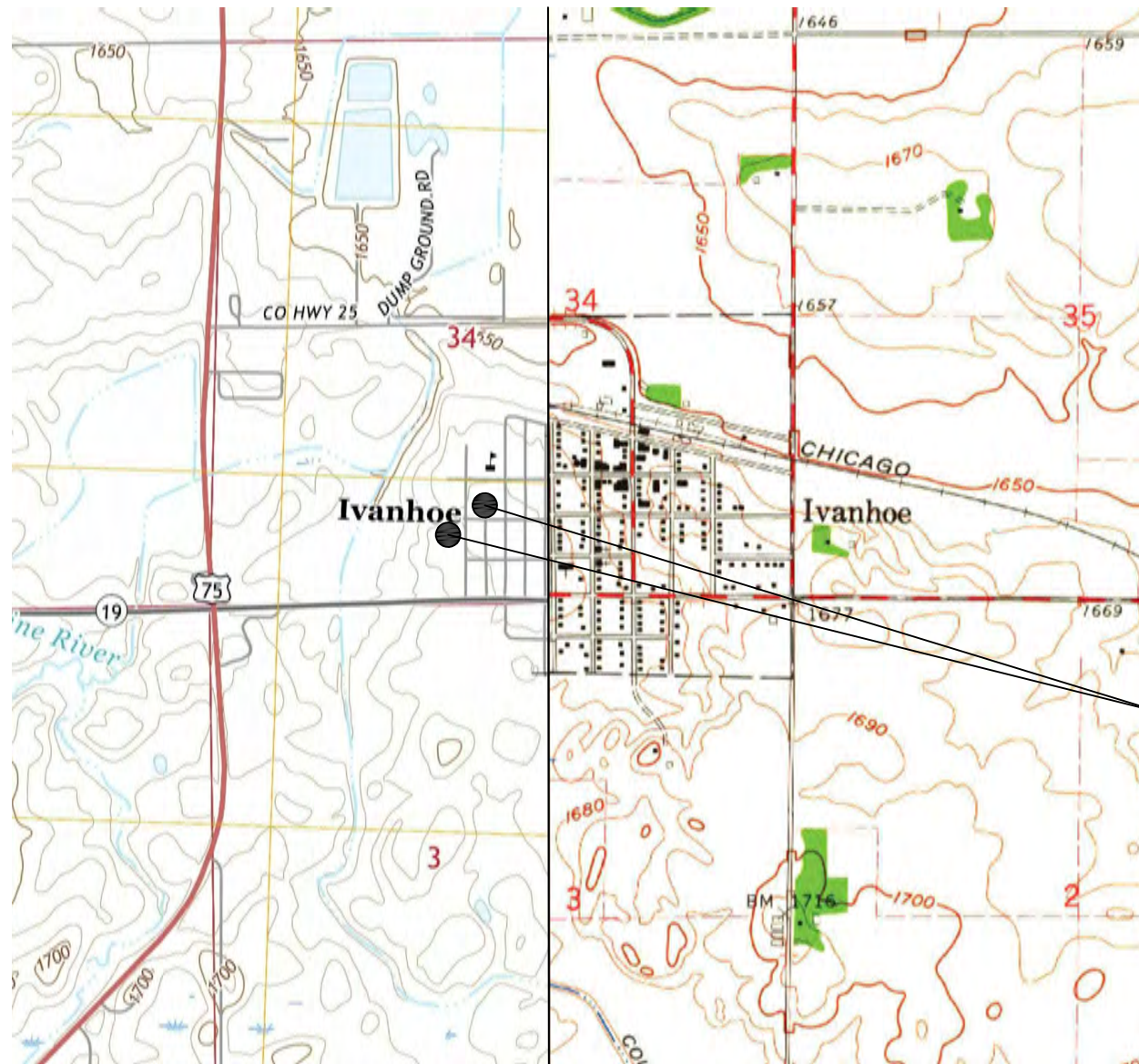
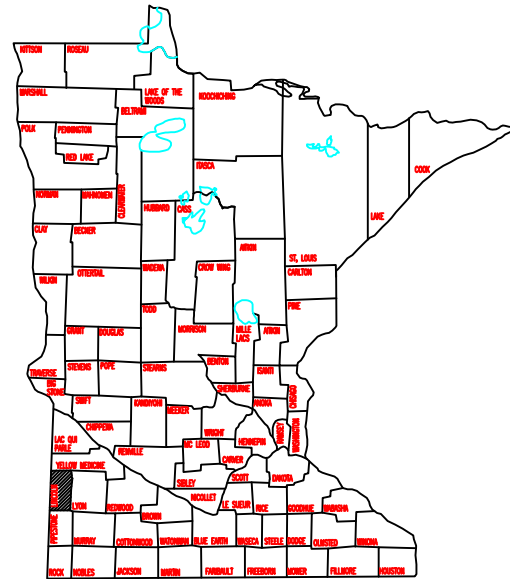


LINCOLN COUNTY PARKING LOT IMPROVEMENTS

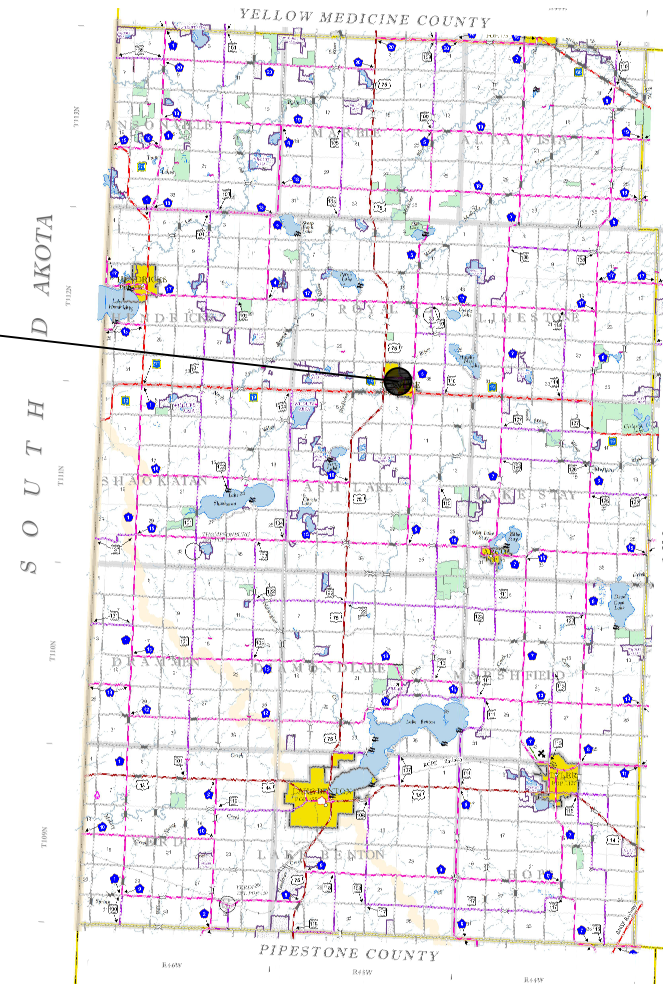
LINCOLN COUNTY, MN

CITY OF IVANHOE, MN



CITY OF IVANHOE

LINCOLN COUNTY HIGHWAY DEPT & COURTHOUSE



LINCOLN COUNTY LOCATION MAP
SCALE: Not to Scale

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- C-202 REMOVAL PLAN - HIGHWAY DEPT.
- C-203 OVERALL PROPOSED IMPROVEMENTS - HIGHWAY DEPT.
- C-204 DRIVEWAY ELEVATION & DIMENSION PLAN
- C-205 SIDEWALK & CONCRETE ELEVATION & DIMENSION PLAN
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- C-207 DRAIN TILE PLAN

USGS LOCATION MAP
SCALE: Not to Scale

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK ASSOCIATES
1012 5th Ave, Suite 1B
Winona, MN 56101
(507) 831-2703
(507) 831-5271

Responsive partner. Exceptional outcomes.

DWN BY TNT	CHK'D MPJ	APP'D DJJ
DWG DATE 6/11/2019		
SCALE Not To Scale		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
--	---

SHEET TITLE Cover Sheet		
PROJECT NO. 4192-01	SHEET NO. G-101	REV NO.

	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.
	Signature: <i>Dennis J. Johnson</i> DENNIS J. JOHNSON 6/11/2019 LICENSE NUMBER 15051 LICENSE RENEWAL DATE IS JUN 31, 2020

Item No.	Item	Unit	Total Estimated Quantity
LINCOLN COUNTY COURTHOUSE & HIGHWAY IMPROVEMENTS			
2021.501	MOBILIZATION	L.S.	1
2101.511	CLEARING & GRUBBING EXISTING TREES	L.S.	1
2102.501	PAVEMENT MARKING REMOVAL	S.F.	20
2102.502	PAVEMENT MARKING REMOVAL	L.F.	132
2104.501	REMOVE CURB AND GUTTER	L.F.	300
2104.503	REMOVE VALLEY GUTTER	S.F.	75
2104.503	REMOVE SIDEWALK	S.F.	715
2104.503	REMOVE CONCRETE PAVEMENT	S.F.	980
2104.503	REMOVE BITUMINOUS PAVEMENT	S.F.	580
2104.509	REMOVE CATCH BASIN & CASTING	EACH	1
2104.523	SALVAGE HANDICAP SIGN	EACH	3
2105.501	COMMON EXCAVATION (P)	C.Y.	880
2211.501	AGGREGATE BASE, CLASS 5	TON	720
2301.504	PLACE CONCRETE PAVEMENT*	S.Y.	820
2357.502	BITUMINOUS MATERIAL FOR TACK COAT	GAL	10
2360.503	TYPE SP 12.5 WEARING COURSE MIXTURE 2C 4" THICK	S.Y.	65
2503.541	8" PIPE SEWER DESIGN, PERFORATED HDPE	L.F.	465
2503.541	16" PIPE SEWER DESIGN, HDPE	L.F.	4
2506.501	CONSTRUCT DRAINAGE STRUCTURE 4' DIA. STORM MANHOLE	L.F.	4.17
2506.501	CONSTRUCT DRAINAGE STRUCTURE 2' x 3' CATCH BASIN	L.F.	7.58
2506.516	CASTING ASSEMBLY - R2557	EACH	1
2506.516	CASTING ASSEMBLY - R3076	EACH	1
2506.516	CASTING ASSEMBLY - R3067	EACH	1
2511.513	3/4" CRUSHED ROCK	C.Y.	114
2511.515	GEOTEXTILE FILTER, TYP_	S.Y.	227
2521.501	CONCRETE WALK, 5"	S.F.	904
2531.501	CONCRETE CURB AND GUTTER B618	L.F.	471
2531.501	CONCRETE VALLEY GUTTER	L.F.	17
2531.618	TRUNCATED DOMES	S.F.	28
2563.601	TRAFFIC CONTROL	L.S.	1
2573.530	STORM DRAIN INLET PROTECTION	EACH	3
2574.508	FERTILIZER, TYPE 3	LB	45
2574.525	TOPSOIL BORROW	C.Y.	121
2575.501	SEEDING	ACRE	0.14
2575.502	SEED MIXTURE NO. 25-131	LB	20
2575.560	HYDRAULIC MULCH MATRIX	LB	224
2582.501	PAVEMENT MESSAGE (HANDICAP) EPOXY	S.F.	30
2582.502	LINEAR MARKINGS 4" WIDE EPOXY WHITE	L.F.	508

*ITEM INCLUDES THE STRUCTURAL CONCRETE

REV	REVISION DESCRIPTION	DWN	APP	REV DATE



WENCK ASSOCIATES
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 Windom, MN 56101
 (507) 831-2703
 (507) 831-5271
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DWN BY MPJ	CHK'D DJJ	APP'D DJJ	PROJECT Lincoln County Parking Lot Improvements	SHEET TITLE Statement of Estimated Quantities	
DWG DATE 5/15/2019		CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142		PROJECT NO. 4192-01	SHEET NO. G-102
SCALE Not To Scale			REV NO.		

Tabulation of Street & Sidewalk Quantities

Location	Class 5 Gravel Depth (inch)	Salvage Gravel Depth (inch)	Concrete Pavement Thickness (in)	Gravel Area (S.Y.)	Place Concrete Pavement* (S.Y.)	Aggregate Base Class 5 (Ton)	Total Excavation (C.Y.)	Curb and Gutter (L.F.)	Valley Gutter (L.F.)	5" Sidewalk (S.F.)	Truncated Domes (S.F.)	4" Type SP 12.5 Non-Wearing Course Mix 2C (S.Y.)	Bituminous Material for Tack Coat (Gallons)
COURTHOUSE													
PARKING LOT	12	0	6	620	620	490	730	335	0	0	0	0	0
PARKING LOT SIDEWALK & RAMP	4	0	0	35	0	10		0	0	302	20	0	0
2' & 5' SIDEWALK	4	0	0	21	0	10		0	0	187	0	0	0
HIGHWAY DEPARTMENT													
DRIVEWAY	12	0	6	115	115	90	150	56	0	0	0	0	0
CONCRETE PAVEMENT & CURB	12	0	6	85	85	70		65	0	0	0	0	0
SIDEWALK	4	0	0	46	0	10		0	0	415	8	0	0
DRAIN TILE	8	0	0	77	0	40		15	17	0	0	65	10
Totals	-----	-----	-----	-----	820	720	880	471	17	904	28	65	10

*ITEM INCLUDES THE STRUCTURAL CONCRETE

Tabulation of Road Striping

LOCATION	4" SOLID LINE WHITE EPOXY (L.F.)	PAVEMENT MESSAGE (HANDICAP) PARKING EPOXY (S.F.)
COURTHOUSE	365	20
HIGHWAY DEPARTMENT	143	10
Total	508	30

Tabulation of Removal Quantities

LOCATION	REMOVE CURB & GUTTER (L.F.)	REMOVE SIDEWALK (S.F.)	REMOVE CONCRETE PAVEMENT (S.F.)	REMOVE VALLEY GUTTER (S.F.)	REMOVE BITUMINOUS PAVEMENT (S.F.)	REMOVE CATCH BASIN & CASTING (EACH)	PAVEMENT MARKING REMOVAL (L.F.)	PAVEMENT MARKING REMOVAL (S.F.)	SALVAGE HANDICAP SIGN** (EACH)	CLEAR & GRUB TREE (L.S.)***
COURTHOUSE	164	460	235	-----	-----	-----	132	20	2	1
HIGHWAY DEPARTMENT	136	255	745	75	580	1	-----	-----	1	-----
Total	300	715	980	75	580	1	132	20	3	1

* ITEM INCLUDES REMOVAL OF 2 HANDICAP PAVEMENT MESSAGE SIGNS & NO PARKING ZONE

** ITEM INCLUDES REMOVAL & REINSTALLATION AT LOCATION SHOWN ON PLANS

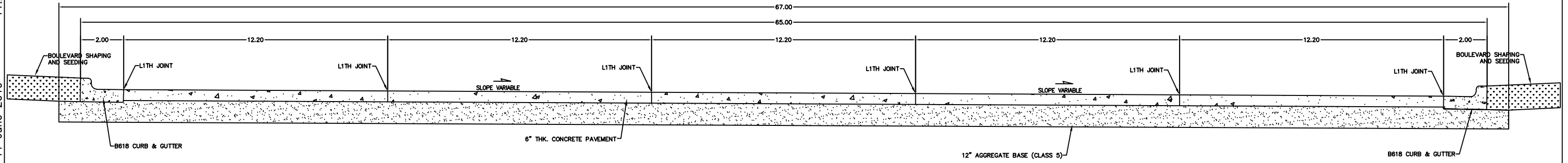
*** ITEM INCLUDES CLEARING & GRUBBING OF 6 TREES

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

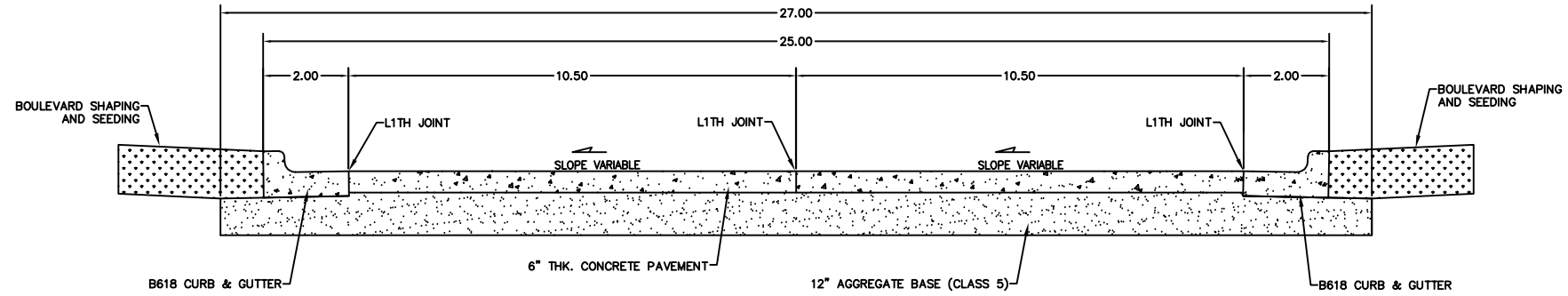


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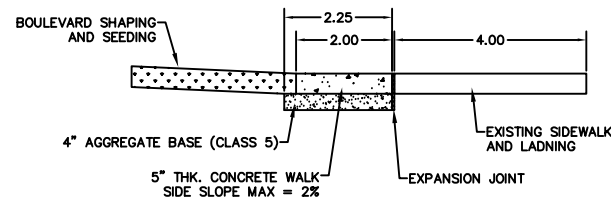
DWN BY MPJ	CHK'D DJJ	APP'D DJJ	PROJECT Lincoln County Parking Lot Improvements	SHEET TITLE Estimated Quantites Pavement & Sidewalk
DWG DATE 5/15/2019			CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142	PROJECT NO. 4192-01
SCALE Not To Scale				SHEET NO. G-103



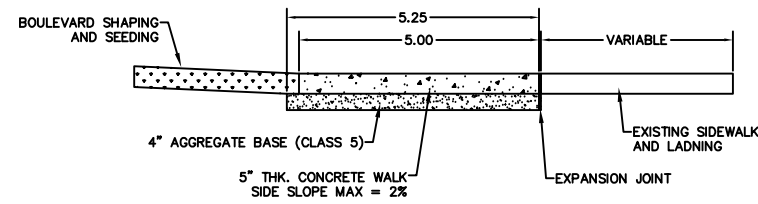
TYPICAL PAVEMENT CROSS SECTION - PROPOSED
PARKING LOT COURTHOUSE



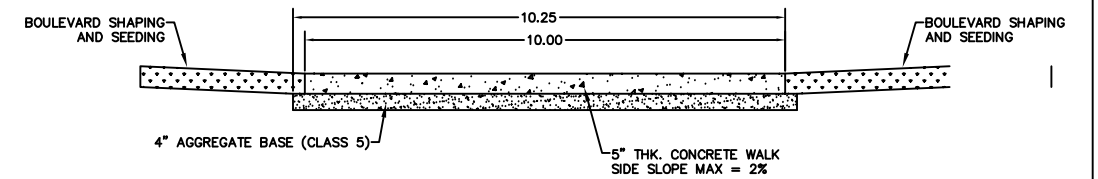
TYPICAL PAVEMENT CROSS SECTION - PROPOSED
DRIVE-WAY COURTHOUSE



TYPICAL SIDEWALK CROSS SECTION - 2' EXTENSION
COURTHOUSE



TYPICAL SIDEWALK CROSS SECTION - 5' EXTENSION
COURTHOUSE



TYPICAL SIDEWALK CROSS SECTION - 10' WIDE
COURTHOUSE

REV	REVISION DESCRIPTION	DWN	APP	REV DATE



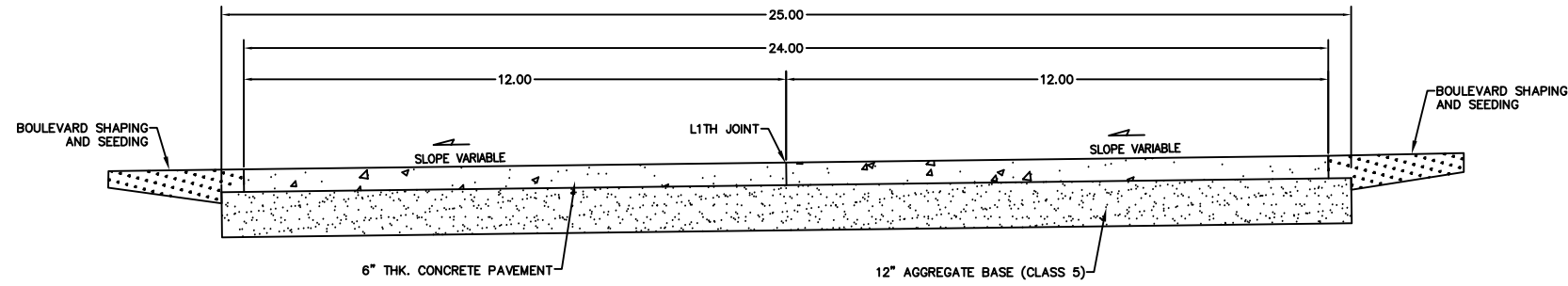
1012 5th Ave, Suite 1B
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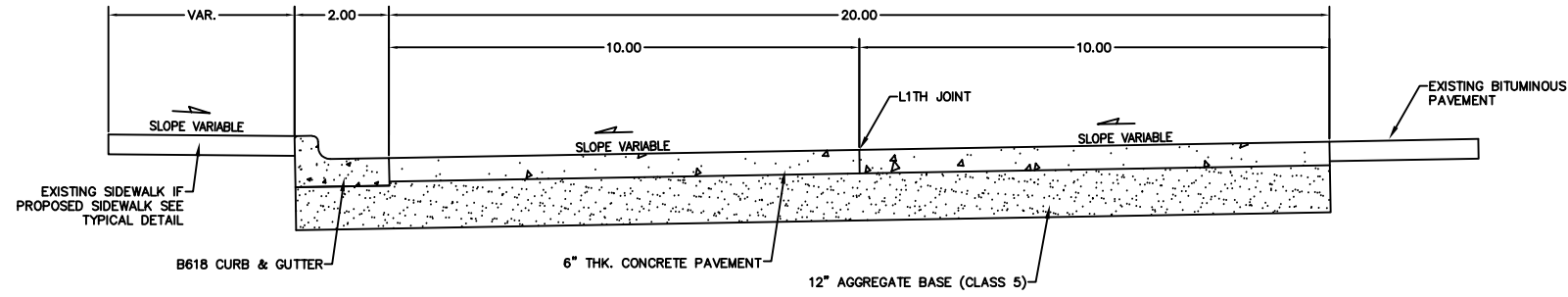
DWN BY	CHK'D	APP'D
MPJ	DJJ	DJJ
DWG DATE	5/15/2019	
SCALE	Not To Scale	

PROJECT	Lincoln County Parking Lot Improvements
CLIENT	Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142

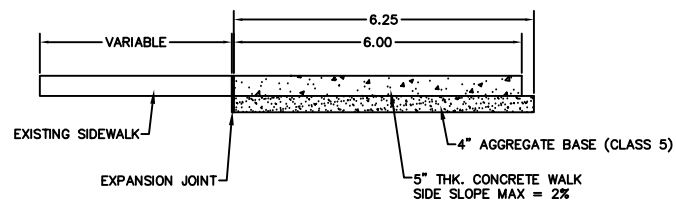
SHEET TITLE Typical Details Pavement & Sidewalk		
PROJECT NO. 4190-01	SHEET NO. G-104	REV NO.



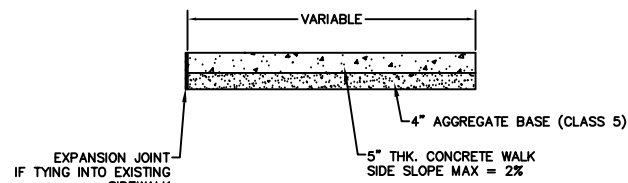
TYPICAL PAVEMENT CROSS SECTION - PROPOSED
DRIVE-WAY HIGHWAY DEPARTMENT



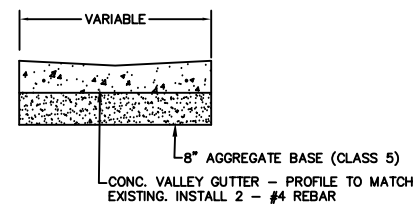
TYPICAL PAVEMENT CROSS SECTION - PROPOSED CONCRETE &
CURB & GUTTER REPLACEMENT HIGHWAY DEPARTMENT



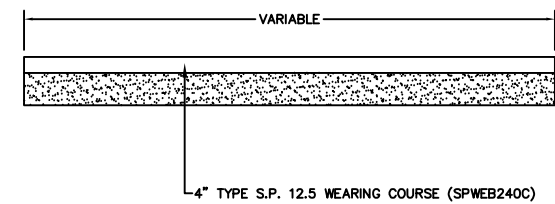
TYPICAL SIDEWALK CROSS SECTION - 6' EXTENSION
HIGHWAY DEPARTMENT



TYPICAL SIDEWALK CROSS SECTION - SIDEWALK
REPLACEMENT HIGHWAY DEPARTMENT



TYPICAL VALLEY GUTTER REPLACEMENT CROSS SECTION
HIGHWAY DEPARTMENT



TYPICAL BITUMINOUS PATCHING CROSS SECTION
HIGHWAY DEPARTMENT

REV	REVISION DESCRIPTION	DWN	APP	REV DATE



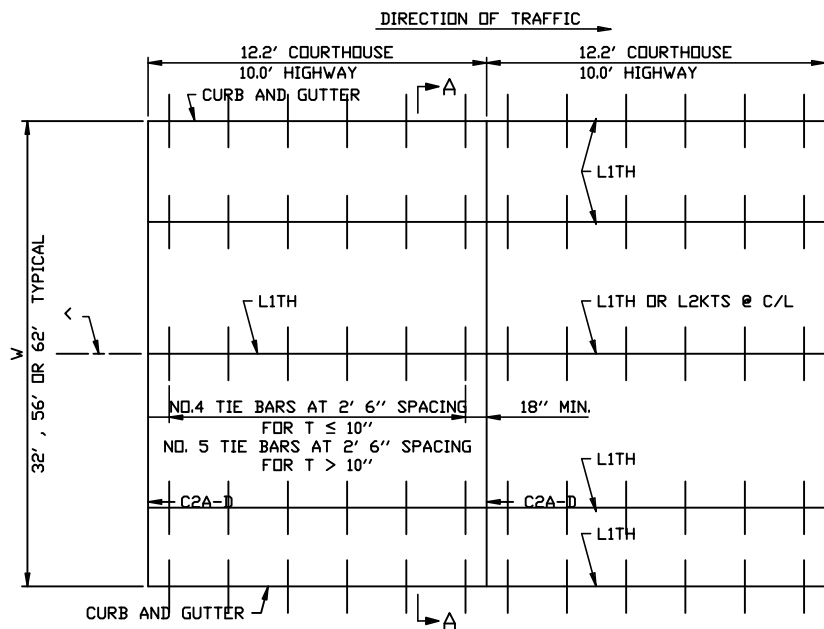
1012 5th Ave, Suite 1B
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Responsive partner. Exceptional outcomes.

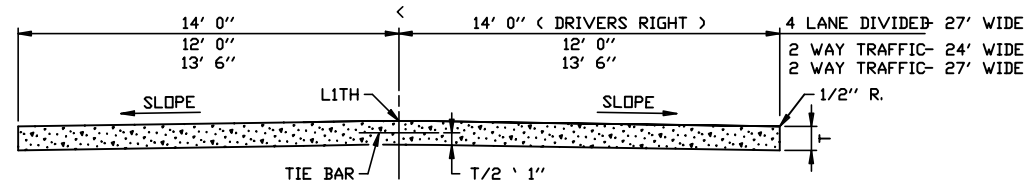
DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE Not To Scale		

PROJECT Lincoln County Parking Lot Improvements
CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142

SHEET TITLE Typical Details Pavement & Sidewalk		
PROJECT NO. 4192-01	SHEET NO. G-105	REV NO.



MAINLINE PAVEMENT



SECTION A-A

GENERAL NOTES:

SEE TYPICAL SECTIONS AND PLAN SHEETS FOR CROSS SLOPES AND PAVEMENT THICKNESS, T.
 WHEN RIGID PAVEMENT ADJOINS FLEXIBLE PAVEMENT, BRIDGE APPROACHES, R. R. CROSSINGS OR OTHER TYPES OF FREE ENDS, THE FOLLOWING MODIFICATIONS SHALL BE MADE: THE FIRST OR LAST 10 JOINTS SHALL BE DOWELED CONTRACTION JOINTS, C4E-D.
 DOWEL BAR ASSEMBLIES, WHEN REQUIRED, SHALL BE SIMILAR TO THOSE SHOWN ON STANDARD PLATE 1103.
 ALL REINFORCING BARS SHALL BE EPOXY COATED IN ACCORDANCE WITH SPEC. 3301 AND SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53. FOR ADDITIONAL REINFORCEMENT OVER CULVERTS, SEE STANDARD PLATE 1070.
TIE BARS:
 USE NO. 4 BARS 2' 6" LONG, AT 2' 6" SPACING. FOR T ≤ 10" USE NO. 5 BARS 3' 0" LONG AT 2' 6" SPACING FOR T > 10".

LONGITUDINAL JOINT CLASS DESIGNATION, DETAIL & SEALER SPECIFICATION TABLE

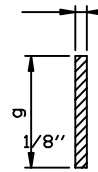
CLASS DESIGNATION				JOINT DETAIL	JOINT SEALER SPECIFICATION
WITHOUT TIE BARS	WITH TIE BARS	WITH KEYWAY & TIE BARS	BUTTED		
L1H	L1H	L2KTH L2KTS	L3H L3S	B	3723
L1BU	L1TBU			A OR B D OR E	UNSEALED 3723
L4S				C	SILICONE 3723
				D OR E	SILICONE
				F	SILICONE

LEGEND

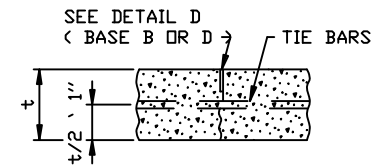
L = LONGITUDINAL JOINT
 ND. = JOINT REFERENCE
 K = KEYWAY
 T = TIE BARS
 B = CONCRETE BASE
 U = UNSEALED
 H = HOT POUR
 S = SILICONE

JOINT REFERENCE NUMBERS

1 = SAWED TO A DEPTH OF t/3
 2 = KEYED CONSTRUCTION JOINT
 3 = BUTTED CONSTRUCTION JOINT
 4 = SAWED TO A DEPTH OF t/2



DETAIL B
 (SAWED & SEALER, SPEC. 3723)
 (BASE JOINTS UNSEALED)



L1, L1T, L1B & L1TB

LONGITUDINAL JOINT DEPTH TABLE

PAVEMENT THICKNESS t	CONCRETE PAVEMENT JOINT DEPTH g	CONCRETE BASE JOINT DEPTH g
6"	2"	2"
6-1/2"	2-1/8"	2"
7"	2-1/4"	2-1/4"
7-1/2"	2-1/2"	2-1/4"
8"	2-5/8"	2-1/2"
8-1/2"	2-7/8"	2-1/2"
9"	3"	2-3/4"
9-1/2"	3-1/4"	3"
10"	3-3/8"	
10-1/2"	3-1/2"	
11"	3-5/8"	
11-1/2"	3-7/8"	
12"	4"	
12-1/2"	4-1/8"	
13"	4-3/8"	
13-1/2"	4-1/2"	
14"	4-5/8"	

LONGITUDINAL JOINT NOTES:

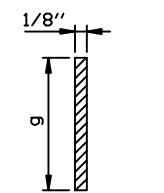
ALL TIE BARS SHALL MEET THE REQUIREMENTS OF GRADE 60 FOR AASHTO M-31 OR M-53.
 NORMALLY, TIED PAVEMENT WIDTHS SHALL NOT EXCEED 30 FEET, EXCEPT BRIDGE APPROACH PANELS AND PAVEMENT TAPERS.
 JOINT WIDTH TOLERANCE IS + 1/16 IN. TO - 1/32 IN.
 SPEC. 3723 SEALER - TOP OF SEALER FLUSH TO - 3/16 IN. BELOW TOP OF PAVEMENT SURFACE.
 ① THE JOINT FACES SHALL BE CLEANED AND DRIED BY SANDBLASTING AND AIR BLASTING. PRIOR TO SEALING THE JOINT, A CLOSED CELL BACKER ROD CAPABLE OF WITHSTANDING SEALANT TEMPERATURES OF 400 DEGREES F, WITH A DIAMETER 1/8 IN. LARGER THAN THE JOINT OPENING, MAY BE PLACED 1/2 IN. BELOW THE TOP OF THE PAVEMENT.

CONTRACTION JOINT CLASS DESIGNATION, DETAIL & SEALER SPEC. TABLE

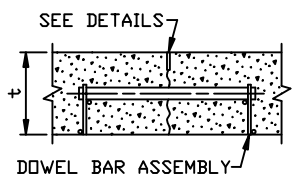
CLASS DESIGNATION		JOINT DETAIL	JOINT SEALER SPEC.
WITHOUT DOWELS	WITH DOWELS		
C1A	C1A-D	A	UNSEALED
C2B	C2B-D	B	3723
C2X	C2X-D	B OR C	3723
C3D	C3D-D	D	3721
C3X	C3X-D	C OR D	3721
C4E	C4E-D	E	SILICONE
C2A	C2A-D	A	3725

CONTRACTION JOINT DEPTH & DOWEL BAR TABLE

PAVEMENT THICKNESS t	CONCRETE PAVEMENT JOINT DEPTH g ⑤	CONCRETE BASE JOINT DEPTH g	DOWEL BAR DIAMETER
6"	1-1/2"	1-1/4"	3/4"
6-1/2"	1-5/8"	1-1/4"	3/4"
7"	1-3/4"	1-1/2"	1"
7-1/2"	1-7/8"	1-1/2"	1"
8"	2"	1-1/2"	1-1/4"
8-1/2"	2-1/8"	1-1/2"	1-1/4"
9"	2-1/4"	1-1/2"	1-1/4"
9-1/2"	2-3/8"	2"	1-1/4"
10"	2-1/2"	2"	1-1/4"
10-1/2"	2-5/8"	—	1-1/4"
11"	2-3/4"	—	1-1/2"
11-1/2"	2-7/8"	—	1-1/2"
12"	3"	—	1-1/2"
12-1/2"	3-1/8"	—	1-1/2"
13"	3-1/4"	—	1-3/4"
13-1/2"	3-3/8"	—	1-3/4"
14"	3-1/2"	—	1-3/4"



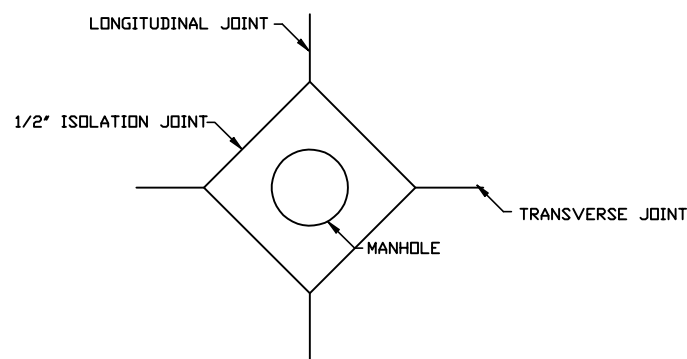
DETAIL A
 FORMED & SAWED



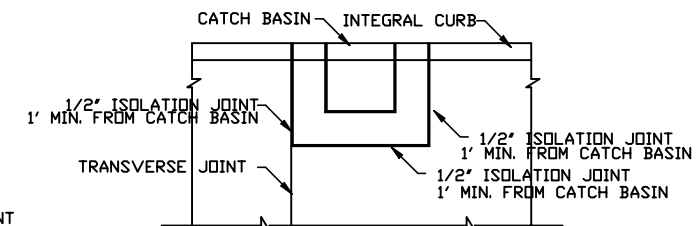
SECTION AT JOINT

LEGEND
 C = CONTRACTION JOINT
 ND. = SEALANT TYPE
 1 = UNSEALED
 2 = 3723
 3 = 3721
 4 = SILICONE
 LETTER = DETAIL
 X = MORE THAN 1 DETAIL
 -D = DOWEL BARS

EXAMPLE
 C2B-D



JOINTS AT MANHOLES



JOINTS AT CATCH BASIN

REV	REVISION DESCRIPTION	DWN	APP	REV DATE



1012 5th Ave, Suite 1B
 Windom, MN 56101
 (507) 831-2703
 (507) 831-5271

DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		SCALE Not To Scale

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
--	---

SHEET TITLE Concrete Joint Details		
PROJECT NO. 4192-01	SHEET NO. G-106	REV NO.

Tabulation of Storm Sewer Quantities

LOCATION	8" PIPE SEWER, DESIGN PERFORATED HDPE (L.F.)*****	16" PIPE SEWER, DESIGN HDPE (L.F.)	2' x 3' CATCH BASIN (L.F.)	4' DIA. STORM MANHOLE (L.F.)	CATCH BASIN CASTING R2557 (EACH)	CATCH BASIN CASTING R3076 (EACH)*	CATCH BASIN CASTING R3067 (EACH)**	GEOTEXTILE FILTER (S.Y.)***	3/4" CRUSHED ROCK (C.Y.)****
COURTHOUSE	-----	-----	-----	-----	-----	-----	-----	-----	-----
HIGHWAY DEPARTMENT	465	4	7.58	4.17	1	1	1	227	114
Total	465	4	7.58	4.17	1	1	1	227	114

*CASTING ASSEMBLY FOR 2' x 3' CATCH BASIN INSTALLED ON SIDEWALK

**CASTING ASSEMBLY FOR 2' x 3' CATCH BASIN INSTALLED IN CURB LINE

***ITEM BASED ON 4' WIDE TRENCH WIDTH

****ITEM BASED ON 4' WIDE TRENCH WIDTH & 1.5' CRUSHED ROCK THICKNESS

*****ITEM INCLUDES SALVAGING TOPSOIL & RESHAPING BOULEVARD. SEEDING IS PAID FOR UNDER, SEEDING, SEED MIXTURE, FERTILIZER, AND HYDRAULIC MULCH

Establishment and Erosion Control

Location	SHAPE BOULEVARD (S.Y.)	TOP SOIL BORROW (CV) (C.Y.)	SEEDING (ACRES)	SEED MIXTURE NO. 25- 131 (LBS)	HYDRAULIC MULCH MATRIX (LBS)	FERTILIZER, TYPE 3 (LBS)	STORM DRAIN INLET PROTECTION (EACH)
COURTHOUSE	173	103	0.04	8	90	18	0
HIGHWAY DEPARTMENT	261	18	0.1	12	135	27	3
Total	434	121	0.14	20	224	45	3

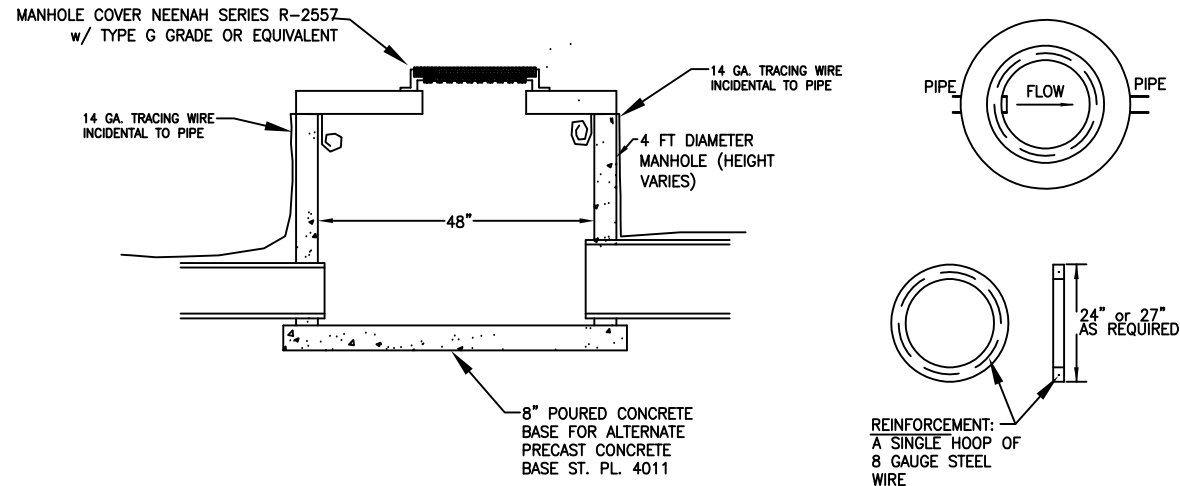
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WENCK
ASSOCIATES

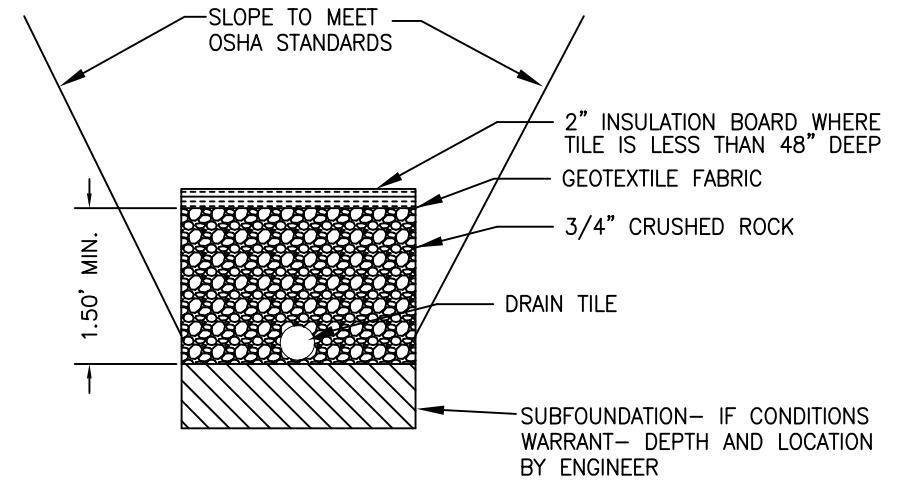
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(507) 831-5271

Responsive partner. Exceptional outcomes.

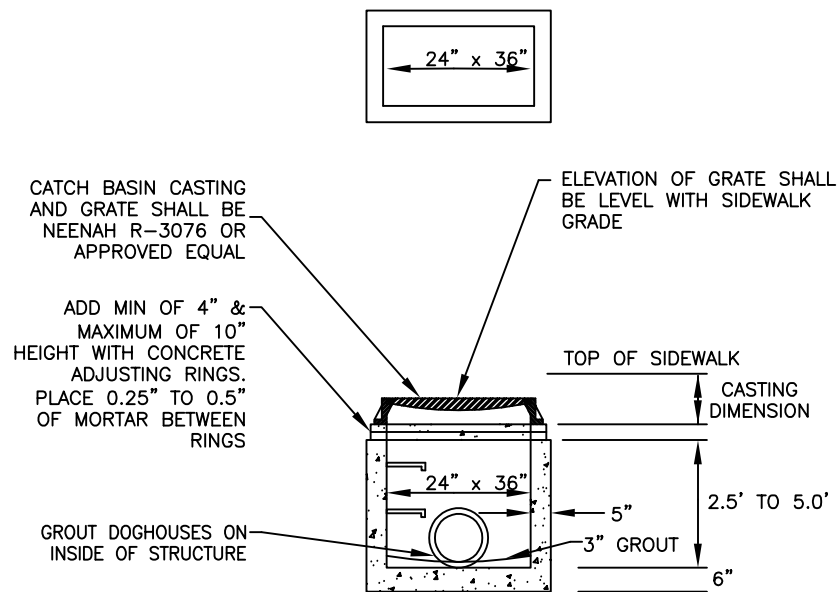
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DWG DATE 5/15/2019			CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142	PROJECT NO. 4192-01
SCALE Not To Scale				SHEET NO. G-107



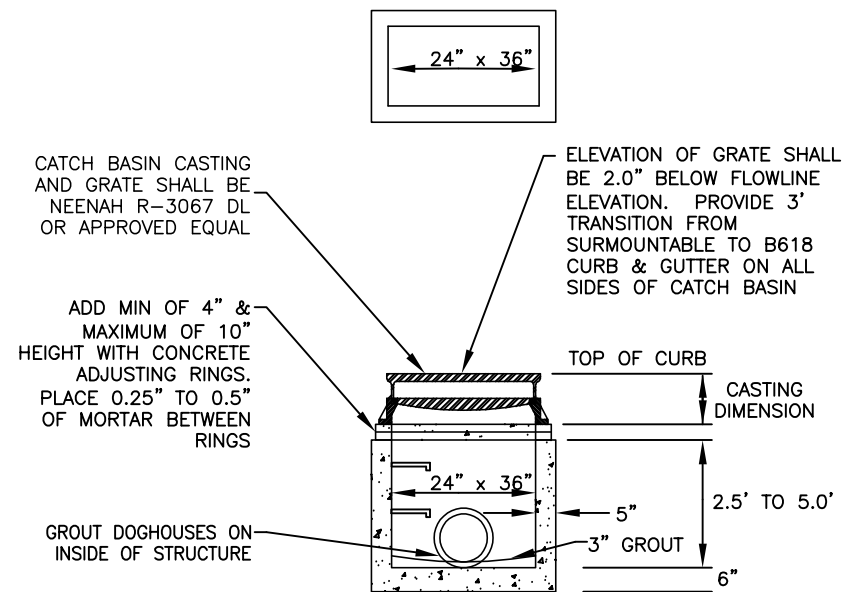
STORM MANHOLE - CATCH BASIN
SECTION - MNDOT 40/20 MH - CB
NOT TO SCALE



SECTION - DRAIN TILE INSTALLATION
NOT TO SCALE



CATCH BASIN - IN SIDEWALK
NOT TO SCALE



CATCH BASIN - IN CURB LINE
NOT TO SCALE

NOTES:

1. UNSUITABLE FOUNDATION MATERIALS, WHEN ENCOUNTERED AT OR BELOW THE FOUNDATION ELEVATION, SHALL BE REMOVED AND REPLACED WITH SUITABLE MATERIAL
2. FOUNDATION PREPARATION SHALL BE PER MN/DOT 2451.3C
3. STEPS SHALL BE PROVIDED IN ALL STORM DRAIN STRUCTURES WITH DEPTH OVER 4' (SEE STANDARD PLATE SEWER 2 FOR STEP REQUIREMENTS)
4. CASTING TO BE COMPLETELY ENCASED IN CONCRETE CURB SECTION
5. WOOD SHIMS ARE NOT PERMITTED FOR USE WITH ADJUSTING RINGS

REV	REVISION DESCRIPTION	DWN	APP	REV DATE

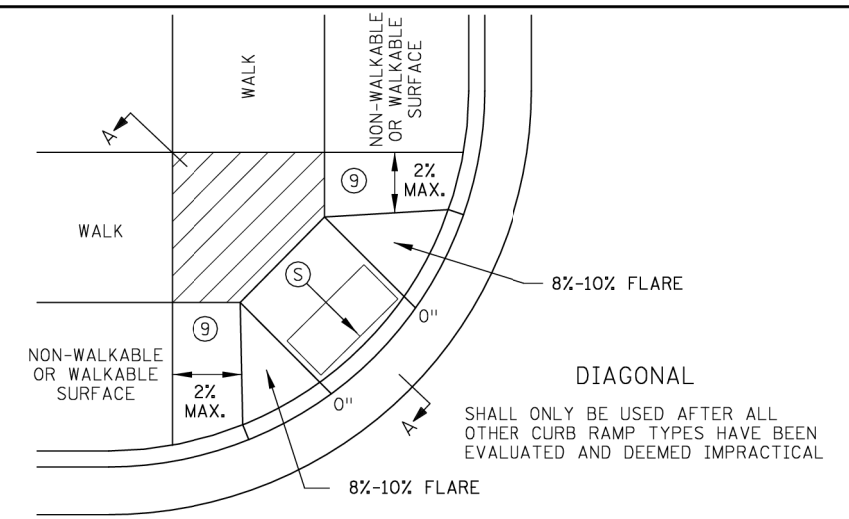
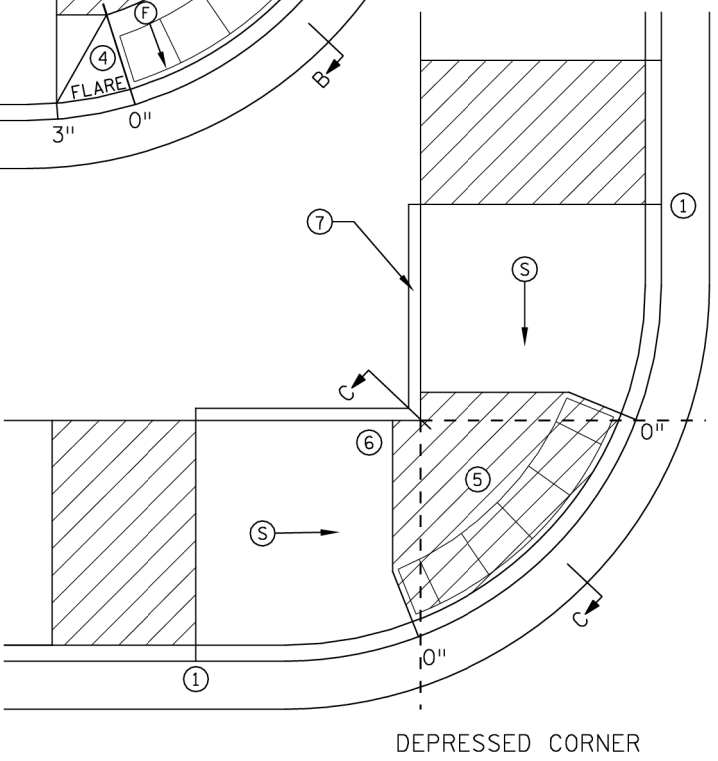
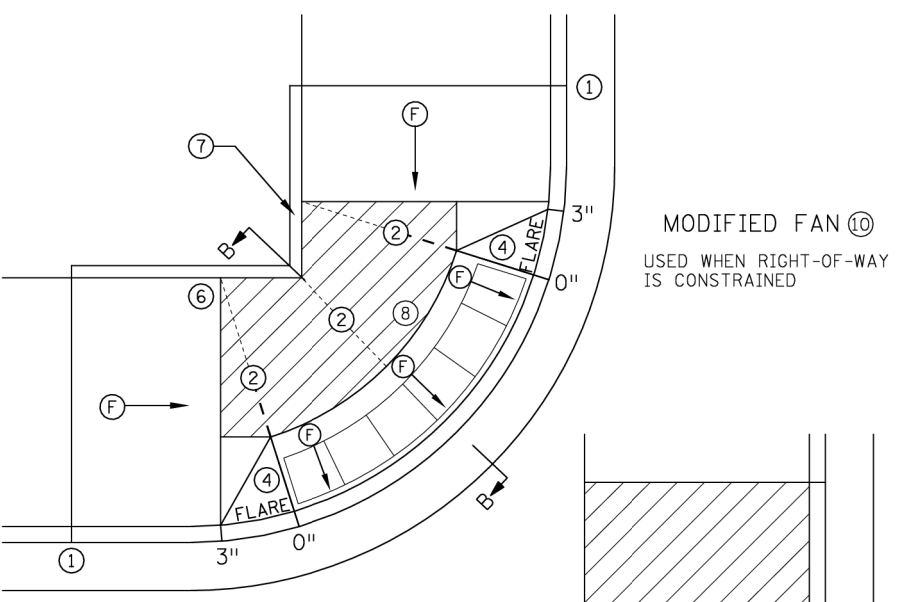
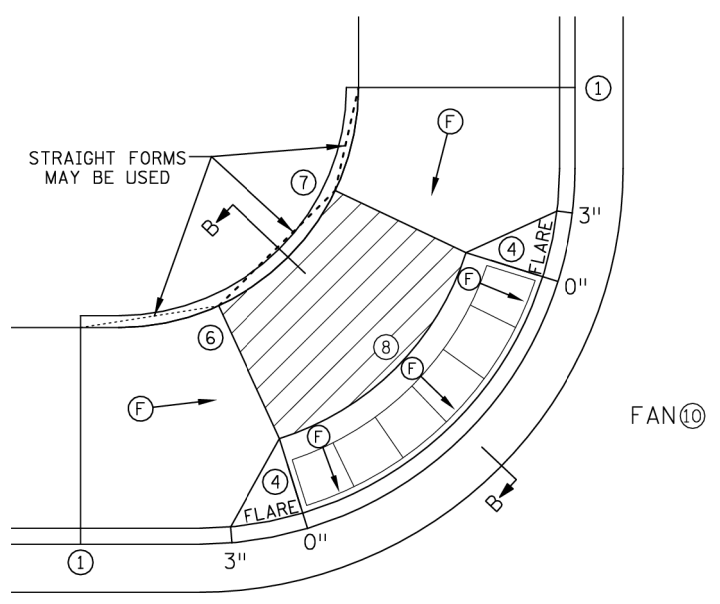
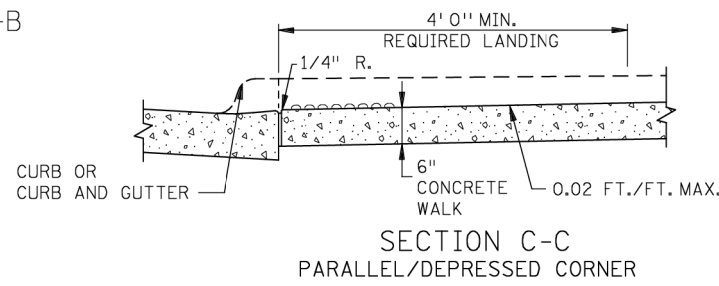
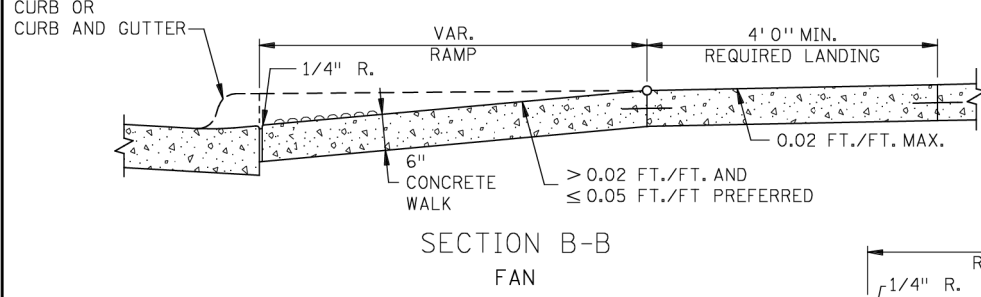
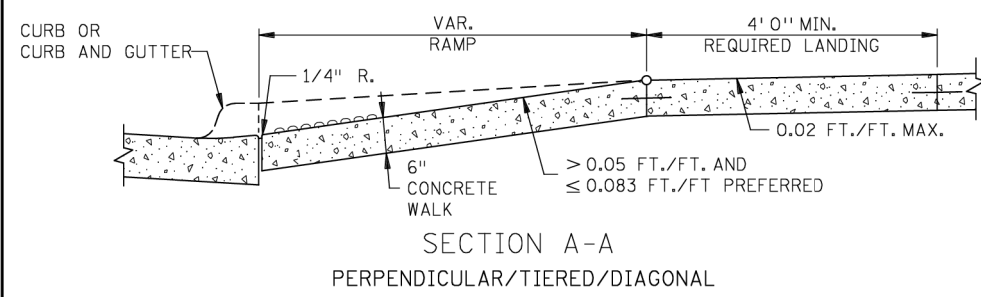
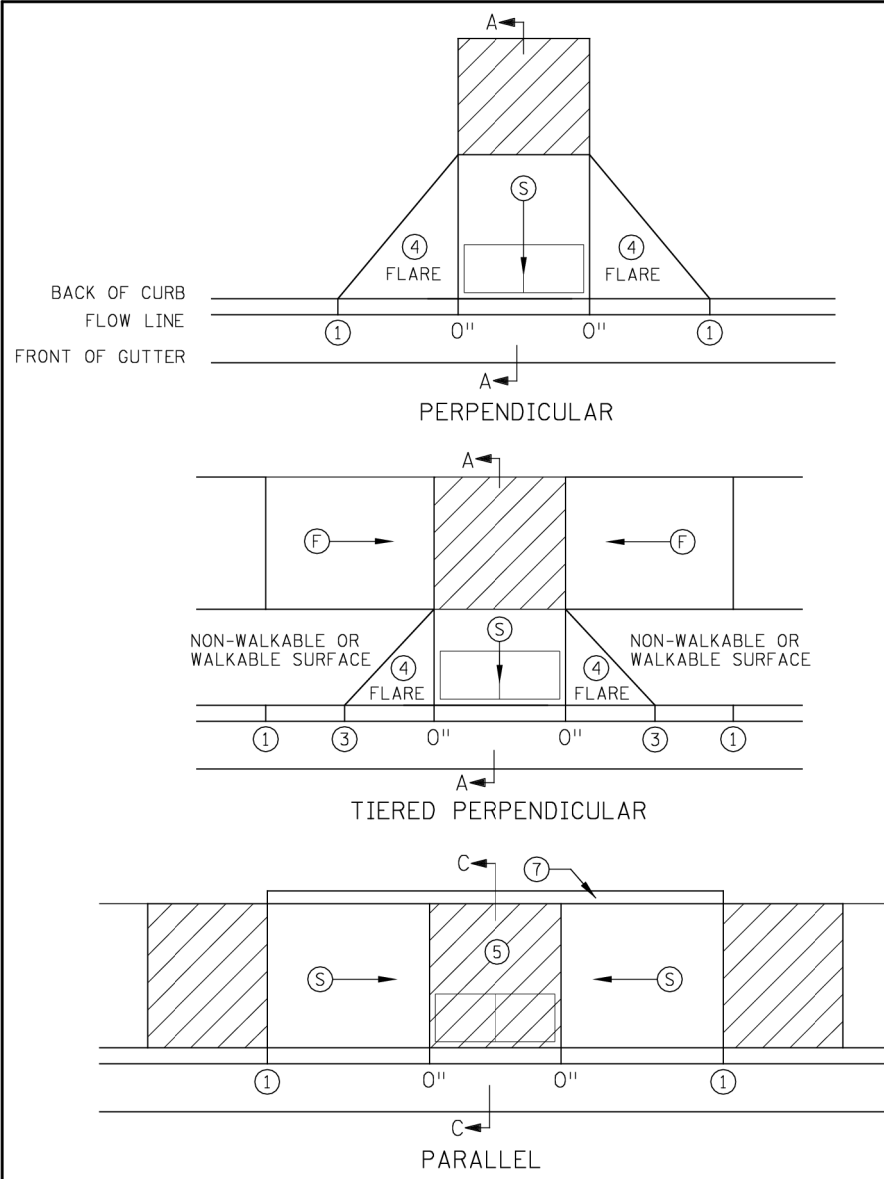


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DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE Not To Scale		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 Wallace Avenue Ivanhoe, MN 56142
PROJECT NO. 4192-01	

SHEET TITLE Typical Details Storm Sewer		REV NO.
PROJECT NO. 4192-01	SHEET NO. G-108	



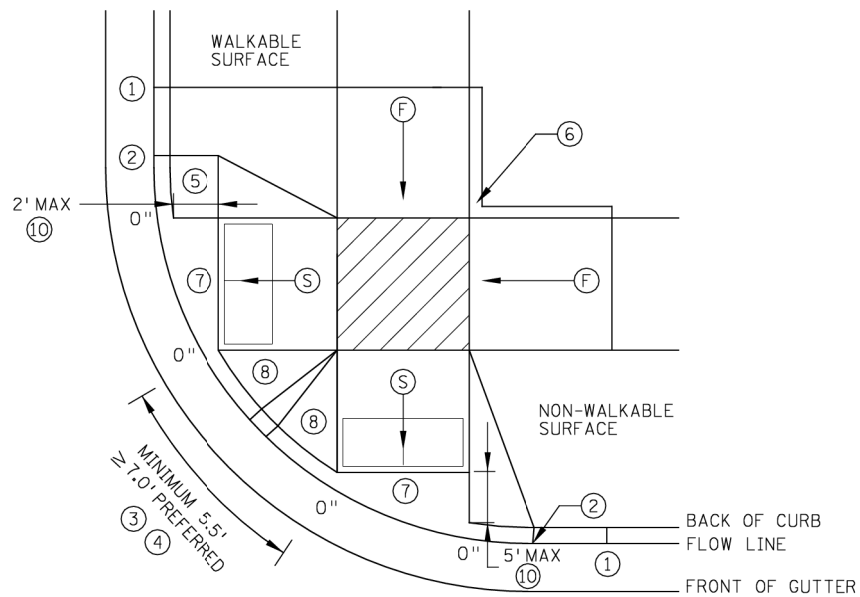
- NOTES:
- LANDINGS SHALL BE LOCATED ANYWHERE THE PEDESTRIAN ACCESS ROUTE (PAR) CHANGES DIRECTION, AT THE TOP OF RAMPS THAT HAVE RUNNING SLOPES GREATER THAN 5.0%, AND IF THE APPROACHING WALK IS INVERSE GRADE GREATER THAN 2%.
 - INITIAL CURB RAMP LANDINGS SHALL BE CONSTRUCTED WITHIN 15' FROM THE BACK 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 TAVERS 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%.
[Hatched Box]	LANDING AREA - 4' X 4' MIN. (5' X 5' MIN. PREFERRED) DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS. LANDING SHALL BE FULL WIDTH OF INCOMING PAR.
X"	CURB HEIGHT

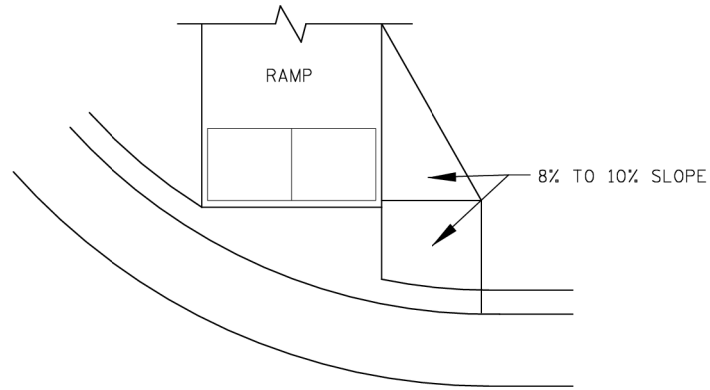
REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

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

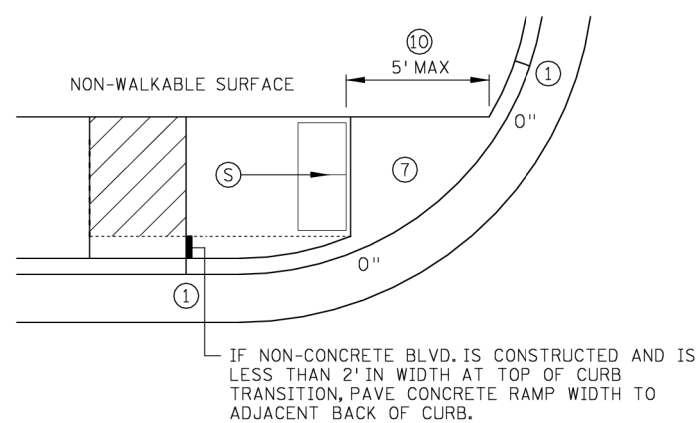
PEDESTRIAN CURB RAMP DETAILS
STANDARD PLAN 5-297.250
1 OF 6



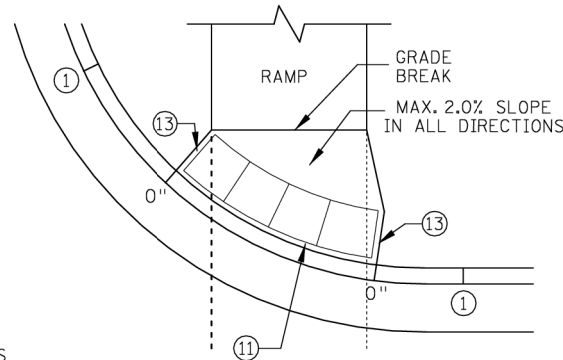
COMBINED DIRECTIONAL ⑨



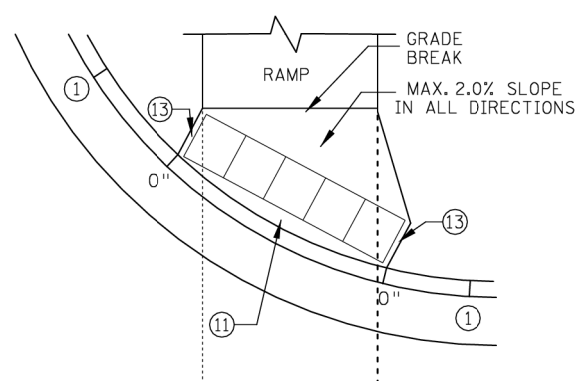
DIRECTIONAL RAMP WALKABLE FLARE



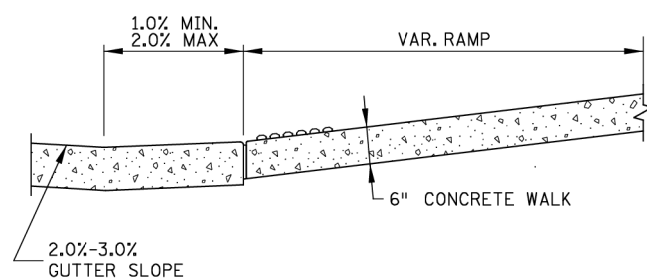
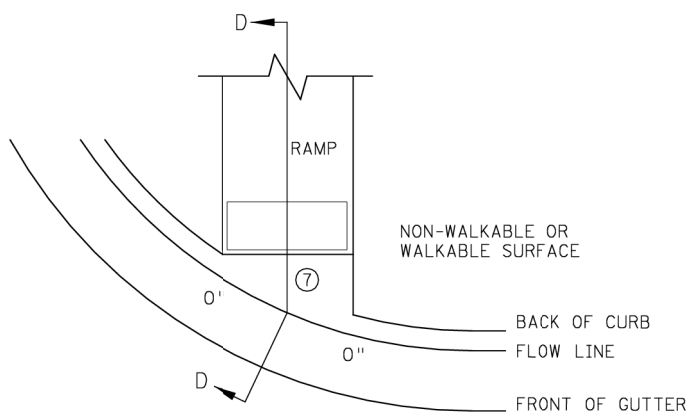
STANDARD ONE-WAY DIRECTIONAL ⑨



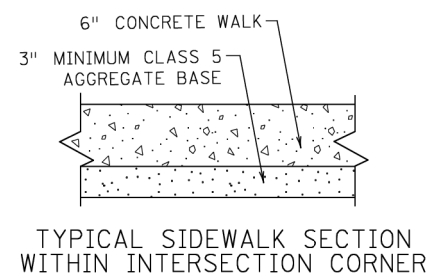
DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED ⑫



ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



SECTION D-D



NOTES:

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

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

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

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

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

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

TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.

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

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

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

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

- ① MATCH FULL CURB HEIGHT.
- ② 3" HIGH CURB WHEN USING A 3' LONG RAMP
4" HIGH CURB WHEN USING A 4' LONG RAMP.
- ③ 3" MINIMUM CURB HEIGHT (5.5' MIN. DISTANCE REQUIRED BETWEEN DOMES)
4" PREFERRED (7' MIN. DISTANCE REQUIRED BETWEEN DOMES).
- ④ THE "BUMP" IN BETWEEN THE RAMPS SHOULD NOT BE IN THE PATH OF TRAVEL FOR COMBINED DIRECTIONAL RAMPS. IF THIS OCCURS MODIFY THE RAMP LOCATION OR SWITCH RAMP TO A FAN/DEPRESSED CORNER.
- ⑤ WHEN USING CONCRETE PAVED FLARES ON THE OUTSIDE OF DIRECTIONAL RAMPS, AND ADJACENT TO A WALKABLE SURFACE, DIRECTIONAL RAMP FLARES SHOULD BE USED. SEE THE DETAIL ON THIS SHEET.
- ⑥ GRADING SHALL ALWAYS BE USED WHEN FEASIBLE. V CURB, IF USED, SHALL BE PLACED OUTSIDE THE SIDEWALK LIMITS WHEN RIGHT OF WAY ALLOWS. WHEN ADJACENT TO PARKING LOTS, CONCRETE OR BITUMINOUS TAPERS SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
- ⑦ MAX. 2.0% SLOPE IN ALL DIRECTIONS IN FRONT OF GRADE BREAK AND DRAIN TO FLOW LINE. SHALL BE CONSTRUCTED INTEGRAL WITH CURB AND GUTTER.
- ⑧ 8% TO 10% WALKABLE FLARE.
- ⑨ PLACE DOMES AT THE BACK OF CURB WHEN ALLOWABLE SETBACK CRITERIA IS EXCEEDED.
- ⑩ FRONT EDGE OF DETECTABLE WARNING SHALL BE SET BACK 2' MAXIMUM WHEN ADJACENT TO WALKABLE SURFACE, AND 5' MAXIMUM WHEN ADJACENT TO NON-WALKABLE SURFACE WITH ONE CORNER SET 3" FROM BACK OF CURB. A WALKABLE SURFACE IS DEFINED AS A PAVED SURFACE ADJACENT TO A CURB RAMP WITHOUT RAISED OBSTACLES THAT COULD MISTAKENLY BE TRAVERSED BY A USER WHO IS VISUALLY IMPAIRED.
- ⑪ RECTANGULAR DETECTABLE WARNINGS MAY BE SETBACK UP TO 9" FROM THE BACK OF CURB WITH CORNERS SET 3" FROM BACK OF CURB. IF 9" SETBACK IS EXCEEDED USE RADIAL DETECTABLE WARNINGS.
- ⑫ FOR DIRECTIONAL RAMPS WITH THE DETECTABLE WARNINGS PLACED AT THE BACK OF CURB, THE DETECTABLE WARNINGS SHALL COVER THE ENTIRE WIDTH OF THE WALK/PATH. THIS ENSURES A DETECTABLE EDGE AND HELPS ELIMINATE THE CURB TAPER OBSTRUCTING THE PATH OF PEDESTRIAN TRAVEL.
- ⑬ THE CONCRETE WALK SHALL BE FORMED AND CONSTRUCTED PERPENDICULAR TO THE BACK OF CURB. MAINTAIN 3" BETWEEN EDGE OF DOMES AND EDGE OF CONCRETE.
- ⑭ TO BE USED FOR ALL DIRECTIONAL RAMPS, EXCEPT WHERE DOMES ARE PLACED ALONG THE BACK OF CURB.

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

G-110

4192-01

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

Revision A: Added Sheet Number & Project Number

CURB FOR DIRECTIONAL RAMPS ⑭

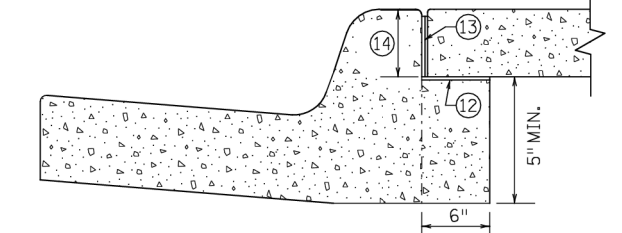
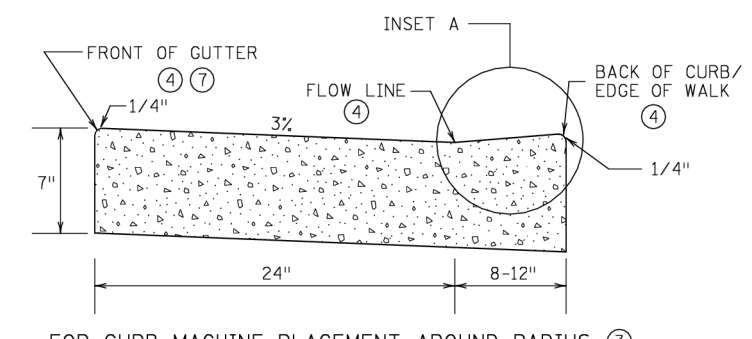
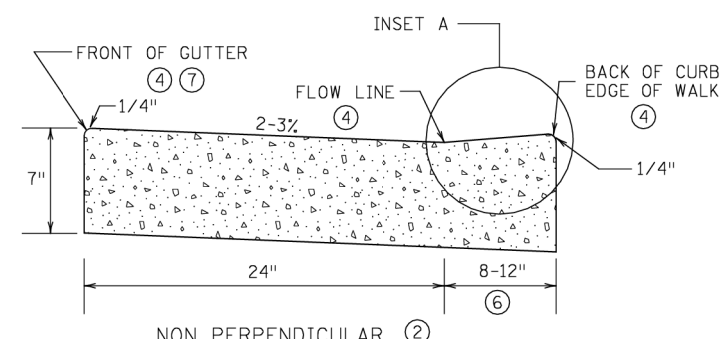
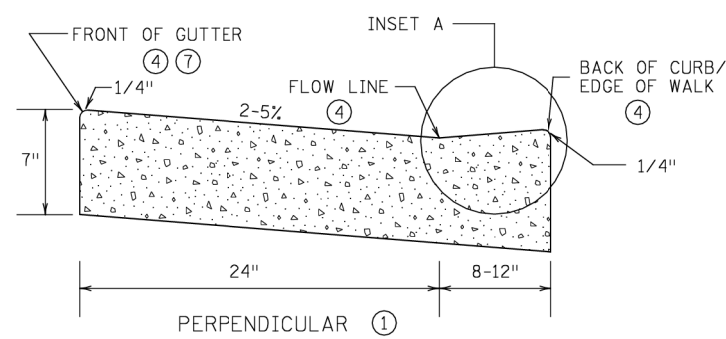
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STATE DESIGN ENGINEER

REVISED:
APPROVED:
1-23-2017

PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250

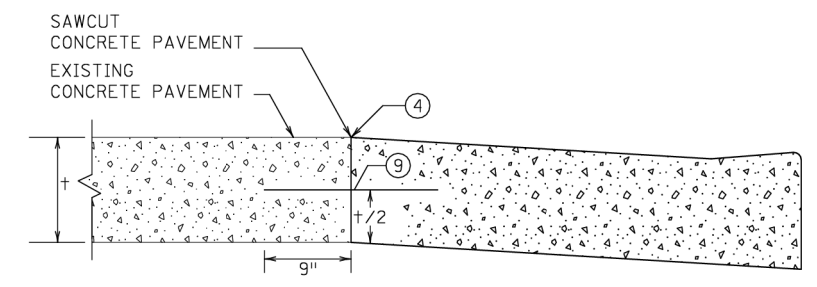
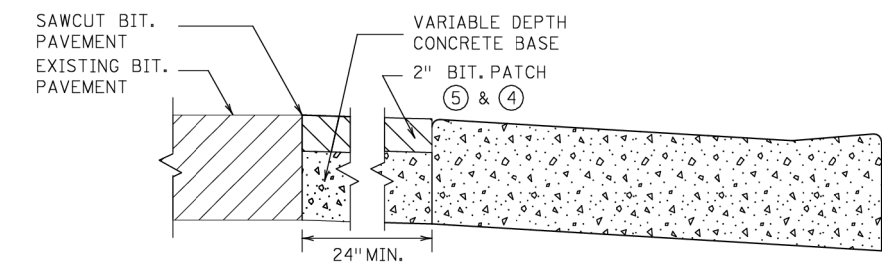
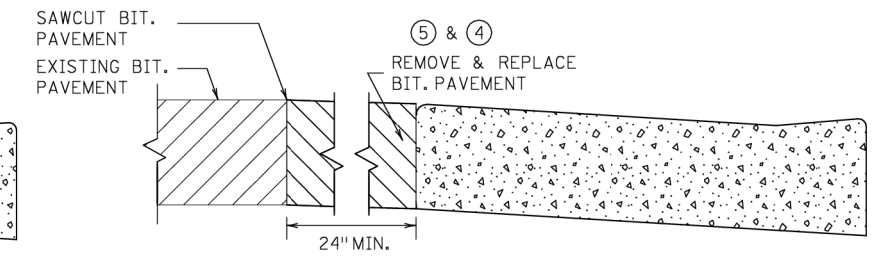
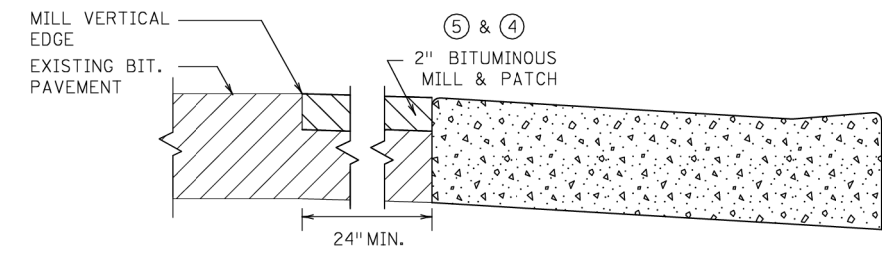
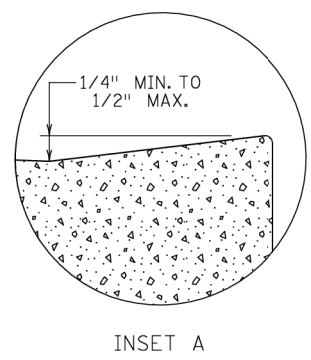
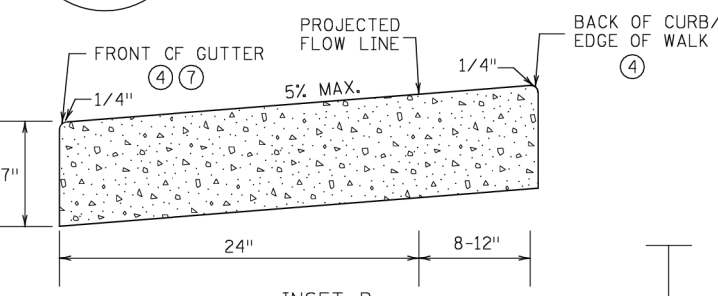
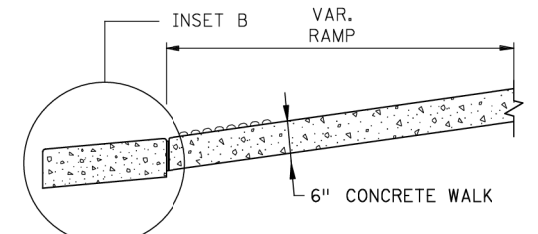
2 OF 6



OPTIONAL SILL CURB WHEN SIDEWALK IS AT BACK OF CURB

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

PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL

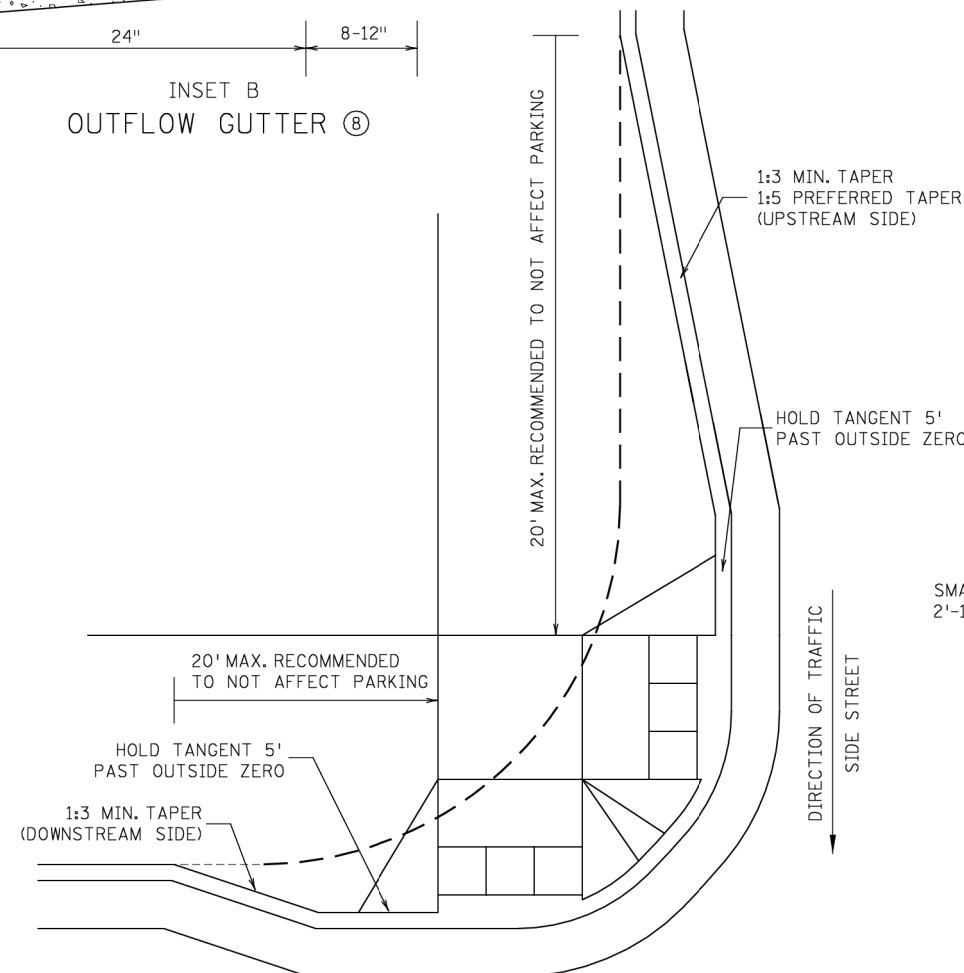


ONLY ALLOWED PER ENGINEER'S APPROVAL

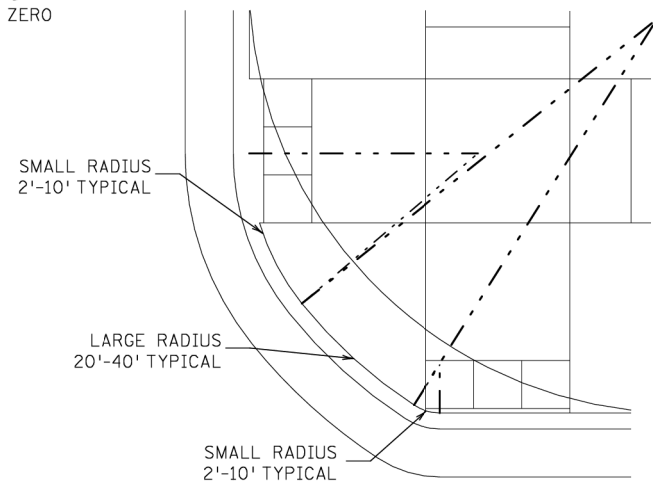
PAVEMENT TREATMENT OPTIONS IN FRONT OF CURB & GUTTER FOR USE ON CURB RAMP RETROFITS

NOTES:

- POSITIVE FLOW LINE DRAINAGE SHALL BE MAINTAINED THROUGH THE PEDESTRIAN ACCESS ROUTE (PAR) AT A 2% MAXIMUM. NO PONDING SHALL BE PRESENT IN THE PAR.
- ANY VERTICAL LIP THAT OCCURS AT THE FLOW LINE SHALL NOT BE GREATER THAN 1/4 INCH.
- ① FOR USE AT CURB CUTS WHERE THE PEDESTRIAN'S PATH OF TRAVEL IS ASSUMED PERPENDICULAR TO THE GUTTER FLOW LINE. RAMP TYPES INCLUDE: PERPENDICULAR, TIERED PERPENDICULAR, PARALLEL, AND DIAGONAL RAMP.
- ② FOR USE AT CURB RAMP 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 RAMP.
- 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.



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑩



COMBINED DIRECTIONAL (COMPOUND RADIUS) ⑩

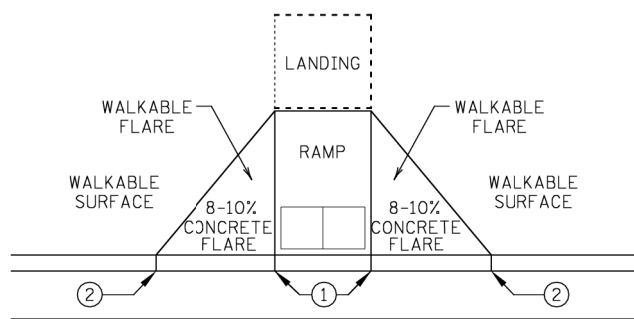
REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

Revision A: Added Sheet Number & Project Number

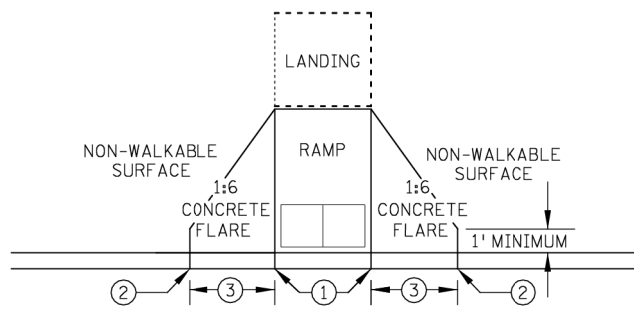
MINNESOTA DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER
Tom John

REVISED:
APPROVED:
1-23-2017

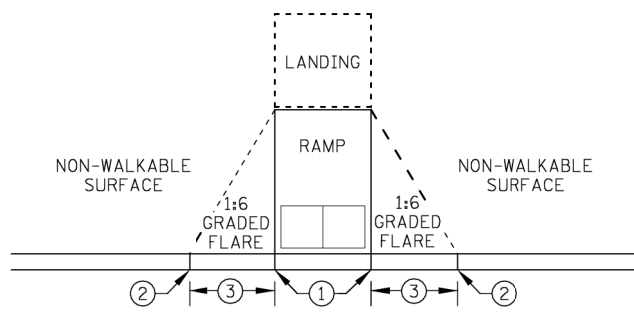
G-111 4192-01
PEDESTRIAN CURB RAMP DETAILS
STANDARD PLAN 5-297.250 3 OF 6



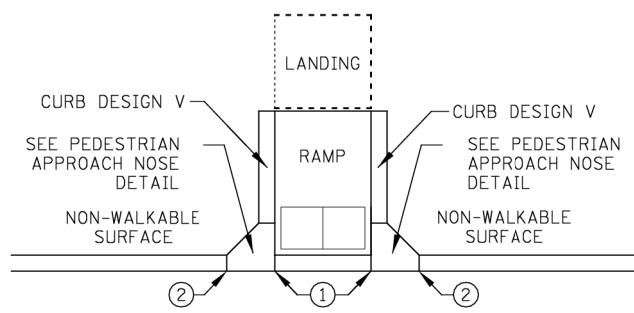
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

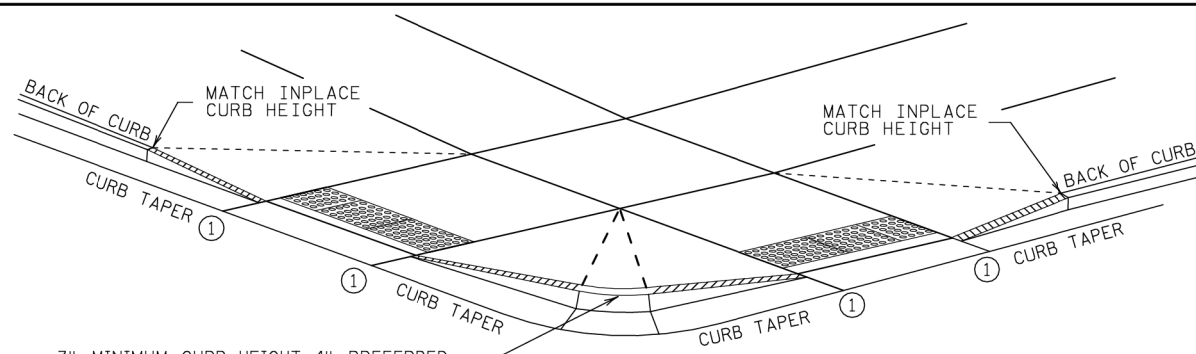


GRADED FLARES



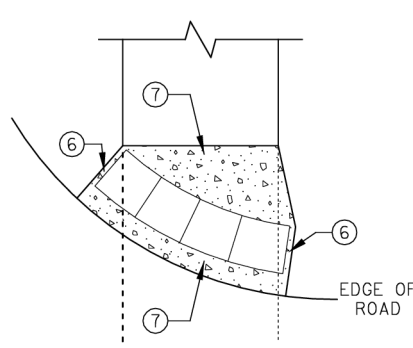
RETURNED CURB ⑤

TYPICAL SIDE TREATMENT OPTIONS ④ ⑪

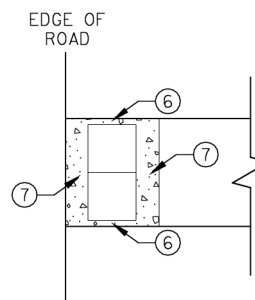


3" MINIMUM CURB HEIGHT, 4" PREFERRED
(MEASURED AT FRONT FACE OF CURB)
FOR A MIN. 6" LENGTH (MEASURED ALONG FLOW LINE)

DETECTABLE EDGE WITH ⑧
CURB AND GUTTER

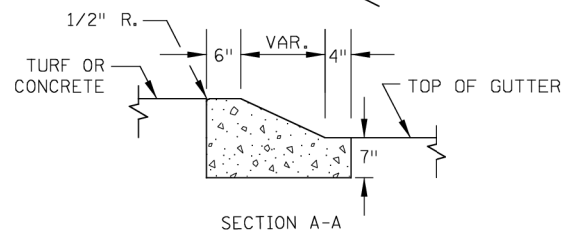
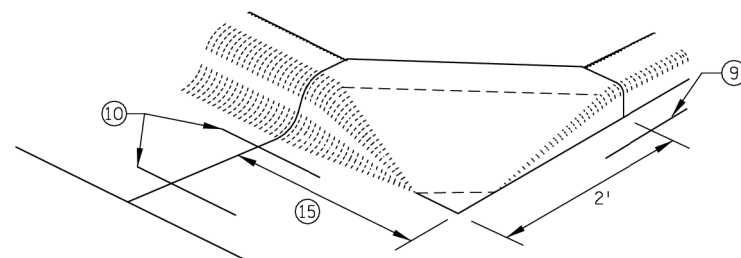


RADIAL DETECTABLE WARNING

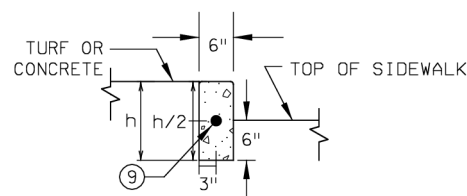


RECTANGULAR DETECTABLE WARNING

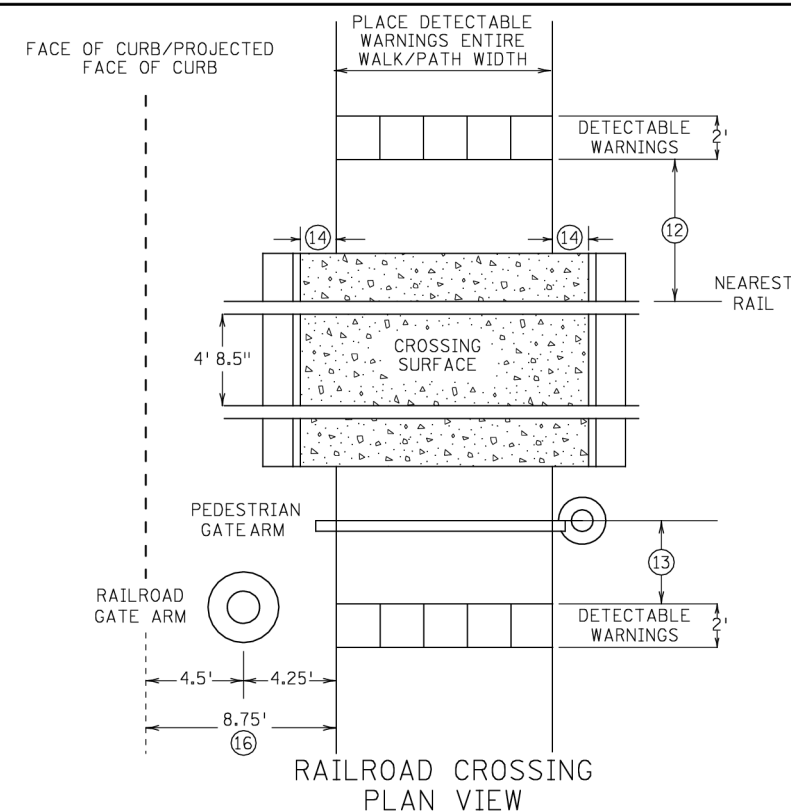
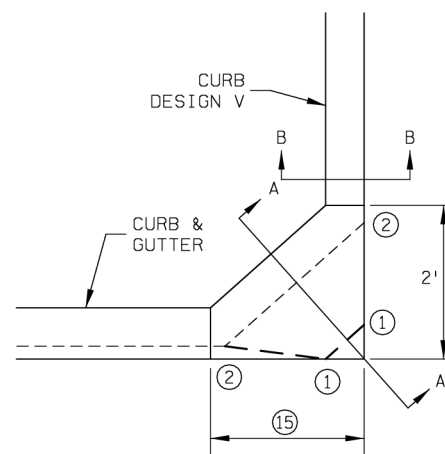
DETECTABLE EDGE WITHOUT CURB AND GUTTER



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.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

Revision A: Added Sheet Number
& Project Number

PEDESTRIAN APPROACH
NOSE DETAIL
(FOR RETURNED CURB
SIDE TREATMENT)

MINNESOTA
DEPARTMENT OF TRANSPORTATION
STATE DESIGN ENGINEER

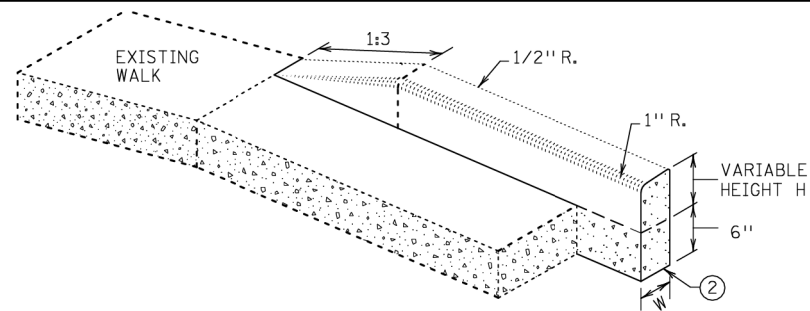
REVISED:
APPROVED:
1-23-2017

G-112
PEDESTRIAN CURB RAMP DETAILS

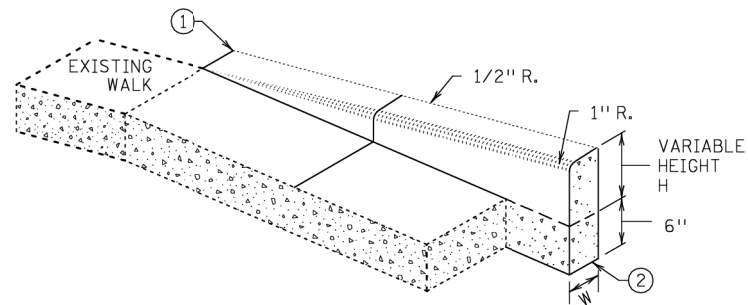
4192-01

STANDARD PLAN 5-297.250

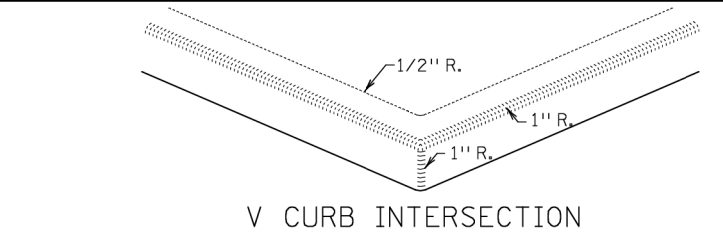
4 OF 6



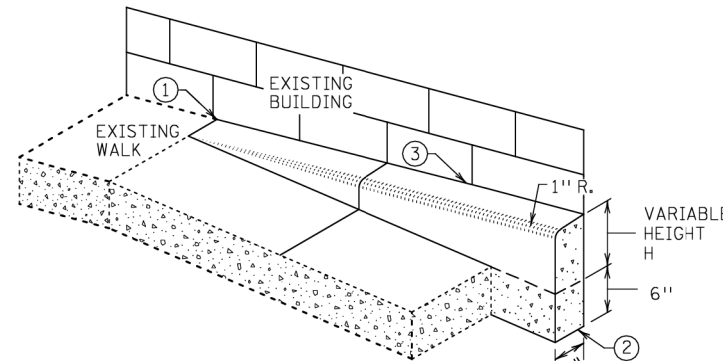
V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS



V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

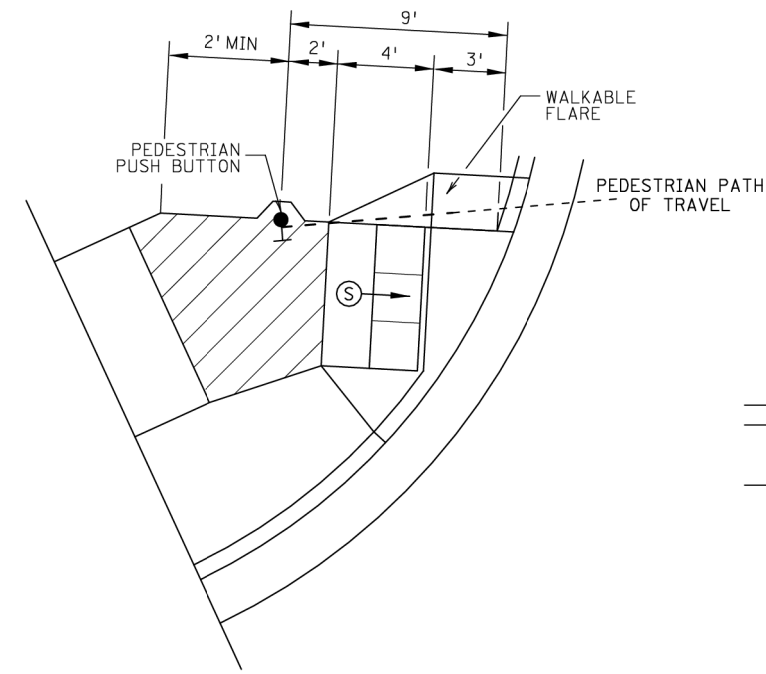


V CURB INTERSECTION



V CURB ADJACENT TO BUILDING
OR BARRIER

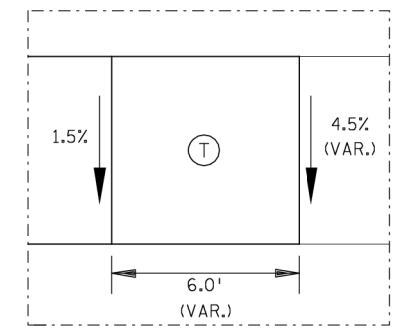
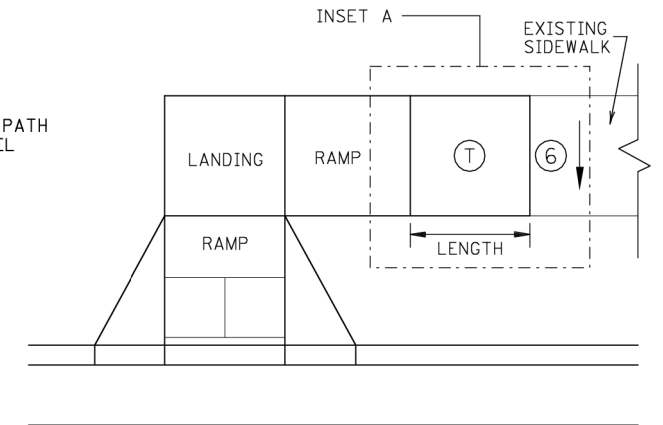
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≥ 6"	6"



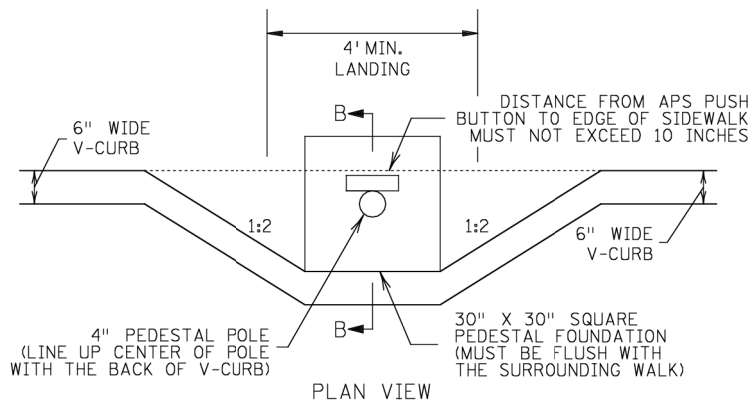
SEMI-DIRECTIONAL RAMP (3,4,9)

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

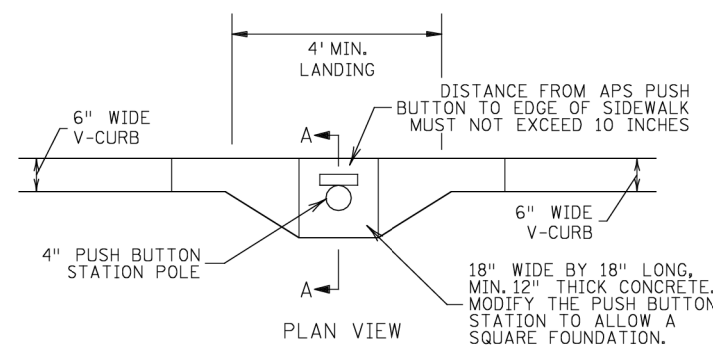
PRIMARILY USED FOR APS APPLICATIONS
WHERE THE PAR DOES NOT CONTINUE PAST
THE PUSH BUTTON (DEAD-END SIDEWALK)



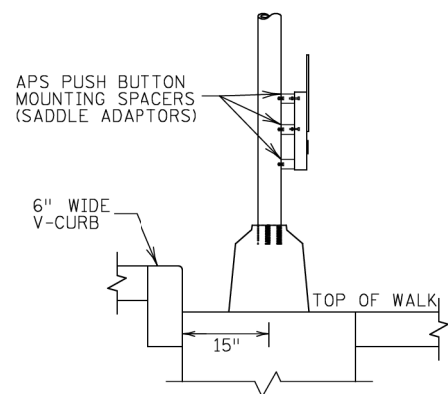
TRANSITION PANEL (4,5)



PLAN VIEW

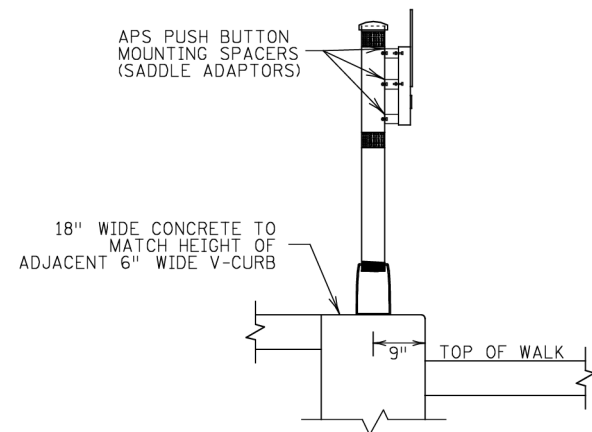


PLAN VIEW



SECTION B-B

SIGNAL PEDESTAL & PUSH BUTTON (V-CURB)



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.

(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%.

(L) 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.

(T) TRANSITION PANEL(S) - TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE 0.5% PER 1' LINEAR FOOT OF WALK. SEE THIS SHEET FOR ADDITIONAL INFORMATION.

REVISION:
APPROVED: JANUARY 23, 2017
OPERATIONS ENGINEER

Revision A: Added Sheet Number
& Project Number



Tom Johnson
STATE DESIGN ENGINEER

REVISED:

APPROVED:

1-23-2017

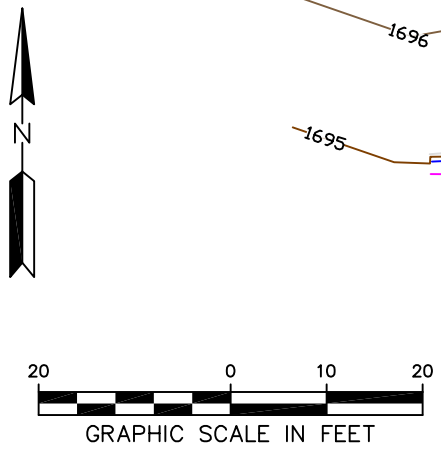
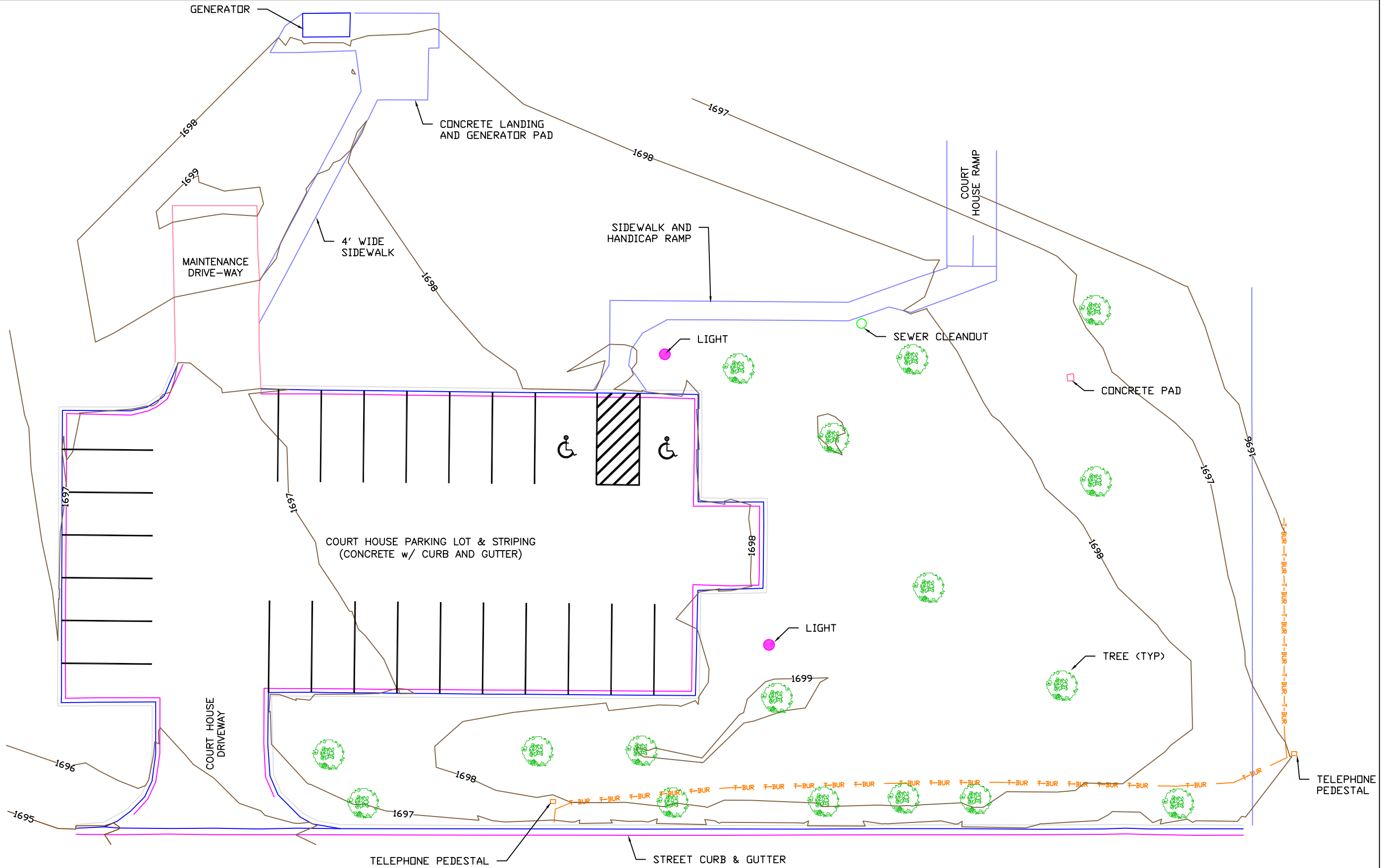
PEDESTRIAN CURB RAMP DETAILS

STANDARD PLAN 5-297.250

5 OF 6

G-113

4192-01



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

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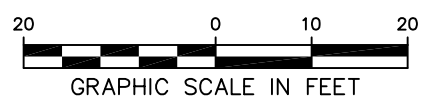
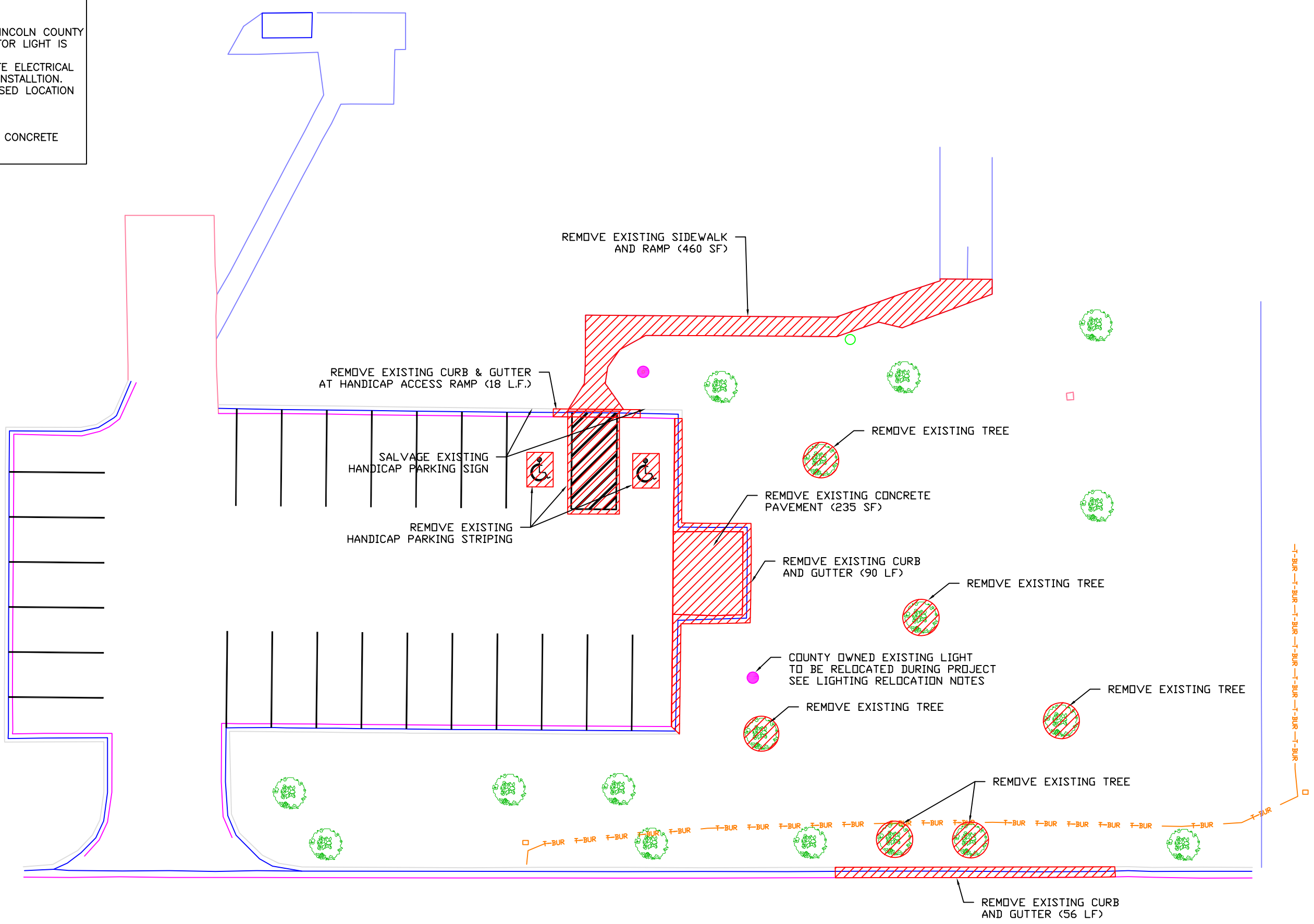
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DWG DATE 5/16/2019		
SCALE 1" = 20'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Existing Conditions Court House		REV NO.
PROJECT NO. 4192-01	SHEET NO. C-101	

R:\Drafting\4192 Lincoln County\01 Parking Lot Improvements\CAD\CIV V-SERIES.dwg Plot Date & Time: 11 June 2019 11:13 AM

- LIGHTING RELOCATION NOTES:**
- EXISTING LIGHT IS OWNED BY LINCOLN COUNTY
 - ELECTRICAL SUPPLY LOCATION FOR LIGHT IS UNKNOWN
 - LINCOLN COUNTY TO COORDINATE ELECTRICAL CONTRACTOR FOR RELOCATION INSTALLTION.
 - SEE SHEET C-103 FOR PROPOSED LOCATION
- REMOVAL NOTE:**
- SAW CUTTING IS INCIDENTAL TO CONCRETE REMOVAL



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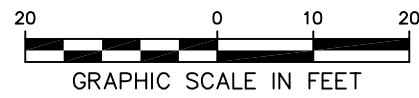
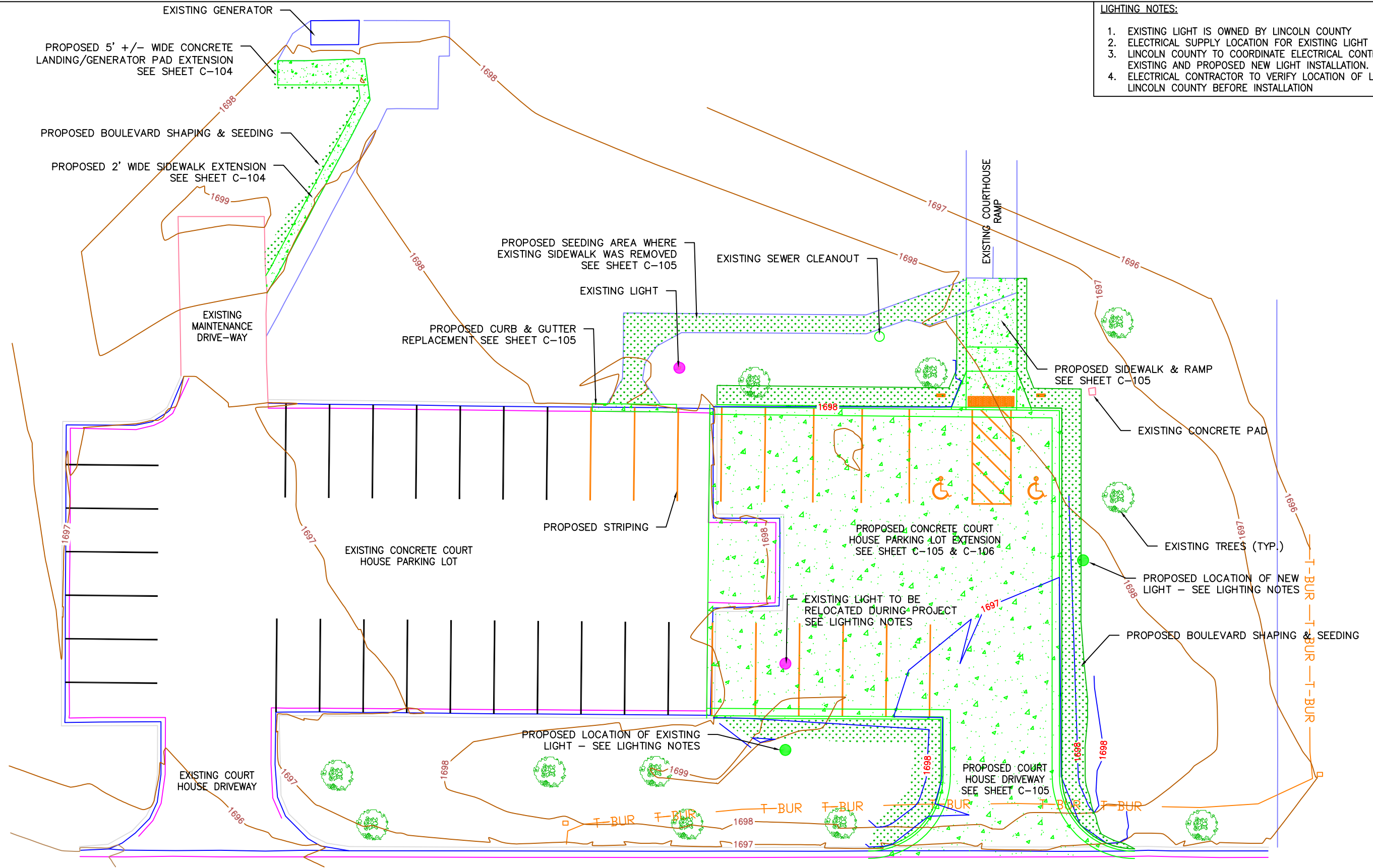
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DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/16/2019		
SCALE 1" = 20'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Removal Plan Court House		
PROJECT NO. 4192-01	SHEET NO. C-102	REV NO.

- LIGHTING NOTES:**
1. EXISTING LIGHT IS OWNED BY LINCOLN COUNTY
 2. ELECTRICAL SUPPLY LOCATION FOR EXISTING LIGHT IS UNKNOWN
 3. LINCOLN COUNTY TO COORDINATE ELECTRICAL CONTRACTOR FOR EXISTING AND PROPOSED NEW LIGHT INSTALLATION.
 4. ELECTRICAL CONTRACTOR TO VERIFY LOCATION OF LIGHTS WITH LINCOLN COUNTY BEFORE INSTALLATION



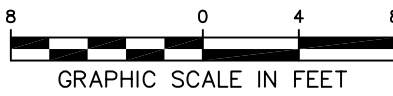
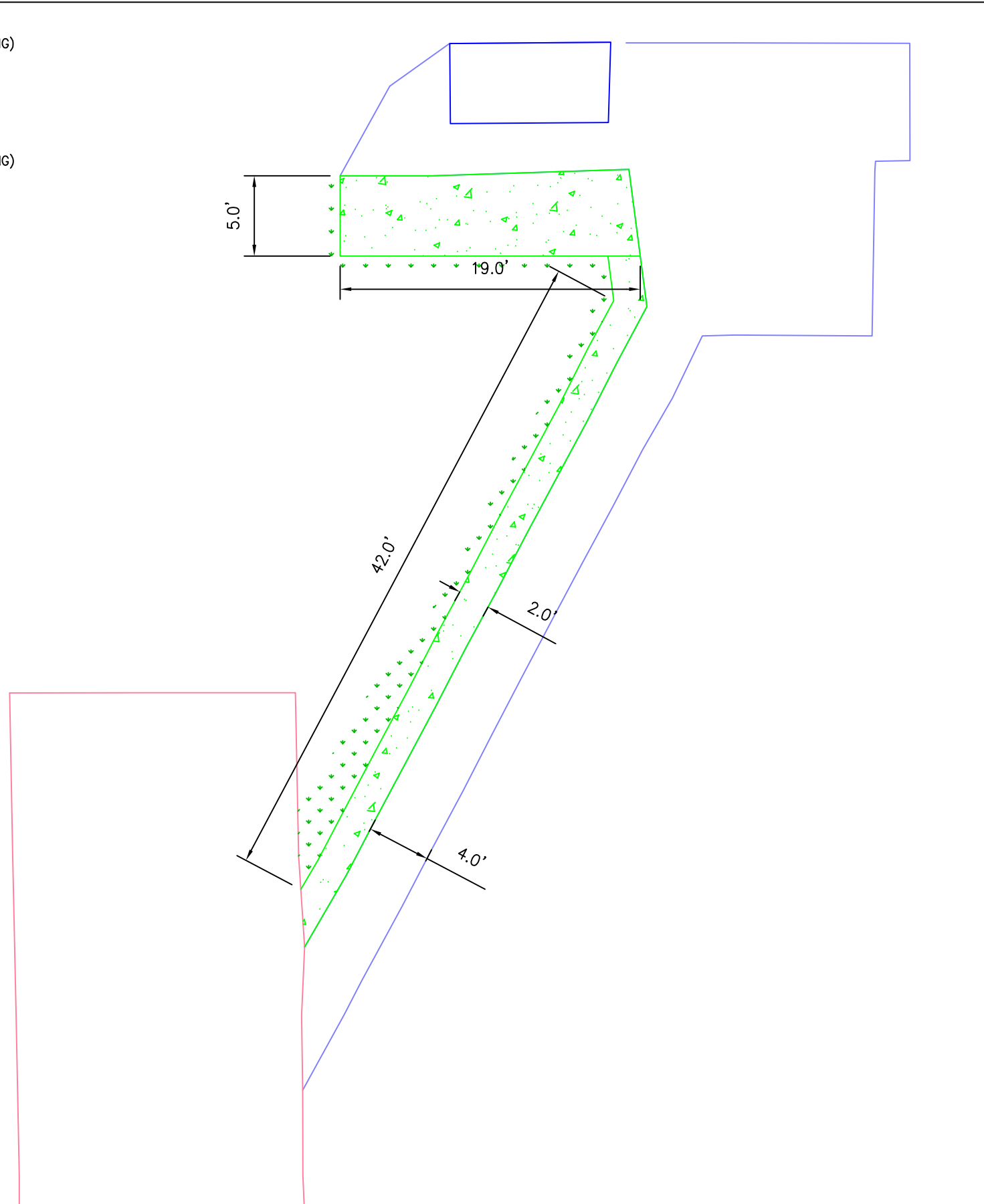
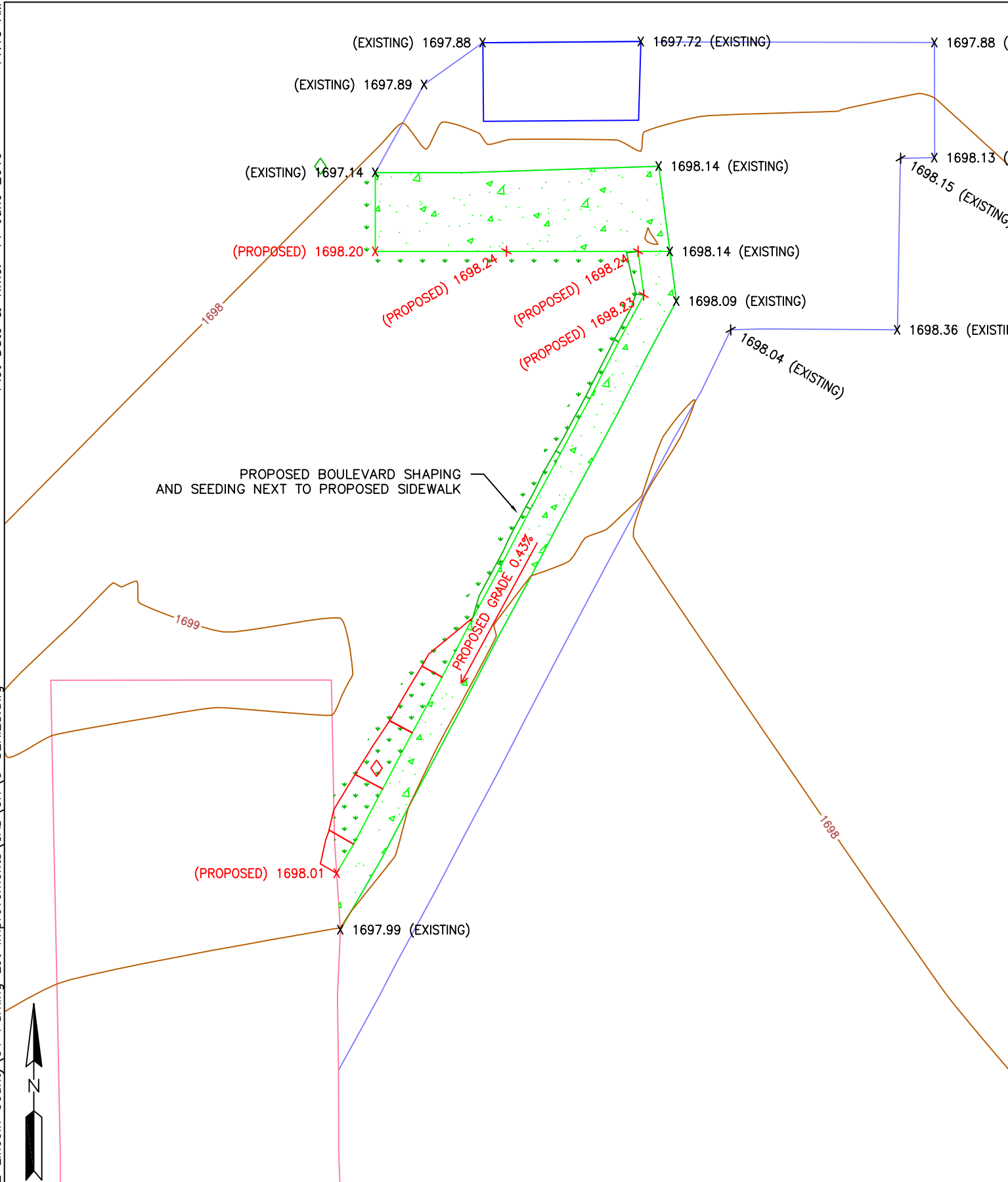
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DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE 1" = 20'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Overall Proposed Improvements - Courthouse		
PROJECT NO. 4192-01	SHEET NO. C-103	REV NO.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

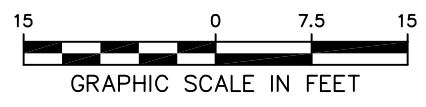
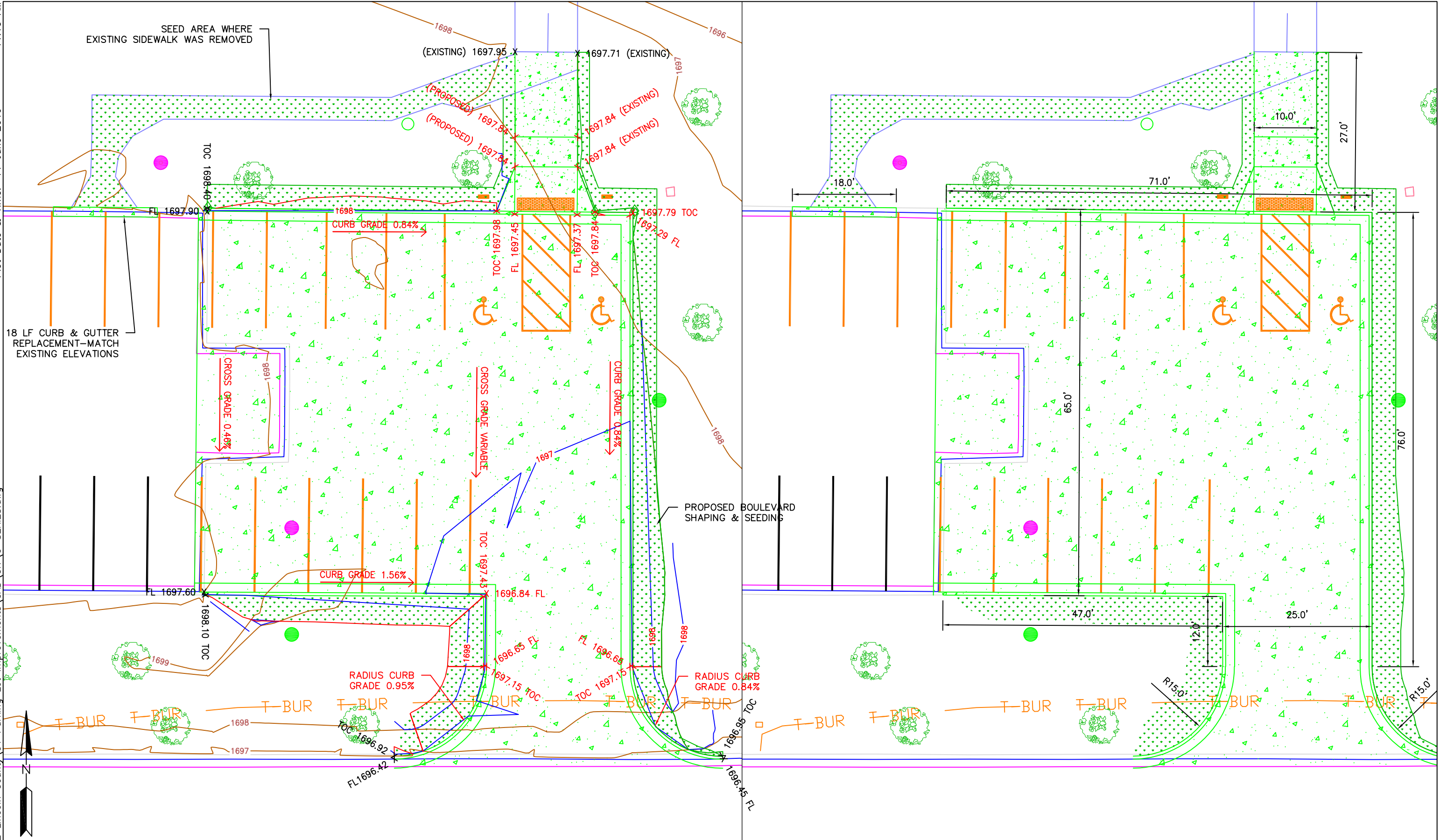
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DWG DATE 5/15/2019		
SCALE 1" = 8'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE 2' & 5' Sidewalk Elevation & Dimension Plan		
PROJECT NO. 4192-01	SHEET NO. C-104	REV NO.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

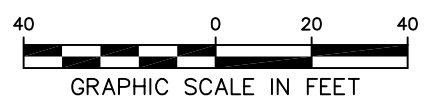
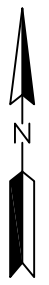
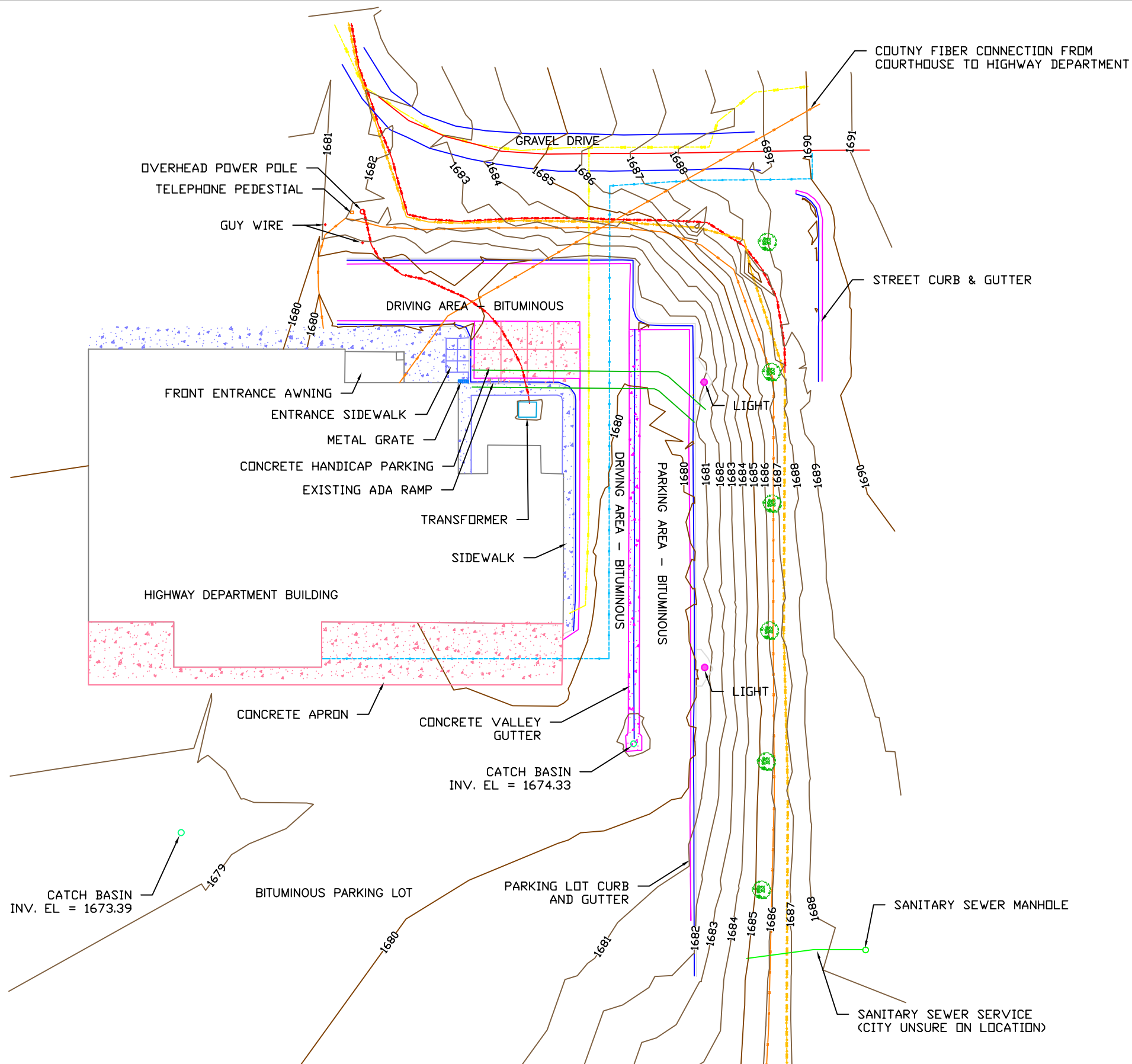
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DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE 1" = 15'		

PROJECT
Lincoln County Parking Lot Improvements

CLIENT
Lincoln County
221 North Wallace Avenue
Ivanhoe, MN 56142

SHEET TITLE Parking Lot Extension Elevation & Dimension Plan		
PROJECT NO. 4192-01	SHEET NO. C-105	REV NO.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

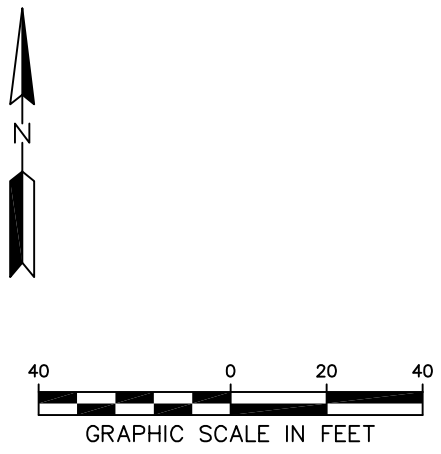
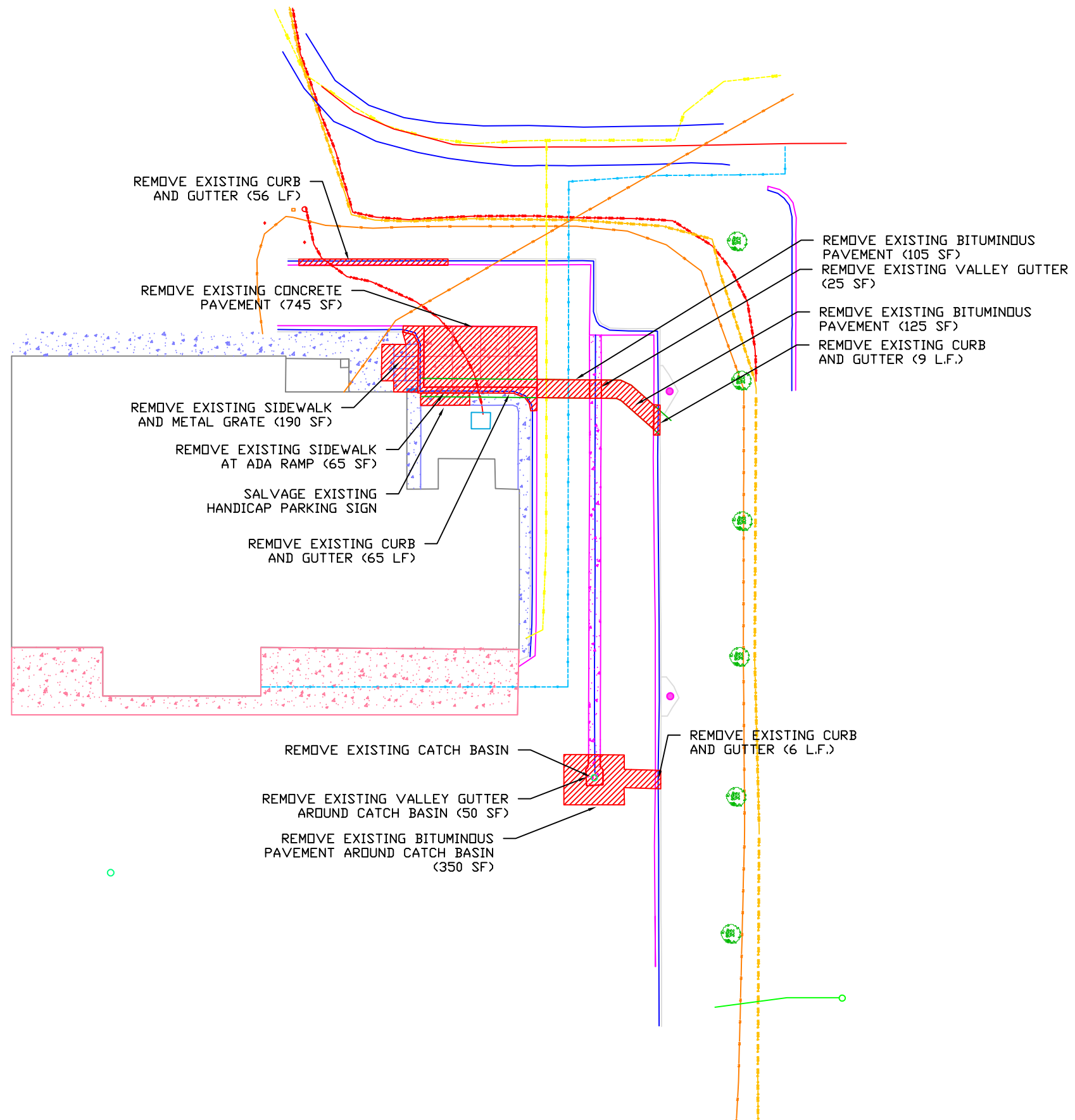
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DWG DATE 5/16/2019		
SCALE 1" = 40'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Existing Conditions Highway Department	PROJECT NO. 4192-01	SHEET NO. C-201	REV NO.
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REMOVAL NOTE:
 1. SAW CUTTING IS INCIDENTAL TO CONCRETE REMOVAL



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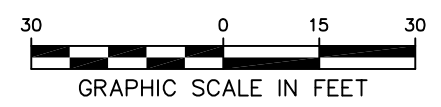
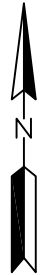
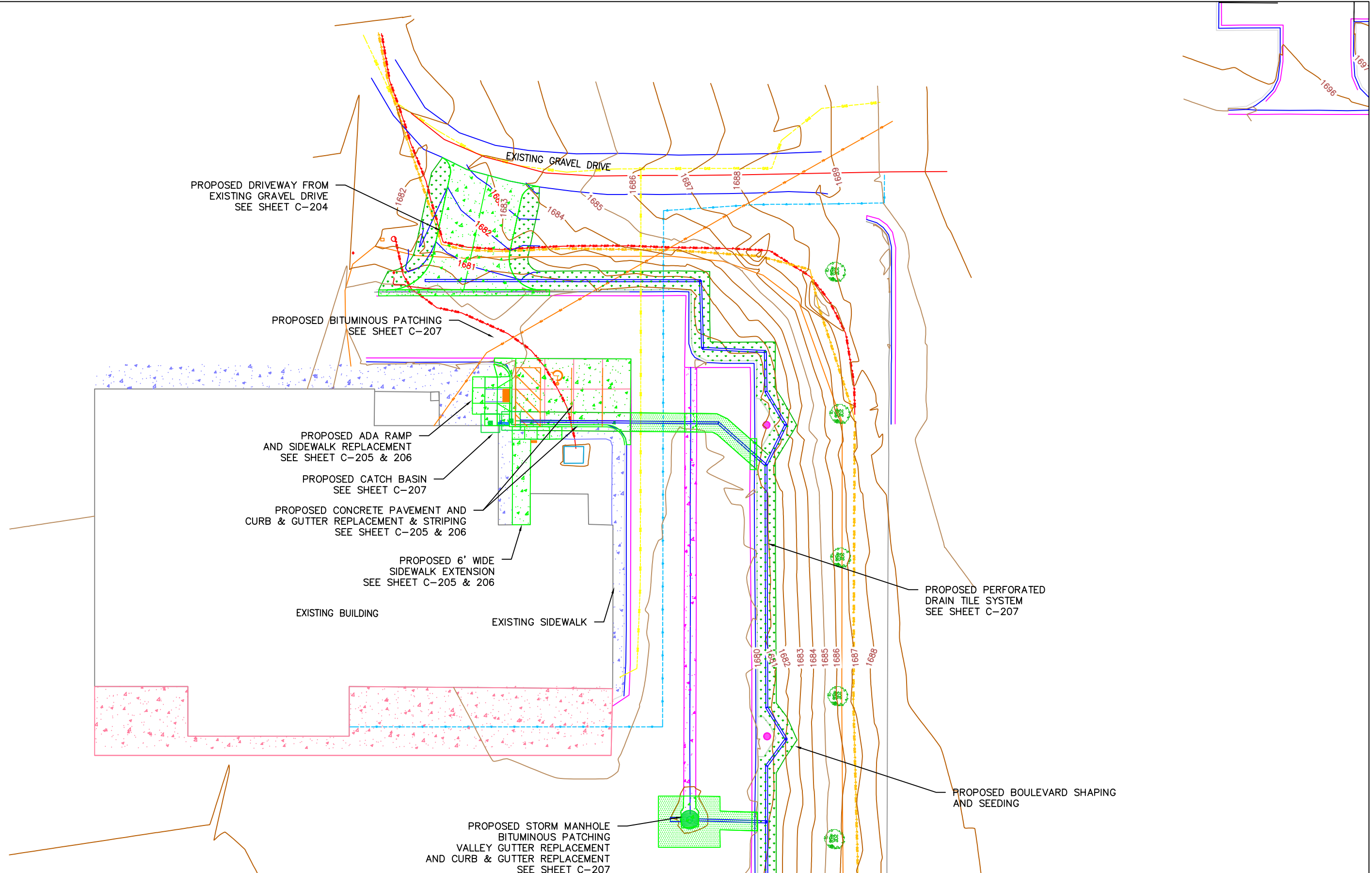
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DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/16/2019		
SCALE 1" = 40'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Removal Plan Highway Department		REV NO.
PROJECT NO. 4192-01	SHEET NO. C-202	



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

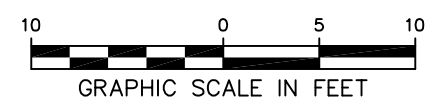
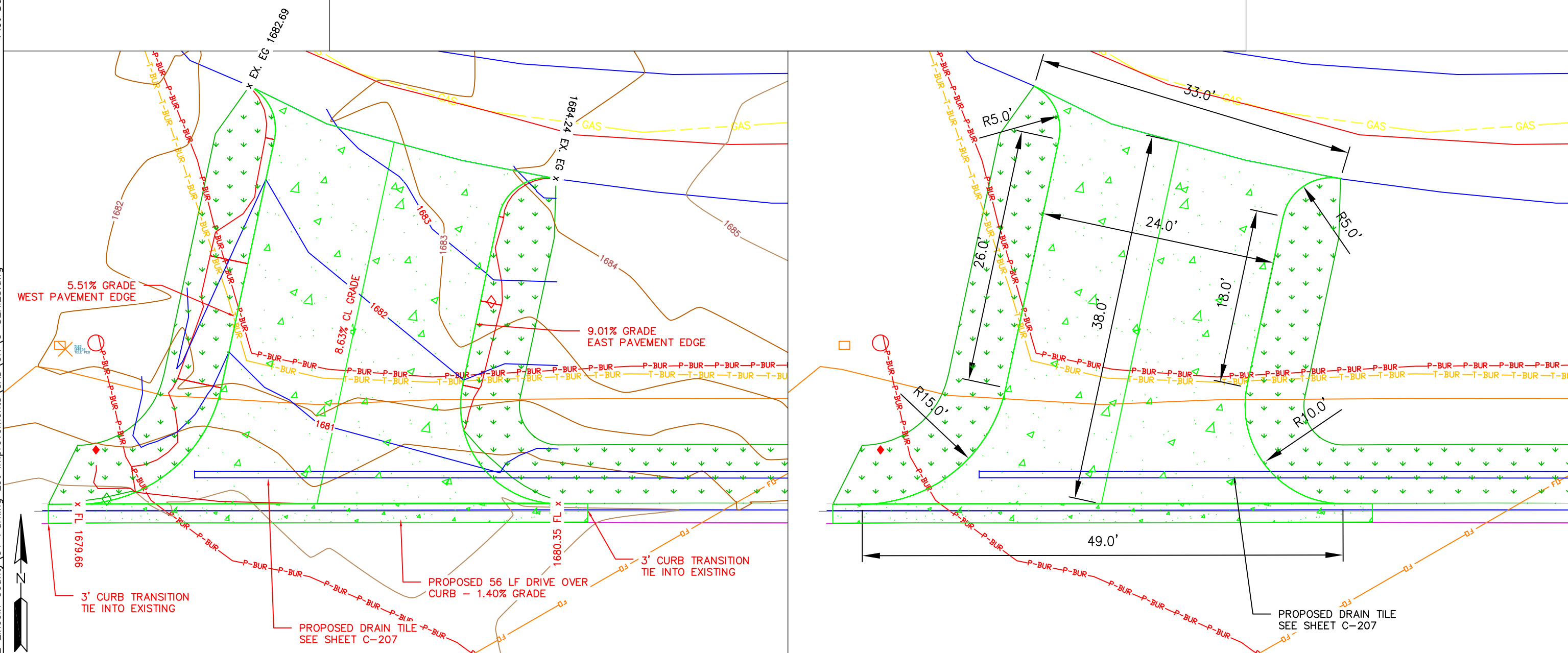
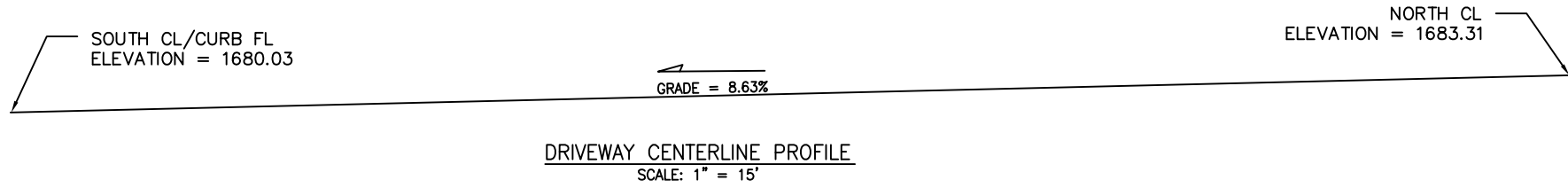
WENCK ASSOCIATES
 1012 5th Avenue, Suite 1B
 Windom, MN 56101
 (507) 831-2703
 (507) 831-5271

Responsive partner. Exceptional outcomes.

DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE 1" = 30'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Overall Proposed Improvements - Highway		
PROJECT NO. 4192-01	SHEET NO. C-203	REV NO.



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK ASSOCIATES
1012 5th Avenue, Suite 1B
Windom, MN 56101
(507) 831-2703
(507) 831-5271

Responsive partner. Exceptional outcomes.

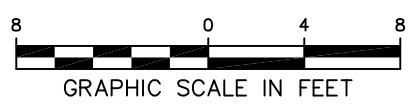
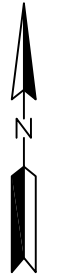
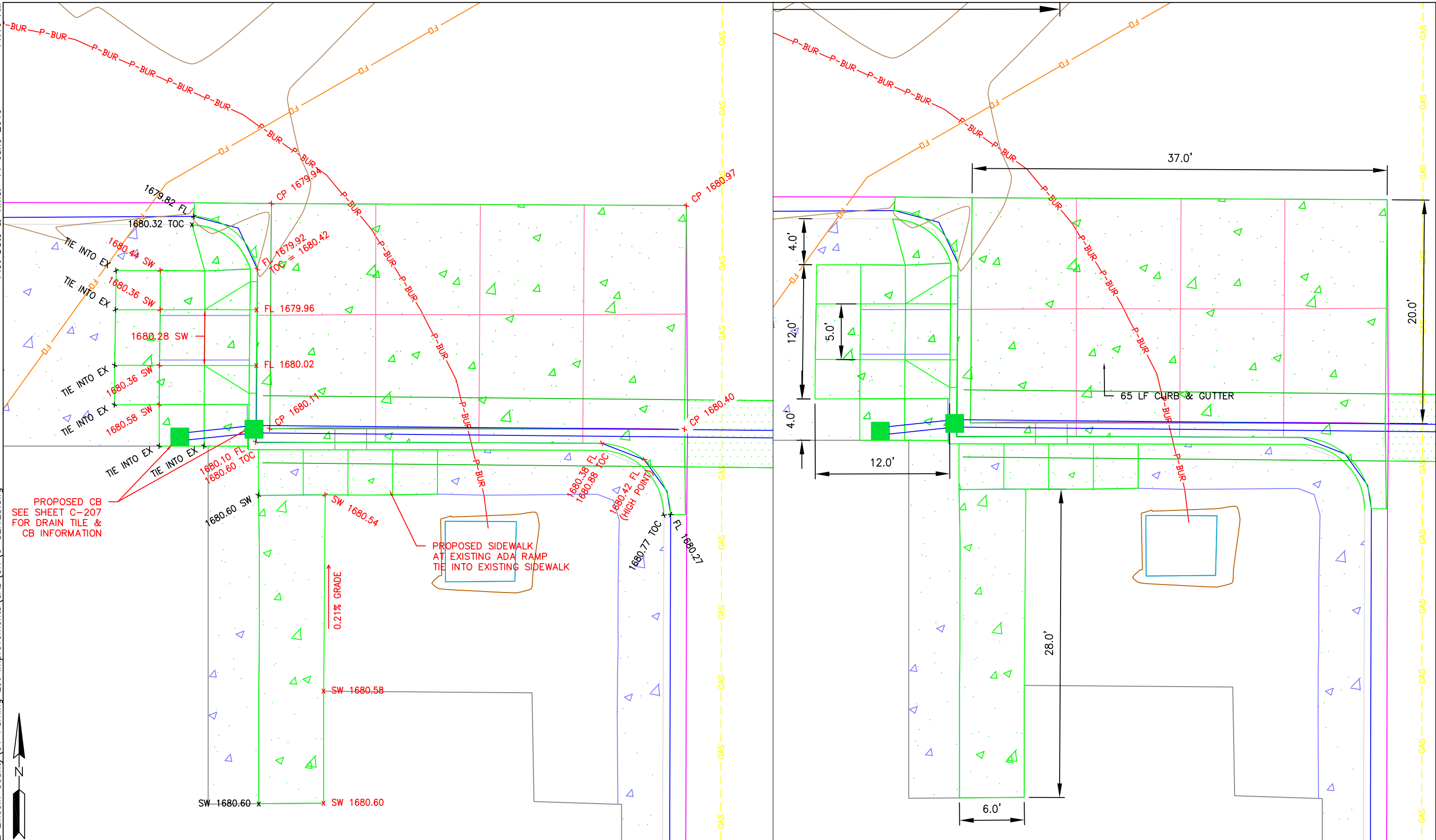
DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE 1" = 10'		

PROJECT
Lincoln County Parking Lot Improvements

CLIENT
Lincoln County
221 North Wallace Avenue
Ivanhoe, MN 56142

SHEET TITLE Highway Driveway Elevation & Dimension Plan		
PROJECT NO. 4192-01	SHEET NO. C-204	REV NO.

R:\Drafting\4192 Lincoln County\01 Parking Lot Improvements\CAD\CIV\C-SERIES.dwg Plot Date & Time: 11 June 2019 11:16 AM



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK ASSOCIATES
1012 5th Avenue, Suite 1B
Windom, MN 56101
(507) 831-2703
(507) 831-5271

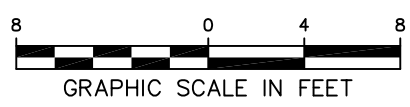
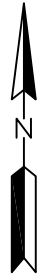
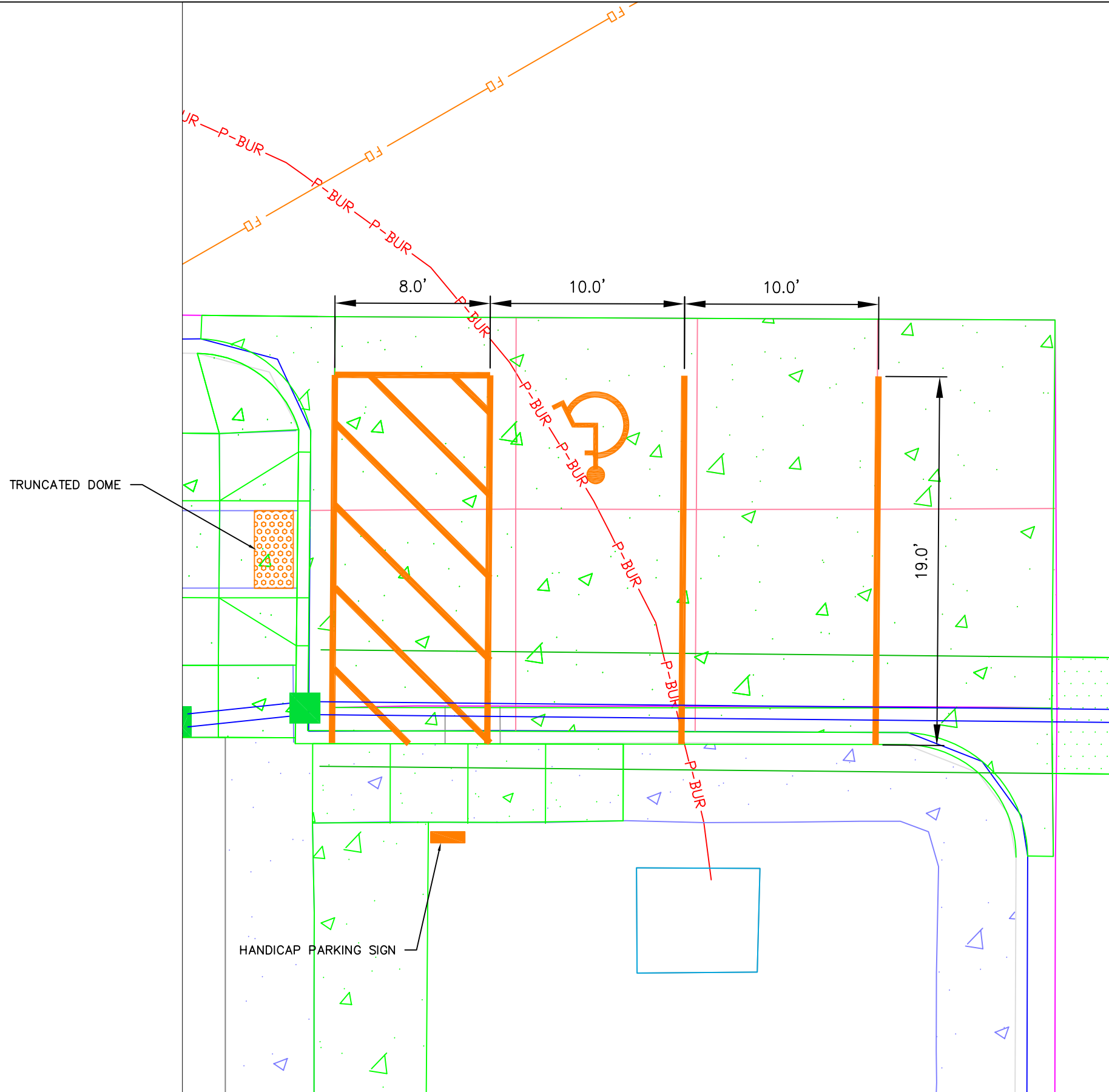
Responsive partner. Exceptional outcomes.

DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE 1" = 8'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Sidewalk & Concrete Elevation & Dimension Plan		
PROJECT NO. 4192-01	SHEET NO. C-205	REV NO.

QUANTITY SUMMARY



REV	REVISION DESCRIPTION	DWN	APP	REV DATE

WENCK ASSOCIATES
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Responsive partner. Exceptional outcomes.

DWN BY MPJ	CHK'D DJJ	APP'D DJJ
DWG DATE 5/15/2019		
SCALE 1" = 8'		

PROJECT Lincoln County Parking Lot Improvements	CLIENT Lincoln County 221 North Wallace Avenue Ivanhoe, MN 56142
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SHEET TITLE Concrete Pavement Striping & Sign Plan		REV NO.
PROJECT NO. 4192-01	SHEET NO. C-206	

