

Madison, Wisconsin

CITY OF MADISON

CITY ENGINEERING DIVISION

DEPARTMENT OF PUBLIC WORKS

PLAN OF PROPOSED IMPROVEMENT

HIGHLAND AVENUE SIDEWALK & LIGHTING IMPROVEMENTS

INDEX OF SHEETS

SHEET NO. S100 STRUCTURAL PLANS & DETAILS
SHEET NO. E000-E200 ELECTRICAL PLANS & DETAILS

CITY PROJECT NO. 12950
CONTRACT NO. 8554

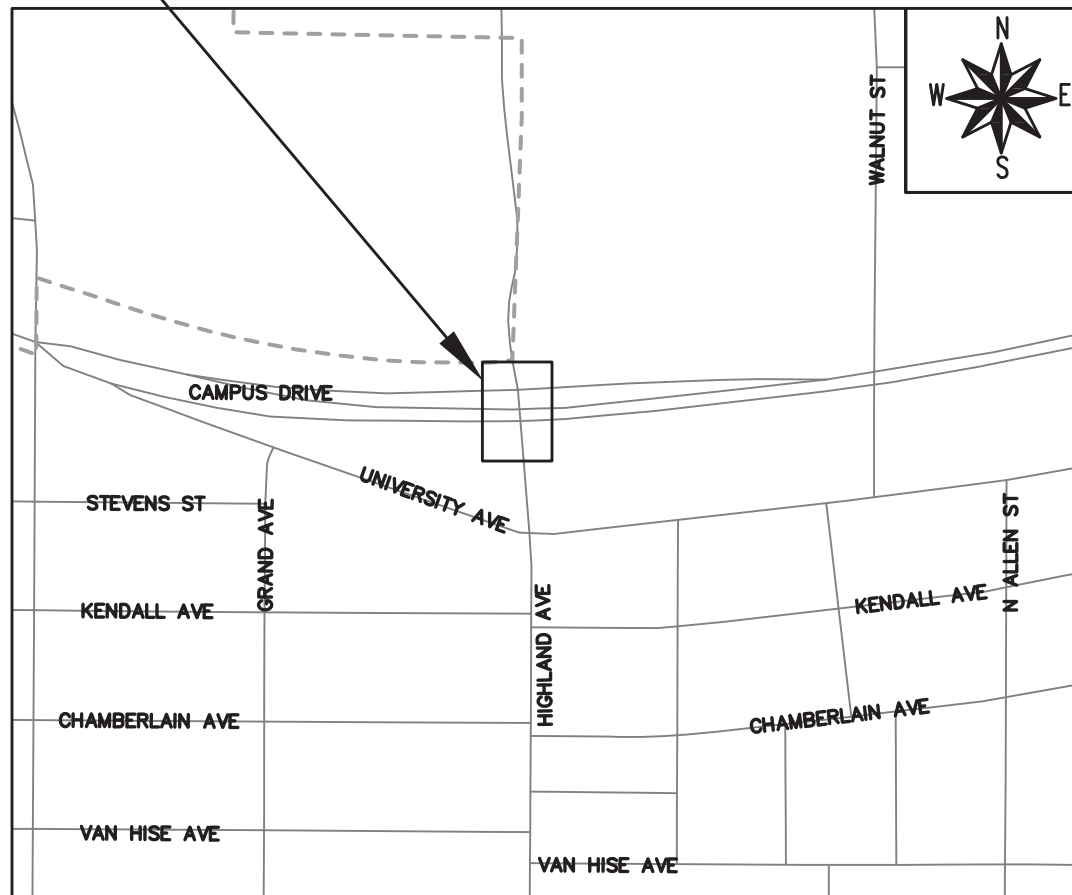
PROJECT LOCATION

CONVENTIONAL SIGNS	
FIELD VERIFY ALL UTILITY LOCATIONS	
GAS	— G —
STORM SEWER	— ST —
SANITARY SEWER	— SAN —
WATER	— W —
BURIED ELECTRIC	— E —
OVERHEAD ELECTRIC	— OH —
POWER POLE	□
ADA COMPLIANT RAMP W/ DETECTABLE WARNING FIELD	▣
COMBUSTIBLE FLUIDS	☀
STREET LIGHT POLE	⊙

NOTES:

ALL GUTTERS SHALL DRAIN WITH A MINIMUM GRADE OF 0.50% TOWARD STORM SEWER INLETS.

SIDEWALK RAMPS SHALL HAVE A MAXIMUM SLOPE OF 1" PER 12". SIDEWALK AND CURB RAMPS SHALL BE CONSTRUCTED WITH A SIDE SLOPE OF 1.50%. SIDEWALK SHALL HAVE A MINIMUM LONGITUDINAL SLOPE OF 0.50% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00% EXCEPT WHERE STREET GRADES EXCEED 5.00%.



PUBLIC IMPROVEMENT PROJECT APPROVED

APPROVED DATE: MAY 5, 2020

BY THE COMMON COUNCIL OF MADISON, WISCONSIN

PUBLIC IMPROVEMENT DESIGN APPROVED BY:

Christy Bachmann 5-6-2020
for City Engineer Date

STRUCTURAL DESIGNED BY:



ELECTRICAL DESIGNED BY:



NO.	DATE	DESCRIPTION

DESIGN DATA:

APPLICABLE CODES/STANDARDS:
 -INTERNATIONAL BUILDING CODE-2009 WITH SEPTEMBER 1, 2011 WISCONSIN AMENDED I-CODE INSERTS
 -ASCE 7-05 MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES, ASCE/SEI 2005

STRUCTURAL DESIGN STANDARDS (DESIGN SHALL CONFORM TO THE CURRENT EDITION UNDER THE APPLICABLE CODE):
 -ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY
 -ANSI/AISC 360 SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS
 -WS D1.1/D1.1M STRUCTURAL WELDING CODE-STEEL

BUILDING CLASSIFICATION CATEGORY: _____ II

BUILDING DESIGN LOADS/CRITERIA:
 DESIGN DEAD LOADS: SELF WEIGHT OF FRAME AND 1/2" PERFORATED STEEL PLATES
 DESIGN LIVE LOADS:
 SIDEWALKS _____ 100 PSF

HANDRAIL ASSEMBLIES & GUARDS:
 200LB LOAD OR 50 PLF LOAD APPLIED IN ANY DIRECTION AT TOP OF HANDRAIL ASSEMBLY OR GUARD & TO TRANSFER THIS LOAD THROUGH SUPPORTS TO THE STRUCTURE.

WIND DESIGN DATA:
 WIND IMPORTANCE FACTOR (Iw) _____ 1.0
 BASIC WIND SPEED (3-SECOND GUST) _____ 90 mph
 WIND DIRECTIONALITY FACTOR (Kd) _____ 0.85
 MEAN ROOF HEIGHT _____ 8 FT
 WIND EXPOSURE CATEGORY _____ B
 PERCENT OF OPEN AREA _____ 5 % MN
 NORMAL WIND PRESSURE _____ 12.6 psf
 DESIGN PROCEDURE _____ SOLID FREESTANDING WALLS & SOLID SIGNS

SOIL DESIGN VALUES:
 SOIL UNIT WEIGHT _____ 110 PCF (ASSUMED)
 LATERAL EARTH PRESSURE
 ACTIVE (RETAINING WALLS) _____ 40 PSF/FT OF DEPTH (ASSUMED)
 AT-REST (BASEMENT WALLS) _____ 60 PSF/FT OF DEPTH (ASSUMED)
 PASSIVE _____ 300 PSF (ASSUMED)
 COEFFICIENT OF SLIDING FRICTION _____ 0.30 (ASSUMED)
 SUBGRADE MODULUS _____ 150 PCI (ASSUMED)
 ALLOWABLE SOIL BEARING PRESSURE _____ 2,000 PSF (ASSUMED)

SOIL CONDITIONS TO BE VERIFIED UPON EXCAVATION

MATERIAL STRENGTHS:

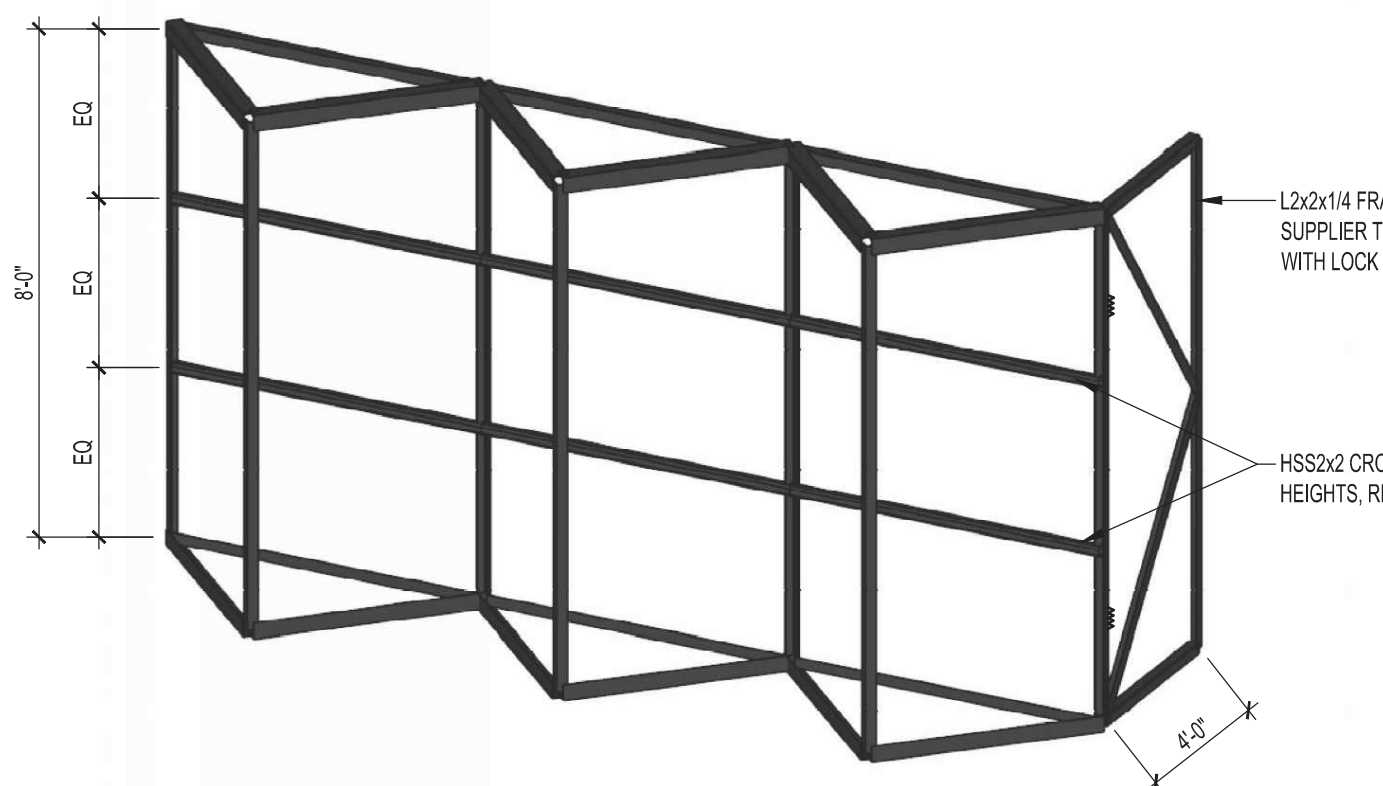
CAST-IN-PLACE CONCRETE:
 FOOTINGS
 MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS _____ $f_c = 4000$ PSI
 MAXIMUM WATER-CEMENTITIOUS RATIO _____ 0.59
 MAXIMUM AGGREGATE SIZE _____ 1 1/2"
 SLUMP LIMIT _____ 5" ± 1"
 AIR CONTENT _____ NO

FOUNDATION FROST WALLS
 MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS _____ $f_c = 4000$ PSI
 MAXIMUM WATER-CEMENTITIOUS RATIO _____ 0.48
 MAXIMUM AGGREGATE SIZE _____ 3/4"
 SLUMP LIMIT _____ 4" ± 1"
 AIR CONTENT _____ YES 4 TO 6%

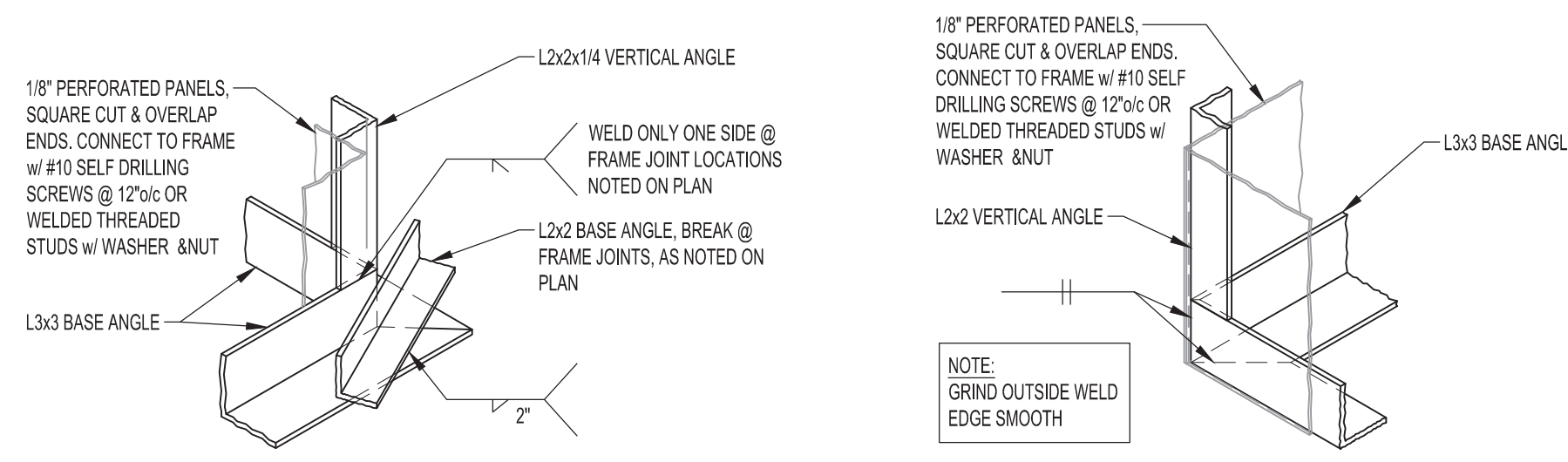
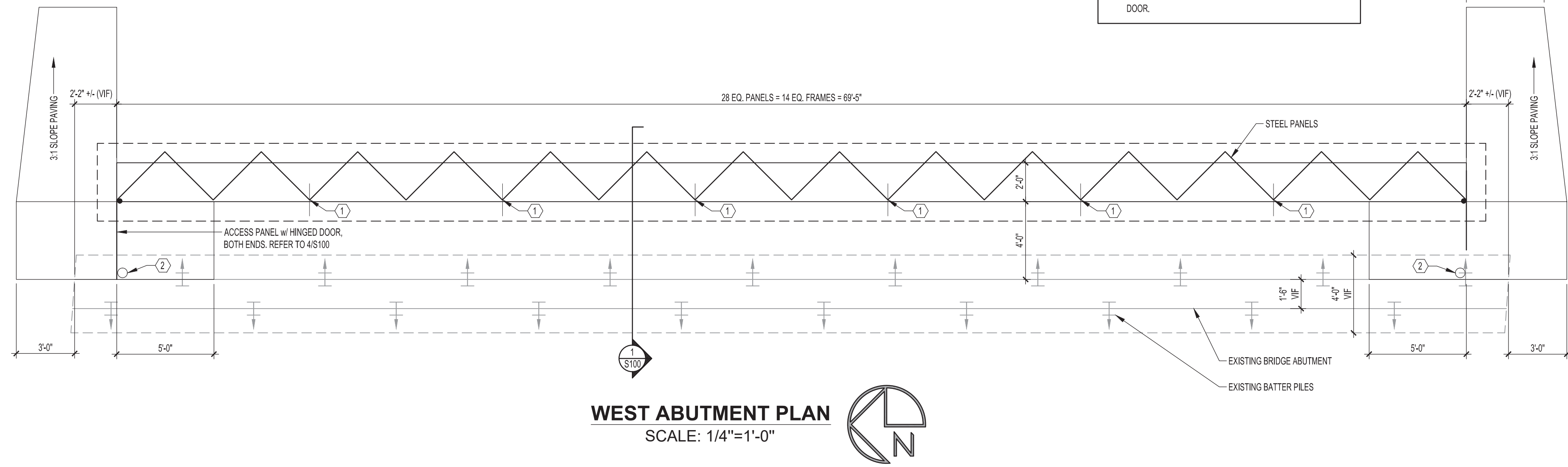
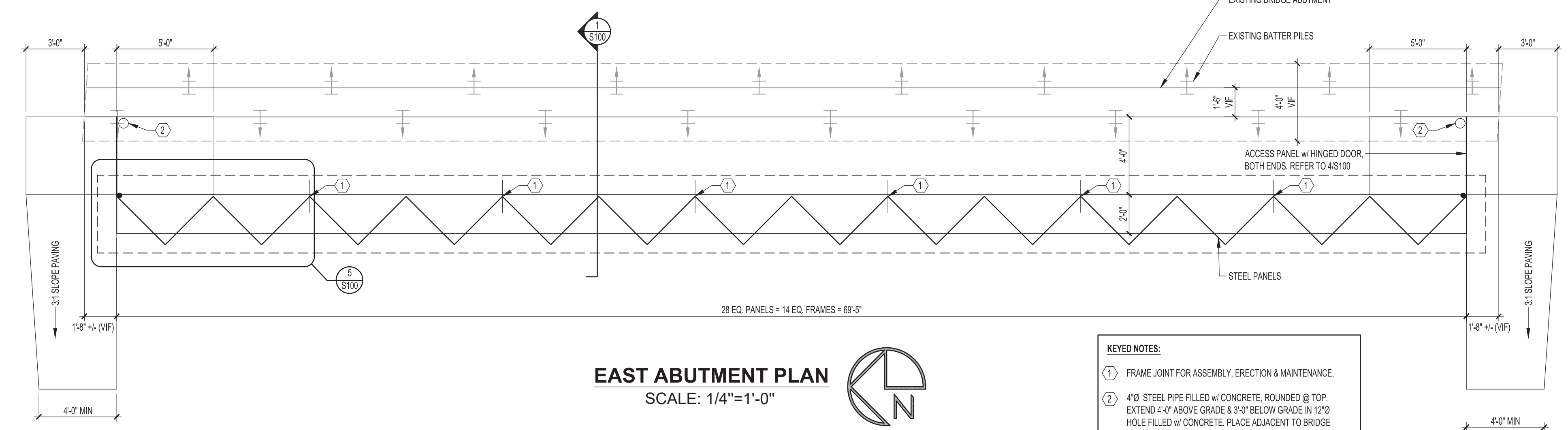
REINFORCING STEEL:
 ALL-ASTM A 615, GRADE 60, DEFORMED _____ $F_y = 60,000$ PSI
 STEEL WELDED WIRE REINFORCEMENT, FLAT SHEETS _____ $F_y = 60,000$ PSI

STRUCTURAL STEEL:
 CHANNELS, ANGLES, & S SHAPES, ASTM A 36 _____ $F_y = 36,000$ PSI
 TUBE SHAPES, ASTM A 500 GRADE B _____ $F_y = 46,000$ PSI

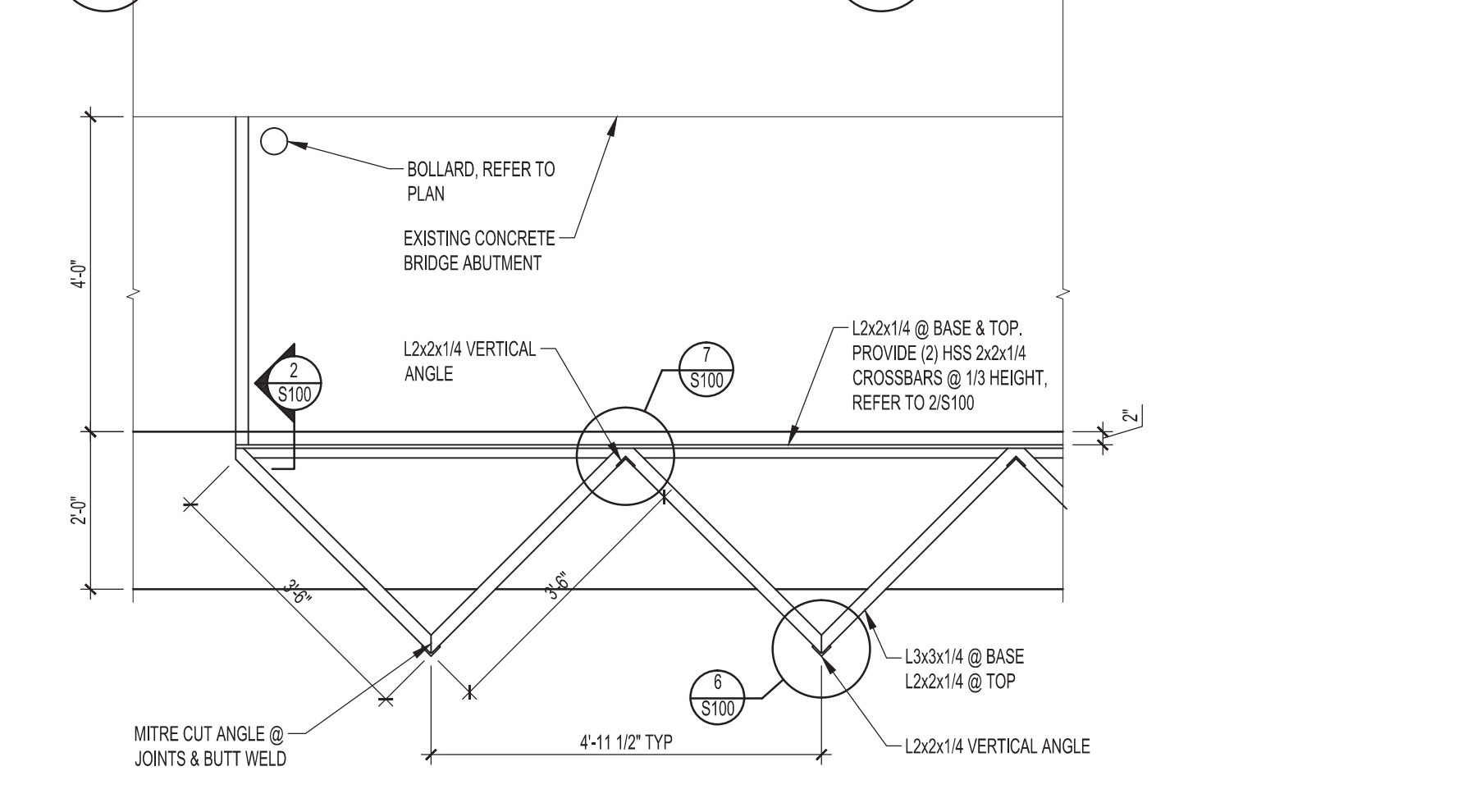
WELDED CONNECTIONS:
 WELDING ELECTRODES _____ E70XX



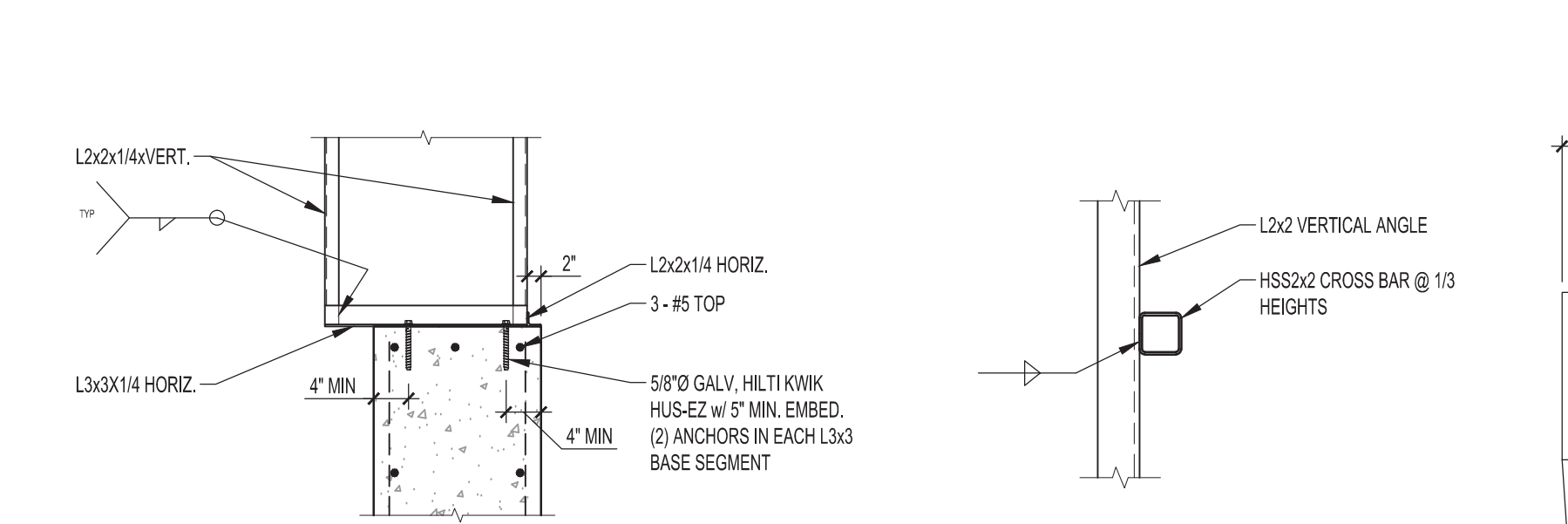
4 3D FRAME VIEW



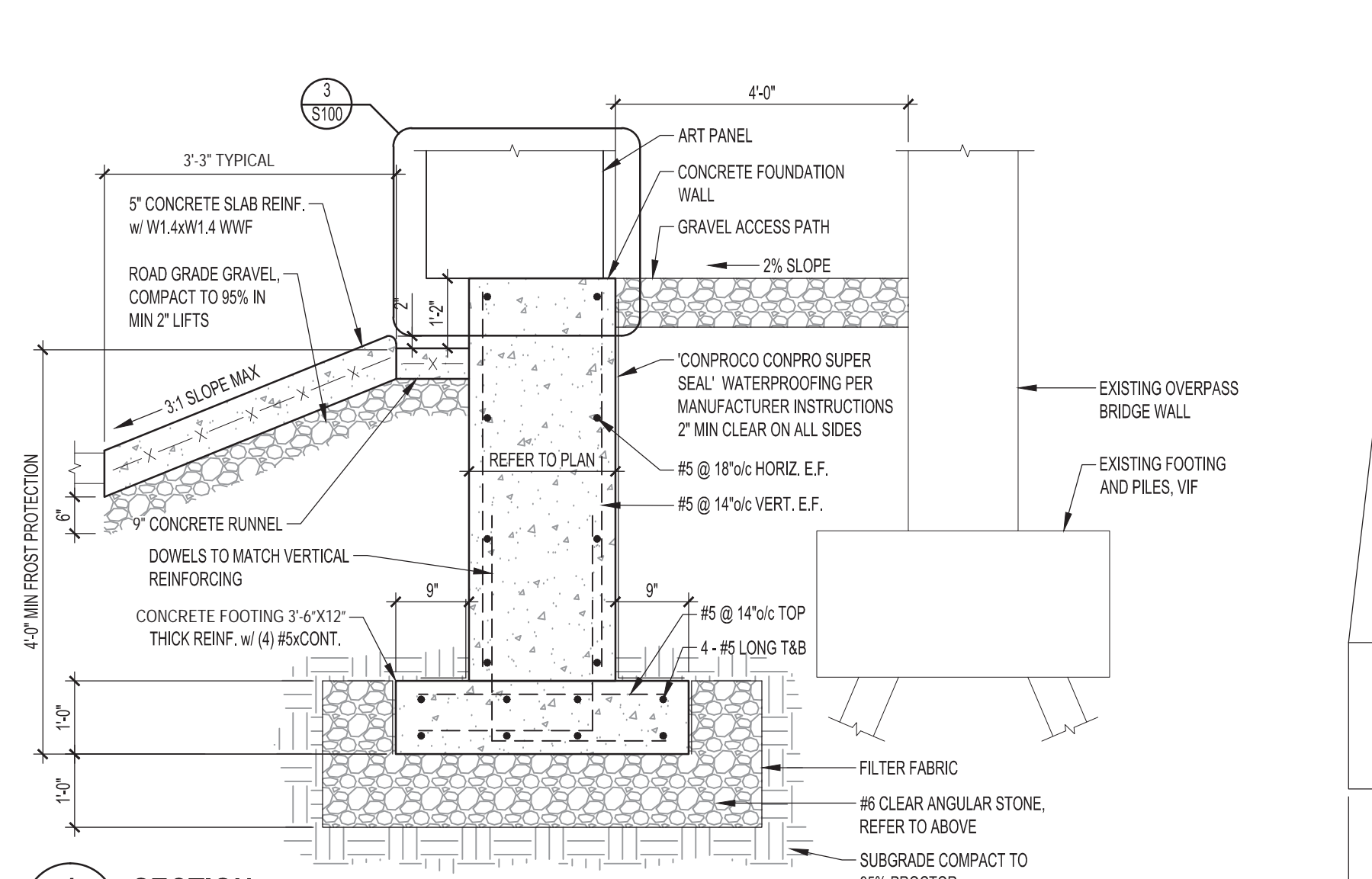
7 BASE CONNECTION DETAIL
6 BASE CONNECTION DETAIL



5 ENLARGED PLAN VIEW



3 BASE CONNECTION DETAIL
2 CROSS BAR CONNECTION



1 SECTION

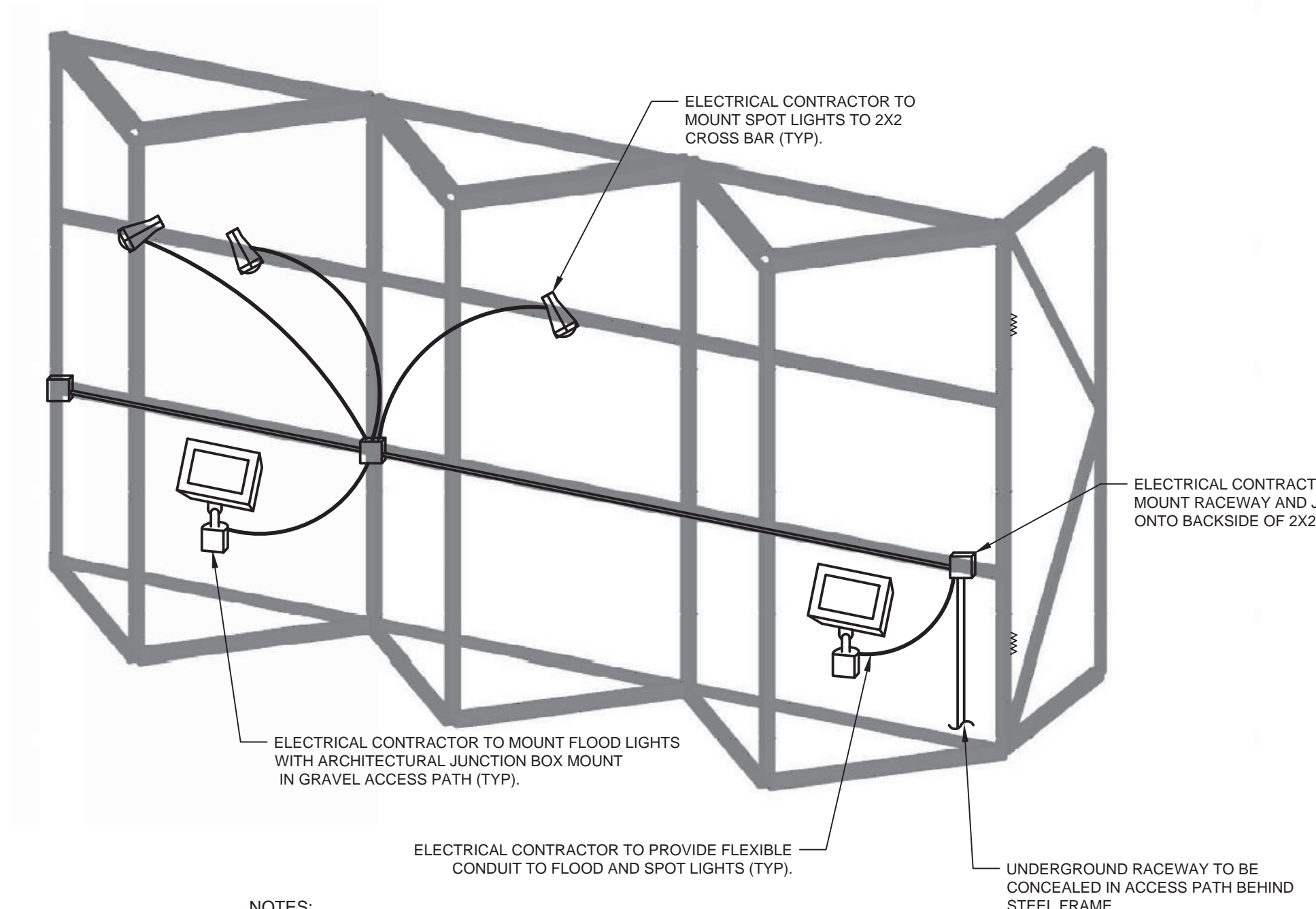
LUMINAIRE SCHEDULE									
SYMBOL	CALLOUT	DESCRIPTION	INPUT WATTS	LAMP COLOR	LUMENS	VOLTS	MOUNTING	MODEL	NOTES
	A	FLOOD LIGHT	46	4000K	4132	120V 1P 2W	JUNCTION BOX	INVUE VFS-K-B40-3-LED-E1-WST-BK / JB-BK	EQUAL BY: AMERLUX FL2-WF-40-BLK-CUSTOM MTG SERIES KIM LIGHTING KFL1-16L-40-4K7-WF-UNV-K-BL/JB1 SERIES
	B	SPOT LIGHT	6	2700K	475	120V 1P 2W	SURFACE	SOLAIS LRP20-25-27K / FOCUS LIGHTING DL-20-NL-BLT	EQUAL BY: KIM LIGHTING EL220BL SERIES RAB HB101B SERIES
	C	POLE BASE ONLY			0	120V 1P 2W	POLE		ELECTRICAL CONTRACTOR TO PROVIDE POLE BASE TYPE LB-2 ONLY, NEW LIGHTING, POLE, AND WIRING BY THE CITY OF MADISON. COORDINATE ELECTRICAL REQUIREMENTS WITH THE CITY OF MADISON.

EXISTING LUMINAIRE SCHEDULE		
SYMBOL	CALLOUT	DESCRIPTION
	POLE (E)	EXISTING POLE
	WALL PACK	EXISTING HIGH PRESSURE SODIUM (HPS) WALL PACK

ABBREVIATIONS:

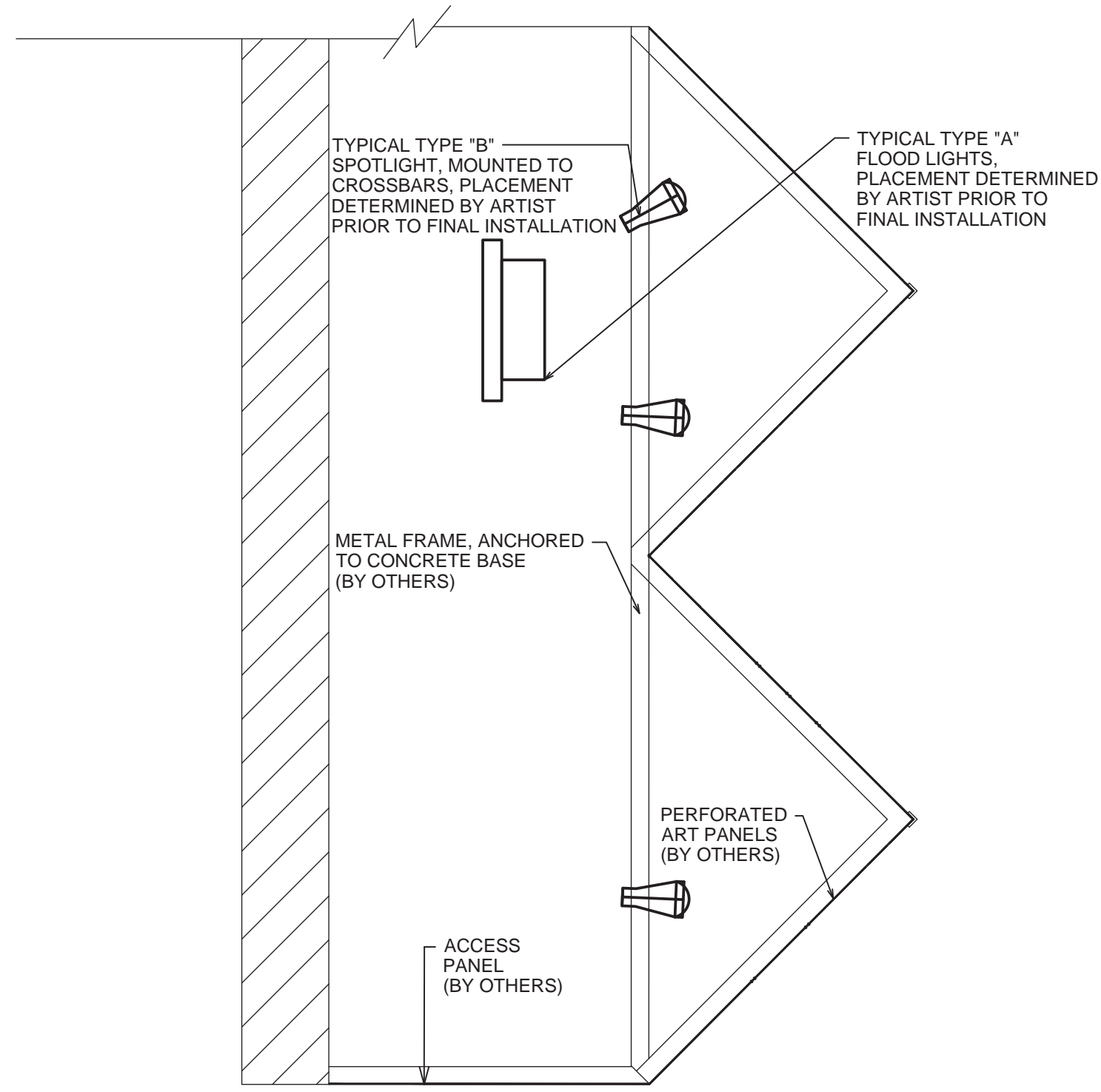
(E) EXISTING TO REMAIN

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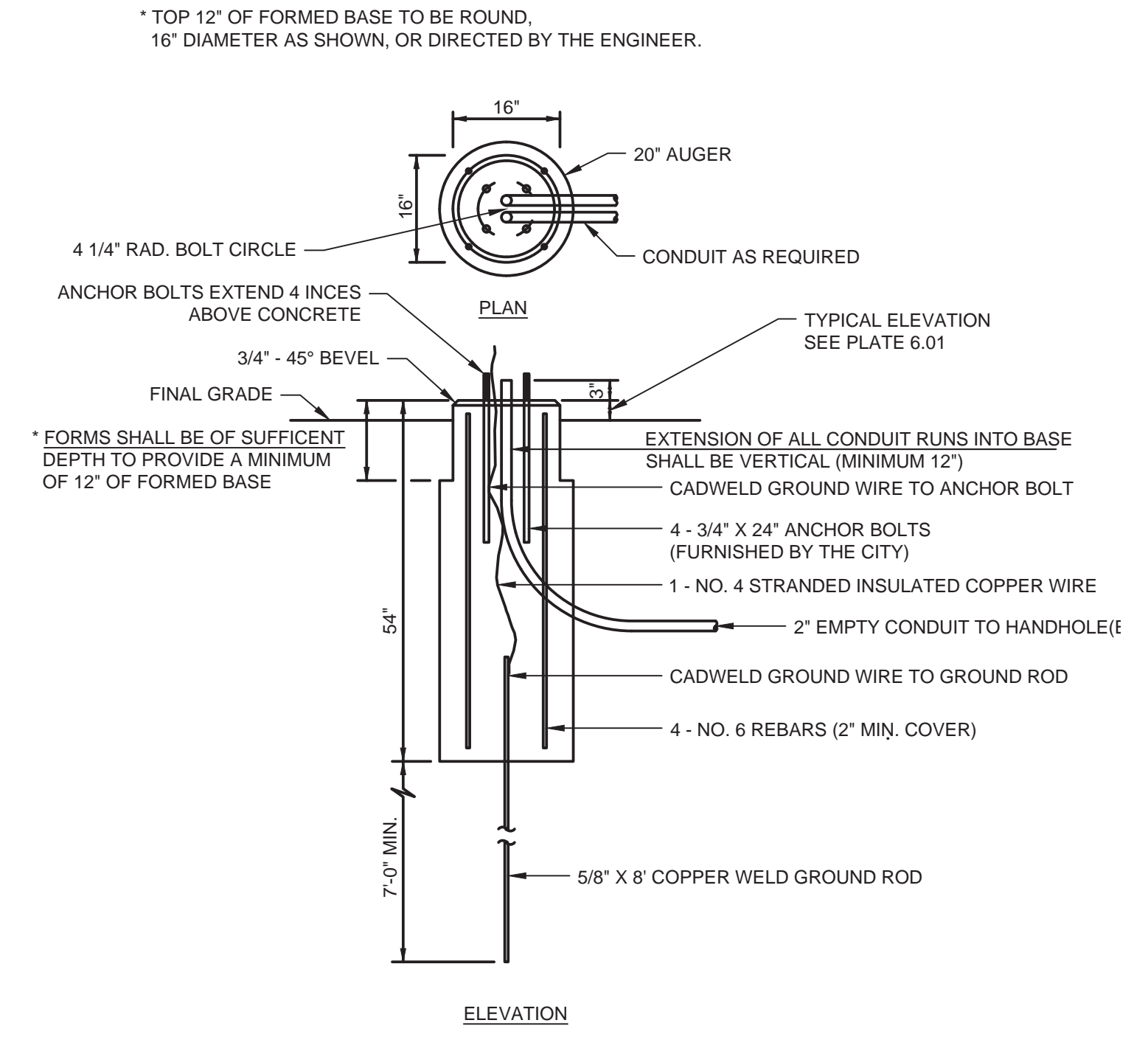
NOTES:
REFER TO STRUCTURAL SHEET S100 FOR MORE INFORMATION ON LENTICULAR WALL
REFER TO ELECTRICAL SHEET E200 FOR FIXTURE LAYOUT.

3 3D LENTICULAR WALL DETAIL
SCALE: NOT TO SCALE



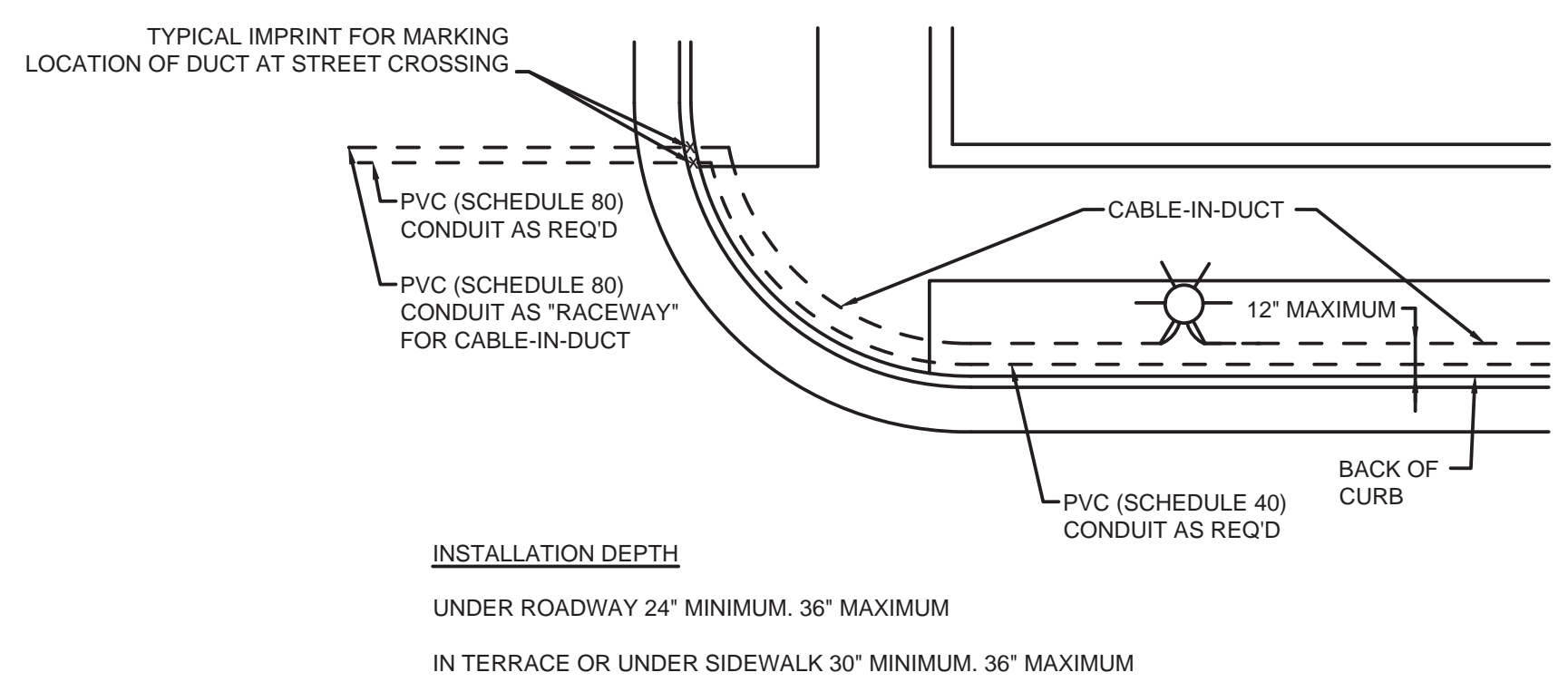
LENTICULAR WALL (2 UNITS)
OPTION 1: SIDE ACCESS PANEL

2 LENTICULAR WALL DETAIL
SCALE: NOT TO SCALE

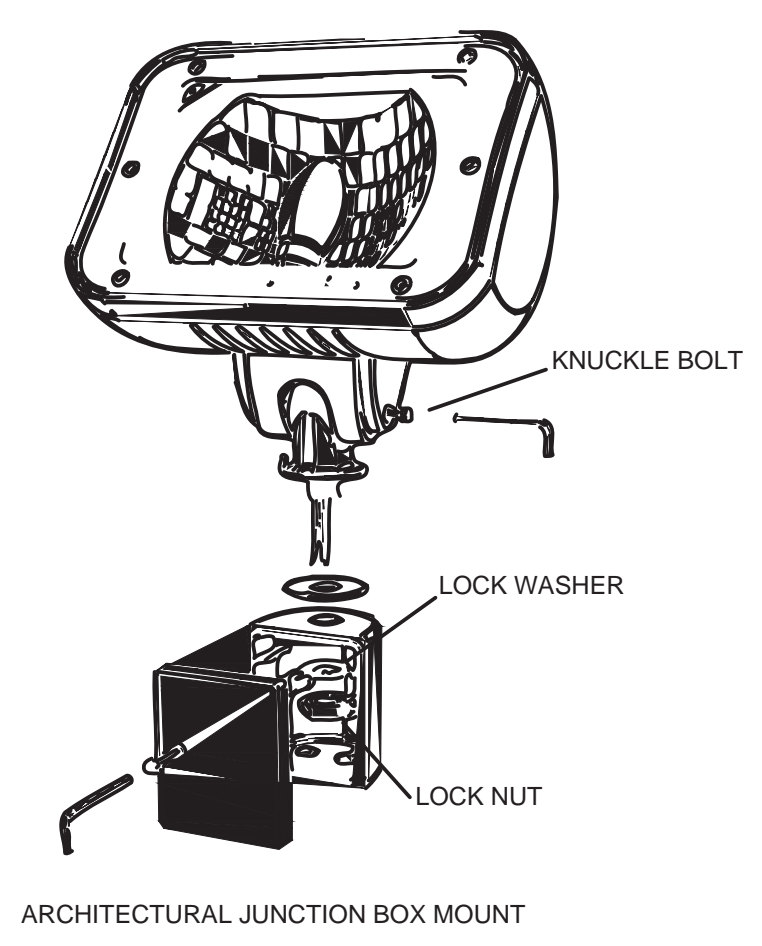


NOTES:
RUST, CORROSION AND ANTI SEIZE PROTECTION SHALL BE PROVIDED AT ALL THREADED ASSEMBLIES.
ROD COUPLERS SHALL BE SET FLUSH WITH TOP OF BASE.

1 LB-2 POLE BASE DETAIL
SCALE: NOT TO SCALE



5 TYPICAL PLAN VIEW OF DUCT INSTALLATION
SCALE: NOT TO SCALE



4 FLOOD LIGHT JUNCTION BOX MOUNT DETAIL
SCALE: NOT TO SCALE

ELECTRICAL SHEET INDEX

E000	SYMBOLS, ABBREVIATIONS, SCHEDULES, AND DETAILS - ELECTRICAL
E100	SITE PLANS - ELECTRICAL
E200	ENLARGED NEW WORK PLAN - ELECTRICAL

ISSUED

REVISIONS / ADDENDA

PROJECT # : 19.0076

DRAWN : JDR

CHECKED : JDR

DATE : 05/31/2019

PHASE :

PROJECT

SHIFT: HIGHLAND AVE UNDERPASS ART

SYMBOLS, ABBREVIATIONS, SCHEDULES, AND DETAILS - ELECTRICAL

CONSULTANTS

ISSUED

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PROJECT # : 19.0076

DRAWN : JDR

CHECKED : JDR

DATE : 05/31/2019

PHASE :

PROJECT

SHIFT: HIGHLAND AVE
 UNDERPASS ART

SITE PLANS
 - ELECTRICAL

GENERAL NOTES:

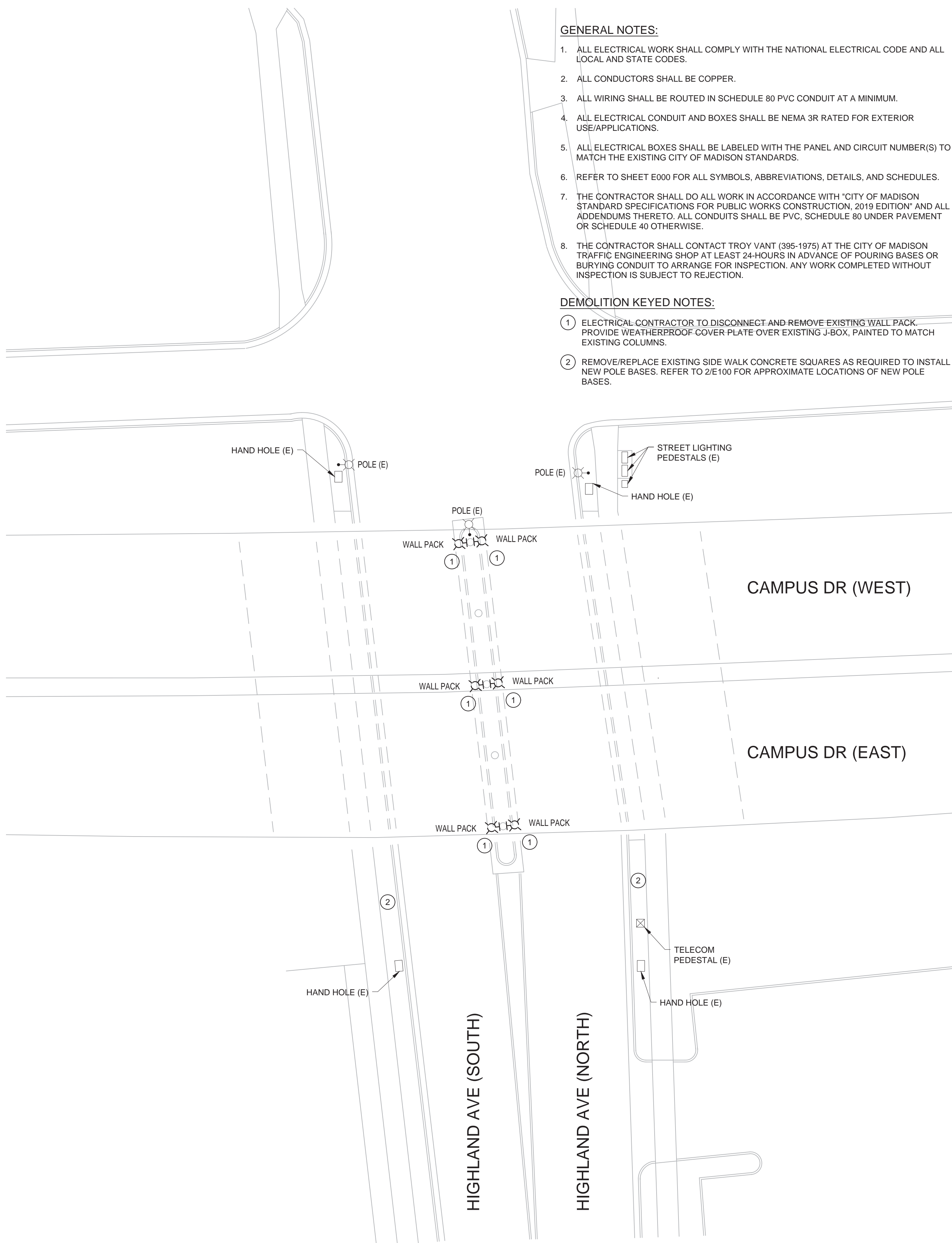
1. ALL ELECTRICAL WORK SHALL COMPLY WITH THE NATIONAL ELECTRICAL CODE AND ALL LOCAL AND STATE CODES.
2. ALL CONDUCTORS SHALL BE COPPER.
3. ALL WIRING SHALL BE ROUTED IN SCHEDULE 80 PVC CONDUIT AT A MINIMUM.
4. ALL ELECTRICAL CONDUIT AND BOXES SHALL BE NEMA 3R RATED FOR EXTERIOR USE/APPLICATIONS.
5. ALL ELECTRICAL BOXES SHALL BE LABELED WITH THE PANEL AND CIRCUIT NUMBER(S) TO MATCH THE EXISTING CITY OF MADISON STANDARDS.
6. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, DETAILS, AND SCHEDULES.
7. THE CONTRACTOR SHALL DO ALL WORK IN ACCORDANCE WITH "CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, 2019 EDITION" AND ALL ADDENDUMS THERETO. ALL CONDUITS SHALL BE PVC, SCHEDULE 80 UNDER PAVEMENT OR SCHEDULE 40 OTHERWISE.
8. THE CONTRACTOR SHALL CONTACT TROY VANT (395-1975) AT THE CITY OF MADISON TRAFFIC ENGINEERING SHOP AT LEAST 24-HOURS IN ADVANCE OF POURING BASES OR BURYING CONDUIT TO ARRANGE FOR INSPECTION. ANY WORK COMPLETED WITHOUT INSPECTION IS SUBJECT TO REJECTION.

DEMOLITION KEYED NOTES:

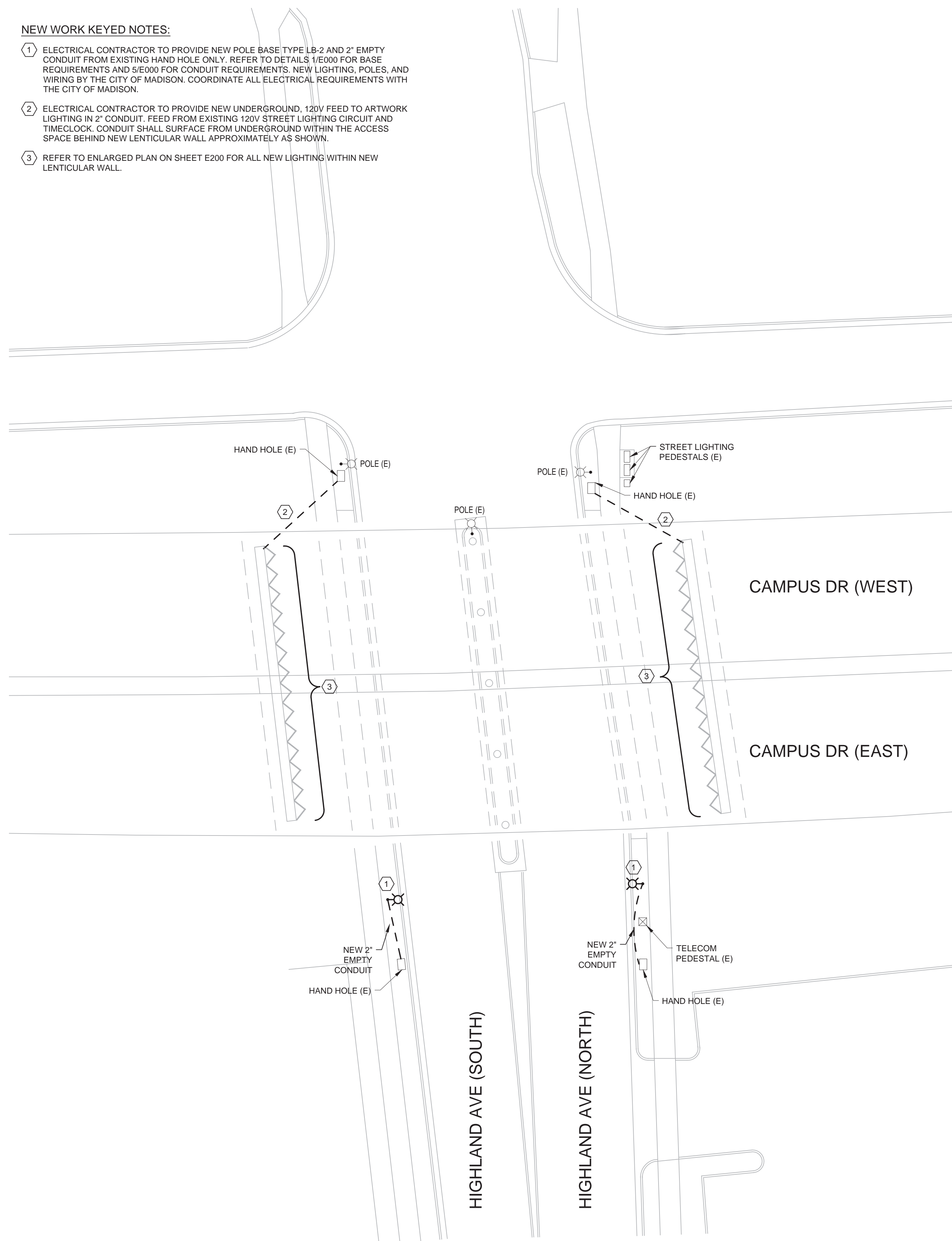
- ① ELECTRICAL CONTRACTOR TO DISCONNECT AND REMOVE EXISTING WALL PACK. PROVIDE WEATHERPROOF COVER PLATE OVER EXISTING J-BOX, PAINTED TO MATCH EXISTING COLUMNS.
- ② REMOVE/REPLACE EXISTING SIDE WALK CONCRETE SQUARES AS REQUIRED TO INSTALL NEW POLE BASES. REFER TO 2/E100 FOR APPROXIMATE LOCATIONS OF NEW POLE BASES.

NEW WORK KEYED NOTES:

- ① ELECTRICAL CONTRACTOR TO PROVIDE NEW POLE BASE TYPE LB-2 AND 2" EMPTY CONDUIT FROM EXISTING HAND HOLE ONLY. REFER TO DETAILS 1/E000 FOR BASE REQUIREMENTS AND 5/E000 FOR CONDUIT REQUIREMENTS. NEW LIGHTING, POLES, AND WIRING BY THE CITY OF MADISON. COORDINATE ALL ELECTRICAL REQUIREMENTS WITH THE CITY OF MADISON.
- ② ELECTRICAL CONTRACTOR TO PROVIDE NEW UNDERGROUND, 120V FEED TO ARTWORK LIGHTING IN 2" CONDUIT. FEED FROM EXISTING 120V STREET LIGHTING CIRCUIT AND TIMELOCK. CONDUIT SHALL SURFACE FROM UNDERGROUND WITHIN THE ACCESS SPACE BEHIND NEW LENTICULAR WALL APPROXIMATELY AS SHOWN.
- ③ REFER TO ENLARGED PLAN ON SHEET E200 FOR ALL NEW LIGHTING WITHIN NEW LENTICULAR WALL.



1 DEMOLITION SITE PLAN - ELECTRICAL
 E100 SCALE: 1/16"=1'-0"



2 NEW WORK SITE PLAN - ELECTRICAL
 E100 SCALE: 1/16"=1'-0"



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DATE : 05/31/2019

PHASE :

PROJECT

SHIFT: HIGHLAND AVE
 UNDERPASS ART

ENLARGED NEW
 WORK PLAN
 - ELECTRICAL

E200

GENERAL NOTES:

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4. ALL ELECTRICAL CONDUIT AND BOXES SHALL BE NEMA 3R RATED FOR EXTERIOR USE/APPLICATIONS.
5. ALL ELECTRICAL BOXES SHALL BE LABELED WITH THE PANEL AND CIRCUIT NUMBER(S) TO MATCH THE EXISTING CITY OF MADISON STANDARDS.
6. REFER TO SHEET E000 FOR ALL SYMBOLS, ABBREVIATIONS, DETAILS, AND SCHEDULES.

KEYED NOTES:

- ① ELECTRICAL CONTRACTOR TO PROVIDE NEW FLOOD LIGHT, FEED FROM EXISTING 120V STREET LIGHTING CIRCUIT AND TIME CLOCK. COORDINATE FINAL PLACEMENT WITH ARTWORK ARTIST PRIOR TO FINAL INSTALLATION.
- ② ELECTRICAL CONTRACTOR TO PROVIDE NEW SPOT LIGHT, MOUNTED TO CROSSBARS, FEED FROM EXISTING 120V STREET LIGHTING CIRCUIT AND TIME CLOCK. COORDINATE FINAL PLACEMENT WITH ARTWORK ARTIST PRIOR TO FINAL INSTALLATION.
- ③ REFER TO SHEET S100 FOR MORE INFORMATION ON LENTICULAR WALLS.

HIGHLAND AVE (SOUTH)

HIGHLAND AVE (NORTH)

