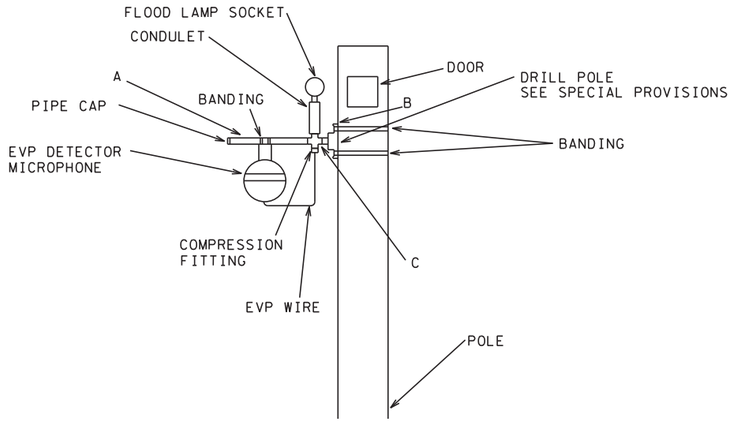
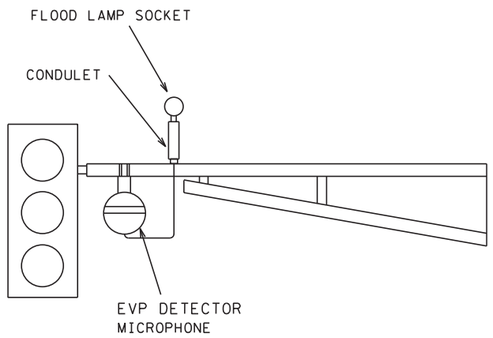


NOTE:
- *NOT TO SCALE
- *DRILL POLE BETWEEN UPPER CHORD AND LOWER CHORD OF MASTARM
- *BRACKETS AND FITTINGS AS SHOWN IN STANDARD PLATE 8110 TRAFFIC SIGNAL BRACKETING:
  - A-1*" IRON PIPE
  - B-MOUNTING BRACKET
  - C-CROSS FITTING

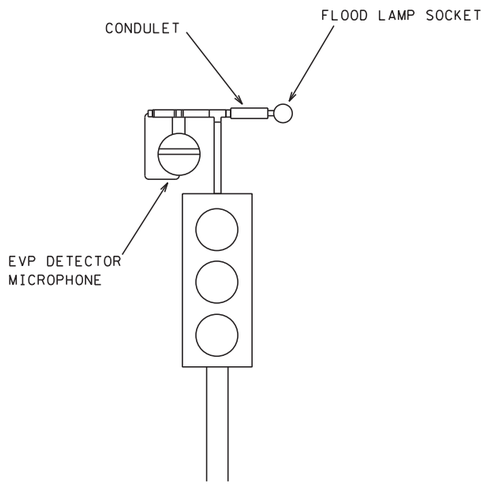
EVP DETECTOR AND LIGHT MOUNTING DETAIL ON POLE

EVP DETAIL 1



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON MAST ARM

EVP DETAIL 2



EVP DETECTOR AND LIGHT MOUNTING DETAIL ON PEDESTAL

EVP DETAIL 3

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DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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Printed Name: JOHN M. GRAY Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM
SIREN ACTIVATED EVP DETAILS
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL6 OF SGL11
302 / 310

SIGNS FOR TRAFFIC SIGNAL SYSTEM
SIGN PANELS - TYPE D (SIGNALS) (F & I)

SIGN PANEL	POLE NO.	A (FT)	B (FT)	SIZE (IN)	MOUNTING BRACKET QUANTITY	MOUNTING BRACKET SPACING (1)	AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
D-1	1	-	13'	132 X 48	5	---	44.00	1	TH 29 W/LEFT ARROW, TH 28 W/UP ARROW, TH 104 W/RIGHT ARROW
D-2	1	-	26'	96 X 24	4	---	16.00	1	FRANKLIN ST
D-3	2	-	10'	132 X 48	5	---	44.00	1	TH 28 W/DBL ARROW, TH 104 W/UP ARROW, TH 29 W/RIGHT ARROW
D-4	2	-	24'	120 X 24	4	---	20.00	1	MINNESOTA AVE
D-5	3	-	13'	132 X 54	5	---	49.50	1	TH 104 W/LEFT ARROW, TH 28 W/UP ARROW, TH 29 W/THRU-RIGHT ARROW
D-6	3	-	26'	96 X 24	4	---	16.00	1	FRANKLIN ST
D-7	4	-	13'	84 X 54	4	---	31.50	1	TH 29 W/LEFT-THRU ARROW, TH 28 W/DBL ARROW
D-8	4	-	24'	120 X 24	4	---	20.00	1	MINNESOTA AVE
TOTAL QUANTITIES							241.00	8	

(1) = SPACING BETWEEN STIFFENERS SHALL NOT EXCEED 36 INCHES AND SHALL BE UNIFORMLY SPACED.
SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE 7/06/2007) FOR BRACKET SPACING REQUIREMENTS.

SIGNS FOR TRAFFIC SIGNAL SYSTEM
SIGN PANELS - TYPE C (SIGNALS) (F & I)

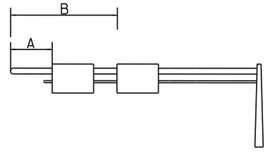
SIGN PANEL	POLE NO.	A (FT)	B (FT)	SIZE (IN)	MOUNTING BRACKET QUANTITY	MOUNTING BRACKET SPACING (1)	AREA/SIGN (SQ. FT.)	NO. REQ.	PANEL LEGEND
R9-5	1, 3	-	-	12 X 18	SEE NOTE 8	---	1.50	2	BIKES USE PED SIGNAL
R10-12	2, 4	1'	-	36 X 48	2	---	12.00	2	LEFT TURN YIELD ON GREEN
R10-X12	1, 3	1'	-	42 X 48	2	---	14.00	2	LEFT TURN YIELD ON FLASHING YELLOW ARROW
R10-3E	-	-	-	9 X 15	-	---	0.94	4	PED INSTRUCTION SIGN (ON BIKE PB STATIONS)
TOTAL QUANTITIES							58.76	10	

NOTE: ALL DIMENSIONS ARE SHOWN IN INCHES UNLESS OTHERWISE NOTED.

OVERLAYS

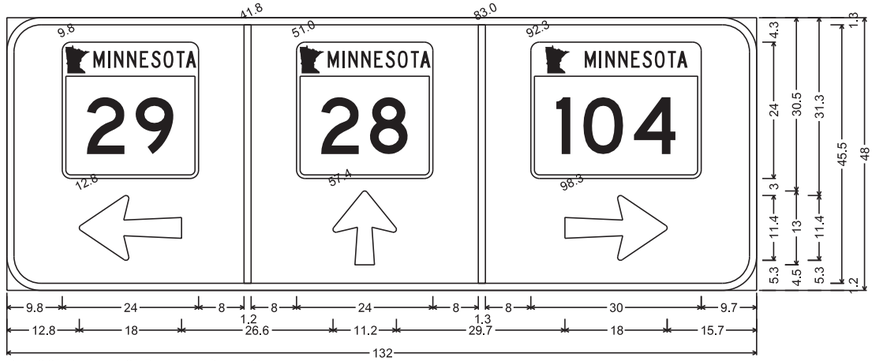
CODE NO.	QUANTITY	SIZE (IN)	LEGEND	SQ.FT. PER OVERLAY
M1-5B	4	24 X 24	MINN HWY 28	4.00
M1-5B	4	24 X 24	MINN HWY 29	4.00
M1-5B	3	30 X 24	MINN HWY 104	5.00

MAST ARM SIGN LOCATION

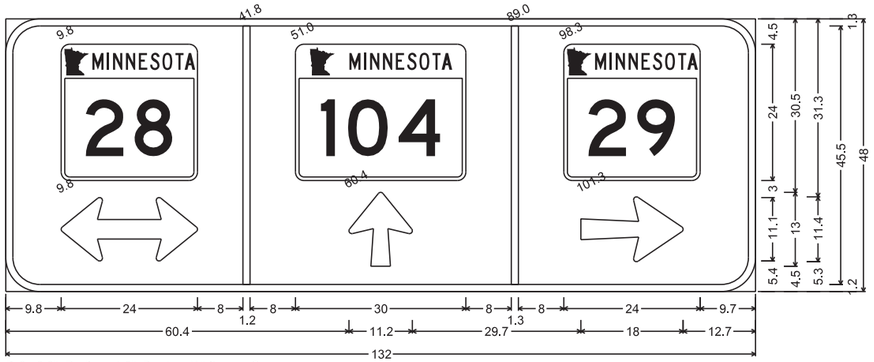


SIGNING NOTES:

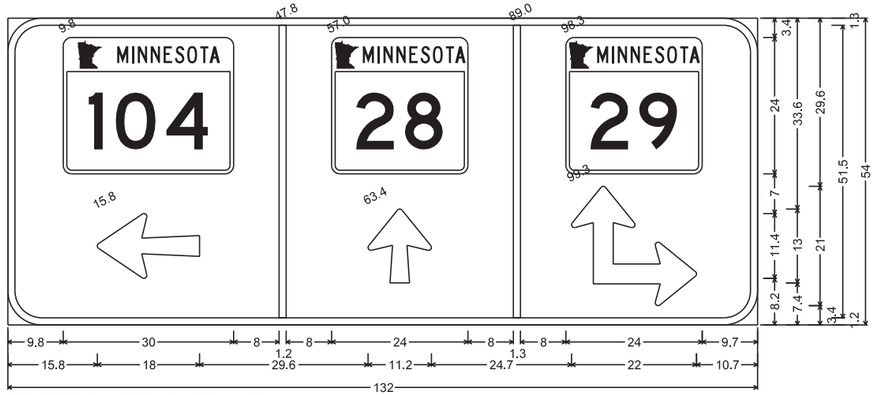
1) COLOR FOR ALL TYPE D SIGNS SHALL BE WHITE LEGEND AND BORDER ON GREEN BACKGROUND, FULLY REFLECTORIZED.
2) CORNERS EXTENDING BEYOND THE BORDER SHALL NOT BE TRIMMED.
3) CORNERS OF STANDARD SIGN PANELS WITH MARGINS SHALL BE TRIMMED.
4) SEE STANDARD SIGNS MANUAL FOR ARROW AND OVERLAY DETAILS.
5) SEE STANDARD SIGNS MANUAL FOR DETAILED DRAWINGS OF TYPE C SIGN PANELS.
6) FURNISHING AND INSTALLING NEW TYPE C AND TYPE D SIGN PANELS FOR THE NEW TRAFFIC SIGNAL SYSTEM SHALL BE INCLUDED AS PART OF THE PAY ITEM FOR ITEM NO. 2565 (TRAFFIC CONTROL SIGNAL SYSTEM).
7) ALL NEW MAST ARM MOUNTED SIGNS SHALL BE FABRICATED USING TYPE XI SHEETING. ALL NEW MAST ARM POLE MOUNTED SIGNS SHALL BE FABRICATED USING HIP SHEETING MEETING ASTM D4956-04 FOR TYPES III AND IV.
8) SIGN PANELS DENOTED BY THIS NOTE SHALL BE PLACED ON TRAFFIC SIGNAL MAST ARM POLE.
9) FOR STRUCTURAL DETAILS OF MAST ARM MOUNTED SIGNS, SEE STANDARD SIGNS MANUAL, PAGE 105A (REVISION DATE: 7/06/07), AND SPECIAL PROVISIONS.



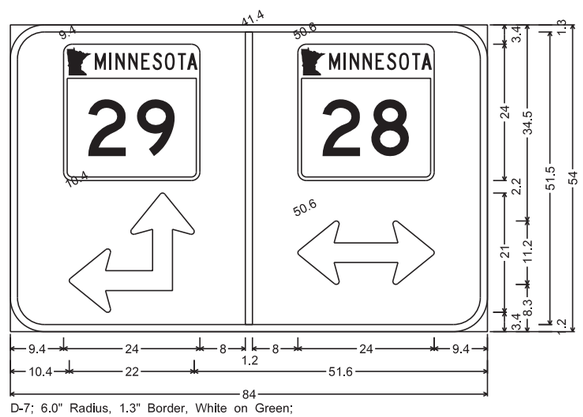
D-1; 6.0" Radius, 1.3" Border, White on Green;
Arrow 14 - 18.0" 180°; Arrow 5 - 13.0" 90°; Arrow 14 - 18.0" 0°;



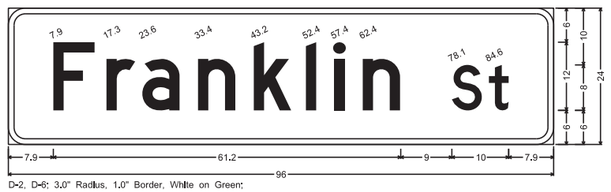
D-3; 6.0" Radius, 1.3" Border, White on Green;
Double Headed Arrow 5 - 24.0" 0°; Arrow 5 - 13.0" 90°; Arrow 14 - 18.0" 0°;



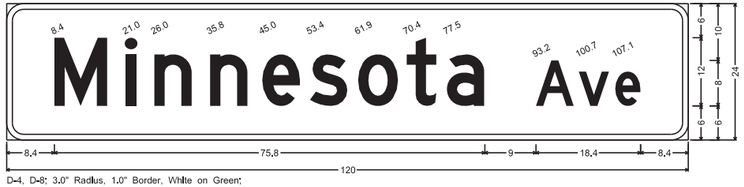
D-5; 6.0" Radius, 1.3" Border, White on Green;
Arrow 14 - 18.0" 180°; Arrow 5 - 13.0" 90°; 90 Deg Double Headed Arrow 22.0" X 21.0";



D-7; 6.0" Radius, 1.3" Border, White on Green;
90 Deg Double Headed Arrow 22.0" X 21.0";
Double Headed Arrow 5 - 24.0" 0°;



D-2, D-6; 3.0" Radius, 1.0" Border, White on Green;
[Franklin St] D:



D-4, D-8; 3.0" Radius, 1.0" Border, White on Green;
[Minnesota Ave] D:

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM
SIGNAL SIGNING DETAILS
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL7 OF SGL11
303 / 310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\C0610332_sgl1.dgn
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6/30/2017 7:59:36 AM

NOTES:

1. SEE SPECIAL PROVISIONS FOR STATE FURNISHED MATERIALS.
2. REFER TO "FOR INFORMATION ONLY" SHEETS FOR INPLACE SIGNAL COMPONENTS.
3. THE EXACT LOCATION OF HANDHOLES, SIGNAL POLES, LOOP DETECTORS, EQUIPMENT PAD, AND PUSH BUTTON STATIONS SHALL BE VERIFIED IN THE FIELD BY MNDOT TRAFFIC OFFICE PERSONNEL.
4. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CONNECTION OF THE POWER FOR THE TRAFFIC SIGNAL SYSTEM.
5. FOR TYPE C AND TYPE D SIGNS SEE DETAIL SHEET. ALL SIGNAL POLE AND MAST ARM MOUNTED SIGNS REQUIRED ARE INCIDENTAL.
6. SEE ELSEWHERE IN COMPLETE PLAN SET FOR PAVEMENT MARKINGS (INCLUDED AS PART OF SEPARATE PAY ITEM FOR EACH APPLICABLE PAVEMENT MARKING ITEM).
7. THIS PLAN SPECIFIES CONDUIT SIZES, TYPES, AND GENERAL LOCATIONS. THE EXACT LOCATIONS WILL BE DETERMINED IN THE FIELD. CONDUITS UNDER THE ROADWAYS REQUIRE BORING.
8. ALL NEW CONDUIT SHALL BE PVC SCHEDULE 80 OR HDPE SCHEDULE 80 AND CARRY 1/C#6 GREEN INSULATED GROUNDING CONDUCTOR AS SHOWN IN PLANS.
9. ITEMS DENOTED WITH AN (*) ARE INCLUDED IN PAYMENT FOR THE EVP SYSTEM PAY ITEM.
10. SEE DETAILS AND SPECIAL PROVISIONS FOR FURTHER INFORMATION REGARDING SIREN-ACTIVATED (SONIC) EVP MATERIALS AND ELECTRICAL EQUIPMENT TO BE PROVIDED, INSTALLED, AND MADE OPERATIONAL BY CONTRACTOR.

LOOP DETECTOR CHART		
NUMBER	SIZE (FT)	LOCATION
D1-1, D5-1	2-6X6	20 & 50
D1-2, D5-2	2-6X6	5 & 35
D2-1	6X6	120
D4-1	6X6	110
D4-2, D4-3	2-6X6	5 & 20
D6-1	6X6	120
D8-1	6X6	110
D8-2, D8-3	2-6X6	0 & 15

- ALL LOOP DETECTORS SHALL BE PVC.
- LOCATION = DISTANCE FROM CROSSWALK TO FRONT OF LOOP DETECTOR IN FEET.

40
SCALE IN FEET

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB6-2)
EXTEND INTO HH 8:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB6-1)
EXTEND INTO HH 10:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB4-1)
EXTEND INTO HH 7:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

BIKE PB STATION (SEE DETAILS)
1-SOLID-STATE PB & SIGN (R10-3e) (PB6-3)
EXTEND INTO HH 10:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

BIKE PB STATION (SEE DETAILS)
1-SOLID-STATE PB & SIGN (R10-3e) (PB6-4)
EXTEND INTO HH 7:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB8-2)
EXTEND INTO HH 10:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB2-1)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB4-2)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

BIKE PB STATION (SEE DETAILS)
1-SOLID-STATE PB & SIGN (R10-3e) (PB2-3)
EXTEND INTO HH 5:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

BIKE PB STATION (SEE DETAILS)
1-SOLID-STATE PB & SIGN (R10-3e) (PB2-4)
EXTEND INTO HH 4:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (RT ARROW) (PB2-2)
EXTEND INTO HH 2:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

APS PUSH BUTTON STATION (SEE DETAILS)
1-APS PUSH BUTTON & SIGN (LT ARROW) (PB8-1)
EXTEND INTO HH 1:
1" CONDUIT
1-2/C#14
1-1/C#6 INS. GR.

(B) SOP-IN-PLACE WOOD POLE
2" CONDUIT RISER & WEATHERHEAD
3-1/C#0
2" CONDUIT INTO HH 14:
3-1/C#0

(A) EQUIPMENT PAD (SEE DETAIL SHEET)
SIGNAL SERVICE CABINET (SSB-NO BATTERIES)
CONTROLLER AND CABINET (STATE FURNISHED)

CONTROLLER CABINET TO HH 1:
4" CONDUIT 3-12/C#14
(*)2-3/C#14
5-2/C#14
1-1/C#6 INS. GR.
4" CONDUIT 2-12/C#14
1-6/C#14
(*)2-3/C#14
6-2/C#14

CONTROLLER CABINET TO HH 4:
4" CONDUIT 2-12/C#14
1-6/C#14
(*)2-3/C#14
6-2/C#14
1-1/C#6 INS. GR.
4" CONDUIT 3-12/C#14
(*)2-3/C#14
7-2/C#14

2-2" AND 1-3" CONDUIT STUBBED OUT FROM CONTROLLER CABINET (CAP BOTH ENDS)
3/4" CONDUIT STUBBED OUT FROM CONTROLLER CABINET (FOR TELEPHONE LINE BY OTHERS)

CONTROLLER CABINET TO SERVICE CABINET:
2" CONDUIT
2-1/C#6
1-1/C#6 INS. GR.

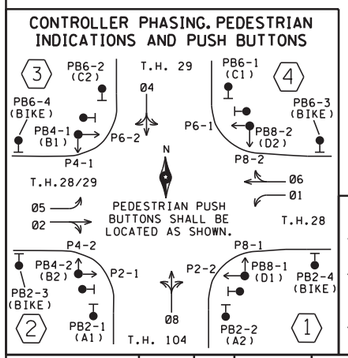
CONTROLLER CABINET TO SERVICE CABINET (COMMS):
2" CONDUIT
1-6 PR. #19

SERVICE CABINET TO HH 12:
2" CONDUIT
3-1/C#0

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

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

CONTROLLER PHASING, PEDESTRIAN INDICATIONS AND PUSH BUTTONS



SIGNAL SYSTEM OPERATIONS:

- THE SIGNAL SYSTEM FLASH MODE SHALL BE ALL RED.
- NORMAL OPERATION SHALL BE 6 PHASE, WITH PHASES 1 AND 5 BEING FLASHING YELLOW ARROW BY TIME OF DAY.
- PHASES 2 AND 6 SHALL BE ON VEHICLE RECALL.

SEE NEXT SHEET FOR DETAILED POLE NOTES.

SYSTEM ID: 20486
METER ADDRESS: SE CORNER T.H. 28/29
T.E. 1630

SIGNAL HEAD CHART				
SIGNAL FACES	R	Y	FYA	G
1-1, 1-2	←	←	←	←
2-1, 2-2	●	●		●
4-1, 4-2, 4-3	●	●		●
5-1, 5-2	←	←	←	←
6-1, 6-2	●	●		●
8-1, 8-2, 8-3	●	●		●

-ALL SIGNAL INDICATIONS SHALL BE NEW 12" LED.
-ALL SIGNAL HEADS SHALL BE BLACK POLYCARBONATE WITH BACKGROUND SHIELDS.
-FYA DENOTES FLASHING YELLOW ARROW.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM INTERSECTION LAYOUT
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL8 OF SGL11
304/310

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_sgl1.dgn
MODEL: SGL8
6/30/2017 7:59:38 AM

(1) PA100 POLE FOUNDATION
TYPE PA100-A-35-X30-9 (DAVIT AT 0 DEG)
1-PAIR SWING AWAY HINGES
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 10'
2-ANGLE MOUNT SIGNALS AT 90 DEG, 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS
AT 90 DEG, 180 DEG
(*) 1-ONE WAY EVP DETECTOR (Ø6,1) AND LED
CONFIRMATORY LIGHT (Ø2,5)-OVERHEAD
LUMINAIRE-"GULL-WING" LED
1-R10-X12 SIGN ADJACENT TO HEAD 5-1
1-R9-5 SIGN (BIKES USE PED SIGNAL) AT 270 DEG
2-TYPE D SIGNS (D-1, 2) (SEE SIGN DETAILS)
EXTEND INTO HH 1:
3" CONDUIT
3-12/C#14
(*) 2-3/C#14
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

(2) PA100 POLE FOUNDATION
TYPE PA100-A-35-X30-9 (DAVIT AT 0 DEG)
1-PAIR SWING AWAY HINGES
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS AT 90 DEG, 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS
AT 90 DEG, 180 DEG
(*) 1-ONE WAY EVP DETECTOR (Ø8) AND LED
CONFIRMATORY LIGHT (Ø4)-OVERHEAD
LUMINAIRE-"GULL-WING" LED
1-R10-12 SIGN ADJACENT TO 4-2
2-TYPE D SIGNS (D-3, 4) (SEE SIGN DETAILS)
EXTEND INTO HH 5:
3" CONDUIT
2-12/C#14
1-6/C#14
(*) 2-3/C#14
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

(3) PA100 POLE FOUNDATION
TYPE PA100-A-35-X30-9 (DAVIT AT 0 DEG)
1-PAIR SWING AWAY HINGES
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
1-STRAIGHT MOUNT SIGNAL OVERHEAD AT 10'
2-ANGLE MOUNT SIGNALS AT 90 DEG, 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS
AT 90 DEG, 180 DEG
(*) 1-ONE WAY EVP DETECTOR (Ø2,5) AND LED
CONFIRMATORY LIGHT (Ø6,1)-OVERHEAD
LUMINAIRE-"GULL-WING" LED
1-R10-X12 SIGN ADJACENT TO HEAD 1-1
1-R9-5 SIGN (BIKES USE PED SIGNAL) AT 270 DEG
2-TYPE D SIGNS (D-5, 6) (SEE SIGN DETAILS)
EXTEND INTO HH 7:
3" CONDUIT
3-12/C#14
(*) 2-3/C#14
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

(4) PA100 POLE FOUNDATION
TYPE PA100-A-35-X30-9 (DAVIT AT 0 DEG)
1-PAIR SWING AWAY HINGES
1-ANGLE MOUNT SIGNAL OVERHEAD AT 0'
2-ANGLE MOUNT SIGNALS AT 90 DEG, 180 DEG
2-ANGLE MOUNT C.D. PED INDICATIONS
AT 90 DEG, 180 DEG
(*) 1-ONE WAY EVP DETECTOR (Ø4) AND LED
CONFIRMATORY LIGHT (Ø8)-OVERHEAD
LUMINAIRE-"GULL-WING" LED
1-R10-12 SIGN ADJACENT TO 8-2
2-TYPE D SIGNS (D-7, 8) (SEE SIGN DETAILS)
EXTEND INTO HH 10:
3" CONDUIT
2-12/C#14
1-6/C#14
(*) 2-3/C#14
1-3/C#14 (LUM)
1-1/C#6 INS. GR.

SYSTEM ID: 20486
METER ADDRESS: SE CORNER T.H. 28/29
T.E. 1630

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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.
Certified By: _____ Licensed Professional Engineer Lic. No. 22457
Printed Name: JOHN M. GRAY Date: 06/29/2017

SEH
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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM
DETAILED POLE NOTES
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL9 OF SGL11
305/310

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6/30/2017

CONTROLLER CABINET

LUMINAIRE 4 — TO LUM 6 — P6-1 P8-2 (8-1) — (5-2) (8-2) — 19 — 18 — SPARE (FOR FUTURE USE) — 20 — Ø8 EVP LIGHT (*) 21 — Ø4 EVP DETECTOR TO EVP HUB (*) 22 — 13 — INS. GR.

LUMINAIRE 1 — TO LUM 3 — P2-2 (2-2) — (5-1) (2-1) — 8 — 7 — P8-1 (4-3) — 9 — Ø2,5 EVP LIGHT (*) 10 — Ø6,1 EVP DETECTOR TO EVP HUB (*) 11 — 13 — INS. GR.

HH 10 — 28 — 13,23 — 13,24 — 13 — GR.RD. — 26 — 27 — D1-1 D1-2 — 6,13,18-28 — 13,25 — 25 PB6-3 TO PB BIKE PB STATION — 13

HH 1 — 13 — GR.RD. — 13-17 — 7-17 — 18-28 — 3,6 — TO SERVICE CABINET

24 PB6-1 TO PB APS PUSH BUTTON STATION — 13,24 — 13 — INS. GR.

12 PB8-1 TO PB APS PUSH BUTTON STATION — 13

23 PB8-2 TO PB APS PUSH BUTTON STATION — 13,23 — 13 — INS. GR.

HH 11 — 28 — 28 — D6-1

HH 2 — 15 — 16 — 17 — HH 3 — 17 — D8-2 D8-3 D8-1

14 PB2-2 TO PB APS PUSH BUTTON STATION — 13 — INS. GR.

RLA 5-1, YLA 5-1, GLA 5-1, NEU 5-1, SPR, FYLA 5-1, SPR, NEU, RED 2-1, YEL 2-1, GRN 2-1, NEU 2-1 — 7
RED 2-2, YEL 2-2, GRN 2-2, NEU 2-2, DWK P2-2, WLK P2-2, SPR, NEU P2-2, SPR, SPR, SPR, NEU — 8
RED 4-3, YEL 4-3, GRN 4-3, NEU 4-3, DWK P8-1, WLK P8-1, SPR, NEU P8-1, SPR, SPR, SPR, NEU — 9
(*) 10 02,5 EVP LT EQ.G. NEU
(*) 11 06,1 EVP DETECTOR
12 PB8-1 NEU
13 INS. GR.
14 PB2-2 NEU
15 D8-2
16 D8-3
17 D8-1
RLA 5-2, YLA 5-2, GLA 5-2, NEU 5-2, SPR, FYLA 5-2, SPR, NEU, RED 8-2, YEL 8-2, GRN 8-2, NEU 8-2 — 18
RED 8-1, YEL 8-1, GRN 8-1, NEU 8-1, DWK P8-2, WLK P8-2, SPR, NEU P8-2, DWK P6-1, WLK P6-1, SPR, NEU P6-1 — 19
SPR, SPR, SPR, NEU, SPR, SPR — 20

(*) 21 Ø8 EVP LT EQ.G. NEU
(*) 22 Ø4 EVP DETECTOR
23 PB8-2 NEU
24 PB6-1 NEU
25 PB6-3 NEU
26 D1-1
27 D1-2
28 D6-1
29 PB2-4 NEU
30 INS. GR.
RLA 1-2, YLA 1-2, GLA 1-2, NEU 1-2, SPR, FYLA 1-2, SPR, NEU, RED 4-2, YEL 4-2, GRN 4-2, NEU 4-2 — 31
RED 4-1, YEL 4-1, GRN 4-1, NEU 4-1, DWK P4-2, WLK P4-2, SPR, NEU P4-2, DWK P2-1, WLK P2-1, SPR, NEU P2-1 — 32
SPR, SPR, SPR, NEU, SPR, SPR — 33
(*) 34 Ø4 EVP LT EQ.G. NEU
(*) 35 Ø8 EVP DETECTOR
36 PB2-1 NEU
37 PB4-2 NEU
38 PB2-3 NEU
39 D5-1
40 D5-2
41 D2-1
RLA 1-1, YLA 1-1, GLA 1-1, NEU 1-1, SPR, FYLA 1-1, SPR, NEU, RED 6-1, YEL 6-1, GRN 6-1, NEU 6-1 — 42

RED 6-2, YEL 6-2, GRN 6-2, NEU 6-2, DWK P6-2, WLK P6-2, SPR, NEU P6-2, SPR, SPR, SPR, NEU — 43
RED 8-3, YEL 8-3, GRN 8-3, NEU 8-3, DWK P4-1, WLK P4-1, SPR, NEU P4-1, SPR, SPR, SPR, NEU — 44
(*) 45 06,1 EVP LT EQ.G. NEU
(*) 46 02,5 EVP DETECTOR
47 PB4-1 NEU
48 PB6-4 NEU
49 PB6-2 NEU
50 D4-2
51 D4-3
52 D4-1

6 PR #19 (COMMS) 53 — 53 — 53 — 6 PR #19 (COMMS)
SIGNAL SERVICE — 3-1/c#6 INS. GR. — 2 — 2 — 2 — 3-1/c#6 SIGNAL INS. GR. SERVICE
INPUT POWER — 3-1/c#0 — 1 — 1

LUMINAIRE 2 — TO LUM 4 — P2-1 P4-2 (4-1) — (1-2) (4-2) — 32 — 31 — SPARE (FOR FUTURE USE) — 33 — Ø4 EVP LIGHT (*) 34 — Ø8 EVP DETECTOR TO EVP HUB (*) 35 — 30 — INS. GR.

HH 6 — 41 — 41 — D2-1

BIKE PB STATION — PB2-4 TO PB — 29 — 30 — INS. GR.

HH 4 — 29-41 — 30 — GR.RD. — 42-52 — 4-5

HH 5 — 4,30-41 — 5,42-52 — 30 — GR.RD. — 39 — 40 — D5-1 D5-2 — 30,37 — 30,36 — 5,30,42-52

APS PB STATION — PB4-2 TO PB — 37 — 30,37 — INS. GR. — 30

PB2-1 TO PB APS PUSH BUTTON STATION — 36 — 30 — INS. GR.

BIKE PB STATION — PB2-3 TO PB — 38 — 30,38 — INS. GR. — 30

LUMINAIRE 3 — TO LUM 5 — (1-1) (6-1) — P6-2 (6-2) — 43 — 42 — P4-1 (8-3) — 44

SIGNAL SERVICE CABINET
LUMINAIRE 3 — 5
LUMINAIRE 2 — 4
4-5
LUMINAIRE 4 — 6
LUMINAIRE 1 — 3
3,6 — TO HH 1

Ø6,1 EVP LIGHT (*) 45 — TO EVP HUB Ø2,5 EVP DETECTOR (*) 46 — 30 — INS. GR.

HH 7 — 30 — GR.RD. — 30,49-52 — 5, 30, 42-52

BIKE PB STATION — PB6-4 TO PB — 48 — 30,48 — INS. GR. — 30

47 PB4-1 TO PB APS PUSH BUTTON STATION — 30 — INS. GR.

HH 13 — 1 — 1 — HH 12
HH 14 — 1 — 1
S.O.P.

HH 8 — 30,49-52 — 50 — 51 — 30,49 — D4-2 D4-3

HH 9 — 52 — 52 — D4-1

APS PUSH BUTTON STATION — PB6-2 TO PB — 49 — 30 — INS. GR.

NOTES:
1) LUMINAIRES ARE UNMETERED.
2) SIGNAL SYSTEM INCLUDES BATTERY BACK-UP SERVICE CABINET (NO BATTERIES OR UPS).
3) FOR CONDUCTOR COLOR CODE, SEE TRAFFIC SIGNAL POLE WIRING CONNECTOR DETAIL.
4) ITEMS DENOTED BY (*) ARE INCLUDED IN PAYMENT FOR EVP SYSTEM PAY ITEM.

SYSTEM ID: 20486
METER ADDRESS: SE CORNER T.H. 28/29
T.E. 1630

FILE: S:\KOVM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_sgll.dgn
MODEL: SGL10

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

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.
Certified By: _____ Licensed Professional Engineer — Lic. No. 22457
Printed Name: JOHN M. GRAY — Date: 06/29/2017

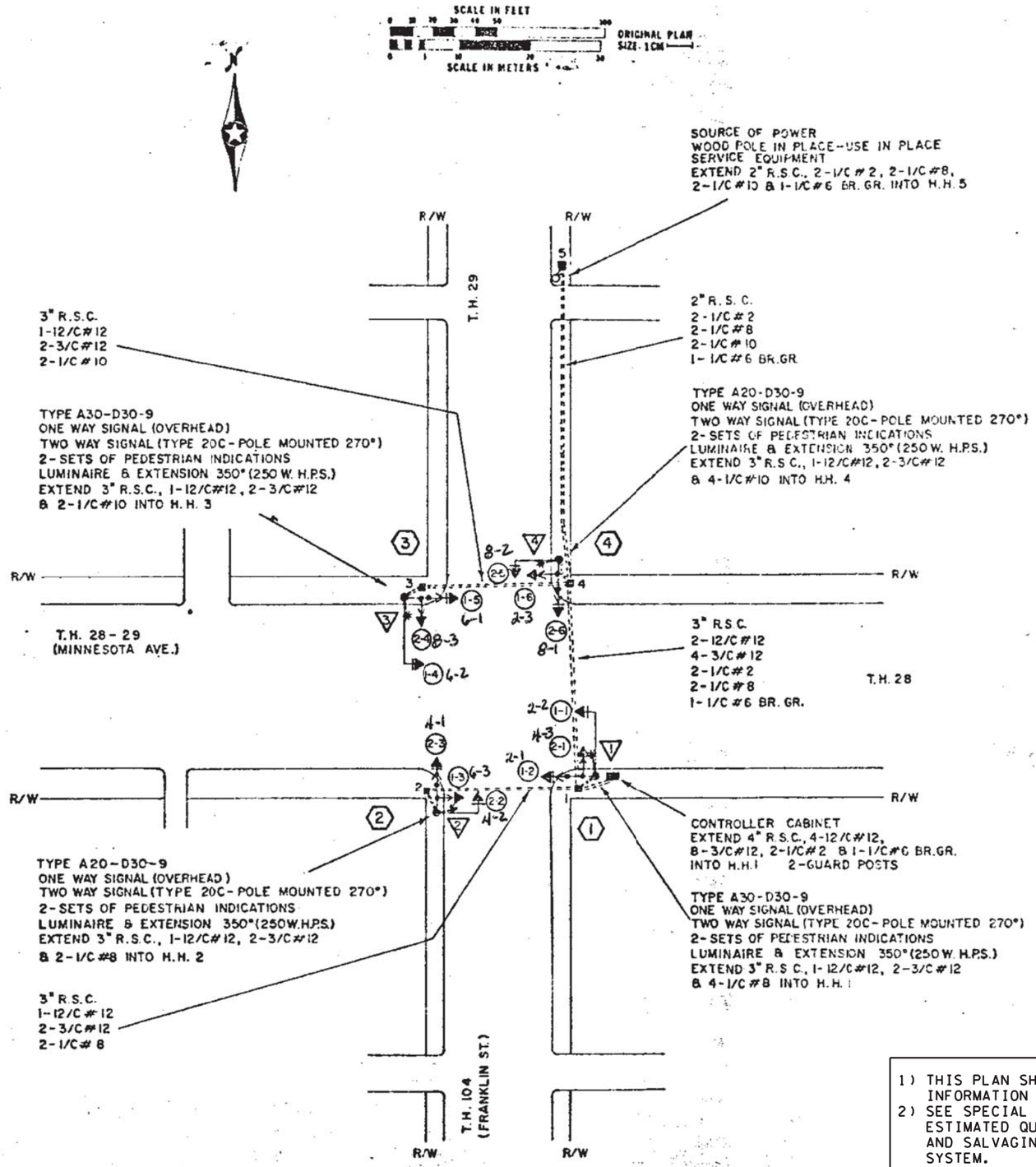
SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

TRAFFIC SIGNAL SYSTEM FIELD WIRING DIAGRAM

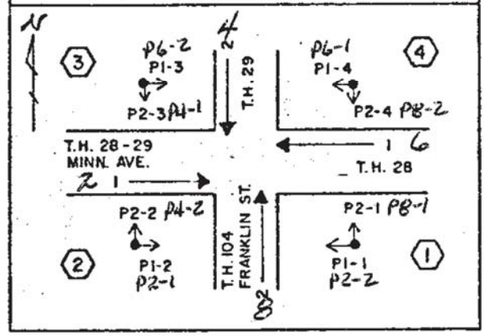
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL10 OF SGL11
306 / 310



SIGNAL INDICATION CHART						
	FACE	PHASE	FLASH	INDICATION SIZE R	INDICATION SIZE Y	INDICATION SIZE G
2-2	1-1	2	Y	12"	12"	12"
2-1	1-2	2	Y	12"	12"	12"
6-3	1-3	6	Y	12"	12"	12"
6-2	1-4	6	Y	12"	12"	12"
6-1	1-5	6	Y	12"	12"	12"
2-3	1-6	2	Y	12"	12"	12"
4-3	2-1	4	R	12"	12"	12"
4-2	2-2	4	R	12"	12"	12"
4-1	2-3	4	R	12"	12"	12"
8-3	2-4	8	R	12"	12"	12"
8-2	2-5	8	R	12"	12"	12"
8-1	2-6	8	R	12"	12"	12"

CONTROLLER PHASING AND PEDESTRIAN INDICATION LAYOUT



NOTES:

1. SEE UTILITY SHEET FOR STREET LIGHT POLE REMOVALS
2. ALL HANDHOLE COVERS SHALL BE TYPE LD - METAL FRAME AND COVER
3. REMOVE AND SALVAGE EXISTING SIGNAL SYSTEM
4. ALL CONDUIT TO BE INSTALLED BY TRENCHING METHOD
5. SEE SPECIAL PROVISIONS FOR STATE FURNISHED EQUIPMENT.

1) THIS PLAN SHEET IS BEING PROVIDED FOR INFORMATION PURPOSES ONLY.
2) SEE SPECIAL PROVISIONS AND STATEMENT OF ESTIMATED QUANTITIES REGARDING REMOVAL AND SALVAGING OF THIS IN-PLACE SIGNAL SYSTEM.

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: JMG				
CHECKED BY: HLR				

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
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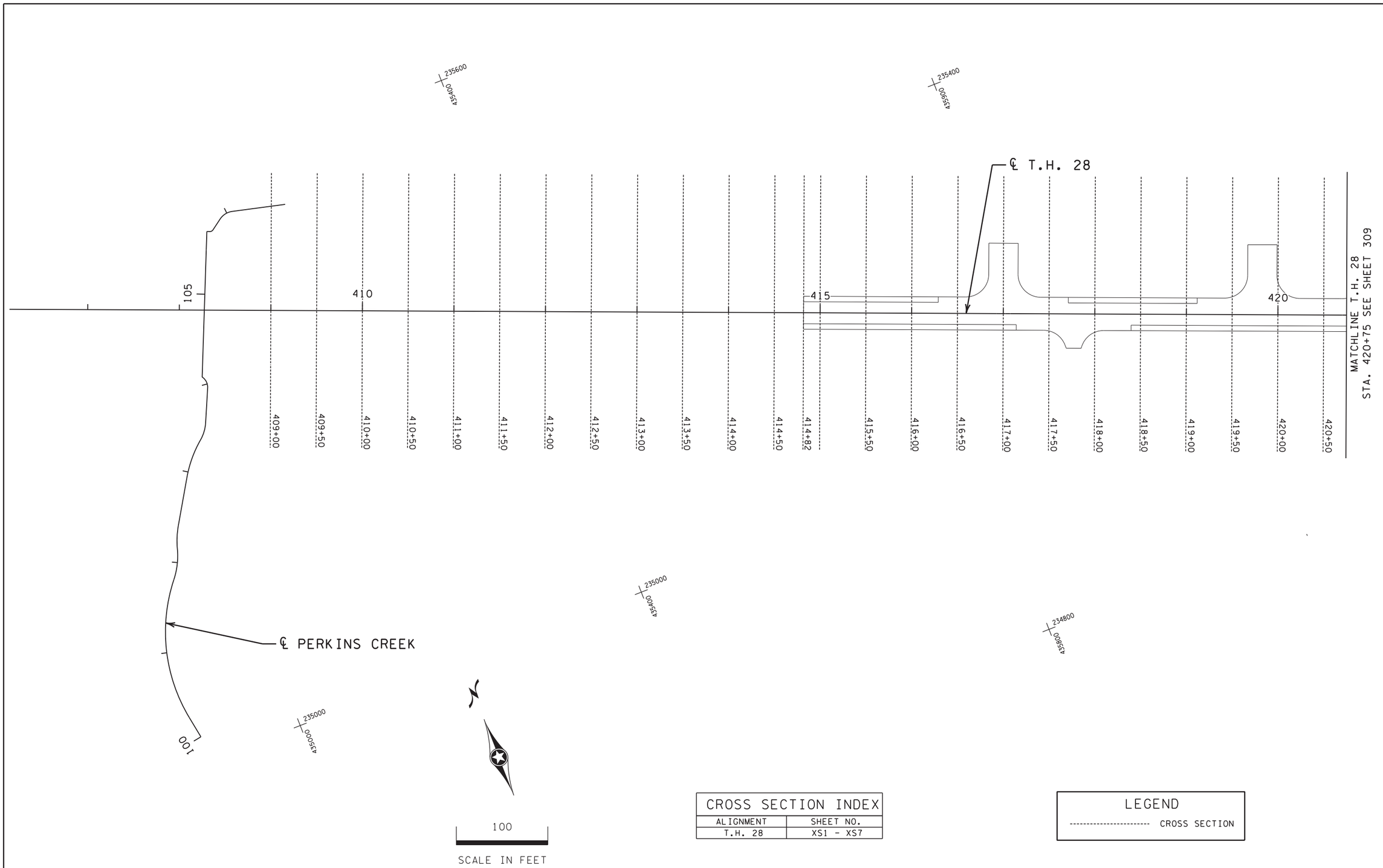
MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

INPLACE SIGNAL SYSTEM "FOR INFORMATION ONLY"
T.H. 28 AT T.H. 29/T.H. 104

FILE NO. MNT04-134590
SGL11 OF SGL11
307 / 310



CROSS SECTION INDEX	
ALIGNMENT	SHEET NO.
T.H. 28	XS1 - XS7

LEGEND

---------- CROSS SECTION

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

SEH
PHONE: (651)490-2000
3535 VADNAIS CENTER DR.
ST. PAUL, MN 55110

MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CROSS SECTION MATCHLINE LAYOUT

FILE NO. MNT04-134590

ML 1 OF ML 3

308 / 310

FILE: S:\KOM\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_mll.dgn
MODEL: ML1
6/30/2017 8:00:12 AM

8:00:12 AM

6/30/2017

MATCHLINE T.H. 28
STA. 420+75 SEE SHEET 308

421+00 421+50 422+00 422+50 423+00 423+50 424+00 424+50 425+00 425+50 426+00 426+50 427+00 427+50 428+00 428+50 429+00 429+50 430+00 430+43 431+00 431+50 432+00 432+50 433+00 433+50 434+00 434+50 435+00 435+50 436+00 436+50

℄ T.H. 28

425 430 435

11+50 11+25 11+00 10+75 10+50 10+25 10

℄ 6TH ST NW

2ND AVE NW

11+00 10+75 10+50 10+30 10

℄ 5TH ST NW

11+56 11+50 11+37 11+25 11+00 10+75 10+50 10+41 10

℄ 4TH ST NW

11+50 11+25 11+00 10+75 10+65 10+50 10+25 10+15 10+00 10

℄ MINNESOTA AVE

234600 4513300

234400 4513500

234000 4513000

MATCHLINE T.H. 28
STA. 436+75 SEE SHEET 310

N

100

SCALE IN FEET

CROSS SECTION INDEX

ALIGNMENT	SHEET NO.
T.H. 28	XS7 - XS15
6TH ST NW	XS46 - XS47
5TH ST NW	XS48
4TH ST NW	XS49- XS50
MINNESOTA AVE	XS51 - XS52

LEGEND

---------- CROSS SECTION

FILE: S:\KO\M\Mnt04\134590\5-final-dsgn\51-drawings\40-TransHwy\plnshts\CD610332_ml1.dgn
MODEL: ML2

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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.

Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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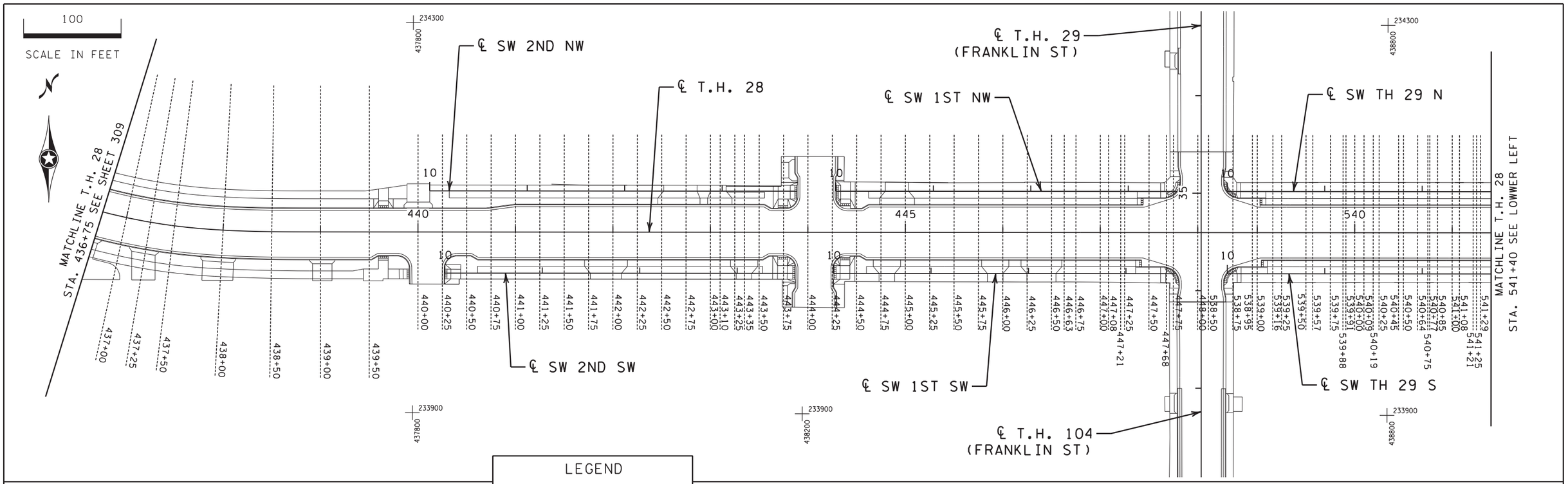
CITY OF GLENWOOD
T.H. 28 / T.H. 29 / T.H. 104
S.P. NO. 6103-32 (T.H. 28)

CROSS SECTION MATCHLINE LAYOUT

FILE NO. MNT04-134590
ML2 OF ML3
309 / 310

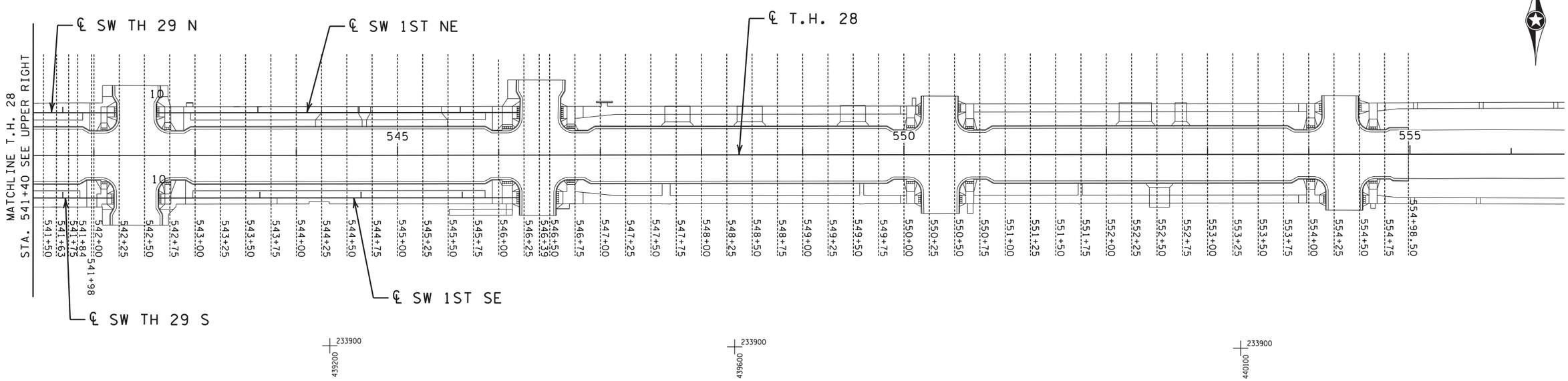


LEGEND

---------- CROSS SECTION

CROSS SECTION INDEX

ALIGNMENT	SHEET NO.
T.H. 28	XS15 - XS45



DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: MTT				
DESIGNER: RDH				
CHECKED BY: HLR				

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Certified By: Heather Redetzke Lic. No. 44267
Licensed Professional Engineer

Printed Name: HEATHER L. REDETZKE Date: 06/29/2017

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MINNESOTA DEPARTMENT OF TRANSPORTATION
CITY OF GLENWOOD

T.H. 28 / T.H. 29 / T.H. 104

S.P. NO. 6103-32 (T.H. 28)

CROSS SECTION MATCHLINE LAYOUT

FILE NO. MNT04-134590
ML 3 OF ML 3
310 / 310

FILE: S:\KO\MNT04\134590\5-final-dsgn\51-drawings\40-Transhwy\plnshts\CD610332_ml1.dgn
MODEL: ML3

8:00:12 AM 6/30/2017

STREET REMOVALS — AA

	STATION TO STATION	LOCATION	REMOVE CURB AND GUTTER	REMOVE BITUMINOUS PAVEMENT	REMOVE CONCRETE PAVEMENT	SAWING CONCRETE PAVEMENT (FULL DEPTH)	SAWING BITUMINOUS PAVEMENT (FULL DEPTH)	REMARKS
			LIN FT	SQ YD	SQ YD	LIN FT	LIN FT	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT		MH 47 TO MH48A		525				MINNESOTA AVE
	554+99 TO 558+30	18' LT TO 8' RT						
	554+99 TO 555+11	47' LT TO 51' LT	12			4	48	AFTER 4TH STREET
	555+18 TO 555+51	45' RT TO 49' RT	33			4		
	555+38 TO 555+48	47' LT TO 51' LT	10			4		
	555+65 TO 555+75	47' LT TO 51' LT	10			4		
	555+94 TO 556+03	46' RT TO 50' RT	10			4		
	555+97 TO 556+07	47' LT TO 51' LT	10			4		
	556+15 TO 556+38	47' LT TO 51' LT	23			4		
	556+45 TO 556+55	46' RT TO 50' RT	10			4		
	556+58 TO 556+79	47' LT TO 51' LT	21			4		
	557+19 TO 557+39	46' RT TO 50' RT	20			4		
	557+30 TO 557+52	47' LT TO 51' LT	22			4		
	558+13 TO 558+40	46' RT TO 50' RT	27			4	27	5TH ST NE
	558+30 TO 560+10	22' RT TO 26' LT						
	558+30 TO 558+63	52' LT TO 56' LT	30			4		
	559+33 TO 559+42	46' RT TO 50' RT	10			4		
	559+35 TO 559+45	47' LT TO 51' LT	10			4		
	559+76 TO 560+00	47' LT TO 51' LT					24	5TH ST SE
	560+00 TO 560+10	47' LT TO 51' LT	10				8	5TH ST SE
	560+10 TO 562+31	6' LT TO 10' RT						
	561+14 TO 561+24	10' RT TO 49' RT	10			4		
	561+20 TO 561+31	35' LT TO 51' LT	10		23	16		
	561+76 TO 561+85	10' RT TO 49' RT	10			4		
	562+07 TO 562+30	56' LT TO 56' LT					23	6TH ST NE
	562+30 TO 562+30	56' LT TO 24' RT					80	6TH ST NE
	SUBTOTAL		298	525	23	84	210	
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT								
	35+42 TO 35+66	23' LT TO 27' LT	24			4		START WORK @ FRANKLIN ST.
	35+78 TO 36+23	27' LT TO 31' LT	45			4		
	37+07 TO 37+24	27' LT TO 31' LT	17			4		
	37+20 TO 37+26	33' RT TO 37' RT	6			4		
	37+73 TO 38+10	69' LT TO 69' LT				4		1ST AVE NW
	37+80 TO 38+06	52' RT TO 52' RT				4		1ST AVE NE
	38+79 TO 38+99	27' LT TO 31' LT	20			4		
	39+04 TO 39+14	21' RT	10			4		
	39+45 TO 39+58	29' RT TO 33' RT	10					
	39+65 TO 39+65	22' LT TO 22' RT						END WORK @ FRANKLIN ST
	SUBTOTAL		132			32		
S.P. 6103-32								
	554+99 TO 558+30	18' LT TO 8' RT		970				
	554+99 TO 555+11	47' LT TO 51' LT		9				AFTER 4TH STREET
	555+18 TO 555+51	45' RT TO 49' RT		65				
	555+38 TO 555+48	47' LT TO 51' LT		8				
	555+65 TO 555+75	47' LT TO 51' LT		8				
	555+94 TO 556+03	46' RT TO 50' RT		20				
	555+97 TO 556+07	47' LT TO 51' LT		8				
	556+15 TO 556+38	47' LT TO 51' LT		19				
	556+45 TO 556+55	46' RT TO 50' RT		20				
	556+58 TO 556+79	47' LT TO 51' LT		17				
	557+19 TO 557+39	46' RT TO 50' RT		40				
	557+30 TO 557+52	47' LT TO 51' LT		18				
	558+13 TO 558+40	46' RT TO 50' RT		54				5TH ST NE
	558+30 TO 560+10	22' RT TO 26' LT		691				
	558+30 TO 558+63	52' LT TO 56' LT		54				
	559+33 TO 559+42	46' RT TO 50' RT		19				
	559+35 TO 559+45	47' LT TO 51' LT		15				
	560+10 TO 562+31	6' LT TO 10' RT		393				
	561+14 TO 561+24	10' RT TO 49' RT		18				
	561+20 TO 561+31	35' LT TO 51' LT		22				
	561+76 TO 561+85	10' RT TO 49' RT		18				
	SUBTOTAL			2486				
S.P. 6110-21								
	29+53 TO 29+74	12' LT TO 8' RT		44				
	31+18 TO 31+51	70' LT TO 70' RT		446			44	
	SUBTOTAL			490			44	
S.P. 6106-23								
	35+42 TO 35+66	23' LT TO 27' LT		438				START WORK @ FRANKLIN ST.
	35+78 TO 36+23	27' LT TO 31' LT		392				
	37+07 TO 37+24	27' LT TO 31' LT		41				
	37+20 TO 37+26	33' RT TO 37' RT		80				
	37+73 TO 38+10	69' LT TO 69' LT		32			37	1ST AVE NW
	37+80 TO 38+06	52' RT TO 52' RT		41			26	1ST AVE NE
	38+79 TO 38+99	27' LT TO 31' LT		80				
	38+93 TO 39+03	26' RT TO 30' RT		32				
	39+04 TO 39+14	21' RT		2				
	39+45 TO 39+58	29' RT TO 33' RT		203				
	39+65 TO 39+65	22' LT TO 22' RT		352			44	END WORK @ FRANKLIN ST
	44+50 TO 44+69	19' RT TO 23' RT		45				
	SUBTOTAL			1738			107	
		TOTAL	430	5239	23	116	361	

PROPOSED STREET — AB

	STATION TO STATION	LOCATION	CONCRETE CURB AND GUTTER DESIGN B624	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	TYPE SP 12.5 WEARING COURSE MIXTURE (3,C)	8" CONCRETE DRIVEWAY PAVEMENT	AGGREGATE BASE (CV) CLASS 5	SELECT GRANULAR EMBANKMENT (CV)	REMARKS
			LIN FT	TON	TON	SQ YD	CU YD	CU YD	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT		MH 47 TO MH48A		121			175	160	MINNESOTA AVE
	554+99 TO 558+30	18' LT TO 8' RT						296	
	554+99 TO 555+11	18' LT TO 51' LT	12					3	
	555+18 TO 555+51	8' RT TO 49' RT	33					20	
	555+38 TO 555+48	19' LT TO 51' LT	10					2	
	555+65 TO 555+75	19' LT TO 51' LT	10					2	
	555+94 TO 556+03	8' RT TO 50' RT	10					6	
	555+97 TO 556+07	19' LT TO 51' LT	10					2	
	556+15 TO 556+38	18' LT TO 51' LT	23					6	
	556+45 TO 556+55	8' RT TO 50' RT	10					6	
	556+58 TO 556+79	18' LT TO 51' LT	21					5	
	557+19 TO 557+39	8' RT TO 50' RT	20					12	
	557+30 TO 557+52	18' LT TO 51' LT	22					6	
	558+13 TO 558+40	8' RT TO 50' RT	27					17	
	558+30 TO 560+10	8' RT TO 26' LT						211	
	558+30 TO 558+63	26' LT TO 56' LT	30					17	
	559+33 TO 559+42	9' RT TO 50' RT	10					6	
	559+35 TO 559+45	26' LT TO 51' LT	10	3			3		DRIVEWAY
	560+00 TO 560+10	26' LT TO 51' LT	10						
	560+10 TO 562+31	6' LT TO 10' RT						120	
	561+14 TO 561+24	10' RT TO 49' RT	10					6	
	561+20 TO 561+31	6' LT TO 51' LT	10			23		7	
	561+76 TO 561+85	10' RT TO 49' RT	10					6	
	SUBTOTAL		298	124		23	178	916	
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT									
	29+53 TO 29+74	12' LT TO 8' RT		10			15	13	
	31+18 TO 31+51	70' LT TO 70' RT						156	
	35+43 TO 37+83	7' LT TO 23' RT		176			255	233	
	35+42 TO 35+66	7' LT TO 27' LT	24	9			14	13	
	35+78 TO 36+23	7' LT TO 31' LT	45	18	14		27	24	
	37+07 TO 37+24	6' LT TO 31' LT	17					10	
	37+20 TO 37+26	21' RT TO 37' RT	6					1	
	37+83 TO 37+99	69' LT TO 45' RT						62	
	37+99 TO 39+58	6' LT TO 21' RT						145	
	38+79 TO 38+99	6' LT TO 31' LT	20					12	
	38+93 TO 39+03	21' RT TO 30' RT						1	
	39+04 TO 39+14	21' RT	10						
	39+45 TO 39+58	21' RT TO 33' RT	10					1	
	44+50 TO 44+69	9' RT TO 23' RT		7			10	9	
	SUBTOTAL		132	220	14		321	680	
S.P. 6103-32									
	554+99 TO 558+30	18' LT TO 8' RT		223			323		
	554+99 TO 555+11	18' LT TO 51' LT		2			3		
	555+18 TO 555+51	8' RT TO 49' RT		15			22		
	555+38 TO 555+48	19' LT TO 51' LT		2			3		
	555+65 TO 555+75	19' LT TO 51' LT		2			3		
	555+94 TO 556+03	8' RT TO 50' RT		5			7		
	555+97 TO 556+07	19' LT TO 51' LT		2			3		
	556+15 TO 556+38	18' LT TO 51' LT		4			6		
	556+45 TO 556+55	8' RT TO 50' RT		5			7		
	556+58 TO 556+79	18' LT TO 51' LT		4			6		
	557+19 TO 557+39	8' RT TO 50' RT		9			13		
	557+30 TO 557+52	18' LT TO 51' LT		4			6		
	558+13 TO 558+40	8' RT TO 50' RT		12			18		
	558+30 TO 560+10	8' RT TO 26' LT		159			230		
	558+30 TO 558+63	26' LT TO 56' LT		12			18		
	559+33 TO 559+42	9' RT TO 50' RT		4			6		
	560+10 TO 562+31	6' LT TO 10' RT		90			131		
	561+14 TO 561+24	10' RT TO 49' RT		4			6		
	561+20 TO 561+31	6' LT TO 51' LT		5			11		
	561+76 TO 561+85	10' RT TO 49' RT		4			6		
	SUBTOTAL			567			828		
S.P. 6110-21									
	31+18 TO 31+51	70' LT TO 70' RT		118			171		
	SUBTOTAL			118			171		
S.P. 6106-23									
	37+07 TO 37+24	6' LT TO 31' LT		7			11		
	37+20 TO 37+26	21' RT TO 37' RT					1		
	37+38 TO 37+99	69' LT TO 45' RT		47			68		
	37+99 TO 39+58	6' LT TO 21' RT		109			158		
	38+79 TO 38+99	6' LT TO 31' LT		9			13		
	38+93 TO 39+03	21' RT TO 30' RT		1			1		
	39+04 TO 39+14	21' RT							
	39+45 TO 39+58	21' RT TO 33' RT		1			1		
	SUBTOTAL			174			253		
		TOTAL	430	1203	14	23	1751	1596	

WIDSETH SMITH NOLTING
Engineering | Architecture | Surveying | Environmental

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.

Lawrence J. VanHoof — DATE: 06.27.2017 LIC. NO. 18342

NO.	REVISIONS DESCRIPTION	DATE	BY

DATE: MONTH, YEAR
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

STREET TABULATIONS

SHEET NO. **U-1**

SANITARY SEWER MAIN

AC

	STATION TO STATION	LOCATION	STRUCTURES	CONNECT TO EXISTING SANITARY SEWER	8" PVC PIPE SEWER	10" PVC PIPE SEWER	12" PVC PIPE SEWER	15" PVC PIPE SEWER	REMARKS
				EACH	LIN FT	LIN FT	LIN FT	LIN FT	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	425+98 TO 425+96	119' RT TO 14' LT	EXISTING TO MH 28A	1	133				
	425+96 TO 427+34	14' LT TO 137' LT	MH 28A TO MH 28	2	190				
	425+96 TO 429+01	43' RT TO 137' LT	MH 35 TO MH 28	2				249	
	432+84 TO 432+84		EXISTING TO MH 47	3	2			4	
	432+84 TO 434+13		MH 47 TO MH 48				226		
	434+13 TO 436+18		MH 48 TO MH 49				286		
	436+18 TO 440+09		MH 49 TO MH 50				400		
	440+09 TO 444+06	CL	MH 50 TO MH 51				398		
	444+06	70' LT TO CL	EXISTING TO MH 51	1			70		
	444+06 TO 538+43	CL	MH 51 TO MH 52			397			
	538+43 TO 542+41	CL	MH 52 TO MH 53			398			
	542+41 TO 546+37	CL	MH 53 TO MH 54			397			
	546+37 TO 549+74	CL	MH 54 TO MH 55			337			
	549+74 TO 551+44	CL	MH 55 TO MH 55A			170			
	552+31 TO 554+32	CL	MH 56A TO MH 56		202				
	554+32 TO 558+29	CL	MH 56 TO MH 57		396				
	554+32	58' LT TO 53' RT	EXISTING TO MH 56	2	111				
	558+29 TO 562+24	CL TO 2' RT	MH 57 TO MH 58A		396				
	562+24 TO 562+35	2' RT	MH 58A TO EXISTING	1	11				
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT									
	29+58 TO 29+63	2' LT	EXISTING TO MH 63A	1		6			
	29+63 TO 29+67	2' LT	MH 63A TO EXISTING	1		4			
	31+21 TO 31+26	1' LT	EXISTING TO MH 63	1	5				
	31+26 TO 31+31	1' LT	MH 63 TO EXISTING	1	5				
	31+26	70' LT TO 70' RT	EXISTING TO MH 63	2	140				
	34+60 TO 37+91	CL TO 2' RT	MH 52 TO MH 37		331				
	37+91 TO 39+50	2' RT	MH 37 TO MH 30A		159				
	37+91	68' LT TO 45' RT	EXISTING TO MH 37	2	114				
	39+50	2' RT TO 33' RT	EXISTING TO MH 30A	2	66				
			TOTAL	22	2261	1709	1380	253	

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MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

SANITARY SEWER TABULATIONS

SHEET NO.
U-2

SANITARY SERVICES

AD

	STATION	LOCATION	4" PVC SANITARY SEWER SERVICE PIPE	6" PVC SANITARY SEWER SERVICE PIPE	8" PVC SANITARY SEWER SERVICE PIPE	8"x4" PVC WYE	10"x4" PVC WYE	12"x4" PVC WYE	8"x6" PVC WYE	10"x6" PVC WYE	12"x6" PVC WYE	12"x8" PVC WYE	6" CLEAN-OUT ASSEMBLY	8" CLEAN-OUT ASSEMBLY	CONNECT TO EXIST. SANITARY SEWER SERVICE	REMARKS
			LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	425+96	5TH ST SW	50			1										
	433+16	MN AVE	20					1								
	434+02	MN AVE	20					1								
	434+46	MN AVE	50					1								
	434+69	MN AVE		50							1					
	435+38	MN AVE		50							1					
	435+93	MN AVE		50							1					
	436+63	29' RT TO 75' RT		50							1					
	437+24	12' RT TO 60' RT		50							1					
	439+41	CL TO 50' RT		50							1					
	440+20	CL TO 50' RT		50							1					
	440+28	CL TO 50' RT		50							1					
	440+73	CL TO 50' LT			50							1		1		
	442+72	CL TO 50' RT		50							1					
	443+00	CL TO 50' LT		50							1					
	444+06	CL TO 99' RT		99							1		1		1	
	444+52	CL TO 50' LT		50						1					1	AT BUILDING R/W
	445+28	CL TO 50' RT		50						1					1	AT BUILDING R/W
	445+88	CL TO 50' LT		50						1					1	AT BUILDING R/W
	446+69	CL TO 50' LT		50						1					1	AT BUILDING R/W
	447+07	CL TO 50' RT		50						1					1	AT BUILDING R/W
	447+08	CL TO 50' LT		50						1					1	AT BUILDING R/W
	539+20	CL TO 50' RT		50						1					1	AT BUILDING R/W
	539+32	CL TO 50' LT		50						1					1	AT BUILDING R/W
	539+58	CL TO 50' RT		50						1					1	AT BUILDING R/W
	539+73	CL TO 50' RT		50						1					1	AT BUILDING R/W
	539+88	CL TO 50' LT		50						1					1	AT BUILDING R/W
	540+10	CL TO 50' LT		50						1					1	AT BUILDING R/W
	540+12	CL TO 50' RT		50						1					1	AT BUILDING R/W
	540+34	CL TO 50' RT		50						1					1	AT BUILDING R/W
	540+36	CL TO 50' LT		50						1					1	AT BUILDING R/W
	540+56	CL TO 50' LT		50						1					1	AT BUILDING R/W
	540+82	CL TO 50' RT		50						1					1	AT BUILDING R/W
	540+92	CL TO 50' LT		50						1					1	AT BUILDING R/W
	541+16	CL TO 50' RT		50						1					1	AT BUILDING R/W
	541+18	CL TO 50' LT		50						1					1	AT BUILDING R/W
	541+72	CL TO 50' LT		50						1					1	AT BUILDING R/W
	541+83	CL TO 50' RT		50						1					1	AT BUILDING R/W
	542+76	CL TO 50' LT		50						1						
	542+99	CL TO 50' LT		50						1						
	543+41	CL TO 50' LT		50						1						
	543+77	CL TO 50' LT		50						1						
	544+10	CL TO 50' LT		50						1						
	544+64	CL TO 50' LT		50						1						
	544+73	CL TO 50' LT		50						1						
	545+16	CL TO 50' RT		50						1						
	545+47	CL TO 50' LT		50						1						
	546+88	CL TO 50' LT		50						1						
	547+53	CL TO 50' RT	50				1									
	548+08	CL TO 50' LT	50				1									
	548+13	CL TO 50' RT	50				1									
	548+97	CL TO 50' LT		50						1			1			
	549+21	CL TO 50' LT	50				1									
	549+71	CL TO 50' RT	50				1									
	550+72	CL TO 50' LT	50				1									
	550+74	CL TO 50' RT	50				1									

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Lawrence J. VanDort DATE: 06-27-2017 LIC. NO. 19342

BY	REVISIONS DESCRIPTION	DATE	REV#

DATE: MONTH, YEAR
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

SANITARY SEWER TABULATIONS

SHEET NO.
U-3

SANITARY SERVICES (CONT) — AD

	STATION	LOCATION	4" PVC SANITARY SEWER SERVICE PIPE	6" PVC SANITARY SEWER SERVICE PIPE	8" PVC SANITARY SEWER SERVICE PIPE	8"x4" PVC WYE	10"x4" PVC WYE	12"x4" PVC WYE	8"x6" PVC WYE	10"x6" PVC WYE	12"x6" PVC WYE	12"x8" PVC WYE	6" CLEAN-OUT ASSEMBLY	8" CLEAN-OUT ASSEMBLY	CONNECT TO EXIST. SANITARY SEWER SERVICE	REMARKS
			LIN FT	LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	EACH	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	551+36	CL TO 50' LT		50						1						
	551+44	50' LT TO 50' RT	100				2									
	552+35	CL TO 50' RT	50			1										
	553+15	CL TO 50' LT	50			1										
	553+30	CL TO 50' RT	50			1										
	554+81	CL TO 50' LT	50			1										
	555+35	CL TO 50' RT	50			1										
	555+43	CL TO 50' LT	50			1										
	555+99	CL TO 50' RT	50			1										
	556+01	CL TO 50' LT	50			1										
	556+33	CL TO 50' LT	50			1										
	556+50	CL TO 50' RT	50			1										
	556+74	CL TO 50' LT	50			1										
	557+24	CL TO 50' RT	50			1										
	557+47	CL TO 50' LT	50			1										
	558+18	CL TO 50' RT	50			1										
	558+59	CL TO 50' LT	50			1										
	559+37	1' RT TO 50' RT	49			1										
	559+40	1' RT TO 50' LT	49			1										
	560+05	1' RT TO 50' LT	49			1										
	561+19	2' RT TO 50' RT	48			1										
	561+26	2' RT TO 50' LT	48			1										
	561+80	2' RT TO 50' RT	48			1										
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT	35+47	1' RT TO 30' LT		31					1						1	AT BUILDING R/W
	35+76	1' RT TO 30' LT		31					1						1	AT BUILDING R/W
	35+93	2' RT TO 30' LT		32					1						1	AT BUILDING R/W
	36+18	2' RT TO 30' LT		32					1						1	AT BUILDING R/W
	37+13	2' RT TO 31' LT		33					1							
	37+25	2' RT TO 37' RT		35					1							
	38+84	2' RT TO 31' LT		33					1							
	38+08	2' RT TO 32' RT		30					1							
	39+50	2' RT TO 33' RT		31												
		TOTAL	1631	2587	50	22	9	3	8	34	11	1	2	1	27	

SANITARY MANHOLES — AE

	STATION	LOCATION	STRUCTURE	CONSTRUCT DRAINAGE STRUCTURE DESIGN F	CASTING ASSEMBLY	RIM ELEVATION	INVERT ELEVATION	REMARKS
				LIN FT	EACH	FEET	FEET	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	425+96	14' LT	MH28A	8.8	1	1143.59	1134.74	
	432+84	MN AVE	MH 47	9.6	1	1143.43	1133.86	
	434+13	MN AVE	MH 48	9.4	1	1143.85	1134.46	
	436+18	41' RT	MH 49	9.7	1	1144.83	1135.09	
	440+09	CL	MH 50	10.1	1	1146.02	1135.97	
	444+06	CL, 99' RT	MH 51	12.8	2	1149.61	1136.85	EXTRA CASTING FOR CO @ 99' RT
	538+73	CL	MH 52	11.5	1	1158.85	1147.34	
	542+41	CL	MH 53	13.5	1	1172.95	1159.46	
	546+37	CL	MH 54	10.8	1	1183.80	1173.04	
	549+74	CL	MH 55	9.2	1	1183.22	1173.98	
	551+44	CL	MH 55A	8.0	1	1182.41	1174.46	
	552+31	CL	MH 56A	9.7	1	1181.95	1172.28	
	554+32	CL	MH 56	13.2	1	1182.77	1169.57	
	558+29	CL	MH 57	10.6	1	1200.68	1190.05	
	562+24	2' RT	MH 58A	8.0	1	1228.30	1220.28	
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT								
	29+63	2' LT	MH 63A	6.5	1	1150.96	1144.42	
	31+26	1' LT	MH 63	9.7	1	1156.46	1146.80	
	37+91	2' RT	MH 37	8.9	1	1158.95	1150.07	
	39+50	2' RT	MH 30A	7.8	1	1158.50	1150.73	
			TOTAL	187.8	20			

REMOVE SANITARY MANHOLE — AF

	STATION	LOCATION	STRUCTURE	REMOVE MANHOLE (SAN)	REMARKS
				EACH	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	425+96	MN AVE	MH 28A EXIST	1	EXISTING DEPTH: 8.8
	435+65	MN AVE	MH 47 EXIST	1	EXISTING DEPTH: 9.6
	432+84	MN AVE	MH 49 EXIST	1	EXISTING DEPTH: 6.4
	440+09	31' RT	MH 50 EXIST	1	EXISTING DEPTH: 7.9
	440+73	50' LT	HOTEL MH	1	EXISTING DEPTH: 8.0
	444+06	5' LT	MH 51 EXIST	1	EXISTING DEPTH: 8.1
	538+73	3' LT	MH 52 EXIST	1	EXISTING DEPTH: 10.2
	542+41	CL	MH 53 EXIST	1	EXISTING DEPTH: 12.3
	546+37	2' RT	MH 54 EXIST	1	EXISTING DEPTH: 9.2
	549+74	4' RT	MH 55 EXIST	1	EXISTING DEPTH: 7.4
	551+44	7' RT	MH 55A EXIST	1	EXISTING DEPTH: 6.0
	554+32	CL	MH 56 EXIST	1	EXISTING DEPTH: 13.2
	558+29	3' RT	MH 57 EXIST	1	EXISTING DEPTH: 9.3
	562+24	2' RT	MH 58A EXIST	1	EXISTING DEPTH: 6.0
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT					
	31+26	CL	MH 63 EXIST	1	EXISTING DEPTH: 6.5
	37+91	2' RT	MH 37 EXIST	1	EXISTING DEPTH: 7.9
	39+50	2' RT	MH 30A EXIST	1	EXISTING DEPTH: 6.6
			TOTAL	17	

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MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

SANITARY SEWER TABULATIONS

SHEET NO.
U-4

WATERMAIN												AG
	STATION TO STATION	LOCATION	CONNECT TO EXISTING WATER MAIN	6" GATE VALVE AND BOX	8" GATE VALVE AND BOX	12" GATE VALVE AND BOX	HYDRANT (8.5' BURY)	6" PVC WATERMAIN	8" PVC WATERMAIN	12" PVC WATERMAIN	LOWER WATERMAIN	REMARKS
			EACH	EACH	EACH	EACH	EACH	LIN FT	LIN FT	LIN FT	EACH	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	427+63 TO 429+25	128' LT TO 38' RT	2		1				332		2	
	434+03 TO 434+08	MN AVE W	1							8	1	
	434+08 TO 434+13	MN AVE W								7		
	434+13 TO 558+38	MN AVE	1							3463	1	
	438+33 TO 438+33	16' LT TO 58' LT		1			1	42				
	440+08	16' LT				1						
	440+12 TO 440+12	17' LT TO 48' LT	1	1				31			1	
	443+54 TO 443+54	15' LT TO 38' LT		1			1	22				
	443+89	15' LT				1						
	443+97 TO 443+97	70' LT TO 15' LT	1			1				55	1	
	443+97 TO 443+97	15' LT TO 72' RT				1				87		
	447+48 TO 447+48	14' LT TO 39' LT		1			1	25				
	538+58	14' LT				1						
	538+65	14' LT				1						
	539+23	13' LT TO 50' LT		1				37				
	541+80 TO 541+80	13' LT TO 39' LT		1			1	26				
	542+47	12' LT				1						
	542+54 TO 542+56	12' LT TO 69' RT	1		1				81		1	
	542+56 TO 542+57	12'LT TO 54' LT	1						42		1	
	542+60	12' LT				1						
	544+57	10' LT TO 50' LT		1				40				
	545+22	10' LT TO 50' LT		1				40				
	545+28	10' LT TO 50' LT		1				40				
	545+78 TO 545+78	10' LT TO 39' LT		1			1	29				
	546+22 TO 546+22	10' LT TO 39' LT	1						29		1	
	546+73	10' LT				1						
	548+01	10' LT TO 50' LT		1				40				
	549+55 TO 549+55	10' LT TO 50' LT		1				40				
	550+68	10' LT				1						
	550+82 TO 550+82	10' LT TO 39' LT		1			1	29				
	554+46 TO 554+46	57' LT TO 11' LT	1		1				46		1	
	554+46 TO 554+46	11' LT TO 53' RT	1			1			64		1	
	554+66	11' LT				1						
	554+73 TO 554+73	11' LT TO 41' LT		1			1	30				
	558+38 TO 558+38	10' LT TO 52' LT	2							42	2	
	558+38 TO 559+99	13' LT TO 13' LT							161			
	559+99 TO 559+99	13' LT TO 23' LT	1						10		1	
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT												
	31+44 TO 31+44	70' LT TO 67' RT	4	1	2		1	10	137		4	
	34+05 TO 34+73	17' RT	1						68		1	
	34+09	17' RT			1							
	34+73 TO 35+14	17' RT TO 13' RT							41			
	35+10	15' RT				1						
	35+14 TO 39+55	13' RT	1						441		1	
	38+02	13' RT	1								1	
	38+34	11' RT TO 25' RT		1			1	14				
	39+55	13' RT			1							
	44+59 TO 44+63	17' RT							4			
	44+61	17' RT TO 32' RT		1			1	15				
		TOTAL	**21**	**17**	**7**	**13**	**10**	**510**	**1456**	**3662**	**21**	

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MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

WATERMAIN TABULATIONS

SHEET NO.
U-5

WATERMAIN SERVICES — AH

	STATION	LOCATION	1" TYPE K COPPER PIPE	2" TYPE K COPPER PIPE	CONNECT TO EXIST. WATER SERVICE - BUILD AT R/W	1" CORPORATION STOP	1" CURB STOP AND BOX	2" CORPORATION STOP	2" CURB STOP AND BOX	REMARKS
			LIN FT	LIN FT	EACH	EACH	EACH	EACH	EACH	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	434+21	16' LT TO 49' RT	66			1	1			
	434+27	16' LT TO 49' RT	66			1	1			
	436+74	9' RT TO 72' RT		63				1	1	
	441+21	16' LT TO 49' RT	66			1	1			
	442+63	16' LT TO 49' RT	65			1	1			
	442+90	16' LT TO 40' LT	24			1	1			
	444+43	15' LT TO 46' LT	31		1	1	1			
	445+98	15' LT TO 46' LT	31		1	1	1			
	446+79	14' LT TO 46' LT		31	1			1	1	
	447+41	14' LT TO 45' LT	31		1	1	1			
	539+27	13' LT TO 50' LT	37		1	1	1			
	539+38	13' LT TO 50' RT	63		1	1	1			
	539+62	13' LT TO 50' RT	63		1	1	1			
	539+78	13' LT TO 50' RT	63		1	1	1			
	539+91	13' LT TO 50' LT	37		1	1	1			
	540+16	13' LT TO 50' LT	37		1	1	1			
	540+17	13' LT TO 50' RT		63	1			1	1	
	540+33	13' LT TO 50' LT	37		1	1	1			
	540+59	13' LT TO 50' LT	37		1	1	1			
	540+85	13' LT TO 50' RT	63		1	1	1			
	540+98	13' LT TO 50' LT	37		1	1	1			
	541+06	13' LT TO 50' RT	63		1	1	1			
	541+14	13' LT TO 50' LT	37		1	1	1			
	541+76	12' LT TO 50' LT	38		1	1	1			
	541+77	13' LT TO 50' RT	63		1	1	1			
	541+87	12' LT TO 50' RT	62		1	1	1			
	543+02	12' LT TO 49' RT	61		1	1	1			
	543+66	11' LT TO 49' LT	38		1	1	1			
	544+18	11' LT TO 49' RT	60		1	1	1			
	544+19	11' LT TO 49' LT	38		1	1	1			
	545+24	11' LT TO 48' LT	37		1	1	1			
	545+29	11' LT TO 48' LT	37		1	1	1			
	547+77	10' LT TO 49' RT	59		1	1	1			
	548+72	10' LT TO 50' RT	60			1	1			
	549+30	10' LT TO 50' LT	40			1	1			
	549+98	10' LT TO 50' RT	60			1	1			
	550+92	10' LT TO 50' RT	60			1	1			
	551+68	11' LT TO 50' RT	61			1	1			
	552+25	11' LT TO 50' RT	61			1	1			
	552+52	11' LT TO 50' LT	39			1	1			
	553+05	11' LT TO 50' LT	39			1	1			
	553+40	11' LT TO 50' RT	61			1	1			
	553+77	11' LT TO 50' LT	39			1	1			
	555+05	11' LT TO 50' LT	39			1	1			
	555+23	11' LT TO 50' RT	61			1	1			
	555+46	11' LT TO 50' RT	61			1	1			
	555+70	10' LT TO 50' LT	40			1	1			
	556+20	10' LT TO 50' LT	40			1	1			
	557+34	10' LT TO 50' RT	60			1	1			
	557+35	10' LT TO 53' LT	43			1	1			
	558+35	10' LT TO 50' RT	60			1	1			
	558+82	13' LT TO 50' LT	37			1	1			
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT										
	35+53	15' RT TO 29' LT	43		1	1	1			
	35+61	15' RT TO 29' LT	43		1	1	1			
	35+87	15' RT TO 29' LT	43		1	1	1			
	36+09	15' RT TO 29' LT	43		1	1	1			
	37+22	13' RT TO 30' LT	42		1	1	1			
	38+94	13' RT TO 30' LT	43		1	1	1			
		TOTAL	2665	157	33	55	55	3	3	

WATERMAIN REMOVALS — AI

	STATION	LOCATION	REMOVE GATE VALVE AND BOX	REMOVE HYDRANT	REMARKS
			LIN FT	LIN FT	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	427+62	130' LT	1		
	438+29	57' LT		1	
	438+33	57' LT	1		
	439+65	25' LT	1		
	440+13	24' LT	1		
	444+32	39' LT	1		
	444+34	42' LT		1	
	446+08	29' LT	1		
	447+87	16' LT	1		
	538+81	26' LT	1		
	538+83	39' LT		1	
	539+33	27' LT	1		
	542+01	25' LT	1		
	542+08	34' LT, 42' LT	1	1	
	542+54	52' RT	1		
	550+68	52' LT	1		
	554+46	52' LT	1		
	554+46	53' RT	1		
	554+71	53' LT		1	
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT					
	31+44	33' LT	1		
	31+66	27' LT		1	
	34+09	16' RT	1		
	35+10	16' RT	1		
	37+94	13' RT	1		
	38+23	13' RT	1	1	
	44+56	20' RT, 26' RT	1	1	
		TOTAL	21	8	

T.H. 104 & 2ND AVENUE SW STORM SEWER — AK

	ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT	1	REMOVE SEWER PIPE (STORM)	LIN FT	89
	2	REMOVE CURB AND GUTTER	LIN FT	31
	3	REMOVE BITUMINOUS PAVEMENT	SQ YD	62
	4	SAWING BITUMINOUS PAVEMENT (FULL DEPTH	LIN FT	49
	5	SELECT GRANULAR EMBANKMENT (CV)	CU YD	19
	6	AGGREGATE BASE (CV) CLASS 5	CU YD	21
	7	TYPE SP 12.5 WEARING COURSE MIXTURE (4,C)	TON	14
	8	12" RCP PIPE SEWER DES 3006 CL V	LIN FT	26
	9	24" RCP PIPE SEWER DES 3006 CL V	LIN FT	63
	10	CONSTRUCT DRAINAGE STRUCTURE DES 48-4020	LIN FT	7.5
	11	CONNECT TO EXISTING STORM SEWER	EACH	4
	12	CONCRETE CURB AND GUTTER DESIGN B624	LIN FT	31

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MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.
WATERMAIN TABULATIONS

SHEET NO. U-6

WATERMAIN FITTINGS (BY WEIGHT)

AJ

	STATION	LOCATION	12" x 8" REDUCER	12" x 4" REDUCER	8" x 6" REDUCER	8" x 4" REDUCER	6" x 4" REDUCER	45 DEGREE BEND 12"	90 DEGREE BEND 12"	90 DEGREE BEND 8"	12" X 12" CROSS	12" X 8" CROSS	8" X 6" CROSS	12" X 6" TEE	12" X 8" TEE	8" X 8" TEE	8" X 6" TEE	8" X 4" TEE	6" X 6" TEE	12" PLUG	REMARKS
			POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	POUND	
CITY OF GLENWOOD - MINNESOTA AVE ALIGNMENT	427+62	130' LT				32															
	434+00	WEST END		58																	
	434+08	WEST END						86													
	434+13	WEST END						86													
	438+32	16' LT												110							
	439+65	17' LT												110							
	443+54	15' LT												110							
	443+97	15' LT		58							215									46	
	447+48	14' LT												110							
	538+58	14' LT										162									
	539+23	13' LT												110							
	541+80	13' LT												110							
	542+55	50' LT TO 68' RT			36	32						162									
	544+57 TO 545+28	10' LT												330							THREE 12" x 6" REDUCERS
	545+78	10' LT												110							
	546+22	10' LT				32									125						
	548+01	10' LT				32								110							
	549+55	10' LT												110							
	550+82	10' LT												110							
	554+46	58' LT TO 53' RT	50	58		3					215					86					ONE 8" x 4" REDUCERS
	554+73	11' LT				32								110							
	558+38	10' LT TO 30' LT					24		108					110	125						
	559+99	13' LT TO 23' LT				32				114											TWO 90 DEGREE BENDS (8")
CITY OF GLENWOOD - FRANKLIN STREET ALIGNMENT																					
	31+44	69' LT TO 66' RT				64							108				72				TWO 8" x 4" REDUCERS
	34+05	17' RT				32															
	35+14	15' RT	50																		
	38+02	17' RT																60			
	38+34	17' RT																			
	39+55	17' RT			36	32															
	44+61	17' RT																	56		
		TOTAL	100	174	72	323	24	172	108	114	430	324	108	1650	250	86	72	60	56	46	PROJECT TOTAL: 4169 LBS

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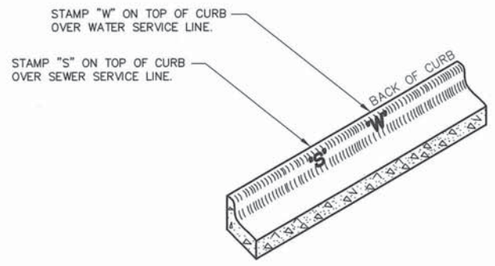
MONTH, YEAR

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

WATERMAIN TABULATIONS

SHEET NO.
U-7

ALL NEW AND EXISTING SERVICE LOCATIONS SHALL BE MARKED IN CURB AS SHOWN. STAMPING OF SERVICE LOCATIONS SHALL BE CONSIDERED INCIDENTAL.

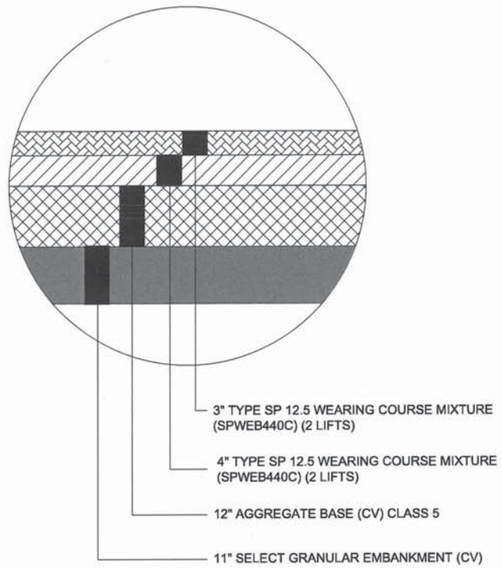


NOTE: STAMPS SHALL BE PROVIDED BY CITY.
CONTRACTOR TO PROVIDE $500 SECURITY DEPOSIT.

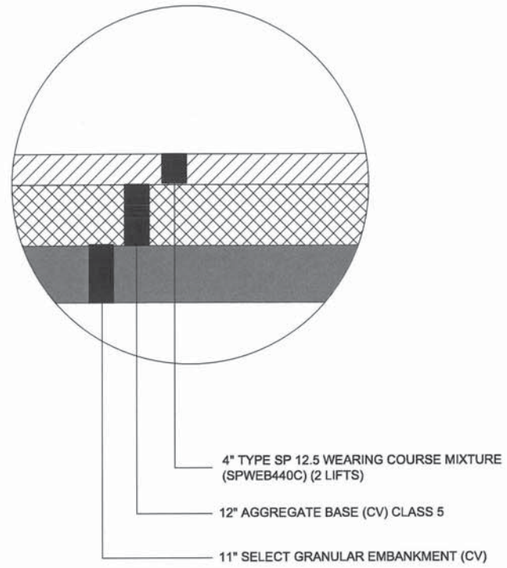
SERVICE LOCATION STAMP

N.T.S. **SS-7, W-9**

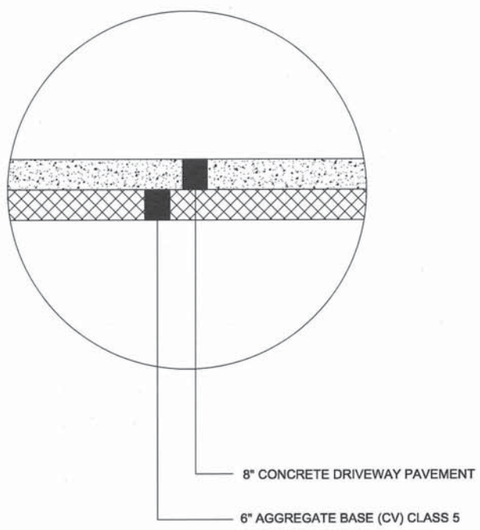
BITUMINOUS STREET REPAIR TYPICAL SECTION
EXISTING BITUMINOUS SURFACE DEPTH VARIES
STA 554+99 TO 561+85
STA 29+53 TO 31+51
STA 35+43 TO 44+69



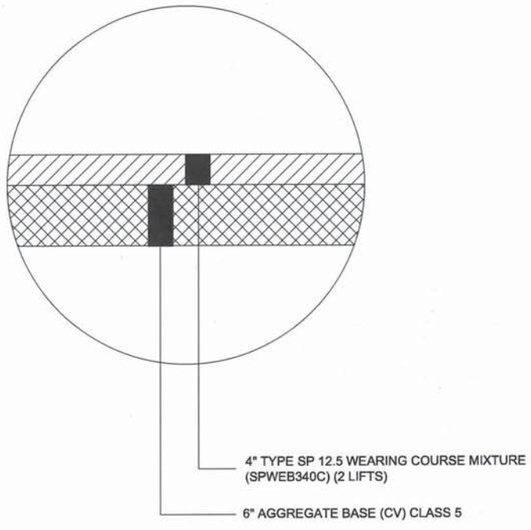
BITUMINOUS STREET REPAIR TYPICAL SECTION
EXISTING BITUMINOUS SURFACE DEPTH VARIES
MH 47 TO MH48A (COUNTY PORTION)
TH 104 & 2ND AVENUE SW STORM SEWER (CITY PORTION)



CONCRETE DRIVEWAY REPAIR TYPICAL SECTION



BITUMINOUS DRIVEWAY REPAIR TYPICAL SECTION



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Lawrence J. VanHoy DATE: 06-27-2017 LIC. NO. 18942

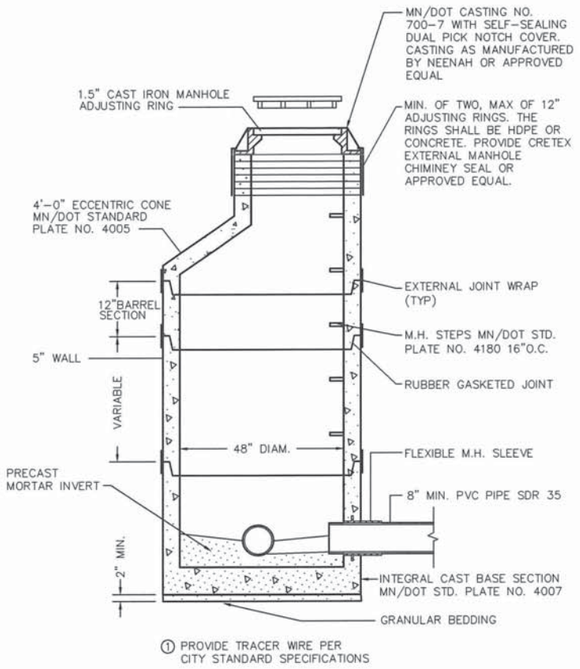
NO.	DATE	REVISIONS DESCRIPTION	BY

DATE: MONTH, YEAR
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

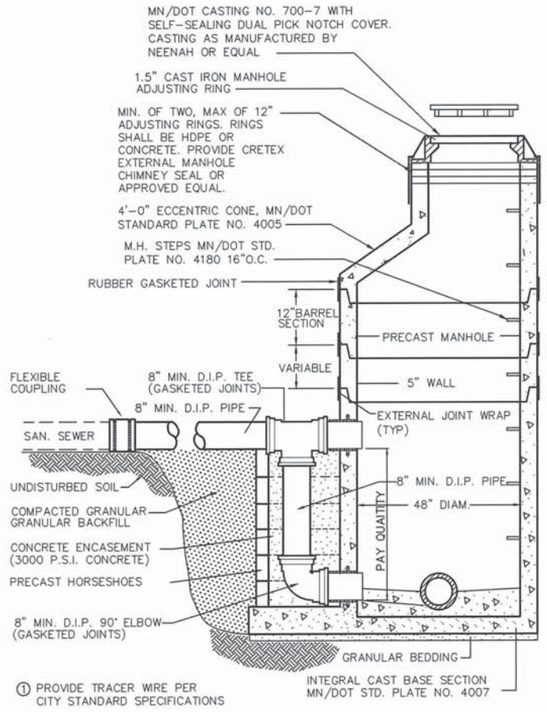
STREET REPAIR DETAILS

SHEET NO.
U-8



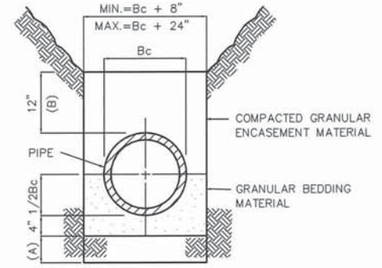
SANITARY SEWER MANHOLE

SS-1



OUTSIDE DROP SAN.SEW.MANHOLE

SS-2



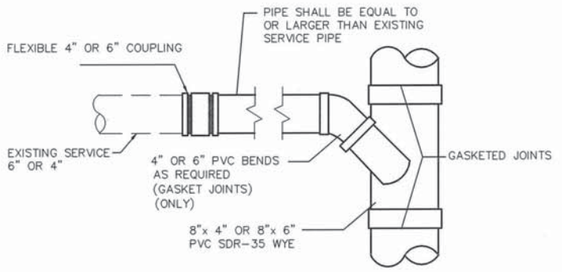
(A) THE TRENCH MAY BE OVEREXCAVATED A MIN. OF 6" & BACKFILLED WITH COMPACTED GRANULAR MATERIALS WHEN ROCK, INCOMPRESSIBLE MATERIALS, OR UNSTABLE SOILS ARE ENCOUNTERED.

(B) IF THIS DIMENSION DECREASES, THE BEDDING CONDITION WILL CHANGE. A HIGHER LEVEL BEDDING CONDITION SHALL BE SOLELY AT THE CONTRACTORS EXPENSE.

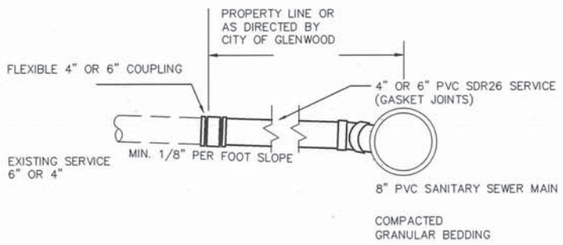
NOTE: THIS DETAIL APPLIES TO SANITARY SEWER, WATERMAIN, AND ALL SERVICE PIPE.

TYPICAL CLASS B PIPE BEDDING

SS-3, W-4



PLAN VIEW

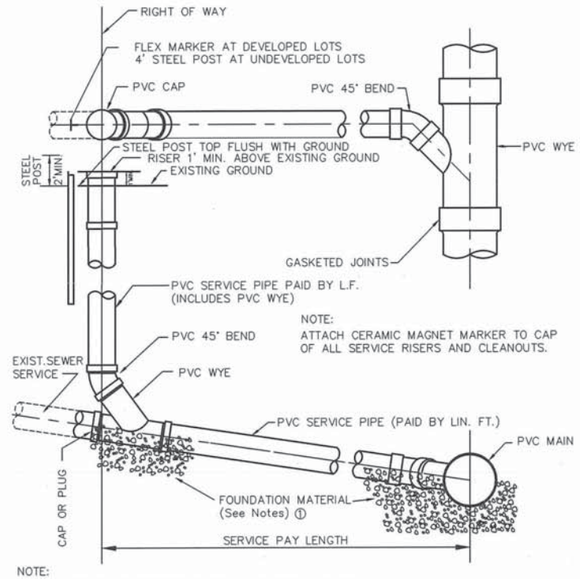


ELEVATION VIEW

NOTE: THIS DETAIL CORRESPONDS WITH SANITARY SEWERMAIN REPLACEMENT W/CONNECTIONS TO EXISTING SEWER SERVICES.

WYE CONNECTION-SANITARY SEWER REPLACEMENT

SS-4



NOTE:

EXTEND SERVICE TO PROPERTY LINE, PERMANENT EASEMENT LINE OR AS DIRECTED BY THE ENGINEER IN THE FIELD.

CLEANOUT REQUIRED WHERE THERE IS NO EXISTING SERVICE.

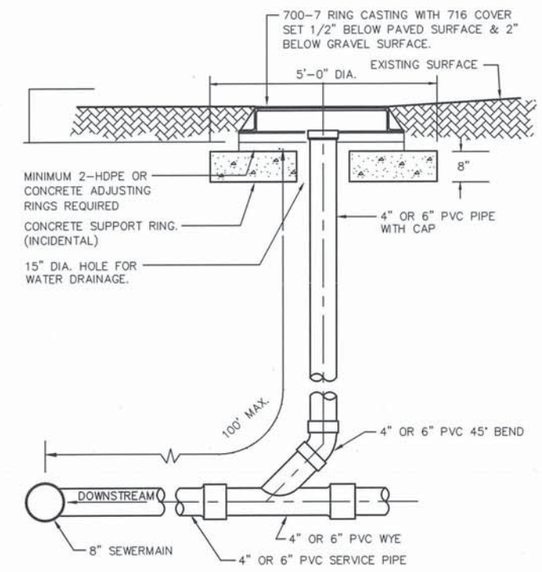
SERVICE PIPE SLOPE: 4"=1.00%, 6"=1.00%

PAY LENGTH FOR SERVICE LINE SHALL BE MEASURED ALONG THE SERVICE LINE ℄ TO THE CLEANOUT. BENDS, PLUGS, MARKERS, ADAPTERS, COUPLINGS, AND CONCRETE BLOCKING SHALL BE INCIDENTAL. WYES AND CLEANOUTS ARE SEPARATE PAY ITEMS.

① FOUNDATION MATERIAL – NATURAL OR CRUSHED 1-1/2 INCH ROCK. PROVIDE WHERE WYES ARE GREATER THAN 10' IN DEPTH OR WHERE WET OR UNSTABLE SOIL CONDITIONS EXIST.

STANDARD RISER DETAIL

SS-5



INSTALL ON DOWNSTREAM SIDE OF DEFLECTIONS LESS THAN 45° AND AT INTERVALS NOT GREATER THAN 100 FEET, INCLUDING LENGTH OF CLEANOUT, ON STRAIGHT RUNS.

NOTE: 1. ONLY REQUIRED FOR BITUMINOUS, CONCRETE OR AGGREGATE STREETS OR DRIVEWAYS.

2. IN AGGREGATE STREETS, CASTING TO BE BURIED 4" BELOW SURFACE.

SEWER CLEAN-OUT & CASTING DETAIL

SS-6

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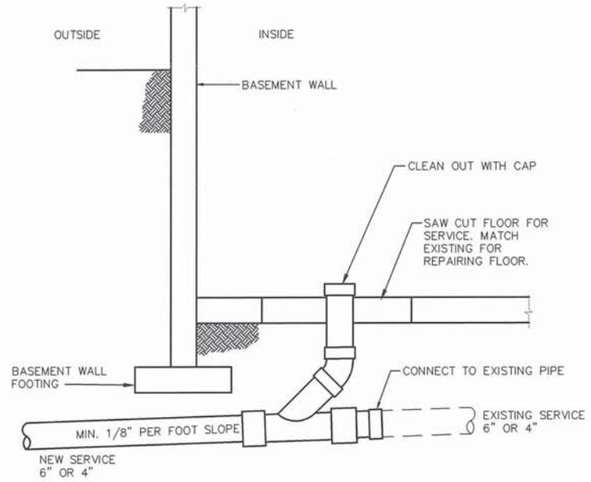
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

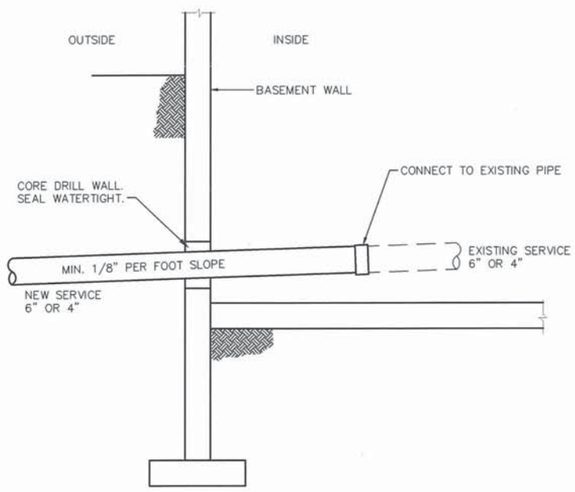
SANITARY SEWER DETAILS

SHEET NO. U-9



ALTERNATE BUILDING SEWER SERVICE CONNECTION

NOTE: SEWER SERVICE TO BE EXTENDED INTO BUILDING WHERE BUILDING ABUTS R.O.W.



BUILDING SEWER SERVICE CONNECTION

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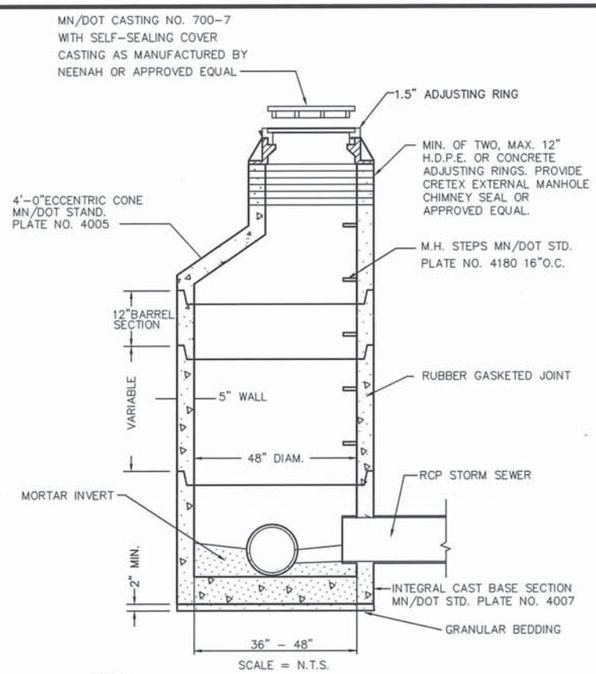
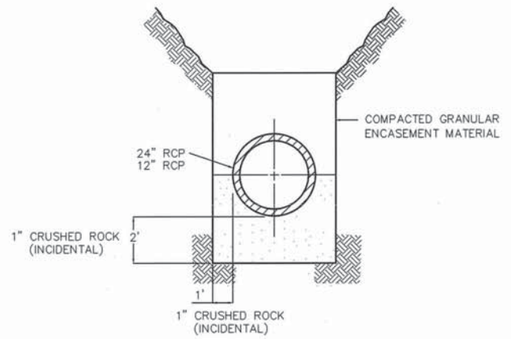


NOTE:
PARKING LOTS REQUIRE USE OF 4.0' SUMP IN MANHOLE. PROVIDE SUMPS IN MANHOLE FOR STREETS AS DIRECTED BY THE CITY OF GLENWOOD.

2ND AVE SW STORM MANHOLE DETAIL STM-1



2ND AVENUE SW STORM BEDDING DETAIL

SS-3, W-4

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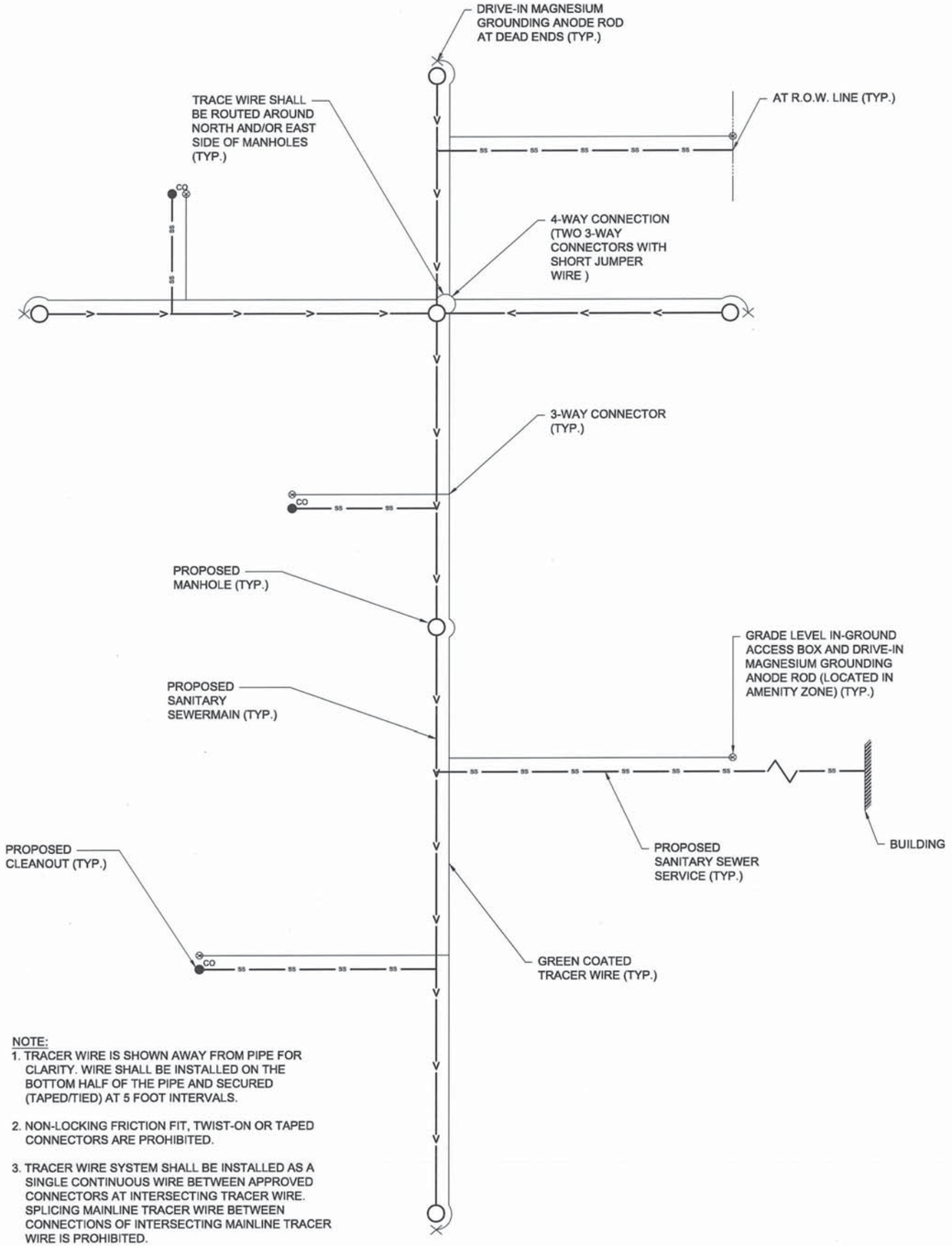
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

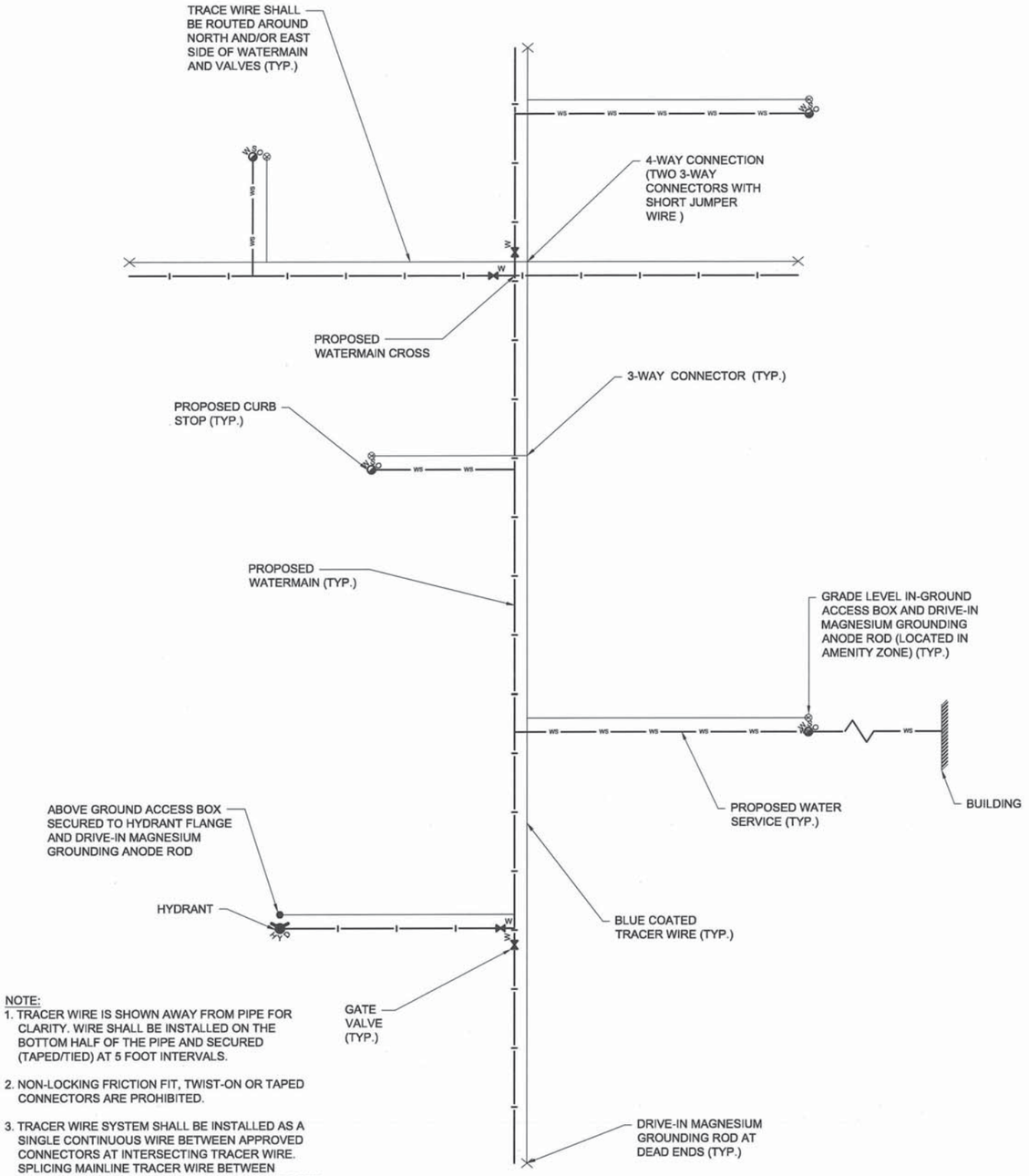
SANITARY SEWER DETAILS

SHEET NO.
U-10



NOTE:
1. TRACER WIRE IS SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM HALF OF THE PIPE AND SECURED (TAPED/TIED) AT 5 FOOT INTERVALS.
2. NON-LOCKING FRICTION FIT, TWIST-ON OR TAPED CONNECTORS ARE PROHIBITED.
3. TRACER WIRE SYSTEM SHALL BE INSTALLED AS A SINGLE CONTINUOUS WIRE BETWEEN APPROVED CONNECTORS AT INTERSECTING TRACER WIRE. SPLICING MAINLINE TRACER WIRE BETWEEN CONNECTIONS OF INTERSECTING MAINLINE TRACER WIRE IS PROHIBITED.
4. ALL TRACER WIRE LATERALS SHALL BE A SINGLE CONTINUOUS WIRE CONNECTED TO THE MAINLINE USING AN APPROVED CONNECTOR INSTALLED WITHOUT CUTTING/SPLICING THE MAINLINE TRACER WIRE. NO LOOPING OR COILING OF TRACER WIRE IS ALLOWED.

SANITARY SEWER TRACER WIRE DETAIL
SCALE = N.T.S.



NOTE:
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4. ALL TRACER WIRE LATERALS SHALL BE A SINGLE CONTINUOUS WIRE CONNECTED TO THE MAINLINE USING AN APPROVED CONNECTOR INSTALLED WITHOUT CUTTING/SPLICING THE MAINLINE TRACER WIRE. NO LOOPING OR COILING OF TRACER WIRE IS ALLOWED.

WATERMAIN TRACER WIRE DETAIL
SCALE = N.T.S.

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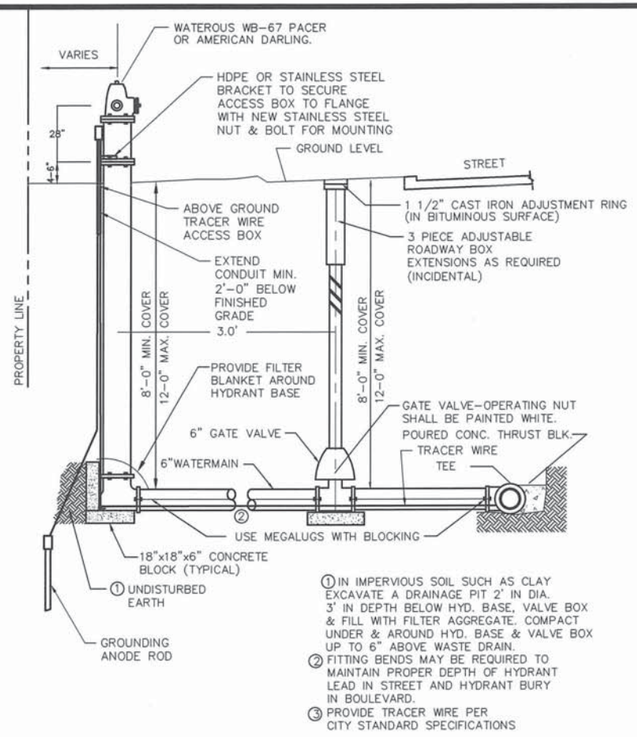
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

TRACER WIRE DETAILS

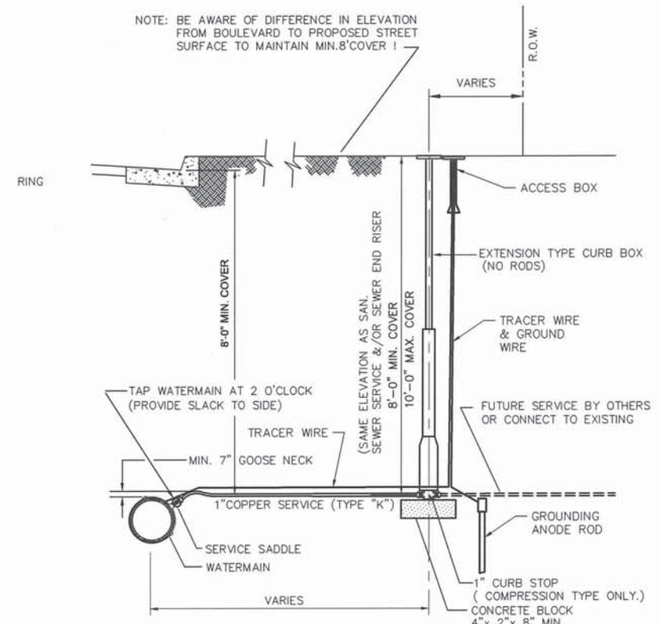
SHEET NO.
U-11



① IN IMPERVIOUS SOIL SUCH AS CLAY EXCAVATE A DRAINAGE PIT 2' IN DIA. 3' IN DEPTH BELOW HYD. BASE, VALVE BOX & FILL WITH FILTER AGGREGATE. COMPACT UNDER & AROUND HYD. BASE & VALVE BOX UP TO 6" ABOVE WASTE DRAIN.
② FITTING BENDS MAY BE REQUIRED TO MAINTAIN PROPER DEPTH OF HYDRANT LEAD IN STREET AND HYDRANT BURY IN BOULEVARD.
③ PROVIDE TRACER WIRE PER CITY STANDARD SPECIFICATIONS

TYPICAL HYDRANT LEAD DETAIL

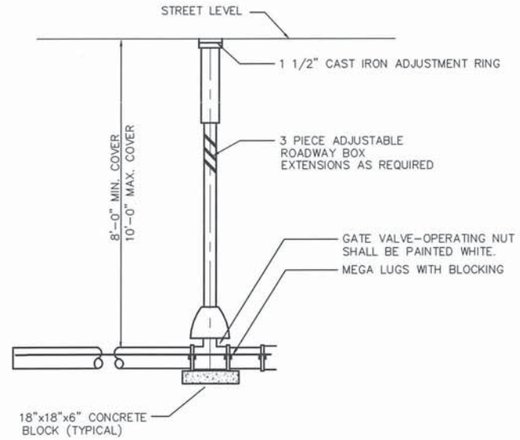
SCALE = N.T.S. **W-1**



① CURB STOPS AND CORPORATION STOPS SHALL BE BALL TYPE AND SHALL BE FORD BRAND,A.Y.MACDONALD OR APPROVED EQUAL. FITTINGS SHALL BE COMPRESSION TYPE.
② PROVIDE TRACER WIRE PER CITY STANDARD SPECIFICATIONS

TYPICAL WATER SERVICE DETAIL

SCALE = N.T.S. **W-2**

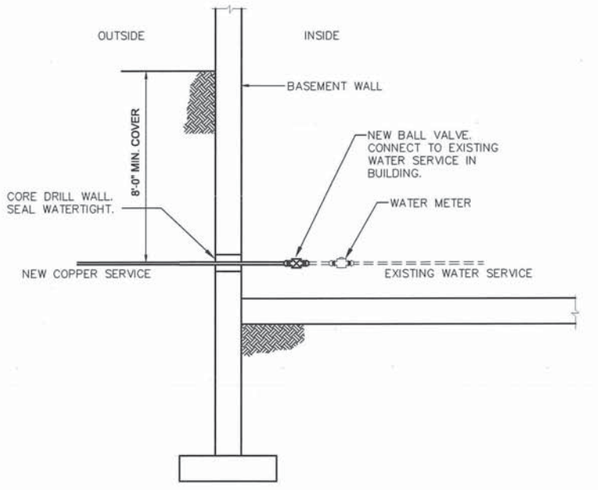


① PROVIDE TRACER WIRE PER CITY STANDARD SPECIFICATIONS

② FOR PAVED STREETS, THE VALVE BOX SHALL BE SET 1/2" BELOW TOP OF PAVED SURFACE.

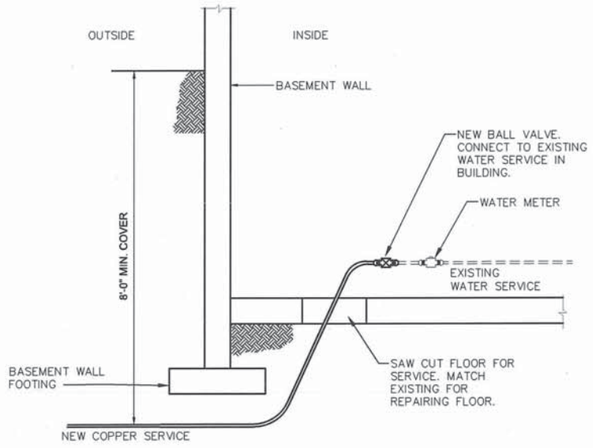
TYPICAL INLINE WATER VALVE DETAIL

SCALE = N.T.S. **W-3**



BUILDING WATER SERVICE CONNECTION

NOTE: WATER SERVICE TO BE EXTENDED INTO BUILDING WHERE BUILDING ABUTS R.O.W.

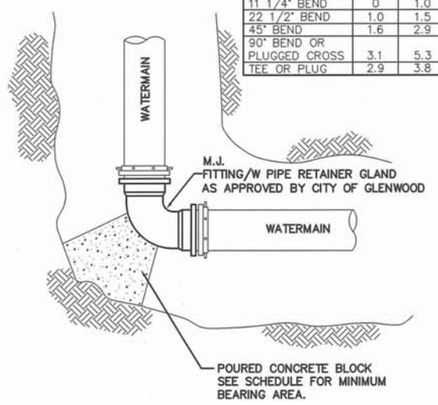


ALTERNATE BUILDING WATER SERVICE CONNECTION

NOTE: WATER SERVICE TO BE EXTENDED INTO BUILDING WHERE BUILDING ABUTS R.O.W.

BEARING AREA (SQ. FT.)

	6"	8"	10"	12"
11 1/4° BEND	0	1.0	1.2	1.7
22 1/2° BEND	1.0	1.5	2.6	3.4
45° BEND	1.6	2.9	4.6	6.6
90° BEND OR PLUGGED CROSS	3.1	5.3	8.4	12.0
TEE OR PLUG	2.9	3.8	5.9	8.5



N.T.S.

POLY ENCASE ALL FITTINGS.

THRUST BLOCK DETAIL **W-6**

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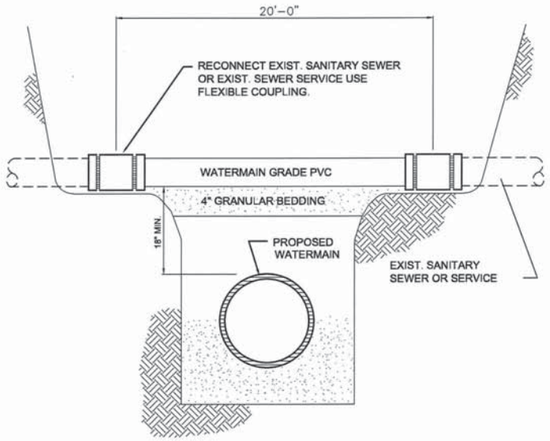
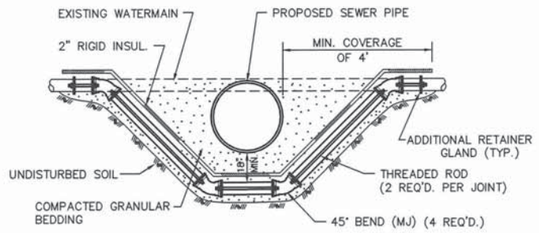
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.
WATERMAIN DETAILS

SHEET NO.
U-12



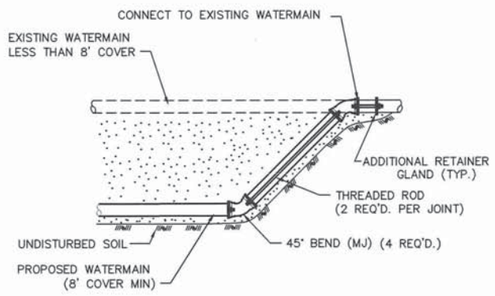
WATERMAIN/SEWER SEPARATION DETAIL W-7



(1) IF SEPARATION BETWEEN WATER AND SEWER IS LESS THAN 18" AT CROSSING POINT, THEN SEWER PIPE JOINTS SHALL BE SPACED EQUIDISTANT FROM WATERMAIN.

(2) PAID FOR AS TWO "LOWER WATERMAIN" ITEMS

EXISTING WATERMAIN ADJUSTMENT DETAIL W-10



WATERMAIN LOWERING DETAIL W-8

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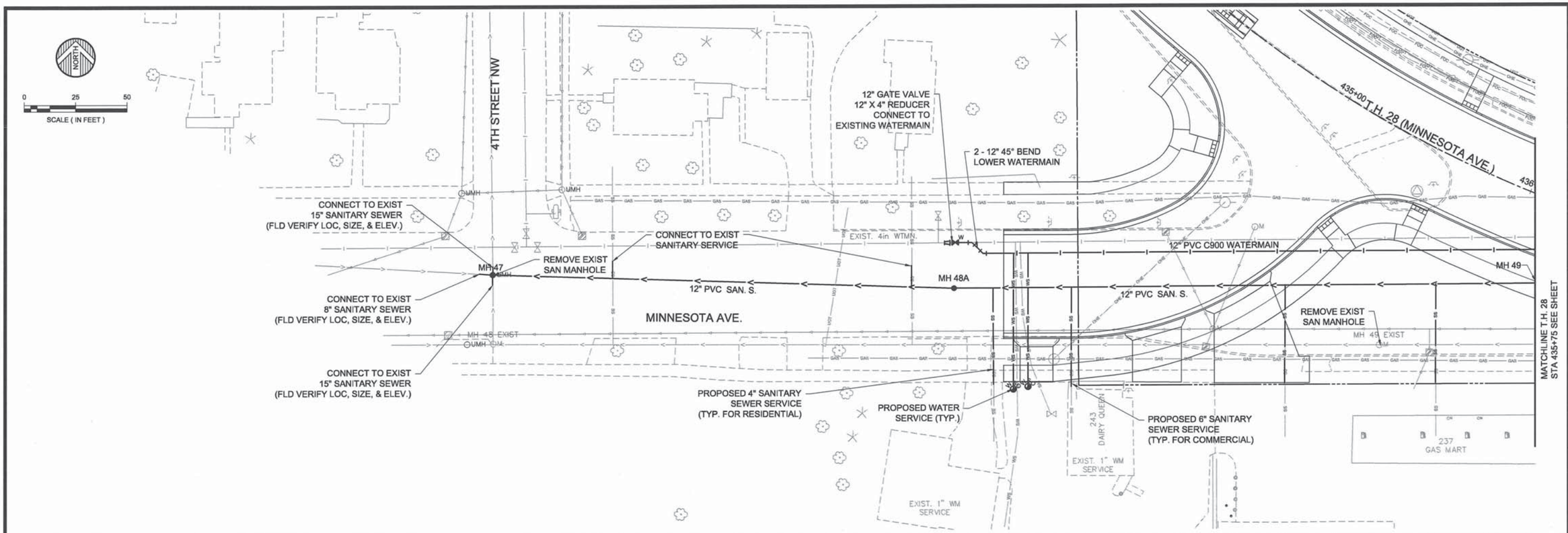
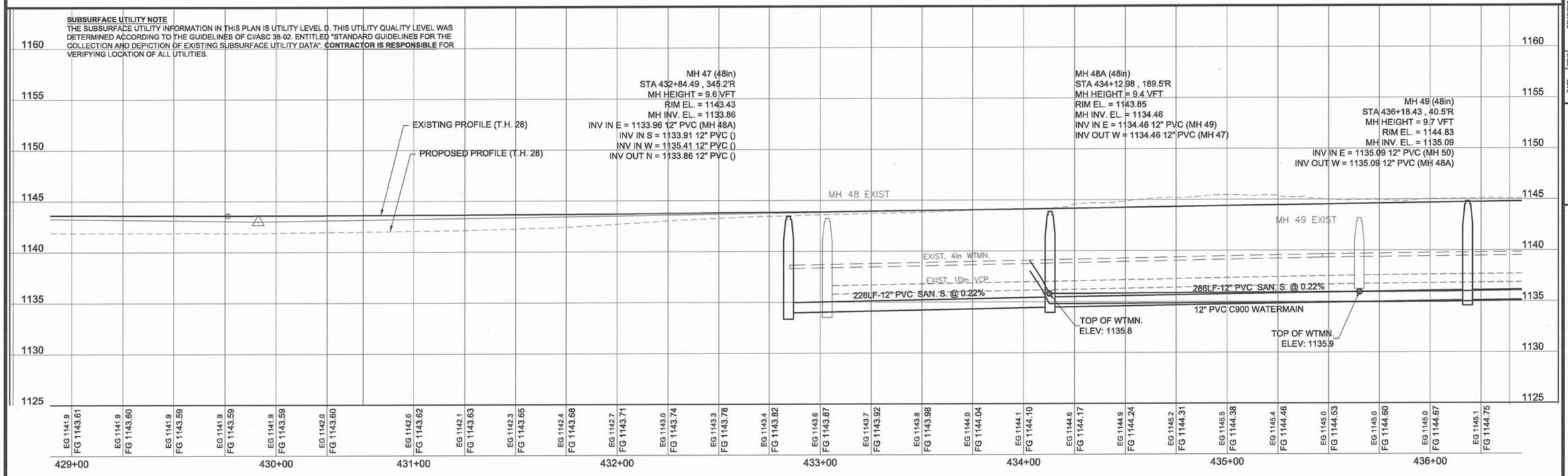
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.
WATERMAIN DETAILS

SHEET NO.
U-13



SUBSURFACE UTILITY NOTE
THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASC 38-02. ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA". **CONTRACTOR IS RESPONSIBLE** FOR VERIFYING LOCATION OF ALL UTILITIES.



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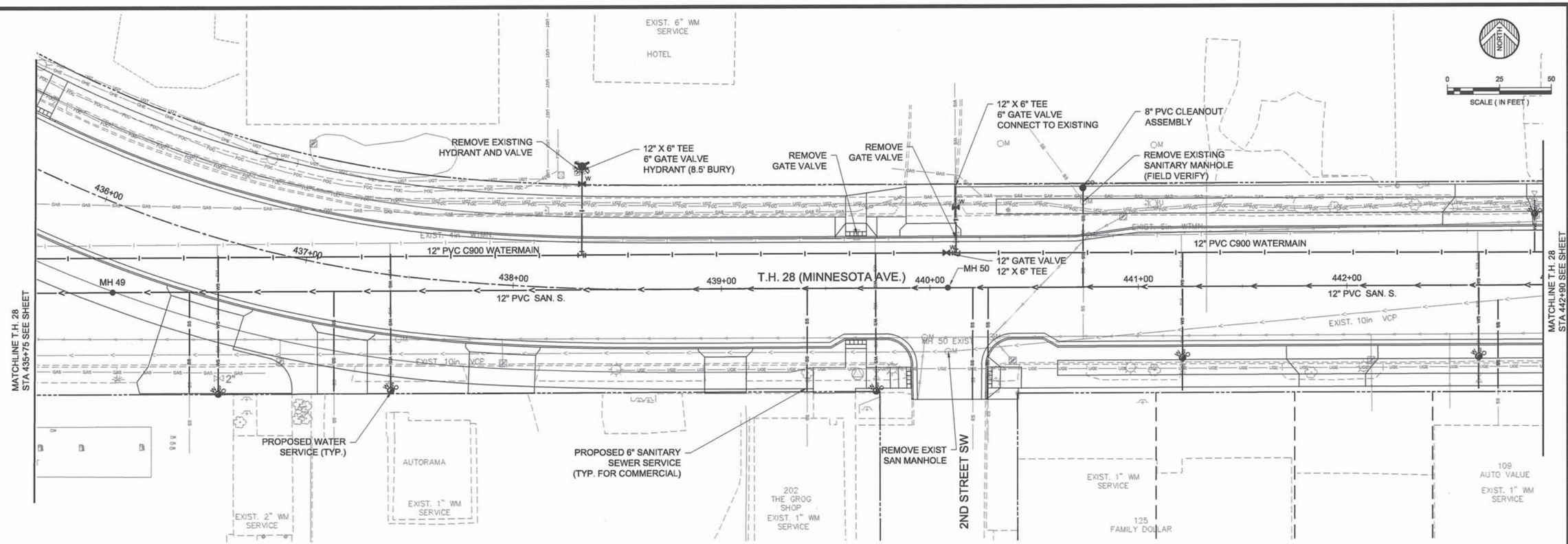
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-14



SUBSURFACE UTILITY NOTE
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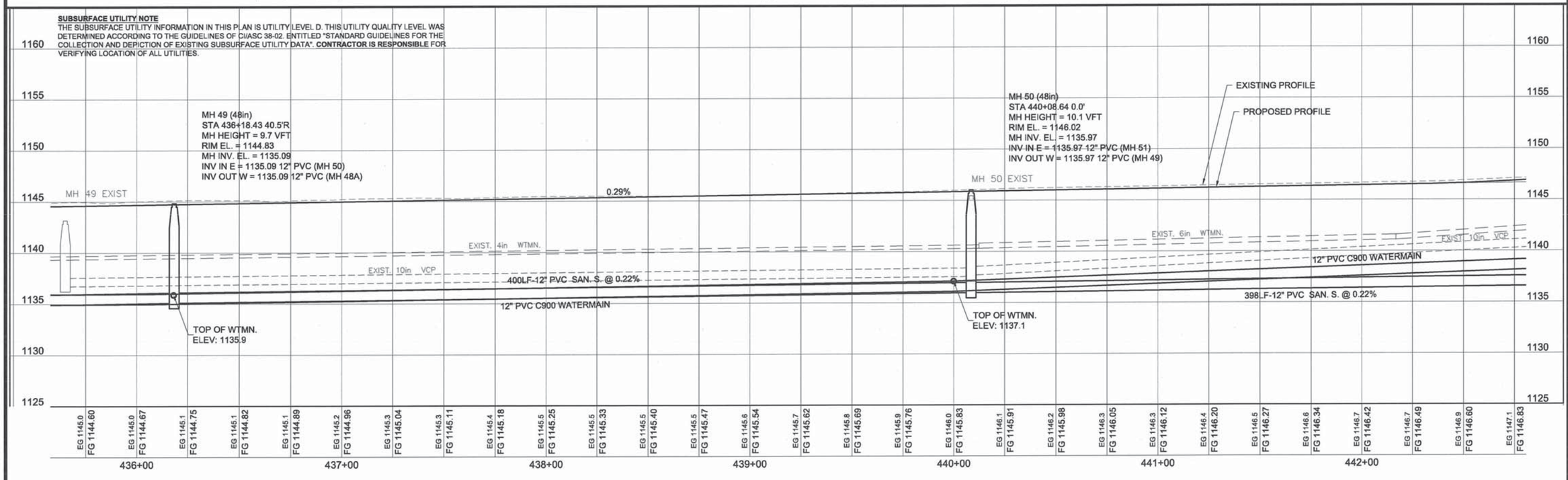

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LAWRENCE J. VANHOUT
DATE: 06-27-2017 LIC. NO. 18342

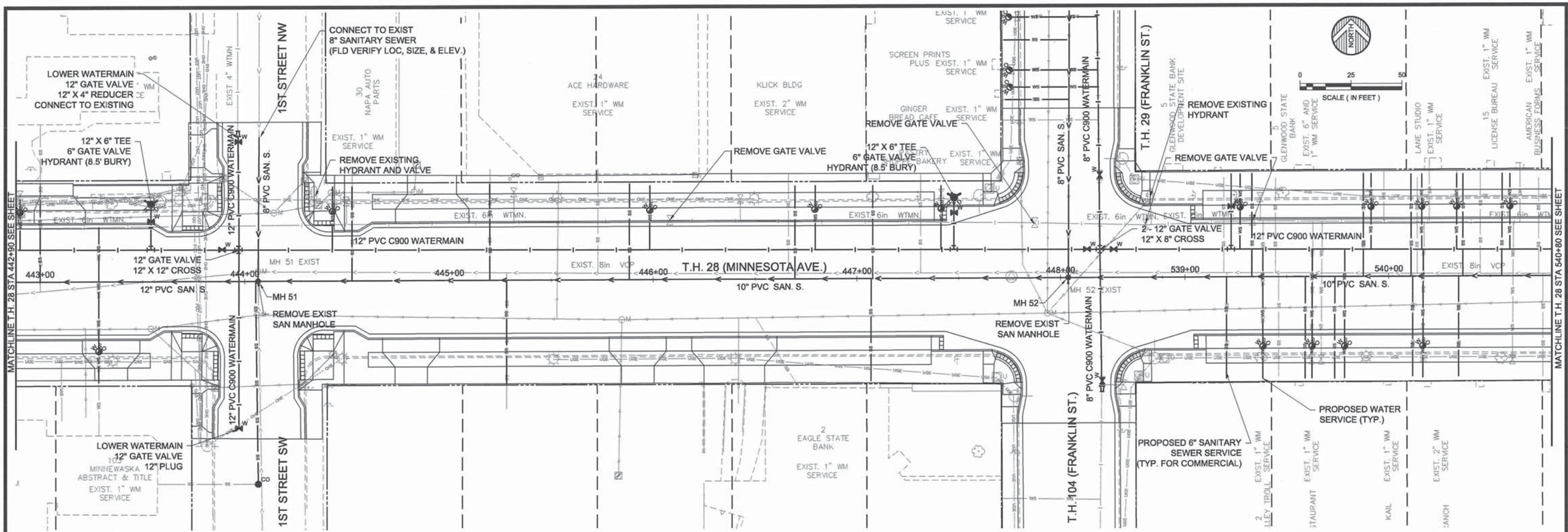
BY	REVISIONS DESCRIPTION	DATE

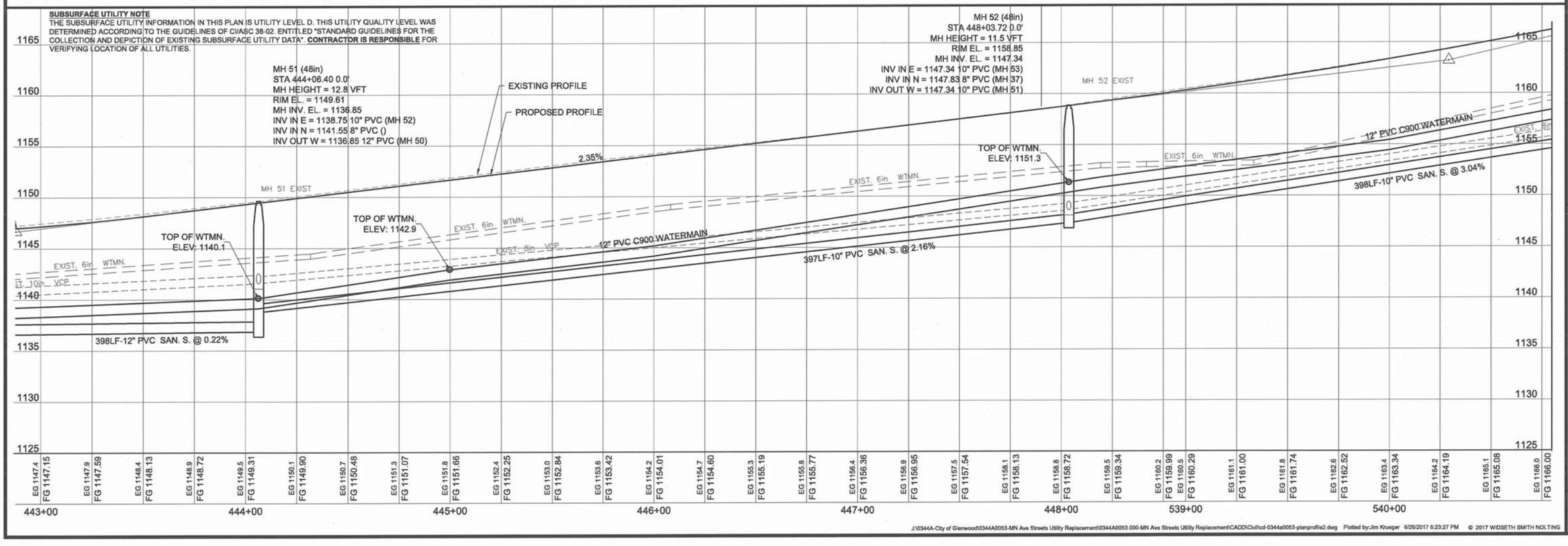
DATE:
SCALE:
DRAWN BY: JAK
CHECKED BY: LVH
MONTH, YEAR
AS SHOWN
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-15





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LAWRENCE J. VAN BUSKIRK DATE: 06-27-2017 LIC. NO. 18342

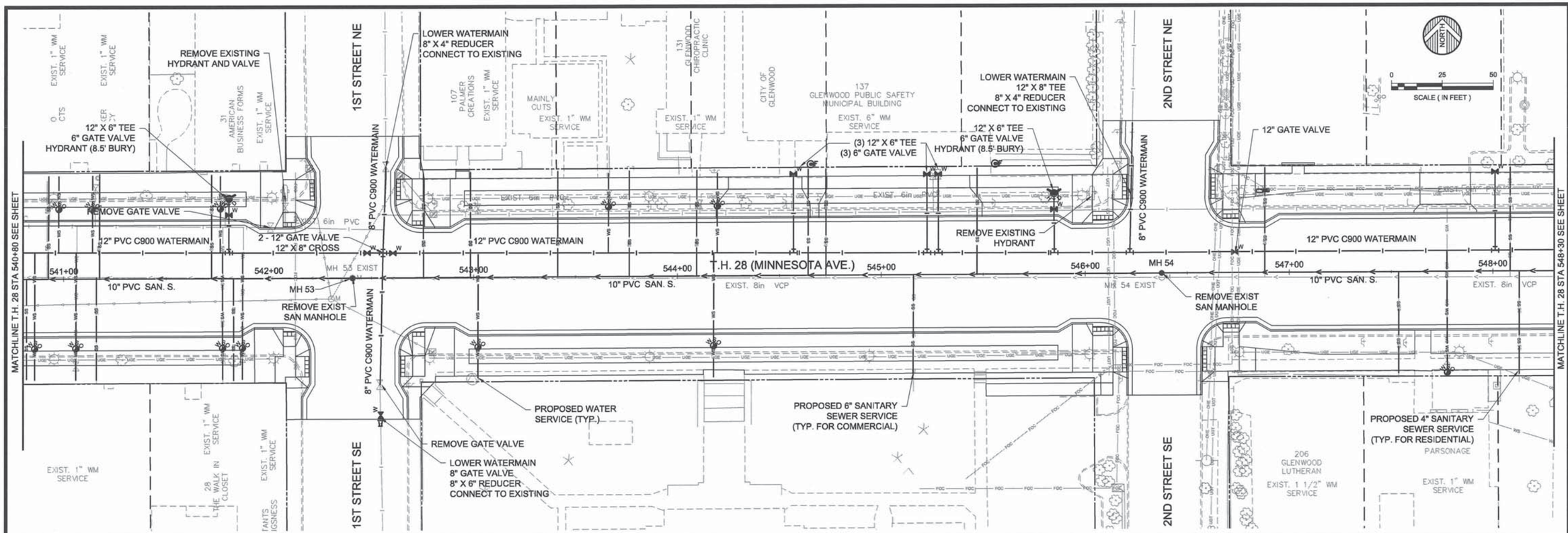
BY	REVISIONS DESCRIPTION	REV#	DATE

DATE:
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-16



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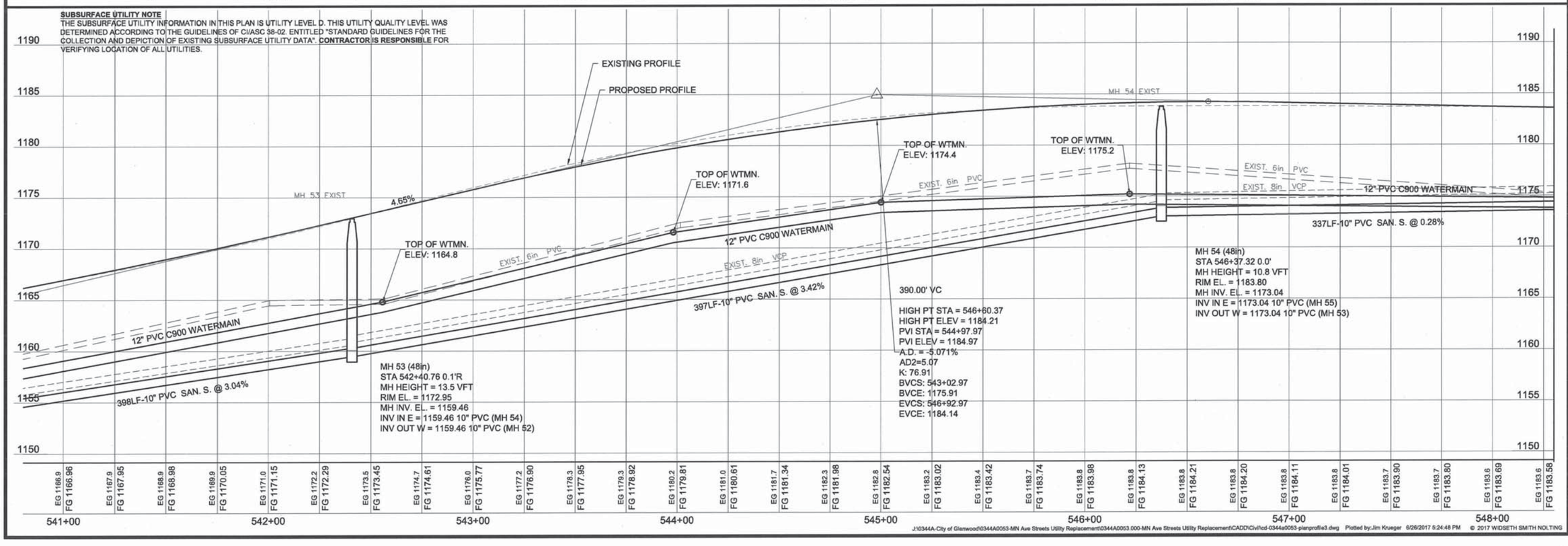

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LAWRENCE J. VANHOUT DATE: 06-27-2017 LIC. NO. 18342

BY	DATE	REVISIONS DESCRIPTION	REV#

DATE: MONTH, YEAR
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-17

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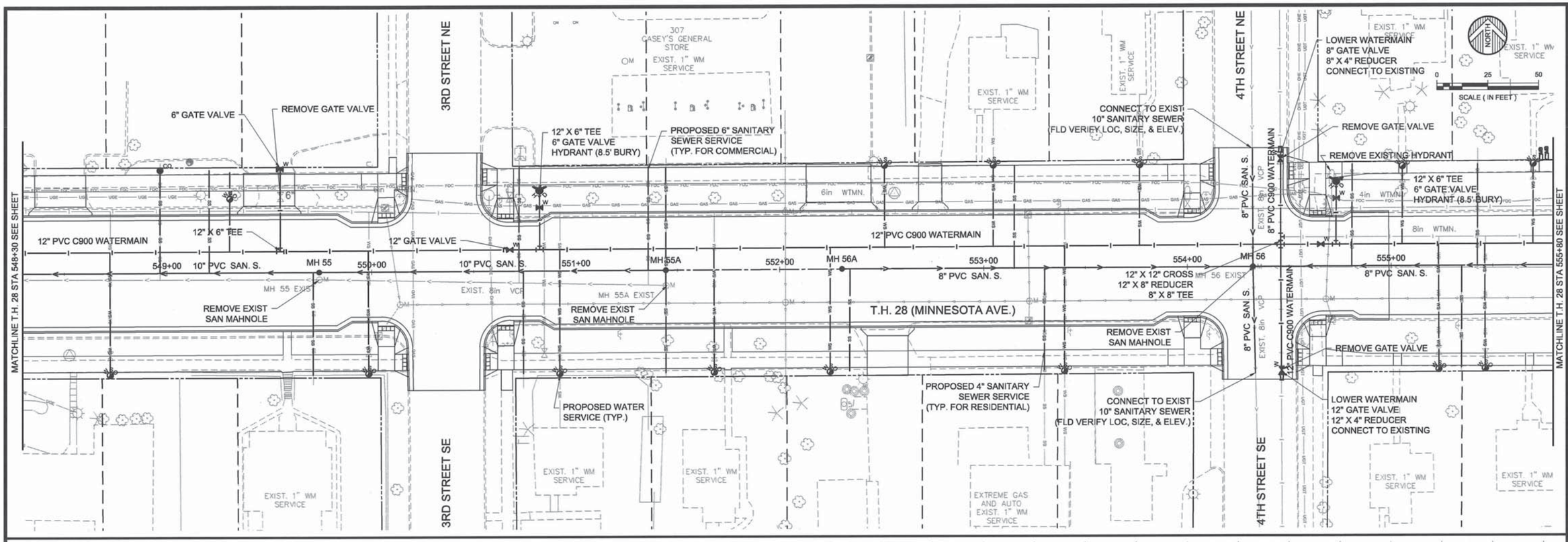

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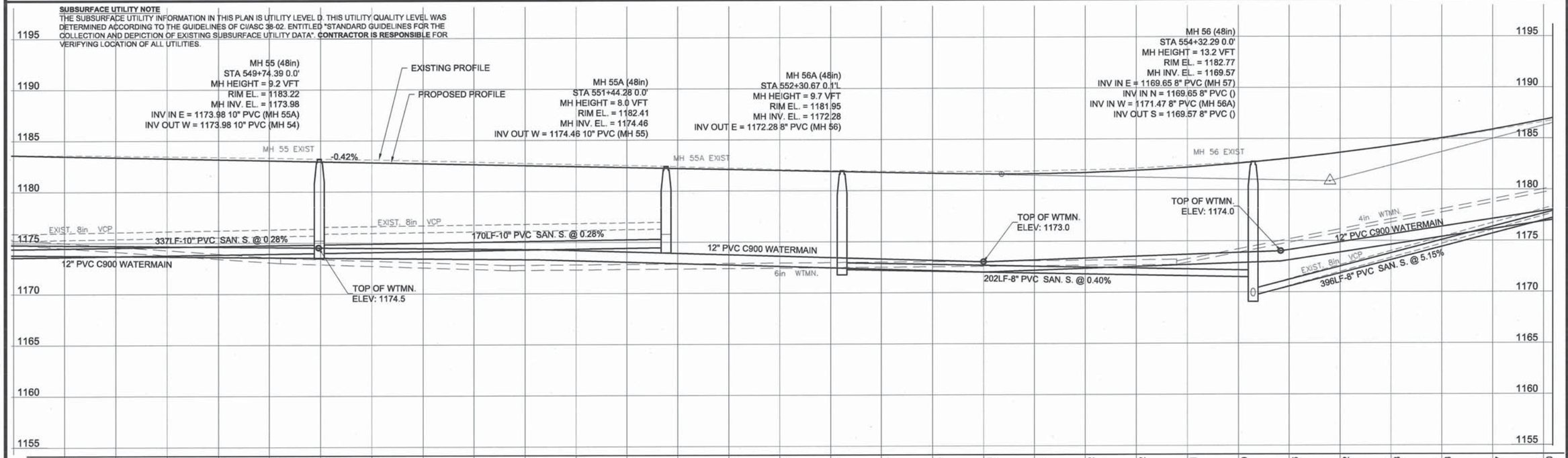

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LAWRENCE J. VANHOUT — DATE: 06-27-2017 — LIC. NO. 18342

BY	DATE	REVISIONS DESCRIPTION	REV#

DATE:
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-18

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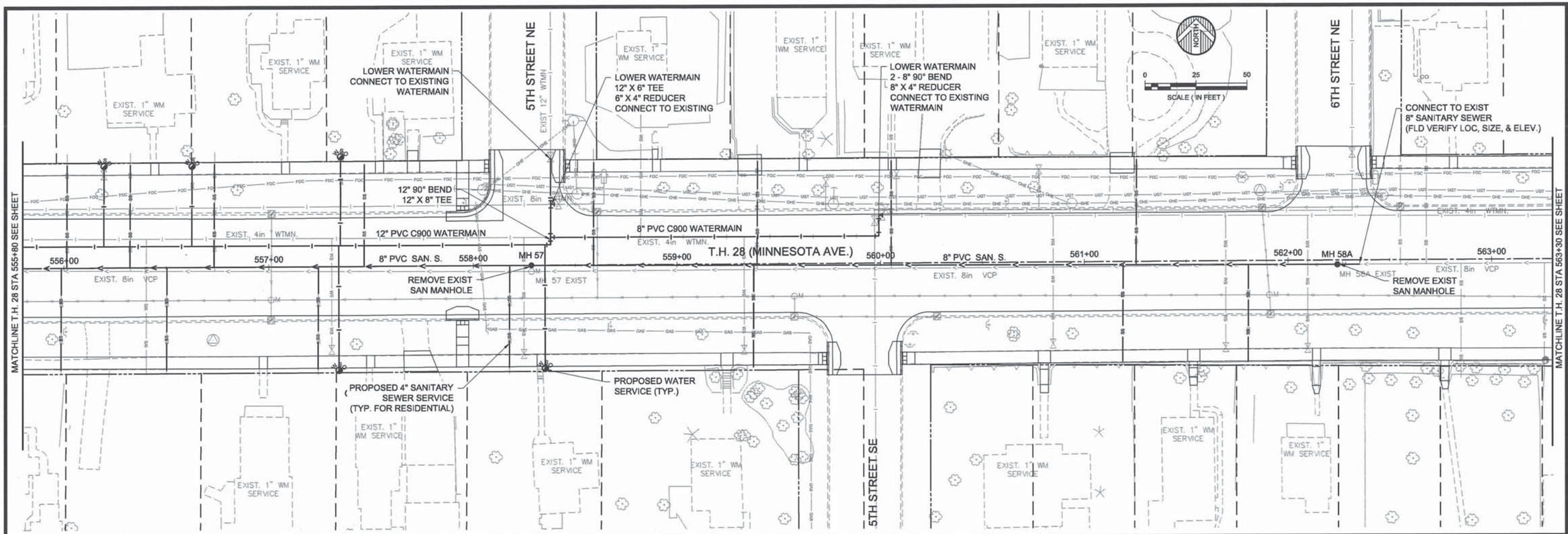

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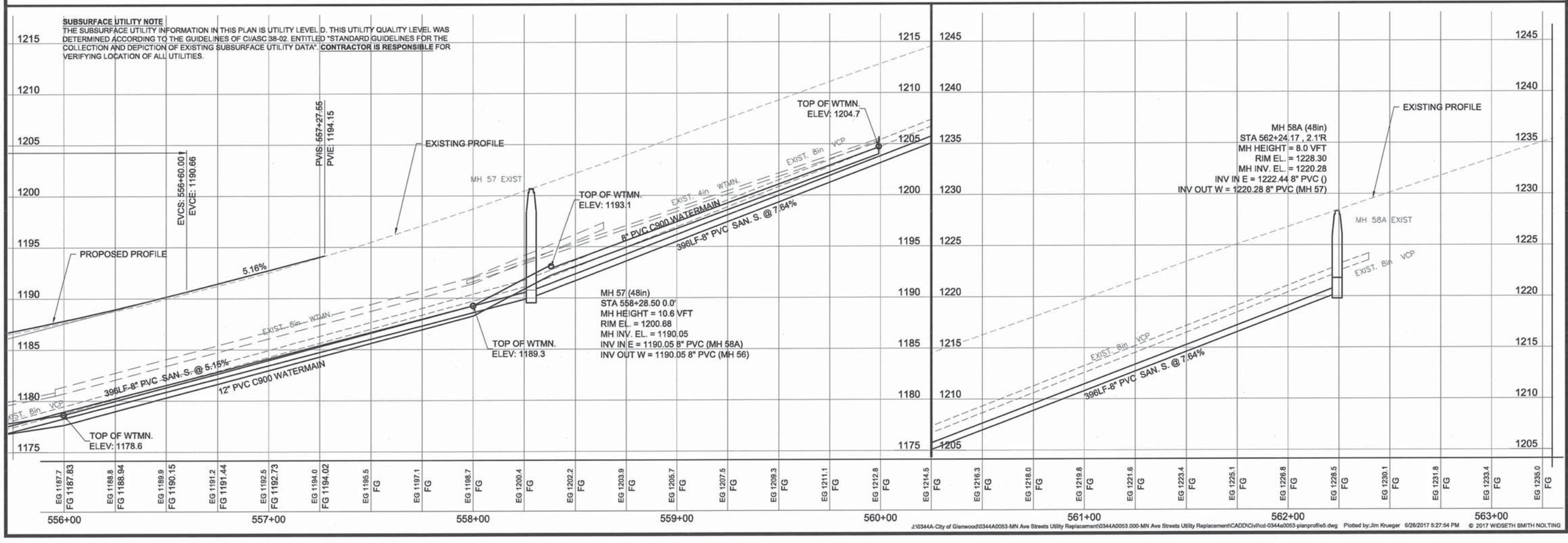

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LAWRENCE J. VARHOUT
DATE: 06-27-2017 LIC. NO. 18342

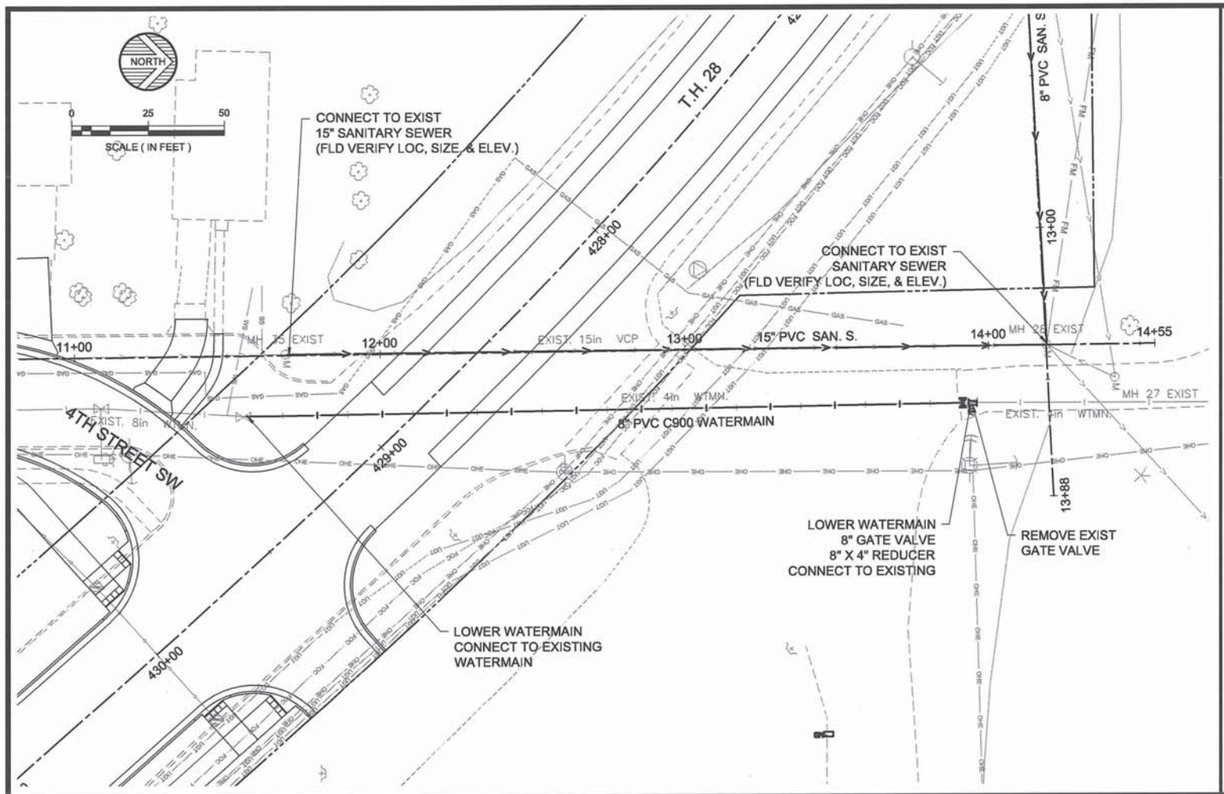
BY	REVISIONS DESCRIPTION	DATE	REV#

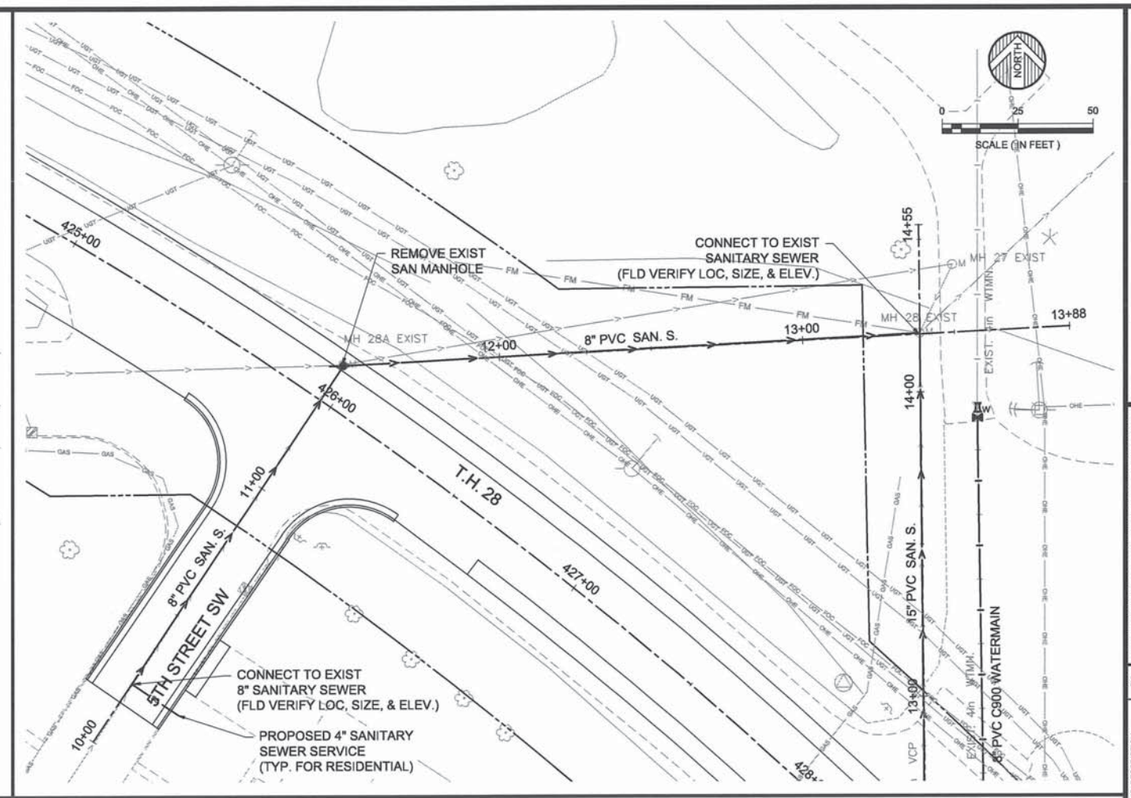
DATE: MONTH, YEAR
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-19





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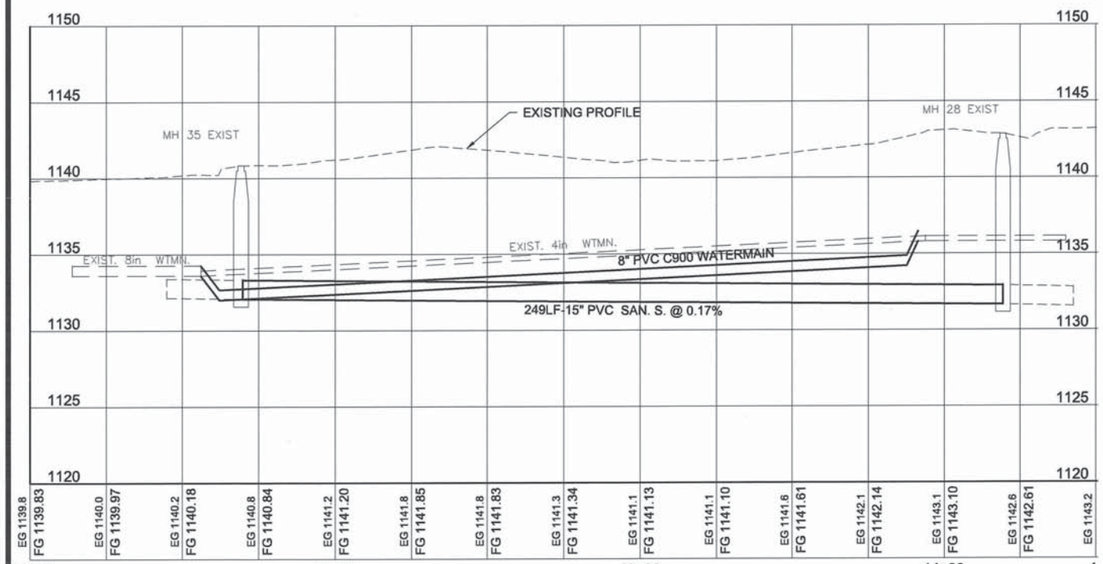

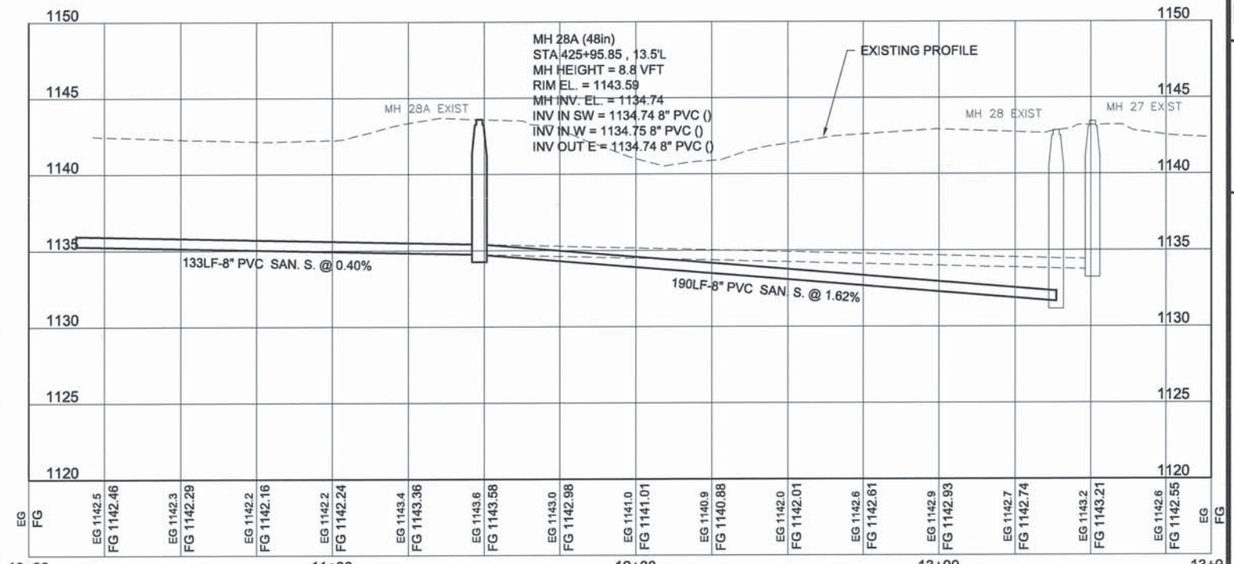

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LAWRENCE J. VAN HOUT DATE: 05-27-2017 LIC. NO. 18342

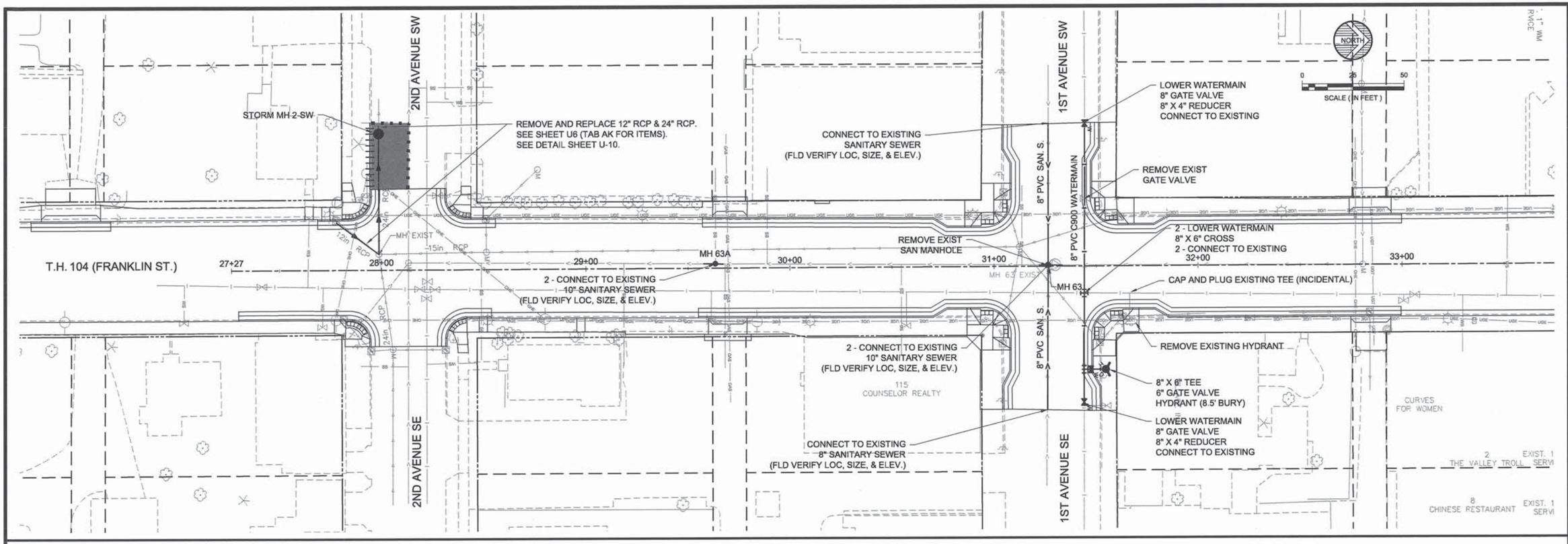
DATE	REV#	REVISIONS DESCRIPTION	BY

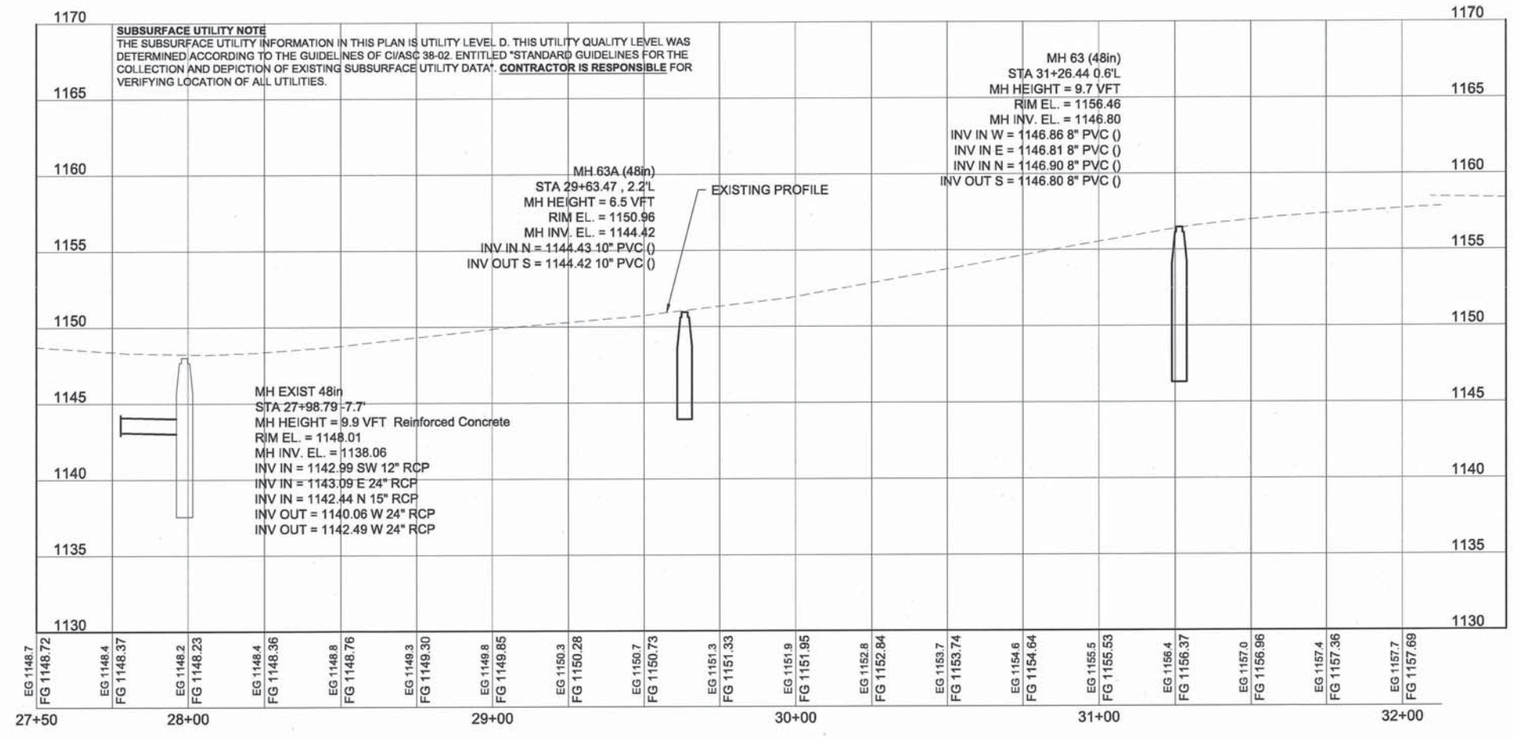
DATE:
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-20





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Lawrence J. VanHoof DATE: 06-27-2017 LIC. NO. 18342

BY	DATE	REV#	REVISIONS DESCRIPTION

DATE: MONTH, YEAR
SCALE: AS SHOWN
DRAWN BY: JAK
CHECKED BY: LVH
JOB NUMBER: 0344A0053

MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-21

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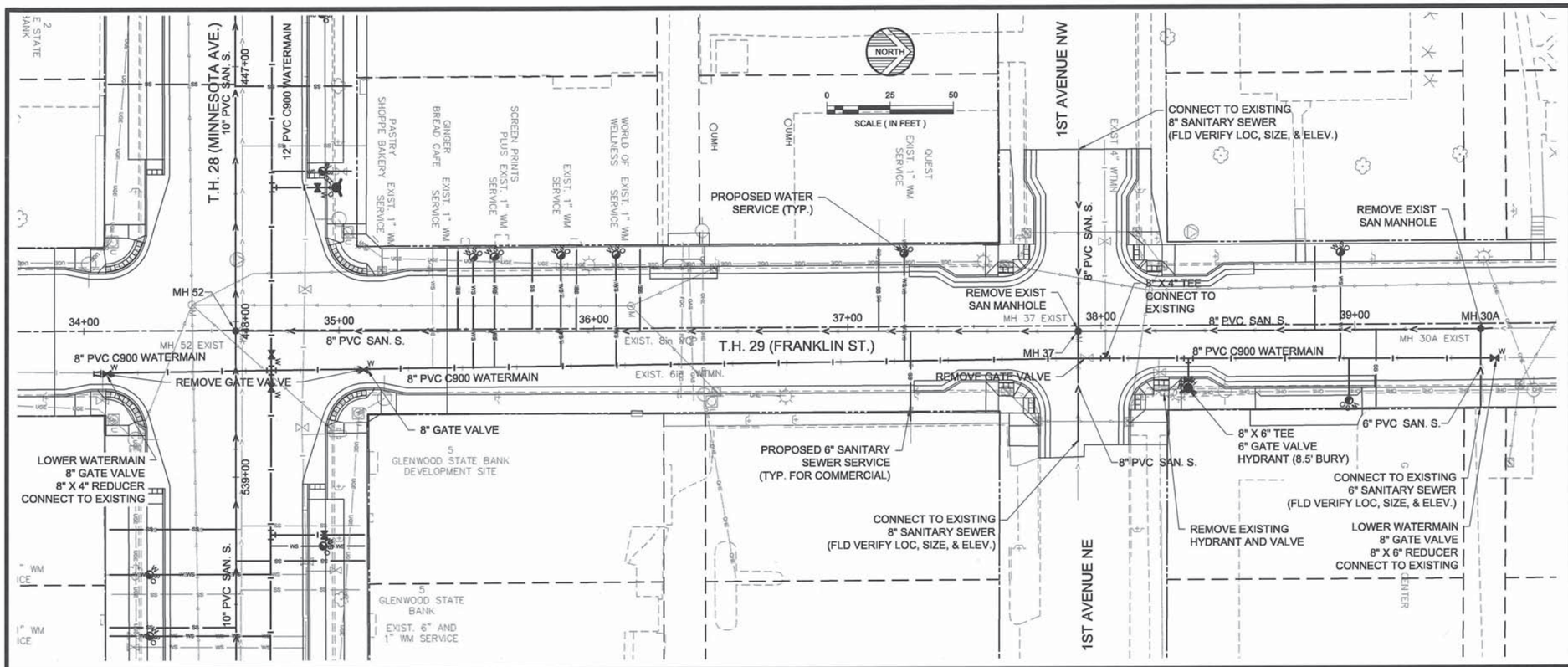

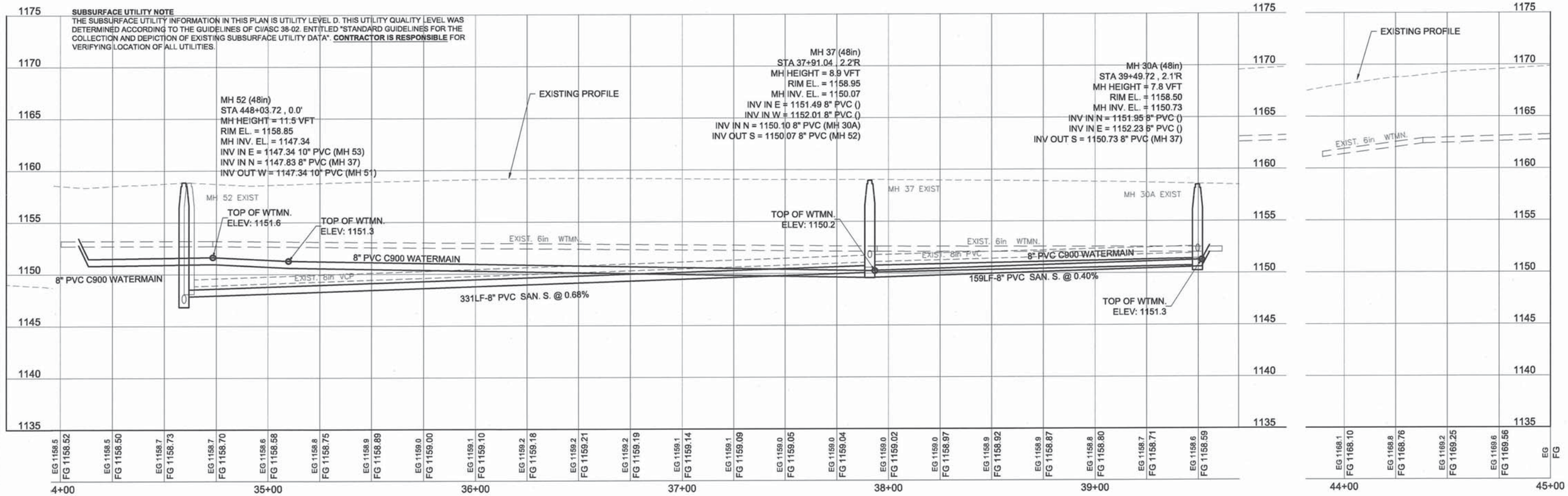

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LAWRENCE J. VANHOUT
DATE: 06-27-2017 LIC. NO. 18342

REVISIONS	DESCRIPTION	DATE	BY
REV#			

DATE: MONTH, YEAR
SCALE: AS SHOWN
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JOB NUMBER: 0344A0053

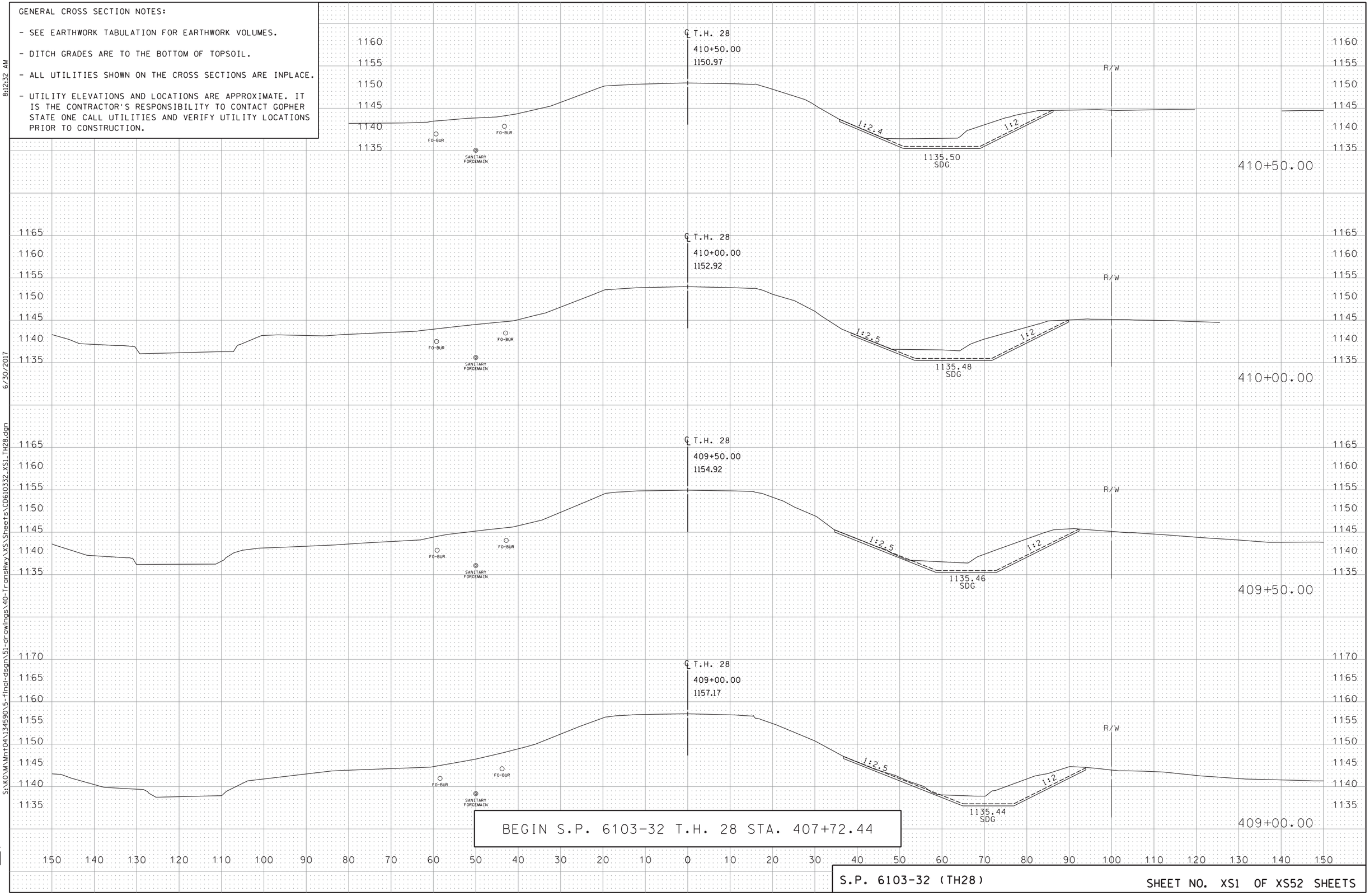
MINNESOTA AVENUE UTILITY IMPROVEMENTS
CITY OF GLENWOOD
GLENWOOD, MN.

UTILITY PLAN AND PROFILE

SHEET NO.
U-22

GENERAL CROSS SECTION NOTES:

- SEE EARTHWORK TABULATION FOR EARTHWORK VOLUMES.
- DITCH GRADES ARE TO THE BOTTOM OF TOPSOIL.
- ALL UTILITIES SHOWN ON THE CROSS SECTIONS ARE INPLACE.
- UTILITY ELEVATIONS AND LOCATIONS ARE APPROXIMATE. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT GOPHER STATE ONE CALL UTILITIES AND VERIFY UTILITY LOCATIONS PRIOR TO CONSTRUCTION.



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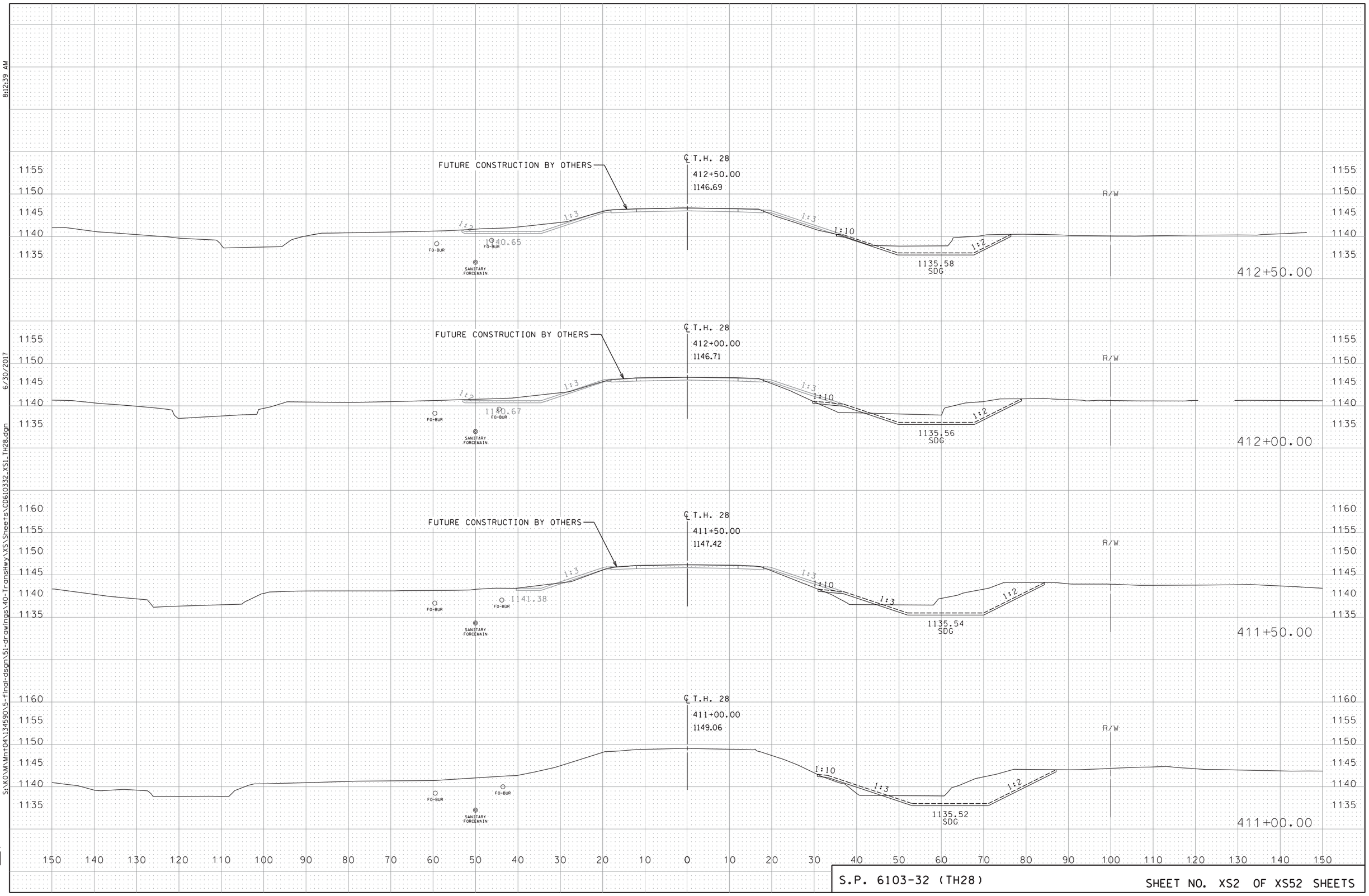

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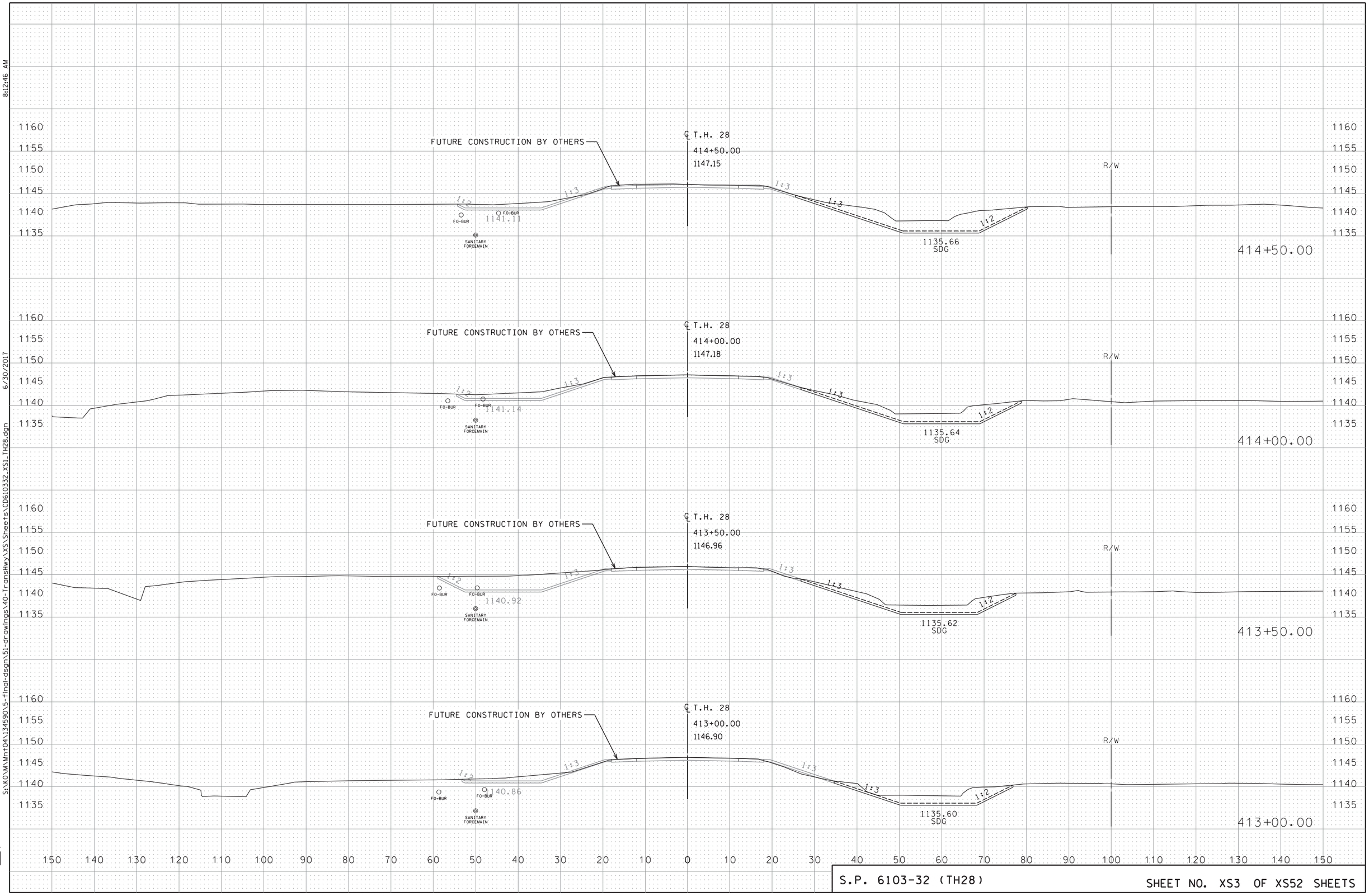

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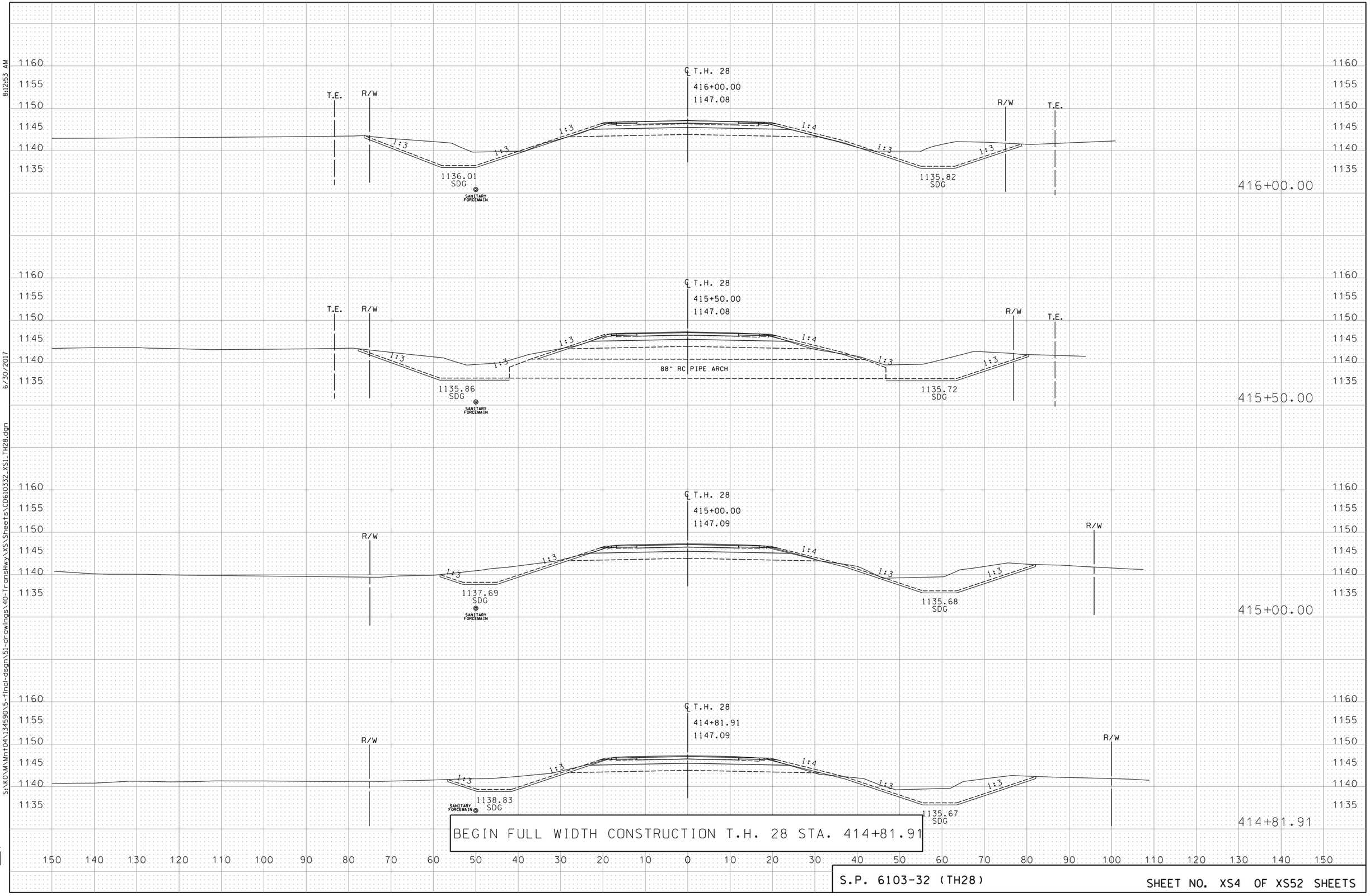

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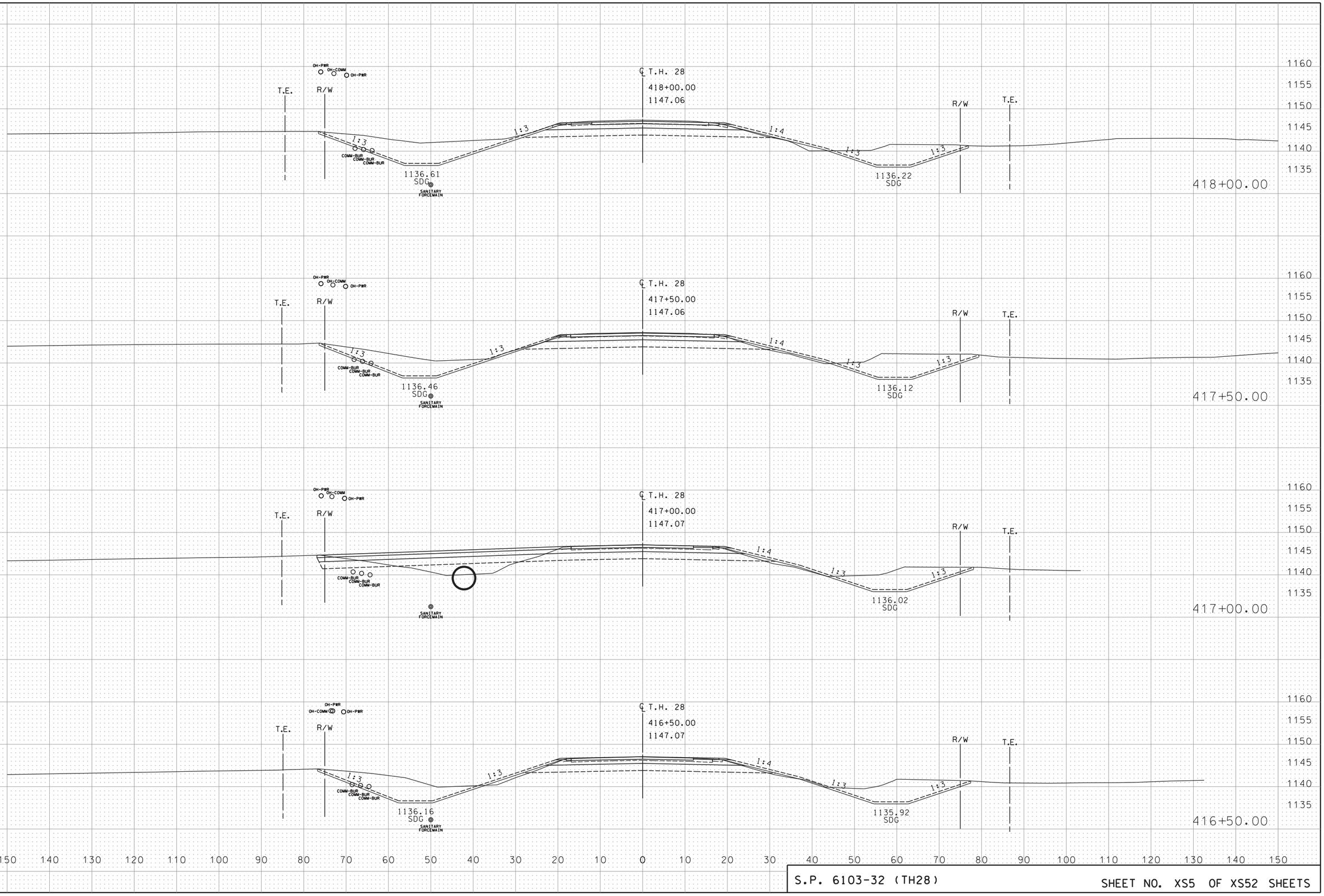

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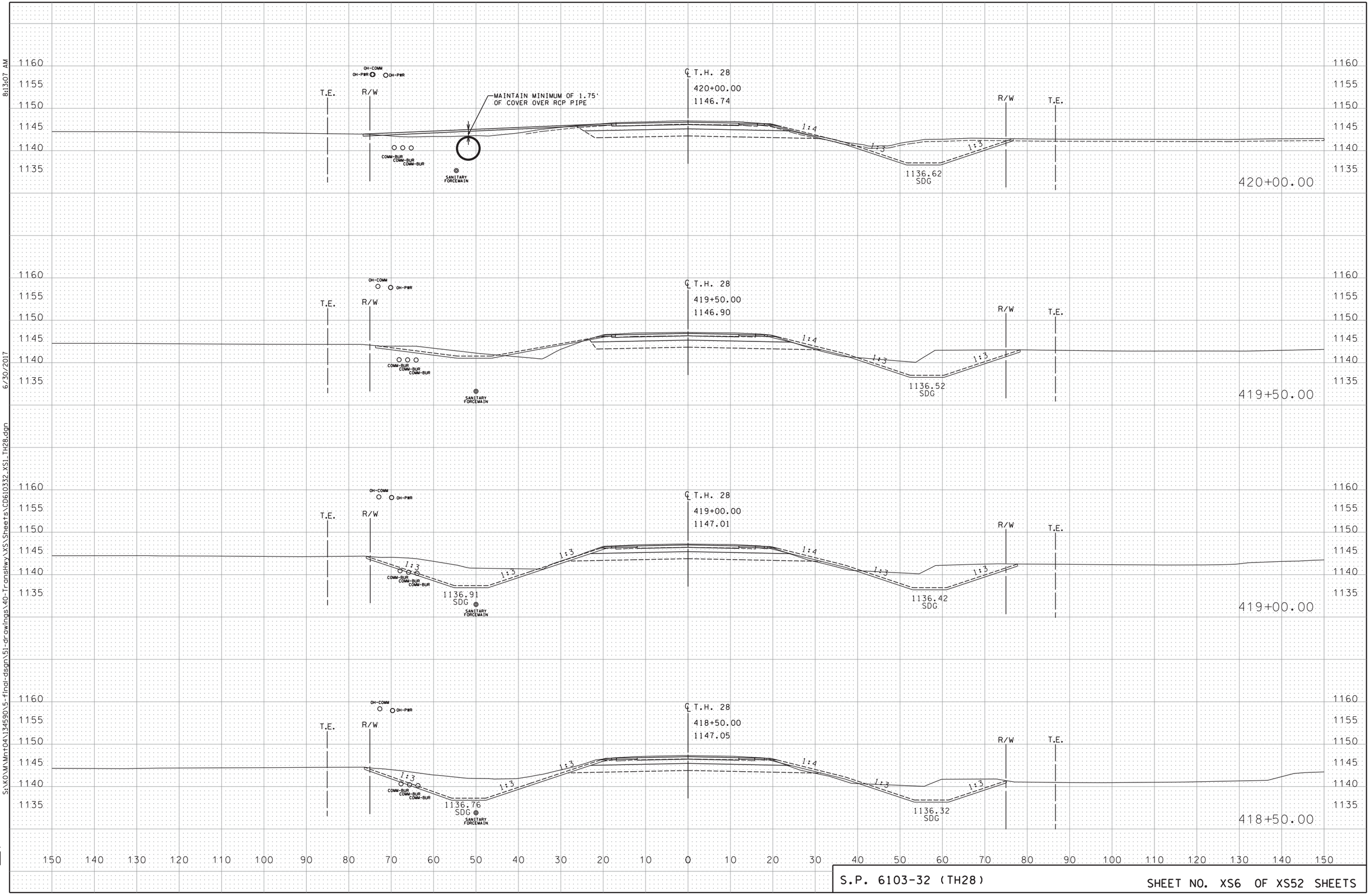

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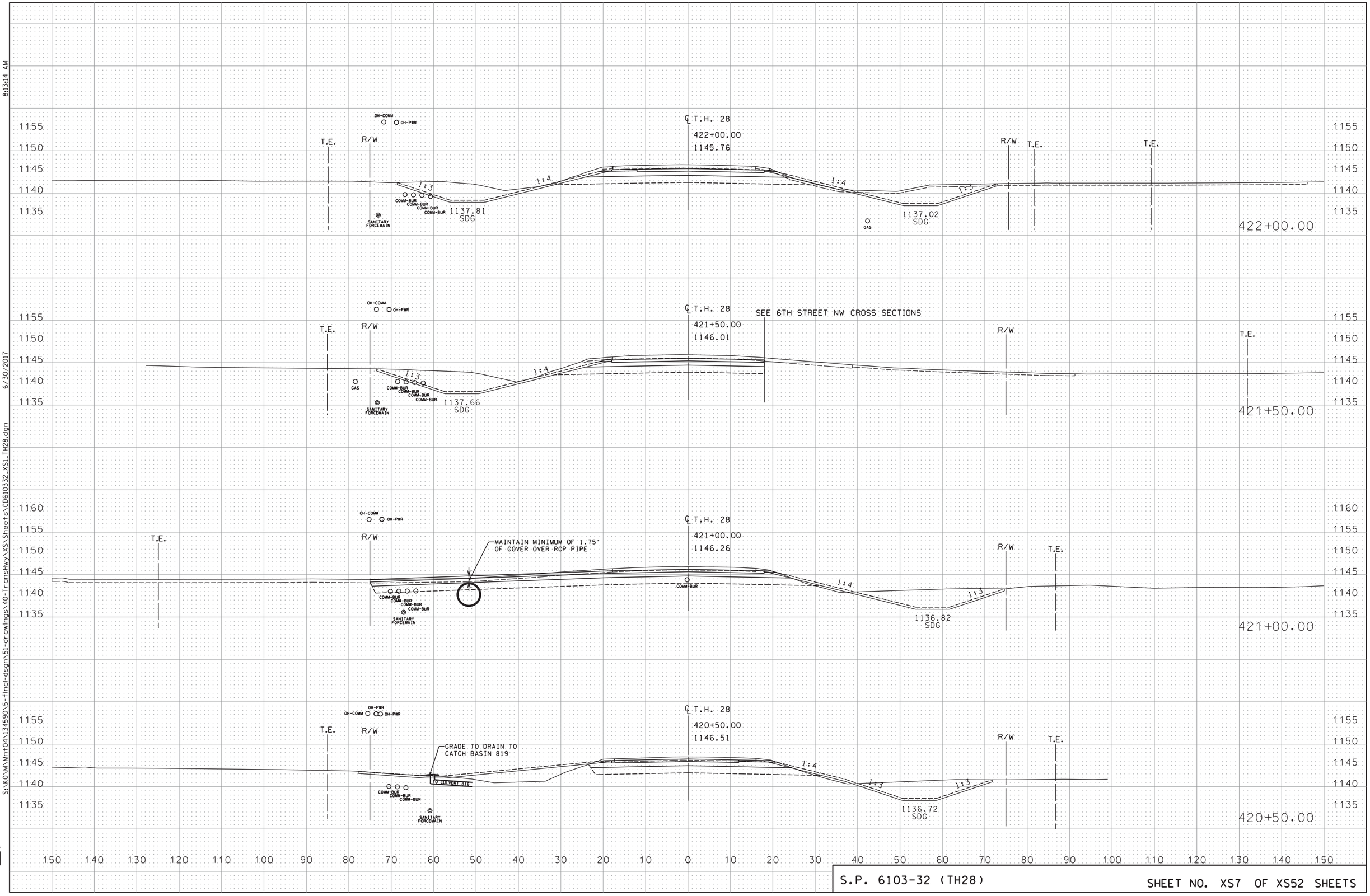

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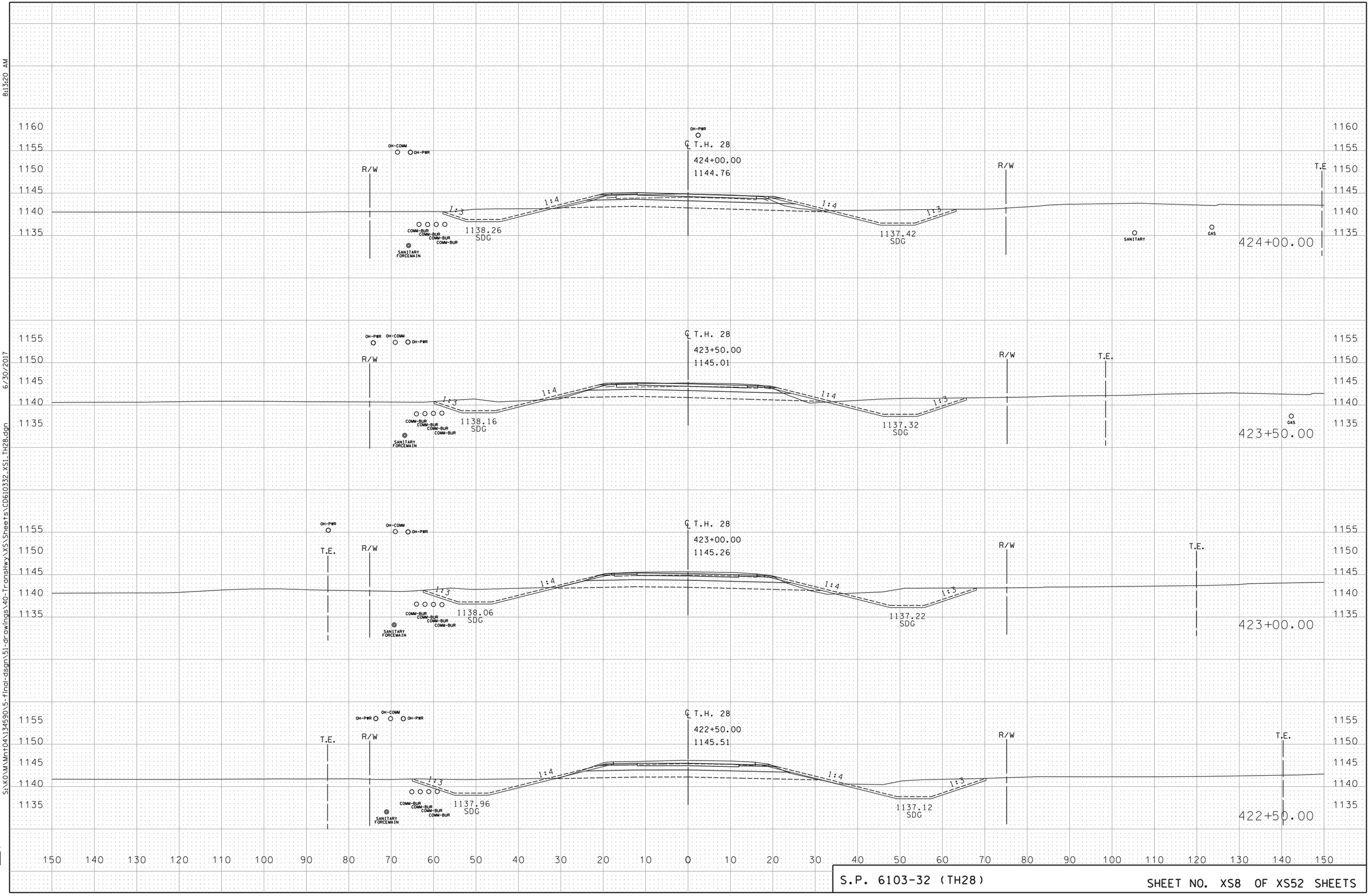

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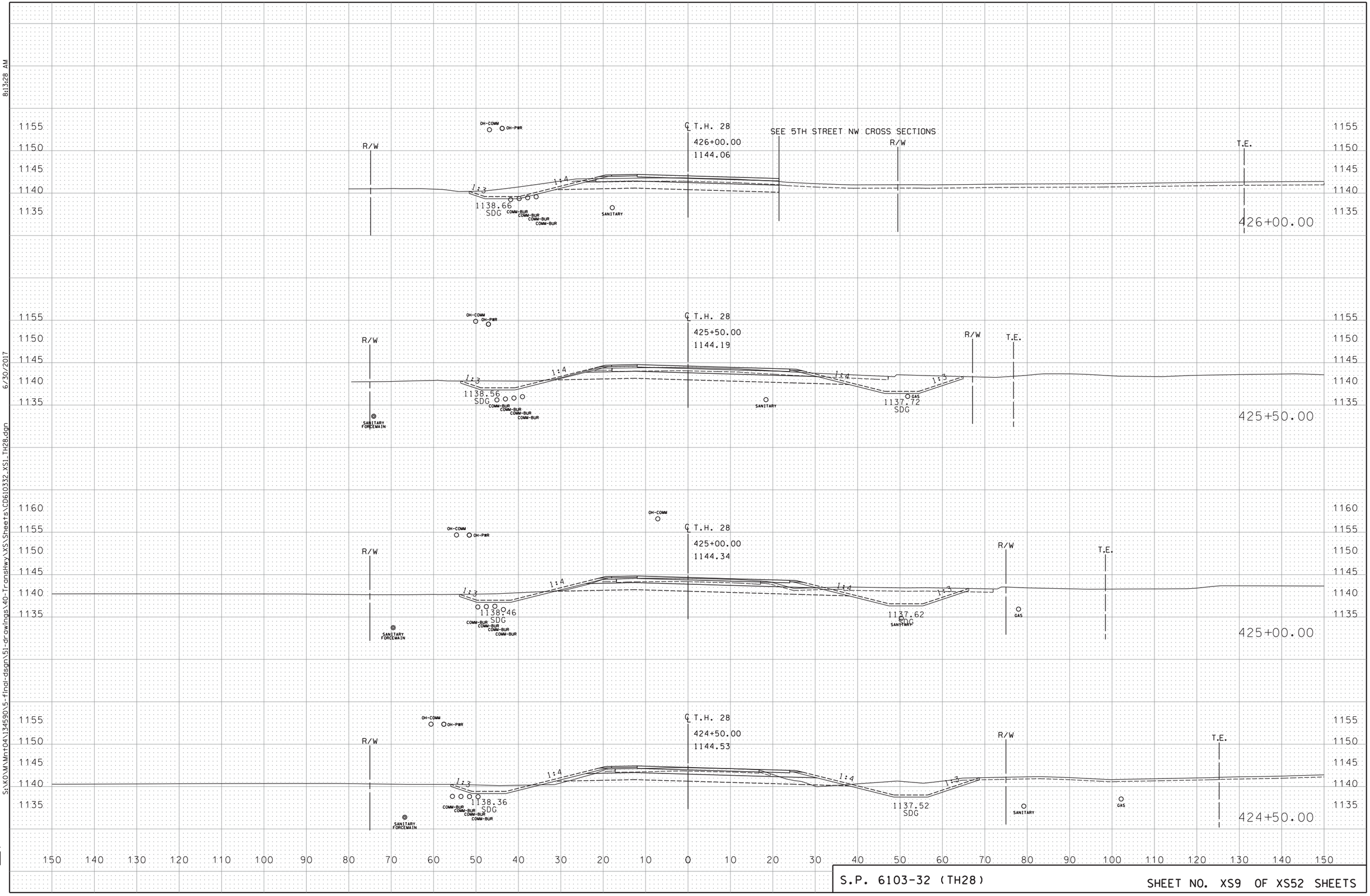

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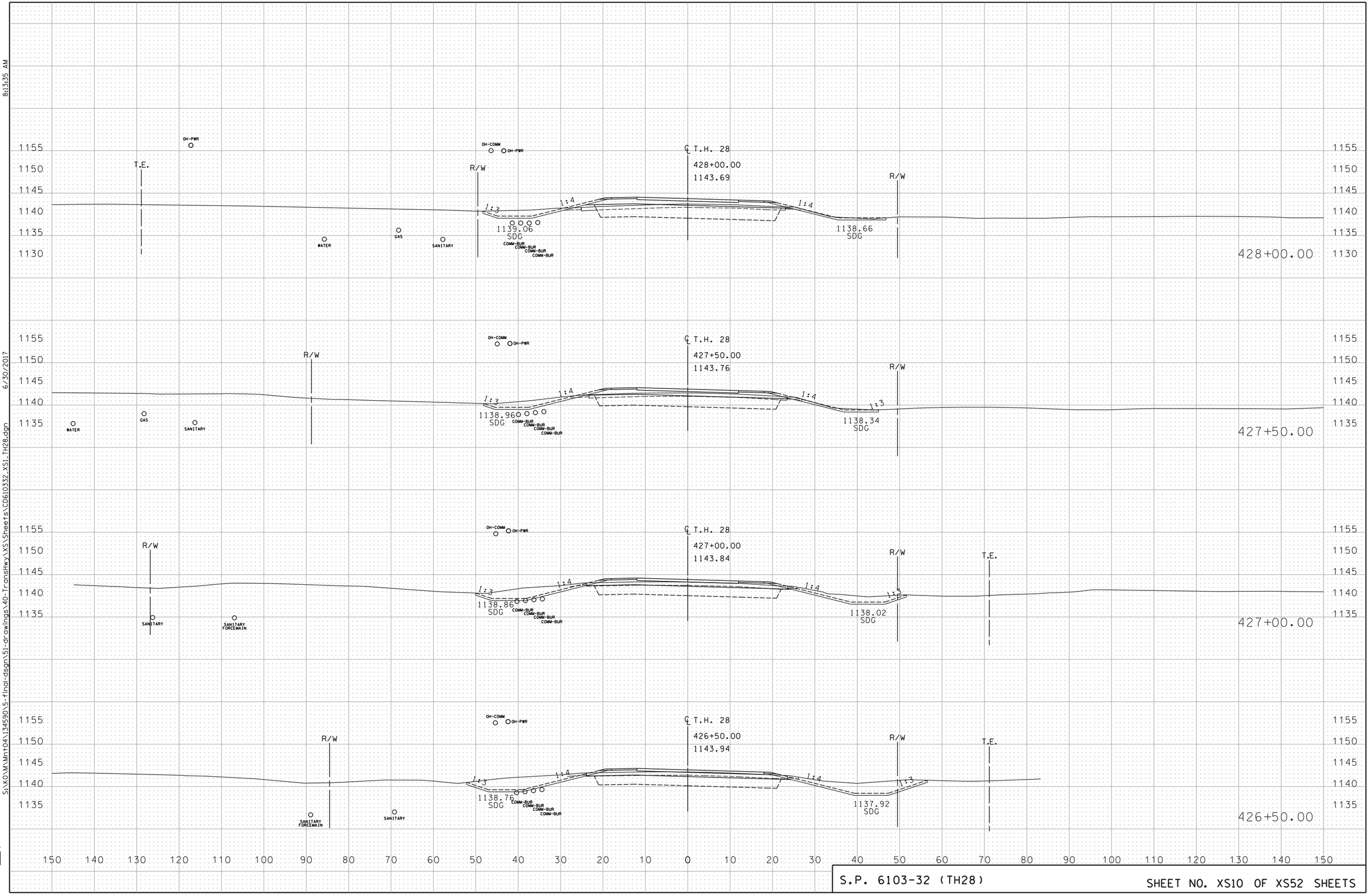

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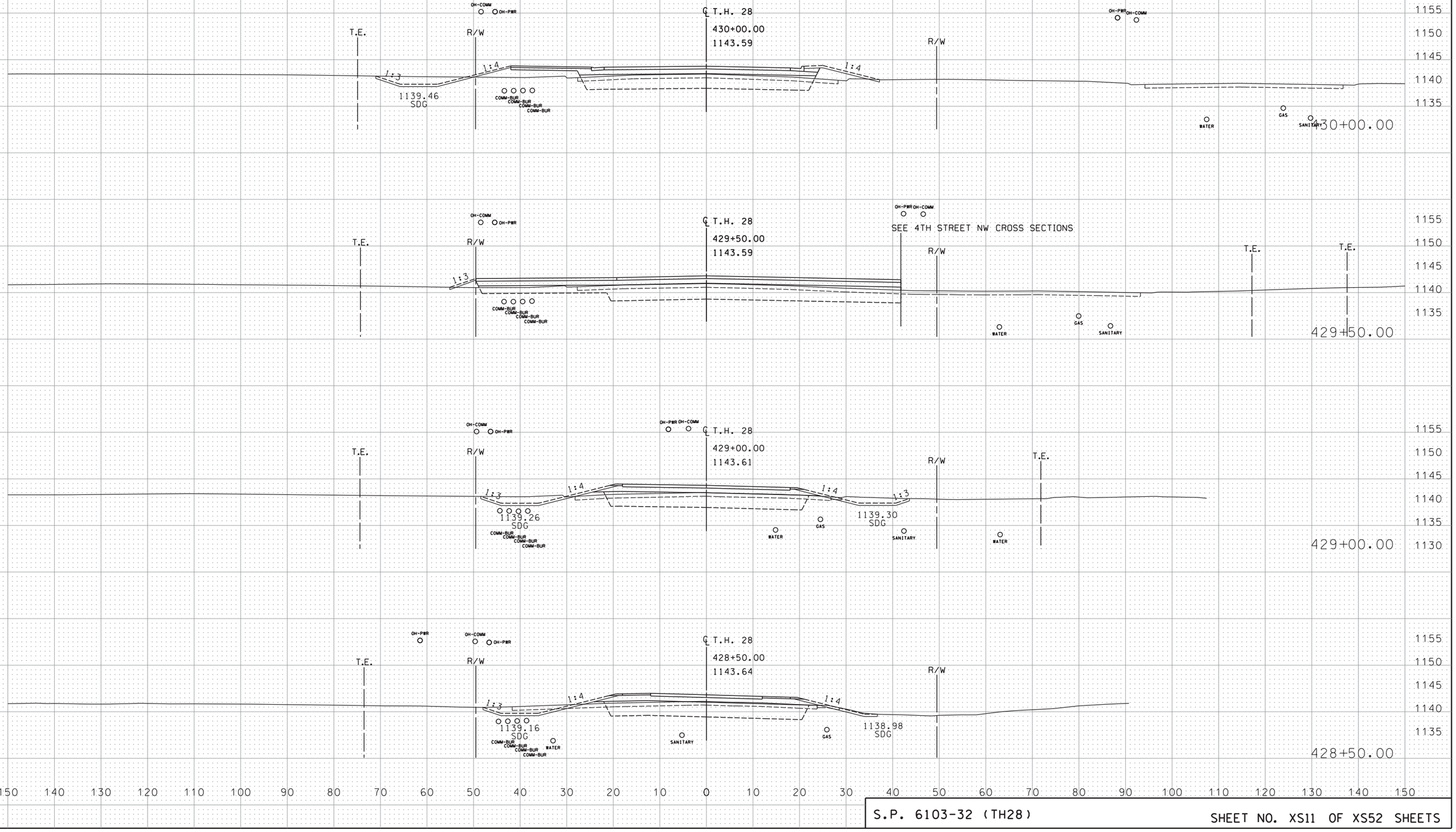

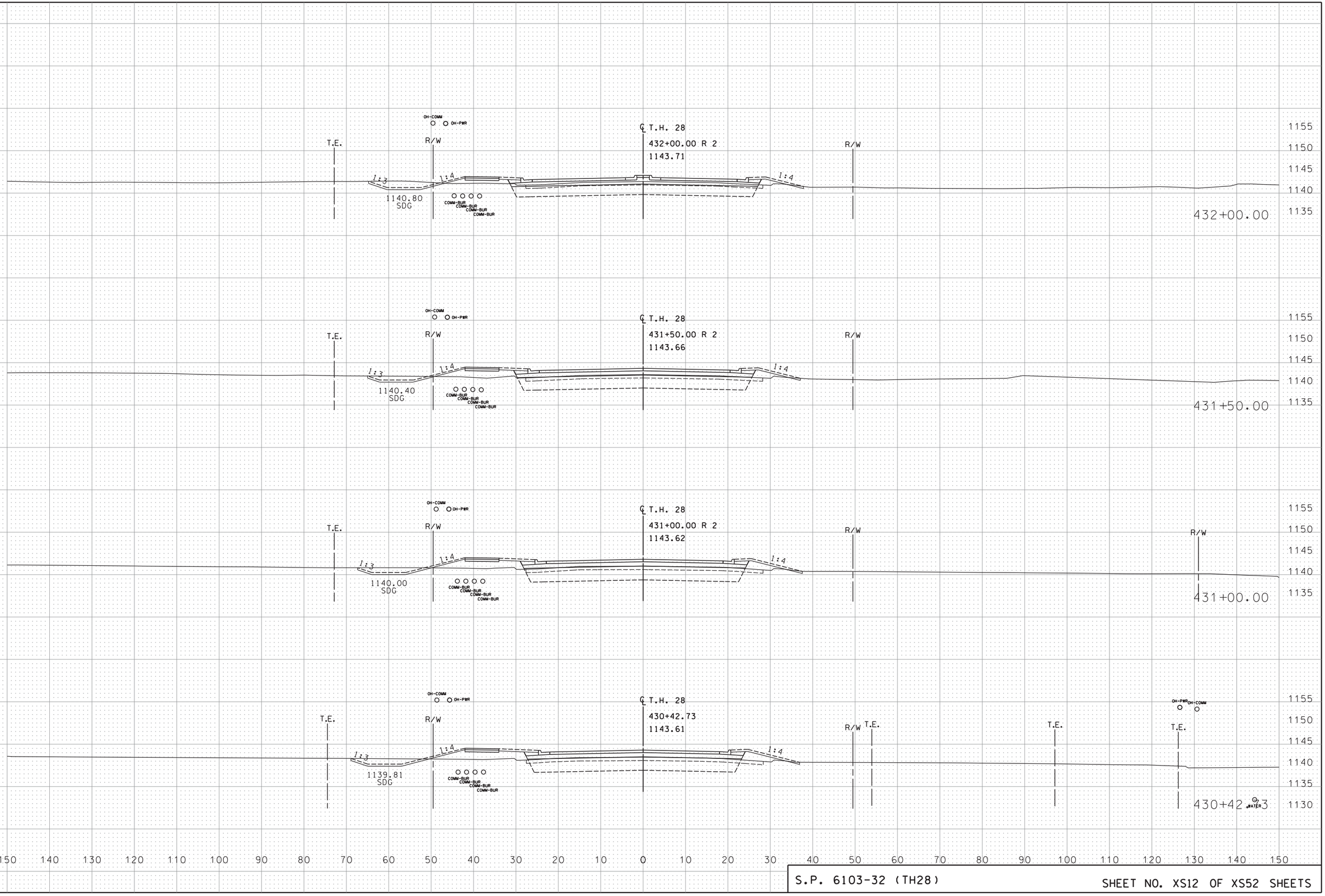

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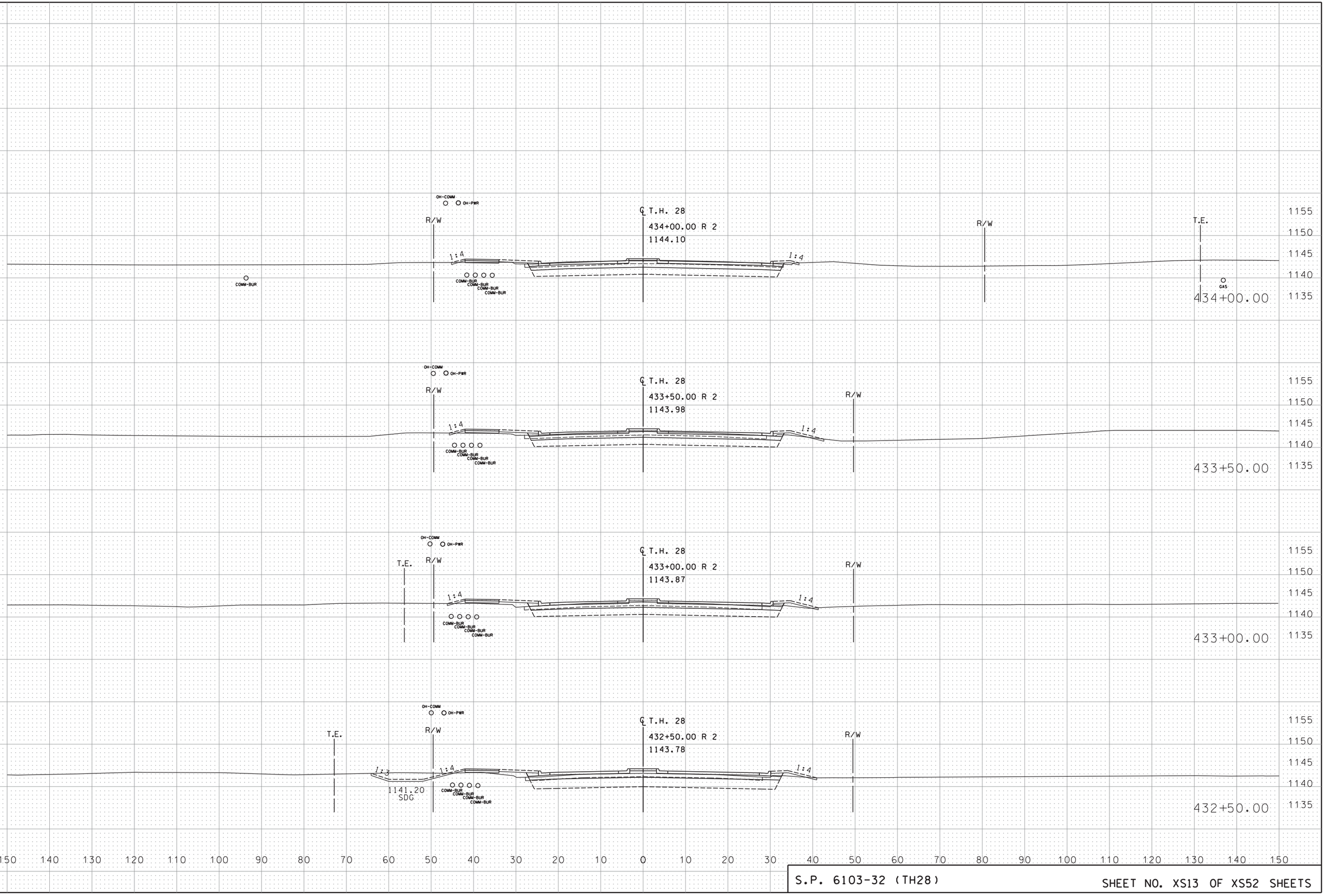

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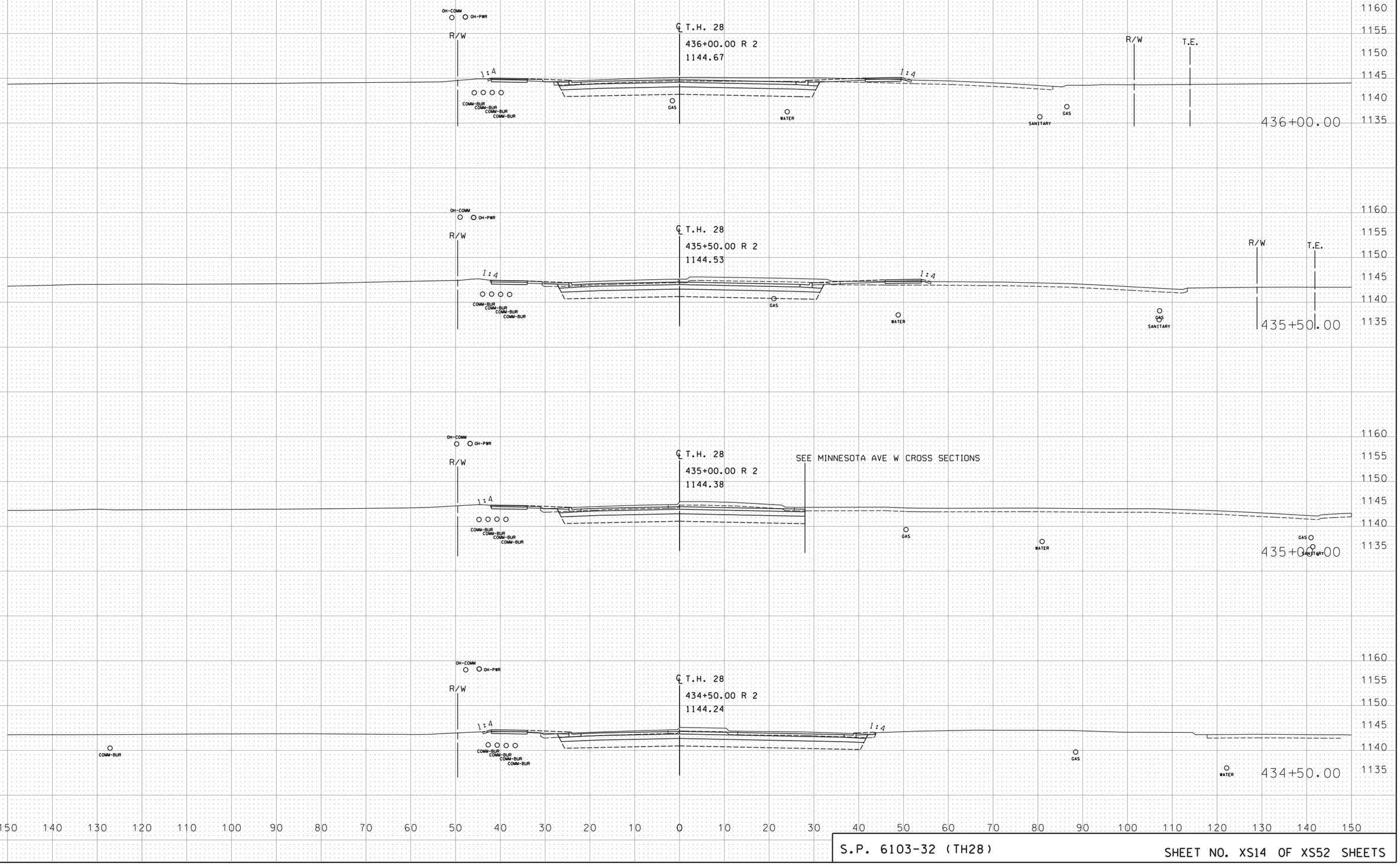

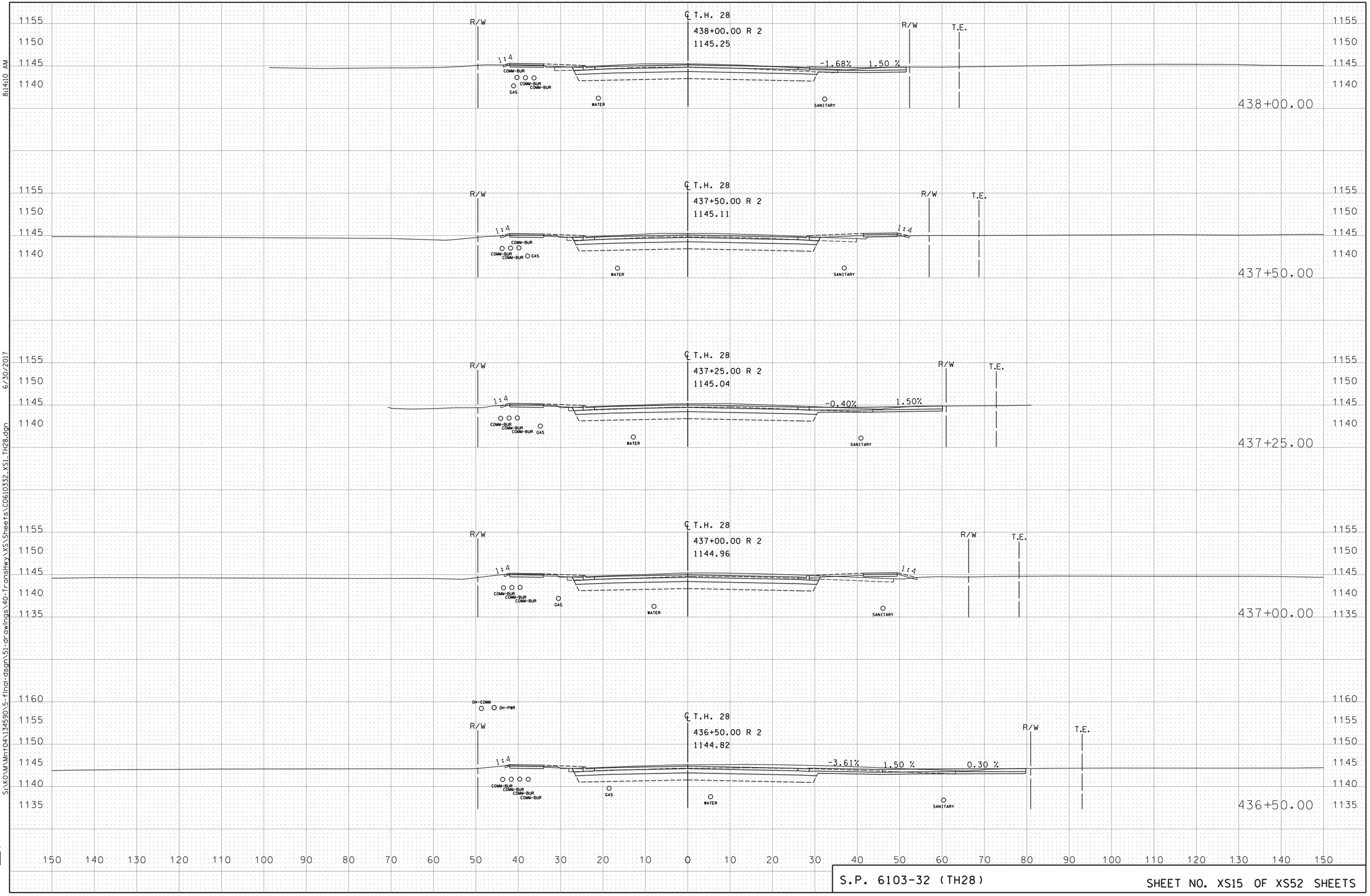

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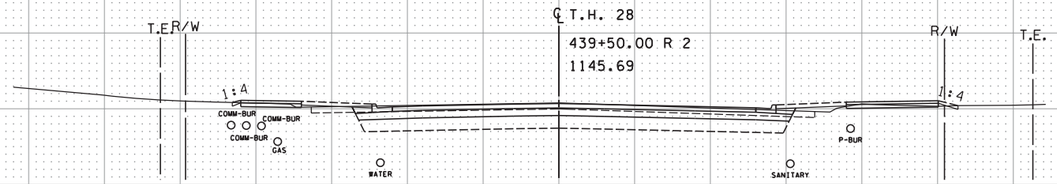

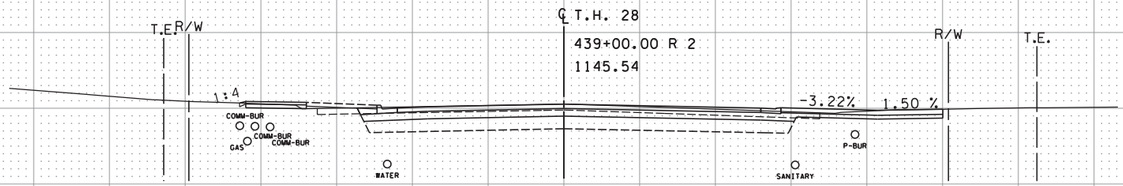

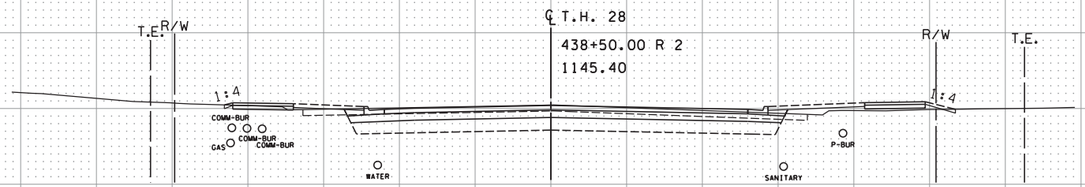

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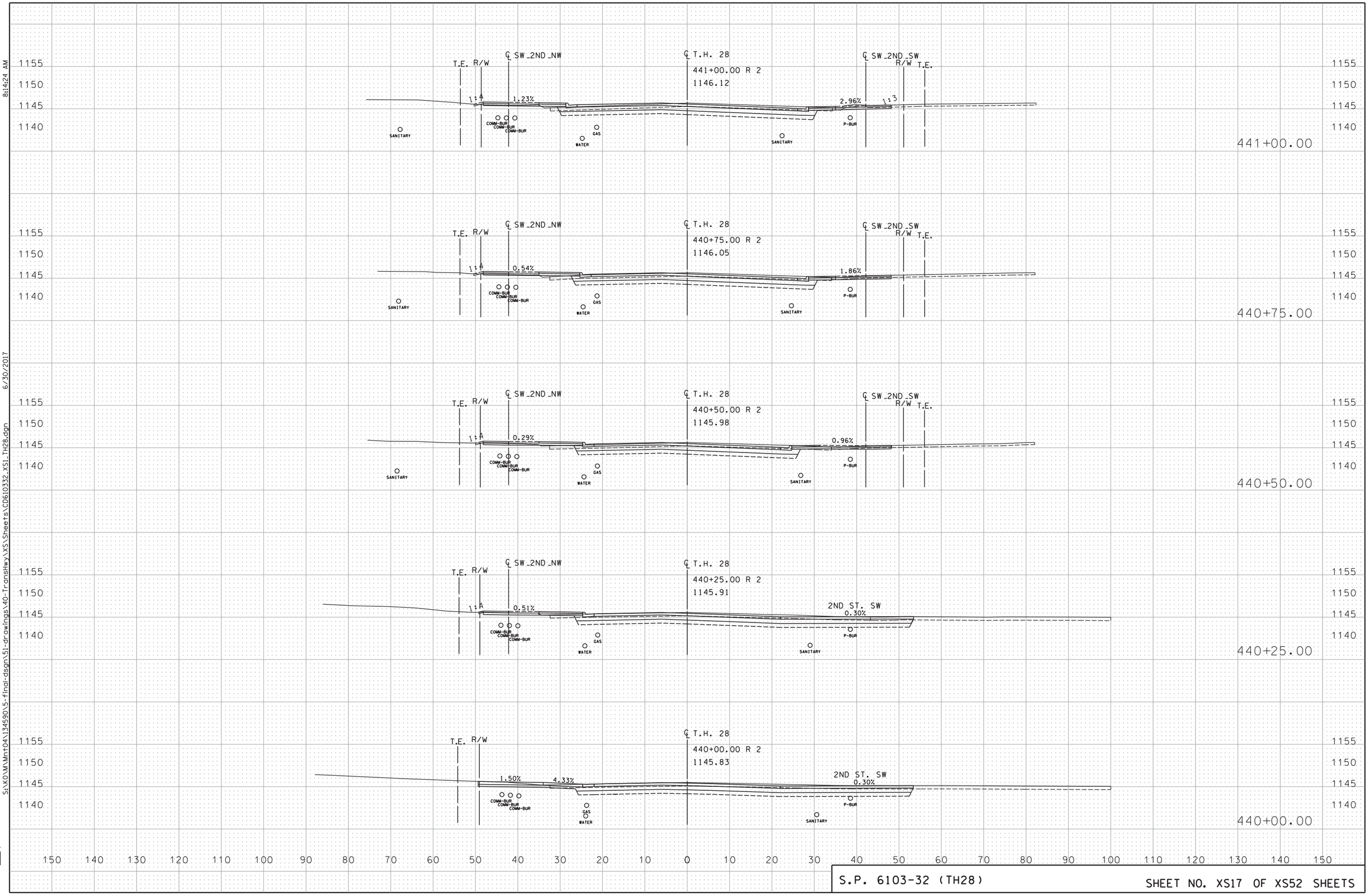
S.P. 6103-32 (TH28)

SHEET NO. XS16 OF XS52 SHEETS



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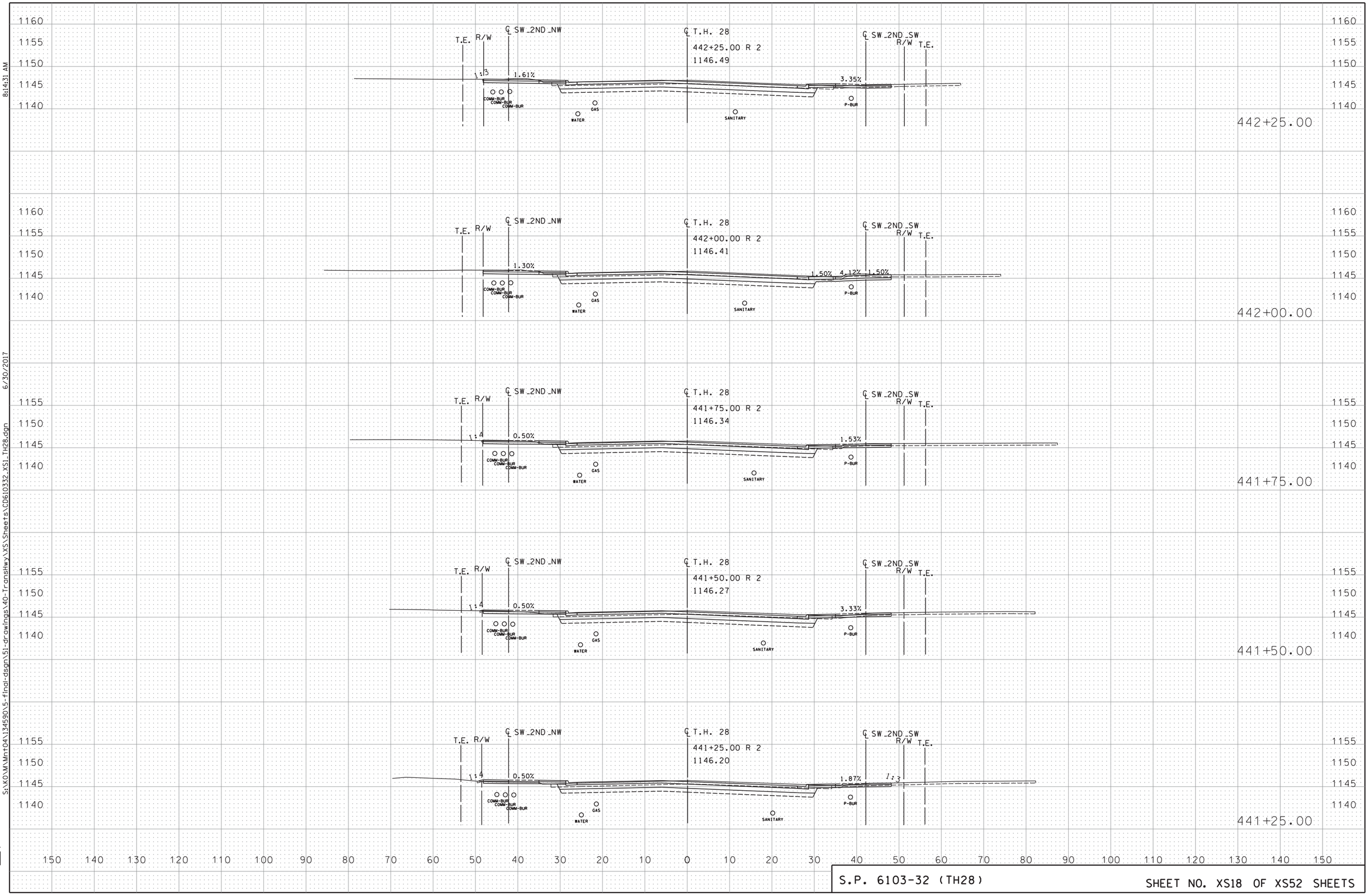
S.P. 6103-32 (TH28)

SHEET NO. XS17 OF XS52 SHEETS



S.P. 6103-32 (TH28)

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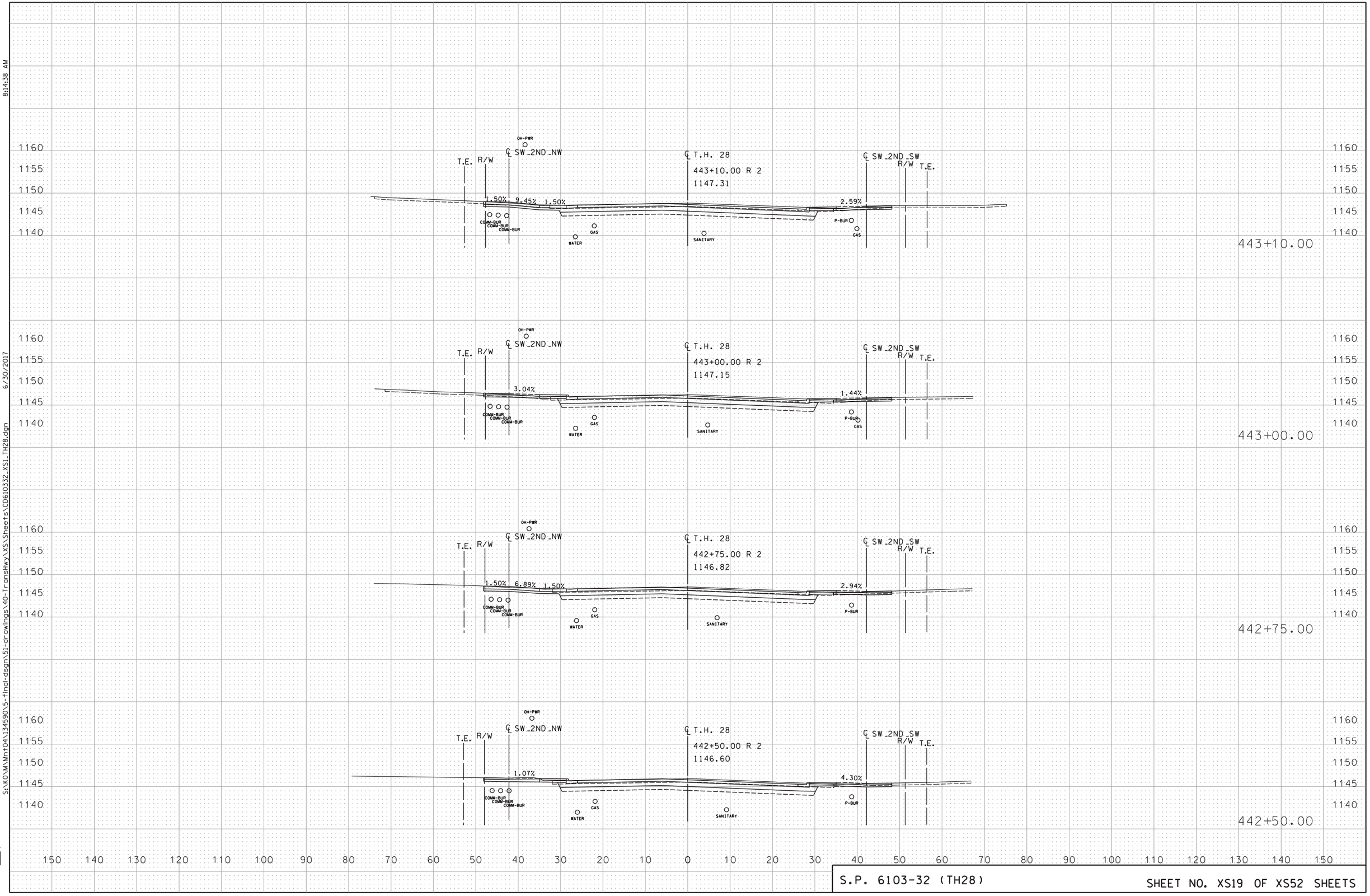

S.P. 6103-32 (TH28)

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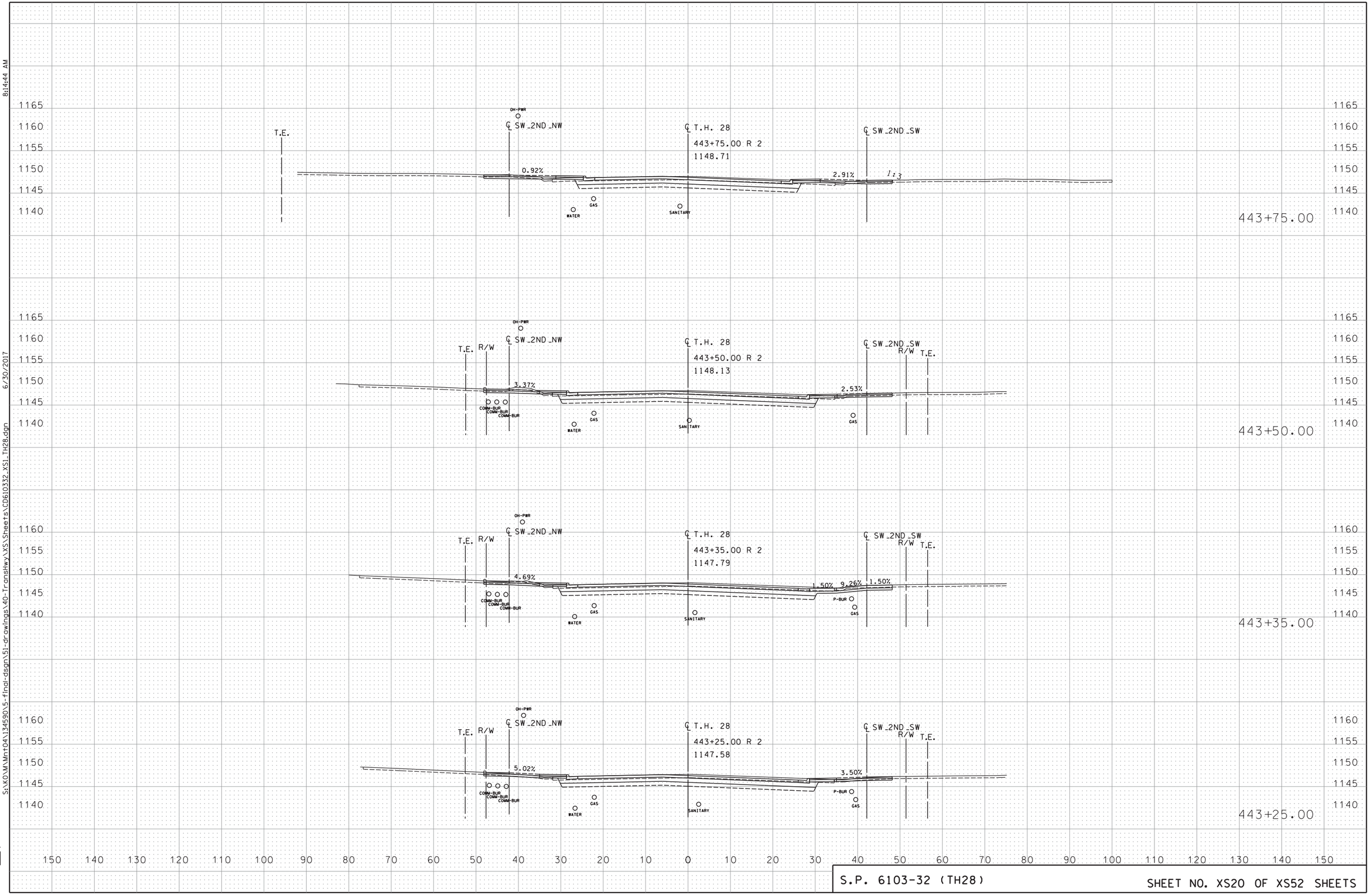

S.P. 6103-32 (TH28)

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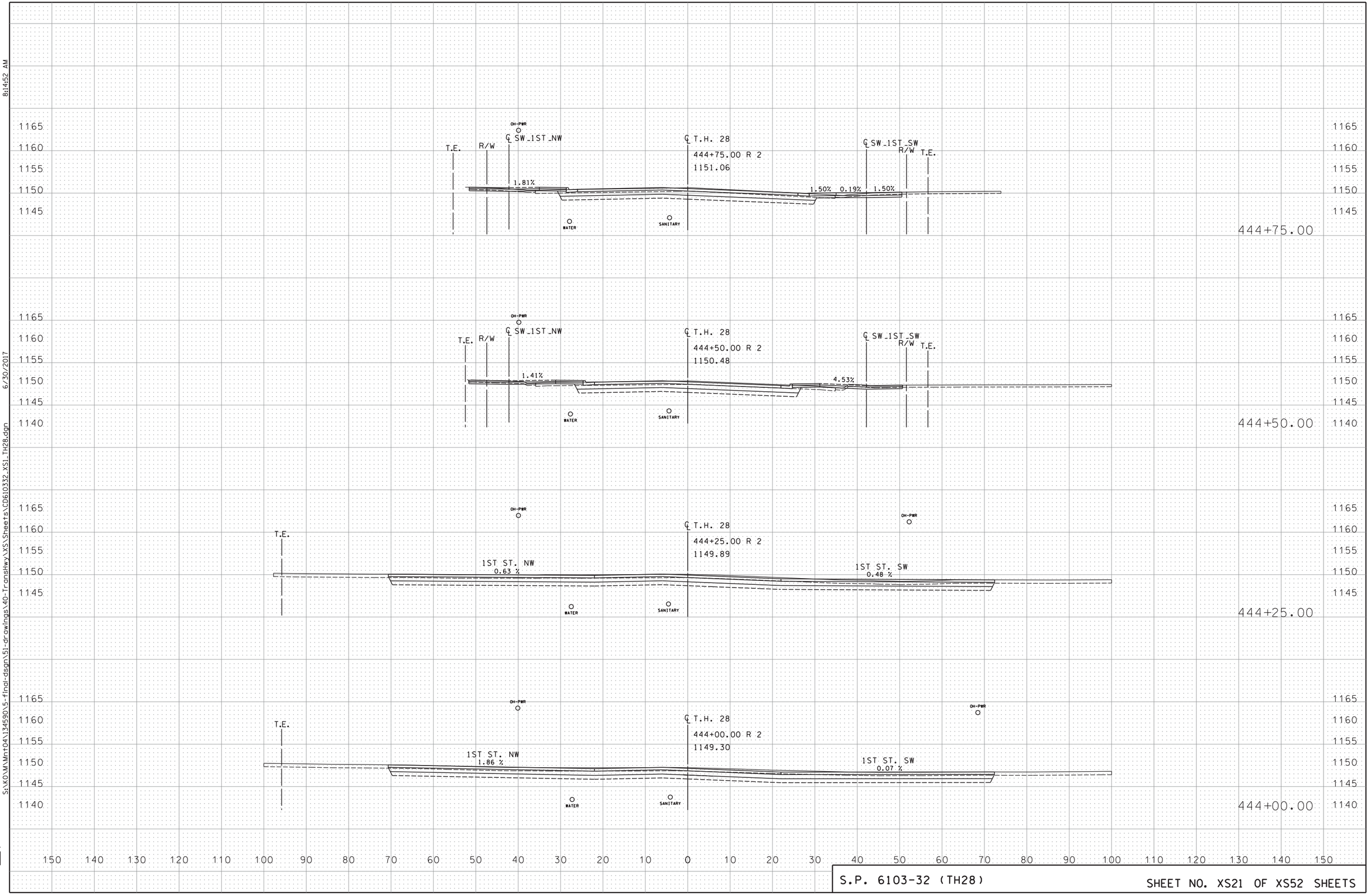
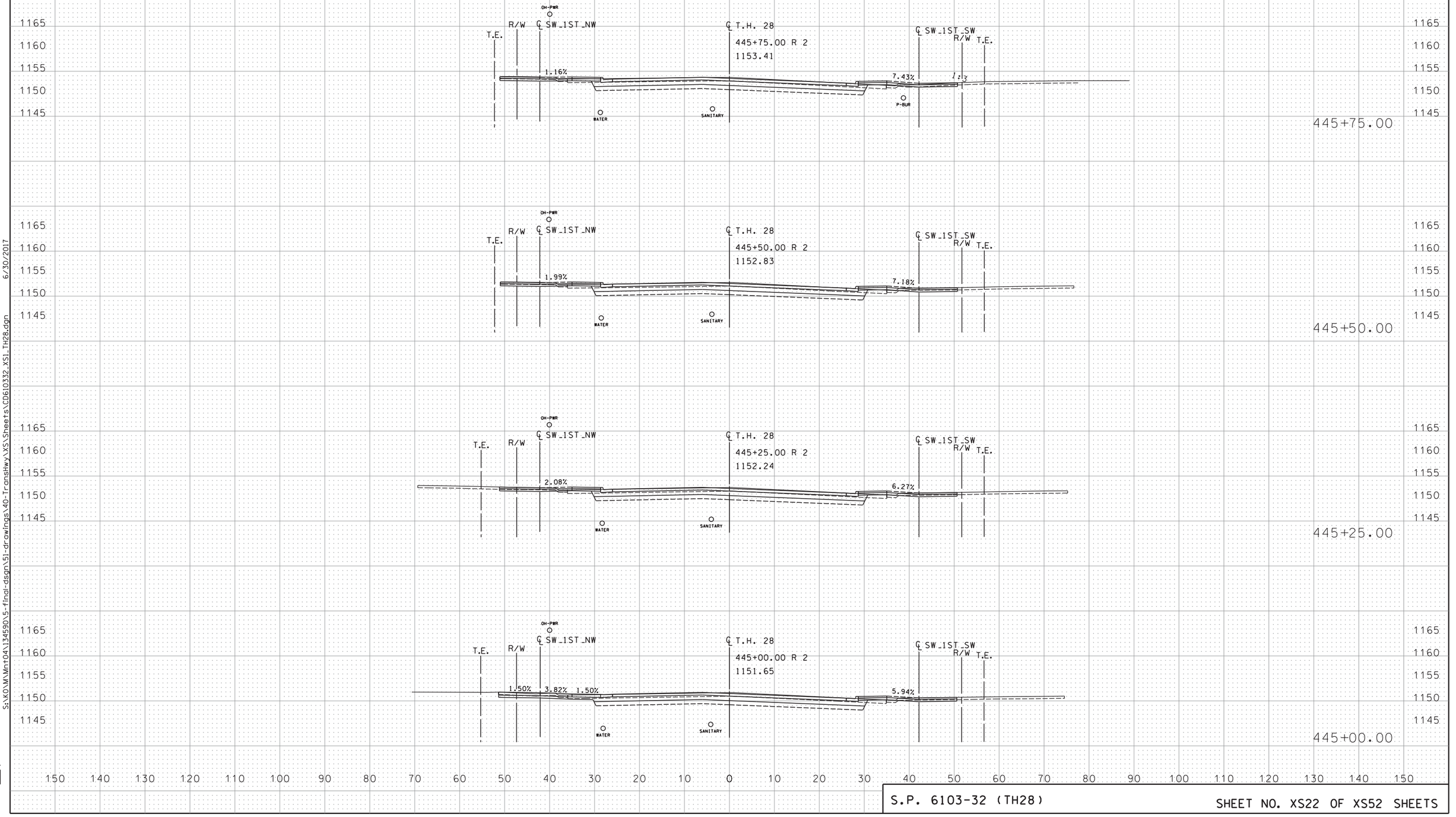


S.P. 6103-32 (TH28)

SHEET NO. XS21 OF XS52 SHEETS



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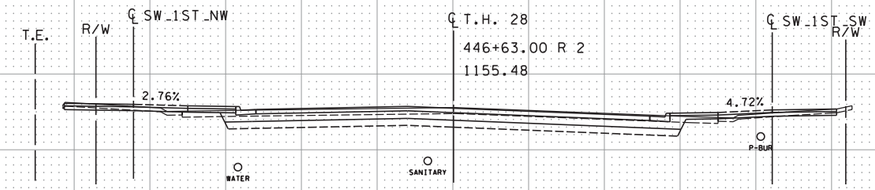
S.P. 6103-32 (TH28)

SHEET NO. XS22 OF XS52 SHEETS



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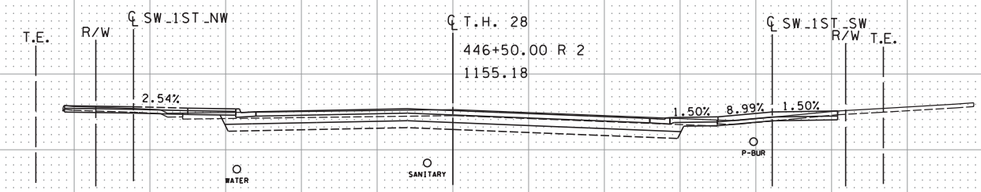

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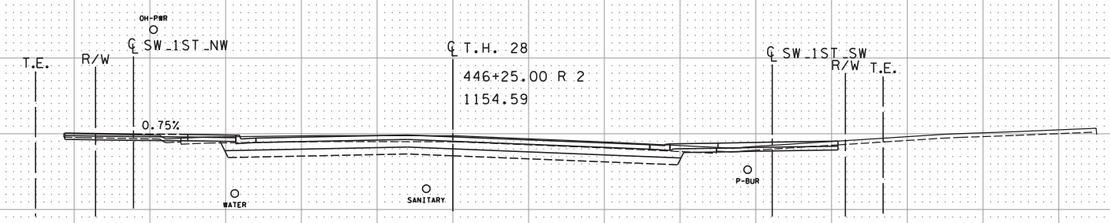

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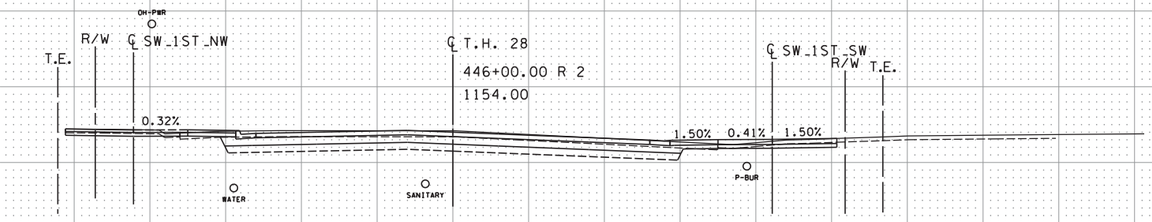

446+00.00

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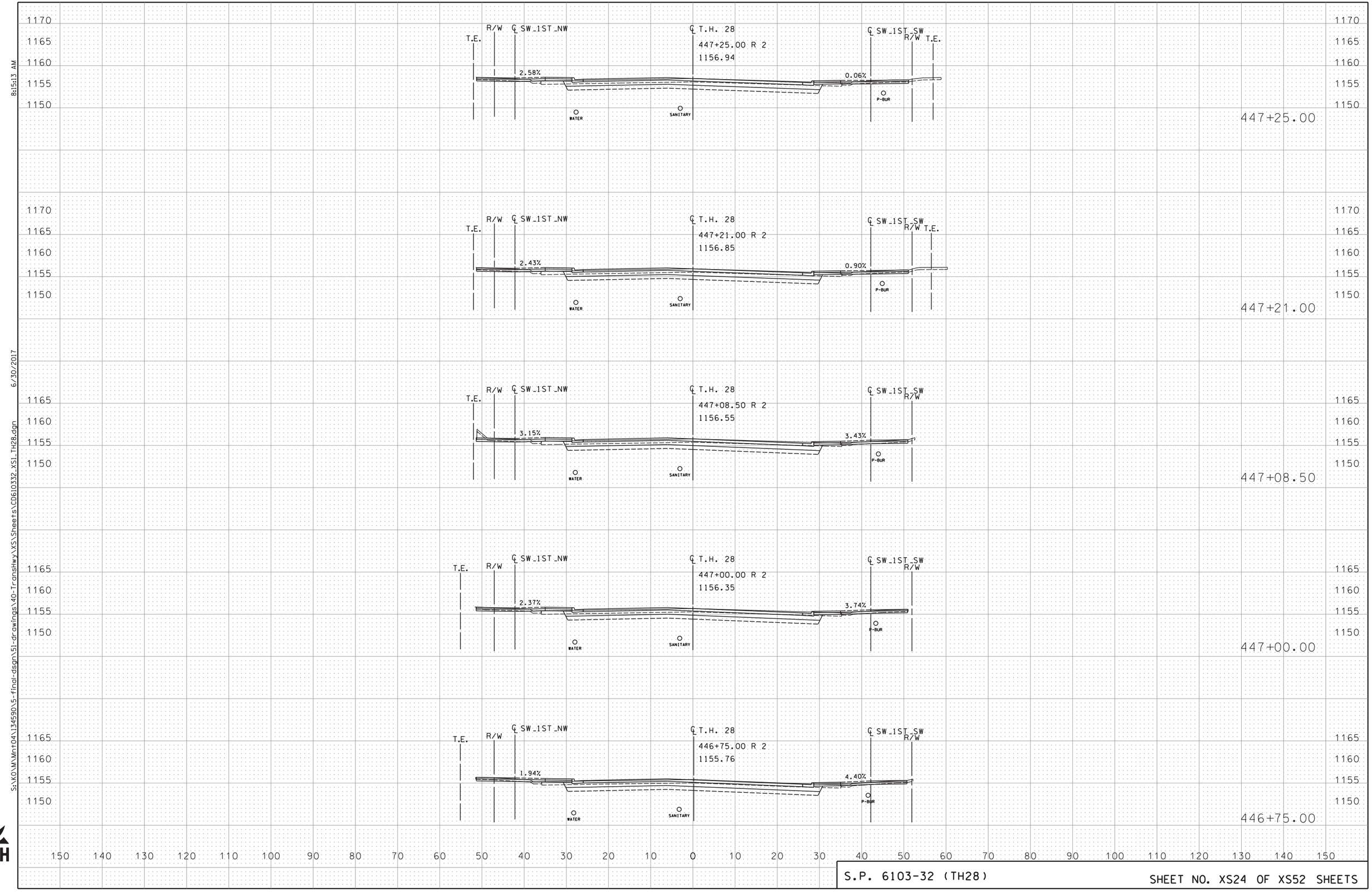
S.P. 6103-32 (TH28)

SHEET NO. XS23 OF XS52 SHEETS



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S.P. 6103-32 (TH28)

SHEET NO. XS24 OF XS52 SHEETS

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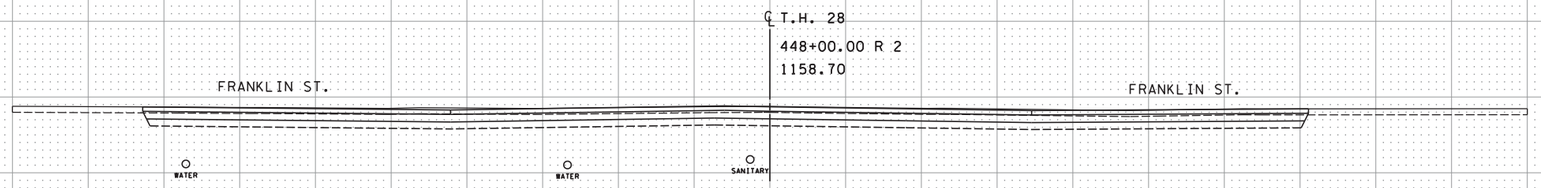

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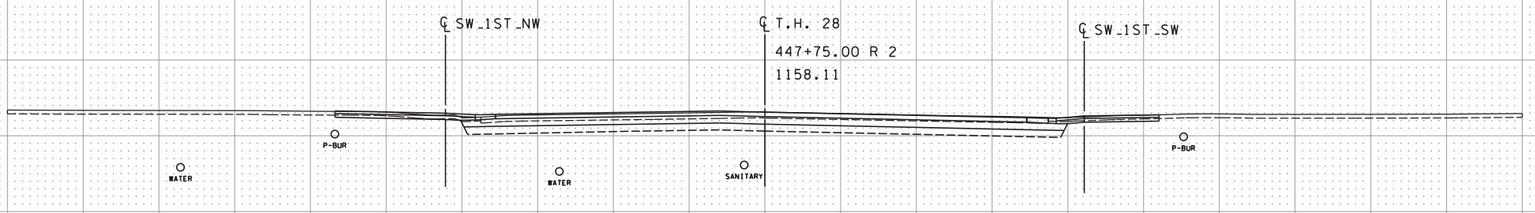
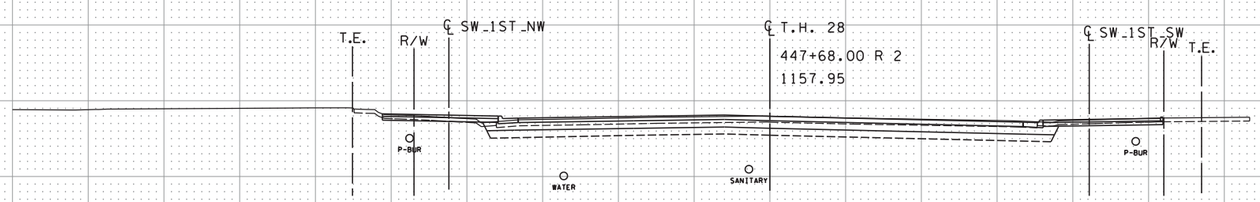
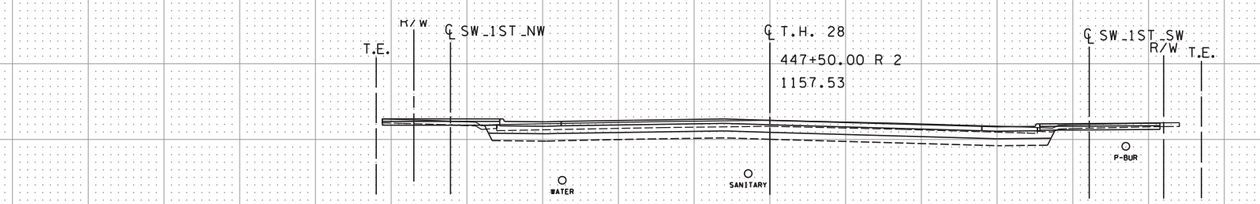


447+75.00



447+68.00



447+50.00

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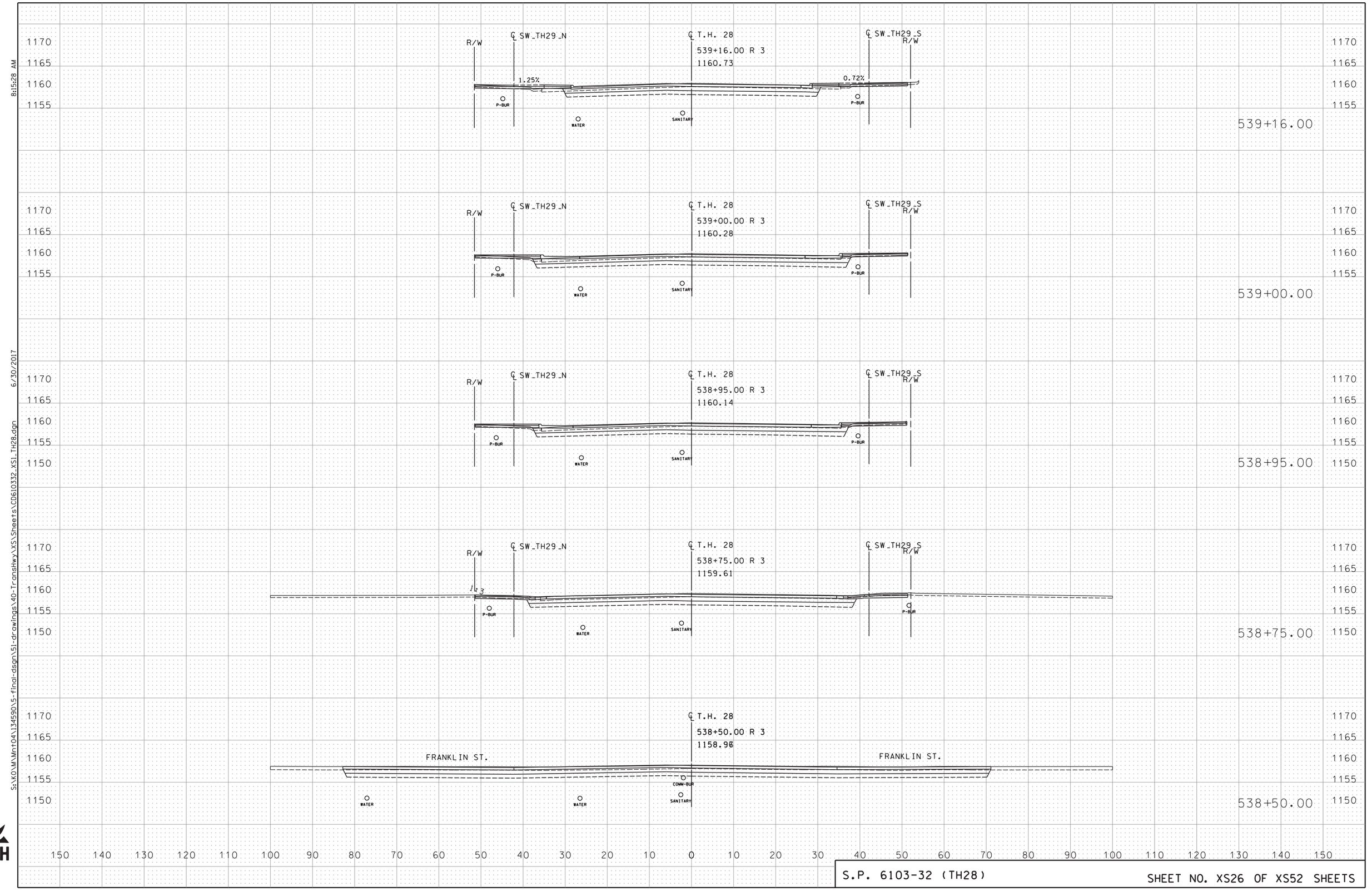
S.P. 6103-32 (TH28)

SHEET NO. XS25 OF XS52 SHEETS



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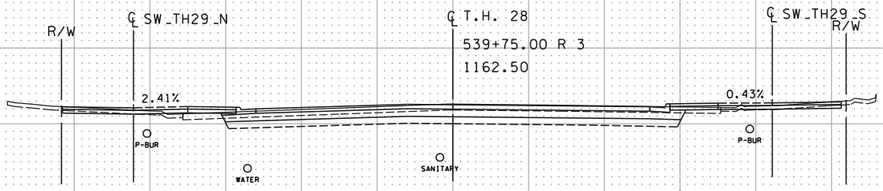
S.P. 6103-32 (TH28)

SHEET NO. XS26 OF XS52 SHEETS



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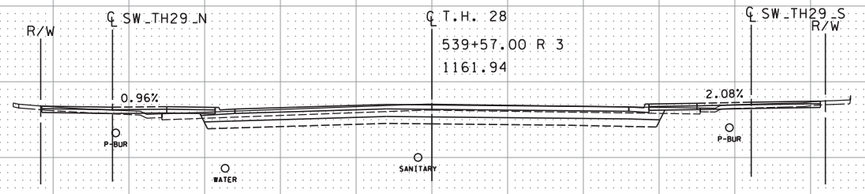
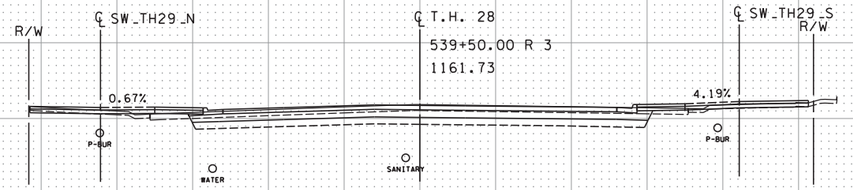
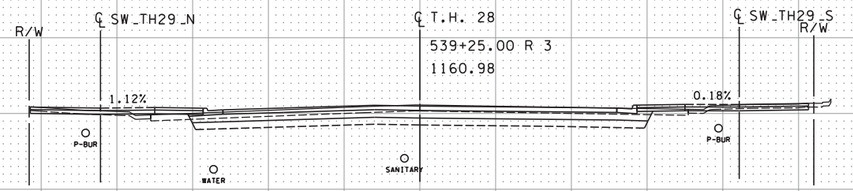


539+57.00



539+50.00



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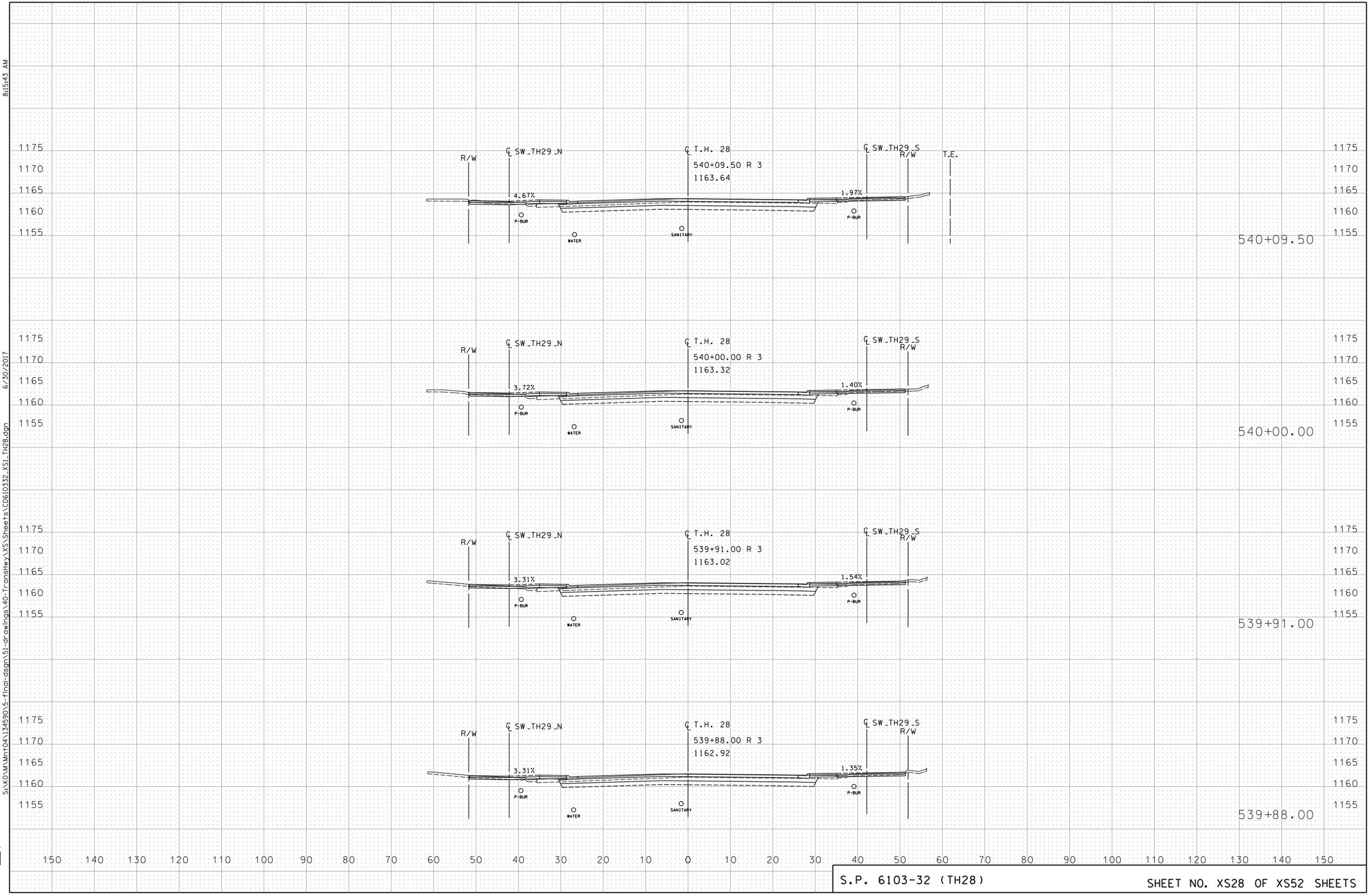
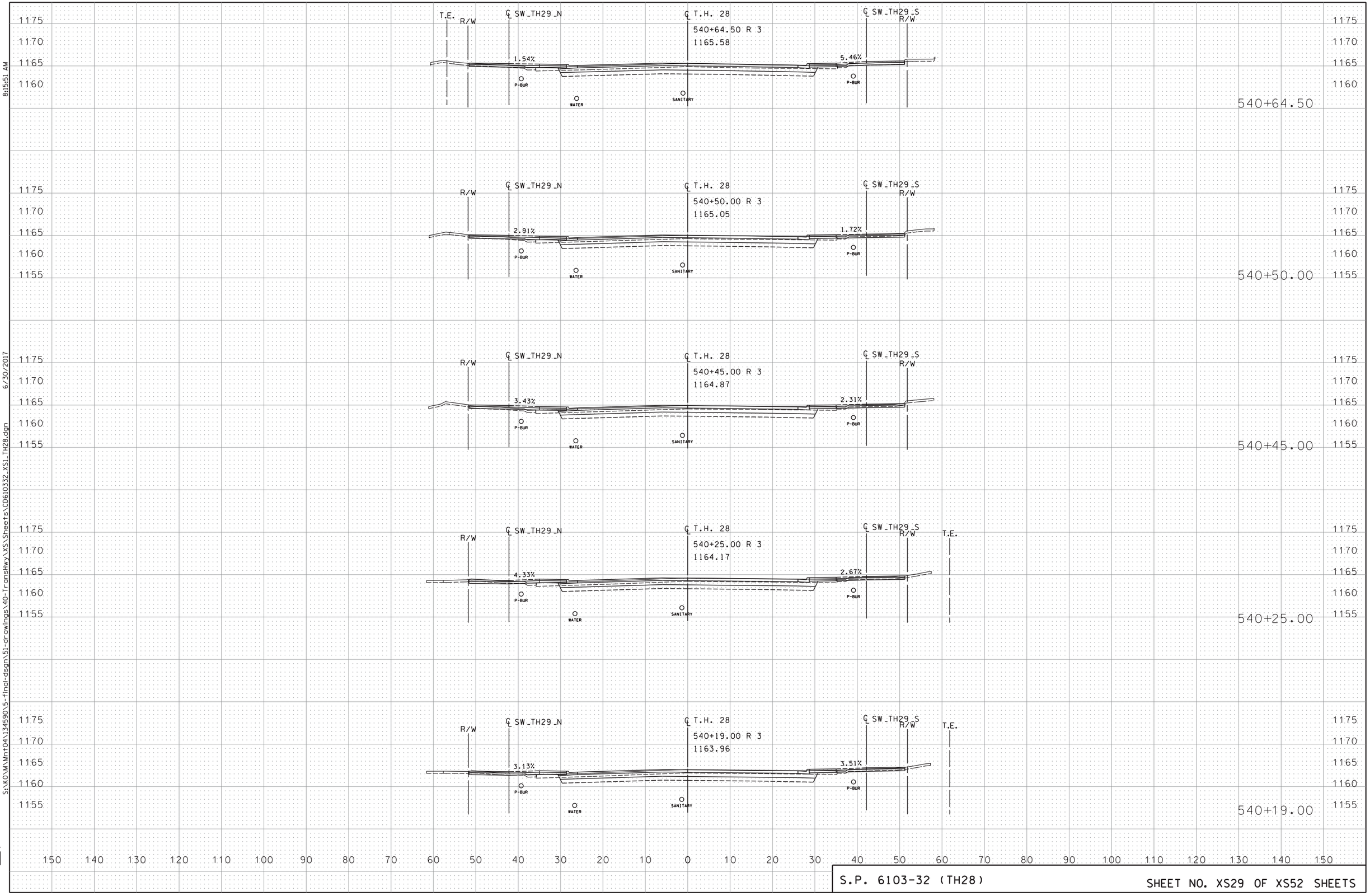


S.P. 6103-32 (TH28)

SHEET NO. XS28 OF XS52 SHEETS



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S.P. 6103-32 (TH28)

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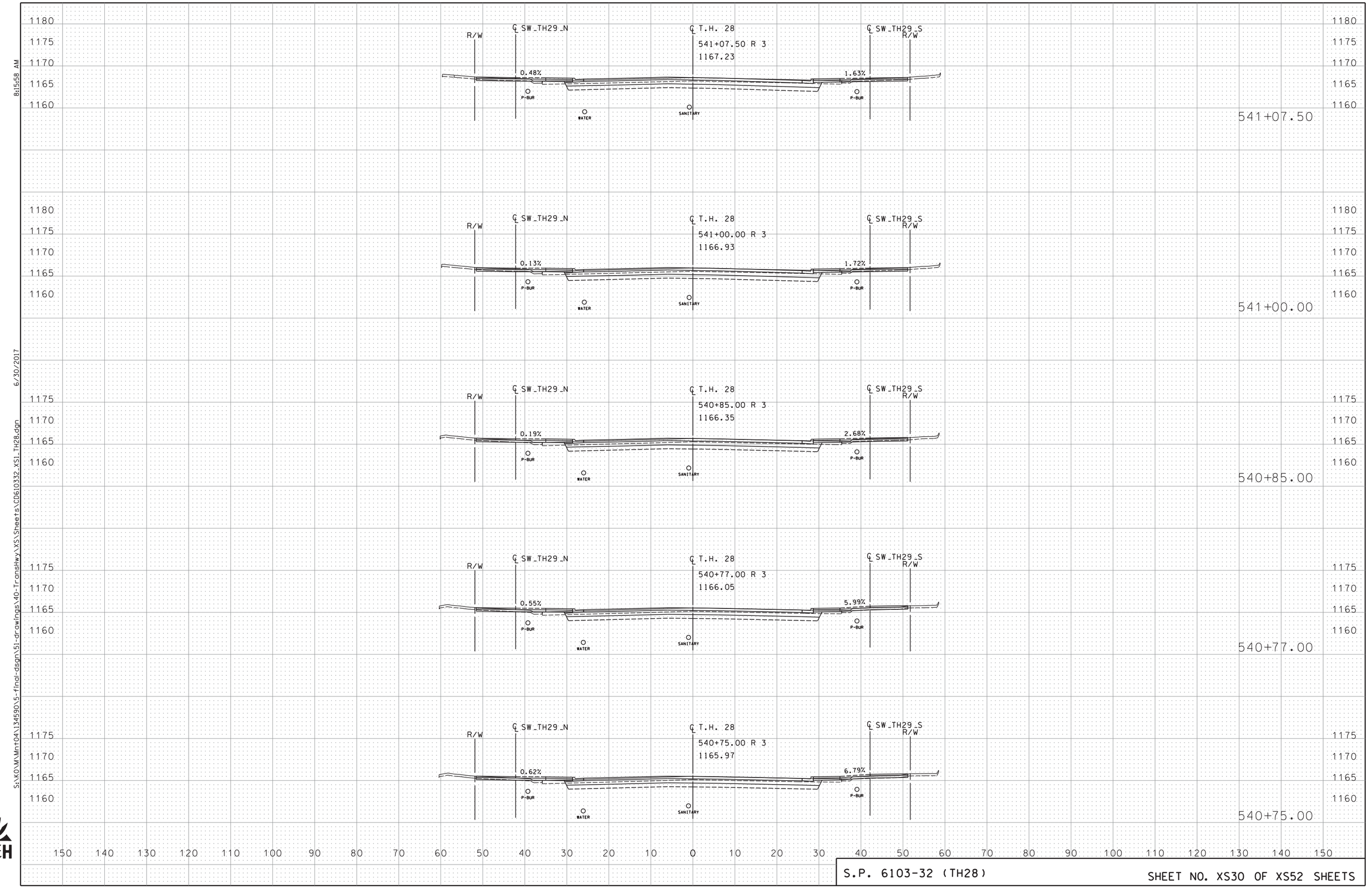

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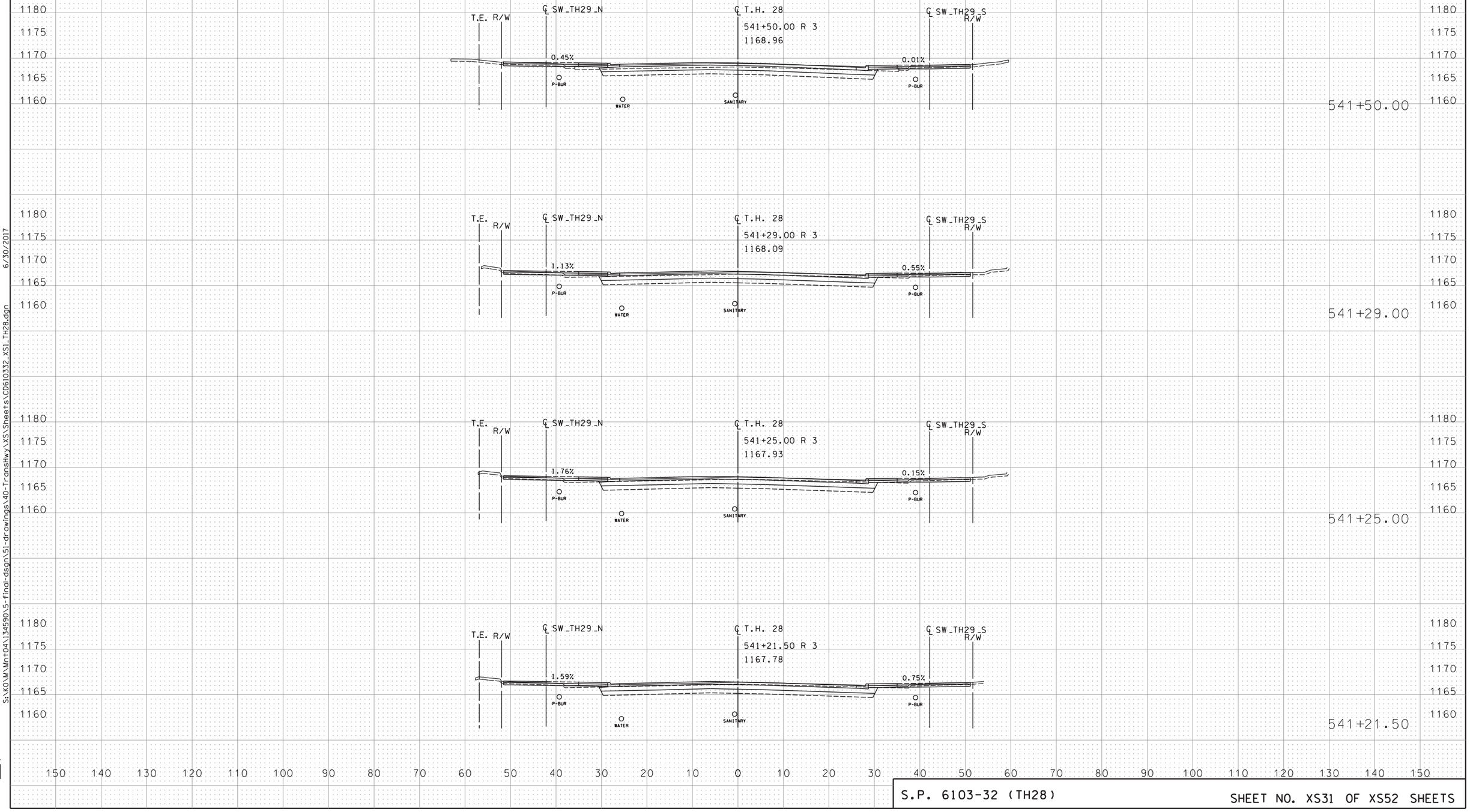
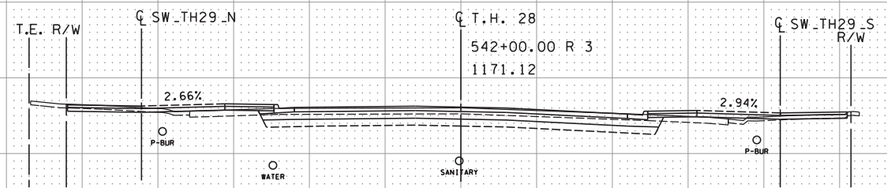
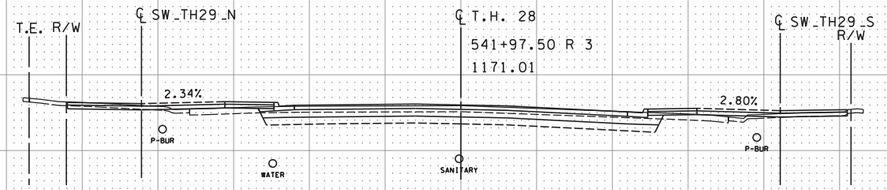
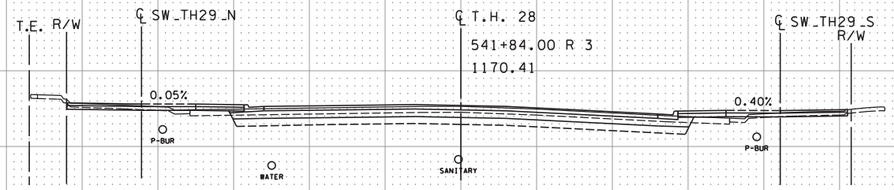
S.P. 6103-32 (TH28)

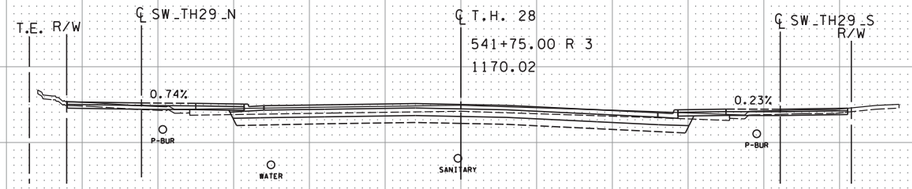
SHEET NO. XS30 OF XS52 SHEETS

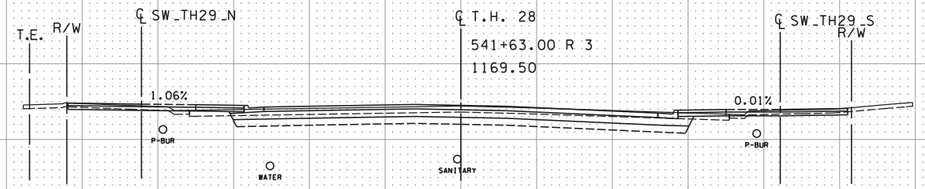












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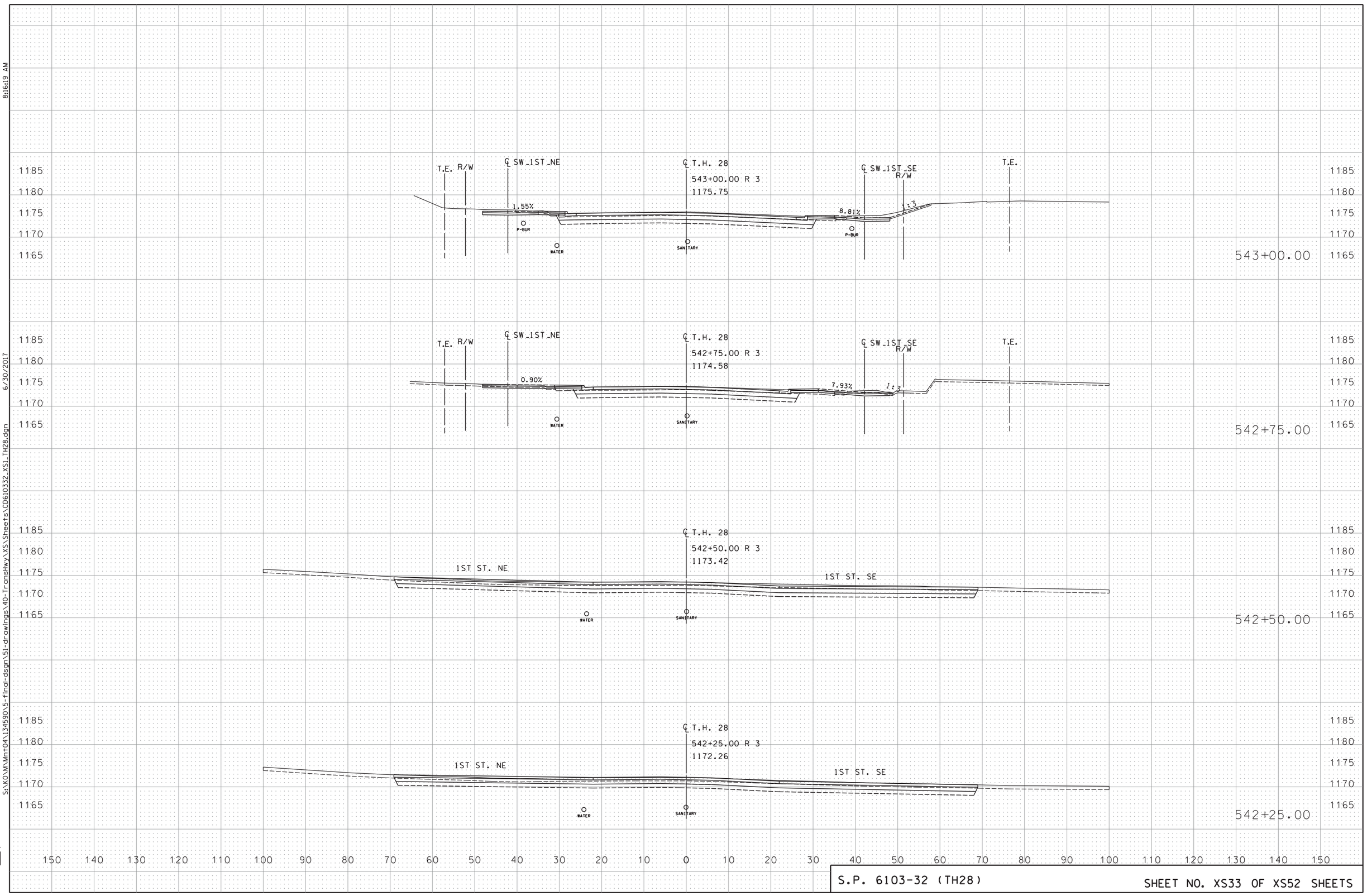
S.P. 6103-32 (TH28)

SHEET NO. XS32 OF XS52 SHEETS



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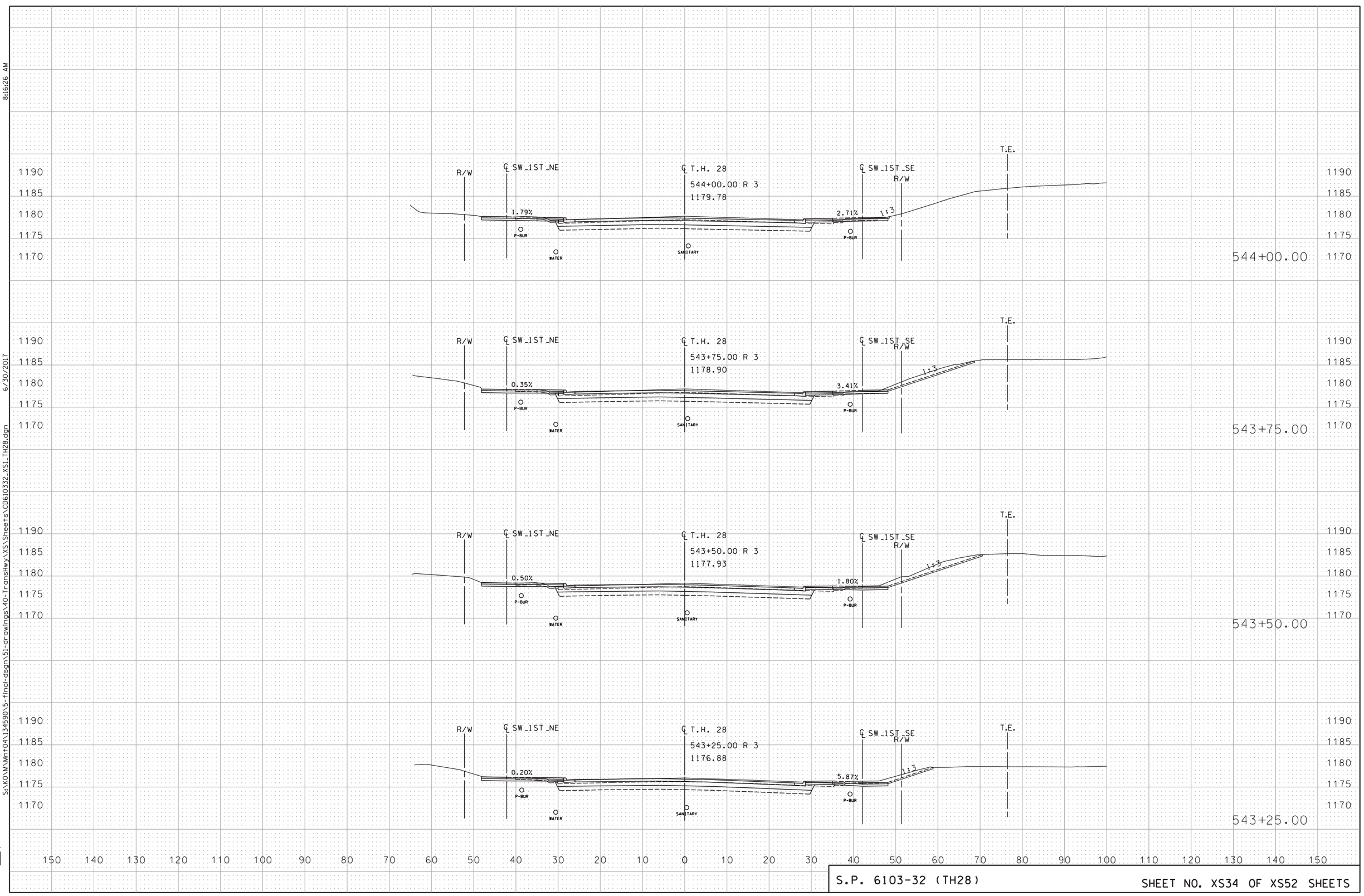
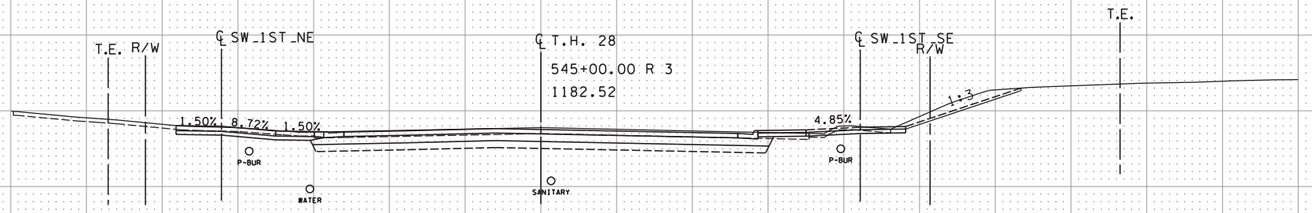
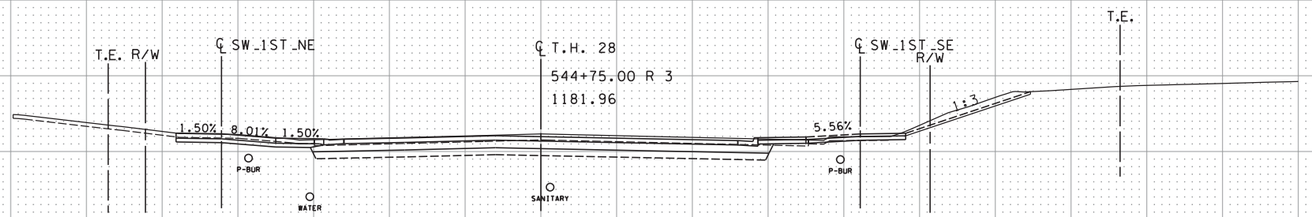
S.P. 6103-32 (TH28)

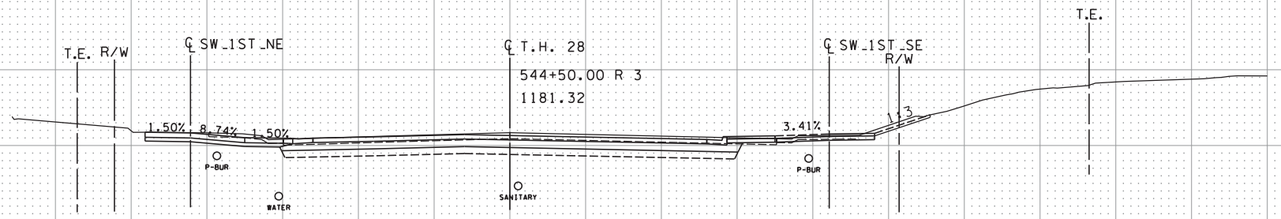
SHEET NO. XS33 OF XS52 SHEETS

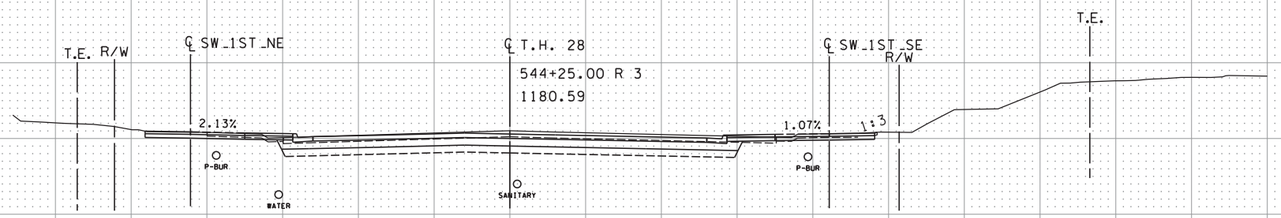


S.P. 6103-32 (TH28)









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S.P. 6103-32 (TH28)

SHEET NO. XS35 OF XS52 SHEETS

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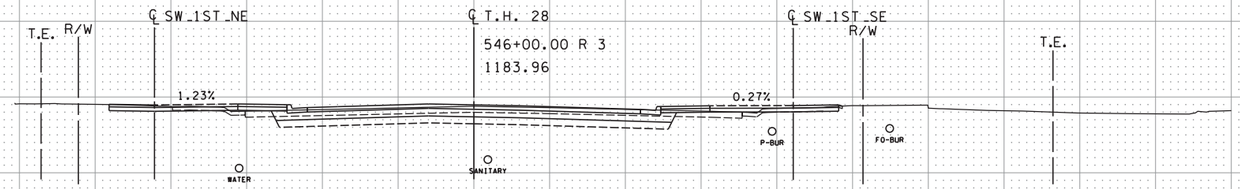

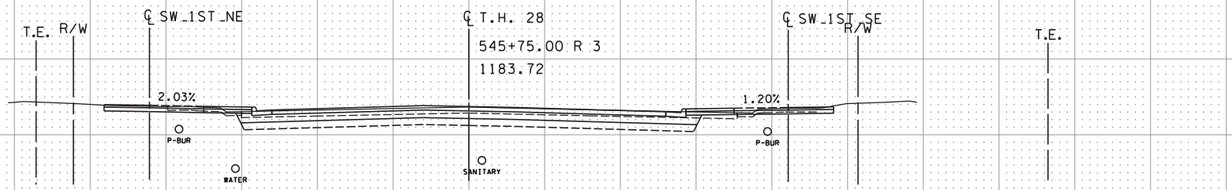

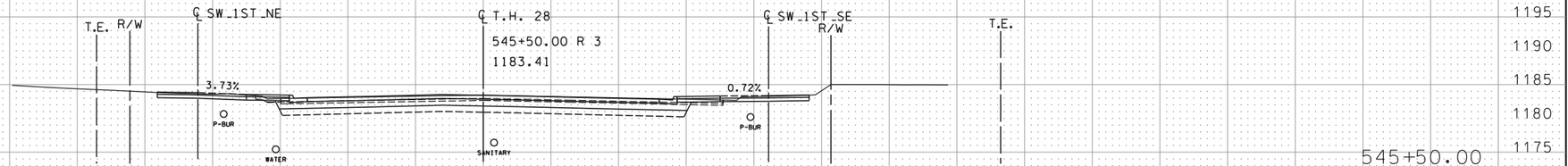

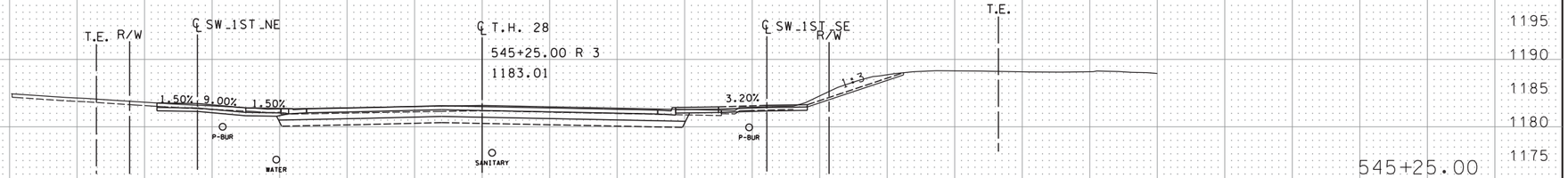

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S.P. 6103-32 (TH28)

SHEET NO. XS36 OF XS52 SHEETS

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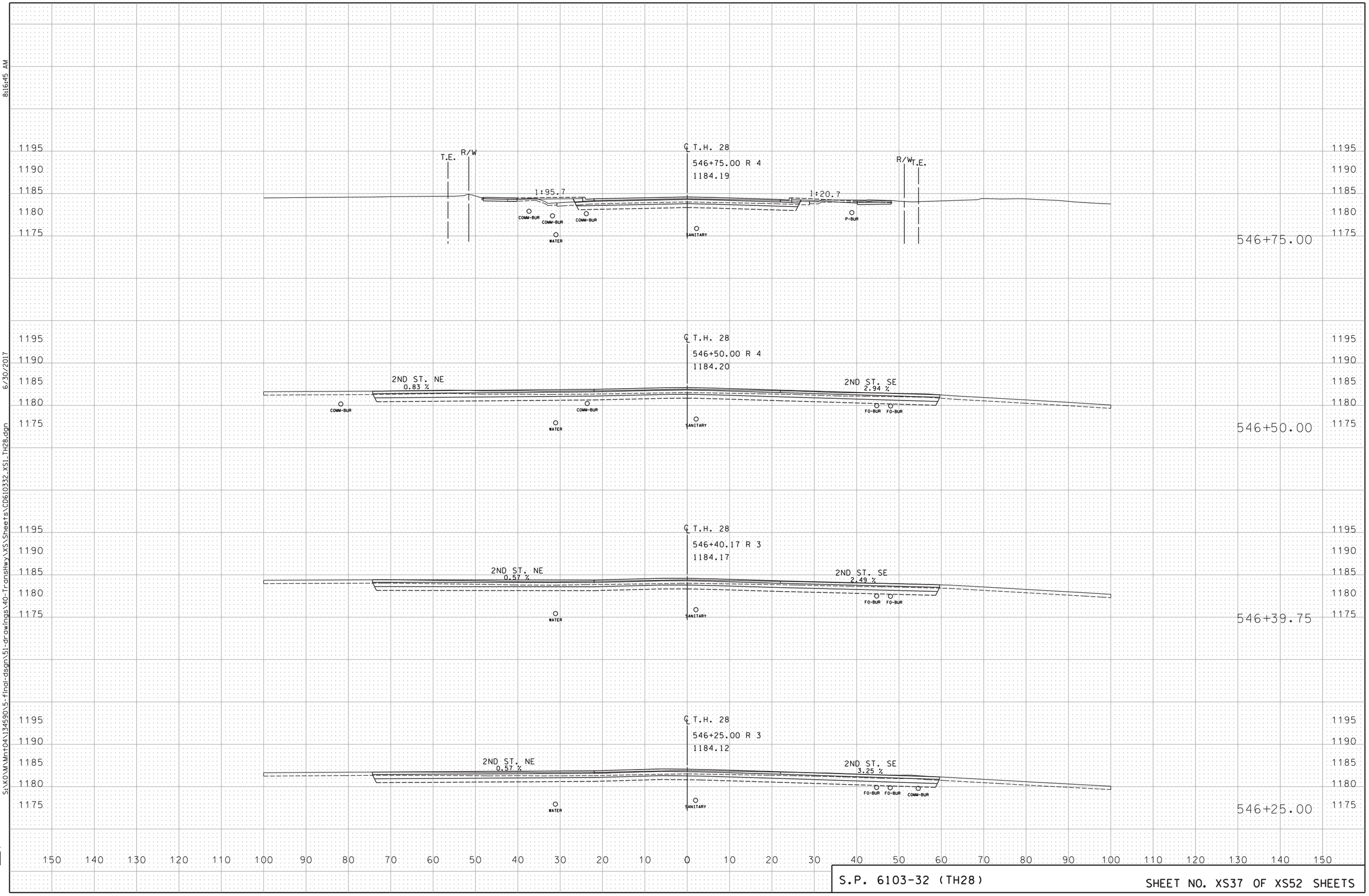

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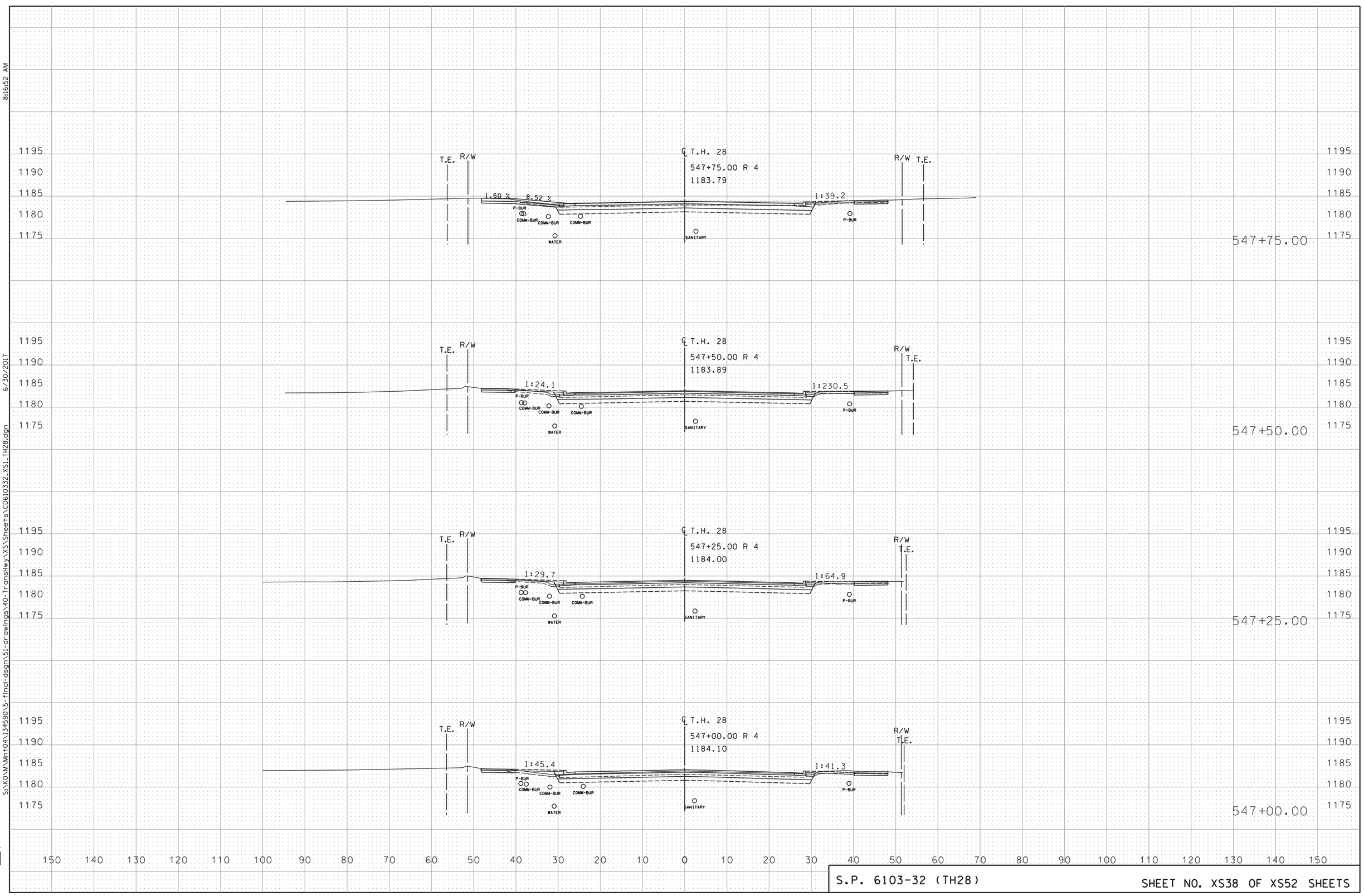
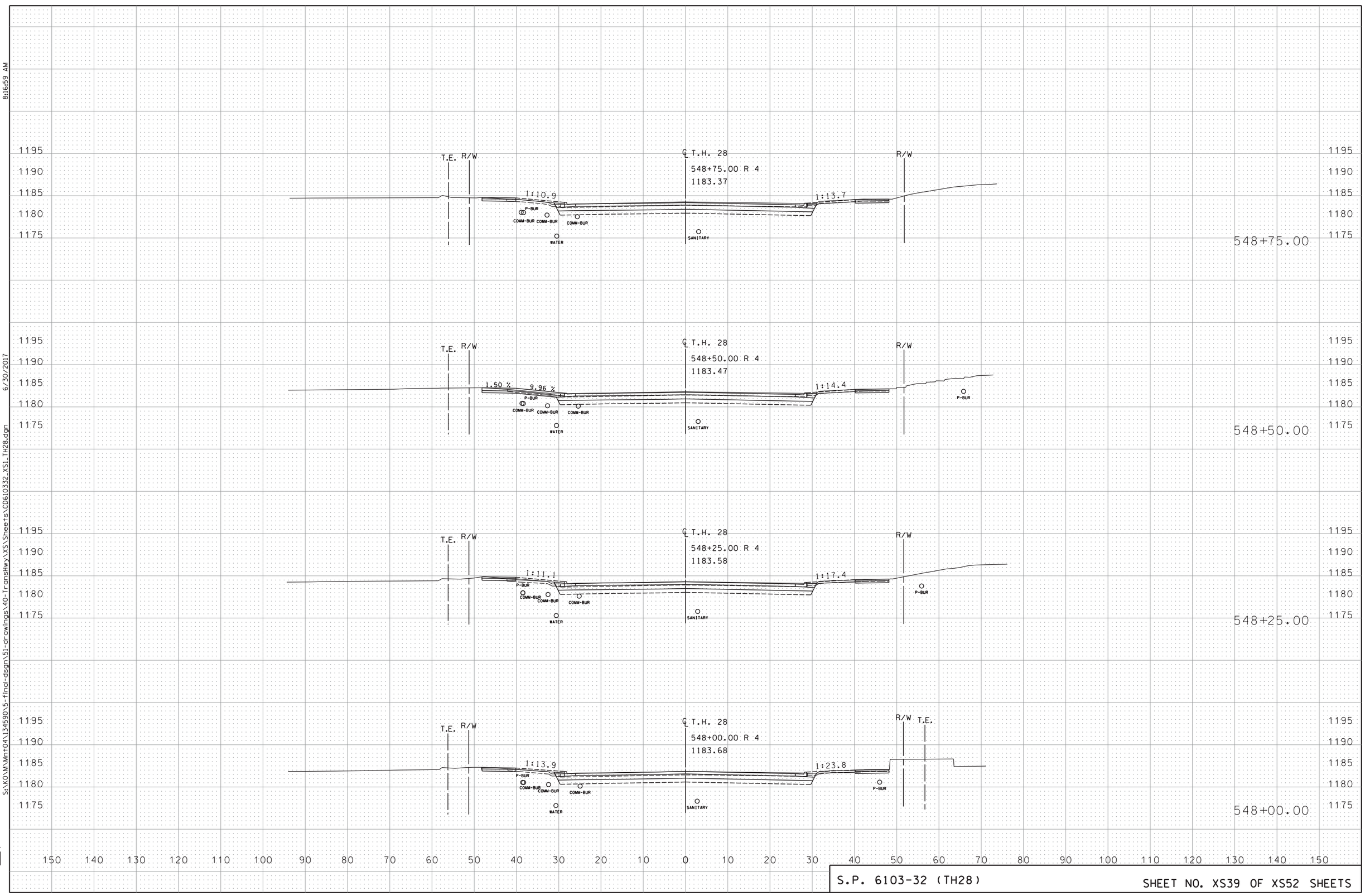
S.P. 6103-32 (TH28)

SHEET NO. XS37 OF XS52 SHEETS



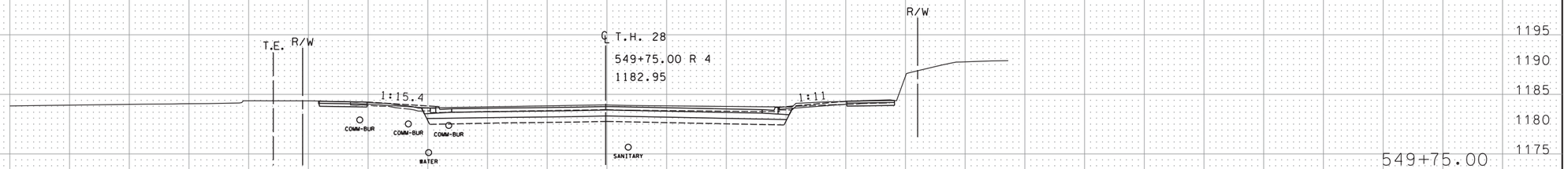
S.P. 6103-32 (TH28)

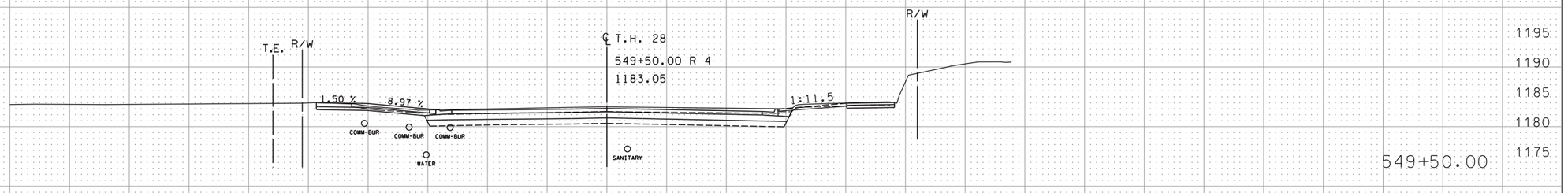
SHEET NO. XS38 OF XS52 SHEETS

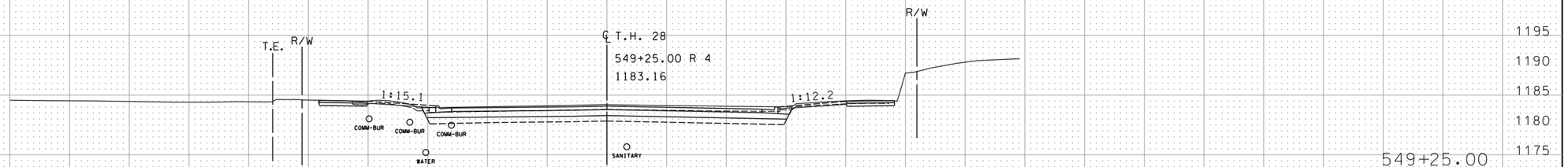


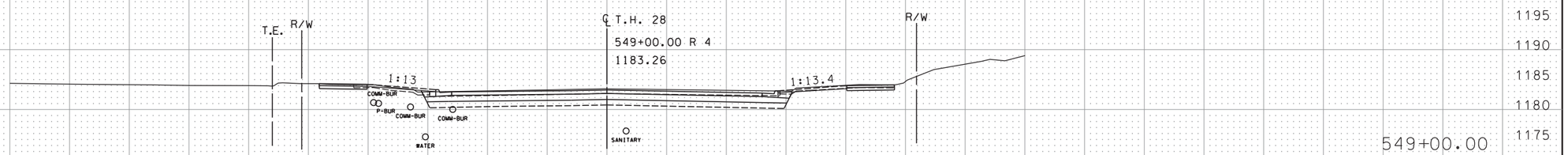
S.P. 6103-32 (TH28)

SHEET NO. XS39 OF XS52 SHEETS









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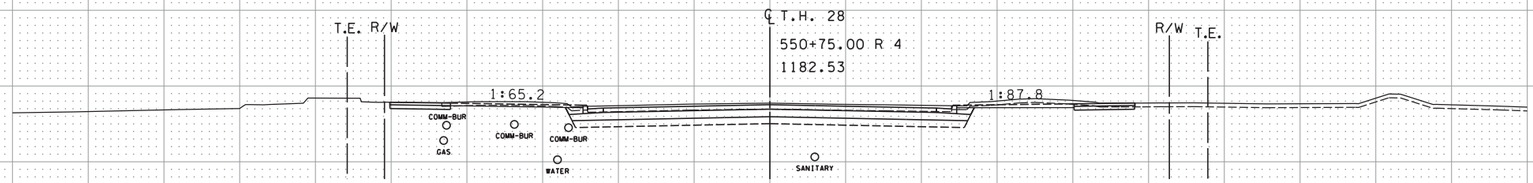
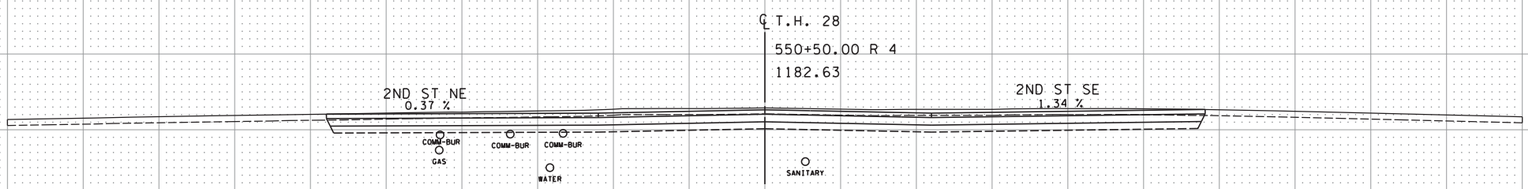
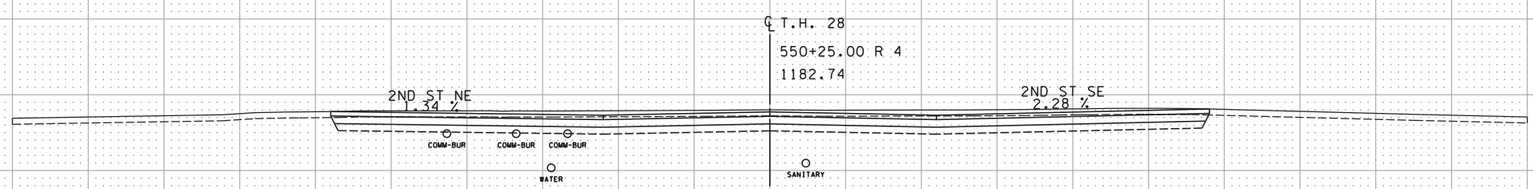
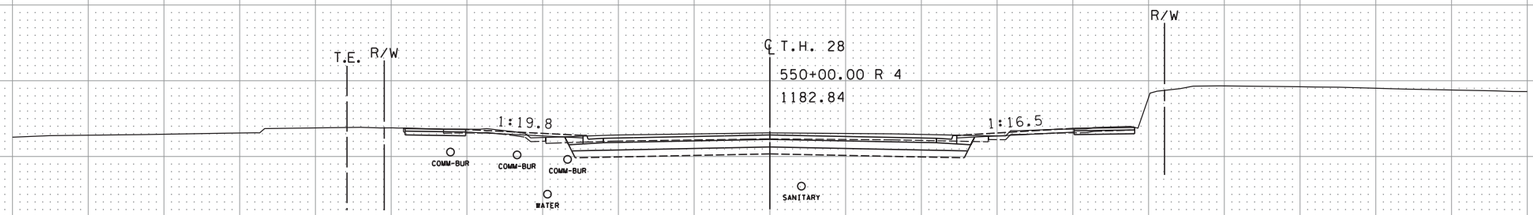
S.P. 6103-32 (TH28)

SHEET NO. XS40 OF XS52 SHEETS









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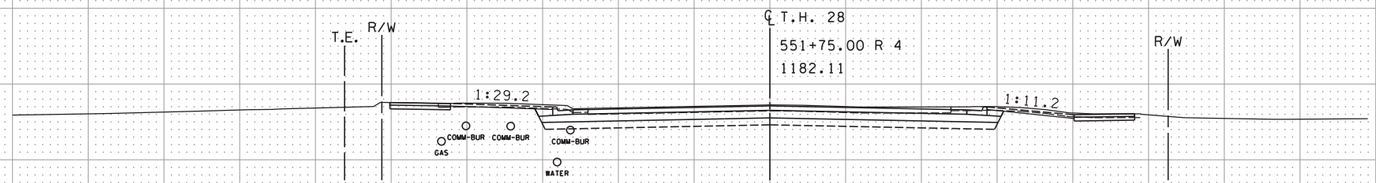
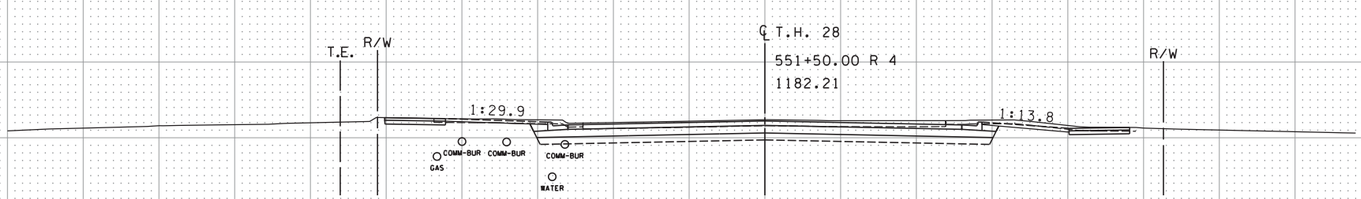
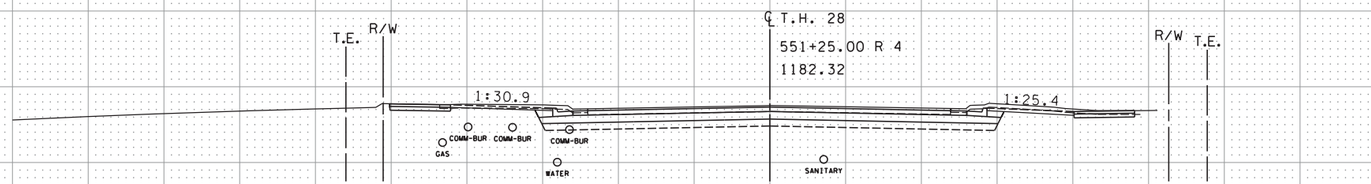
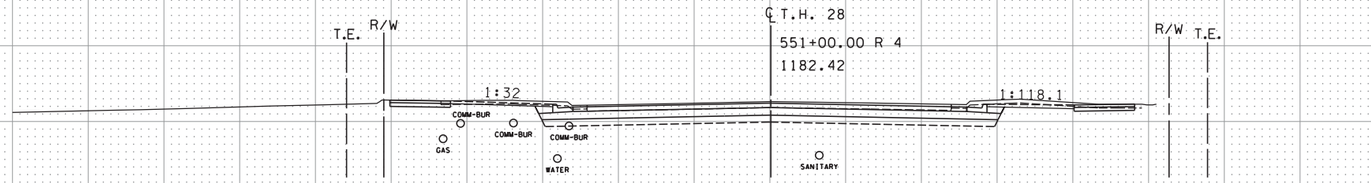
S.P. 6103-32 (TH28)

SHEET NO. XS41 OF XS52 SHEETS









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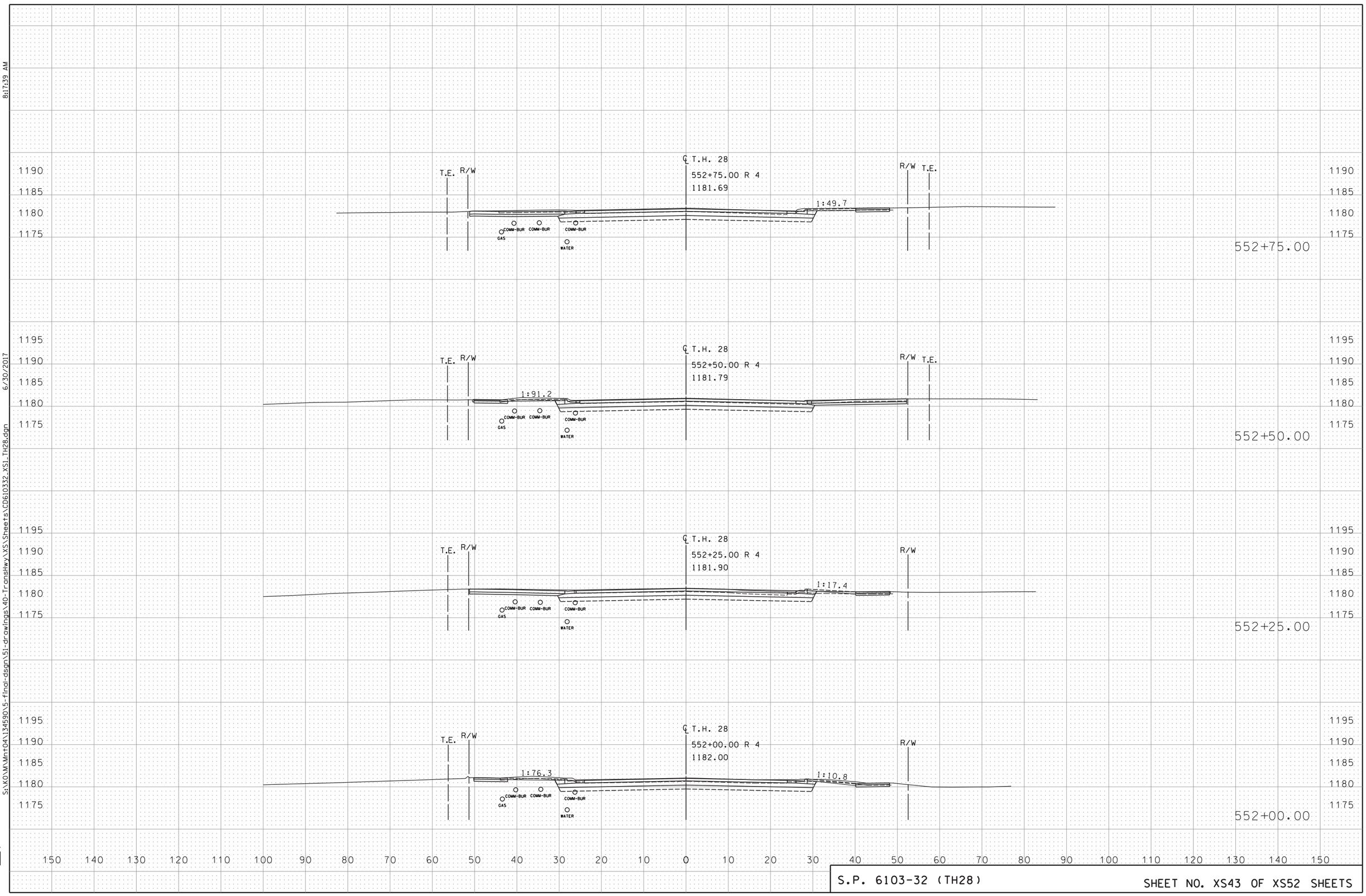
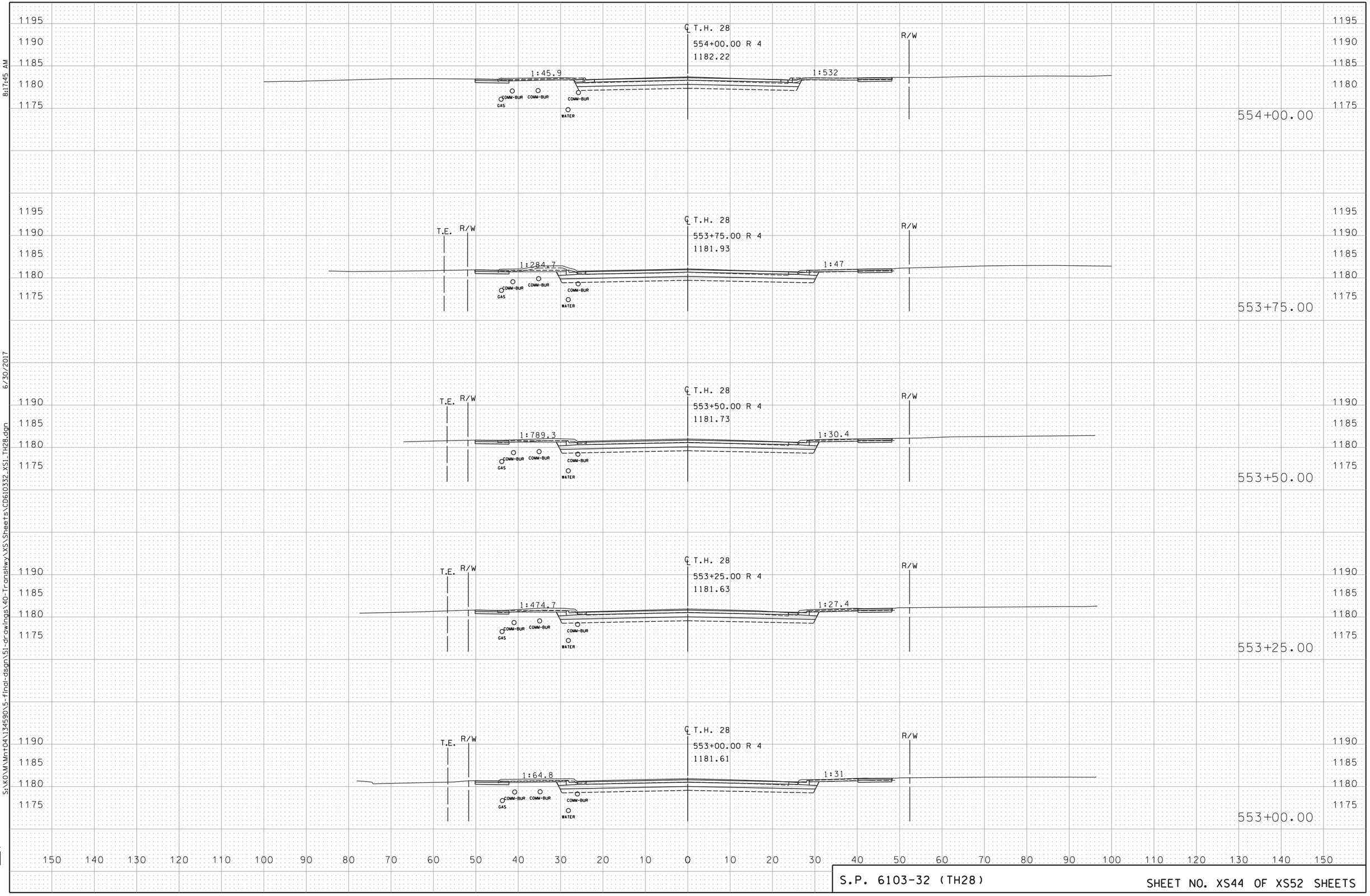
S.P. 6103-32 (TH28)

SHEET NO. XS42 OF XS52 SHEETS



S.P. 6103-32 (TH28)

SHEET NO. XS43 OF XS52 SHEETS

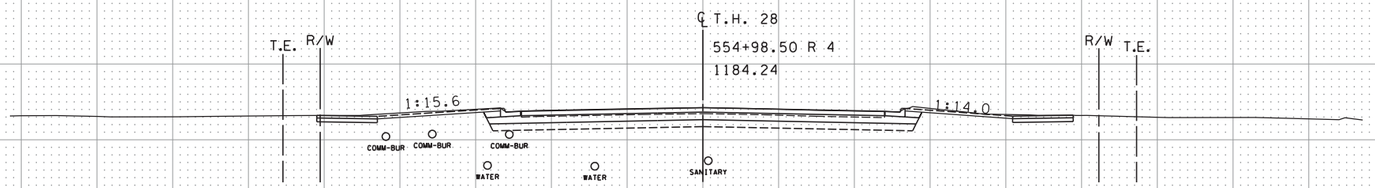


SEH

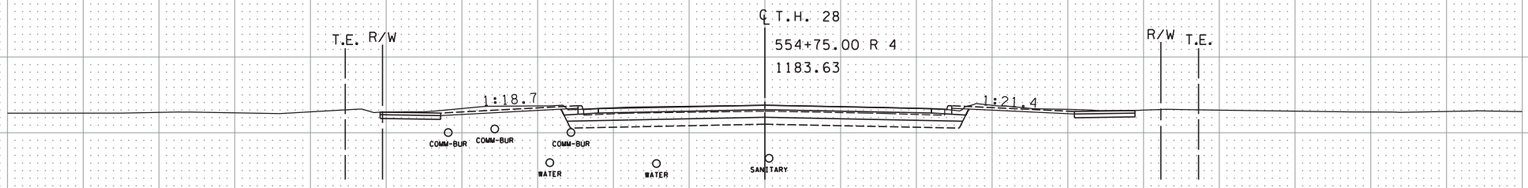
S.P. 6103-32 (TH28)

SHEET NO. XS44 OF XS52 SHEETS

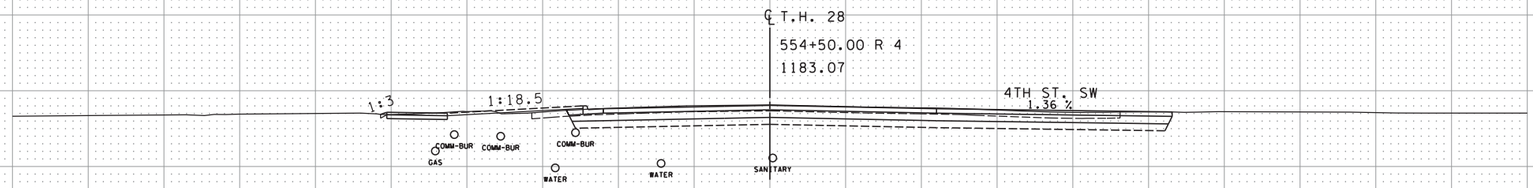
END FULL WIDTH CONSTRUCTION T.H. 28 STA. 554+98.49



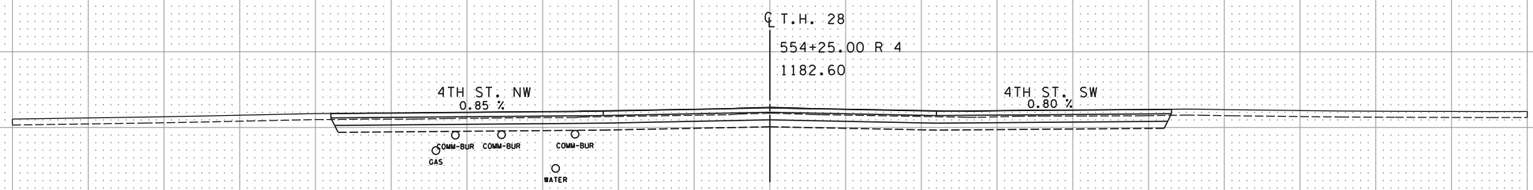
554+98.50



554+75.00



554+50.00



554+25.00

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

S.P. 6103-32 (TH28)

SHEET NO. XS45 OF XS52 SHEETS

8:17:52 AM 6/30/2017

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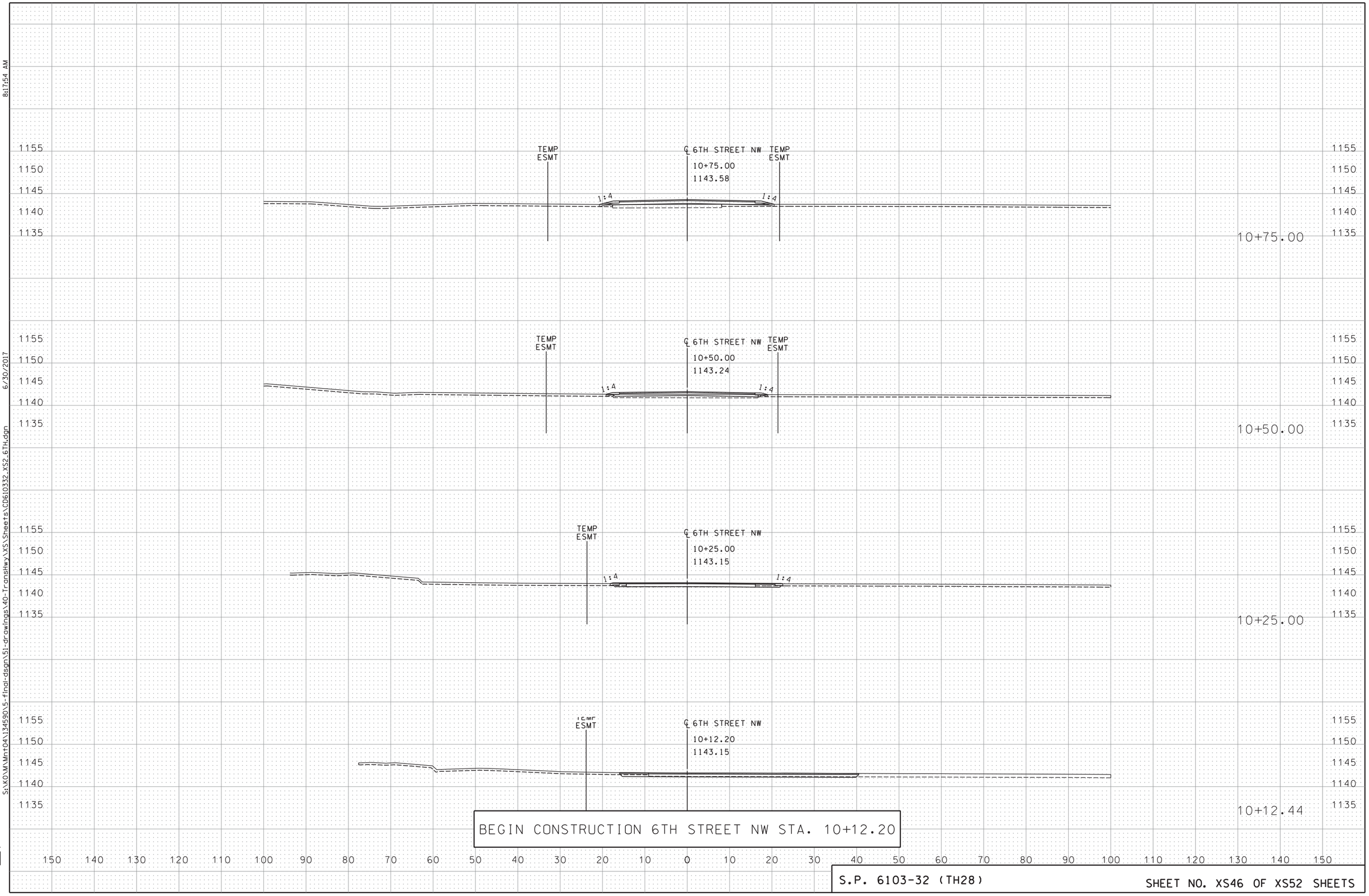

8:17:54 AM

6/30/2017

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SEH

S.P. 6103-32 (TH28)

SHEET NO. XS46 OF XS52 SHEETS

8:17:55 AM

6/30/2017

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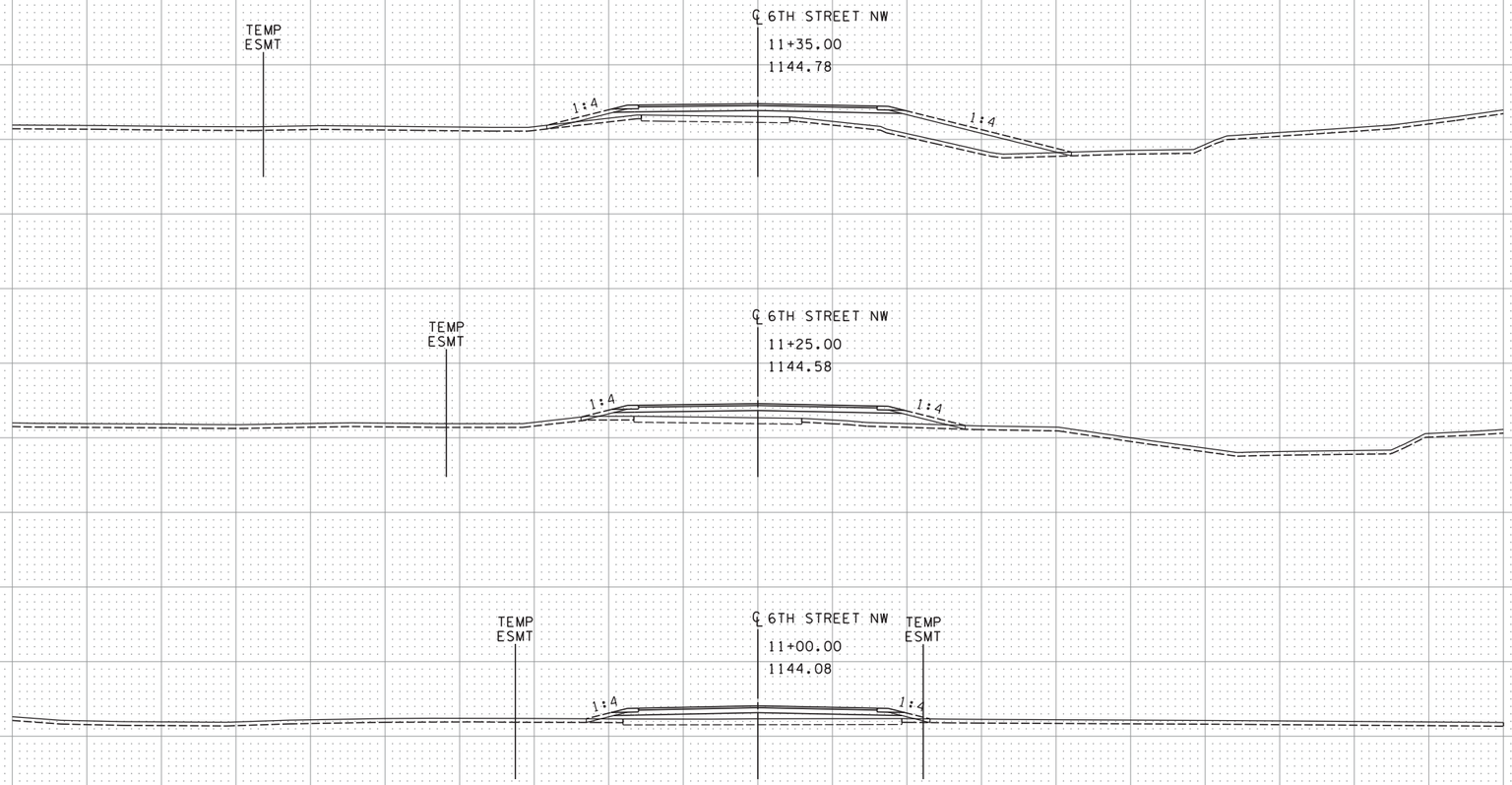
END CONSTRUCTION 6TH STREET NW STA. 11+35.00



S.P. 6103-32 (TH28)

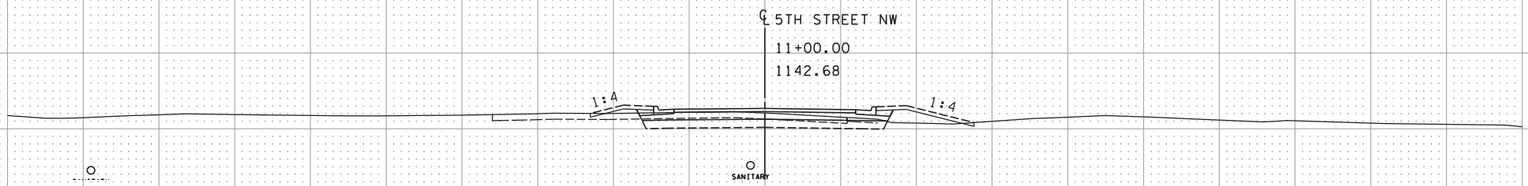
SHEET NO. XS47 OF XS52 SHEETS

8:17:56 AM

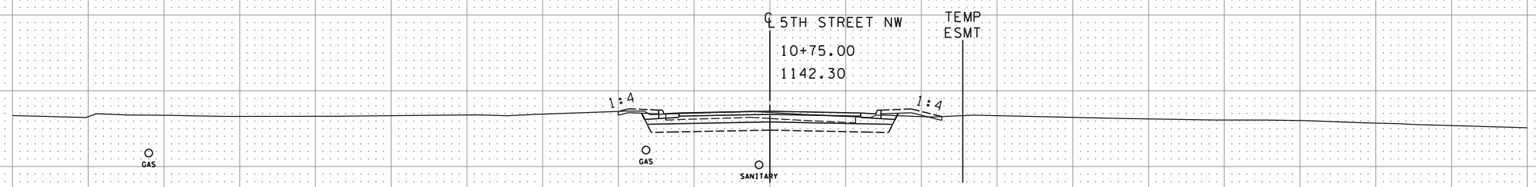
6/30/2017

S:\KO\M\Mn\04\134590\5-final-dsgn\51-drawings\40-TransHwy\XS\Sheets\CD610332_XS3_5TH.dgn

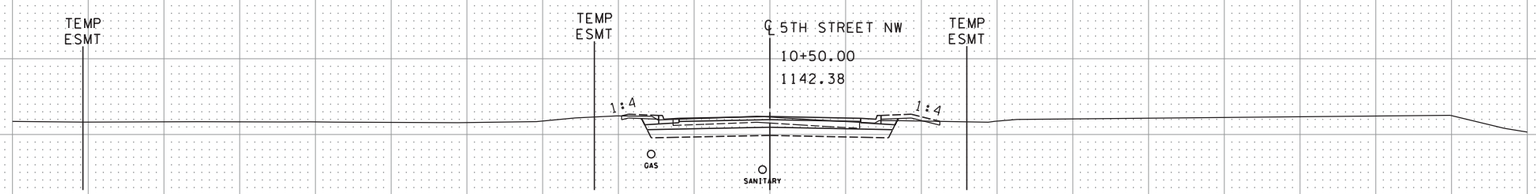
END CONSTRUCTION 5TH STREET NW STA. 11+00.00



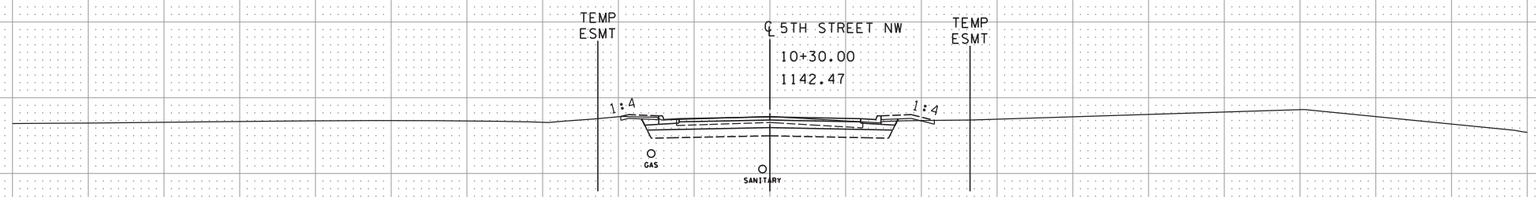
11+00.00



10+75.00



10+50.00



10+30.00

BEGIN CONSTRUCTION 5TH STREET NW STA. 10+30.00

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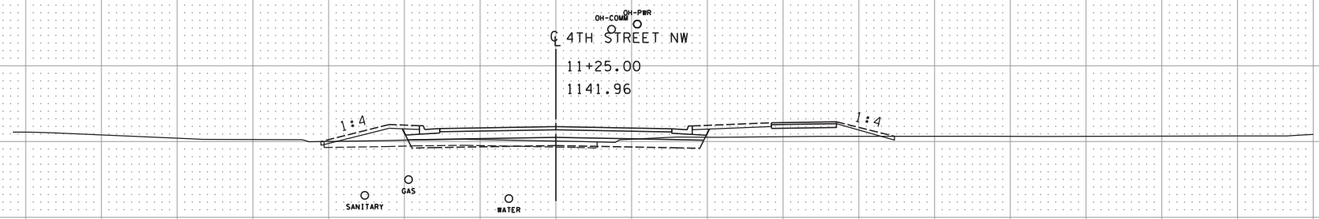
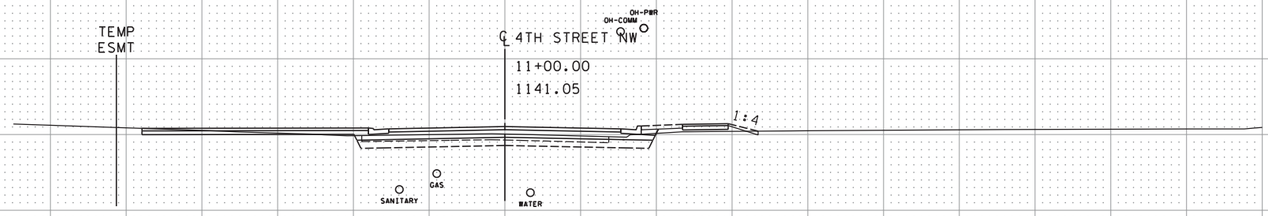
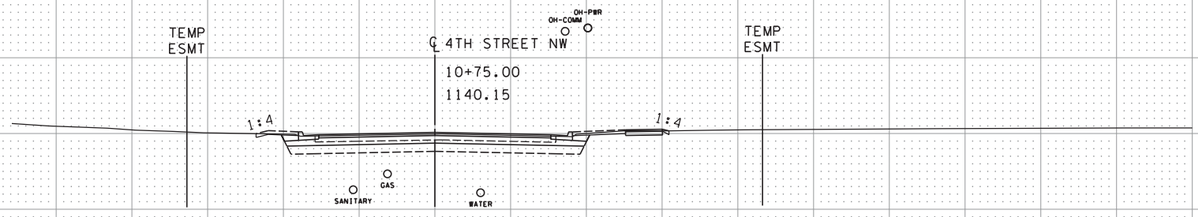
SEH

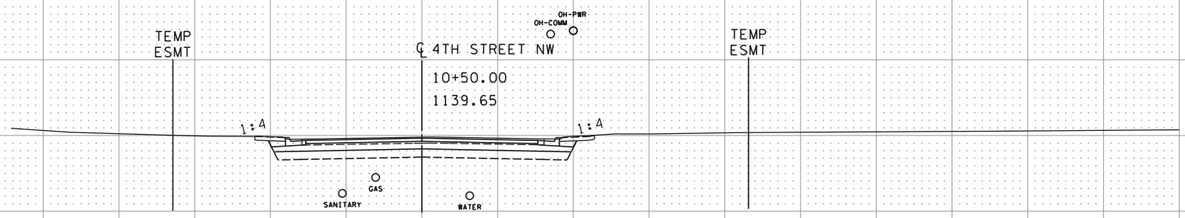
S.P. 6103-32 (TH28)

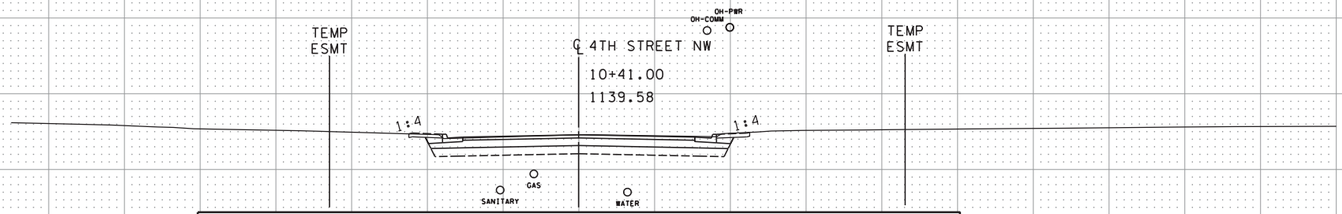
SHEET NO. XS48 OF XS52 SHEETS











BEGIN CONSTRUCTION 4TH STREET NW STA. 10+41.00

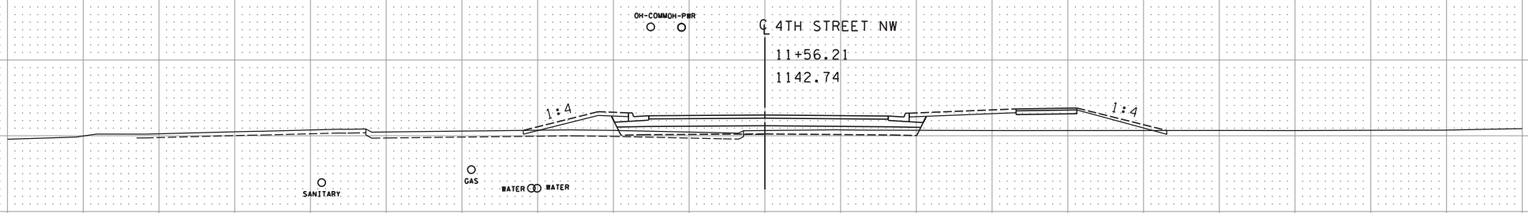
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

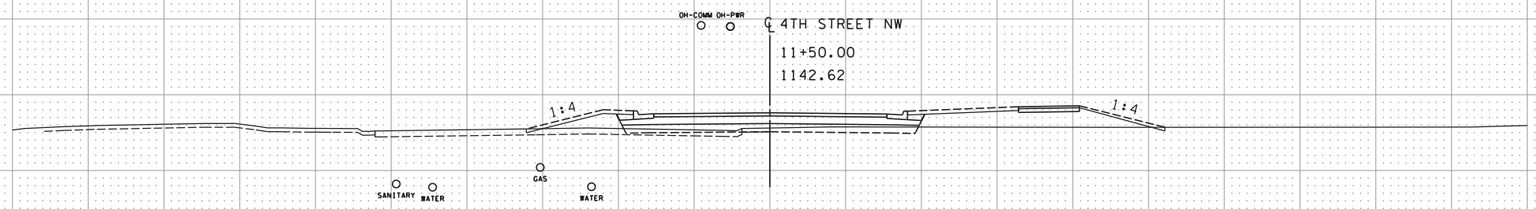
SEH

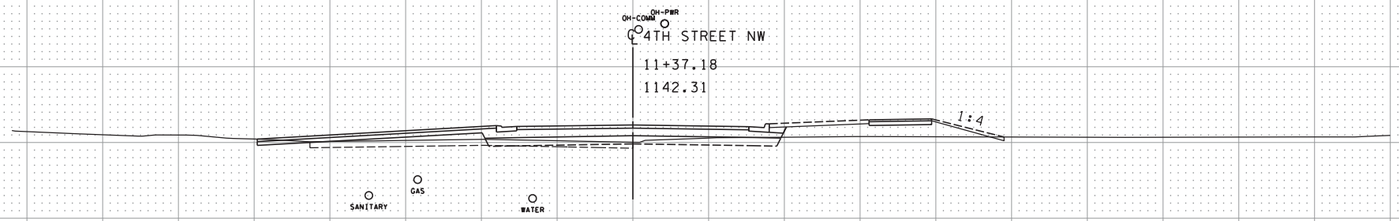
S.P. 6103-32 (TH28)

SHEET NO. XS49 OF XS52 SHEETS

END CONSTRUCTION 4TH STREET NW STA. 11+56.21





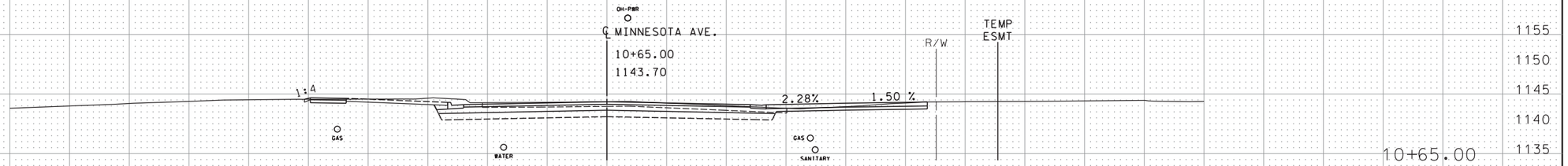


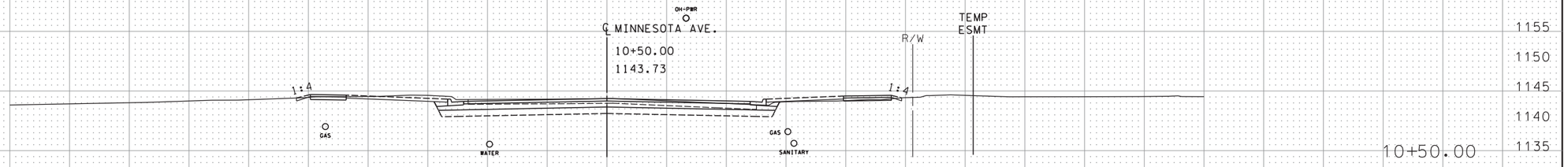
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

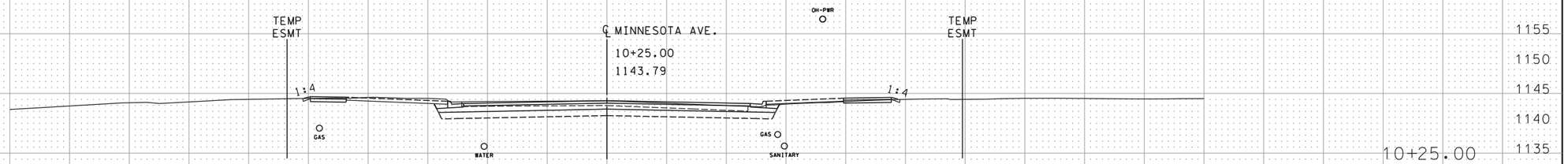
S.P. 6103-32 (TH28)

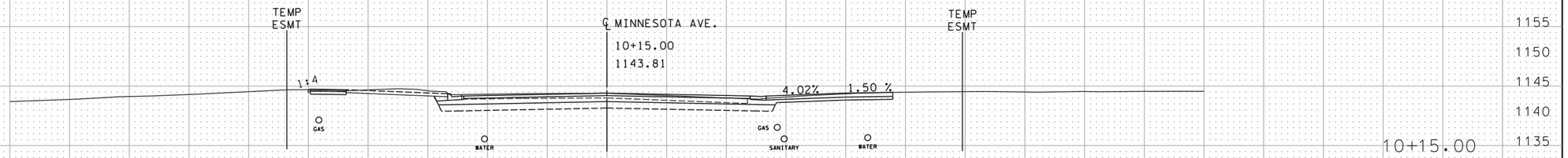
SHEET NO. XS50 OF XS52 SHEETS

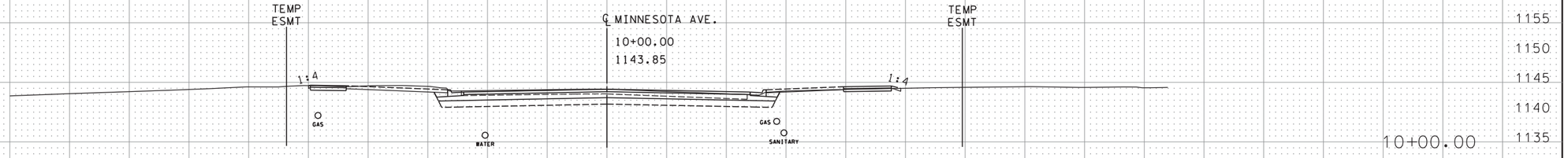
8:17:59 AM 6/30/2017 S:\X0\MN\Mn104\134590\5-final-dsgn\51-drawings\40-TransHwy\XS\Sheets\CD610332_XS4_4TH.dgn











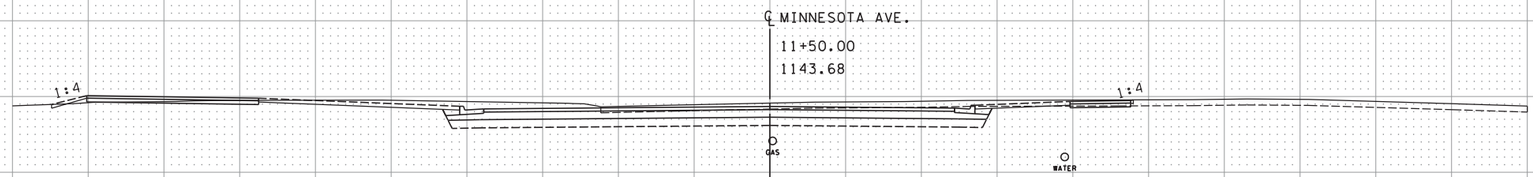
BEGIN CONSTRUCTION MINNESOTA AVE. STA. 10+00.00

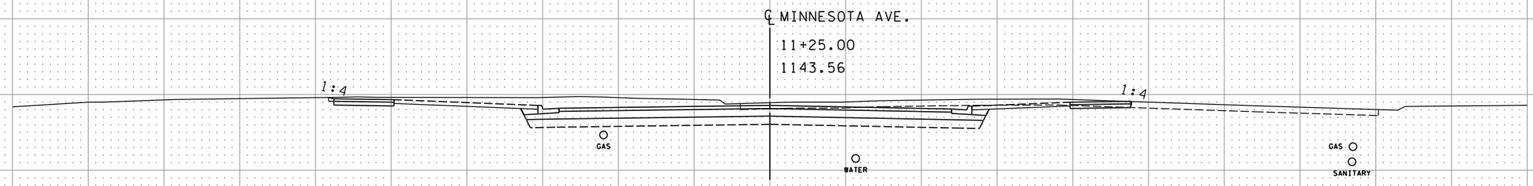
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

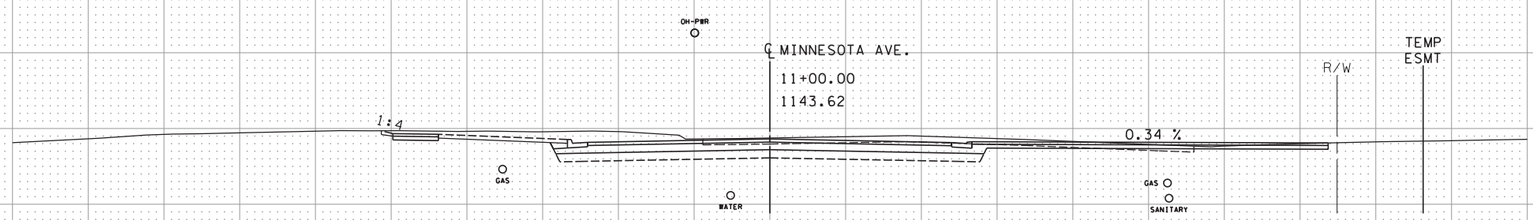
S.P. 6103-32 (TH28)

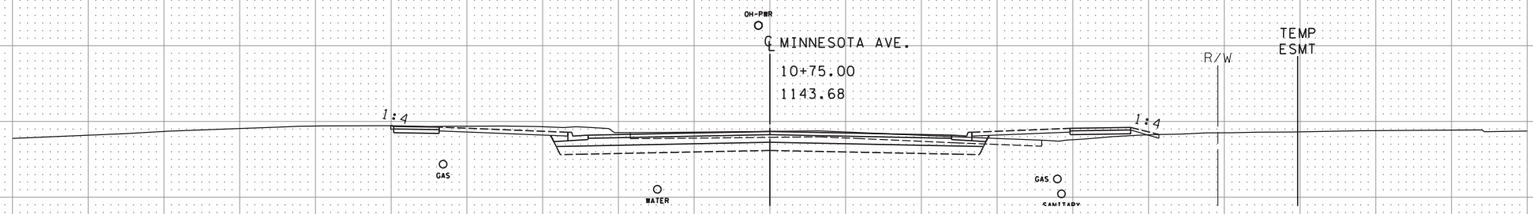
SHEET NO. XS51 OF XS52 SHEETS

END CONSTRUCTION MINNESOTA AVE. STA. 11+50.00









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S.P. 6103-32 (TH28)

SHEET NO. XS52 OF XS52 SHEETS

8:18:01 AM 6/30/2017

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SEH