

# **APPENDIX E**

## **WATER QUALITY CALCULATIONS**

## Manual Basin: Home2Suites WQ cntrl

Scenario: Scenario 1  
 Node: Outfall  
 Hydrograph Method: NRCS Unit Hydrograph  
 Infiltration Method: Curve Number  
 Time of Concentration: 5.0000 min  
 Max Allowable Q: 0.00 cfs  
 Time Shift: 0.0000 hr  
 Unit Hydrograph: UH484  
 Peaking Factor: 484.0  
 Area: 1.3955 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name
1.2098	Impervious	1	
0.1857	Grass_post-dev	3	

Comment:

## Manual Basin Runoff Summary [Scenario 1]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
Home2Suites WQ cntrl	1inch 24hr	1.41	12.0000	1.00	0.87	1.3955	98.8	86.69	86.69

## Node: Outfall

Scenario: Scenario 1  
 Type: Time/Stage  
 Base Flow: 0.00 cfs  
 Initial Stage: 0.00 ft  
 Warning Stage: 5.00 ft  
 Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	0.00
0	0	0	2.0000	0.00
0	0	0	3.0000	0.00
0	0	0	6.0000	0.00
0	0	0	12.0000	0.00
0	0	0	24.0000	0.00
0	0	0	48.0000	0.00

Comment:

## Node Max Conditions [Scenario 1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Outfall	1inch 24hr	5.00	0.00	0.0000	1.41	0.00	0

# City of Indianapolis Stormwater Quality Unit (SQU) Selection Guide

(Check  
<http://www.indy.gov/eGov/City/DPW/Business/Specs/Pages/UpdatedStormWaterManual.aspx>  
 for current Selection Guide)

Performance Matrix for Manufactured SQUs that are approved for use as post-construction water quality units in the City of Indianapolis and in compliance with the Stormwater Design and Construction Specifications Manual

*PLEASE NOTE: All SQUs shall be configured as off-line units unless approved for on-line use. On-line units must document the peak 10-year flow (per the Stormwater Design and Construction Specification Manual) is less than the approved maximum 10-yr flow rate.*

**Rate Based SQUs - Table 1**

Manufactured SQU	SQU System Model	Max Treatment Flow (cfs)	Max 10-yr On-Line Flow Rate (cfs)	Cleanout Depth (Inches)
SciClone <sup>1</sup>	SC-3	0.39	N/A	9
	SC-4	0.70	N/A	9
	SC-5	1.09	N/A	9
	SC-6	1.57	N/A	9
	SC-7	2.14	N/A	9
	SC-8	2.80	N/A	9
	SC-9	3.54	N/A	9
	SC-10	4.37	N/A	9
	SC-11	5.29	N/A	9
	SC-12	6.30	N/A	9
CDS Technologies <sup>1</sup>	CDS-3	0.52	1.04	9
	CDS-4	0.93	1.86	9
	CDS-5	1.5	3.00	9
	CDS-6	2.1	4.2	9
	CDS-7	2.8	5.60	9
	CDS-8	3.7	7.4	9
	CDS-10	5.8	11.6	9
	CDS-12	8.4	16.8	9
DVS <sup>1</sup>	DVS-36C	0.56	1.12	9
	DVS-48C	1.00	2.00	9
	DVS-60C	1.56	3.12	9
	DVS-72C	2.25	4.50	9
	DVS-84C	3.06	6.12	9
	DVS-96C	4.00	8.00	9
	DVS-120C	6.25	12.50	9
	DVS-144C	9.00	18.00	9



# City of Indianapolis Stormwater Quality Unit (SQU) Selection Guide

Manufactured SQU	SQU System Model	Max Treatment Flow (cfs)	Max 10-yr On-Line Flow Rate (cfs)	Cleanout Depth (Inches)
<b>Hydro International Downstream Defender<sup>1</sup></b>	4-ft	1.12	2.95	9
	6-ft	2.52	6.63	12
	8-ft	4.49	11.81	15
	10-ft	7.00	18.40	18
	12 ft	10.08	26.51	21
<b>Hydro International First Defense High Capacity<sup>1</sup></b>	3-ft	0.85	1.84	9
	4-ft	1.5	3.24	9
	5-ft	2.35	5.08	9
	6-ft	3.38	7.30	9
	7-ft	4.60	9.94	9
	8-ft	6.00	12.96	9
<b>HydroStorm by Hydroworks, LLC<sup>1</sup></b>	HS-3	0.50	1.00	6
	HS-4	0.88	1.76	6
	HS-5	1.37	2.74	6
	HS-6	1.98	3.96	6
	HS-7	2.69	5.38	6
	HS-8	3.52	7.04	6
	HS-9	4.45	8.9	6
	HS-10	5.49	10.98	6
	HS-11	6.65	13.3	6
	HS-12	7.91	15.82	6
<b>AquaShield Aqua-Swirl Xcelerator<sup>1</sup></b>	XC-2	0.57	1.16	6
	XC-3	1.13	2.30	6
	XC-4	1.86	3.79	6
	XC-5	2.30	4.68	6
	XC-6	3.31	6.74	6
	XC-7	4.50	9.16	6
	XC-8	5.88	11.97	6
	XC-9	7.44	15.14	6
	XC-10	9.19	18.70	6
	XC-11	11.12	22.63	6
	XC-12	13.23	26.92	6
	XC-13	15.53	31.60	6

<sup>1</sup> Installed in the configuration as reviewed by NJCAT only

# City of Indianapolis Stormwater Quality Unit (SQU) Selection Guide

## Appendix I

### Design Treatment Flow Rate Determination

For

Table 1 SQUs

### Stormwater Quality Flow Rate Determination – Table 1 SQUs

The design flow rate for manufactured stormwater quality units (SQUs) shall be determined using the SCS runoff methodology as outlined below.

1. Delineate the watershed basin(s) to be served by the proposed SQU(s). Tabulate the total impervious and pervious areas. *Please note impervious and pervious area runoff rates MUST be calculated as separate basins. The sizing calculation assumes the impervious area is connected directly to the SQU and the Tc calculation must be adjusted for this assumption (i.e. no flow over grass) for the impervious basin. This can be accomplished by creating two basins, one with an area equivalent to the total impervious area and the other with an area equivalent to the total pervious area of the delineated watershed to be served by the SQU.*
2. Determine the time-of-concentration (Tc) using the TR-55 methodology (Worksheet 3, Chapter 200 Appendix of the City of Indianapolis Stormwater Specifications Manual) for each basin. A minimum 5-minute Tc may be assumed for the impervious basin.
3. Calculate the curve numbers (CN) for each basin, using CN=98 for the impervious basin.
4. Determine the peak discharge from the 0.3-inch storm using the appropriate Huff, 50% rainfall distribution (Storm duration 0 up to and including 6 hrs – 1<sup>st</sup> Quartile, 6.1 to 12 hrs – 2<sup>nd</sup> Quartile, 12.1 to 24 hrs – 3<sup>rd</sup> Quartile. See Table below for Huff ordinates.). A single hydrograph for each basin should be determined and all basin hydrographs added to determine the peak flow. Storm durations of 15-, 30- and 45 minutes as well as 1-, 2-, 3- 6- 12- and 24- hours should be checked to determine the peak SQU flow.

# City of Indianapolis Stormwater Quality Unit (SQU) Selection Guide

**Huff Ordinates Table IA**

% Storm Time	Indianapolis Huff Quartile			
	1 <sup>st</sup> Quartile	2 <sup>nd</sup> Quartile	3 <sup>rd</sup> Quartile	4 <sup>th</sup> Quartile
0	0.00	0.00	0.00	0.00
10	20.00	6.50	5.26	6.67
20	40.80	18.13	11.55	14.25
30	54.95	35.85	17.06	20.00
40	62.50	52.94	24.24	26.09
50	68.75	67.86	37.78	33.33
60	76.67	76.52	58.33	40.00
70	83.05	83.81	78.03	50.00
80	89.70	90.67	88.68	68.57
90	95.00	95.89	95.29	88.37
100	100.00	100.00	100.00	100.00

# City of Indianapolis Stormwater Quality Unit (SQU)

## Selection Guide

### Appendix II

#### O&M Manual Checklist

In addition to the requirements listed in Section 102.06 of the Stormwater Specifications Manual, the following notes / maintenance items should be included in the Operations and Maintenance Manual (**O & M Manual**):

- \_\_\_\_\_ 1. Owner name, address, business phone number, home phone number, email address, cellular phone number.
- \_\_\_\_\_ 2. Site drawings (8½” by 11” or 11” by 17”), showing both plan and cross-section views, showing the infrastructure and applicable features, including dimensions, easements, outlet works, forebays, all water quality and quantity features, inspection and maintenance features (ports, access drives, etc.), signage, etc., as well as an overall site map of the development showing all structures.
- \_\_\_\_\_ 3. A stormwater management easement is required for each facility. The easement must include the BMP, all outlet structures and access to the BMP.
- \_\_\_\_\_ 4. Requirement of owner to perform periodic inspections and maintenance, annually at minimum and as necessary to confirm the system is functioning as designed and permitted;
- \_\_\_\_\_ 5. Frequency of required inspection and maintenance for each BMP;
- \_\_\_\_\_ 6. Requirement of owner to keep records of inspections and maintenance activities;
- \_\_\_\_\_ 7. Requirement of owner to self-certify when requested by the City that inspections and maintenance was performed according to the O&M Manual;
- \_\_\_\_\_ 8. Requirement of the owner to remove and replace filter media as need, determined by infiltration rate, drain down time, percolation test, etc.
- \_\_\_\_\_ 9. The maximum sediment depth should be clearly specified, e.g. 8” based on the table above.
- \_\_\_\_\_ 10. Graphical and written description of sediment measuring procedure. This should include the use of a dipstick tube equipped with a ball valve (e.g. Sludge Judge®).
- \_\_\_\_\_ 11. Oil and other floatable materials removal procedure during routine cleanup.
- \_\_\_\_\_ 12. The O & M Manual should specify if entry into the SQU should be considered an OSHA confined space and guidelines followed.

# City of Indianapolis Stormwater Quality Unit (SQU) Selection Guide

- \_\_\_\_\_ 13. A minimum inspection and maintenance frequency of annually should be specified in the narrative and the tabular inspection schedule.
- \_\_\_\_\_ 14. Off-line configurations must include inspection and maintenance of connecting manhole and diversion weir.
- \_\_\_\_\_ 15. Detail drawing of proposed SQU, including floating debris capture device where applicable, should be included.
- \_\_\_\_\_ 16. Note in the manual to clean unit immediately if there is a hydrocarbon spill (e.g. gasoline or oil).
- \_\_\_\_\_ 17. The use of adsorbents should be addressed as appropriate.
- \_\_\_\_\_ 18. A note should be provided indicating disposal of all sediment must be in accordance with all federal, state and local requirements and should NOT be dumped into the storm sewer or a sanitary sewer.
- \_\_\_\_\_ 19. Other specific requirements per the manufacturer's recommendations.

## Plan Checklist

The following items should be specified on all **plans** referencing a SQU submitted for approval by the City of Indianapolis:

- \_\_\_\_\_ 1. The minimum cover requirement as specified by the Stormwater Specifications Manual should be shown on the details for all connecting pipes.
- \_\_\_\_\_ 2. A minimum 6" stone base should be shown on the detail.
- \_\_\_\_\_ 3. The backfill should be specified as required by the manufacturer.
- \_\_\_\_\_ 4. Detail drawing of each SQU model, including floating debris capture device as applicable, per the manufacturer should be included on plans.
- \_\_\_\_\_ 5. Detail of connecting structures and diversion for off-line configurations should be included.
- \_\_\_\_\_ 6. A minimum 24" access opening must be shown.
- \_\_\_\_\_ 7. All construction plans shall show the SQUs installed with one inlet and one outlet pipe approximately 180 degrees apart unless the design report includes documentation the unit was tested by NJCAT and certified by NJDEP for the proposed layout. The inclusion of surface inlets must also include the testing and certification documentation.

# City of Indianapolis Stormwater Quality Unit (SQU) Selection Guide

## Drainage Report Checklist

The following requirements should be addressed in drainage design **reports**:

- \_\_\_\_\_ 1. The design storm must not create a hydraulic tailwater condition on the SQU. A first flush hydraulic gradeline evaluation should be included in the report.
- \_\_\_\_\_ 2. The design storm should be the peak runoff for a 0.3-inch rainfall depth using the appropriate Huff, 50% rainfall distribution. The contributing watershed should be modeled with the pervious and impervious areas inputted as separate areas (i.e. not combined using a single curve number.)
- \_\_\_\_\_ 3. The 10-yr pipe capacity up- and downstream of all water quality structures should be documented with calculations to demonstrate the water surface for the 10-yr storm is below the crown of the pipe as required by the Stormwater Specifications Manual.
- \_\_\_\_\_ 4. Diversion structure design should be documented with calculations as appropriate.
- \_\_\_\_\_ 5. Buoyancy shall be addressed in the report.
- \_\_\_\_\_ 6. Traffic loading requirements should be addressed in the report.

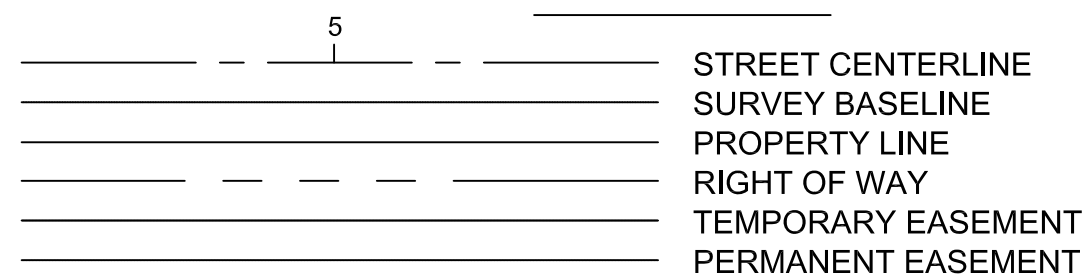
**APPENDIX F**

**LAKE BUSINESS CENTER – HOTEL SITE**  
**– SIMBORG DEVELOPMENT, INC –**

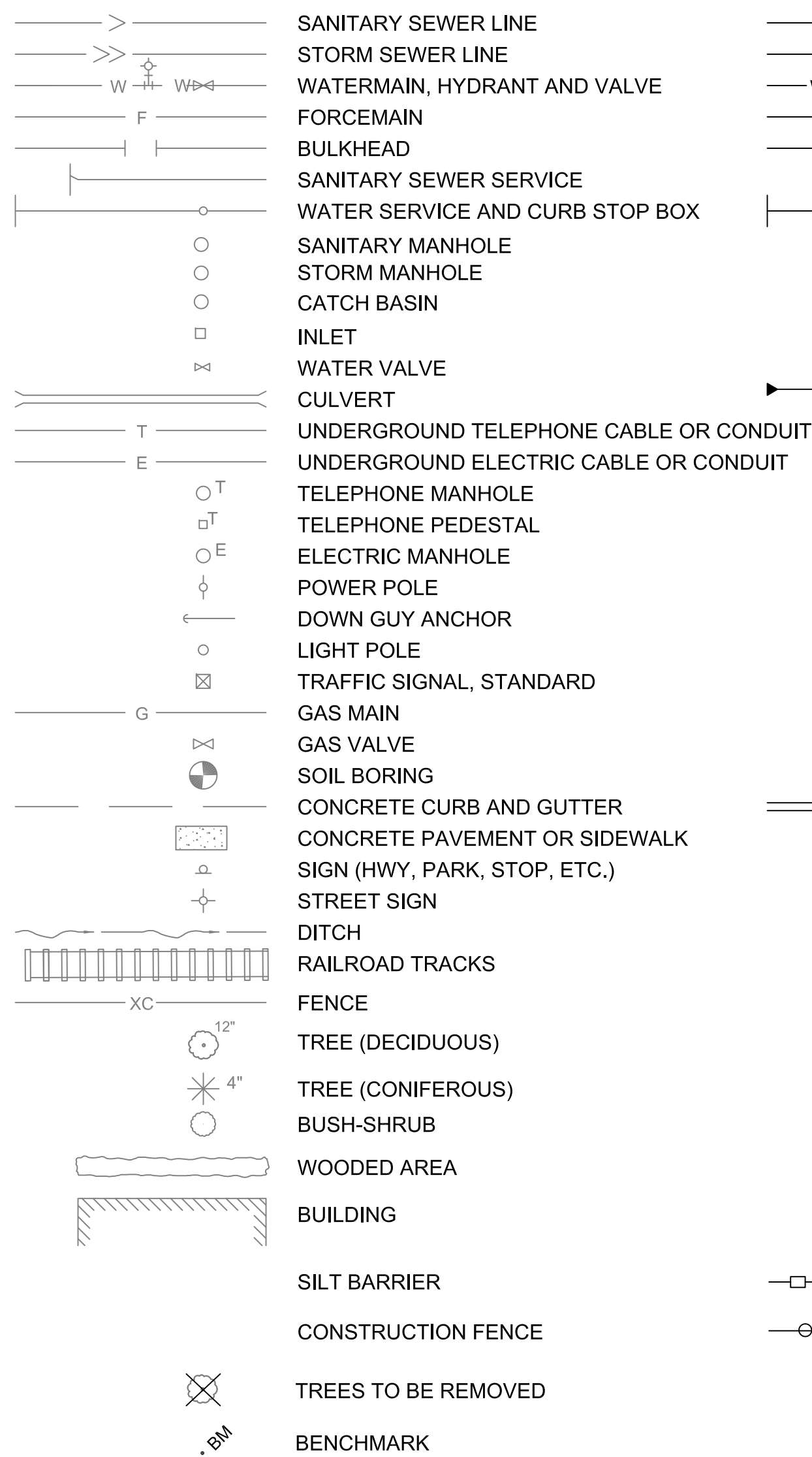
**2012 FINAL ENGINEERING**  
**IMPROVEMENT PLANS**

SIMBORG DEVELOPMENT, INC.  
TOWN OF MUNSTER, INDIANA

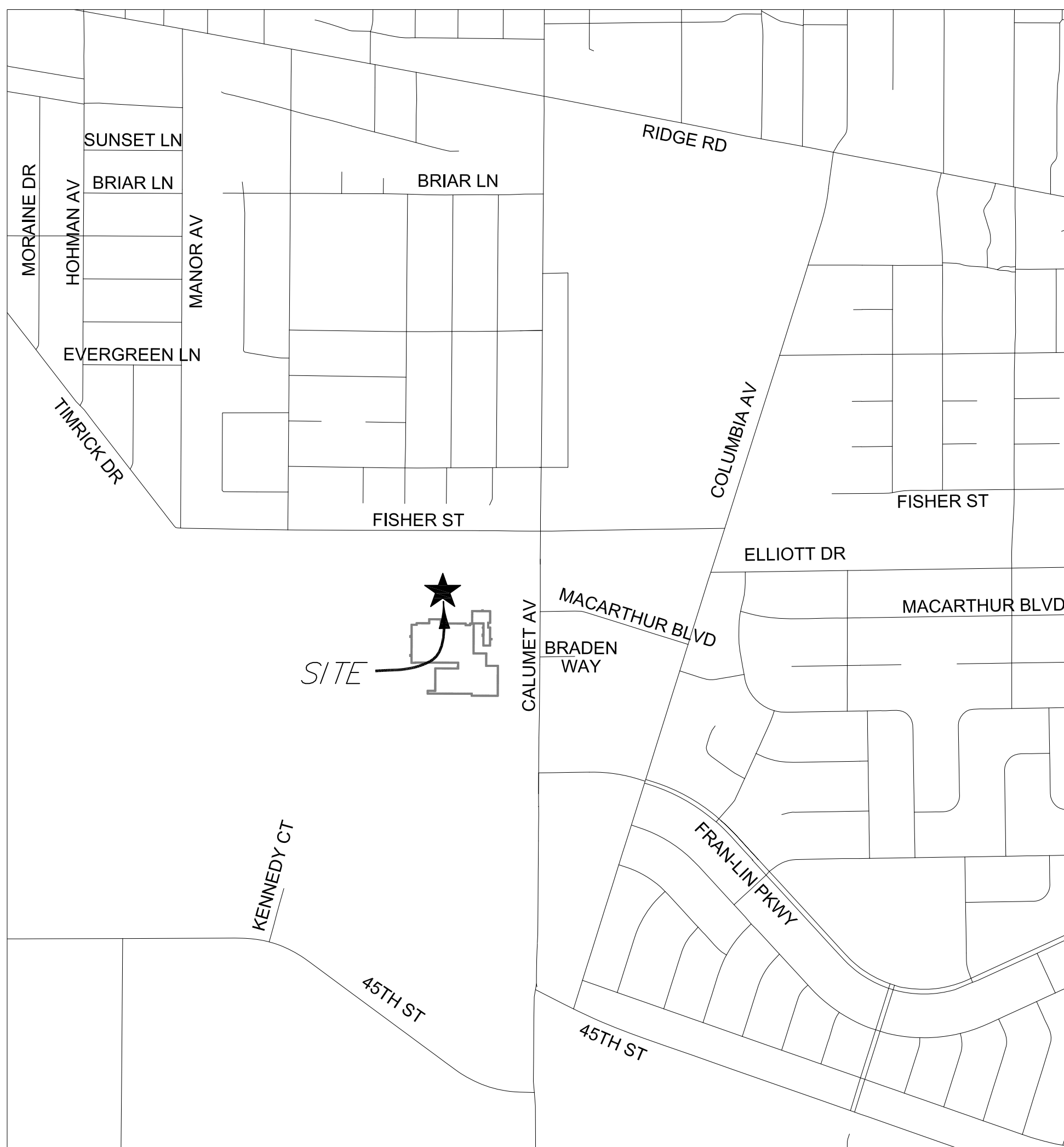
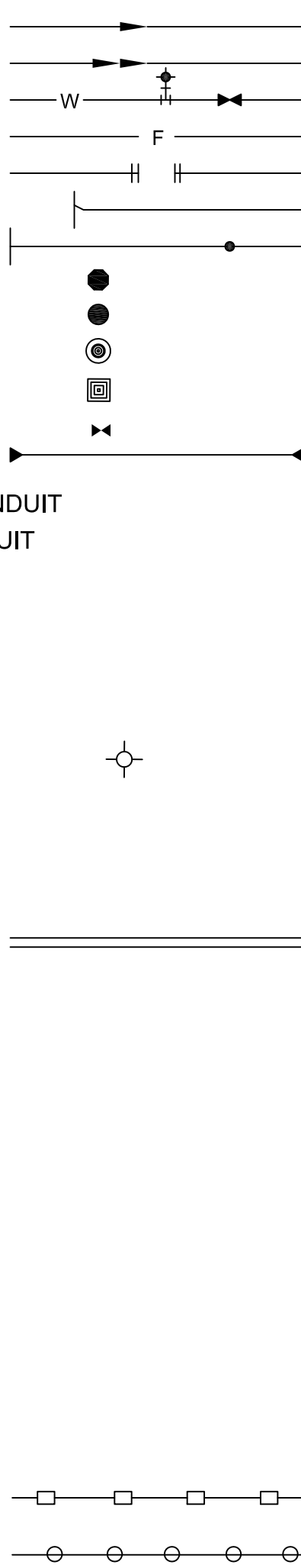
## LEGEND



EXISTING



PROPOSED



LOCATION MAP

NOT TO SCALE

## UTILITY CONTACTS

GAS & ELECTRIC  
NIPSCO  
1460 EAST 15TH AV.  
GARY, IN 46402  
(219) 886.5510

CABLE TV  
COMCAST  
844 169TH STREET  
HAMMOND, IN 46324

PUBLIC WORKS  
DEPT. OF PUBLIC WORKS  
1005 RIDGE ROAD  
MUNSTER, IN 46321  
(219) 836.6970

TELEPHONE  
AT&T  
302 SOUTH EAST ST.  
CROWN POINT, IN 46307  
(219) 662.4418

## SHEET INDEX

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	PROJECT SPECIFICATIONS
3	OVERALL SITE / MASTER UTILITY PLAN
4-6	DIMENSIONAL SITE AND PAVING PLAN
7-9	DEMOLITION AND EROSION CONTROL PLAN
10-12	GRADING AND UTILITY PLAN
13	SANITARY SEWER PROFILE
14-15	CONSTRUCTION DETAILS
16	UNDERGROUND DETENTION CONSTRUCTION DETAILS
L1-L5	LANDSCAPE PLANS AND DETAILS

GENERAL NOTES

1. THE TOWN OF MUNSTER ENGINEERING AND PUBLIC WORKS DEPARTMENTS SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. (PHONE NO. 219.836.6970).
2. THE HAMMOND SANITARY DISTRICT SHALL BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF SEWER CONSTRUCTION. (PHONE NO. 219.853.6413).
3. ALL CONTRACTORS INSTALLING PUBLIC IMPROVEMENTS IN THE TOWN OF MUNSTER SHALL BE REQUIRED TO ATTEND A PRE-CONSTRUCTION MEETING WITH THE TOWN OF MUNSTER ENGINEERING AND PUBLIC WORKS DEPARTMENT PRIOR TO BEGINNING WORK.
4. ALL UTILITY COMPANIES SHALL BE CONTACTED AND THEIR FACILITIES SHALL BE LOCATED PRIOR TO ANY WORK IN AN EASEMENT, RIGHT-OF-WAY, OR SUSPECTED UTILITY LOCATION. REPAIR OF ANY DAMAGE TO EXISTING FACILITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. UTILITY LOCATIONS SHOWN HEREIN ARE FOR GRAPHIC ILLUSTRATION ONLY AND ARE NOT TO BE RELIED UPON.
5. PRIOR TO COMMENCEMENT OF ANY OFFSITE CONSTRUCTION, THE CONTRACTOR SHALL SECURE WRITTEN AUTHORIZATION THAT ALL OFFSITE EASEMENTS HAVE BEEN SECURED, AND THAT PERMISSION HAS BEEN GRANTED TO ENTER ONTO PRIVATE PROPERTY.
6. ALL ELEVATIONS SHOWN HEREON REFLECT THE VERTICAL DATUM USED ON THE CALUMET AVENUE INDOT PLANS PREPARED BY ROBINSON ENGINEERING, DATED APRIL 17, 2009.
7. CONSTRUCTION SHALL NOT BLOCK OFFSITE DRAINAGE.
8. EXCEPT WHERE MODIFIED BY THE CONTRACT DOCUMENTS, ALL WORK PROPOSED HEREON SHALL BE IN ACCORDANCE WITH THE FOLLOWING SPECIFICATIONS, WHICH ARE HEREBY MADE A PART HEREOF:
  - A. "STANDARD SPECIFICATIONS" AS PREPARED BY INDOT, 2012 EDITION.
  - B. "MODEL SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN INDIANA", 1998 EDITION.
  - C. "RECOMMENDED STANDARDS FOR WATER WORKS", 2007 EDITION AND "RECOMMENDED STANDARDS FOR WASTEWATER FACILITIES", 2004 EDITION AS PREPARED BY GREAT LAKES – UPPER MISSISSIPPI RIVER BOARD, AKA THE TEN STATES STANDARDS.
  - D. THE SUBDIVISION AND DEVELOPMENT CODES AND STANDARDS OF THE TOWN OF MUNSTER, AS PUBLISHED BY THE MUNICIPALITY.
  - E. THE STANDARD SPECIFICATIONS OF THE HAMMOND SANITARY DISTRICT.
  - F. THE NATIONAL ELECTRIC CODE.
  - G. "INDIANA STORM WATER QUALITY MANUAL", AS PREPARED BY THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT.
  - H. THE CONTRACT DOCUMENTS, GENERAL CONDITIONS, SPECIAL PROVISIONS AND SUPPLEMENTAL CONDITIONS OF THE PROJECT AS PREPARED BY SHORT ELLIOT HENDRICKSON, INC.
9. IN THE EVENT OF CONFLICTING SPECIFICATIONS WITH REGARD TO SITE WORK ISSUES DESIGNED BY THE ENGINEER, THE DECISION OF THE ENGINEER SHALL BE FINAL AND CONCLUSIVE.
10. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL OBTAIN A COPY OF THE NOTIFICATION OF COVERAGE LETTER AND THE INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM) NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) GENERAL PERMIT FROM THE OWNER. THE CONTRACTOR SHALL CONFORM TO ALL REQUIREMENTS OF THE GENERAL PERMIT INCLUDING MAINTENANCE AND INSPECTION OF EROSION CONTROL MEASURES AND FILING OF APPLICABLE CERTIFICATIONS AND REPORTS. A COPY OF THE NOTIFICATION OF COVERAGE LETTER SHALL BE POSTED AT THE SITE IN A PROMINENT PLACE FOR PUBLIC VIEWING.

SOURCE BENCHMARK:

SQUARE CUT ON NORTHWEST CORNER OF LIGHT POLE BASE  
ON EAST RIGHT-OF-WAY OF CALUMET AVENUE BETWEEN  
#9339 AND #9445 - DZIADOWICZ FUNERAL HOME.

ELEVATION : 617.31

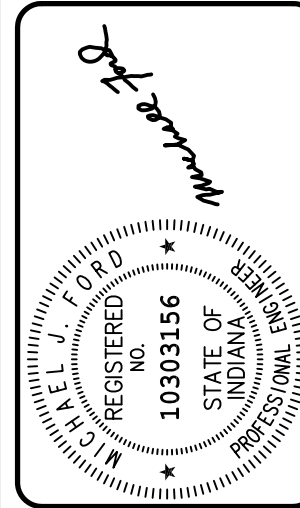
NOTE:  
THE EXACT LOCATION OF UNDERGROUND UTILITIES SUCH AS GAS, TELEPHONE, FIBER OPTIC, ELECTRIC, CABLE TV, AND PIPE LINES ARE UNKNOWN. THE CONTRACTOR SHALL CONTACT "HOLEY MOLEY" AND ALL OTHER UTILITY OWNERS WHICH ARE WITHIN PROJECT LIMITS BEFORE COMMENCING EXCAVATION.



FOR REVIEW ONLY  
NOT FOR CONSTRUCTION

[illegible]

SEH FILE NO.	SIMBU
PROJECT NO.	120610
ISSUE DATE	06/18/12
DRAWN BY:	RPO
DESIGNED BY:	MJF
CHECKED BY:	CH



MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
TITLE SHEET

SHEET

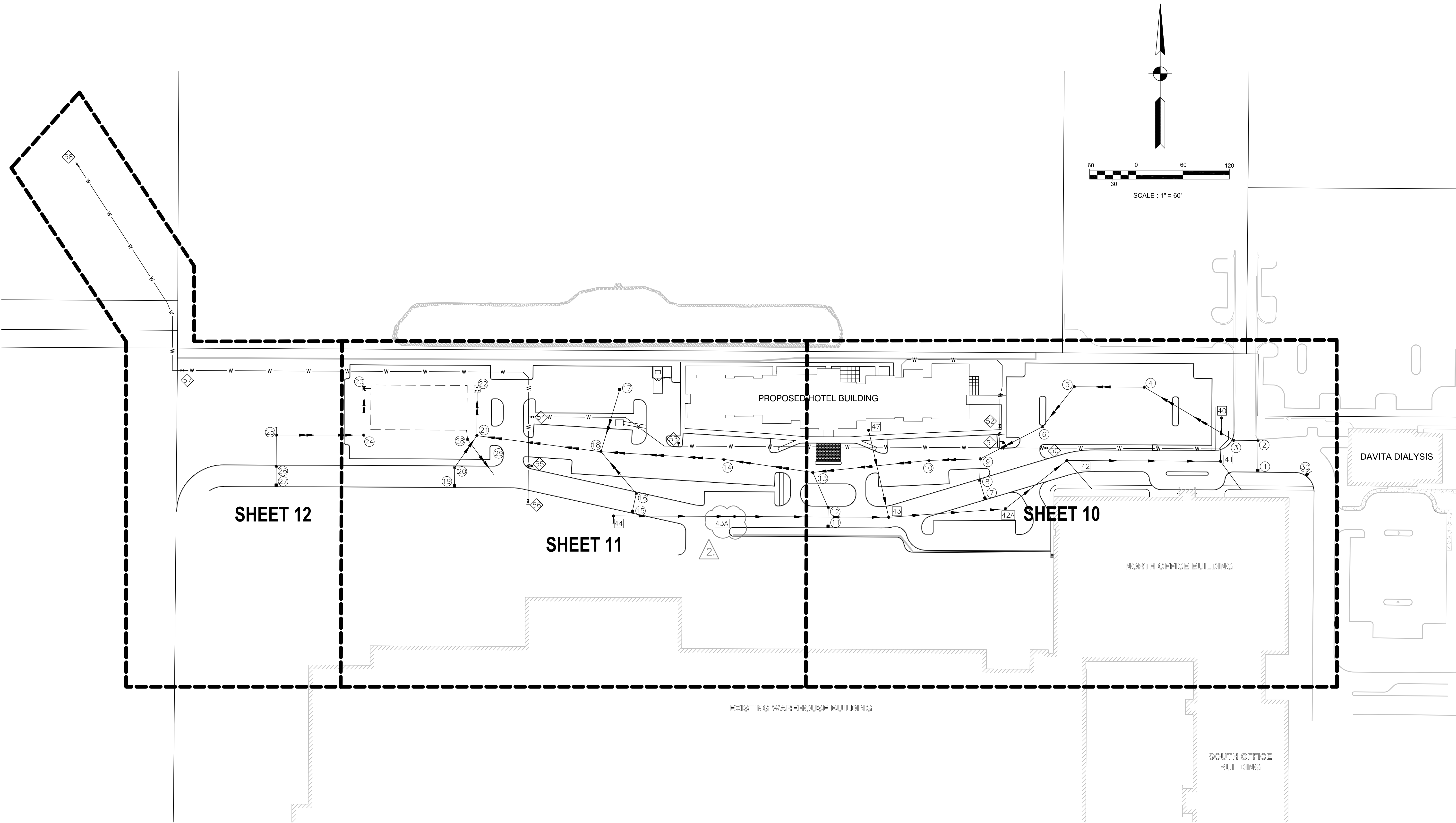
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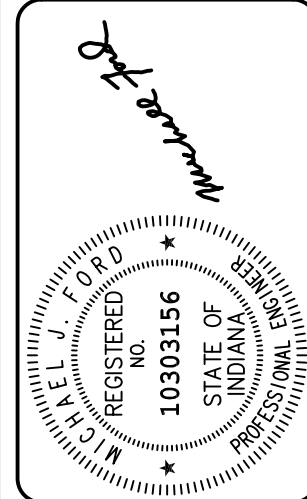


LEGEND	
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②	SANITARY STRUCTURE NO.
③	WATERMAIN STRUCTURE NO.

MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
OVERALL UTILITY PLAN

SHEET  
3

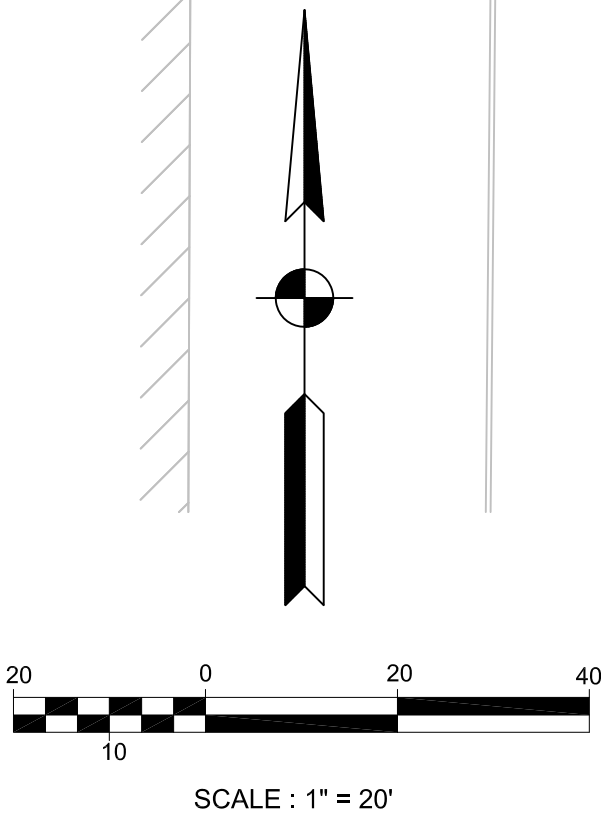
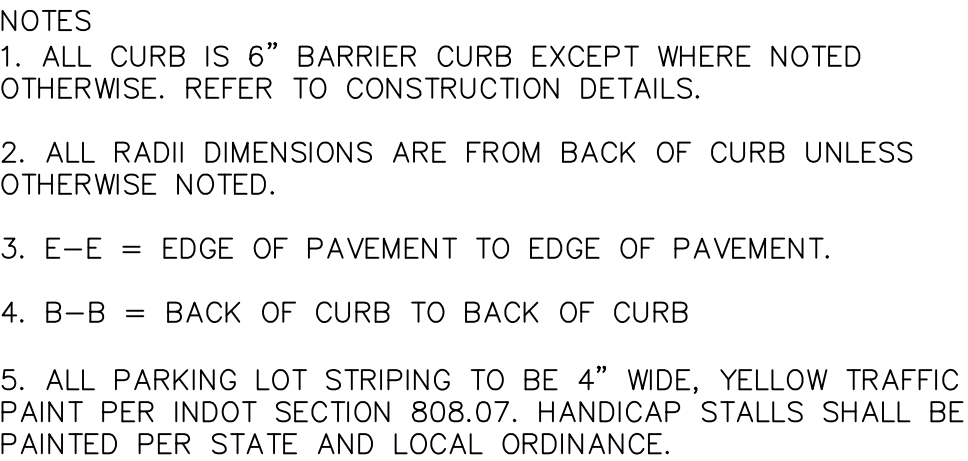
**SEH of Indiana**  
9200 Coliseum Avenue, Suite 1501  
Munster, Indiana 46321  
Phone: 219.513.2500



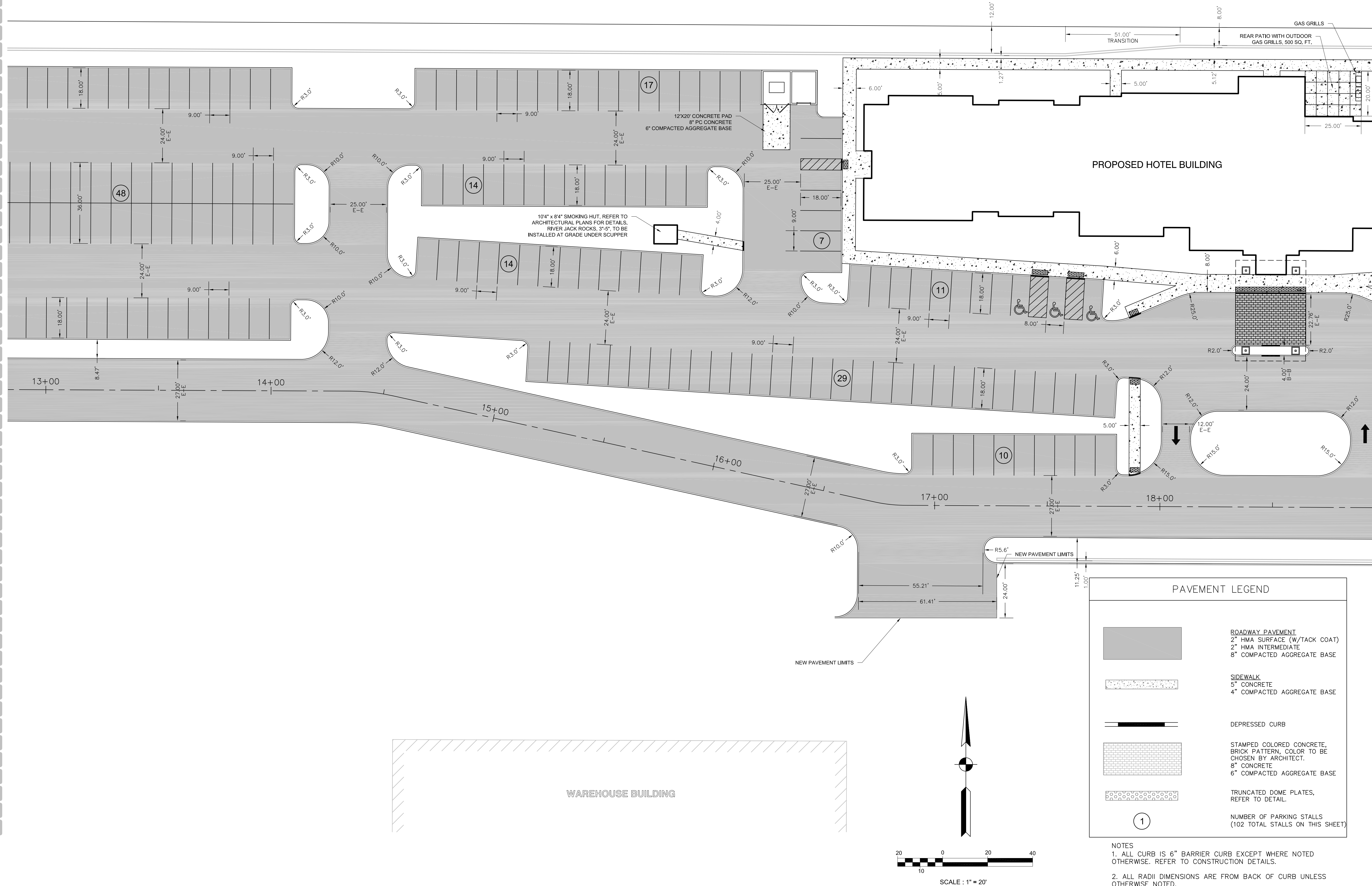
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ISSUE DATE	06/18/12
DRAWN BY:	RPO
DESIGNED BY:	MJF
CHECKED BY:	CLH

NO.	BY	DATE	REVISIONS
2	M.J.F.	11/26/12	SANITARY SEWER REVISIONS

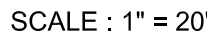
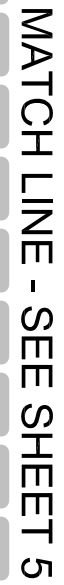
Appendix F 4 of 22 6/30/2020



MATCH LINE - SEE SHEET 6




MATCH LINE - SEE SHEET 4



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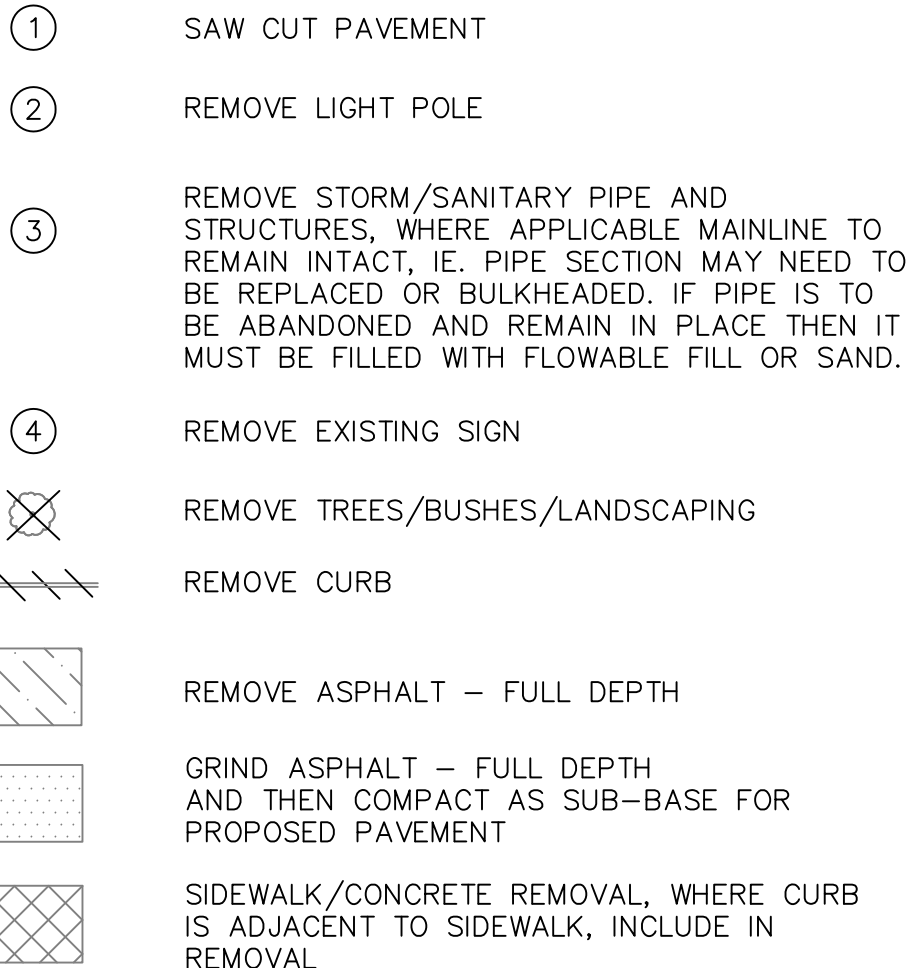
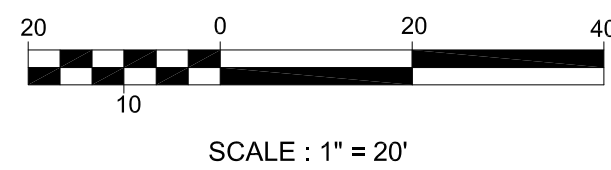
5. ALL PARKING LOT STRIPING TO BE 4" WIDE, YELLOW TRAFFIC PAINT PER INDOT SECTION 808.07. HANDICAP STALLS SHALL BE PAINTED PER STATE AND LOCAL ORDINANCE.

○

30.11.11

M  
SIMBO  
LAKE BUS  
DIP





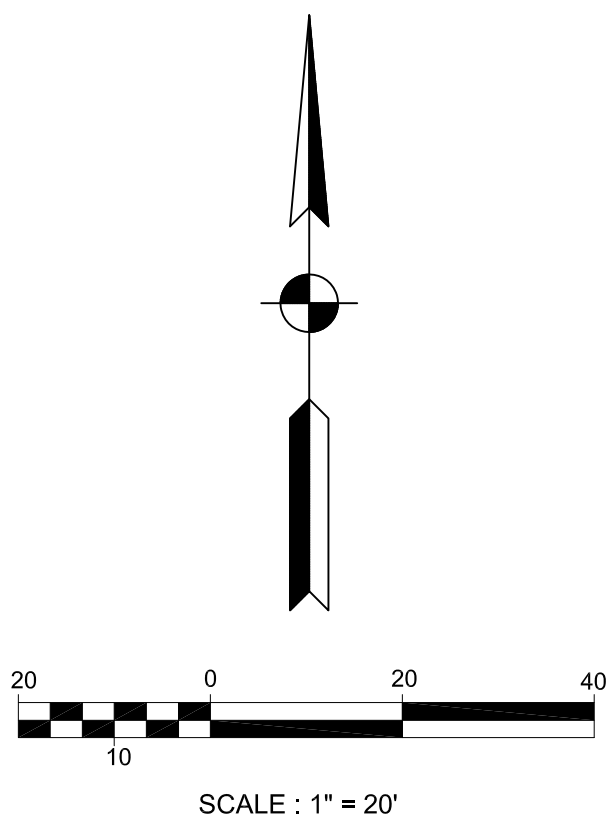
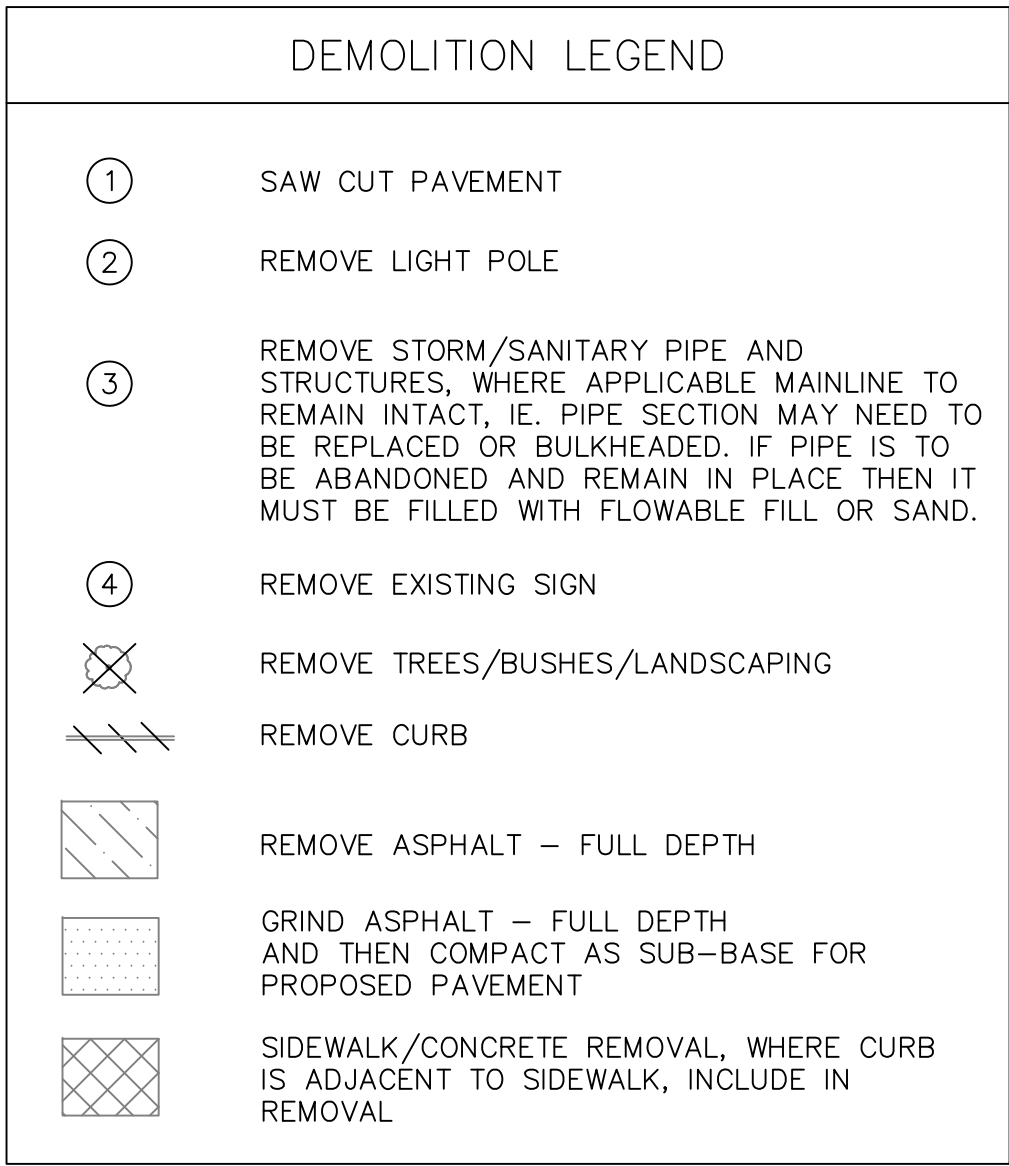
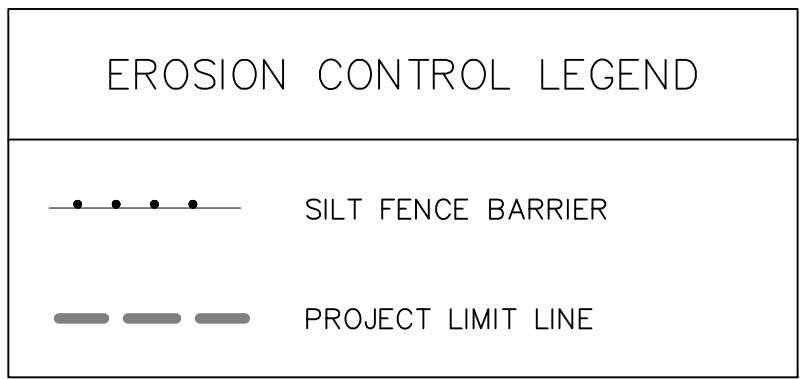
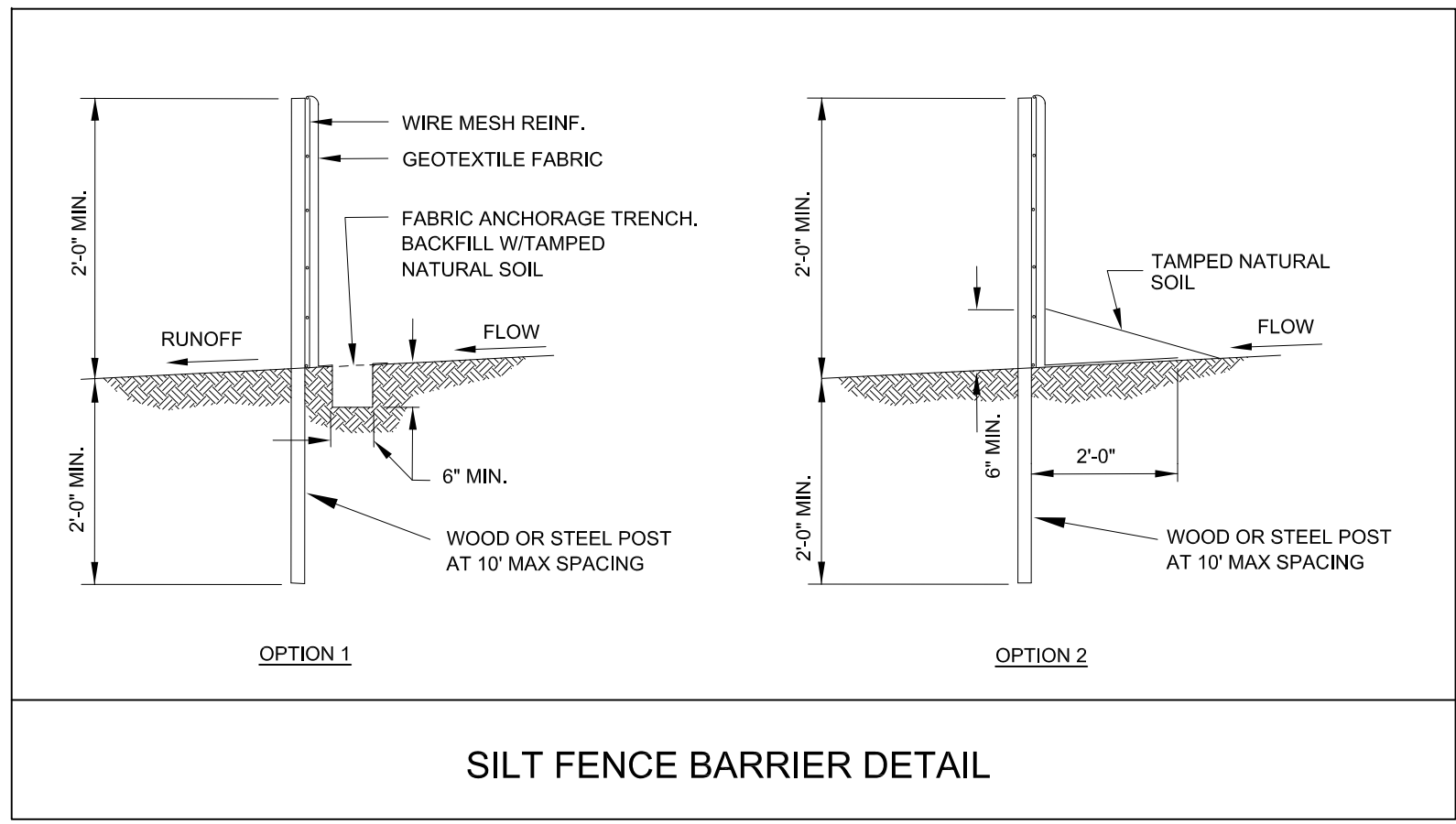
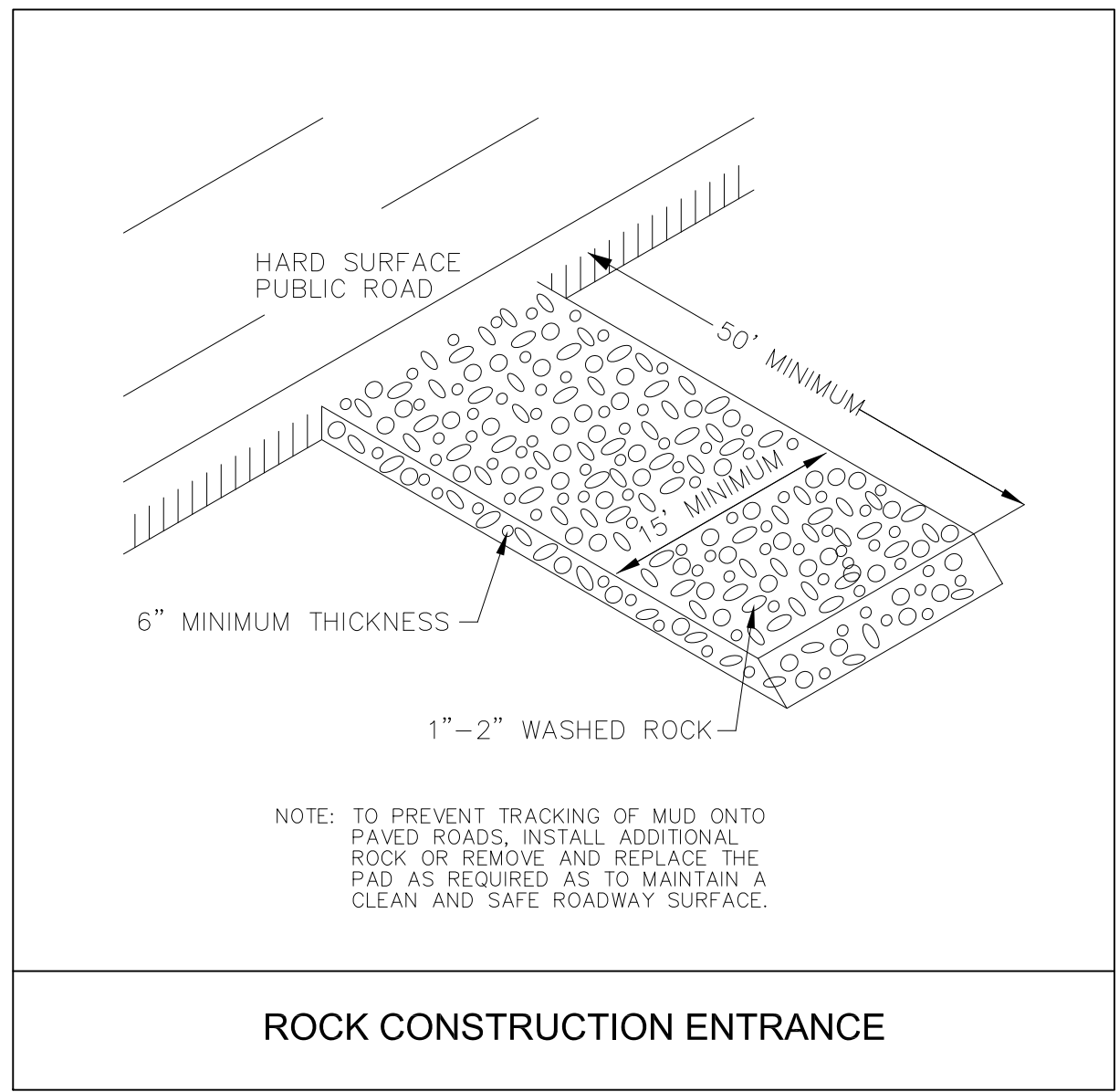
MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
EROSION CONTROL / DEMOLITION PLAN



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MATCH LINE - SEE SHEET 9

MATCH LINE - SEE SHEET 7



NO.	BY	DATE	REVISIONS
1	M.J.F.	08/28/12	TOWN AND CLIENT REVIEW

SEH FILE NO.	120610
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ISSUE DATE	RFO
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DESIGNED BY:	M.J.F.
CHECKED BY:	CLH

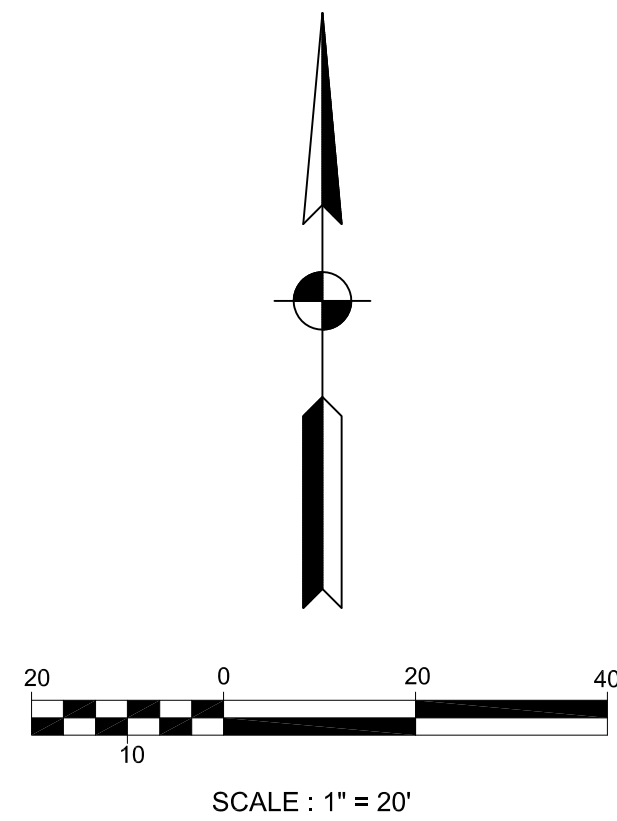
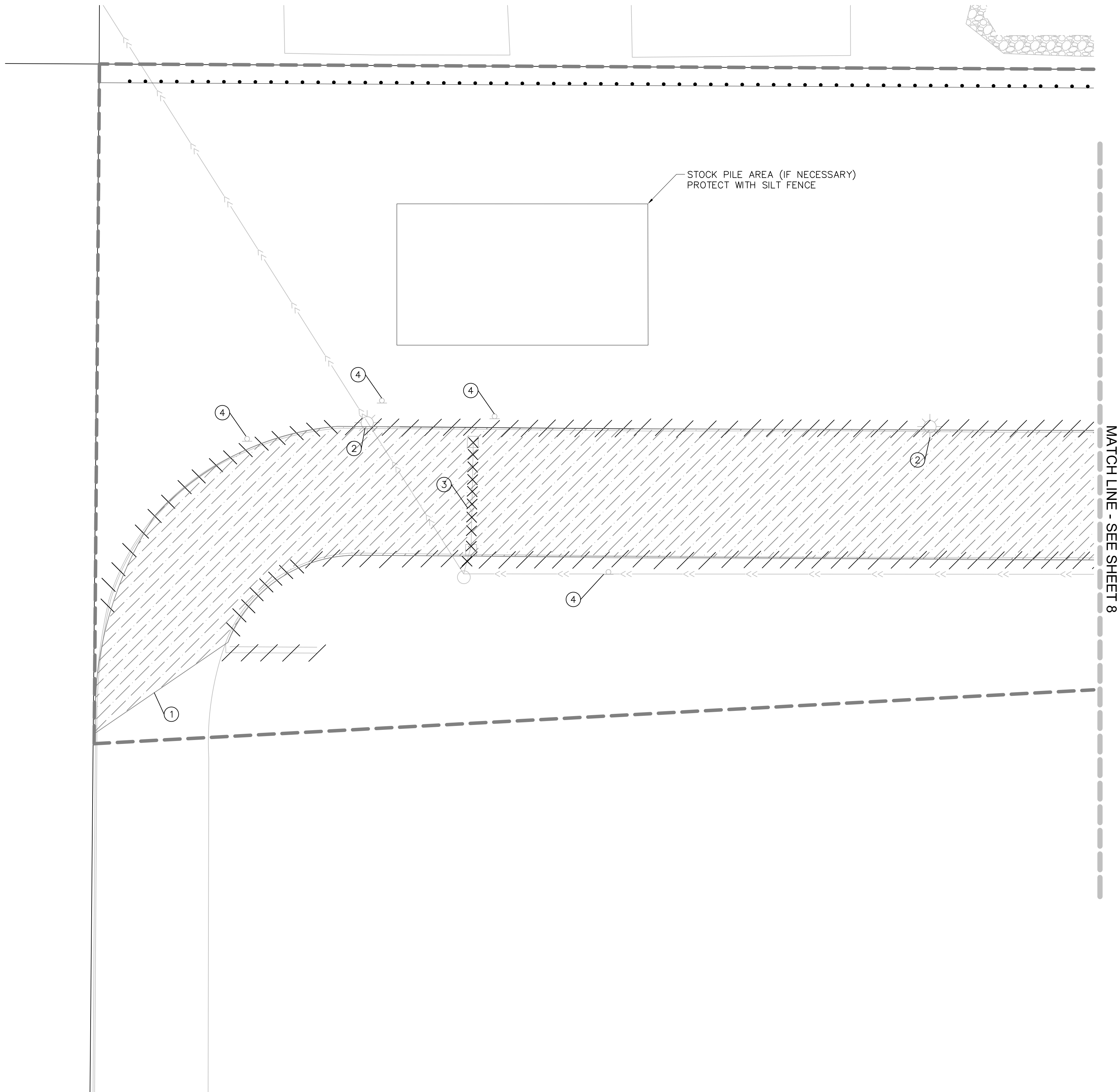


**SEH of Indiana**  
9200 Calumet Avenue, Suite N501  
Munster, Indiana 46321  
Phone: 219.513.2500

MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
EROSION CONTROL / DEMOLITION PLAN

SHEET  
**8**

P:\PT\3\SIMBU\20010\5-FINAL-DSSN\50-FINAL-DSSN\10-CIVIL\EP\PLAN SET\EROSION CONTROL.DWG 8/29/2012 3:08 PM

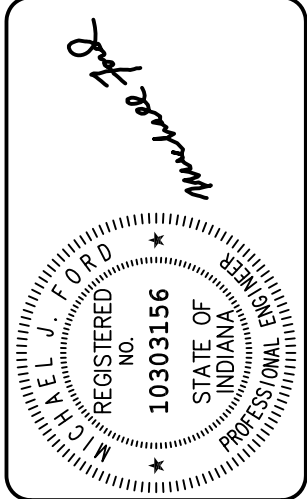


EROSION CONTROL LEGEND	
	SILT FENCE BARRIER
	PROJECT LIMIT LINE

DEMOLITION LEGEND	
	SAW CUT PAVEMENT
	REMOVE LIGHT POLE
	REMOVE STORM/SANITARY PIPE AND STRUCTURES, WHERE APPLICABLE MAINLINE TO REMAIN INTACT, IE. PIPE SECTION MAY NEED TO BE REPLACED OR BULKHEADED. IF PIPE IS TO BE ABANDONED AND REMAIN IN PLACE THEN IT MUST BE FILLED WITH FLOWABLE FILL OR SAND.
	REMOVE EXISTING SIGN
	REMOVE TREES/BUSHES/LANDSCAPING
	REMOVE CURB
	REMOVE ASPHALT - FULL DEPTH
	GRIND ASPHALT - FULL DEPTH AND THEN COMPACT AS SUB-BASE FOR PROPOSED PAVEMENT
	SIDEWALK/CONCRETE REMOVAL, WHERE CURB IS ADJACENT TO SIDEWALK, INCLUDE IN REMOVAL

REVISIONS	
NO.	DATE
1	08/28/12
TOWN AND CLIENT REVIEW	
BY	
M.J.F.	

SEH FILE NO.	SIMBU
PROJECT NO.	120610
ISSUE DATE	06/18/12
DRAWN BY:	RFO
DESIGNED BY:	M.J.F.
CHECKED BY:	CLH

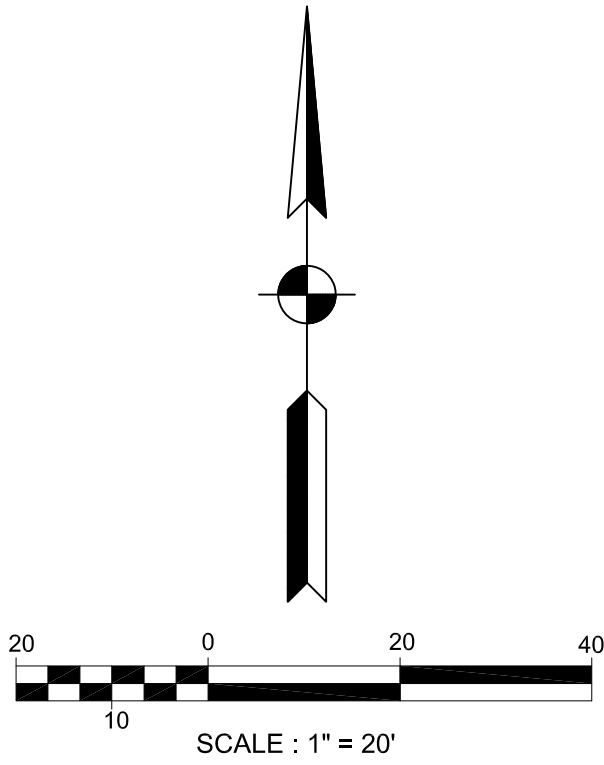




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EROSION CONTROL / DEMOLITION PLAN



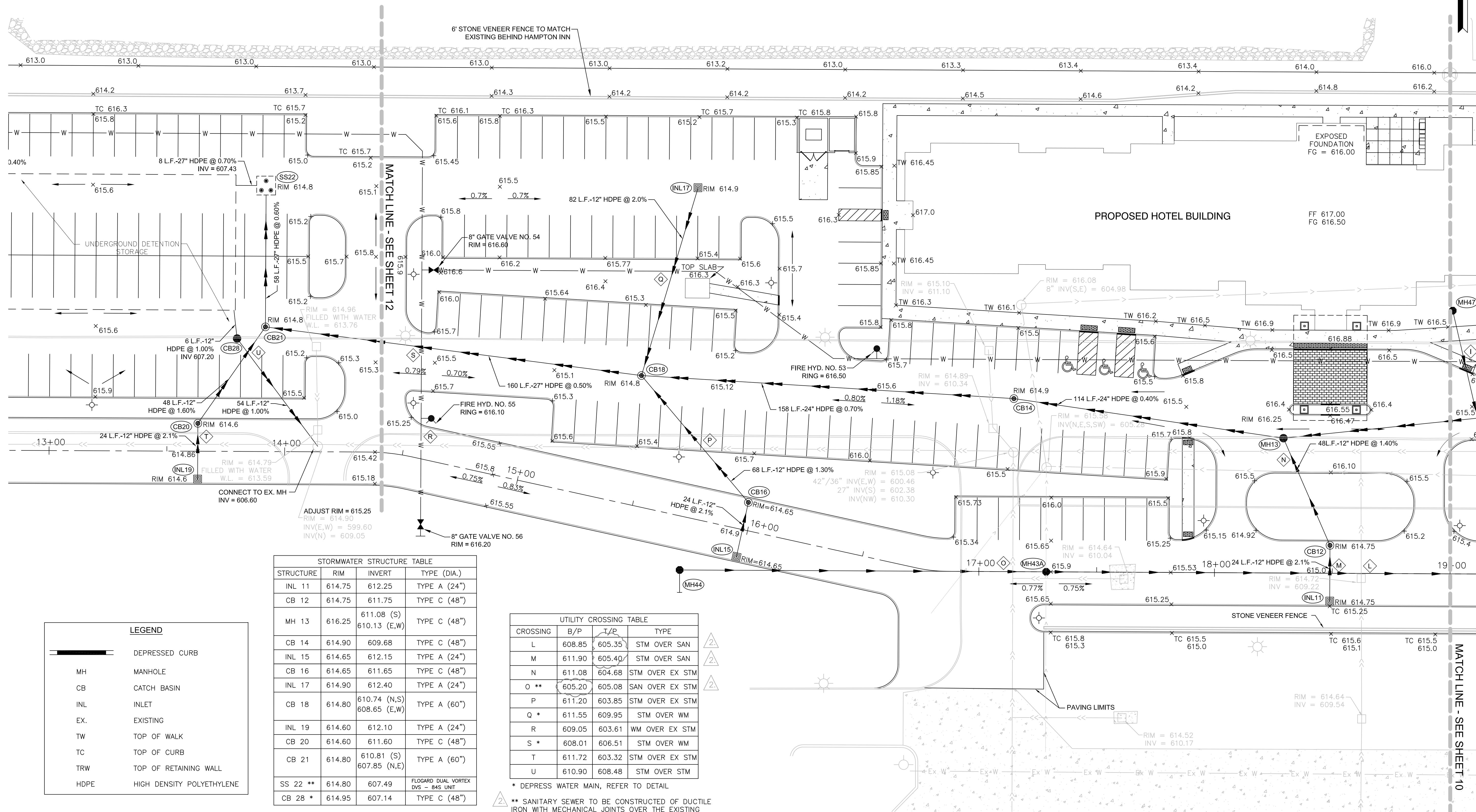
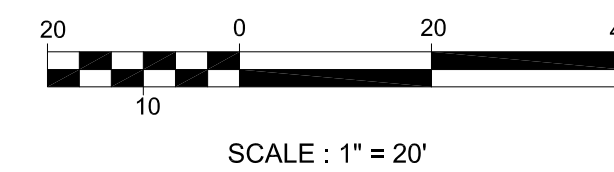


1. ALL ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE INDICATED. ADD 0.5' TO CALCULATE TOP OF CURB GRADE.
2. ALL UTILITY LINES THAT ARE INSTALLED UNDERNEATH PAVEMENT ARE TO BE BACKFILLED WITH COMPACTED AGGREGATE (NO. 53 STONE) OR SAND. REFER TO DETAILS.
3. WHERE WATER MAIN CROSSES STORM SEWER OR SANITARY SEWER, A MINIMUM OF 18" SEPARATION MUST BE MAINTAINED, REFER TO CROSSING TABLE.
4. FOR ALL SANITARY SEWER INFORMATION REFER TO PROFILE SHEET.
5. ALL WATER MAIN IS 8" DUCTILE IRON.

STORMWATER STRUCTURE TABLE			
STRUCTURE	RIM	INVERT	TYPE (DIA.)
INL 1	615.3	612.80	TYPE A (24")
CB 2	615.0	612.20	TYPE C (48")
CB 3	615.0	612.10	TYPE C (48")
CB 4	614.9	611.70	TYPE C (48")
CB 5	614.9	611.43	TYPE C (48")
CB 6	614.9	611.05	TYPE C (48")
INL 7	614.75	612.25	TYPE A (24")
CB 8	614.75	611.75	TYPE C (48")
MH 9	615.2	611.20 (S) 610.86 (E,W)	TYPE C (48")
CB 10	614.9	610.73	TYPE C (48")

UTILITY CROSSING TABLE			
CROSSING	B/P	T/P	TYPE
A *	611.95	610.40	STM OVER WM
B	611.48	603.00	STM OVER SAN
C	609.72	603.08	WM OVER SAN
D1	608.56	603.53	WM TO BE REMOVED
D2	608.94	606.00	SAN OVER EX STM
<p>E1: SANITARY SEWER TO CROSS THROUGH EXISTING STORM MANHOLE AT INV = 603.40. TO BE CONSTRUCTED OF DUCTILE IRON WITH MECHANICAL JOINTS, 10' BOTH SIDES OF MANHOLE.</p>			
E2	609.25	606.05	WM TO BE REMOVED
E3	609.25	608.87	WM TO BE REMOVED
E4	608.04	605.55	SAN OVER EX STM
F *	610.72	609.10	STM OVER WM
G	611.57	605.66	STM OVER EX STM
I	609.55	608.00	WM OVER SAN
J	610.25	608.20	STM OVER SAN
K1	606.81	605.00	SAN OVER EX STM
K2	608.26	604.67	EX STM OVER SAN

\* DEPRESS WATER MAIN, REFER TO DETAIL



STORMWATER STRUCTURE TABLE			
STRUCTURE	RIM	INVERT	TYPE (DIA.)
INL 11	614.75	612.25	TYPE A (24")
CB 12	614.75	611.75	TYPE C (48")
MH 13	616.25	611.08 (S) 610.13 (E,W)	TYPE C (48")
CB 14	614.90	609.68	TYPE C (48")
INL 15	614.65	612.15	TYPE A (24")
CB 16	614.65	611.65	TYPE C (48")
INL 17	614.90	612.40	TYPE A (24")
CB 18	614.80	610.74 (N,S) 608.65 (E,W)	TYPE A (60")
INL 19	614.60	612.10	TYPE A (24")
CB 20	614.60	611.60	TYPE C (48")
CB 21	614.80	610.81 (S) 607.85 (N,E)	TYPE A (60")
SS 22 **	614.80	607.49	FLOGARD DUAL VORTEX DVS - 845 UNIT
CB 28 *	614.95	607.14	TYPE C (48")

	UTILITY CROSSING TABLE		
CROSSING	B/P	T/P	TYPE
L	608.85	605.35	STM OVER SAN
M	611.90	605.40	STM OVER SAN
N	611.08	604.68	STM OVER EX STM
O **	605.20	605.08	SAN OVER EX STM
P	611.20	603.85	STM OVER EX STM
Q *	611.55	609.95	STM OVER WM
R	609.05	603.61	WM OVER EX STM
S *	608.01	606.51	STM OVER WM
T	611.72	603.32	STM OVER EX STM
U	610.90	608.48	STM OVER STM

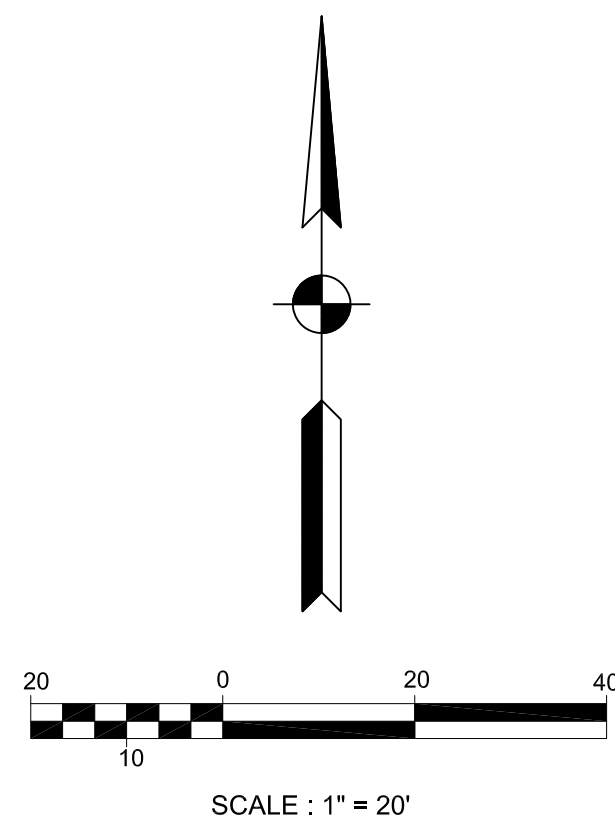
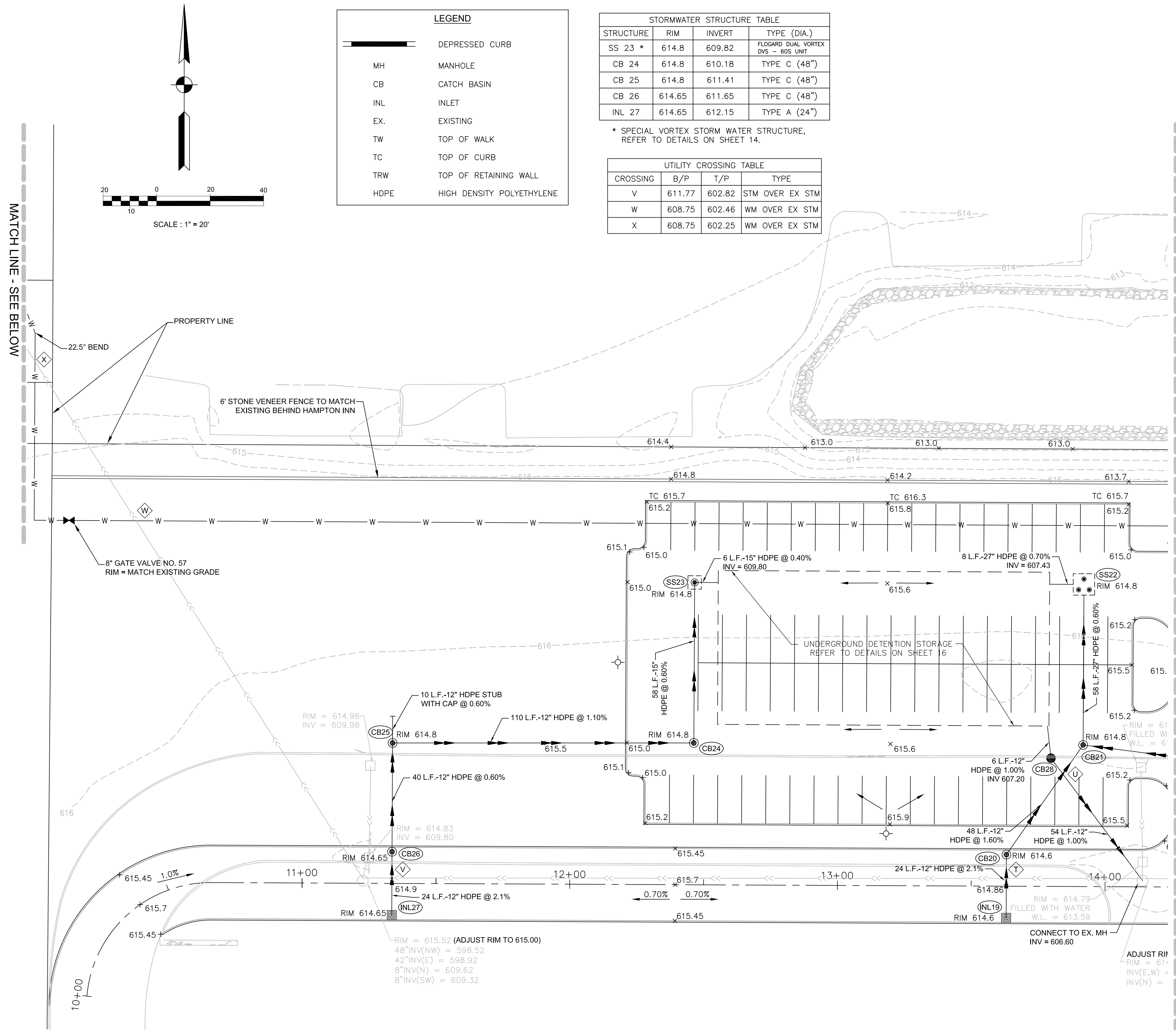
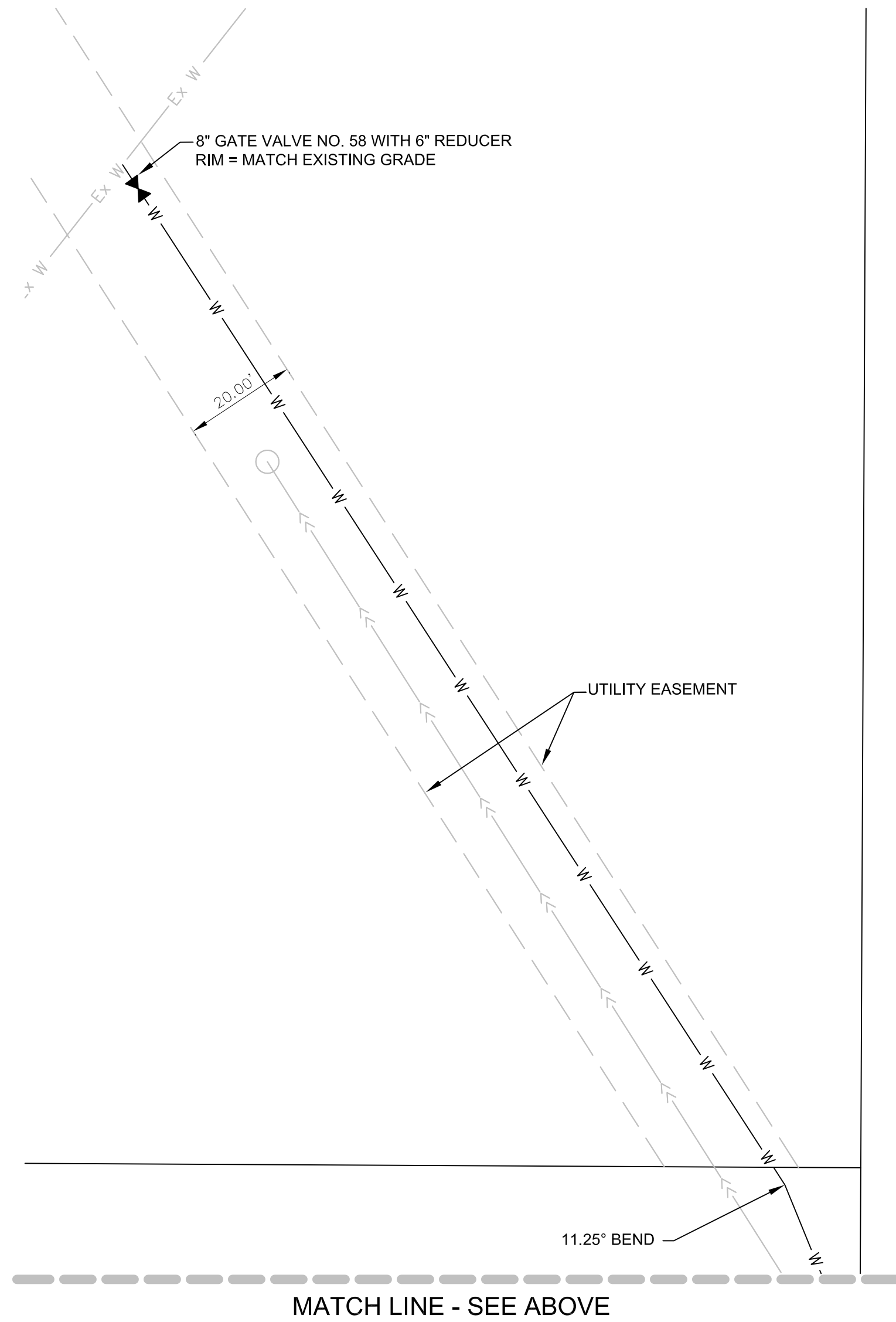
\* DEPRESS WATER MAIN, REFER TO DETAIL

\*\* SANITARY SEWER TO BE CONSTRUCTED OF DUCTILE IRON WITH MECHANICAL JOINTS OVER THE EXISTING STORM SEWER (10' EITHER SIDE)

NOTES

1. ALL ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE INDICATED. ADD 0.5' TO CALCULATE TOP OF CURB GRADE.
2. ALL UTILITY LINES THAT ARE INSTALLED UNDERNEATH PAVEMENT ARE TO BE BACKFILLED WITH COMPACTED AGGREGATE (NO. 53 STONE) OR SAND. REFER TO DETAILS.
3. WHERE WATER MAIN CROSSES STORM SEWER OR SANITARY SEWER, A MINIMUM OF 18" SEPARATION MUST BE MAINTAINED, REFER TO CROSSING TABLE.
4. FOR ALL SANITARY SEWER INFORMATION REFER TO PROFILE SHEETS.
5. ALL WATER MAIN IS 8" DUCTILE IRON.

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LEGEND	
	DEPRESSED CURB
	MANHOLE
	CATCH BASIN
	INLET
	EXISTING
	TOP OF WALK
	TOP OF CURB
	TOP OF RETAINING WALL
	HDPPE

STORMWATER STRUCTURE TABLE			
STRUCTURE	RIM	INVERT	TYPE (DIA.)
SS 23 *	614.8	609.82	FLOGARD DUAL VORTEX DVS - 60S UNIT
CB 24	614.8	610.18	TYPE C (48")
CB 25	614.8	611.41	TYPE C (48")
CB 26	614.65	611.65	TYPE C (48")
INL 27	614.65	612.15	TYPE A (24")

\* SPECIAL VORTEX STORM WATER STRUCTURE, REFER TO DETAILS ON SHEET 14.

UTILITY CROSSING TABLE			
CROSSING	B/P	T/P	TYPE
V	611.77	602.82	STM OVER EX STM
W	608.75	602.46	WM OVER EX STM
X	608.75	602.25	WM OVER EX STM

#### NOTES

- ALL ELEVATIONS ARE TO TOP OF PAVEMENT UNLESS OTHERWISE INDICATED. ADD 0.5' TO CALCULATE TOP OF CURB GRADE.
- ALL UTILITY LINES THAT ARE INSTALLED UNDERNEATH PAVEMENT ARE TO BE BACKFILLED WITH COMPACTED AGGREGATE (NO. 53 STONE) OR SAND. REFER TO DETAILS.
- WHERE WATER MAIN CROSSES STORM SEWER OR SANITARY SEWER, A MINIMUM OF 18" SEPARATION MUST BE MAINTAINED, REFER TO CROSSING TABLE.
- FOR ALL SANITARY SEWER INFORMATION REFER TO PROFILE SHEETS.
- ALL WATER MAIN IS 8" DUCTILE IRON.

REVISIONS

NO.	BY	DATE	TOWN AND CLIENT REVIEW
1	MJF	08/28/12	

SEH FILE NO.

PROJECT NO.

ISSUE DATE

DRAWN BY

DESIGNED BY

CHECKED BY

120610

06/18/12

RFO

MJF

CLH

REGISTERED

10303156

STATE OF INDIANA

PROFESSIONAL

SEH of Indiana

9200 Colburn Avenue, Suite 100

Munster, Indiana 46321

Phone: 219.513.2500

MUNSTER, INDIANA

SIMBORG DEVELOPMENT, LLC

LAKE BUSINESS CENTER - HOTEL SITE

GRADING AND UTILITY PLAN

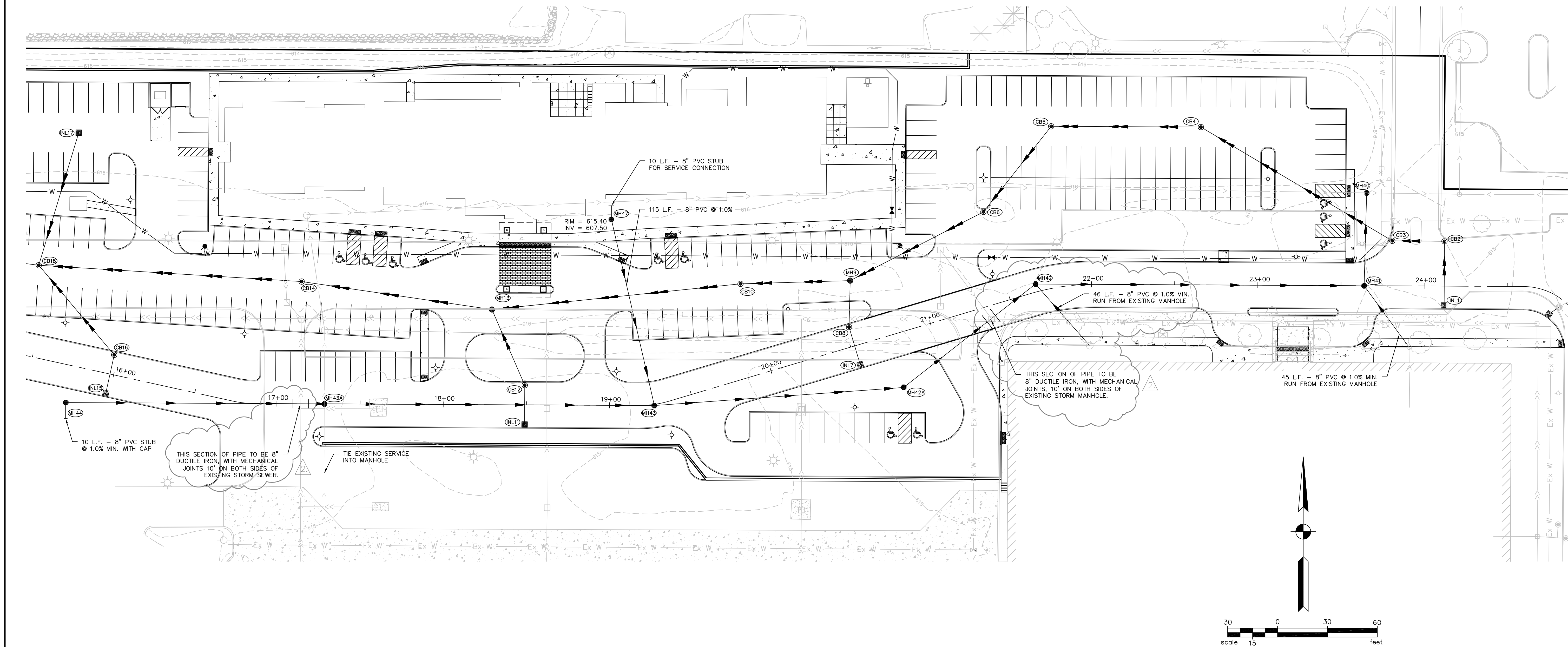
SHEET

12

Appendix F 13 of 22 6/30/2020

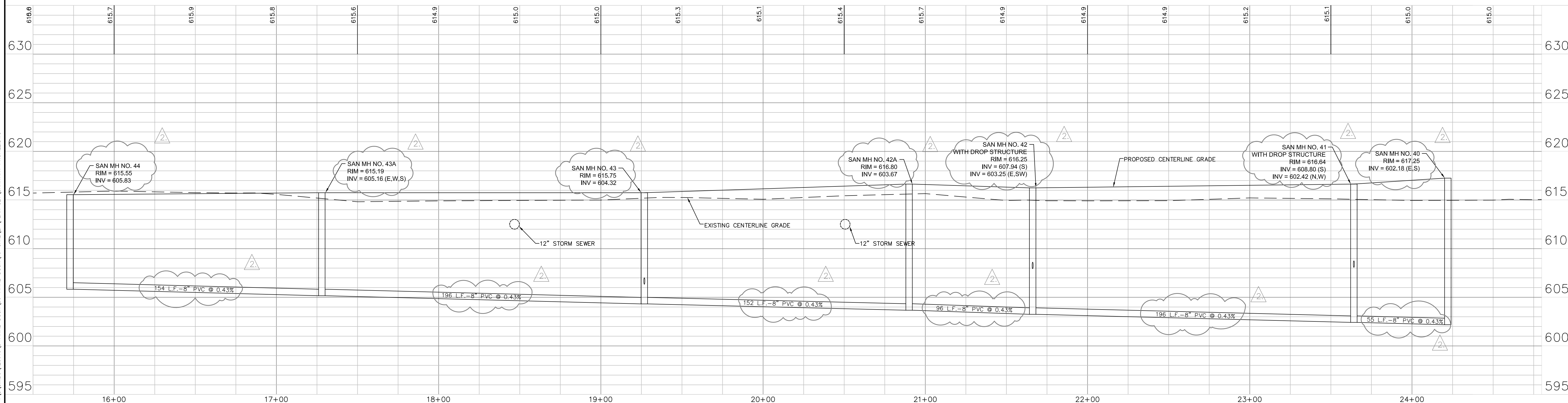


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#### NOTES

- ALL SANITARY SEWER TO BE 8" PVC, SDR 26.



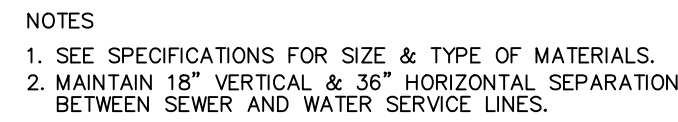
NO.		BY	DATE	REVISIONS
2		MJF	11/26/12	SANITARY SEWER REVISIONS

SEH FILE NO.	120610
PROJECT NO.	120610
ISSUE DATE	06/04/12
DRAWN BY:	RPO
DESIGNED BY:	MJF
CHECKED BY:	CLH



MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
SANITARY SEWER PLAN AND PROFILE





12" MIN to 20" MAX

18" MIN  
24" MAX

HYDRANT—SEE SPECS.  
TO BE PAINTED GREEN

FINISHED GRADE

EDGE OF PAVEMENT

4" ABOVE TOP  
OF CURB

STANDPIPE

AUX. VALVE BOX

5' MIN COVER — SEE SPECS.

1 CU. YD.  
CRUSHED ROCK

6" GATE  
VALVE

TEE

WATERMAIN  
SIZE VARIES,  
RESTRAINED TEE  
W/ 6" BRANCH

CONCRETE THRUST  
BLOCK AND BASE

6" D.I.P.

CONCRETE BLOCK (TYP.)

3/4" TIE RODS, MIN. 2  
(GALVANIZED) OR MEGALUG  
OR APPROVED EQUAL

NOTE:

1. FIRE HYDRANT SHOULD BE PLACED AT A MINIMUM OF 3 FEET BEHIND THE BACK OF CURB.
2. ALL FIRE HYDRANTS TO HAVE A STORZ CONNECTION.

[illegible]

- NOTES:
1. ALL INLET PIPES MUST ENTER SEPARATOR AT INLET GALLERY, (OBLIQUE ANGLES ALLOWED).
  2. STANDARD OUTLET PIPE CONFIGURATION TO EXIT SEPARATOR AT THE CENTER LINE, (OBLIQUE ANGLES ALLOWED). CUSTOM OUTLET CONFIGURATIONS AVAILABLE UPON REQUEST.
  3. BOLTED & GASKETED MANHOLE ACCESS COVER ELEVATION MAY BE ADJUSTED TO GRADE. FIELD POURED CONCRETE COLLAR AS REQUIRED BY OTHERS. INLET GRATES & ALTERNATE COVER OPTIONS AVAILABLE.
  4. FOR DEPTHS LESS THAN THE MINIMUM SHOWN CONTACT KRISTAR ENTERPRISES FOR ENGINEERING ASSISTANCE.
  5. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM DESIGNATION C858.
  6. SURF PARTITION MAY BE MADE AS A CONCRETE SLAB AS SHOWN, OR FROM ALTERNATIVE MATERIALS: E.G. STAINLESS STEEL, FIBERGLASS COMPOSITE.
  7. REMOVABLE INTERNAL COMPONENTS MAY BE AVAILABLE TO FACILITATE MAINTENANCE. SEE DRAWING DVS-R-0001 OR CONTACT KRISTAR ENTERPRISES FOR DETAILS.
  8. MATCH LINES PROVIDED TO FACILITATE PROPER ALIGNMENT OF ALL CONCRETE COMPONENTS DURING ASSEMBLY.

<p><b>TITLE</b> <i>FlowGuard</i> DUAL-VORTEX HYDRODYNAMIC SEPARATOR SQUARE STRUCTURE DVS-84S</p>	<p><b>KriStar</b> Enterprises, Inc. 360 Sutton Place, Santa Rosa, CA 95407 Ph: 800.579.8819, Fax: 707.524.8186, <a href="http://www.kristar.com">www.kristar.com</a></p>
<p><b>DVS-84S</b></p>	<p><b>NR</b> 0086 NEW 4/25/11 <b>JPR</b> 4/25/11 <b>SHEET</b> 1 OF 1</p>

**DVS-605**

**INLET GALLERY**  
24.00" X 60.00"

**INLET,**  
#24.00" MAX.  
PIPE SIZE.  
SEE NOTE 1.

**OUTLET,**  
#24.00" MAX.  
PIPE SIZE.  
SEE NOTE 2.

**#48.00" BOLTED & GASKETED**  
ACCESS COVER STANDARD, ALTERNATE  
COVERS & GRATED INLET OPTIONS AVAILABLE.  
SEE NOTE 3.

**TOP SLAB**

**UPPER RISER**  
AS REQUIRED.

**#48.00" BOLTED & GASKETED**  
ACCESS COVER, STANDARD, ALTERNATE  
COVERS & GRATED INLET OPTIONS  
AVAILABLE. SEE NOTE 3.

**CONCRETE COLLAR**  
REQUIRED BY  
OTHERS. SEE NOTE 2.

**INLET GALLERY**  
24.00" X 60.00"

**INLET,**  
#24.00" MAX.  
PIPE SIZE.  
SEE NOTE 1.

**OUTLET,**  
#24.00" MAX.  
PIPE SIZE.  
SEE NOTE 2.

**INTERNAL COMPONENTS**

**MIDDLE RISER**  
WITH INTERNALS  
INSTALLED.

**OUTLET,**  
INTERNAL COMPONENTS.

**BASE.**

**6.25' [75.00"]**  
SUMP

**5.00" MINIMUM**

**3.50' [42.00"]**  
MINIMUM DEPTH,  
SEE NOTE 3.

- 
- 6.00" MINIMUM WALL THICKNESS
- 5.00' [60.00"]
- 6.00" MINIMUM
- NOTES:
1. ALL INLET PIPES MUST ENTER SEPARATOR AT INLET GALLERY, (OBLIQUE ANGLES ALLOWED).
  2. STANDARD OUTLET PIPE CONFIGURATION TO EXIT SEPARATOR AT THE CENTER LINE, (OBLIQUE ANGLES ALLOWED). CUSTOM OUTLET CONFIGURATIONS AVAILABLE UPON REQUEST.
  3. BOLTED & GASKETED MANHOLE ACCESS COVER ELEVATION MAY BE ADJUSTED TO GRADE. FIELD POURED CONCRETE REQUIRED. BY OTHERS. INLET GRATES & ALTERNATE COVER OPTIONS AVAILABLE.
  4. FOR DEPTHS LESS THAN THE MINIMUM SHOWN CONTACT KRISTAR ENTERPRISES FOR ENGINEERING ASSISTANCE.
  5. CONCRETE COMPONENTS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM DESIGNATION C688.
  6. REMOVABLE INTERNAL COMPONENTS MAY BE AVAILABLE TO FACILITATE MAINTENANCE. SEE DRAWING DVS-R-0001 OR CONTACT KRISTAR ENTERPRISES FOR DETAILS.

<p><b>TITLE</b> <i><b>FlowGuard</b></i> <b>DUAL-VORTEX</b> HYDRODYNAMIC SEPARATOR SQUARE STRUCTURE <b>DVS-60S</b></p>	<p><b>KriStar</b> <b>KriStar Enterprises, Inc.</b> 360 Sutton Place, Santa Rosa, CA 95407 Ph: 800.579.8819, Fax: 707.524.8116, <a href="http://www.kristar.com">www.kristar.com</a></p>
<p><b>DVS-60S</b></p>	<p><b>NR</b> 0086 NEW 4/25/11 <b>JPR</b> 4/25/11 SHEET 1 OF 1</p>

STANDARD "HANDICAPPED PARKING" SIGN WITH SYMBOL, BOLT, TO STEEL TUBE WITH  $\frac{3}{8}$ " CADMIUM PLATED BOLTS, NUTS, AND WASHERS.

SIGNAGE STATING "VAN ACCESSIBLE", REFER TO HANDICAP PARKING DETAIL FOR DESIGNATED SPOTS, OTHERWISE NOT NECESSARY.

SIGNAGE STATING "\$XXX FINE", CHECK WITH MUNICIPALITY TO VERIFY FINE AMOUNTS.

PAVING

1'-6" DIA. CONCRETE BASE

Dimensions: 30, 24, 16, 24, 16, 6'-0", 3'-0", 1'-0"

6.00' 5.00' 6.00'

12:1 SLOPE

12:1 SLOPE

1/2" PREFORMED JOINT FILLER

12 3/4" x 24" CAST IRON TRUNCATED DOME PLATE BY EAST JORDAN IRON WORKS (EJOW) WITH BLACK FINISH. PROVIDE ALL MATERIALS NECESSARY TO INSTALL PER MANUFACTURER'S SPECIFICATIONS.

CURB FACE (SEE CURB DETAIL)

ASPHALT

5.00' 2.00'

ASPHALT

6.00' 5.00' 6.00'

FRONT VIEW

The diagram illustrates a 15.0' wide accessible parking space layout. It shows a top-down view of the parking area with various components labeled:

- Dimensions:**
  - Overall width: 15.0'
  - Individual parking space width: 8.0' (three spaces shown)
  - Distance between the centerlines of the first and second spaces: 8.0'
  - Distance between the centerlines of the second and third spaces: 8.0'
  - Length of the parking space: 48.0'
  - Height of the concrete wheel stop: 2.0'
- Components and Features:**
  - Handicap Parking Signs:** Indicated by circles with a wheelchair symbol at the top of the diagram.
  - Van Accessible Signs:** Indicated by circles with a van symbol at the top of the diagram.
  - Concrete Walk:** A path leading to the parking spaces.
  - Depressed Curb:** A curb with a textured surface, 2.0' high, separating the parking area from the adjacent area.
  - Concrete Wheel Stop:** A 2.0' high stop at the end of the parking space, with a note to "REFER TO DETAIL".
  - Wheelchair Symbols:** Four symbols are shown, indicating the accessible nature of the spaces.
  - Detachable Warnings:** A note pointing to the 2.0' high curb, stating: "DETECTABLE WARNINGS, CAST IRON, INDICATED DOME PLATE, BY EAST GORHAM IRON WORKS OR APPROVED EQUAL, WITH BLACK PAVEMENT WORKS WITH BLACK PAINT, NECESSARY TO INSTALL PER MANUFACTURER'S SPECIFICATIONS."

PAVEMENT OR GROUND LINE

SOLID LID

1/4" - 1/2" BELOW FINISH GRADE

VALVE BOX SHALL BE BUFFALO TYPE, THREE PIECE CAST IRON 5 1/4" SHAFT, ADJUSTABLE TO 6" UP OR DOWN FROM STANDARD BOX LENGTH.

5.5' MINIMUM COVER

EXTENSION PIECES SHALL BE USED WHERE NEEDED TO BRING THE TOP OF THE BOX TO THE PROPOSED GRADE OR GROUND LINE.

VALVE BOX SHALL BE INSTALLED IN A TRUE VERTICAL ALIGNMENT, NOT CENTERED IN OPENING.

VALVE SHALL BE RESILIENT WEDGE - SEE SPECS.

UNDISTURBED GROUND

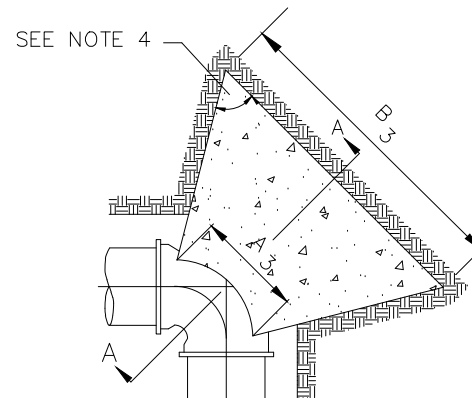
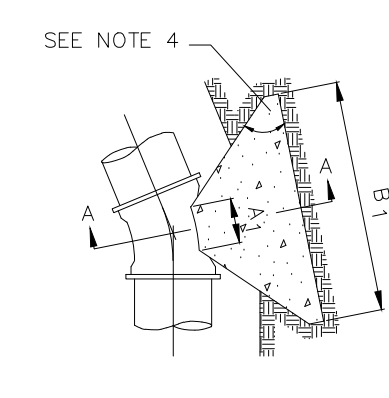
8" CONCRETE BLOCK

NOTES:

1. SHAPE OF BACK OF BUTTRISS MAY VARY AS LONG AS POURED AGAINST FIRM UNDISTURBED EARTH.
2. DIMENSION C1, C2, C3 SHOULD BE LARGE ENOUGH TO MAKE ANGLE  $\alpha$  EQUAL TO OR LARGER THAN 45 DEGREES.
3. DIMENSION A1, A2, A3 SHOULD BE AS LARGE AS POSSIBLE WITHOUT INTERFERING WITH MJ BOLTS.
4. 45 DEGREES MINIMUM.
5. PLACE POLYETHYLENE BETWEEN CONCRETE AND PIPE.
6. FIELD-LOK GASKETS MAY BE USED IN PLACE OF THRUST BLOCKING.

BUTTRESS DIMENSIONS						
PIPE SIZE	22 1/2" BEND		45° BEND		90° BEND	
	B <sub>1</sub>	D <sub>1</sub>	B <sub>2</sub>	D <sub>2</sub>	B <sub>3</sub>	D <sub>3</sub>
6"	1'-5"	1'-5"	1'-5"	1'-5"	2'-1"	1'-6"
8"	1'-5"	1'-5"	2'-1"	1'-5"	2'-8"	2'-0"
12"	1'-10"	1'-10"	3'-4"	2'-0"	4'-9"	2'-6"
16"	3'-0"	2'-0"	3'-10"	3'-0"	6'-2"	3'-6"
20"	3'-0"	2'-8"	5'-6"	3'-4"	8'-4"	4'-0"
24"	4'-4"	3'-0"	6'-10"	3'-10"	9'-8"	5'-0"
30"	—	—	9'-3"	6'-0"	17'-0"	6'-0"

CONCRETE SHALL BE  
IN CONTACT WITH  
THIS QUADRANT  
OF PIPE

[illegible]

- NOTES:  
1. PAINT TO BE CHLORINATED ALKYD FS TT,  
TYPE 111 QUICK DRYING, NONBLEEDING, COLOR  
PER TOWN CODE.

TOP OF REINFORCING BAR  
FLUSH WITH TOP OF CONCRETE

1/2" DIA. HOLE

24" REINFORCING BAR  
EMBEDDED 40" INTO  
SUBGRADE

2 #4 BARS  
CONTINUOUS

6'-0"

24"

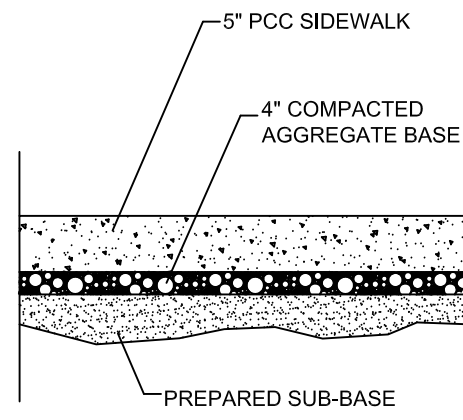
9"

24"

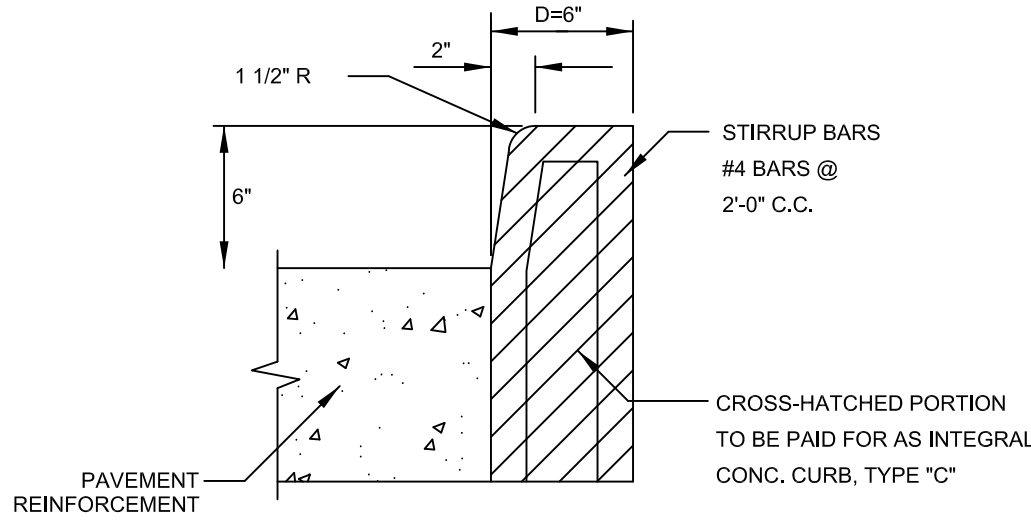
## CONCRETE WHEEL STOP



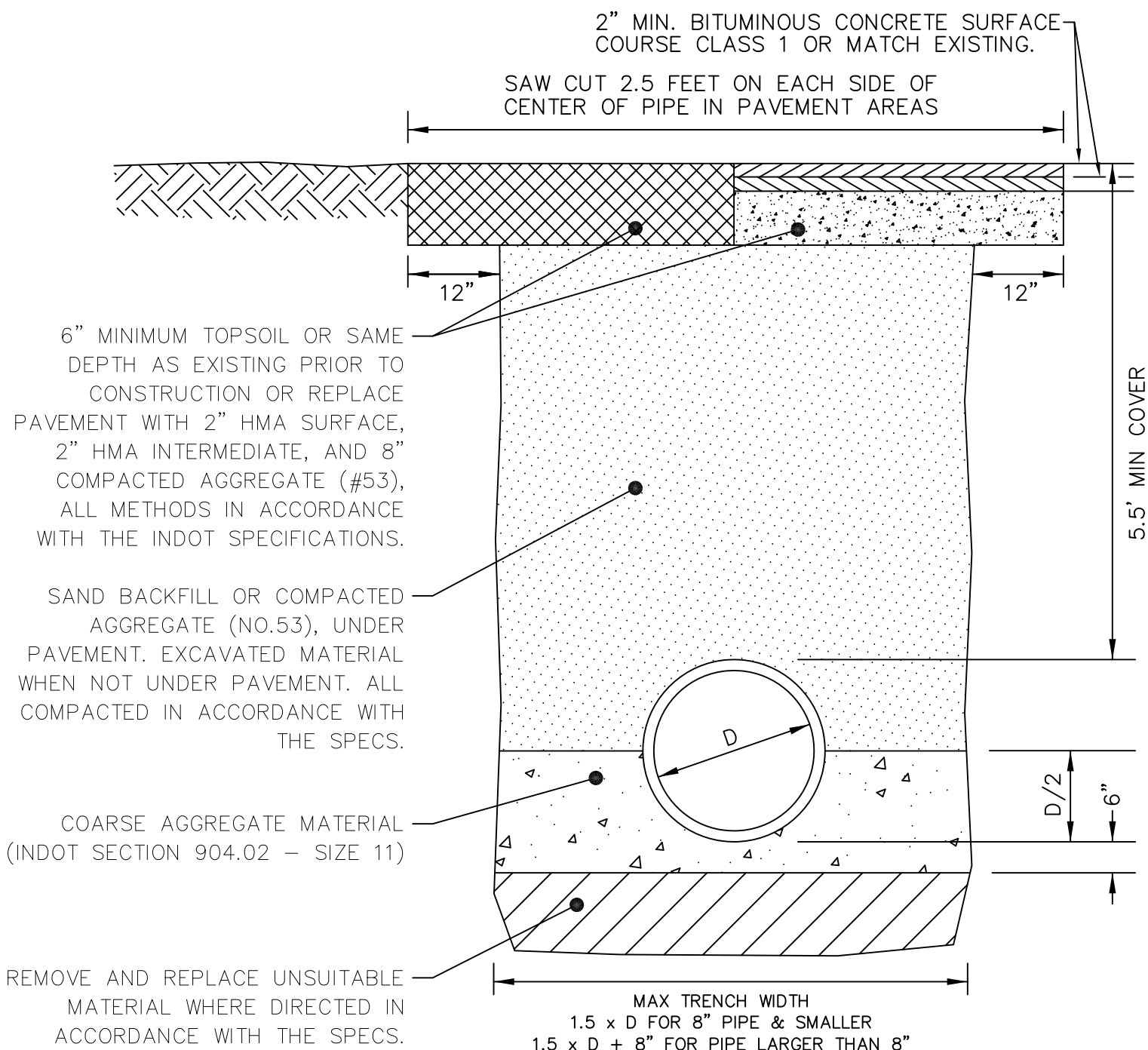
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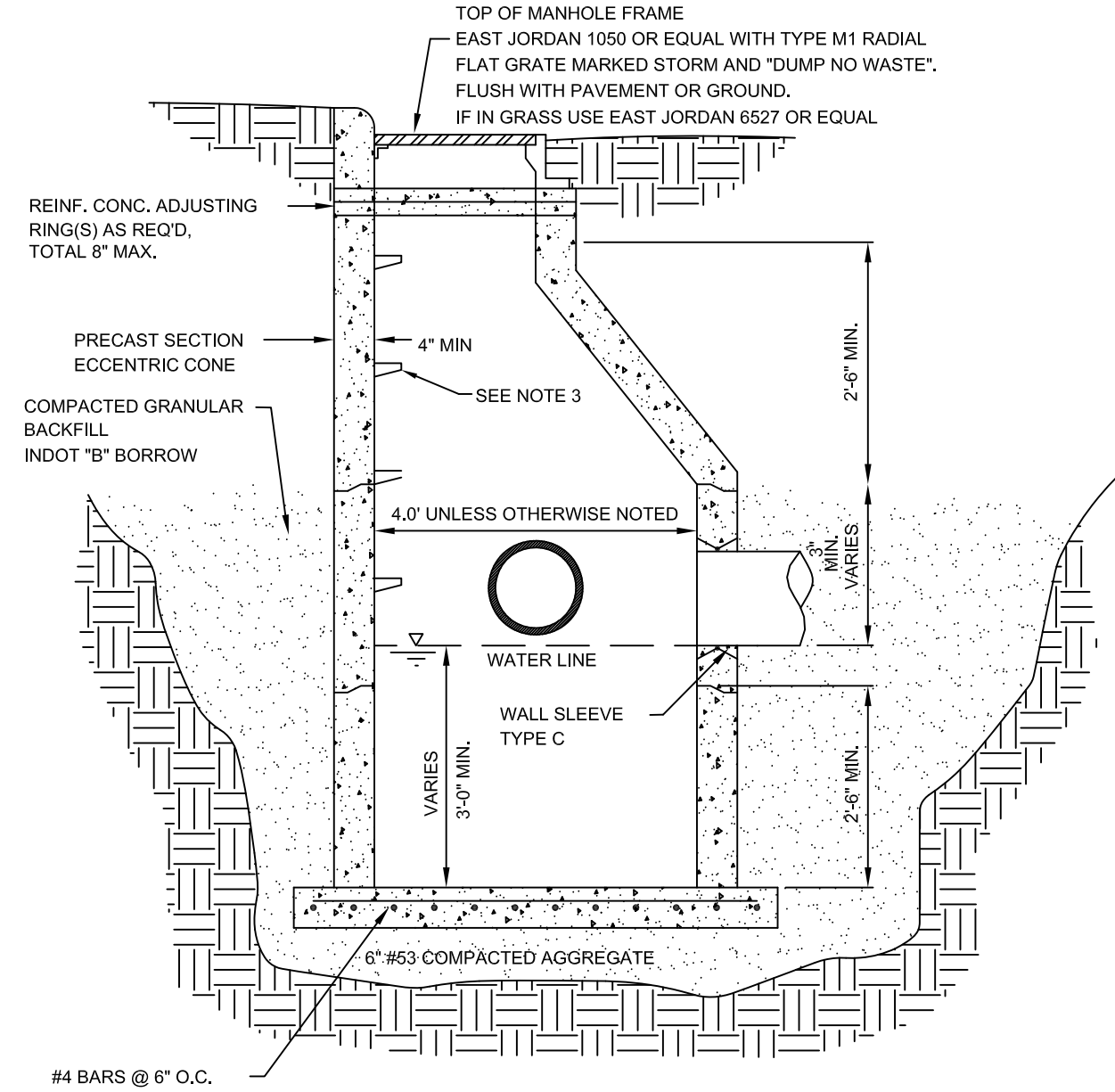
CONCRETE SIDEWALK SECTION



BARRIER (INTEGRAL) CONCRETE CURB - TYPE C

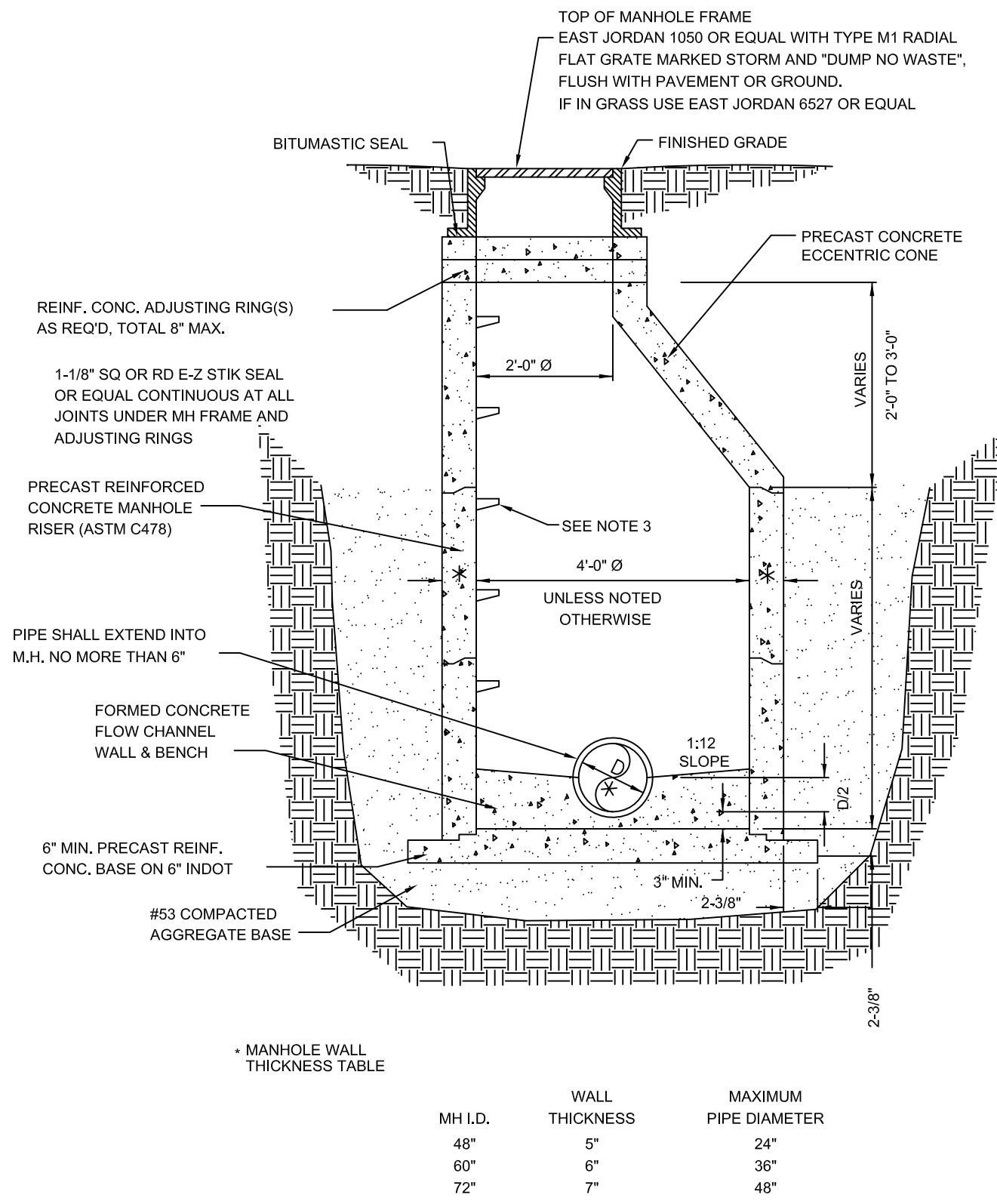


TYPICAL TRENCH



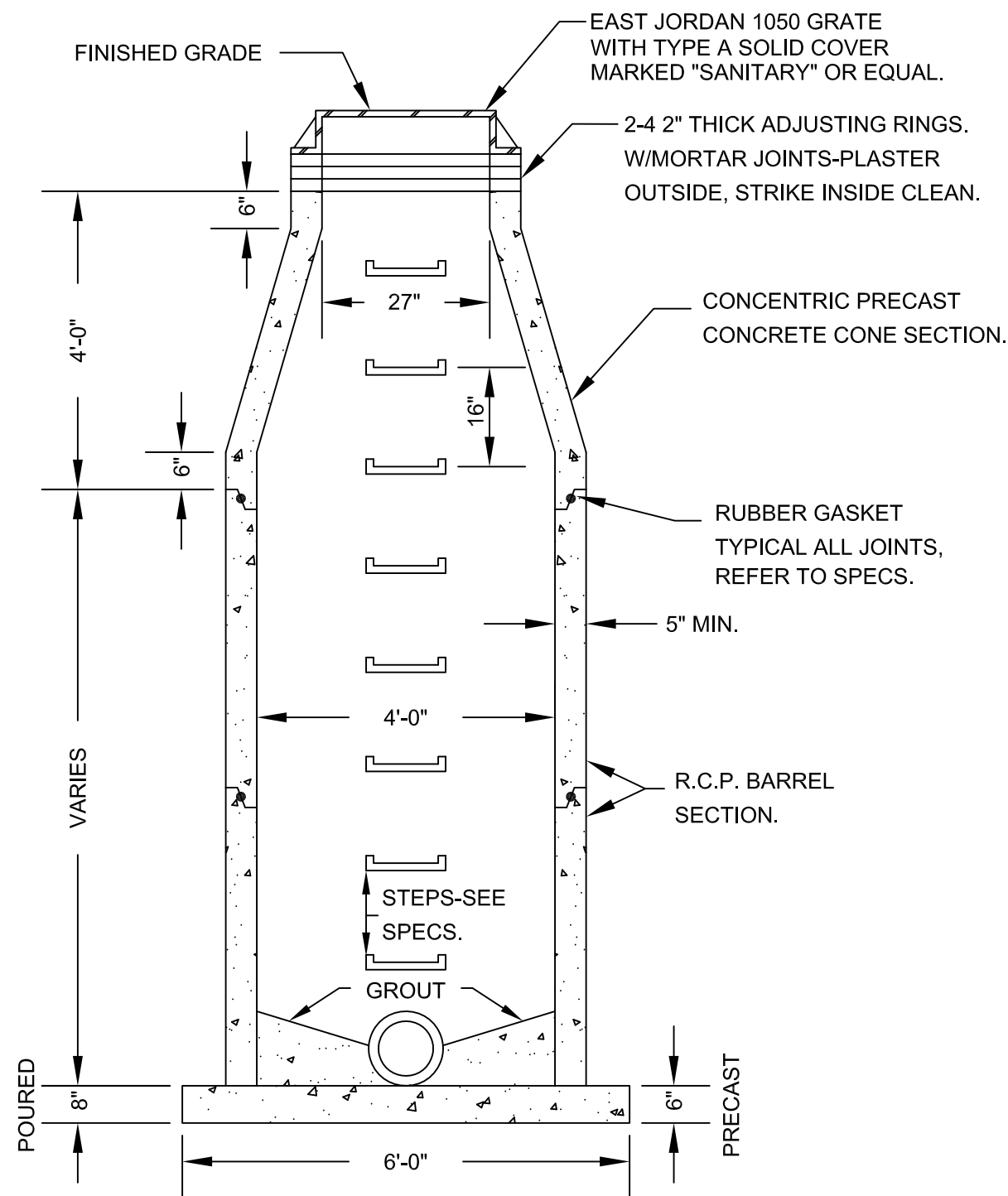
- NOTE:
1. WHERE DEPTH FROM TOP OF CASTING TO INVERT IS LESS THAN 5'-0", USE FLAT TOP MANHOLE TYPE "C" IN LIEU OF ECCENTRIC CONE
  2. WATERTIGHT SEAL IS REQ'D BETWEEN PRECAST RISER AND SEWER PIPE.
  3. COPOLYMER/STEEL MH STEPS AS MANUFACTURED BY M.A. INDUSTRIES, INC., OR EQUAL, AT 16" O.C.

CATCH BASIN-TYPE A

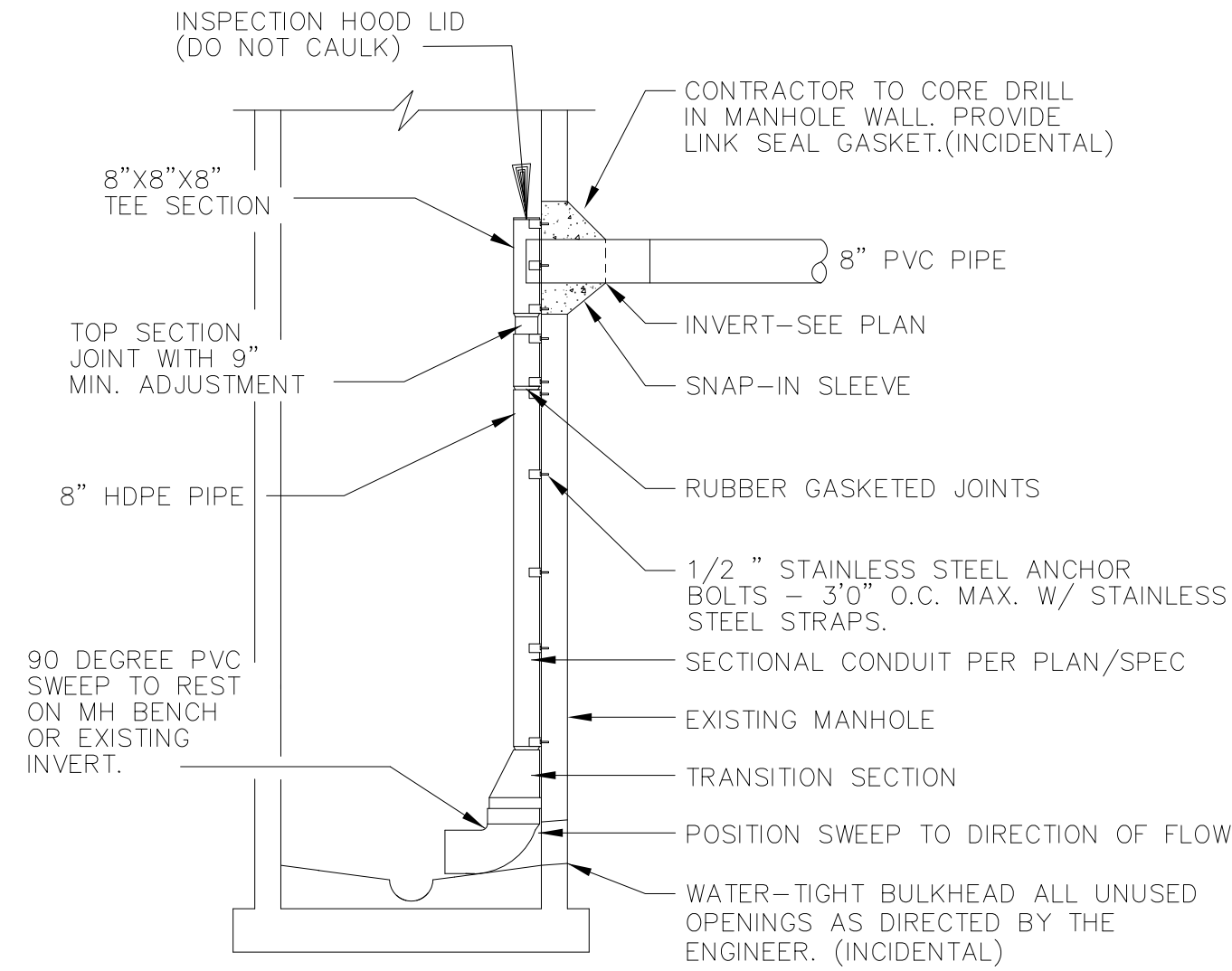


- NOTE:
1. WHERE DEPTH FROM TOP OF CASTING TO INVERT IS LESS THAN 5'-0", USE FLAT TOP MANHOLE TYPE "C" IN LIEU OF ECCENTRIC CONE
  2. WATERTIGHT SEAL IS REQ'D BETWEEN PRECAST RISER AND SEWER PIPE.
  3. COPOLYMER/STEEL MH STEPS AS MANUFACTURED BY M.A. INDUSTRIES, INC., OR EQUAL, AT 16" O.C.

STORM MANHOLE-TYPE A

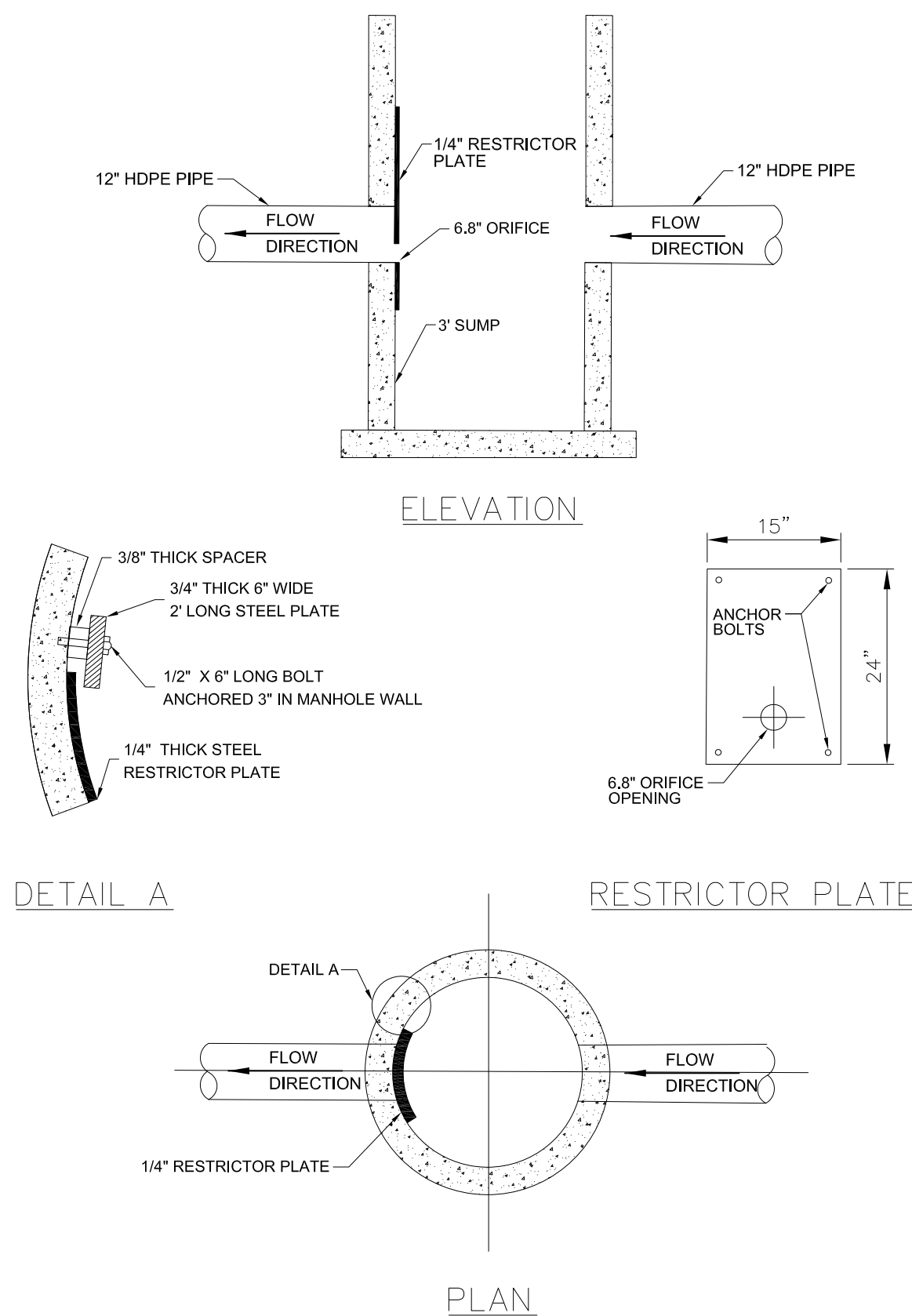


SANITARY MANHOLE - STANDARD



- NOTES:
- DO NOT DRILL WITHIN 8" ABOVE OR BELOW THE MANHOLE JOINT.
  - LOW PROFILE INSIDE DROP SYSTEM TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

SANITARY DROP MANHOLE



- NOTES:
1. RESTRICTOR PLATE SHALL BE PERMANENTLY MOUNTED TO THE CATCH BASIN WALL BY MEANS OF 1/2"x6" ANCHOR BOLTS (4" MIN.) WELDED TO THE RESTRICTOR PLATE. ALL SPACES BETWEEN PLATE AND THE MANHOLE WALL SHALL BE FILLED WITH LEAN PORTLAND CEMENT GROUT.
  2. THE RESTRICTOR PLATE AND ANCHOR BOLTS SHALL BE HOT DIP GALVANIZED AFTER THE ORIFICE HAS BEEN CUT AND THE ANCHOR BOLTS HAVE BEEN WELDED.
  3. THE ORIFICE OPENING SHALL BE 6.8" IN DIAMETER.
  4. CONSTRUCT CATCH BASIN AS PER STORM CATCH BASIN DETAIL.

CATCH BASIN NO. 28 WITH RESTRICTOR

REVISIONS

DATE

BY

NO.

SIMBU

120610

06/18/12

ISSUE DATE

RFO

DESIGNED BY:

CLH

REGISTERED

10303156

STATE OF

INDIANA

PROFESSIONAL

SEAL

SEH of Indiana

9620 California Avenue, Suite 100

Munster, Indiana 46321

Phone: 219.513.2500

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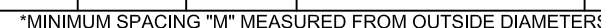
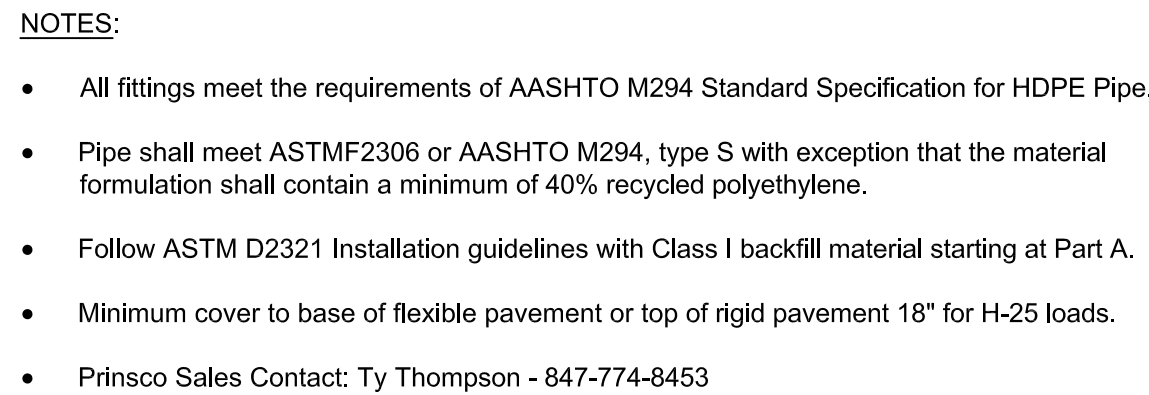
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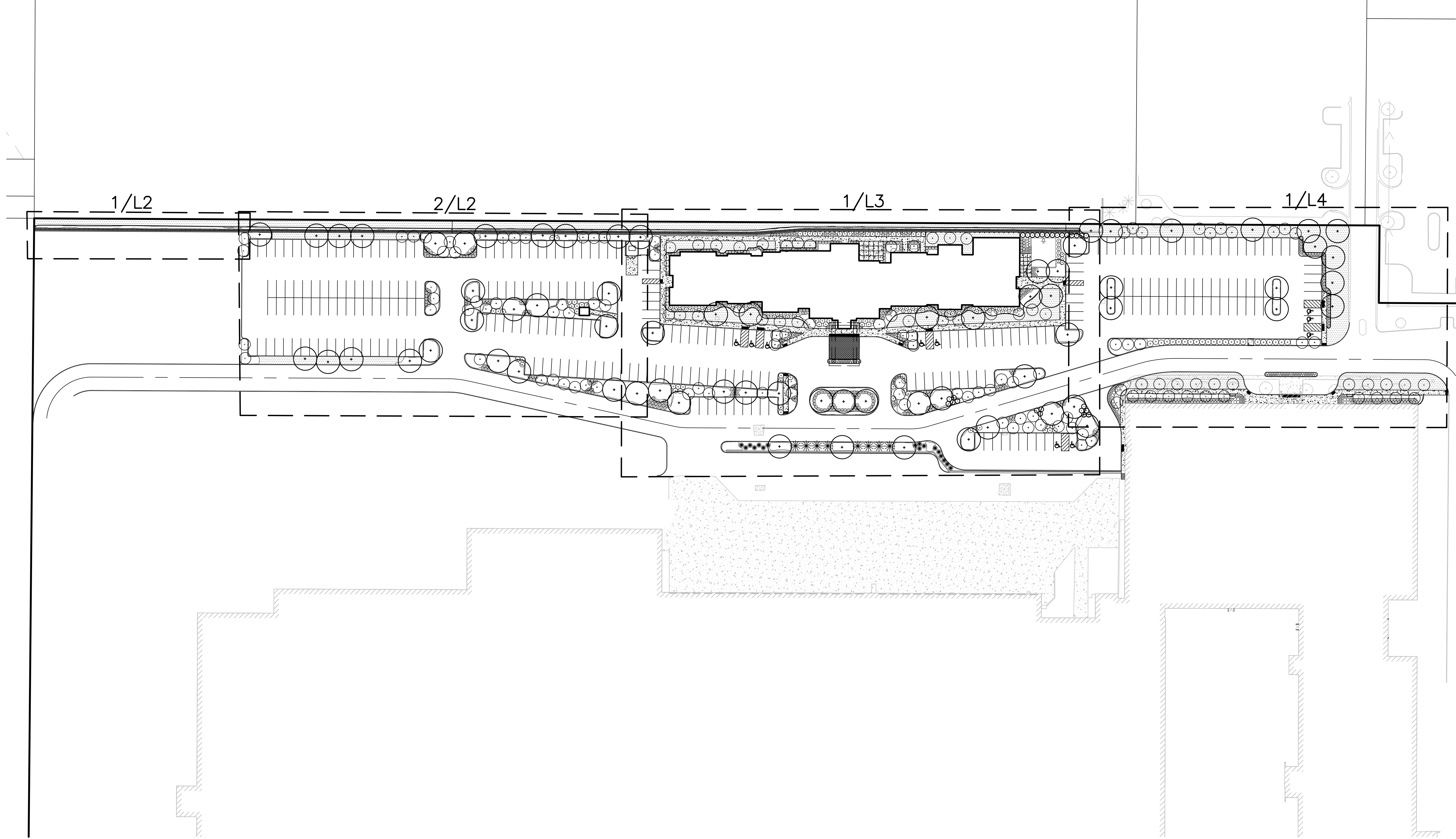
SEH of Indiana

SHEET

15

MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
CONSTRUCTION DETAILS

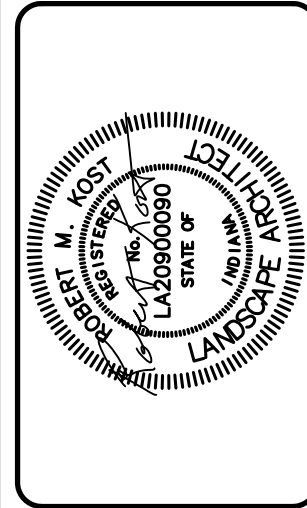




SHEET  
L-1

MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
LANDSCAPE LAYOUT SHEET

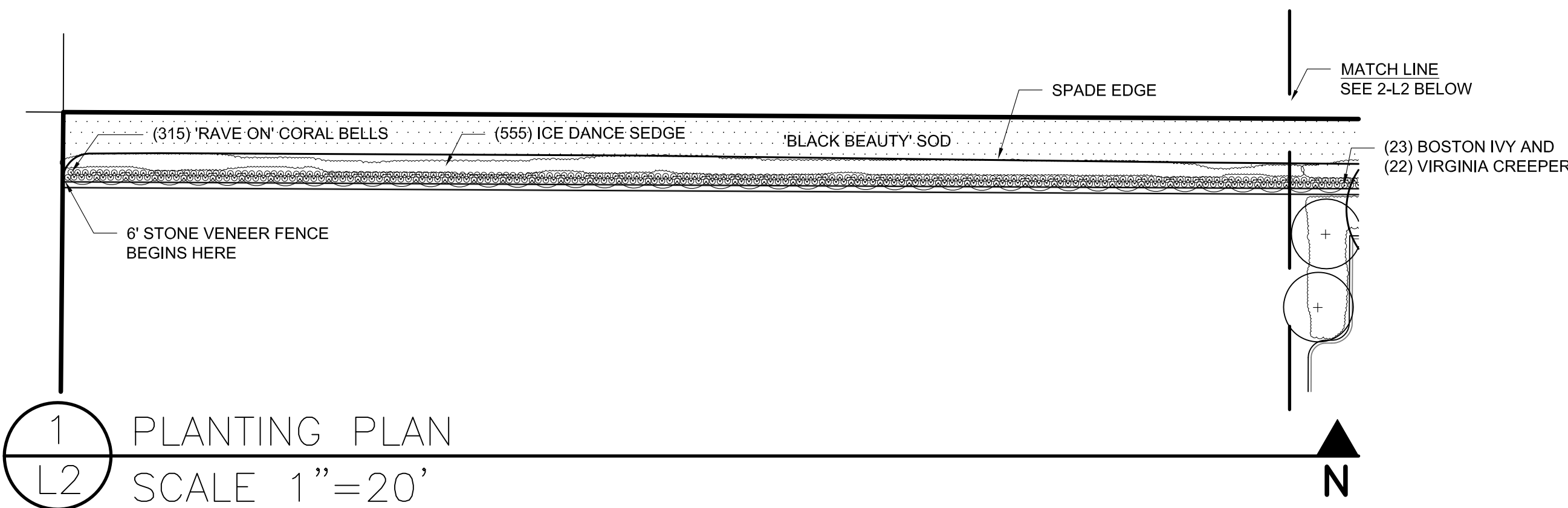
**SEH of Indiana**  
9200 Calhoun Avenue, Suite 100  
Munster, Indiana 46321  
Phone: 219.513.2500



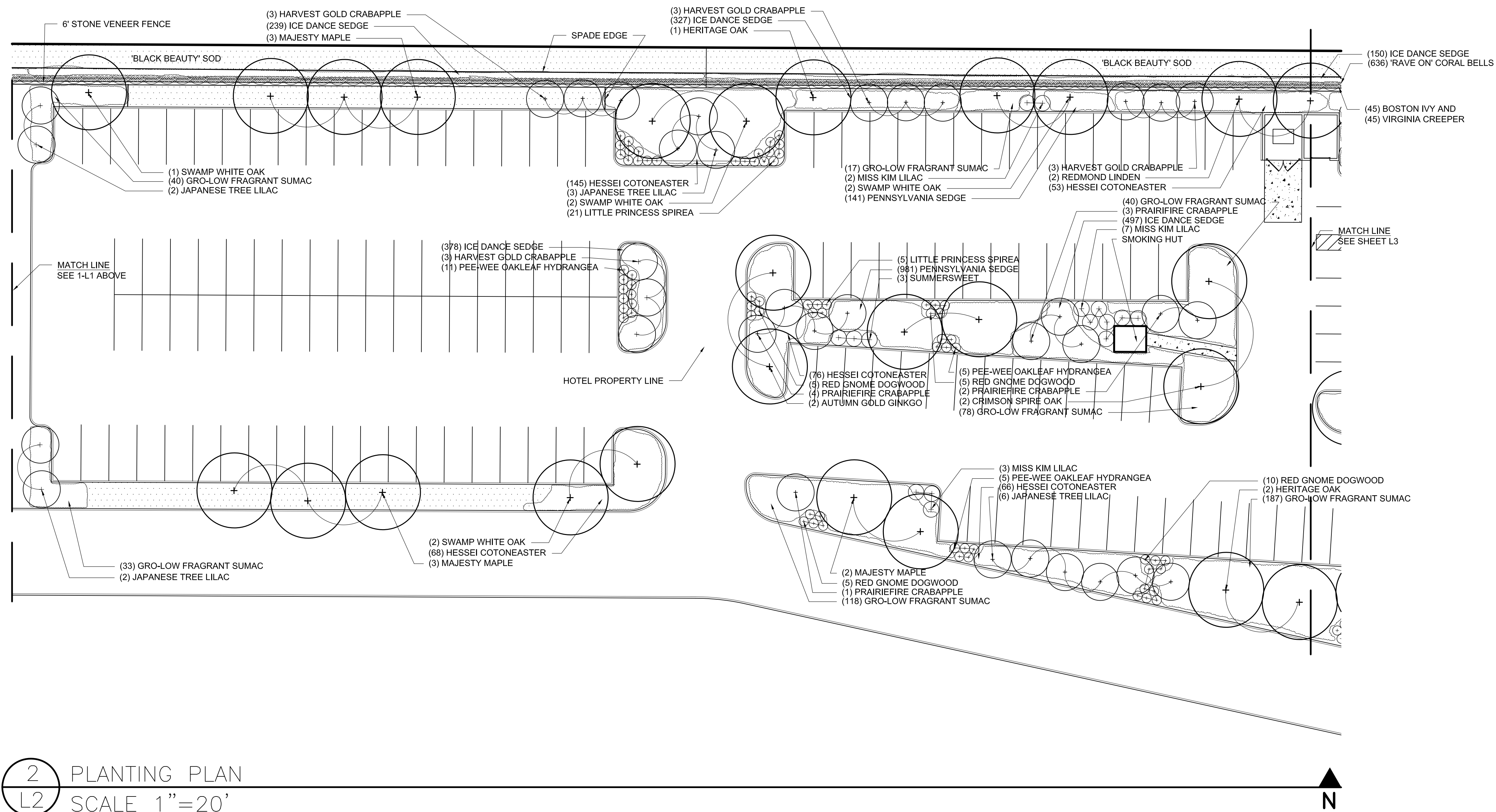
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PROJECT NO. 120610  
ISSUE DATE 06/18/12  
DRAWN BY: BLS  
DESIGNED BY: BLS  
CHECKED BY: GEC

NO.	BY	DATE	REVISIONS





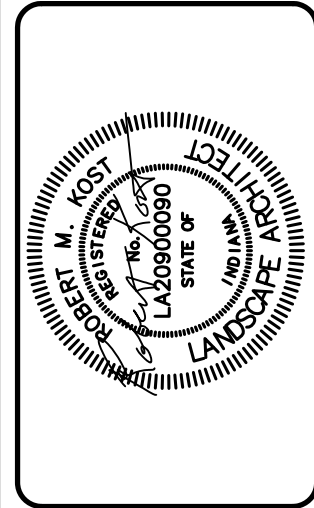
1 PLANTING PLAN  
L2 SCALE 1"=20'



2 PLANTING PLAN  
L2 SCALE 1"=20'

REVISIONS		DATE	BY	NO.

SIMBU	120610
PROJECT NO.	06/18/12
ISSUE DATE	BLS
DRAWN BY	BLS
DESIGNED BY	GEC
CHECKED BY	

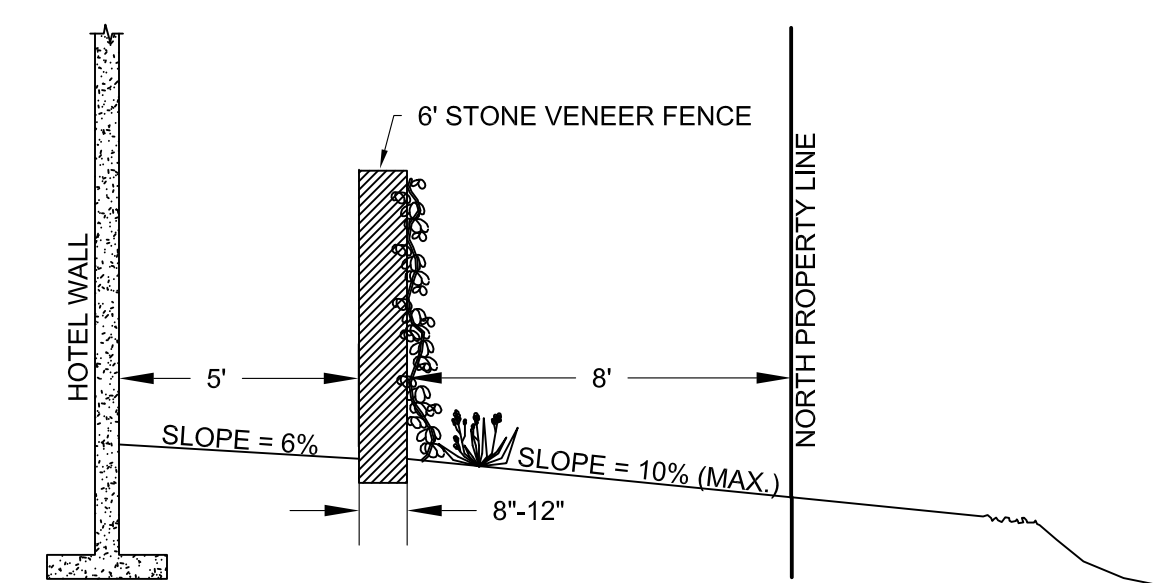


**SEH of Indiana**  
9200 California Avenue, Suite 100  
Munster, Indiana 46321  
Phone: 219.513.2500

MUNSTER, INDIANA  
SIMBORG DEVELOPMENT, LLC  
LAKE BUSINESS CENTER - HOTEL SITE  
LANDSCAPE PLANTING PLAN





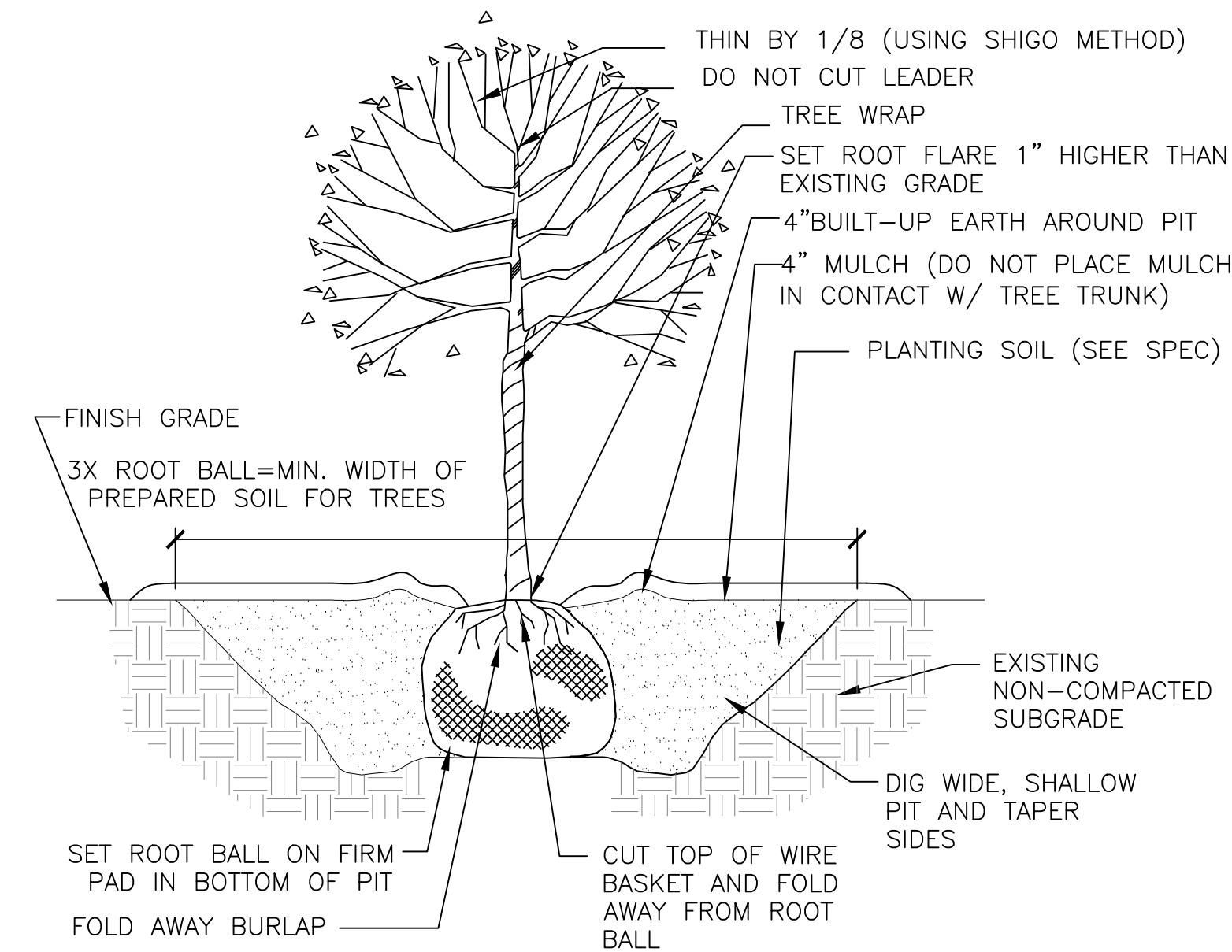


2 NARROW FENCE SECTION BEHIND HOTEL  
L4 SCALE 1"=4'

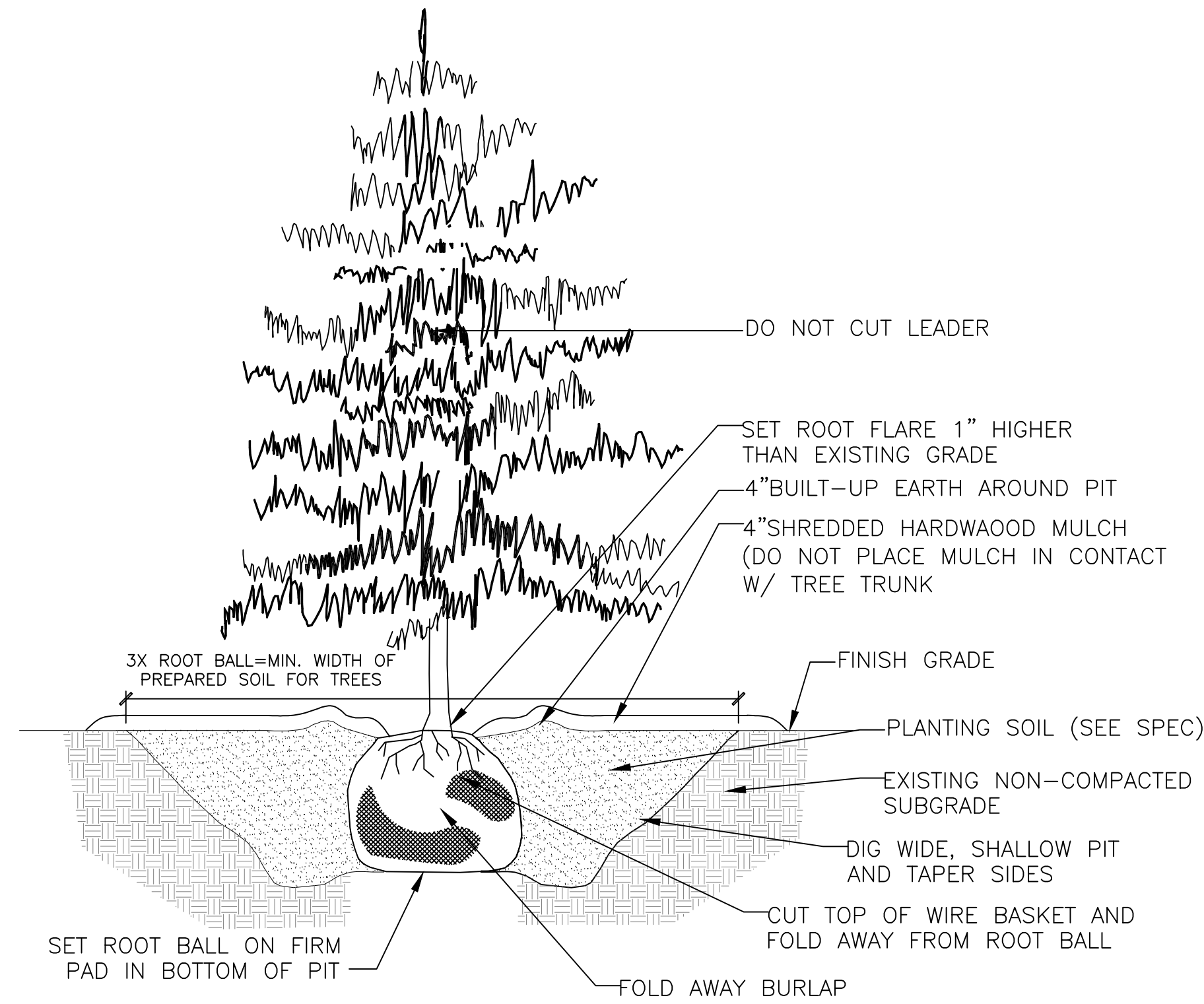
SHEET

L-4

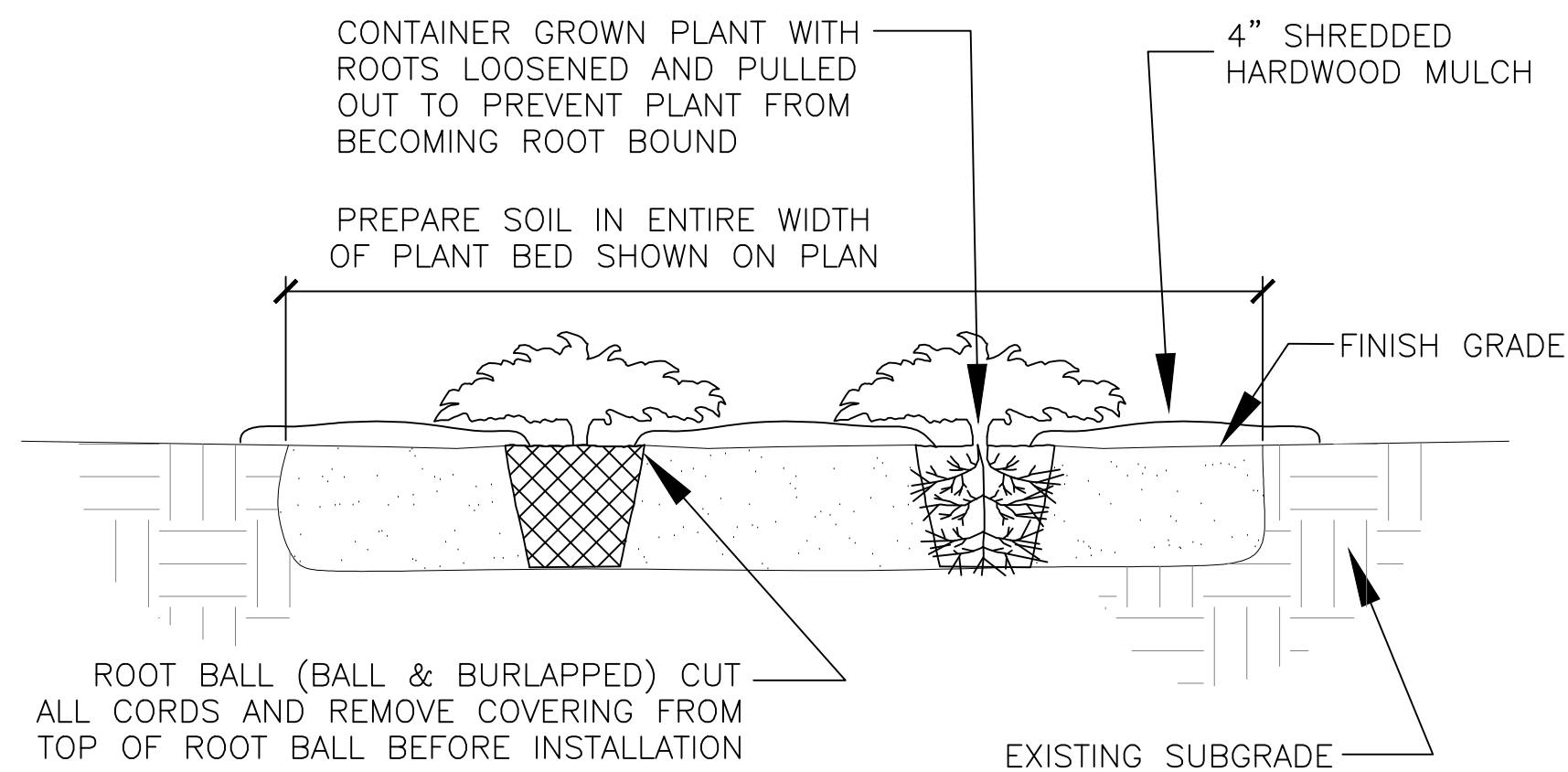




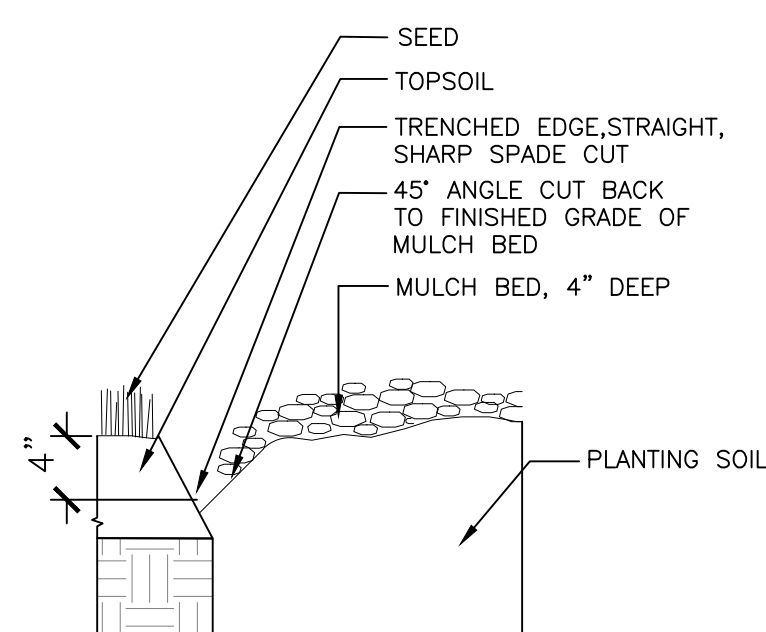
1 DECIDUOUS TREE DETAIL  
L3 NO SCALE



2 CONIFEROUS TREE DETAIL  
L3 NO SCALE



3 PERENNIAL PLANTING DETAIL  
L3 NO SCALE



4 SHRUB PLANTING DETAIL  
L3 NO SCALE

## PLANTING SCHEDULE

Quantity	Common Name	Botanical Name	Size	Root	Spacing	Notes
SHADE TREES						
9	Crimson Spire Oak	<i>Quercus robur</i> X <i>Q. alba</i> 'Crimschmidt'	2" col.	B&B	per plan	Trunk free of branches 6-7'
5	Elm, Valley Forge	<i>Ulmus americana</i> 'Valley Forge'	2" col.	B&B	per plan	Trunk free of branches 6-7'
4	Ginkgo, Autumn Gold	<i>Ginkgo biloba</i> 'Autumn Gold'	2" col.	B&B	per plan	Trunk free of branches 6-7'
6	Heritage Oak	<i>Quercus</i> X <i>macrocarpa</i> 'Heritage'	2" col.	B&B	per plan	Trunk free of branches 6-7'
12	Linden, Redmond	<i>Tilia americana</i> 'Redmond'	2" col.	B&B	per plan	Trunk free of branches 6-7'
17	Maple, Majesty	<i>Acer saccharum</i> 'Flax Mill'	2" col.	B&B	per plan	Trunk free of branches 6-7'
15	Swamp White Oak	<i>Quercus bicolor</i>	2" col.	B&B	per plan	Trunk free of branches 6-7'
ORNAMENTAL TREES						
44	Crabapple, Harvest Gold	<i>Malus</i> 'Harvest Gold'	2" col.	B&B	per plan	
54	Crabapple, Prairiefire	<i>Malus</i> 'Prairiefire'	2" col.	B&B	per plan	
12	Eastern Redbud	<i>Cercis canadensis</i>	2" col.	B&B	per plan	
38	Lilac, Japanese Tree	<i>Syringa reticulata</i>	2" col.	B&B	per plan	
EVERGREENS						
17	Blue Spruce, Iseli Fastigate	<i>Picea pungens</i> 'Iseli fastigate'	6'	B&B	per plan	
8	Juniper, Burki	<i>Juniperus virginiana</i> 'Burkii'	12'	B&B	per plan	
SHRUBS						
280	Wintergreen boxwood	<i>Buxus microphylla</i>	#5	CONT.	per plan	
169	Dogwood, Red Gnome	<i>Cornus alba sibirica</i> 'Red Gnome'	#5	CONT.	per plan	
775	Hessel Cotoneaster	<i>Cotoneaster horizontalis</i> x <i>adpressus</i>	#5	CONT.	3' O.C.	
27	Holly, Shamrock	<i>Ilex glabra</i> 'Shamrock'	#5	CONT.	per plan	
78	Hydrangea, Oakleaf Pee Wee	<i>Hydrangea quercifolia</i> 'Pee Wee'	#5	CONT.	per plan	
8	Jim Dandy Winterberry	<i>Ilex verticillata</i> 'Jim Dandy'	#5	CONT.	per plan	
70	Lilac, Miss Kim	<i>Syringa patula</i> 'Miss Kim'	#5	CONT.	per plan	
115	Little Princess Spirea	<i>Spirea japonica alba</i>	#5	CONT.	per plan	
60	Red Sprite Winterberry	<i>Ilex verticillata</i> 'Red Sprite'	#5	CONT.	per plan	
27	Summersweet	<i>Clethra alnifolia</i>	#5	CONT.	per plan	
688	Sumac, Gro-Low Fragrant	<i>Rhus aromatica</i> 'Gro-Low'	#5	CONT.	3' O.C.	
VINE						
160	Boston Ivy	<i>Parthenocissus tricuspidata</i> 'Robusta'	#1	CONT.	5' O.C.	Alternate Boston Ivy and
115	Virginia Creeper	<i>Parthenocissus quinquefolia</i>	#1	CONT.	5' O.C.	Virginia creeper every 5'
HERBACEOUS PERENNIALS						
730	Bremen Astilbe	<i>Astilbe japonica</i> 'Bremen'	#1	CONT.	18" o.c.	
1011	Coral Bells, 'Rave On'	<i>Heuchera</i> 'Rave On'	#1	CONT.	18" o.c.	
ORNAMENTAL GRASSES						
47	Feather Reed Grass 'Karl Foerster'	<i>Calamagrostis</i> x <i>acutiflora</i> 'Karl Foerster'	#1	CONT.	per plan	
301	Prairie Dropseed	<i>Sporobolus heterolepis</i>	#1	CONT.	12" O.C.	
5499	Sedge, Ice Dance	<i>Carex morrowii</i>	#1	CONT.	12" O.C.	
3802	Sedge, Pennsylvania	<i>Carex pennsylvanica</i>	#1	CONT.	12" O.C.	
8	Tufted Hair Grass	<i>Deschampsia cespitosa</i>	#1	CONT.	per plan	





Home2 Suites Munster, Indiana - Perspective Approaching Entry, 2020/06/18





Home2 Suites Munster, Indiana - East Perspective, 2020/06/18





Home2 Suites Munster, Indiana - East Perspective at Cross Walk, 2020/06/18





Home2 Suites Munster, Indiana - North Perspective, 2020/06/18





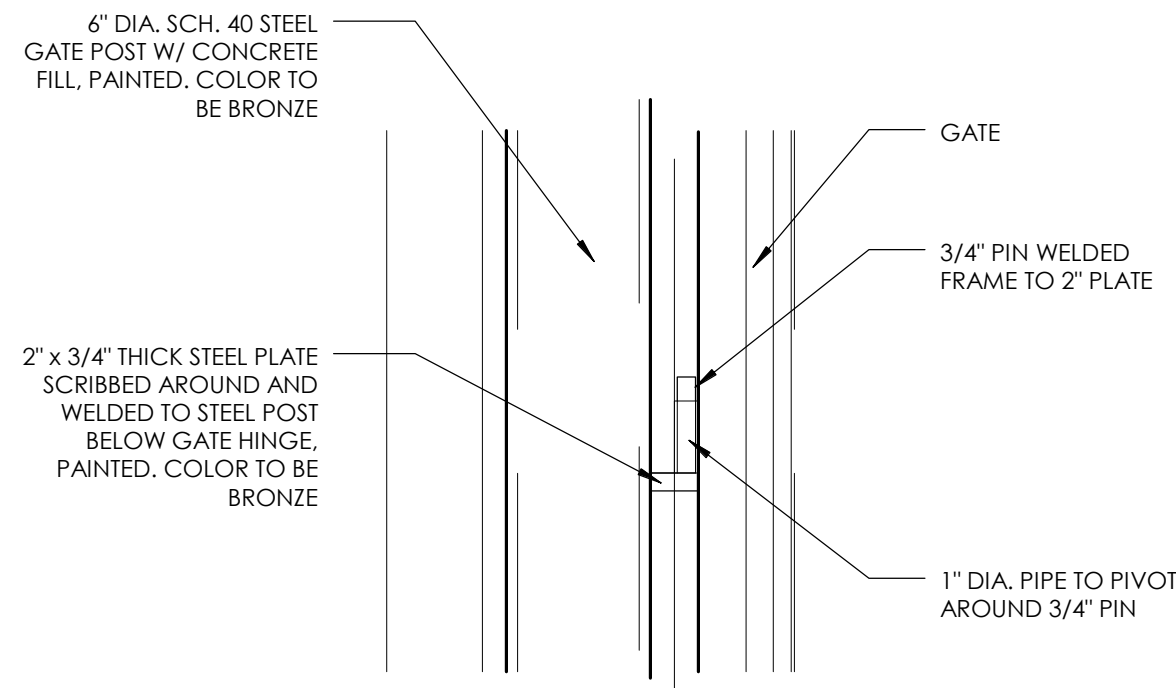
Home2 Suites Munster, Indiana - West Elevation Perspective, 2020/06/26



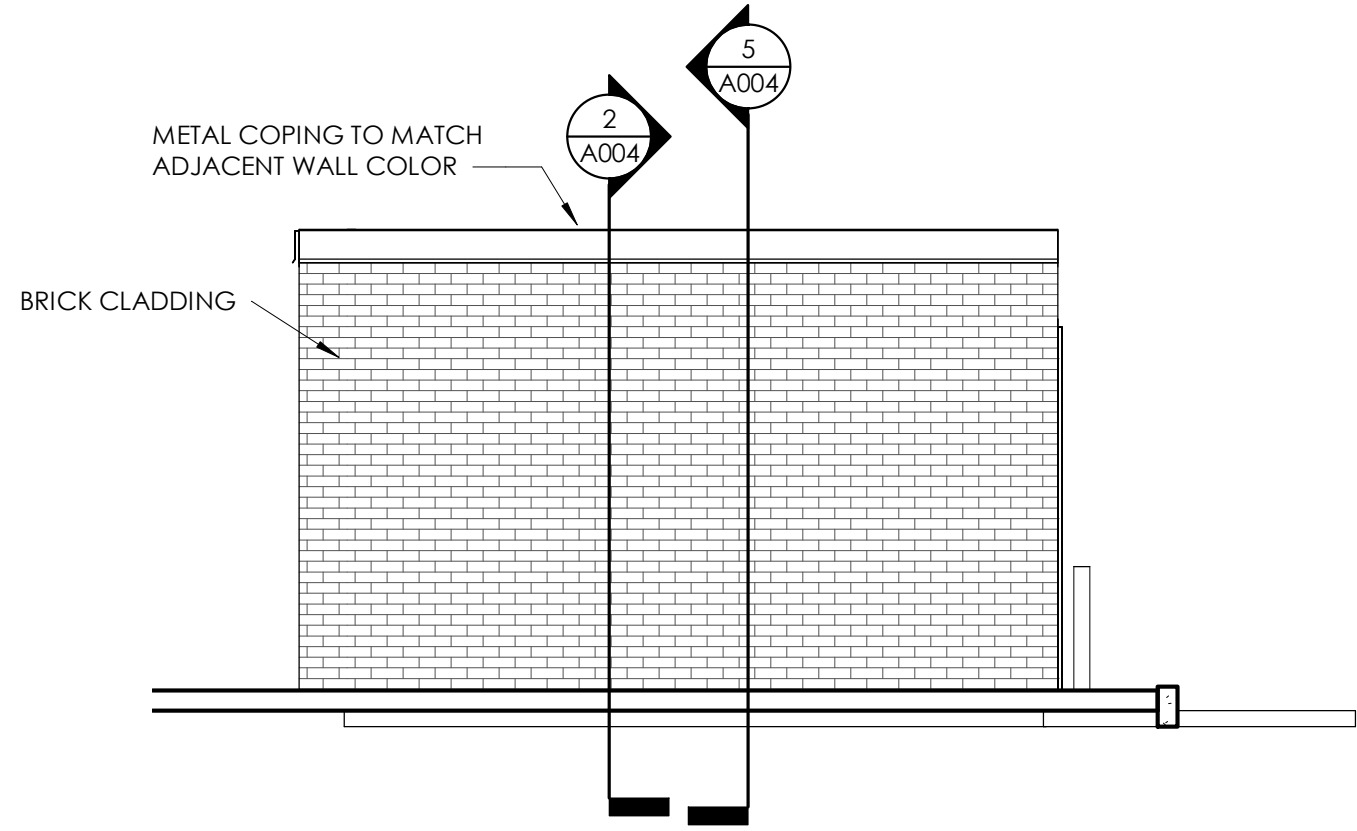


Home2 Suites Munster, Indiana - South Perspective, 2020/06/18

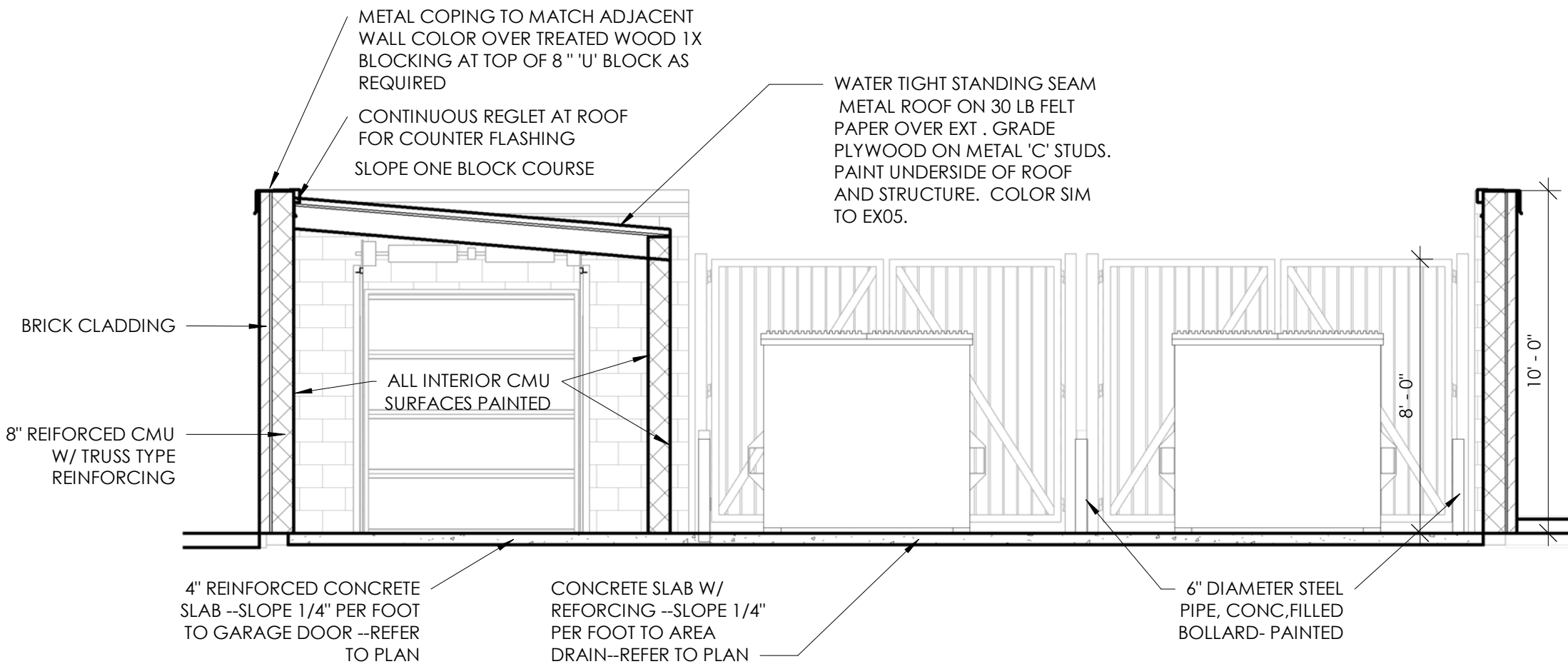




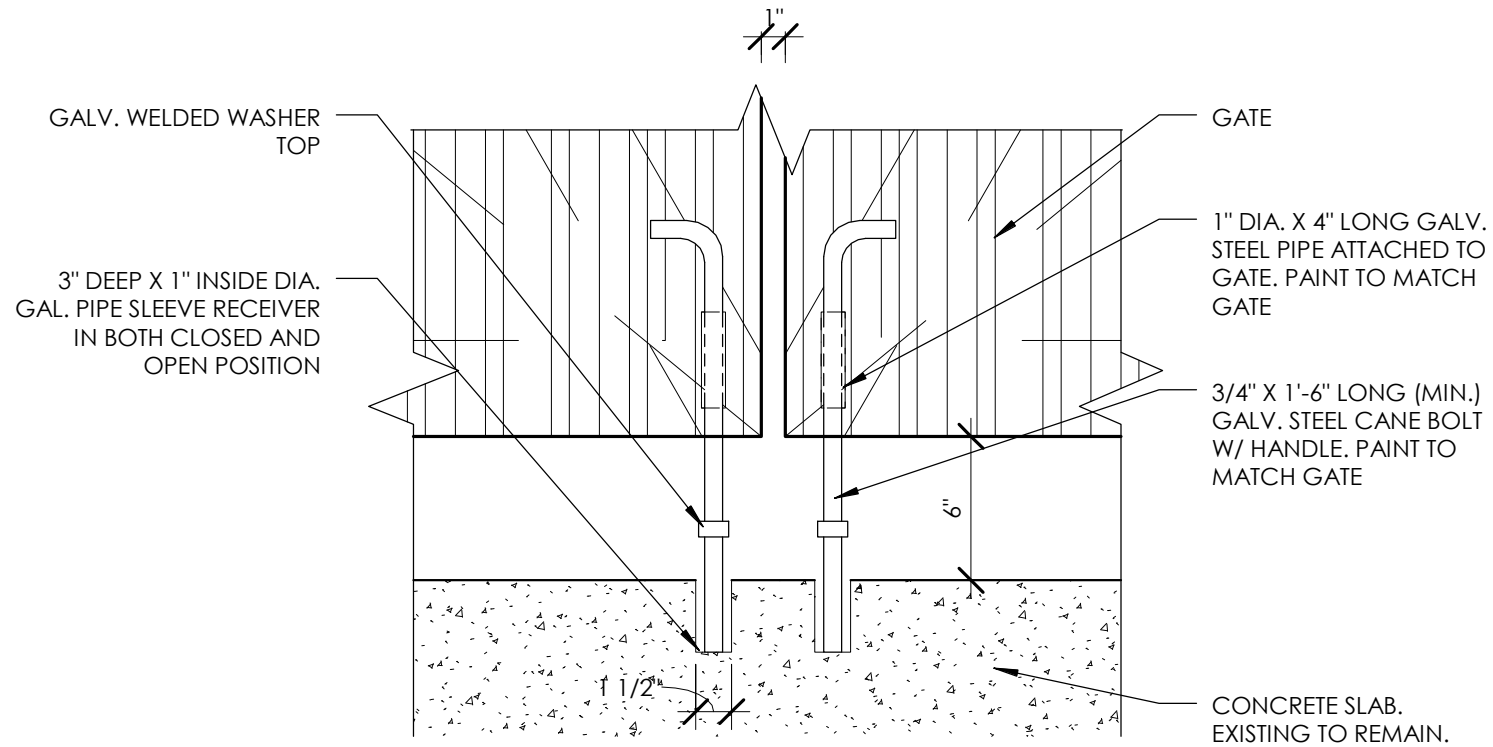
**6 GATE HINGE DETAIL**  
1 1/2" = 1'-0"



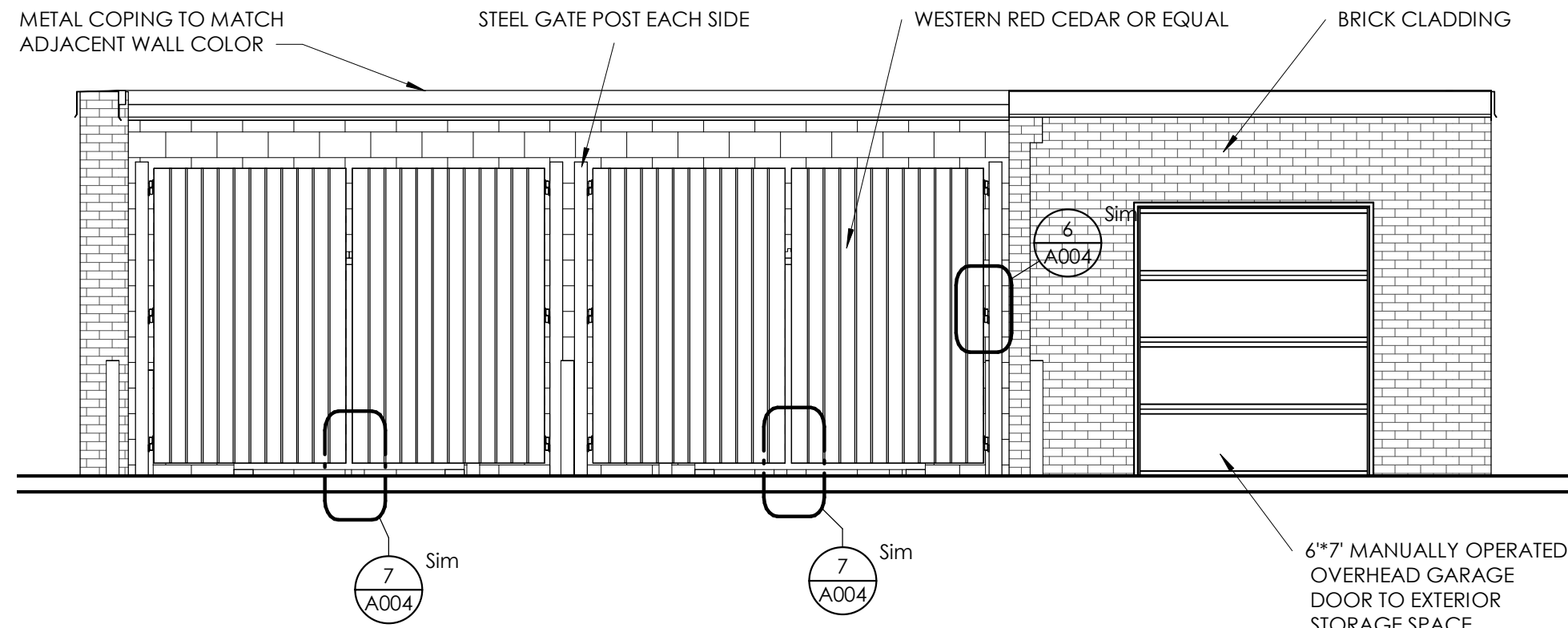
**3 ELEVATION - TRASH DUMPSTER 1**  
1/4" = 1'-0"



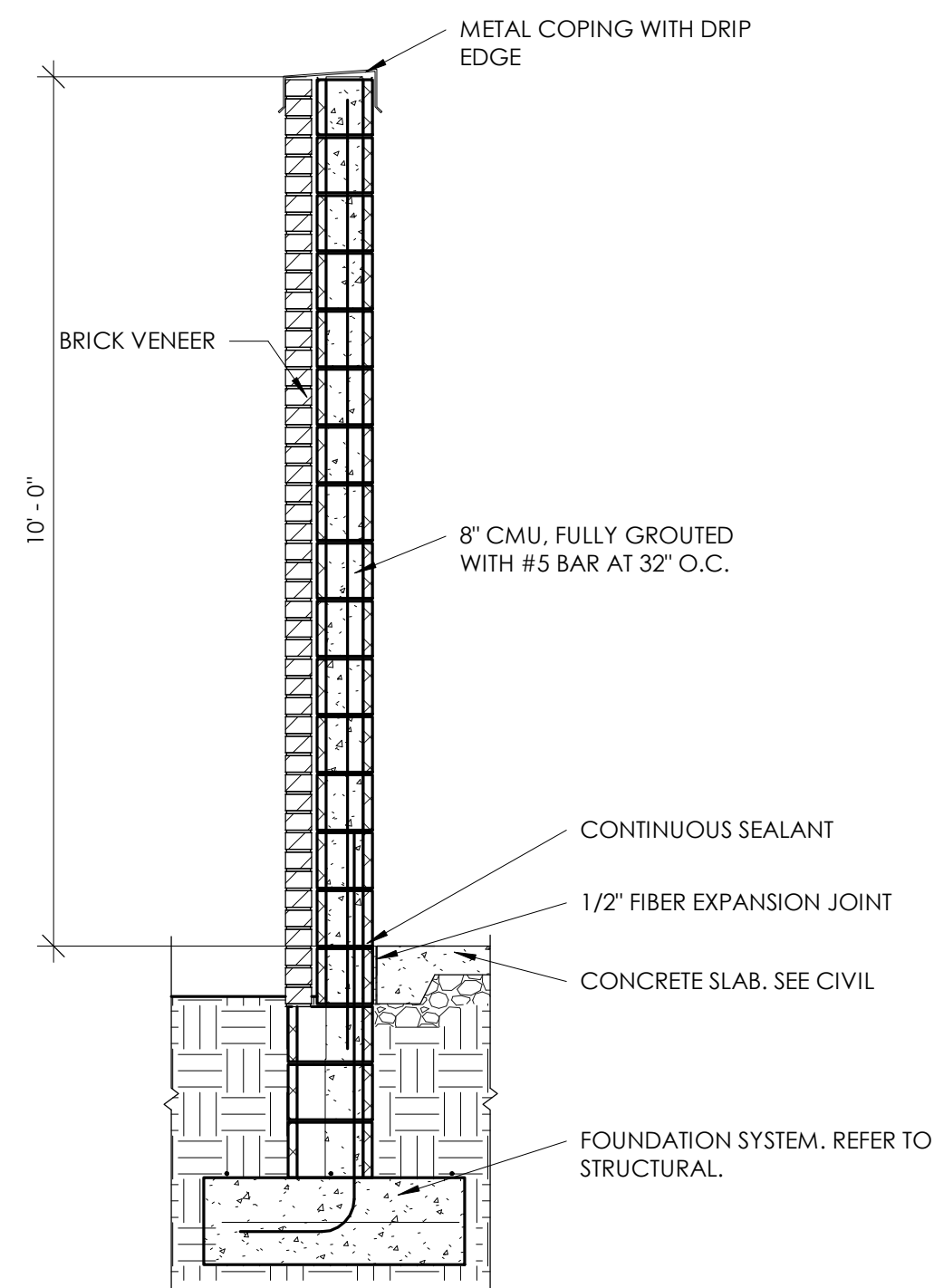
**2 SECTION - TRASH DUMPSTER**  
1/4" = 1'-0"



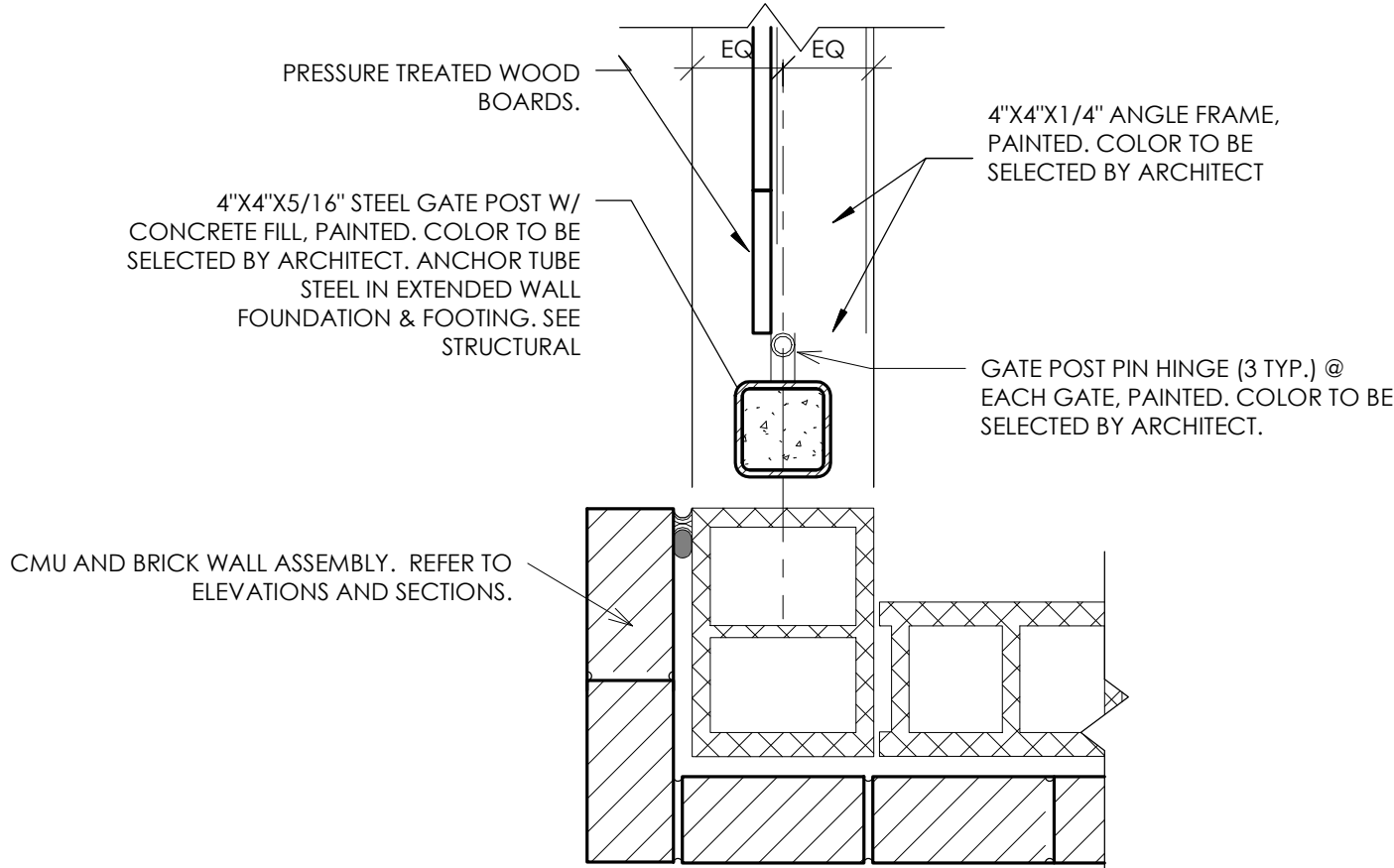
**7 GATE LOCK DETAIL**  
1 1/2" = 1'-0"



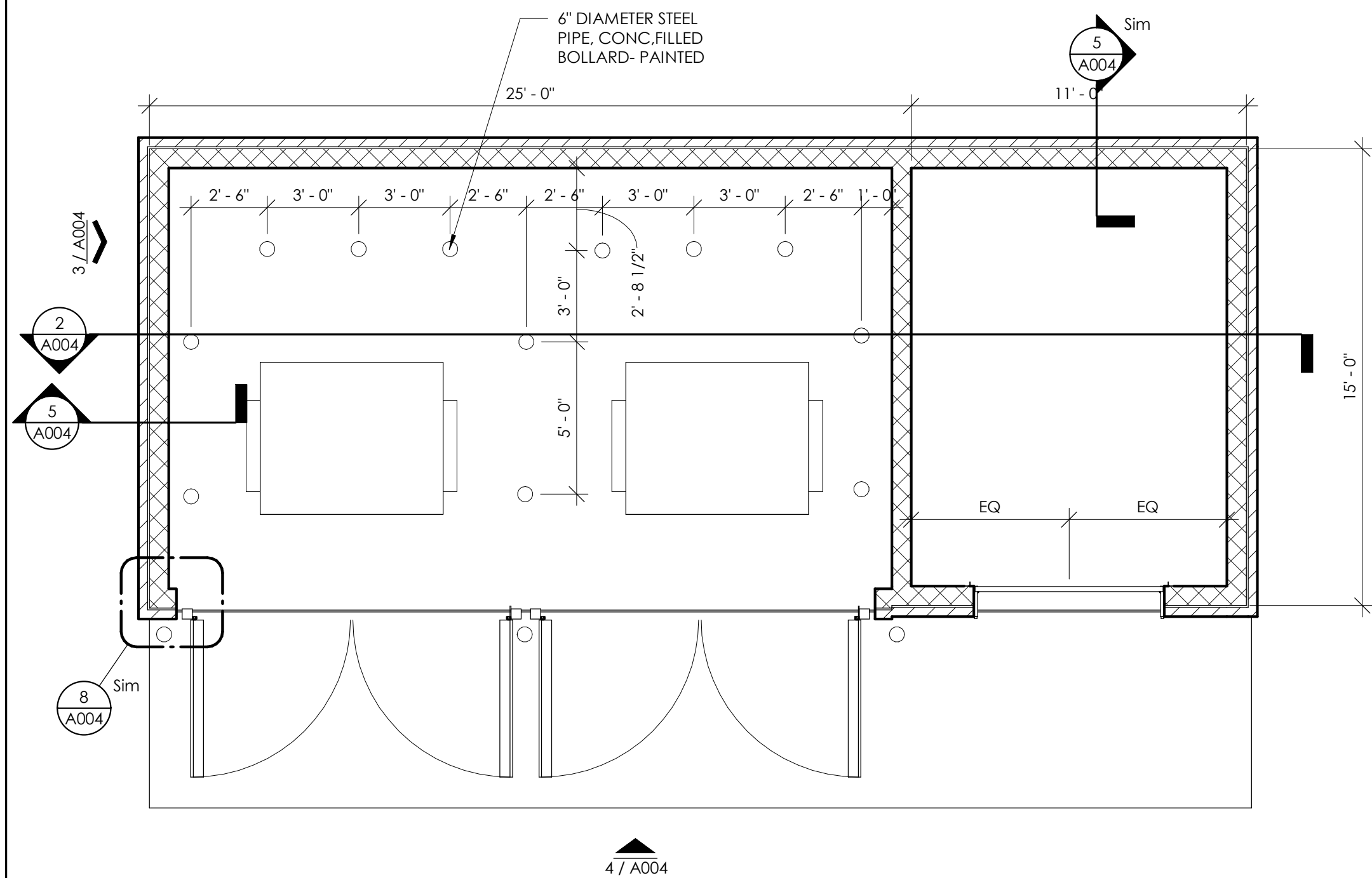
**4 ELEVATION - TRASH DUMPSTER 2**  
1/4" = 1'-0"



**5 WALL SECTION - DUMPSTER**  
1/2" = 1'-0"



**8 JAMB DETAIL - SITE GATE**  
1 1/2" = 1'-0"

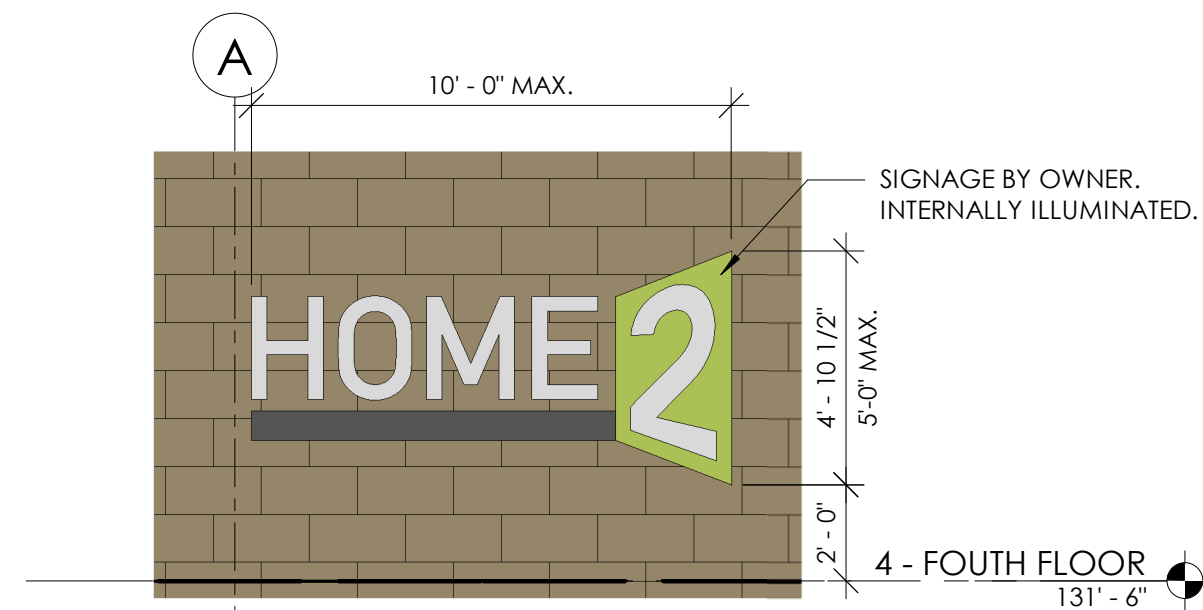


**1 FIRST FLOOR PLAN**  
1/4" = 1'-0"

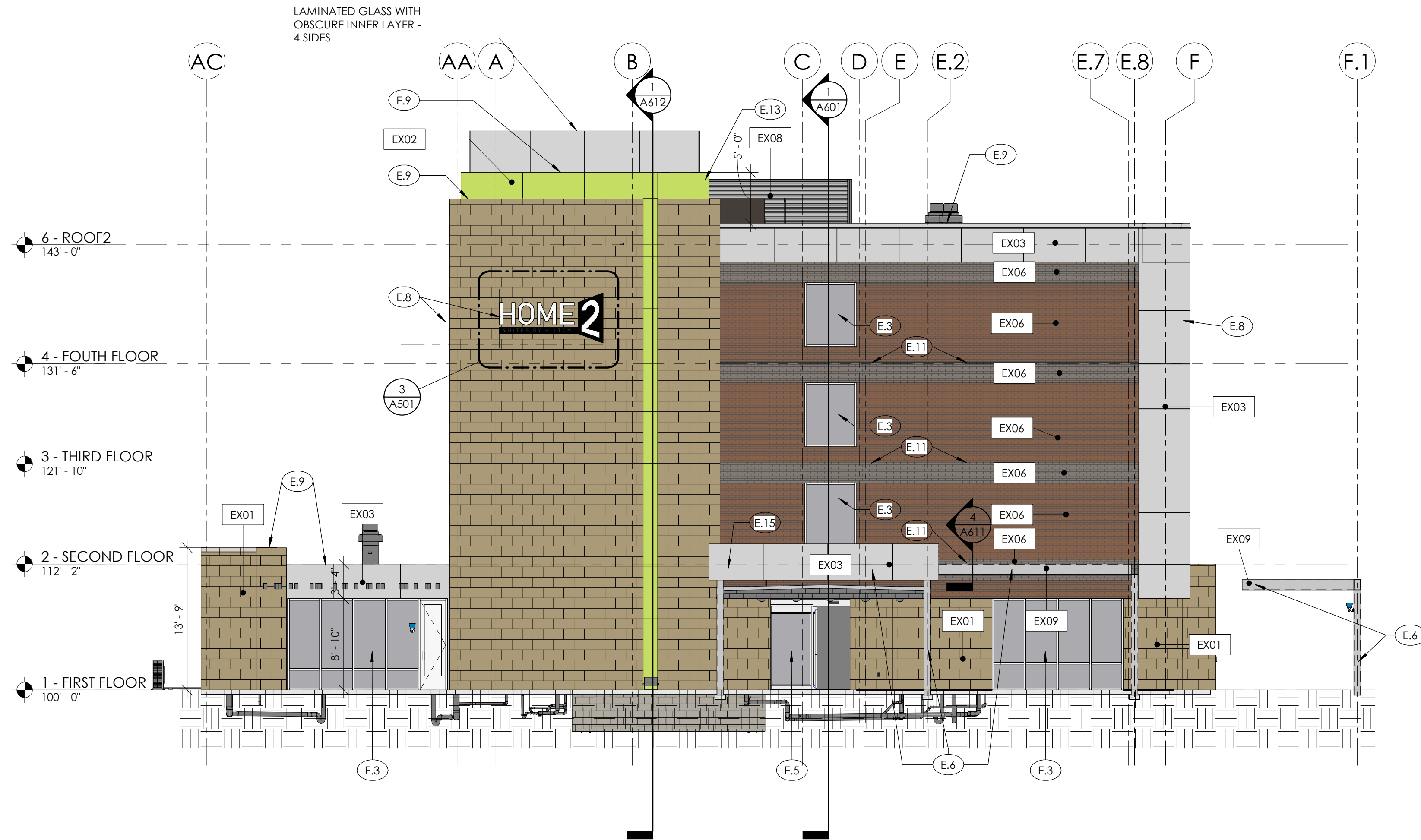
REVISION NUMBER		REVISION DATE		REVISION DESCRIPTION	
CONSULTANTS					
3939 PRIORITY WAY SOUTH DRIVE SUITE 200 INDIANAPOLIS, INDIANA 46240 Phone (317) 844-4777 E-Mail: cripe@cripe.biz CIVIL ENGINEERING SURVEY & 3D LASER SCANNING EQUIPMENT PLANNING REAL ESTATE SERVICES					
<b>Cripe</b> Solutions by Design Since 1937					
TRASH ENCLOSURE PLAN AND DETAILS HOSPITALITY PROJECT SERVICES HOME2 SUITES BY HILTON 920 CALUMET AVE. MUNSTER, IN 46321					
PRELIMINARY NOT FOR CONSTRUCTION					
AJS SFM Approver As indicated A004 2020-06-01 0190149-10000					



6/26/2020 10:50:58 AM



**3 ELEVATION - SIGNAGE EAST**  
1/4" = 1'-0"



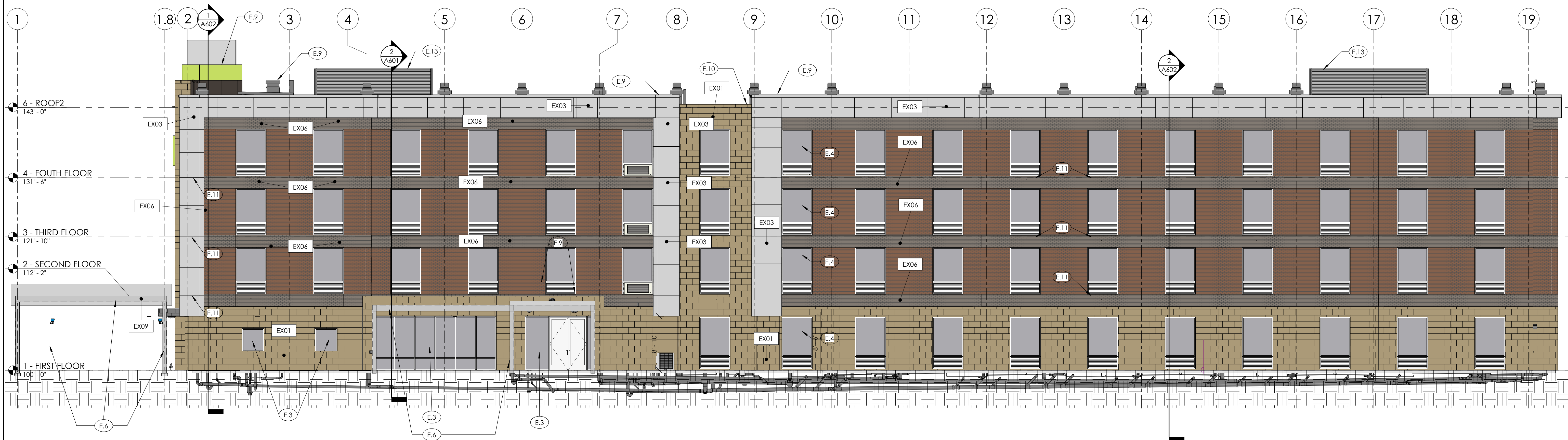
**1 EAST**  
1/8" = 1'-0"

## EXTERIOR ELEVATION KEYNOTES

- E.1 EXTERIOR FINISH CONTROL JOINT.
- E.2 LOUVER. PAINTED TO MATCH ADJACENT BUILDING MATERIAL.
- E.3 ALUMINUM STOREFRONT SYSTEM.
- E.4 ALUMINUM FIXED WINDOW WITH INTEGRAL LOUVER AT PTAC.
- E.5 ALUMINUM SLIDING ENTRY DOOR.
- E.6 PAINTED TUBE STEEL CANOPY WITH WOOD TRELLIS.
- E.7 OVERFLOW SCUPPER.
- E.8 SIGNAGE. PROVIDE POWER AND BLOCKED AS REQUIRED.
- E.9 ALUMINUM COPING SYSTEM.
- E.10 ALUMINUM GRAVEL STOP.
- E.11 EXPANSION JOINT AT FLOOR LINE W/ BACKER ROD & SEALANT.
- E.12 4" X 6" RECTANGULAR ALUMINUM GUTTER & 4" X 4" DOWNSPOUT EACH END WITH PRECAST SPLASH BLOCK.
- E.13 MECHANICAL EQUIPMENT SCREEN WALL ASSEMBLY.
- E.14 ENVELOPE -ACCENT FINISH-REFER TO STYLE GUIDE
- E.15 ALUMINUM ADDRESS NUMBERS, 12" HEIGHT, 1" DEPTH.

## EXTERIOR FINISH LEGEND

- EX01 SMOOTH CUT LIMESTONE MASONRY
- EX02 METAL PANEL - CUSTOM COLOR
- EX03 METAL PANEL - COLOR "PURE WHITE"
- EX04 METAL PANEL - COLOR "BLACK METALLIC"
- EX06 BRICK
- EX08 LOUVER SCREEN
- EX09 PAINTED STEEL - SHERWIN-WILLIAMS SW7019 HIGH PERFORMANCE COATING



**2 NORTH**  
1/8" = 1'-0"

REVISION NUMBER REVISION DATE REVISION DESCRIPTION

## CONSULTANTS

3939 PRIORITY WAY SOUTH DRIVE  
SUITE 200  
INDIANAPOLIS, IN 46240  
Phone (317) 844-4777  
E-Mail: cripe@cripe.biz  
Cripe Inc.  
CIVIL ENGINEERING  
SURVEY & 3D LASER SCANNING  
EQUIPMENT PLANNING  
REAL ESTATE SERVICES

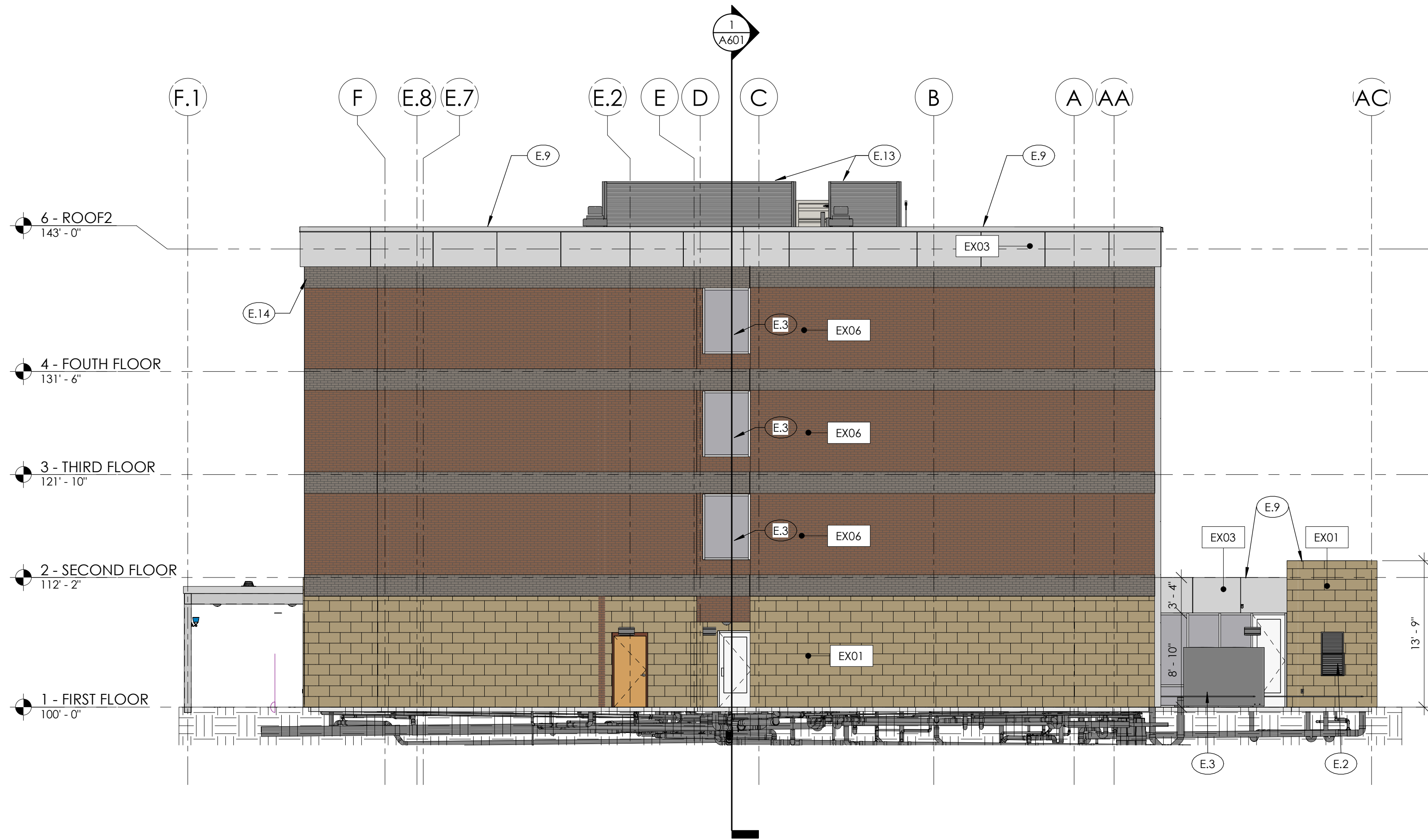
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Solutions by Design Since 1937

EXTERIOR ELEVATIONS  
HOSPITALITY PROJECT SERVICES  
HOME2 SUITES BY HILTON  
920 CALUMET AVE.  
MUNSTER, IN 46321

PRELIMINARY  
NOT FOR  
CONSTRUCTION

AJS  
SFM  
Approver  
As indicated  
A501  
2020-06-01  
Project Number  
0190149-10000





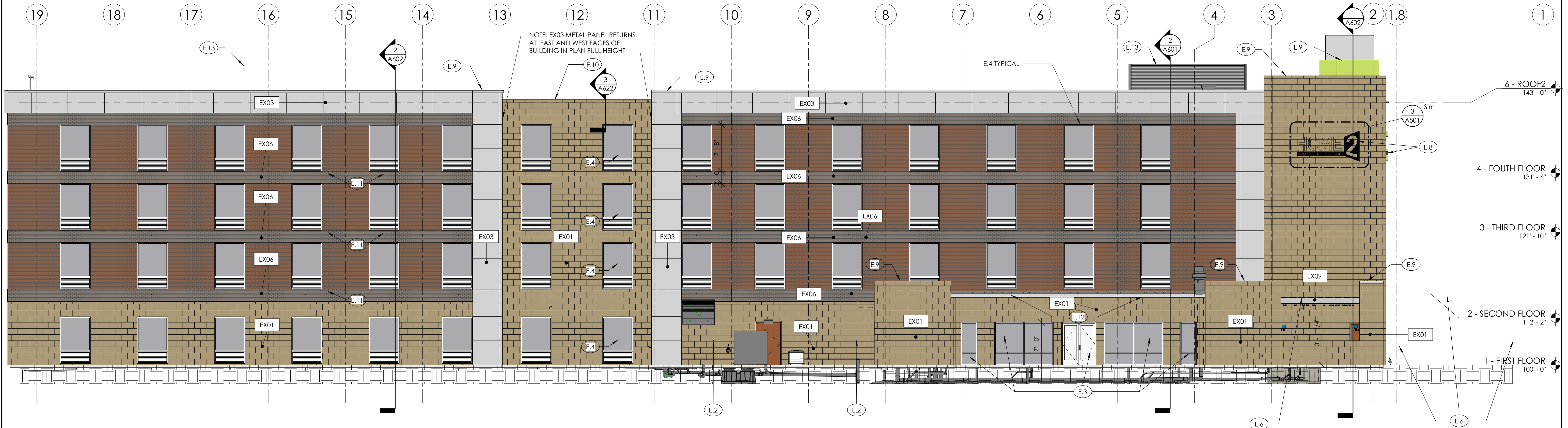
**1 WEST**  
1/8" = 1'-0"

#### EXTERIOR ELEVATION KEYNOTES

- E.1 EXTERIOR FINISH CONTROL JOINT.
- E.2 LOUVER. PAINTED TO MATCH ADJACENT BUILDING MATERIAL.
- E.3 ALUMINUM STOREFRONT SYSTEM.
- E.4 ALUMINUM FIXED WINDOW WITH INTEGRAL LOUVER AT PTAC.
- E.5 ALUMINUM SLIDING ENTRY DOOR.
- E.6 PAINTED TUBE STEEL CANOPY WITH WOOD TRELLIS.
- E.7 OVERFLOW SCUPPER.
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- E.15 ALUMINUM ADDRESS NUMBERS, 12" HEIGHT, 1" DEPTH.

#### EXTERIOR FINISH LEGEND

- EX01 SMOOTH CUT LIMESTONE MASONRY
- EX02 METAL PANEL - CUSTOM COLOR
- EX03 METAL PANEL - COLOR "PURE WHITE"
- EX04 METAL PANEL - COLOR "BLACK METALLIC"
- EX06 BRICK
- EX08 LOUVER SCREEN
- EX09 PAINTED STEEL - SHERWIN-WILLIAMS SW7019 HIGH PERFORMANCE COATING



**2 SOUTH**  
1/8" = 1'-0"

REVISION NUMBER	REVISION DATE	REVISION DESCRIPTION

#### CONSULTANTS

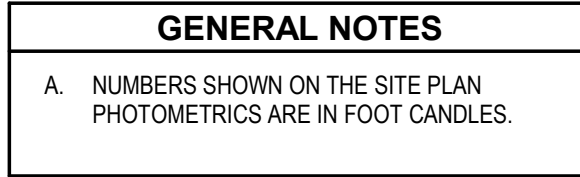
3939 PRIORITY WAY SOUTH DRIVE  
SUITE 200  
INDIANAPOLIS, IN 46240  
Phone (317) 844-4777  
E-Mail: [cripe@cripe.biz](mailto:cripe@cripe.biz)  
CIVIL ENGINEERING  
SURVEY & 3D LASER SCANNING  
ARCHITECTURAL RENDERINGS  
EQUIPMENT PLANNING  
RETAILER SERVICES



EXTERIOR ELEVATIONS  
HOSPITALITY PROJECT SERVICES  
HOME2 SUITES BY HILTON  
9020 CALUMET AVE.  
MUNSTER, IN 46321

PRELIMINARY  
NOT FOR  
CONSTRUCTION

Author	AJS
Checked By	SFM
Approver	
Scale	1/8" = 1'-0"
Sheet	<b>A502</b>
Date	2020-06-01
Project Number	0190149-10000



# 1 SITE PHOTOMETRICS PLAN

TAG	LAMP TYPE	MOUNTING	FIXTURE DESCRIPTION	PRODUCT REFERENCE	LAMPS	VOLTAGE	WATTAGE	MOUNTING HEIGHT
R3	LED	RECESSED	6" DOWNLIGHT WITH CLEAR LENS, WIDE DISTRIBUTION AND DIMMING. PROVIDE 12W BATTERY PACK WHERE INDICATED ON PLANS.	ALPHABET - NU6-RD-SW-40LM-35K-80-D60-120-10V-NC-WH-WH OR APPROVED EQUIVALENT	3200 LUMENS, 3500K, >80CRI	120V	32W	SEE ARCH. DWGS
S2	LED	SURFACE	WET LISTED LED SCONCE FIXTURE HAVING DIFFUSED LENS. INTEGRAL PHOTOCONTROL AND COLD WEATHER BATTERY PACK.	HUBBELL - SG2-50-3K7-FT-120-XX-PCU-CS-EH OR APPROVED EQUIVALENT	1800 LUMENS, 4000K, >80CRI	120V	51W	SEE ARCH. DWGS
P4	LED	POLE ON ELEVATED BASE 20' MAX HEIGHT	POLE MOUNTED LED AREA LIGHT MOUNTED ON STRAIGHT SQUARE STEEL POLE. COORDINATE BASE AND POLE HEIGHTS FOR 20' MAXIMUM FINAL HEIGHT AT TOP OF FIXTURE. TYPE 4	HUBBELL - RAR1-160L70-3K7-4W-UNV-ASQ-XX-BC OR APPROVED EQUIVALENT	22,000 LUMENS, 3000K, >80CRI	120V	154W	20'
P5	LED	POLE ON ELEVATED BASE 20' MAX HEIGHT	POLE MOUNTED LED AREA LIGHT MOUNTED ON STRAIGHT SQUARE STEEL POLE. COORDINATE BASE AND POLE HEIGHTS FOR 20' MAXIMUM FINAL HEIGHT AT TOP OF FIXTURE. TYPE 5	HUBBELL - RAR1-160L70-3K7-5QW-UNV-ASQ-XX-BC OR APPROVED EQUIVALENT	22,000 LUMENS, 3000K, >80CRI	120V	154W	20'
P6	LED	POLE ON ELEVATED BASE 20' MAX HEIGHT	POLE MOUNTED LED AREA LIGHT MOUNTED ON STRAIGHT SQUARE STEEL POLE. COORDINATE BASE AND POLE HEIGHTS FOR 20' MAXIMUM FINAL HEIGHT AT TOP OF FIXTURE. TYPE 2	HUBBELL - RAR1-160L70-3K7-2W-UNV-ASQ-XX-BC OR APPROVED EQUIVALENT	22,000 LUMENS, 3000K, >80CRI	120V	154W	20'
B1	LED	BASE MOUNTED BOLLARD	FLOOR WASH LED BOLLARD HAVING WIDE DISTRIBUTION.	ERCO - LIGHTMARK SERIES OR APPROVED EQUIVALENT	825 LUMENS 3000K	120V	7.5W	3'





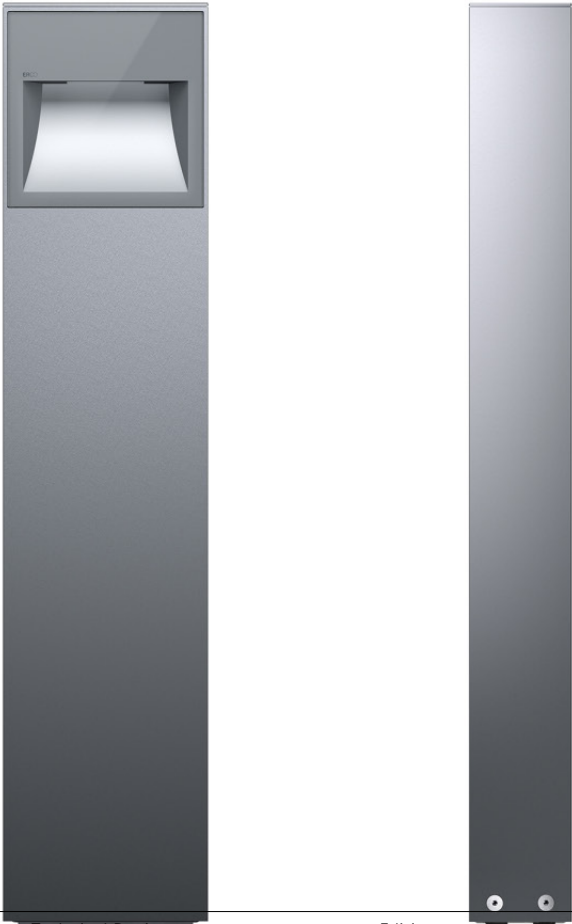
# Lightmark – Precise light of minimalist elegance

**The efficient bollard luminaire with good visual comfort for the illumination of pathways and open areas**

Lightmark bollard luminaires focus the attention very naturally on any architectural setting. Using the wide light distribution, Lightmark illuminates pathways along walls or buildings evenly over an area wide enough to require a minimum number of luminaires. Their deep-beam version effectively lights squares or terraces.

With their low-maintenance and smooth surface, Lightmark is a robust yet elegant bollard luminaire for the outdoor area. The light

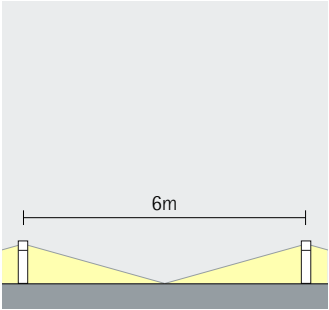
source is discreetly hidden to ensure glare-free light for passers-by. Thanks to Dark Sky technology, Lightmark bollard luminaires emit no spill light above the horizontal plane. The system design of the Lightmark range enables many different combinations of bollard and façade luminaires.



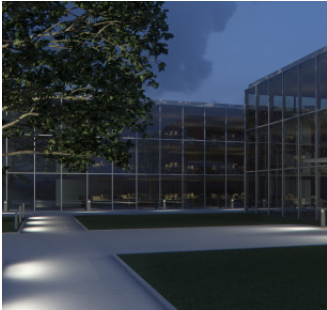
**Structure and characteristics**  
The features described here are typical of products in this range. Special versions may offer additional or varying features. A comprehensive description of the features of individual products can be found on our website.



- 1 ERCO Spherolit lens**
    - Light distributions: wide beam or deep beam
  - 2 ERCO LED-module**
    - High-power LED: warm white (3000K) or neutral white (4000K)
    - Collimating lens made of optical polymer
  - 3 Luminaire**
    - Graphit m
    - Corrosion-resistant cast aluminium, No-Rinse surface treatment
    - Double powder-coated
    - Optimised surface for reduced accumulation of dirt
    - Non-reflective safety glass
  - 4 Bollard**
    - Corrosion-resistant aluminium profile, No-Rinse surface treatment
    - Graphit m, double powder-coated
    - Tamper-proof screws
  - 5 Control gear**
    - Switchable
  - 6 Base plate**
    - For mounting on concrete plinth or accessories
- Protection mode IP65**  
Dust-tight and water jet-proof
- Variants on request**
  - High-power LEDs: 3000K CRI 97 or 2700K, 3500K, 4000K with CRI 92
  - Housing: 10,000 further coloursPlease contact your ERCO consultant.



**Large luminaire spacing**  
ERCO's efficient photometrics enable selected luminaires to be spaced particularly far apart, thereby minimising the number of luminaires required.



**Different light distributions: wide or deep**  
The wide or deep beam distribution Spherolit lenses allow the light distribution to be matched to the lighting task at hand.

Special characteristics

- Different light distributions: wide or deep
- Large luminaire spacing possible

- ERCO high-power LEDs
- Efficient Spherolit technology
- Dark Sky technology
- Different light colours

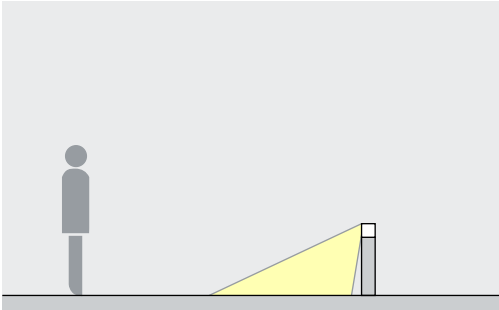
- Excellent thermal management
- EMC-optimised
- Protection mode IP65

- Switchable

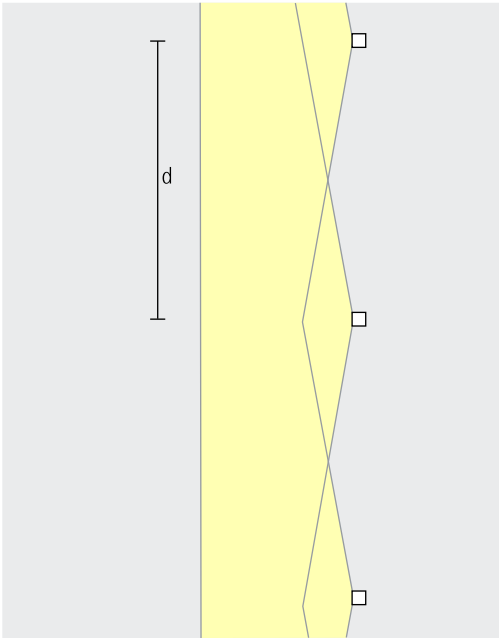


Lightmark Bollard luminaires – Luminaire arrangement

Floor washlights  
Wide beam, Deep beam

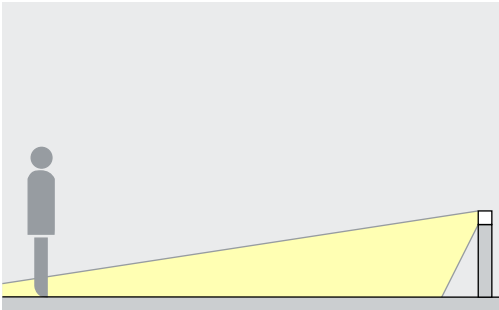


**Washlighting**  
Lightmark bollard luminaires with wide beam light distribution directed forward provide subtle light for a glare-free and uniform illumination of pathways.

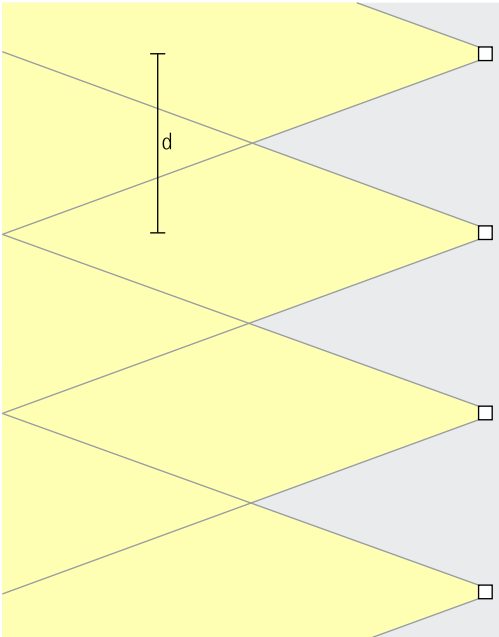


For uniform washlighting of the ground, the luminaire spacing (d) may be up to 3m. The luminaires may be spaced apart even further for visual guidance.

Arrangement:  $d \leq 3\text{m}$

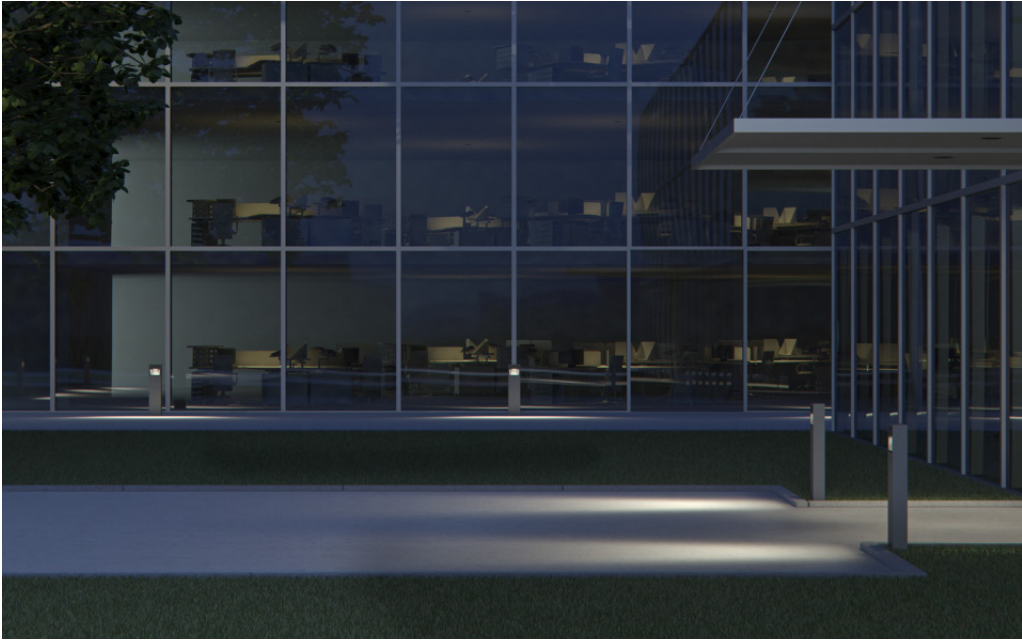


Lightmark bollard luminaires with deep beam light distribution directed forward provide subtle light for a glare-free and uniform illumination of open areas.



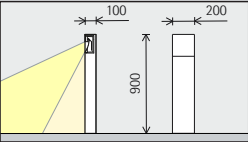
For uniform washlighting of the ground, the luminaire spacing (d) may be up to 3m. The luminaires may be spaced apart even further for visual guidance.

Arrangement:  $d \leq 3\text{m}$



Lightmark Bollard luminaires

Construction size 900 mm



LED module  
Maximum value  
at 4000K CRI 82

6W/825lm

Light colour

	2700K CRI 92 *		3500K CRI 92 *
	3000K CRI 92		4000K CRI 82
	3000K CRI 97 *		4000K CRI 92 *

Light  
distribution

	Floor washlights
	Wide beam
	Deep beam

Control

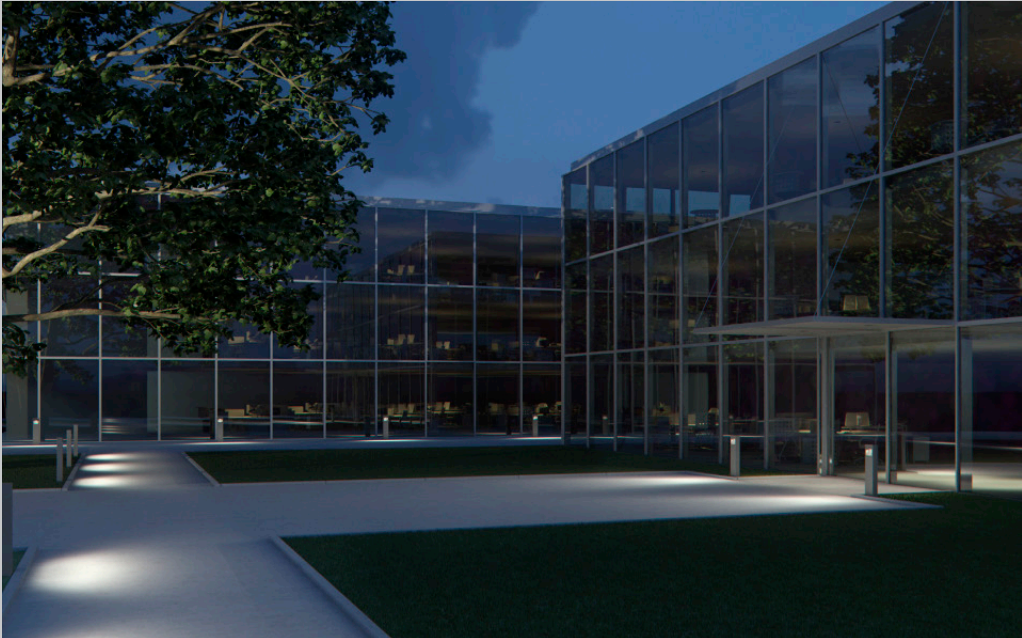
Switchable

Colour (housing)

	Graphit m
	10,000 colours *

Accessories

	Distribution box		Concrete anchor
	Anchorage unit		



\* available on request

Article numbers and planning data:  
[www.erco.com/011960](http://www.erco.com/011960)

Design and application:  
[www.erco.com/lightmark](http://www.erco.com/lightmark)





# RATIO Series

AREA/SITE LIGHTER

## FEATURES

- Low profile LED area/site luminaire with a variety of IES distributions for lighting applications such as retail, commercial and campus parking lots
- Featuring Micro Strike Optics which maximizes target zone illumination with minimal losses at the house-side, reducing light trespass issues
- Visual comfort standard
- Compact and lightweight design with low EPA
- 3G rated for high vibration applications including bridges and overpasses
- Control options including photo control, occupancy sensing, NX Distributed Intelligence™ and 7-Pin with networked controls
- Best in class surge protection available



## CONTROL TECHNOLOGY



## SPECIFICATIONS

### CONSTRUCTION

- Rectilinear form mimics the traditional shoebox form factor keeping a similar but updated style and appearance, ideal for retrofit applications
- Die-cast housing with hidden vertical heat fins that are optimal for heat dissipation while keeping a clean smooth outer surface
- Corrosion resistant, die-cast aluminum housing with powder coat paint finish

### OPTICS

- Entire optical aperture illuminates to create a larger luminous surface area resulting in a low glare appearance without sacrificing optical performance
- 80, 160, 320 or 480 midpower LEDs
- 3000K, 4000K or 5000K (70 CRI) CCT
- Zero uplight at 0 degrees of tilt
- Field rotatable optics

### INSTALLATION

- Standard square arm mount, compatible with B3 drill pattern
- Optional universal mounting block for ease of installation during retrofit applications. Available as an option or accessory for square and round poles.
- Knuckle arm fitter option available for 2-3/8" OD tenon. Max tilt of 60 degrees with 4 degree adjustable increments. (Restrictions apply for 7-pin options)

### ELECTRICAL

- Universal 120-277 VAC or 347-480 VAC input voltage, 50/60 Hz
- Ambient operating temperature -40°C to 40°C
- Drivers have greater than 90% power factor and less than 20% THD
- LED drivers have output power over-voltage, over-current protection and short circuit protection with auto recovery
- Field replaceable surge protection device provides 20kA protection meeting ANSI/IEEE C62.41.2 Category C High and Surge Location Category C3; Automatically takes fixture off-line for protection when device is compromised

### CONTROLS

- Photo control, occupancy sensor and wireless available for complete on/off and dimming control
- 7-pin ANSI C136.41-2013 photocontrol receptacle option available for twist lock photocontrols or wireless control modules (control accessories sold separately)
- 0-10V dimming leads available for use with control devices (provided by others, must specify lead length)
- SiteSync™ wireless control system is available via 7-pin See ordering information and details at: [www.hubbelllighting.com/sitesync](http://www.hubbelllighting.com/sitesync)
- NX Distributed Intelligence™ available with in fixture wireless control module, features dimming and occupancy sensor

## RELATED PRODUCTS

θ [Airo](#) θ [Cimarron LED](#) θ [Ratio Family](#)



### CONTROLS (CONT'D)

- wiSCAPE® available with in fixture wireless control module, features dimming and occupancy sensor via 7-pin

### CERTIFICATIONS

- DLC® (DesignLights Consortium Qualified), with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org)
- Listed to UL1598 and CSA C22.2#250.0-24 for wet locations and 40°C ambient temperatures
- 3G rated for ANSI C136.31 high vibration applications
- Fixture is IP66 rated
- Meets IDA recommendations using 3K CCT configuration at 0 degrees of tilt

### WARRANTY

- 5 year limited warranty
- See [HLI Standard Warranty](#) for additional information

KEY DATA	
Lumen Range	3,000–48,000
Wattage Range	25–340
Efficacy Range (LPW)	118–155
Fixture Projected Life (Hours)	L70>60K
Weights lbs. (kg)	13.5–24 (6.1–10.9)

# RATIO SERIES

AREA/SITE LIGHTER

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

## ORDERING GUIDE

Example: RAR1-80L-25-3K7-2-UNV-ASQ-BL-NXWE-BC

CATALOG #

## ORDERING INFORMATION

Series	# LEDs - Wattage	CCT/CRI	Distribution	Optics Rotation	Voltage
RAR1 Ratio Area Size 1	80L-25 25W - 3,000 Lumens	3K7 3000K, 70 CRI	2 IES TYPE II	Blank for no rotation	UNV Universal 120-277V
	80L-39 39W - 5,200 Lumens	4K7 4000K, 70 CRI	3 IES TYPE III	L Optic rotation left	120 120V
	80L-50 50W - 6,000 Lumens	5K7 5000K, 70 CRI	4W IES TYPE IV	R Optic rotation right	208 208V
	160L-70 70W - 9,000 Lumens		5QW IES TYPE V		240 240V
	160L-100 100W - 12,000 Lumens				277 277V
	160L-115 115W - 15,000 Lumens				347 347V
	160L-135 135W - 18,000 Lumens				480 480V
RAR2 Ratio Area Size 2	320L-110 110W - 15,000 Lumens				
	320L-140 140W - 18,000 Lumens				
	320L-165 165W - 21,000 Lumens				
	480L-185 185W - 24,000 Lumens				
	480L-210 210W - 27,000 Lumens				
	480L-240 240W - 30,000 Lumens				
	480L-255 255W - 36,000 Lumens				
	480L-295 295W - 42,000 Lumens				
	480L-340 340W - 48,000 Lumens				

Mounting	Color	Control Options Network	Options
ASQ Arm mount for square pole/flat surface	BLT Black Matte Textured	NXWE NX Wireless Enabled (module + radio)	BC Backlight control
ASQU Universal arm mount for square pole/flat surface	BLS Black Gloss Smooth	NXSPW_F NX Wireless, PIR Occ. Sensor, Daylight Harvesting <sup>2</sup>	CD Continuous dimming
Mounting Round Poles		NXSP_F NX, PIR Occ. Sensor, Daylight Harvesting <sup>2</sup>	F Fusing (must specify voltage)
A_ Arm mount for round pole <sup>1</sup>	DBT Dark Bronze Matte Textured	Control Options Other	TB Terminal block
A_U Universal arm mount for round pole <sup>1</sup>	DBS Dark Brone Gloss Smooth		2PF 2 power feed with 2 drivers <sup>3</sup>
Mounting Other		SCP-40F Programmable occupancy sensor <sup>4</sup>	
WB Wall bracket	GTT Graphite Matte Textured	7PR 7-Pin twist lock receptacle	
MAF Mast arm fitter for 2-3/8" OD horizontal arm	LGS Light Grey Gloss Smooth	7PR-SC 7-Pin receptacle with shorting cap	
K Knuckle	PSS Platinum Silver Smooth	7PR-MD40F Low voltage sensor for 7PR	
	WHT White Matte Textured	7PR-TL 7-Pin PCR with photocontrol	
	WHS White Gloss Smooth		
	VGT Verde Green Textured		
	Color Option		
	CC Custom Color		

Notes:

- 1 Replace "\_" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole
- 2 Replace "\_" with "14" for up to 14' mounting height, "30F" for 15-30' mounting height
- 3 Not available with 25, 50, 255, 295 & 340W configurations
- 4 At least one SCPREMOTE required to program SCP motion sensor

## STOCK ORDERING INFORMATION

Catalog Number	Lumens	Wattage	LED Count	CCT/CRI	Voltage	Distribution	Mounting	Finish
RAR1-100-4K-3	12,000	100W	160L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR1-100-4K-4W	12,000	100W	160L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR1-135-4K-3	18,000	135W	160L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR1-135-4K-4W	18,000	135W	160L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze
RAR2-165-4K-3	21,000	165W	320L	4000K/70CRI	120-277V	Type 3	Square Arm	Bronze
RAR2-165-4K-4W	21,000	165W	320L	4000K/70CRI	120-277V	Type 4W	Square Arm	Bronze



DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

# RATIO SERIES

AREA/SITE LIGHTER

## OPTIONS AND ACCESSORIES - STOCK (ORDERED SEPARATELY)

Catalog Number	Description
<input type="checkbox"/> RARRPA3DB	Round pole adapter 3.5" to 4.13" for ASQ arm, 3.5" to 4.13" OD pole, dark bronze finish
<input type="checkbox"/> RARA3UDB	Universal mount for square pole or round pole 3.5" to 4.13", dark bronze finish
<input type="checkbox"/> RARBC80L	Ratio blacklight control 80L
<input type="checkbox"/> RARBC160L	Ratio blacklight control 160L
<input type="checkbox"/> RARBC320L	Ratio blacklight control 320L
<input type="checkbox"/> RARBC480L	Ratio blacklight control 480L

## ACCESSORIES AND REPLACEMENT PARTS - MADE TO ORDER

Catalog Number	Description
<input type="checkbox"/> RAR-ASQU-XX	Universal arm mount for square pole/flat surface <sup>2</sup>
<input type="checkbox"/> RAR-A_U-XX	Universal arm mount for round poles <sup>1,2</sup>
<input type="checkbox"/> RAR-RPA_-XX	Round pole adapter <sup>1,2</sup>
<input type="checkbox"/> SETAVP-XX	4" square pole top tenon adapter, 2 3/8" OD slipfitter <sup>2</sup>
<input type="checkbox"/> RETAVP-XX	4" round pole top tenon adapter; 2 3/8" OD slipfitter for max. Four fixtures (90o); order 4" round pole adapters separately <sup>2</sup>
<input type="checkbox"/> BIRD-SPIKE-3	Ratio size 1 bird deterrent/spikes
<input type="checkbox"/> BIRD-SPIKE-4	Ratio size 2 bird deterrent/spikes
<input type="checkbox"/> RARWB-XX	Wall bracket - use with Mast Arm Fitter or Knuckle <sup>2</sup>

- 1 Replace "-" with "3" for 3.5"-4.13" OD pole, "4" for 4.18"-5.25" OD pole, "5" for 5.5"-6.5" OD pole  
2 Replace "XX" with desired color/paint finish

## CONTROLS

### Control Options

#### Standalone

SW7PR	SiteSync™ on fixture module via 7PR
SWUSB	SiteSync™ Software on USB
SWTAB	SiteSync™ Windows Tablet
SWBRG	SiteSync™ Wireless Bridge Node
SWFC	SiteSync™ Field Commission Serve
SCPREMOTE	Order at least one per project location to program and control

#### Networked – Wireless

WIR-RME-L	wiSCAPE External Fixture Module <sup>1,2</sup>
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#### NX Networked – Wireless

NXOFM-1R1D-UNV	NX Wireless, Daylight Harvesting, BLE, 7 pin twisted lock
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Notes:

- 1 Works with external networked photosensor  
2 wiSCAPE Gateway required for system programming

# RATIO SERIES

AREA/SITE LIGHTER

## PERFORMANCE DATA

Description	Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 80 CRI)				
				Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
RAR1	25	25.4	2	3438	135	1	0	1	3445	136	1	0	1	3240	128	1	0	1
			3	3460	136	1	0	1	3467	136	1	0	1	3260	128	1	0	1
			4W	3406	134	1	0	1	3412	134	1	0	1	3209	126	1	0	1
			5QW	3483	137	2	0	1	3490	137	2	0	1	3282	129	2	0	1
	39	39	2	5263	139	1	0	2	5273	139	1	0	2	4960	131	1	0	2
			3	5297	139	1	0	2	5308	140	1	0	2	4991	131	1	0	2
			4W	5200	137	1	0	2	5210	137	1	0	2	4900	129	1	0	2
			5QW	5333	140	3	0	1	5344	141	3	0	1	5025	132	3	0	1
	50	49.8	2	6310	127	1	0	2	6323	127	1	0	2	5946	120	1	0	2
			3	6349	128	1	0	2	6362	128	1	0	2	5983	120	1	0	2
			4W	6233	125	1	0	2	6245	126	1	0	2	5873	118	1	0	2
			5QW	6392	129	3	0	1	6405	129	3	0	1	6023	121	3	0	1
	70	68.4	2	9486	139	1	0	2	9505	139	1	0	2	8938	131	1	0	2
			3	9544	140	1	0	2	9563	140	1	0	2	8993	131	1	0	2
			4W	9395	137	1	0	2	9414	138	1	0	2	8853	129	1	0	2
			5QW	9608	140	4	0	2	9628	141	4	0	2	9054	132	4	0	2
	100	90.0	2	11976	133	2	0	2	12000	133	2	0	2	11285	125	2	0	2
			3	12050	134	2	0	2	12074	134	2	0	2	11354	126	2	0	2
			4W	11861	132	2	0	2	11885	132	2	0	2	11177	124	2	0	2
			5QW	12131	135	4	0	2	12155	135	4	0	2	11431	127	4	0	2
	115	109.7	2	15572	142	2	0	2	15494	141	2	0	2	14871	136	2	0	2
			3	15833	144	2	0	2	15754	144	2	0	2	15121	138	2	0	2
			4W	15281	139	2	0	3	15205	139	2	0	3	14623	133	2	0	3
			5QW	15732	143	4	0	2	15653	143	4	0	2	15024	137	4	0	2
	135	133.3	2	17971	135	3	0	3	17881	134	3	0	3	17163	129	3	0	3
			3	18272	137	2	0	2	18181	136	2	0	2	17450	131	2	0	2
			4W	17635	132	2	0	3	17547	132	2	0	3	16876	127	2	0	3
			5QW	18156	136	4	0	2	18065	136	4	0	2	17339	130	4	0	2
RAR2 Performance Data on next page																		

\* Lumen values are from photometric test performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.



# RATIO SERIES

AREA/SITE LIGHTER

## PERFORMANCE DATA

Description	Nominal Wattage	System Watts	Dist. Type	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 80 CRI)				
				Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
RAR2	110	100.3	2	15326	153	2	0	3	15357	153	2	0	3	14442	144	2	0	3
			3	15421	154	2	0	3	15452	154	2	0	3	14531	145	2	0	3
			4W	15180	151	2	0	2	15210	152	2	0	2	14304	143	2	0	2
			5QW	15525	155	4	0	2	15556	155	4	0	2	14629	146	4	0	2
	140	133.2	2	19395	146	2	0	3	19434	146	2	0	3	18276	137	2	0	3
			3	19515	147	2	0	3	19554	147	2	0	3	18389	138	2	0	3
			4W	19210	144	2	0	3	19248	145	2	0	3	18101	136	2	0	3
			5QW	19647	148	5	0	3	19686	148	5	0	3	18513	139	5	0	3
	165	153.6	2	21651	141	3	0	3	21695	141	3	0	3	20402	133	3	0	3
			3	21785	142	3	0	3	21828	142	3	0	3	20527	134	3	0	3
			4W	21444	140	3	0	3	21487	140	3	0	3	20206	132	3	0	3
			5QW	21932	143	5	0	3	21976	143	5	0	3	20666	135	5	0	3
	185	174.5	2	26046	149	3	0	3	26098	150	3	0	3	24543	141	3	0	3
			3	26207	150	3	0	3	26259	150	3	0	3	24694	142	3	0	3
			4W	25797	148	3	0	4	25849	148	3	0	4	24308	139	3	0	4
			5QW	26384	151	5	0	3	26437	152	5	0	3	24861	143	5	0	3
	210	198.2	2	28848	145	3	0	4	28906	146	3	0	4	27184	137	3	0	4
			3	29027	146	3	0	4	29085	147	3	0	4	27351	138	3	0	4
			4W	28572	144	3	0	4	28630	144	3	0	4	26924	136	3	0	4
			5QW	29222	147	5	0	4	29281	148	5	0	4	27536	139	5	0	4
	240	226.9	2	32087	141	3	0	4	32151	142	3	0	4	30235	133	3	0	4
			3	32285	142	3	0	4	32350	143	3	0	4	30422	134	3	0	4
			4W	31780	140	3	0	4	31844	140	3	0	4	29946	132	3	0	4
			5QW	32503	143	5	0	4	32568	144	5	0	4	30627	135	5	0	4
	255	257.0	2	37040	144	3	0	4	36854	143	3	0	4	35373	138	3	0	4
			3	37660	147	3	0	4	37472	146	3	0	4	35966	140	3	0	4
			4W	36347	141	3	0	5	36166	140	3	0	5	34782	135	3	0	5
			5QW	37420	146	5	0	4	37233	145	5	0	4	35736	139	5	0	4
	295	294.0	2	41733	142	3	0	4	41524	141	3	0	4	39855	136	3	0	4
			3	42432	144	3	0	4	42220	144	3	0	4	40523	138	3	0	4
			4W	40953	139	3	0	5	40748	139	3	0	5	39190	133	3	0	5
			5QW	42162	143	5	0	4	41951	143	5	0	4	40264	137	5	0	4
	340	347.1	2	48392	139	4	0	5	48150	139	4	0	5	46215	133	4	0	5
			3	49203	142	3	0	4	48957	141	3	0	4	46989	135	3	0	4
			4W	47488	137	4	0	5	47261	136	4	0	5	45443	131	4	0	5
			5QW	48889	141	5	0	5	48645	140	5	0	5	46689	135	5	0	5

\* Lumen values are from photometric test performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

# RATIO SERIES

AREA/SITE LIGHTER

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

## ELECTRICAL DATA

# OF LEDS	Nominal Wattage	Input Voltage	Oper. Current (Amps)	System Power (Watts)
RAR1	25	120	0.21	25.4
		208	0.12	
		240	0.11	
		277	0.09	
	39	120	0.32	38.0
		208	0.18	
		240	0.16	
		277	0.14	
		347	0.11	
		480	0.08	
	50	120	0.42	49.8
		208	0.24	
		240	0.21	
		277	0.18	
	70	120	0.57	68.4
		208	0.33	
		240	0.29	
		277	0.25	
	100	120	0.75	90.0
		208	0.43	
		240	0.38	
		277	0.32	
	115	120	0.91	109.7
		208	0.53	
		240	0.46	
		277	0.40	
		347	0.32	
		480	0.23	
	135	120	1.11	133.3
		208	0.64	
		240	0.56	
		277	0.48	
		347	0.38	
		480	0.28	

# OF LEDS	Nominal Wattage	Input Voltage	Oper. Current (Amps)	System Power (Watts)
RAR2	110	120	0.84	100.3
		208	0.48	
		240	0.42	
		277	0.36	
	140	120	1.11	133.2
		208	0.64	
		240	0.56	
		277	0.48	
	165	120	1.28	153.6
		208	0.74	
		240	0.64	
		277	0.55	
	185	120	1.45	174.5
		208	0.84	
		240	0.73	
		277	0.63	
	210	120	1.65	198.3
		208	0.95	
		240	0.83	
		277	0.72	
	240	120	1.89	226.9
		208	1.09	
		240	0.95	
		277	0.82	
	255	120	2.14	257.0
		208	1.24	
		240	1.07	
		277	0.93	
		347	0.74	
		480	0.54	
	295	120	2.45	294.0
		208	1.41	
		240	1.23	
		277	1.06	
		347	0.85	
		480	0.61	
	340	120	2.89	347.1
		208	1.67	
		240	1.45	
		277	1.25	
		347	1.00	
		480	0.72	

## LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Ambient Temperature		Lumen Multiplier
0° C	32° F	1.03
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	0.99
40° C	104° F	0.98
50° C	122° F	0.97

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

## PROJECTED LUMEN MAINTENANCE

Ambient Temperature	OPERATING HOURS					
	0	25,000	TM-21-11 L90 36,000	50,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.97	0.95	0.93	0.86	238,000
40°C / 104°F	0.99	0.96	0.95	0.93	0.85	225,000

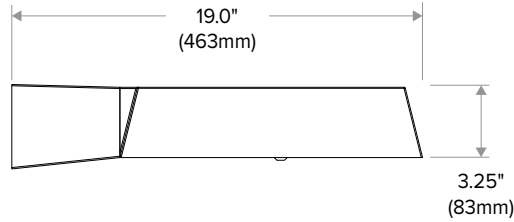
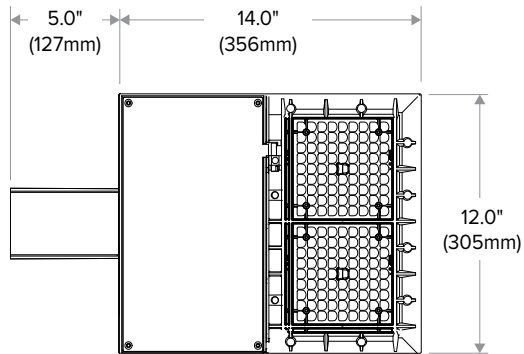


# RATIO SERIES

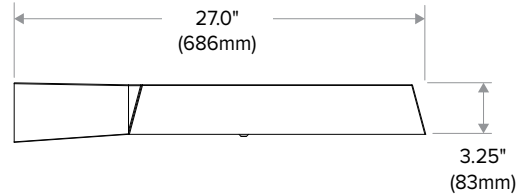
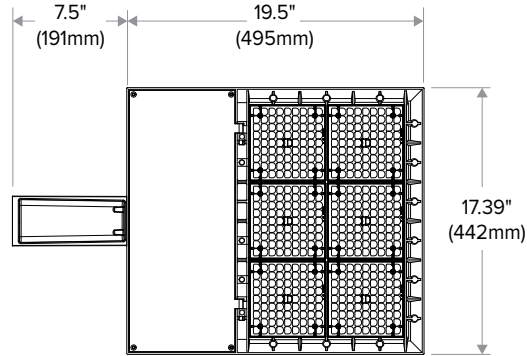
AREA/SITE LIGHTER

## DIMENSIONS

**RAR1**

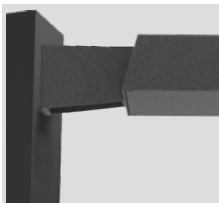


**RAR2**



## ADDITIONAL INFORMATION

### MOUNTING



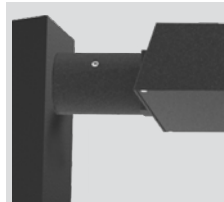
**Arm Mount** – Fixture ships with integral arm for ease of installation. Compatible with Hubbell Outdoor B3 drill pattern.



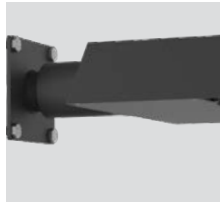
**Knuckle** – Knuckle mount 15° aiming angle increments for precise aiming and control, fits 2-3/8" tenons or pipes.



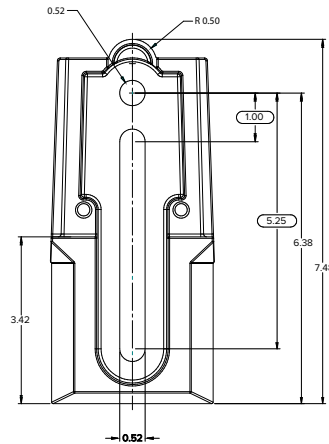
**Universal Mounting** – Universal mounting block for ease of installation. Compatible with drill patterns from 2.5" to 4.5"



**MAF** – Fits 2-3/8" OD arms Roadway applications.



**Wall Mount** – Wall mount bracket designed for building mount applications.



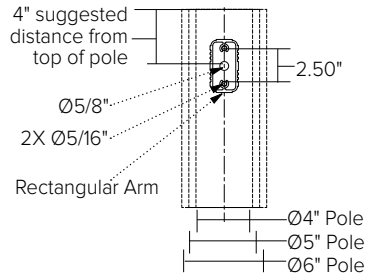
# RATIO SERIES

AREA/SITE LIGHTER

## ADDITIONAL INFORMATION (CONT'D)

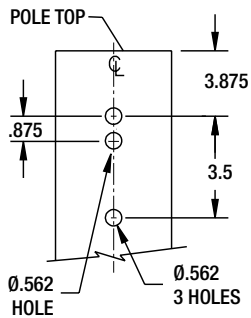
### ARM MOUNT (ASQ)

Compatible with Pole drill pattern B3



### UNIVERSAL MOUNTING (ASQU)

Compatible with pole drill pattern S2



## SITESYNC 7-PIN MODULE



**SW7PR**



- SiteSync features in a new form
- Available as an accessory for new construction or retrofit applications (with existing 7-Pin receptacle)

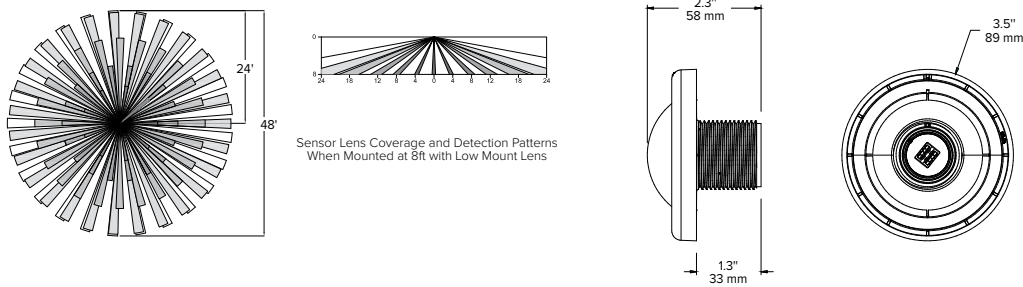


# RATIO SERIES

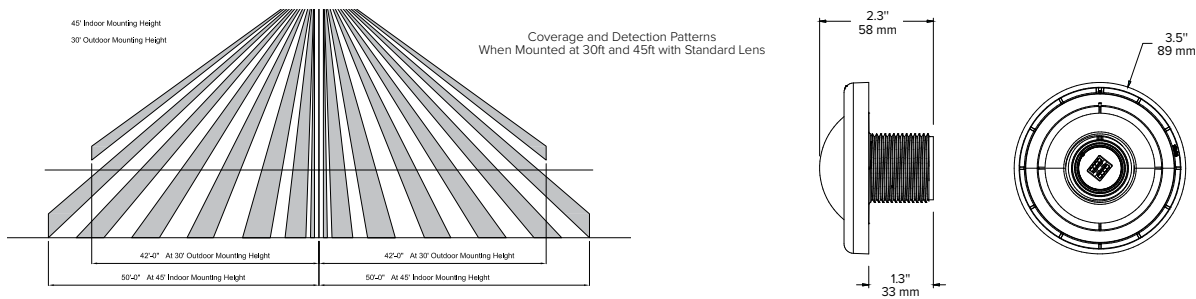
AREA/SITE LIGHTER

## ADDITIONAL INFORMATION (CONT'D)

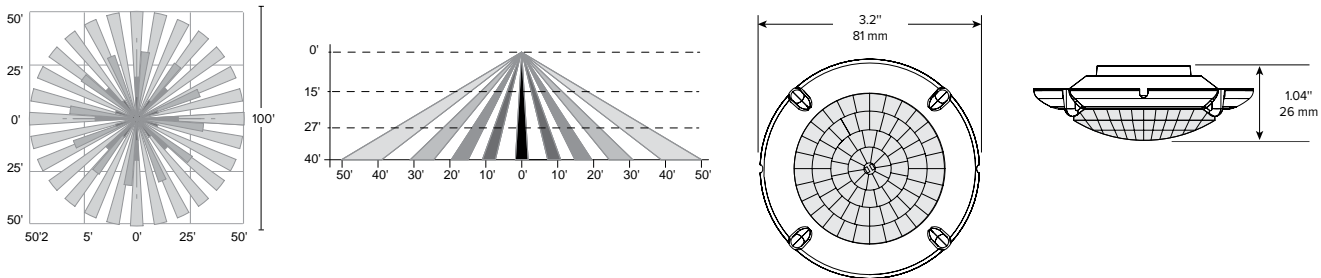
### NXSP-14F



### NXSP-30F



### SCP-40F



### RAR1 EPA

RAR-1	
EPA at 0°	EPA at 30°
.45ft. <sup>2</sup> .13m <sup>2</sup>	.56ft. <sup>2</sup> .17m <sup>2</sup>

### RAR2 EPA


RAR-2	
EPA at 0°	EPA at 30°
.55ft. <sup>2</sup> .17m <sup>2</sup>	1.48ft. <sup>2</sup> .45m <sup>2</sup>

### SHIPPING

Catalog Number	G.W(kg)/CTN	Carton Dimensions		
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)
RAR1	15 (6.8)	20.75 (52.7)	15.125 (38.4)	6.9375 (17.6)
RAR2	19 (8.6)	25 (63.5)	15.125 (38.4)	6.9375 (17.6)

## USE OF TRADEMARKS AND TRADE NAMES

All product and company names, logos and product identifies are trademarks ™ or registered trademarks ® of Hubbell Lighting, Inc. or their respective owners. Use of them does not necessarily imply any affiliation with or endorsement by such respective owners.

Submitted by ESL-Spectrum		<b>Catalog Number:</b> NU6-RD-SW-40LM-35K-80-D60-120-10V-NC-XX-XX <b>Notes:</b>	<b>Type:</b> <b>R-3</b> INDY20-80667
		<b>Job Name:</b> Hilton - Home 2 Home Engineer: TRC Engineering (Springfield)	



Alphabet by Ledra Brands, Inc.

15774 Gateway Circle  
Tustin, CA 92780PH: 714.259.9959  
FAX: 714.259.9969

AlphabetLighting.com

JOB NAME
CONTACT
ORDERING CODE

## ORDERING CODE



LM-79

# ECO NU6"

## Round Downlight

COB

eldoLED<sup>®</sup>  
your product | our drive

## DESCRIPTION

The EcoNU6RD is an economical and highly efficient spec grade 6" recessed downlight with thoughtful construction and pleasing aesthetics. Standard with premium dimming using EldoLED 1% flicker free drivers in 120V, 277V, and step down transformer for 347V. A minimalistic look is achieved with an ultrathin 1/16" trim that is only 5/16" wide. Color choices of both trim and bezel are offered for a customized look. Several beam angles available, plus an optional high-efficiency BrightView diffused lens for smooth light distribution and obscured LED image.

## HOUSING

Electrocoated 16-gauge cold-rolled steel provides enhanced structural reinforcement and rust prevention. Superior, UL-certified, injection-molded commercial-grade Lexan™ (PC) is used for the frame and regressed bezel trim. Lexan provides unmatched durability and impact resistance, and is tested for UV resistance and water exposure in outdoor applications. The thermally-advanced, anodized heat sink uses 6063 aluminum alloy. Wet location rated is offered standard. A 90-minute constant-power IOTA emergency battery backup is available.

## MOUNTING

An advanced mounting system allows for quick and secure installation with LED and driver serviceability from below the ceiling. The LED assembly uses die-cast aluminum mounting clamp grips (MCG) that swing out to tighten onto variable ceiling thicknesses. Integrated rubber feet on each MCG provide a non-slip vibration-resistant installation. The hidden MCG system is accessible from below ceiling by removing the snap-in lens/bezel assembly with either the included suction cup or a screwdriver blade. Integrated bar hangers feature integral toothed nails, T-bar mounting slots with locking holes, tabs for joist positioning. Retrofit mounting option allows for installation from below ceiling by use of compact driver box. No risk damaging LED or bezel assembly during installation, these are installed during last steps. Fixture and driver are easily removed for servicing after install without damaging drywall.

MOUNTING DIMENSIONS	CEILING THICKNESS	CEILING CUTOUT	New Construction Bar Hangers (included)	Mounting Length: 14-3/4" to 26"
Trim	1/8" to 2"	6-3/8" diameter		
			Extension Kit p/n: K20266 (ordered separately, 1 per fixture)	Extends a pair of Bar Hangers Total Mounting Length: 29" to 48"

## LISTINGS

- ETLus Listed to UL1598, cETL Listed to CSA C22.2 #250.0
- IP65 with lens - Suitable for wet locations with lens - Suitable for damp locations without lens
- Non-conductive, Lexan dead-front construction
- Made in the USA – meets the requirements of the Buy American provision within the ARRA

RATINGS / CERTIFICATIONS	NC	RET	IC	ICAT	CP
Type non-IC	✓	✓			
Type IC			✓	✓	✓
Chicago Plenum (CCEA)					✓
Suitable for air handling plenums				✓	✓
Reduced airflow (with lens) ASTM E283	✓	✓	✓	✓	✓

## LED INFO

- 90 CRI: SDCM = 2-step MacAdam Ellipse, Lumen Maintenance:  $L_{70} > 49,500$  hrs
- 80 CRI: SDCM = 3-step MacAdam Ellipse, Lumen Maintenance:  $L_{70} > 49,500$  hrs

SERIES		NU6													
TYPE		RD	round downlight												
LED		SW	static white												
DELIVERED LUMENS (3000K 80CRI HE60)	07LM	660 lm	Calculated Delivered Lumens = [Delivered Lumen Value] x [CCT Multiplier] x [Reflector Multiplier]												
	10LM	880 lm													
	13LM	1080 lm													
	15LM	1200 lm													
	20LM	1660 lm													
	30LM	2500 lm													
	40LM	3180 lm													
	50LM	4225 lm													
CCT	22K	2200K	CCT	2200K	2700K	3000K	3500K	4000K	5000K						
	27K	2700K	CRI	80+	90+	80+	90+	80+	90+	80+	90+				
	30K	3000K													
	35K	3500K	CCT MULTIPLIER FOR LUMEN OUTPUT	0.89	N/A	0.96	0.81	1.00	0.84	1.01	0.85	1.03	0.87	1.04	N/A
	40K	4000K													
50K	5000K														
CRI	80	80CRI													
	90	90CRI													
REFLECTOR & LM MULTIPLIER	HE40	40" high efficiency diffused lens (0.99)													
	HE60	60" high efficiency diffused lens (1.00)													
	HE70	70" high efficiency diffused lens (0.96)													
	SS30	30" semi-specular with clear lens (0.89)													
	SS40	40" semi-specular with clear lens (0.90)													
	SS60	60" semi-specular with clear lens (0.92)													
		60" diffused with clear lens (0.90)													
	WH70	70" brilliant white with clear lens (0.99)													
NO LENS OPTION		NL <sup>3</sup>	no lens												
VOLTAGE		120V 277V	ADVISE See Electrical Options for 347V.												
DIMMING	10V <sup>6</sup>	flicker free 0-10V dimming to 5%													
	DIM10 <sup>4</sup>	standard driver with flicker free 0-10V dimming to 1%													
	DIM10Z <sup>4</sup>	flicker free 0-10V dimming to 0%													
	DALI <sup>4</sup>	flicker free DALI dimming to 1%													
	DALIZ <sup>4</sup>	flicker free DALI dimming to 0%													
	DMXZ	flicker free DMX dimming to 0%													
	LTE <sup>7</sup>	Lutron Hi-lume 2-Wire (Triac) dimming to 1%													
	LUT <sup>7</sup>	Lutron Hi-lume EcoSystem dimming to 1%, Soft-on & Fade-to-Black													
	LUTP <sup>8</sup>	Lutron Hi-lume Premier EcoSystem dimming to 0.1%, Soft-on & Fade-to-Black													
	ELV <sup>5</sup>	leading & trailing edge (Triac/ELV) dimming to <10%													
	ELV1 <sup>5</sup>	leading & trailing edge (Triac/ELV) dimming to 1%													
MOUNTING OPTIONS	NC	new construction with ceiling fitting plate													
	IC <sup>2</sup>	insulation contact housing													
	ICAT <sup>2</sup>	insulation contact / airtight housing													
	CP <sup>3</sup>	chicago plenum housing													
	RET	retrofit, no ceiling fitting plate													
TRIM COLOR	WH	white													
	MC	matte chrome													
	BK	black													
	BZ	bronze													
	WT	wheat													
BEZEL COLOR	WH	white													
	MC	matte chrome													
	BK	black													
	BZ	bronze													
	WT	wheat													
ELECTRICAL OPTIONS	EM7 <sup>4</sup>	emergency battery backup, 90 minutes at 7 watts to LED													
	EM12 <sup>5</sup> FOR 347V OPTION	emergency battery backup, 90 minutes at 12 watts to LED order separate "347V to 277V" step down transformer p/n: P70489													

## ORDERING CODE

Follow the steps to specify your fixture, example:

NU6 - RD - SW - 30LM - 35K - 90 - HE40 - 120 - DIM10 - NC - WH - WH - EM7

SW (LED)	POWER
DELIVERED LM	W (80/90 CRI)
660	8
880	9
1080	11
1200	14
1660	17
2500	27
3180	32
4225	43

Power Factor ≥ 0.9

## NOTES

- 90 CRI not available in 2200K or 5000K.
- IC/ICAT/CP not available in 50LM
- "No lens" option available for SS30, SS40, SS60, D40, D60, or WH70 and is damp location rated.
- Driver uses logarithmic dimming curve as standard. For linear dimming curve add "LIN" after dimming code, i.e. DIM10LIN.
- Triac/ELV dimming available in 120V only. Not available in 50LM.
- For integrated test switch add "ITS" after emergency backup code, i.e. EM12ITS. Test switch is mounted in the bezel of the fixture.
- LTE/LUT not available in 50LM.
- LUTP not available in 30LM, 40LM, or 50LM.
- 10V dimming only available in 15LM and 20LM.



# SLING Series

SLENDER WALLPACK

tradeSELECT®

## FEATURES

- Two sizes for a variety of applications
- Ranges from 21W to 80W with up to 8000 lumens
- SG1 Series replaces from 100W-150W HID; SG2 Series replaces from 150W-250W HID
- Comfort lens available as an option or accessory provides glare control and enhanced uniformity
- Knuckle and trunnion accessory mounting kits available for flood applications
- IP65 and certified to UL 1598 for use in wet locations up to 40°C ambient
- DLC (DesignLights Consortium Qualified - see [www.designlights.org](http://www.designlights.org))



\*3000K and warmer CCTs only



## RELATED PRODUCTS

- [LNC Litepak](#)    [LNC2 Litepak](#)    [LNC3 Litepak](#)  
[LNC4 Litepak](#)    [GeoPak](#)    [GeoPak2](#)

## SPECIFICATIONS

### HOUSING

- Rugged die-cast aluminum housing with corrosion resistant powder coat finish
- Heating dissipating fins provide superior thermal performance extending the life of the electronic components
- Impact resistant tempered glass offers zero uplight
- Comfort lens available as an option or accessory to reduce glare (7-10% lumen reduction) and provide better uniformity

### OPTICS

- 3000K, 4000K and 5000K CCT nominal with 70 CRI
- Smaller SG1 housing has 2 LEDs, larger SG2 housing has 3 LEDs

### INSTALLATION

- Side hinge allows for easy installation and wiring
- Side movement avoids damage to the lens and helps prevent injury common in drop down hinge designs
- Mounts to 4" junction box and includes a gasket to help seal electrical connections
- Four 1/2" threaded conduits hubs for surface conduit provided

### ELECTRICAL

- 120-277V, 50/60Hz electronic drivers
- 347V and 480V available in large SG2 housing
- 10KA surge protection included

### OPTIONS/CONTROLS

- Button photocontrol for dusk to dawn energy savings. Stock versions include 120V-277V PC with a cover which provides a choice to engage photocontrol or not. PC is installed in top hub
- Occupancy sensor available for on/off and dimming control in larger SG2 housing
- SiteSync™ wireless lighting control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution. See ordering information or visit [www.hubbelllighting.com/sitesync](http://www.hubbelllighting.com/sitesync) for more details
- Battery backup options available in larger SG2 housing rated for either 0° C or -30° C. Performance exceeds NEC requirement providing 1 fc minimum over 10'x10' at 11' mounting height

### CERTIFICATIONS

- DesignLights Consortium® (DLC) qualified. Please refer to the DLC website for specific product qualifications at [www.designlights.org](http://www.designlights.org)
- Listed to UL1598 for use in wet location, listed for -40°C to 40°C applications
- IDA approved with zero uplight for 3000K and warmer CCTs
- IP65

### WARRANTY

- 5 year limited warranty
- See [HLI Standard Warranty](#) for additional information

KEY DATA	
Lumen Range	2263-8079
Wattage Range	21-80
Efficacy Range (LPW)	101-113
Fixture Projected Life (Hours)	L70>50K
Weights lbs. (kg)	4.3-11 (2.0-5.0)

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

# SLING SERIES

SLENDER WALLPACK

## ORDERING GUIDE

Example: SG1-20-3K7-FT-UNV-DBT-PCU-CS

CATALOG #

## ORDERING INFORMATION

Housing	CCT/CRI	Distribution	Voltage	Color/Finish	Control Options	Options
<b>SG1-10</b> Size 1, 10W	<b>3K7</b> 3000K, 70 CRI	<b>FT</b> Fwd Throw	<b>UNV</b> 120V-277V	<b>BLT</b> Black Matte Textured	<b>PCU</b> Universal Button Photocontrol (120-277V)	<b>CS</b> Comfort Lens
<b>SG1-20</b> Size 1, 20W			<b>120</b> 120V	<b>BLS</b> Black Gloss Smooth	<b>SCP</b> <sup>1,2,3</sup> Occupancy Sensor Programmable (Dim)	<b>E</b> <sup>1,2</sup> Battery 0°C
<b>SG1-30</b> Size 1, 30W	<b>4K7</b> 4000K, 70 CRI		<b>277</b> 277V	<b>DBT</b> Dark Bronze Matte Textured	<b>SWP</b> <sup>1,2</sup> SiteSync Pre-commission	<b>EH</b> <sup>1,2</sup> Battery w/ heater -20°
<b>SG1-40</b> Size 1, 40W	<b>5K7</b> 5000K, 70 CRI		<b>UHV</b> 347V-480V	<b>DBS</b> Dark Brone Gloss Smooth	<b>SWPM</b> <sup>1,2</sup> SiteSync Pre-commission w/ Sensor	
<b>SG2-50</b> Size 2, 50W				<b>GTT</b> Graphite Matte Textured	<b>Specify MTG HT for SCO/SCP &amp; SWPM</b>	
<b>SG2-80</b> Size 2, 80W				<b>LGS</b> Light Grey Gloss Smooth	<b>8F</b> Up to 8'	
				<b>PSS</b> Platinum Silver Smooth	<b>20F</b> Up to 20'	
				<b>WHT</b> White Matte Textured		
				<b>WHS</b> White Gloss Smooth		
				<b>VGT</b> Verde Green Textured		
				<b>Color Option</b>		
				<b>CC</b> Custom Color		

### Notes:

- Available in SG2 only, UHV available in SG2-50 only
- Sensor controls & battery backup can not be used with flood accessory or kit or for inverted/up mounting, 120-227V only for SCO/SCP, 120 or 277 only for SWP, SWPM, E & EH
- Must order minimum of one remote control to program dimming settings, 0-10V fully adjustable dimming with automatic daylight calibration and different time delay settings, 120-277V only

## STOCK ORDERING INFORMATION

Catalog Number	CCT/CRI	Wattage	Mounting Height	Color	Color	Delivered Lumens	LPW	Weight lbs. (kg)
<b>SG1-10-PCU</b>	5000K/70	11W	8-12ft	120-277V	Dark Bronze	1349	122	4.3 (2.0)
<b>SG1-10-4K-PCU</b>	4000K/70	11W	8-12ft	120-277V	Dark Bronze	1424	129	4.3 (2.0)
<b>SG1-20-PCU</b>	5000K/70	21W	8-12ft	120-277V	Dark Bronze	2263	108	4.3 (2.0)
<b>SG1-20-4K-PCU</b>	4000K/70	21W	8-12ft	120-277V	Dark Bronze	2310	110	4.3 (2.0)
<b>SG1-30-PCU</b>	5000K/70	29W	10-15ft	120-277V	Dark Bronze	3270	113	4.3 (2.0)
<b>SG1-30-4K-PCU</b>	4000K/70	29W	10-15ft	120-277V	Dark Bronze	3060	105	4.3 (2.0)
<b>SG1-40-PCU</b>	5000K/70	38W	10-15ft	120-277V	Dark Bronze	4008	105	4.3 (2.0)
<b>SG1-40-4K-PCU</b>	4000K/70	38W	10-15ft	120-277V	Dark Bronze	4070	106	4.3 (2.0)
<b>SG2-50-PCU</b>	5000K/70	51W	12-18ft	120-277V	Dark Bronze	5548	110	11 (5.0)
<b>SG2-50-4K-PCU</b>	4000K/70	51W	12-18ft	120-277V	Dark Bronze	5526	109	11 (5.0)
<b>SG2-80-PCU</b>	5000K/70	80W	15-25ft	120-277V	Dark Bronze	8061	101	11 (5.0)
<b>SG2-80-4K-PCU</b>	4000K/70	80W	15-25ft	120-277V	Dark Bronze	8079	101	11 (5.0)



DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

# SLING SERIES

SLENDER WALLPACK

## ORDERING GUIDE

### OPTIONS AND ACCESSORIES

	Catalog Number	Description	Weight lbs. (kg)
<input type="checkbox"/>	SG1-CS	Acrylic comfort lens for SG1	1 (.45)
<input type="checkbox"/>	SG2-CS	Acrylic comfort lens for SG2	1 (.45)
<input type="checkbox"/>	SG1-YOKE	SG1 Series Yoke/Floodlight mount kit, includes visor	2.0 (1.0)
<input type="checkbox"/>	SG1-KNUCKLE	SG1 Series Knuckle/Floodlight mount kit, includes visor	2.0 (1.0)
<input type="checkbox"/>	SG2-YOKE	SG2 Series Yoke/Floodlight mount kit, includes visor	2.0 (1.0)
<input type="checkbox"/>	SG2-KNUCKLE	SG2 Series Knuckle/Floodlight mount kit, includes visor	2.0 (1.0)
<input type="checkbox"/>	SCP-REMOTE*	Remote control for SCP option. Order at least one per project to program and control fixtures	1 (.45)
<input type="checkbox"/>	SG2-PMA-3-XX	3" Pole Mount adapter for SG2, both square and round, XX= finish	7 (3.5)
<input type="checkbox"/>	SG2-PMA-4-XX	4" Pole Mount adapter for SG2, both square and round, XX= finish	7 (3.5)
<input type="checkbox"/>	SG2-PMA-5-XX	5" Pole Mount adapter for SG2, both square and round, XX= finish	7 (3.5)
<input type="checkbox"/>	SG2-PMA-6-XX	6" Pole Mount adapter for SG2, both square and round, XX= finish	7 (3.5)
<input type="checkbox"/>	SG1-SPC	Vandal Resistant Lens (shield polycarbonate), SG1	3 (1.5)
<input type="checkbox"/>	SG2-SPC	Vandal Resistant Lens (shield polycarbonate), SG2	3 (1.5)
<input type="checkbox"/>	SG1-WCP	Universal Wall Cover Plate, Dark Bronze, SG1	10 (5)
<input type="checkbox"/>	SG2-WCP-H	Horizontal Mount Wall Cover Plate, Dark Bronze, SG2	10 (5)
<input type="checkbox"/>	SG2-WCP-V	Vertical Mount Wall Cover Plate, Dark Bronze, SG2	10 (5)
<input type="checkbox"/>	SG2XL-WCP-H	Horizontal Mount Wall Cover Plate, DB, SG2 with battery or sensor	10 (5)
<input type="checkbox"/>	SG2XL-WCP-V	Vertical Mount Wall Cover Plate, DB, SG2 with battery or sensor	10 (5)

### ACCESSORIES AND SERVICES (ORDERED SEPARATELY)

Control Options	
<b>SWUSB<sup>1</sup></b>	SiteSync™ interface software loaded on USB flash drive for use with owner supplied PC (Windows based only). Includes SiteSync™ license, software and USB radio bridge node.
<b>SWTAB<sup>1</sup></b>	Windows tablet and SiteSync™ interface software. Includes tablet with preloaded software, SiteSync™ license and USB radio bridge node.
<b>SWBRG<sup>2</sup></b>	SiteSync™ USB radio bridge node only. Order if a replacement is required or if an extra bridge node is requested.

Notes:

- When ordering SiteSync™ at least one of these two interface options must be ordered per project.
- If needed, an additional Bridge Node can be ordered.

# SLING SERIES

SLENDER WALLPACK

## PERFORMANCE DATA

Description	# of LEDs	Drive Current	System Watts	5K (5000K NOMINAL 70 CRI)					4K (4000K NOMINAL 70 CRI)					3K (3000K NOMINAL 80 CRI)				
				Lumens	LPW	B	U	G	Lumens	LPW	B	U	G	Lumens	LPW	B	U	G
SG1-10	2	140mA	11	1349	122	1	0	0	1424	129	1	0	0	1003	91	1	0	0
SG1-20	2	250mA	21	2449	115	1	0	0	2310	110	1	0	0	2054	95	1	0	0
SG1-30	2	350mA	29	3332	117	2	0	0	3060	106	1	0	0	2913	100	1	0	0
SG-40	2	450mA	38	4008	105	2	0	0	4070	106	2	0	0	3845	100	2	0	0
SG2-50-UHV	3	350mA	44	4633	106	2	0	0	4609	105	2	0	0	3895	90	2	0	0
SG2-50	3	415mA	51	5548	109	2	0	0	5526	107	2	0	0	4700	92	2	0	0
SG2-80	3	650mA	80	7851	98	2	0	1	8079	103	2	0	1	6721	86	2	0	1

\*347 and 480 VAC input Lumen values are from photometric test performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment application and inherent performance balances of the electrical components.

## ELECTRICAL DATA

Catalog number	# of Drivers	Input Voltage	Current (AMPS)	System Power
SG1-10	1	120	0.09	11.0
	1	277	0.04	11.0
SG1-20	1	120	0.18	21.0
	1	277	0.08	21.0
SG1-30	1	120	0.24	28.9
	1	277	0.10	28.9
SG2-40	1	120	0.32	38.3
	1	277	0.14	38.3
SG-50-UHV	1	347	0.13	43.5
	1	480	0.18	43.5
SG2-50	1	120	0.42	50.6
	1	277	0.18	50.6
SG2-80	1	120	0.68	79.8
	1	277	0.29	79.8

## PROJECTED LUMEN MAINTENANCE

Ambient Temperature	OPERATING HOURS					
	0	25,000	50,000	TM-21-11' L96 60,000	100,000	L70 (Hours)
25°C / 77°F	1.00	0.98	0.97	0.96	0.95	>791,000
40°C / 104°F	0.99	0.98	0.96	0.96	0.94	>635,000

1. Projected per IESNA TM-21-11 \* (Nichia 219B, 700mA, 85°C Ts, 10,000hrs) Data references the extrapolated performance projections for the base model in a 40°C ambient, based on 10,000 hours of LED testing per IESNA LM-80-08



# SLING SERIES

SLENDER WALLPACK

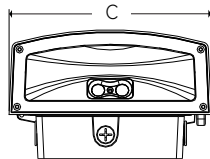
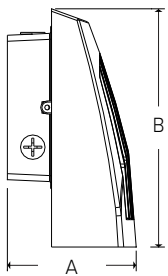
## LUMINAIRE AMBIENT TEMPERATURE FACTOR (LATF)

Ambient Temperature		Lumen Multiplier
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	0.99
50° C	122° F	0.96

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

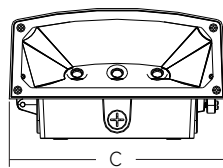
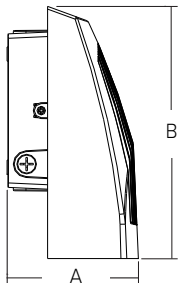
## DIMENSIONS

**SG1**



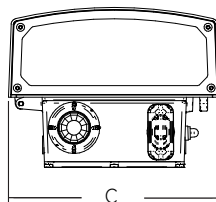
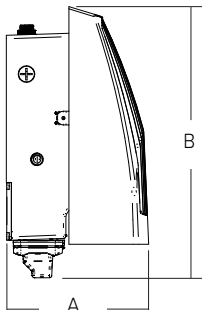
A	B	C	Weight
4.19" (107mm)	7.80" (198mm)	6.61" (168mm)	4.4lbs (2kg)

**SG2**



A	B	C	Weight
5.80" (147mm)	11.14" (283mm)	9.52" (242mm)	11lbs (5kg)

**SG2 with occupancy sensor and battery options**



A	B	C	Weight
7.26" (184mm)	13.84" (352mm)	9.52" (242mm)	11lbs (5kg)

# SLING SERIES

SLENDER WALLPACK

DATE:	LOCATION:
TYPE:	PROJECT:
CATALOG #:	

## PHOTOMETRY

### SG1-10-4K7

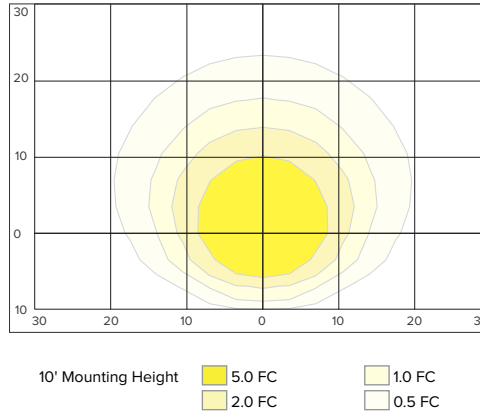
#### LUMINAIRE DATA

Description	4000 Kelvin, 70 CRI
Distribution Type	Forward Throw
Delivered Lumens	1424
Watts	11.4
Efficacy	125
Mounting	Wall

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	996.6	70.0
Downward House Side	427.8	30.0
Downward Total	1424.4	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	1424.4	100.0

#### ISOMETRIC FOOTCANDLE



### SG1-20-4K7

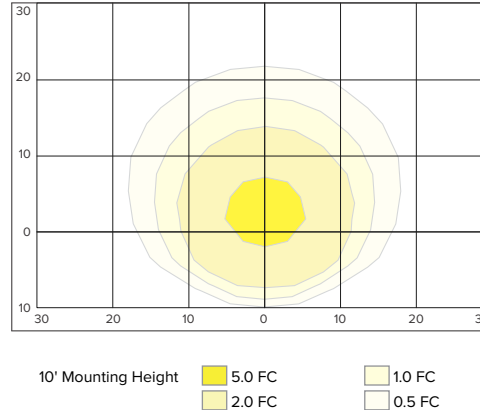
#### LUMINAIRE DATA

Description	4000 Kelvin, 70 CRI
Distribution Type	Forward Throw
Delivered Lumens	2310
Watts	20.9
Efficacy	111
Mounting	Wall

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	1618	70.0
Downward House Side	692.1	30
Downward Total	2310	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	2310.3	100.0

#### ISOMETRIC FOOTCANDLE



### SG1-30

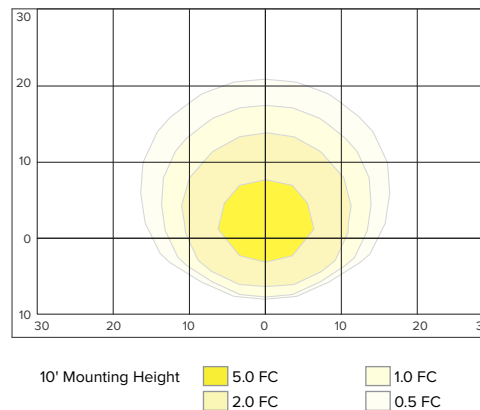
#### LUMINAIRE DATA

Description	4000 Kelvin, 70 CRI
Distribution Type	Forward Throw
Delivered Lumens	3060
Watts	29.1
Efficacy	105
Mounting	Wall

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	2619.4	70.9
Downward House Side	890.4	29.1
Downward Total	3059.8	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	3059.8	100.0

#### ISOMETRIC FOOTCANDLE





# SLING SERIES

SLENDER WALLPACK

## PHOTOMETRY

### SG1-40-4K7

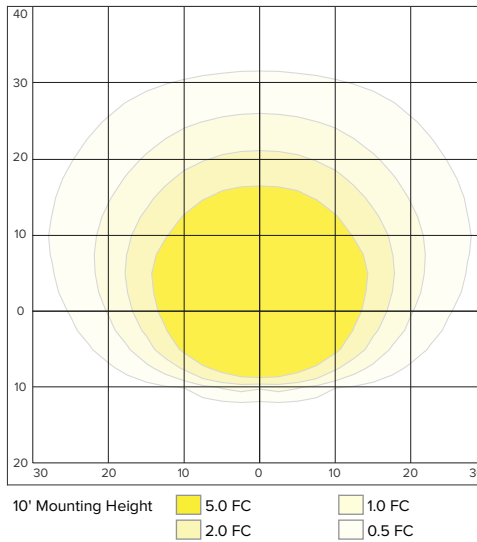
#### LUMINAIRE DATA

Description	4000 Kelvin, 70 CRI
Distribution Type	Forward Throw
Delivered Lumens	4070
Watts	38.1
Efficacy	107
Mounting	Wall

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	2857.7	70.2
Downward House Side	1215.5	29.8
Downward Total	4070.2	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	4070.2	100.0

#### ISOMETRIC FOOTCANDLE



### SG2-50-4K7

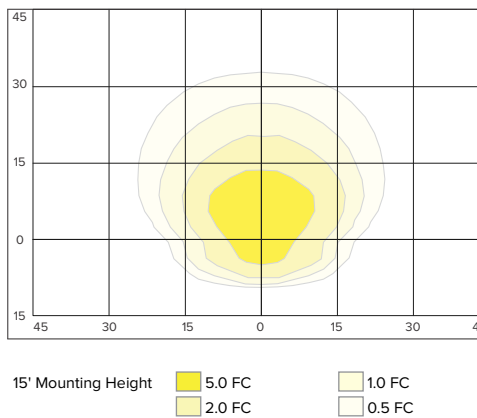
#### LUMINAIRE DATA

Description	4000 Kelvin, 70 CRI
Distribution Type	Forward Throw
Delivered Lumens	5525.7
Watts	51.7
Efficacy	107
Mounting	Wall

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	4611.8	83.5
Downward House Side	913.9	16.5
Downward Total	5525.7	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	5525.7	100.0

#### ISOMETRIC FOOTCANDLE



### SG2-80-4K7

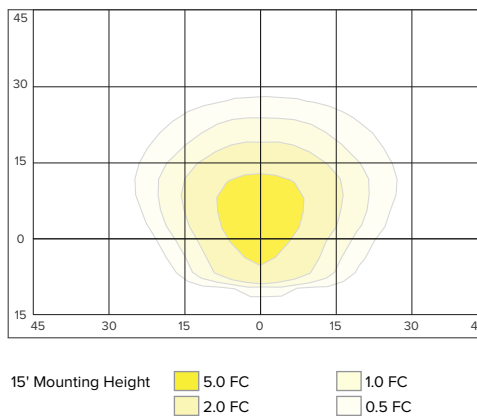
#### LUMINAIRE DATA

Description	4000 Kelvin, 70 CRI
Distribution Type	Forward Throw
Delivered Lumens	8453
Watts	78.5
Efficacy	108
Mounting	Wall

#### ZONAL LUMEN SUMMARY

Zone	Lumens	% Luminaire
Downward Street Side	6677.7	79.0
Downward House Side	1775.5	21.0
Downward Total	8453.2	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	8453.2	100.0

#### ISOMETRIC FOOTCANDLE



# SLING SERIES



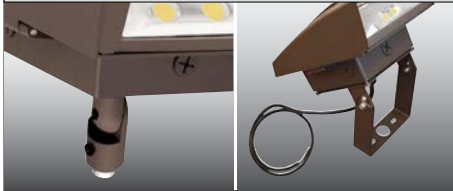

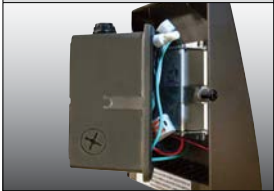
SLENDER WALLPACK

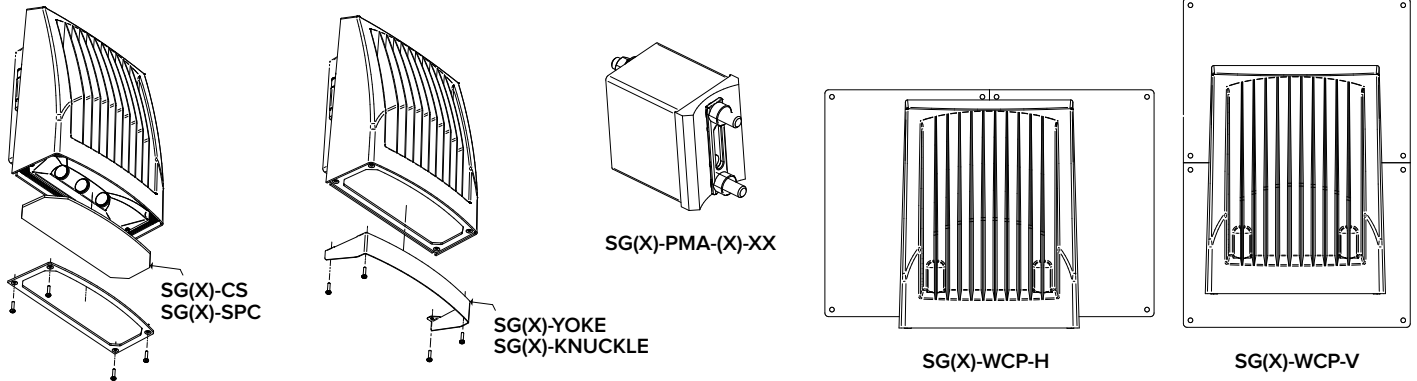
## ADDITIONAL INFORMATION

### Shipping Information



Catalog Number	G.W(kg)/ CTN	Carton Dimensions			Carton Qty. per Master Pack	Pallet Qty.
		Length Inch (cm)	Width Inch (cm)	Height Inch (cm)		
SG1	4.35lbs (2kg)	9.5 (24)	8.25 (21)	5.25 (13)	6	98
SG2	11lbs (5kg)	14 (36)	11.5 (29)	8 (20)	2	64

### Accessories and Services

Comfort Lens	Visor	Mounting Options	Photocontrol	Hinged Housing Door
				
Acrylic comfort lens provides glare control, improved visual comfort and better uniformity	Visor accessory included with mounting accessory kits	Flood mounting accessories - 1/2" threaded knuckle or yoke (includes grommet and 3' SO cord)	Photocontrol option available for energy-saving dusk-to-dawn operation	Side hinged for easy installation and wiring access, single screw secures housing closure



### Features

Emergency Mode (EH)	Wireless and Occupancy Controls
	

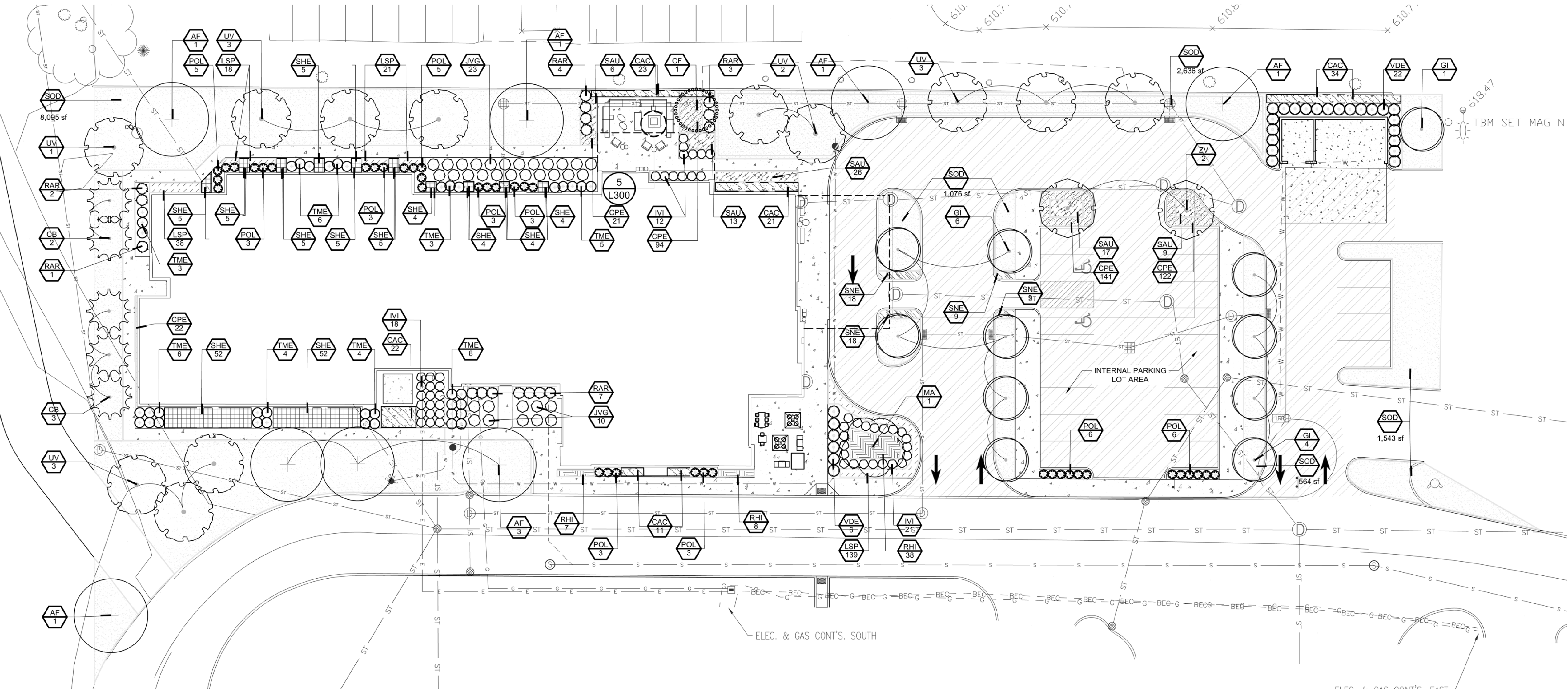
Battery back up feature with side indicator.

Exceeds Life Safety Code average illuminance of 1.0 fc. at 12' mounting height. Assumes open space with no obstructions. Battery backup units consume 6W when charging a dead battery and 2W during maintenance charging. EH (units with a heater) consume up to an additional 8W when charging if the battery temp is lower than 10°C

Diagrams for illustration purposes only, please consult factory for application layout.

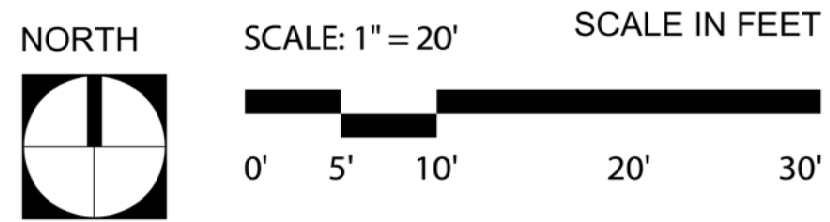
SiteSync™ Lighting Control delivers flexible control strategies for reducing power consumption and minimizing maintenance costs while delivering the right light levels with a simple and affordable wireless solution.





PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT
AF	8	ACER FREEMANII 'ARMSTRONG'	FREEMAN MAPLE	B&B, 2.5" CAL.
CB	5	CARPINUS BETULUS 'FASTIGIATA' BRANCHING TO BEGIN 3' FROM GROUND	PYRAMIDAL EUROPEAN HORNBEAN	B&B, 2.5" CAL.
CF	1	CORNUS FLORIDA	EASTERN DOGWOOD	B&B, 2" CAL.
GI	11	GLEDITSIA TRIACANTHOS INERMIS	THORNLESS COMMON HONEYLOCUST	B&B, 2" CAL.
MA	1	MAGNOLIA X 'ANN'	ANN MAGNOLIA	B&B, 2.5" CAL.
UV	12	ULMUS AMERICANA 'VALLEY FORGE'	AMERICAN ELM	B&B, 2.5" CAL.
ZV	2	ZELKOVA SERRATA 'VILLAGE GREEN'	SAWLEAF ZELKOVA	B&B, 2.5" CAL.
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT
IVI	51	ITEA VIRGINICA 'HENRY'S GARNET'	HENRY'S GARNET SWEETSPIRE	3 GAL
JVG	33	JUNIPERUS VIRGINIANA 'GREY OWL'	EASTERN REDCEDAR	3 GAL
POL	40	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL'	DWARF NINEBARK	3 GAL
RAR	17	RHUS AROMATICA 'GRO-LOW'	GRO-LOW FRAGRANT SUMAC	3 GAL
TME	39	TAXUS X MEDIA 'DENSIFORMIS'	DENSE YEW	3 GAL
VDE	28	VIBURNUM DENTATUM 'BLUE MUFFIN'	BLUE MUFFIN VIBURNUM	3 GAL
ORNAMENTAL GRASSES	QTY	BOTANICAL NAME	COMMON NAME	CONT
CAC	111	CALAMAGROSTIS X ACUTIFLORA 'KARL FOERSTER'	FEATHER REED GRASS	1 GAL
SHE	150	SPOROBOLUS HETEROLEPIS	PRAIRIE DROPSEED	1 GAL
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT
CPE	400	CAREX PENNSYLVANICA	PENNSYLVANIA SEDGE	1 GAL
LSP	216	LIRIOPE SPICATA	CREeping LILY TURF	1 GAL
SOD	13,915 SF	SODDED LAWN	SOD	
PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	CONT
RHI	53	RUDBECKIA HIRTA	BLACK-EYED SUSAN	1 GAL
SNE	54	SALVIA NEMOROSA 'MAY NIGHT'	MAY NIGHT SAGE	1 GAL
SAU	71	SEDUM X 'AUTUMN JOY'	AUTUMN JOY SEDUM	1 GAL



PLANTING NOTES

- Seed/Sod limit line is approximate. Seed/Sod to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized disruption outside of designated construction area.
- Contractor responsible for erosion control in all seeded/sodded areas.
- Tree mulch rings in turf areas are 5 foot diameter, typical. Contractor shall provide a mulch ring around all existing trees within the limit of work. Remove all existing grass from area to be mulched and provide a typical v-trench edge.
- Bedlines are to be spade cut to a minimum depth of 3 inches unless otherwise shown on the plans. Curved bedlines are to be smooth and not segmented.
- Do not locate plants within 10' of utility structures, or within 5' horizontally of underground utility lines unless otherwise shown on the plans. Consult with Landscape Architect if these conditions exist.
- FOR LUMP SUM CONTRACTS, Plants and other materials are quantified and summarized for the convenience of the Owner and jurisdictional agencies only. Confirm and install sufficient quantities to complete the work as drawn and specified. No additional payments will be made for materials required to complete the work as drawn and specified.
- FOR UNIT PRICE CONTRACTS, Payments will be made based on actual quantities installed as measured in place by the Owners Representative.
- Refer to specifications for additional conditions, standards and notes.

SLEEVING NOTES

- Sleeving shall be schedule 40 PVC pipe unless otherwise noted. Where possible sleeving should be stacked or ganged to minimize space requirements.
- Contractor to provide a sleeving diagram for approval by the Landscape Architect prior to installation.
- Contractor shall provide at least two (2) sleeves for irrigation and electrical service to each planting area and /or raised, surrounded or isolated by paving.
- Locate sleeves in accessible corners or along edges of pavement. Avoid directing sleeves toward or through the center of planting areas where large rootballs are intended.

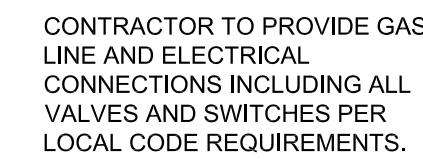
FURNITURE LAYOUT NOTES

- See Architecture Drawings for specification and location of outdoor furniture.

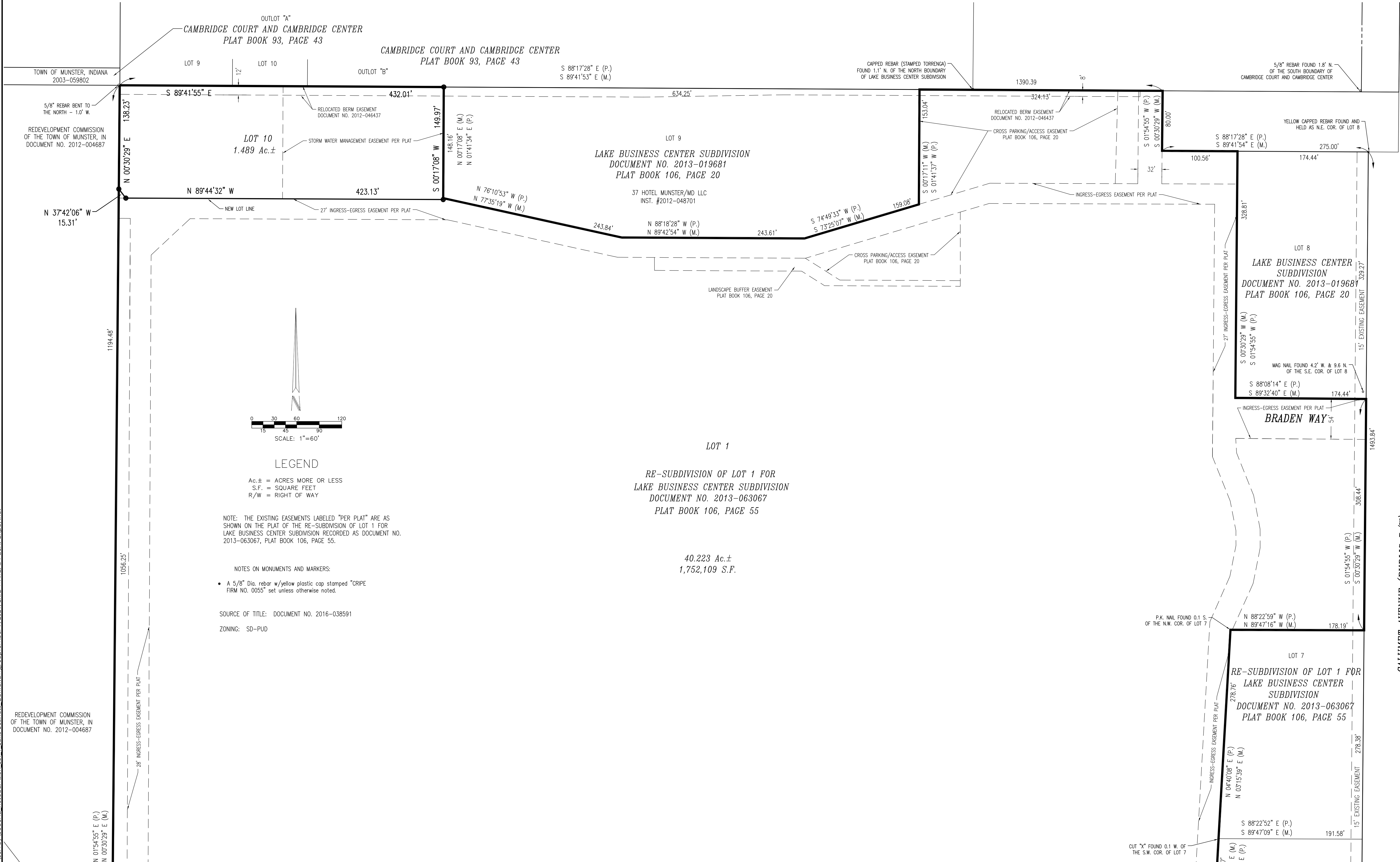
REQUIRED PLANT MATERIALS		REQUIRED	PROPOSED
ZONING ORDINANCE SECTION			
26-1303.2	PERIMETER SCREENING = SHADE TREES = 150 LF	NORTH 455 LF = 15 TREES WEST 200 LF = 7 TREES SOUTH 180 LF = 6 TREES	15 TREES 7 TREES 6 TREES
26-1303.1	INTERNAL PLANTING = 16,845 SF LANDSCAPE AREA = 7.5% SHADE TREES = 1120 SF	1263.4 SF 10 TREES	4385 SF 12 TREES
	TOTAL SITE PLANTING AREA LANDSCAPE BEDS SODDED LAWN TREES		4390 SF 10,730 SF 40 TREES





[illegible]

SECOND RE-SUBDIVISION OF LOT 1 OF  
LAKE BUSINESS CENTER SUBDIVISION



SEE SHEET 2 OF 3

I affirm, under the penalties for perjury, that I have taken reasonable care to reflect each social security number in this document, unless required by law.  
Name ERIC C. WHITE

Drawn By:	ECW	Techn. Chk. By & Date:	
Concept Chk. By & Date:		Field Chk. By & Date:	
Certified By:			
Name:	ERIC C. WHITE, P.S. #29700012	Date:	9/09/2021

3939 Priority Way South Drive, Suite 200 Indianapolis, Indiana 46240 (317) 844-6777 E-Mail: <a href="mailto:crpe@crpe.biz">crpe@crpe.biz</a>	
FINAL SUBDIVISION PLAT SECOND RE-SUBDIVISION OF LOT 1 OF LAKE BUSINESS CENTER SUBDIVISION HOSPITALITY PROJECT SERVICES 2501 S. HIGH SCHOOL ROAD INDIANAPOLIS, IN 46241 PHONE: (317) 596-1565	
Large Township: NORTH TWP. - LAKE CO. Section: 25 Range: 36-N Township: 10-W	Client: LBC OWNER LLC
Scale: 1"=60' Sheet No: 1 of 3 Project Number: 190149-10000	

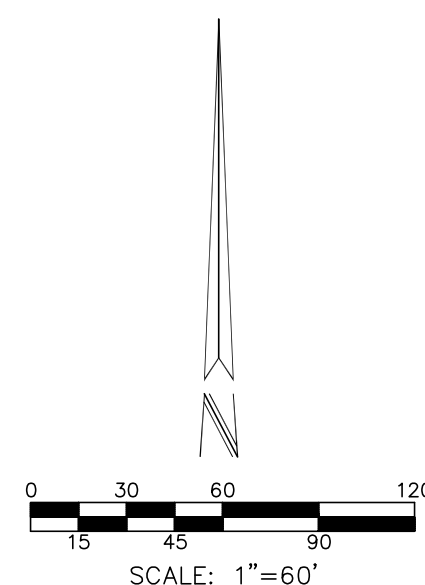


SECOND RE-SUBDIVISION OF LOT 1 OF  
LAKE BUSINESS CENTER SUBDIVISION

SEE SHEET 1 OF 3

RE-SUBDIVISION OF LOT 1 FOR  
LAKE BUSINESS CENTER SUBDIVISION  
DOCUMENT NO. 2013-063067  
PLAT BOOK 106, PAGE 55

40.223 Ac.±  
1,752,109 S.F.



LEGEND

Ac.± = ACRES MORE OR LESS  
S.F. = SQUARE FEET  
R/W = RIGHT OF WAY

NOTE: THE EXISTING EASEMENTS LABELED "PER PLAT" ARE AS SHOWN ON THE PLAT OF THE RE-SUBDIVISION OF LOT 1 FOR LAKE BUSINESS CENTER SUBDIVISION RECORDED AS DOCUMENT NO. 2013-063067, PLAT BOOK 106, PAGE 55.

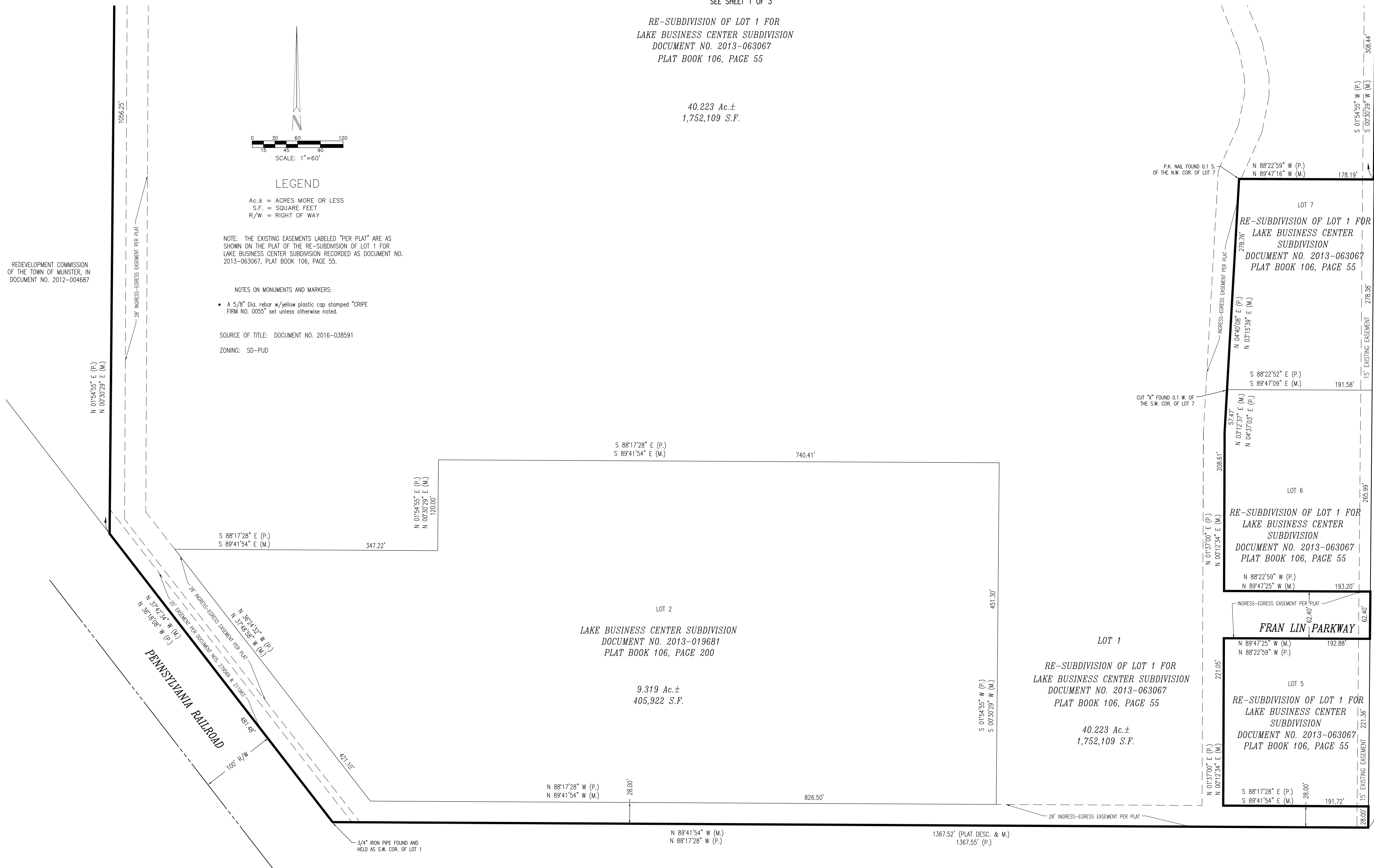
NOTES ON MONUMENTS AND MARKERS:

- A 5/8" Dia. rebar w/yellow plastic cap stamped "CRIPE FIRM NO. 0055" set unless otherwise noted.

SOURCE OF TITLE: DOCUMENT NO. 2016-038591

ZONING: SD-PUD

REDEVELOPMENT COMMISSION  
OF THE TOWN OF MUNSTER, IN  
DOCUMENT NO. 2012-004687



"I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law."

Nome ERIC C. WHITE

DRAWN BY: <div style="border: 1px solid black; padding: 5px; text-align: center; font-size: 1.2em;">ECW</div>	TECH. CK. BY & DATE:  
CONCEPT CK. BY & DATE:  	FIELD CK. BY & DATE:  
CERTIFIED BY:  	
NAME: <div style="border: 1px solid black; padding: 5px;">ERIC C. WHITE, P.S. #29700012</div>	DATE: <div style="border: 1px solid black; padding: 5px;">9/09/2021</div>

THIS PLAT PREPARED BY ERIC C. WHITE, P.S. #29700012

[illegible]



SECOND RE-SUBDIVISION OF LOT 1 OF  
LAKE BUSINESS CENTER SUBDIVISION

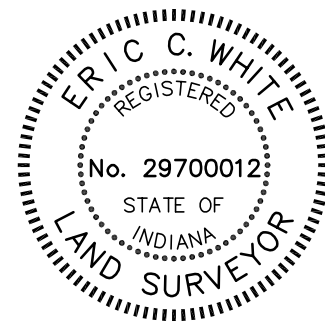
## LAND DESCRIPTION

Lot 1 of the Re-subdivision of Lot 1 for Lake Business Center Subdivision, an addition to the Town of Munster, Lake County, Indiana, as per plat thereof, recorded as Document No. 2013-063067, Plat Book 106, page 55 in the Office of the Recorder of Lake County, Indiana, containing 41.712 acres, more or less.

This subdivision consists of two (2) lots numbered 1 and 10. The size of the lots and easements are shown in feet and decimal parts thereof.

This plat is based upon an ALTA/NSPS Land Title Survey of the above described real estate prepared by Cripe dated \_\_\_\_\_, 2021 and recorded as Document No. \_\_\_\_\_ in the Office of the Recorder of Lake County, Indiana.

Witness my signature this \_\_\_\_ day of \_\_\_\_\_, 2021.



Eric C. White, P.S. #29700012

## DEED OF DEDICATION

We, the undersigned, LBC Owner LLC, owner(s) of the real estate shown and described herein, do hereby certify that we have laid off, platted and subdivided, and do hereby lay off, plat and subdivide, said real estate in accordance with the within plat.

The subdivision shall be known and designated as the "SECOND RE-SUBDIVISION OF LOT 1 OF LAKE BUSINESS CENTER SUBDIVISION", an addition to the Town of Munster, Lake County, Indiana. All streets shown and not hereto dedicated, are dedicated to the City of Indianapolis as public right of way.

Witness our Hand and Seal this day of \_\_\_\_\_, 2021.

LBC Owner LLC

By: \_\_\_\_\_

Name:

Title:

STATE OF INDIANA )

) SS:

COUNTY OF \_\_\_\_\_

Before me the undersigned Notary Public in and for said County and State, personally appeared \_\_\_\_\_, President of LBC Owner LLC, who acknowledged the execution of the forgoing instrument as his voluntary act and deed, for the purposes herein expressed.

Witness my hand and notary seal this day of \_\_\_\_\_, 2021.

Notary Public

My Commission expires:\_\_\_\_\_

I am a resident of County\_\_\_\_\_

## PLAN COMMISSION CERTIFICATE

Submitted to, approved and accepted by the Plan Commission of the Town of Munster, Lake County, Indiana, this \_\_\_\_ day of \_\_\_\_\_, 2021.

PLAN COMMISSION OF THE TOWN OF MUNSTER, LAKE COUNTY, INDIANA

BY: \_\_\_\_\_ ATTEST: \_\_\_\_\_  
Chairman: \_\_\_\_\_ Executive Secretary \_\_\_\_\_

Executive Secretary

-----  
(Printed Name)

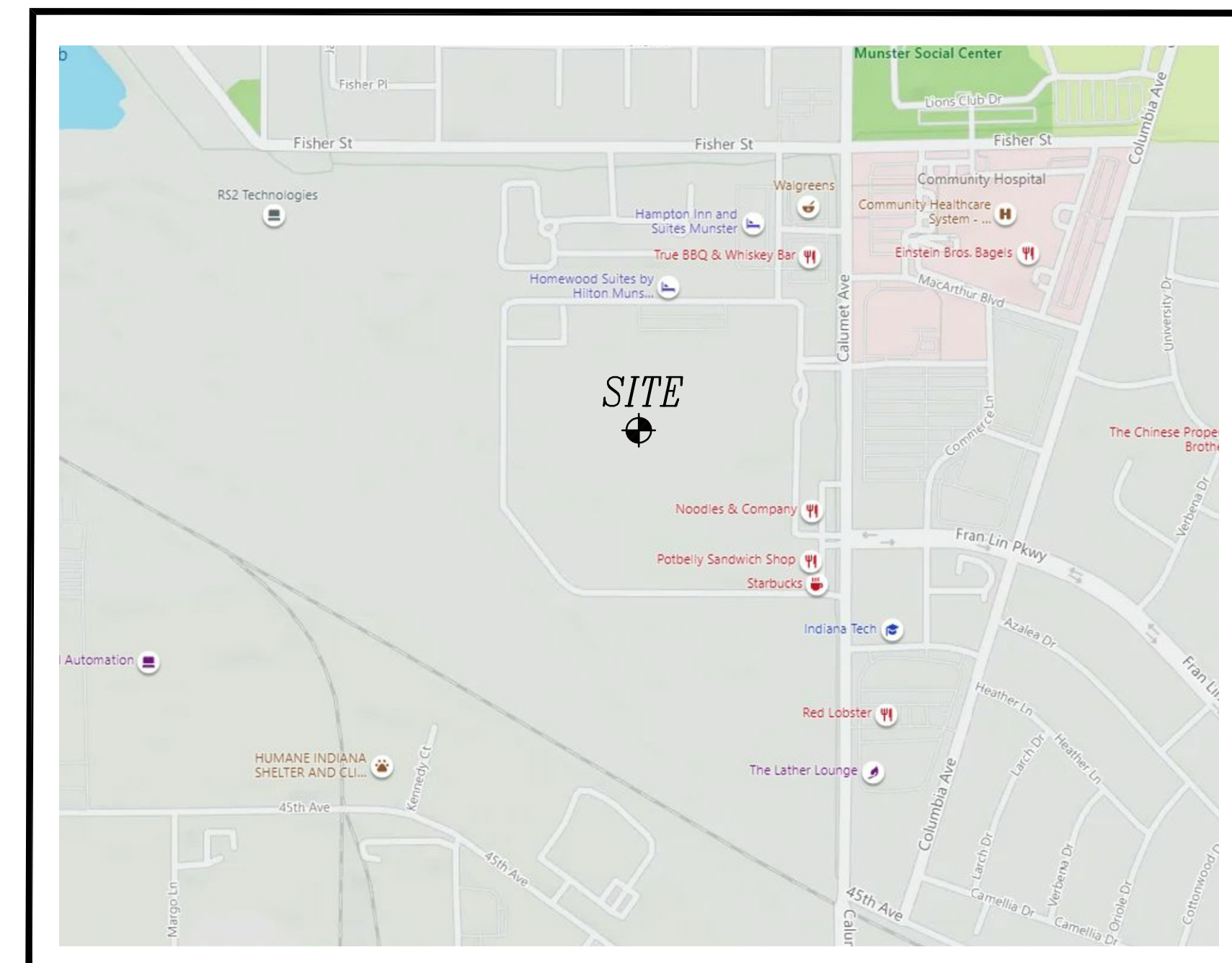
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(Printed Name)

## FLOOD STATEMENT:

The subject property is located within an unshaded Flood Zone X (areas determined to be outside the 0.2% annual chance floodplain) as plotted by scale from "FIRM, Flood Insurance Rate Map, Community Panel Number 180139 0117 E, Town of Munster, Lake County, Indiana, effective date, January 18, 2012, as prepared by the Federal Emergency Management Agency. The accuracy of any flood hazard data shown on this report is subject to map scale uncertainty and to any other uncertainty in location or elevation on the referenced Flood Insurance Rate Map.

UTILITY EASEMENTS:

An easement is hereby granted to the Town of Munster, Indiana, SBC, AT&T, Northern Indiana Public Service Company and other companies identified by the Munster Town Board as supplying public service needs severally and their respective successors and assigns to install, lay, erect, construct, renew, operate, repair, replace and maintain sewers, water mains, gas mains, conduits, cables, poles and wires, underground with all necessary braces, guys, anchors and other appliances, in, upon, along and marked "easements for public utilities" for the purpose of serving the public in general with sewer, water, gas, electric, telephone and television service, including aerial right as to streets where necessary with aerial service wires to adjacent lots, together with the right to enter upon the said easements for public utilities at all times for any and all of the purposes aforesaid and to trim and keep trimmed any trees, shrubs, or saplings that interfere with any such utility equipment. Any fences, trees, black topplings, vegetation improvements or other potential obstacles to the use of easements shown upon the subdivision plat shall be placed at the risk of the property owner and may be subject to removal in the event of any interference with the use of said easements or drainage of other lots. Changes of yard elevations in easements from those established upon the subdivision plat or noted on plats submitted and approved when building permits owner's expense. All designated utility easements are also hereby dedicated as drainage easements.



VICINITY MAP (NO SCALE)

I affirm, under the penalties for perjury, that I have taken reasonable care to redact each social security number in this document, unless required by law."

Name ERIC C. WHITE

DRAWN BY: ECW		TECH. CK. BY & DATE:	
CONCEPT CK. BY & DATE:		FIELD CK. BY & DATE:	
CERTIFIED BY:			
NAME: ERIC C. WHITE, P.S. #29700012		DATE: 9/09/2021	

Owner:  
LBC Owner LLC  
1149 W. 175th Street  
Homewood, IL 60430

THIS PLAT PREPARED BY ERIC C. WHITE, P.S. #29700012

C:\2019\190149\10000\Cad\Survey\Second Resubdivision Lot 1 Lake Business Center.dwg, September 9, 2021, ERIC WHITE, © Paul I. Cripe, Inc.

Project Name: <b>3 of 3</b> Project Number: <b>190149-10000</b>		Scale: <b>1"=60'</b>		Sheet No.: <b>3 of 3</b>	
Owner: <b>LAKE CO. ENGINEERING</b> Address: <b>250 S. HIGH SCHOOL ROAD, INDIANAPOLIS, IN 46241</b> Phone: <b>(317)-556-1355</b>		North Twp. — LAKE CO. Section: <b>25</b> Township: <b>36-N</b> Range: <b>10-W</b>		Final Subdivision Plat Second Re-Subdivision of Lot 1 of Lake Business Center Subdivision Hospitality Project Services LBC Owner LLC	
Project Description: <b>FINAL SUBDIVISION PLAT</b> Project Location: <b>3939 Priority Way, South Drive, Suite 200, Indianapolis, Indiana 46248</b> Project Contact: <b>(317) 844-6777</b> Project Email: <b>E-Mail cripe@cripe.biz</b>		Project Status: <b>Architectural - Final</b> Project Status: <b>Engineering - Final</b> Project Status: <b>Surveying - Final</b> Project Status: <b>Planning - Final</b> Project Status: <b>Real Estate Services - Final</b>		Project Status: <b>Architectural - Final</b> Project Status: <b>Engineering - Final</b> Project Status: <b>Surveying - Final</b> Project Status: <b>Planning - Final</b> Project Status: <b>Real Estate Services - Final</b>	