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**MICHIGAN AIR NATIONAL GUARD
CONSTRUCT MAIN BASE ENTRANCE**
 BATTLE CREEK ANGB
 BATTLE CREEK, MICHIGAN

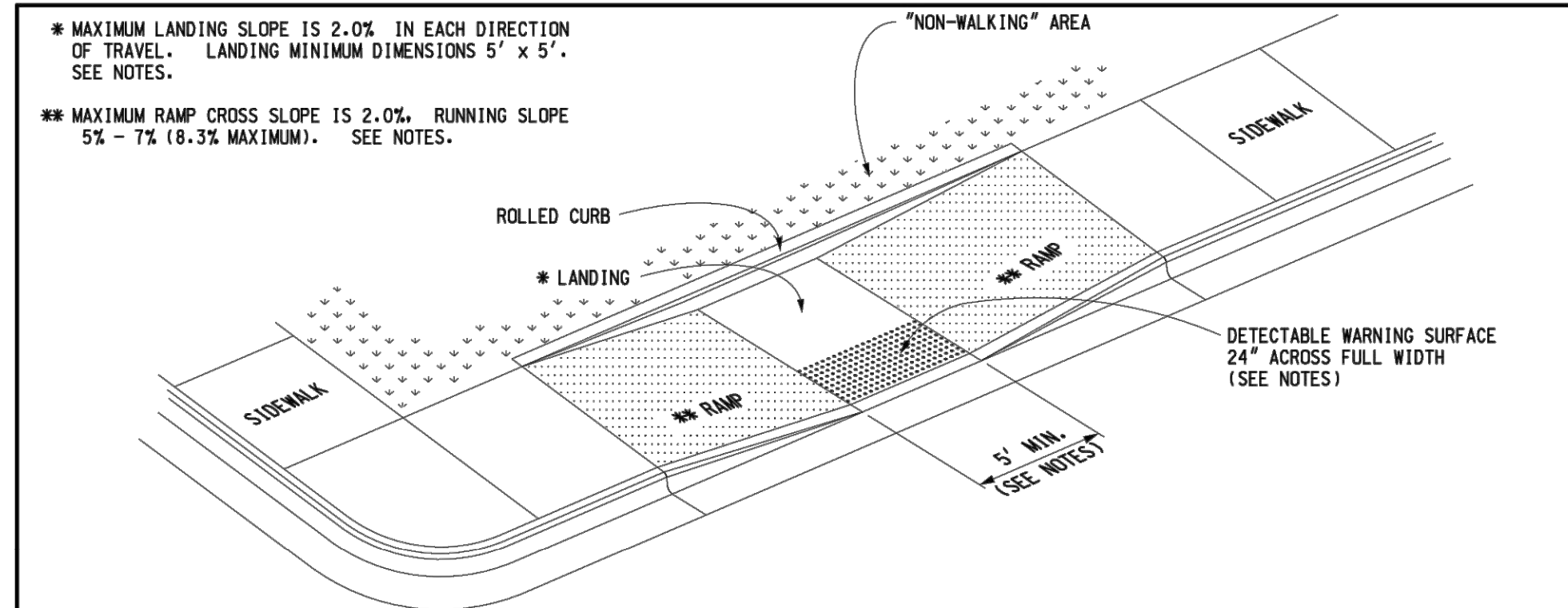
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ANG Project No: MBMV099170
 M&H NO.: 3141900-113782.01
 DATE: FEBRUARY 17, 2021
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 DRAWN BY: DAY
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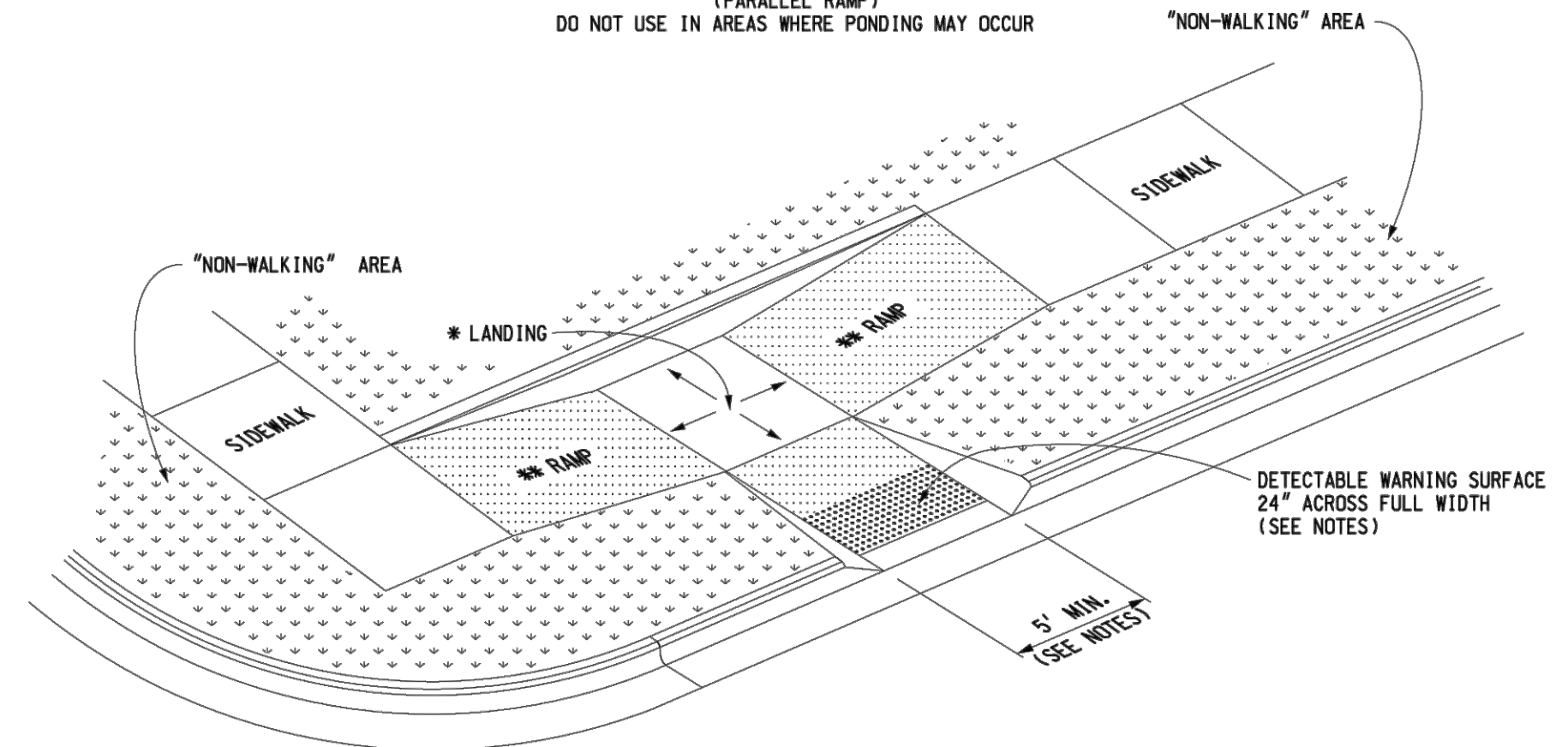
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SHEET NO.

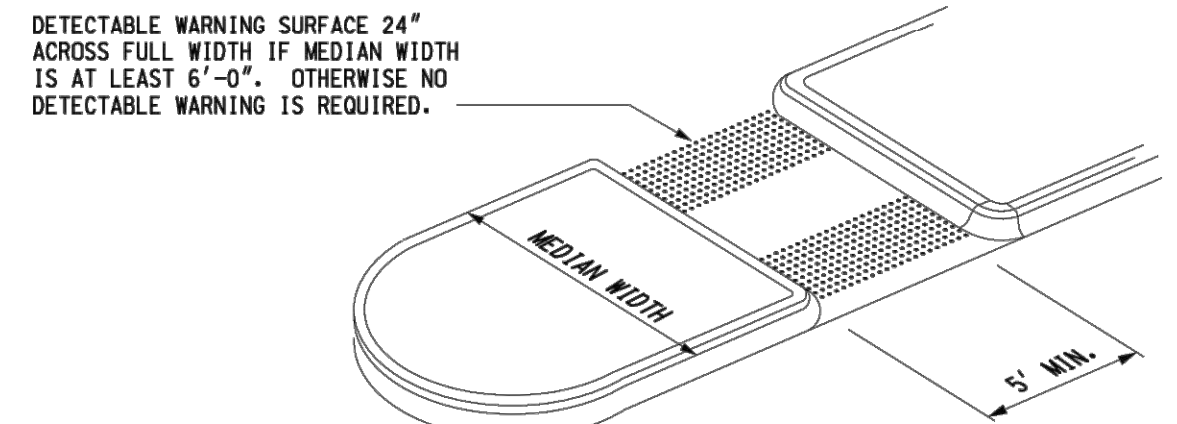
C-532



SIDEWALK RAMP TYPE P
(PARALLEL RAMP)
DO NOT USE IN AREAS WHERE PONDING MAY OCCUR



SIDEWALK RAMP TYPE C
(COMBINATION RAMP)

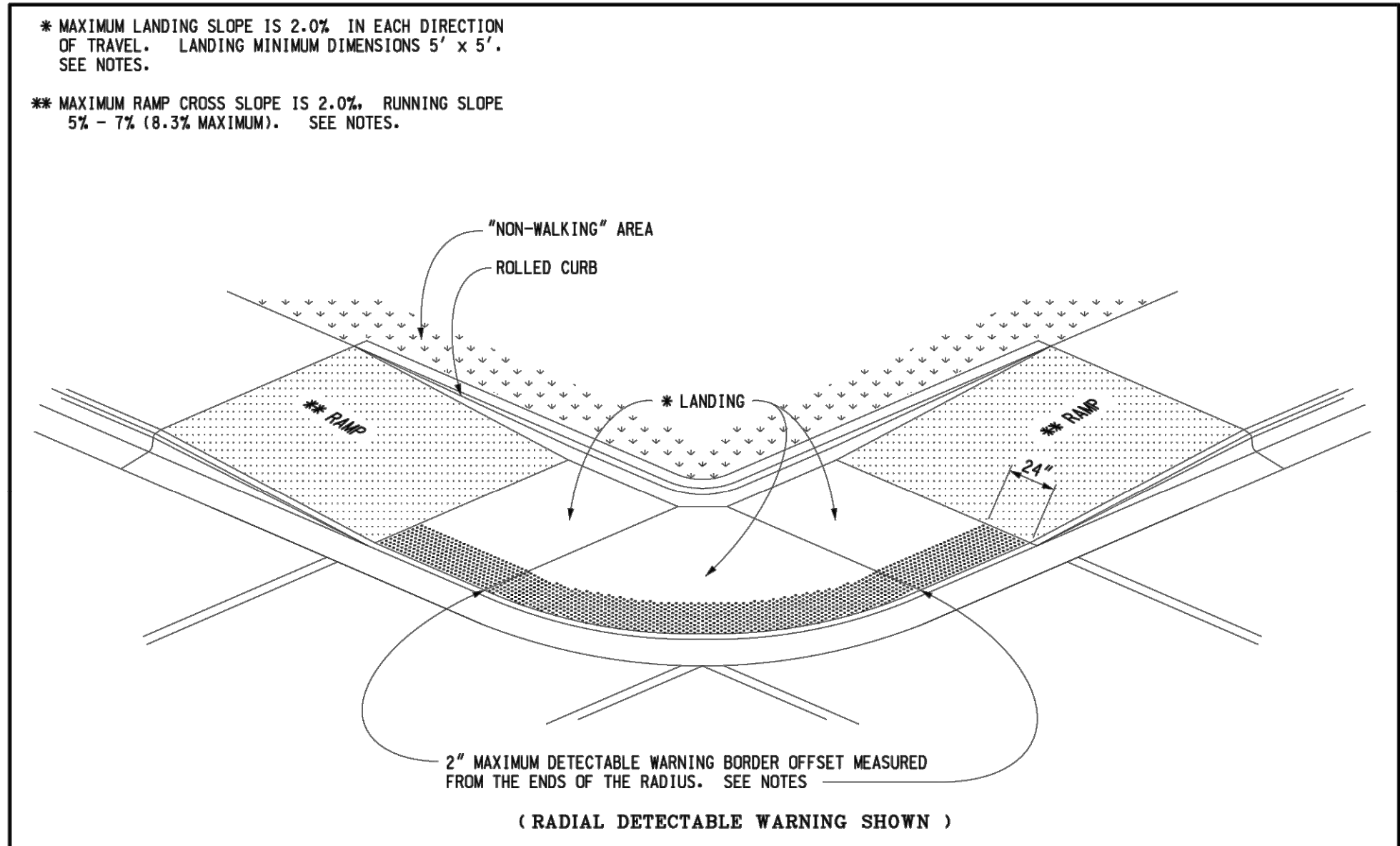


SIDEWALK RAMP TYPE M
(MEDIAN ISLAND)

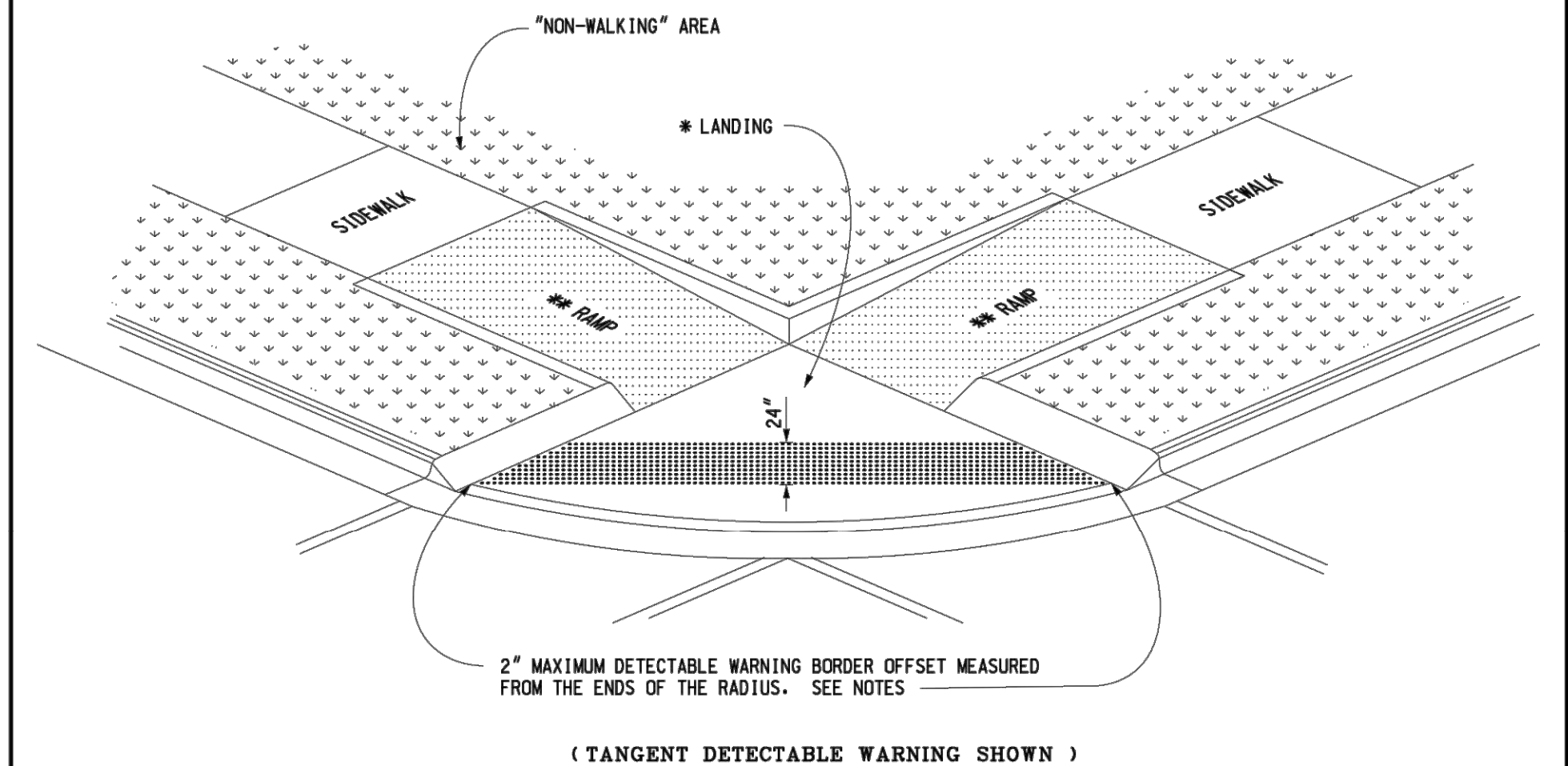
MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**SIDEWALK RAMP AND
 DETECTABLE WARNING DETAILS**

F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 3 OF 7
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(RADIAL DETECTABLE WARNING SHOWN)



(TANGENT DETECTABLE WARNING SHOWN)

SIDEWALK RAMP TYPE D
(DEPRESSED CORNER)

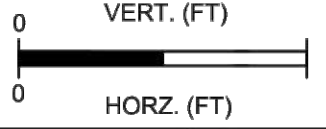
USE ONLY WHEN INDEPENDENT DIRECTIONAL RAMPS CAN NOT BE CONSTRUCTED FOR EACH CROSSING DIRECTION

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**SIDEWALK RAMP AND
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F.H.W.A. APPROVAL	7-26-2019 PLAN DATE	R-28-J	SHEET 4 OF 7
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AS-LET PLAN REVISIONS							
NO.	DATE	AUTH	DESCRIPTION	NO.	DATE	AUTH	DESCRIPTION



DATE:	CS:	DRAWING	SHEET
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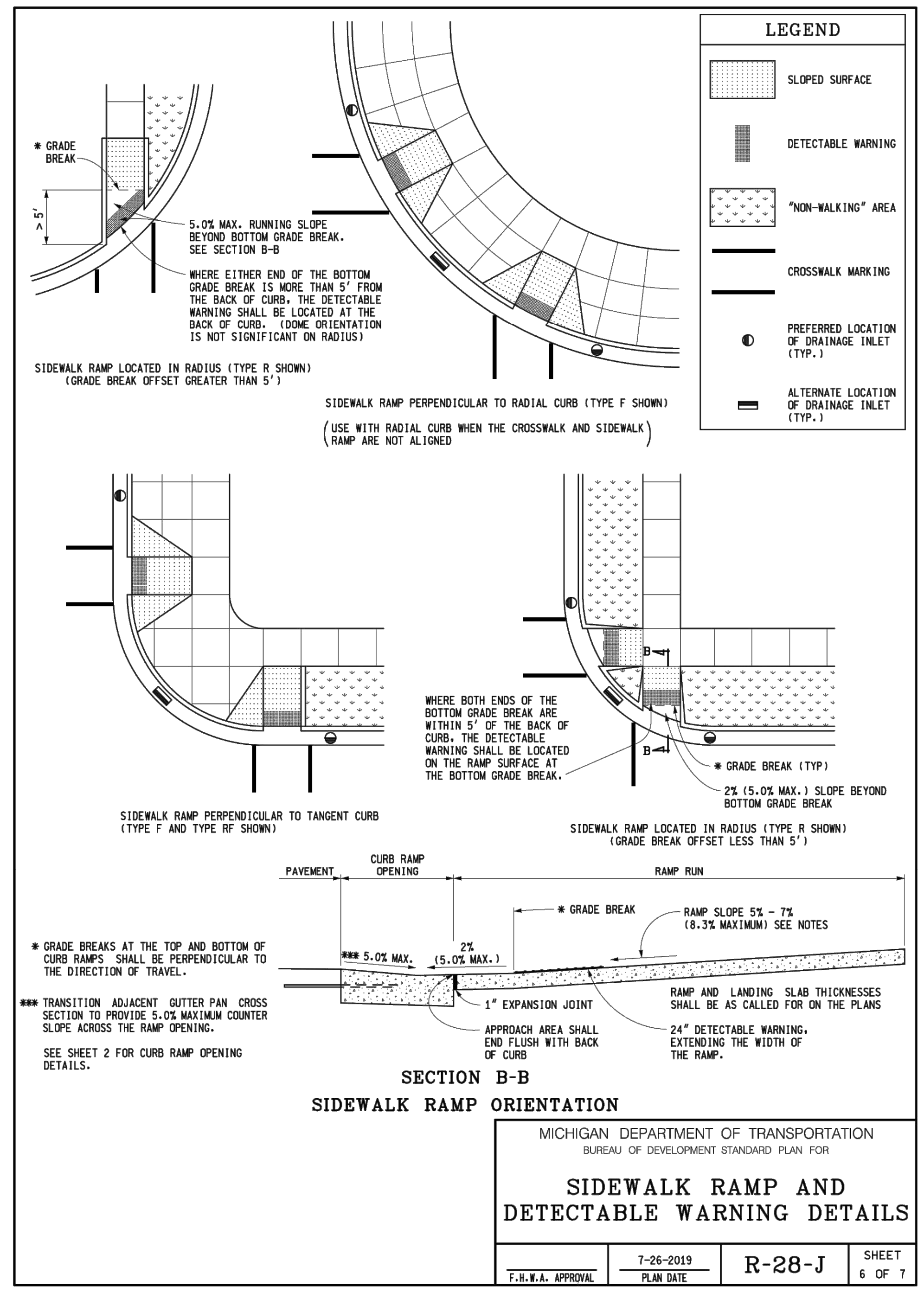
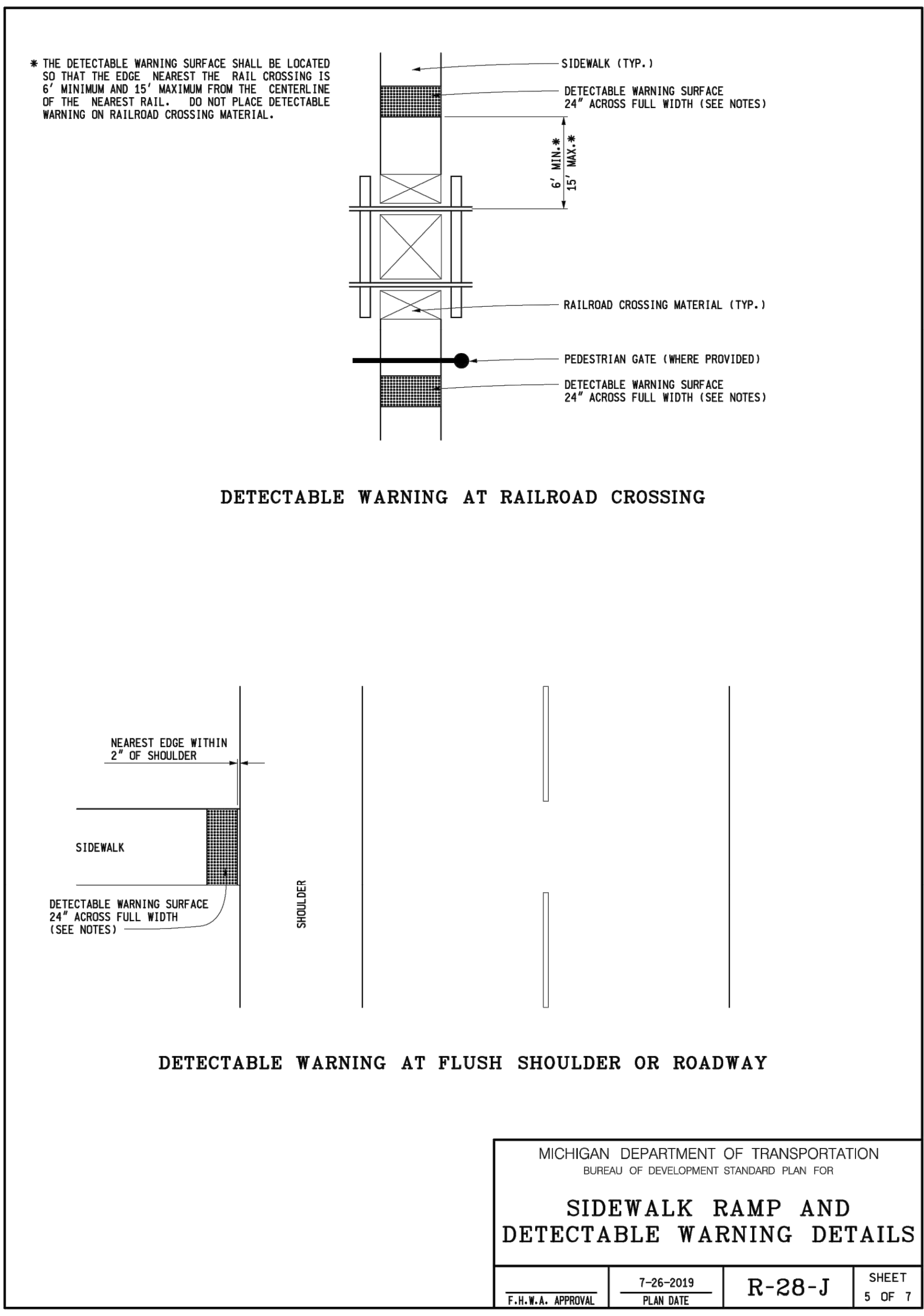
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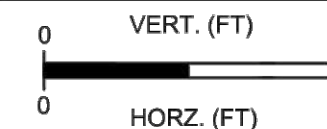
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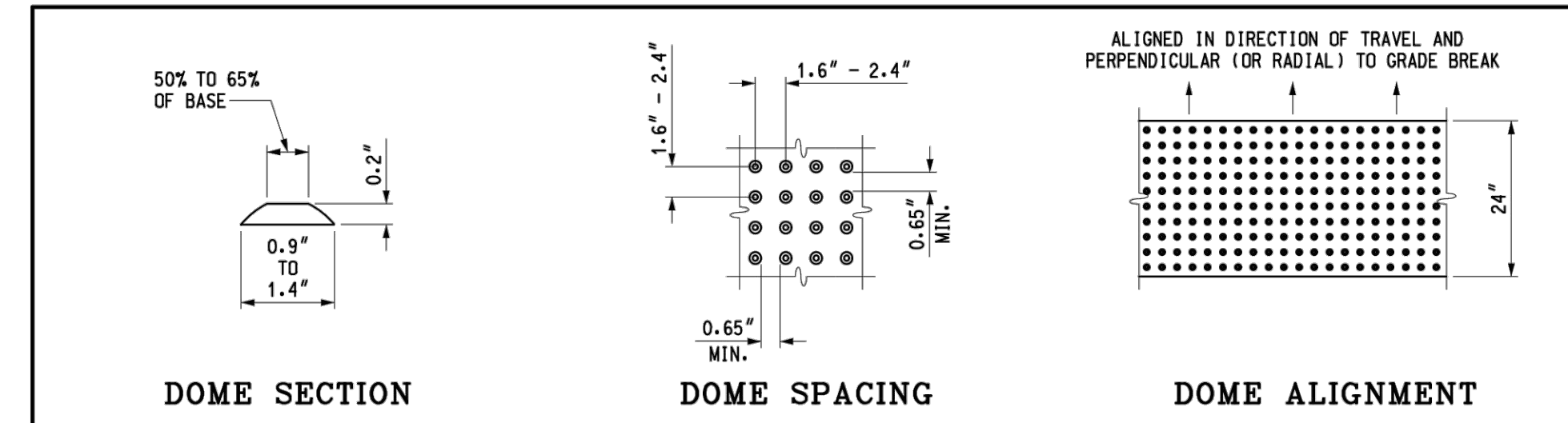
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DETECTABLE WARNING DETAILS

NOTES:

DETAILS SPECIFIED ON THIS PLAN APPLY TO ALL CONSTRUCTION, RECONSTRUCTION, OR ALTERATION OF STREETS, CURBS, OR SIDEWALKS IN THE PUBLIC RIGHT OF WAY.

SIDEWALK RAMP ARE TO BE LOCATED AS SPECIFIED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

RAMP SHALL BE PROVIDED AT ALL CORNERS OF AN INTERSECTION WHERE THERE IS EXISTING OR PROPOSED SIDEWALK AND CURB. RAMP SHALL ALSO BE PROVIDED AT MARKED AND/OR SIGNALIZED MID-BLOCK CROSSINGS.

SURFACE TEXTURE OF THE RAMP SHALL BE THAT OBTAINED BY A COARSE BROOMING, TRANSVERSE TO THE RUNNING SLOPE.

SIDEWALK SHALL BE RAMPED WHERE THE DRIVEWAY CURB IS EXTENDED ACROSS THE WALK.

CARE SHALL BE TAKEN TO ASSURE A UNIFORM GRADE ON THE RAMP. WHERE CONDITIONS PERMIT, IT IS DESIRABLE THAT THE SLOPE OF THE RAMP BE IN ONLY ONE DIRECTION, PARALLEL TO THE DIRECTION OF TRAVEL.

RAMP WIDTH SHALL BE INCREASED, IF NECESSARY, TO ACCOMMODATE SIDEWALK SNOW REMOVAL EQUIPMENT NORMALLY USED BY THE MUNICIPALITY.

WHEN 5' MINIMUM WIDTHS ARE NOT PRACTICABLE, RAMP WIDTH MAY BE REDUCED TO NOT LESS THAN 4' AND LANDINGS TO NOT LESS THAN 4' x 4'.

CURB RAMP WITH A RUNNING SLOPE ≤5% DO NOT REQUIRE A TOP LANDING. HOWEVER, ANY CONTINUOUS SIDEWALK OR PEDESTRIAN ROUTE CROSSING THROUGH OR INTERSECTING THE CURB RAMP MUST INDEPENDENTLY MAINTAIN A CROSS SLOPE NOT GREATER THAN 2% PERPENDICULAR TO ITS OWN DIRECTION(S) OF TRAVEL.

DETECTABLE WARNING SURFACE COVERAGE IS 24" MINIMUM IN THE DIRECTION OF RAMP/PATH TRAVEL AND THE FULL WIDTH OF THE RAMP/PATH OPENING EXCLUDING CURBED OR FLARED CURB TRANSITION AREAS. A BORDER OFFSET NOT GREATER THAN 2" MEASURED ALONG THE EDGES OF THE DETECTABLE WARNING IS ALLOWABLE. FOR RADIAL CURB THE OFFSET IS MEASURED FROM THE ENDS OF THE RADIUS.

FOR NEW ROADWAY CONSTRUCTION, THE RAMP CROSS SLOPE MAY NOT EXCEED 2.0%. FOR ALTERATIONS TO EXISTING ROADWAYS, THE CROSS SLOPE MAY BE TRANSITIONED TO MEET AN EXISTING ROADWAY GRADE. THE CROSS SLOPE TRANSITION SHALL BE APPLIED UNIFORMLY OVER THE FULL LENGTH OF THE RAMP.

THE MAXIMUM RUNNING SLOPE OF 8.3% IS RELATIVE TO A FLAT (0%) REFERENCE. HOWEVER, IT SHALL NOT REQUIRE ANY RAMP OR SERIES OF RAMP TO EXCEED 15 FEET IN LENGTH NOT INCLUDING LANDINGS OR TRANSITIONS.

DRAINAGE STRUCTURES SHOULD NOT BE PLACED IN LINE WITH RAMP. THE LOCATION OF THE RAMP SHOULD TAKE PRECEDENCE OVER THE LOCATION OF THE DRAINAGE STRUCTURE. WHERE EXISTING DRAINAGE STRUCTURES ARE LOCATED IN THE RAMP PATH OF TRAVEL, USE A MANUFACTURER'S ADA COMPLIANT GRATE. OPENINGS SHALL NOT BE GREATER THAN 1/2". ELONGATED OPENINGS SHALL BE PLACED SO THAT THE LONG DIMENSION IS PERPENDICULAR TO THE DOMINANT DIRECTION OF TRAVEL.

THE TOP OF THE JOINT FILLER FOR ALL RAMP TYPES SHALL BE FLUSH WITH THE ADJACENT CONCRETE.

CROSSWALK AND STOP LINE MARKINGS, IF USED, SHALL BE SO LOCATED AS TO STOP TRAFFIC SHORT OF RAMP CROSSINGS. SPECIFIC DETAILS FOR MARKING APPLICATIONS ARE GIVEN IN THE "MICHIGAN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES".

FLARED SIDES WITH A SLOPE OF 10% MAXIMUM, MEASURED ALONG THE ROADSIDE CURB LINE, SHALL BE PROVIDED WHERE AN UNOBSTRUCTED CIRCULATION PATH LATERALLY CROSSES THE SIDEWALK RAMP. FLARED SIDES ARE NOT REQUIRED WHERE THE RAMP IS BORDERED BY LANDSCAPING, UNPAVED SURFACE OR PERMANENT FIXED OBJECTS. WHERE THEY ARE NOT REQUIRED, FLARED SIDES CAN BE CONSIDERED IN ORDER TO AVOID SHARP CURB RETURNS AT RAMP OPENINGS.

DETECTABLE WARNING PLATES MUST BE INSTALLED USING FABRICATED OR FIELD CUT UNITS CAST AND/OR ANCHORED IN THE PAVEMENT TO RESIST SHIFTING OR HEAVING.

MICHIGAN DEPARTMENT OF TRANSPORTATION
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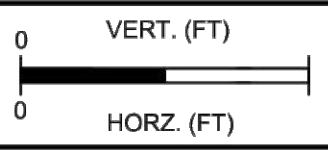
F.H.W.A. APPROVAL _____ PLAN DATE _____ SHEET OF _____

MICHIGAN DEPARTMENT OF TRANSPORTATION
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**SIDEWALK RAMP AND
DETECTABLE WARNING DETAILS**

F.H.W.A. APPROVAL _____ 7-26-2019 PLAN DATE _____ R-28-J SHEET 7 OF 7

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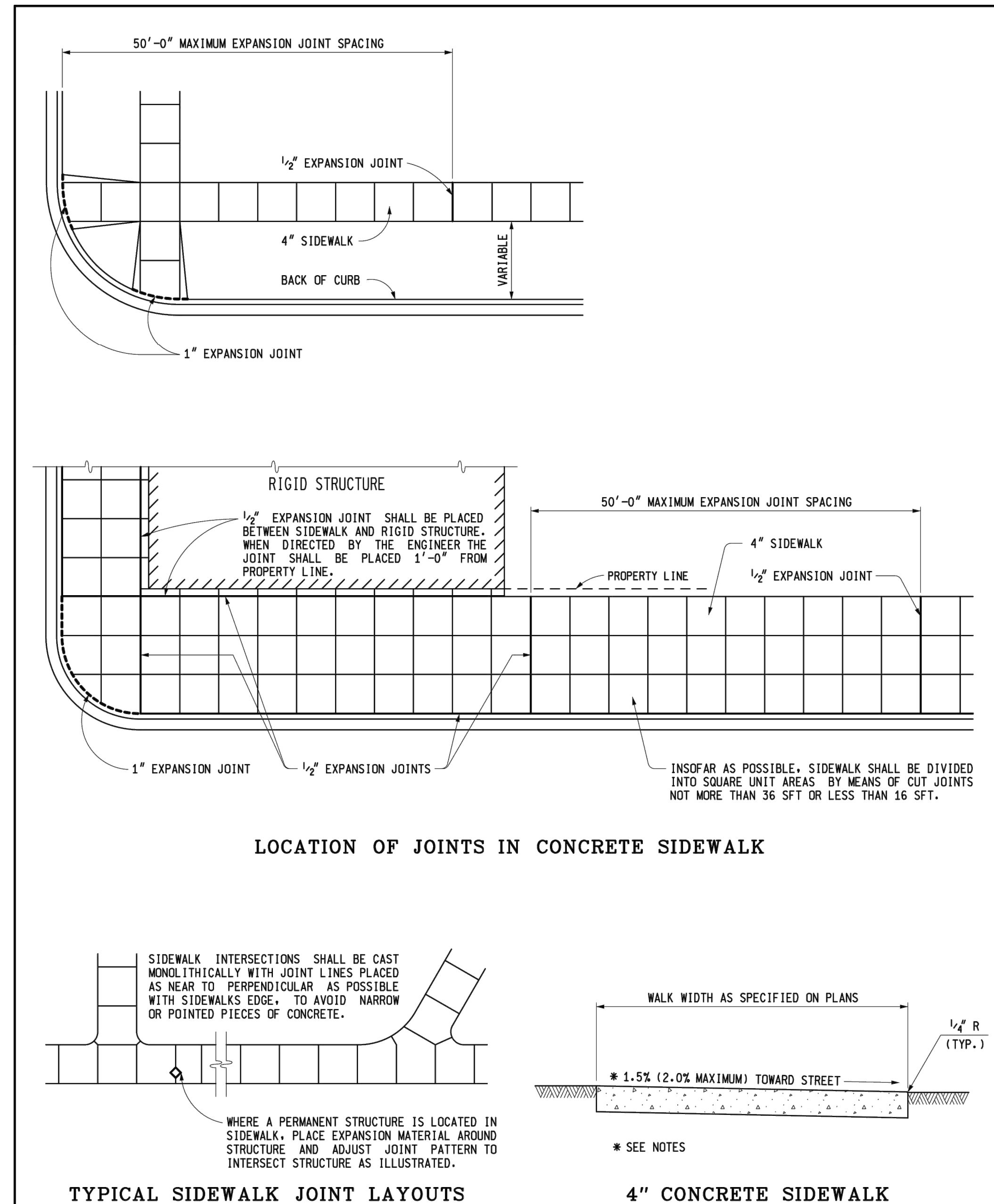
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SHEET NO.

C-535



<p>PREPARED BY DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.</p>	<p>DEPARTMENT DIRECTOR Kirk T. Steudle</p> <p>APPROVED BY: <i>Randy U. Pfeiffer</i> DIRECTOR, BUREAU OF FIELD SERVICES</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR DRIVEWAY OPENINGS & APPROACHES, AND CONCRETE SIDEWALK</p>			
	<p>APPROVED BY: <i>Neil A. Van Pelt</i> DIRECTOR, BUREAU OF HIGHWAY DEVELOPMENT</p>	<p>9-30-2014 F.H.W.A. APPROVAL</p>	<p>7-1-2014 PLAN DATE</p>	<p>R-29-I</p>	<p>SHEET 1 OF 4</p>



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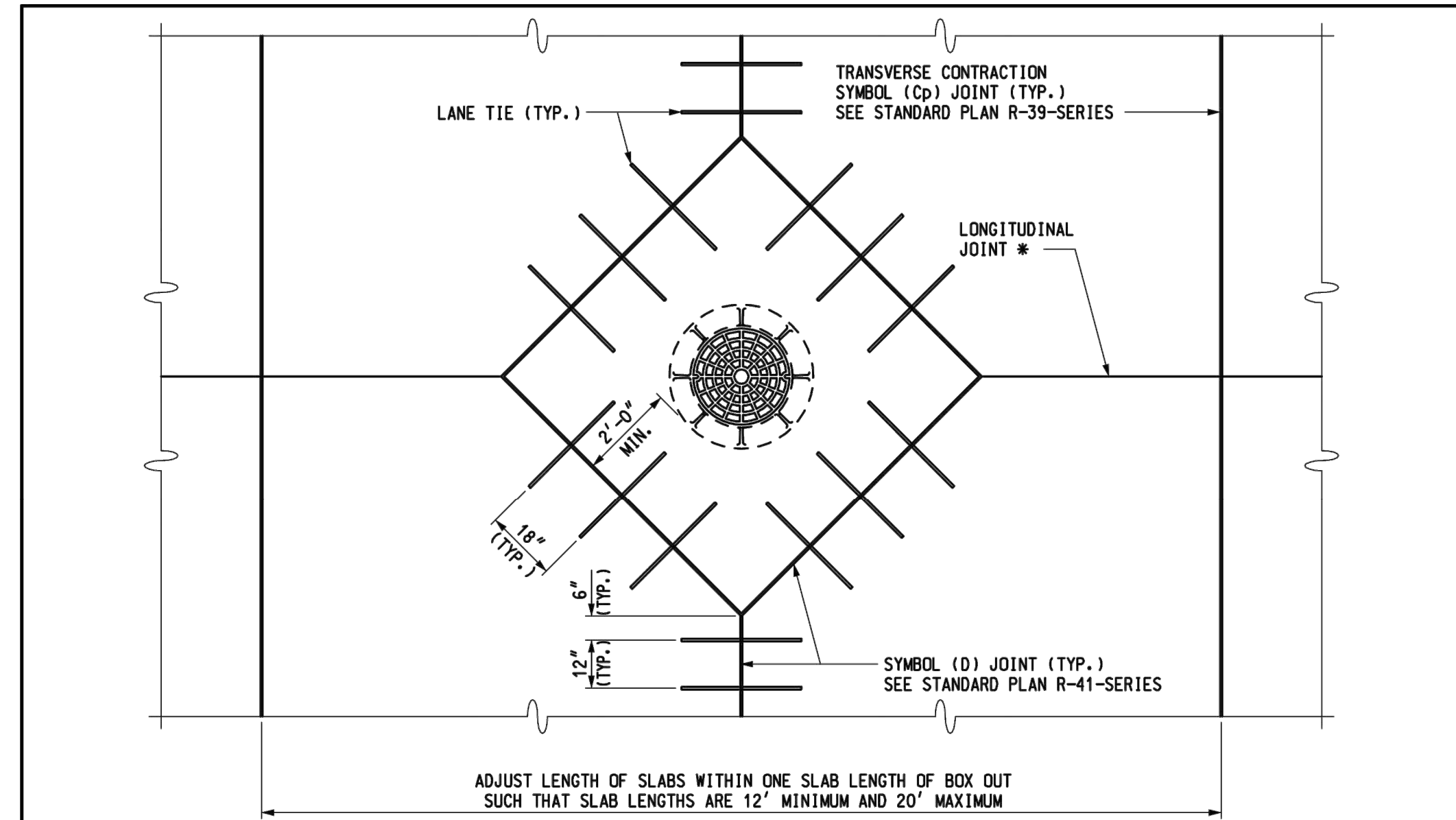
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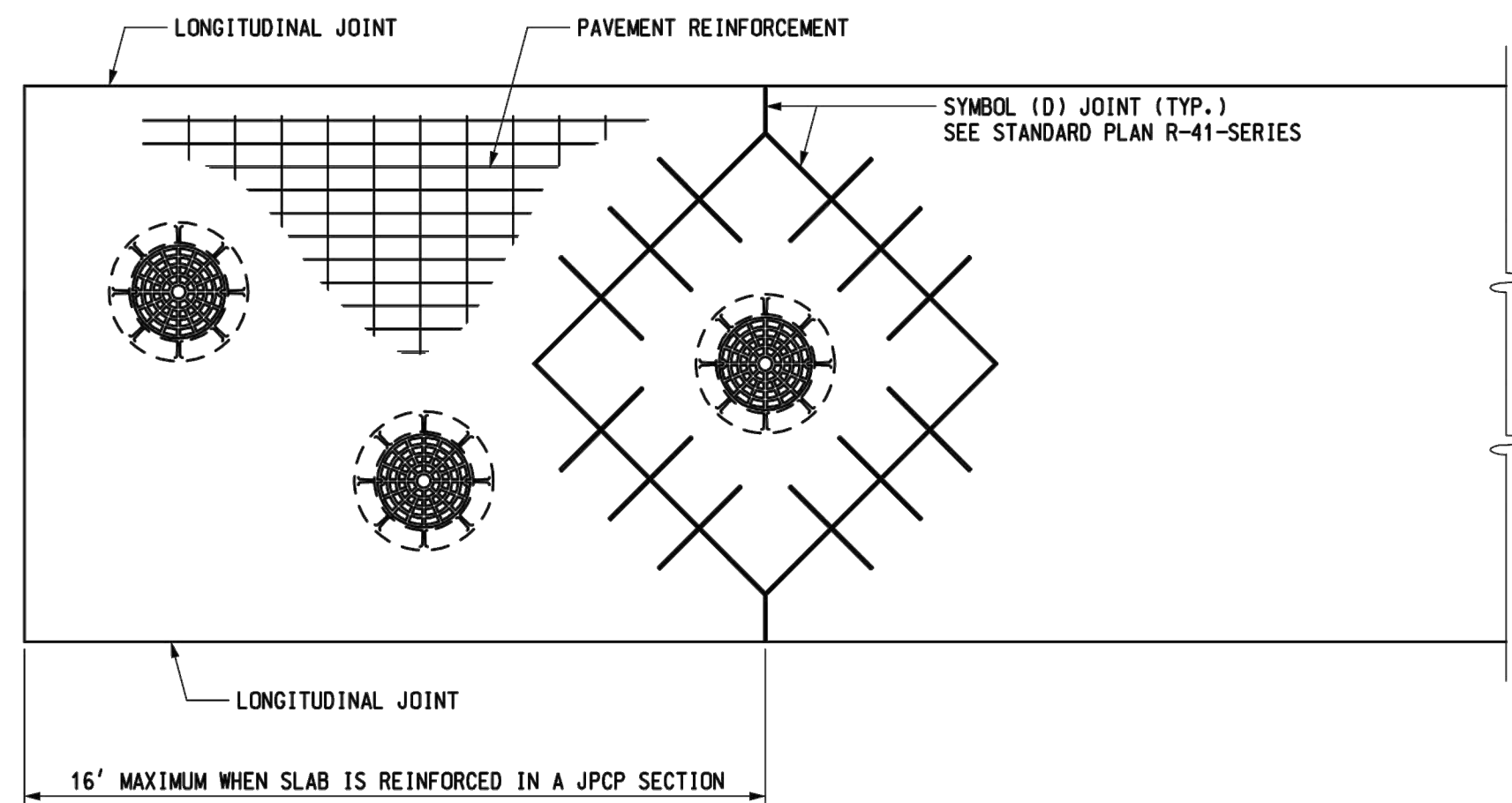
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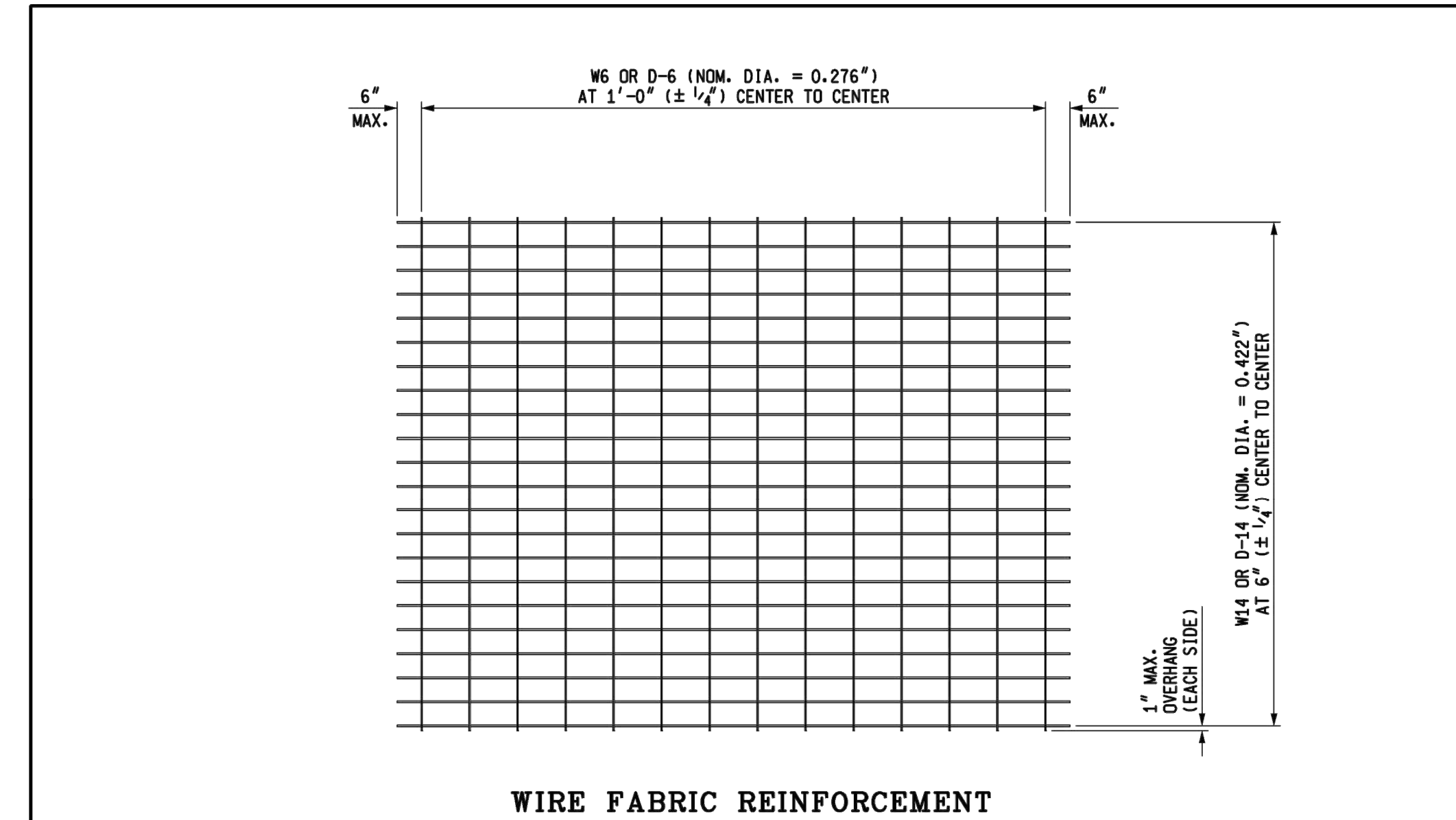
DIAGONAL BOX OUT OPTION
FOR USE WHEN STRUCTURE IS ON OR NEAR THE JOINT

* IF NECESSARY, ADJUST LONGITUDINAL JOINT LOCATION TO INTERSECT BOX OUT AS APPROVED BY THE ENGINEER.

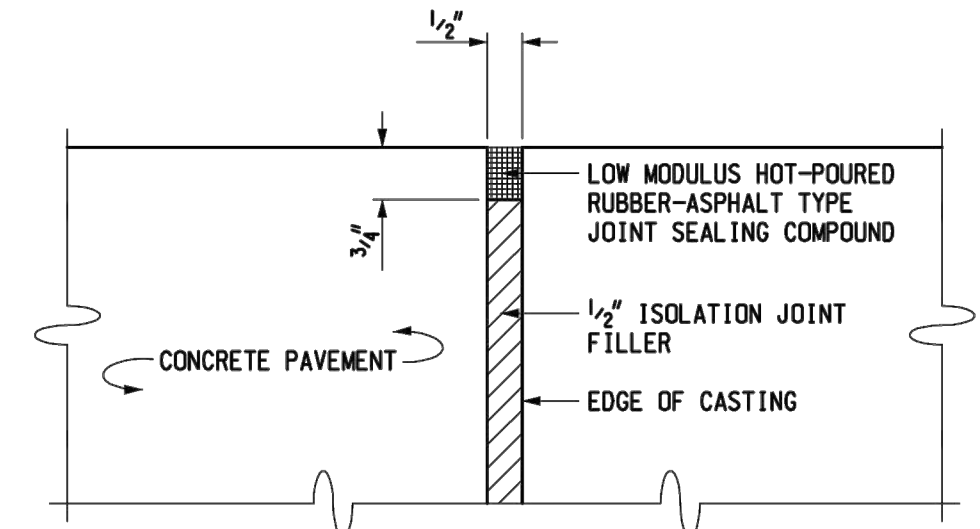


MULTIPLE STRUCTURES WITHIN SLAB

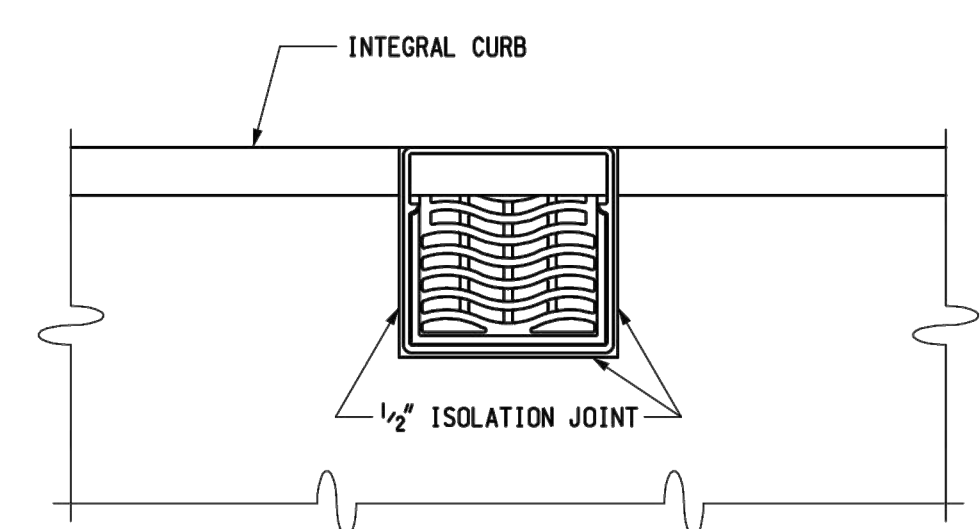
FOR SLABS WITH MULTIPLE STRUCTURES INCLUSIVE, REINFORCE THE SLAB JOINT TO JOINT. IF A BOX OUT OPTION IS USED WITHIN THE SLAB (FOR CONSTRUCTION PURPOSES), FOLLOW BOX OUT DETAIL WITH REINFORCEMENT.



WIRE FABRIC REINFORCEMENT



ISOLATION JOINT



DRAINAGE INLET
(FOR USE WITH INTEGRAL CURB)
NOT ALIGNED WITH TRANSVERSE JOINT

NOTES:
NO PLUG OR SLIVER OF CONCRETE SHOULD EXTEND OVER, UNDER, THROUGH, AROUND, OR BETWEEN SECTIONS OF THE JOINT FILLER.
JOINT FILLER MAY BE HELD IN PLACE BY STAKES IN THE SUBGRADE.
AFTER THE CONCRETE HARDENS, THE TOP OF THE JOINT FILLER MAY BE RECESSED APPROXIMATELY 3/4" TO ALLOW SPACE FOR LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

<p>PREPARED BY DESIGN DIVISION DRAWN BY: <u>B.L.T.</u> CHECKED BY: <u>W.K.P.</u></p>	<p>DEPARTMENT DIRECTOR Kirk T. Stouffe</p> <p>APPROVED BY: <u>John C. Fried</u> ENGINEER OF DELIVERY</p>	<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR</p> <p>ISOLATION JOINT DETAILS</p>		
	<p>APPROVED BY: <u>Mark A. Van Pelt</u> ENGINEER OF DEVELOPMENT</p>	<p>9-10-2010 F.H.W.A. APPROVAL</p>	<p>5-28-2010 PLAN DATE</p>	<p>R-37-B</p>

<p>MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR</p> <p>ISOLATION JOINT DETAILS</p>			
<p>9-10-2010 F.H.W.A. APPROVAL</p>	<p>5-28-2010 PLAN DATE</p>	<p>R-37-B</p>	<p>SHEET 2 OF 2</p>



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SYMBOL (Cp) AND (C3p)

SYMBOL	LOAD TRANSFER	JOINT USE
(Cp)	YES	PAVEMENT
(C3p)	NO	SHOULDER

SAWED JOINT DETAIL
SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

* DEPTH OF RELIEF CUT FOR JOINT (Cp) AND (C3p) SHALL BE 1/4 THE SLAB THICKNESS FOR PAVEMENTS LESS THAN OR EQUAL TO 7" IN THICKNESS AND 1/3 THE SLAB THICKNESS FOR PAVEMENTS GREATER THAN 7" THICK.

SURFACE OF FINISHED PAVEMENT OR SHOULDER

SEE SAWED JOINT DETAIL

SEE STANDARD PLAN R-40-SERIES FOR LOAD TRANSFER ASSEMBLY

LOAD TRANSFER ASSEMBLY METHOD

SURFACE OF FINISHED PAVEMENT OR SHOULDER

SEE SAWED JOINT DETAIL

DOWEL BAR INSERTER METHOD

TRANSVERSE CONTRACTION JOINT

SYMBOL (W)

SAWED JOINT DETAIL
SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

* DEPTH OF RELIEF CUT FOR JOINT 1/4 THE SLAB THICKNESS.

SURFACE OF FINISHED SHOULDER

SEE SAWED JOINT DETAIL

TRANSVERSE AND INTERSECTION PLANE OF WEAKNESS JOINTS

 MICHIGAN DEPARTMENT OF TRANSPORTATION PREPARED BY: Kimberly Avery DESIGN DIVISION DRAWN BY: B.L.T. CHECKED BY: W.K.P.	DEPARTMENT DIRECTOR Kirk T. Stuedle APPROVED BY: Kimberly Avery DIRECTOR, BUREAU OF FIELD SERVICES APPROVED BY: Bradley C. Wieferich DIRECTOR, BUREAU OF DEVELOPMENT	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT) 2-21-2018 F.H.W.A. APPROVAL 9-25-2017 PLAN DATE R-39-K SHEET 1 OF 5	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT) 2-21-2018 F.H.W.A. APPROVAL 9-25-2017 PLAN DATE R-39-K SHEET 2 OF 5
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SYMBOL (E2) AND (E4)

SAWED JOINT DETAIL
SAWED JOINT SEALED WITH LOW MODULUS HOT-POURED RUBBER-ASPHALT TYPE JOINT SEALING COMPOUND.

SURFACE OF FINISHED PAVEMENT OR SHOULDER

SEE SAWED JOINT DETAIL

SEE STANDARD PLAN R-40-SERIES FOR LOAD TRANSFER ASSEMBLY

TRANSVERSE EXPANSION JOINT

SURFACE OF FINISHED PAVEMENT OR SHOULDER

SEE SAWED JOINT DETAIL

SEE STANDARD PLAN R-40-SERIES FOR LOAD TRANSFER ASSEMBLY

OUTSIDE EDGE TREATMENT

SYMBOL (U)

1/8" SAWED JOINT OR A FORMED JOINT MADE BY PLACING 1/4" HARDBOARD OR OTHER APPROVED MATERIAL FLUSH WITH THE SURFACE OF THE CONCRETE BASE COURSE AND TRUE TO POSITION AND LINE BEFORE THE CONCRETE HAS SET

TRANSVERSE PLANE OF WEAKNESS JOINTS IN CONCRETE BASE COURSE

MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR TRANSVERSE PAVEMENT JOINTS (PLAIN CONCRETE PAVEMENT) 2-21-2018 F.H.W.A. APPROVAL 9-25-2017 PLAN DATE R-39-K SHEET 2 OF 5

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SYMBOL (E3)

NOTE:
THE FINAL WIDTH OF THE GROOVE SHALL BE 1" + 1/16" PLUS ANY INCREASE OR MINUS ANY DECREASE IN THE WIDTH OF THE RELIEF CUT. THE FINAL SAW CUT SHALL BE TO THE TOP OF THE FIBER FILLER WITH A MINIMUM DEPTH AS SHOWN AND SHALL BE CENTERED OVER THE FIBER FILLER WITH A HORIZONTAL TOLERANCE OF 1/4". FIBER FILLER FOR EXPANSION JOINTS IN CONCRETE SHOULDERS SHALL BE FREE OF HOLES OR OTHER DEFECTS AND TRIMMED TO FIT SHOULDER CONFIGURATIONS.

SYMBOL	LOAD TRANSFER ASSEMBLY	JOINT USE
(E3)	NO	PAVEMENT & SHOULDER

TRANSVERSE EXPANSION JOINT

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

**TRANSVERSE PAVEMENT JOINTS
(PLAIN CONCRETE PAVEMENT)**

2-21-2018 F.H.W.A. APPROVAL	9-25-2017 PLAN DATE	R-39-K	SHEET 3 OF 5
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SEWER NOT UNDER ROADBED CONCRETE A1

SEWER NOT UNDER ROADBED METAL & PLASTIC A2

SEWER UNDER ROADBED OR WITHIN INFLUENCE OF ROADBED CONCRETE & METAL PIPE B1

UTILITY TRENCHES

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 1 OF 5
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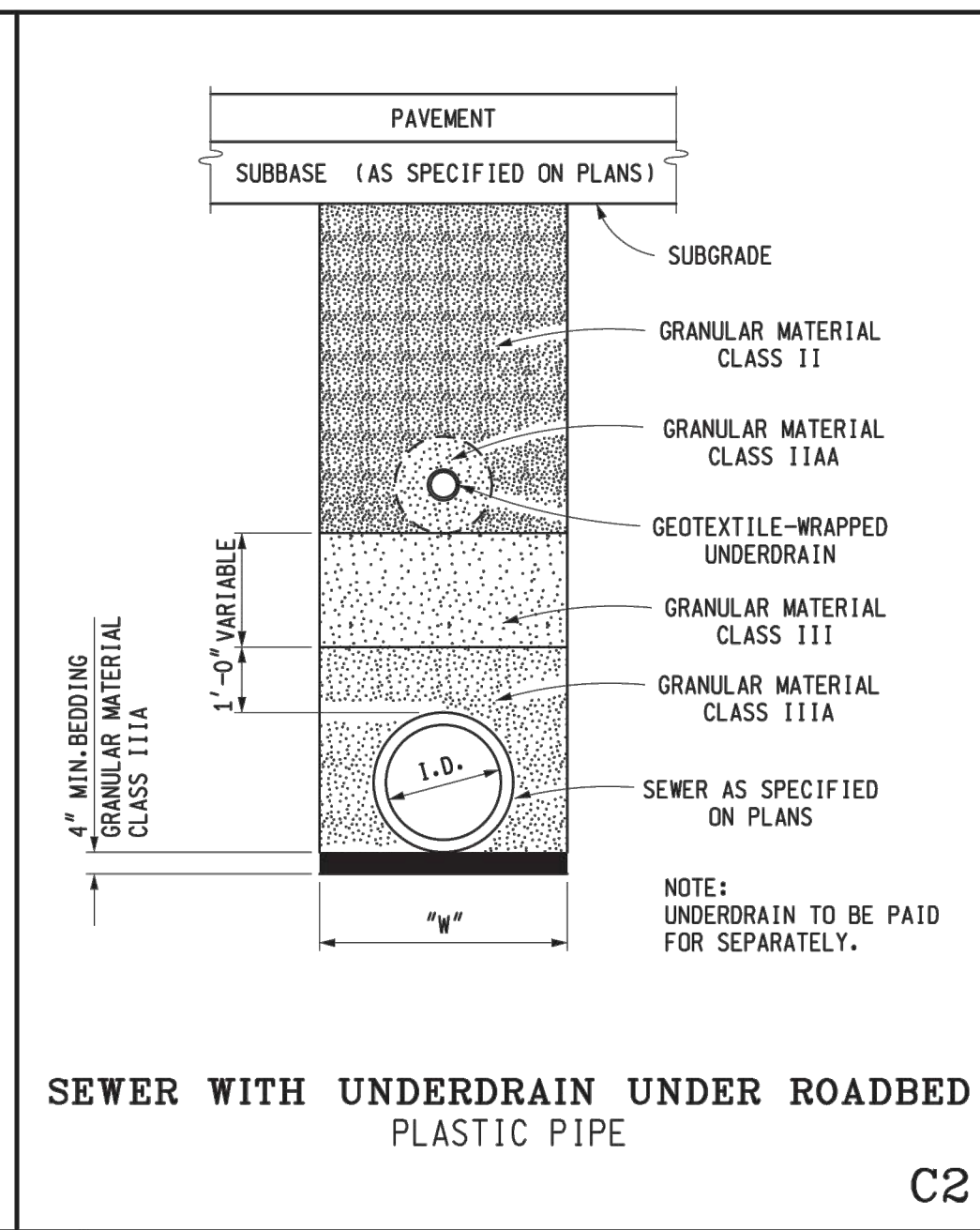
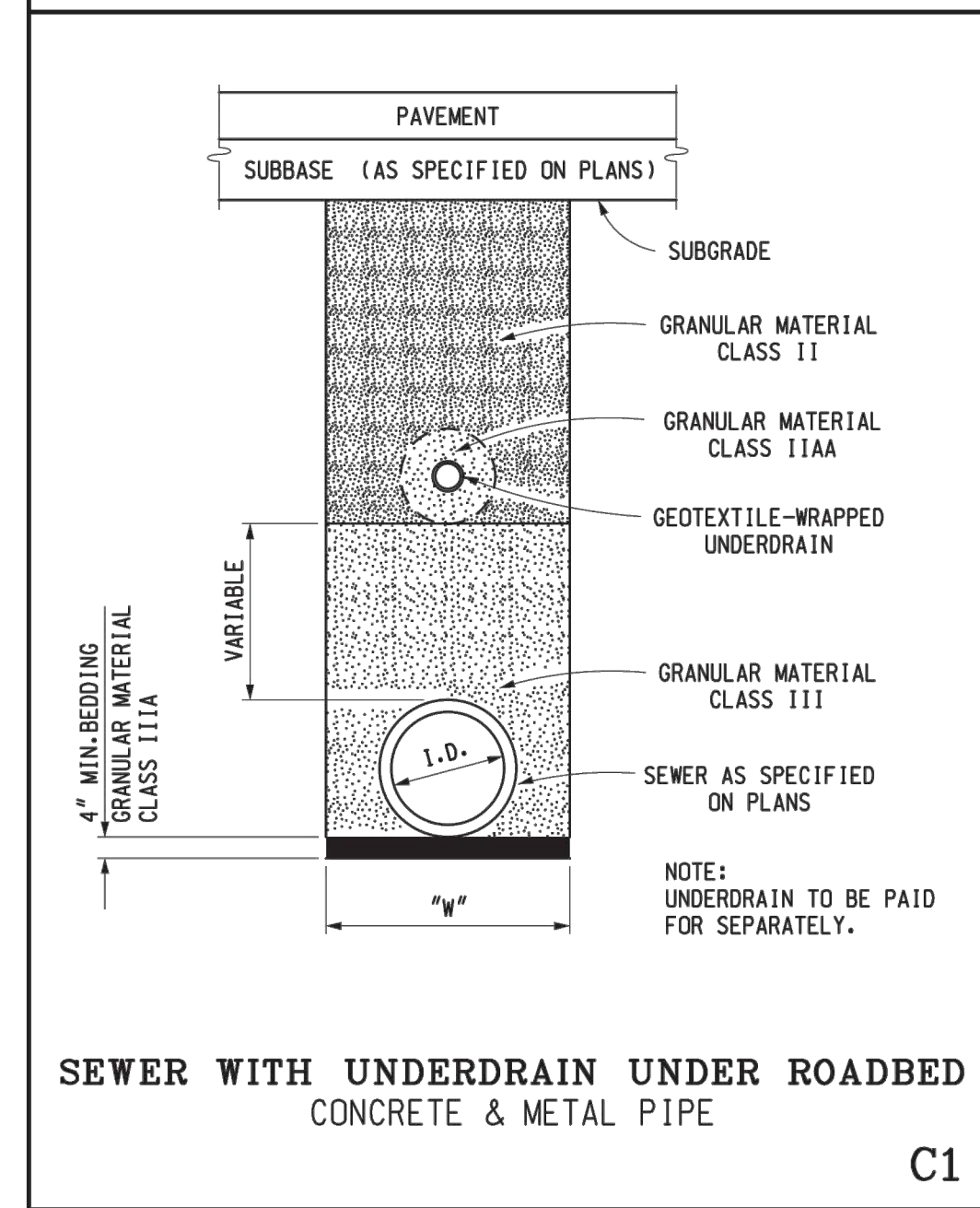
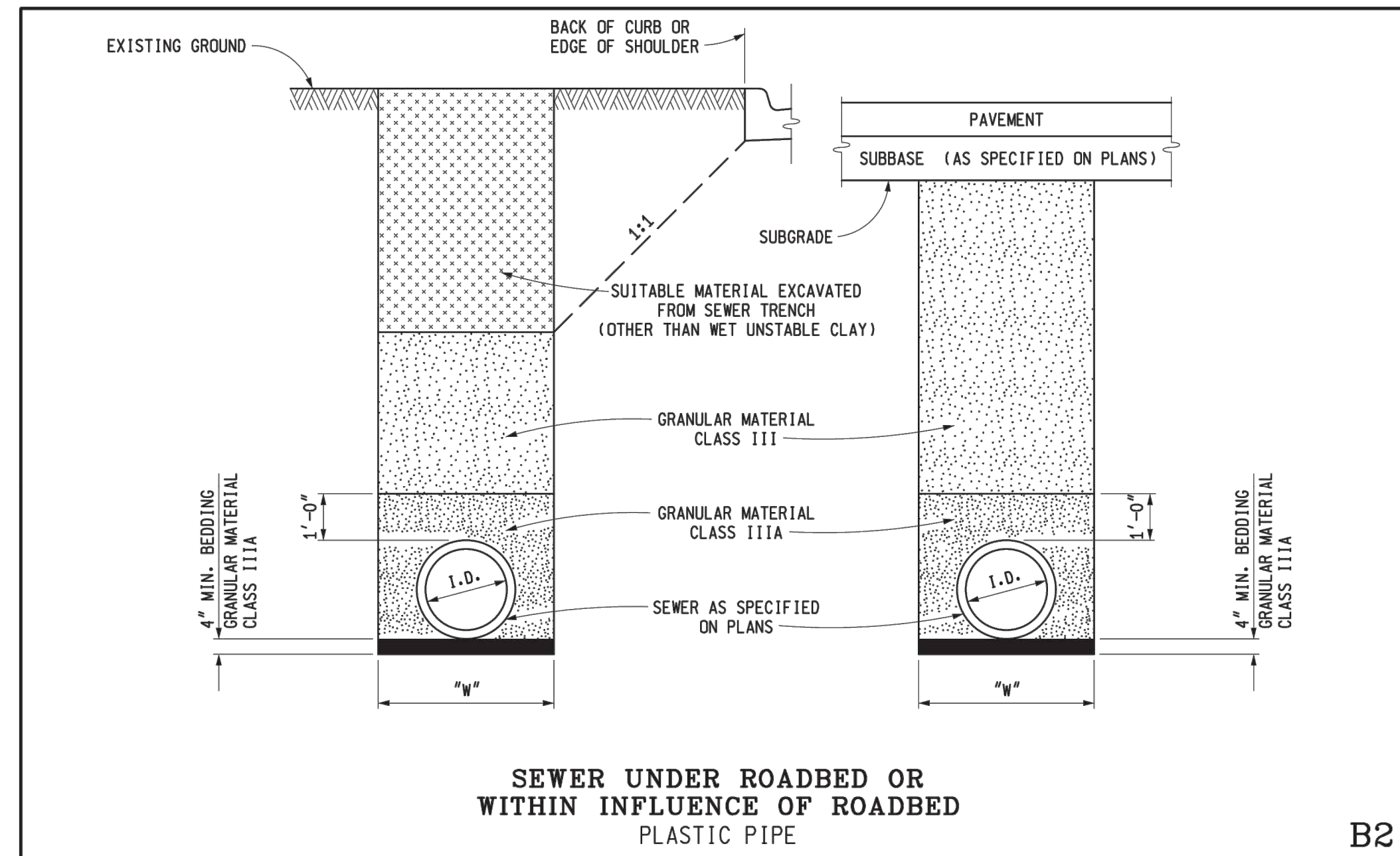
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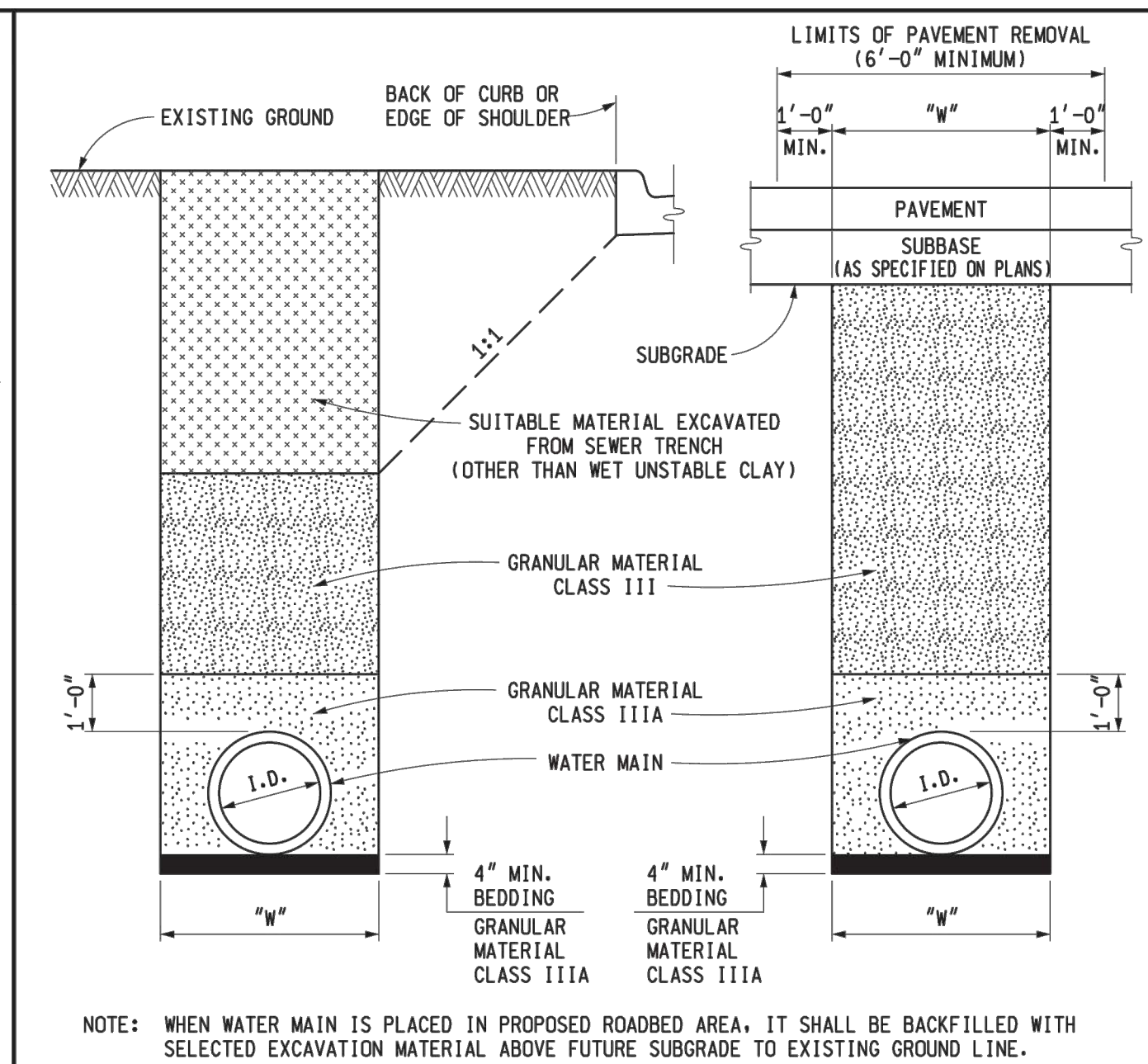
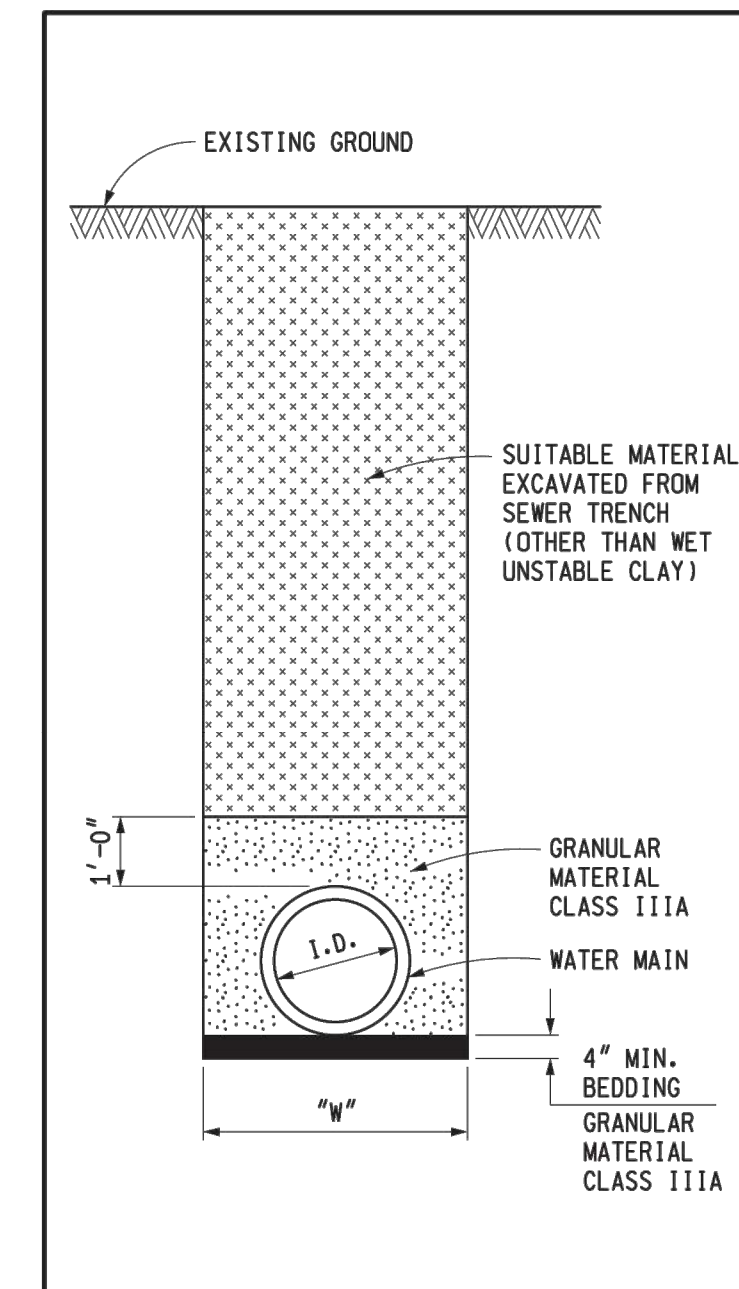
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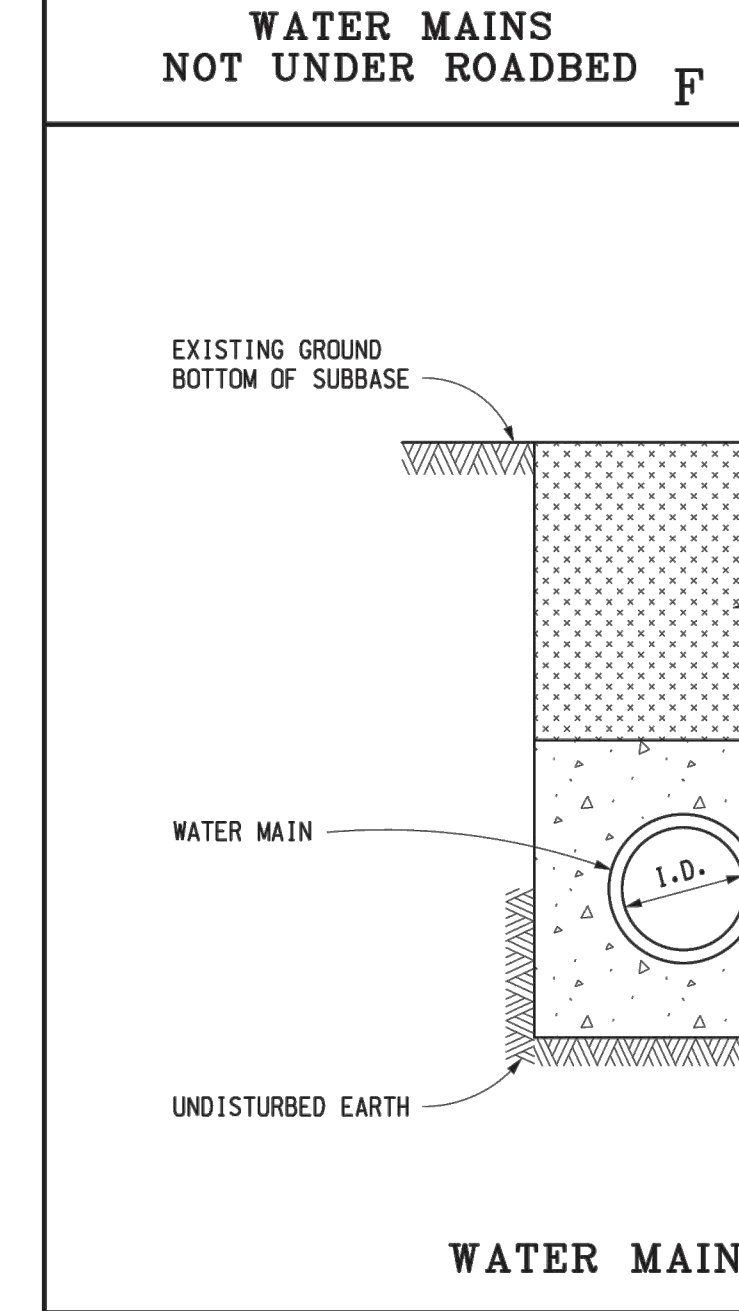


MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 2 OF 5
--------------------------------	-----------------------	---------------	-----------------



NOTE: WHEN WATER MAIN IS PLACED IN PROPOSED ROADBED AREA, IT SHALL BE BACKFILLED WITH SELECTED EXCAVATION MATERIAL ABOVE FUTURE SUBGRADE TO EXISTING GROUND LINE.



NOTE: REINFORCEMENT SHALL BE AS SPECIFIED ON PLANS.

REQUIRED ENCASEMENT SIZE FOR RESPECTIVE PIPE SIZES	
DIAMETER OF PIPE	ENCASEMENT SIZE AND TRENCH WIDTH
6" - 12"	3'-0"
16"	3'-6"
24"	4'-6"
30"	5'-0"
36"	5'-6"
42"	6'-0"
48"	7'-0"
54"	7'-6"
60"	8'-0"
66"	8'-6"
72"	9'-0"

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 4 OF 5
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MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR
UTILITY TRENCHES

7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 4 OF 5
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**MICHIGAN AIR NATIONAL GUARD
CONSTRUCT MAIN BASE ENTRANCE**

**BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN**

ISSUED
02/17/21 B3 FINAL

ANG Project No: MBMV099170
MMH No: 3141900-113782.01
DATE: FEBRUARY 17, 2021
DESIGNED BY: JAK
DRAWN BY: DAY
CHECKED BY: SAH
DO NOT SCALE DRAWINGS

SHEET CONTENTS
CONSTRUCTION
DETAILS

SHEET NO.

C-540

NOTES:

BACKFILLING SHALL BE ACCORDING TO THE STANDARD SPECIFICATION.

SUFFICIENT TRENCH WIDTH SHALL BE PROVIDED TO ALLOW FREE WORKING SPACE AND TO PERMIT COMPACTING THE BACKFILL AROUND THE PIPE.

THE FOLLOWING ARE MINIMUM TRENCH WIDTHS:

I.D. PIPE SIZE (INCHES)	LESS THAN 18	21	24	30	36
TRENCH WIDTH (FEET)	3.0	3.5	4.0	5.0	6.0

I.D. PIPE SIZE (INCHES)	42	48	54	60	66	72
TRENCH WIDTH (FEET)	7.0	8.0	9.5	10.0	10.5	11.0

I.D. PIPE SIZE (INCHES)	78	84	90	96	102	108
TRENCH WIDTH (FEET)	11.5	12.0	12.5	13.0	13.5	14.0

ESTIMATED PAVEMENT REMOVAL WIDTH IS TO BE TRENCH WIDTH "W" PLUS 1'-0" EACH SIDE OF THE TRENCH (6'-0" MINIMUM).

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF DEVELOPMENT STANDARD PLAN FOR

UTILITY TRENCHES

7-25-2017 F.H.W.A. APPROVAL	2-8-2016 PLAN DATE	R-83-C	SHEET 5 OF 5
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**BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN**

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SHEET CONTENTS
CONSTRUCTION
DETAILS

SHEET NO.

C-541

PLAN VIEW

LONGITUDINAL SECTION

GRATE FOR 12" THROUGH 18" DIAMETER PIPE WITH CONCRETE END SECTION

STEEL REINFORCEMENT QUANTITIES										
DIAMETER		12"			15"			18"		
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	34"	12	1	40"	14	1	48"	17
A2	#6	5	24"	15	5	28"	17	7	28"	24
A3	#6				2	14"	3	2	14"	3
C1	#10	1	36"	13	1	40"	14	1	44"	16
C2	#8	1	30"	6	1	34"	7	1	36"	8
ANCHOR PIN	#6	2	36"	9	2	36"	9	2	36"	9
GRATE HOLDER	#6	2	20"	5	2	20"	5	2	20"	5
TOTAL STEEL WEIGHT (LBS)		60			69			82		

DIMENSIONS		
DIAMETER	L1	L2
12"	12"	12"
15"	14"	14"
18"	14"	14"

PLAN VIEW

LONGITUDINAL SECTION

GRATE FOR 21" DIAMETER PIPE WITH CONCRETE END SECTION

STEEL REINFORCEMENT QUANTITIES				
DIAMETER		21"		
BAR	BAR SIZE	NUMBER REQUIRED	LENGTH	WEIGHT (LBS)
A1	#10	1	54"	19
A2	#8	1	24"	5
A3	#6	5	37"	23
A4	#6	2	26 1/2"	7
A5	#6	2	16"	4
C1	#10	1	52"	18
C2	#8	1	44"	9
ANCHOR PIN	#6	2	36"	9
GRATE HOLDER	#6	2	20"	5
TOTAL STEEL WEIGHT (LBS)		99		

DIMENSIONS		
DIAMETER	L1	L2
21"	21"	16"

PREPARED BY
DESIGN DIVISION
DRAWN BY: B.L.T.
CHECKED BY: M.K.P.

ENGINEER - ROAD DESIGN
[Signature]
ENGINEER OF CONSTRUCTION & TECHNOLOGY
[Signature]
ENGINEER OF DESIGN
[Signature]
DEPARTMENT DIRECTOR
Gregory J. Rosine
BY: [Signature]
CHIEF ENGINEER/DEPUTY DIRECTOR
BUREAU OF HIGHWAY TECHNICAL SERVICES

MICHIGAN DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAY TECHNICAL SERVICES STANDARD PLAN FOR

**STEEL GRATES
FOR END SECTIONS**

9-14-2001 F.H.W.A. APPROVAL	2-26-2001 PLAN DATE	R-92-C	SHEET 1 OF 6
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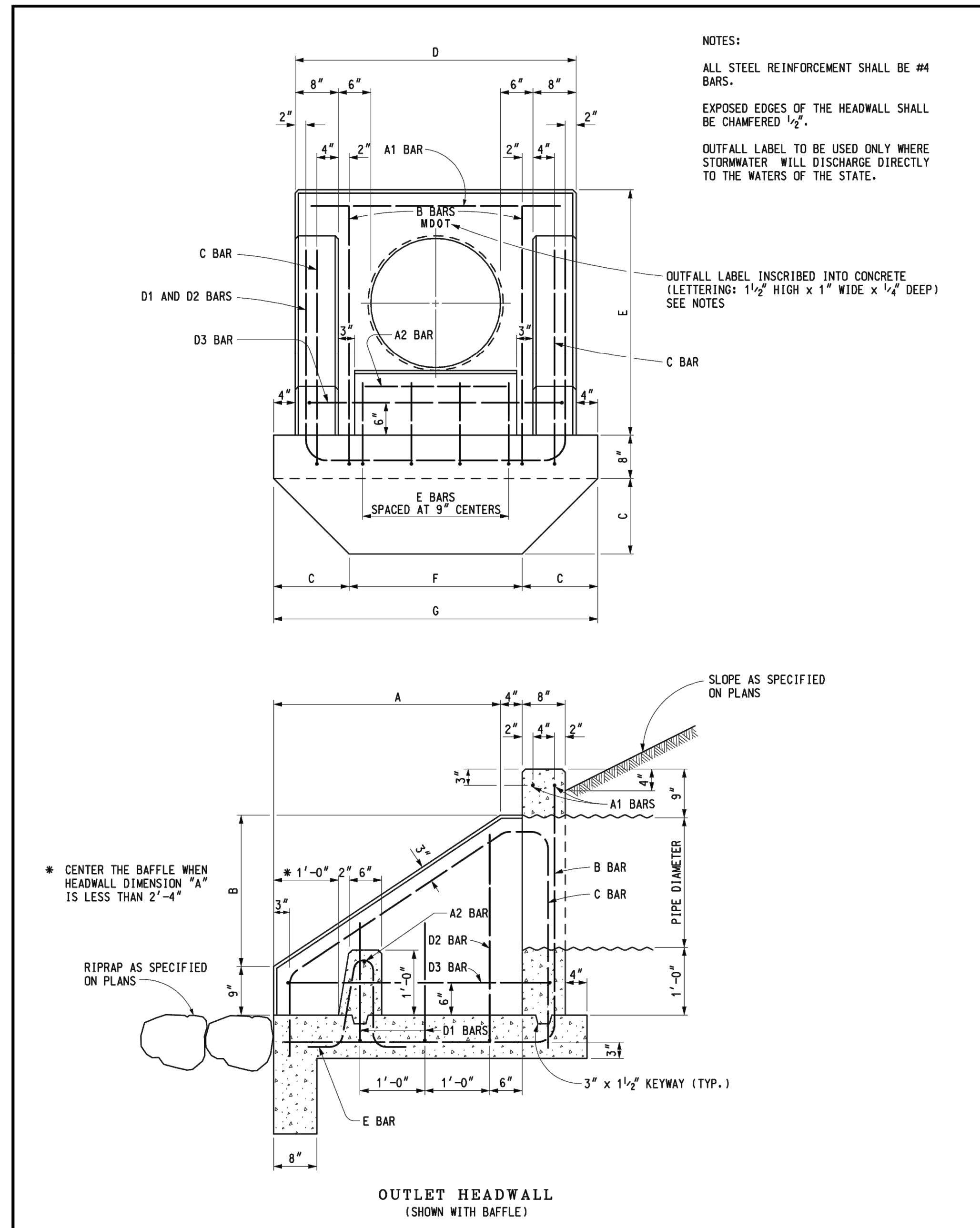
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CONSTRUCT MAIN BASE ENTRANCE**
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 BATTLE CREEK, MICHIGAN

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SHEET NO.

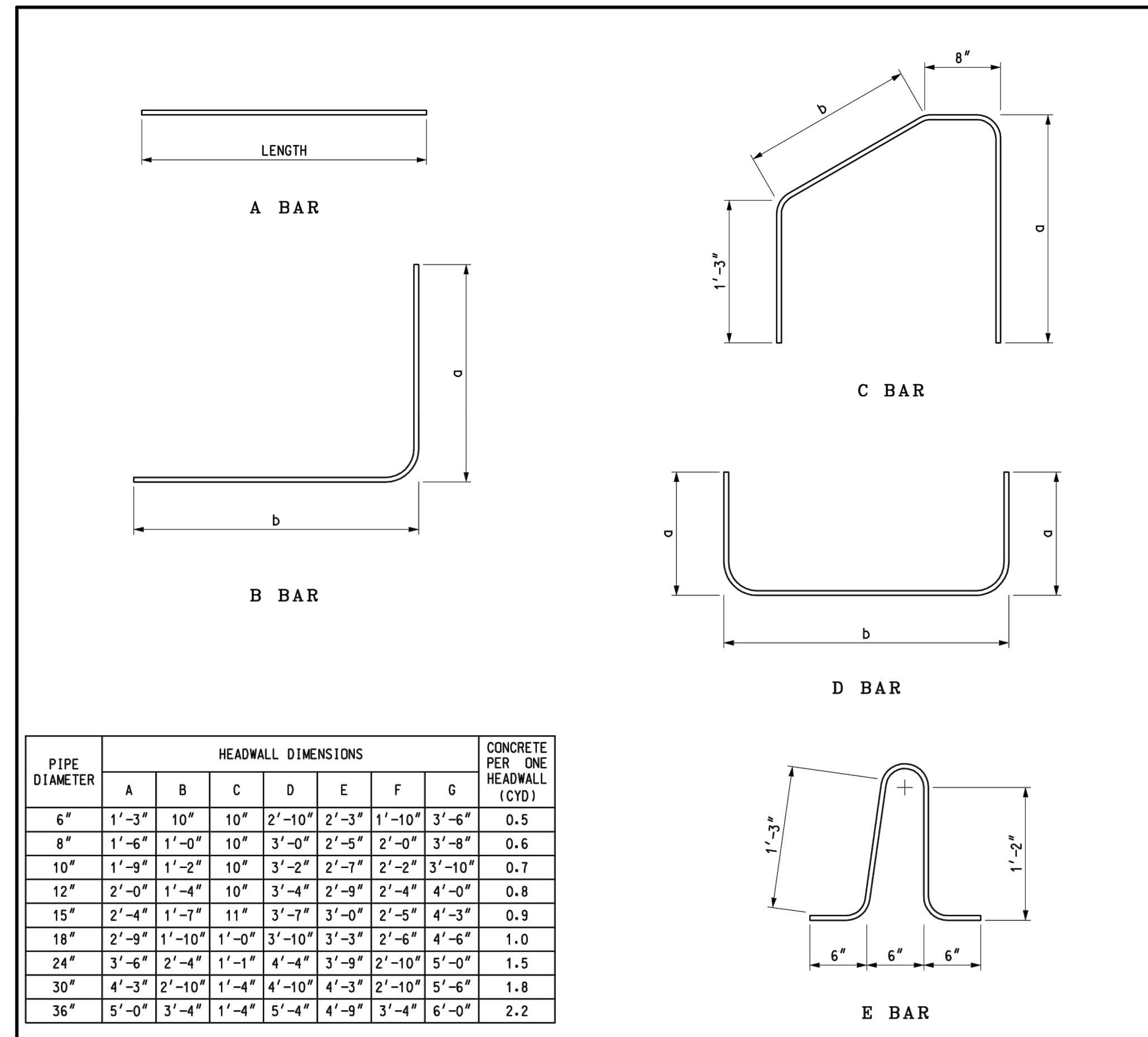


NOTES:
 ALL STEEL REINFORCEMENT SHALL BE #4 BARS.
 EXPOSED EDGES OF THE HEADWALL SHALL BE CHAMFERED 1/2".
 OUTFALL LABEL TO BE USED ONLY WHERE STORMWATER WILL DISCHARGE DIRECTLY TO THE WATERS OF THE STATE.
 OUTFALL LABEL INSCRIBED INTO CONCRETE (LETTERING: 1 1/2" HIGH x 1" WIDE x 1/4" DEEP) SEE NOTES

* CENTER THE BAFFLE WHEN HEADWALL DIMENSION "A" IS LESS THAN 2'-4"

RIPPRAP AS SPECIFIED ON PLANS

**OUTLET HEADWALL
(SHOWN WITH BAFFLE)**



PIPE DIAMETER	HEADWALL DIMENSIONS							CONCRETE PER ONE HEADWALL (CYD)
	A	B	C	D	E	F	G	
6"	1'-3"	10"	10"	2'-10"	2'-3"	1'-10"	3'-6"	0.5
8"	1'-6"	1'-0"	10"	3'-0"	2'-5"	2'-0"	3'-8"	0.6
10"	1'-9"	1'-2"	10"	3'-2"	2'-7"	2'-2"	3'-10"	0.7
12"	2'-0"	1'-4"	10"	3'-4"	2'-9"	2'-4"	4'-0"	0.8
15"	2'-4"	1'-7"	11"	3'-7"	3'-0"	2'-5"	4'-3"	0.9
18"	2'-9"	1'-10"	1'-0"	3'-10"	3'-3"	2'-6"	4'-6"	1.0
24"	3'-6"	2'-4"	1'-1"	4'-4"	3'-9"	2'-10"	5'-0"	1.5
30"	4'-3"	2'-10"	1'-4"	4'-10"	4'-3"	2'-10"	5'-6"	1.8
36"	5'-0"	3'-4"	1'-4"	5'-4"	4'-9"	3'-4"	6'-0"	2.2

PIPE DIA.	STEEL QUANTITIES FOR ONE OUTLET HEADWALL WITH BAFFLE																												
	STEEL QUANTITIES FOR ONE OUTLET HEADWALL WITHOUT BAFFLE																												
	A1 BAR	B BAR		C BAR		D1 BAR		D2 BAR		D3 BAR		TOTAL WEIGHT OF BARS (LBS)	A2 BAR	E BAR		TOTAL WEIGHT OF BARS (LBS)													
TOTAL LENGTH	NO.	DIMENSIONS		TOTAL LENGTH	NO.	DIMENSIONS		TOTAL LENGTH	NO.	DIMENSIONS		TOTAL LENGTH	NO.	DIMENSIONS		TOTAL LENGTH	NO.	DIMENSIONS		TOTAL LENGTH	NO.								
		a	b			a	b			a	b			a	b			a	b										
6"	2'-6"	2	1'-11"	2'-6"	4'-5"	2	1'-10"	1'-3"	5'-0"	2	1'-1"	2'-6"	4'-8"	1						1'-7"	2'-6"	5'-8"	1	23	8"	1	3'-8"	2	29
8"	2'-8"	2	2'-2"	2'-8"	4'-10"	2	2'-0"	1'-6"	5'-5"	2	1'-3"	2'-8"	5'-2"	1						1'-10"	2'-8"	6'-4"	1	26	10"	1	3'-8"	2	32
10"	2'-10"	2	2'-5"	2'-10"	5'-3"	2	2'-2"	1'-10"	5'-11"	2	1'-5"	2'-10"	5'-8"	1						2'-1"	2'-10"	7'-0"	1	28	1'-0"	1	3'-8"	2	34
12"	3'-0"	2	2'-8"	3'-0"	5'-8"	2	2'-4"	2'-1"	6'-4"	2	1'-7"	3'-0"	6'-2"	2						2'-4"	3'-0"	7'-8"	1	34	1'-2"	1	3'-8"	2	40
15"	3'-3"	2	3'-0"	3'-3"	6'-3"	2	2'-7"	2'-6"	7'-0"	2	1'-10"	3'-3"	6'-11"	2						2'-8"	3'-3"	8'-7"	1	38	1'-5"	1	3'-8"	3	46
18"	3'-6"	2	3'-5"	3'-6"	6'-11"	2	2'-10"	3'-0"	7'-9"	2	2'-1"	3'-6"	7'-8"	2						3'-1"	3'-6"	9'-8"	1	41	1'-8"	1	3'-8"	3	50
24"	4'-0"	2	4'-2"	4'-0"	8'-2"	2	3'-4"	3'-11"	9'-2"	2	1'-10"	4'-0"	7'-8"	2	3'-3"	4'-0"	10'-6"	1	3'-10"	4'-0"	11'-8"	1	54	2'-2"	1	3'-8"	4	65	
30"	4'-6"	2	4'-11"	4'-6"	9'-5"	2	3'-10"	4'-10"	10'-7"	2	2'-4"	4'-6"	9'-2"	2	3'-8"	4'-6"	11'-10"	1	4'-7"	4'-6"	13'-8"	1	62	2'-8"	1	3'-8"	4	74	
36"	5'-0"	2	5'-8"	5'-0"	10'-8"	2	4'-4"	5'-9"	12'-0"	2	2'-2"	5'-0"	9'-4"	2	3'-5"	5'-0"	11'-10"	2	5'-4"	5'-0"	15'-8"	1	76	3'-2"	1	3'-8"	5	90	

MICHIGAN DEPARTMENT OF TRANSPORTATION
 BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
OUTLET HEADWALLS
 11-17-2005 4-21-2005 R-85-D SHEET 2 OF 2
 F.H.W.A. APPROVAL PLAN DATE

MDOT Michigan Department of Transportation
 DEPARTMENT DIRECTOR Gloria J. Jeff
 MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF HIGHWAY DEVELOPMENT STANDARD PLAN FOR
OUTLET HEADWALLS
 11-17-2005 4-21-2005 R-85-D SHEET 1 OF 2
 F.H.W.A. APPROVAL PLAN DATE
 PREPARED BY DESIGN SUPPORT AREA
 DRAWN BY: B.L.T.
 CHECKED BY: M.K.P.
 APPROVED BY: John C. Friend ENGINEER OF DELIVERY
 APPROVED BY: J.L. Rouse ENGINEER OF DEVELOPMENT

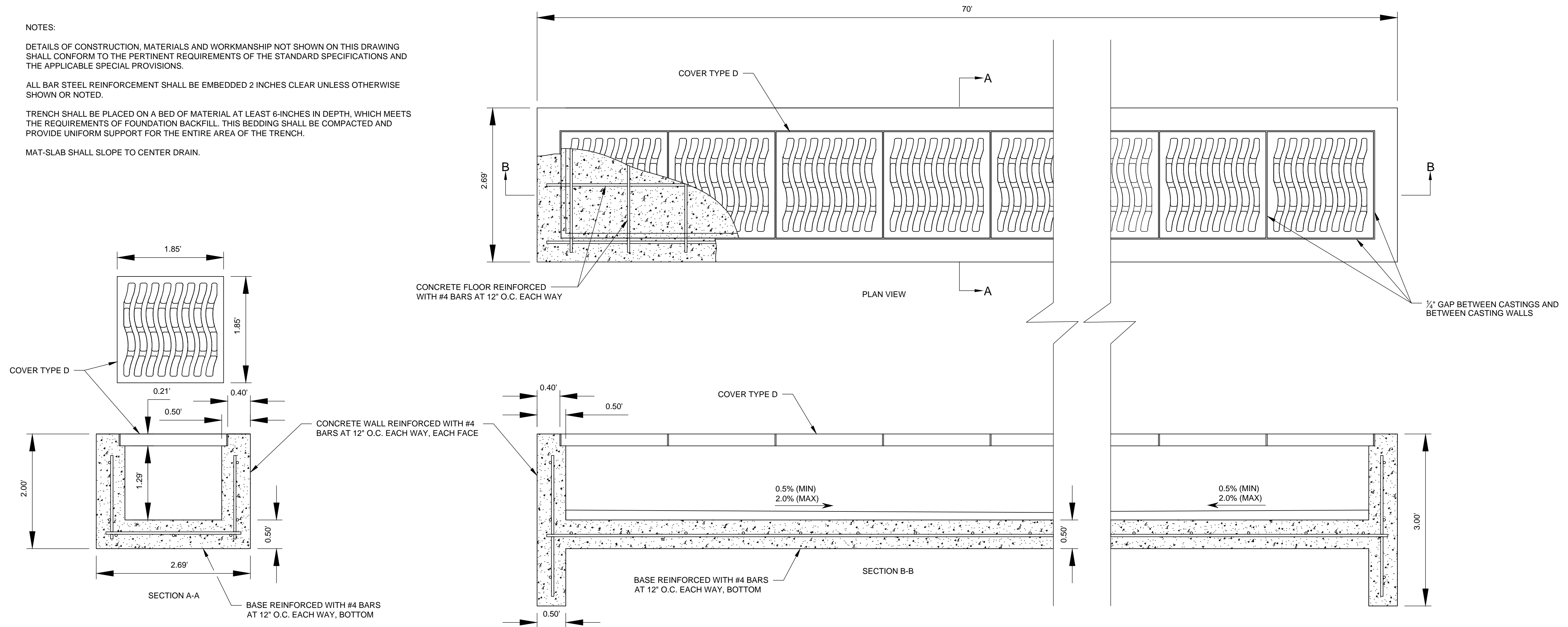
NOTES:

DETAILS OF CONSTRUCTION, MATERIALS AND WORKMANSHIP NOT SHOWN ON THIS DRAWING SHALL CONFORM TO THE PERTINENT REQUIREMENTS OF THE STANDARD SPECIFICATIONS AND THE APPLICABLE SPECIAL PROVISIONS.

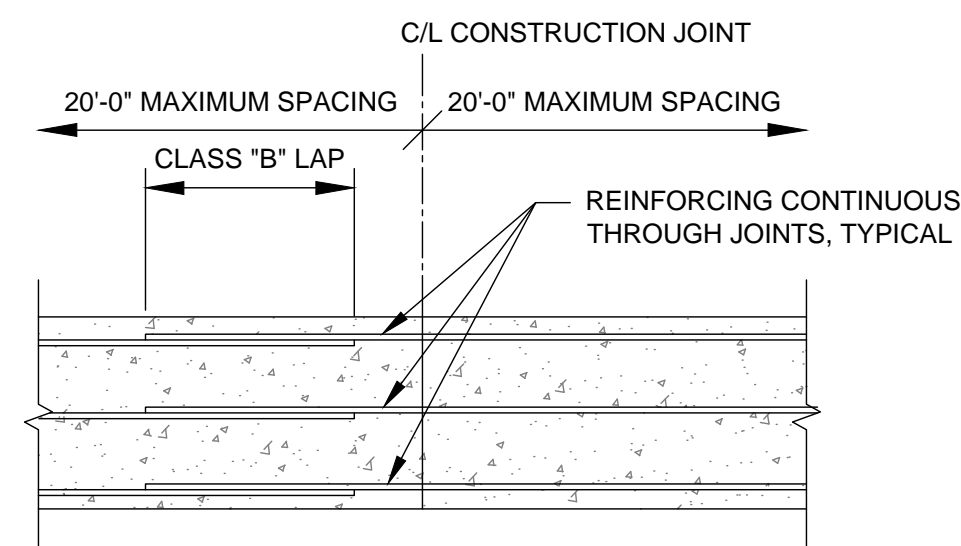
ALL BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 2 INCHES CLEAR UNLESS OTHERWISE SHOWN OR NOTED.

TRENCH SHALL BE PLACED ON A BED OF MATERIAL AT LEAST 6-INCHES IN DEPTH, WHICH MEETS THE REQUIREMENTS OF FOUNDATION BACKFILL. THIS BEDDING SHALL BE COMPACTED AND PROVIDE UNIFORM SUPPORT FOR THE ENTIRE AREA OF THE TRENCH.

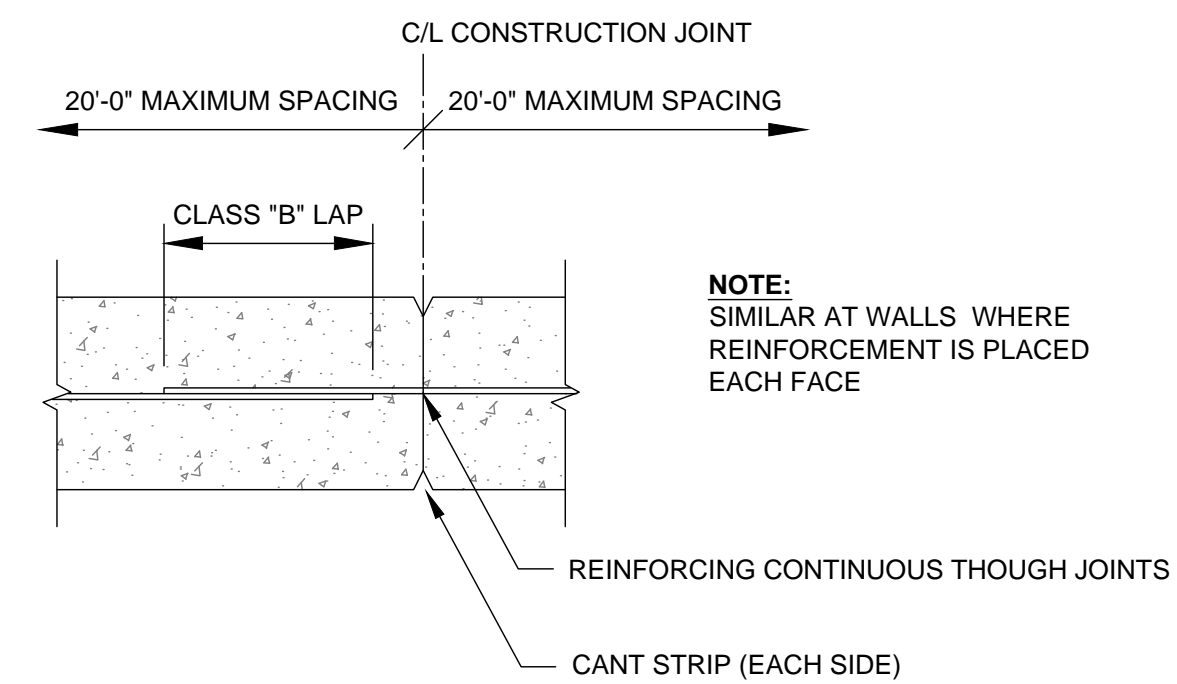
MAT-SLAB SHALL SLOPE TO CENTER DRAIN.



1 TRENCH DETAIL
NO SCALE



3 TYPICAL FOOTING CONSTRUCTION JOINT
NO SCALE



2 TYPICAL FOUNDATION WALL CONSTRUCTION JOINT
NO SCALE



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BATTLE CREEK, MICHIGAN

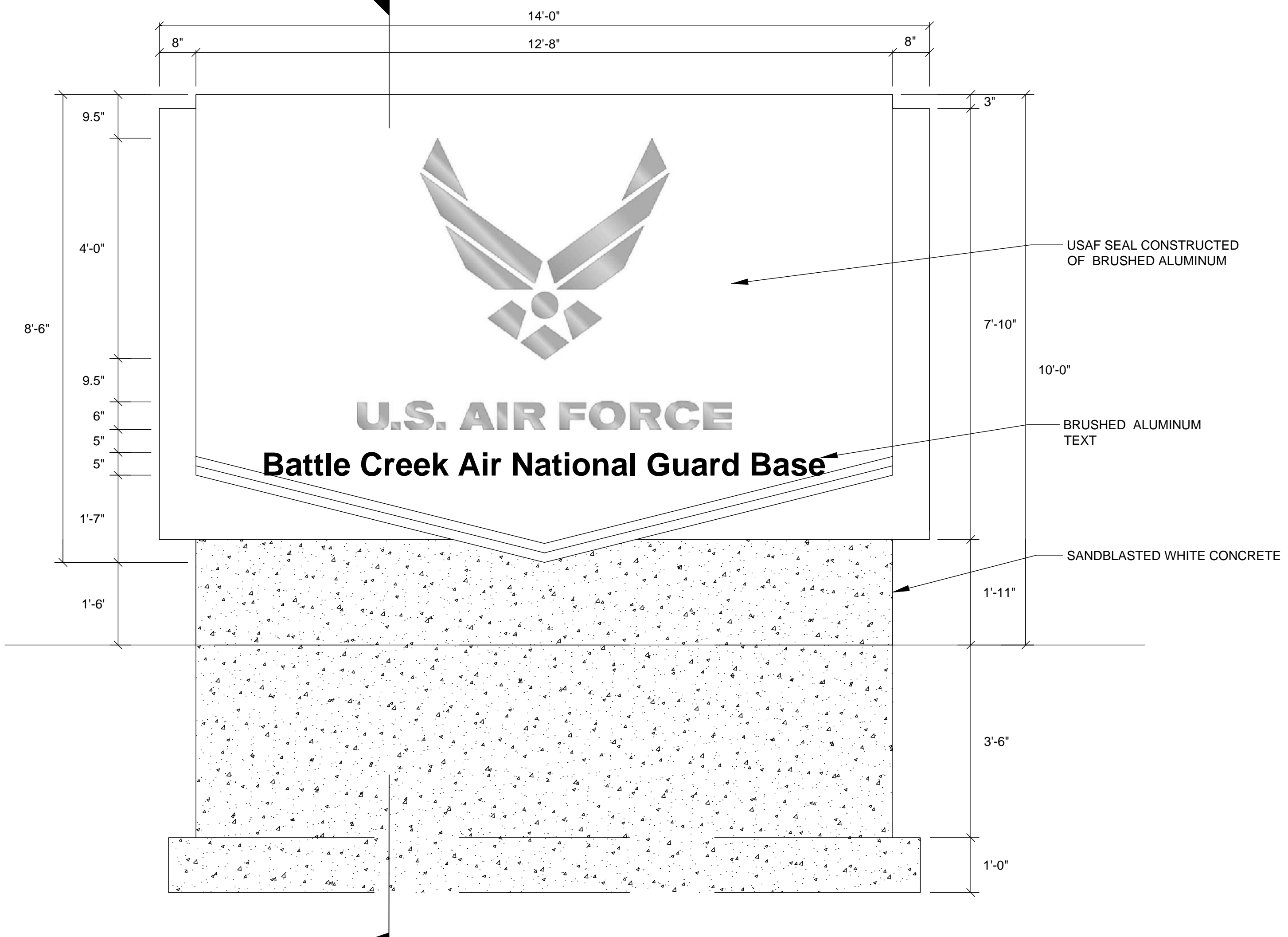
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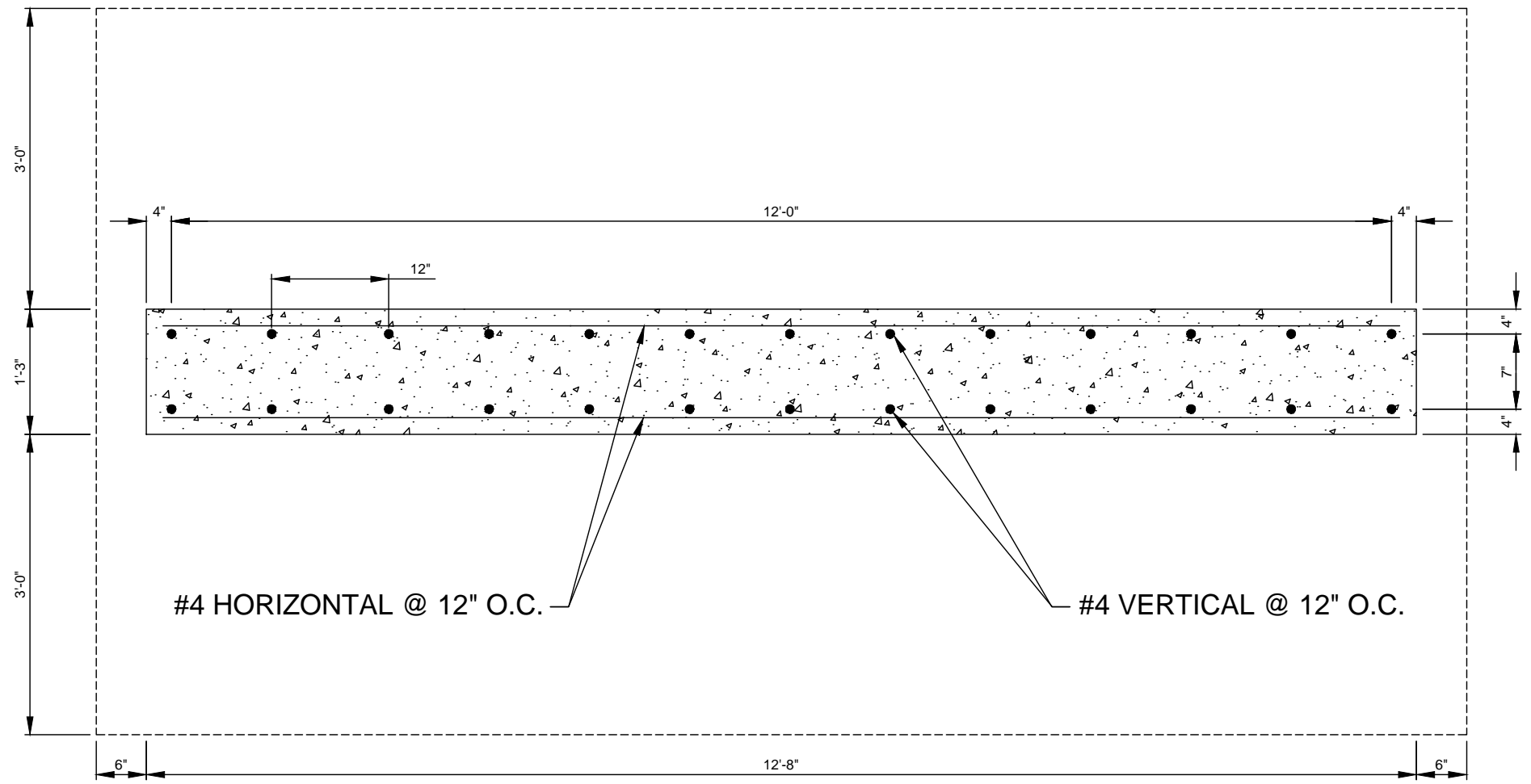
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SHEET NO.

A
C-061



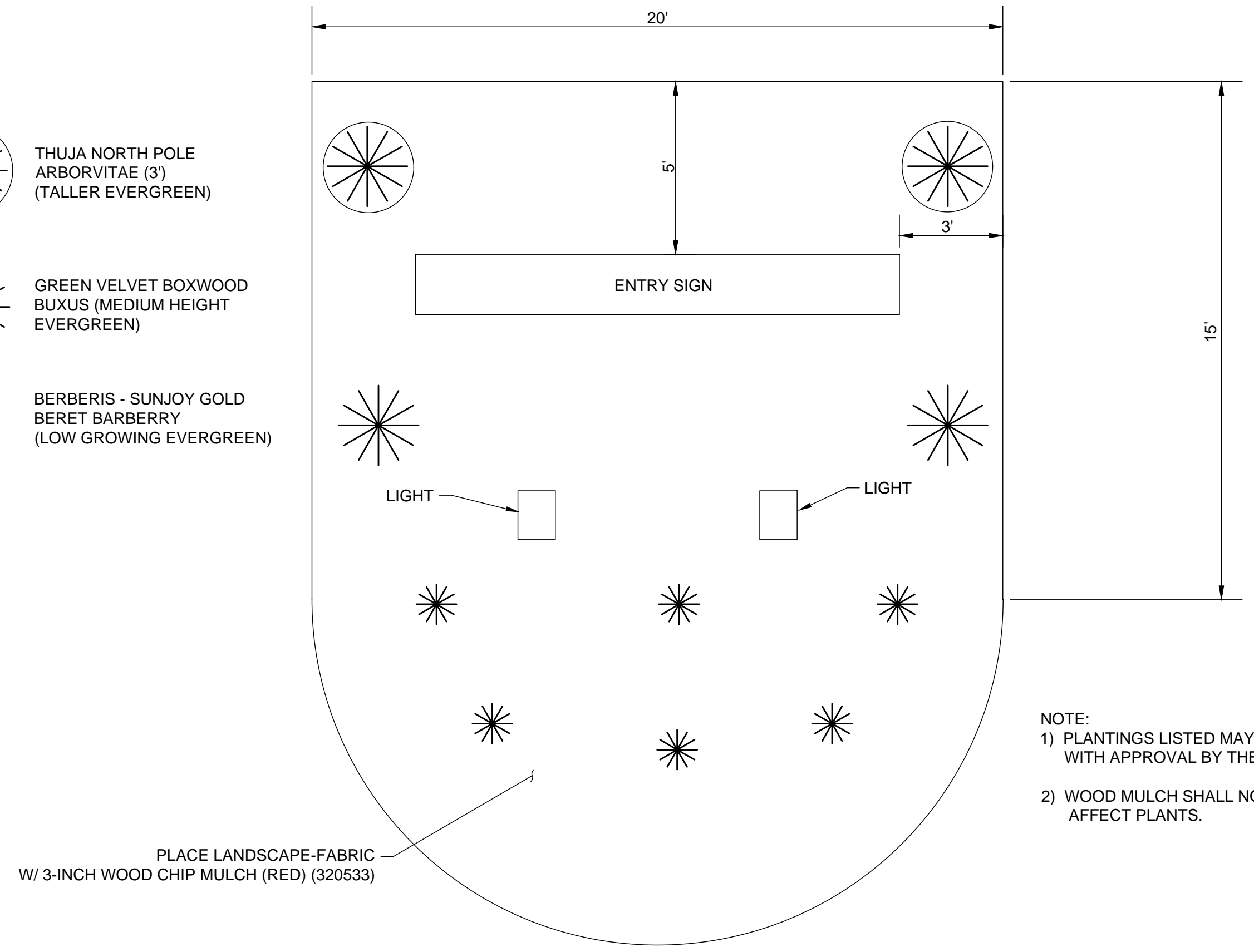
ENTRY SIGN ELEVATION



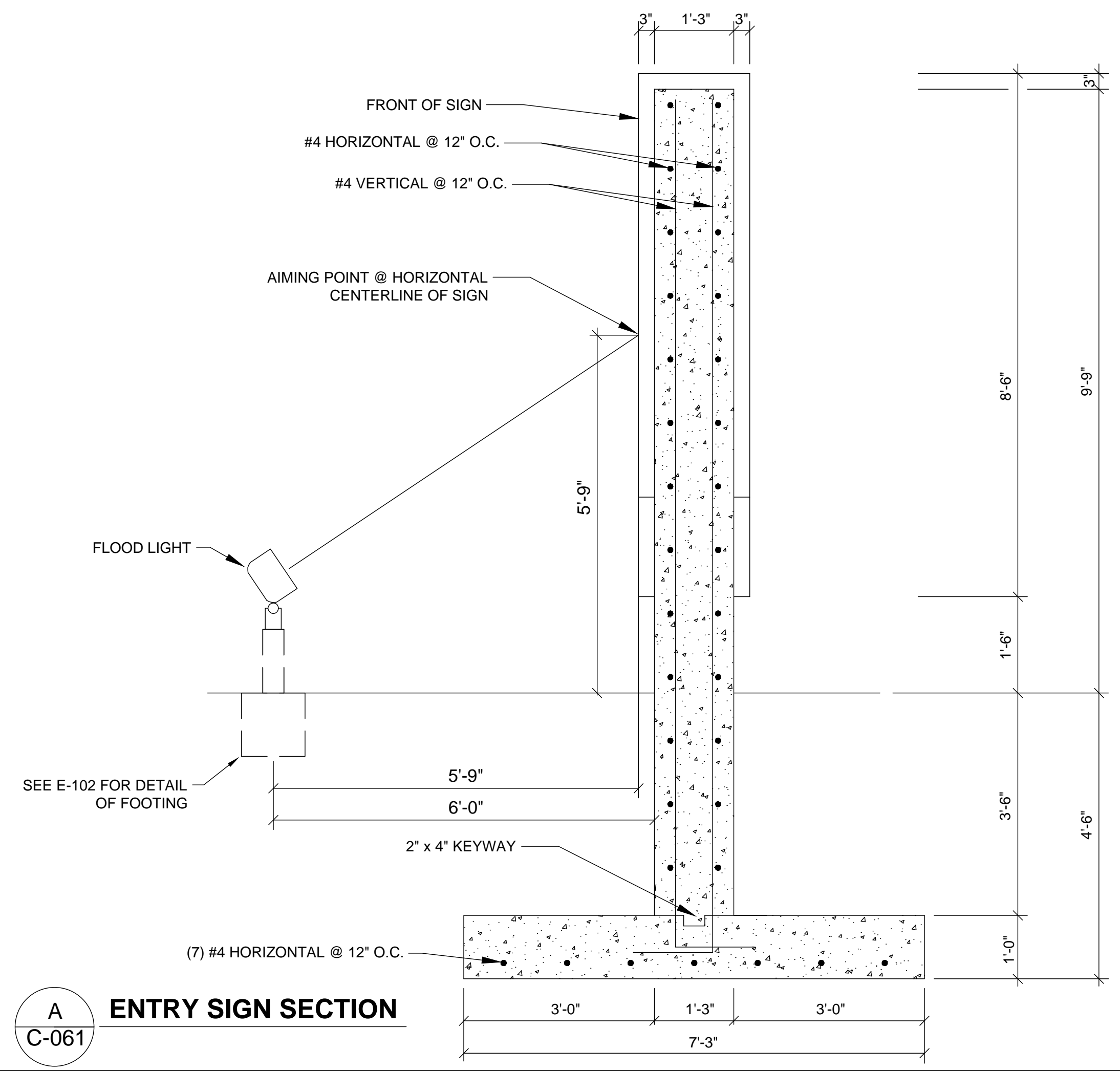
ENTRY SIGN PLAN

NOTES:
1) SEE UFC 3-120-1 (CHANGE 3) FOR DESIGN: SIGN STANDARDS.
2) SIGN DRAWINGS FOR REFERENCE ONLY. SIGN CONTRACTOR TO PROVIDE SHOP DRAWINGS FOR SIGNS. DRAWINGS TO BE APPROVED BY COR PRIOR TO BEGINNING CONSTRUCTION.

- THUJA NORTH POLE ARBORVITAE (3') (TALLER EVERGREEN)
- GREEN VELVET BOXWOOD BUXUS (MEDIUM HEIGHT EVERGREEN)
- BERBERIS - SUNJOY GOLD BERET BARBERRY (LOW GROWING EVERGREEN)



LANDSCAPING PLAN



ENTRY SIGN SECTION

A
C-061

Mead & Hunt
Mead and Hunt, Inc.
2440 Deming Way
Middleton, WI 53562
phone: 608-273-6380
meadhunt.com



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SHEET CONTENTS
CONSTRUCTION
DETAILS

SHEET NO.

C-544

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2/10/2021 8:07:18 AM



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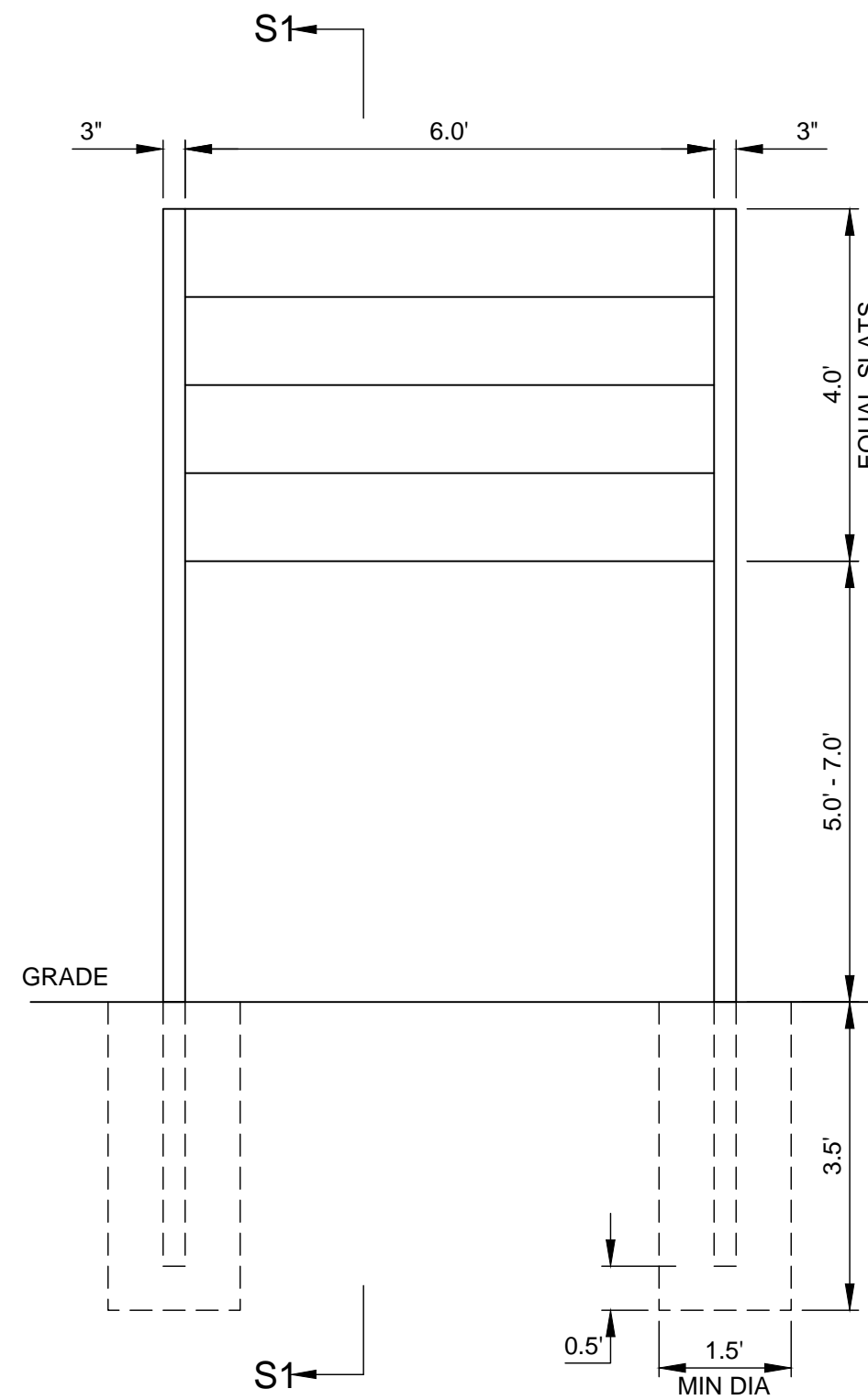
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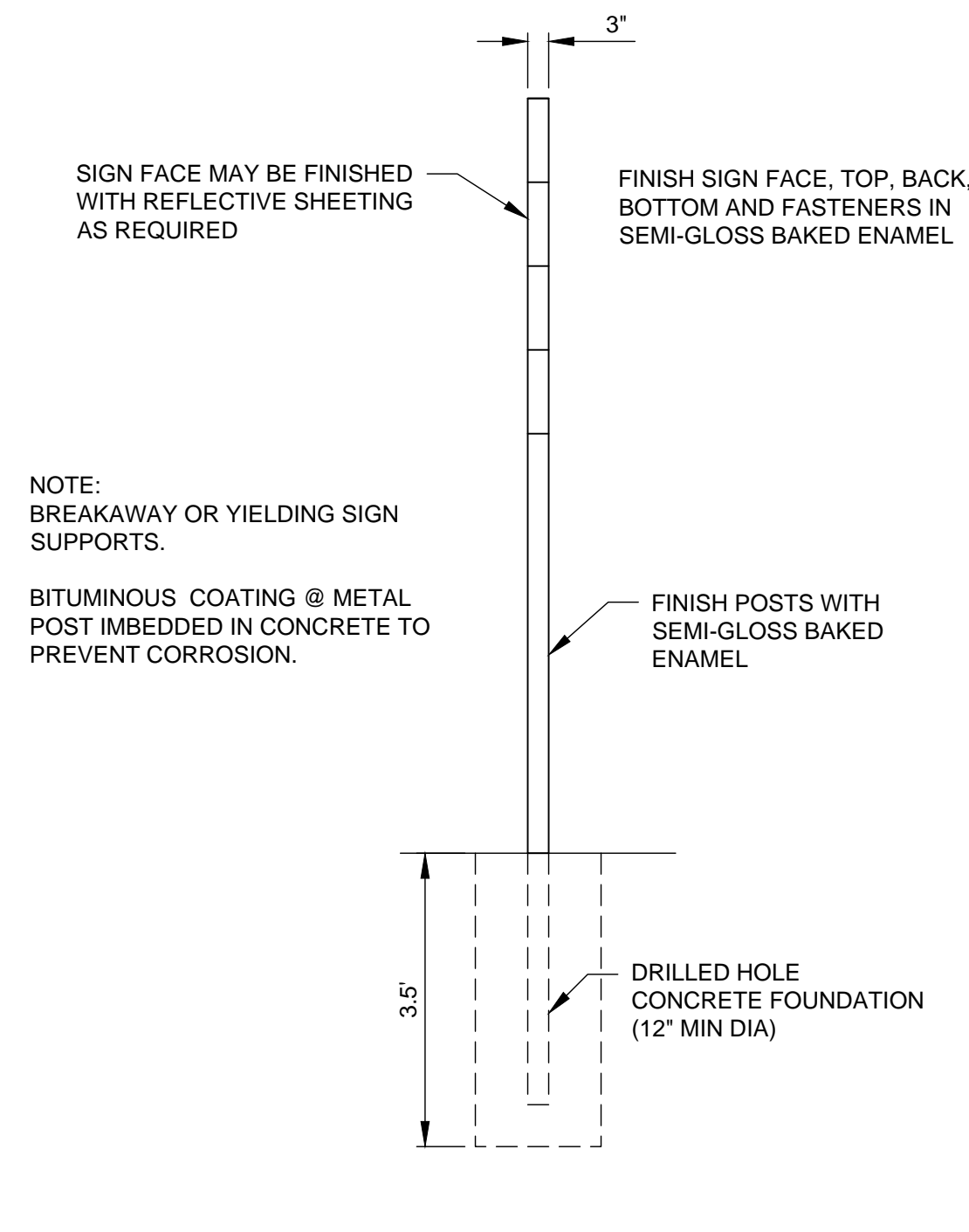
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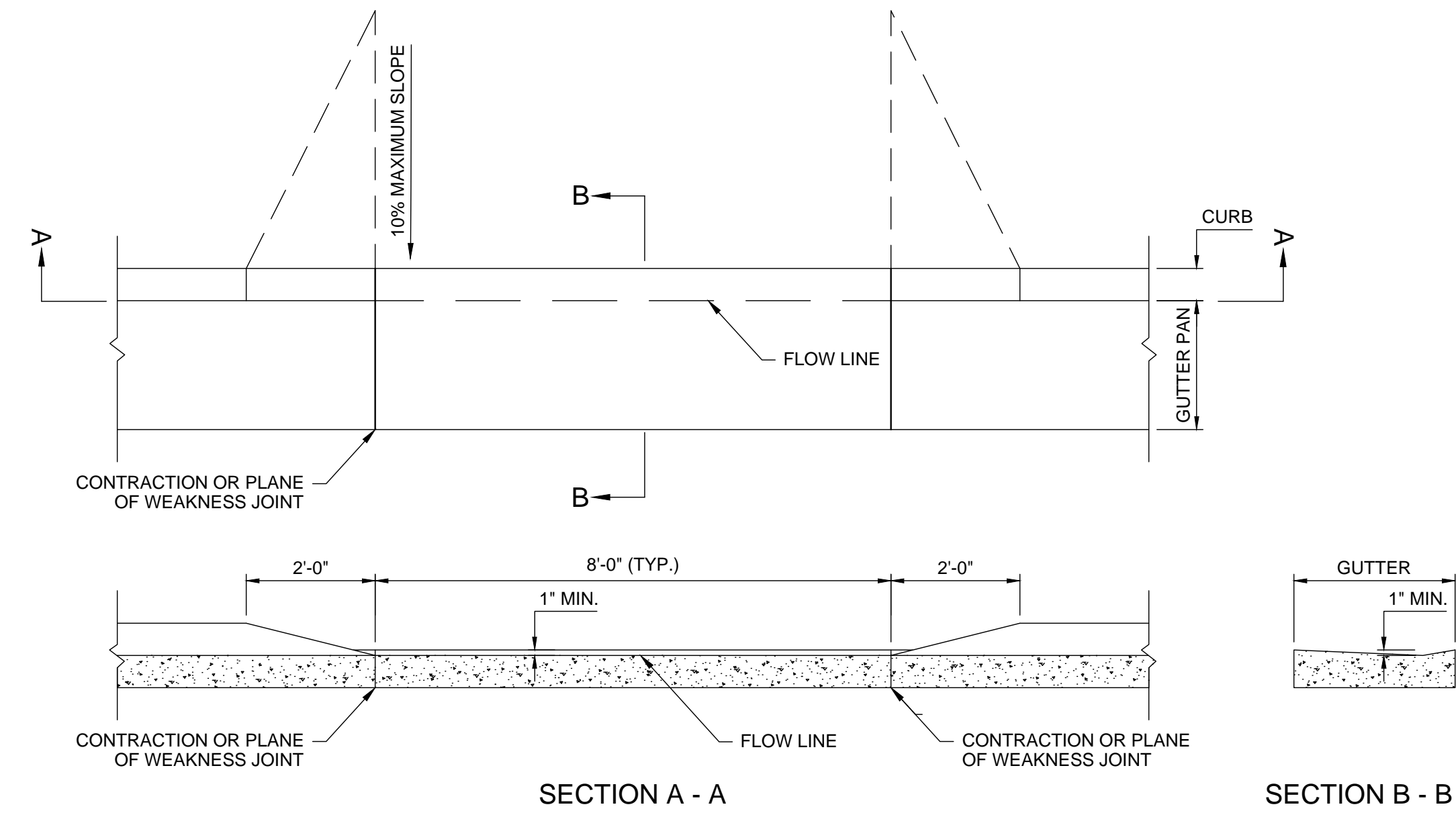
C-545



FRONT ELEVATION
SCALE: 1" = 2'



S1 VERTICAL SECTION
SCALE: 1" = 2'



CURB CUT FOR MAINTENANCE ACCESS

Model ECH30IH
HURRICANE SERIES
Max unflagged wind speed: 241 mph
Max flagged wind speed: 150+ mph

30' Pole Height
Max flag size: 5' x 8'

Truck Details
Revolving non-fouling internal halyard truck, cast aluminum, 26 stainless steel ball bearings and 2-1/2" diameter plated steel sheave.

Approximate flag pole height

EIT
Intertek
Conforms to UL 919-1998

Project:	Ground set tapered aluminum flagpole - ALLOY 6063T8	Flagpole Warehouse	Date:
Location:	Exposed Height: 30'-0"	3600 Cantrell Industrial Ct., Acworth, GA 30101	Revision:
Architect:	Butt diameter: 6"	www.flagpolewarehouse.com	
Contractor:	Top diameter: 3'-1/2"		
Customer:	Wall Thickness: .250"	Ship in: 2 Section	1-800-962-0956

Model ILH30IH
30' Pole Height

Pole Height	A	B	C	D	E	F	G
20'	3'-0"	3'-6"	6"	12"	6"	12"	24"
25'	3'-0"	3'-6"	6"	12"	8"	16"	30"
30'	3'-0"	3'-6"	6"	12"	8"	16"	30"
35'	3'-6"	4'-0"	6"	12"	8"	16"	35"
40'	4'-0"	4'-6"	6"	12"	9"	18"	48"
45'	4'-0"	4'-6"	6"	12"	9"	18"	48"
50'	5'-0"	5'-6"	6"	12"	10"	20"	60"
60'	6'-0"	6'-10"	10"	14"	12"	24"	72"
70'	7'-0"	8'-0"	12"	12"	12"	24"	72"
80'	8'-0"	9'-0"	12"	12"	12"	24"	72"

Aluminum flash collar
3000 PSI concrete
Hardwood wedges (supplied by others)
Dry sand tightly tamped after aligning pole
Foundation sleeve -16 ga hot dip galvanized steel
Steel centering wedges
3/4" Steel base plate
1/4" Steel support plate welded to grounding spike

Ornament (Optional at Additional Charge)
Concealed Halyard (Revolving) Truck
3/8" Stainless Steel Ball Bearings
1 1/8" Diameter Stainless Steel Aircraft Cable
Beaded Retainer Ring
Neoprene Coated Counterweight
20" THRU 35" FLAGPOLES

Project:	Ground set tapered aluminum flagpole - ALLOY 6063T8	Flagpole Warehouse	Date:
Location:	Exposed Height: 30'-0"	3600 Cantrell Industrial Ct., Acworth, GA 30101	Revision:
Architect:	Butt diameter: 6"	www.flagpolewarehouse.com	
Contractor:	Top diameter: 3'-1/2"		
Customer:	Wall Thickness: .250"	Ship in: 2 Section	1-800-962-0956



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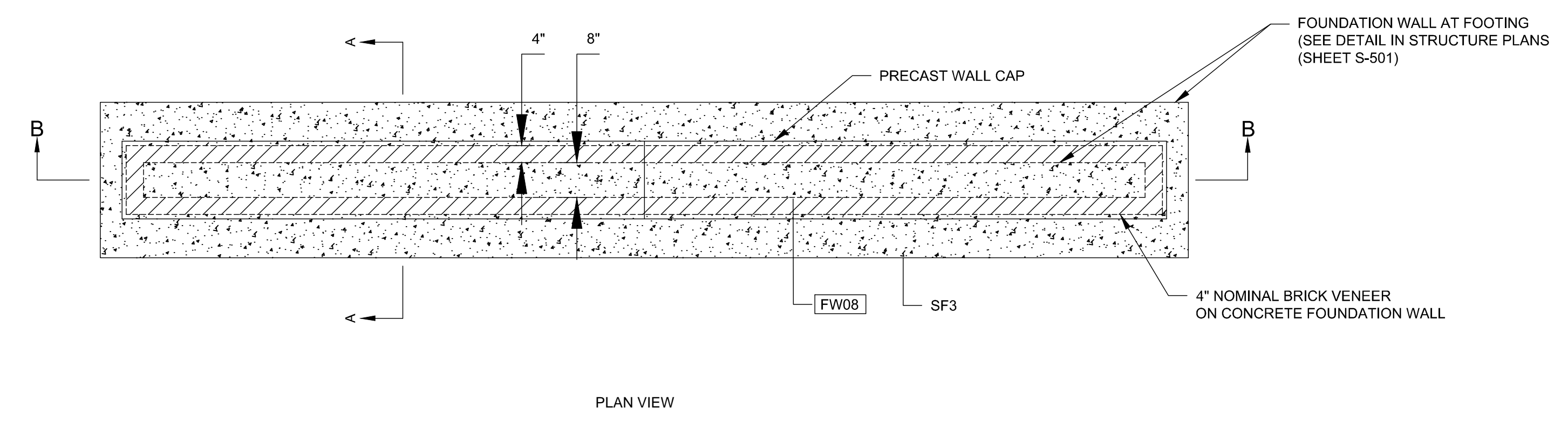
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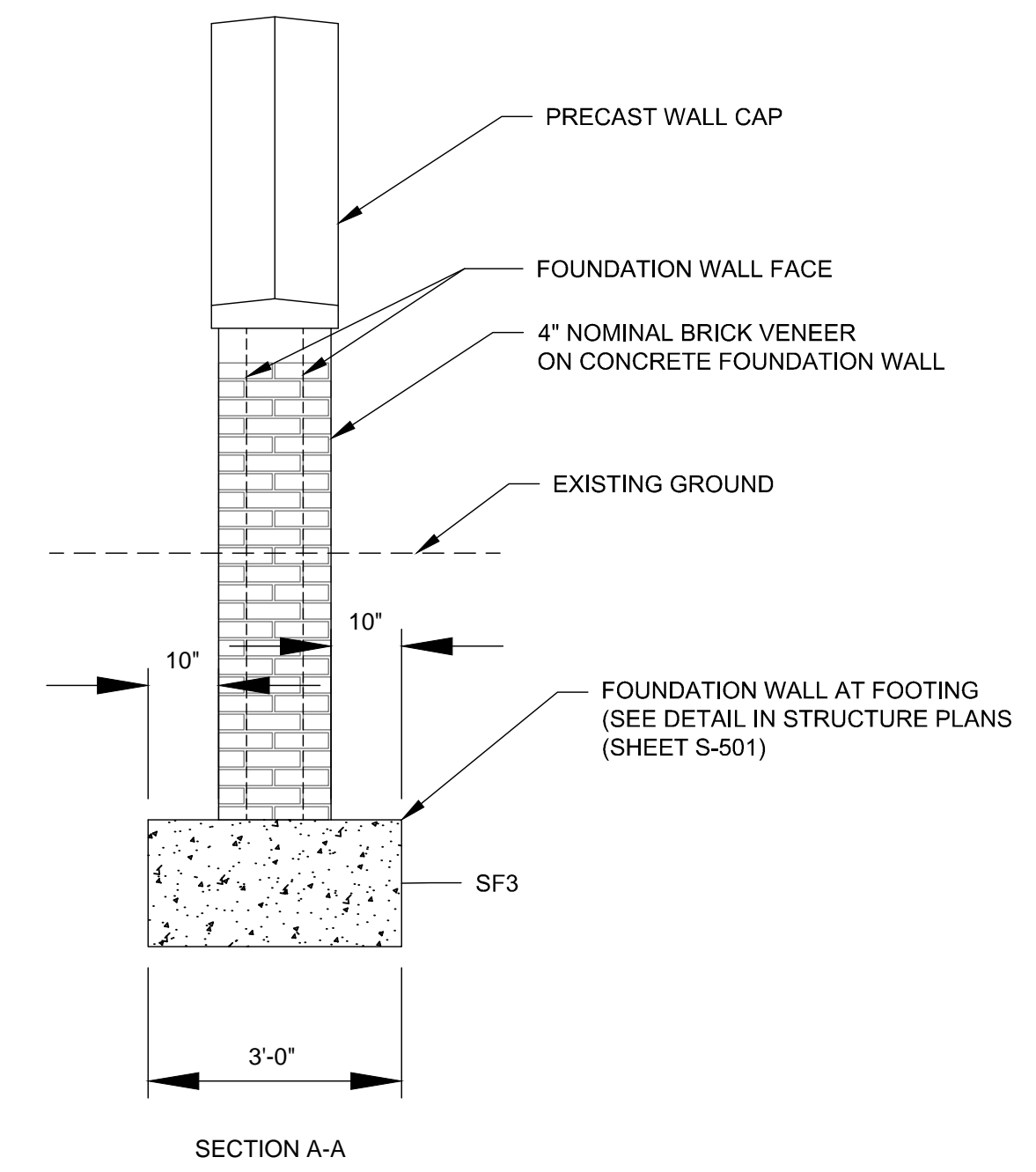
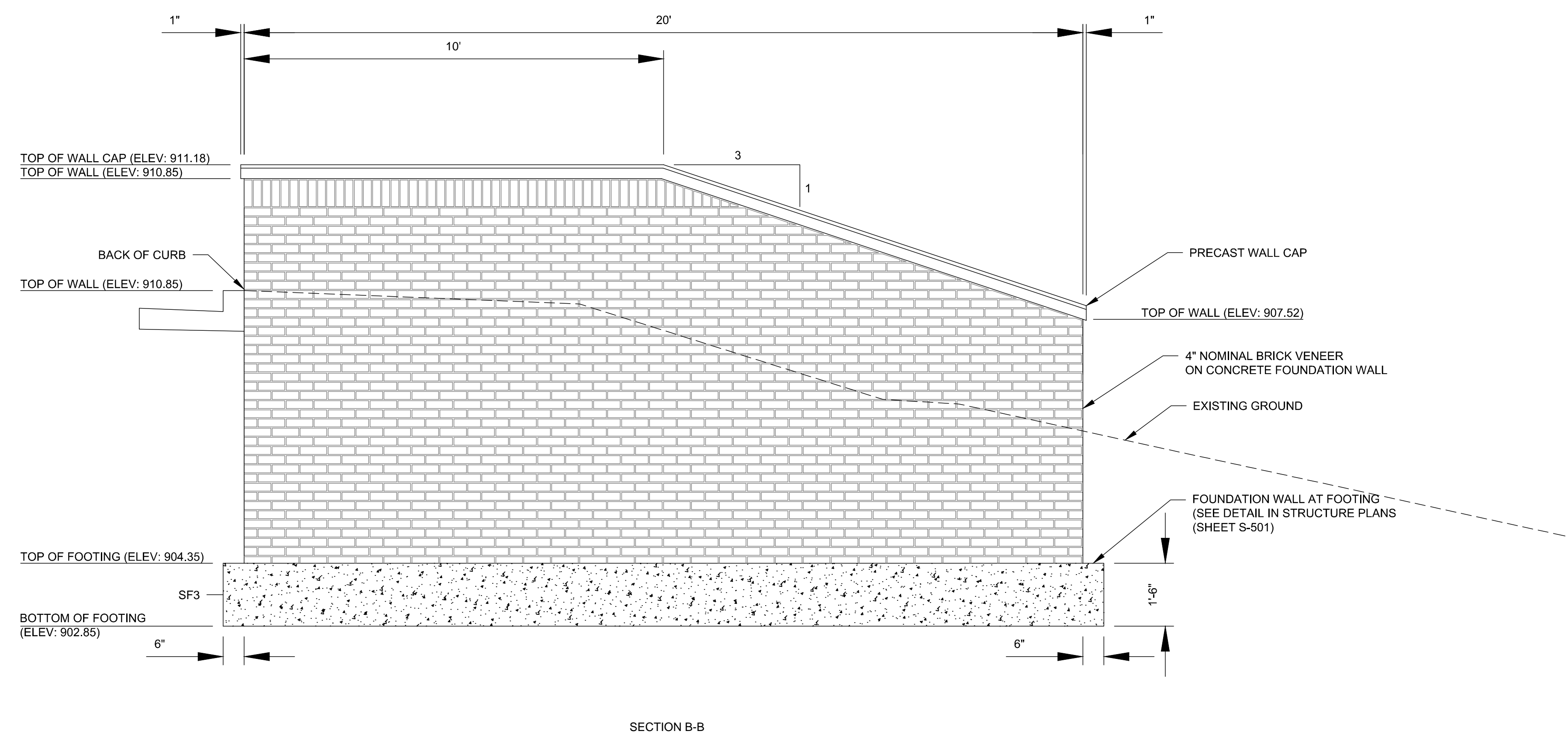
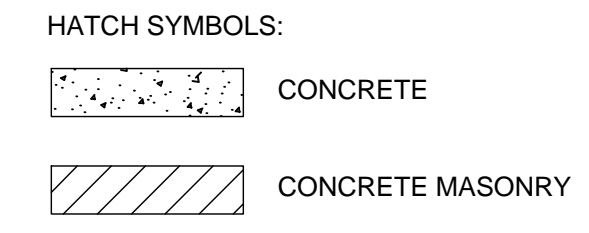
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SHEET NO.

C-546



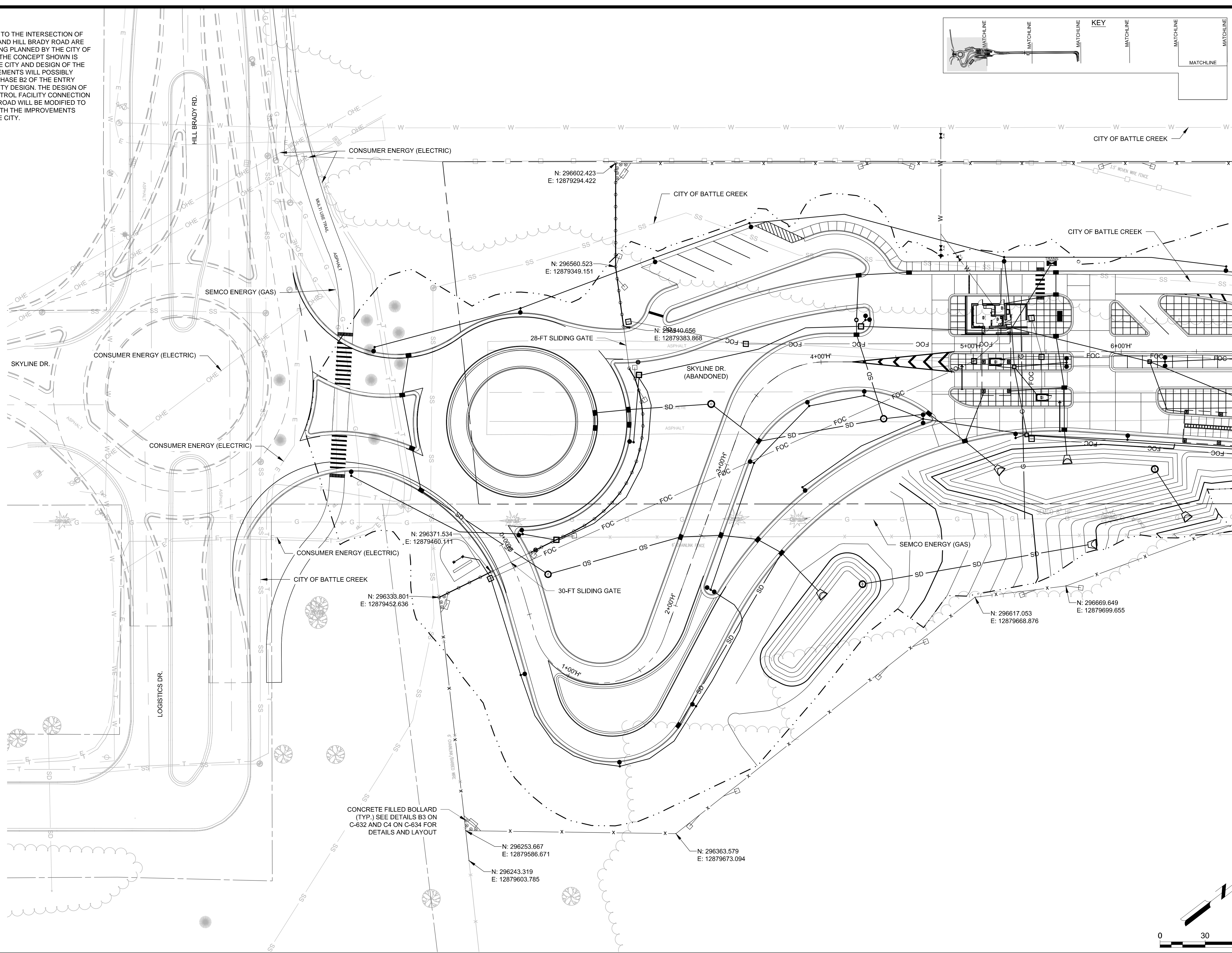
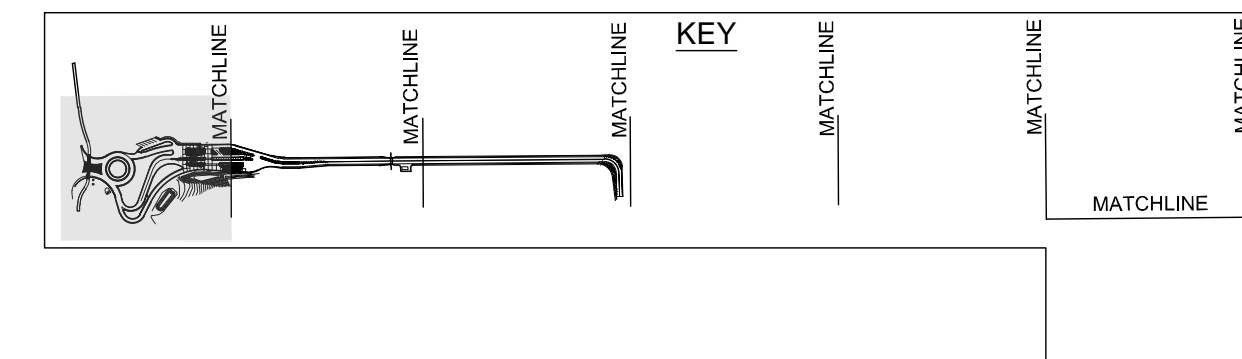
- NOTES:
- 1) REFER TO SHEET S-001 FOR STRUCTURAL LEGENDS, ABBREVIATIONS, AND SYMBOLOLOGY.
 - 2) REFER TO SHEET S-501 FOR FOUNDATION WALL AT FOOTING DETAIL.
 - 3) REFER TO SHEET S-601 FOR STRUCTURAL SCHEDULES.



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1 KNEE WALLS AT ACTIVE VEHICLE BARRIER
 NO SCALE

NOTE:
IMPROVEMENTS TO THE INTERSECTION OF SKYLINE DRIVE AND HILL BRADY ROAD ARE CURRENTLY BEING PLANNED BY THE CITY OF BATTLE CREEK. THE CONCEPT SHOWN IS FAVORABLE TO THE CITY AND DESIGN OF THE PUBLIC IMPROVEMENTS WILL POSSIBLY BEGIN DURING PHASE B2 OF THE ENTRY CONTROL FACILITY DESIGN. THE DESIGN OF THE ENTRY CONTROL FACILITY CONNECTION TO THE PUBLIC ROAD WILL BE MODIFIED TO COORDINATE WITH THE IMPROVEMENTS PLANNED BY THE CITY.



MATCHLINE SEE SHEET C-602

Mead & Hunt
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 2440 Deming Way
 Middleton, WI 53562
 phone: 608-273-6380
 meadhunt.com

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 CONSTRUCT MAIN BASE ENTRANCE**
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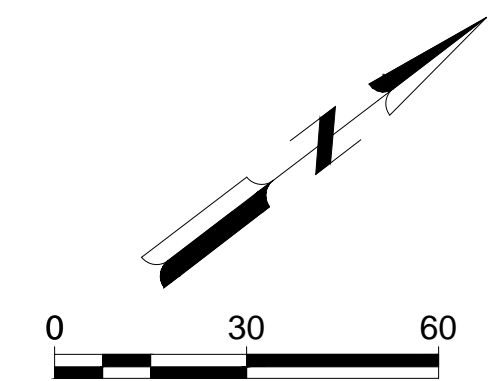
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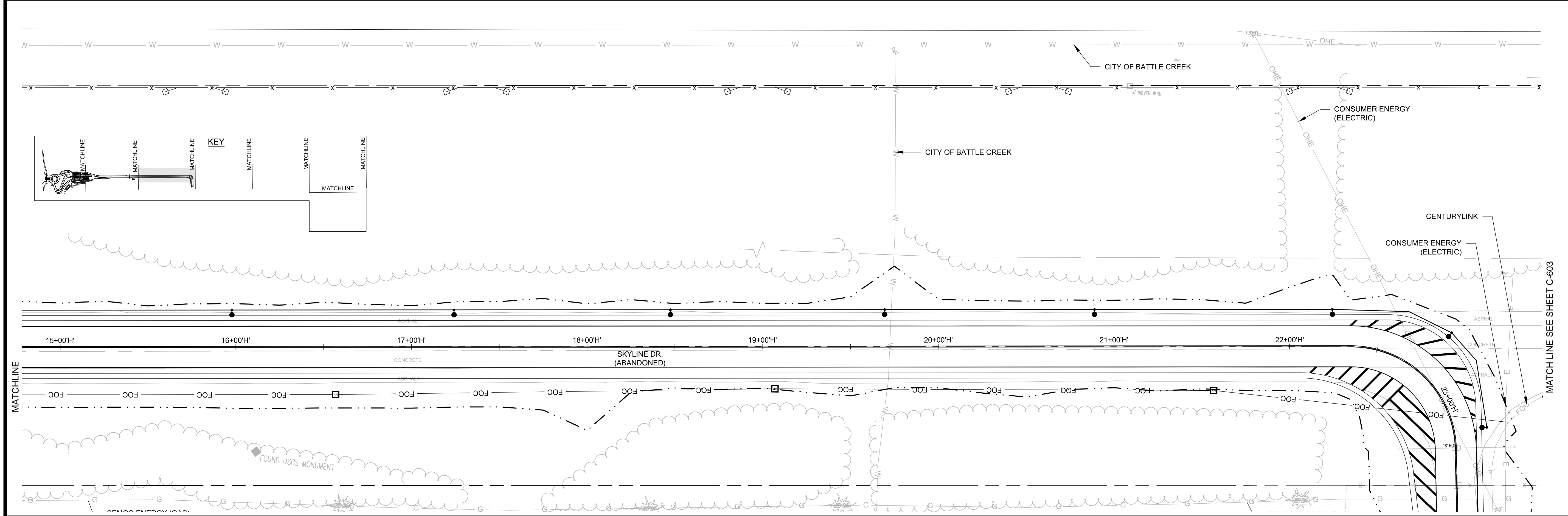
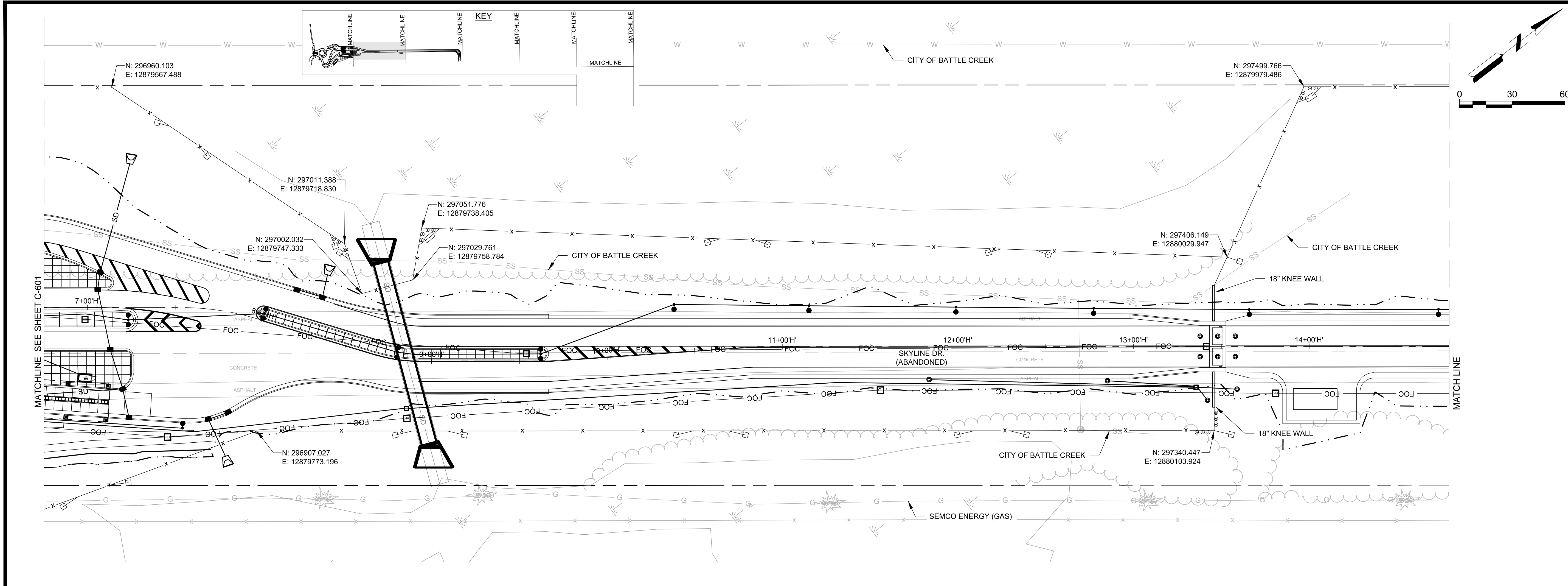
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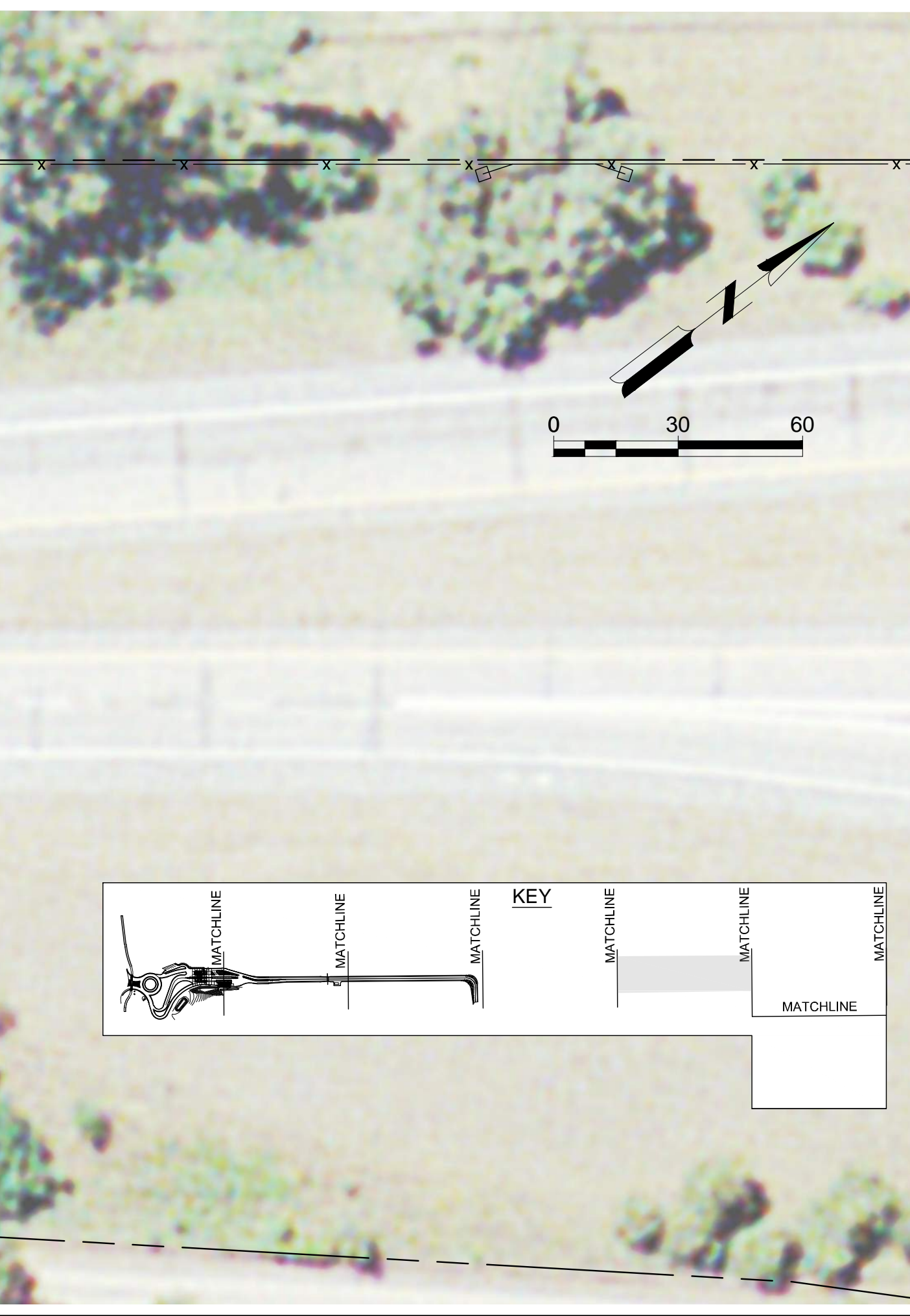
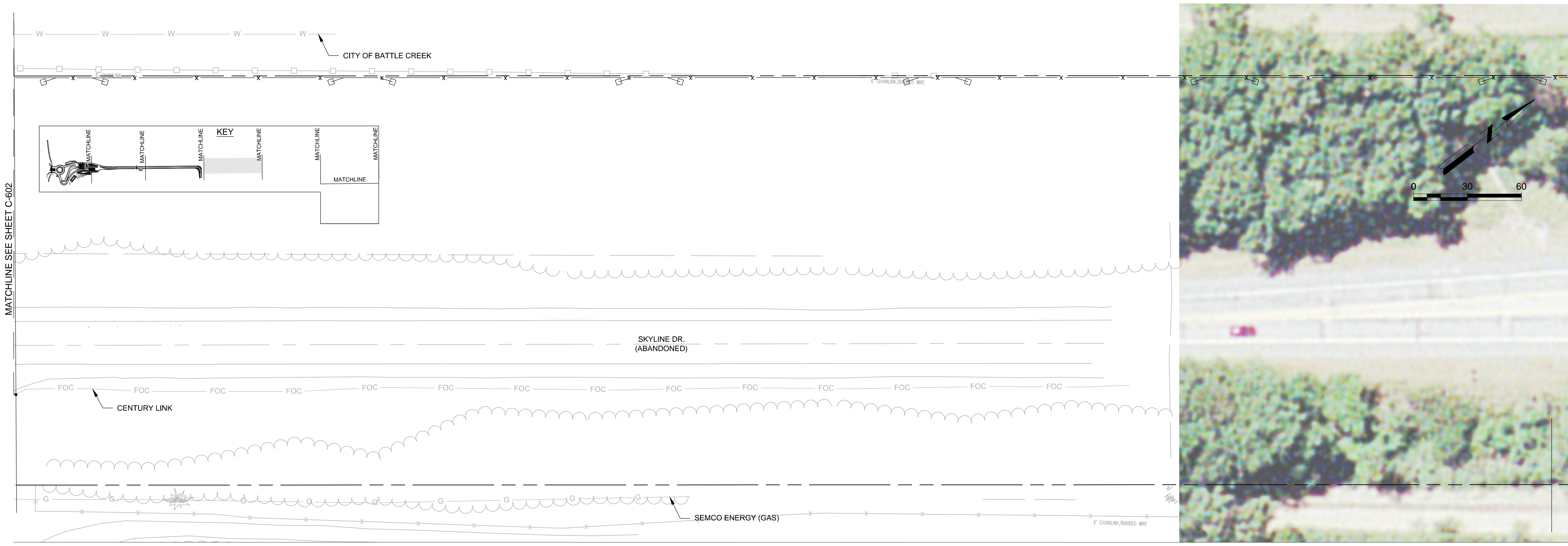
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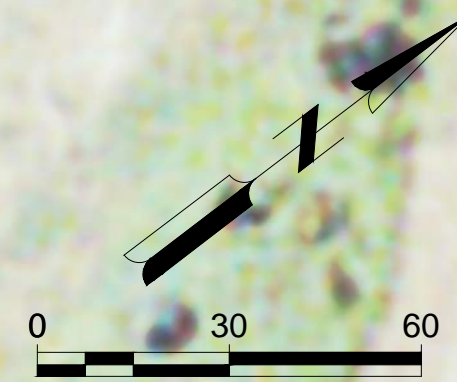
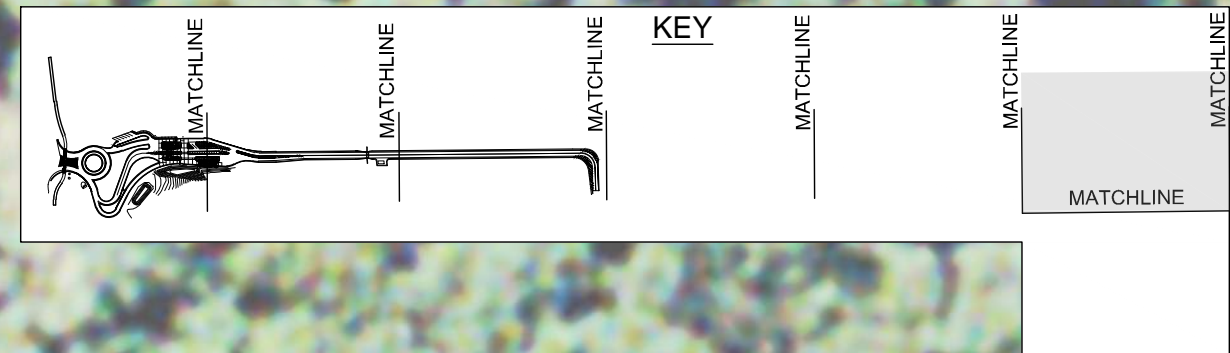
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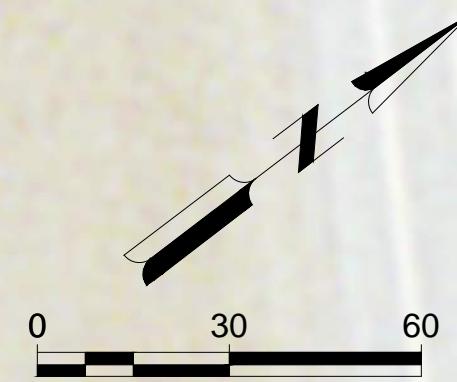
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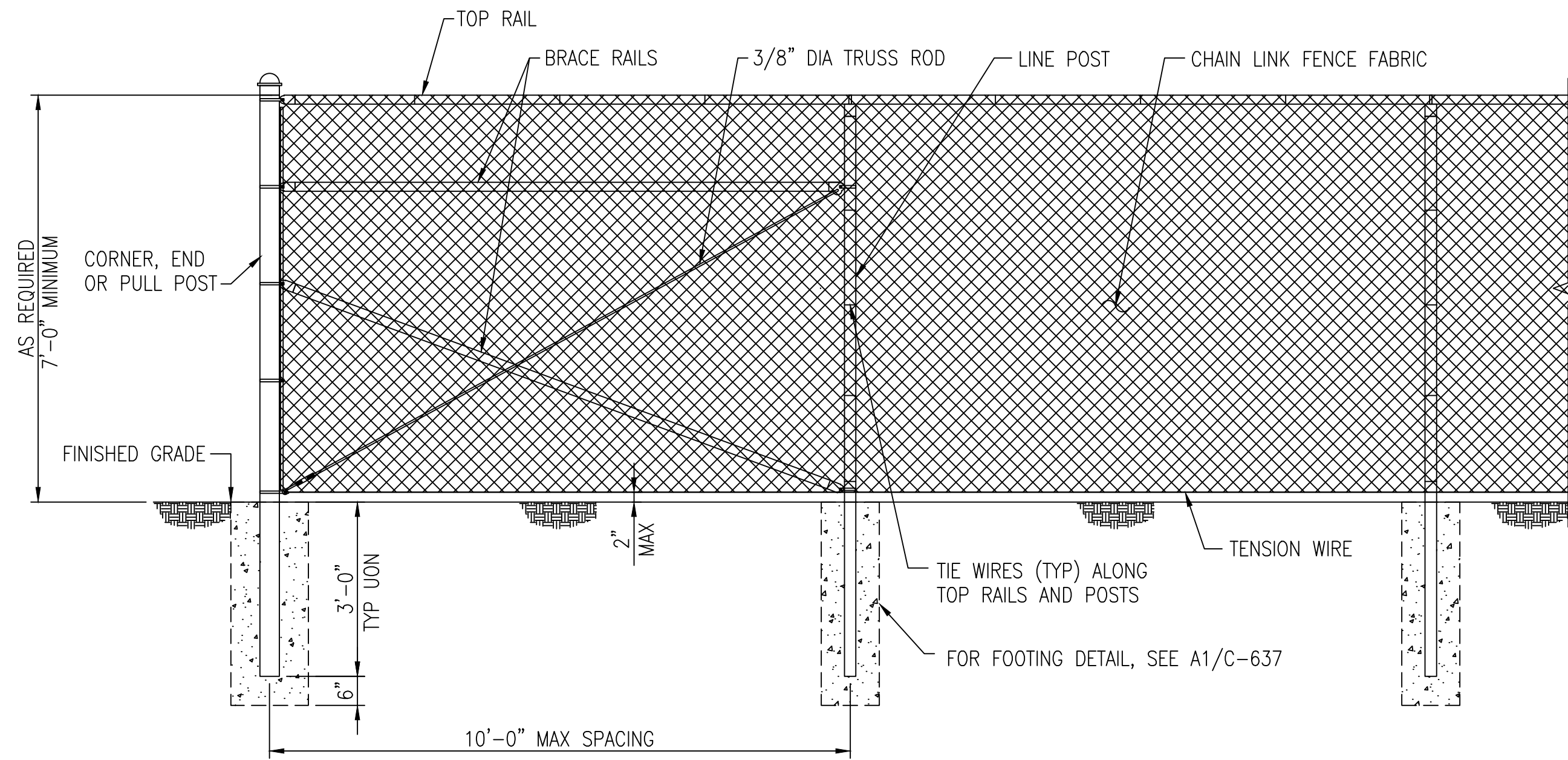
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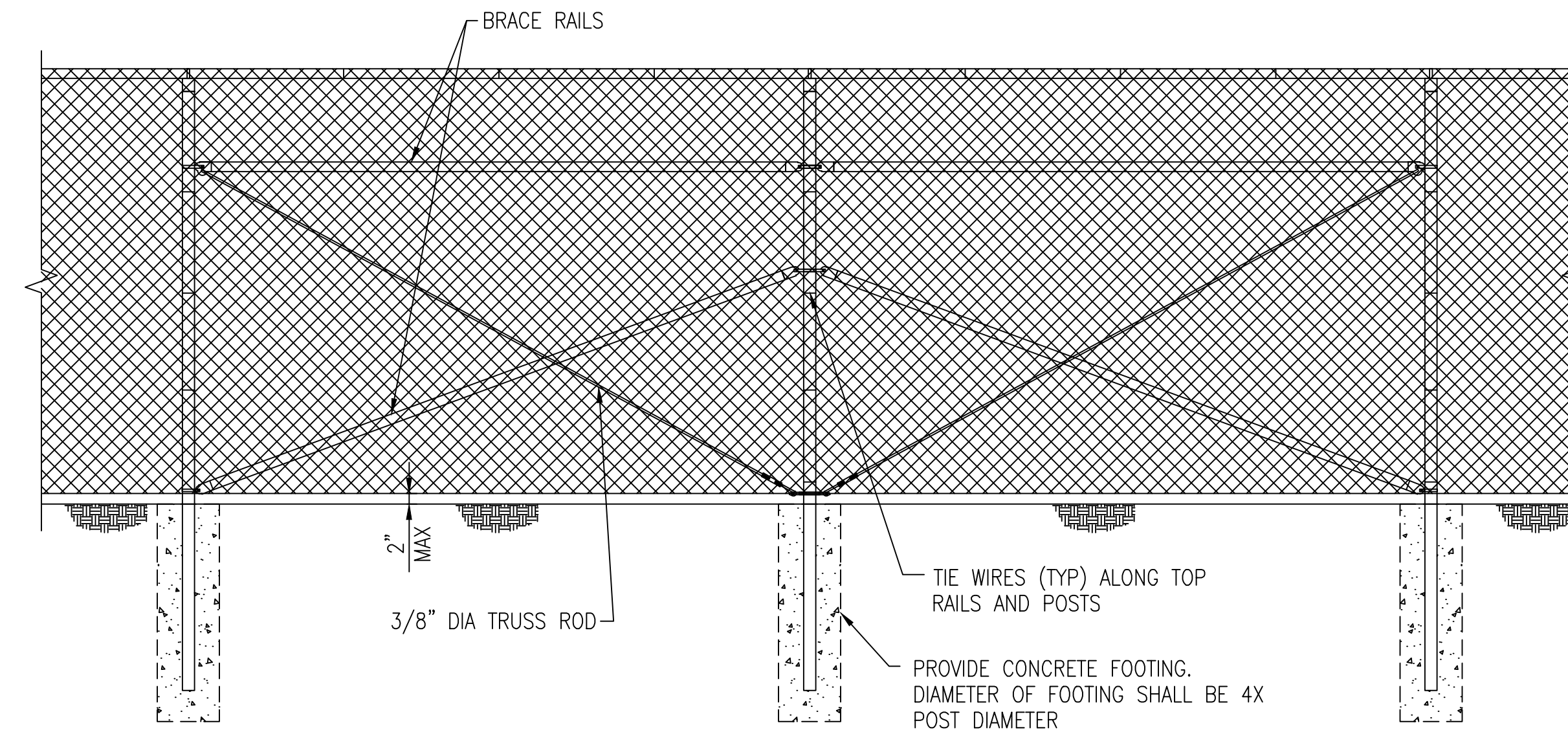
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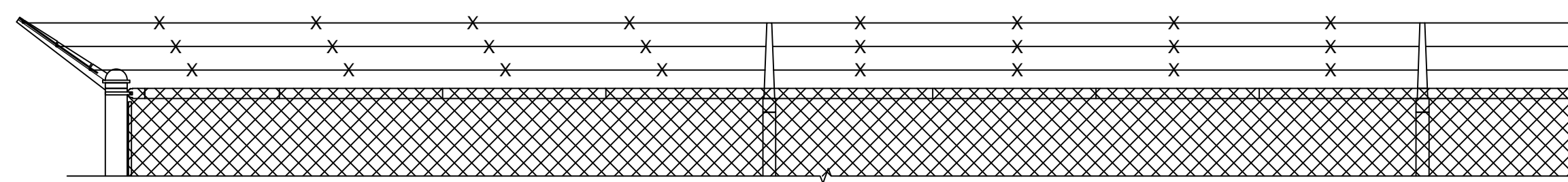
TYPICAL FENCE AND CORNER PANEL ELEVATION

SCALE: 1" = 1'-0"



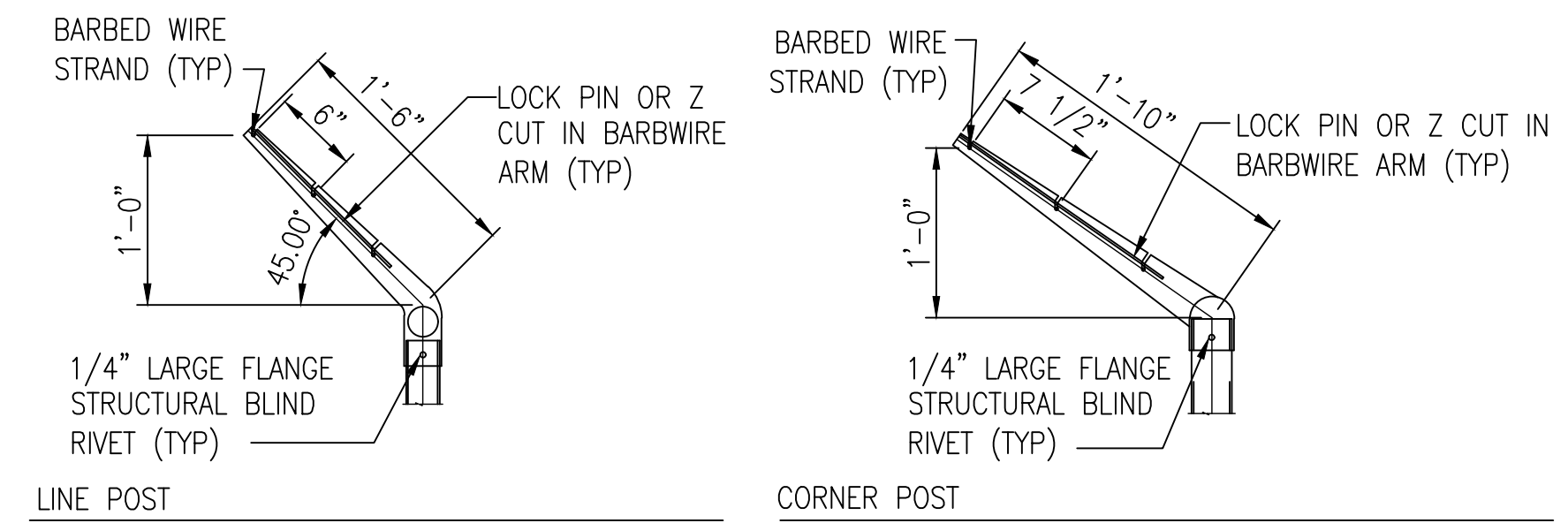
TYPICAL FENCE AND BRACED PANEL ELEVATION

SCALE: 1" = 1'-0"



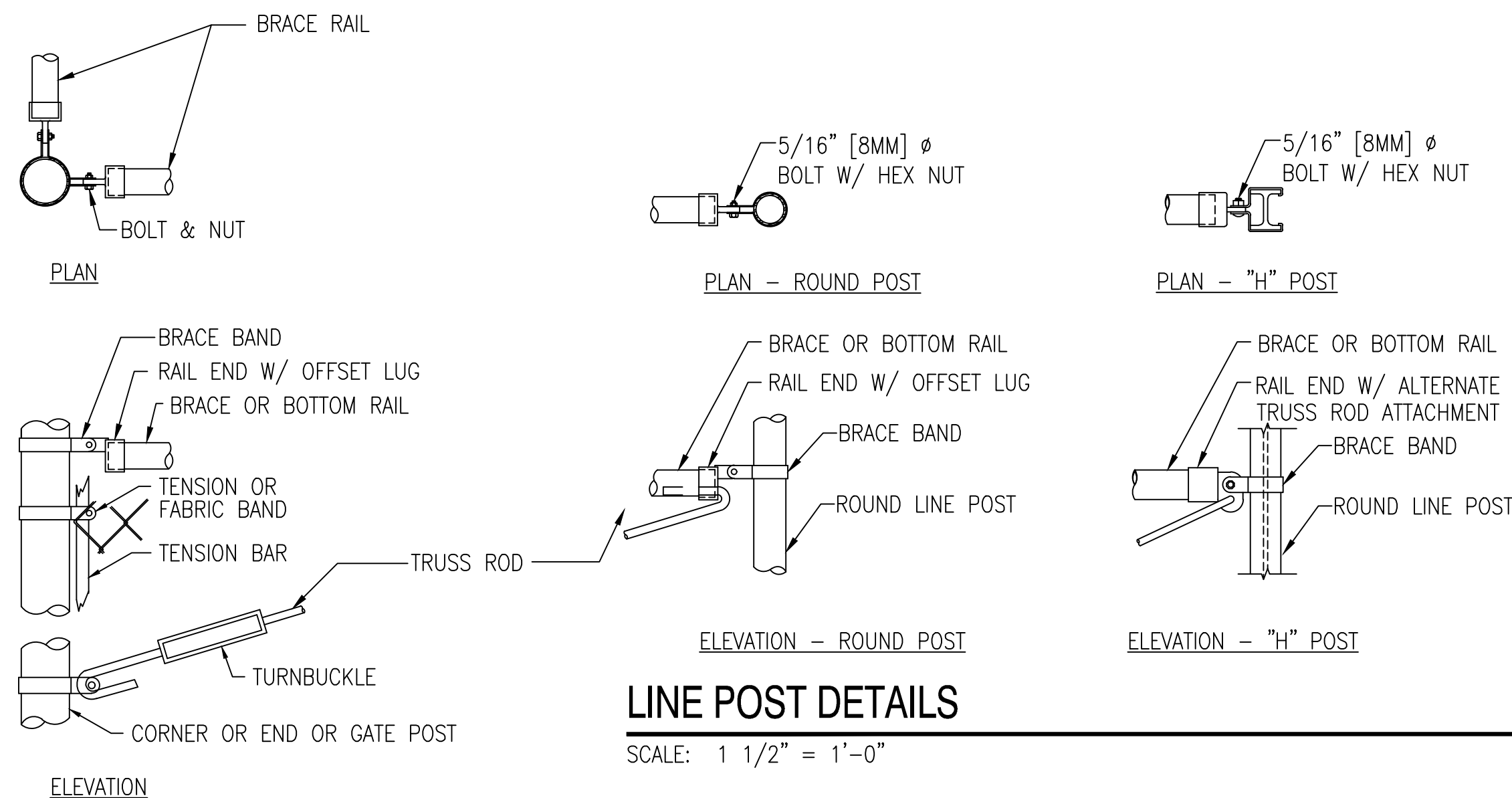
TYPICAL 3 STRAND BARBED WIRE AND SINGLE EXTENSION ARM CONFIGURATION

SCALE: 1" = 1'-0"



SINGLE EXTENSION ARM DETAILS

SCALE: 1" = 1'-0"

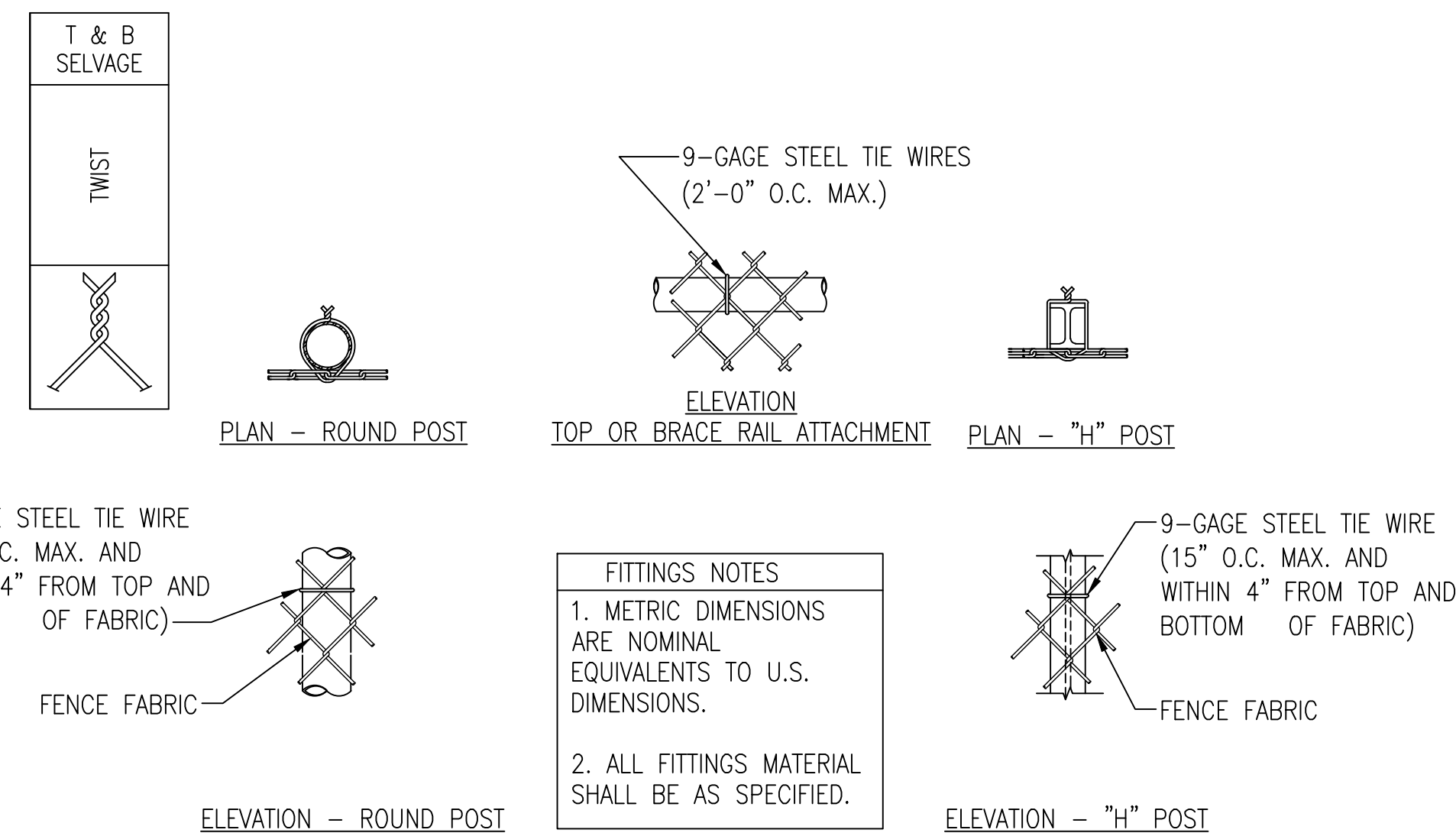


LINE POST DETAILS

SCALE: 1 1/2" = 1'-0"

CORNER OR END POSTS

SCALE: 1 1/2" = 1'-0"



FITTINGS NOTES
 1. METRIC DIMENSIONS ARE NOMINAL EQUIVALENTS TO U.S. DIMENSIONS.
 2. ALL FITTINGS MATERIAL SHALL BE AS SPECIFIED.



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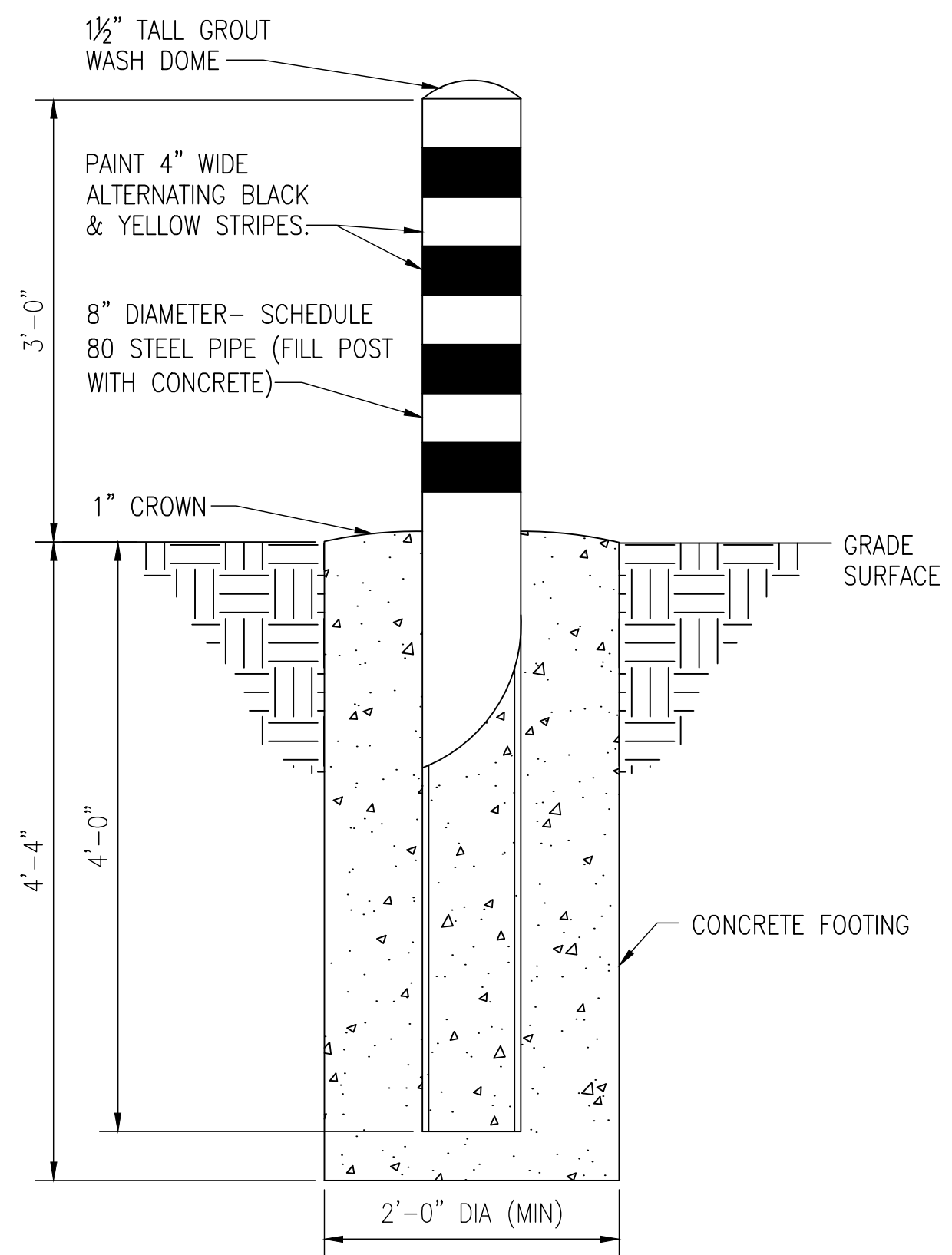
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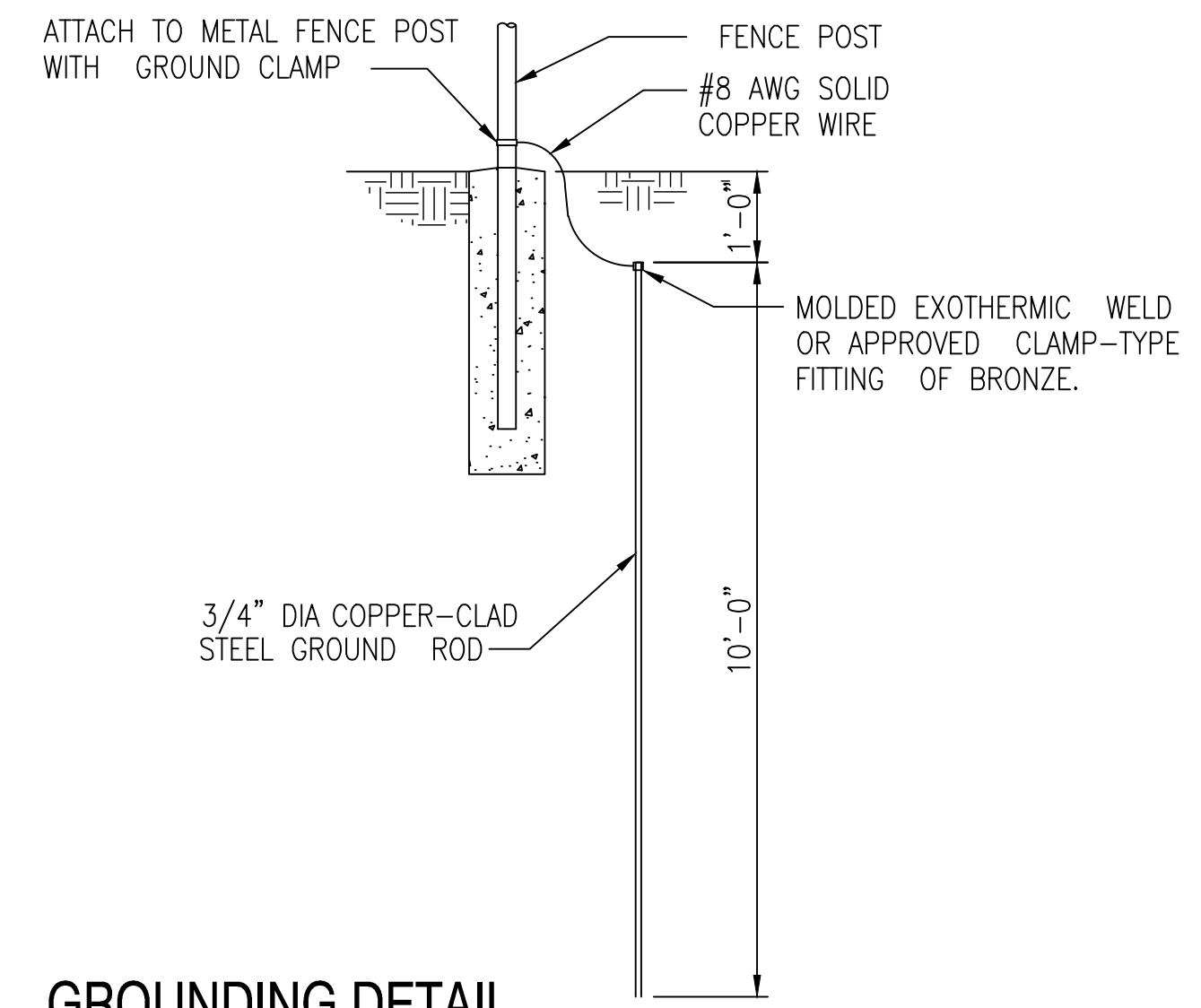
NOTE: STEEL PIPE FOR BOLLARDS SHALL CONFORM TO ASTM A53, TYPE E OR S, GALVANIZED.



CONC FILLED BOLLARD ~ FOOTING

SCALE: 1" = 1'-0"

B3
C-632



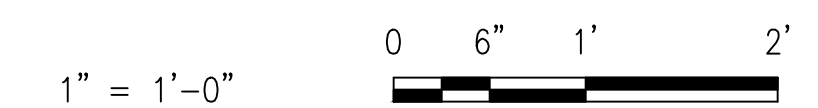
GROUNDING DETAIL

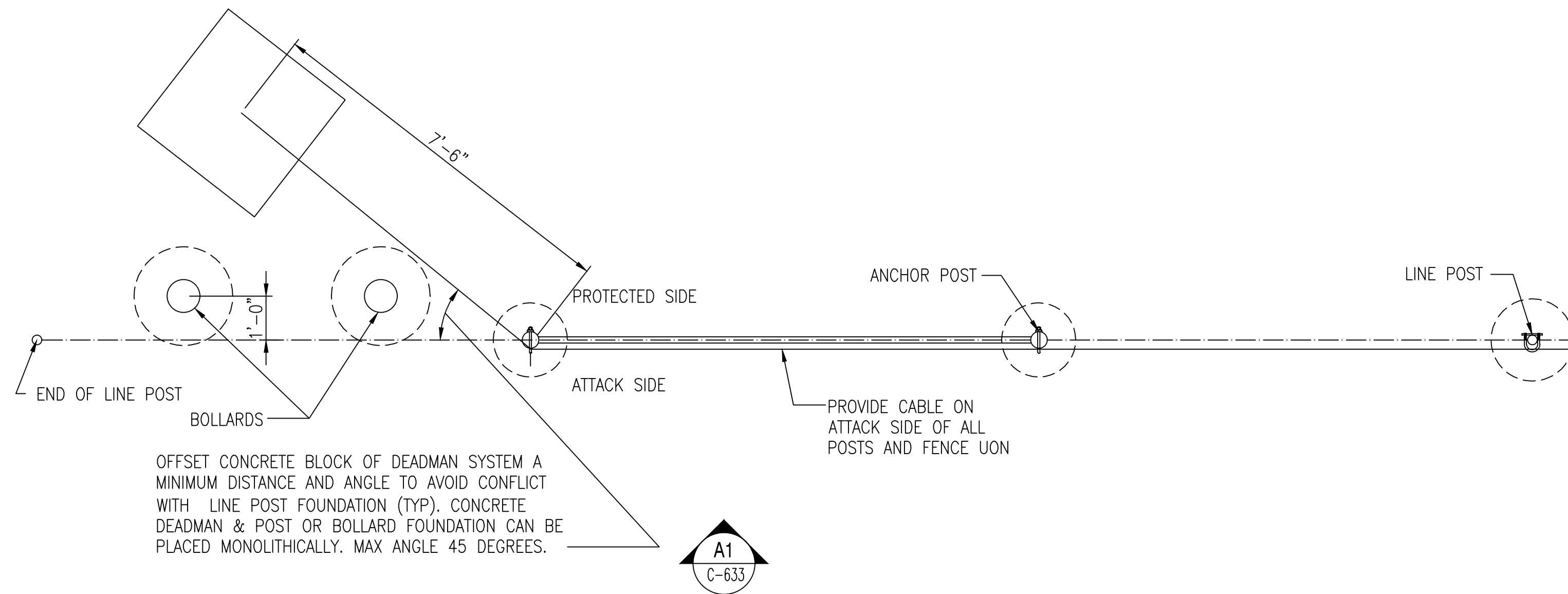
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CHAIN LINK FENCING NOTES

- FABRIC:** THE STANDARD FENCE FABRIC SHALL BE VINYL, ZINC OR ALUMINUM-COATED STEEL WIRE CHAIN LINK WITH MESH OPENINGS NOT LARGER THAN TWO INCHES PER SIDE AND A TWISTED AND BARBED SELVAGE AT TOP AND BOTTOM IN ACCORDANCE WITH THE SPECIFICATIONS.
- FABRIC TIES:** ONLY 12-GAUGE STEEL TIES SHALL BE USED. COATING OR PLATING WILL BE ELECTROLYTICALLY COMPATIBLE WITH THE FENCE FABRIC TO INHIBIT CORROSION.
- REINFORCEMENT:** TENSION WIRES SHALL BE INSTALLED AND INTERWOVEN (OR AFFIXED WITH FABRIC TIES) ALONG THE TOP & BOTTOM OF THE FENCE FOR STABILIZATION OF THE FENCE FABRIC.
- FENCE HEIGHT:** CHAIN LINK FABRIC SHALL BE 7' HIGH WITH AN ADDITIONAL 1" IN HEIGHT COMPOSED OF 3 STRANDS OF BARBED WIRE AS REQUIRED. THE TOTAL FENCE HEIGHT SHALL BE 8'.
- GROUND CLEARANCE:** BOTTOM OF THE FENCE FABRIC SHALL BE WITHIN TWO INCHES OF FIRM SOIL.
- TOP GUARDS:** A TOP GUARD IS AN OVERHANG OF BARBED WIRED ALONG THE TOP OF A FENCE, FACING OUTWARD (AWAY FROM PROTECTED SITE) AND UPWARD AT APPROX. 45° ANGLE. TOP GUARD SUPPORTING ARMS WILL BE PERMANENTLY AFFIXED TO THE TOP OF FENCE POSTS TO INCREASE THE OVERALL HEIGHT OF THE FENCE AT LEAST 1 FOOT. THREE STRANDS OF 12-GAUGE BARBED WIRE, EQUALLY SPACED, SHALL BE INSTALLED ON THE SUPPORTING ARMS.
- FENCE POSTS:** SHALL BE ASTM F1043 OR F1083 ROUND PIPE OR SQUARE TUBE AND SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS. FENCE POST SPACING AND SIZE (DIAMETER) SHALL BE DETERMINED IN ACCORDANCE WITH CHAIN LINK FENCE MANUFACTURERS' INSTITUTE (WLG 2445). SPACING SHALL NOT EXCEED 10'-0" OC. SIZE (DIAMETER) SHALL NOT BE LESS THAN THAT SPECIFIED.

GRAPHIC SCALES

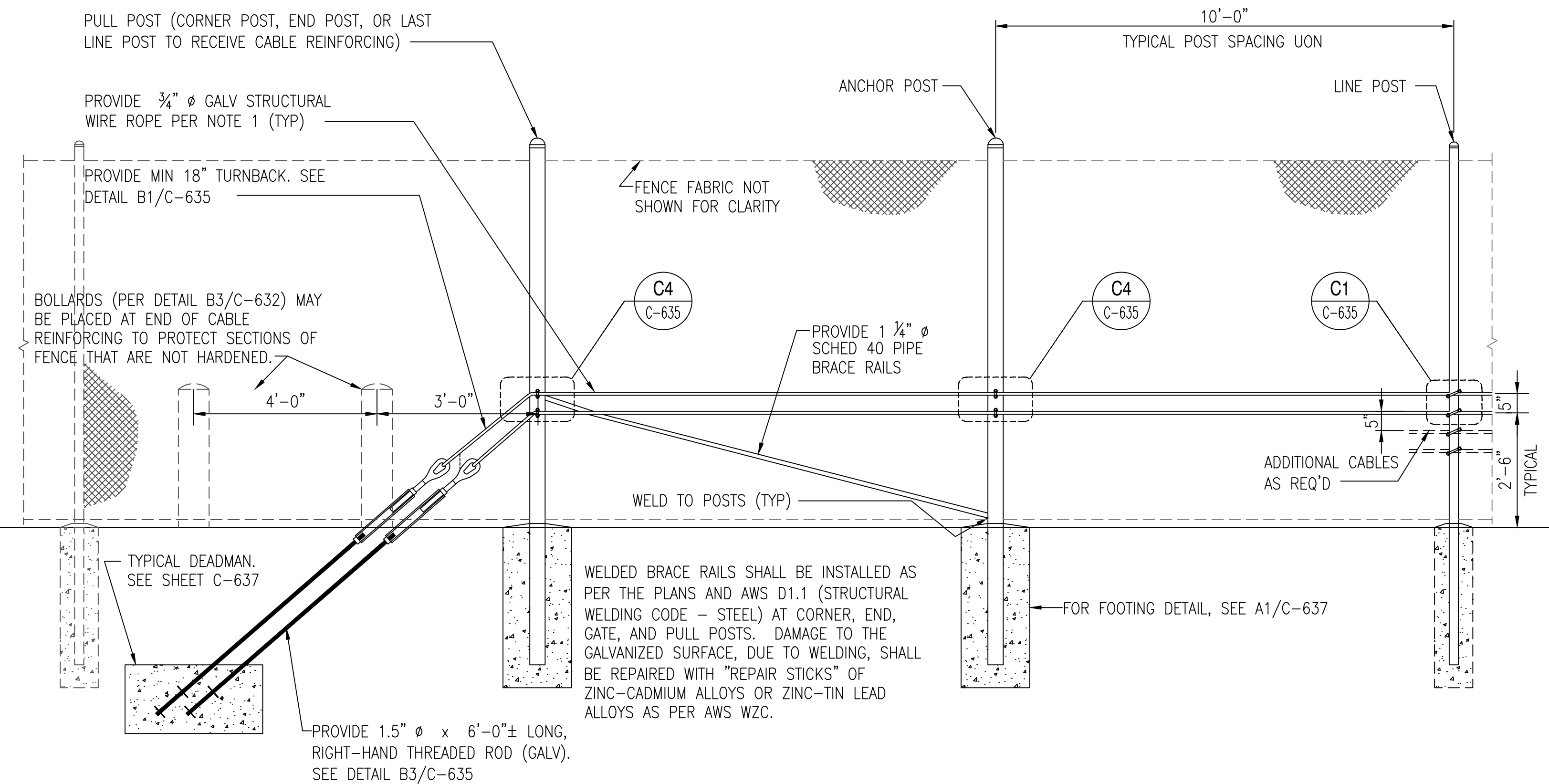




TYPICAL PLAN OF END POST DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

C1
C-633



TYPICAL ELEVATION OF END POST DEADMAN AND LINE POST LAYOUT

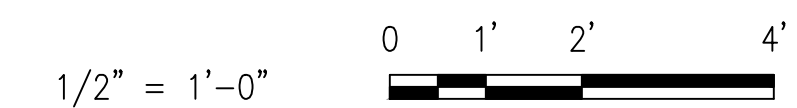
SCALE: 1/2" = 1'-0"

A1
C-633

REINFORCING NOTES

1. REINFORCING CABLES SHALL BE U.S. DOMESTIC MINIMUM 3/4" Ø 6x19 CLASS WIRE ROPE, REGULAR LAY, EXTRA IMPROVED PLOW STEEL (EIP), INDEPENDENT WIRE ROPE CORE (IWRC), CONFORMING TO ASTM A1023 AND GALVANIZED IN ACCORDANCE WITH ASTM A475 CLASS A, & HAVE A MINIMUM BREAKING STRENGTH OF 40,000 POUNDS (20 TONS). CABLES WITH A BLACK VINYL COATING, SHALL NOT BE IMPREGNATED.
2. CABLES SHALL BE CONTINUOUS FROM DEADMAN TO DEADMAN. NO SPLICES IN CABLE SHALL BE ALLOWED. CABLE BARRIER SHALL BE INSTALLED BETWEEN FENCE POST AND FENCE FABRIC AS PER PLANS. U-BOLTS SHALL BE INSTALLED PERPENDICULAR TO THE LAY OF THE STRANDS OF THE WIRE ROPE AND SHALL BE TIGHTENED AFTER SAG IN CABLE BARRIER HAS BEEN REMOVED. UNLESS INDICATED OTHERWISE, CONCRETE DEADMAN SPACING SHALL BE AT MAXIMUM 200' INTERVALS & TURNING POINTS (EXTERNAL CORNERS).
3. WIRE ROPE ENDS SHALL TERMINATE AROUND TURNBUCKLES, GATE POSTS OR EXTRA HEAVY-DUTY WIRE ROPE THIMBLES (AT GATES). THESE TERMINATIONS REQUIRE 18" MINIMUM OF ROPE FOR TURN BACK AND A MINIMUM OF (4)- CLIPS EACH (EQUAL SPACING).
4. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS PRIOR TO ORDERING MATERIALS.
5. DEADMEN SHALL BE INSTALLED ON THE SECURED SIDE (INTERIOR) OF THE FENCE; WHILE CABLES SHALL BE INSTALLED ON THE EXTERIOR SIDE OF POST.
6. PROVIDE NECESSARY SLACK IN CABLES (GATES ONLY) TO ALLOW FOR FULL SWING OF ALL GATE LEAVES.
7. OFFSET DEADMAN SYSTEMS FROM FENCELINE (PLAN VIEW) TO AVOID CONFLICT WITH EXISTING FENCE POSTS.
8. ALLOW EPOXY ANCHOR BOLTS (MIN 2 DAYS) & CONCRETE DEADMEN (MIN 7 DAYS) TO CURE, PRIOR TO APPLYING LOADS (INSTALLING TURNBUCKLES & STRAIGHTENING CABLES).
9. ALL WELDING SHALL BE DONE IN ACCORDANCE WITH AWS D1.1. ALL WELD MATERIAL SHALL BE E70XX ELECTRODES.
10. STRUCTURAL STEEL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE NINTH EDITION OF THE AISC "MANUAL OF STEEL CONSTRUCTION FOR ALLOWABLE STRESS DESIGN.
11. STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 AND SHALL HAVE A MINIMUM YIELD STRESS OF 36,000 PSI.
12. ALL STRUCTURAL STEEL MEMBERS AND HARDWARE USED IN CABLE ANCHORING SYSTEM SHALL BE HOT-DIPPED GALVANIZED. ANY AREAS WHERE COATING IS DAMAGED OR REMOVED SHALL BE COVERED WITH A ZINC RICH COMPOUND.
13. TURNBUCKLES SHALL BE 1 1/2"x18", TYPE I, GALVANIZED IN ACCORDANCE WITH ASTM F1145.
14. WIRE ROPE CLAMPS SHALL BE TYPE I, GALVANIZED, AND CONFORM TO FS FF-C-450.
15. ALL THREADED RODS, U-BOLTS, AND BOLTS SHALL CONFORM TO ASTM A307 AND SHALL BE INSTALLED WITH F844 WASHERS AND A563 NUTS. ENTIRE BOLT ASSEMBLY SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
16. ZINC RICH COMPOUND FOR REPAIRS SHALL BE 95% METALLIC ZINC, BY WEIGHT IN DRIED FILM; INSTALL AT LEAST TWO COATS, 4 MILS MIN TOTAL THICKNESS.
17. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ACI 318. CONCRETE SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI. THE MINIMUM CONCRETE COVER SHALL BE 3", UNLESS OTHERWISE NOTED.
18. AT CABLE REINFORCING GATES, PROVIDE TWIST-OFF METAL TIES TO SECURE CABLE TO GATE FABRIC @ 24" OC & U-BOLTS TO SECURE TO GATE UPRIGHTS. MODIFY AS NEEDED TO FACILITATE OPERATION OF GATE.
19. FOR CABLE REINFORCING SWINGING GATES, PROVIDE EYEBOLTS TO SECURE CABLE TO GATE PICKETS @ 24" OC & U-BOLTS TO SECURE TO GATE UPRIGHTS. MODIFY AS NEEDED FOR OPERATION.

GRAPHIC SCALES



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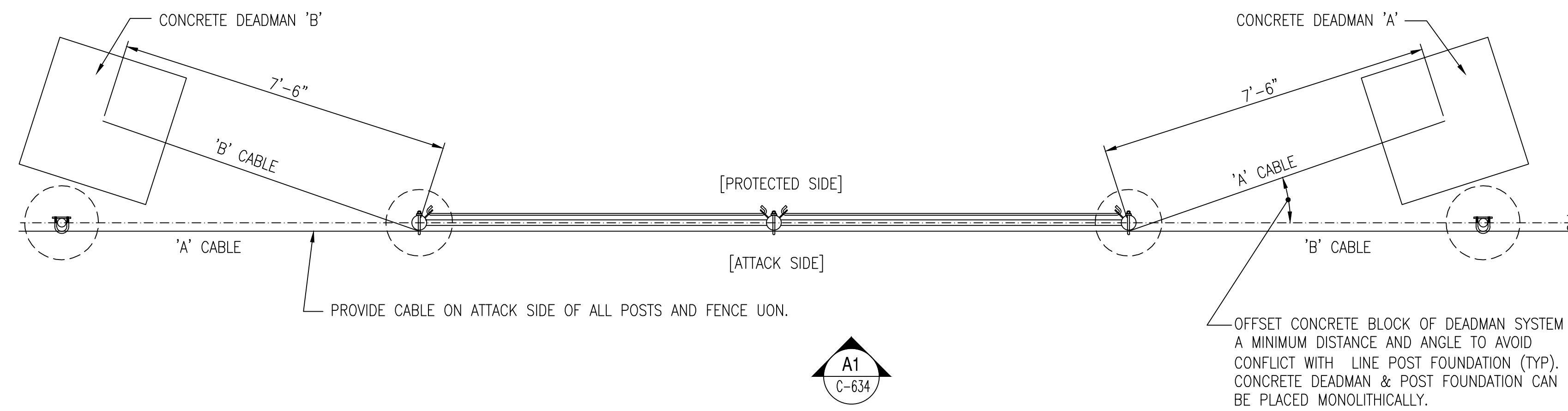
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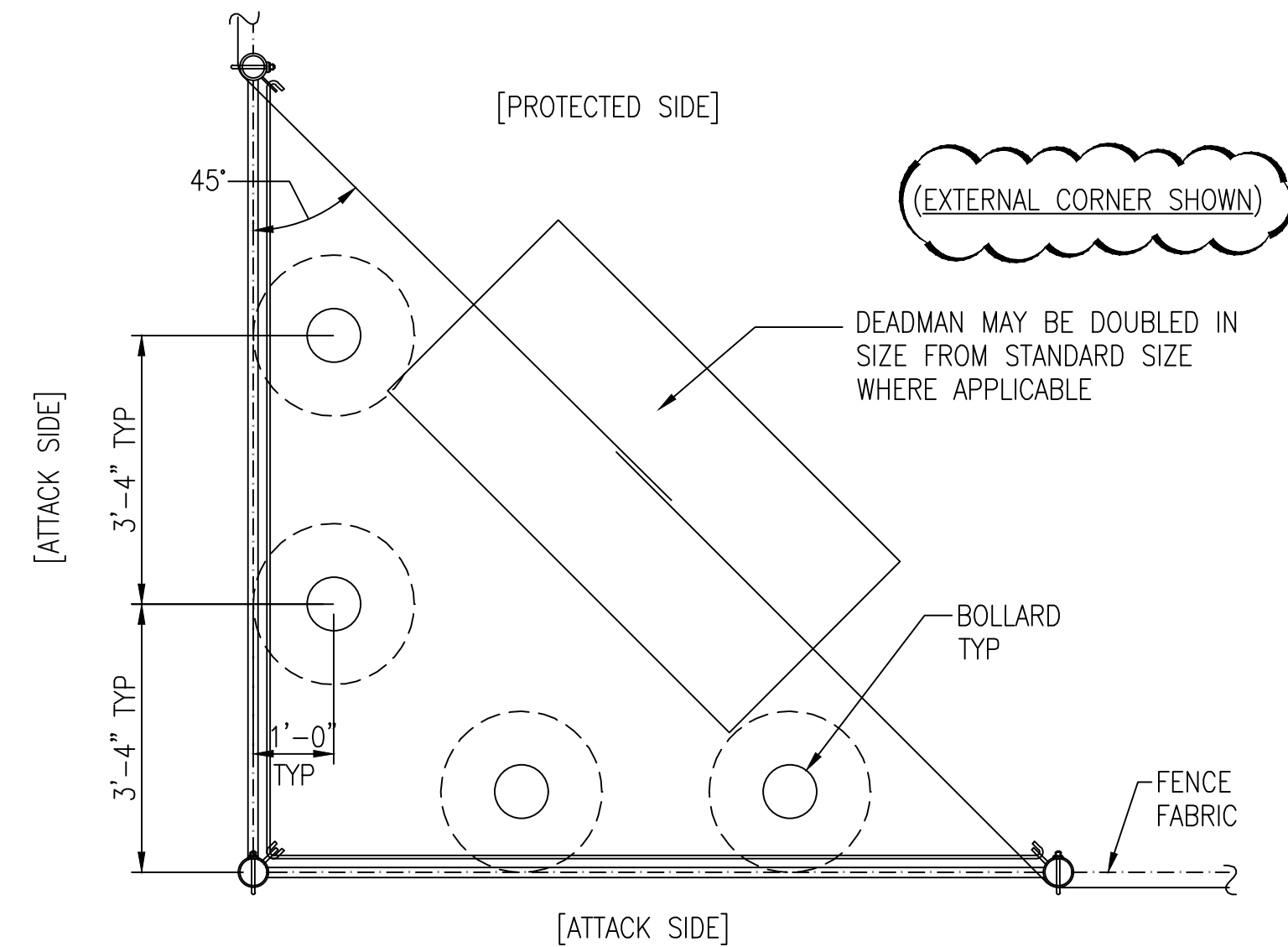
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TYPICAL PLAN OF DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

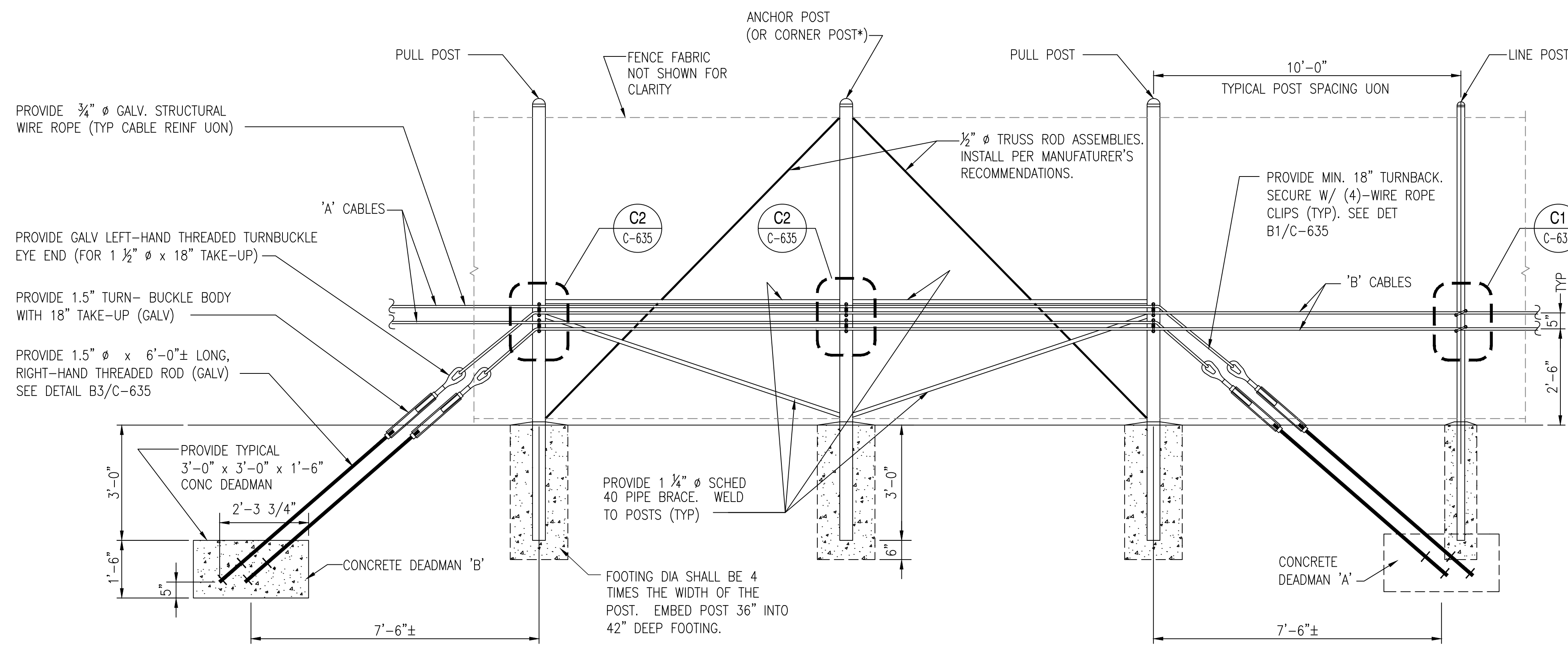
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TYPICAL PLAN OF TURNING POINT POST LAYOUT

SCALE: 1/2" = 1'-0"

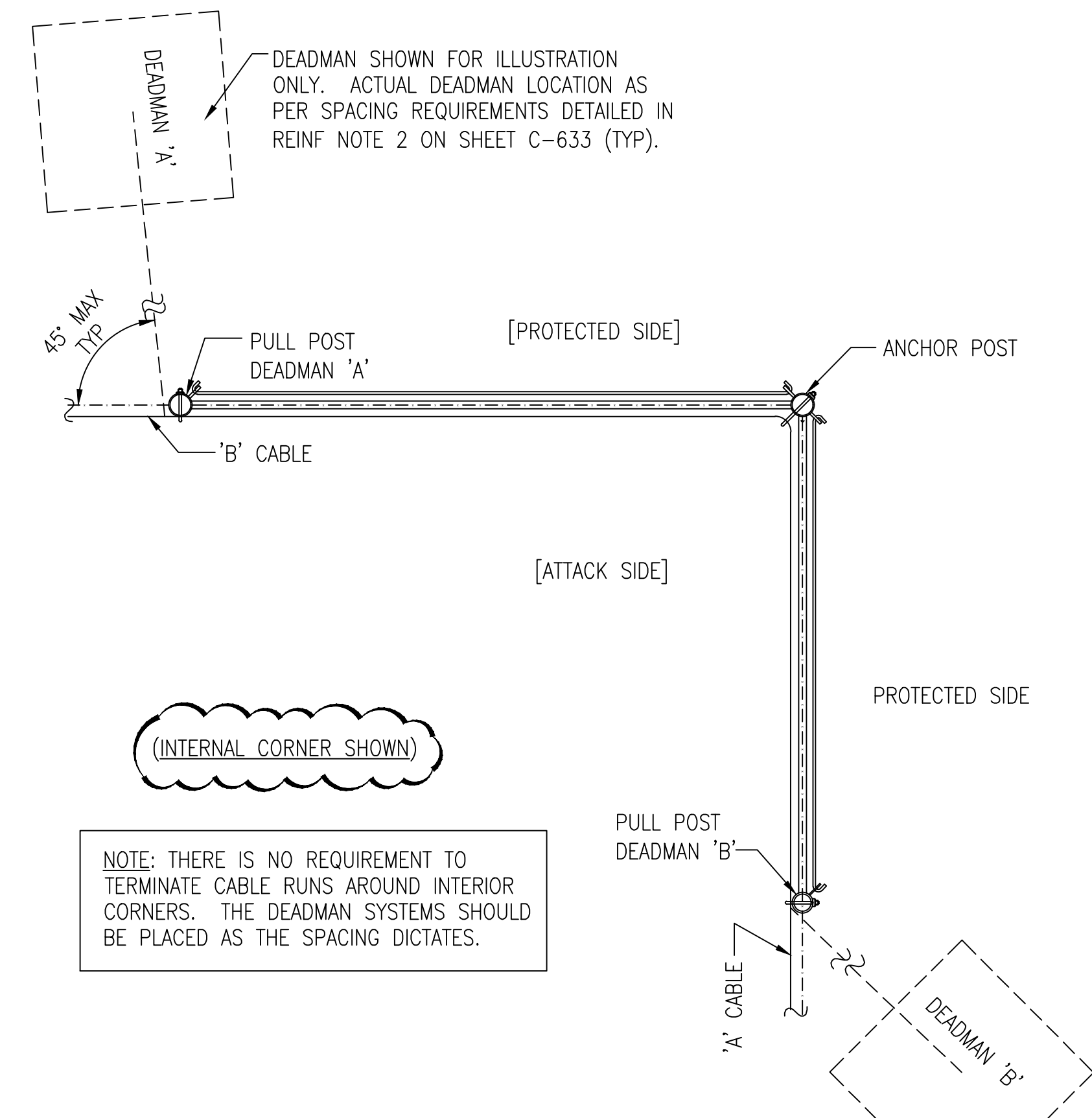
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TYPICAL ELEVATION OF DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

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C-634

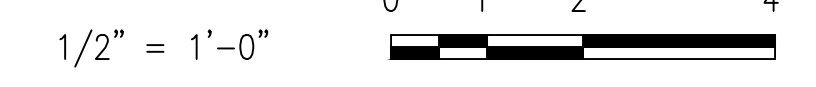


TYPICAL PLAN OF TURNING POINT POST LAYOUT

NOT TO SCALE

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GRAPHIC SCALES



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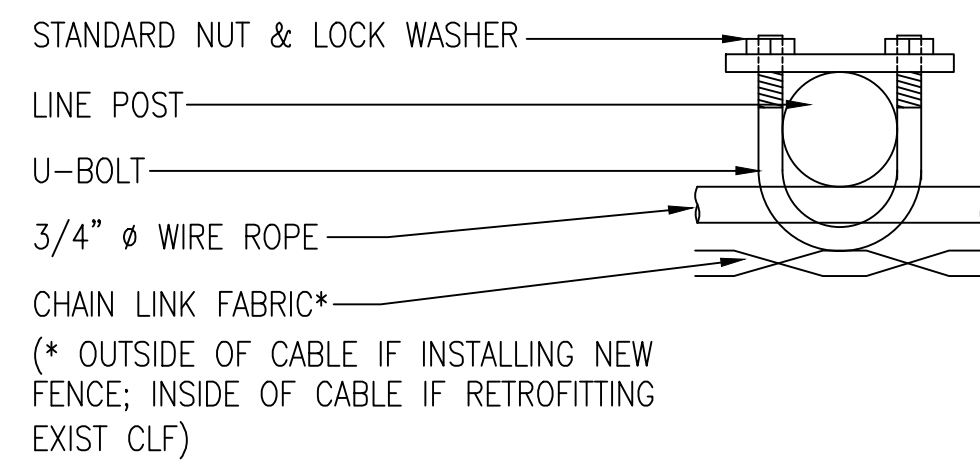
ISSUED 02/17/21 B3 FINAL

ANG Project No: MBMV099170
 M&H No: 3141900-113782.01
 DATE: FEBRUARY 17, 2021
 DESIGNED BY: JAK
 DRAWN BY: DAY
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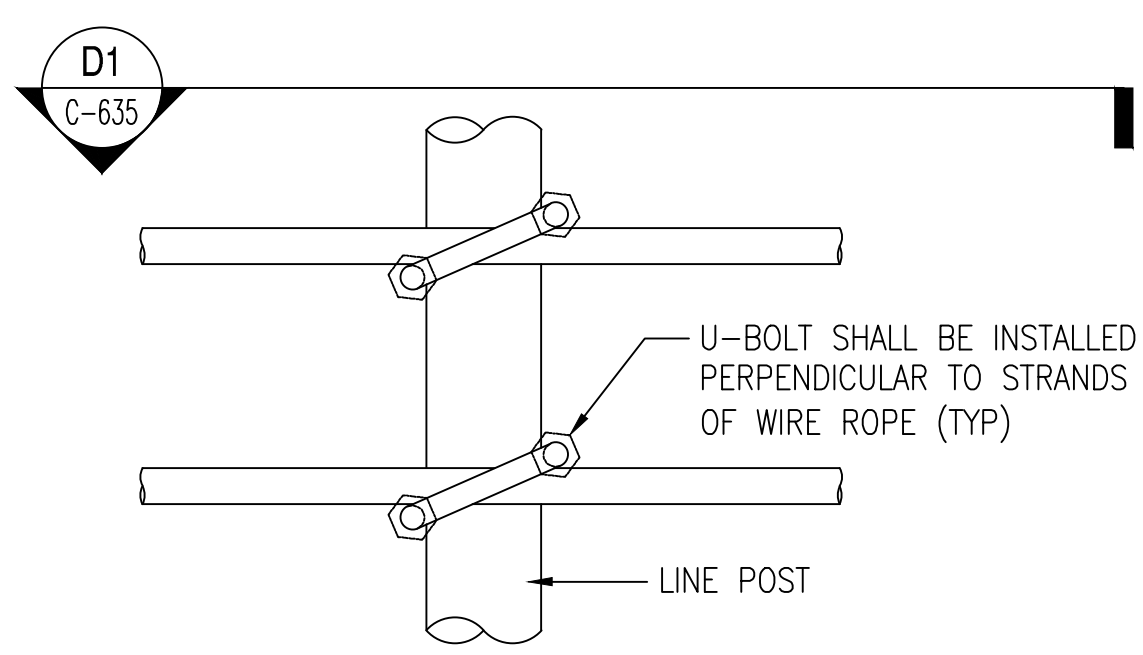
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FENCING DETAILS

SHEET NO.

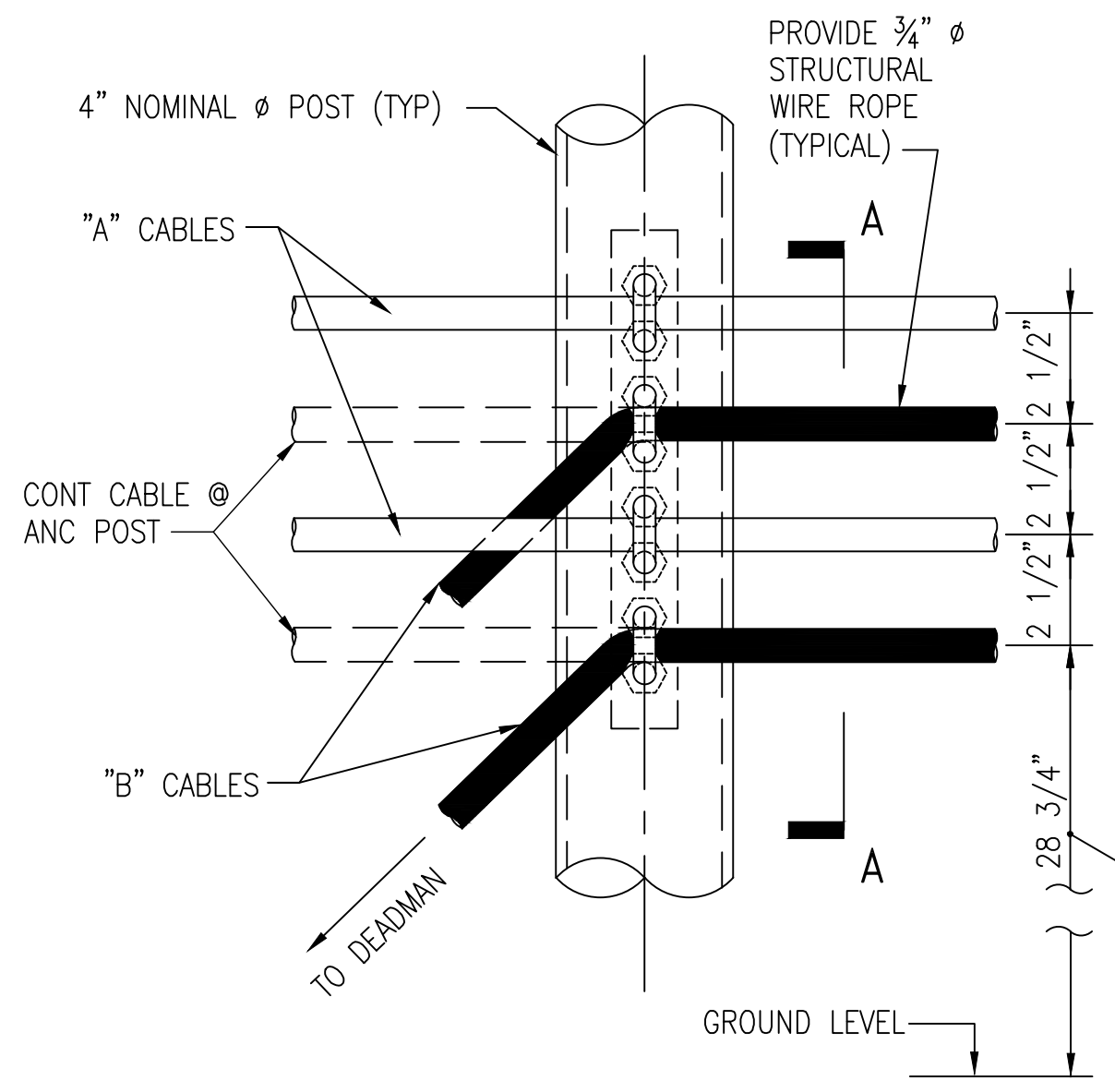
C-635



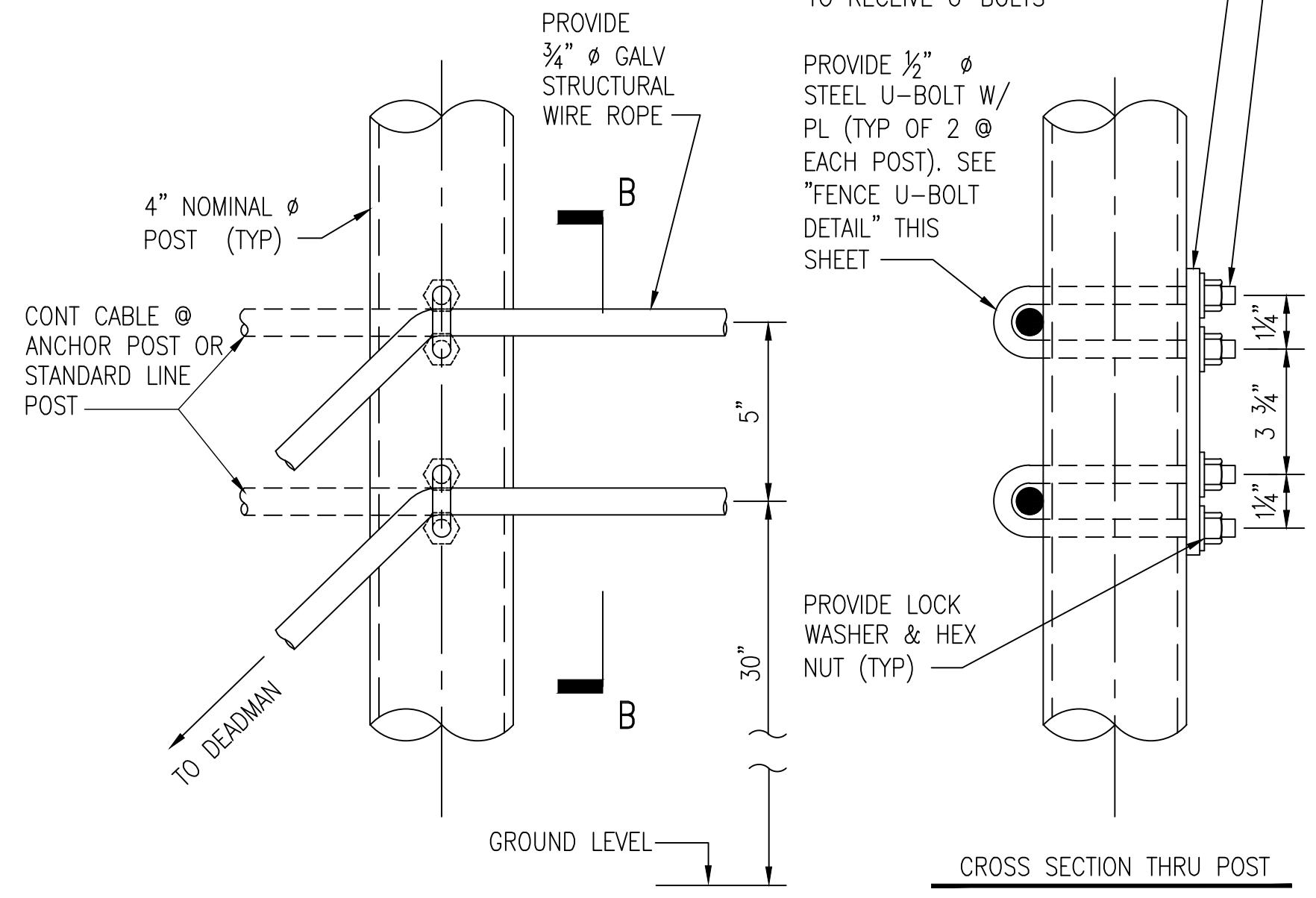
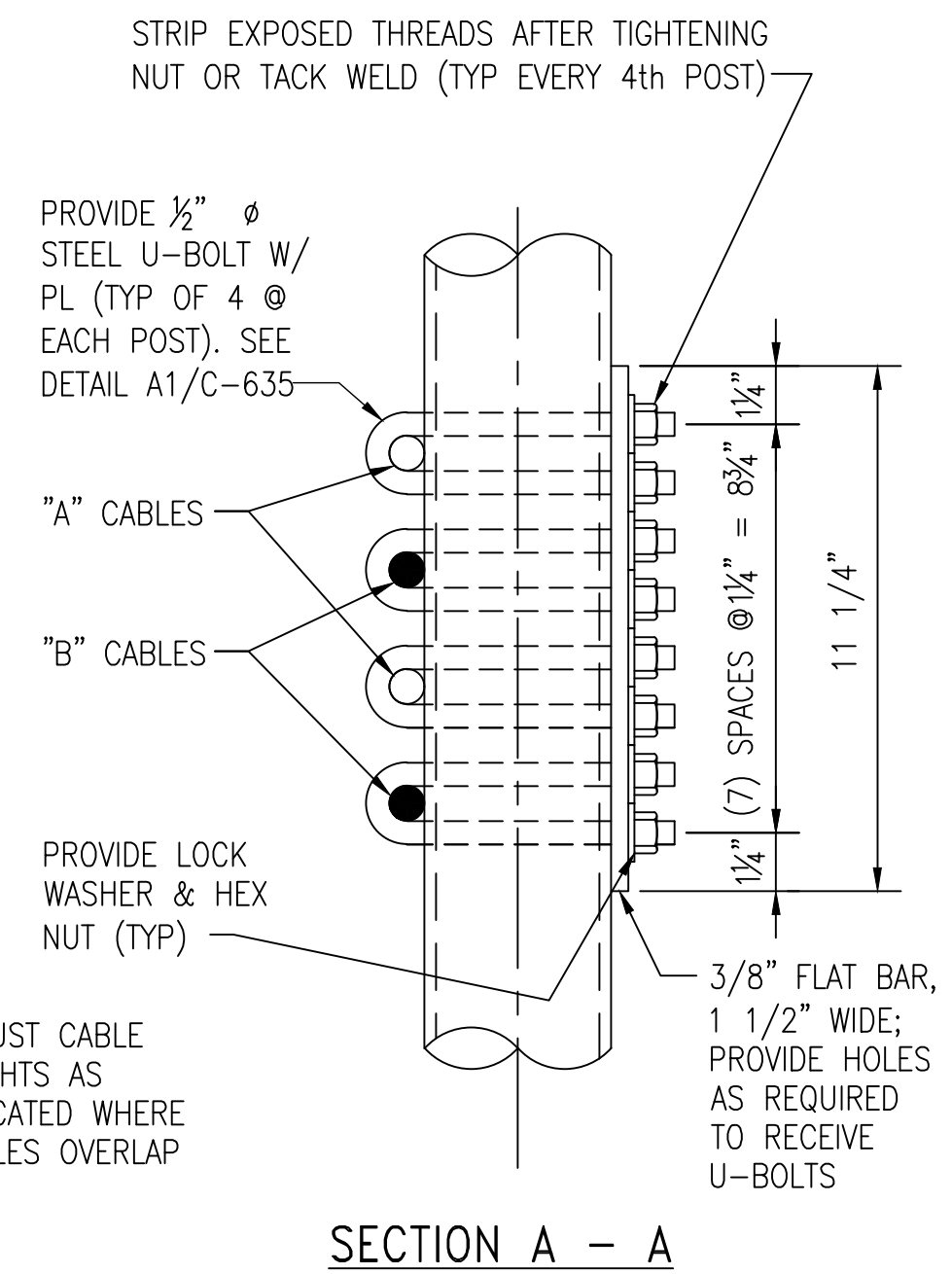
PLAN
 SCALE: 3" = 1'-0"
 D1
 C-635



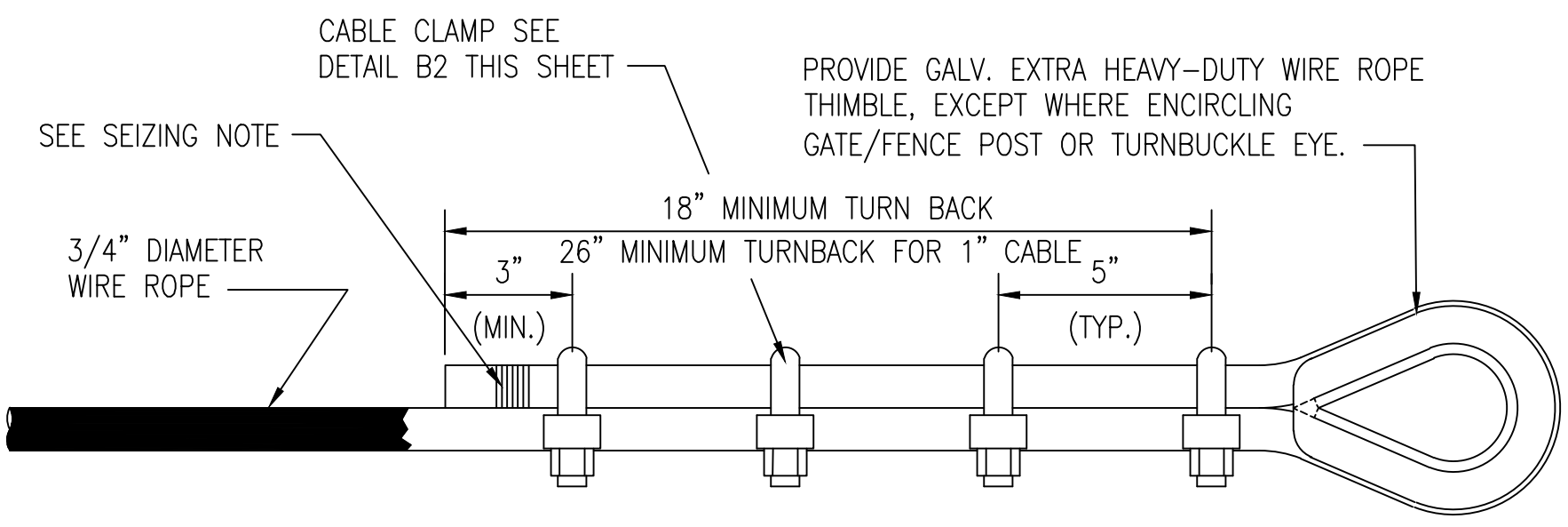
LINE POST DETAIL (CLF ONLY)
 SCALE: 3" = 1'-0"
 C1
 C-635



CABLE ANCHORAGE DETAIL @ PULL & ANCHOR POST W/ OVERLAPPING CABLES
 SCALE: 3" = 1'-0"
 C2
 C-635



CABLE ANCHORAGE DETAIL @ PULL & ANCHOR POST
 SCALE: 3" = 1'-0"
 C4
 C-635

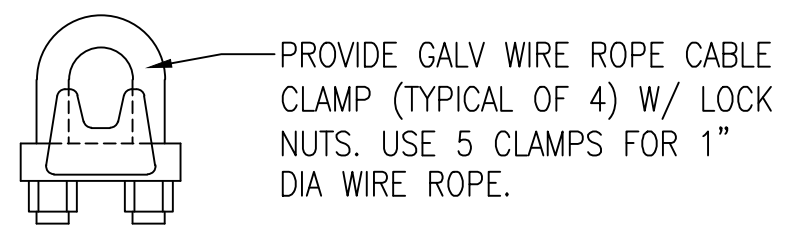


ORNAMENTAL FENCE NOTE: STRIP VINYL COATING OFF WIRE ROPE IN AREA OF CLIPS AND THIMBLE (APPROX. LAST 4'-6").

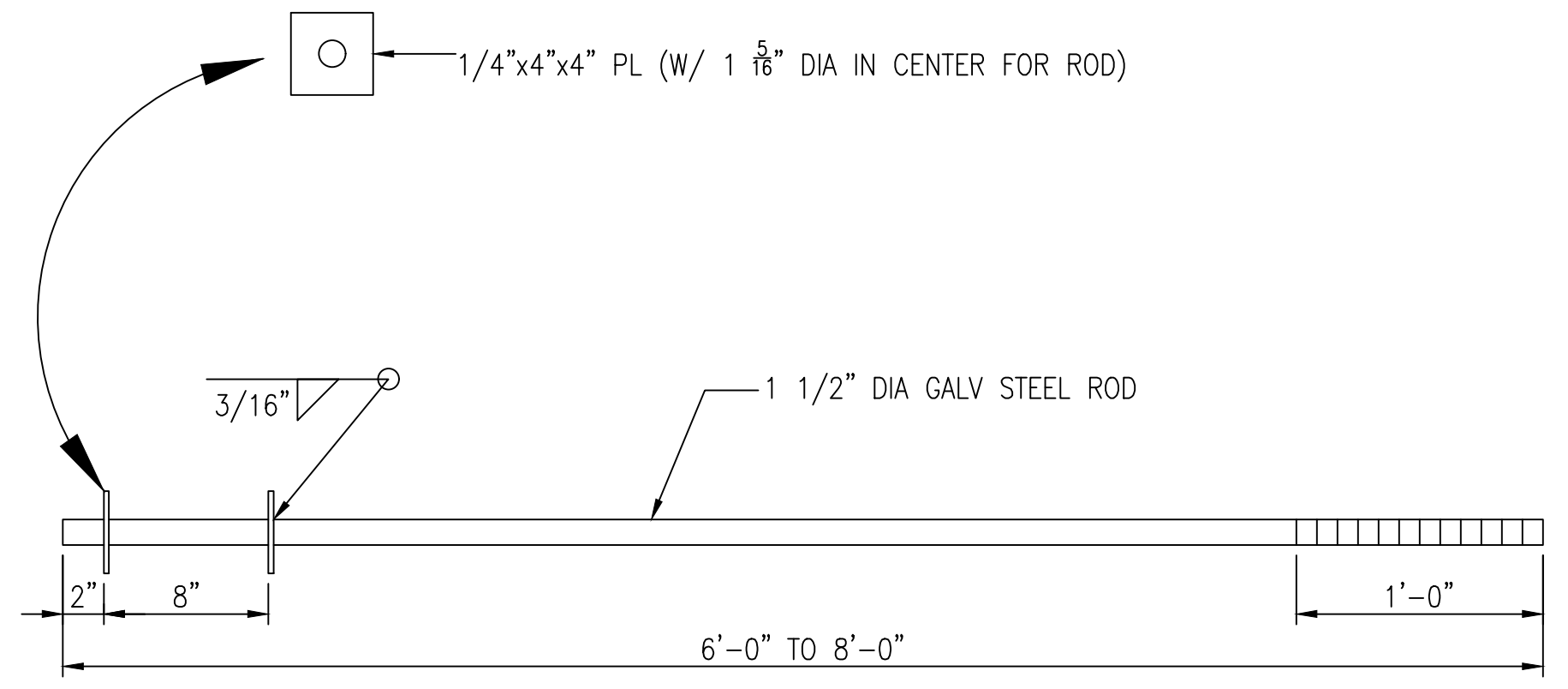
SEIZING NOTE: WIND SEIZING WIRE IN A TIGHT SPIRAL AROUND THE ROPE END TO A 1" LENGTH OF SEIZING. TWIST THE TWO ENDS OF THE SEIZING WIRE AT THE CENTER OF THE SEIZING LENGTH. USE ZINC COATED STEEL WIRE.

NOTE (ALL FENCE TYPES): INSTALL SADDLE OF CLIPS ON LIVE SIDE (AS SHOWN), SEIZE CUT END OF WIRE ROPE, AND TORQUE NUTS PER MANUFACTURER'S RECOMMENDATIONS (TYP).

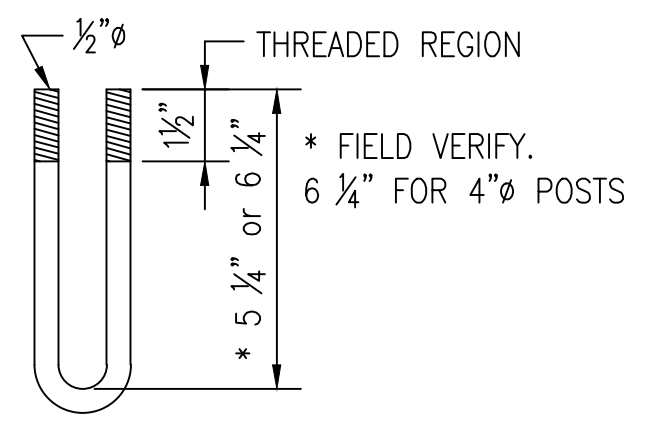
TYPICAL TURNBACK AND CLAMP DETAIL
 SCALE: 3" = 1'-0"
 B1
 C-635



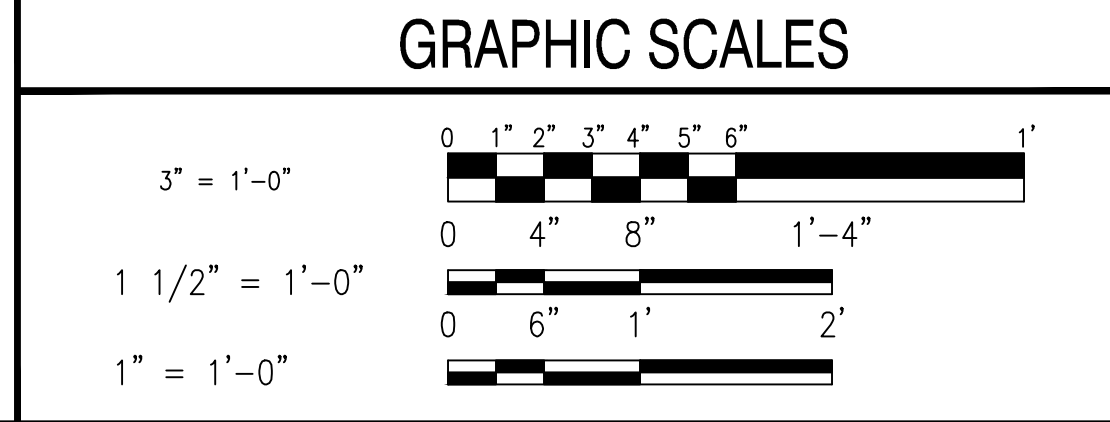
CLAMP DETAIL
 NOT TO SCALE
 B2
 C-635



DEADMAN ANCHOR ROD
 SCALE: 1 1/2" = 1'-0"
 B3
 C-635



FENCE U-BOLT DETAIL
 SCALE: 3" = 1'-0"
 A1
 C-635



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CONSTRUCT MAIN BASE ENTRANCE**

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BATTLE CREEK, MICHIGAN

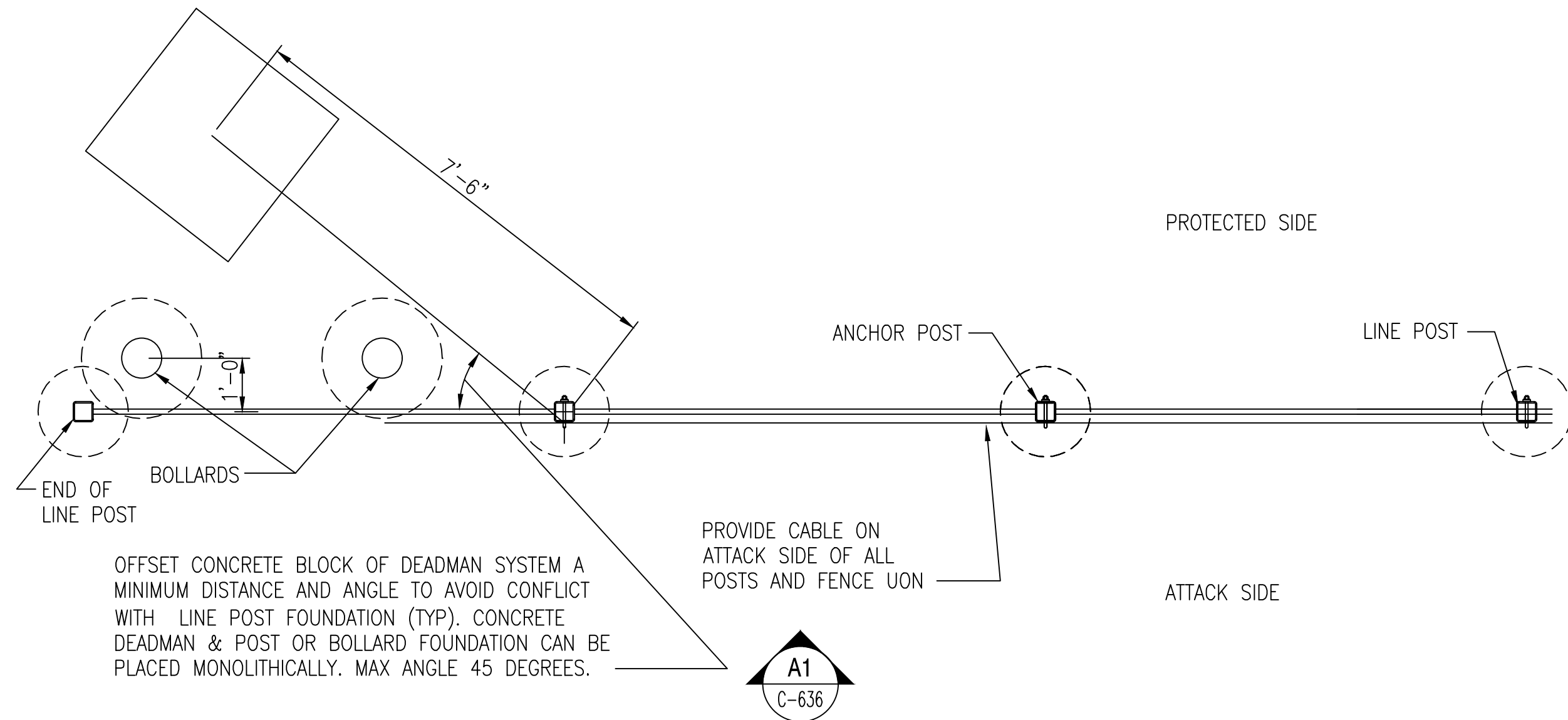
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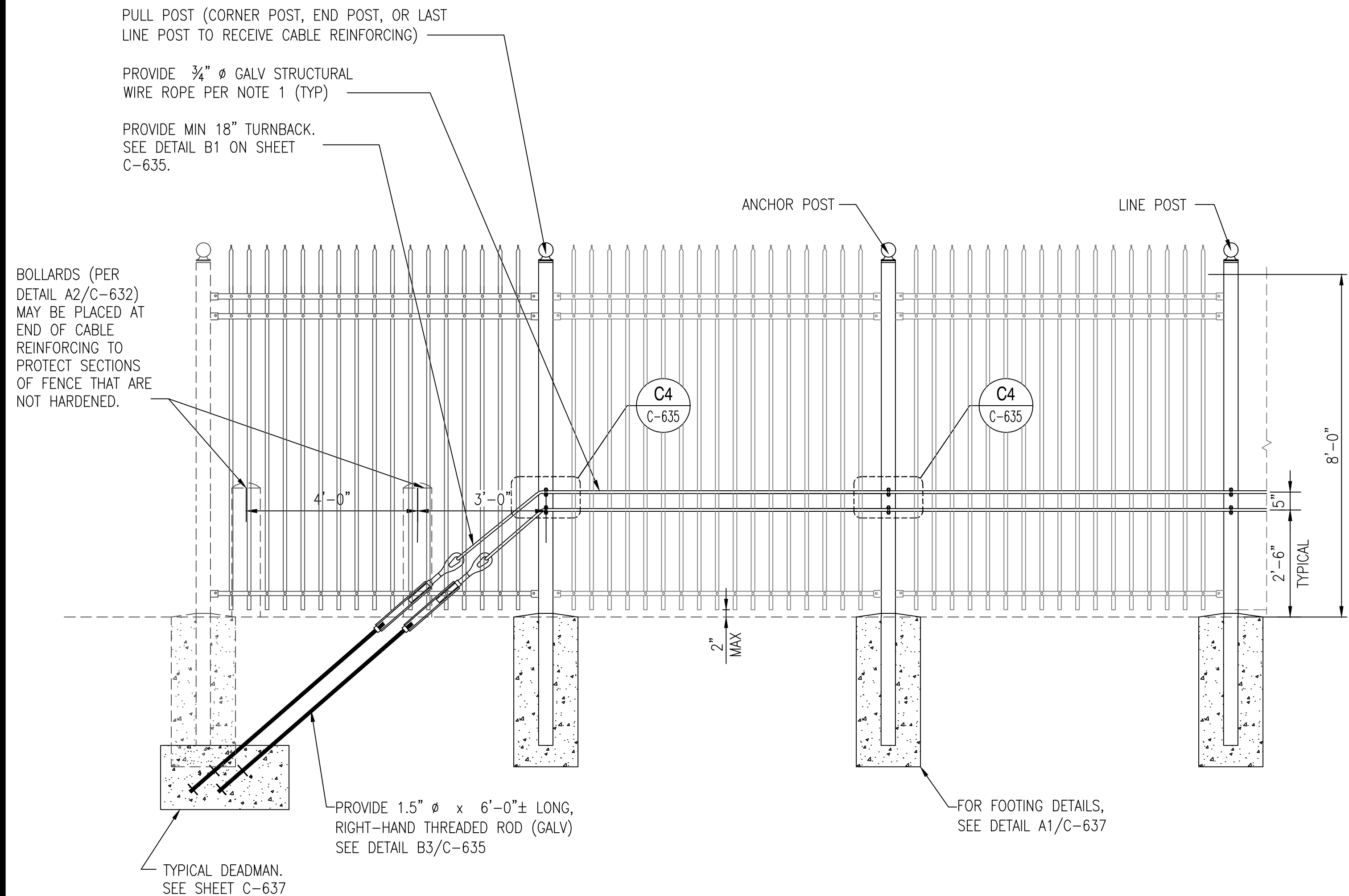
C-636



TYPICAL PLAN OF END POST DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

C1
C-636

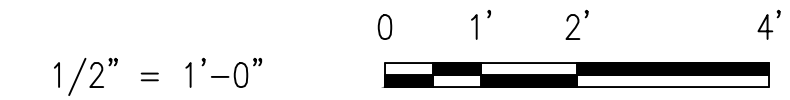


TYPICAL ELEVATION OF END POST DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

A1
C-636

GRAPHIC SCALES





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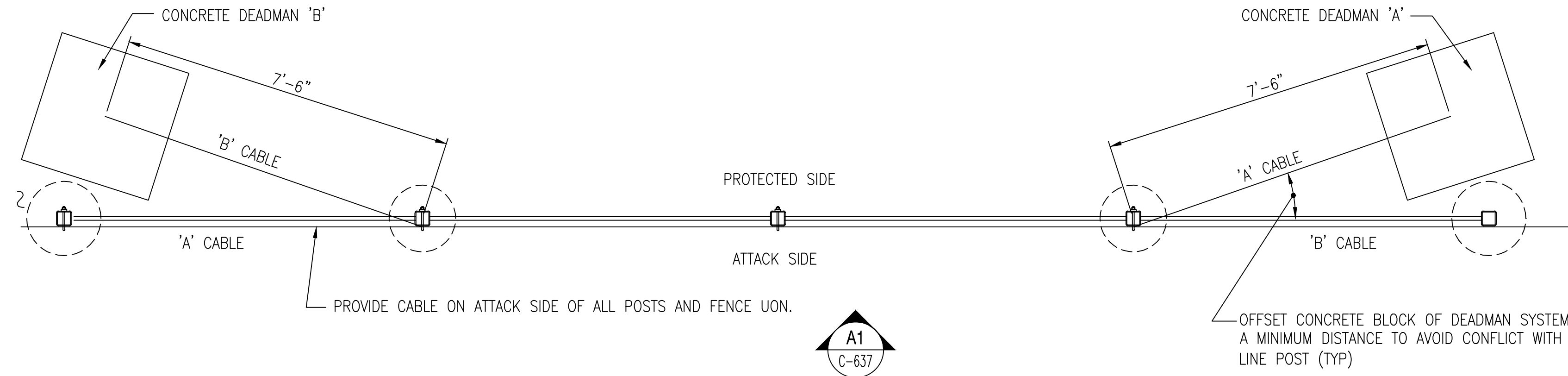
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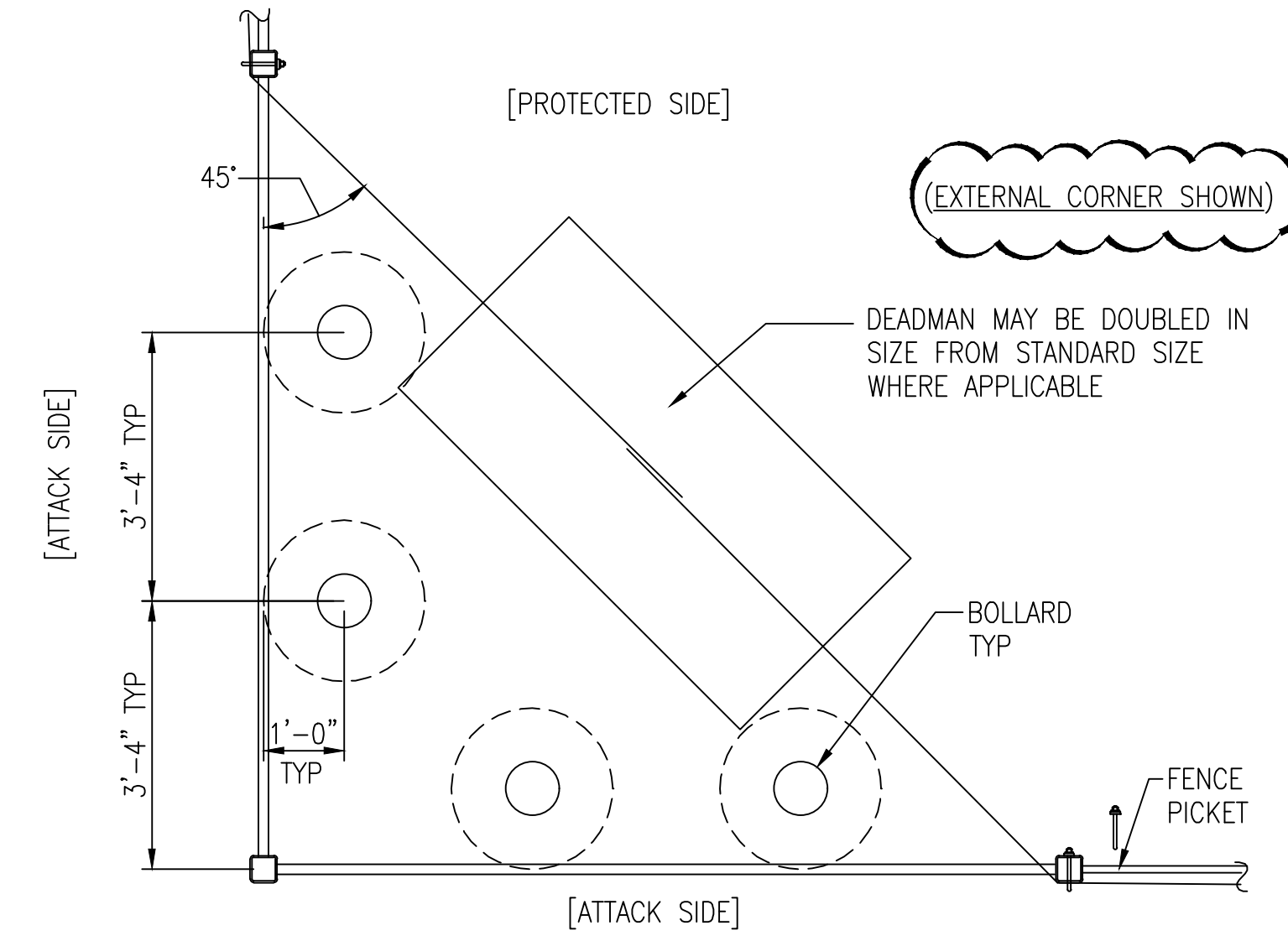
C-637



TYPICAL PLAN OF DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

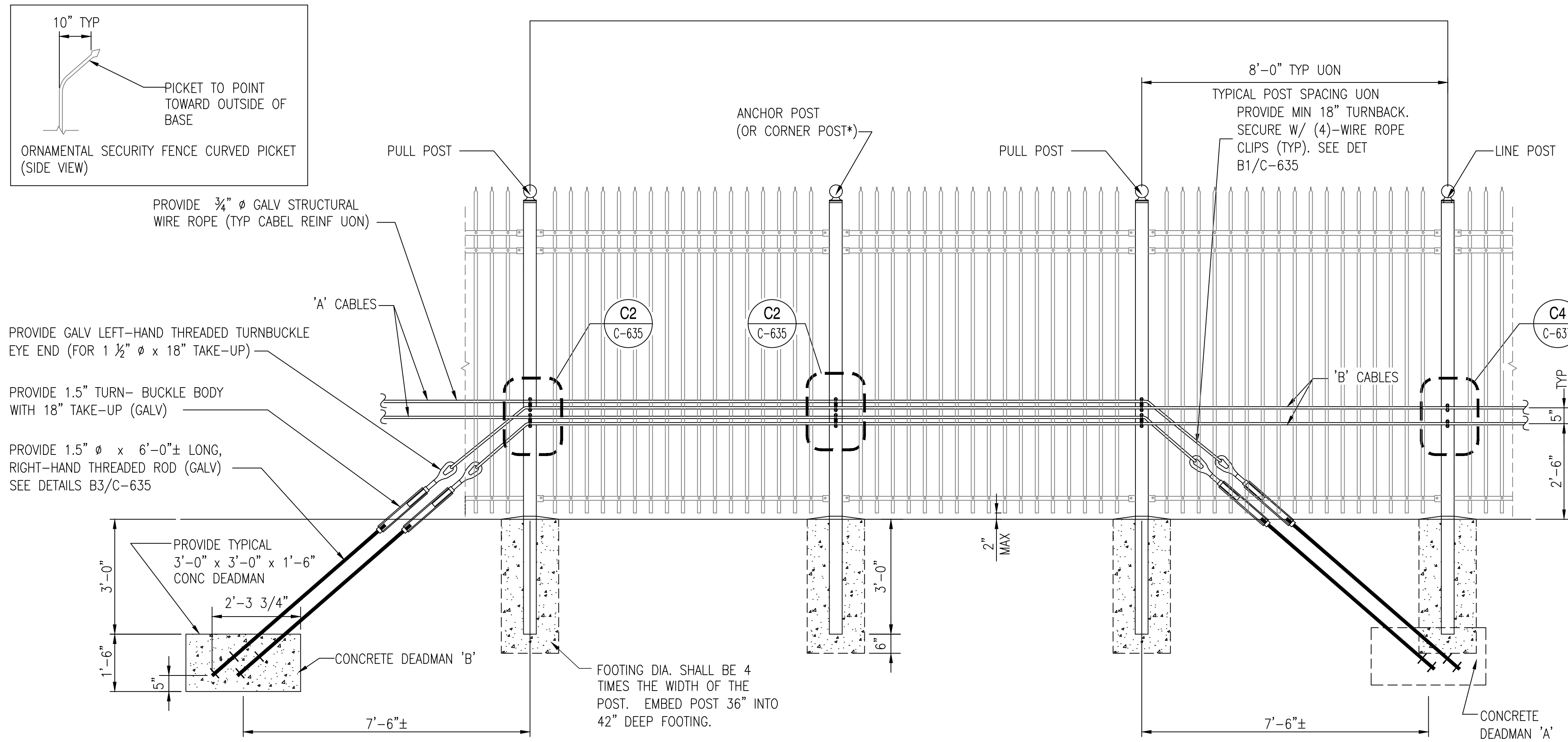
A1
C-637



TYPICAL PLAN OF TURNING POINT POST LAYOUT

SCALE: 1/2" = 1'-0"

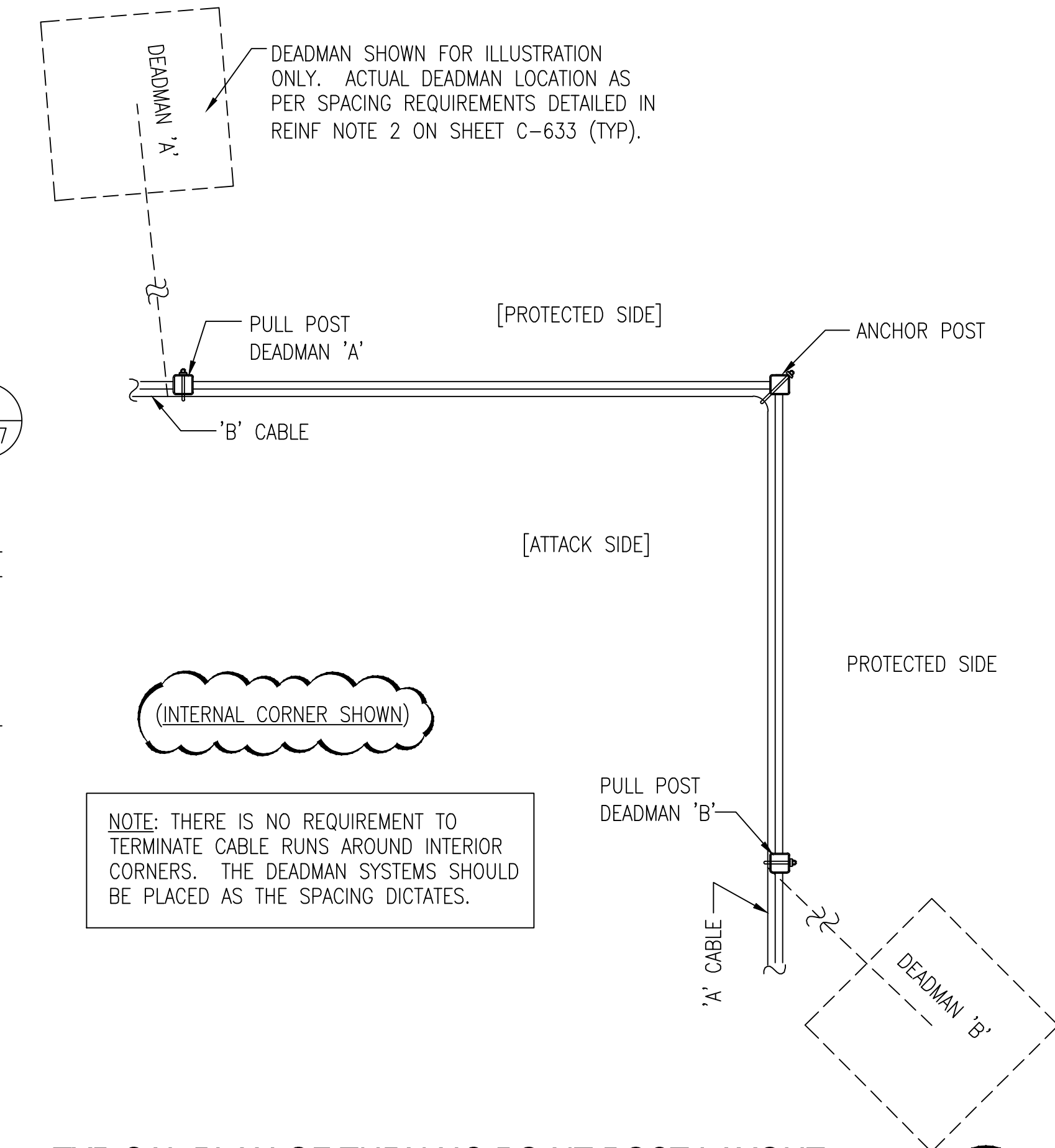
C4
C-637



TYPICAL ELEVATION OF DEADMAN AND LINE POST LAYOUT

SCALE: 1/2" = 1'-0"

A1
C-637



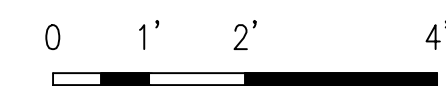
TYPICAL PLAN OF TURNING POINT POST LAYOUT

NOT TO SCALE

A4
C-637

GRAPHIC SCALES

1/2" = 1'-0"





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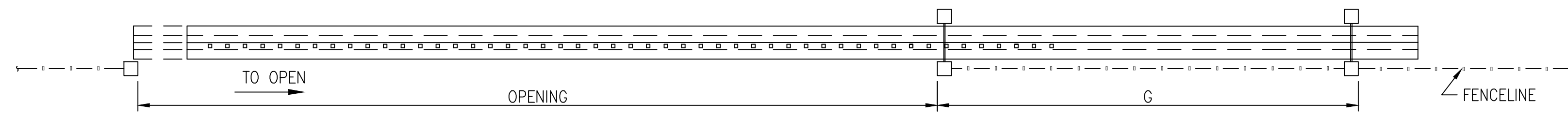
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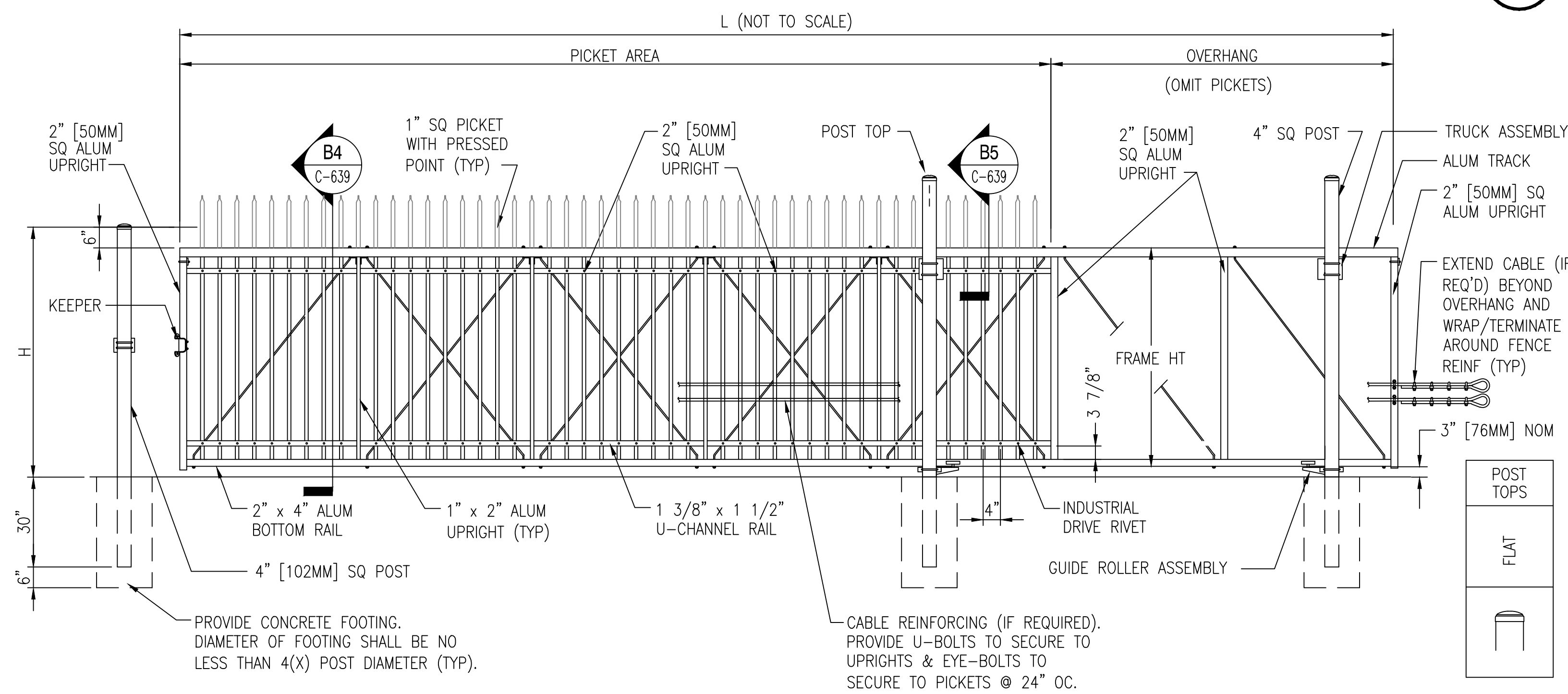
SHEET NO.

C-638



GATE PLAN

NOT TO SCALE



TYPICAL SINGLE CANTILEVERED SLIDING GATE ELEVATION- (5) BAYS SHOWN

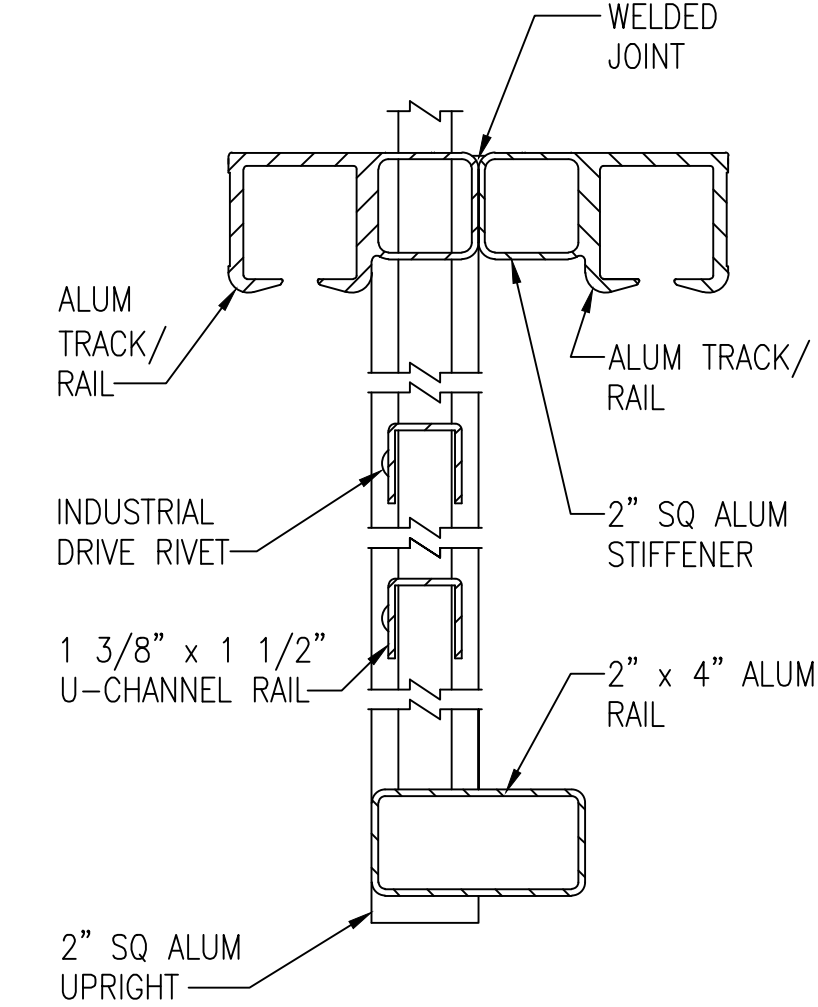
NOT TO SCALE

D1
C-639

B1
C-639

BAYS	OPENING (F/F)	NOM HEIGHT (H)	LENGTH (L)	GATE POSTS (G)	BAYS / OVERHANG
5	30'-0" [9144MM]	8'-0" [2438MM]	42'-3" [12878MM]	12'-0" [3658MM]	5(Pickets) / 2(w/o)

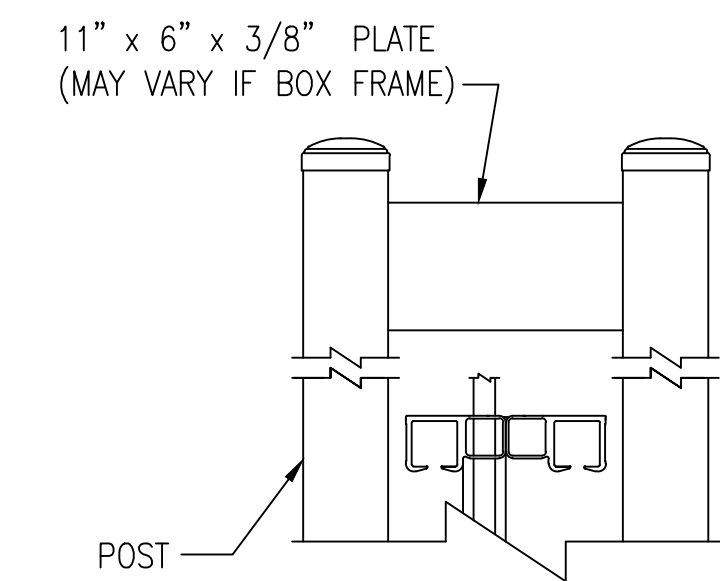
* NOTE: VERIFY SIZE OF OPENING WITH SITE PLANS. DIMENSIONS WILL VARY BASED ON OPENING. DIMENSIONS ABOVE PROVIDED FOR BASELINE PURPOSES.



SECTION (TYP)

NOT TO SCALE

B4
C-639



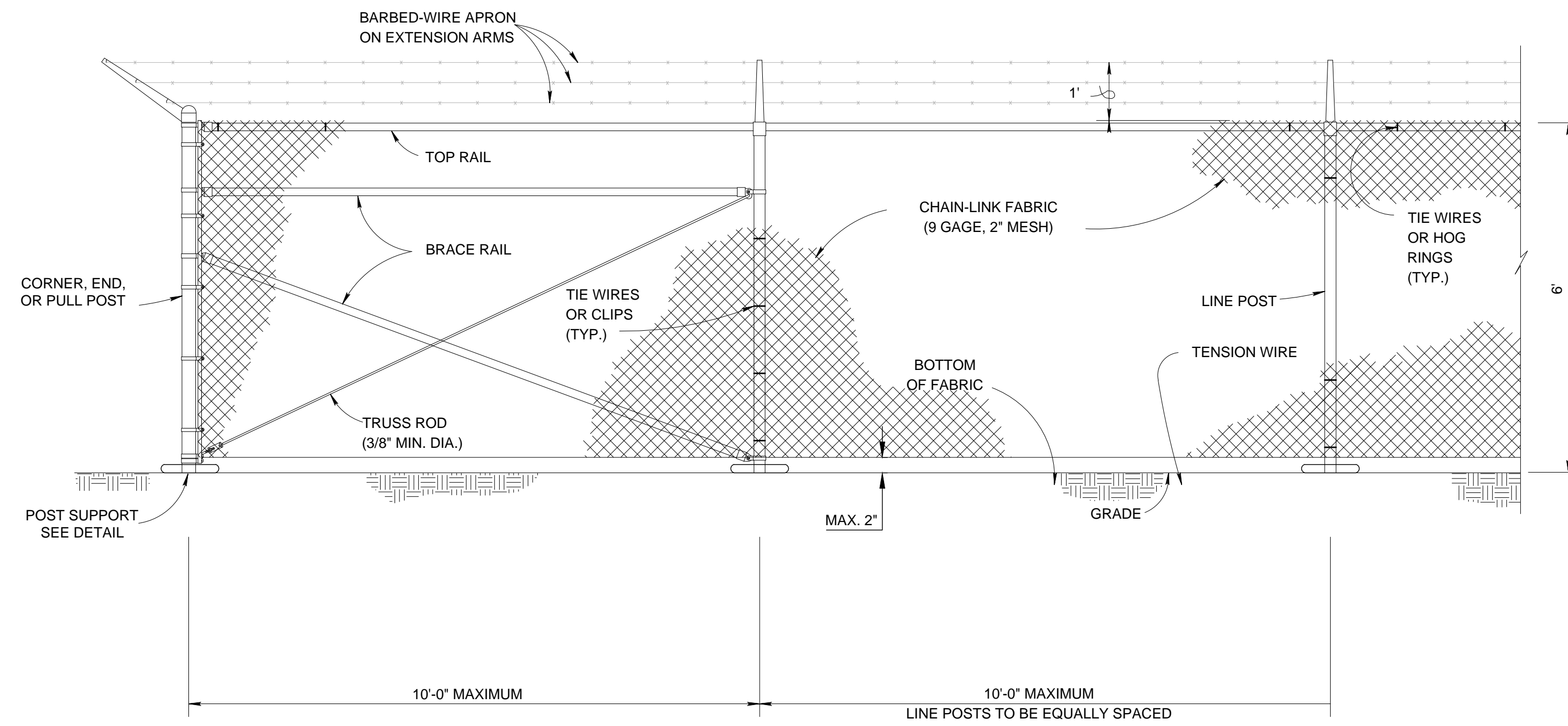
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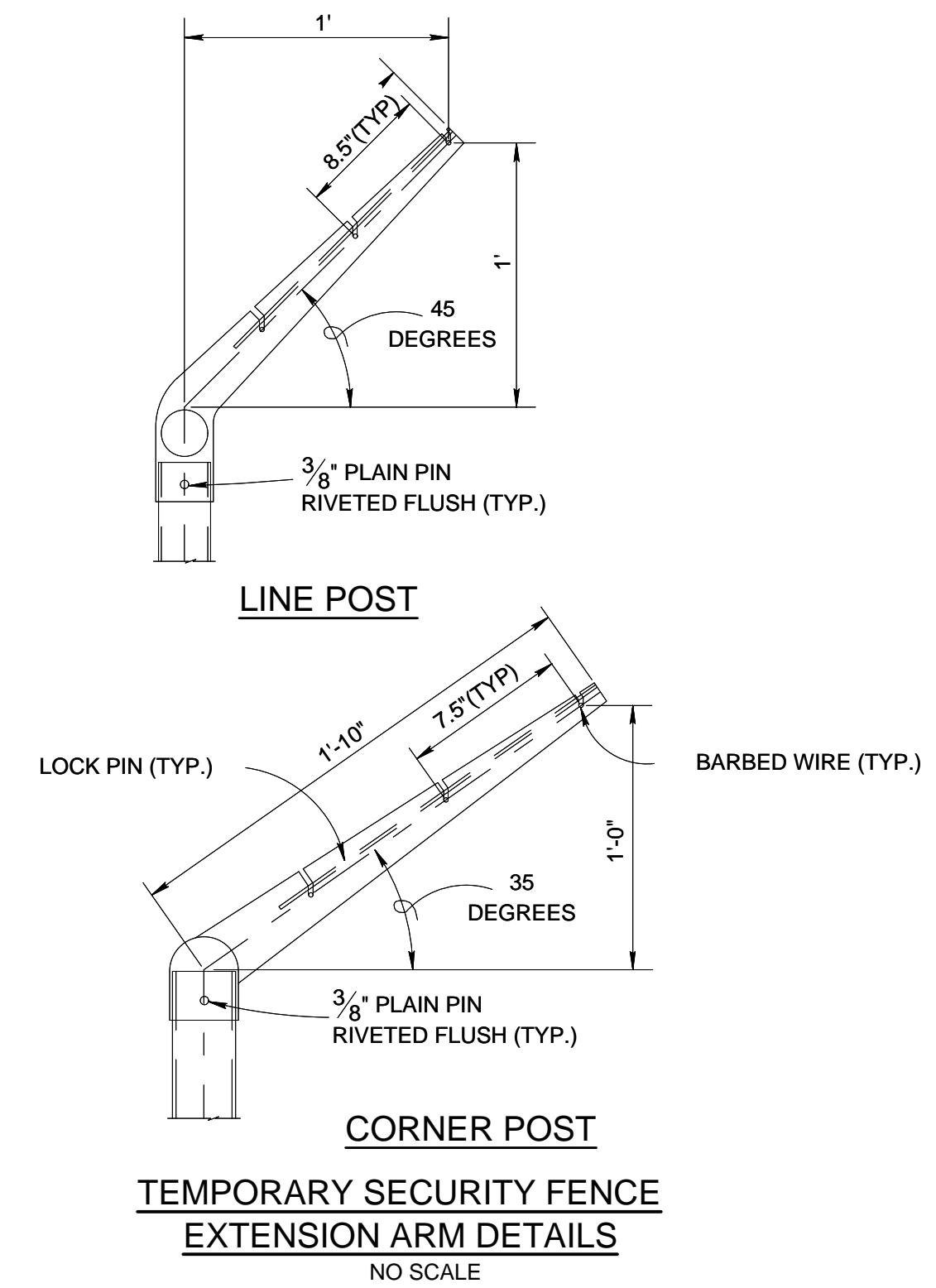
B5
C-639

GRAPHIC SCALES

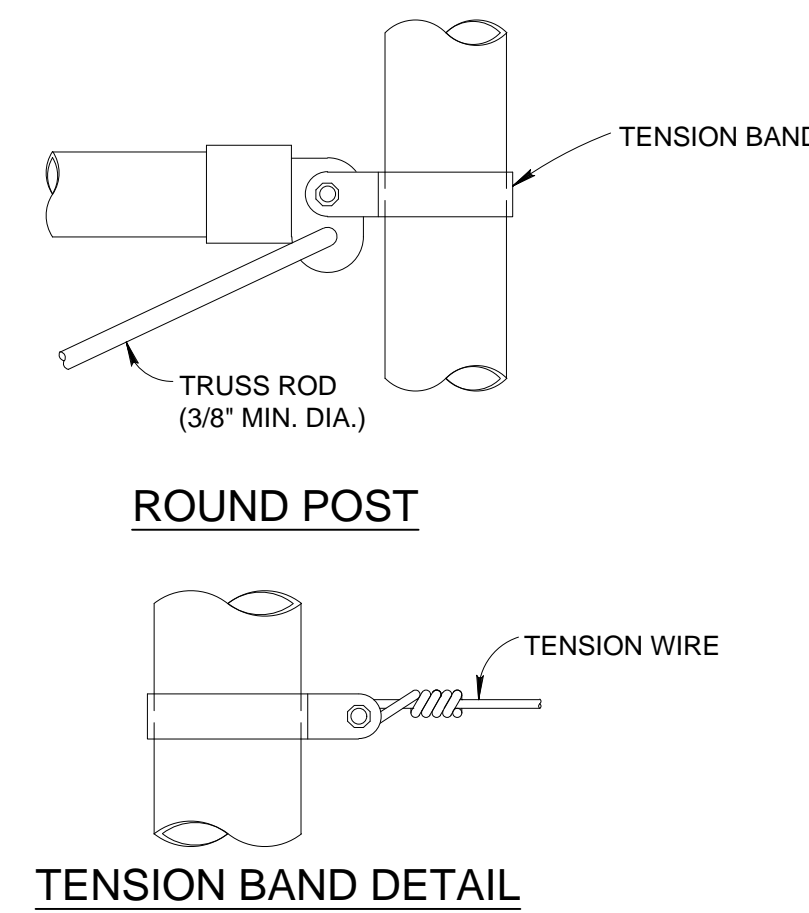




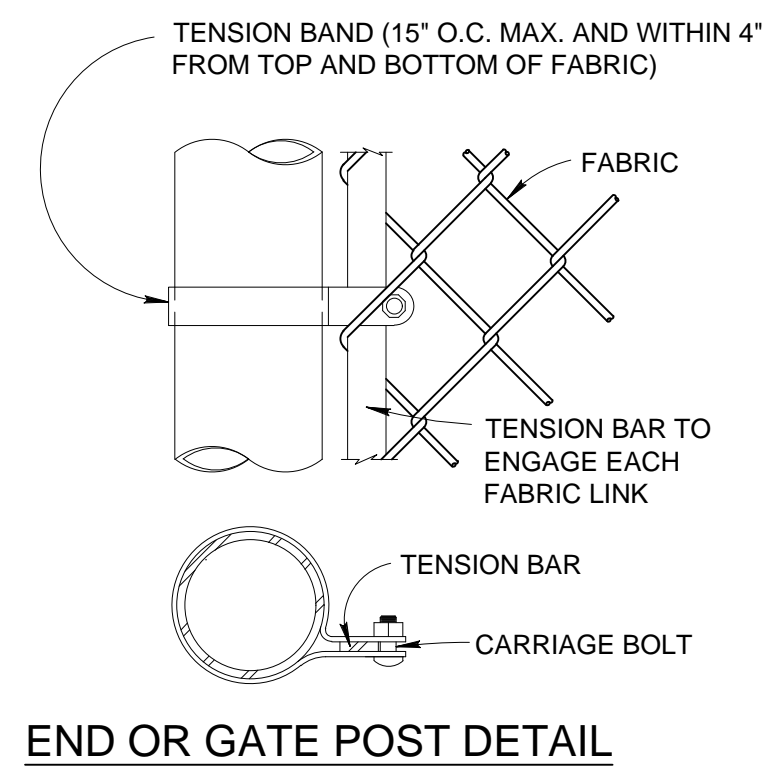
TEMPORARY SECURITY FENCE DETAIL
NO SCALE



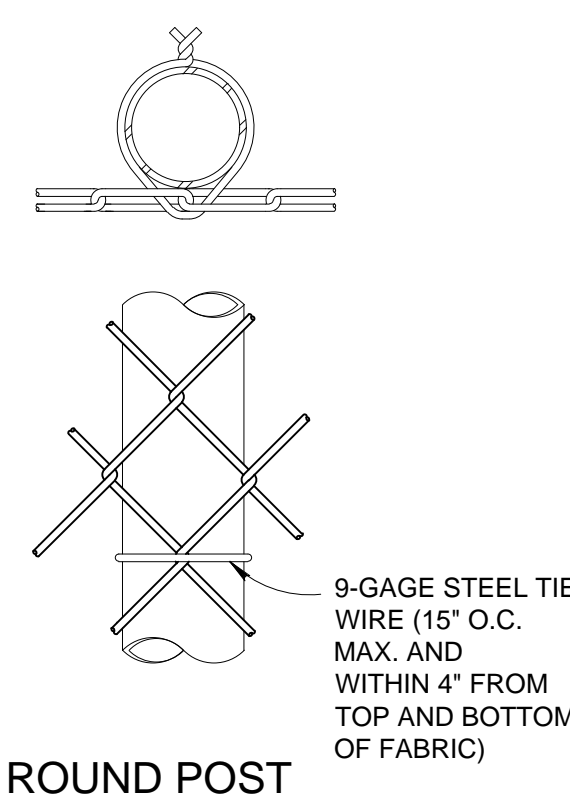
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NO SCALE



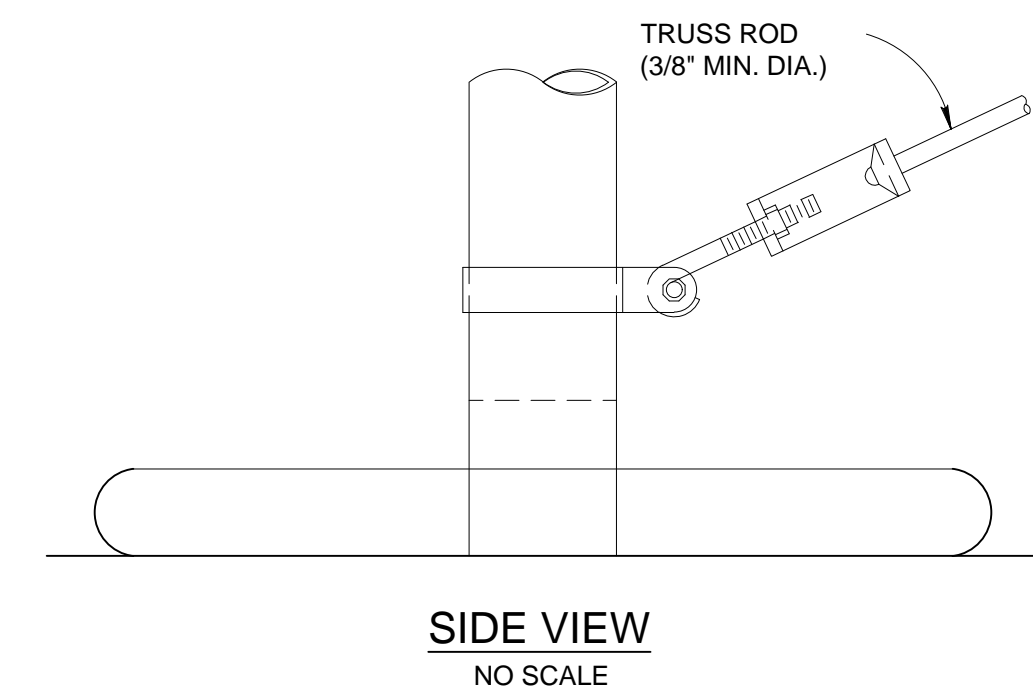
FASTENING DETAILS
NO SCALE



END OR GATE POST DETAIL

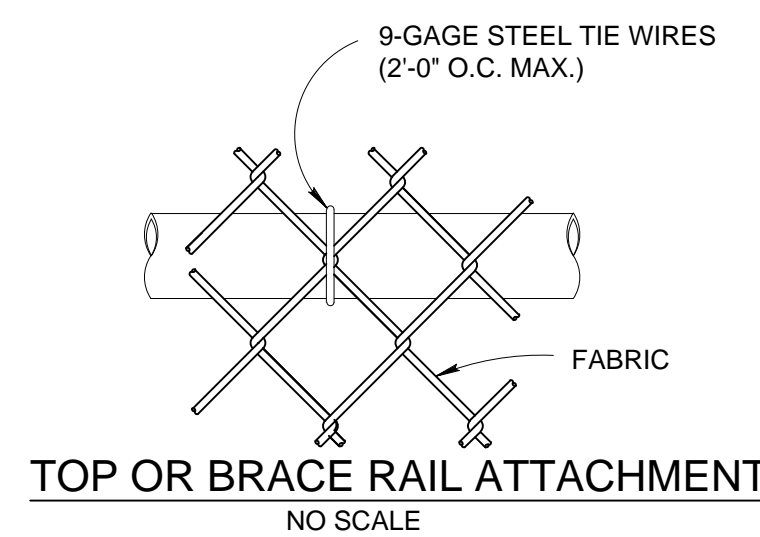


ROUND POST
NO SCALE

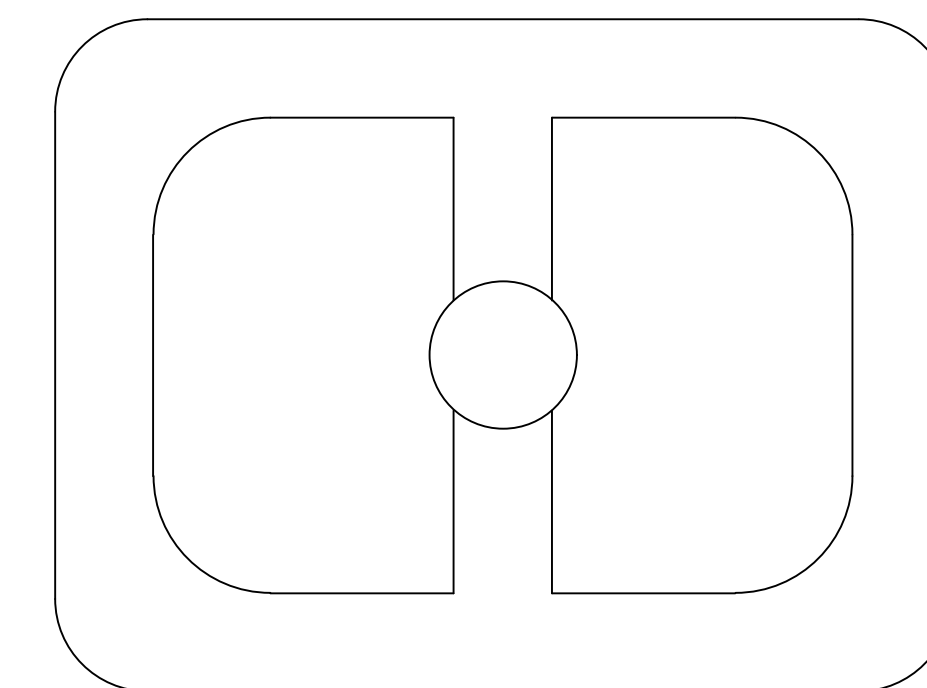


SIDE VIEW
NO SCALE

- NOTE:
1. IF CONTRACTOR ELECTS TO SALVAGE EXISTING TEMPORARY FENCE OR INSTALL NEW TEMPORARY FENCE, SUCH FENCE SHALL CONFORM TO REQUIREMENTS ON THIS SHEET.
 2. ANY TEMPORARY FENCE USED SHALL BE AT THE CONTRACTORS DISCRETION AND THERE WILL BE NO PAYMENT FOR SUCH FENCE.



TOP OR BRACE RAIL ATTACHMENT
NO SCALE



TOP VIEW
NO SCALE
POST SUPPORT - SIDE VIEW

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BATTLE CREEK, MICHIGAN

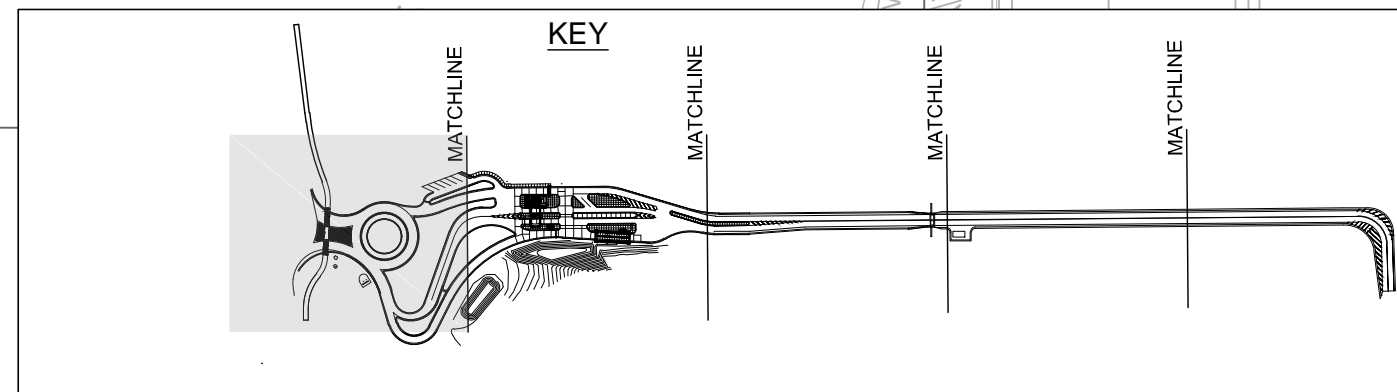
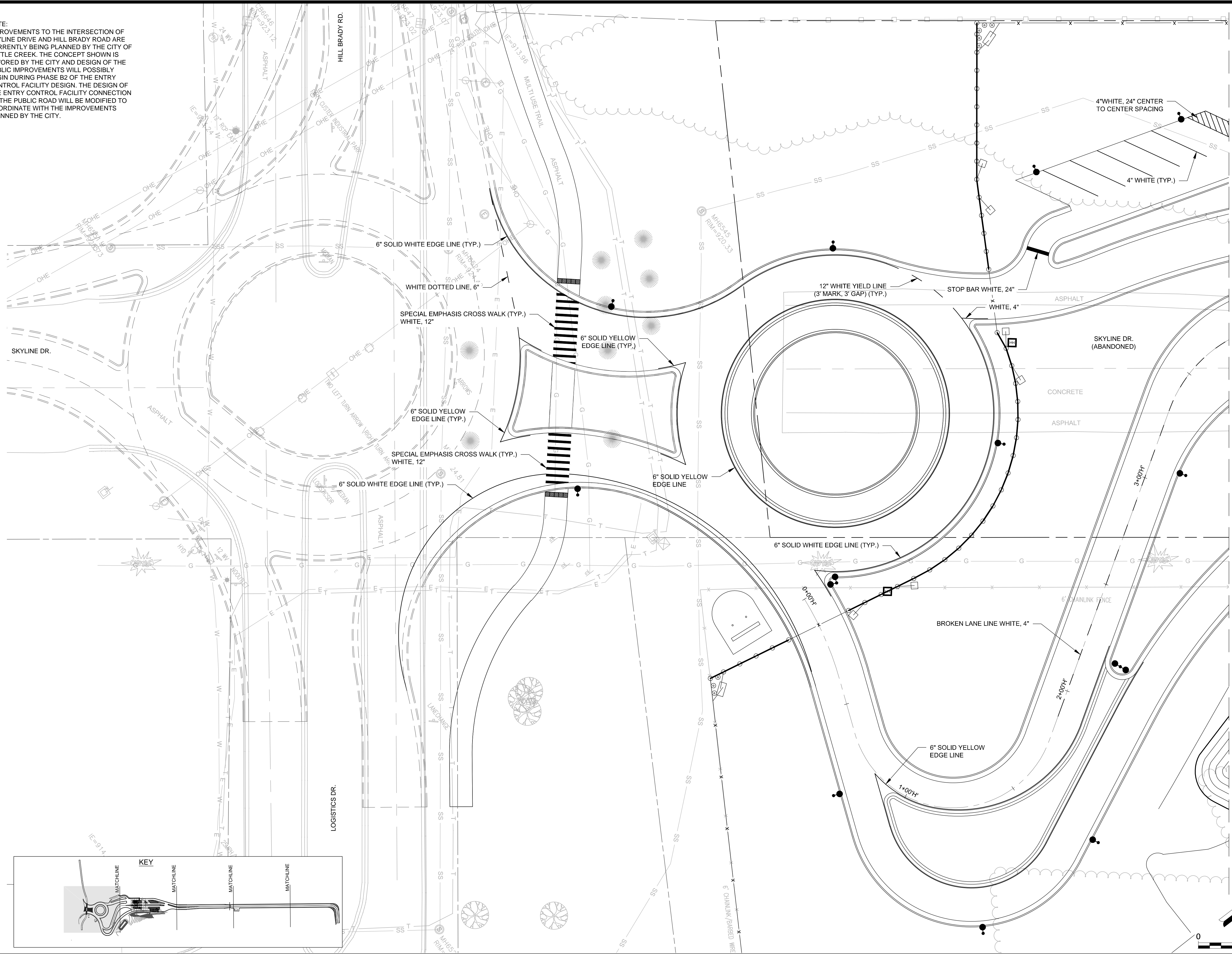
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SHEET CONTENTS
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Mead & Hunt

Mead and Hunt, Inc.
 2440 Deming Way
 Middleton, WI 53562
 phone: 608-273-6380
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 MARKING PLAN

SHEET NO.

C-651

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MATCHLINE SEE SHEET C-652



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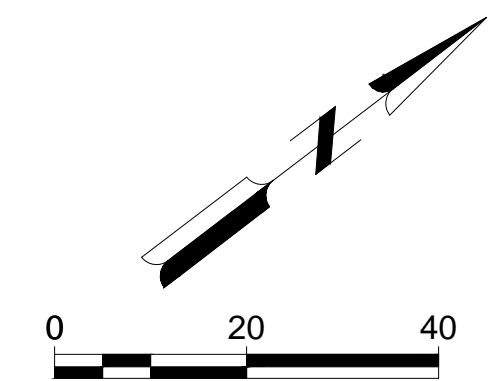
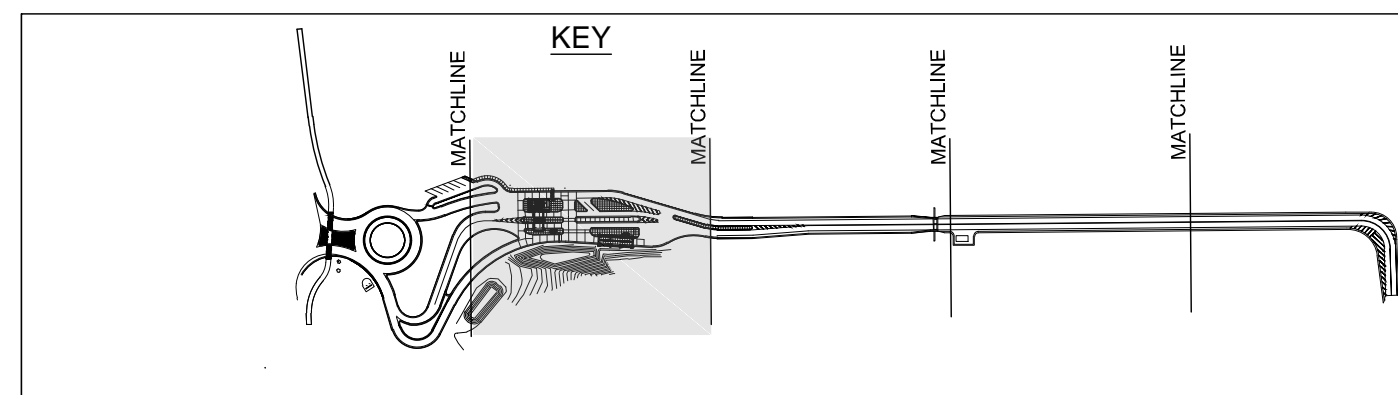
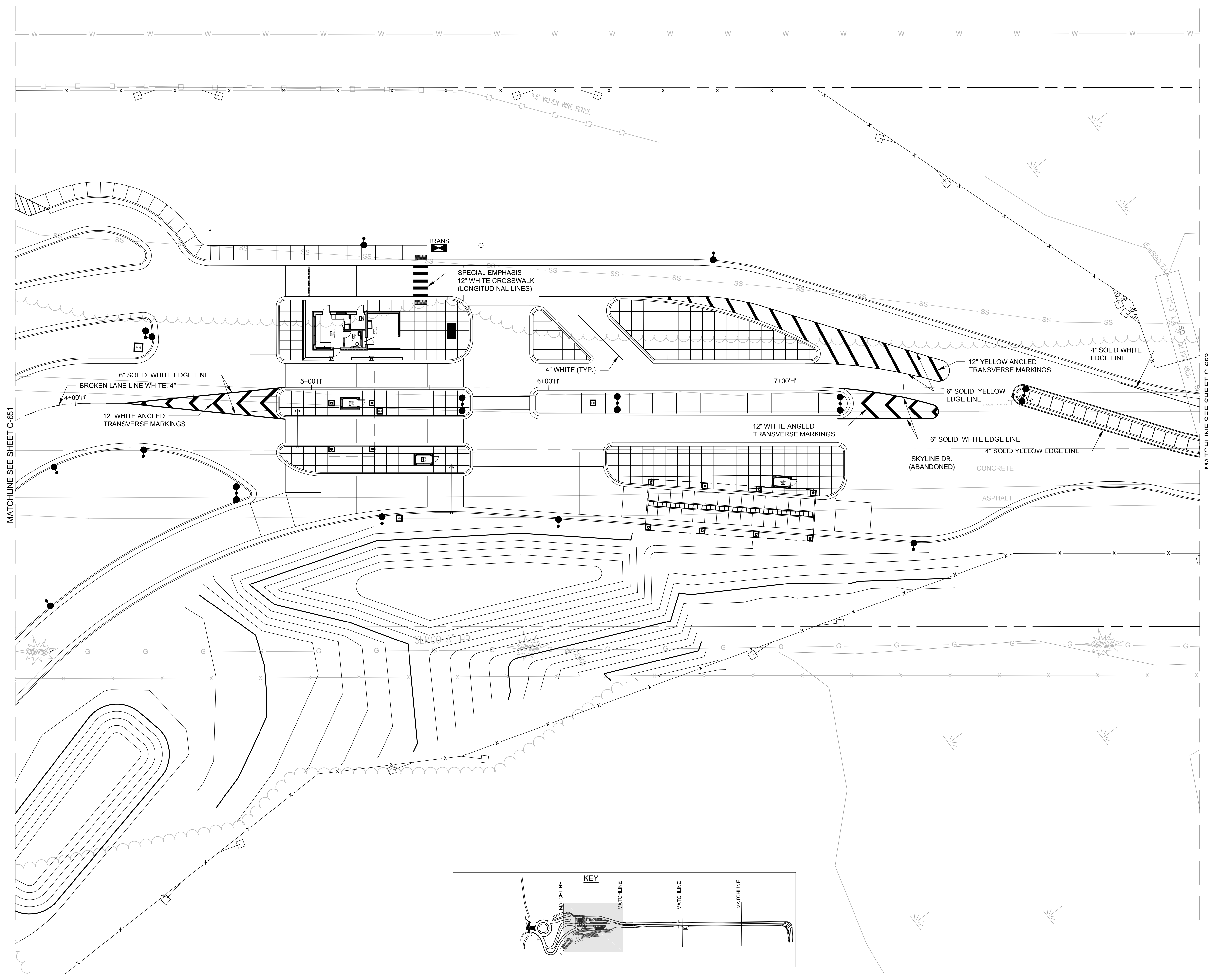
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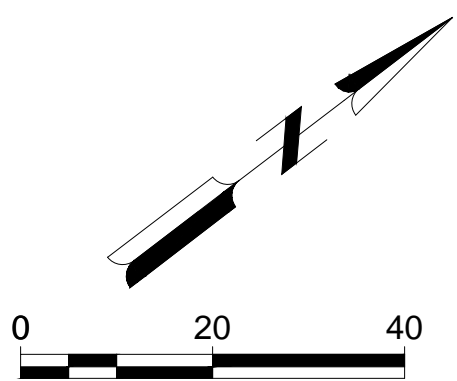
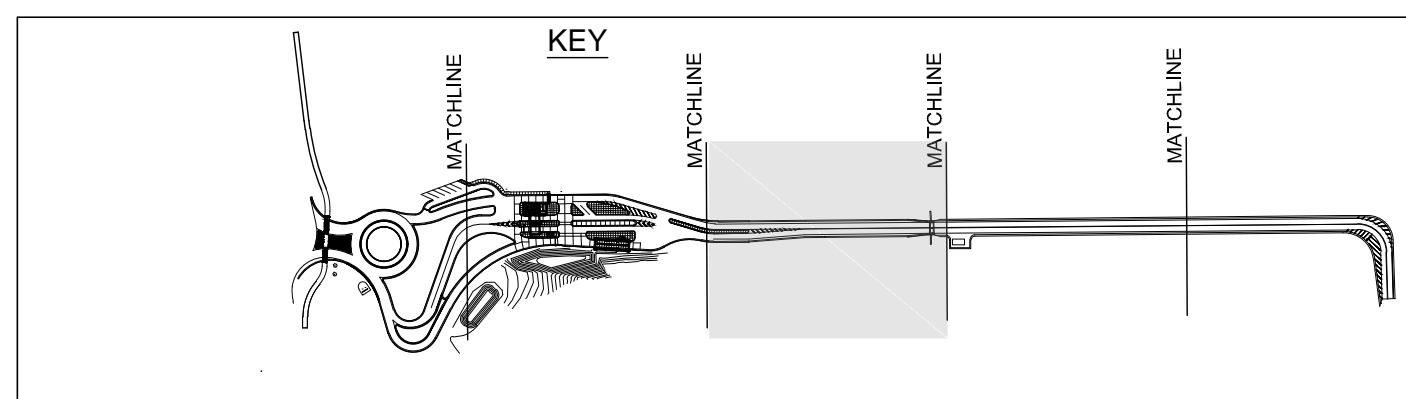
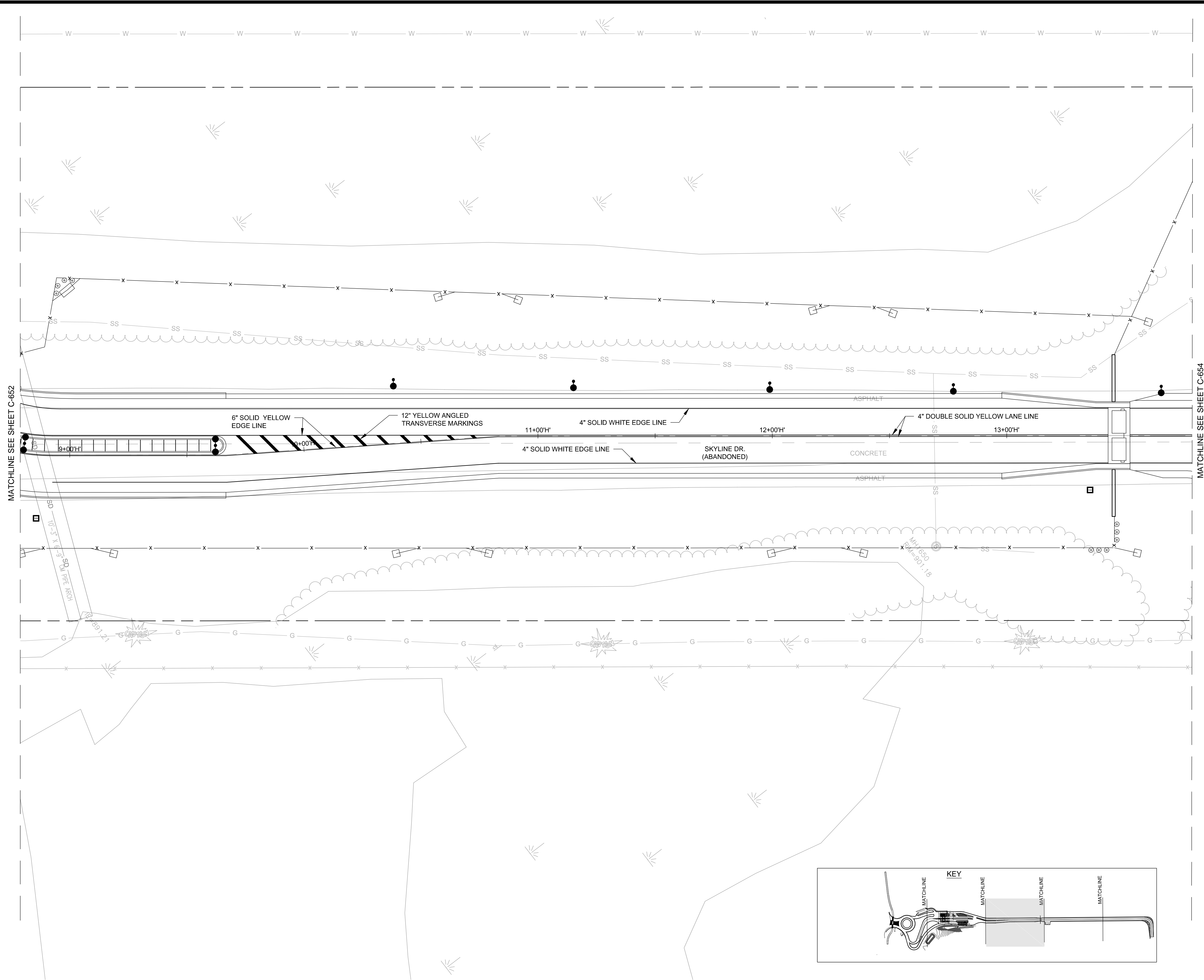
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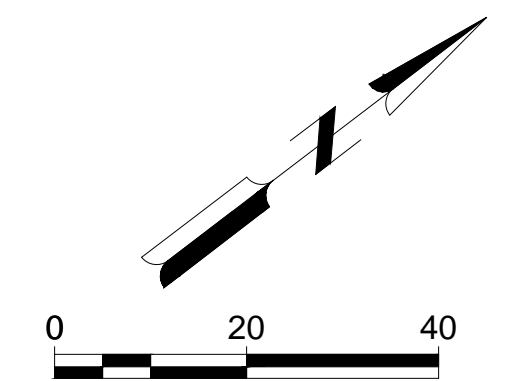
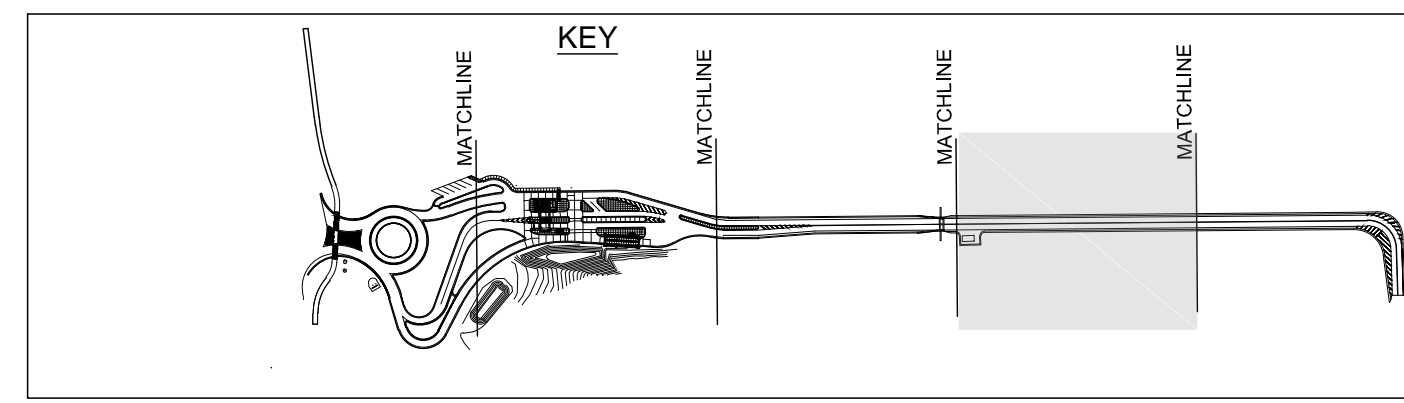
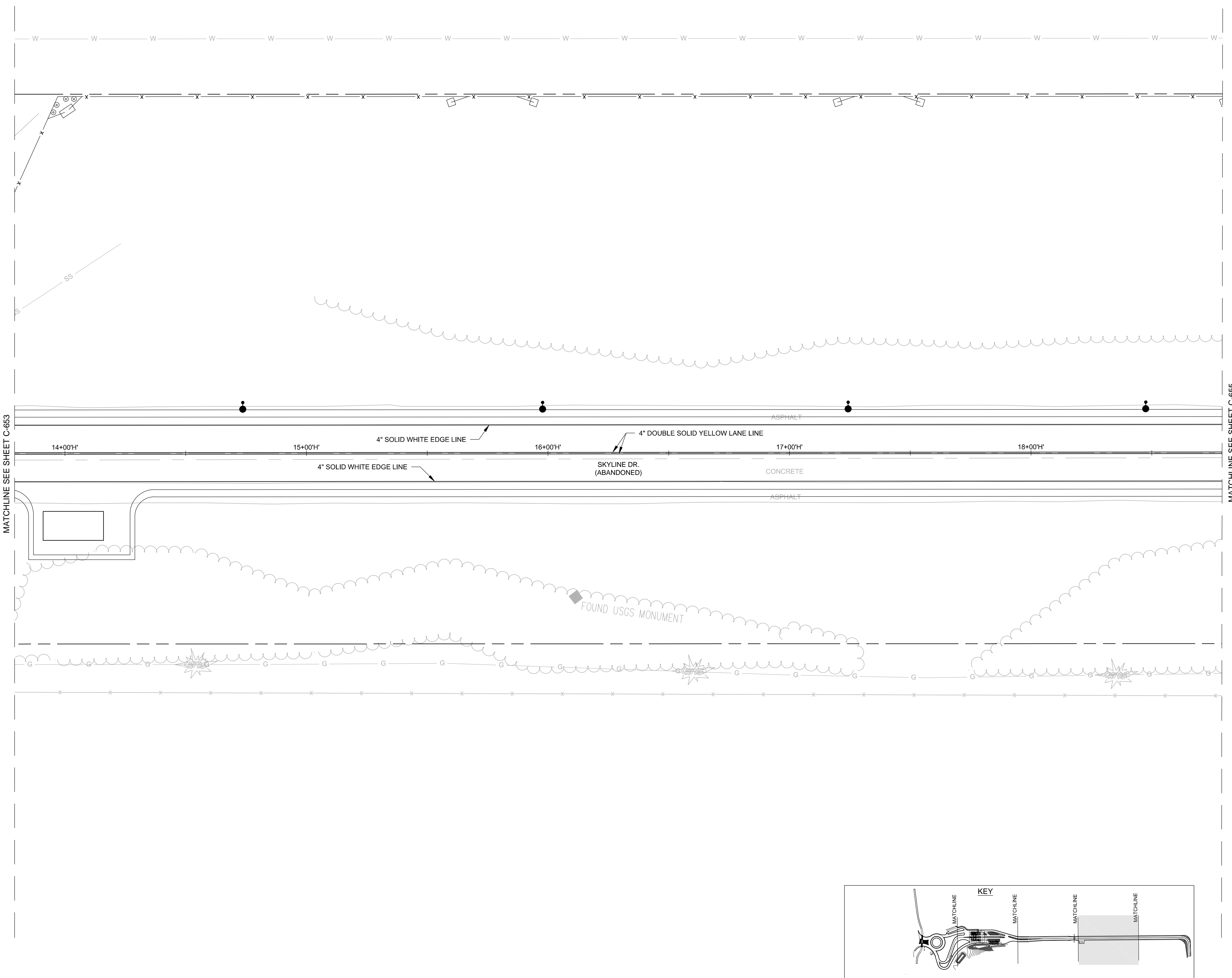
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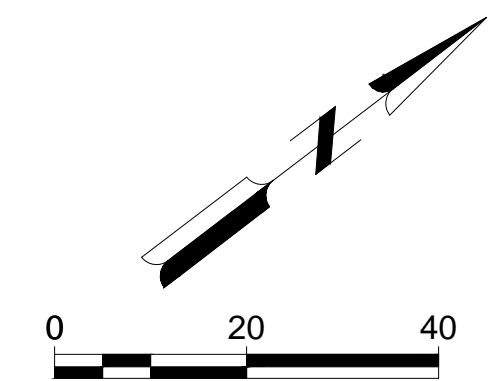
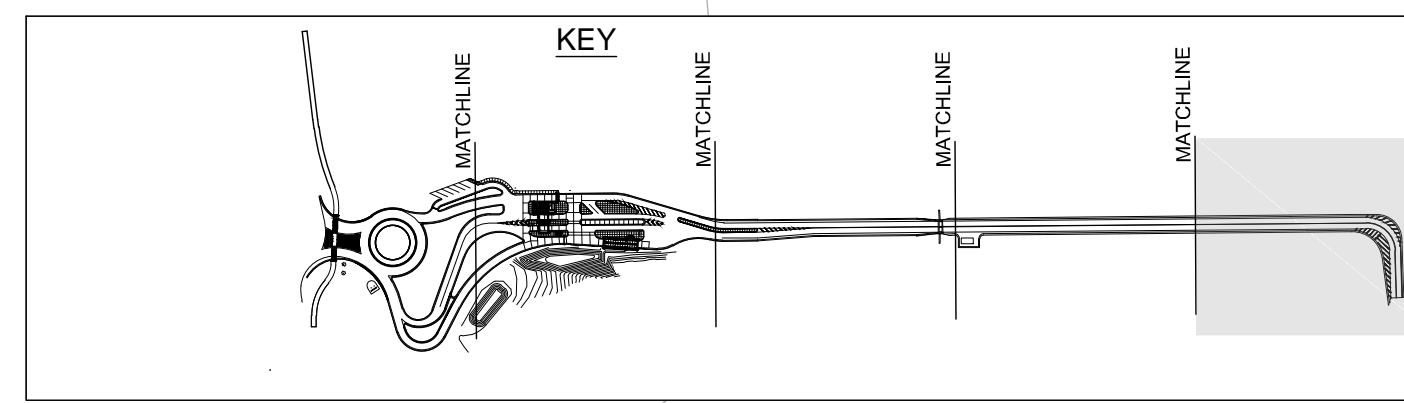
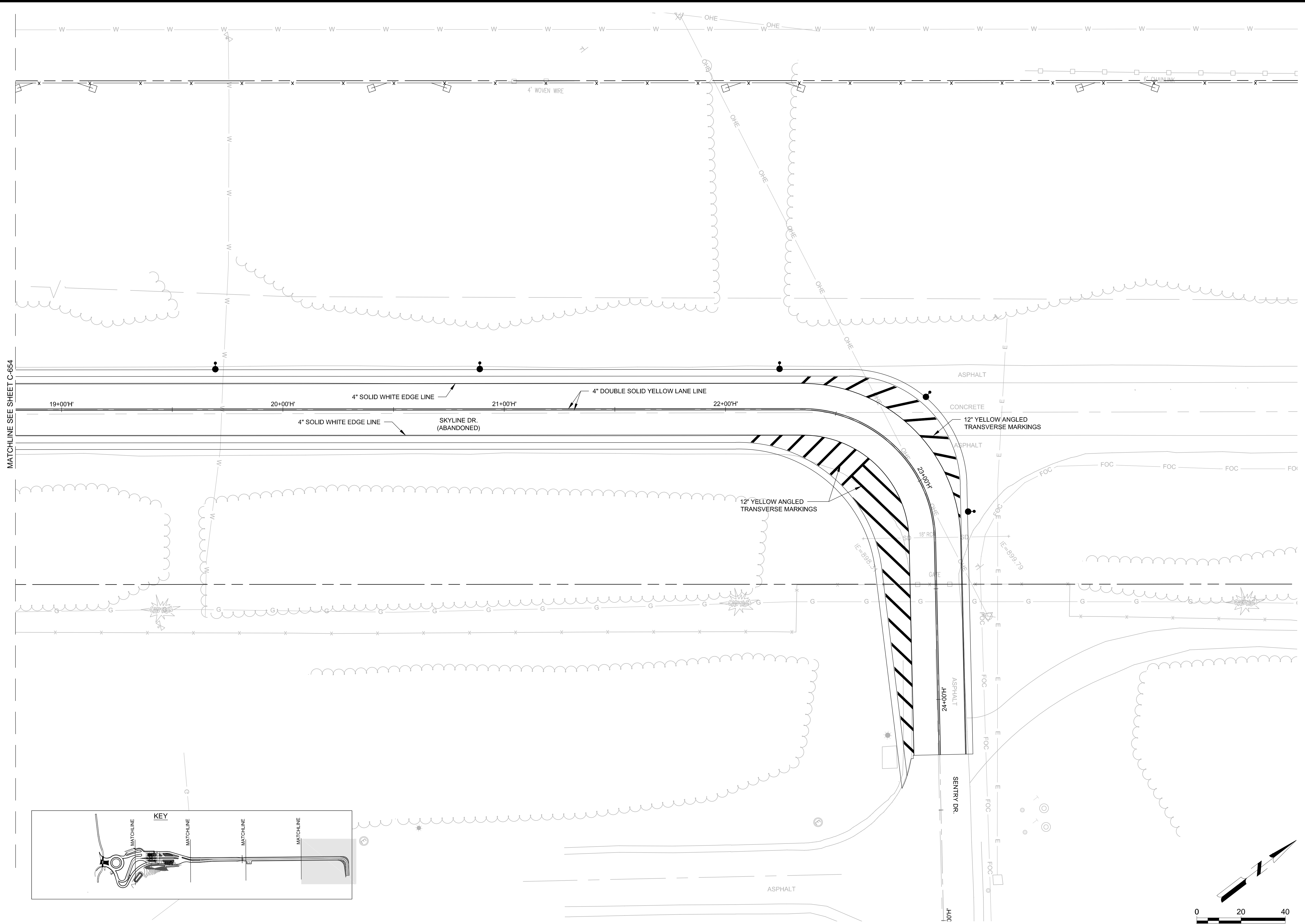
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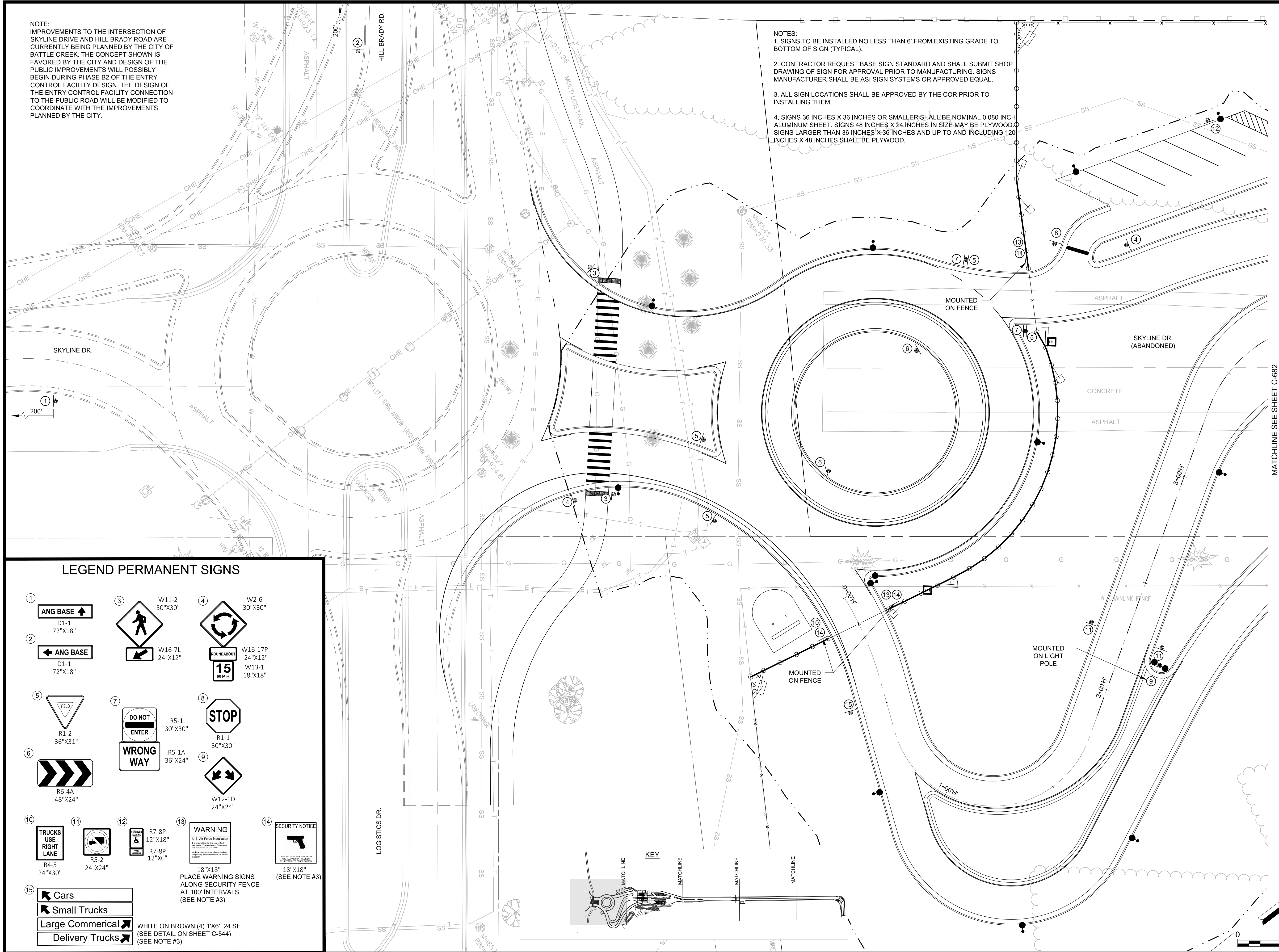
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MATCHLINE SEE SHEET C-654

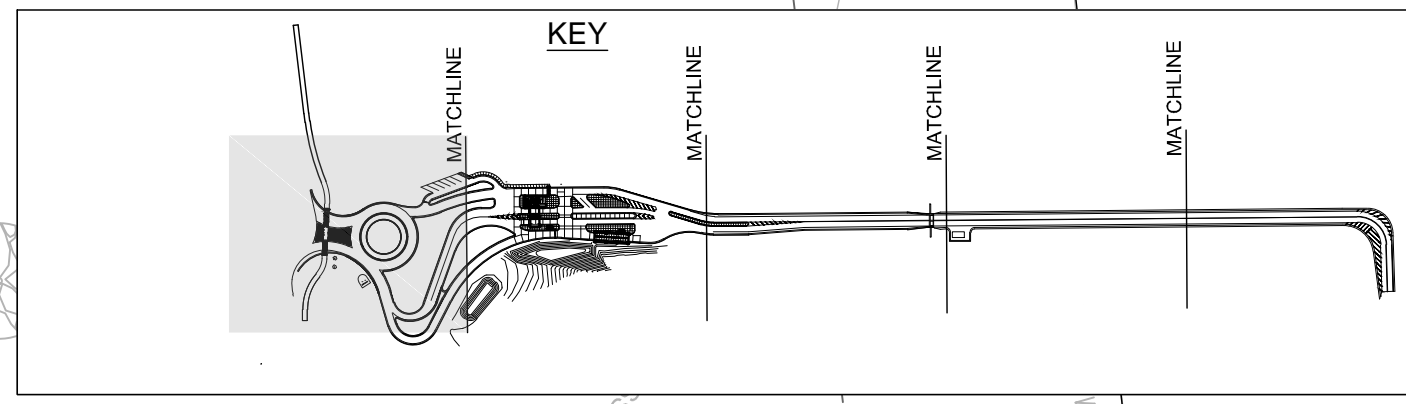
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NOTES:
1. SIGNS TO BE INSTALLED NO LESS THAN 6' FROM EXISTING GRADE TO BOTTOM OF SIGN (TYPICAL).
2. CONTRACTOR REQUEST BASE SIGN STANDARD AND SHALL SUBMIT SHOP DRAWING OF SIGN FOR APPROVAL PRIOR TO MANUFACTURING. SIGNS MANUFACTURER SHALL BE ASI SIGN SYSTEMS OR APPROVED EQUAL.
3. ALL SIGN LOCATIONS SHALL BE APPROVED BY THE COR PRIOR TO INSTALLING THEM.
4. SIGNS 36 INCHES X 36 INCHES OR SMALLER SHALL BE NOMINAL 0.080 INCH ALUMINUM SHEET. SIGNS 48 INCHES X 24 INCHES IN SIZE MAY BE PLYWOOD. SIGNS LARGER THAN 36 INCHES X 36 INCHES AND UP TO AND INCLUDING 120 INCHES X 48 INCHES SHALL BE PLYWOOD.



LEGEND PERMANENT SIGNS

1 ANG BASE D1-1 72"x18"	3 W11-2 30"x30"	4 W2-6 30"x30"
2 ANG BASE D1-1 72"x18"	W16-7L 24"x12"	ROUNDABOUT W16-17P 24"x12"
5 YIELD R1-2 36"x31"	15 MPH	W13-1 18"x18"
6 TRUCKS USE RIGHT LANE R4-5 24"x30"	7 DO NOT ENTER R5-1 30"x30"	8 STOP R1-1 30"x30"
11 R5-2 24"x24"	9 WRONG WAY R5-1A 36"x24"	10 W12-1D 24"x24"
12 R7-8P 12"x18"	13 WARNING U.S. Air Force Installation 18"x18"	14 SECURITY NOTICE 18"x18"
14 R7-8P 12"x6"	PLACE WARNING SIGNS ALONG SECURITY FENCE AT 100' INTERVALS (SEE NOTE #3)	
15 Cars	WHITE ON BROWN (4) 1'X6", 24 SF (SEE DETAIL ON SHEET C-544) (SEE NOTE #3)	
Small Trucks		
Large Commercial		
Delivery Trucks		



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MICHIGAN AIR NATIONAL GUARD
CONSTRUCT MAIN BASE ENTRANCE
BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

ISSUED 02/17/21 B3 FINAL

ANG Project No: MBMV099170
MAH NO.: 3141900-113782.01
DATE: FEBRUARY 17, 2021
DESIGNED BY: JAK
DRAWN BY: DAY
CHECKED BY: SAH
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SHEET CONTENTS
SIGNING PLAN

SHEET NO.

C-681



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MICHIGAN AIR NATIONAL GUARD CONSTRUCT MAIN BASE ENTRANCE

BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

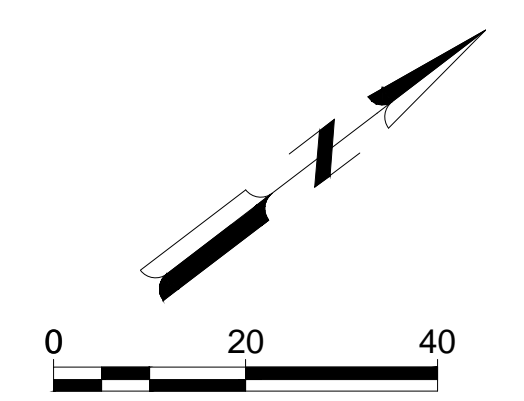
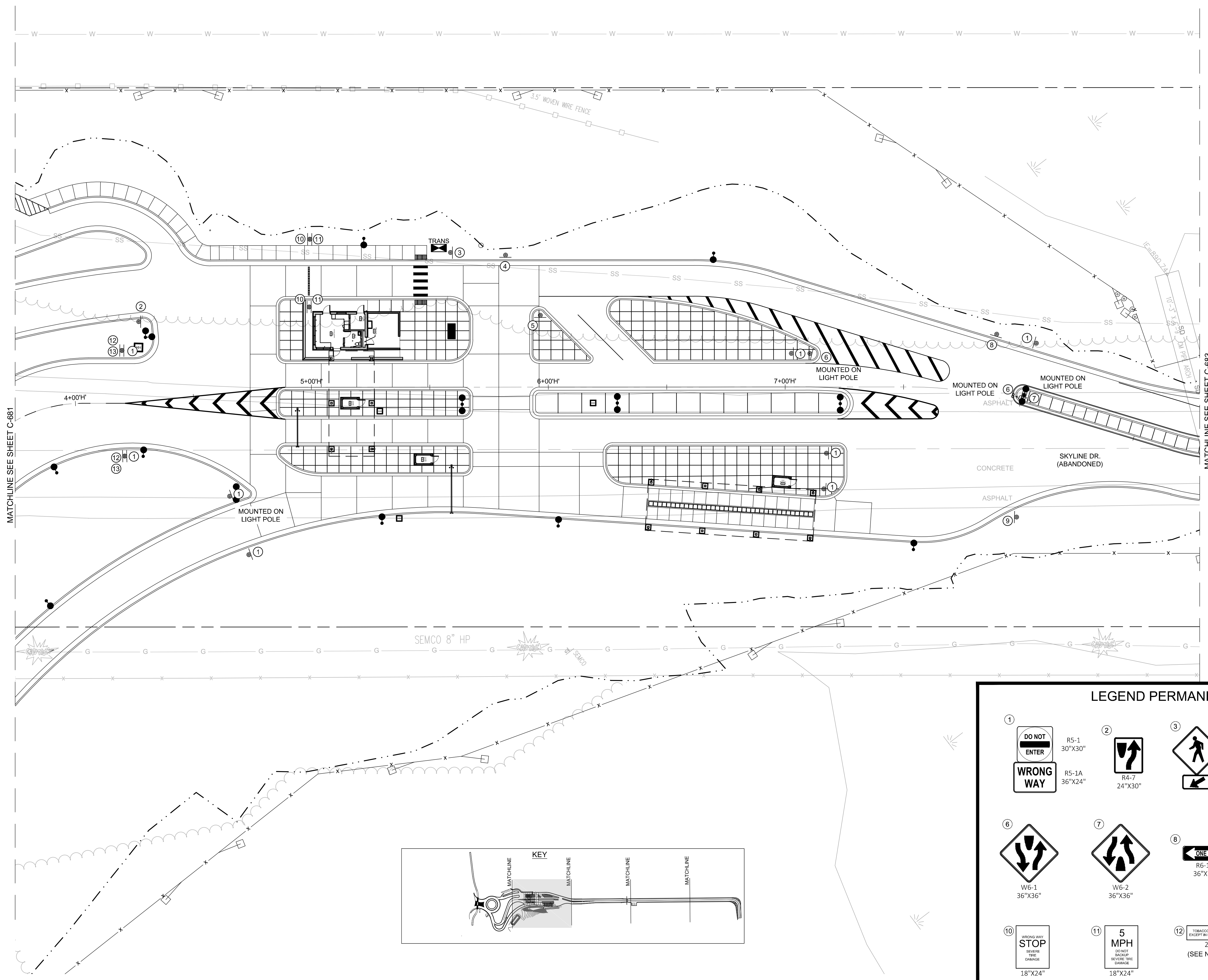
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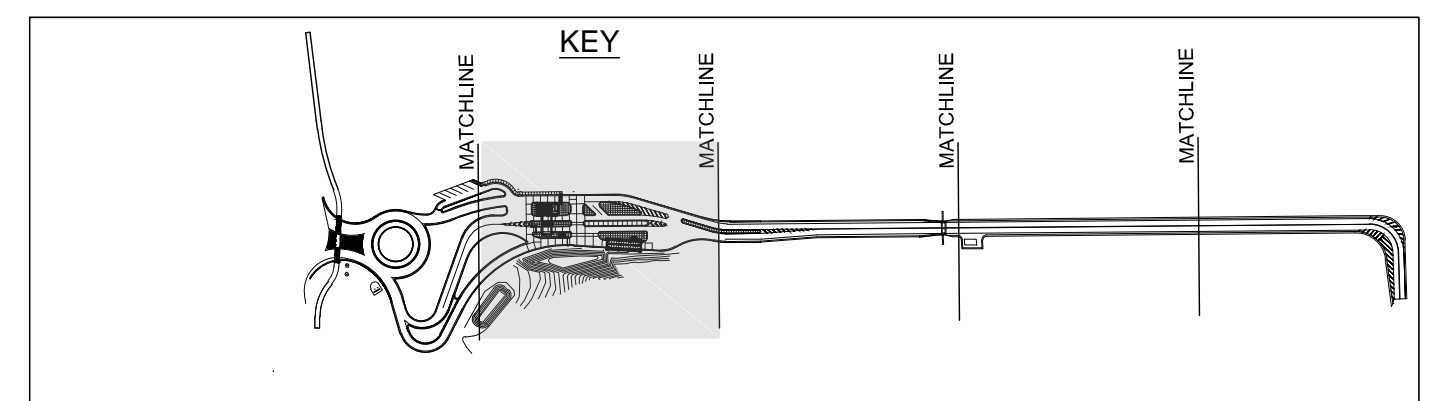
SHEET NO.

C-682



LEGEND PERMANENT SIGNS

1 R5-1 30"X30" WRONG WAY	2 R4-7 24"X30"	3 W11-2 30"X30"	4 R6-2L 24"X30"	5 R1-2 36"X31"
6 W6-1 36"X36"	7 W6-2 36"X36"	8 R6-1L 36"X12"	9 W9-2L 36"X36"	
10 NO PARKING STOP SEVERE TIRE DAMAGE 18"X24"	11 5 MPH DO NOT SACRIFICE SEVERE FIRE DAMAGE 18"X24"	12 TOBACCO USE PROHIBITED EXCEPT IN DESIGNATED AREAS 24"X6" (SEE NOTE #3)	13 NO CELL PHONE USE WHILE DRIVING IS PROHIBITED ALL WEAPONS MUST BE SECURED PRIOR TO ENTRY 18"X24"	



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BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

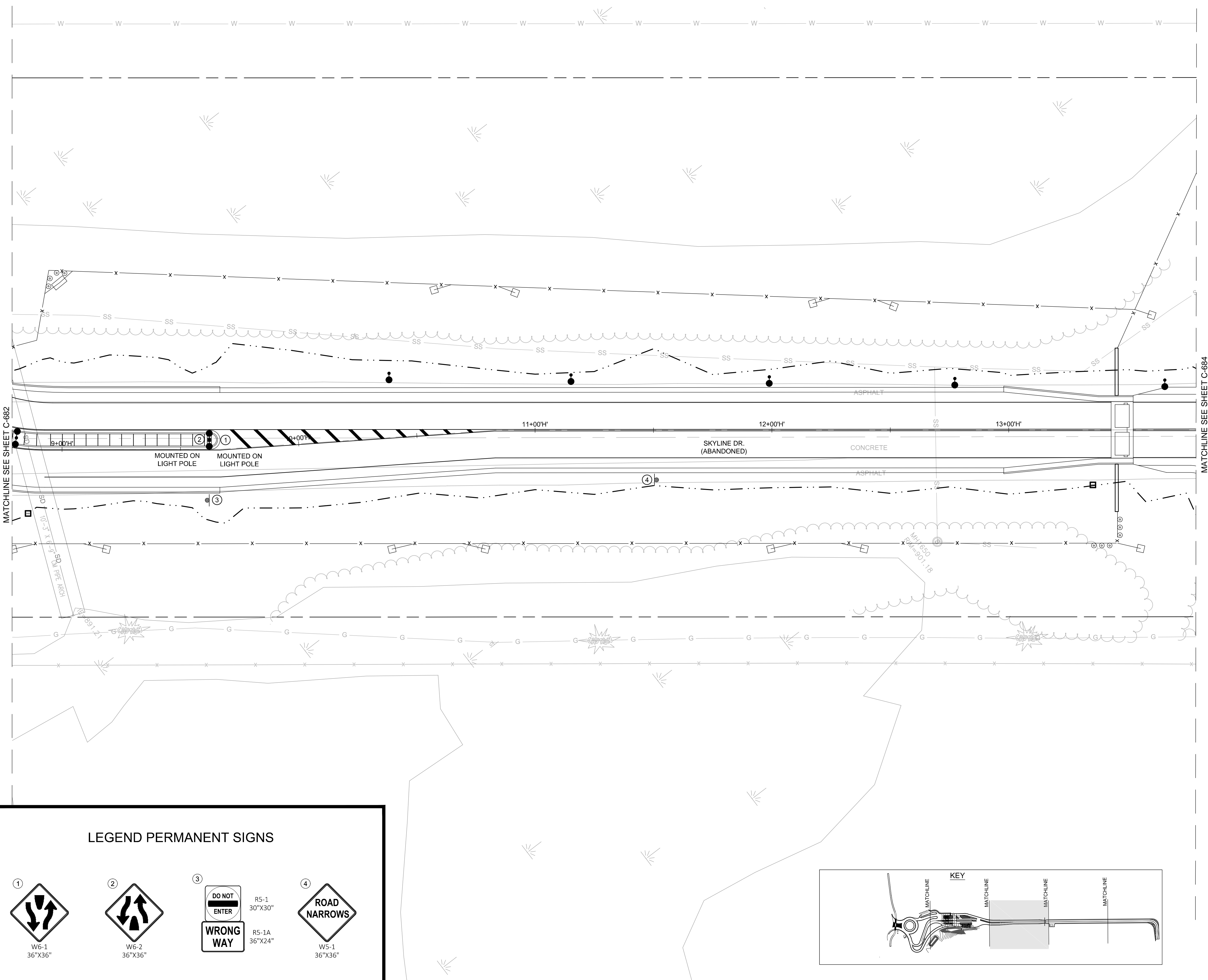
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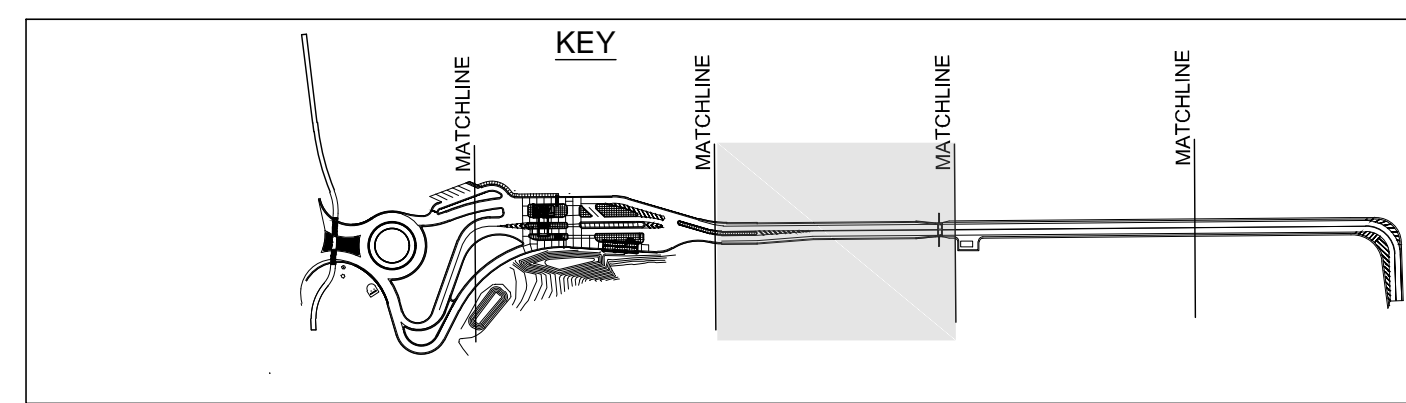
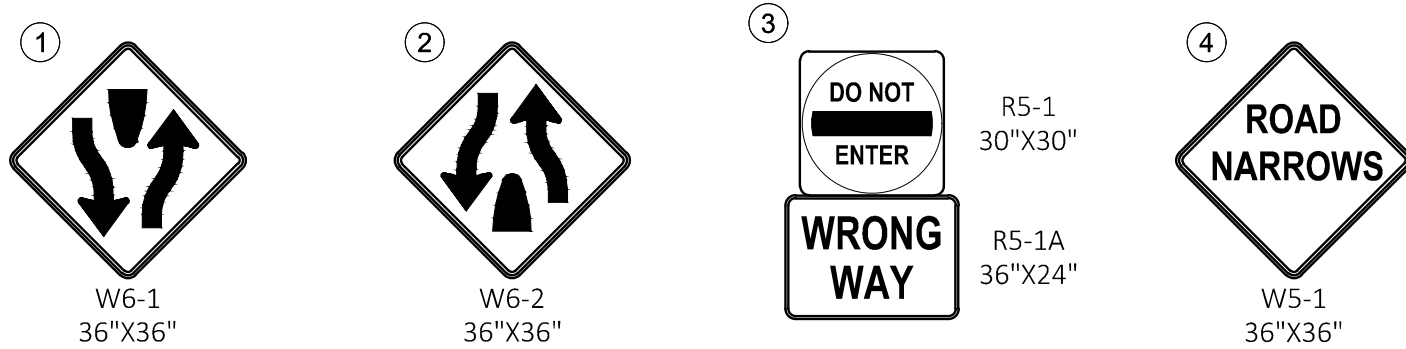
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SHEET NO.

C-683



LEGEND PERMANENT SIGNS



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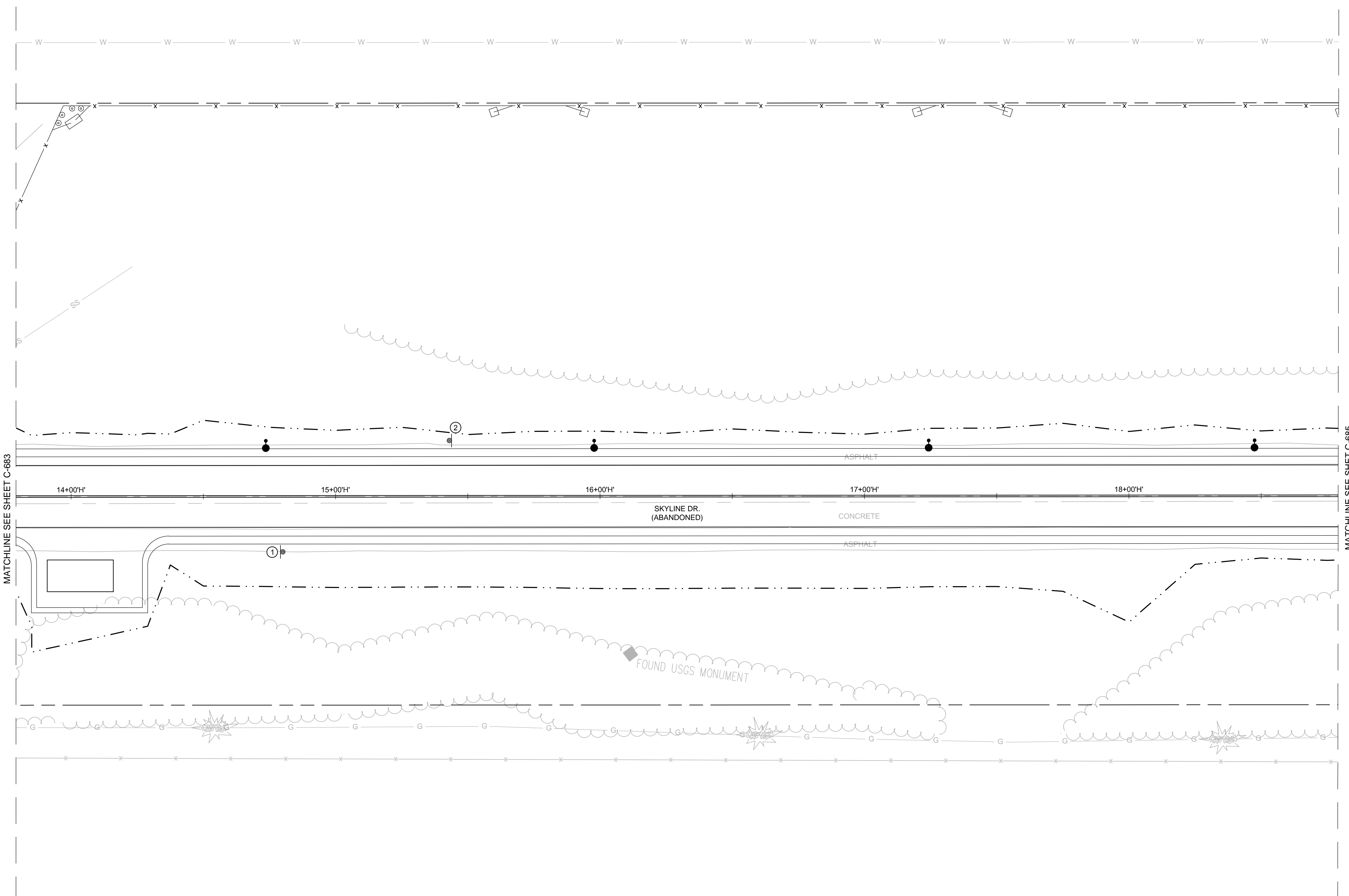
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SHEET NO.

C-684



MATCHLINE SEE SHEET C-683

MATCHLINE SEE SHEET C-685

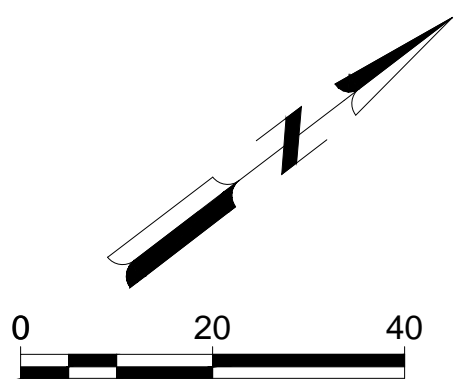
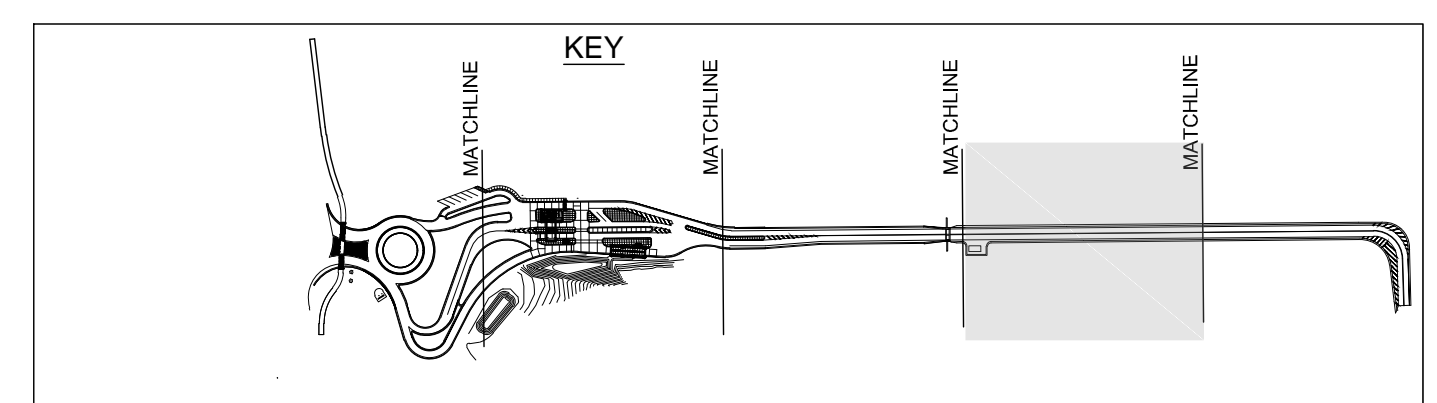
LEGEND PERMANENT SIGNS

①

R2-1
24"X30"

②

W5-1
36"X36"



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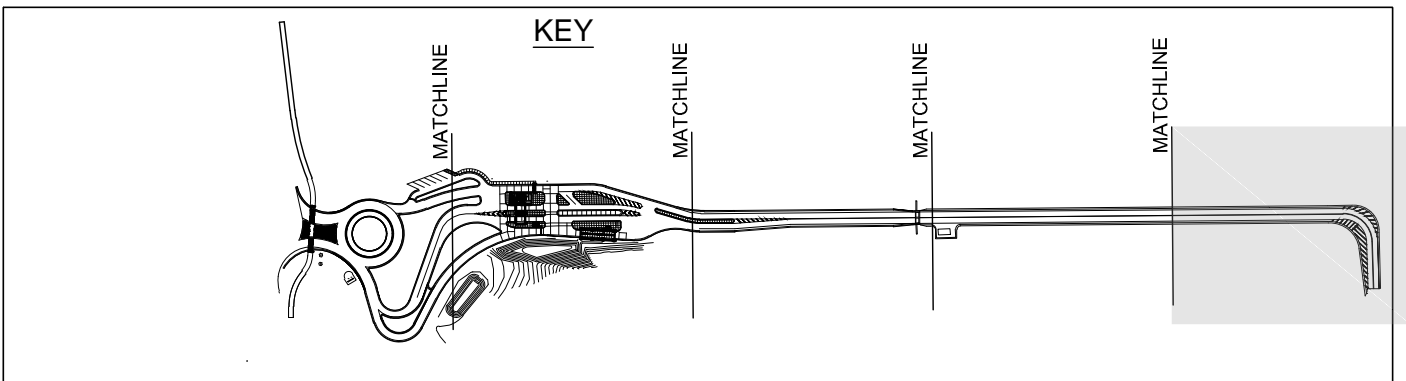
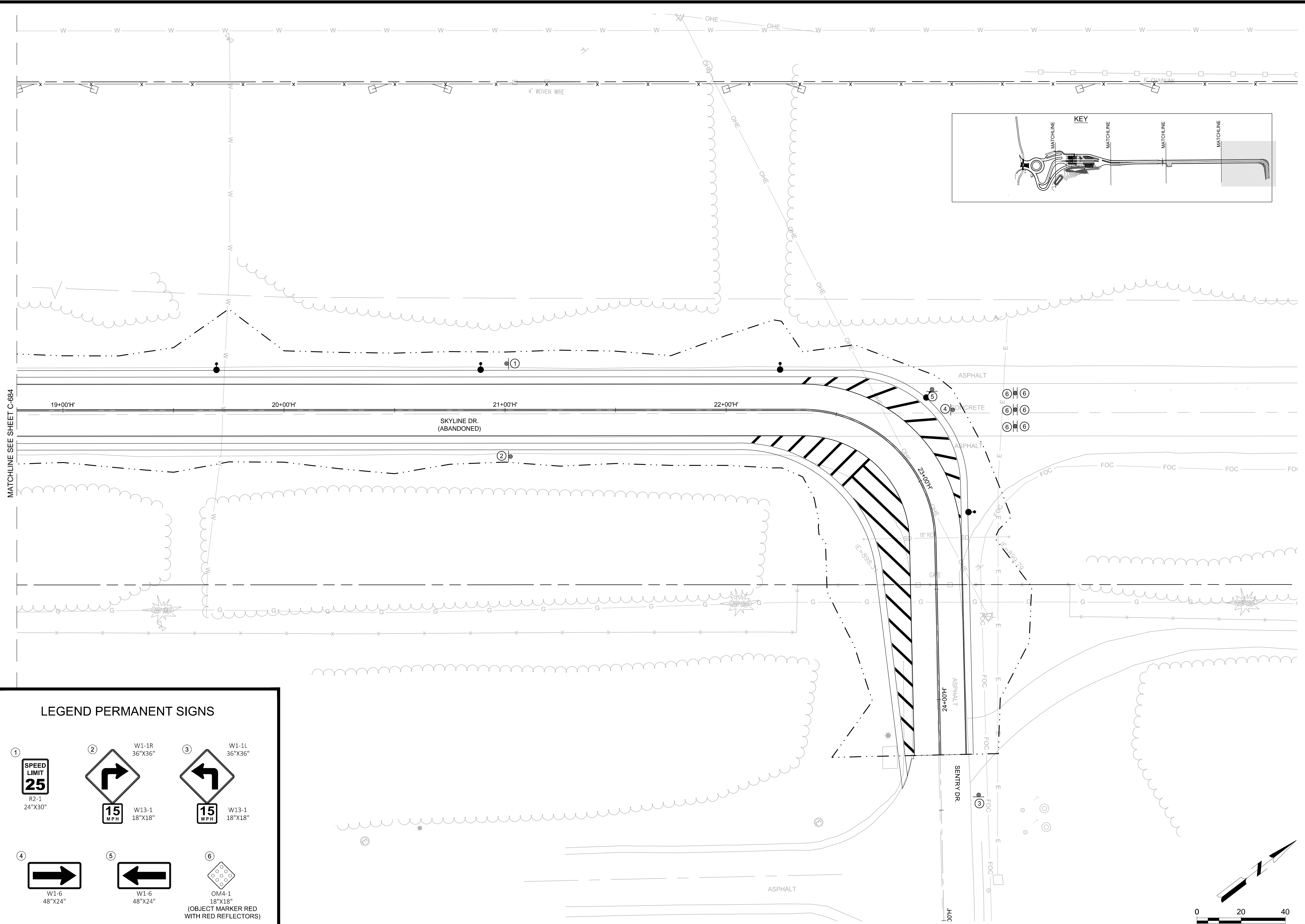
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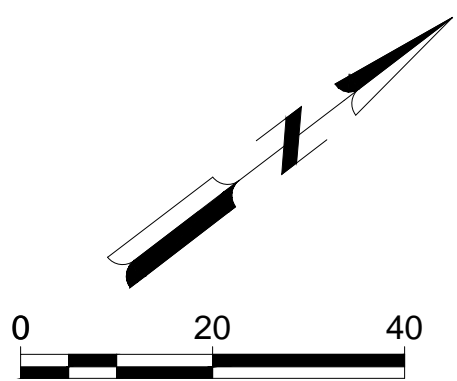
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C-685



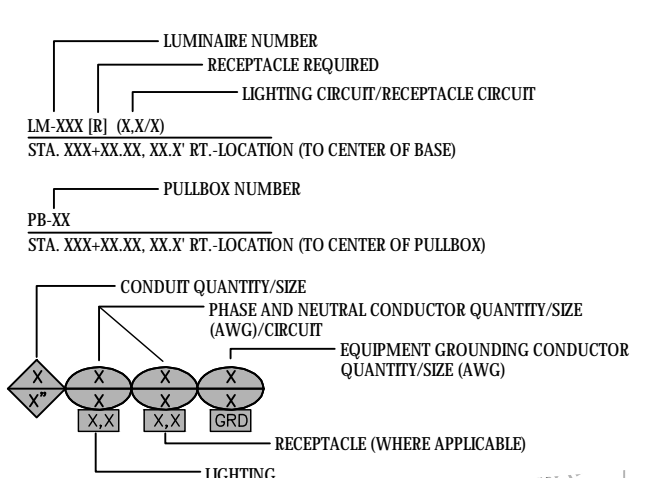
LEGEND PERMANENT SIGNS

① SPEED LIMIT 25 R2-1 24"X30"	② W1-1R 36"X36" 15 MPH W13-1 18"X18"	③ W1-1L 36"X36" 15 MPH W13-1 18"X18"
④ W1-6 48"X24"	⑤ W1-6 48"X24"	⑥ OM4-1 18"X18" (OBJECT MARKER RED WITH RED REFLECTORS)



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- LEGEND**
- CONDUIT RIGID NONMETALLIC SCHEDULE 40, 2 INCH UNLESS OTHERWISE NOTED.
 - INSTALL SCHEDULE 80 BELOW ROADWAY AND DRIVEWAYS.
 - PROPOSED SINGLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5.
 - PROPOSED DOUBLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5 W/ RECEPTACLE.
 - PULL BOXES STEEL, 24x42 INCH.
 - LIGHTING CONTROL CABINET ON CONCRETE CONTROL CABINET BASE TYPE 124.



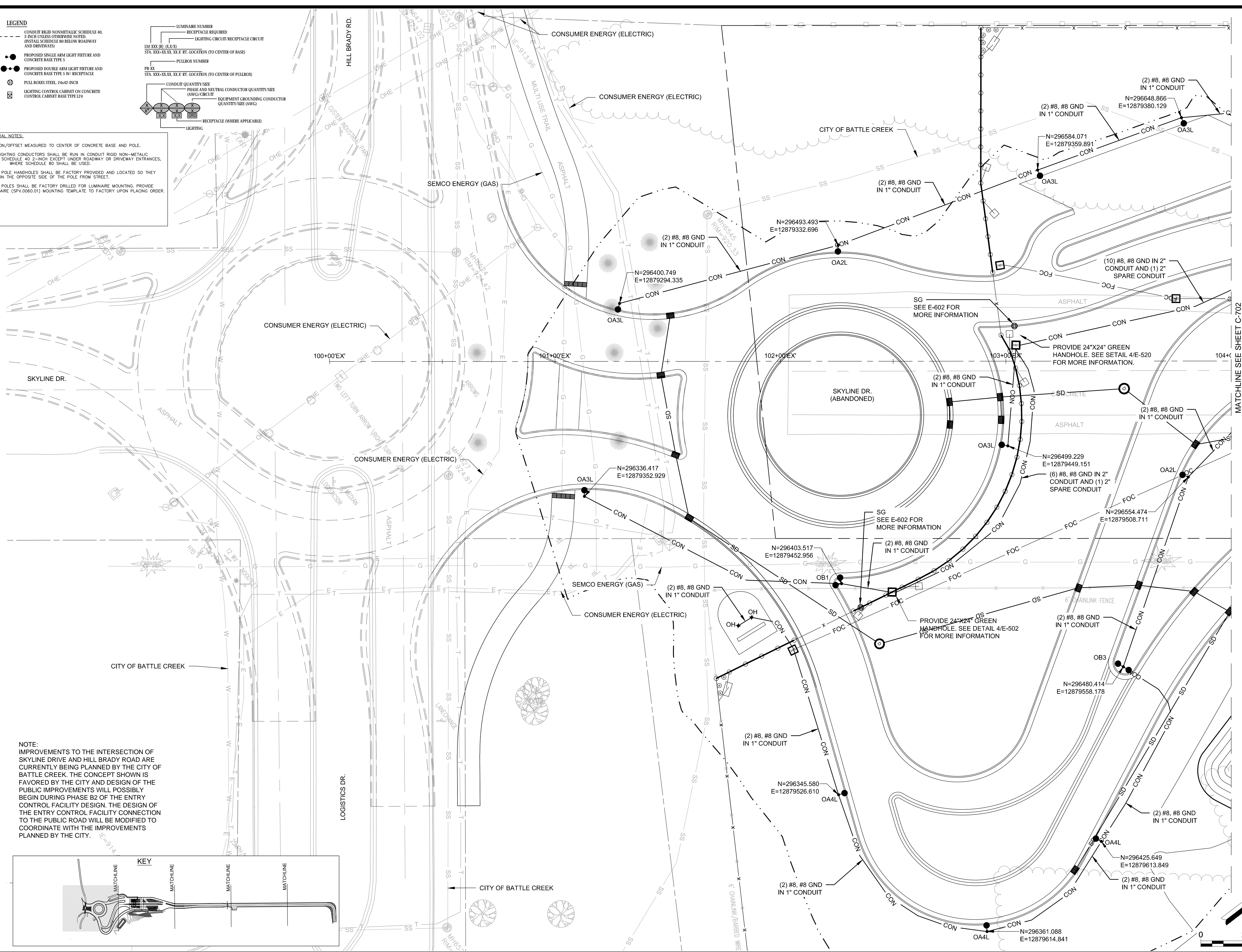
GENERAL NOTES:

STATION/OFFSET MEASURED TO CENTER OF CONCRETE BASE AND POLE.

ALL LIGHTING CONDUCTORS SHALL BE RUN IN CONDUIT RIGID NON-METALLIC SCHEDULE 40 2-INCH EXCEPT UNDER ROADWAY OR DRIVEWAY ENTRANCES, WHERE SCHEDULE 80 SHALL BE USED.

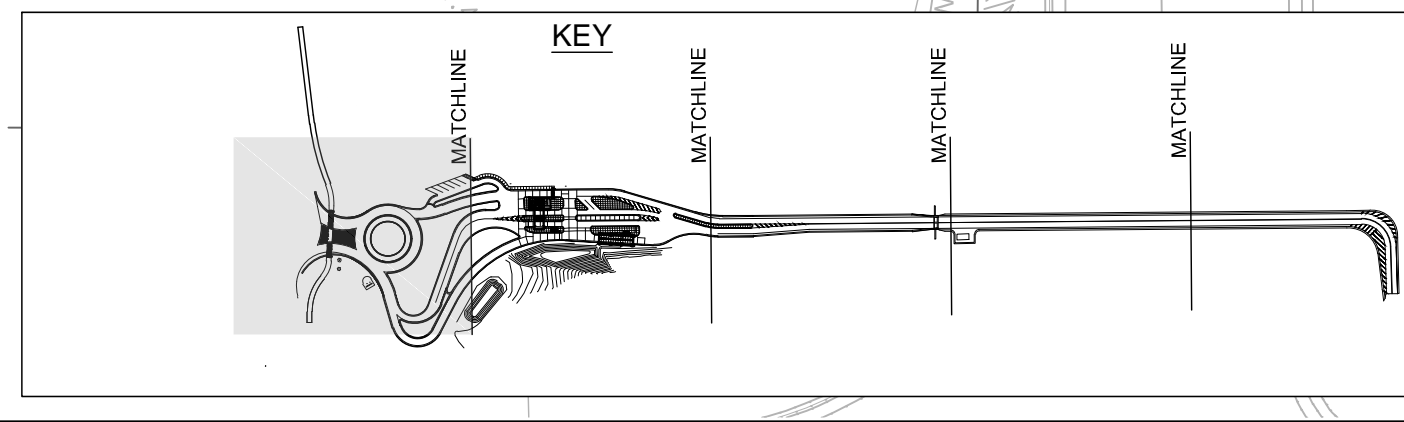
LIGHT POLE HANDHOLES SHALL BE FACTORY PROVIDED AND LOCATED SO THEY ARE ON THE OPPOSITE SIDE OF THE POLE FROM STREET.

LIGHT POLES SHALL BE FACTORY DRILLED FOR LUMINAIRE MOUNTING. PROVIDE LUMINAIRE (SPV.0060.01) MOUNTING TEMPLATE TO FACTORY UPON PLACING ORDER.



NOTE:

IMPROVEMENTS TO THE INTERSECTION OF SKYLINE DRIVE AND HILL BRADY ROAD ARE CURRENTLY BEING PLANNED BY THE CITY OF BATTLE CREEK. THE CONCEPT SHOWN IS FAVORED BY THE CITY AND DESIGN OF THE PUBLIC IMPROVEMENTS WILL POSSIBLY BEGIN DURING PHASE B2 OF THE ENTRY CONTROL FACILITY DESIGN. THE DESIGN OF THE ENTRY CONTROL FACILITY CONNECTION TO THE PUBLIC ROAD WILL BE MODIFIED TO COORDINATE WITH THE IMPROVEMENTS PLANNED BY THE CITY.



Mead & Hunt

Mead and Hunt, Inc.
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Middleton, WI 53562
phone: 608-273-6380
meadhunt.com

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**MICHIGAN AIR NATIONAL GUARD
CONSTRUCT MAIN BASE ENTRANCE**

BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

ISSUED 02/17/21 B3 FINAL

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SHEET CONTENTS
LIGHTING PLAN

SHEET NO.

C-701

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MICHIGAN AIR NATIONAL GUARD CONSTRUCT MAIN BASE ENTRANCE

BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

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02/17/21 B3 FINAL

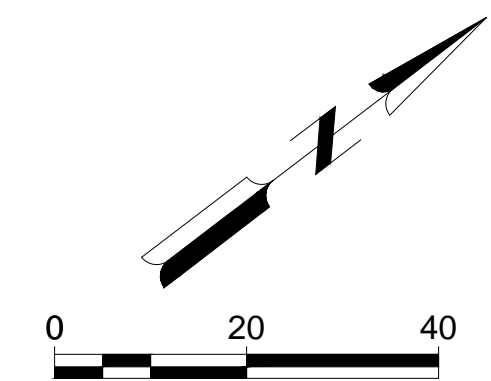
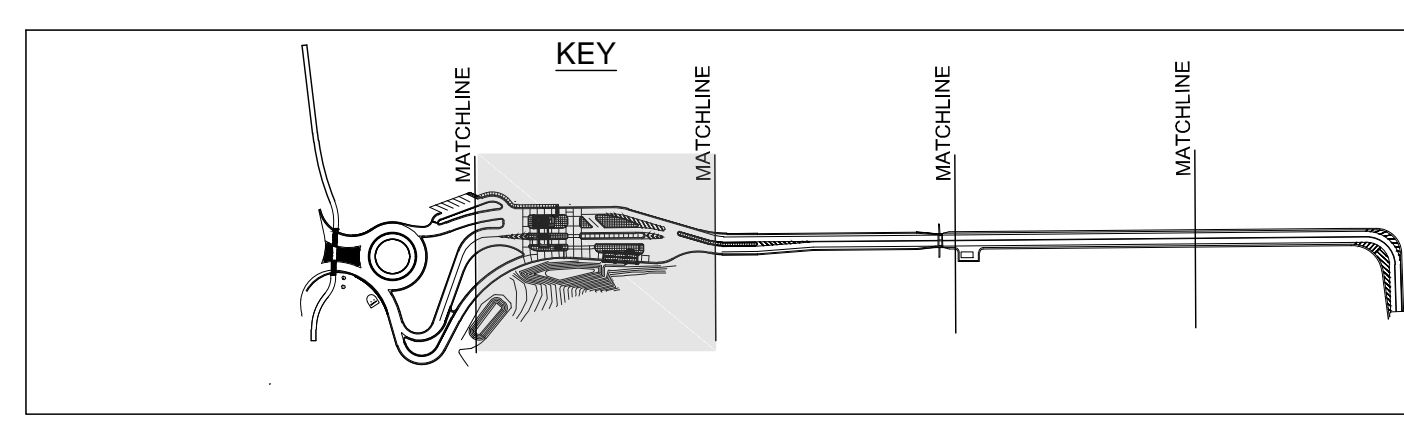
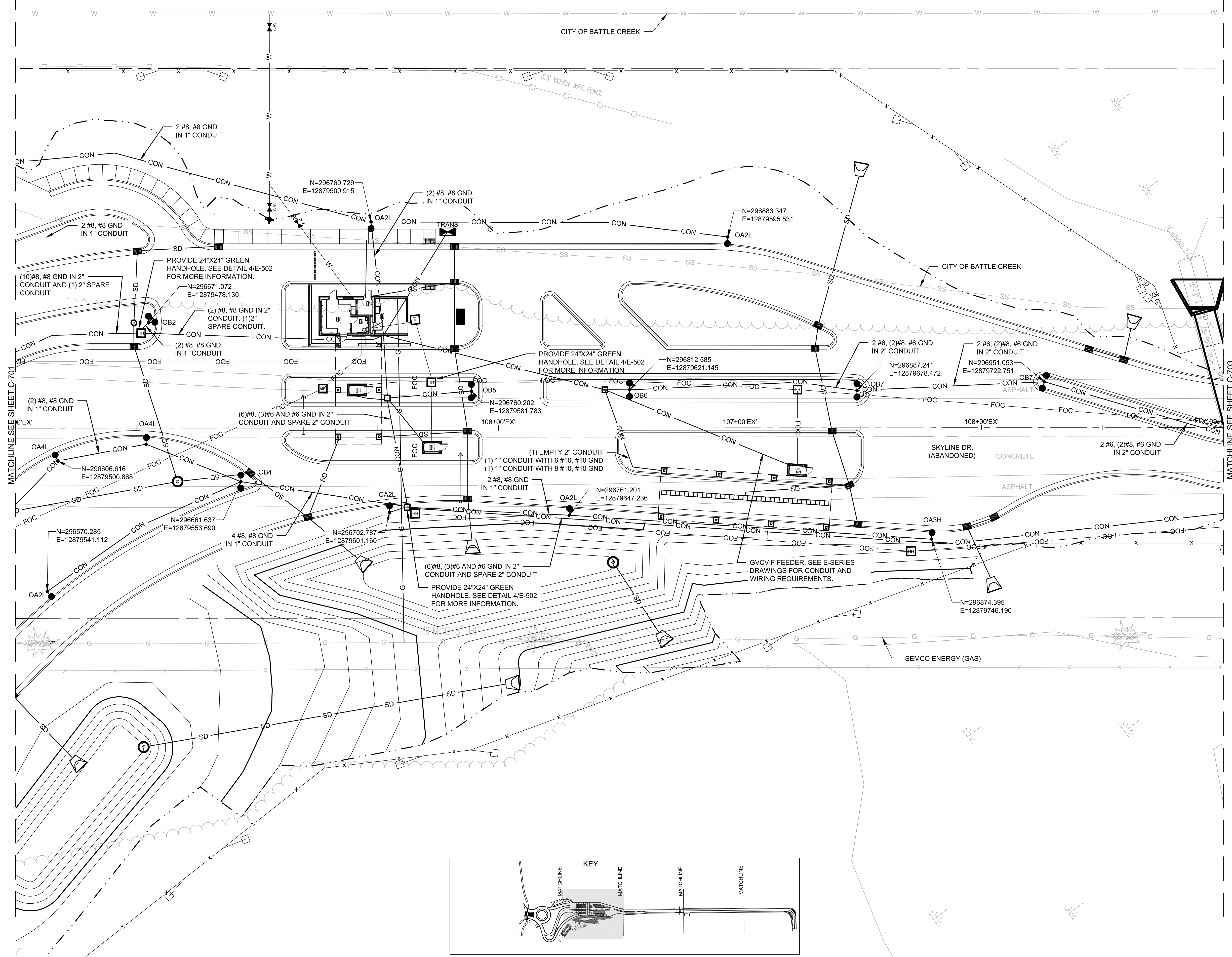
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M&H No.: 3141900-113782.01
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SHEET CONTENTS
LIGHTING PLAN

SHEET NO.

C-702

- LEGEND**
- CONDUIT RIGID NONMETALLIC SCHEDULE 40, 2 INCH UNLESS OTHERWISE NOTED. INSTALL SCHEDULE 80 BELOW ROADWAY AND DRIVEWAYS
 - PROPOSED SINGLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5
 - PROPOSED DOUBLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5 W/ RECEPTACLE
 - FULL BOXES STEEL, 24x42 INCH
 - LIGHTING CONTROL CABINET ON CONCRETE CONTROL CABINET BASE TYPE L24



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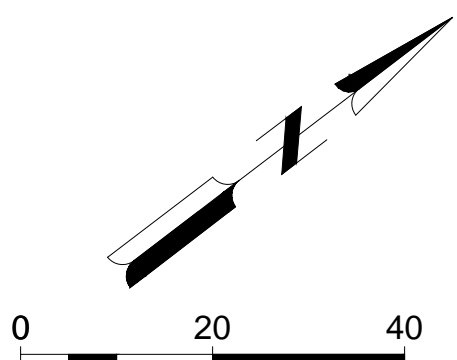
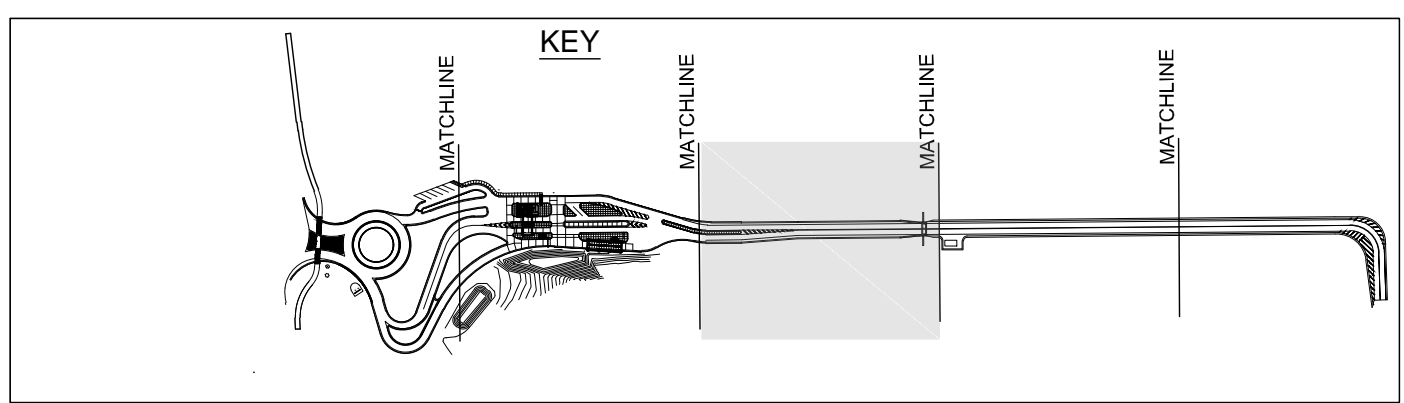
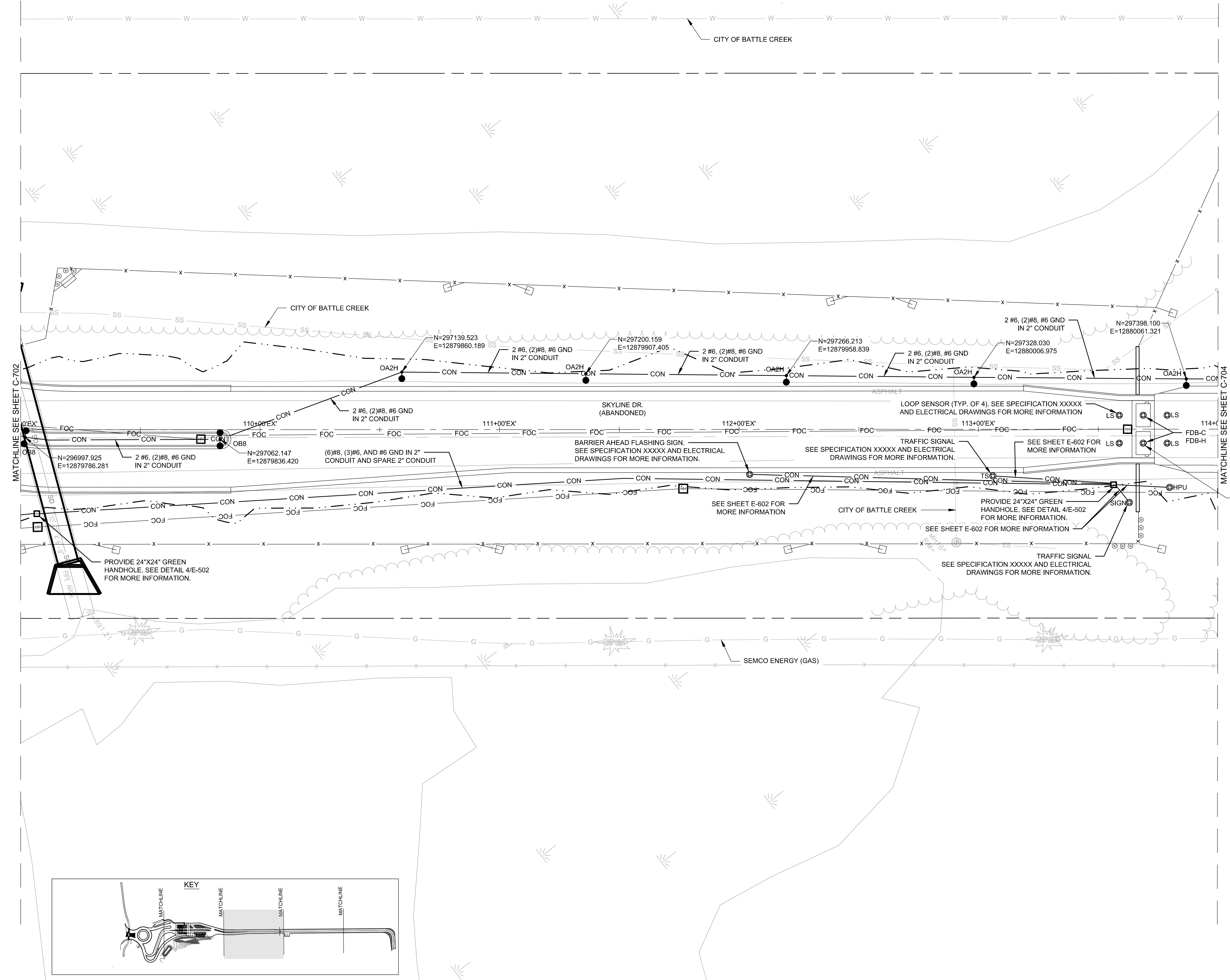
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SHEET CONTENTS
LIGHTING PLAN

SHEET NO.

C-703

- LEGEND**
- CONDUIT RIGID NONMETALLIC SCHEDULE 40, 2 INCH UNLESS OTHERWISE NOTED. INSTALL AS BELOW ROADWAY AND DRIVEWAYS
 - PROPOSED SINGLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5
 - PROPOSED DOUBLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5 W/ RECEPTACLE
 - ⊕ FULL BOXES STEEL 24x42 INCH
 - ⊕ LIGHTING CONTROL CABINET ON CONCRETE CONTROL CABINET BASE TYPE 124



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MICHIGAN AIR NATIONAL GUARD CONSTRUCT MAIN BASE ENTRANCE

BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

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02/17/21 B3 FINAL

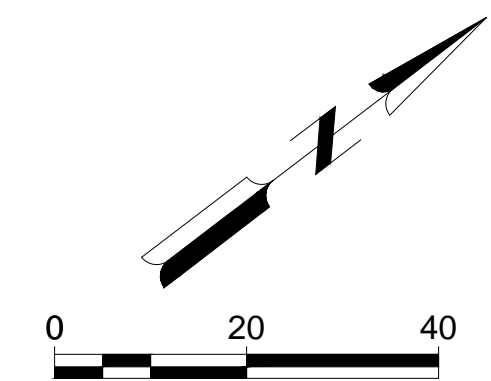
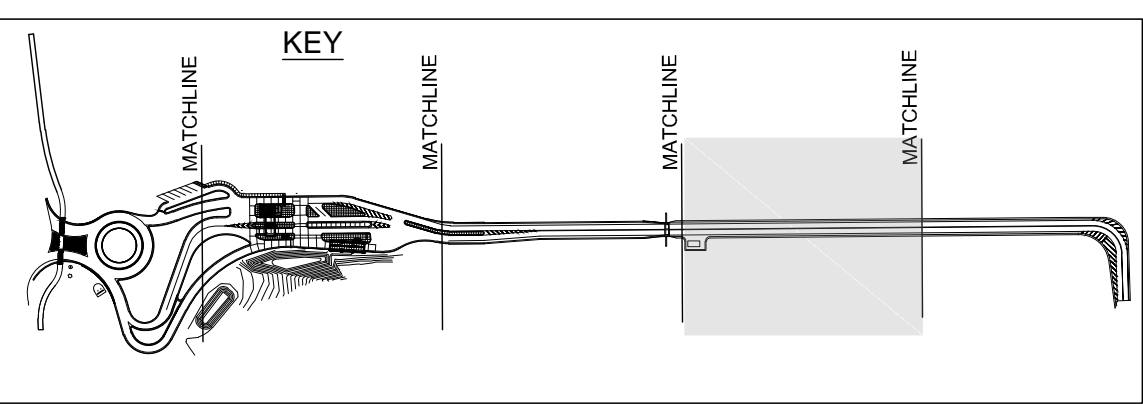
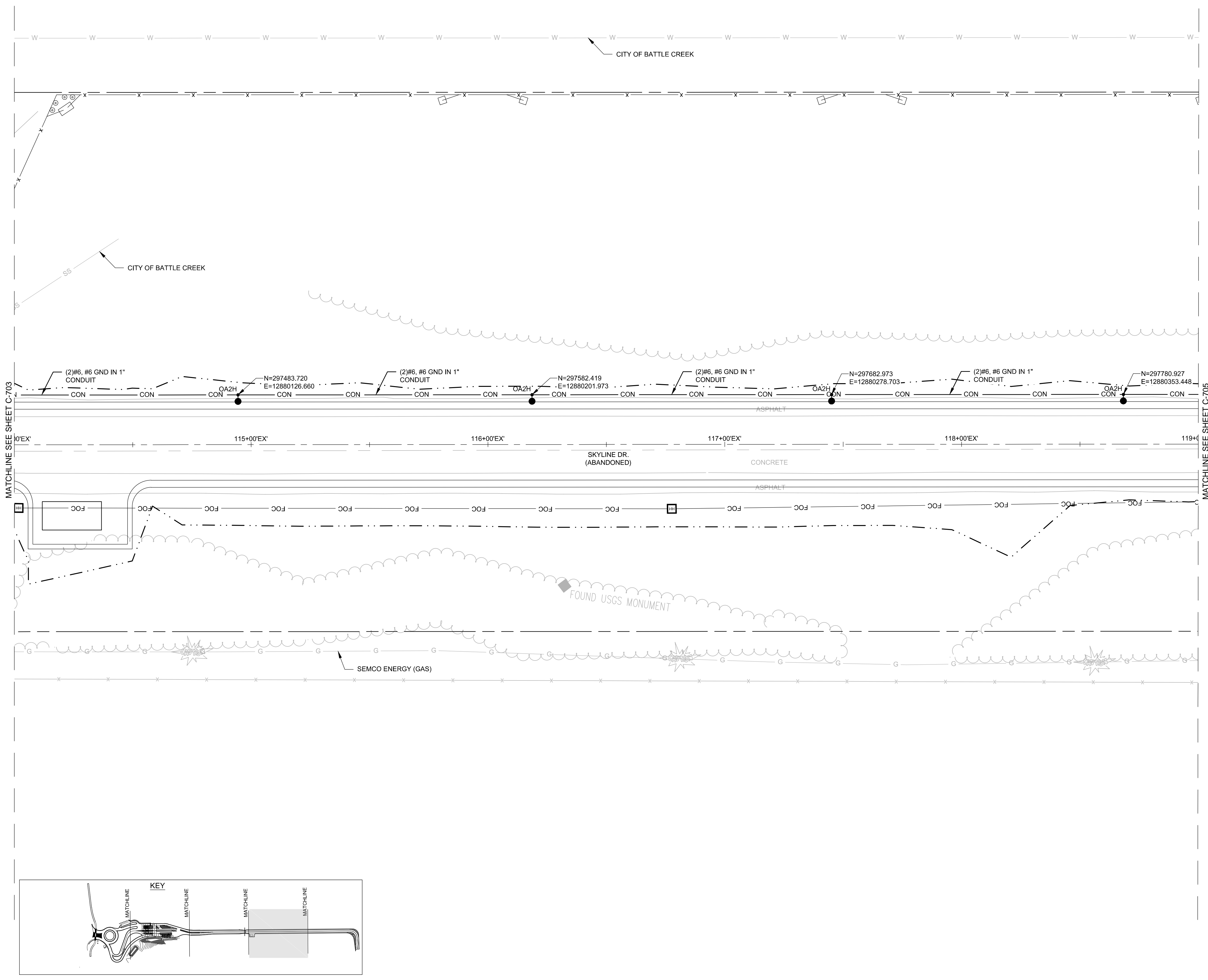
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SHEET CONTENTS
LIGHTING PLAN

SHEET NO.

C-704

- LEGEND**
- CONDUIT RIGID NONMETALLIC SCHEDULE 40, 2 INCH UNLESS OTHERWISE NOTED; INSTALL SCHEDULE 80 BELOW ROADWAY AND DRIVEWAYS
 - PROPOSED SINGLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5
 - PROPOSED DOUBLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5 W/ RECEPTACLE
 - ⊙ FULL BOXES STEEL 24x42 INCH
 - ☒ LIGHTING CONTROL CABINET ON CONCRETE CONTROL CABINET BASE TYPE L24



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BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

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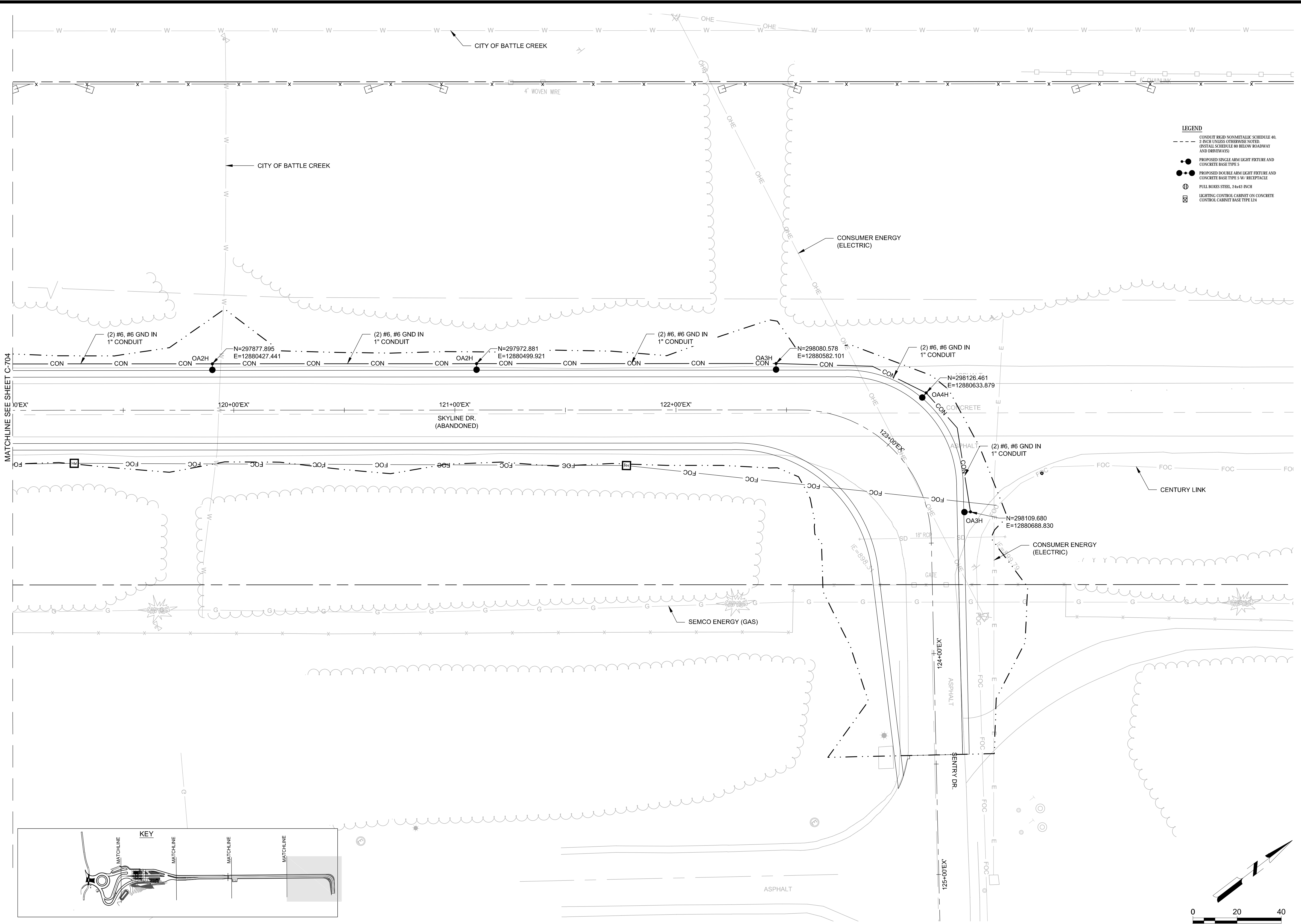
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LIGHTING PLAN

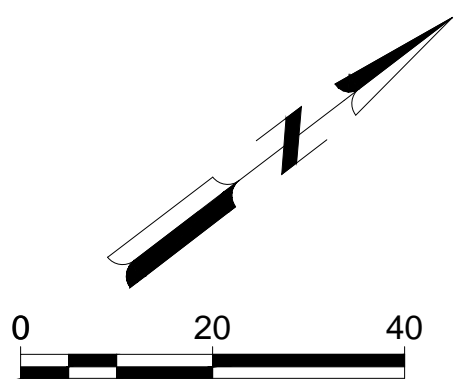
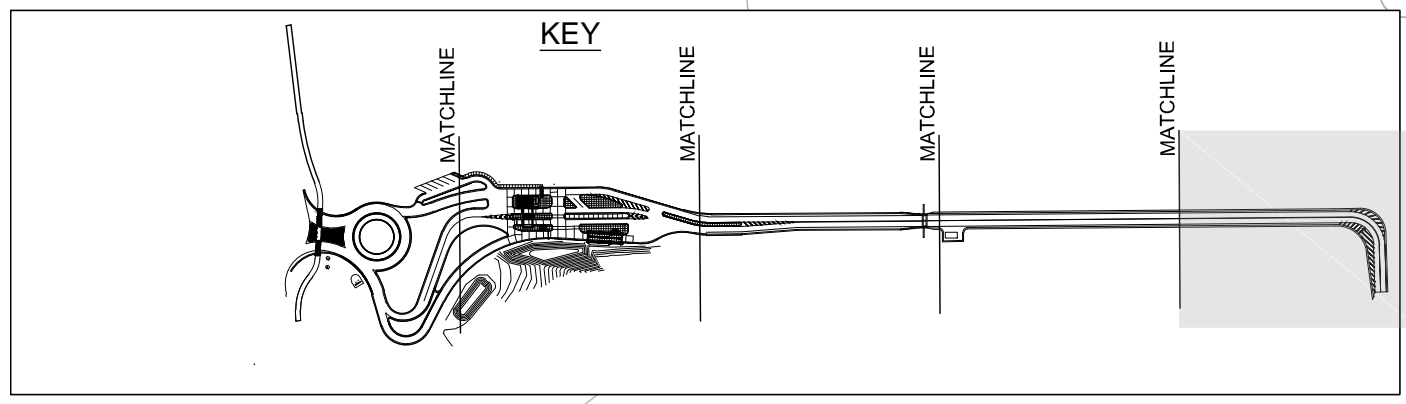
SHEET NO.

C-705



- LEGEND**
- CONDUIT RIGID NONMETALLIC SCHEDULE 40, 2 INCH UNLESS OTHERWISE NOTED (INSTALL SCHEDULE 80 BELOW ROADWAY AND DRIVEWAYS)
 - PROPOSED SINGLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5
 - PROPOSED DOUBLE ARM LIGHT FIXTURE AND CONCRETE BASE TYPE 5 W/ RECEPTACLE
 - ⊕ FULL BOXES STEEL 24x42 INCH
 - ⊠ LIGHTING CONTROL CABINET ON CONCRETE CONTROL CABINET BASE TYPE L24

MATCHLINE SEE SHEET C-704



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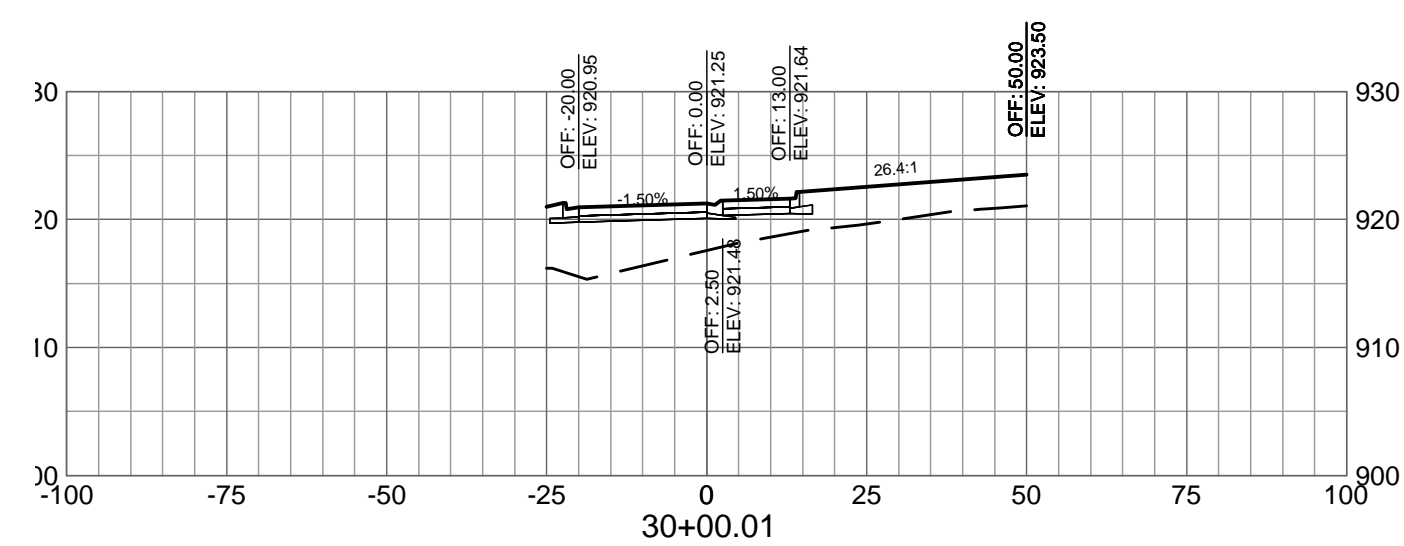
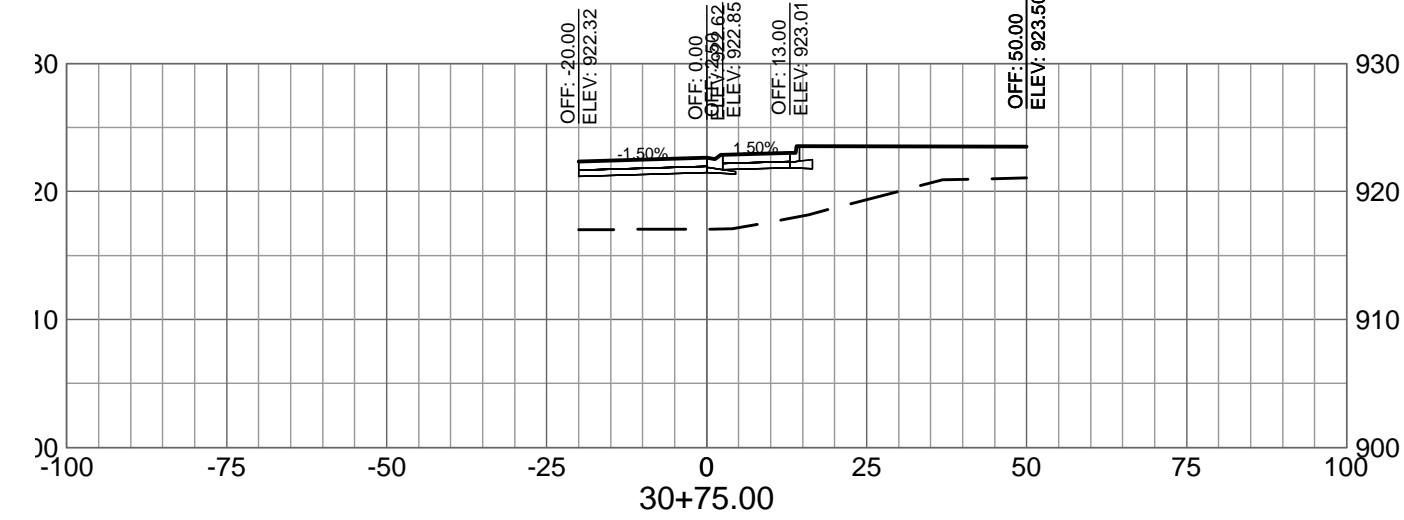
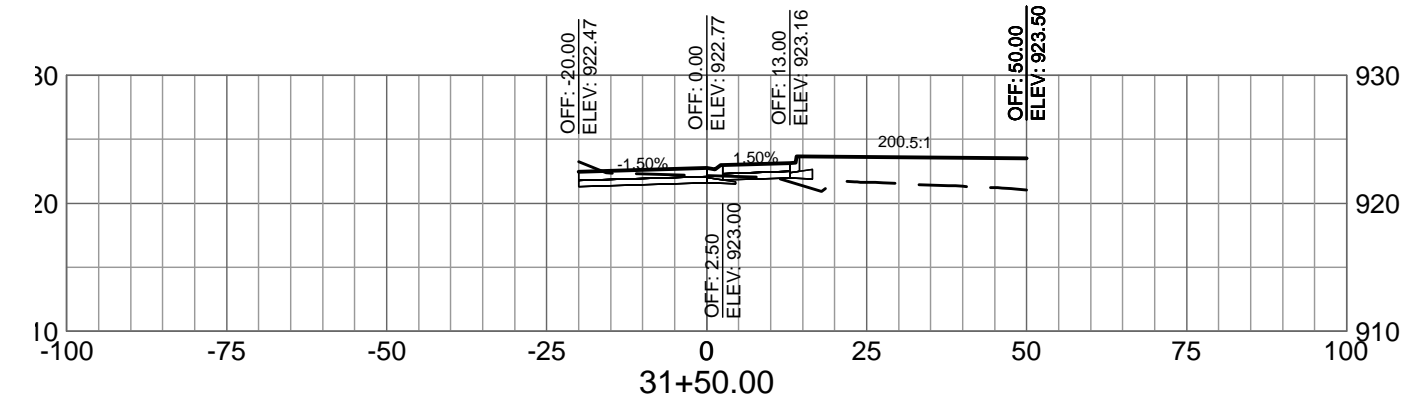
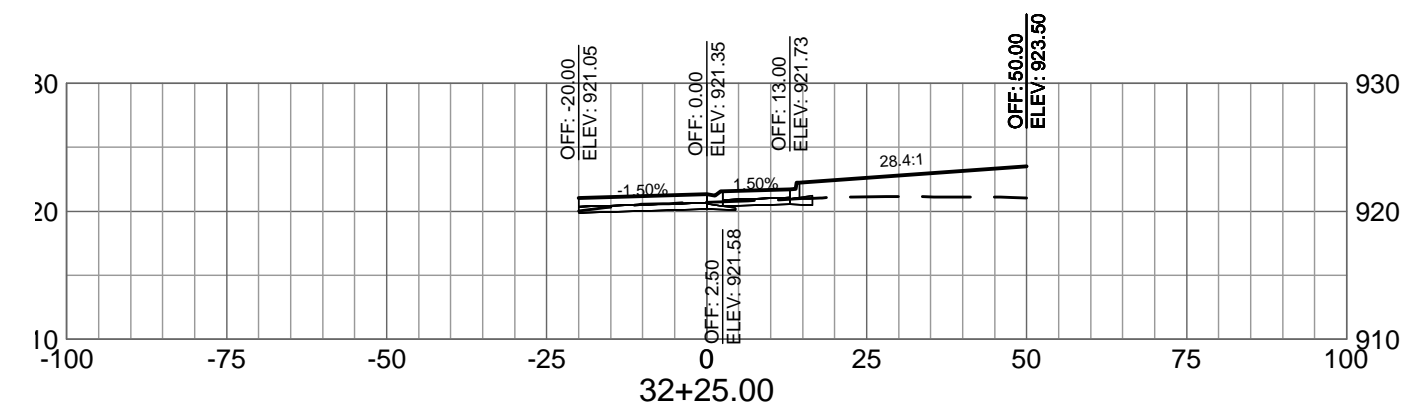
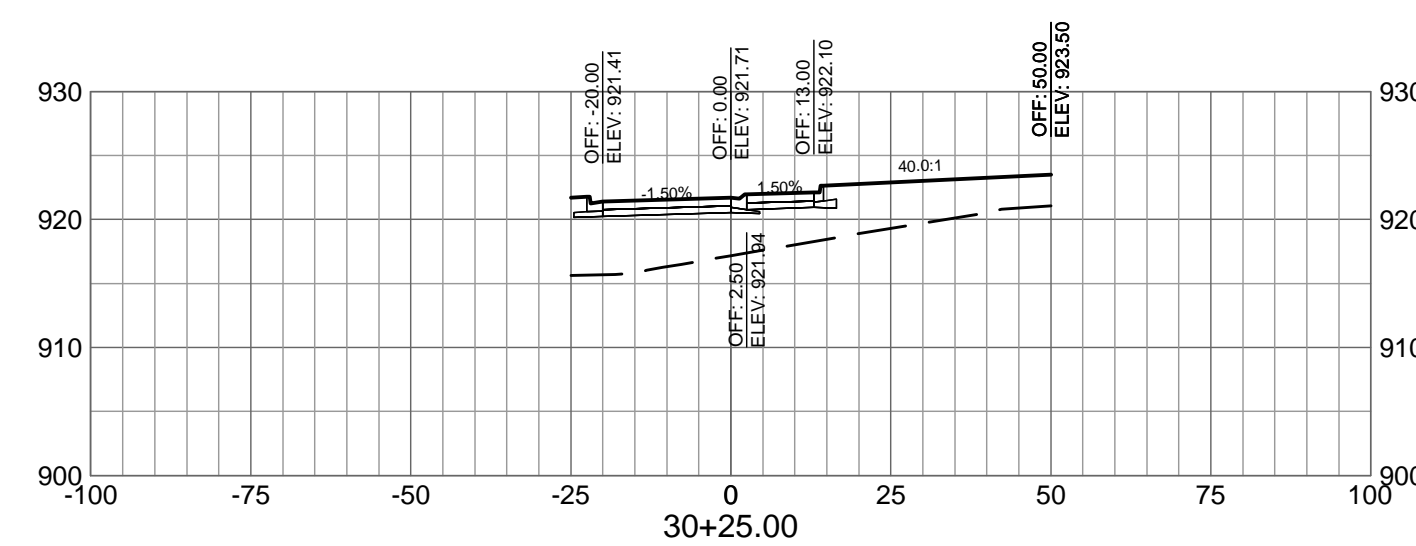
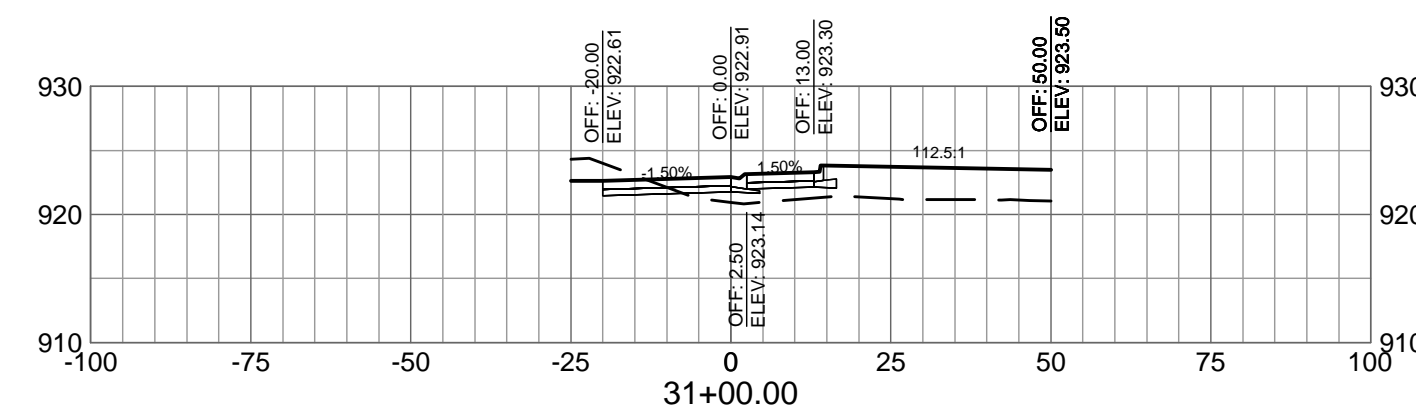
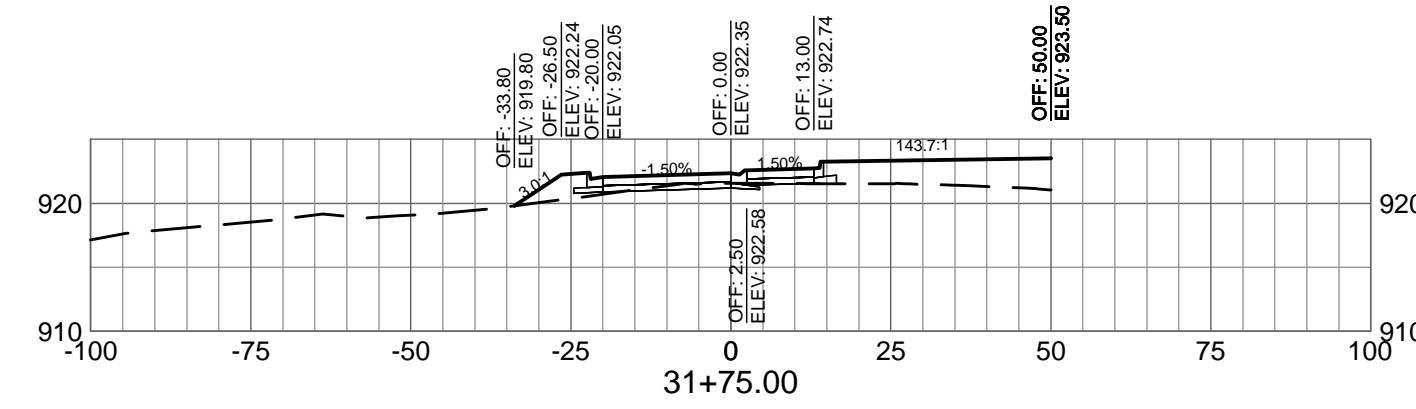
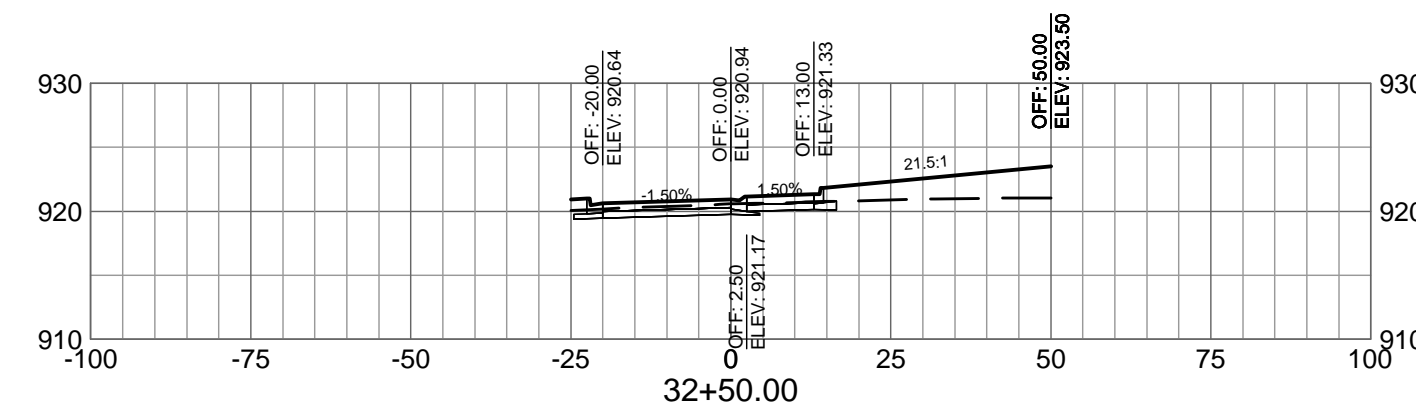
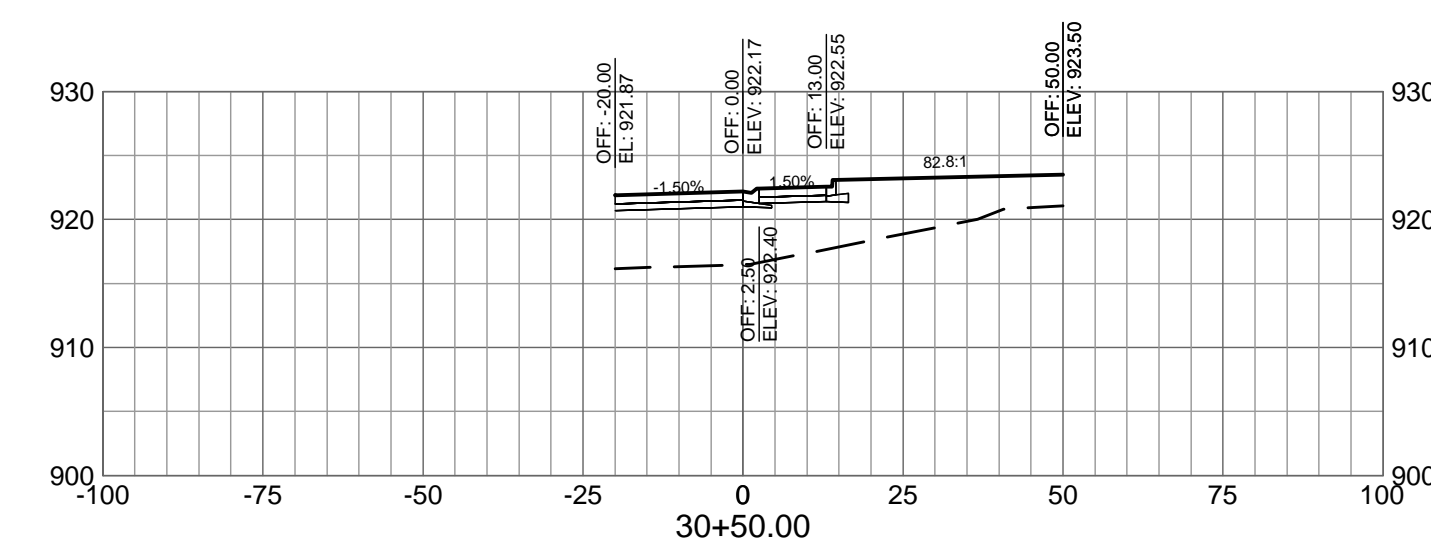
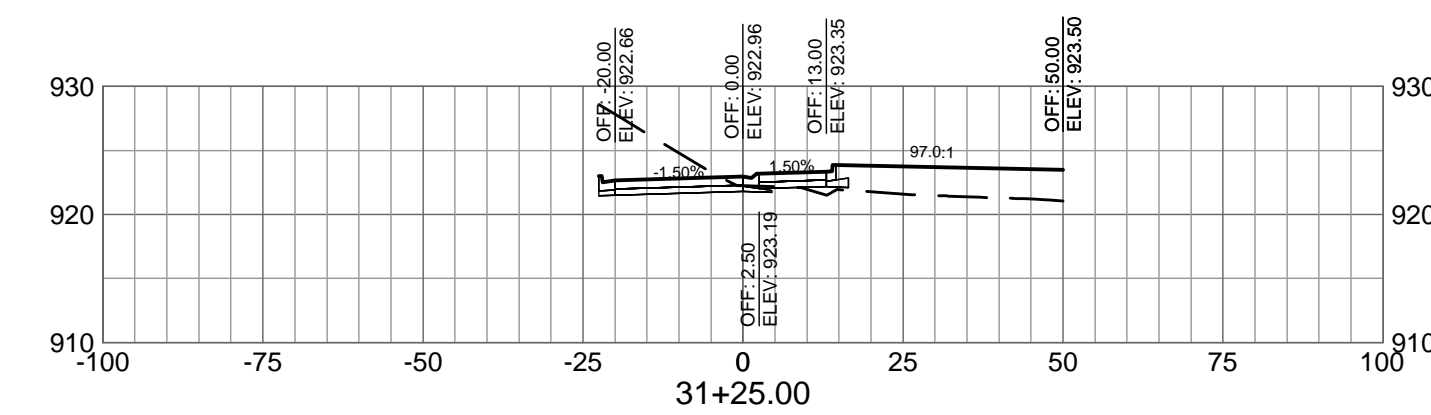
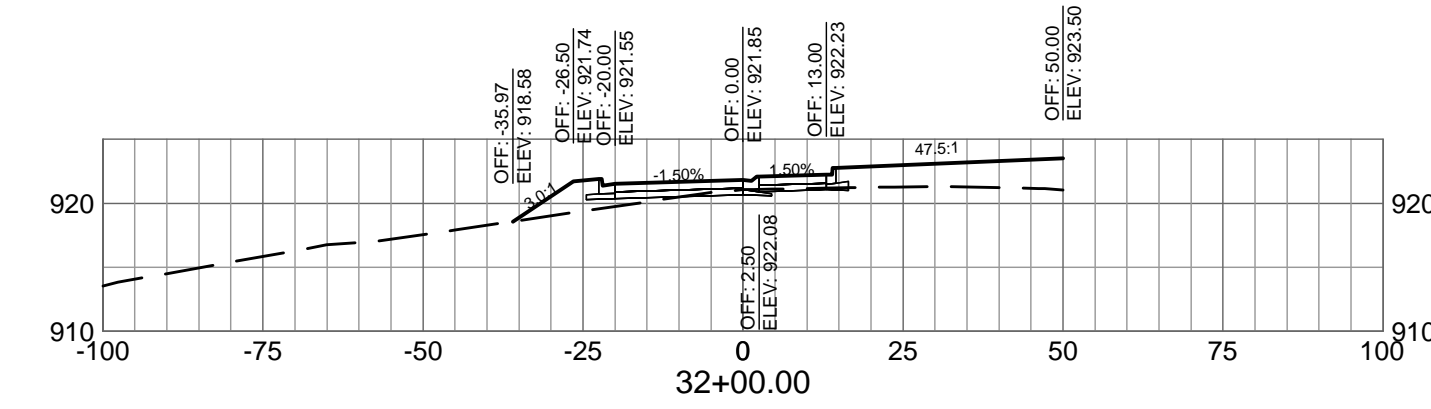
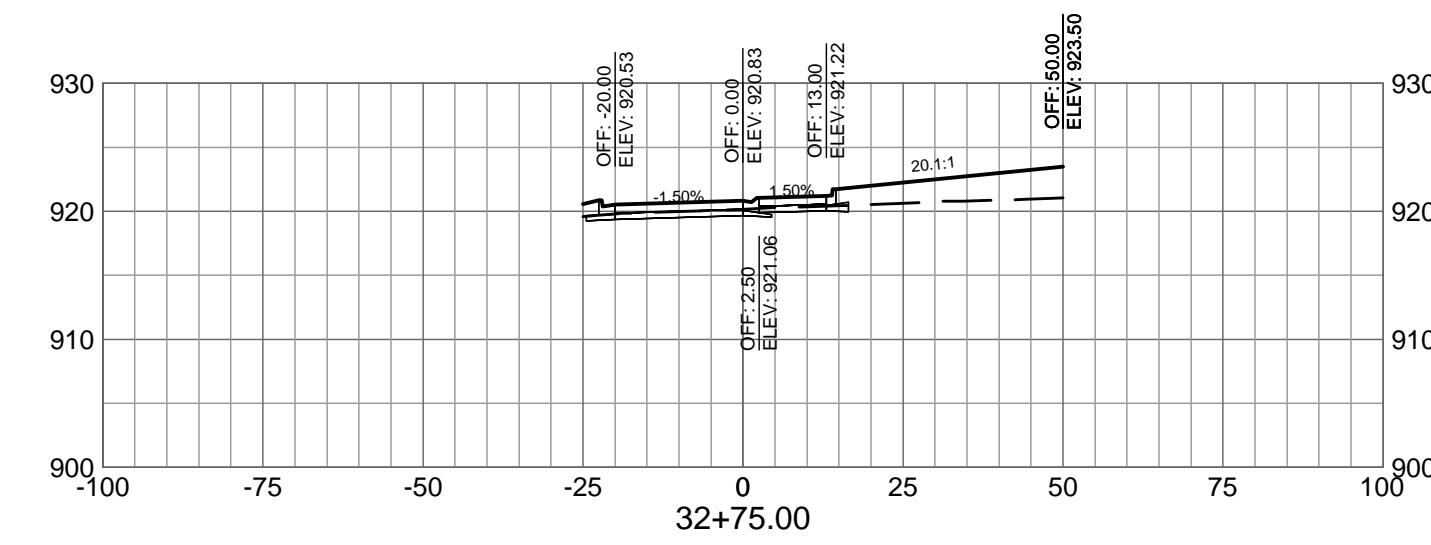
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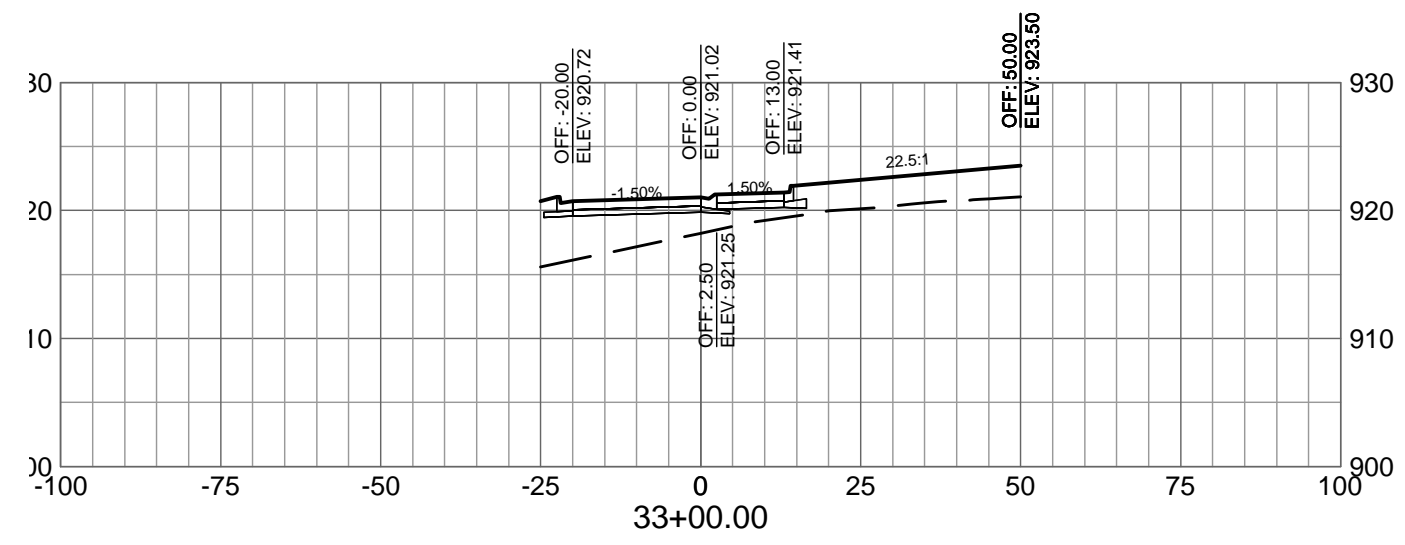
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**MICHIGAN AIR NATIONAL GUARD
CONSTRUCT MAIN BASE ENTRANCE**
BATTLE CREEK ANGB
BATTLE CREEK, MICHIGAN

ISSUED
02/17/21 B3 FINAL

ANG Project No: MBMV099170
MMH NO.: 3141900-113782.01
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BATTLE CREEK ANGB
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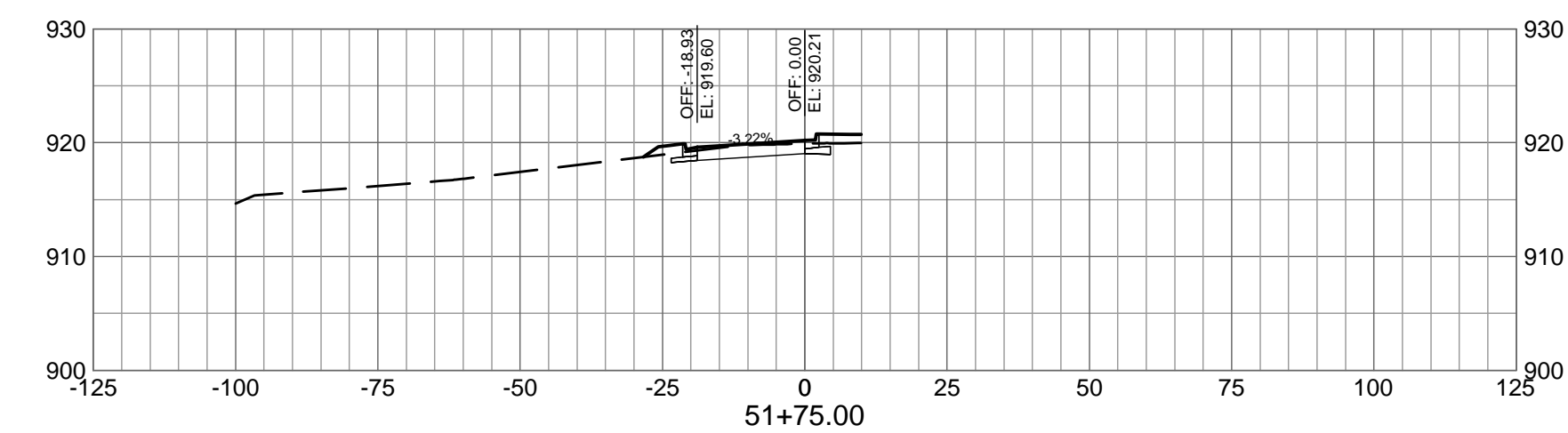
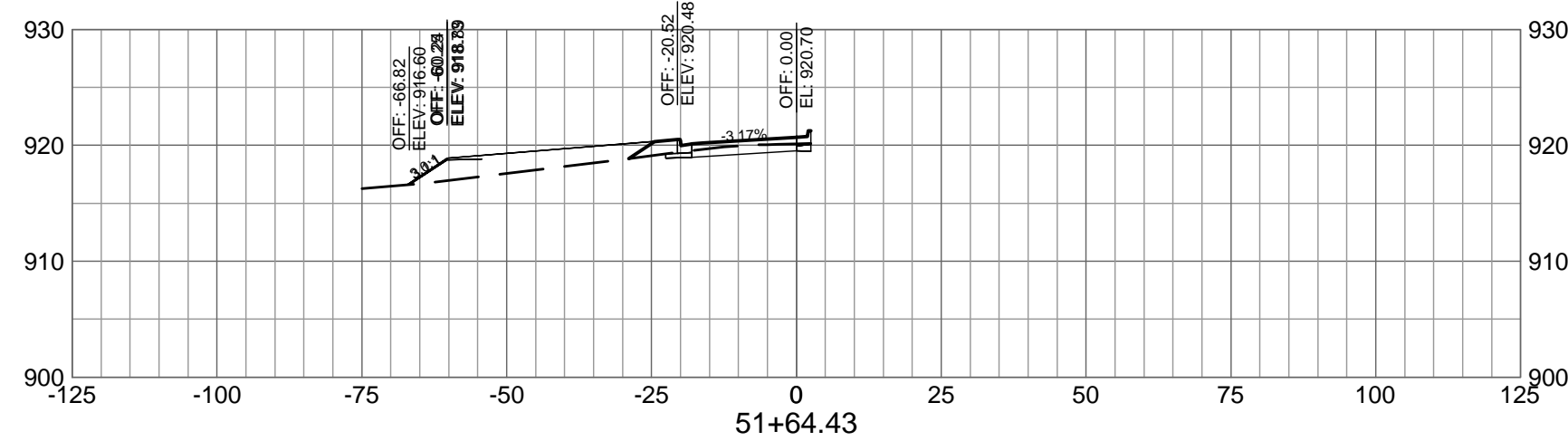
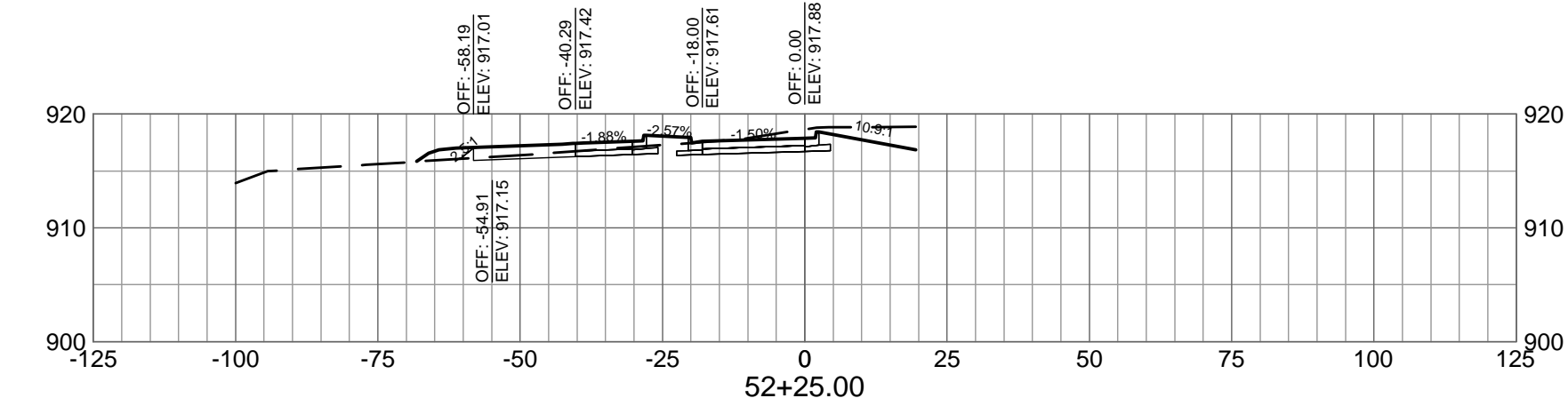
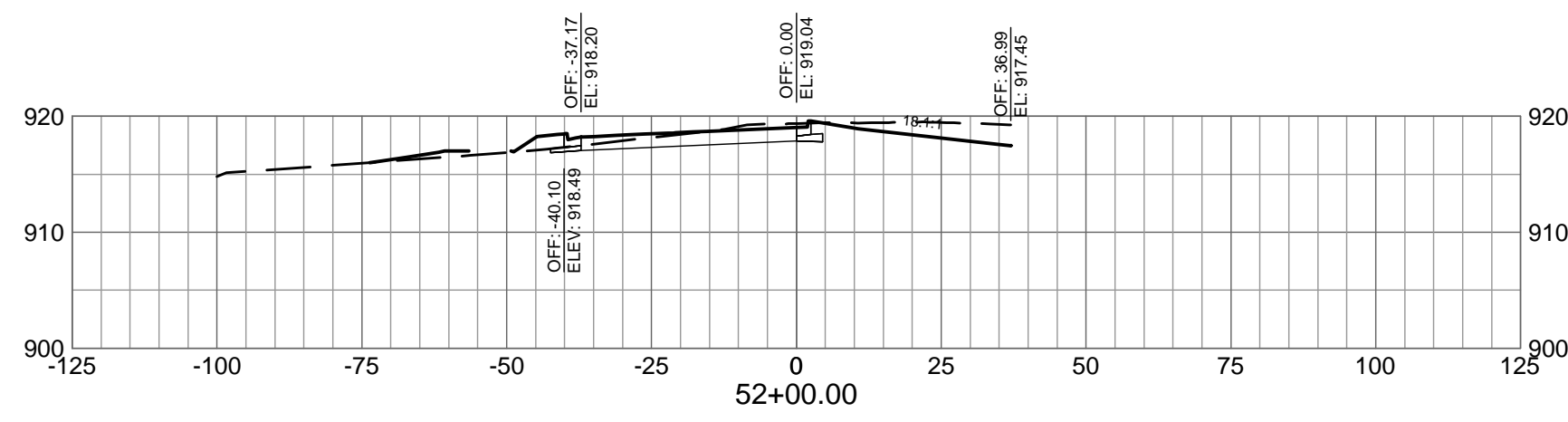
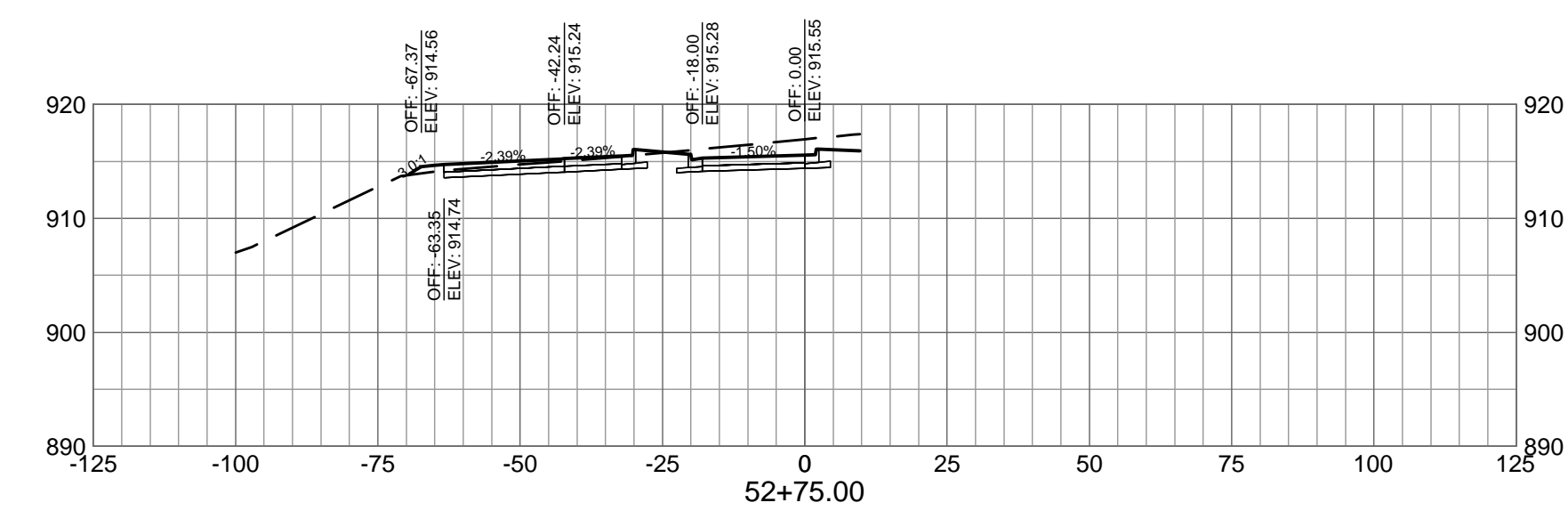
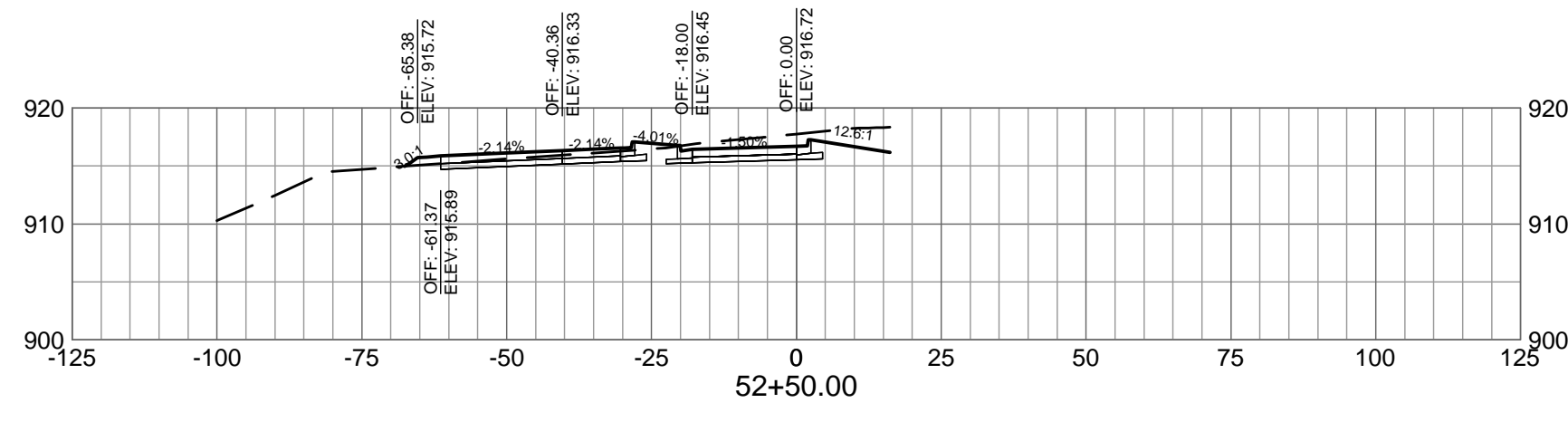
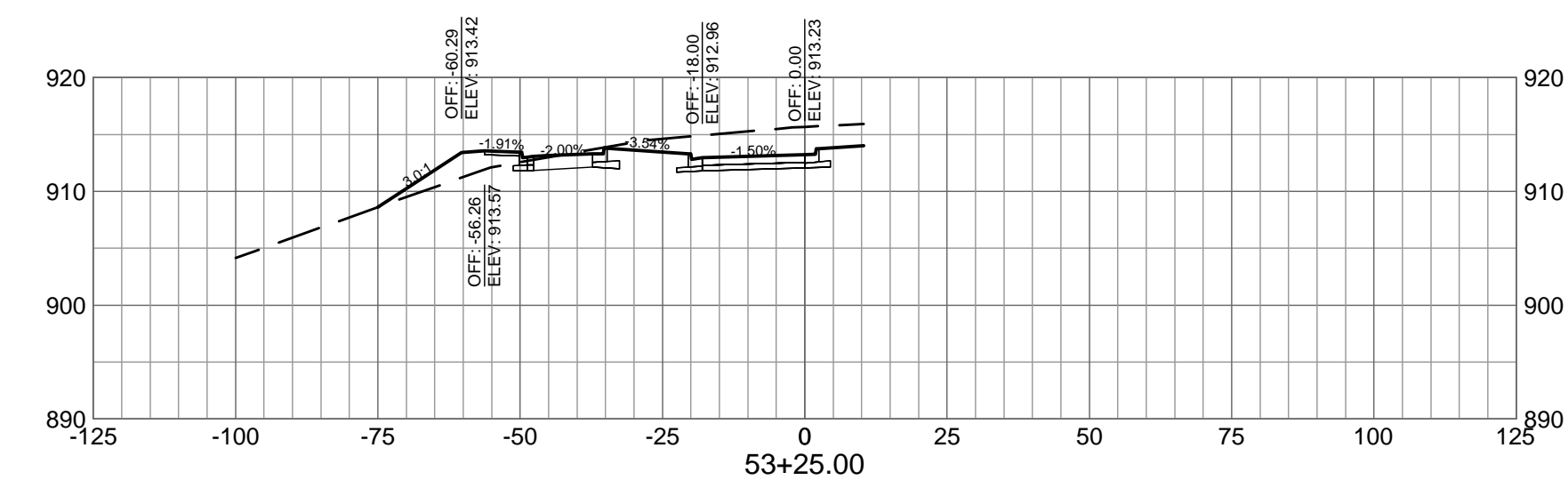
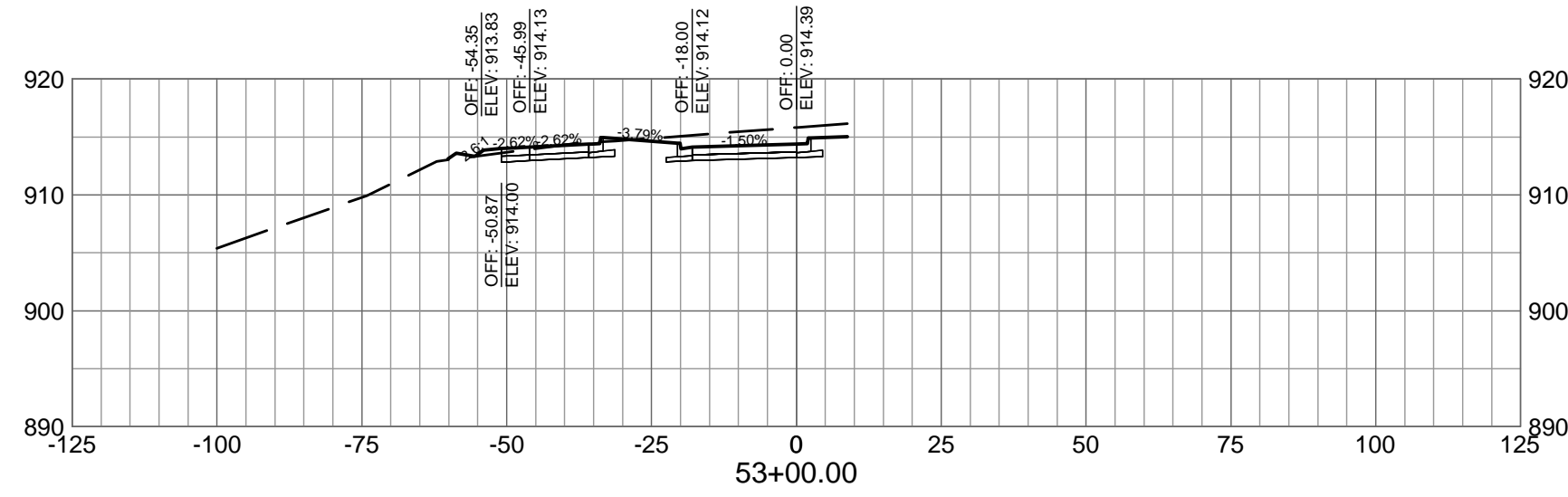
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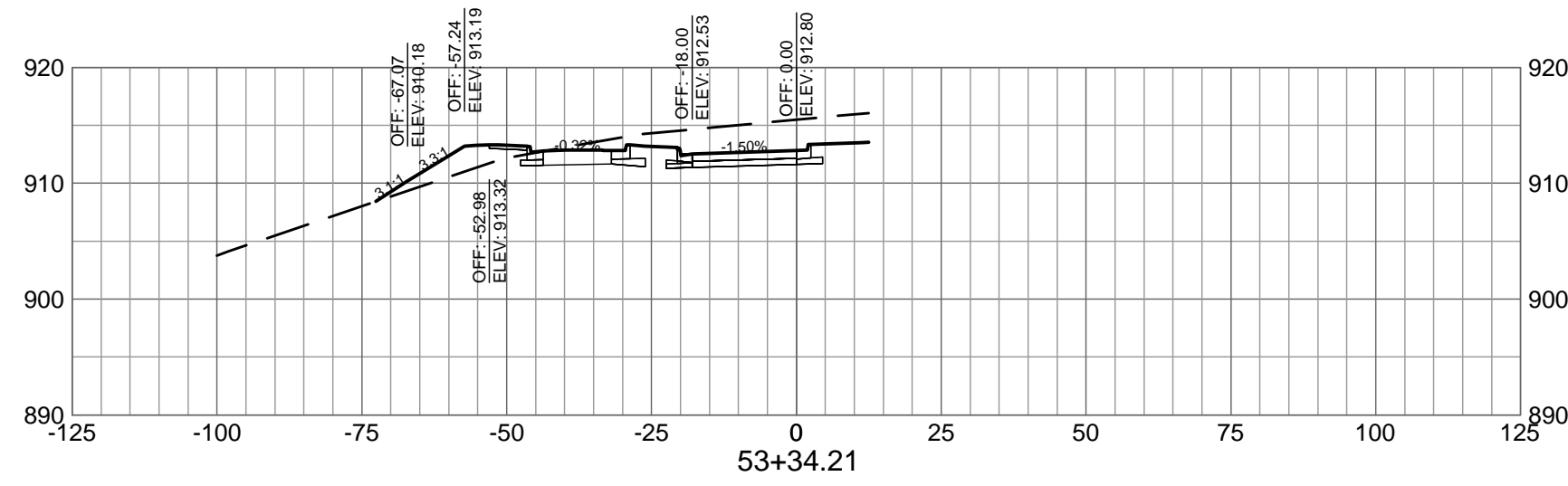
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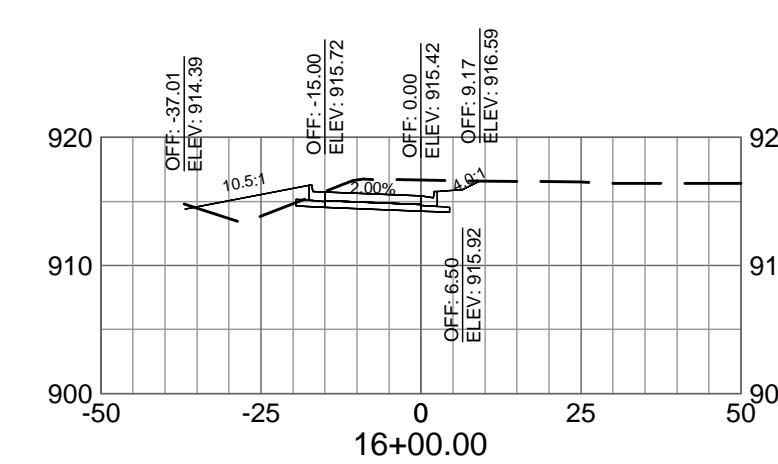
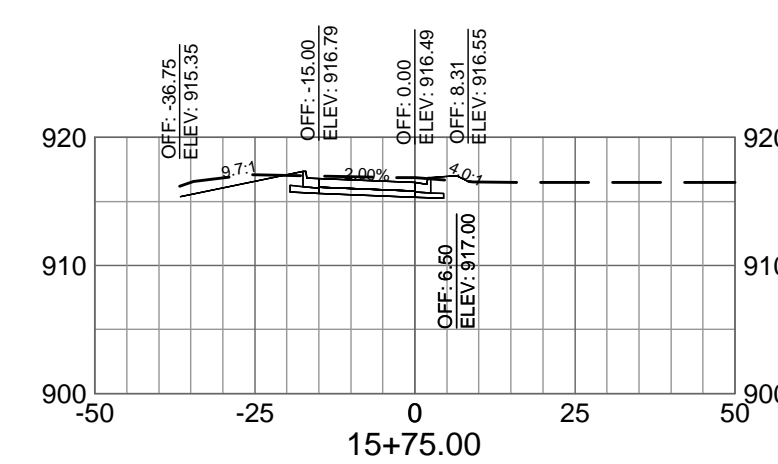
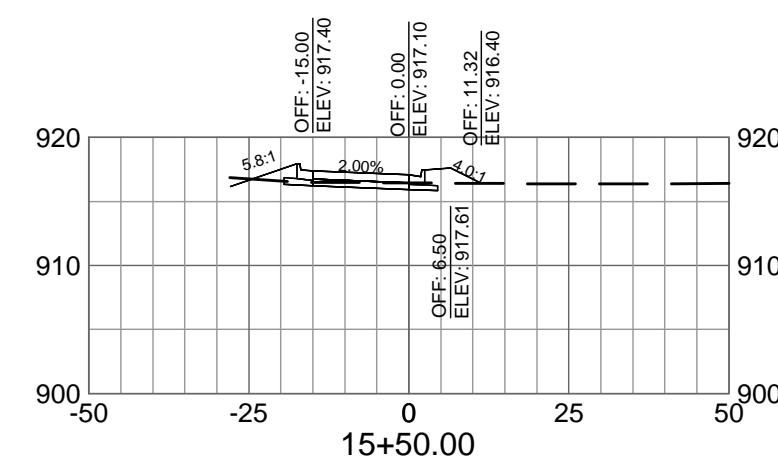
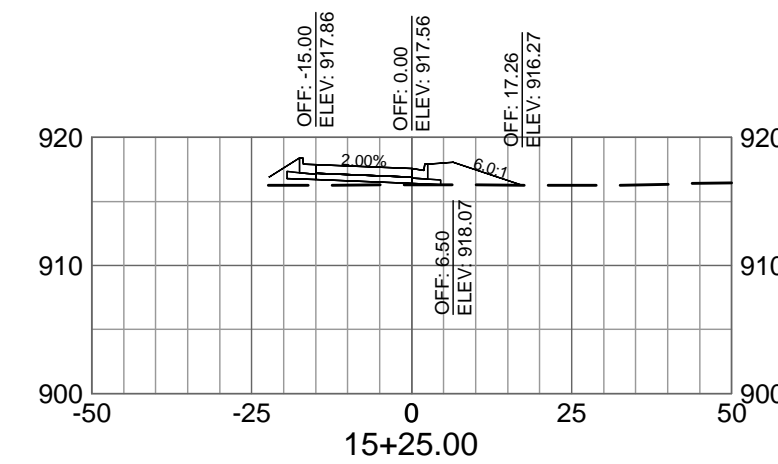
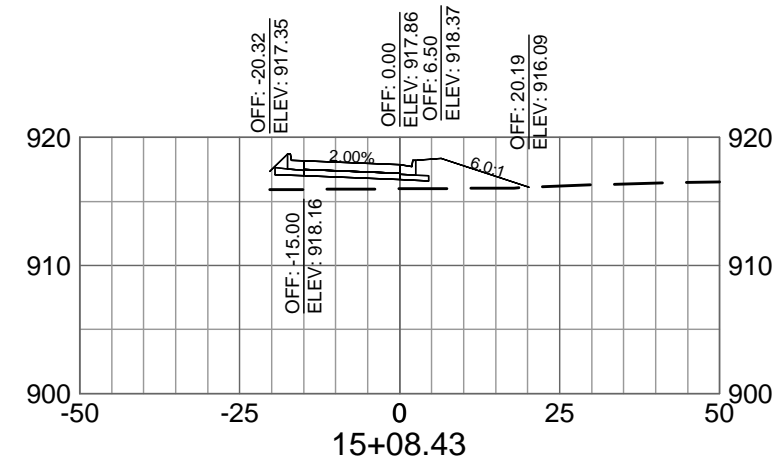
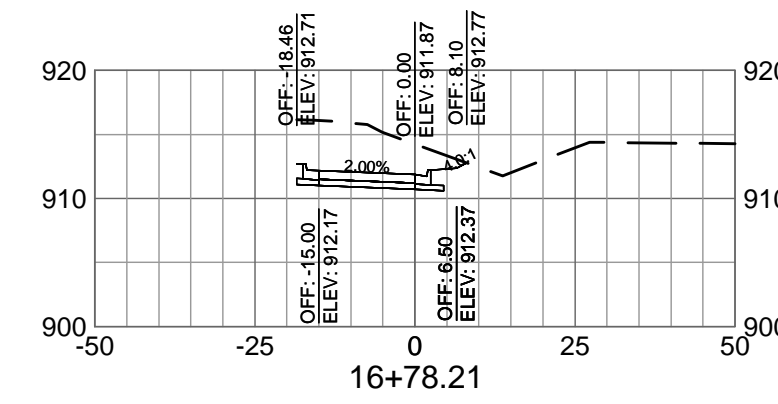
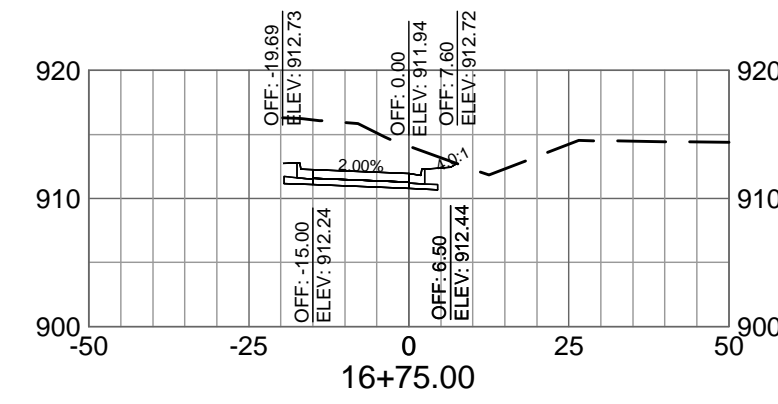
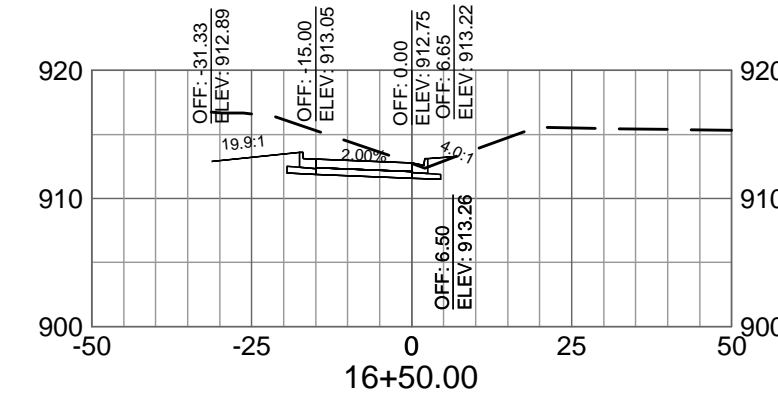
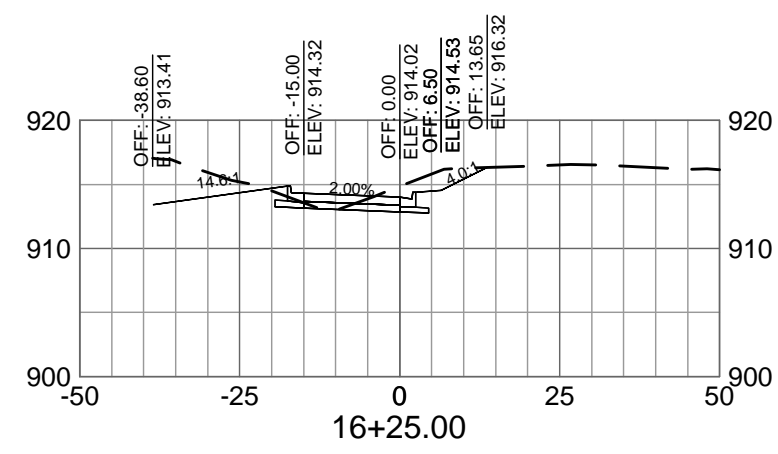
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