MINNESOTA DEPARTMENT OF TRANSPORTATION

LINCOLN COUNTY

CONSTRUCTION PLAN FOR ADA CURB RAMPS AND DRIVEWAYS

LOCATED ON SEVERAL CSAHS ACROSS LINCOLN COUNTY

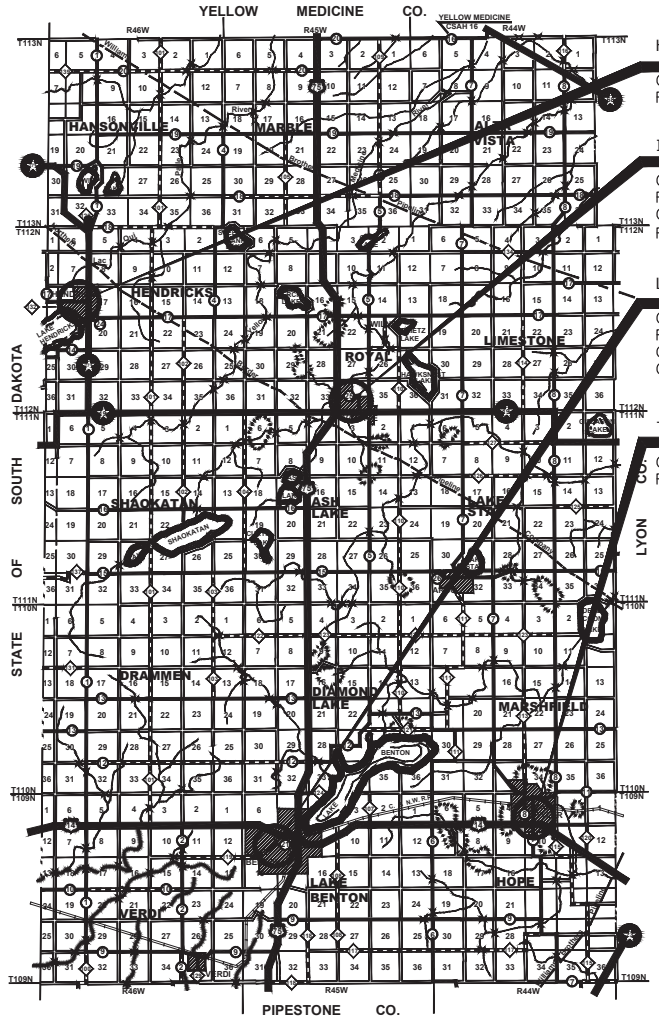
MINN PROJECT NO. TA 4123(284)

PLANS SYMBOLS

STATE LINE
COUNTY LINE
TOWNSHIP OR RANGE LINE
SECTION LINE
QUARTER LINE
PRESENT ROW
NEW ROW
TEMPORARY EASEMENT
CONTROL OF ACCESS LINE
PROPERTY LINES
VACATED PLATTED PROPERTY
CORPORATE OR CITY LIMITS
RETAINING WALL
RAILROAD
RAILROAD RIGHT-OF-WAY
DRAINAGE DITCH
DRAIN TILE
CULVERT
DROP INLET
GUARD RAIL
BARBED WIRE FENCE
WOVEN WIRE FENCE
CHAIN LINK FENCE
RAILROAD SNOW FENCE
SWAMP
WETLAND
TREE
SHRUB LINE
TIMBER
ORCHARD
BRUSH
NURSERY
CATCH BASIN
FIRE HYDRANT
WATER VALVE
BUILDING (ONE STORY FRAME)
F - FRAME C - CONCRETE
S - STONE T - TILE
B - BRICK ST- STUCCO
CEMETERY
FIELD TILE
IRON PIPE OR ROD
MONUMENT (STONE,CONC. OR METAL
WOODEN HUB
GRAVEL PIT
SAND PIT
BORROW PIT
ROCK QUARRY

UTILITIES SYMBOLS

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



HENDRICKS - GROUP H1-H11

CSAH 17M – BEGIN 24+35 END 39+00
FROM BROOK ST. TO STATE HWY. 271

IVANHOE - GROUP I1-I8

CSAH 23M – BEGIN 10+50 END 21+50
FROM W. ROWENA ST. TO W. RAILROAD ST.
CSAH 5M – BEGIN 263+75 END 264+00
FROM 100' SOUTH OF EAST GEORGE ST.

LAKE BENTON - GROUP L1-L18

CSAH 21M – BEGIN 2+50 END 44+00
FROM S. HARRISON ST. TO STATE HWY. 14
CSAH 22M – BEGIN 6+75 END 9+25
CSAH 21M TO LINCOLN ST.

TYLER - GROUP T1-T10

CSAH 7M – BEGIN –6+25 END 46+50
FROME DANEBOD CT. TO MARSH ST.

SCALE: 1 MILE

SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE SUPPLEMENTAL SPECIFICATIONS DATED SEPTEMBER 2022 SHALL GOVERN.

ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST MMUTCD, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL LAYOUTS

INDEX

THIS PLAN CONTAINS 61 SHEETS

LOCAL AGENCY SIGNATURES

Signature: _____ Typed or Printed Name: Joseph M. Wilson,
Design Engineer: I hereby certify that this plan was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Date: 6-13-2023

License Number 54947

_____ Date: 6-13-2023

Approved: Lincoln County Engineer

Todd Broadwell Digitally signed by Todd Broadwell Date: 2023.06.26 13:32:54 -05'00'

Date:

District State-Aid Engineer: Reviewed for Compliance with State–Aid Rules/or Federal Rules/Policy

Angela Murphy Digitally signed by Angela Murphy Date: 2023.06.27 09:11:19 -05'00' Date:

State-Aid Engineer: Approved for State Aid Funding/or Federal Funding

S.P. NO. 041–030–013 SHEET NO. 1 OF 61

NOTES	ITEM NUMBER	ITEM	UNIT	PARTICIPATING FED / CSAH MUNICIPAL	TOTAL ESTIMATED QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	1	1
	2021.601	RAILROAD PROTECTIVE LIABILITY INSURANCE	LUMP SUM	1	1
	2021.601	RAILROAD PROTECTIVE SERVICES	LUMP SUM	1	1
	2041.610	TRAINEES	HOUR	250	250
1	2101.502	GRUBBING	EACH	17	17
1	2104.502	REMOVE CONCRETE STEPS	EACH	1	1
2	2104.502	SALVAGE CASTING	EACH	25	25
1,3	2104.503	REMOVE CURB AND GUTTER	LIN FT	3418	3418
1,3,4	2104.504	REMOVE CONCRETE WALK	SQ YD	2250	2250
1,3,4	2104.504	REMOVE CONCRETE DRIVEWAY PAVEMENT	SQ YD	1335	1335
1,3	2104.504	REMOVE BITUMINOUS PAVEMENT	SQ YD	829	829
1,3	2104.518	REMOVE BRICK SIDEWALK	SQ FT	7625	7625
	2106.507	COMMON EMBANKMENT (CV) (P)	CU YD	27	27
5	2360.509	TYPE SP 12.5 WEARING COURSE MIXTURE (2,B)	TON	209	209
	2504.602	ADJUST VALVE BOX	EACH	21	21
6	2506.502	INSTALL CASTING	EACH	25	25
7	2506.502	ADJUST FRAME AND RING CASTING	EACH	5	5
8,9,10,11	2521.518	4" CONCRETE WALK	SQ FT	6496	6496
8,9,10,11,12	2521.518	6" CONCRETE WALK	SQ FT	7396	7396
8,9,10,11,12	2521.618	CONCRETE CURB RAMP WALK	SQ FT	12670	12670
8,9,10,11	2531.503	CONCRETE CURB AND GUTTER DESIGN B618	LIN FT	2526	2526
8,9,10,11	2531.503	CONCRETE CURB AND GUTTER DESIGN B624	LIN FT	332	332
8,9,10,11,13	2531.503	CONCRETE CURB AND GUTTER DESIGN D418	LIN FT	490	490
8,9,10,11,12,14	2531.504	6" CONCRETE DRIVEWAY PAVEMENT	SQ YD	1266	1266
8,9,10,11	2531.504	8" CONCRETE DRIVEWAY PAVEMENT	SQ YD	478	478
8,9,10,11	2531.604	7" CONCRETE VALLEY GUTTER	SQ YD	3	3
15	2531.618	TRUNCATED DOMES	SQ FT	1174	1174
16	2563.601	TRAFFIC CONTROL	LUMP SUM	1	1
17	2573.502	STORM DRAIN INLET PROTECTION	EACH	75	75
18,19,20	2575.602	SITE RESTORATION	EACH	107	107
21	2582.603	PAVEMENT MARKING SPECIAL	LIN FT	623	623

UTILITY CONTACTS

GOPHER STATE ONE CALL 1-800-252-1166

CONTRACTORS SHALL CONTACT PUBLIC UTILITIES PRIOR TO CONSTRUCTION, SO THAT LOCATIONS OF ALL UNDERGROUND OR ABOVE GROUND FACILITIES ARE IDENTIFIED AND RELOCATED IF NECESSARY SO AS NOT TO CONFLICT WITH CONSTRUCTION OPERATIONS.

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

CITY OF LAKE BENTON- (507)368-4641
CITY OF HENDRICKS- (507)275-3192
CITY OF IVANHOE- (507)694-1738
ITC INC.- (605)874-2181
OTTERTAIL POWER CO.- (218)739-8831
MN ENERGY- (800)889-9508
CENTURYLINK- (877)366-8344
FRONTIER COMMUNICATIONS- (800)921-8101
SOUTH DAKOTA NETWORK LLC- (406)728-7943
MEDIACOM- (845)443-2840
WOODSTOCK TELEPHONE- (507)658-3830
LYON-LINCOLN ELECTRIC COOP INC.- (507)247-5505

STANDARD PLATES

PLATE NO.	DESCRIPTION
7038A	DETECTABLE WARNING SURFACE TRUNCATED DOMES
7000E	INTEGRANT CURBS (D)
7100H	CONCRETE CURB AND GUTTER (B AND V)
7111J	INSTALLATION OF CATCH BASIN CASTINGS
7112C	INSTALLATION & REINFORCEMENT OF CATCH BASIN AND MANHOLE CASTINGS
8000K	CHANNELIZERS - TYPE A, TYPE B, TYPE C

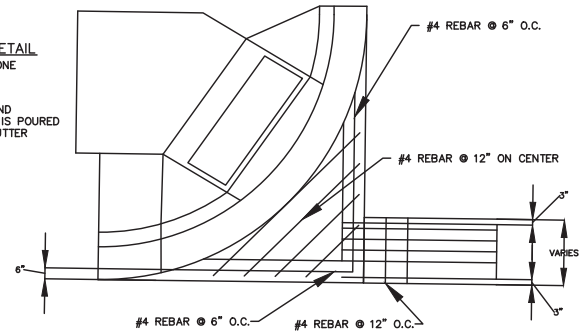
* THESE STANDARD PLATES ARE APPROVED BY THE FEDERAL HIGHWAY ADMINISTRATION AND SHALL APPLY ON THIS PROJECT.

BASIS FOR PLANNED QUANTITIES

BITUMINOUS	110 LBS./ IN-SQ YD
FERTILIER	300 LBS./ACRE
SEED MIXTURE 25-151	120 LBS./ACRE (PLS RATE)
HYDRAULIC MULCH	2500 LBS./ACRE

FILLET DETAIL
Scale: NONE

NOTE:
-ALL REBAR IS TO BE TIED AND INSPECTED BEFORE CONCRETE IS POURED
-TIE INTO EXISTING VALLEY GUTTER



ESTIMATED QUANTITIES

CERTIFIED BY Joseph M Littlefield LICENSED ENGINEER LIC. NO. 54947 DATE: 6-26-2023

S.P. NO. 041-030-013 SHEET NO. 2 OF 61

GENERAL CONSTRUCTION NOTES:

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

- THE INFORMATION SHOWN ON THESE PLANS CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES ARE NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO.

- CONTRACTOR IS RESPONSIBLE FOR NOTIFYING GOPHER STATE ONE CALL PRIOR TO CONSTRUCTION PHONE NO. 1-800-252-1166.

- CONTRACTOR SHALL COORDINATE WORK WITH OTHER UTILITY CONTRACTORS, WORK MAY BE ADJACENT AND WITHIN THE PROJECT LIMITS. NO COMPENSATION WILL BE MADE FOR THE COORDINATION WITH THE UTILITIES.

- CONTRACTOR SHALL MAINTAIN CONSTRUCTION WORK WITHIN THE LIMITS AS SHOWN ON THE PLANS. ANY DAMAGE OUTSIDE THE CONSTRUCTION LIMITS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

- (P) INDICATES PLANNED QUANTITY.

NOTES

1. REMOVAL ITEMS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OF PER MNDOT SPEC. 2104. REMOVED GRUBBING, BITUMINOUS AND CONCRETE WITHOUT REBAR MAY BE HAULED AND DISPOSED OF AT THE SOOK PIT LOCATED AT 2607 COUNTY ROAD 126, ARCO, MN 56113.

2. CONTRACTOR SHALL USE CAUTION WHILE SALVAGING CASTING TO NOT CAUSE DAMAGE. CASTINGS DAMAGED DURING SALVAGING SHALL BE REPLACED BY CONTRACTOR.

3. ALL SAWING OF BITUMINOUS, CONCRETE, BRICK AND CURB AND GUTTER SHALL BE INCLUDED IN THE REMOVAL OF THE BID ITEM.

4. ALL ASSOCIATED COSTS FOR REMOVING AND REPLACING PVC PIPE SHALL BE INCLUDED WITH THE OF PRICE OF BID ITEM REMOVE CONCRETE WALK AND REMOVE CONCRETE DRIVEWAY PAVEMENT AS NOTED ON SHEETS 49 AND 53.

5. BITUMINOUS MIX DESIGN SHALL BE SPWEB240B. BITUMINOUS DEPTHS VARY, SHALL MATCH EXISTING DEPTH. BITUMINOUS TACK MATERIAL SHALL BE INCLUDED IN THE BID PRICE FOR SP 12.5 WEARING COURSE MIXTURE (2,B). TACK SHALL BE APPLIED IN SUCH WAY TO KEEP FINISHED CURB AND GUTTER SURFACE FREE OF TACK.

6. IN-PLACE CASTINGS TO BE REPLACED WITH NEW CASTINGS AS NOTED ON CONCRETE PLACEMENT SHEETS 33,36,46,48,49 SHALL BE PROVIDED BY COUNTY FORCES. ALL IN-PLACE CASTINGS REPLACED BY THE COUNTY WILL BECOME THE PROPERTY OF THE CONTRACTOR.

7. CONTRACTOR SHALL MAKE ALL ADJUSTMENTS PRIOR TO THE FINISHED SURFACE.

8. DRIVEWAY AND SIDEWALK CONCRETE ITEMS SHALL INCLUDE 6" OF AGGREGATE BASE, CLASS 5. SHALL ALSO INCLUDE ALL GRADING THAT IS REQUIRED FOR THE PLACEMENT OF CONCRETE.

9. FLAT WORK CONCRETE MIX TYPE SHALL BE 3F52, HIGH EARLY STRENGTH FOR FLAT WORK AS CALLED OUT ON PLANS SHALL BE 3HE52. CURB AND GUTTER CONCRETE MIX TYPE SHALL BE 3F32, HIGH EARLY STRENGTH MIX FOR CURB AND GUTTER AS CALLED OUT IN PLANS SHALL BE 3HE32. ALL SHALL BE INCLUDED WITH THE COST OF THE BID ITEM.

10. THE CONTRACTOR IS RESPONSIBLE FOR MEETING ALL CURRENT ADA SAFETY STANDARDS AS THEY RELATE TO THE CONSTRUCTION OF THE CURB AND GUTTER, SIDEWALKS, HANDICAPPED RAMPS, AND DRIVEWAYS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR LAYING OUT THE CUTS IN THE CURB FOR THE ADA RAMPS. ALL SIDEWALK JOINTS SHALL BE SAWCUT ACCORDING TO ADA STANDARDS. SHOULD THERE BE ANY AREAS THAT DO NOT MEET ADA STANDARDS AFTER CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY REMOVE AND REPLACE THE INCORRECT SIDEWALK, ADA RAMP, CURB, OR DRIVEWAY AT NO COST TO THE OWNER.

11. CAST IN-PLACE OR DRILL AND GROUT NO. 4 REINFORCEMENT BARS WILL BE REQUIRED IN ACCORDANCE WITH THE DETAILS SHOWN IN STANDARD PLAN SHEETS 5-297.250 AND STANDARD PLAN SHEETS 5-297.254. AND SHALL BE INCIDENTAL. EPOXY COATED REBAR IS NOT BEING REQUIRED BY THE COUNTY.

12. COUNTY FORCES WILL BE REMOVING, AND REINSTALLING SIGNS CURRENTLY INSTALLED IN CONCRETE. CONTRACTOR SHALL COORDINATE WITH COUNTY FORCES FOR LOCATION ON DRILLING CORES FOR REINSTALLATION OF SIGNS IN NEW CONCRETE. CONTRACTOR SHALL PROVIDE TEMPORARY SIGNS AND SHALL BE INCLUDED WITH BID ITEM.

13. CONCRETE CURB AND GUTTER DESIGN D418 IS TO BE DESIGNED AS CONCRETE CURB AND GUTTER DESIGN D318.

14. 6" CONCRETE DRIVEWAY PAVEMENT BID ITEM SHALL INCLUDE ALL REBAR NEEDED TO REPLACE VALLEY GUTTERS AND FILLETS. DOWELING INTO EXISTING VALLEY GUTTER 1' ON CENTER SHALL BE INCIDENTAL.

15. UNPAINTED TRUNCATED DOMES SHALL BE USED.

16. ACCESS SHALL BE MAINTAINED TO ADJACENT RESIDENCES AS MUCH AS POSSIBLE. EMERGENCY ROUTES SHALL BE COORDINATED WITH THE CITY (POLICE, AMBULANCE, AND FIRE DEPARTMENT) DURING CONSTRUCTION. DO NOT DAMAGE TREES, DRIVEWAYS, SIDEWALKS AND MINIMIZE DAMAGE TO EXISTING TURF. TRAFFIC SHALL BE TEMPORARILY RESTORED BY EACH DAYS END THROUGH EACH INTERSECTION. EITHER DRUMS OR WEIGHTED CHANNELIZERS ARE ACCEPTABLE FOR PROTECTION OF THE WORK ON THE SIDEWALKS, DRIVEWAYS AND PEDESTRIAN RAMPS. THE CONTRACTOR SHALL IMMEDIATELY MAINTAIN TRAFFIC CONTROL DEVICES WHEN CALLED BY ENGINEER OR OWNER. FAILURE TO DO SO WILL RESULT IN A $100 PENALTY PER DAY THAT THE TRAFFIC CONTROL DEVICE IS NOT MAINTAINED. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM AND BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD) AND THE LATEST EDITION OF THE TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS MANUAL.

17. ALL STORM DRAIN INLET PROTECTION SHALL BE IN PLACE BEFORE WORK BEGINS AND SHALL BE MAINTAINED UNTIL VEGETATION HAS BEEN ESTABLISHED.

18. THE CONTRACTOR SHALL FURNISH AND INSTALL THE NECESSARY MATERIALS TO CONTROL SOIL EROSION WITHIN AND FROM LEAVING THE CONSTRUCTION SITE. TEMPORARY EROSION CONTROL DEVICES SHALL BE CONSTRUCTED, MAINTAINED, AND LEFT IN PLACE UNTIL SUCH TIME AS PERMANENT EROSION CONTROL MEASURES ARE INPLACE OR INSTRUCTED TO REMOVE THEM BY THE ENGINEER. ROADS SHALL BE KEPT CLEAN OF EXCESS SOIL BY ROUTINE SWEEPING DAILY WITH A PICKUP BROOM. ALL COSTS ASSOCIATED WITH THE IMPLEMENTATION OF BEST MANAGEMENT PRACTICES (BMP'S) TO PREVENT SOIL AND SEDIMENT LOSS AND OTHER POLLUTANTS FROM LEAVING THE PROJECT SITE SHALL BE INCLUDED IN THE SITE RESTORATION BID ITEM. THE CONTRACTOR SHALL SUBMIT A SPECIFIC POLLUTION PREVENTION PLAN DESCRIBING THE BMP'S THAT ARE TO BE IMPLEMENTED ON THE PROJECT FOR APPROVAL BY THE ENGINEER.

19. THE SITE RESTORATION AND BID ITEM SHALL INCLUDE ALL COSTS FOR SITE GRADING, COMMON EXCAVATION, CLASS 5, SALVAGE AND REINSTALL EXISTING TOPSOIL, PROVIDING ADDITIONAL SCREENED TOPSOIL IF SHORT, TILLING TOPSOIL, SEEDING AND HYDROMULCHING UNLESS SPECIFICALLY STATED ON THE PLANS. THE EXISTING TOPSOIL SHALL BE SALVAGED AND REUSED ON THE PROJECT. IF THE CONTRACTOR DOES NOT SALVAGE THE EXISTING TOPSOIL, THE CONTRACTOR SHALL PROVIDE SCREENED TOPSOIL AT NO COST TO THE PROJECT. THE MINIMUM DEPTH OF TOPSOIL SHALL BE 6". THE TOPSOIL SHALL BE SCREENED THROUGH A MECHANICAL SCREENER TO REMOVE LARGE CHUNKS AND ROCKS, SHALL BE INCLUDED IN THE SITE RESTORATION BID ITEM.

20. SITE RESTORATION - MNDOT 2575 IS THE ACCEPTED METHOD FOR RE-ESTABLISHING THE TURF ON THE PROJECT. HOWEVER IT IS IMPERATIVE THAT:

A) SITE PREPARATION - PRIOR TO SEEDING TAKING PLACE, THE SITE SHALL BE PREPARED BY REMOVING ALL ROCKS AND CLUMPS OF SOD AND SOIL, LEVEL AND FINAL SHAPE ALL TRENCHES AND DISTURBED AREAS, AND THE SURFACE AREA MUST BE TILLED TO A MINIMUM OF 3" DEPTH. IT IS CRITICAL THAT THE SEED BED BE LOOSENED TO A POINT THAT THERE ARE A LOT OF SPACES, CRACKS, AND CREVICES FOR THE SEED TO FILTER INTO, OTHERWISE IT MAY END UP ON THE SURFACE ONLY.

B) FERTILIZER - THE FERTILIZER SHALL BE 22-5-10(NPK), COMMERCIAL GRADE ANALYSIS, APPLIED AT A RATE OF 300 LBS/ACRE.

C) SEED INSTALLATION - SEED SHALL BE INSTALLED BY SEEDING EVENLY OVER THE ENTIRE SITE BY EITHER BROADCAST OR DRILL SEEDING METHOD.

D) SEEDING RATE - SHALL BE APPLIED AT THE ADJUSTED PLS RATE OF APPLICATION FOR EACH MIXTURE. THE SEED MIXTURE SHALL BE SEED NUMBER 25-151 (REPLACES 270) (EXISTING LAWNS) AND IN CONFORMANCE WITH MNDOT SPEC 2575.

E) HARROWING - THE SITE SHALL BE HARROWED, CULTIPACKED, OR RAKED FOLLOWING SEEDING.

F) ALL SEEDED AREAS SHALL BE COVERED WITH HYDRAULIC MATRIX B.2, TYPE HYDRAULIC MULCH AS PER MNDOT SPEC. 3884. FOR HYDRAULIC MULCH, HYDRAULIC SPRAY EQUIPMENT IN A WATER-SLURRY MIXTURE SHALL BE USED WITH AN APPLICATION RATE OF APPROXIMATELY 2500 LBS/ACRE. USE WATER TO BALE RATIO AS RECOMMENDED BY THE MANUFACTURER WITH A VISUAL TRACER TO ENSURE UNIFORM COVERAGE. INCREASE THE APPLICATION RATE AND TACKIFIER TO ROUGHENED SOILS FOR COMPLETE COVERAGE.

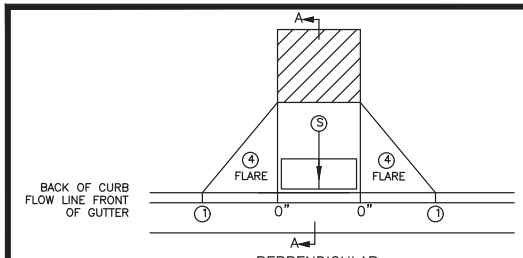
G) CATEGORY 15 EROSION CONTROL BLANKET MAY BE USED IN LIEU OF HYDRAULIC MULCH. BLANKET SHALL BE REMOVED ONCE VEGETATION HAS BEEN ESTABLISHED.

21. PAINT SHALL BE LATEX AND YELLOW IN COLOR AND ALSO COVER FULL CURB HEIGHT.

ESTIMATED QUANTITIES NOTES

CERTIFIED BY Joseph M Wilson LICENSED ENGINEER LIC. NO. 54947 DATE: 6-13-2023

S.P. NO. 041-030-013 SHEET NO. 3 OF 61



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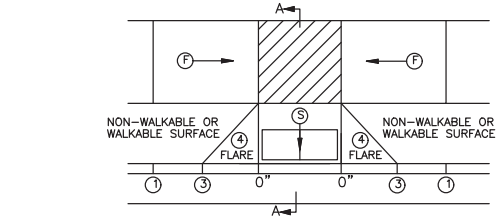
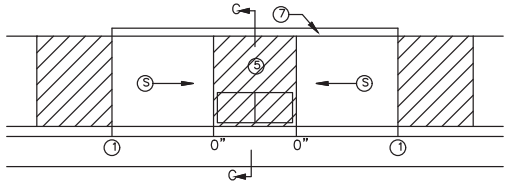


TIERED PERPENDICULAR



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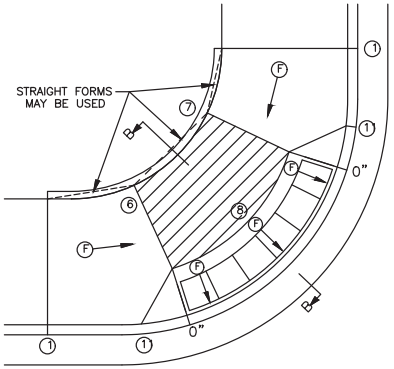
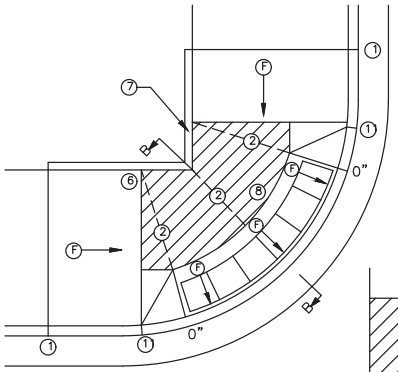
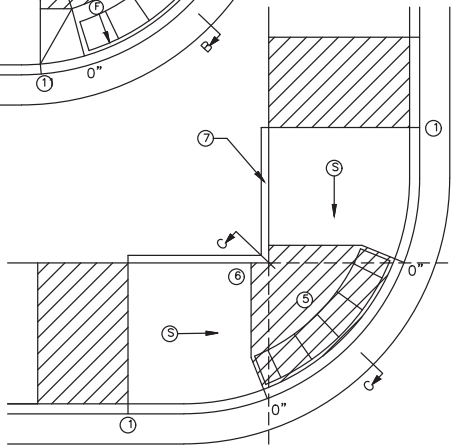


FAN (10)

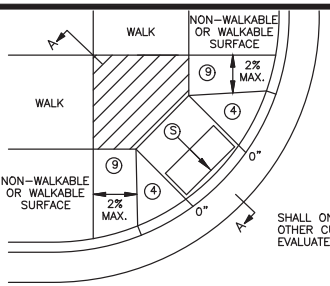


MODIFIED FAN (10)

USED WHEN RIGHT–OF–WAY
IS CONSTRAINED

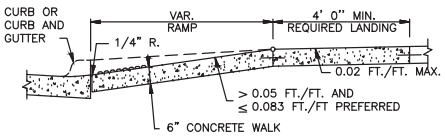


DEPRESSED CORNER



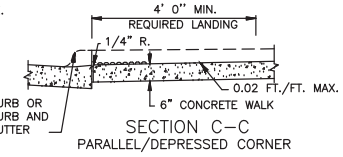
DIAGONAL

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



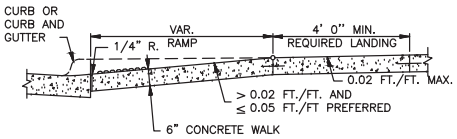
SECTION A–A

PERPENDICULAR/TIERED/DIAGONAL



SECTION C–C

PARALLEL/DEPRESSED CORNER



SECTION B–B

FAN

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 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 SHEET 6 OF 6 FOR ALL SEPARATELY POURED INITIAL LANDINGS.
WHEN SIDEWALK IS AT BACK OF CURB, TOP OF CURB SHALL MATCH PROPOSED ADJACENT WALK GRADE.
MAINTAIN POSITIVE BOULEVARD DRAINAGE TO TOP OF CURB.
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 THE ENTIRE PAR WIDTH OF SHARED–USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" – 3" OFFSET IS ALLOWED.
WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE 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.
(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 LESS THAN 5% RUNNING SLOPE SHOULD BE USED OVER V CURB TO REDUCE TRIPPING HAZARDS AND FACILITATE SNOW & ICE REMOVAL.
(8) A 7' MIN TOP RADIUS GRADE BREAK IS 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.
(11) INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8–10% TO A MINIMUM 3" CURB HEIGHT. REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

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

REVISION:

APPROVED: 11–04–2021

JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

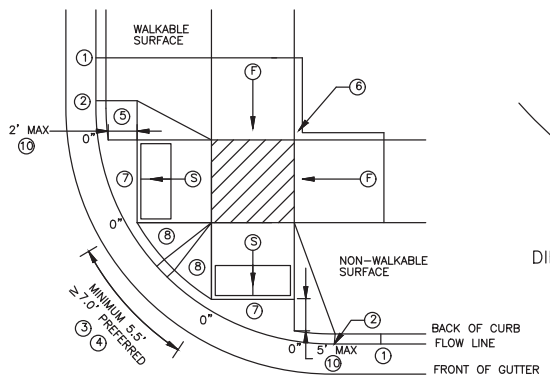
STANDARD PLAN 5–297.250 | 1 OF 6

APPROVED:11–04–2021
REVISED:

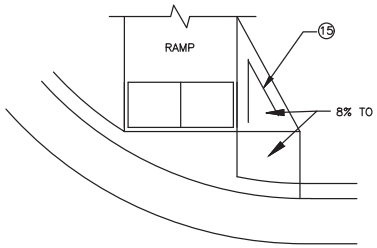
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

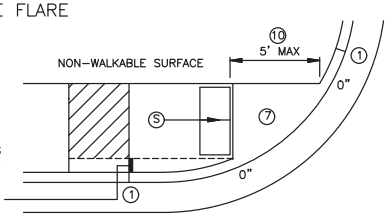
STATE PROJ. NO. (041–030–013) SHEET NO. 4 OF 61 SHEETS



COMBINED DIRECTIONAL

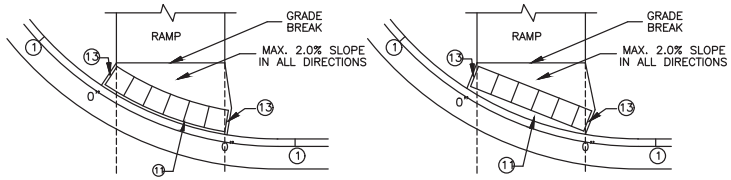


DIRECTIONAL RAMP WALKABLE FLARE



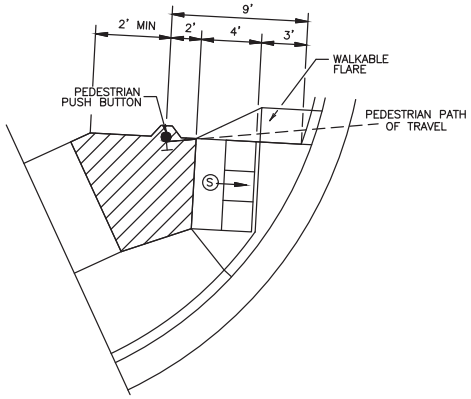
IF NON-CONCRETE BLVD. IS CONSTRUCTED AND IS LESS THAN 2' IN WIDTH AT TOP OF CURB TRANSITION, PAVE CONCRETE RAMP WIDTH TO ADJACENT BACK OF CURB.

STANDARD ONE-WAY DIRECTIONAL (9)



DETECTABLE WARNING PLACEMENT WHEN SETBACK CRITERIA IS EXCEEDED (12)

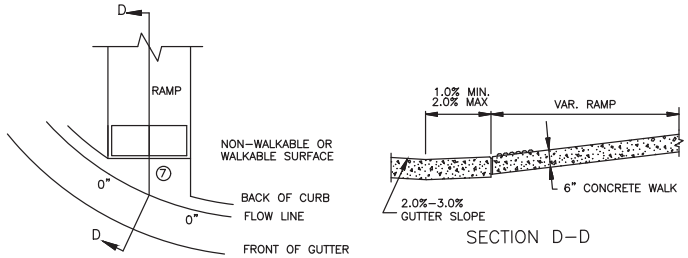
ONE-WAY DIRECTIONAL WITH DETECTABLE WARNING AT BACK OF CURB



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)



SECTION D-D

CURB FOR DIRECTIONAL RAMPS (14)

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 THE ENTIRE PAR WIDTH OF SHARED-USE PATHS AND THE ENTIRE PAR WIDTH OF THE WALK WITH THE EXCEPTION OF 3" MAXIMUM ON EACH OUTSIDE EDGE WHICH ENSURES THE DETECTABLE WARNINGS ARE ENCASED IN CONCRETE WHEN ADJACENT TO TURF. WHEN ADJACENT TO CONCRETE FLARES 0" – 3" OFFSET IS ALLOWED.

WHEN DESIGNING OR ORDERING RECTANGULAR DETECTABLE WARNING SURFACES SHOULD BE 6" LESS THAN THE INCOMING PAR. ARC LENGTH OF THE 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) 5' 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 SHALL 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 SIDEWAL 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.

(15) PLACE 2 NO. 4 BARS 4 INCHES FROM SIDE OF FORMS WITH A MINIMUM 2 INCHES OF CONCRETE COVER ALONG EACH SIDE OF FLARE (INCIDENTAL).

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

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

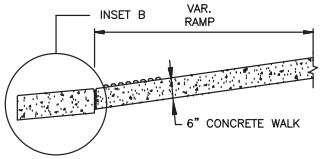
STANDARD PLAN 5-297.250 | 2 OF 6

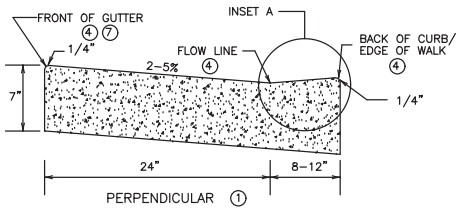
APPROVED: 11-04-2021
REVISED:

THOMAS STYREWICKI
STATE DESIGN ENGINEER

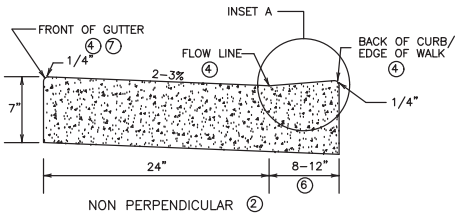
PEDESTRIAN CURB RAMP DETAILS

STATE PROJ. NO. (041-030-013) SHEET NO. 5 OF 61 SHEETS



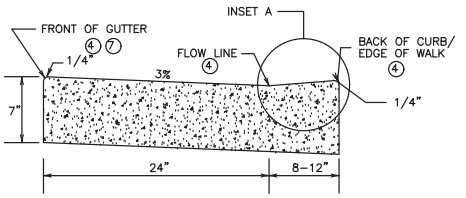


PERPENDICULAR ①

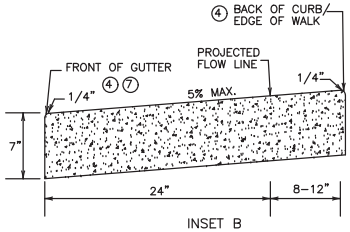


NON PERPENDICULAR ②

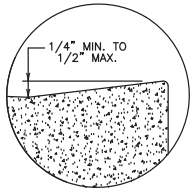
PEDESTRIAN ACCESS ROUTE CURB & GUTTER DETAIL



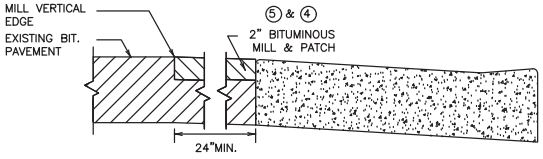
FOR CURB MACHINE PLACEMENT AROUND RADIUS ③
(REGARDLESS OF RAMP TYPE)

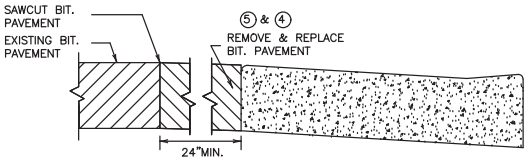


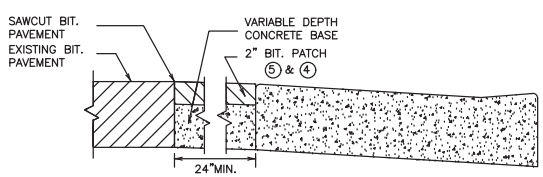
INSET B
OUTFLOW GUTTER ⑧

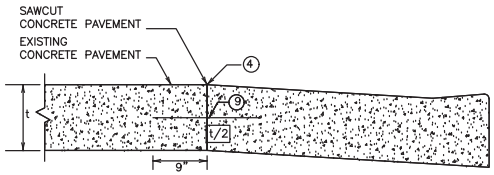


INSET A



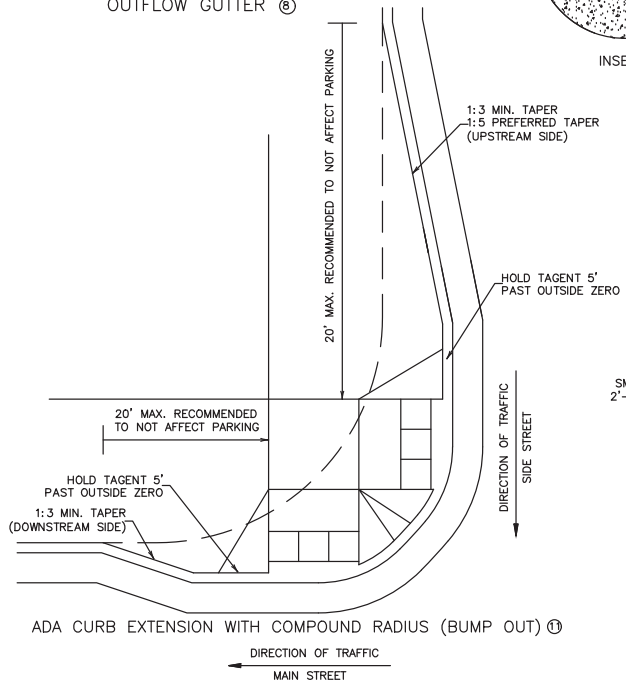




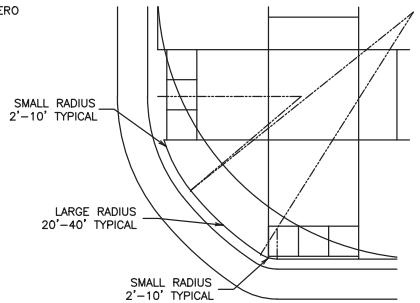


ONLY ALLOWED PER ENGINEER'S APPROVAL

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



ADA CURB EXTENSION WITH COMPOUND RADIUS (BUMP OUT) ⑪



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.

REVISION:

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JEFFREY PERKINS
OPERATIONS DIVISION

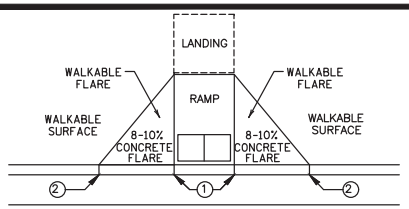
MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 3 OF 6

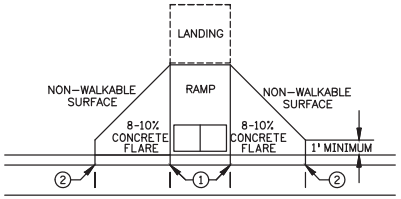
APPROVED: 11–04–2021
REVISED:
THOMAS STYREWICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

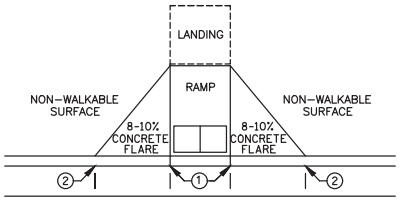
STATE PROJ. NO. (041–030–013) SHEET NO. 6 OF 61 SHEETS



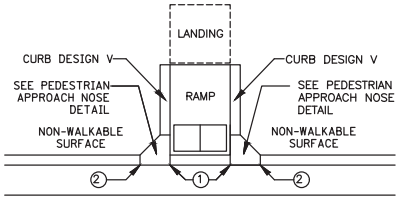
PAVED FLARES
ADJACENT TO WALKABLE SURFACE



PAVED FLARES
ADJACENT TO NON-WALKABLE SURFACE

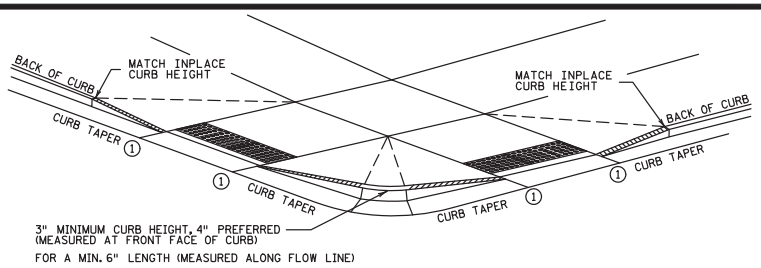


GRADED FLARES

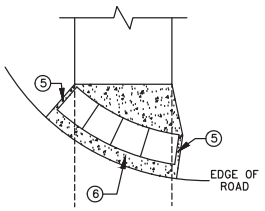


RETURNED CURB ④

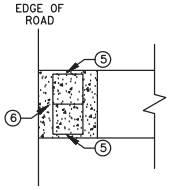
TYPICAL SIDE TREATMENT OPTIONS ③ ⑩



DETECTABLE EDGE WITH ⑦
CURB AND GUTTER

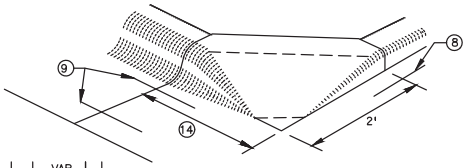


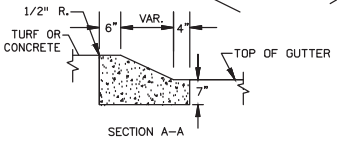
RADIAL DETECTABLE WARNING



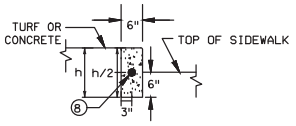
RECTANGULAR DETECTABLE WARNING

DETECTABLE EDGE WITHOUT CURB AND GUTTER

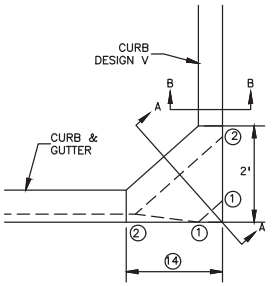


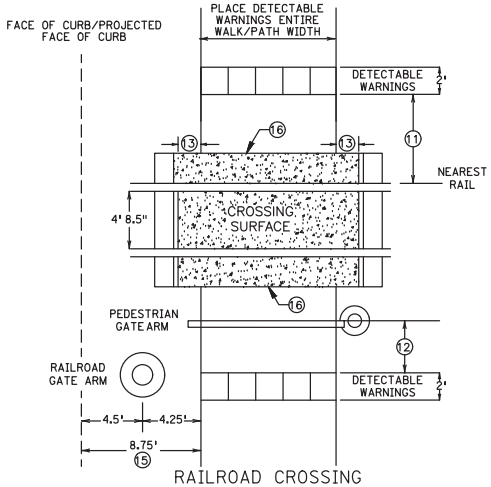


SECTION A-A



SECTION B-B





RAILROAD CROSSING
PLAN VIEW

NOTES:

INTERMEDIATE CURB HEIGHTS TAPER SHALL RISE AT 8-10 % TO A MINIMUM 3 INCH CURB HEIGHT. INCREASE CURB TAPER LENGTH AT LESS THEN 8% OR REDUCE INTERMEDIATE CURB HEIGHT TO 2+ INCHES IF NECESSARY TO MATCH ADJACENT BOULEVARD OR SIDEWALK GRADES.

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. SEE INSET A ON SHEET 3 OF 6.

② FULL CURB HEIGHT.

③ SIDE TREATMENT ARE APPLICABLE TO ALL RAMP TYPES AND SHOULD BE IMPLEMENTED AS NEEDED AS FIELD CONDITIONS DICTATE. THE ENGINEER SHALL DETERMINE THE RAMP SIDE TREATMENS BASED ON MAINTENACE OF BOTH ROADWAY AND SIDEWALK. ADJACENT PROPERTY CONSIDERATIONS, AND MITIGATING CONSTRUCTION IMPACTS.

④ TYPICALLY USED FOR MEDIANS AND ISLANDS.

⑤ 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.

⑥ 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.

⑦ ALL CONSTRUCTED CURBS MUST HAVE A CONTINUOUS DETECTABLE EDGE FOR THE VISUALLY IMPAIRED. THIS DETECTABLE EDGE REQUIRES DETECTABLE WARNINGS WHENEVER THERE IS ZERO-INCH HIGH CURB. CURB TAPES 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 LWSS THEN 3 INCHES IN HEIGHT IS NOT ACCESSIBILITY STANDARDS.

⑧ 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.

⑨ DRILL AND GROUT 2 - 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 CURB AND GUTTER.

⑩ SIDE TREATMENT EXAMPLES SHOWN ARE THE WHEN THE INITIAL LANDING IS APPROXIMATELY LEVEL WITH THE FULL HEIGHT CURB (I.E.6' LONG RAMP FOR 6" HIGH CURB). WHEN THE INTITIAL LANDING IS MORE THEN 1" BELOW FILL HEIGHT CURB REFER TO SHEETS 1 &2 TO MODIFY THE CURB HEIGHT TAPERS AND MAINTAIN POSITIVE BOULEVARD DRAINAGE. CONSTRUCT THESE TAPERS AT 0"-3" AT 8-10%, THEN LESS THAN 5% FROM 3" CURB TO FULL CURB HEIGHT.

⑪ NEAREST EDGE OF DETECTABLE WARNING SURFACES SHALL BE PLACED 12' MINIMUM TO 15' MAXIMUM FROM THE NEAREST RAIL. FOR SKEWED RAILWAYS IN NO INSTACNCE SHALL THE DETECTABLE WARNING BE CLOSER THEN 12' MEASURED PERPENDICULAR TO THE NEAREST RAIL.

⑫ 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 ⑪ .

⑬ CROSSING SURFACE SHALL EXTEND 2' MINIMUM PAST THE OUTSIDE EDGE OF WALK OR SHARED-USE PATH.

⑭ 3' FOR MEDIANS AND SPLITTER ISLANDS. NOSE CAN BE REDUCED TO 2' ON FREE RIGHT ISLAND.

⑮ 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.

⑯ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A-E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

REVISION:

APPROVED: 11-04-2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

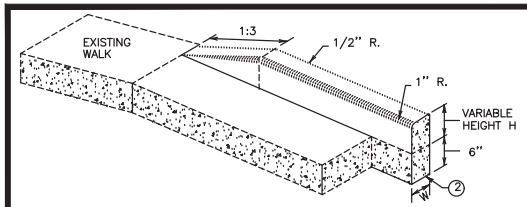
STANDARD PLAN 5-297.250 | 4 OF 6

APPROVED:11-04-2021
REVISED:

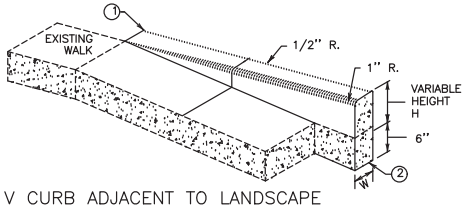
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

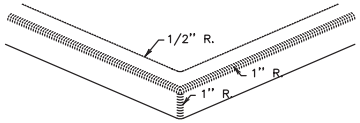
STATE PROJ. NO. (041-030-013) SHEET NO. 7 OF 61 SHEETS



V CURB ADJACENT TO LANDSCAPE
CURB WITHIN SIDEWALK LIMITS

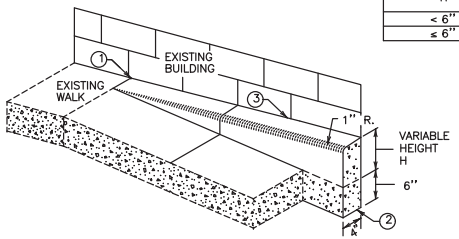


V CURB ADJACENT TO LANDSCAPE
CURB OUTSIDE SIDEWALK LIMITS

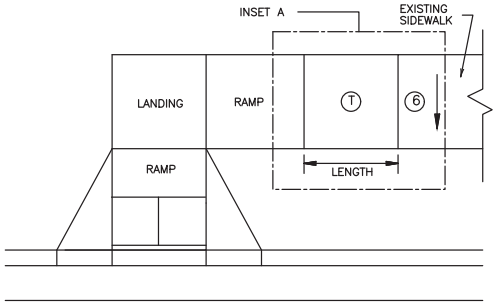


V CURB INTERSECTION

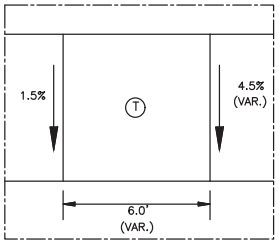
CONCRETE CURB DESIGN V	
CURB HEIGHT H	CURB WIDTH W
< 6"	4"
≤ 6"	6"



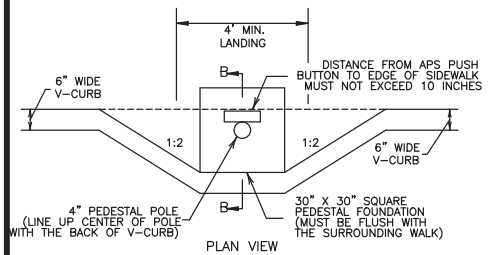
V CURB ADJACENT TO BUILDING OR BARRIER



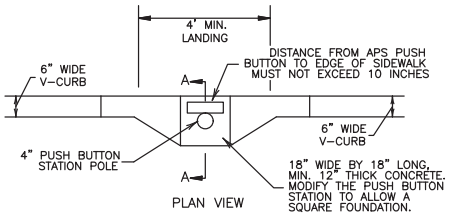
TRANSITION PANEL ④⑤



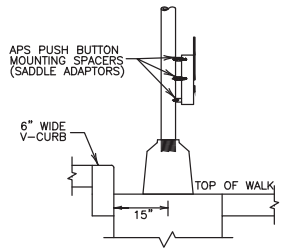
INSET A



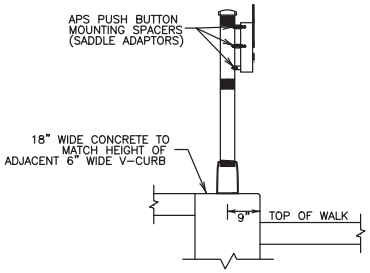
PLAN VIEW



PLAN VIEW



SECTION B–B



SECTION A–A

SIGNAL PEDESTAL & PUSH BUTTON (V–CURB)

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 CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A–E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

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.

REVISION:

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OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 5 OF 6

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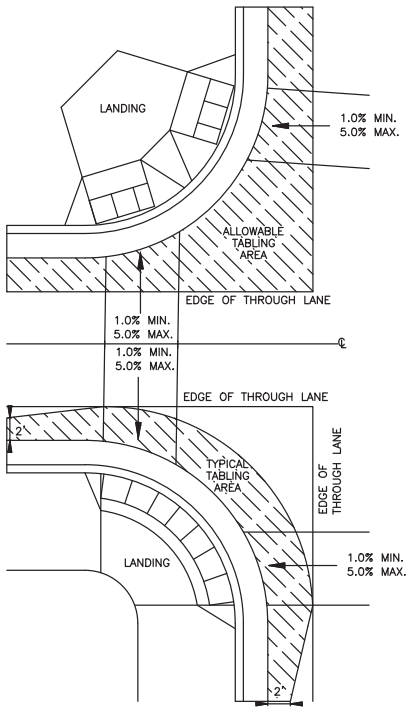
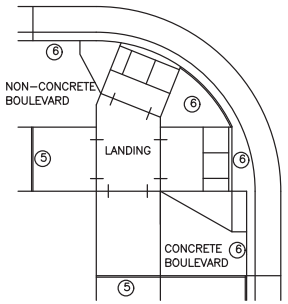
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

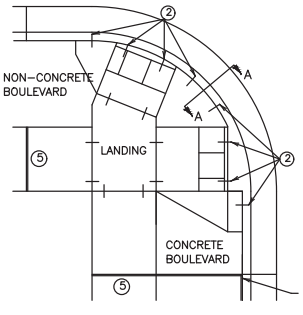
STATE PROJ. NO. (041–030–013) SHEET NO. 8 OF 61 SHEETS



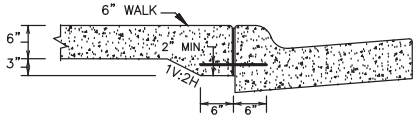
CURB LINE AND ROAD CROSSING ADJUSTMENTS



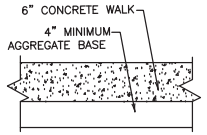
EXPANSION MATERIAL PLACEMENT FOR CONCRETE ROADWAYS



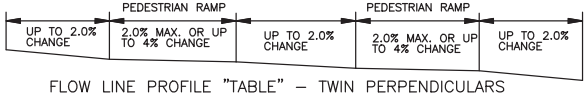
CURB LINE REINFORCEMENT ④ PLACEMENT ON BITUMINOUS ROADWAYS



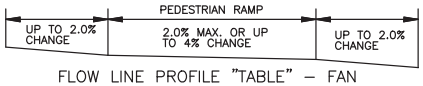
SECTION VIEW A–A
THICKENED SECTION
THROUGH CURB RAMP FLARES



TYPICAL SIDEWALK SECTION
WITHIN INTERSECTION CORNER

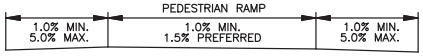


FLOW LINE PROFILE "TABLE" – TWIN PERPENDICULARS

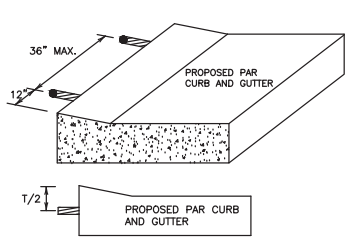


FLOW LINE PROFILE "TABLE" – FAN

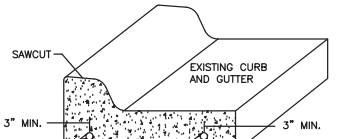
FLOW LINE PROFILE RAISE – TWIN PERPENDICULARS



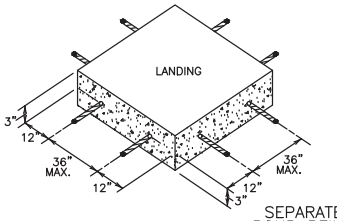
FLOW LINE PROFILE RAISE – FAN

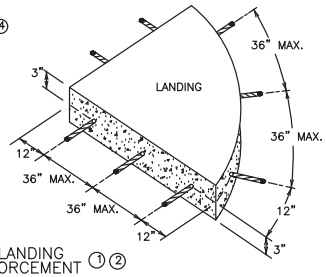


CURB RAMP REINFORCEMENT DETAILS ②④



CURB AND GUTTER REINFORCEMENT ③





SEPARATE LANDING POUR REINFORCEMENT ①②

GENERAL NOTES:

"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 (EPOXY COATED) AT 36" MAXIMUM CENTER TO CENTER MINIMUM 12" SPACING FROM CONSTRUCTION JOINTS. BARS TO BE ADJUSTED TO MATCH RAMP GRADE. BARS TO BE PAID BY EACH.

③ DRILL AND GROUT 2 – NO. 4 X 12" LONG (6" EMBEDDED) REINFORCEMENT BARS (EPOXY COATED). REINFORCEMENT REQUIRED FOR ALL CONSTRUCTION JOINTS. BARS TO BE PAID BY EACH.

④ THIS CURB LINE REINFORCEMENT DETAIL SHALL BE USED ON BITUMINOUS ROADWAYS. FOR CONCRETE ROADWAYS, SEE NOTE 6.

⑤ CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A–E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE.

⑥ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

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JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.250 | 6 OF 6

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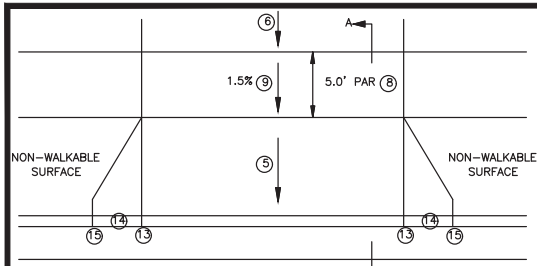
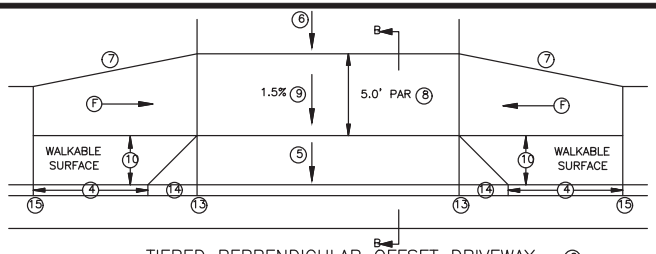
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

PEDESTRIAN CURB RAMP DETAILS

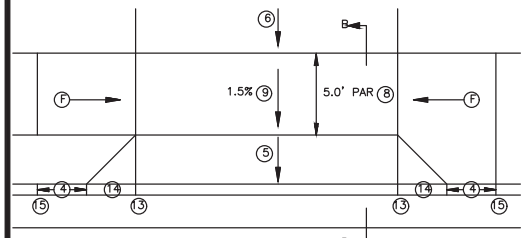
STATE PROJ. NO. (041–030–013) SHEET NO. 9 OF 61 SHEETS



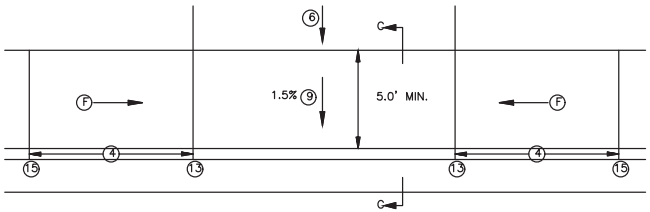
PERPENDICULAR DRIVEWAY ①



TIERED PERPENDICULAR OFFSET DRIVEWAY ②



TIERED PERPENDICULAR DRIVEWAY ②



PARALLEL DRIVEWAY ③

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURE FROM BACK OF CURB.

IN URBAN ROADWAY SECTIONS, 6" CURB HEIGHT SHOULD BE USED WHEN 6' OR GREATER BOULEVARD WIDTH IS PROPOSED. WHEN BOULEVARD IS LESS THAN 6' WIDE, 4" CURB HEIGHT SHOULD BE USED.

MAINTAIN EXISTING DRAINAGE PATTERNS FLOWING TO PUBLIC RIGHT OF WAY.

ACQUIRE ADEQUATE L3 TO ALLOW FOR A CONTINUOUS PAR PROFILE (UNIFORM TYPICAL SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

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 PERPENDICULAR DRIVEWAYS ARE THE STANDARD AND STARTING POINT FOR ALL DRIVEWAY DESIGN AND CONSTRUCTION. SHOULD BE USED TO ACHIEVE CONTINUOUS PAR PROFILE THROUGH THE DRIVEWAY. OBTAINING A PERPENDICULAR DRIVEWAY DESIGN BECOMES MORE CRITICAL WITH STEEP ROADWAY PROFILES.

② TO BE USED WHEN PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED, THE DRIVEWAY PAR IS BELOW ROADWAY CURB HEIGHT. THIS DRIVEWAY TYPE CAN BE USED FOR BOTH PAVED (AS SHOWN) AND GRASS BOULEVARDS.

③ TO BE USED WHEN PERPENDICULAR AND TIERED PERPENDICULAR DRIVEWAY DESIGN CANNOT BE ACHIEVED. CAN BE USED FOR STEEP NEGATIVE SLOPED DRIVEWAYS. DW CURB TYPE 2 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% STANDARD, 10% MAX. FOR COMMERCIAL AND 12% MAX. FOR RESIDENTIAL. SEE GENERAL NOTES ON SHEET 2 FOR MORE INFORMATION.

⑥ S3 8% MAXIMUM, IF THE SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. IF EXISTING DRIVEWAY IS NEGATIVELY DRAINING, S3 CAN BECOME SLIGHTLY MORE NEGATIVE TO ACHIEVE PERPENDICULAR DRIVEWAY DESIGN IF THE VERTICAL CLEARANCE IS ACHIEVED IN VEHICLE TEMPLATES.

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 INTEGRAL DRIVEWAY APRON TO BE POURED MONOLITHICALLY/INTEGRAL WITH THE CURB AND GUTTER. SEE SHEET 2 FOR MORE INFORMATION.

⑫ SEE SHEET 2 FOR CURB TYPE INFORMATION.

⑬ 0" CURB IS AT FLOW LINE. SEE DRIVEWAY TABLE FOR BACK OF CURB HEIGHTS.

⑭ 3' LONG AT 8–10% PREFERRED FOR INITIAL CURB TAPER. REDUCE CURB TAPER SLOPE IF NECESSARY TO MATCH ADJACENT SIDEWALK GRADES.

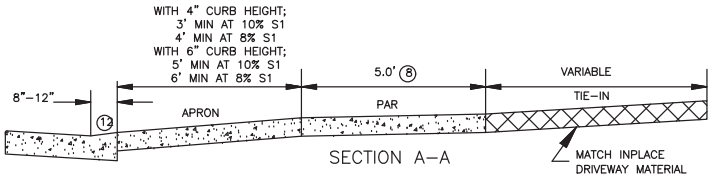
⑮ MATCH FULL CURB HEIGHT.

⑯ 1:2 TAPER RATE ON INTEGRAL DRIVEWAY APRONS.

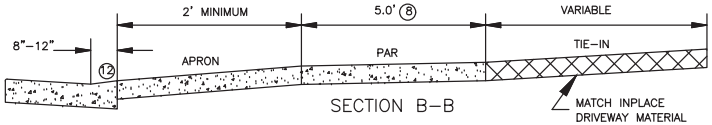
⑰ SEE SHEET 4 FOR WHEN 6" WALK IS REQUIRED.

LEGEND

Ⓕ 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%



SECTION A–A



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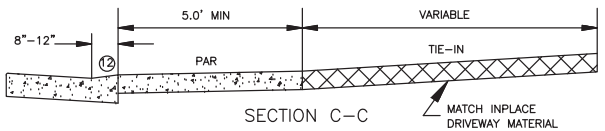

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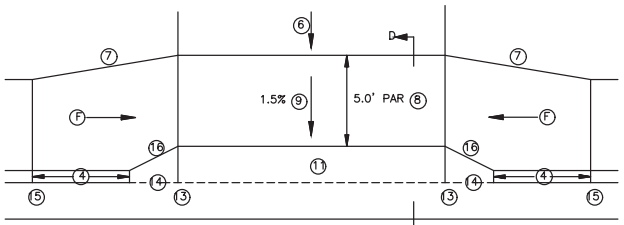
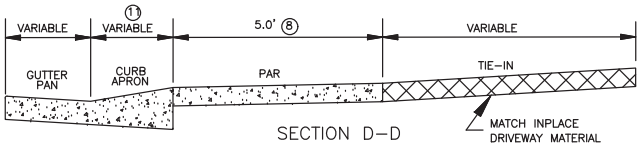


INTEGRAL DRIVEWAY APRON



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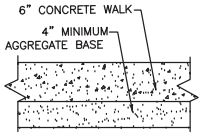
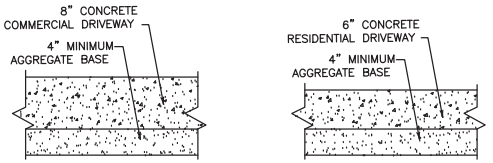


TYPICAL SIDEWALK SECTION ⑰



TYPICAL DRIVEWAY SECTIONS

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JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.254 | 1 OF 4

APPROVED:11–04–2021
REVISED:

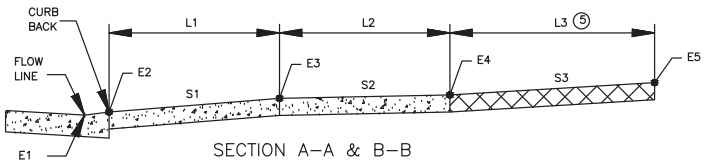
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (041–030–013) SHEET NO 10 OF 61 SHEETS

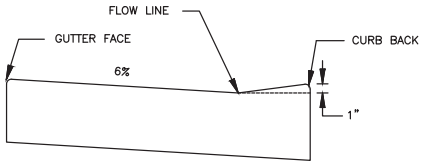
DRIVEWAY TABLE (1)

STATION	SIDE	DRIVEWAY TYPE (2)	CURB TYPE (3)	E1	E2	L1 FT	S1 %	E3	L2 FT	S2 (4) %	E4	L3 (5) FT	S3 %	EXISTING (6) %	E5	COMMENTS



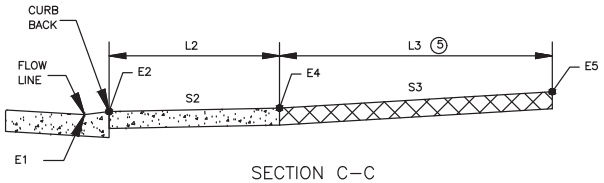
SECTION A–A & B–B

(REFER TO PREVIOUS SHEET)



DW CURB TYPE 1

STANDARD CURB AT DRIVEWAY



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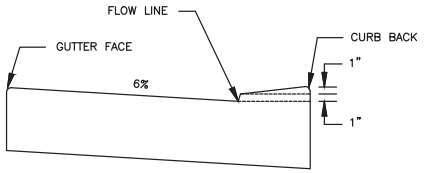
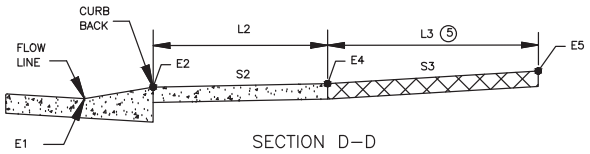


DW CURB TYPE 2

VERTICALLY CONSTRAINED



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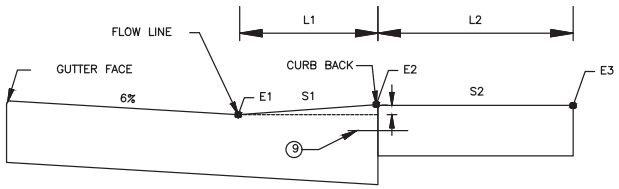

INTEGRAL DRIVEWAY APRON (IDA)

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

DW CURB TYPE 1 SHALL BE USED WHEN THE DRIVEWAY ACTS AS A PEDESTRIAN RAMP. THE MAX. APRON SLOPE MUST ADHERE TO ADA CRITERIA AS WELL. DW CURB TYPE 1 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% STANDARD, 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.

S3 8% MAXIMUM, IF THIS SLOPE IS EXCEEDED OR CONTINUED FOR MORE THAN 5', ANALYZE VEHICLE TEMPLATES FOR VERTICAL CLEARANCE. SEE FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGNS OF DRIVEWAYS.

(1) EXAMPLE SHOWN TO BE INCLUDED IN PLAN FOR EACH DRIVEWAY THAT HAS PAR THROUGH IT.

(2) REFERS TO THE FOLLOWING TYPES; PERPENDICULAR DRIVEWAY, TIERED PERPENDICULAR OFFSET DRIVEWAY, TIERED PERPENDICULAR DRIVEWAY, PARALLEL DRIVEWAY, AND INTEGRAL DRIVEWAY APRON.

(3) DW CURB TYPE 1 IS THE STANDARD AND SHALL BE THE STARTING POINT FOR ALL PERPENDICULAR AND TIERED DRIVEWAYS. DW CURB TYPE 2 SHALL ONLY BE USED AFTER UTILIZING BEST PRACTICES SUCH AS MAXIMIZING S1, S3, AND L3.

(4) SHOULD BE DESIGNED AT 1.5%.

(5) ACQUIRE ADEQUATE L3 TO ALLOW FOR CONTINUOUS PAR PROFILE (UNIFORM SIDEWALK SECTION) THROUGH THE DRIVEWAY APRON.

(6) PROVIDE INPLACE TIE–IN SLOPE INFORMATION AT BACK OF PROPOSED WALK (S3 AREA).

(7) INFORMATION TO BE INCORPORATED INTO DRIVEWAY TABLE WHEN INTEGRAL DRIVEWAY APRON IS USED. OTHER CURB HEIGHTS & CURB APRON LENGTHS CAN BE USED.

(8) L1 & S1 FOR INTEGRAL DRIVEWAY APRON IS TO FLOWLINE. 12.5% IS MAXIMUM PREFERRED SLOPE.

(9) TIE ADJACENT SECTIONS. CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. DRILL AND GROUT OR CAST IN–PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINT.

TYPICAL INTEGRAL DRIVEWAY APRON (7)

CURB TYPE	L1 FT	E2	S1 (8) %
IDA 216	1.33	+0.16	12.5
IDA 220	1.67	+0.16	10
IDA 324	2	+0.24	12.5
IDA 432	2.67	+0.33	12.5

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OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.254 2 OF 4

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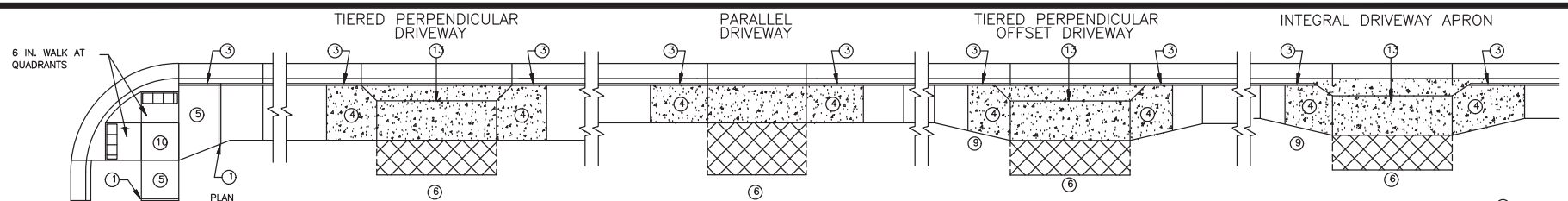
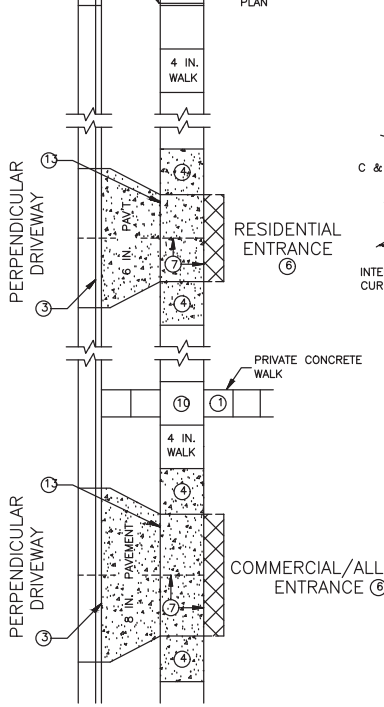
REVISED:

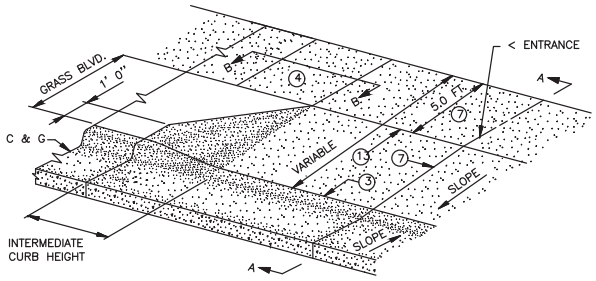
THOMAS STYBRICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (041–030–013) SHEET NO. 11 OF 61 SHEETS

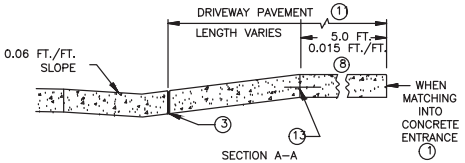




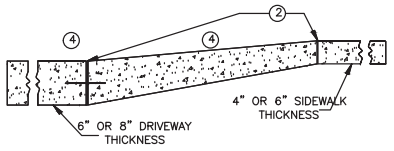


HALF PLAN PERSPECTIVE

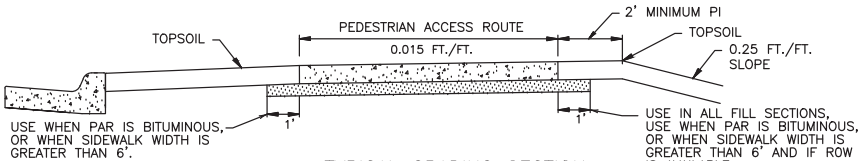
PERPENDICULAR DRIVEWAYS WITH GRASS BOULEVARDS



SECTION THRU DRIVEWAY

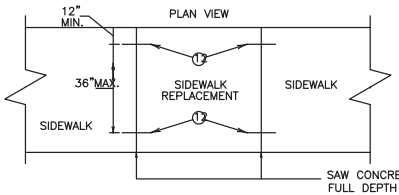


SECTION THRU SIDEWALK THICKNESS TRANSITION



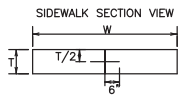
TYPICAL GRADING SECTION

(NOT USED WHEN CONFINED BY CURB, BUILDING, WALL, ETC.)



TRANSVERSE SIDEWALK TIE BAR REINFORCEMENT

RETROFITS ONLY



LONGITUDINAL SIDEWALK REINFORCEMENT JOINTS

SIDEWALK LONGITUDINAL JOINT TIE BAR TABLE				
SIDEWALK WIDTH, W	SIDEWALK THICKNESS, T	TIE BAR SIZE	LENGTH	SPACING
> 7'	4"	No. 4	12"	24"
>10'	6"	No. 4	12"	36"

FOR 4" CONCRETE ONLY: CAST IN PLACE BARS MUST BE SUPPORTED WITH P–STAKES OR REINFORCEMENT BASKETS FOR FULL WIDTH CONCRETE PLACEMENTS.

FOR 6" CONCRETE ONLY: DRILL AND GROUT OR CAST IN PLACE THROUGH HOLES IN THE FORMS REQUIRED FOR STAGED ADJACENT CONCRETE PLACEMENTS.

NOTES:

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

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 FACILITY DESIGN GUIDE, CHAPTER 6, FOR GEOMETRIC DESIGN OF DRIVEWAYS.

① CONSTRUCT WITH EXPANSION MATERIAL PER MNDOT SPECIFICATION 3702 TYPES A–E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. DRIVEWAY EXPANSION SHALL BE PLACED AT TOP OR BOTTOM OF TRANSITION PANEL.

② CONSTRUCT WITH EXPANSION MATERIAL MNDOT PER SPEC. 3702 TYPES A–E. EXPANSION MATERIAL SHALL MATCH FULL HEIGHT OF ADJACENT CONCRETE. MAXIMUM ONE EXPANSION PER DRIVEWAY PLACED AT EITHER TOP OR BOTTOM OF CONCRETE THICKNESS TRANSITION. IF MULTIPLE DRIVEWAYS EXIST PLACE ONE EXPANSION BETWEEN EACH DRIVEWAY. IF NO DRIVEWAY EXIST PLACE A MAXIMUM OF ONE EXPANSION PER 150' OF SIDEWALK RUN.

③ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE.

④ TRANSITION DRIVEWAY THICKNESS TO WALK THICKNESS. IF THERE IS A CONSTRUCTION JOINT AND NO EXPANSION IS USED, INSTALL TIE BARS.

⑤ TRANSITION CURB RAMP THICKNESS TO WALK THICKNESS.

⑥ MATCH INPLACE DRIVEWAY WIDTH, MATERIAL TYPE AND THICKNESS.

⑦ FORM CONTRACTION JOINT AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANELS. CONCRETE PANEL SIZE SHOULD NOT EXCEED 1 1/2 : 1 LENGTH X WIDTH. 81 SF FOR 6" CONCRETE DRIVEWAY WITH 9'X9' MAXIMUM PANEL SIZE. 144 SF FOR 8" CONCRETE DRIVEWAY WITH 12'X12' MAXIMUM PANEL SIZE. MATCH DRIVEWAY APRON AND SIDEWALK JOINTS.

⑧ THE PEDESTRIAN ACCESS ROUTE CROSS–SLOPE, SHALL NOT EXCEED 0.02 FT./FT. AS CONSTRUCTED.

⑨ 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.

⑩ LANDING REQUIRED, SEE NEXT SHEET FOR MORE INFORMATION.

⑪ CONCRETE DRIVEWAY APRON AND CONCRETE DRIVEWAY SIDEWALK SECTIONS SHALL BE CONSTRUCTED SEPARATELY IN AN INDEPENDENT CONCRETE POUR. ENGINEER'S APPROVAL REQUIRED FOR MONOLITHIC PLACEMENTS.

⑫ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. BARS TO BE ADJUSTED TO MATCH SIDEWALK GRADES. TO BE PAID BY EACH.

⑬ DRILL AND GROUT OR CAST IN–PLACE THROUGH HOLES IN THE FORMS NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

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JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

STANDARD PLAN 5–297.254 | 3 OF 4

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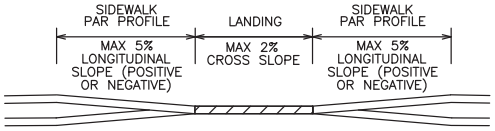
REVISED:

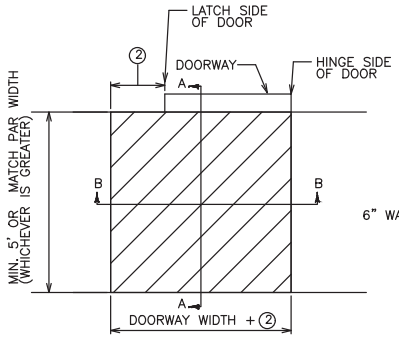
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

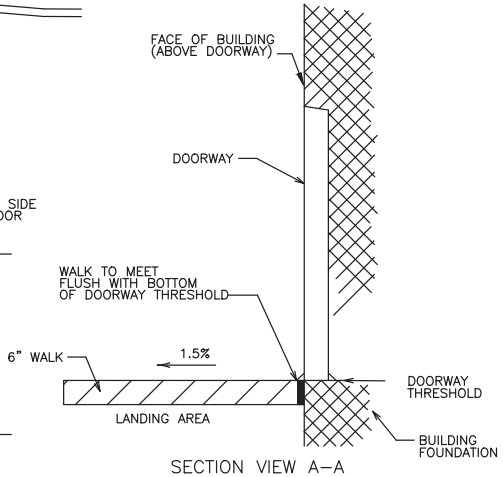
STATE PROJ. NO. (041–030–013) SHEET NO. 12 OF 61 SHEETS



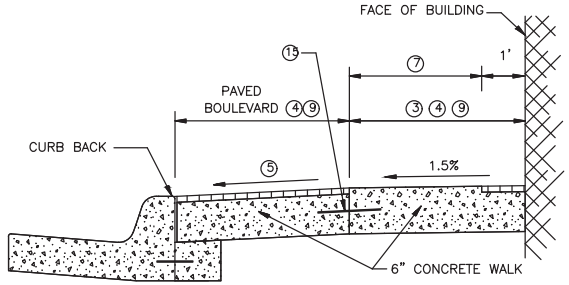
SECTION VIEW B–B



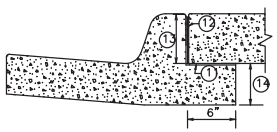
PLAN VIEW DOORWAY



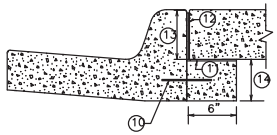
SECTION VIEW A–A



DOWNTOWN SIDEWALK TYPICAL SECTION



SLIP FORM SILL

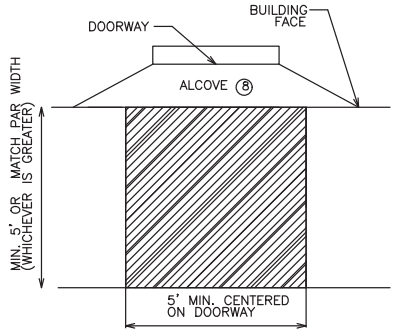


FIXED FORM SILL

SILL CURB SHOULD BE USED AT ALL LOCATIONS WHEN CONCRETE WALK IS AT BACK OF CURB, INCLUDING PAVED BOULEVARD.

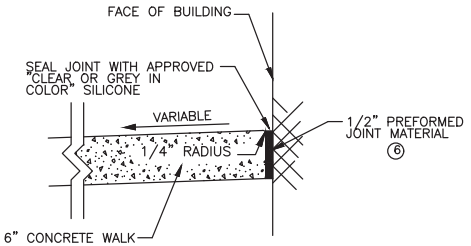
SILL CURB SHALL NOT BE USED IN CURB RAMP AND DRIVEWAY AREAS, INCLUDING CONCRETE FLARES.

SILL CURB WITH 4" WALK CAN USE FIXED OR SLIP FORM OPTIONS.



PLAN VIEW DOORWAY WITH ALCOVE

SIDEWALK LANDING REQUIREMENTS ①



BUILDING JOINT SEAL (INCIDENTAL)

NOTES:

6" WALK IS REQUIRED:
1) IN ALL SIDEWALK LOCATIONS WHERE VARIABLE SLOPED CONCRETE BOULEVARDS ARE PAVED, SUCH AS COMMERCIAL (STORE FRONT, DOWNTOWN) AREAS.
2) ANYTIME DRILL AND REINFORCEMENT IS USED TO TIE LONGITUDINAL JOINTS TOGETHER.
3) TO ELIMINATE LONGITUDINAL JOINT WHEN INCREASING PANEL SIZE OVER 36SF.
4) AT LOCATIONS WHERE MAINTENANCE EQUIPMENT WILL SUBJECT CONCRETE TO HEAVY LOADS.

ALL SIDEWALK AND BOULEVARD WIDTHS SHALL BE MEASURED FROM BACK OF CURB.

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, STEPS, AND PRIVATE WALKS. FEASIBILITY DECREASES WITH NARROWER BOULEVARDS AND STEEPER SIDEWALK PROFILES.

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. HOLD UNIFORM BOULEVARD WIDTH. 4' PREFERRED MINIMUM BOULEVARD.

⑤ 1%–5% FOR THE MAJORITY OF THE BLOCK, WITH EXCEPTIONS UP TO 8% IN CONSTRAINED AREAS.

⑥ CONSTRUCT USING APPROVED EXPANSION MATERIAL PER MNDOT TYPE A–E EXPANSION. LEAVE A MINIMUM 1/2" TOP GAP AND SEAL WITH MNDOT APPROVED SILICONE PER MNDOT SPEC 3722.

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

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

⑨ FORM CONTRACTION JOINTS AS NEEDED TO PRODUCE APPROXIMATELY SQUARE PANEL SIZE. CONRETE PANEL SIZE SHOULD NOT EXCEED 11/2 : 1 LENGTH X WIDTH.

⑩ DRILL AND GROUT NO. 4 X 8" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONSTRUCTION JOINTS. 1' MINIMUM FROM ADJACENT CONCRETE JOINTS. TIE BARS SHALL BE EMBEDDED 4" WITH 2" MINIMUM CONCRETE COVER AND ARE INCIDENTAL TO SILL PLACEMENT.

⑪ FURNISH AND INSTALL THE FULL WIDTH OF THE TOP OF SILL A MINIMUM 2ML THICK POLYTHENE SHEETING.

⑫ USE AN APPROVED TYPE F (1/4 INCH THICK) SEPARATION MATERIAL. SEPARATION MATERIAL SHALL MATCH FULL HEIGHT DIMENSION OF ADJACENT CONCRETE .

⑬ DIMENSION TO BE SAME AS SIDEWALK THICKNESS, 4" MIN.

⑭ 6" WALK: 5" MIN. FOR B424; 7" MIN. FOR B624
4" WALK: 7" MIN. FOR B424; 9" MIN. FOR B624

⑮ DRILL AND GROUT NO. 4 X 12" LONG TIE BARS (EPOXY COATED). 36" MAXIMUM SPACING BETWEEN BARS WITH 2" MINIMUM CONCRETE COVER PLACED 1' MINIMUM FROM ADJACENT CONCRETE JOINTS.

REVISION:

APPROVED: 11–04–2021
JEFFREY PERKINS
OPERATIONS DIVISION

MINNESOTA DEPARTMENT OF TRANSPORTATION

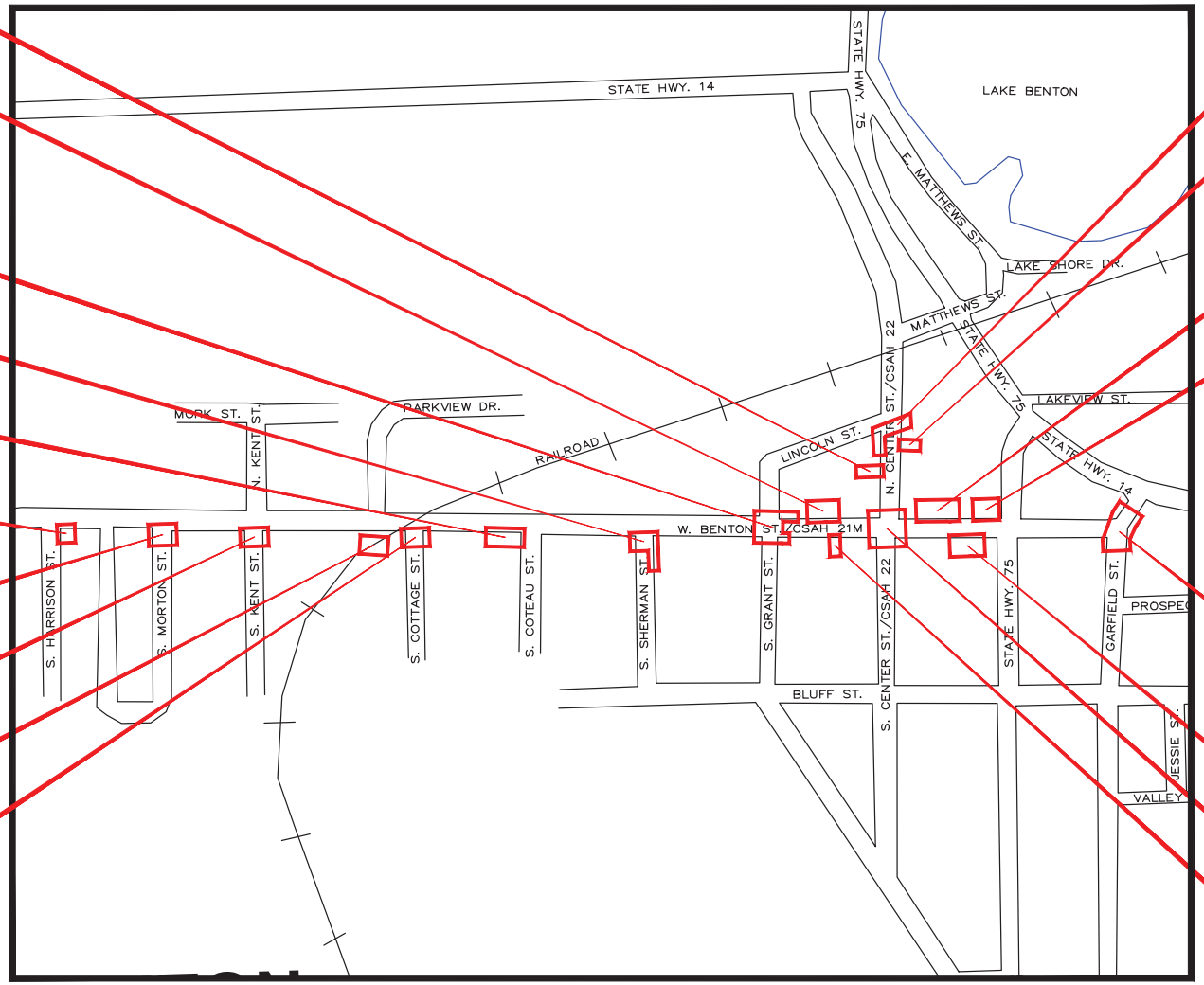
STANDARD PLAN 5–297.254 | 4 OF 4

APPROVED: 11–04–2021
REVISED:
THOMAS STYRBICKI
STATE DESIGN ENGINEER

DRIVEWAY AND SIDEWALK DETAILS

STATE PROJ. NO. (041–030–013) SHEET NO. 13 OF 61 SHEETS

CITY OF LAKE BENTON



L16 (1) DRIVEWAY ACCESS

L10 (2) DRIVEWAY ACCESS

L8 (4) PEDESTRIAN ACCESS RAMPS
(2) DRIVEWAY ACCESS

L7 (2) PEDESTRIAN ACCESS RAMPS
(1) SIDEWALK SECTION

L6 (1) PEDESTRIAN ACCESS RAMP
(1) SIDEWALK SECTION

L1 (1) PEDESTRIAN ACCESS RAMP

L2 (2) PEDESTRIAN ACCESS RAMPS

L3 (2) PEDESTRIAN ACCESS RAMPS

L4 (1) PEDESTRIAN ACCESS RAILROAD CROSSING

L5 (2) PEDESTRIAN ACCESS RAMPS

L18 (2) PEDESTRIAN ACCESS RAMPS
(1) DRIVEWAY ACCESS

L17 (1) DRIVEWAY ACCESS

L13 (2) DRIVEWAY ACCESS

L14 (1) DRIVEWAY ACCESS

L15 (4) PEDESTRIAN ACCESS RAMPS

L12 (2) DRIVEWAY ACCESS

L11 (4) PEDESTRIAN ACCESS RAMPS

L9 (1) DRIVEWAY ACCESS

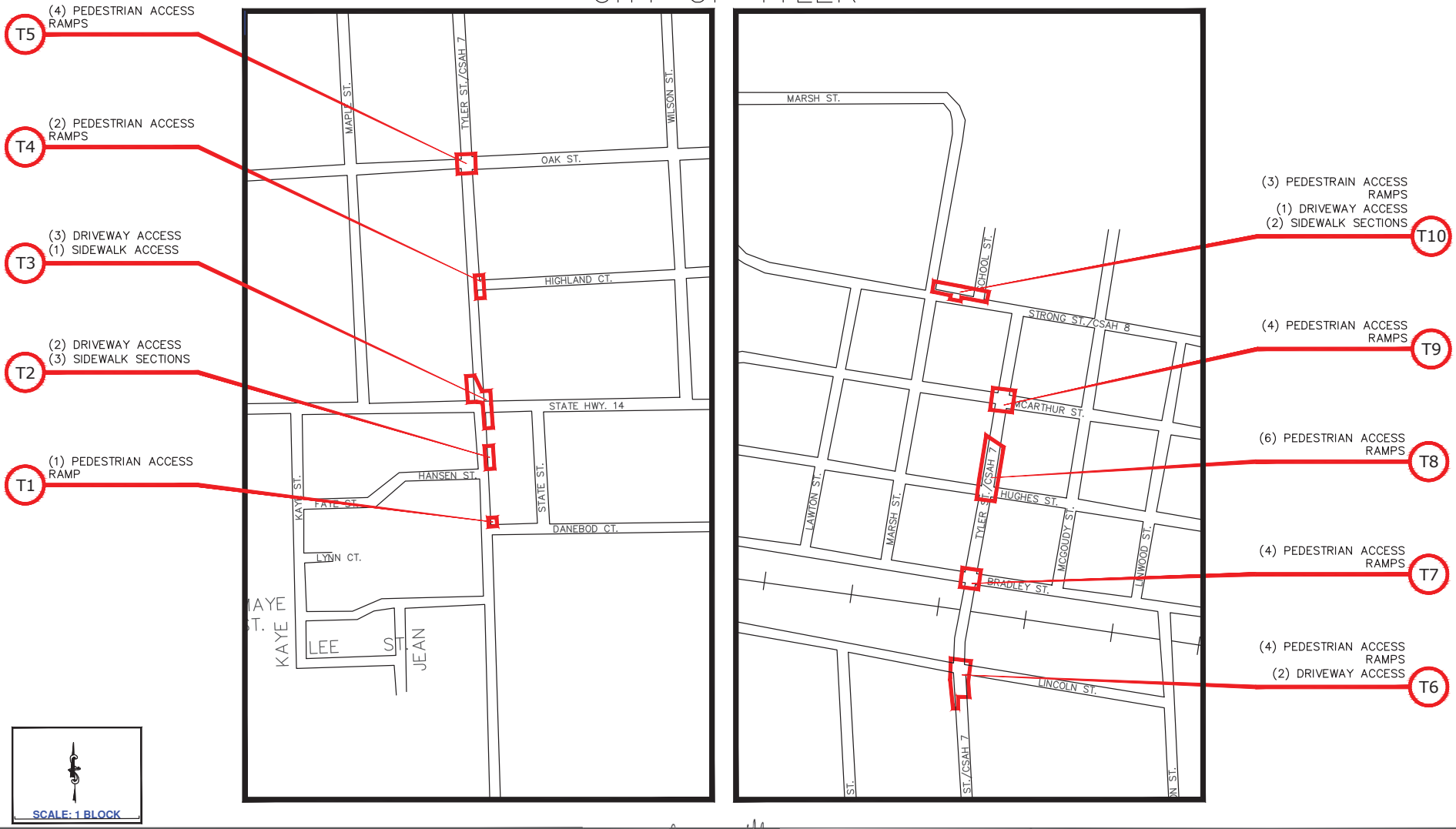
SCALE: 1 BLOCK

ADA CURB RAMP GENERAL LAYOUT

CERTIFIED BY Joseph M. Wilson LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 14 OF 61

CITY OF TYLER

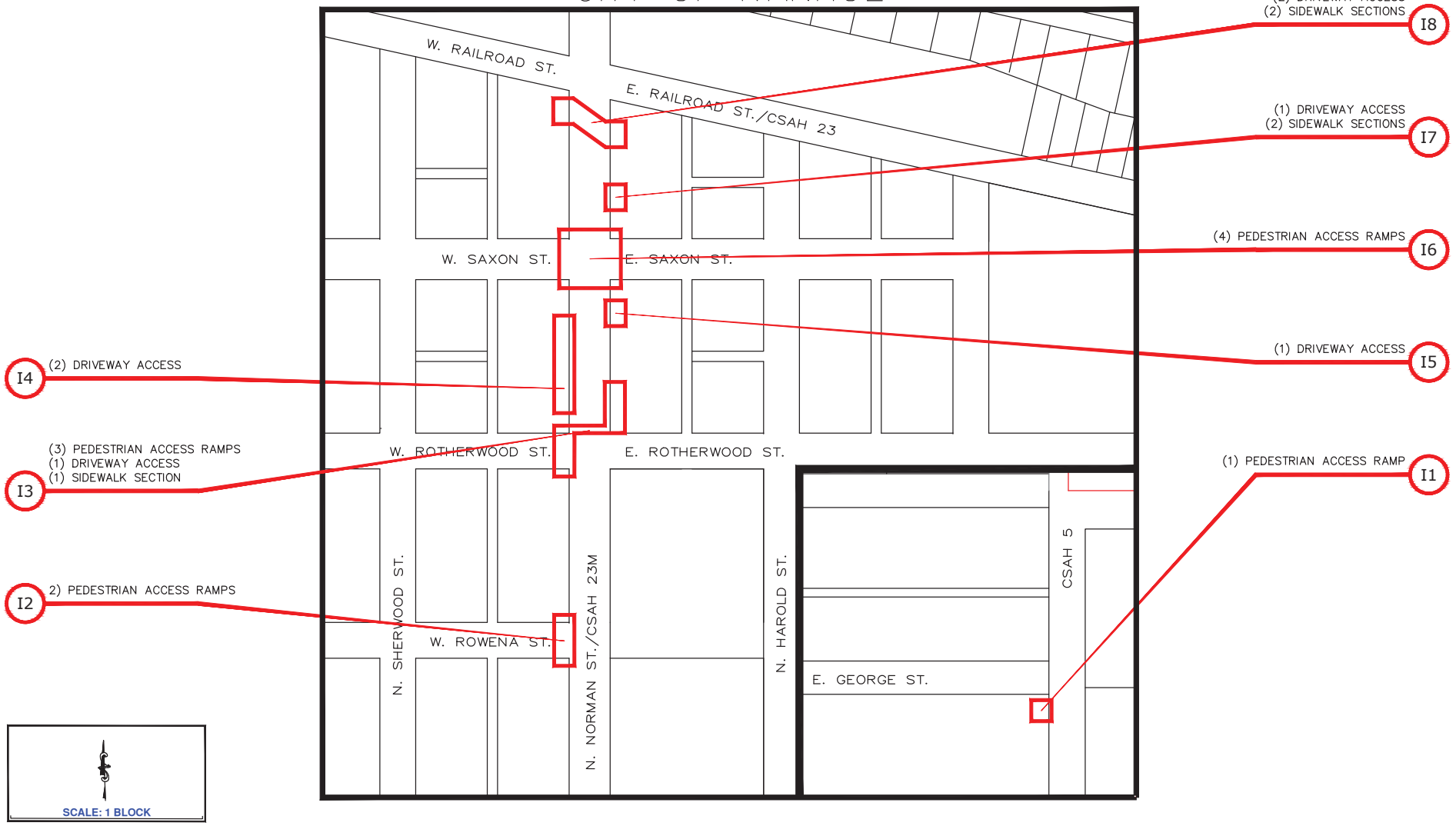


ADA CURB RAMP GENERAL LAYOUT

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 15 OF 61

CITY OF IVANHOE

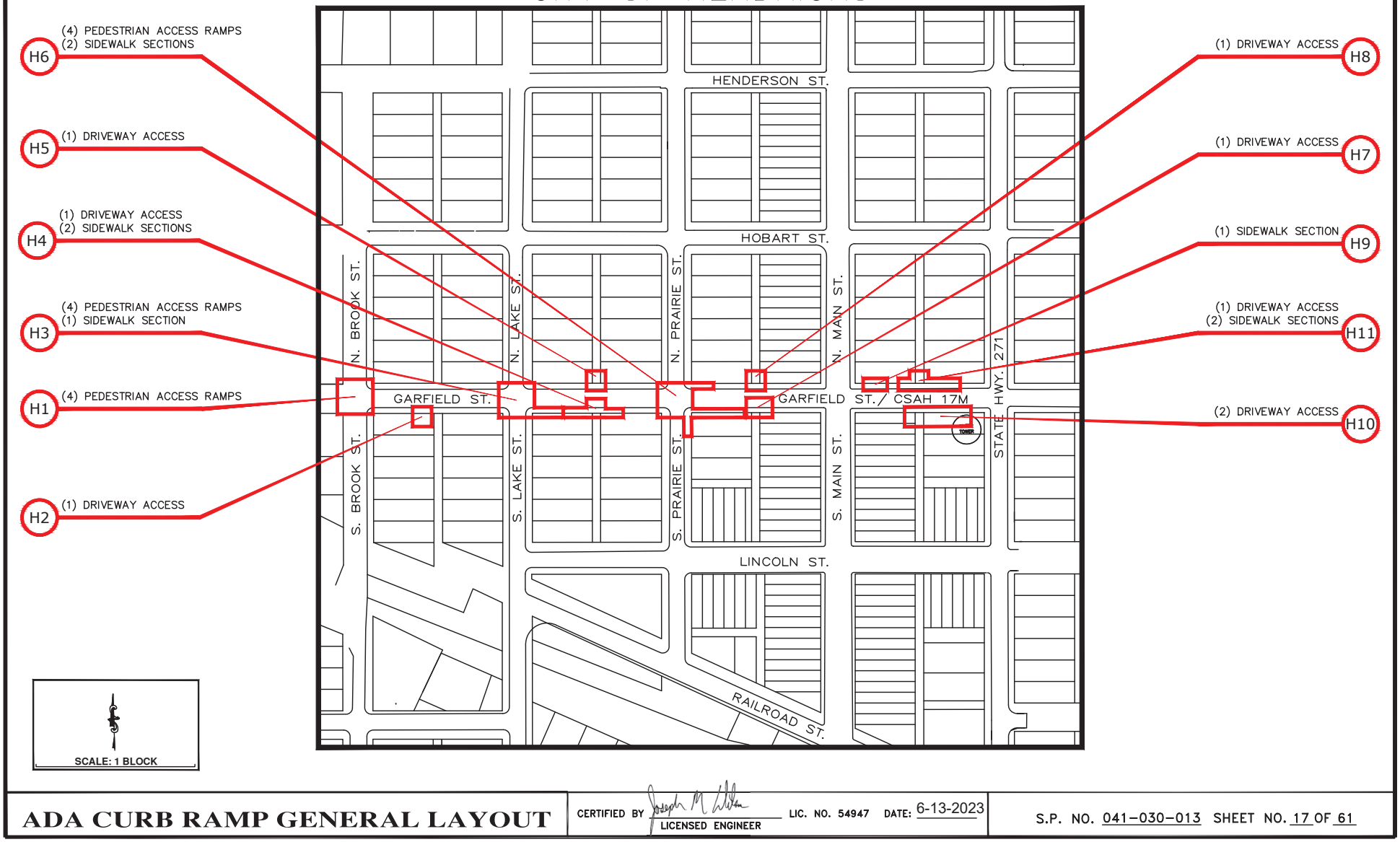


ADA CURB RAMP GENERAL LAYOUT

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 16 OF 61

CITY OF HENDRICKS



ADA CURB RAMP GENERAL LAYOUT

CERTIFIED BY Joseph M Wilson LICENSED ENGINEER LIC. NO. 54947 DATE: 6-13-2023

S.P. NO. 041-030-013 SHEET NO. 17 OF 61

CITY OF LAKE BENTON

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	REMOVE CURB AND GUTTER (LIN FT)			REMOVE CONCRETE WALK (SQ YD)			REMOVE CONCRETE DRIVEWAY PAVEMENT (SQ YD)		REMOVE BITUMINOUS PAVEMENT (SQ YD)			REMOVE BRICK SIDEWALK (SQ FT)		TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (TON)			4" CONCRETE WALK (SQ FT)		6" CONCRETE WALK (SQ FT)		CONCRETE CURB RAMP WALK (SQ FT)		CURB RAMP / DRIVEWAY DESIGN
			CSAH 21	CSAH 22	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CITY	CSAH 21	CSAH 22	
L1	CSAH 21 & SOUTH HARRISON ST.	SOUTHEAST	15	0	0	7	0	0	0	0	4	0	0	0	0	1	0	0	24	0	0	0	64	0	DIRECTIONAL
L2	CSAH 21 & SOUTH MORTON ST.	SOUTHWEST	13	0	0	9	0	0	0	0	3	0	0	0	0	1	0	0	60	0	0	0	52	0	DIRECTIONAL
		SOUTHEAST	10	0	0	8	0	0	0	0	3	0	0	0	0	1	0	0	33	0	0	0	54	0	DIRECTIONAL
L3	CSAH 21 & SOUTH KENT ST.	SOUTHWEST	11	0	0	9	0	0	0	0	3	0	0	0	0	1	0	0	44	0	0	0	61	0	DIRECTIONAL
		SOUTHEAST	24	0	0	6	0	0	0	0	6	0	0	0	0	2	0	0	18	0	0	0	61	0	DIRECTIONAL
L4	CSAH 21 & SOUTH KENT ST. / SOUTH COTTAGE ST.	ACROSS RAILROAD TRACKS	0	0	0	10	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	20	140	0	RR CROSSING
L5	CSAH 21 & SOUTH COTTAGE ST.	SOUTHWEST	21	0	0	7	0	0	0	0	5	0	0	0	0	1	0	0	23	0	0	0	62	0	DIRECTIONAL
		SOUTHEAST	26	0	0	9	0	0	0	0	6	0	0	0	0	2	0	0	30	0	0	0	76	0	DIRECTIONAL
L6	CSAH 21 & SOUTH CORTEAU ST.	SOUTHWEST	11	0	70	5	0	46	0	0	2	0	0	0	0	1	0	0	0	428	0	0	56	0	DIRECTIONAL
L7	CSAH 21 & SOUTH SHERMAN ST.	SOUTHWEST	17	0	0	14	0	0	0	0	4	0	0	0	0	1	0	0	50	0	0	0	110	0	DIRECTIONAL
		SOUTHEAST	36	0	17	17	0	10	0	0	9	0	4	0	0	3	0	1	0	0	99	87	57	0	DEPRESSED CORNER
L8	CSAH 21 & SOUTH GRANT ST.	SOUTHWEST	27	0	0	9	0	0	0	0	7	0	0	0	0	2	0	0	12	0	0	0	91	0	DIRECTIONAL / TIERED PERPENDICULAR
		SOUTHEAST	30	0	24	15	0	4	3	20	9	0	5	0	0	3	0	2	0	0	0	0	79	0	DIAGONAL
	CSAH 21 & NORTH GRANT ST.	NORTHWEST	13	0	0	12	0	0	0	0	8	0	0	0	0	2	0	0	27	0	0	0	102	0	DIRECTIONAL
		NORTHEAST	26	0	71	15	0	9	7	66	10	0	16	0	0	3	0	5	0	0	0	80	78	0	FAN / TIERED PERPENDICULAR
L9	CSAH 21 & SOUTH GRANT ST. / SOUTH CENTER ST.	BETWEEN SOUTH GRANT ST. / SOUTH CENTER ST.	0	0	29	0	0	12	0	19	0	0	11	0	0	0	0	3	0	0	0	0	0	0	TIERED PERPENDICULAR

LAKE BENTON-QUANTITY TABULATIONS

CERTIFIED BY Joseph M Hilton LICENSED ENGINEER LIC. NO. 54947 DATE: 6-13-2023

S.P. NO. 041-030-013 SHEET NO. 18 OF 61

CITY OF LAKE BENTON

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	REMOVE CURB AND GUTTER (LIN FT)			REMOVE CONCRETE WALK (SQ YD)			REMOVE CONCRETE DRIVEWAY PAVEMENT (SQ YD)		REMOVE BITUMINOUS PAVEMENT (SQ YD)			REMOVE BRICK SIDEWALK (SQ FT)		TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (TON)			4" CONCRETE WALK (SQ FT)		6" CONCRETE WALK (SQ FT)		CONCRETE CURB RAMP WALK (SQ FT)		CURB RAMP / DRIVEWAY DESIGN
			CSAH 21	CSAH 22	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CITY	CSAH 21	CSAH 22	
L10	CSAH 21 & NORTH GRANT ST. / CENTER ST.	BETWEEN NORTH GRANT ST. / NORTH CENTER ST.	0	0	19	0	0	8	0	9	0	0	4	0	0	0	0	1	0	0	0	0	0	0	TIERED PERPENDICULAR
			0	0	33	0	0	10	0	26	0	0	12	0	0	0	0	4	0	0	0	0	0	0	TIERED PERPENDICULAR
L11	CSAH 21 & SOUTH CENTER ST.	SOUTHWEST	41	0	81	0	0	9	0	0	0	0	17	463	1243	0	0	5	0	0	0	1326	463	0	TIERED PERPENDICULAR
		SOUTHEAST	41	0	79	0	0	18	0	0	0	0	17	456	1226	0	0	5	0	0	0	1384	457	0	DIRECTIONAL
	CSAH 21 & NORTH CENTER ST.	NORTHWEST	43	0	80	0	0	0	0	0	0	0	18	495	1295	0	0	5	0	0	0	1296	495	0	DIRECTIONAL
		NORTHEAST	41	0	84	0	0	10	0	0	0	0	18	457	1296	0	0	5	0	0	0	1381	457	0	DIRECTIONAL
L12	CSAH 21 & SOUTH CENTER ST. / TH 75	BETWEEN SOUTH CENTER ST. / TH 75	0	0	25	0	0	6	0	19	0	0	6	0	0	0	0	2	0	0	0	0	0	0	TIERED PERPENDICULAR
			0	0	25	0	0	15	0	21	0	0	5	0	0	0	0	2	0	0	0	0	0	0	TIERED PERPENDICULAR
L13	CSAH 21 & NORTH CENTER ST. / TH 75	BETWEEN NORTH CENTER ST. / TH 75	0	0	21	0	0	7	0	15	0	0	5	0	0	0	0	1	0	24	0	0	0	0	TIERED PERPENDICULAR
			0	0	22	0	0	7	0	21	0	0	9	0	0	0	0	3	0	0	0	0	0	0	TIERED PERPENDICULAR
L14	CSAH 21 & TH 75	NORTHWEST	0	0	108	0	0	15	0	107	0	0	24	0	0	0	0	7	0	0	0	0	0	0	TIERED PERPENDICULAR
L15	CSAH 21 & GARFIELD ST.	SOUTHWEST	18	0	0	8	0	0	0	0	4	0	0	0	0	1	0	0	40	0	0	0	43	0	PERPENDICULAR
		SOUTHEAST	24	0	0	16	0	0	0	0	5	0	0	0	0	2	0	0	103	0	0	0	146	0	PERPENDICULAR
		NORTHWEST	42	0	0	11	0	0	0	0	9	0	0	0	0	3	0	0	87	0	0	0	47	0	PERPENDICULAR
		NORTHEAST	26	0	0	23	0	0	0	0	6	0	0	0	0	2	0	0	167	0	0	0	40	0	PERPENDICULAR
L16	CSAH 22 & CSAH 21 / LINCOLN ST.	BETWEEN CSAH 21 / LINCOLN ST.	0	0	0	0	0	15	0	25	0	0	5	0	0	0	0	1	0	0	0	0	0	0	TIERED PERPENDICULAR
L17	CSAH 22 & CSAH 21 / MATTEWS ST.	BETWEEN CSAH 21 / MATTHEWS ST.	0	0	0	0	0	10	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	TIERED PERPENDICULAR
L18	CSAH 22 & LINCOLN ST.	SOUTHWEST	0	32	0	0	21	8	0	43	0	8	9	0	0	0	2	3	0	0	0	0	0	189	FAN / TIERED PERPENDICULAR
		SOUTHEAST	0	20	0	0	20	0	0	0	0	4	0	0	0	0	1	0	0	0	0	0	0	180	PERPENDICULAR
TOTALS			556	52	788	210	41	219	10	413	109	12	185	1871	5060	32	3	55	718	452	99	5574	3291	369	

LAKE BENTON-QUANTITY TABULATIONS

CERTIFIED BY Joseph M Wilson LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 19 OF 61

CITY OF LAKE BENTON

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	CONCRETE CURB AND GUTTER DESIGN B618 (LIN FT)			CONCRETE CURB AND GUTTER DESIGN B624 (LIN FT)			CONCRETE CURB AND GUTTER DESIGN D418 (LIN FT)		6" DRIVEWAY PAVEMENT (SQ YD)		8" DRIVEWAY PAVEMENT (SQ YD)	TRUNCATED DOMES (SQ FT)		STORM DRAIN INLET PROTECTION (EACH)	SITE RESTORATION (EACH)		PAVEMENT MARKING SPECIAL (LIN FT)	CURB RAMP / DRIVEWAY DESIGN
			CSAH 21	CSAH 22	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CITY	CITY	CSAH 21	CSAH 22	CSAH 21	CSAH 21	CSAH 22	CSAH 21	
L1	CSAH 21 & SOUTH HARRISON ST.	SOUTHEAST	15	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	11	DIRECTIONAL
L2	CSAH 21 & SOUTH MORTON ST.	SOUTHWEST	13	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	9	DIRECTIONAL
		SOUTHEAST	10	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	6	DIRECTIONAL
L3	CSAH 21 & SOUTH KENT ST.	SOUTHWEST	11	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	7	DIRECTIONAL
		SOUTHEAST	24	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	20	DIRECTIONAL
L4	CSAH 21 & SOUTH KENT ST. / SOUTH COTTAGE ST.	ACROSS RAILROAD TRACKS	0	0	0	0	0	0	0	0	0	0	0	16	0	0	1	0	0	RR CROSSING
L5	CSAH 21 & SOUTH COTTAGE ST.	SOUTHWEST	21	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	17	DIRECTIONAL
		SOUTHEAST	26	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	21	DIRECTIONAL
L6	CSAH 21 & SOUTH CORTEAU ST.	SOUTHWEST	11	0	0	0	0	0	0	0	0	0	0	9	0	3	1	0	6	DIRECTIONAL
L7	CSAH 21 & SOUTH SHERMAN ST.	SOUTHWEST	17	0	0	0	0	0	0	0	0	0	0	9	0	1	1	0	12	DIRECTIONAL
		SOUTHEAST	36	0	17	0	0	0	0	0	0	0	0	13	0	2	1	0	41	DEPRESSED CORNER
L8	CSAH 21 & SOUTH GRANT ST.	SOUTHWEST	27	0	0	0	0	0	0	0	0	0	0	8	0	0	1	0	21	DIRECTIONAL / TIERED PERPENDICULAR
		SOUTHEAST	30	0	24	0	0	0	0	0	4	31	0	12	0	1	1	0	23	DIAGONAL
	CSAH 21 & NORTH GRANT ST.	NORTHWEST	13	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	5	DIRECTIONAL
		NORTHEAST	26	0	71	0	0	0	0	0	7	0	82	26	0	1	1	0	12	FAN / TIERED PERPENDICULAR
L9	CSAH 21 & SOUTH GRANT ST. / SOUTH CENTER ST.	BETWEEN SOUTH GRANT ST. / SOUTH CENTER ST.	0	0	0	0	0	29	0	0	0	31	0	0	0	1	1	0	0	TIERED PERPENDICULAR

LAKE BENTON-QUANTITY TABULATIONS

CERTIFIED BY Joseph M Hilton LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 20 OF 61

CITY OF LAKE BENTON

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	CONCRETE CURB AND GUTTER DESIGN B618 (LIN FT)			CONCRETE CURB AND GUTTER DESIGN B624 (LIN FT)			CONCRETE CURB AND GUTTER DESIGN D418 (LIN FT)		6" DRIVEWAY PAVEMENT (SQ YD)		8" DRIVEWAY PAVEMENT (SQ YD)	TRUNCATED DOMES (SQ FT)		STORM DRAIN INLET PROTECTION (EACH)	SITE RESTORATION (EACH)		PAVEMENT MARKINGS SPECIAL (LIN FT)	CURB RAMP / DRIVEWAY DESIGN
			CSAH 21	CSAH 22	CITY	CSAH 21	CSAH 22	CITY	CSAH 21	CITY	CSAH 21	CITY	CITY	CSAH 21	CSAH 22	CSAH 21	CSAH 21	CSAH 22	CSAH 21	
L10	CSAH 21 & NORTH GRANT ST. / CENTER ST.	BETWEEN NORTH GRANT ST. / NORTH CENTER ST.	0	0	0	0	0	19	0	0	0	16	0	0	0	0	1	0	0	TIERED PERPENDICULAR
			0	0	0	0	0	33	0	0	0	35	0	0	0	1	1	0	0	TIERED PERPENDICULAR
L11	CSAH 21 & SOUTH CENTER ST.	SOUTHWEST	0	0	0	0	0	0	41	81	0	0	0	22	0	1	1	0	0	TIERED PERPENDICULAR
		SOUTHEAST	0	0	0	0	0	0	41	79	0	0	0	22	0	1	1	0	0	DIRECTIONAL
	CSAH 21 & NORTH CENTER ST.	NORTHWEST	0	0	0	0	0	0	43	80	0	0	0	22	0	0	1	0	0	DIRECTIONAL
		NORTHEAST	0	0	0	0	0	0	41	84	0	0	0	22	0	2	1	0	0	DIRECTIONAL
L12	CSAH 21 & SOUTH CENTER ST. / TH 75	BETWEEN SOUTH CENTER ST. / TH 75	0	0	0	0	0	25	0	0	0	25	0	0	0	0	1	0	0	TIERED PERPENDICULAR
			0	0	0	0	0	25	0	0	0	36	0	0	0	1	1	0	0	TIERED PERPENDICULAR
L13	CSAH 21 & NORTH CENTER ST. / TH 75	BETWEEN NORTH CENTER ST. / TH 75	0	0	0	0	0	21	0	0	0	21	0	0	0	1	1	0	0	TIERED PERPENDICULAR
			0	0	0	0	0	22	0	0	0	28	0	0	0	1	1	0	0	TIERED PERPENDICULAR
L14	CSAH 21 & TH 75	NORTHWEST	0	0	0	0	0	108	0	0	0	122	0	0	0	1	1	0	34	TIERED PERPENDICULAR
L15	CSAH 21 & GARFIELD ST.	SOUTHWEST	0	0	0	18	0	0	0	0	0	0	0	9	0	0	1	0	13	PERPENDICULAR
		SOUTHEAST	24	0	0	0	0	0	0	0	0	0	0	9	0	0	1	0	19	PERPENDICULAR
		NORTHWEST	42	0	0	0	0	0	0	0	0	0	0	8	0	1	1	0	33	PERPENDICULAR
		NORTHEAST	26	0	0	0	0	0	0	0	0	0	0	8	0	0	1	0	22	PERPENDICULAR
L16	CSAH 22 & CSAH 21 / LINCOLN ST.	BETWEEN CSAH 21 / LINCOLN ST.	0	0	0	0	0	0	0	0	0	40	0	0	0	0	0	1	0	TIERED PERPENDICULAR
L17	CSAH 22 & CSAH 21 / MATTHEWS ST.	BETWEEN CSAH 21 / MATTHEWS ST.	0	0	0	0	0	0	0	0	0	32	0	0	0	0	0	1	0	TIERED PERPENDICULAR
L18	CSAH 22 & LINCOLN ST.	SOUTHWEST	0	0	0	0	32	0	0	0	0	51	0	0	24	0	0	1	0	FAN / TIERED PERPENDICULAR
		SOUTHEAST	0	20	0	0	0	0	0	0	0	0	0	0	8	0	0	1	0	PERPENDICULAR
TOTALS			372	20	112	18	32	282	166	324	11	468	82	281	32	25	31	4	332	

LAKE BENTON-QUANTITY TABULATIONS

CERTIFIED BY Joseph M. Hilton LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 21 OF 61

CITY OF TYLER

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	REMOVE CURB AND GUTTER (LIN FT)		REMOVE CONCRETE WALK (SQ YD)		REMOVE CONCRETE DRIVEWAY PAVEMENT (SQ YD)		REMOVE BITUMINOUS PAVEMENT (SQ YD)		REMOVE BRICK SIDEWALK (SQ FT)	TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (TON)		CURB RAMP / DRIVEWAY DESIGN
			CSAH 7	CITY	CSAH 7	CITY	CSAH 7	CITY	CSAH 7	CITY	CSAH 7	CSAH 7	CITY	
T1	CSAH 7 & DANEBODE COURT	NORTHEAST	35	0	25	0	4	0	9	0	0	2	0	DIRECTIONAL
T2	CSAH 7 & HANSEN ST.	NORTHEAST	0	15	0	13	0	14	0	3	0	0	1	PERPENDICULAR
		NORTHEAST OF HANSEN ST.	0	34	0	21	0	9	0	7	0	0	2	PERPENDICULAR
T3	CSAH 7 & STATE HIGHWAY 14	SOUTHEAST OF STATE HIGHWAY 14	0	21	0	18	0	18	0	5	0	0	1	PERPENDICUALR
		NORTHWEST	0	0	0	2	0	186	0	0	0	0	0	TIERED PERPENDICUALR
		NORTHEAST	0	0	0	0	0	48	0	0	0	0	0	TIERED PERPENDICUALR
T4	CSAH 7 & HIGHLAND COURT	SOUTHEAST	14	0	16	0	0	0	4	0	0	1	0	DIRECTIONAL
		NORTHEAST	17	0	15	0	0	0	4	0	0	1	0	DIRECTIONAL
T5	CSAH 7 & OAK ST.	SOUTHWEST	32	0	21	0	0	0	8	0	0	1	0	COMBINED DIRECTIONAL
		SOUTHEAST	23	0	30	0	0	0	6	0	0	1	0	FAN
		NORTHWEST	28	0	20	0	0	0	7	0	0	1	0	FAN
		NORTHEAST	32	0	12	0	0	0	8	0	0	1	0	COMBINED DIRECTIONAL
T6	CSAH 7 & LINCOLN ST.	SOUTHWEST	27	20	25	16	0	105	7	4	0	1	1	TIERED PERPENDICUALR / FAN
		SOUTHEAST	27	0	26	6	0	99	7	0	0	1	0	PERPENDICULAR/ FAN
		NORTHWEST	23	0	26	0	0	0	6	0	0	1	0	DIRECTIONAL
		NORTHEAST	41	0	25	0	0	0	26	0	0	4	0	FAN
T7	CSAH 7 & BRADLEY ST.	SOUTHWEST	21	0	19	0	0	0	5	0	0	1	0	DIRECTIONAL
		SOUTHEAST	17	0	25	0	0	0	4	0	0	1	0	DIRECTIONAL
		NORTHWEST	42	0	33	0	0	0	10	0	52	2	0	COMBINED DIRECTIONAL
		NORTHEAST	29	0	38	0	0	0	7	0	33	1	0	COMBINED DIRECTIONAL
T8	CSAH 7 & HUGHES ST.	SOUTHWEST	34	0	32	0	0	0	8	0	72	1	0	FAN
		SOUTHEAST	37	0	39	0	0	0	9	0	75	1	0	FAN
		NORTHWEST	30	0	18	0	0	0	7	0	25	1	0	FAN
		NORTHEAST	43	0	26	0	0	0	16	0	46	3	0	FAN
		NORTHEAST OF HUGHES ST.	34	0	46	0	0	0	8	0	166	1	0	TIERED PERPENDICULAR
		NORTHWEST OF HUGHES ST.	30	0	17	0	0	0	7	0	90	1	0	TIERED PERPENDICULAR
T9	CSAH 7 & MCARTHUR ST.	SOUTHWEST	25	0	16	0	0	0	12	0	37	2	0	FAN
		SOUTHEAST	42	0	19	0	0	0	10	0	98	2	0	FAN
		NORTHWEST	16	0	9	0	0	0	4	0	0	1	0	DIRECTIONAL
		NORTHEAST	13	0	14	0	0	0	3	0	0	1	0	DIRECTIONAL
T10	CSAH 7 & SCHOOL ST.	NORTHEAST	16	0	12	0	0	0	4	0	0	1	0	DIRECTIONAL
		NORTHWEST	27	0	9	19	0	0	6	0	0	2	0	DIRECTIONAL
	CSAH 7 & BETWEEN SCHOOL ST. & MARSH ST.	NORTHWEST OF SCHOOL ST.	0	0	0	32	0	31	0	0	0	0	0	PERPENDICULAR
	CSAH 7 & MARSH ST.	NORTHEAST	16	0	8	17	0	0	4	0	0	1	0	DIRECTIONAL
TOTALS			771	90	621	144	4	510	216	19	694	38	5	

TYLER-QUANTITY TABULATIONS

CERTIFIED BY _____ LIC. NO. 54947 DATE: 5-22-2023
LICENSED ENGINEER

S.P. NO. 041-030-013 SHEET NO. 22 OF 61

CITY OF TYLER

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	4" CONCRETE WALK (SQ FT)		6" CONCRETE WALK (SQ FT)		CONCRETE CURB RAMP WALK (SQ FT)	CONCRETE CURB AND GUTTER DESIGN B618 (LIN FT)		6" CONCRETE DRIVEWAY PAVEMENT (SQ YD)		8" CONCRETE DRIVEWAY PAVEMENT (SQ YD)	TRUNCATED DOMES (SQ FT)	STORM DRAIN INLET PROTECTION (EACH)	SITE RESTORATION (EACH)	PAVEMENT MARKING SPECIAL (LIN FT)	CURB RAMP / DRIVEWAY DESIGN
			CSAH 7	CITY	CSAH 7	CITY	CSAH 7	CSAH 7	CITY	CSAH 7	CITY	CITY	CSAH 7	CSAH 7	CSAH 7	CSAH 7	
T1	CSAH 7 & DANEBODE COURT	NORTHEAST	131	0	0	0	69	35	0	4	0	0	9	0	1	0	DIRECTIONAL
T2	CSAH 7 & HANSEN ST.	NORTHEAST	0	128	0	0	0	0	15	0	10	0	0	0	1	0	PERPENDICULAR
		NORTHEAST OF HANSEN ST.	0	146	0	0	0	0	34	0	20	0	0	0	1	0	PERPENDICULAR
T3	CSAH 7 & STATE HIGHWAY 14	SOUTHEAST OF STATE HIGHWAY 14	0	155	0	0	0	0	21	0	23	0	0	1	1	0	PERPENDICUALR
		NORTHWEST	0	0	0	0	0	0	0	0	0	193	0	0	1	0	TIERED PERPENDICUALR
		NORTHEAST	0	0	0	0	0	0	0	0	48	0	0	0	1	0	TIERED PERPENDICUALR
T4	CSAH 7 & HIGHLAND COURT	SOUTHEAST	65	0	0	0	88	14	0	0	0	0	9	1	1	0	DIRECTIONAL
		NORTHEAST	50	0	0	0	96	17	0	0	0	0	9	1	1	0	DIRECTIONAL
T5	CSAH 7 & OAK ST.	SOUTHWEST	94	0	0	0	135	32	0	0	0	0	18	1	1	0	COMBINED DIRECTIONAL
		SOUTHEAST	148	0	0	0	117	23	0	0	0	0	31	1	1	0	FAN
		NORTHWEST	91	0	0	0	93	28	0	0	0	0	31	1	1	0	FAN
		NORTHEAST	51	0	0	0	121	32	0	0	0	0	17	1	1	0	COMBINED DIRECTIONAL
T6	CSAH 7 & LINCOLN ST.	SOUTHWEST	0	0	103	0	118	27	20	0	0	131	25	1	1	0	TIERED PERPENDICUALR / FAN
		SOUTHEAST	0	0	124	0	109	27	0	0	105	0	20	0	1	0	PERPENDICULAR/ FAN
		NORTHWEST	0	0	102	0	159	23	0	0	0	0	15	1	1	0	DIRECTIONAL
		NORTHEAST	0	0	161	0	84	41	0	0	0	0	26	1	1	0	FAN
T7	CSAH 7 & BRADLEY ST.	SOUTHWEST	0	0	75	0	111	21	0	0	0	0	15	1	1	13	DIRECTIONAL
		SOUTHEAST	0	0	84	0	176	17	0	0	0	0	15	1	1	9	DIRECTIONAL
		NORTHWEST	0	0	0	0	357	42	0	0	0	0	23	0	1	23	COMBINED DIRECTIONAL
		NORTHEAST	0	0	0	0	379	29	0	0	0	0	21	0	1	12	COMBINED DIRECTIONAL
T8	CSAH 7 & HUGHES ST.	SOUTHWEST	0	0	0	0	357	34	0	0	0	0	27	1	1	19	FAN
		SOUTHEAST	0	0	0	0	420	37	0	0	0	0	29	1	1	21	FAN
		NORTHWEST	0	0	0	0	188	30	0	0	0	0	26	0	1	15	FAN
		NORTHEAST	0	0	0	0	285	43	0	0	0	0	24	1	1	29	FAN
		NORTHEAST OF HUGHES ST.	0	0	88	0	500	34	0	0	0	0	8	0	1	0	TIERED PERPENDICULAR
		NORTHWEST OF HUGHES ST.	0	0	0	0	243	30	0	0	0	0	8	0	1	0	TIERED PERPENDICULAR
T9	CSAH 7 & MCARTHUR ST.	SOUTHWEST	0	0	0	0	194	25	0	0	0	0	27	1	1	10	FAN
		SOUTHEAST	0	0	0	0	271	42	0	0	0	0	28	1	1	24	FAN
		NORTHWEST	26	0	0	0	62	16	0	0	0	0	9	0	1	0	DIRECTIONAL
		NORTHEAST	49	0	0	0	99	13	0	0	0	0	9	1	1	0	DIRECTIONAL
T10	CSAH 7 & SCHOOL ST.	NORTHEAST	28	0	0	0	114	16	0	0	0	0	9	0	1	0	DIRECTIONAL
		NORTHWEST	25	173	0	0	81	27	0	0	0	0	9	1	1	0	DIRECTIONAL
	CSAH 7 & BETWEEN SCHOOL ST. & MARSH ST.	NORTHWEST OF SCHOOL ST.	0	215	0	24	0	0	0	0	41	0	0	0	1	0	PERPENDICULAR
	CSAH 7 & MARSH ST.	NORTHEAST	29	52	0	121	66	16	0	0	0	0	9	1	1	0	DIRECTIONAL
TOTALS			787	869	737	145	5092	771	90	4	247	324	506	20	34	175	

TYLER-QUANTITY TABULATIONS

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 23 OF 61

CITY OF IVANHOE

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	REMOVE CURB AND GUTTER (LIN FT)			REMOVE CONCRETE WALK (SQ YD)			REMOVE CONCRETE DRIVEWAY PAVEMENT (SQ YD)	REMOVE BITUMINOUS PAVEMENT (SQ YD)			TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (TON)			4" CONCRETE WALK (SQ FT)	6" CONCRETE WALK (SQ FT)		CONCRETE CURB RAMP WALK (SQ FT)		CONCRETE CURB AND GUTTER DESIGN B618 (LIN FT)			6" CONCRETE DRIVEWAY PAVEMENT (SQ YD)	8" DRIVEWAY PAVEMENT (SQ YD)	TRUNCATED DOMES (SQ FT)		STORM DRAIN INLET PROTECTION (EACH)		SITE RESTORATION (EACH)		PAVEMENT MARKING SPECIAL (LIN FT)	CURB RAMP / DRIVEWAY DESIGN
			CSAH 23	CSAH 5	CITY	CSAH 23	CSAH 5	CITY	CITY	CSAH 23	CSAH 5	CITY	CSAH 23	CSAH 5	CITY	CSAH 23	CSAH 23	CITY	CSAH 23	CSAH 5	CSAH 23	CSAH 5	CITY	CITY	CITY	CSAH 23	CSAH 5	CSAH 23	CSAH 5	CSAH 23	CSAH 5	CSAH 23	
I1	CSAH 5 & EAST GEORGE ST.	SOUTHWEST	0	10	0	0	7	0	0	0	2	0	0	1	0	0	0	0	71	71	0	10	0	0	0	0	9	0	1	0	1	0	DIRECTIONAL
I2	CSAH 23 & WEST ROWENA ST.	SOUTHWEST	14	0	0	14	0	0	0	4	0	0	1	0	0	49	0	0	60	0	14	0	0	0	0	8	0	2	0	1	0	0	DIRECTIONAL
		NORTHWEST	11	0	0	11	0	0	0	2	0	0	1	0	0	44	0	0	68	0	11	0	0	0	0	9	0	2	0	1	0	0	DIRECTIONAL
I3	CSAH 23 & WEST ROTHERWOOD ST. / EAST ROTHERWOOD ST.	SOUTHWEST	17	0	0	23	0	0	0	5	0	0	1	0	0	0	140	0	72	0	17	0	0	0	0	8	0	2	0	1	0	0	DIRECTIONAL
		NORTHWEST	17	0	0	12	0	0	0	5	0	0	1	0	0	0	0	0	113	0	17	0	0	0	0	11	0	1	0	1	0	0	DIRECTIONAL
		NORTHEAST	28	0	92	15	0	26	61	7	0	20	1	0	4	0	0	170	133	0	28	0	92	68	72	20	0	2	0	1	0	0	FAN / SIDEWALK / TIRED PERPENDICULAR
I4	CSAH 23 & WEST ROTHERWOOD ST. / WEST SAXON ST.	BETWEEN WEST ROTHERWOOD ST. & WEST SAXON ST.	0	0	76	0	0	5	67	0	0	17	0	0	3	0	0	0	0	0	0	0	76	0	0	0	0	0	0	1	0	76	TIERED PERPENDICULAR
			0	0	18	0	0	6	13	0	0	7	0	0	1	0	0	0	0	0	0	0	18	18	0	0	0	0	0	1	0	0	TIERED PERPENDICULAR
I5	CSAH 23 & EAST ROTHERWOOD ST. / EAST SAXON STREET	BETWEEN EAST ROTHERWOOD ST. & EAST SAXON ST.	0	0	0	0	0	8	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	0	0	1	0	0	TIERED PERPENDICULAR
I6	CSAH 23 & EAST SAXON ST. / WEST SAXON ST.	SOUTHWEST	44	0	0	37	0	0	0	11	0	0	2	0	0	0	0	0	334	0	44	0	0	0	0	23	0	2	0	1	0	0	DEPRESSED CORNER
		SOUTHEAST	48	0	0	40	0	0	0	12	0	0	2	0	0	0	0	0	355	0	48	0	0	0	0	20	0	2	0	1	0	15	DIAGONAL
		NORTHWEST	40	0	0	48	0	0	0	10	0	0	2	0	0	0	0	0	431	0	40	0	0	0	0	21	0	1	0	1	0	15	DEPRESSED CORNER
		NORTHEAST	49	0	0	44	0	0	0	12	0	0	2	0	0	0	0	0	400	0	49	0	0	0	0	24	0	1	0	1	0	10	DEPRESSED CORNER
I7	CSAH 23 & EAST SAXON ST. / EAST RAILROAD ST.	BETWEEN EAST SAXON ST. / EAST RAILROAD ST.	0	0	30	0	0	20	18	0	0	7	0	0	1	0	0	73	0	0	0	0	30	30	0	0	0	0	0	1	0	0	TIERED PERPENDICULAR
I8	CSAH 23 & WEST RAILROAD ST. / EAST RAILROAD ST.	SOUTHWEST	0	0	40	0	0	18	34	0	0	9	0	0	2	0	0	25	0	0	0	0	40	49	0	0	0	1	0	1	0	0	TIERED PERPENDICULAR
		SOUTHEAST	0	0	40	0	0	24	32	0	0	19	0	0	4	0	0	143	0	0	0	0	40	40	0	0	0	1	0	1	0	0	TIERED PERPENDICULAR
TOTALS			268	10	296	244	7	107	235	68	2	79	13	1	15	93	140	411	2037	71	268	10	296	224	72	144	9	17	1	15	1	116	

IVANHOE-QUANTITY TABULATIONS

CERTIFIED BY Joseph M Walton LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 24 OF 61

CITY OF HENDRICKS

GROUP ID NUMBER	NEAREST INTERSECTION	QUANDRANT / LOCATION	REMOVE CURB AND GUTTER (LIN FT)		REMOVE CONCRETE WALK (SQ YD)		REMOVE CONCRETE DRIVEWAY PAVEMENT (SQ YD)	REMOVE BITUMINOUS PAVEMENT (SQ YD)		TYPE SP 9.5 WEARING COURSE MIXTURE (2,B) (TON)		4" CONCRETE WALK (SQ FT)		6" CONCRETE WALK (SQ FT)		CONCRETE CURB RAMP WALK (SQ FT)	CONCRETE CURB AND GUTTER DESIGN B618 (LIN FT)		6" CONCRETE DRIVEWAY PAVEMENT (SQ YD)	7" CONCRETE VALLEY GUTTER (SQ YD)	TRUNCATED DOMES (SQ FT)	STORM DRAIN INLET PROTECTION (EACH)	SITE RESTORATION (EACH)	CURB RAMP / DRIVEWAY DESIGN
			CSAH 17	CITY	CSAH 17	CITY	CITY	CSAH 17	CITY	CSAH 17	CITY	CSAH 17	CITY	CSAH 17	CITY	CSAH 17	CSAH 17	CITY	CITY	CSAH 17	CSAH 17	CSAH 17	CSAH 17	
H1	CSAH 17 & SOUTH BROOK ST.	SOUTHWEST	34	0	23	0	0	8	0	3	0	119	0	20	0	59	34	0	0	0	25	0	1	DEPRESSED CORNER
		SOUTHEAST	33	0	21	0	0	8	0	3	0	83	0	0	0	169	33	0	0	0	18	0	1	COMBINED DIRECTIONAL
	CSAH 17 & NORTH BROOK ST.	NORTHWEST	41	0	40	0	0	10	0	3	0	255	0	0	0	174	41	0	0	0	18	0	1	COMBINED DIRECTIONAL
		NORTHEAST	32	0	17	0	0	8	0	3	0	48	0	0	0	174	32	0	0	0	18	1	1	COMBINED DIRECTIONAL
H2	CSAH 17 & SOUTH BROOK ST. / SOUTH LAKE ST.	BETWEEN SOUTH BROOK ST. & SOUTH LAKE ST.	0	28	0	9	24	0	6	0	2	0	0	0	0	0	0	28	32	0	0	1	1	PERPENDICULAR
H3	CSAH 17 & SOUTH LAKE ST.	SOUTHWEST	33	0	33	0	0	9	0	3	0	179	0	0	0	170	33	0	0	0	20	1	1	COMBINED DIRECTIONAL
		SOUTHEAST	16	0	13	46	0	4	0	1	0	0	362	0	60	158	16	0	0	0	11	1	1	ONE-WAY DIRECTIONAL
	CSAH 17 & NORTH LAKE ST.	NORTHWEST	37	0	20	0	0	9	0	3	0	78	0	0	0	171	37	0	0	0	19	0	1	COMBINED DIRECTIONAL
		NORTHEAST	20	0	17	0	0	5	0	2	0	59	0	0	0	147	20	0	0	0	9	1	1	ONE-WAY DIRECTIONAL
H4	CSAH 17 & SOUTH LAKE ST. / SOUTH PRAIRIE ST.	BETWEEN SOUTH LAKE ST. & SOUTH PRAIRIE ST.	0	29	0	58	29	0	6	0	2	0	280	0	118	0	0	29	44	0	0	0	1	SIDEWALK / PERPENDICUALR
H5	CSAH 17 & NORTH LAKE ST. / NORTH PRAIRIE ST.	BETWEEN NORTH LAKE ST. & NORTH PRAIRIE ST.	0	0	0	7	11	0	0	0	0	0	0	0	0	0	0	0	19	0	0	0	1	PERPENDICULAR
H6	CSAH 17 & SOUTH PRAIRIE ST.	SOUTHWEST	27	0	25	0	0	7	0	2	0	98	0	0	0	179	27	0	0	0	21	1	1	COMBINED DIRECTIONAL
		SOUTHEAST	15	0	9	133	0	3	0	1	0	0	1095	0	72	105	15	0	0	0	11	1	1	ONE-WAY DIRECTIONAL / SIDEWALK
	CSAH 17 & NORTH PRAIRIE ST.	NORTHWEST	34	0	30	0	0	8	0	3	0	143	0	0	0	192	34	0	0	0	22	0	1	COMBINED DIRECTIONAL
		NORTHEAST	13	0	38	0	0	3	0	1	0	235	0	0	20	112	13	0	0	0	10	1	1	ONE-WAY DIRECTIONAL
H7	CSAH 17 & SOUTH PRAIRIE ST. / SOUTH MAIN ST.	BETWEEN CSAH 17 & SOUTH PRAIRIE ST. / SOUTH MAIN ST.	0	51	0	13	38	0	11	0	4	0	0	0	0	0	0	51	56	0	0	0	1	TIERED PERPENDICUALR
H8	CSAH 17 & NORTH PRAIRIE ST. / NORTH MAIN ST.	BETWEEN CSAH 17 & NORTH PRAIRIE ST. / NORTH MAIN ST.	0	32	0	9	5	0	7	0	2	0	0	0	0	0	0	32	37	0	0	0	1	TIERED PERPENDICUALR
H9	CSAH 17 & NORTH MAIN ST.	NORTHEAST	0	0	0	37	0	0	0	0	0	0	330	0	0	0	0	0	0	0	0	0	1	SIDEWALK
H10	CSAH 17 & SOUTH MAIN ST. / STATE HWY. 271	BETWEEN CSAH 17 & SOUTH MAIN ST. / STATE HWY. 271	0	32	0	3	4	0	9	0	3	0	0	0	0	0	0	32	24	3	0	2	1	TIERED PERPENDICUALR
		BETWEEN CSAH 17 & SOUTH MAIN ST. / STATE HWY. 271	0	49	0	29	23	0	11	0	4	0	0	0	0	0	0	49	67	0	0	0	1	SIDEWALK
H11	CSAH 17 & NORTH MAIN ST. / STATE HWY. 271	BETWEEN CSAH 17 & NORTH MAIN ST. / STATE HWY. 271	0	31	0	13	29	0	7	0	2	0	86	0	0	0	0	31	33	0	0	2	1	TIERED PERPENDICUALR
		BETWEEN CSAH 17 & NORTH MAIN ST. / STATE HWY. 271	0	0	0	14	0	0	0	0	0	0	127	0	0	0	0	0	0	0	0	0	1	TIERED PERPENDICUALR
TOTALS			335	252	286	371	163	82	57	28	19	1297	2280	20	270	1810	335	252	312	3	202	12	22	

HENDRICKS-QUANTITY TABULATIONS

CERTIFIED BY Joseph M Wilson LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 25 OF 61

CITY OF LAKE BENTON					
CASTINGS					
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	SALVAGE CASTING	INSTALL CASTING	ADJUST FRAME RING AND CASTING
			CSAH 21	CSAH 21	CSAH 21
STA. 10+50.24 @ 24.82' RT.	SOUTHEAST	EACH	1	1	0
STA. 25+78.22 @ 46.17' RT.	SOUTHEAST	EACH	1	1	0
STA. 25+88.98 @ 28.34' RT.	SOUTHEAST	EACH	1	1	0
STA. 30+51.08 @ 37.74 LT.	NORTHEAST	EACH	1	1	0
STA. 30+55.25 @ 38.97 RT.	SOUTHEAST	EACH	1	1	0
STA. 30+71.01 @ 38.67' LT.	NORTHEAST	EACH	1	1	0
STA. 32+36.00 @ 39.05' RT.	BETWEEN SOUTH GRANT ST. / SOUTH CENTER ST.	EACH	1	1	0
STA. 32+32.93 @ 39.88' LT.	BETWEEN NORTH GRANT ST. / NORTH CENTER ST.	EACH	1	1	0
STA. 34+37.89 @ 43.86' RT.	SOUTHWEST	EACH	0	0	1
STA. 35+34.31 @ 43.65' RT	SOUTHEAST	EACH	0	0	1
STA. 34+34.08 @ 43.59' LT.	NORTHWEST	EACH	0	0	1
STA. 35+34.80 @ 46.69' LT.	NORTHEAST	EACH	0	0	1
	TOTAL	EACH	8	8	4

CITY OF TYLER					
CASTINGS					
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	SALVAGE CASTING	INSTALL CASTING	ADJUST FRAME RING AND CASTING
			CSAH 7	CSAH 7	CSAH 7
STA. 12+55.72 @ 21.77' LT.	SOUTHWEST	EACH	1	1	0
STA. 13+27.09 @ 21.84' LT.	NORTHWEST	EACH	1	1	0
STA. 13+18.69 @ 21.63' RT.	NORTHEAST	EACH	1	1	0
STA. 32+67.60 @ 53.27' RT.	NORTHEAST	EACH	1	1	0
STA. 36+93.06 @ 51.21' RT.	SOUTHEAST	EACH	1	1	0
STA. 44+05.63 @ 39.12' RT.	NORTHEAST	EACH	0	0	1
STA. 44+49.88 @ 24.35 RT	NORTHWEST	EACH	1	1	0
	TOTAL	EACH	6	6	1

CITY OF IVANHOE				
CASTINGS				
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNIT	SALVAGE CASTING	INSTALL CASTING
			CSAH 23	CSAH 23
STA. 14+39.44 @ 29.46' LT.	SOUTHWEST	EACH	1	1
STA. 15+04.06 @ 31.92' RT.	NORTHEAST	EACH	1	1
STA. 17+98.04 @ 30.92' LT. / STA. 18+09.63 @ 43.06' LT.	SOUTHWEST	EACH	2	2
STA. 17+98.16 @ 31.75' RT. / STA. 18+09.50 @ 43.47' RT.	SOUTHEAST	EACH	2	2
STA. 18+78.59 @ 30.75' LT.	NORTHWEST	EACH	1	1
STA. 18+79.73 @ 31.37' RT.	NORTHEAST	EACH	1	1
	TOTAL	EACH	8	8

CITY OF HENDRICKS				
CASTINGS				
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	SALVAGE CASTING	INSTALL CASTING
			CSAH 17	CSAH 17
STA. 28+44.92 @ 26.56' RT.	SOUTHWEST	EACH	1	1
STA. 37+75.36 @ 22.39' RT.	BETWEEN SOUTH MAIN ST. & STATE HWY. 271	EACH	1	1
STA. 37+87.32 @ 20.41' LT.	BETWEEN NORTH MAIN ST. & STATE HWY. 271	EACH	1	1
	TOTAL	EACH	3	3

QUANTITY TABLES

CERTIFIED BY Joseph M Hilton LICENSED ENGINEER LIC. NO. 54947 DATE: 6-13-2023

CITY OF LAKE BENTON				
ADJUST VALVE BOX				
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	CSAH 21	CSAH 22
STA. 32+42.07 @ 41.53 RT.	BETWEEN SOUTH GRANT ST. / SOUTH CENTER ST.	EACH	1	0
STA. 34+42.45 @ 94.26 RT.	SOUTHWEST	EACH	1	0
STA. 35+66.22 @ 44.56' LT.	NORTHEAST	EACH	1	0
STA. 36+10.12 @ 44.86' LT.	BETWEEN NORTH CENTER ST. / TH 75	EACH	1	0
STA. 38+36.99 @ 44.31' LT.	NORTHWEST	EACH	1	0
STA. 7+06.93 @ 42.50 LT.	BETWEEN CSAH 21 / LINCOLN STREET	EACH	0	1
STA. 8+38.30 @ 42.11 LT.	SOUTHWEST	EACH	0	1
	TOTAL	EACH	5	2

CITY OF TYLER			
ADJUST VALVE BOX			
STATION AND OFFSET	INTERSECTION QUANDRANT / LOCATION	UNITS	CSAH 7
STA. 1+53.24 @22.88' LT.	NORTHWEST	EACH	1
STA. 12+68.64 @ 33.64' RT.	SOUTHEAST	EACH	1
STA. 32+03.66 @ 47.22' LT.	SOUTHWEST	EACH	1
STA. 32+04.68 @ 49.74' RT.	SOUTHEAST	EACH	1
STA. 34+67.96' LT. @ 40.34' LT.	NORTHWEST OF HUGHES ST.	EACH	1
	TOTAL	EACH	5

CITY OF IVANHOE			
ADJUST VALVE BOX			
STATION AND OFFSET	INTERSECTION QUANDRANT / LOCATION	UNITS	CSAH 7
STA. 15+06.93 @ 32.83' RT / STA. 15+82.60 @ 33.72' RT.	NORTHEAST	EACH	2
STA. 17+90.11 @ 32.25' LT.	SOUTHWEST	EACH	1
STA. 18+65.33 @ 41.96' LT. / STA. 18+92.75 @ 32.31' LT.	NORTHWEST	EACH	2
STA. 19+53.26 @ 30.97' RT.	BETWEEN EAST SAXON ST. / EAST RAILROAD ST.	EACH	1
STA. 20+77.24 @ 32.03' RT. / STA. 20+79.02 @ 31.92' RT.	SOUTHEAST	EACH	2
	TOTAL	EACH	8

CITY OF HENDRICKS			
ADJUST VALVE BOX			
STATION AND OFFSET	INTERSECTION QUANDRANT / LOCATION	UNITS	CSAH 17
STA. 36+97.96 @ 29.22' LT.	NORTHEAST	EACH	1
	TOTAL	EACH	1

QUANTITY TABLES

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

CITY OF LAKE BENTON			
STORM INLET DRAIN PROTECTION			
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	STORM DRAIN PROTECT
			CSAH 21
STA. 2+60.62 @ 44.29' RT.	SOUTHEAST	EACH	1
STA. 6+34.35 @ 24.65' RT.	SOUTHWEST	EACH	1
STA. 6+76.23 @ 24.12' RT.	SOUTHEAST	EACH	1
STA. 10+08.97 @ 20.04' RT.	SOUTHWEST	EACH	1
STA. 10+50.24 @ 24.82' RT.	SOUTHEAST	EACH	1
STA. 16+38.50 @ 29.09' RT.	SOUTHWEST	EACH	1
STA. 20+53.36 @ 23.82 RT. / STA. 20+90.75 @ 56.80' RT. / 20+96.06 @ 57.13' RT.	SOUTHWEST	EACH	3
STA. 25+42.68 @ 36.80' RT.	SOUTHWEST	EACH	1
STA. 25+78.22 @ 46.17' RT. / STA. 25+88.98 @ 28.34' RT.	SOUTHEAST	EACH	2
STA. 30+55.25 @ 38.97' RT.	SOUTHEAST	EACH	1
STA. 30+71.01 @ 39.67' LT.	NORTHEAST	EACH	1
STA. 32+36.01 @ 39.10' RT.	BETWEEN SOUTH GRANT ST. / SOUTH CENTER ST.	EACH	1
STA. 32+32.93 @ 39.88' LT.	BETWEEN NORTH GRANT ST. / NORTH CENTER ST.	EACH	1
STA. 34+45.28 @ 85.87' RT.	SOUTHWEST	EACH	1
STA. 35+24.13 @ 84.83' RT.	SOUTHEAST	EACH	1
STA 35+35.54 @ 70.06 LT. / STA. 35+76.90 @ 39.90 LT.	NORTHEAST	EACH	2
STA. 37+87.59 @ 39.26' RT.	BETWEEN SOUTH CENTER ST. / TH 75	EACH	1
STA 36+24.30 @ 52.64 LT.	BETWEEN NORTH CENTER ST. / TH 75	EACH	1
STA. 36+88.21 @ 39.55' LT.	BETWEEN NORTH CENTER ST. / TH 75	EACH	1
STA. 37+87.57 @ 39.59' LT.	NORTHWEST	EACH	1
STA. 43+89.97 @ 20.32' LT	NORTHWEST	EACH	1
	TOTAL	EACH	25

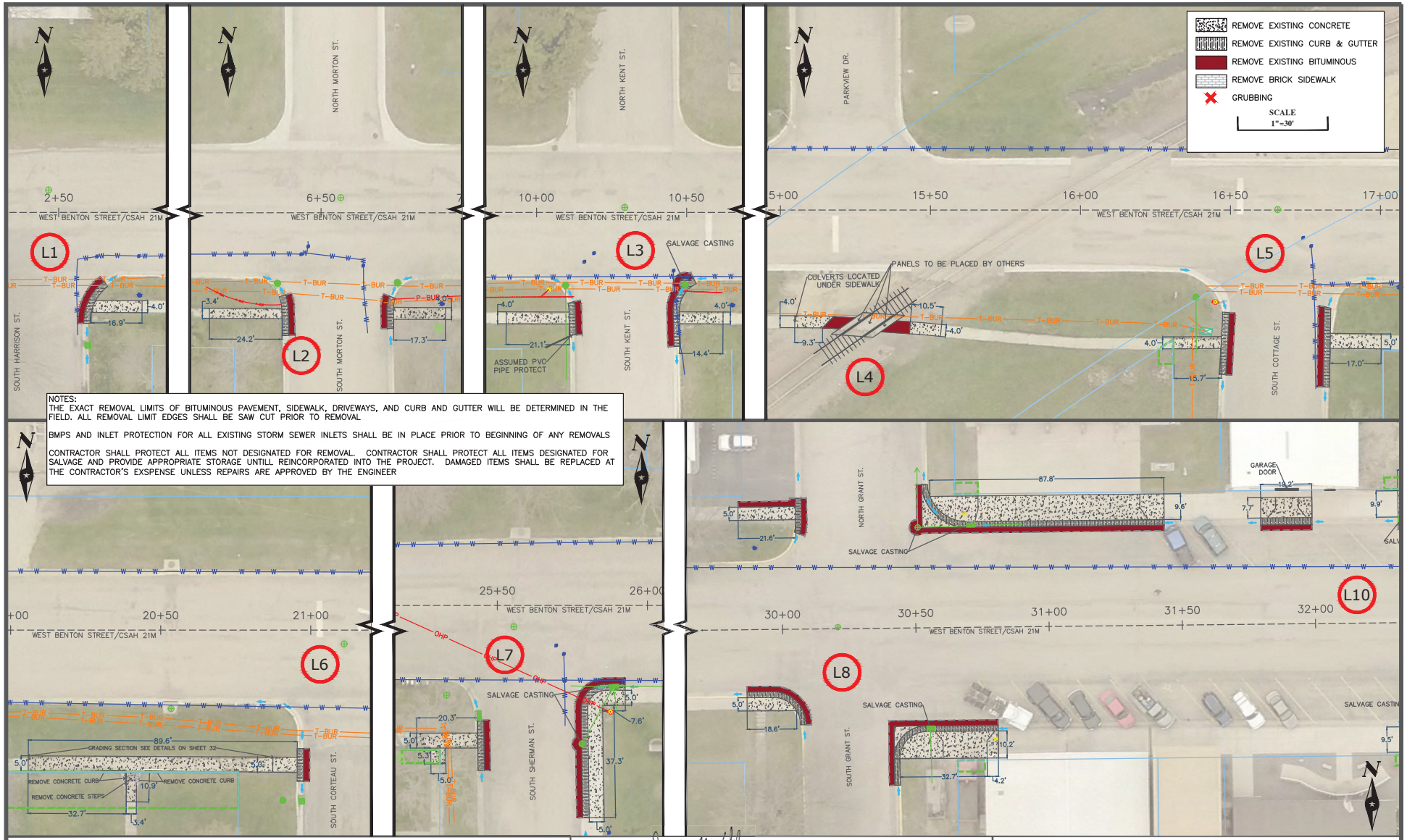
CITY OF TYLER			
STORM INLET DRAIN PROTECTION			
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	STORM DRAIN PROTECT
			CSAH 7
STA. -1+47.83 @ 22.77' RT.	SOUTHEAST OF STATE HIGHWAY 14	EACH	1
STA. 6+36.91 @ 21.77 RT.	SOUTHEAST	EACH	1
STA. 7+01.06 @ 21.72 RT.	NORTHEAST	EACH	1
STA. 12+55.72 @ 21.77' LT.	SOUTHWEST	EACH	1
STA. 12+48.21 @ 21.71' RT.	SOUTHEAST	EACH	1
STA. 13+27.09 @ 21.84' LT.	NORTHWEST	EACH	1
STA. 13+18.69 @ 21.63' RT.	NORTHEAST	EACH	1
STA. 22+72.42 @ 21.80' LT.	SOUTHWEST	EACH	1
STA. 23+50.94 @ 28.25' LT.	NORTHWEST	EACH	1
STA. 23+40.17 @ 30.04' RT.	NORTHEAST	EACH	1
STA. 27+29.09 @ 30.85' LT.	SOUTHWEST	EACH	1
STA. 27+27.31 @ 28.59' RT.	SOUTHEAST	EACH	1
STA. 31+90.70 @ 37.87' LT.	SOUTHWEST	EACH	1
STA. 31+91.46 @ 38.12' RT.	SOUTHEAST	EACH	1
STA. 32+67.60 @ 53.27' RT.	NORTHEAST	EACH	1
STA. 36+79.69 @ 37.80' LT.	SOUTHWEST	EACH	1
STA. 36+93.06 @ 51.21' RT.	SOUTHEAST	EACH	1
STA. 37+39.42 @ 55.79' RT.	NORTHEAST	EACH	1
STA. 44+49.88 @ 24.35' RT.	NORTHWEST	EACH	1
STA. 46+17.24 @ 27.25' RT.	NORTHEAST	EACH	1
	TOTAL	EACH	20

CITY OF IVANHOE				
STORM INLET DRAIN PROTECTION				
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	STORM DRAIN PROTECT	
			CSAH 7	CSAH 5
STA. 264+00.15 @ 21.26' LT.	SOUTHWEST	EACH	0	1
STA. 10+68.20 @ 19.58' LT. / 10+76.24 @ 37.28' LT	SOUTHWEST	EACH	2	0
STA. 11+11.37 @ 38.35' LT. / 11+20.77 @ 20.37' LT.	NORTHWEST	EACH	2	0
STA. 14+39.44 @ 29.46 ' LT. / 14+47.60 LT @ 36.80' LT.	SOUTHWEST	EACH	2	0
STA. 14+93.18 @ 30.60' LT.	NORTHWEST	EACH	1	0
STA. 14+88.63 @ 50.10' RT. / STA. 15+04.06 @ 31.92' RT.	NORTHEAST	EACH	2	0
STA. 17+98.04 @ 30.92' LT. / STA. 18+09.63 @ 43.06' LT.	SOUTHWEST	EACH	2	0
STA. 17+98.16 @ 31.75' RT. / STA. 18+09.50 @ 43.47' RT.	SOUTHEAST	EACH	2	0
STA. 18+78.59 @ 30.75' LT.	NORTHWEST	EACH	1	0
STA. 18+79.73 @ 31.37' RT.	NORTHEAST	EACH	1	0
STA. 21+68.59 @ 30.67' LT.	SOUTHWEST	EACH	1	0
STA. 21+45.55 @ 30.96' RT.	SOUTHEAST	EACH	1	0
	TOTAL	EACH	17	1

CITY OF HENDRICKS			
STORM INLET DRAIN PROTECTION			
STATION AND OFFSET	INTERSECTION QUADRANT / LOCATION	UNITS	STORM DRAIN PROTECT
			CSAH 17
STA. 26+38.10 @ 19.61' LT.	NORTHEAST	EACH	1
STA. 26+39.08 @ 23.90' RT.	BETWEEN SOUTH BROOK ST. & SOUTH LAKE ST.	EACH	1
STA. 28+44.92 @ 26.56' RT.	SOUTHWEST	EACH	1
STA. 28+90.28 @ 26.66' RT.	SOUTHEAST	EACH	1
STA. 29+05.80 @ 19.82' LT.	NORTHEAST	EACH	1
STA. 32+18.20 @ 38.03' RT.	SOUTHWEST	EACH	1
STA. 32+60.34 @ 25.89' RT.	SOUTHEAST	EACH	1
STA. 32+76.55 @ 20.18' LT.	NORTHEAST	EACH	1
STA. 37+75.31 @ 22.40' RT. / STA. 38+09.49 @ 22.34' RT.	BETWEEN CSAH 17 & SOUTH MAIN ST. / STATE HWY. 271	EACH	2
STA. 37+87.32 @ 21.41' LT. / STA. 38+19.77 @ 20.16' LT.	BETWEEN CSAH 17 & NORTH MAIN ST. / STATE HWY. 271	EACH	2
	TOTAL	EACH	12

QUANTITY TABLES

CERTIFIED BY Joseph M Chilton LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023



NOTES:
THE EXACT REMOVAL LIMITS OF BITUMINOUS PAVEMENT, SIDEWALK, DRIVEWAYS, AND CURB AND GUTTER WILL BE DETERMINED IN THE FIELD. ALL REMOVAL LIMIT EDGES SHALL BE SAW CUT PRIOR TO REMOVAL

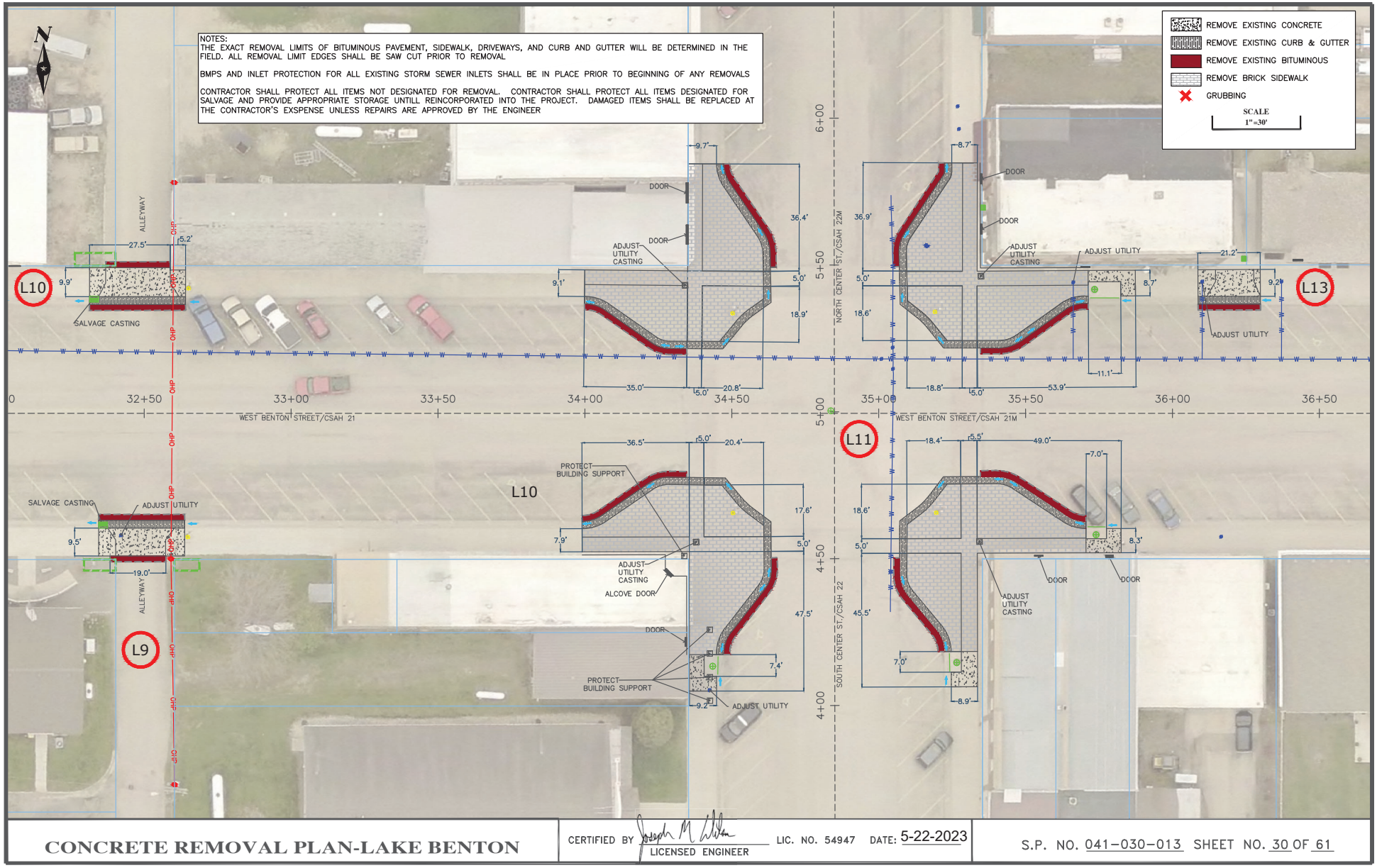
BMPS AND INLET PROTECTION FOR ALL EXISTING STORM SEWER INLETS SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY REMOVALS

CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL. CONTRACTOR SHALL PROTECT ALL ITEMS DESIGNATED FOR SALVAGE AND PROVIDE APPROPRIATE STORAGE UNTILL REINCORPORATED INTO THE PROJECT. DAMAGED ITEMS SHALL BE REPLACED AT THE CONTRACTOR'S EXSPENSE UNLESS REPAIRS ARE APPROVED BY THE ENGINEER

CONCRETE REMOVAL PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 29 OF 61



CONCRETE REMOVAL PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

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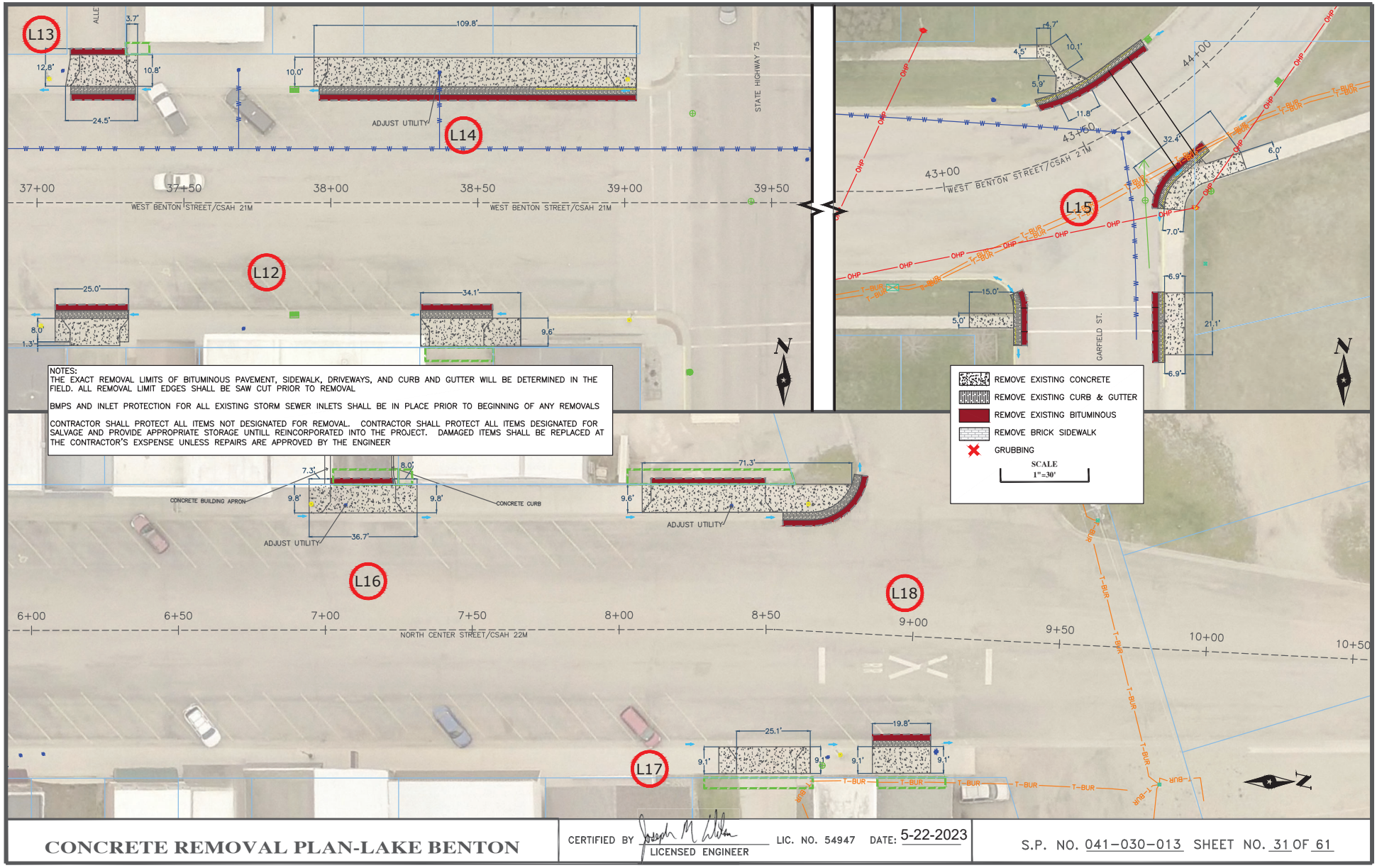
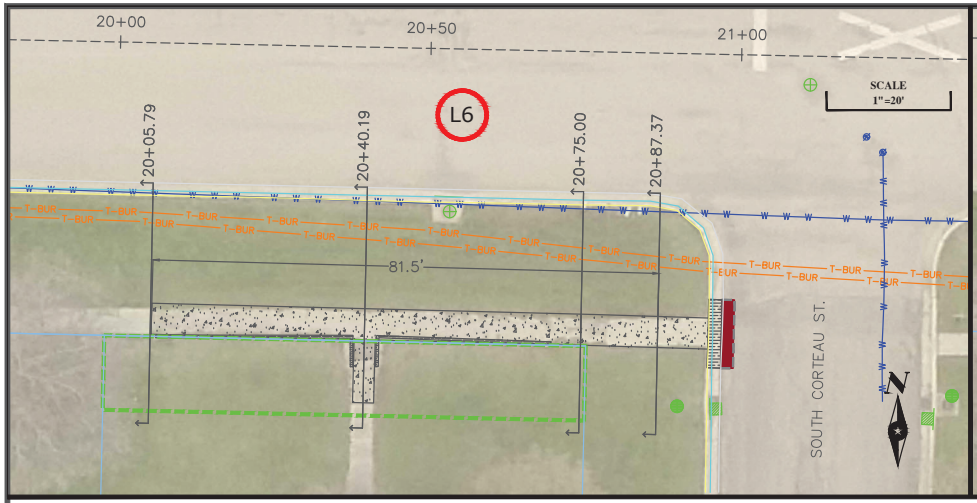
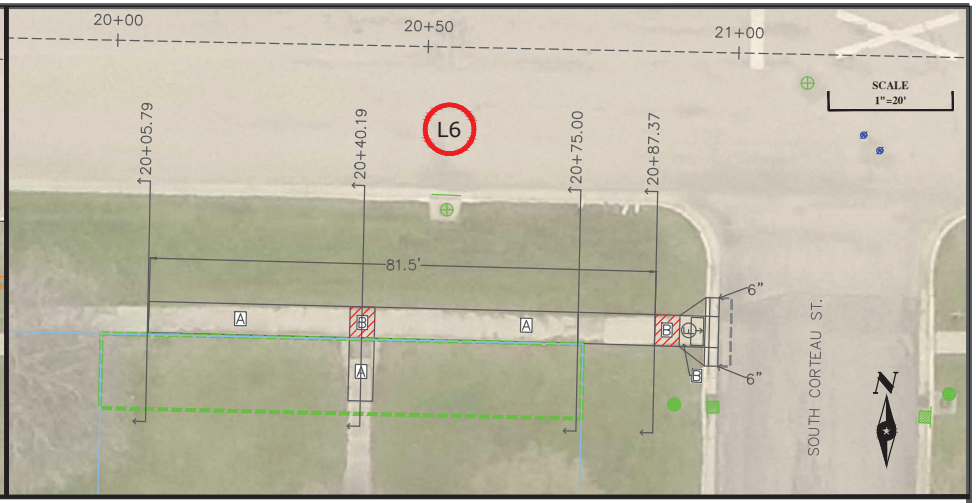


CONCRETE REMOVAL PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 31 OF 61





REMOVE EXISTING CONCRETE
REMOVE EXISTING CURB & GUTTER
REMOVE EXISTING BITUMINOUS
REMOVE BRICK SIDEWALK
GRUBBING

COMMON EMBANKMENT QUANTITY BREAKDOWN:

Station	Excavation (CY)	Embankment (CY)	Accum. Embank. Balance (CY)
20+05.79	0	0	0
20+40.19	2.50	8.50	6.00
20+75.00	0.75	17.75	23.00
20+87.37	0.01	4.01	27.00

LEGEND

TRUNCATED DOMES (SEE STANDARD PLATE 7038)
CONSTRUCT CONCRETE CURB & GUTTER
BITUMINOUS TREATMENT–SEE TABULATIONS
x" CURB HEIGHT
LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
DRAINAGE FLOW ARROW

A 4" CONCRETE
B 6" CONCRETE
C 8" CONCRETE

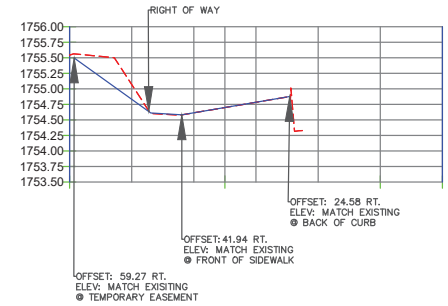
(E) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MINIMUM AND 8.3% MAXIMUM IN THE DIRECTION SHOWN AND CROSS SLOPE SHALL NOT EXCEED 2.0%

(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) – TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK

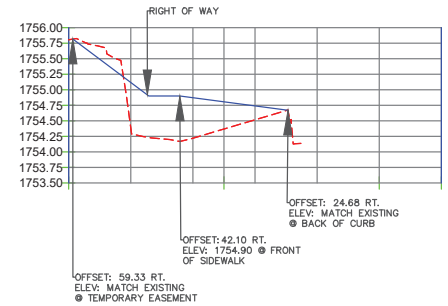
SCALE:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

20+05.70 @ CENTERLINE



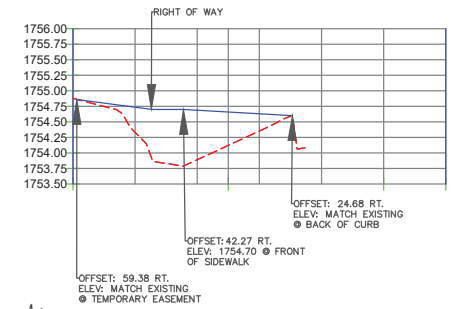
SCALE:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

STA. 20+40.19 @ CENTERLINE



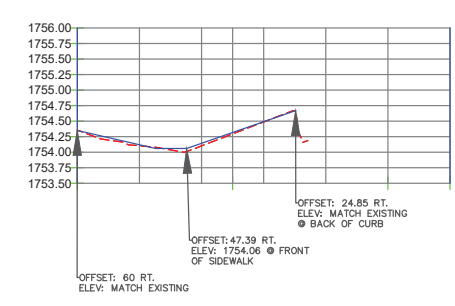
SCALE:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

STA. 20+75.00 @ CENTERLINE



SCALE:
1" = 40' HORIZONTAL
1" = 4' VERTICAL

STA. 20+87.37 @ CENTERLINE



LAKE BENTON GRADING

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

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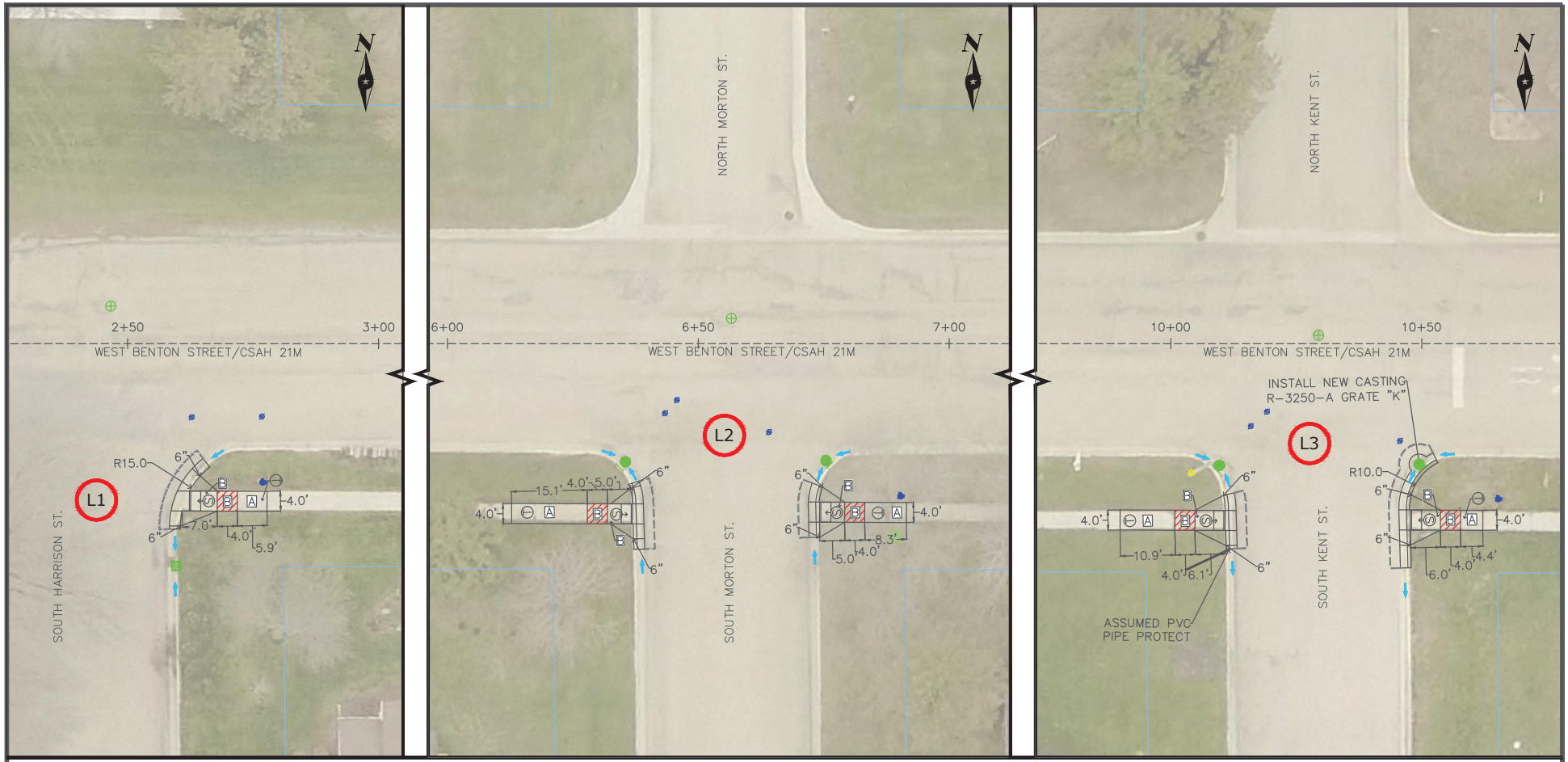


SCALE
1"=20'

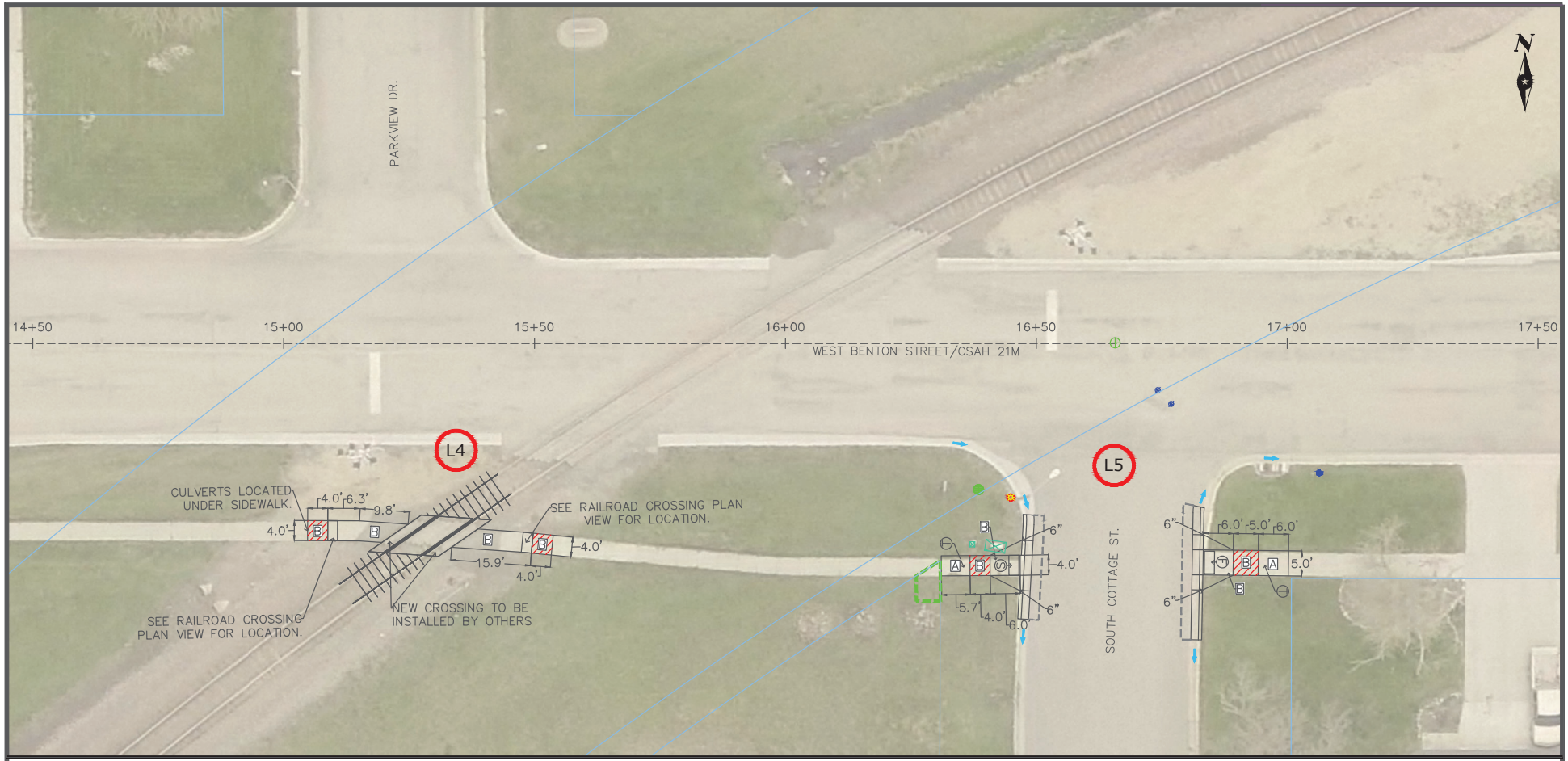
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 33 OF 61



SCALE
1"=20'

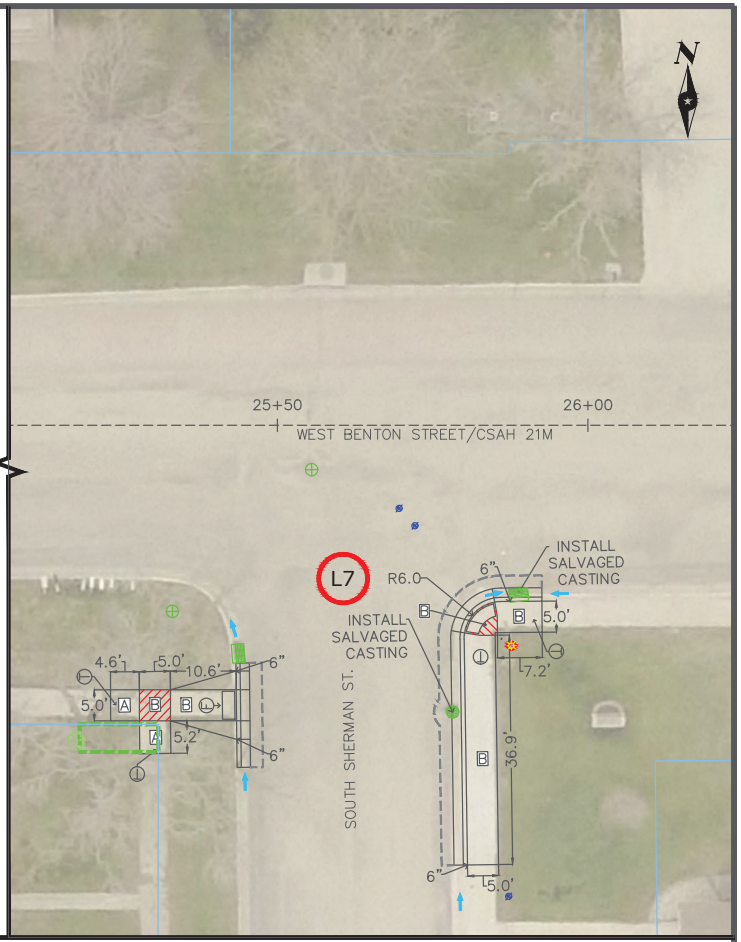
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 34 OF 61



SCALE
1"=20'

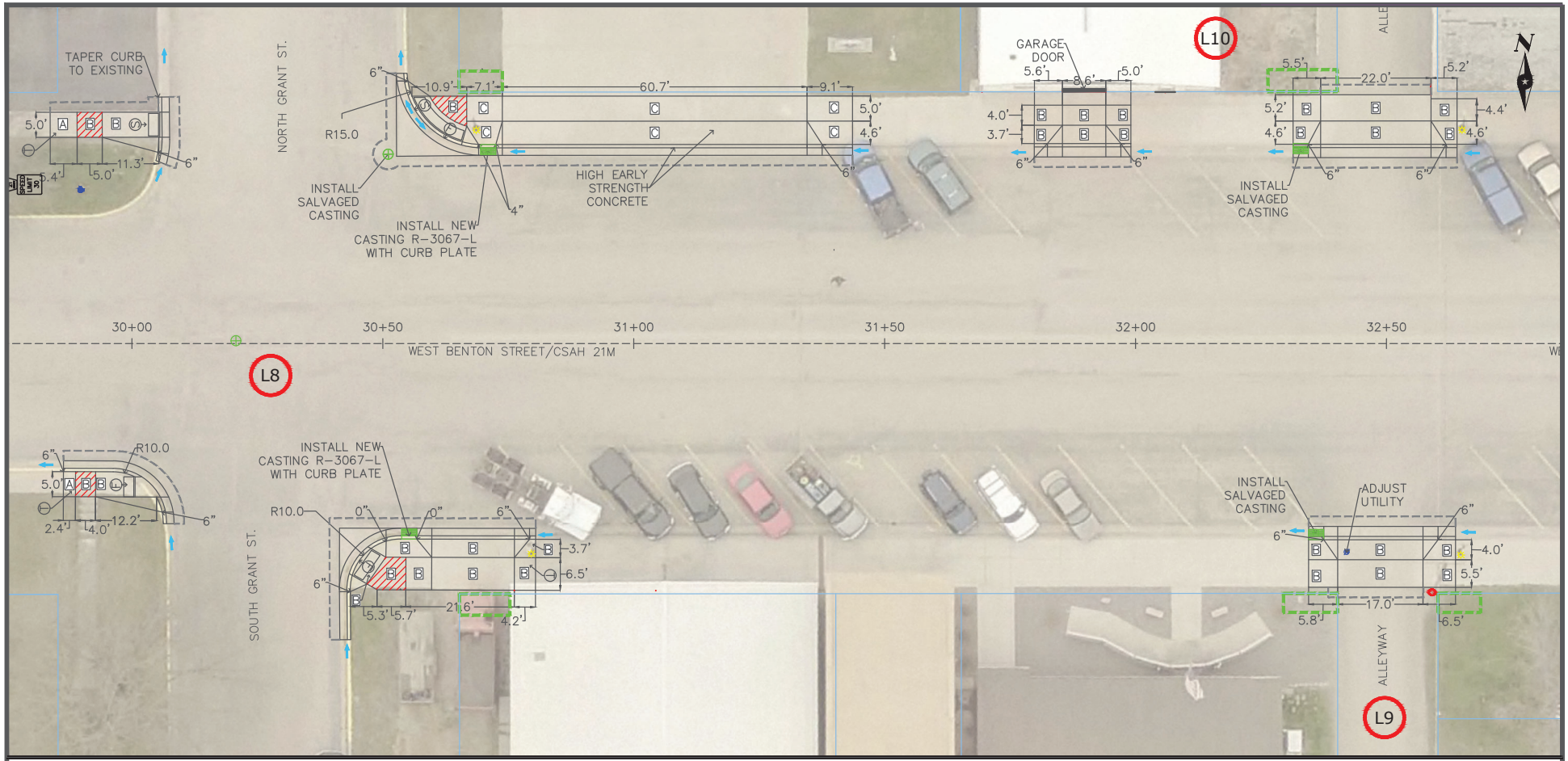
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY Joseph M Gilbertson LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 35 OF 61



SCALE
1"=20'

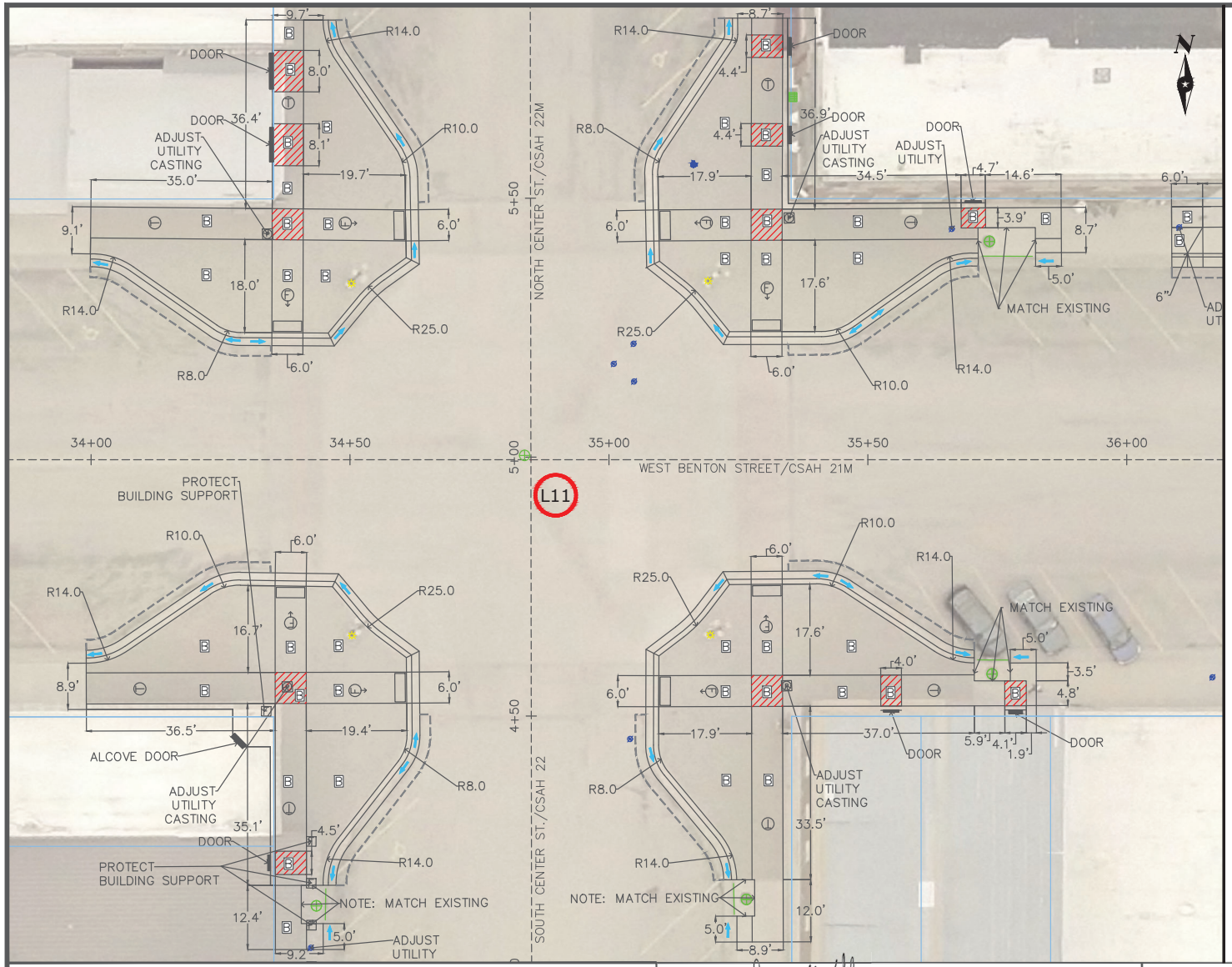
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 36 OF 61



SCALE
1"=20'

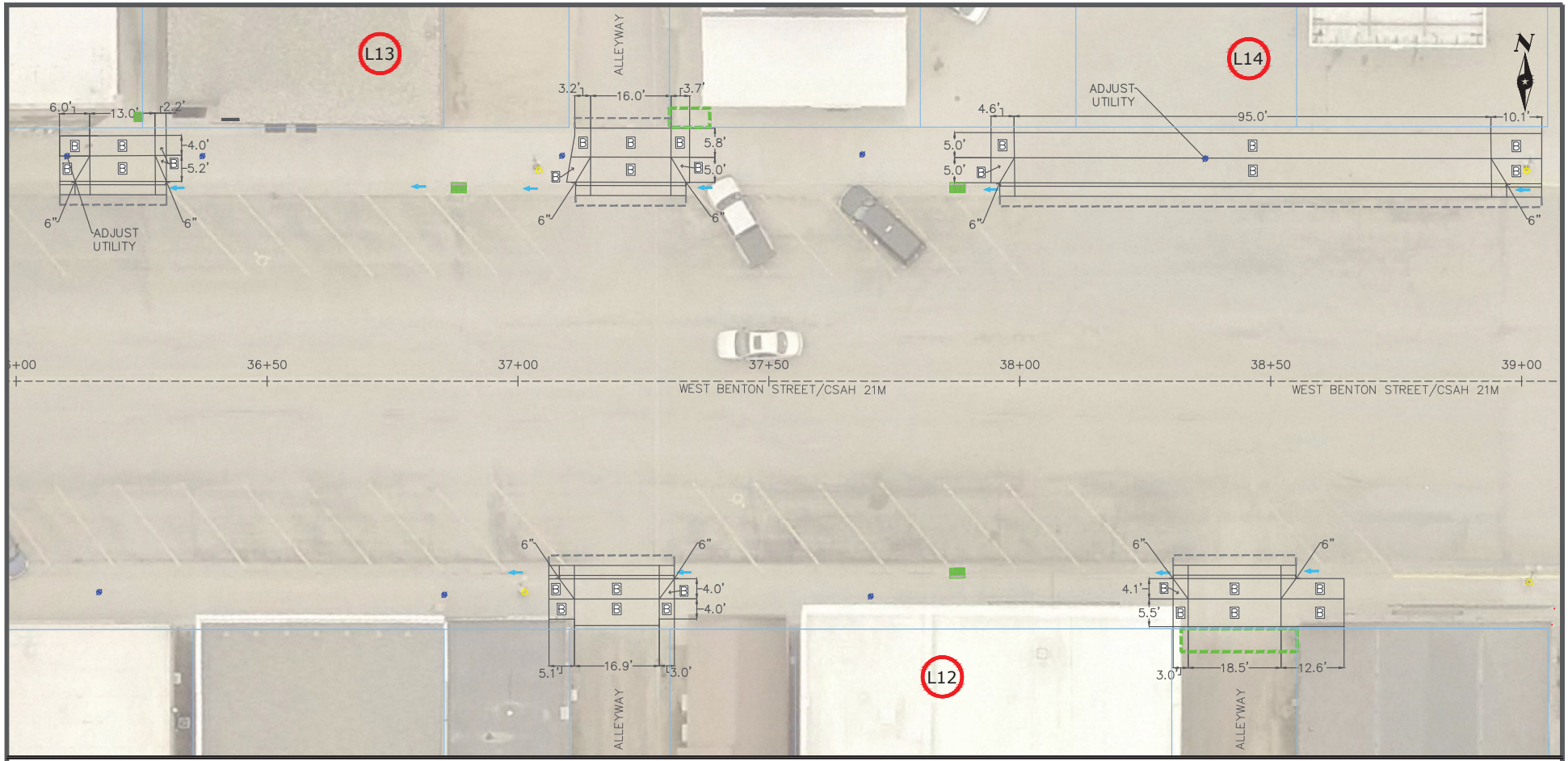
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT—SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – 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.
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 6-13-2023

S.P. NO. 041-030-013 SHEET NO. 37 OF 61



SCALE
1"=20'

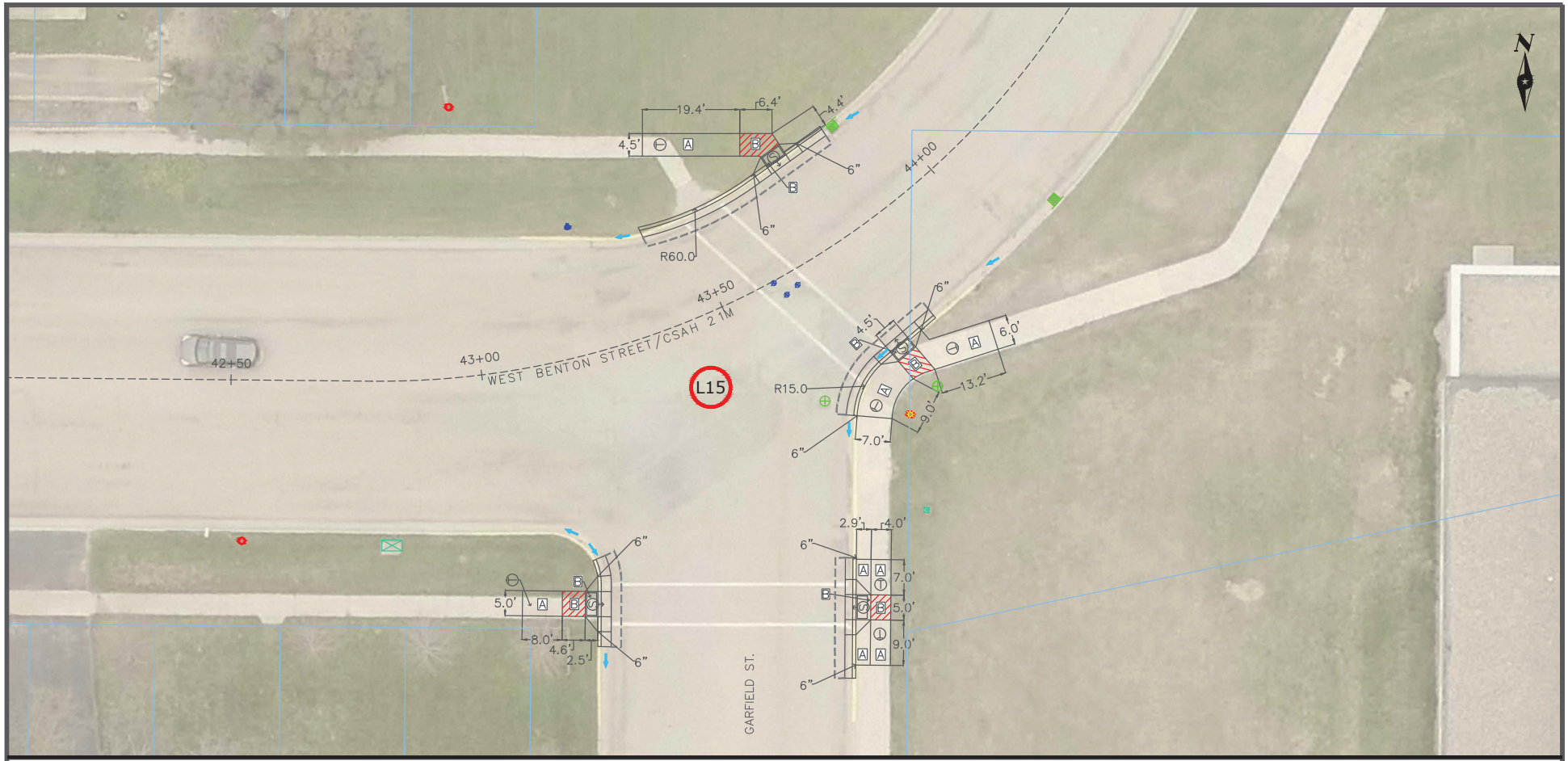
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 38 OF 61



LEGEND

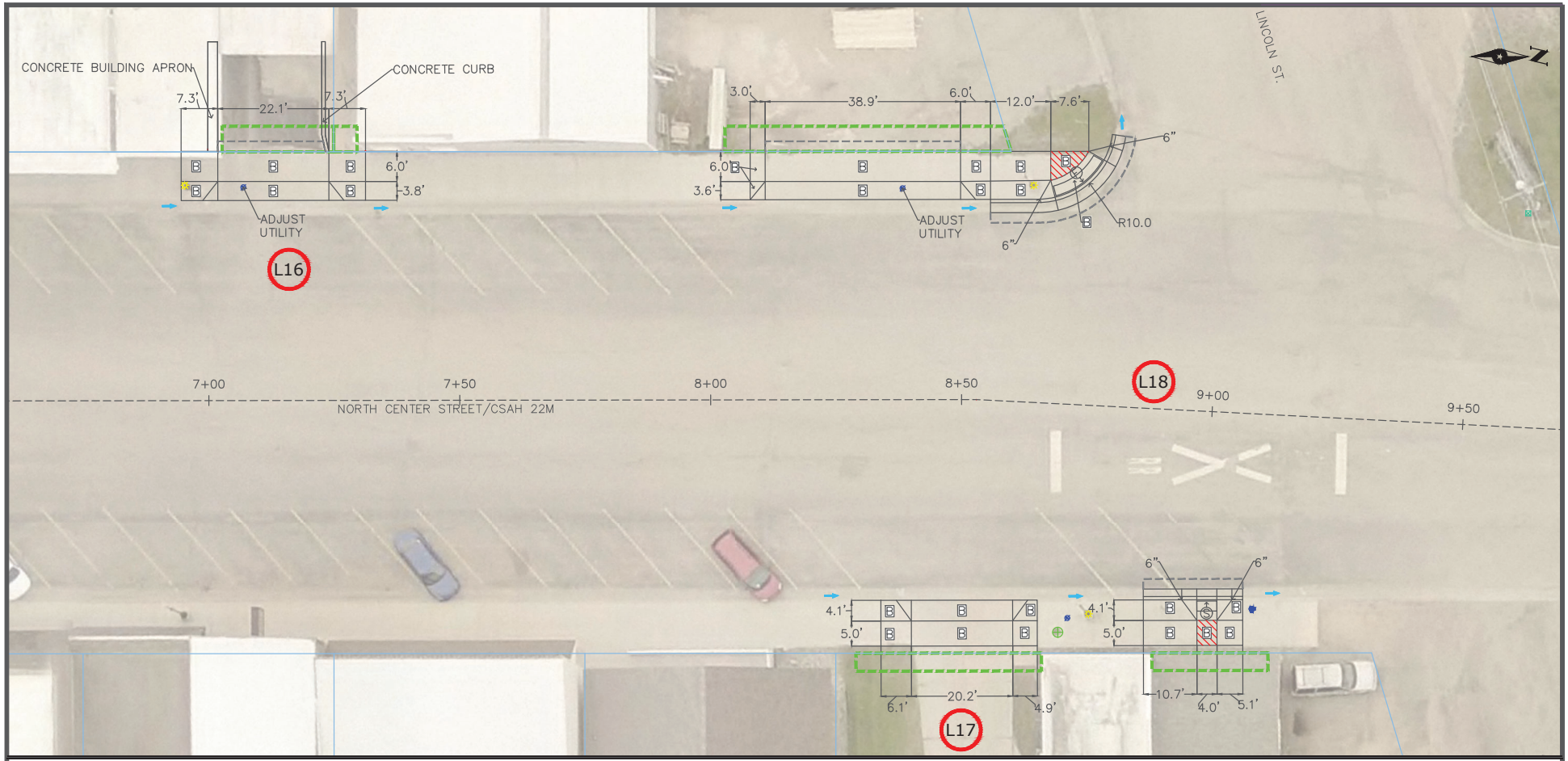
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MINIMUM 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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

SCALE
1"=20'

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 39 OF 61



SCALE
1"=20'

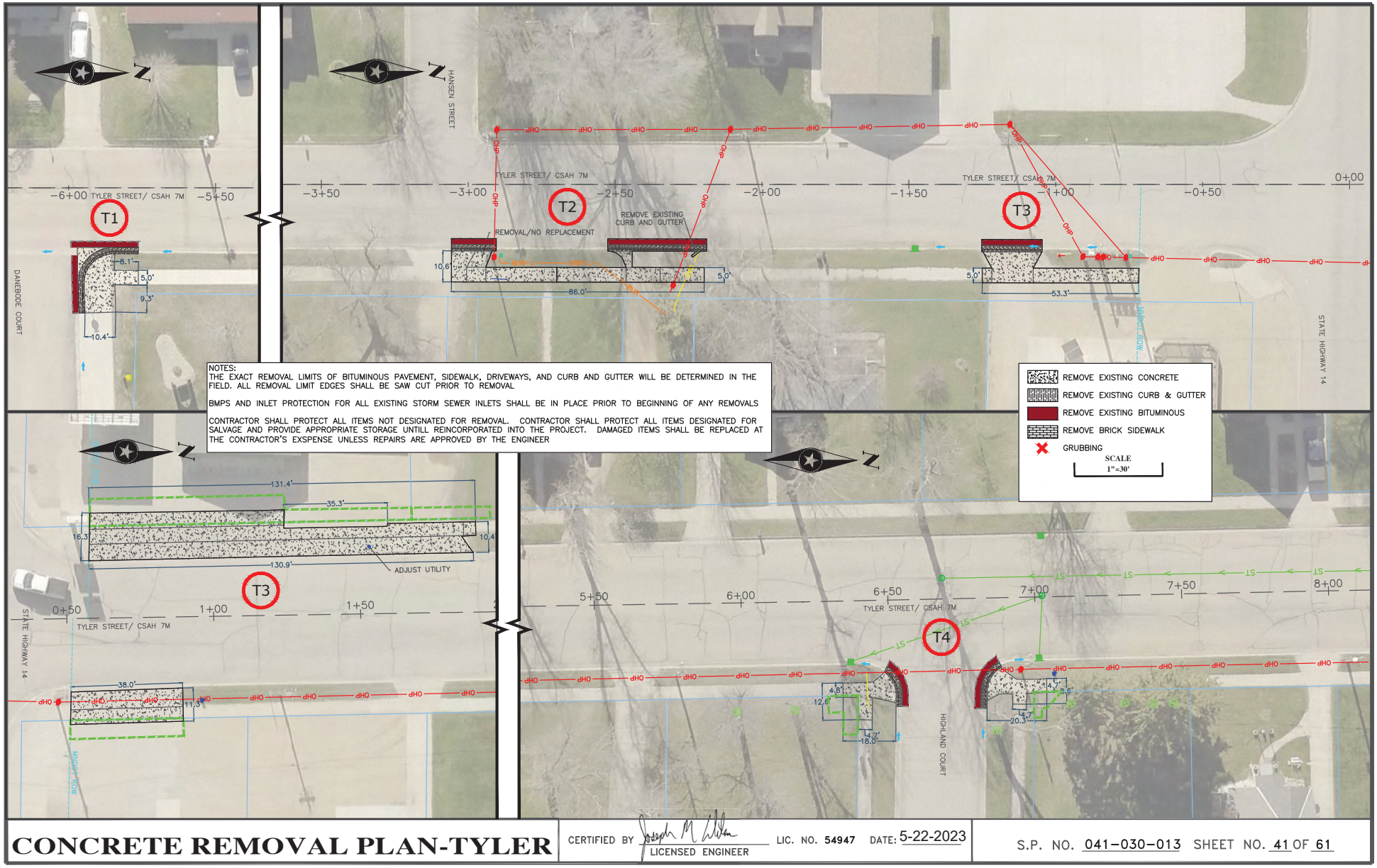
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-LAKE BENTON

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

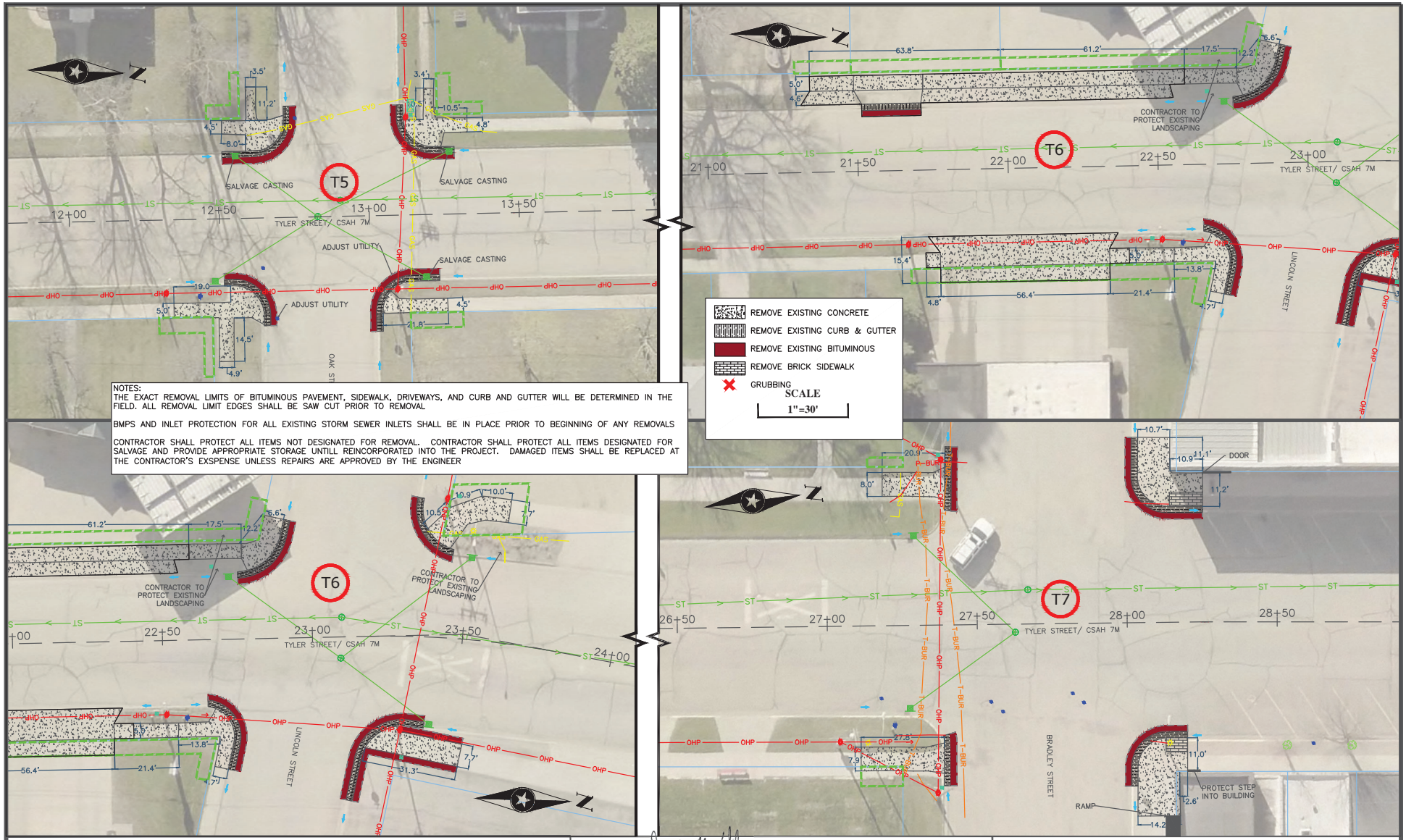
S.P. NO. 041–030–013 SHEET NO. 40 OF 61



CONCRETE REMOVAL PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 41 OF 61



NOTES:
THE EXACT REMOVAL LIMITS OF BITUMINOUS PAVEMENT, SIDEWALK, DRIVEWAYS, AND CURB AND GUTTER WILL BE DETERMINED IN THE FIELD. ALL REMOVAL LIMIT EDGES SHALL BE SAW CUT PRIOR TO REMOVAL

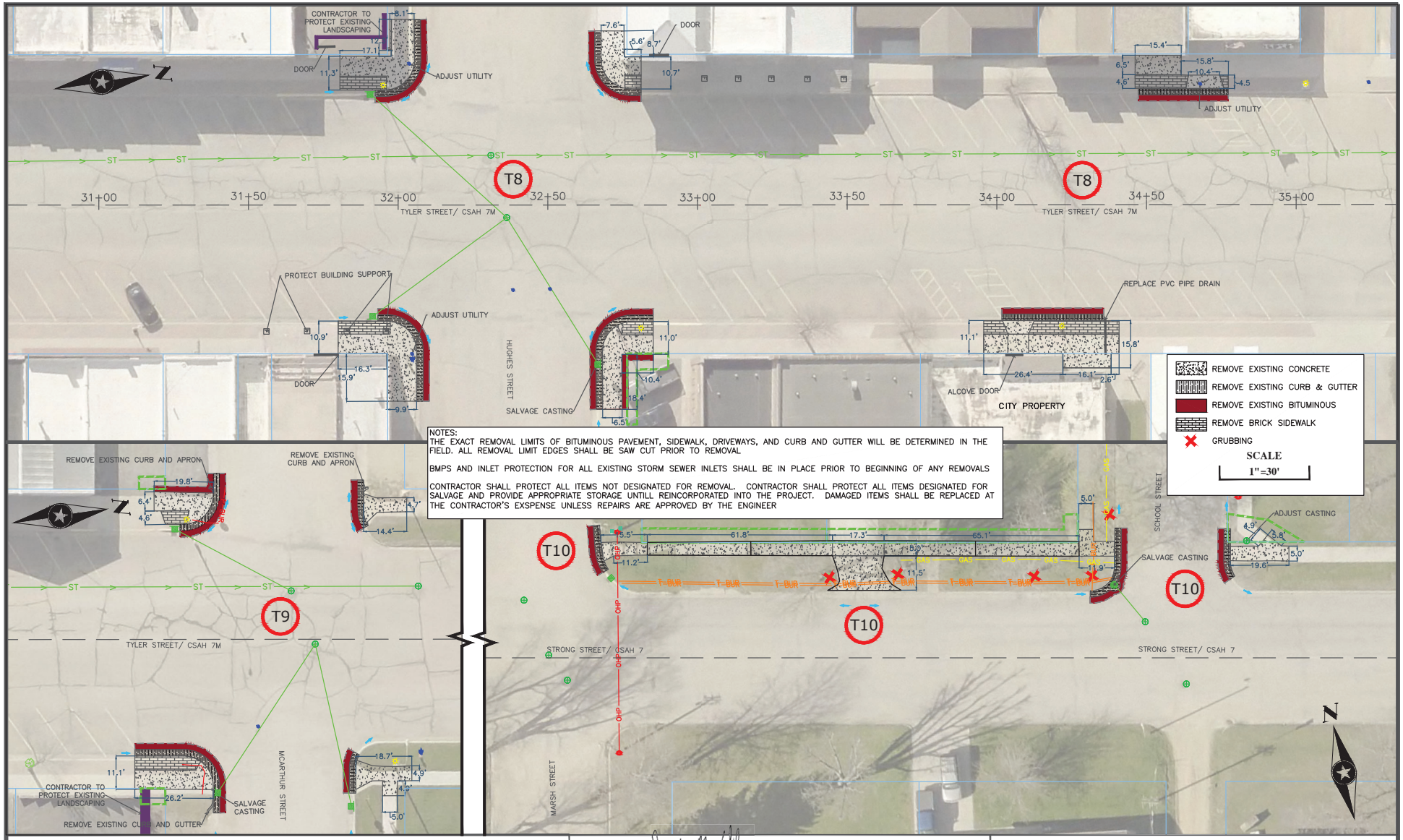
BMPS AND INLET PROTECTION FOR ALL EXISTING STORM SEWER INLETS SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY REMOVALS

CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL. CONTRACTOR SHALL PROTECT ALL ITEMS DESIGNATED FOR SALVAGE AND PROVIDE APPROPRIATE STORAGE UNTILL REINCORPORATED INTO THE PROJECT. DAMAGED ITEMS SHALL BE REPLACED AT THE CONTRACTOR'S EXSPENSE UNLESS REPAIRS ARE APPROVED BY THE ENGINEER

CONCRETE REMOVAL PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 42 OF 61



CONCRETE REMOVAL PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 43 OF 61

LEGEND

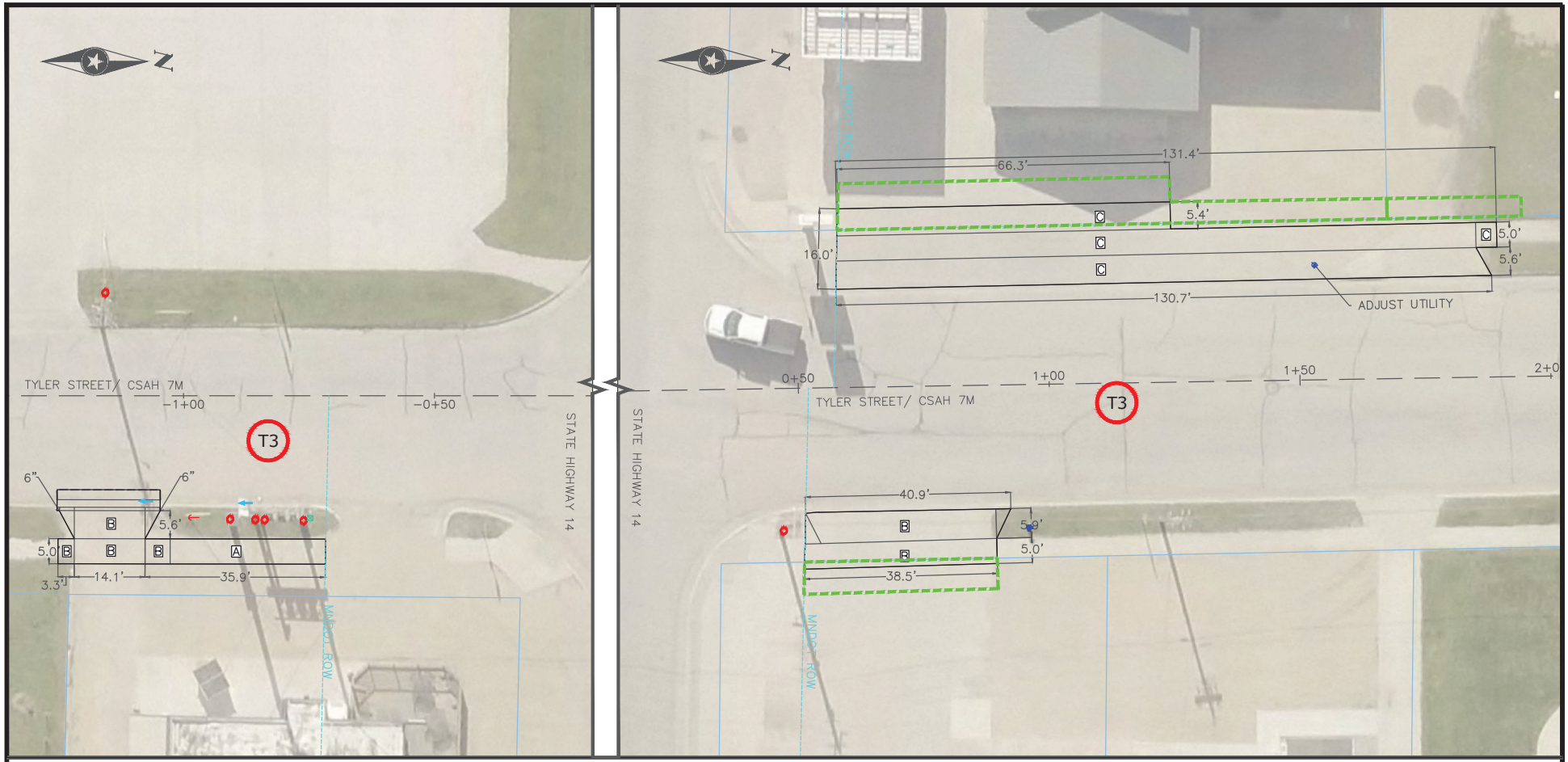
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MINIMUM 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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

SCALE
1"=20'

CONCRETE PLACEMENT PLAN - TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 44 OF 61



LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

SCALE
1"=20'

CONCRETE PLACEMENT PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 45 OF 61

SCALE
1"=20'

LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW

(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%

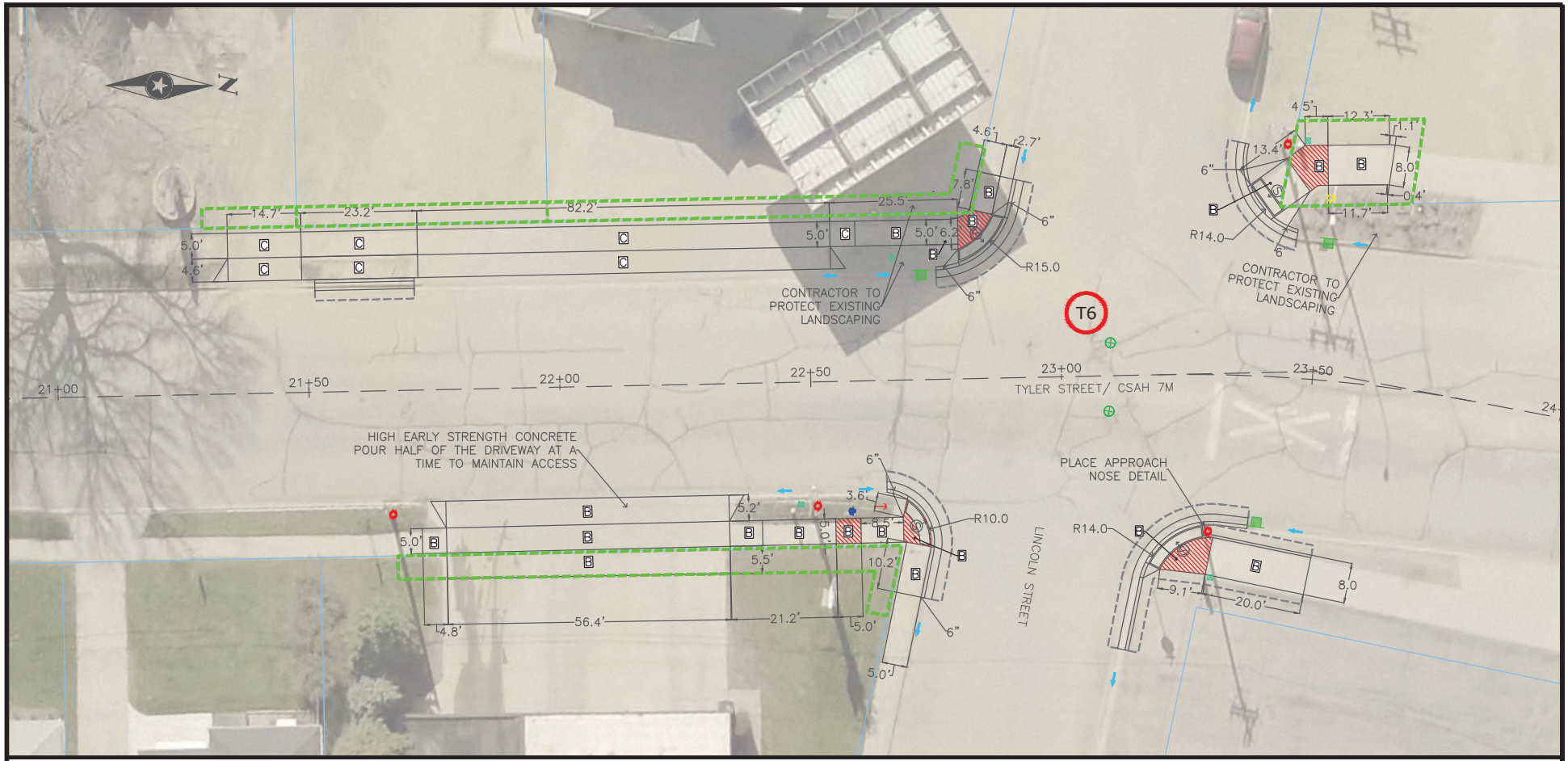
(T) TRANSITION PANEL(S) – TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK

- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 46 OF 61



LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW

(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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK

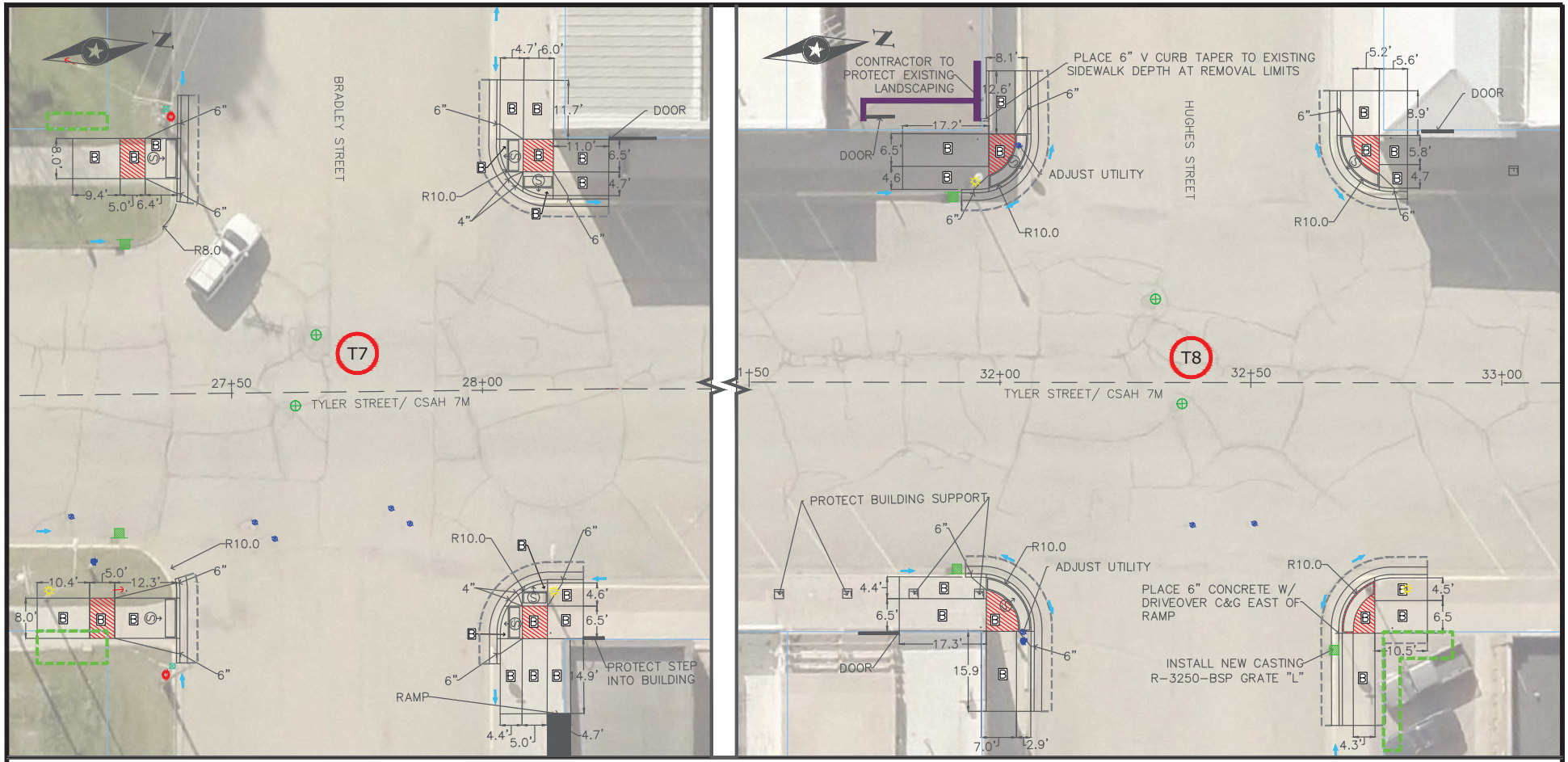
[A] 4" CONCRETE
[B] 6" CONCRETE
[C] 8" CONCRETE

SCALE
1"=20'

CONCRETE PLACEMENT PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 47 OF 61



SCALE
1"=20'

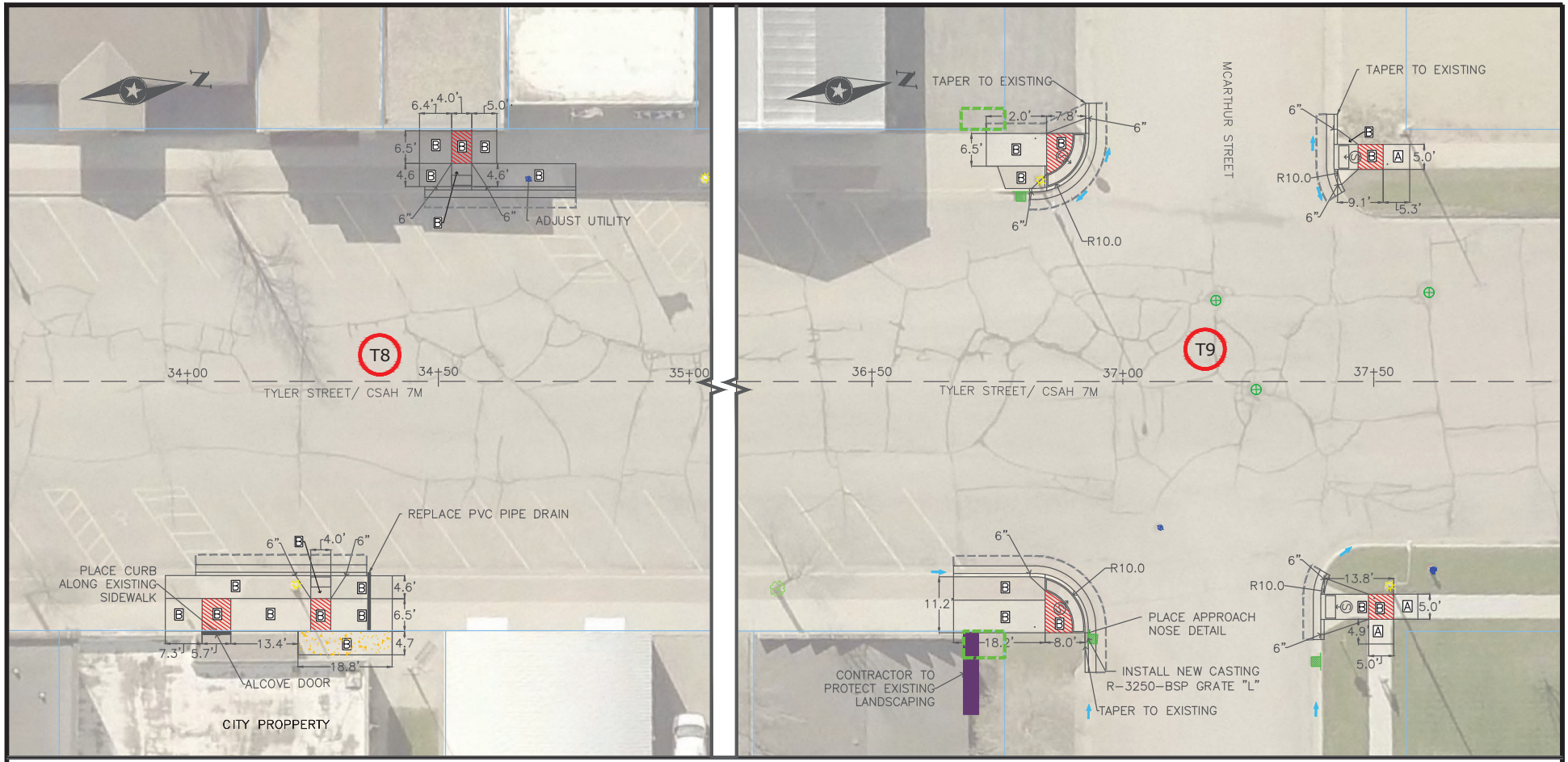
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 48 OF 61



LEGEND

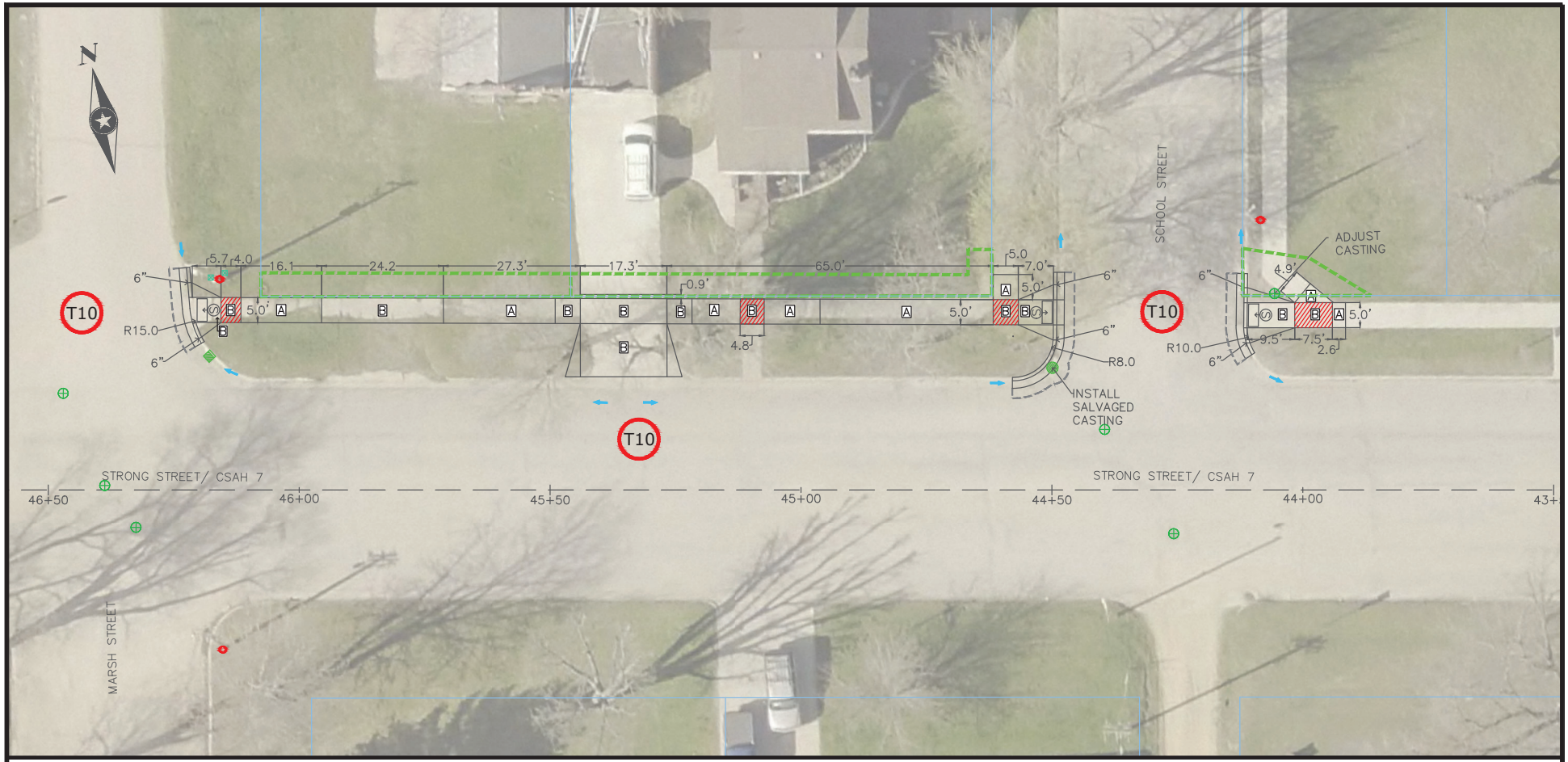
- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (S) INDICATES PEDESTRIAN RAMP – SLOPE SHALL BE BETWEEN 5.0% MINIMUM 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) – TO BE USED FOR TRANSITIONING THE CROSS-SLOPE OF A RAMP TO THE EXISTING WALK CROSS-SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

SCALE
1"=20'

CONCRETE PLACEMENT PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041-030-013 SHEET NO. 49 OF 61



SCALE
1"=20'

LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW

(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%

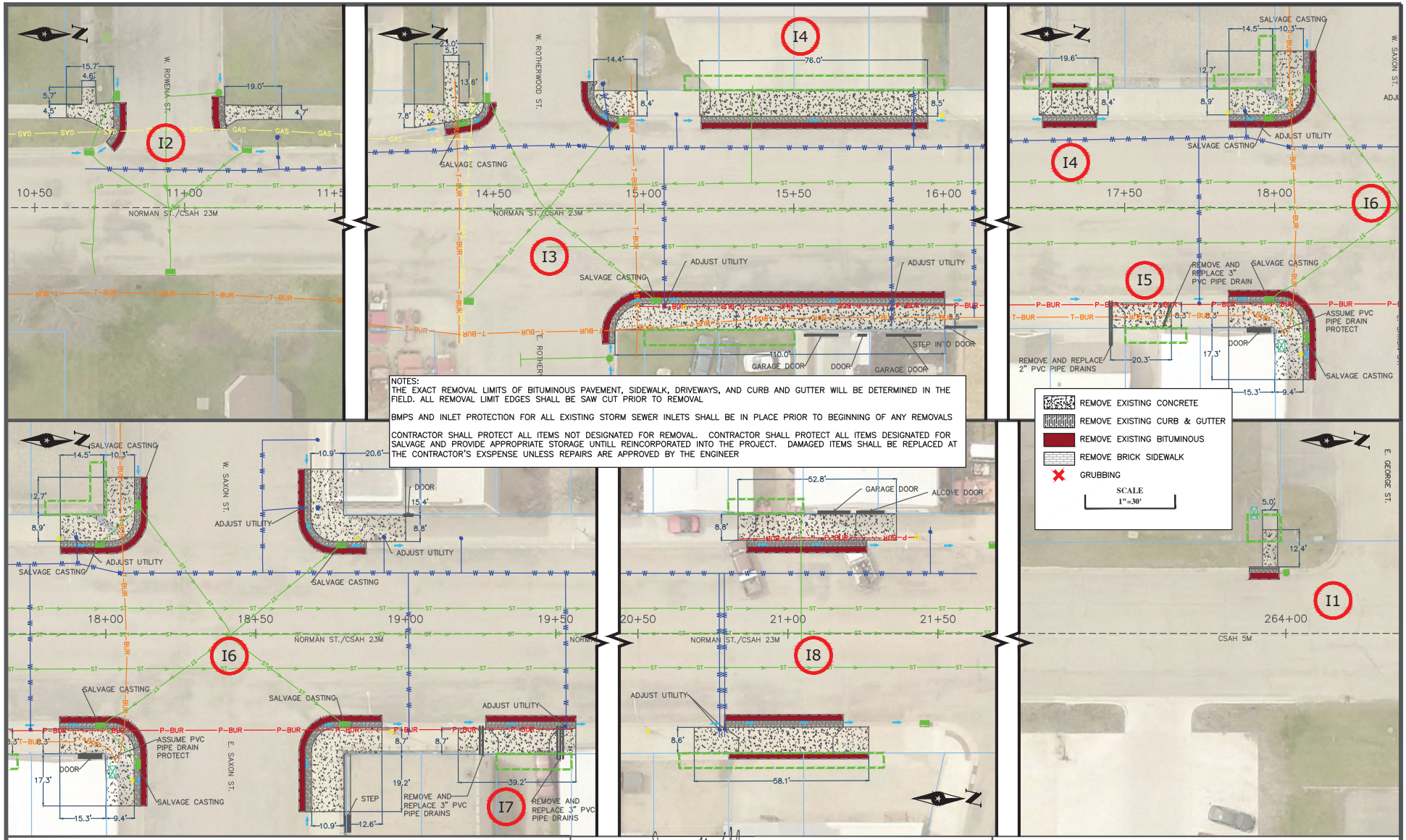
(T) TRANSITION PANEL(S) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK

[A] 4" CONCRETE
[B] 6" CONCRETE
[C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-TYLER

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 50 OF 61



NOTES:
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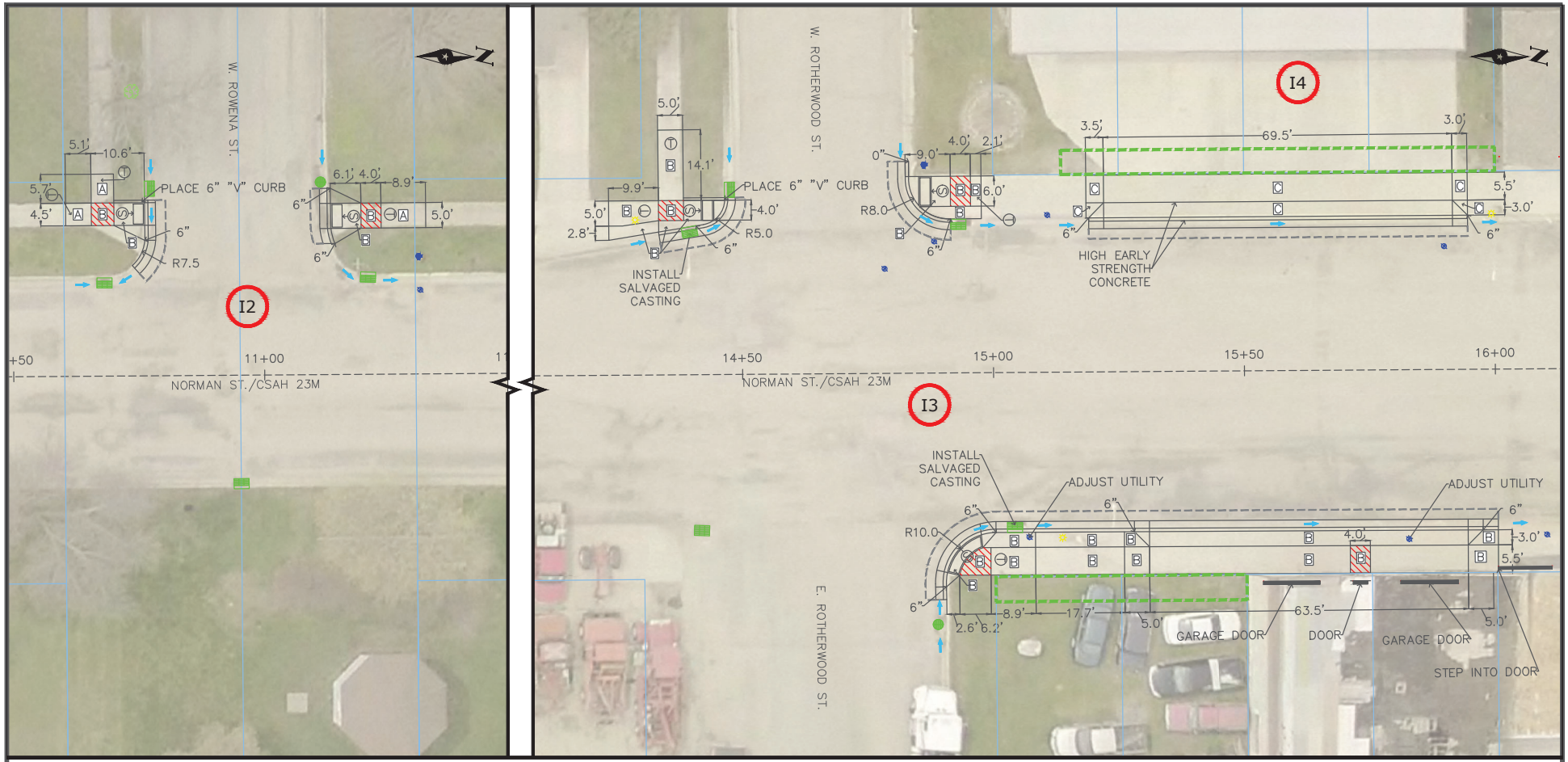
CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL. CONTRACTOR SHALL PROTECT ALL ITEMS DESIGNATED FOR SALVAGE AND PROVIDE APPROPRIATE STORAGE UNTILL REINCORPORATED INTO THE PROJECT. DAMAGED ITEMS SHALL BE REPLACED AT THE CONTRACTOR'S EXSPENSE UNLESS REPAIRS ARE APPROVED BY THE ENGINEER

CONCRETE REMOVAL PLAN-IVANHOE

CERTIFIED BY _____ LIC. NO. 54947 DATE: 5-22-2023
LICENSED ENGINEER

S.P. NO. 041-030-013 SHEET NO. 51 OF 61



SCALE
1"=20'

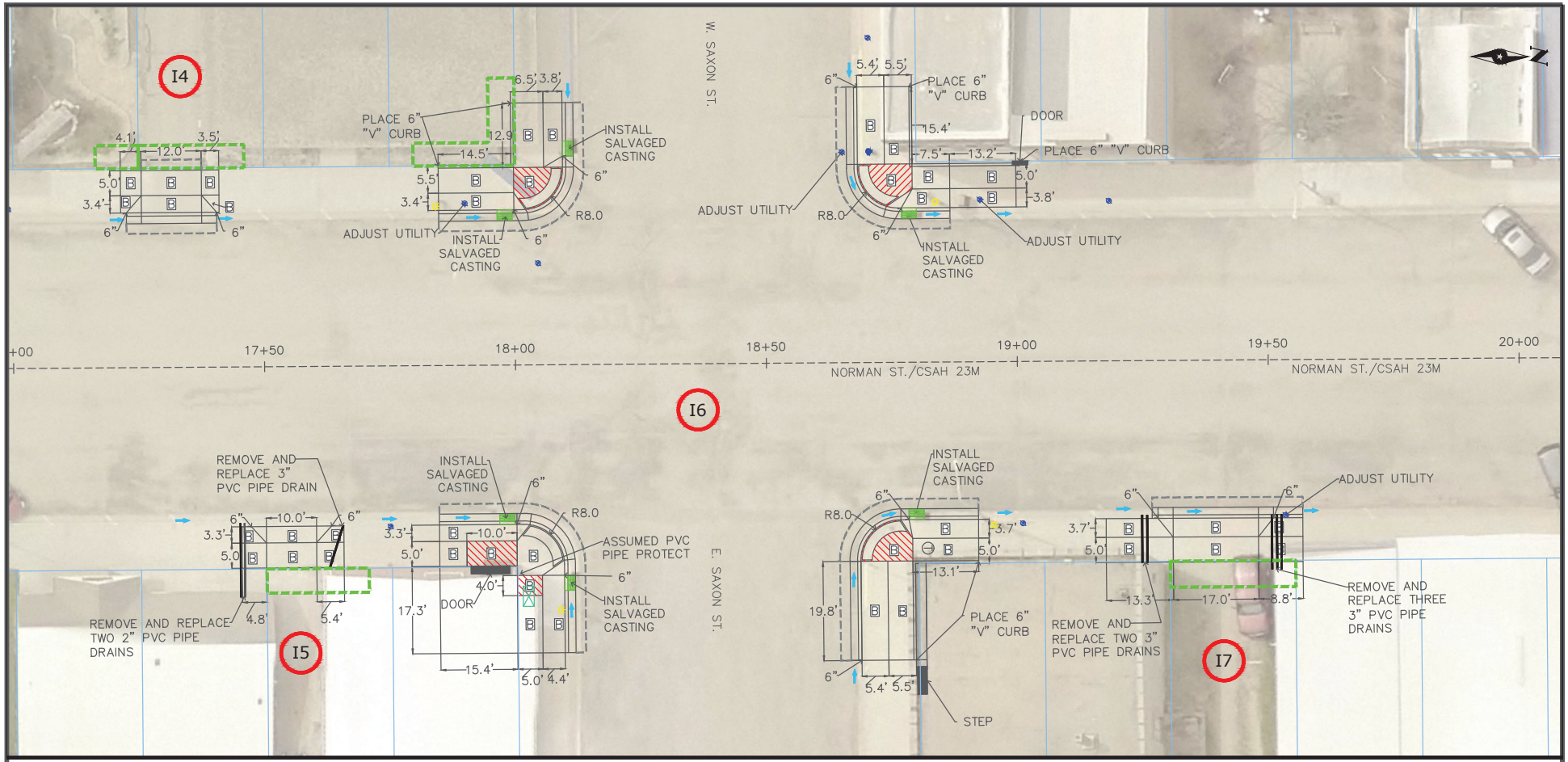
LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
- LANDING AREA – 4' X 4' MIN. DIMENSIONS AND MAX 2.0% SLOPE IN ALL DIRECTIONS
- DRAINAGE FLOW ARROW
- (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) – TO BE USED FOR TRANSITIONING THE CROSS–SLOPE OF A RAMP TO THE EXISTING WALK CROSS–SLOPE. RATE OF TRANSITION SHOULD BE .5% PER LINEAR FOOT OF WALK
- [A] 4" CONCRETE
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-IVANHOE

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 52 OF 61



SCALE
1"=20'

LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
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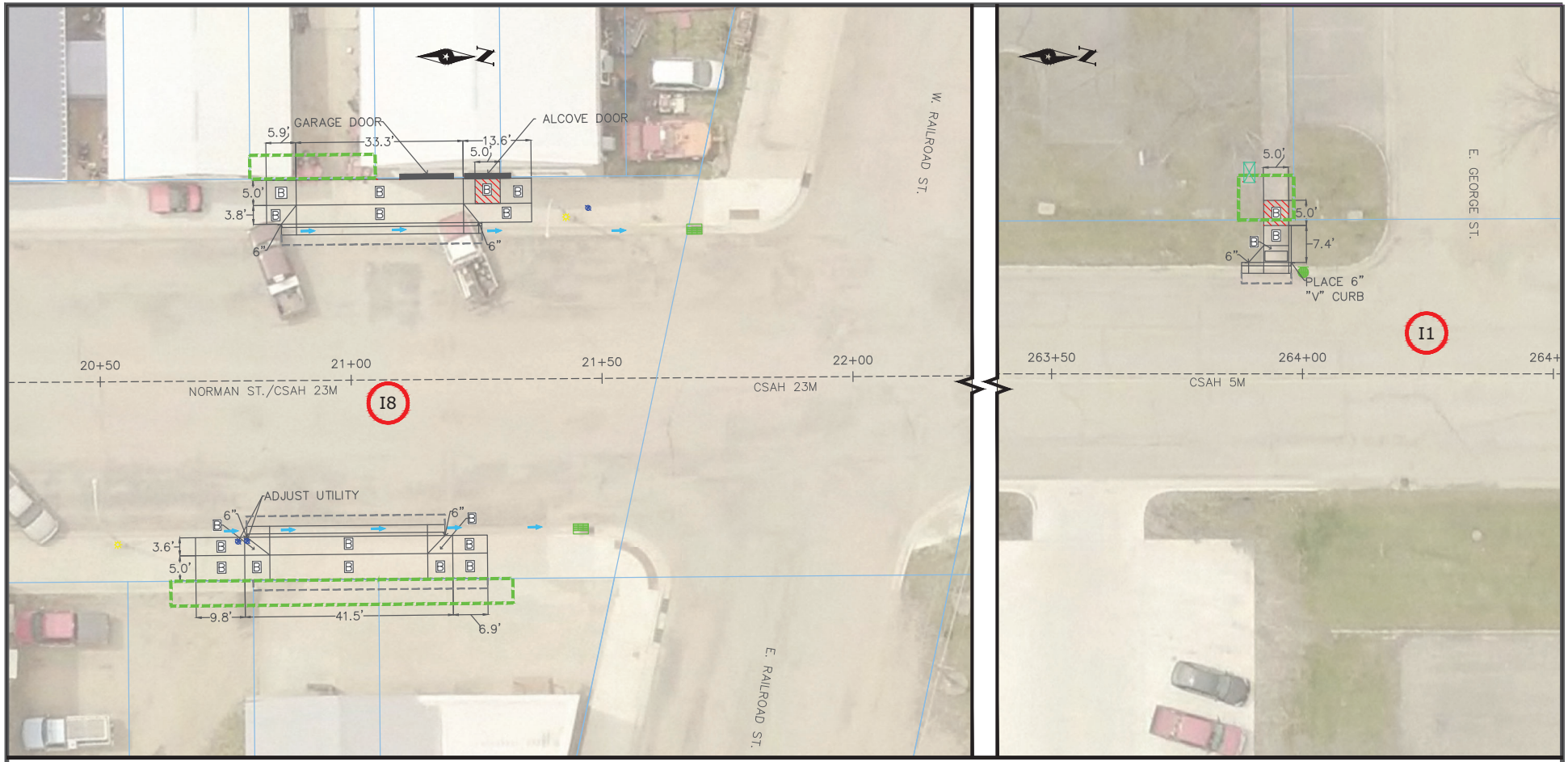
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-IVANHOE

CERTIFIED BY Joseph M Wilson LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 53 OF 61



LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
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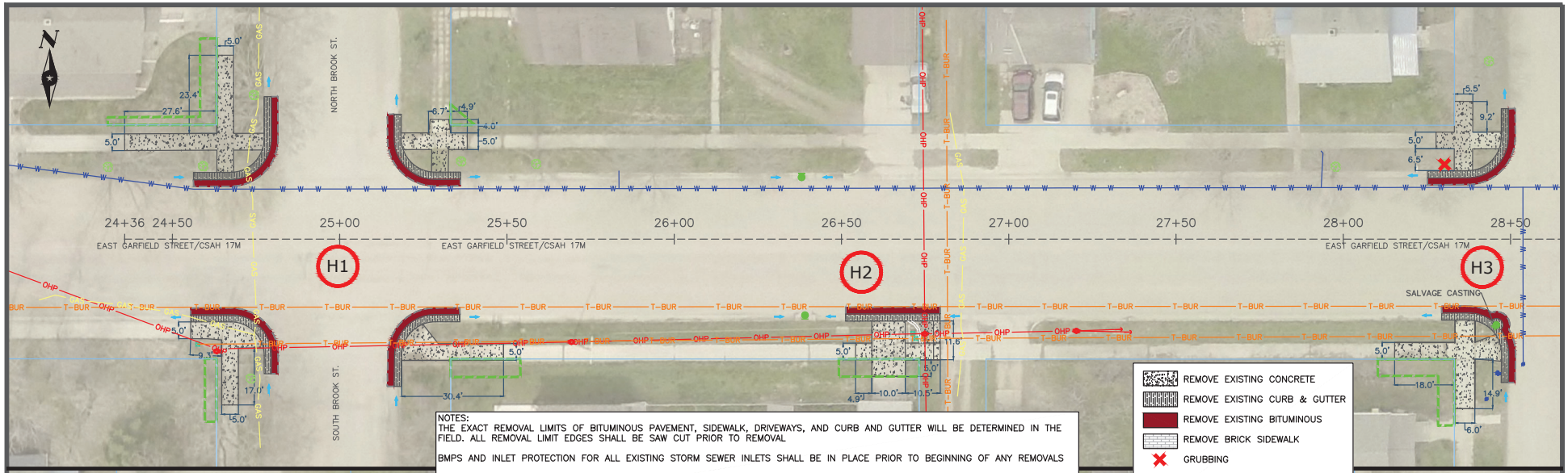
- [B] 6" CONCRETE
- [C] 8" CONCRETE

SCALE
1"=20'

CONCRETE PLACEMENT PLAN - IVANHOE

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

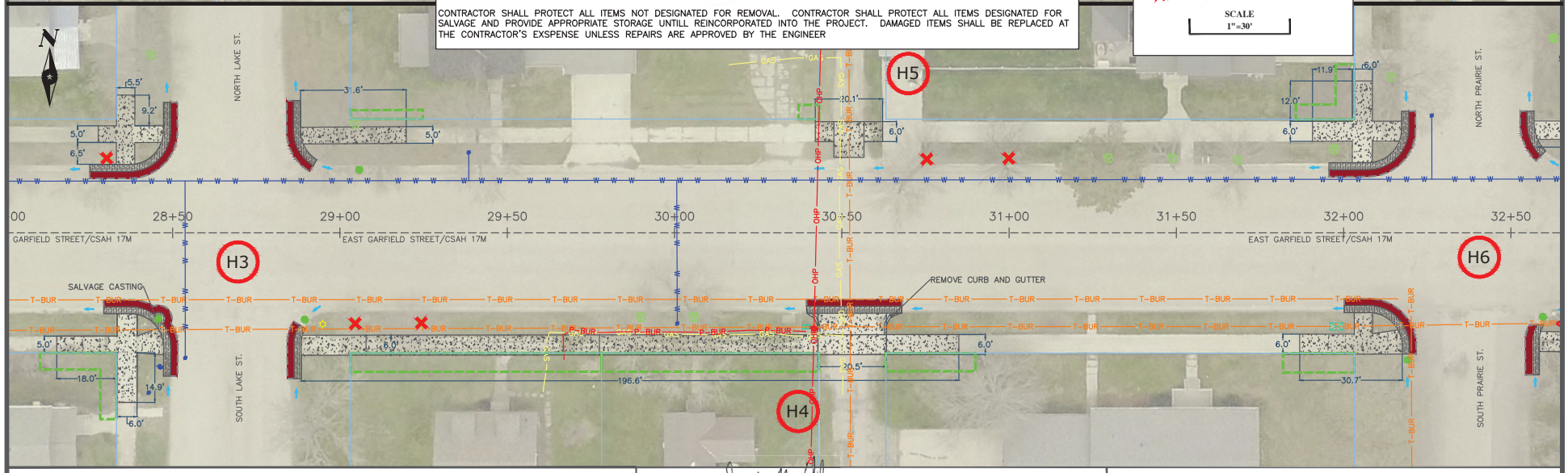
S.P. NO. 041–030–013 SHEET NO. 54 OF 61



NOTES:
THE EXACT REMOVAL LIMITS OF BITUMINOUS PAVEMENT, SIDEWALK, DRIVEWAYS, AND CURB AND GUTTER WILL BE DETERMINED IN THE FIELD. ALL REMOVAL LIMIT EDGES SHALL BE SAW CUT PRIOR TO REMOVAL

BMPS AND INLET PROTECTION FOR ALL EXISTING STORM SEWER INLETS SHALL BE IN PLACE PRIOR TO BEGINNING OF ANY REMOVALS

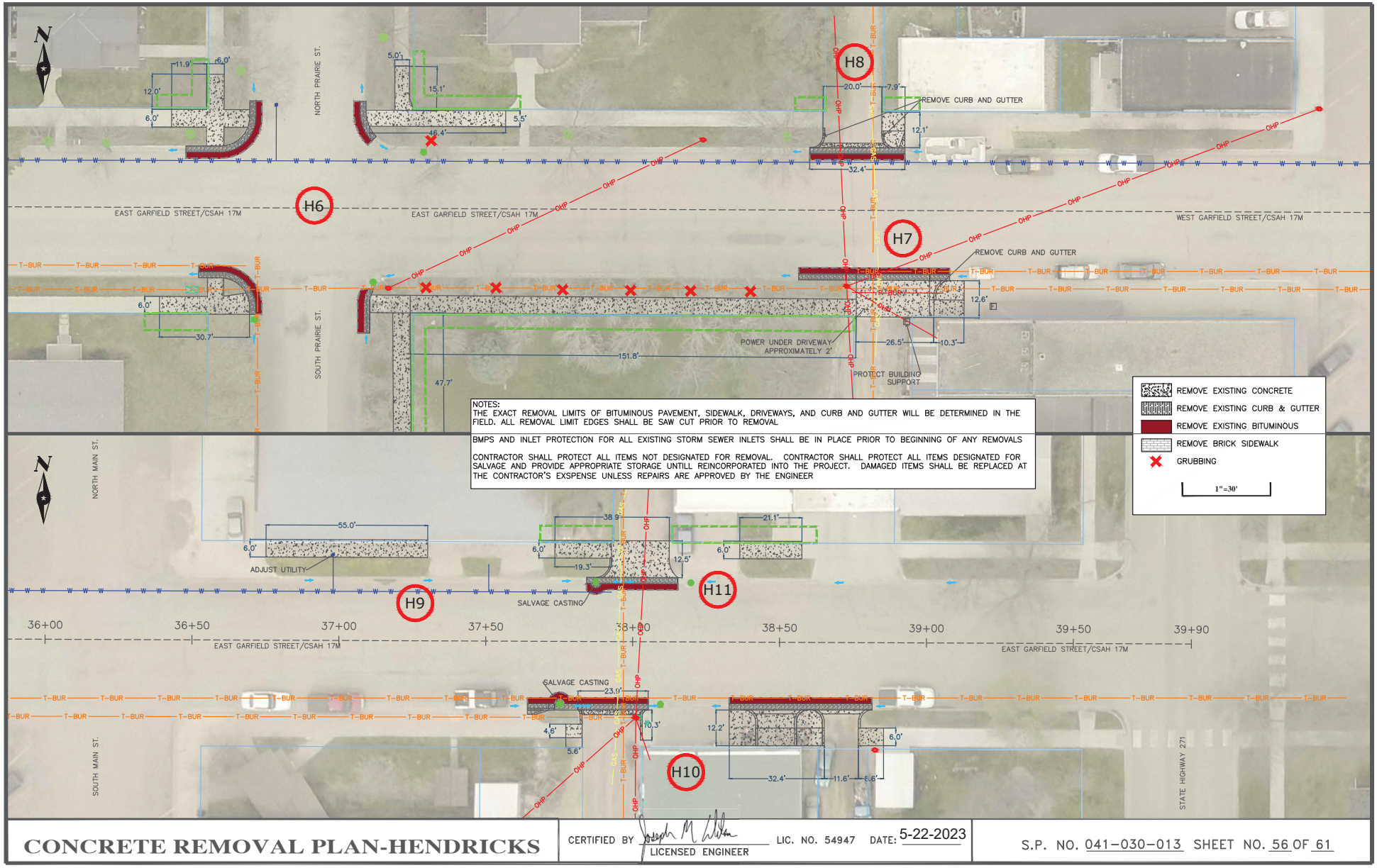
CONTRACTOR SHALL PROTECT ALL ITEMS NOT DESIGNATED FOR REMOVAL. CONTRACTOR SHALL PROTECT ALL ITEMS DESIGNATED FOR SALVAGE AND PROVIDE APPROPRIATE STORAGE UNTILL REINCORPORATED INTO THE PROJECT. DAMAGED ITEMS SHALL BE REPLACED AT THE CONTRACTOR'S EXSPENSE UNLESS REPAIRS ARE APPROVED BY THE ENGINEER



CONCRETE REMOVAL PLAN-HENDRICKS

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

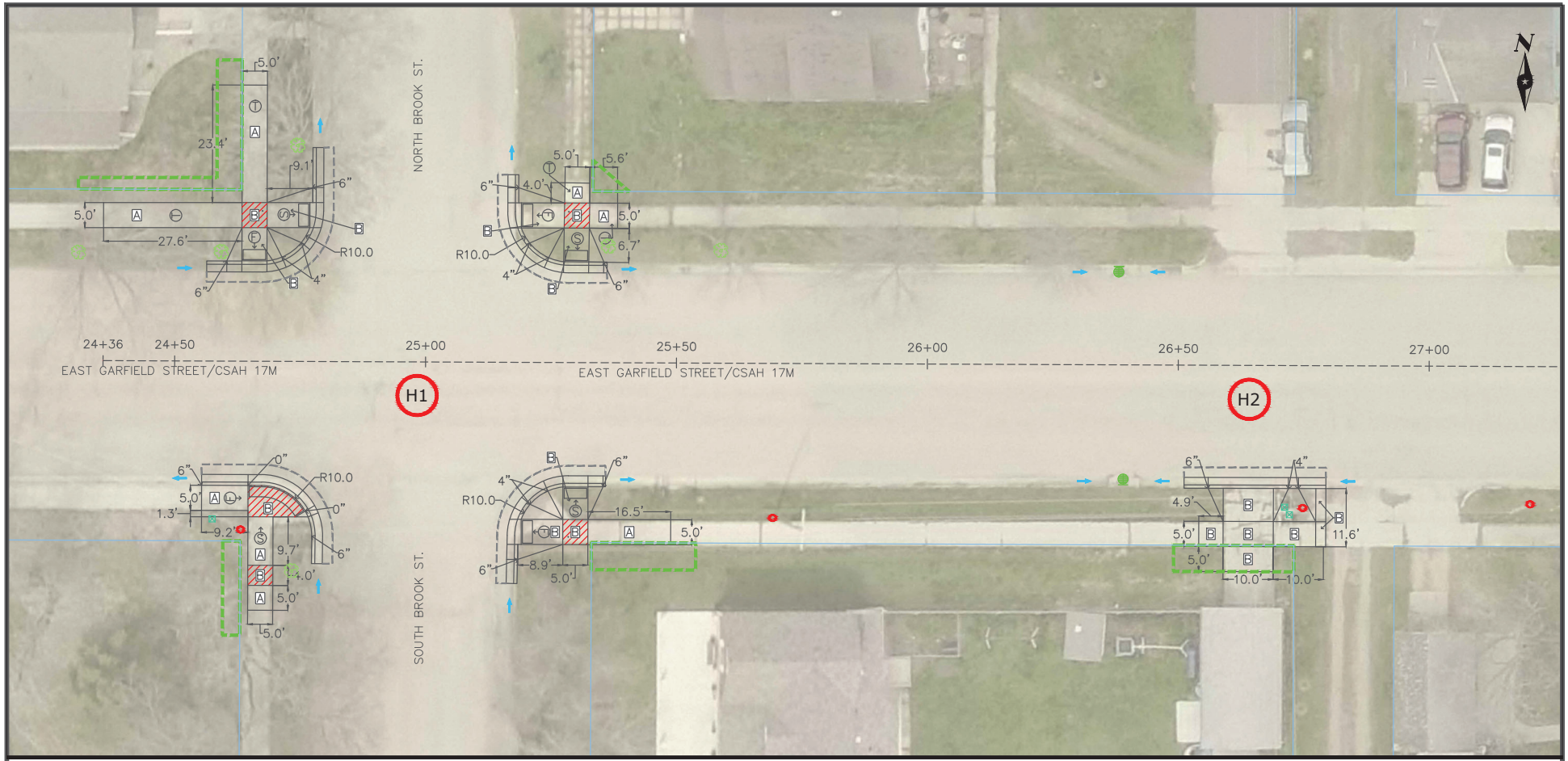
S.P. NO. 041-030-013 SHEET NO. 55 OF 61



CONCRETE REMOVAL PLAN-HENDRICKS

CERTIFIED BY _____ LIC. NO. 54947 DATE: 5-22-2023
LICENSED ENGINEER

S.P. NO. 041-030-013 SHEET NO. 56 OF 61



SCALE
1"=20'

LEGEND

- TRUNCATED DOMES (SEE STANDARD PLATE 7038)
- CONSTRUCT CONCRETE CURB & GUTTER
- BITUMINOUS TREATMENT–SEE TABULATIONS
- X" CURB HEIGHT
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- DRAINAGE FLOW ARROW
- (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%
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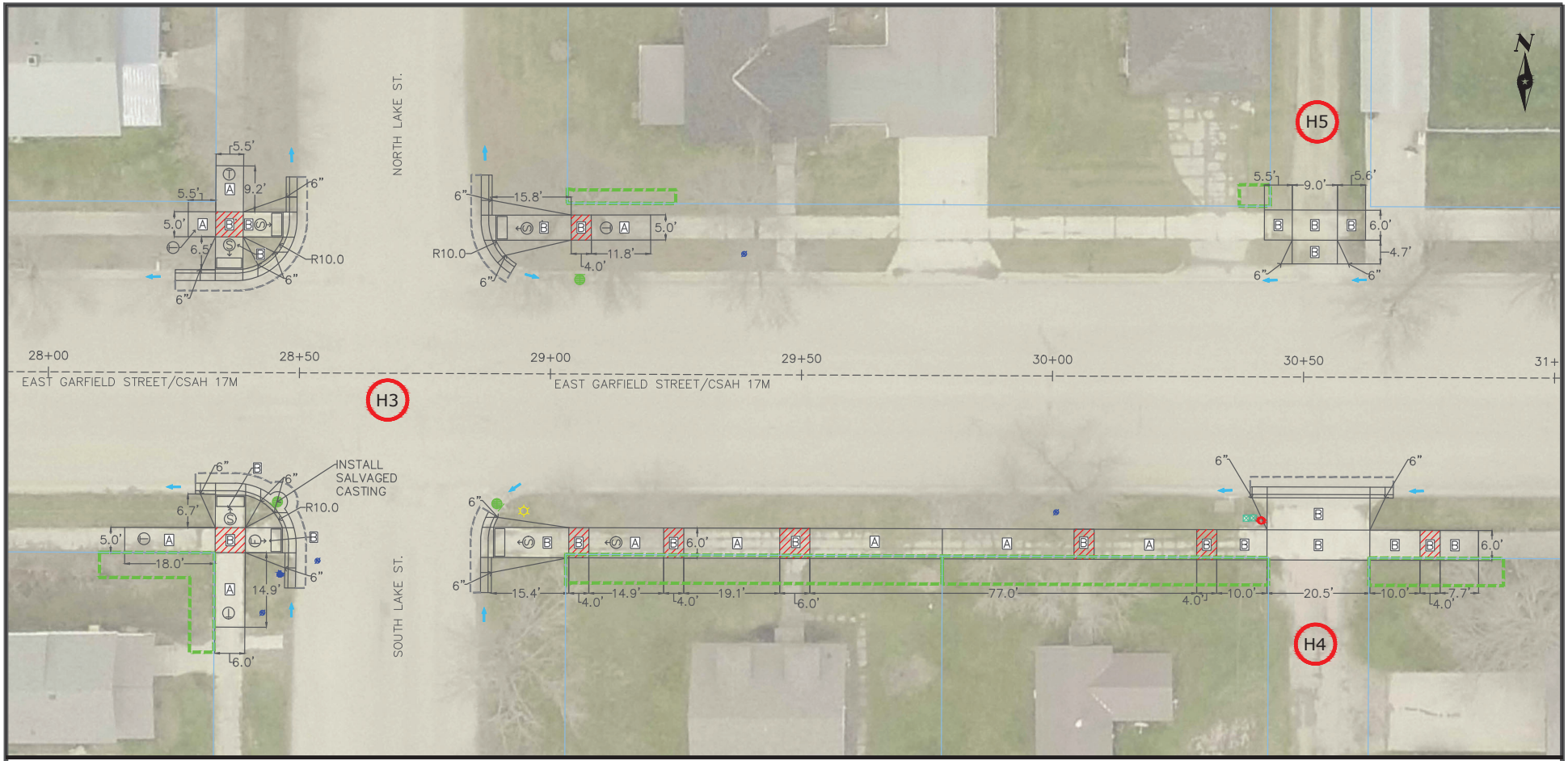
- [B] 6" CONCRETE
- [C] 8" CONCRETE

CONCRETE PLACEMENT PLAN-HENDRICKS

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 57 OF 61



LEGEND

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- CONSTRUCT CONCRETE CURB & GUTTER
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- X" CURB HEIGHT
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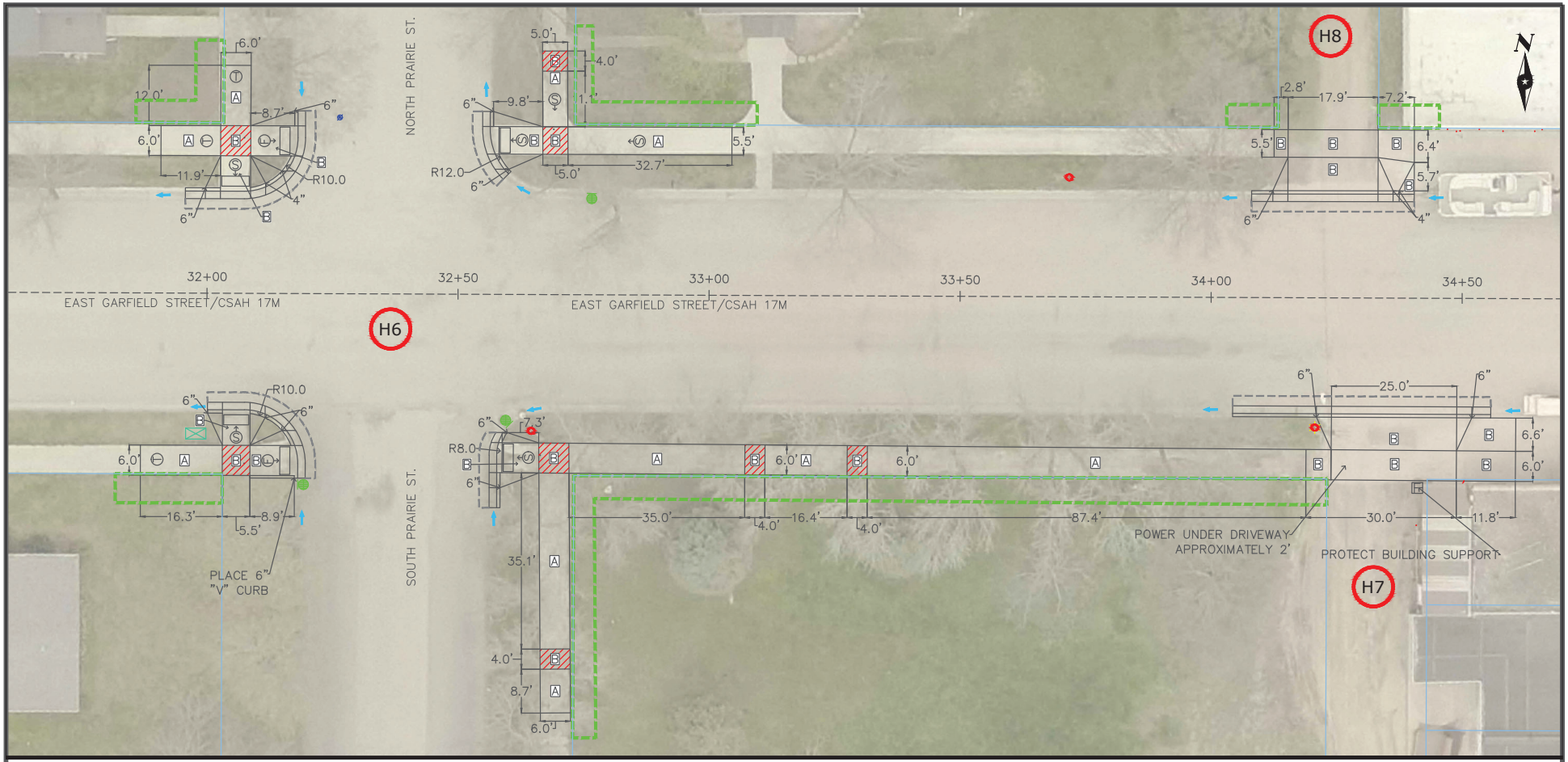
SCALE
1"=20'

CONCRETE PLACEMENT PLAN-HENDRICKS

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 58 OF 61



SCALE
1"=20'

LEGEND

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- CONSTRUCT CONCRETE CURB & GUTTER
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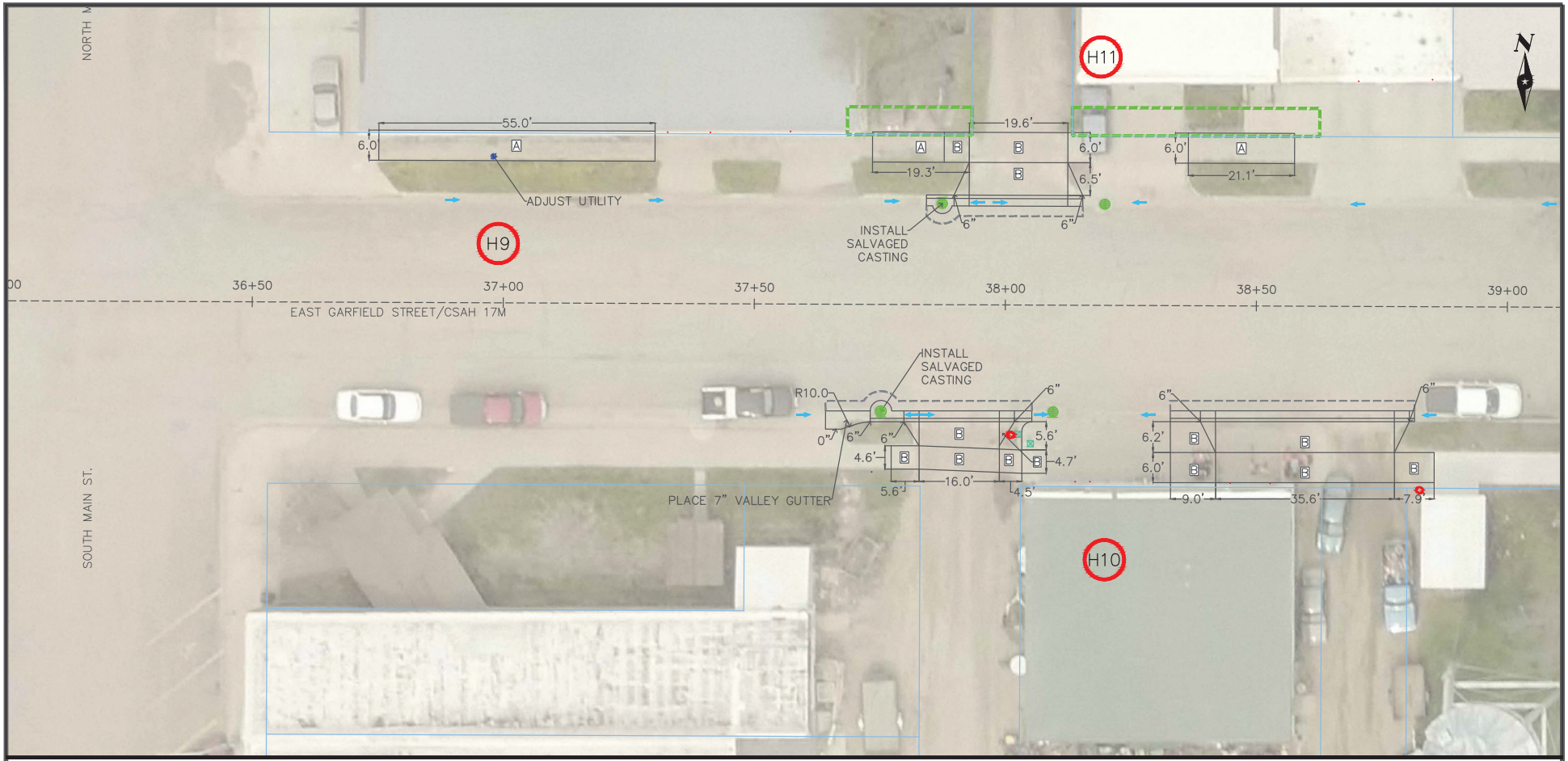
CONCRETE PLACEMENT PLAN-HENDRICKS

CERTIFIED BY Joseph M Gilbertson LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 59 OF 61



LEGEND

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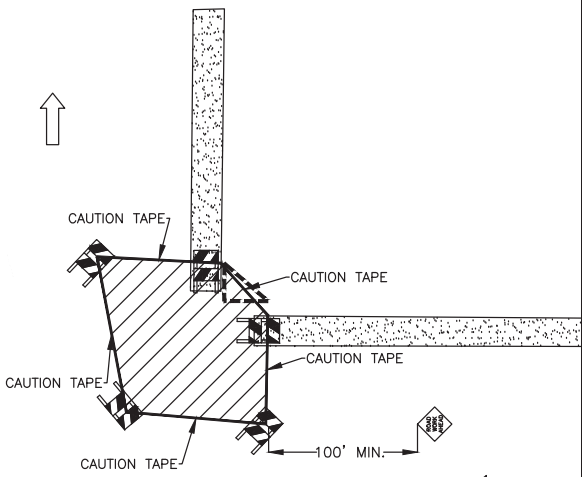
SCALE
1"=20'

CONCRETE PLACEMENT PLAN-HENDRICKS

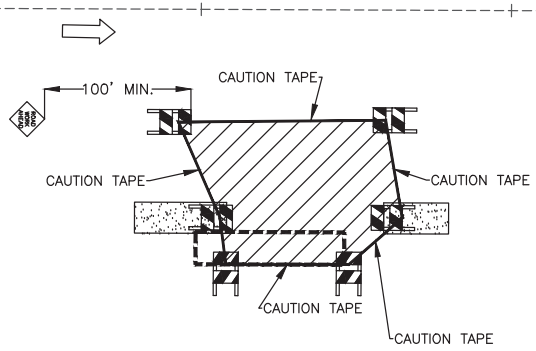
CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 60 OF 61

TRAFFIC CONTROL



NO SCALE



SIGN	SIGN NO.	SIZE	COLOR	QUANTITY
	TYPE II BARRICADE	60" X 48"	ORANGE ON WHITE	5 PER RAMP – 6 PER DRIVEWAY
	W20–1	36" X 36"	BLACK ON ORANGE	1 PER SITE

LEGEND

THIS LAYOUT AND TABULATION SHOULD BE CONSIDERED A MINIMUM. ADDITIONAL SIGNING MAY BE REQUIRED TO MEET SAFETY STANDARDS BASED ON THE CONTRACTOR'S OPERATIONS.

ALL NECESSARY TRAFFIC CONTROL DEVICES ON THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

TRAFFIC CONTROL FOR EACH "INSTALLATION LOCATION" SHALL MEET THE REQUIREMENTS OF THE CURRENT EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), INCLUDING THE FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS

TRAFFIC CONTROL

CERTIFIED BY _____ LICENSED ENGINEER LIC. NO. 54947 DATE: 5-22-2023

S.P. NO. 041–030–013 SHEET NO. 61 OF 61