



City of Fitchburg
 Planning/Zoning Department
 5520 Lacy Road
 Fitchburg, WI 53711
 (608-270-4200)

ARCHITECTURAL & DESIGN REVIEW APPLICATION

Applicant/Contact Person: Eric Utes, AIA, 608-266-4519 / Greg Brockmeyer, 608-266-4519

Address: See summary letter Phone Number of Contact Person: See above

City, State, Zip Code: See summary letter Email of Contact Person: See summary letter

Project Address: 5415 King James Way, Fitchburg, WI. Lot: Lot 2 Subdivision: Part of Lot 1

Project Type: Multi-Family Commercial Industrial Remodel of EM Facility Other
 New Addition

Impervious Surface Ratio (ISR): 61.88 % (City Standard: maximum 65% ISR)

All items listed below must be included with the application to be considered complete. If an item is not included with the application, the applicant must provide in writing the basis for not including it. Building and site plans submitted to the Fitchburg Plan Commission for architectural and design review shall contain the following information:

Site Data:

- 1. Lot or property dimensions.
- 2. Orientation (to north).
- 3. Adjacent highways, roads, drive, etc.
- 4. Existing natural features (rivers, ponds, wetlands).
- 5. Existing buildings and/or improvements.
- 6. Existing and proposed site drainage.
- 7. Utility plans, including main/lateral sizes and existing fire hydrants on site or within 300 feet of the site
- 8. ISR shall be indicated on all plans.
- 9. Stormwater management plans and details, including grading plan.
- 10. Lighting plan in footcandles and light fixture cut sheets.

Building:

- 1. Building size, configuration and orientation.
- 2. Distance from lot lines.
- 3. Distance from other buildings, improvements and natural features.
- 4. Location of well, septic tank, drainfield, etc. (if applicable)
- 5. Additional proposed additions or new structures, including trash/recycling enclosure(s).
- 6. Construction type (wood frame, structural steel, etc.).
- 7. Foundation type (full basement, slab on grade, etc.).
- 8. Number of levels.
- 9. Siding/exterior covering type, color, texture, etc.
- 10. Roof type (gable, hip, shed, flat, etc.) and pitch.
- 11. Roofing material type, color, texture, etc.
- 12. Exterior door and window location, size, type, etc.
- 13. Fire protection sprinklers or fire alarm systems. See summary letter

Ingress, Egress, Parking:

- 1. Location of highway and road access points.
- 2. Location, size, configuration of drivers and walks.
- 3. Number, size, location of parking spaces.
- 4. Location of handicapped parking and accessible building entrances.
- 5. Bicycle rack(s). See summary letter


Landscaping:

- 1. Location, species, size of existing trees, shrubs, and plantings.
- 2. Location, species, size of proposed plantings.
- 3. Location and size of all paved, seeded/sodded and gravelled areas.
- 4. Location of all retaining walls, fences, berms and other landscape features.

***It is highly recommended that an applicant hold at least one neighborhood meeting prior to submitting an ADR application to identify any concerns or issues of surrounding residents.**

The preceding information is considered to be the minimum information for submission, and the City may require additional information for its review. Any interpretations provided by city officials as the result of submitting the attached information are based on the submitted plans, and any plan changes, may affect the interpretations.

It is the responsibility of the owner/applicant to insure compliance with all local and state requirements. The below signed applicant acknowledges the above information and hereby submits the attached information for the City's Architectural and Design Review Process.

Signed:  Date: 10/16/20
 Applicant or Authorized Agent
 Greg Brockmeyer, Dane County Administrator

***** Application shall be accompanied by one (1) sets of full-size plans, two (2) sets no larger than 11"x17", and one (1) pdf document of the complete submittal to planning@fitchburgwi.gov. Applications are due at least 4 weeks prior to the desired Plan Commission Meeting. The time frame assumes a complete set of plans is provided, and if it is not provided the Plan Commission date will be adjusted.**

FOR CITY USE ONLY

Date Received: 10/20/20 Plan Commission Date: 11/17/20

Comments:



300 CARDINAL DRIVE, SUITE 160 | SAINT CHARLES IL 60175
P 630.221.0671 | F 630.221.0118 | PRAIRIEFORGEGROUP.COM

October 20, 2020

Sonja Kruesel, AICP Sonja.Kruesel@fitchburgwi.gov
City of Fitchburg - City Planner & Zoning Administrator
5520 Lacy Road
Fitchburg, WI 53711

Re: Architectural and Design Review – ADR Application
Dane County EM Facility Remodel
5415 King James Way
Fitchburg, WI 53711

Dear Sonja:

Enclosed is the Architectural and Design Review ADR Application and the associated exhibits for the review and approval by the City of Fitchburg Plan Commission of the Dane County Emergency Management (EM) Remodel Project located 5415 King James Way, Fitchburg, Wisconsin.

The primary contact from Dane County is:

Mr. Eric Urtes, AIA / Project Manager, urtes.eric@countyofdane.com
Department of Public Works, Highway & Transportation
1919 Alliant Energy Center Way
Madison, WI 53713

Authorized signatory for Dane County is:

Greg Brockmeyer, Dane County Administrator, brockmeyer@countyofdane.com
210 Martin Luther King Blvd – CCB-4, Room 425
Madison, WI 53703

The Architect for the project is:

Prairie Forge Group (PFG)
Tom Tristano, AIA Principle-in-Charge, tmtristano@p-fgroup.com,
Rebecca Strader, AIA Senior Project Architect, rbstrader@p-fgroup.com
300 Cardinal Drive, Suite 160
Saint Charles, IL 60175

The Civil Engineer is:

Jason Green, PE, CPESC, DECI, Vice President of Civil Engineering Jason.green@wtengineering.com
W-T Group
2675 Pratum Avenue
Hoffman Estates, IL 60192

The Emergency Management Remodel Project Summary is as follows: The existing building at 5415 King James Way, Fitchburg, Wisconsin, was constructed in 1993 as a fire station. This renovation is to re-purpose the building for use by the Dane County Emergency Management Department with the primary occupancy

classification of Civic Administration (B: Business) and secondary occupancy of Emergency Vehicle Storage (S-1: Medium Hazard Storage). The existing building area is: 12,520 SF First Floor; 3,598 SF Basement; 802 SF Mezzanine for a total building of 16,920 GSF. The property is in the B-G: General Business zoning district., where "Government Offices" is a permitted use.

The highest point of the building is at the Vehicle storage bays at 22'-6" above grade. There is an existing radio tower on the north side of the building extending up to approximately 45' above grade.

The existing building exterior is composed of architectural concrete masonry units (split face and smooth) with accent blocks of painted tiles; aluminum framed fixed and operable windows; aluminum storefront entry doors; and a painted metal fascia capping the perimeter of the roof and extending down the wall approximately 5 feet.

The exterior building and site changes include:

1. Exterior building revisions include: replacing the existing windows and entry doors; painting the metal fascia; removing the stone address and tiles at the existing south entry; creating a new entry at the northwest corner with a metal and glass cantilevered canopy.
2. Change the mailing address of the building to Kapec Road.
3. New roofing and roof drainage tied in to new underground storm water piping.
4. Re-grading around the building to lower the earth off of the masonry block and slope away from the building.
5. New concrete sidewalks to connect parking to the new entry.
6. Re-configured and re-pave the asphalt parking lot and driveways.
7. Reduce the size of the curb cut and driveway off of King James Road entering into the garage bays.
8. Remove the existing parking lot curb cut and driveway to the south on King James Road. Install a new driveway into the new parking lot from the west off of Kapec Road.
9. New dumpster enclosure southeast of the building, constructed of concrete masonry units to match the building.
10. New exterior building lighting at all doors. New site lighting for parking areas, sidewalks and landscape areas.
11. Replace the existing emergency generator and move to the south.
12. One new radio tower (approximately 60' high) on the east side of the building.
13. Remove the existing monumental sign at the southwest corner of the lot. Install a new building sign at the new entry on the northwest corner of the building.
14. New landscaping, including trees, bushes, perennials, and turf.

The existing fire protection system will remain and be updated/modified to accommodate the new remodeled plan. The existing fire alarm (FA) system will be completely removed and replaced with a new FA system that will meet current building code requirements. Since the building is a secured Emergency Management operation and will not be open for public use or access the bikes will be stored in the fleet/garage area.

If you have any questions or require further clarification please feel free to contact any of us.

Cordially,



Thomas M. Tristano, AIA
Principal

**DANE COUNTY
EMERGENCY MANAGEMENT REMODEL**

PROJECT NO. 2020-001



October 20, 2020

ARCHITECTURAL & DESIGN REVIEW

Owner: Dane County Department of Public Works,
Highway & Transportation
1919 Alliant Energy Center Way
Madison, WI 53713

Architect: Prairie Forge Group
300 Cardinal Drive Suite 160
St. Charles, Illinois 60175
630 / 221- 0671 fax 630 / 221-0118

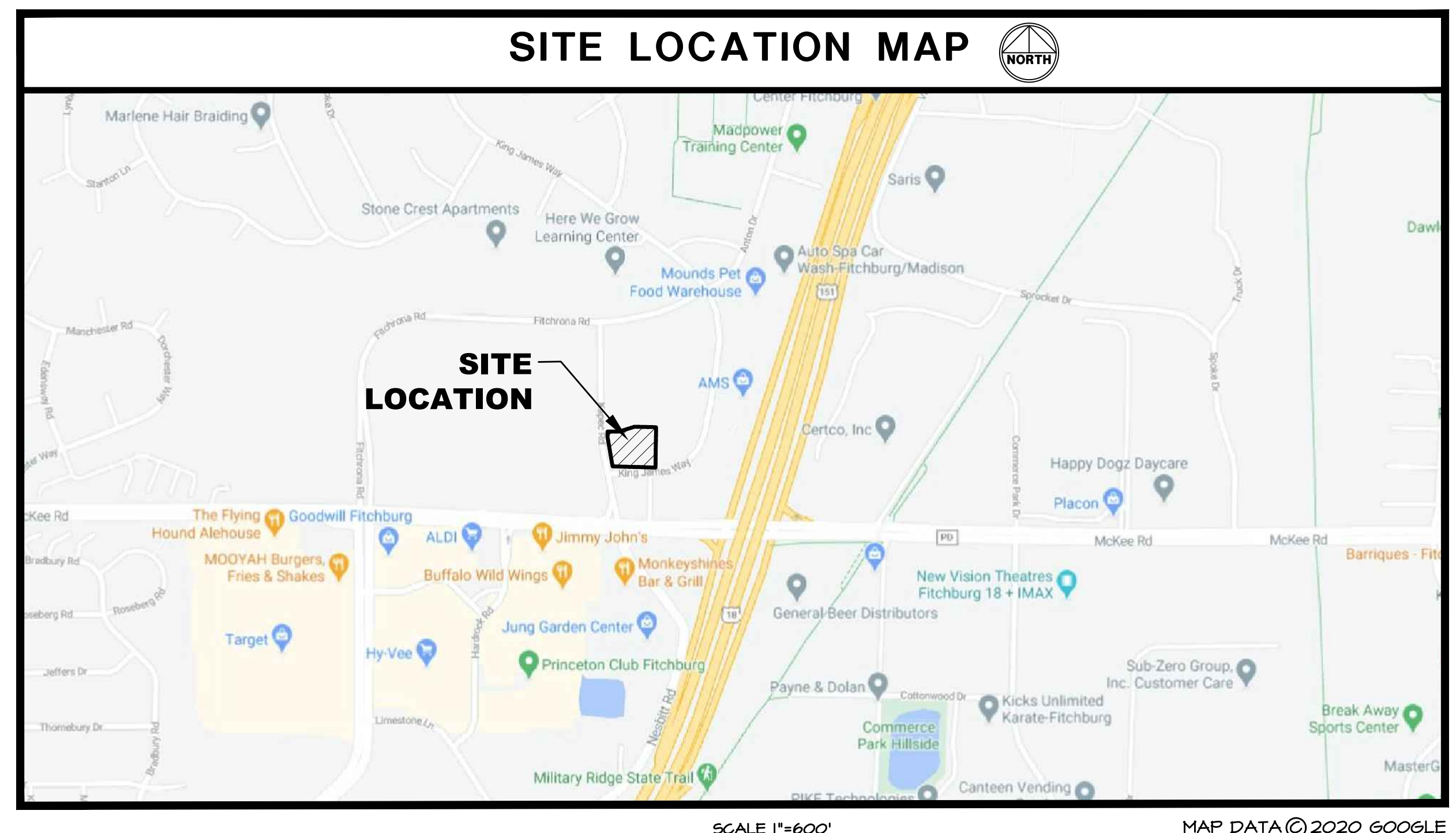
DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY FITCHBURG, WISCONSIN 53719

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0118 | F
www.prairieforgroup.com

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CIVIL DRAWING INDEX		
SHEET	DESCRIPTION	DATE
T-1.0	TITLE SHEET	10-20-20
C-1.0	SITE DEMOLITION PLAN	10-20-20
C-2.0	SITE GEOMETRIC PLAN	10-20-20
C-3.0	SITE DEVELOPMENT PLAN	10-20-20
C-3.1 - C-3.2	SITE DEVELOPMENT DETAILS	10-20-20
C-4.0	SITE GRADING PLAN	10-20-20
C-5.0	SITE UTILITY PLAN	10-20-20
C-5.1 - C-5.2	SITE UTILITY DETAILS	10-20-20
C-6.0	STORM WATER POLLUTION PREVENTION PLAN	10-20-20
C-6.1	STORM WATER POLLUTION PREVENTION DETAILS	10-20-20
C-7.0 - C-7.4	PROJECT SPECIFICATIONS	10-20-20
EX-1.0	CIRCULATION PLAN - GARBAGE TRUCK	10-20-20
EX-1.1	CIRCULATION PLAN - FIRE TRUCK	10-20-20
EX-2.0	EXISTING VS. PROPOSED CONDITION EXHIBIT	10-20-20
SUR-1	BOUNDARY AND TOPOGRAPHIC SURVEY (PREPARED BY WT GROUP)	10-7-20



**SECTION 6
TOWNSHIP 6N
RANGE 9E**

CIVIL ENGINEERING STATEMENT AND SEAL

I, JASON E. GREEN, P.E. DULY LICENSED IN THE STATE OF WISCONSIN BY THE WISCONSIN PROFESSIONAL LICENSING AGENCY, DO HEREBY STATE THAT THIS DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

DATE: 10-20-2020

JASON E. GREEN - WISCONSIN P.E. #41138-6
DATE OF EXPIRATION - JULY 31, 2022

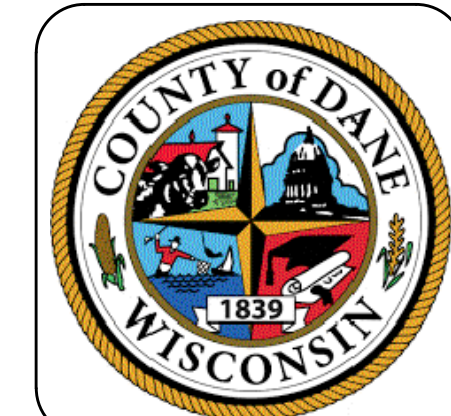
NOTE: SIGNED AND SEALED FOR SHEETS T-1.0 THROUGH EX-2.0



DIGGERS HOTLINE, WISCONSIN'S ONE-CALL CENTER
CALL 811 OR (800) 242-8511
(262) 432-1410
(817) 500-4542 (EMERGENCY ONLY)



CONTRACTOR MUST LOCATE PRIVATE UTILITIES IN AREA OF CONSTRUCTION PRIOR TO PROCEEDING WITH WORK.



**DANE COUNTY EMERGENCY
MANAGEMENT REMODEL**
5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

- BENCHMARKS:**
- BENCHMARK #1 - SET CROSS ON HYDRANT ON THE EAST SIDE OF KAPEC ROAD, 8' SOUTH OF THE ENTRANCE AS SHOWN. ELEVATION = 1001.46' (NAVD88)
 - BENCHMARK #2 - TAG BOLT ON HYDRANT ON THE SOUTH SIDE OF KING JAMES WAY, 91' SOUTHEAST OF LIGHT POLE ON THE EAST SIDE OF EAST ENTRANCE & 30' SOUTHWEST OF EXISTING #1#3. ELEVATION = 1000.80' (NAVD88)

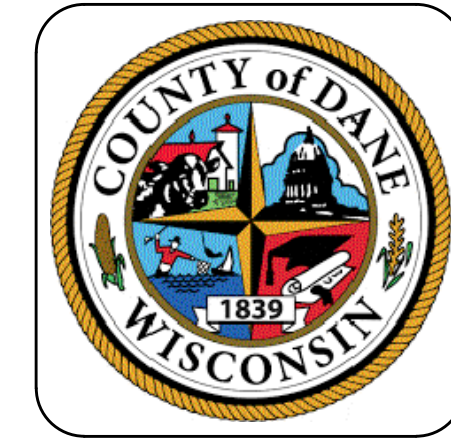
ISSUE RECORD	
ADR	10-20-20

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2020-001

WT JOB NUMBER - 2002139C

WT GROUP
Structural | Mechanical/Electrical/Plumbing
Civil/Land Survey | Telecommunications/Aviation
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.
2675 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.293.6333 | F: 224.293.8444
wtgrouping.com
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TITLE SHEET
T-1.0



DANE COUNTY EMERGENCY MANAGEMENT REMODEL
 5415 KING JAMES WAY
 FITCHBURG, WISCONSIN 53719

ISSUE RECORD

ADR	10-20-20

NOT FOR CONSTRUCTION

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 2020-001

SITE DEMOLITION PLAN
C-1.0

SITE DEMOLITION NOTES:

- A. CONTRACTOR SHALL PERFORM ALL DEMOLITION WORK IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL REQUIREMENTS.
- B. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY DEMOLITION PERMITS AND COORDINATE ALL DEMOLITION WITH THE MUNICIPALITY AND OWNERS REPRESENTATIVE TO ENSURE PROTECTION AND MAINTENANCE OF SANITARY AND WATER UTILITIES AS NECESSARY AND TO PROVIDE STORM WATER CONVEYANCE UNTIL NEW FACILITIES ARE CONSTRUCTED, TESTED, AND PLACED IN OPERATION.
- C. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A DAILY PROGRAM OF DUST CONTROL PROCEDURES PRIOR TO DEMOLITION OF ANY STRUCTURES. MODIFICATION OF DUST CONTROL PROCEDURES SHALL BE PERFORMED BY THE CONTRACTOR TO THE SATISFACTION OF THE MUNICIPALITY AND COMPLY WITH THE NPDES II REQUIREMENTS OF THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY AND THE INDIVIDUAL STORM WATER POLLUTION PREVENTION PLAN FOR THIS PROJECT.
- D. ALL EXISTING TREES, BRUSH AND MISCELLANEOUS VEGETATION TO BE REMOVED OR DEMOLISHED SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
- E. VOIDS LEFT BY ANY ITEM REMOVED UNDER ANY PROPOSED BUILDING, PAVEMENT, OR WALK OR WITHIN 24" THEREOF SHALL BE BACKFILLED WITH ENGINEERED FILL ACCORDING TO THE GEOTECHNICAL REPORT.
- F. ALL EXISTING BUILDINGS, FOUNDATIONS, CONCRETE OR ASPHALT PAVEMENT OR WALKS, CURB AND GUTTER AND MISCELLANEOUS STRUCTURES (INCLUDING, BUT NOT LIMITED TO FENCES, POLES, YARD LIGHTS, ELECTRICAL PANELS, AND MISCELLANEOUS DEBRIS) INDICATED TO BE DEMOLISHED SHALL BE REMOVED OR DEMOLISHED AND REMOVED FROM THE SITE AND DISPOSED OF LEGALLY BY THE CONTRACTOR.
- G. CONTACT GAS COMPANY PRIOR TO DEMOLITION. LOCATION OF EXISTING GAS SERVICES ARE UNKNOWN.
- H. ALL EXISTING TREES SHALL REMAIN UNLESS OTHERWISE NOTED.
- I. ALL EXISTING UTILITIES SHALL REMAIN UNLESS OTHERWISE NOTED.
- J. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
- K. CONTRACTOR SHALL PROVIDE REMOVAL, AND REPLACEMENT AND SHORING AS NECESSARY TO MEET OSHA AND LOCAL CODE, AS WELL AS MANUFACTURER'S REQUIREMENTS.
- L. ALL FOUNDATIONS FOR ALL FENCES, SIGNS, ETC. NOTED FOR REMOVAL SHALL BE REMOVED AND LEGALLY DISPOSED OF OFFSITE.
- M. PROOF-ROLLING SHALL BE PERFORMED FOR ALL SUBGRADE PRIOR TO CONSTRUCTION OF NEW PAVEMENT. ALL SUBGRADE PROOF-ROLLING SHALL BE WITNESSED AND APPROVED BY A MATERIALS TESTING AGENCY TO BE HIRED BY THE OWNER. CONTRACTOR TO COORDINATE ALL PROOF-ROLLING WITH THE MATERIALS TESTING AGENCY. CONTACT THE ENGINEER AND MATERIAL TESTING AGENCY SO THAT THEY MAY WITNESS THE PROOF ROLL. PROOF ROLL SHALL BE PROVIDED FOR ALL PAVEMENT AREAS SPECIFIED FOR FULL DEPTH REMOVAL AND REPLACEMENT.
- N. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 10-11-20, PREPARED BY JMT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
- O. SEE SHEET SUR-1 "BOUNDARY AND TOPOGRAPHIC SURVEY" FOR ALL EXISTING LOCATED UTILITY DATA.
- P. CLEAR SITE AS NECESSARY TO CONSTRUCT PROPOSED IMPROVEMENTS.
- Q. ALL ITEMS MARK "EXISTING OR EXISTING TO REMAIN" TO BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION.
- R. CONTRACTOR TO PROVIDE SOIL TESTING SERVICES FOR COMPLETION OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES FORMS AS PART OF THEIR CONTRACT.
- S. PREPARE SUBGRADE AS SPECIFIED WITHIN THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
- T. ALL TOPSOIL BENEATH PROPOSED STRUCTURES AND PAVEMENT SHALL BE REMOVED. REFER TO THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC) FOR EXISTING TOPSOIL DEPTHS.

HATCH LEGEND

- EXISTING CONCRETE PAVEMENT TO BE REMOVED FULL DEPTH
- EXISTING ASPHALT PAVEMENT TO BE REMOVED FULL DEPTH

DEMOLITION LEGEND

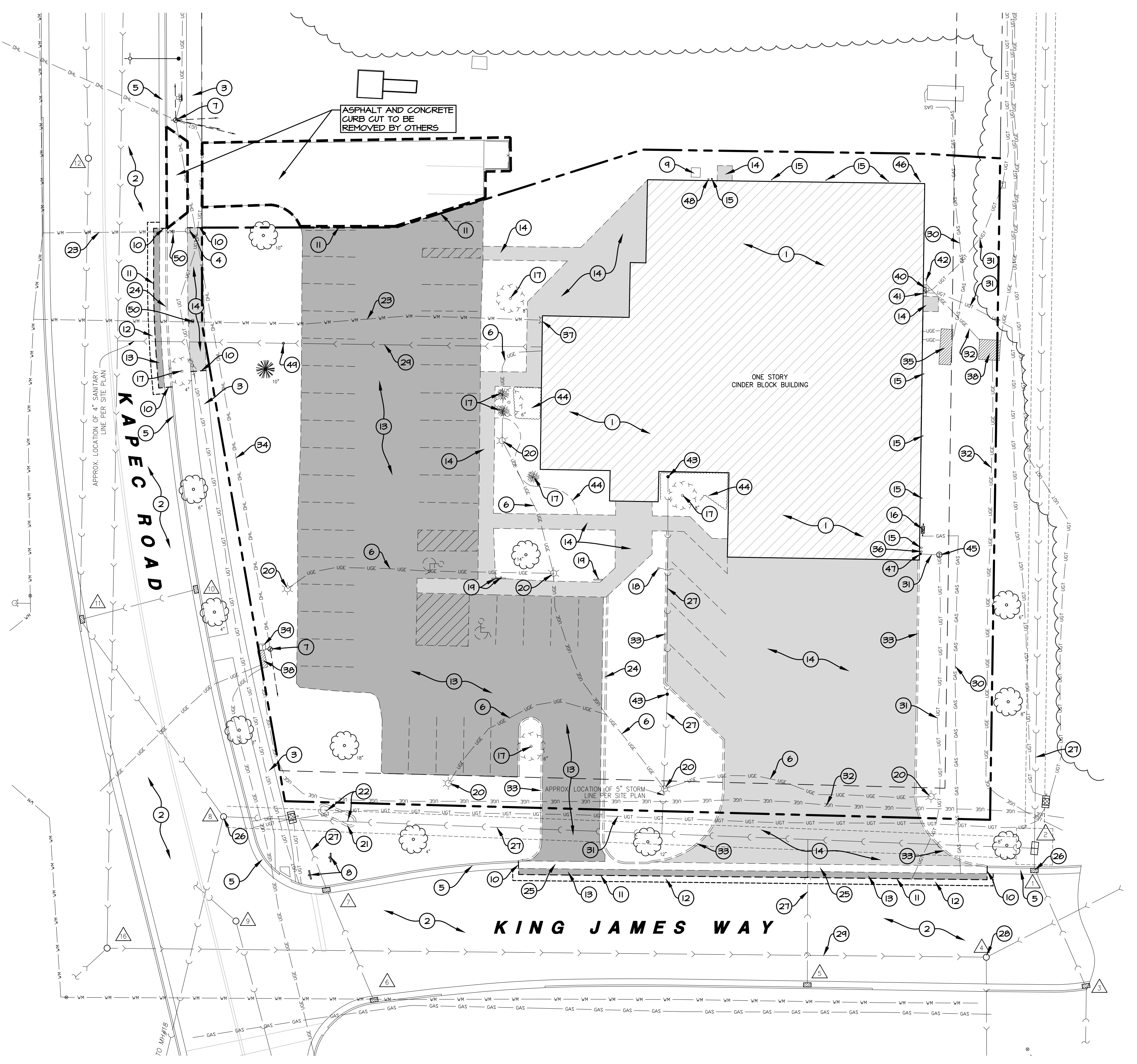
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING OVERHEAD LINES
- EXISTING GAS LINE
- EXISTING UNDERGROUND ELECTRIC LINE
- EXISTING UNDERGROUND TELCO LINE
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING B-BOX
- EXISTING AREA LIGHT
- EXISTING TELCO PEDESTAL
- EXISTING ELECTRIC METER
- EXISTING GAS METER
- EXISTING SIGN
- EXISTING TREE/SHRUB

PROJECT NOTES:

1. EXISTING BUILDING TO REMAIN.
2. EXISTING ASPHALT PAVEMENT TO REMAIN.
3. EXISTING CONCRETE PAVEMENT TO REMAIN.
4. EXISTING HYDRANT AND ASSOCIATED PIPING TO REMAIN.
5. EXISTING CURB AND GUTTER TO REMAIN.
6. EXISTING UNDERGROUND ELECTRIC TO BE REMOVED. SEE ELECTRICAL PLANS FOR DETAILS.
7. EXISTING UTILITY POLE AND ASSOCIATED WIRING TO REMAIN.
8. EXISTING SIGN TO REMAIN.
9. EXISTING CONCRETE PAD WITH RADIO TOWER TO REMAIN.
10. NEW FULL DEPTH SAWCUT OF EXISTING CURB/CONCRETE TO PROVIDE CLEAN CONSTRUCTION BREAK.
11. NEW FULL DEPTH SAWCUT OF EXISTING ASPHALT PAVEMENT TO PROVIDE CLEAN CONSTRUCTION BREAK.
12. NEW 2" BUTT JOINT.
13. EXISTING ASPHALT PAVEMENT TO BE REMOVED FULL DEPTH TO MEET THE BOTTOM OF THE NEW PAVEMENT CROSS SECTIONS (NEW SUBGRADE ELEVATION). SEE THE SITE GRADING PLAN FOR NEW FINISHED ELEVATIONS AND DETAIL SHEETS FOR NEW PAVEMENT CROSS SECTIONS.
14. EXISTING CONCRETE TO BE REMOVED FULL DEPTH TO MEET THE BOTTOM OF THE NEW PAVEMENT CROSS SECTIONS (NEW SUBGRADE ELEVATION). SEE THE SITE GRADING PLAN FOR NEW FINISHED ELEVATIONS AND DETAIL SHEETS FOR NEW PAVEMENT CROSS SECTIONS.
15. EXISTING DOWNSPOUT TO BE REMOVED. SEE PLUMBING PLANS FOR DETAILS.
16. EXISTING GAS METER TO REMAIN.
17. EXISTING TREE TO BE REMOVED.
18. EXISTING FLAG POLE AND ASSOCIATED FOUNDATION TO BE REMOVED.
19. EXISTING SIGN TO BE REMOVED.
20. EXISTING AREA LIGHT TO BE REMOVED. SEE ELECTRICAL PLANS FOR DETAILS.
21. EXISTING BLOCK WALL TO BE REMOVED.
22. EXISTING MONUMENT SIGN TO BE REMOVED.
23. EXISTING WATERMAIN TO REMAIN.
24. EXISTING CURB AND GUTTER TO BE REMOVED.
25. EXISTING DEPRESSED CURB TO BE REMOVED.
26. EXISTING STORM STRUCTURE AND ASSOCIATED PIPING TO REMAIN.
27. EXISTING STORM SEWER TO REMAIN.
28. EXISTING SANITARY STRUCTURE AND ASSOCIATED PIPING TO REMAIN.
29. EXISTING SANITARY SEWER TO REMAIN.
30. EXISTING GAS LINE TO REMAIN.
31. EXISTING UNDERGROUND TELCO TO REMAIN.
32. EXISTING UNDERGROUND ELECTRIC TO REMAIN.
33. EXISTING BARRIER CURB TO BE REMOVED.
34. EXISTING OVERHEAD LINE TO REMAIN.
35. EXISTING GENERATOR, GAS SERVICE AND CONCRETE PAD TO BE REMOVED.
36. EXISTING ROOF OVERFLOW DRAIN OUTLET TO REMAIN.
37. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
38. EXISTING TRANSFORMER TO REMAIN.
39. EXISTING TELCO PEDESTAL TO REMAIN.
40. EXISTING ELECTRIC METER TO REMAIN.
41. EXISTING TELCO BOX TO REMAIN.
42. EXISTING ELECTRIC BOX TO REMAIN.
43. EXISTING CLEANOUT TO REMAIN.
44. EXISTING VEGETATION AND GRAVEL TO BE REMOVED.
45. EXISTING TELCO MANHOLE TO REMAIN.
46. EXISTING PVC SUMP DISCHARGE PIPE TO REMAIN. SEE PLUMBING PLANS FOR DETAILS.
47. EXISTING TELCO BUILDING CONNECTION TO REMAIN.
48. EXISTING ROOF OVERFLOW TO BE REMOVED.
49. EXISTING CLEAN OUT TO REMAIN. SHOWN PER RECORDS. CONTRACTOR TO VERIFY IN FIELD EXACT LOCATION.
50. EXISTING B-BOX TO REMAIN.

EXISTING UTILITY DATA

- 1 RIM=997.22' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.85' (18" RCP N/SSE)
- 2 RIM=997.95' (STORM)
12"x12" CONCRETE STRUCTURE
INV=991.80' (48"x76" RCP N)
ELLIPTICAL PIPE
INV=993.55' (18" RCP S)
INV=991.80' (53"x83" RCP W)
ELLIPTICAL PIPE
- 3 RIM=997.10' (STORM)
36"x18" CONCRETE STRUCTURE
INV=994.79' (18" RCP NW)
INV=994.79' (15" PVC S)
- 4 RIM=998.34' (SANITARY)
48" CONCRETE STRUCTURE
INV=993.34' (12" RCP NE/S)
INV=993.66' (6" PVC W)
- 5 RIM=997.65' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.90' (18" RCP N)
- 6 RIM=997.26' (STORM)
36"x18" CONCRETE STRUCTURE
INV=993.61' (12" RCP NNW)
- 7 RIM=997.31' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.54' (12" RCP NNW/SSE)
- 8 RIM=998.05' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=988.55' (53"x83" RCP E)
ELLIPTICAL PIPE
INV=988.55' (66" RCP SW)
INV=988.65' (36" RCP NW)
- 9 RIM=997.87' (STORM)
60" CONCRETE STRUCTURE
INV=980.45' (42" RCP SSE/NW)
- 10 RIM=998.51' (STORM)
36"x18" CONCRETE STRUCTURE
INV=992.66' (18" RCP WSW)
- 11 RIM=998.42' (STORM)
72" CONCRETE STRUCTURE
INV=990.23' (30" RCP N)
INV=990.47' (18" RCP ENE)
INV=981.23' (42" RCP SE)
- 12 RIM=1000.57' (STORM)
48" CONCRETE STRUCTURE
INV=995.85' (30" RCP N)
INV=993.23' (30" RCP S)
- 13 RIM=998.11' (SANITARY)
48" CONCRETE STRUCTURE
INV=994.67' (6" PVC N/E/SW)
- 14 RIM=995.13' (STORM)
84" CONCRETE STRUCTURE
INV=987.18' (36" RCP ENE)
INV=979.93' (42" RCP SSE/NNW)
- 15 RIM=996.01' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
INV=987.46' (66" RCP NE/SW)
INV=989.21' (24" RCP ESE CAPPED)

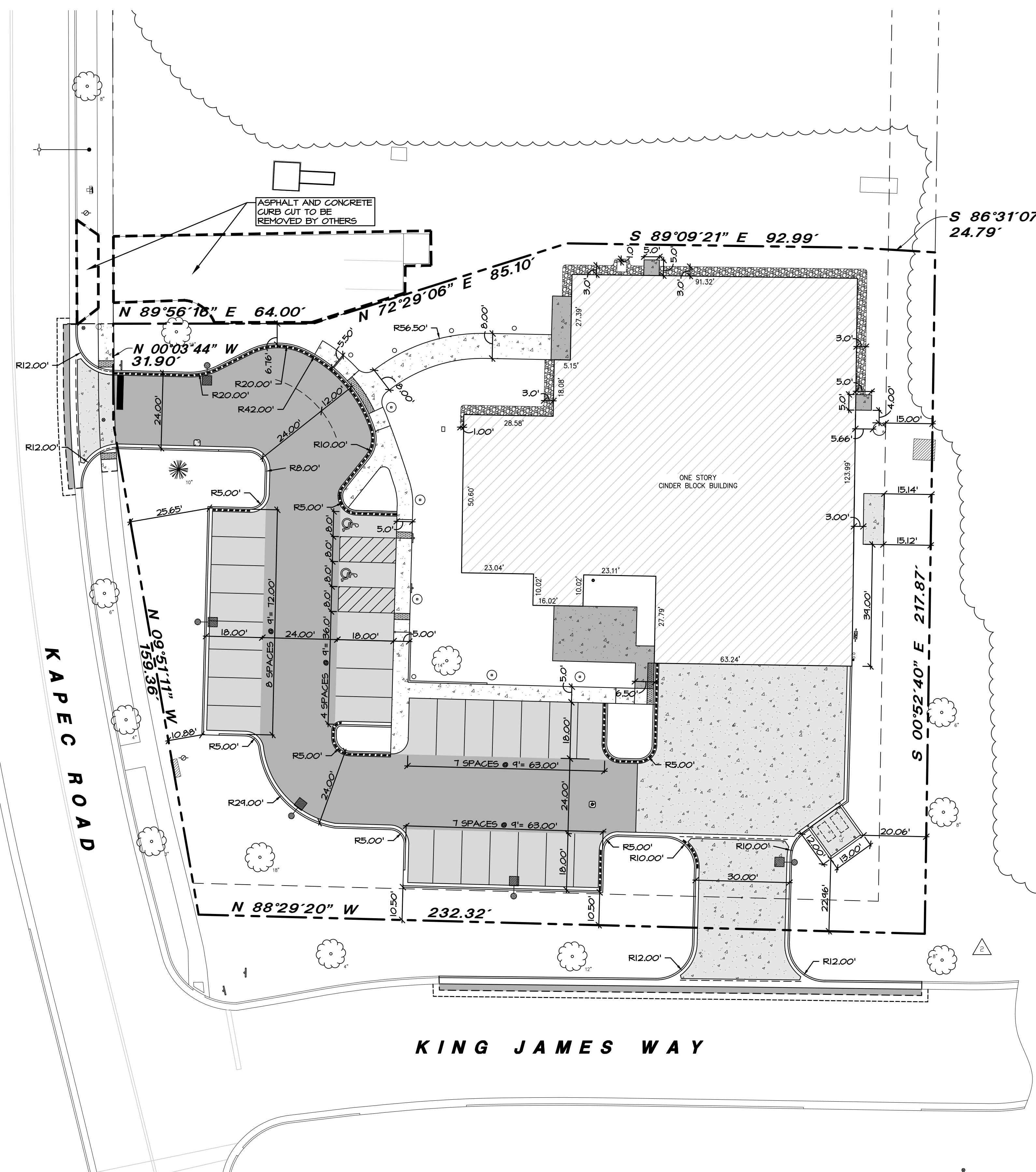


1" = 20'



WT JOB NUMBER - 2002139C

WT Group
 Structural | Mechanical | Electrical | Plumbing
 Civil | Land Survey | Information Systems | Aquatics
 Accessibility Consulting | Design & Program Management
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HATCH LEGEND

- NEW CONCRETE SIDEWALKS**
5" PORTLAND CEMENT CONCRETE
4" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS
- NEW CONCRETE PAVEMENT / CONCRETE PAD**
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW CONCRETE STOOP / CONCRETE PATIO**
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW FULL DEPTH ASPHALT PAVEMENT**
1-3/4" HMA SURFACE COURSE
2-1/4" HMA BINDER COURSE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW FULL DEPTH HEAVY DUTY ASPHALT PAVEMENT**
2-1/2" HMA SURFACE COURSE
2-1/2" HMA BINDER COURSE
10" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW GRAVEL TRENCH DRAIN SYSTEM**

SITE GEOMETRIC NOTES:

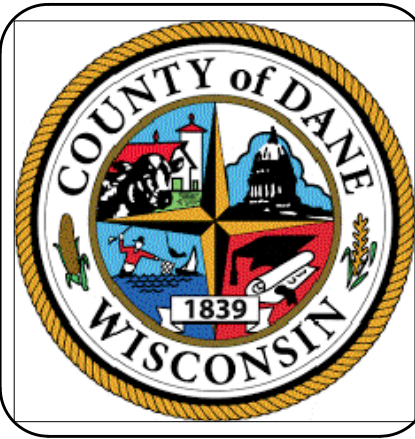
- A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 10-7-20, PREPARED BY WT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
- B. ALL DIMENSIONS SHOWN ARE MEASURED FROM EDGE OF PAVEMENT TO EDGE OF PAVEMENT OR FACE OF CURB UNLESS OTHERWISE NOTED.
- C. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ARCHITECTURAL PLANS.
- D. SEE THE ARCHITECTURAL PLANS FOR THE DESIGN OF ALL BUILDING ENTRIES.
- E. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- F. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
- G. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE, WISCONSIN ONE-CALL CENTER (811 OR 1-800-242-8811) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
- H. ASPHALT PAVEMENT MARKINGS SHALL BE MADE WITH HIGH QUALITY PAINT CONFORMING TO THE WISCONSIN DOT STANDARD SPECIFICATIONS.
- I. ALL PAINTED CURBS ON SITE TO BE REPAINTED FOLLOWING RESURFACING OF THE PARKING LOT. MATCH EXISTING COLOR, REPAINT WITH HIGH QUALITY PAINT.

PARKING STALL COUNTS			
	STANDARD	ADA	TOTAL
PROPOSED	26	2	28

IMPERVIOUS SURFACE RATIO (ISR) = 61.88%

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SITE GEOMETRIC PLAN
C-2.0

NORTH

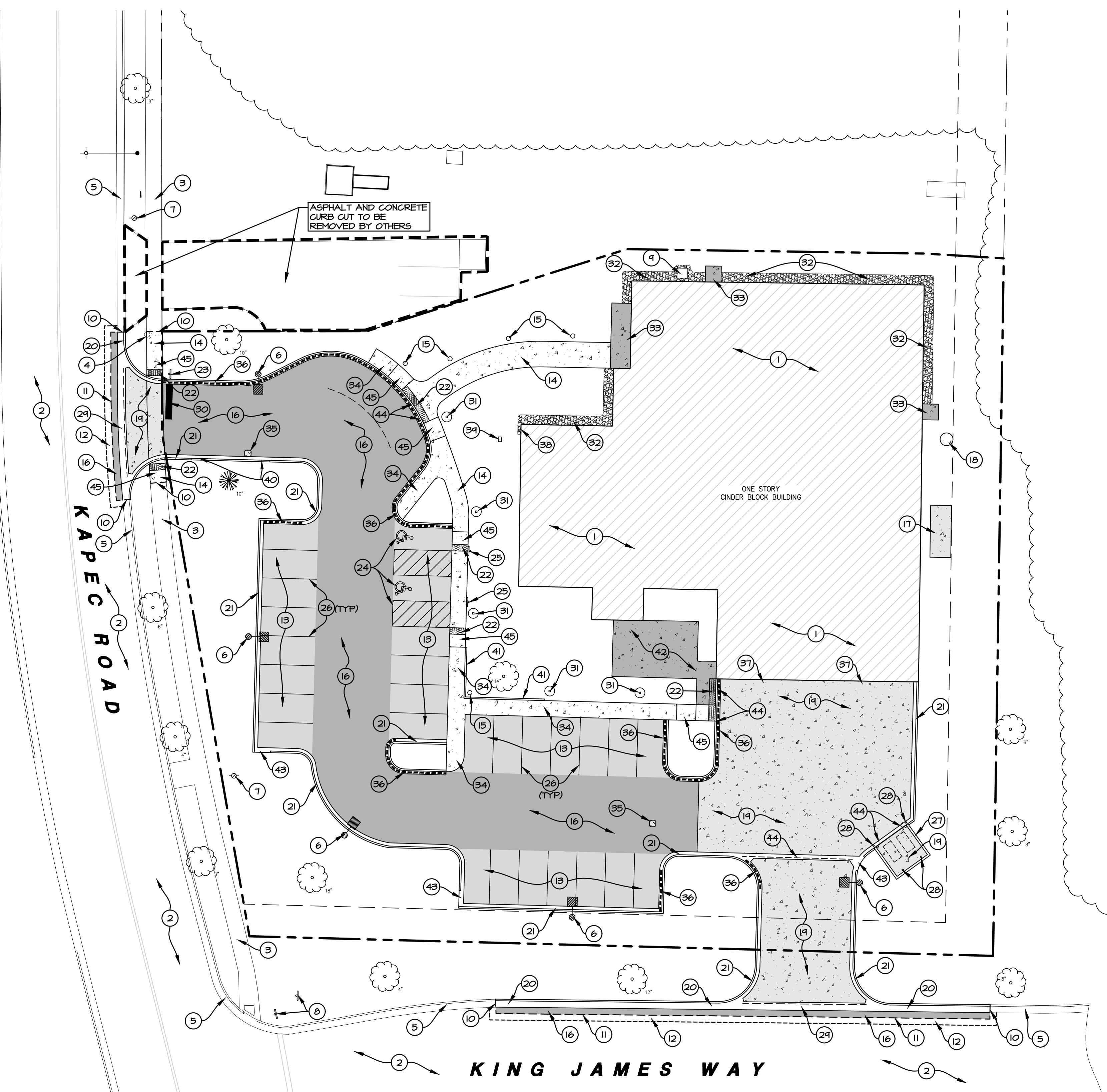
1" = 20'

00 10 20 40

WT JOB NUMBER - 2002139C

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- NEW GRAVEL TRENCH DRAIN SYSTEM**

SITE DEVELOPMENT NOTES:

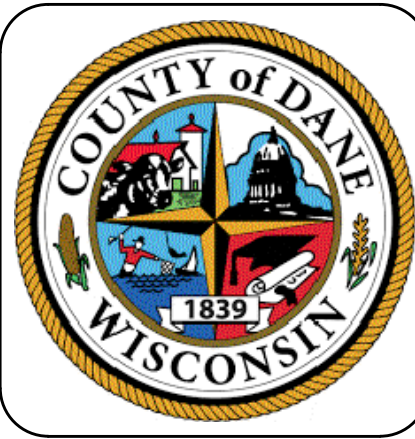
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- B. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES WITH THE ARCHITECTURAL PLANS.
- C. SEE THE ARCHITECTURAL PLANS FOR THE DESIGN OF ALL BUILDING ENTRIES.
- D. CONTRACTOR SHALL COORDINATE ALL LANDSCAPING IMPROVEMENTS WITH LANDSCAPE PLANS.
- E. CONSTRUCTION SURVEY AND STAKEOUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- F. ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
- G. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
- H. ASPHALT PAVEMENT MARKINGS SHALL BE MADE WITH HIGH QUALITY PAINT CONFORMING TO WISDOT SPECIFICATIONS.
- I. CONTRACTOR SHALL RESTORE ALL DISTURBED GREEN SPACES WITH 6" OF TOPSOIL, SEED, AND EROSION CONTROL BLANKET.
- J. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
- K. CONTRACTOR SHALL RE-STRIPE ALL STRIPING DISTURBED WITHIN THE EXISTING ROADWAYS/PARKING LOT TO MATCH EXISTING.
- L. CONTRACTOR SHALL HIRE A PRIVATE UTILITY LOCATOR TO LOCATE UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE SITE ENGINEER IF A CONFLICT EXISTS.
- M. ALL ITEMS MARKED "EXISTING" TO BE PROTECTED FROM DAMAGE FOR THE DURATION OF CONSTRUCTION.
- N. ALL EXISTING SUBGRADE TO BE SCARIFIED (DISKED) TO A DEPTH OF 12" AND RE-COMPACTED, AND THEN TESTED USING A DYNAMIC CONE METER. SEE GEOTECHNICAL REPORT FOR ADDITIONAL REQUIREMENTS.

PROJECT NOTES:

1. EXISTING BUILDING TO REMAIN.
2. EXISTING ASPHALT PAVEMENT TO REMAIN.
3. EXISTING CONCRETE PAVEMENT TO REMAIN.
4. EXISTING HYDRANT AND ASSOCIATED PIPING TO REMAIN.
5. EXISTING CURB AND GUTTER TO REMAIN.
6. NEW AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
7. EXISTING UTILITY POLE AND ASSOCIATED WIRING TO REMAIN.
8. EXISTING SIGN TO REMAIN.
9. EXISTING CONCRETE PAD WITH ANTENNA TO REMAIN.
10. NEW FULL DEPTH SAWCUT OF EXISTING CURB/CONCRETE TO PROVIDE CLEAN CONSTRUCTION BREAK.
11. NEW FULL DEPTH SAWCUT OF EXISTING ASPHALT PAVEMENT TO PROVIDE CLEAN CONSTRUCTION BREAK.
12. NEW 2" BUTT JOINT.
13. NEW ASPHALT PAVEMENT.
14. NEW CONCRETE SIDEWALK.
15. NEW BOLLARD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
16. NEW HEAVY DUTY ASPHALT PAVEMENT.
17. NEW 8" CONCRETE PAD.
18. NEW CONCRETE TOWER FOUNDATION. SEE TELECOMMUNICATION PLANS FOR DETAILS.
19. NEW CONCRETE PAVEMENT.
20. NEW 30" CONCRETE CURB AND GUTTER.
21. NEW 18" CONCRETE CURB AND GUTTER.
22. NEW DETECTABLE WARNING PLATE.
23. NEW "STOP" SIGN.
24. NEW ACCESSIBLE PARKING SPACE STRIPING AND SYMBOL.
25. NEW ACCESSIBLE PARKING SIGN.
26. NEW 4" WIDE, YELLOW PAINTED PAVEMENT STRIPING.
27. NEW TRASH ENCLOSURE. SEE ARCHITECTURAL PLANS FOR DETAILS.
28. NEW BOLLARD.
29. NEW 30" DRIVEWAY SECTION.
30. NEW 24" WIDE, WHITE PAINTED STOP BAR.
31. NEW TOP POST AREA LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
32. NEW WATERPROOFING FOUNDATION / GRAVEL TRENCH DRAIN. SEE ARCHITECTURAL, STRUCTURAL AND LANDSCAPING PLANS FOR MORE DETAILS.
33. NEW 8" CONCRETE STOOP, DOWNELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
34. NEW MONOLITHIC CONCRETE CURB AND SIDEWALK.
35. NEW CONCRETE COLLAR.
36. NEW 18" CONCRETE CURB AND GUTTER REJECT SECTION.
37. NEW 8" CONCRETE PAVEMENT, DOWNELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
38. EXISTING FIRE DEPARTMENT CONNECTION TO REMAIN.
39. NEW FLOOD LIGHT. SEE ELECTRICAL PLAN FOR MORE DETAILS.
40. VARIABLE HEIGHT CONCRETE CURB WITH GUTTER.
41. NEW RETAINING CURB.
42. NEW 8" CONCRETE PATIO, DOWNELLED TO THE BUILDING. SEE STRUCTURAL PLANS FOR ALL DETAILS.
43. NEW CONCRETE CURB CUT.
44. NEW 18" DEPRESSSED CONCRETE CURB AND GUTTER.
45. NEW ADA CONCRETE CURB RAMP.

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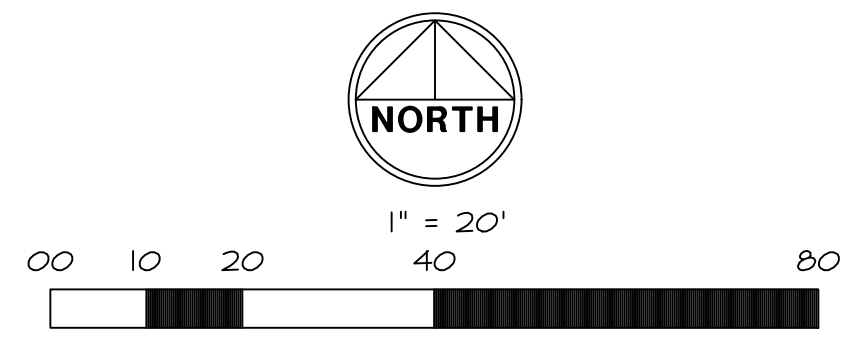
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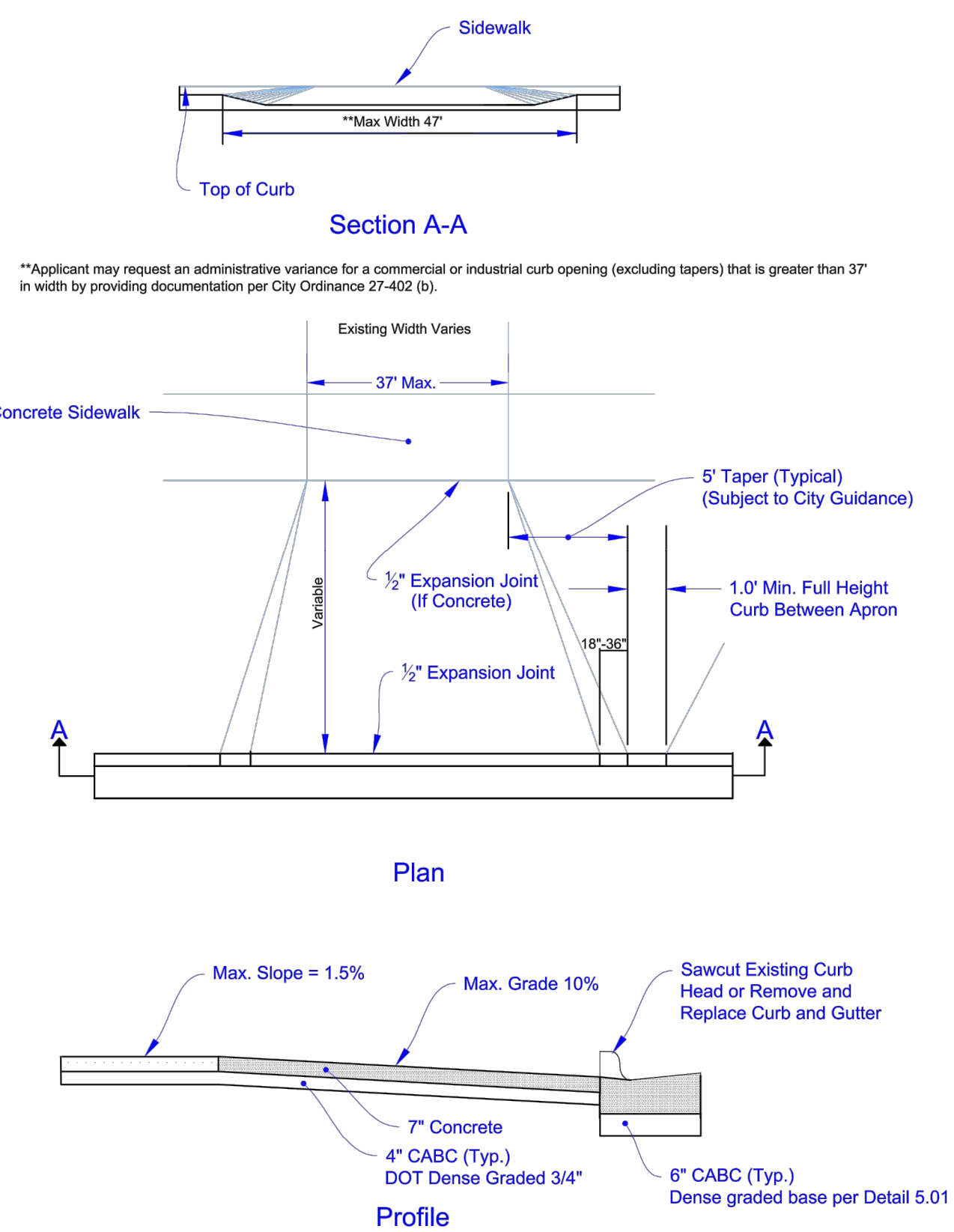
SITE DEVELOPMENT PLAN
C-3.0



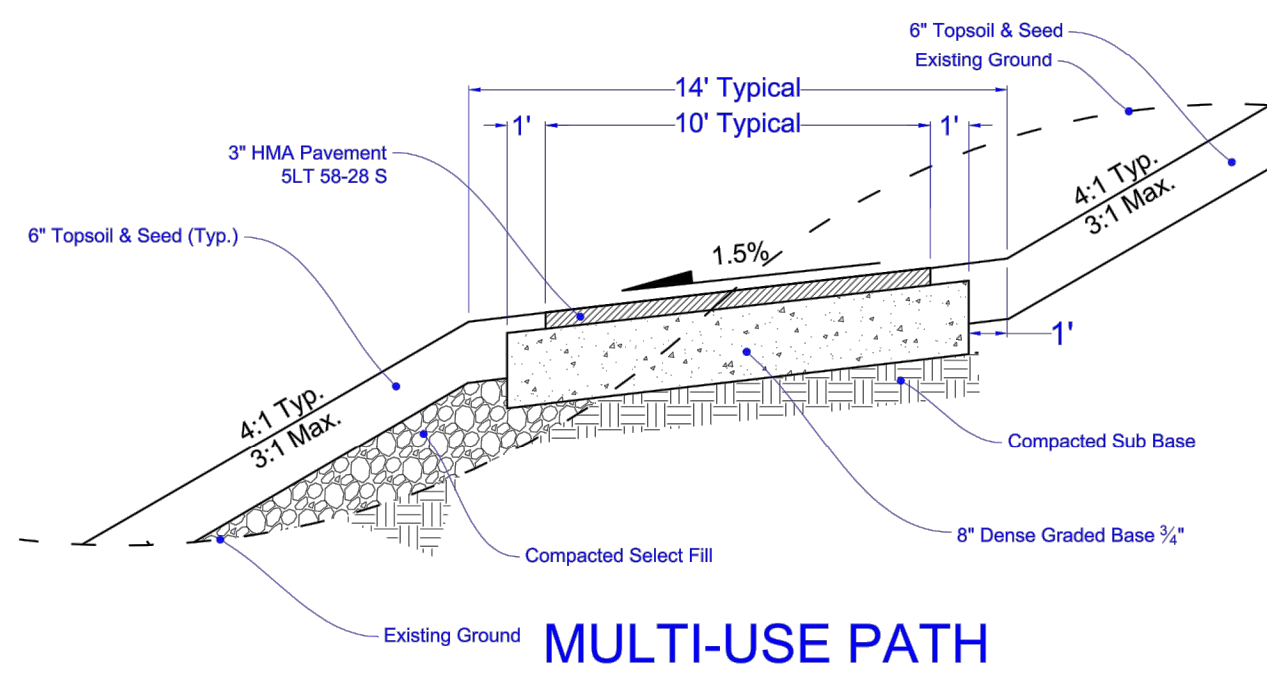
WT JOB NUMBER - 2002139C

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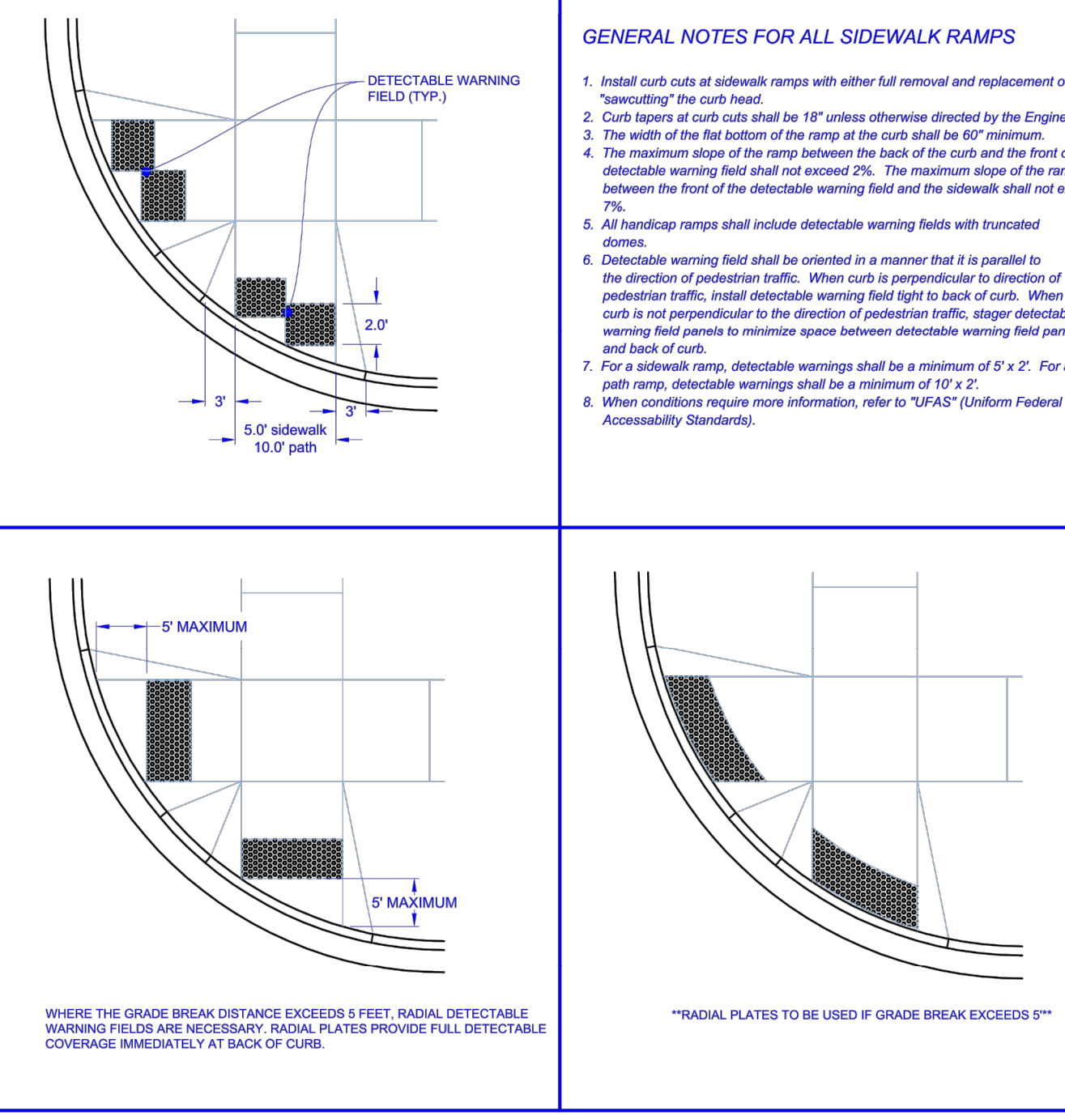
Commercial Driveway Detail



COMMERCIAL DRIVEWAY STANDARD DETAIL DRAWING
 DATE: 2/1/2017
 SHEET NO.: 4.03



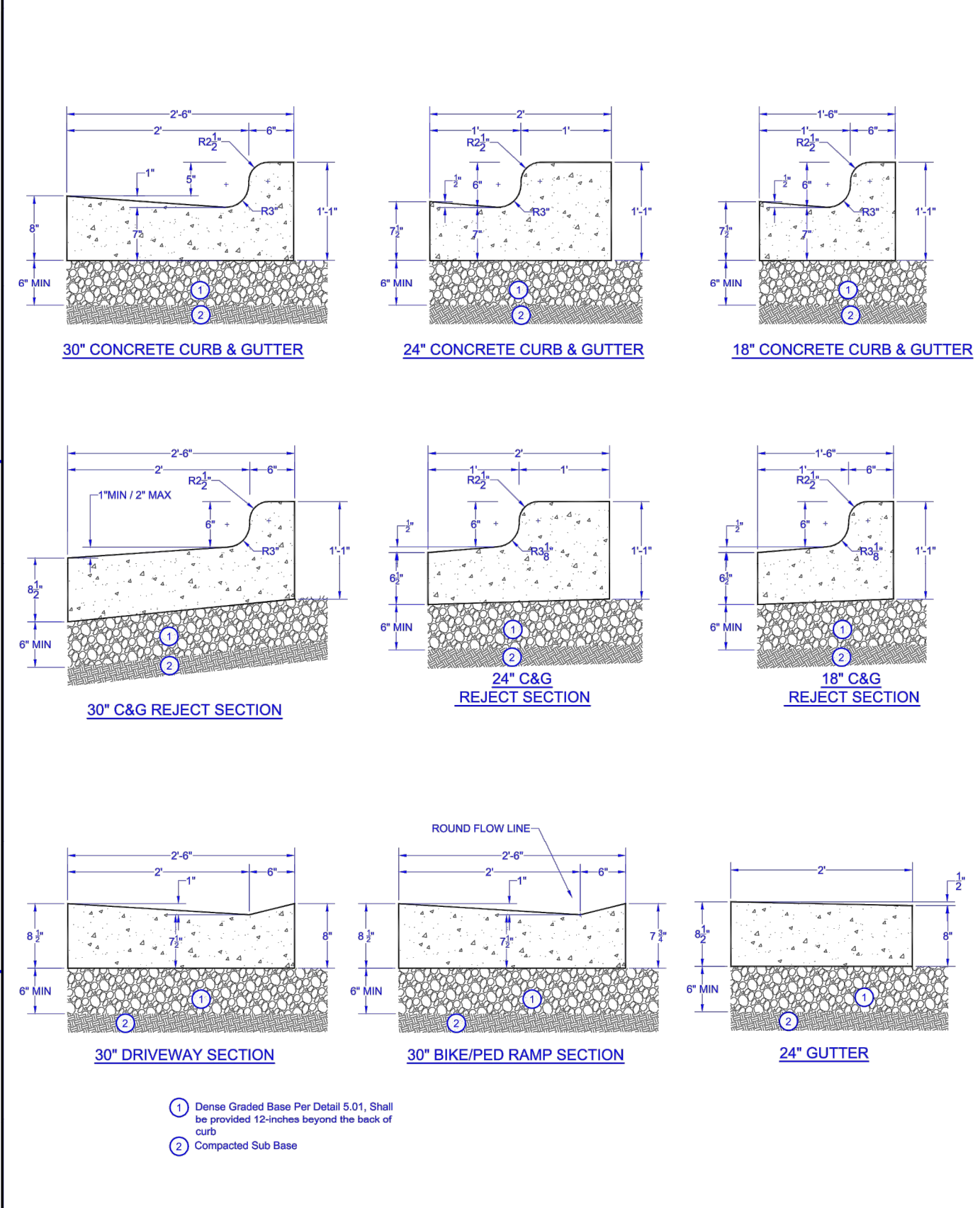
PATHS STANDARD DETAIL DRAWING
 DATE: 2/1/2017
 SHEET NO.: 4.02



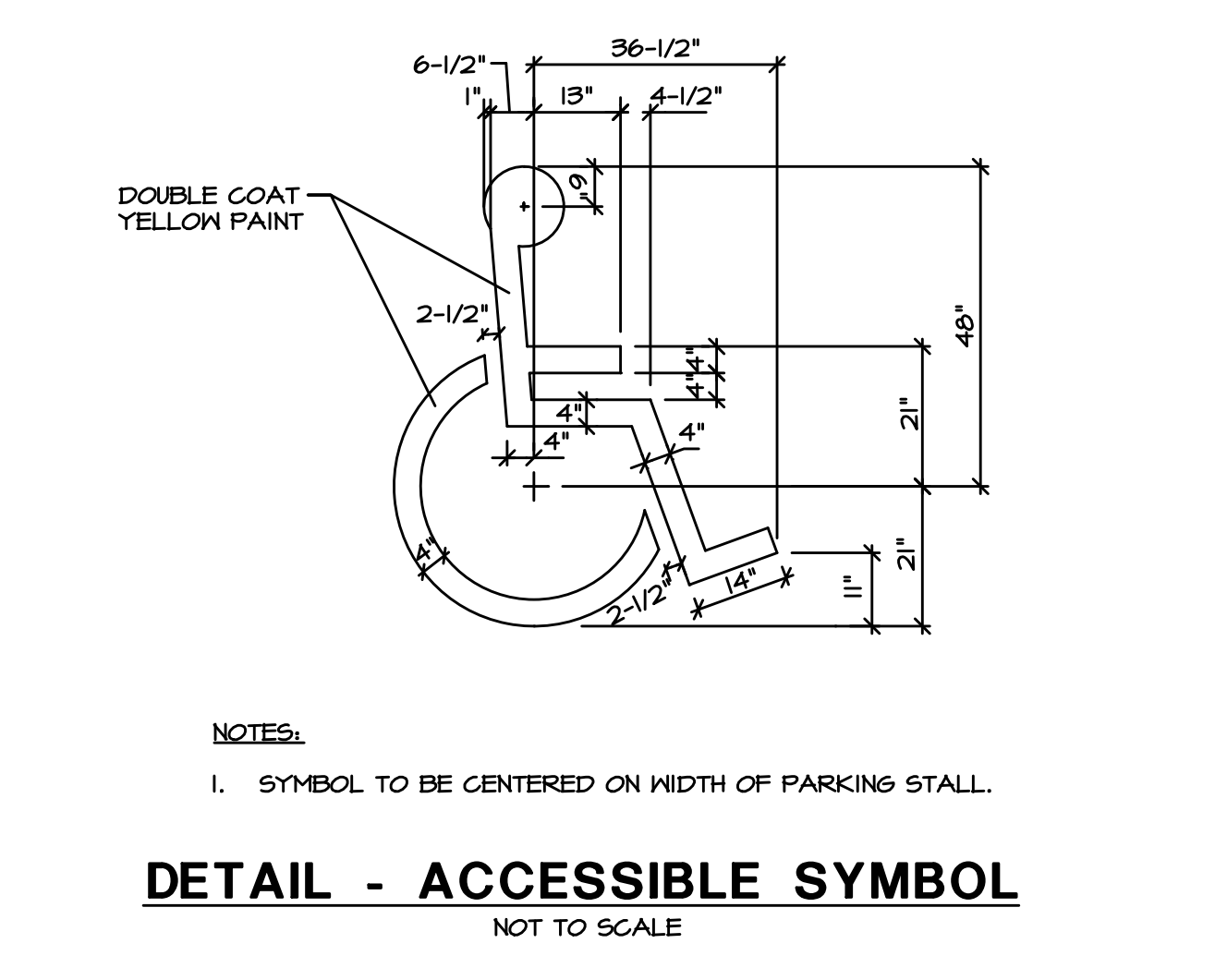
GENERAL NOTES FOR ALL SIDEWALK

1. Sidewalk thickness shall be 7-inches through driveways, 7-inches at ramps, and 5-inches for all public sidewalk.
2. Sidewalk cross-slope shall be 1.5% and not exceed 2.0%.
3. Provide a 1/2" expansion joint at all ramp locations, through driveways, against the curb and gutter, at radii, and every 200' of the sidewalk.
4. Construction forms shall be equal to or greater than the sidewalk thickness.

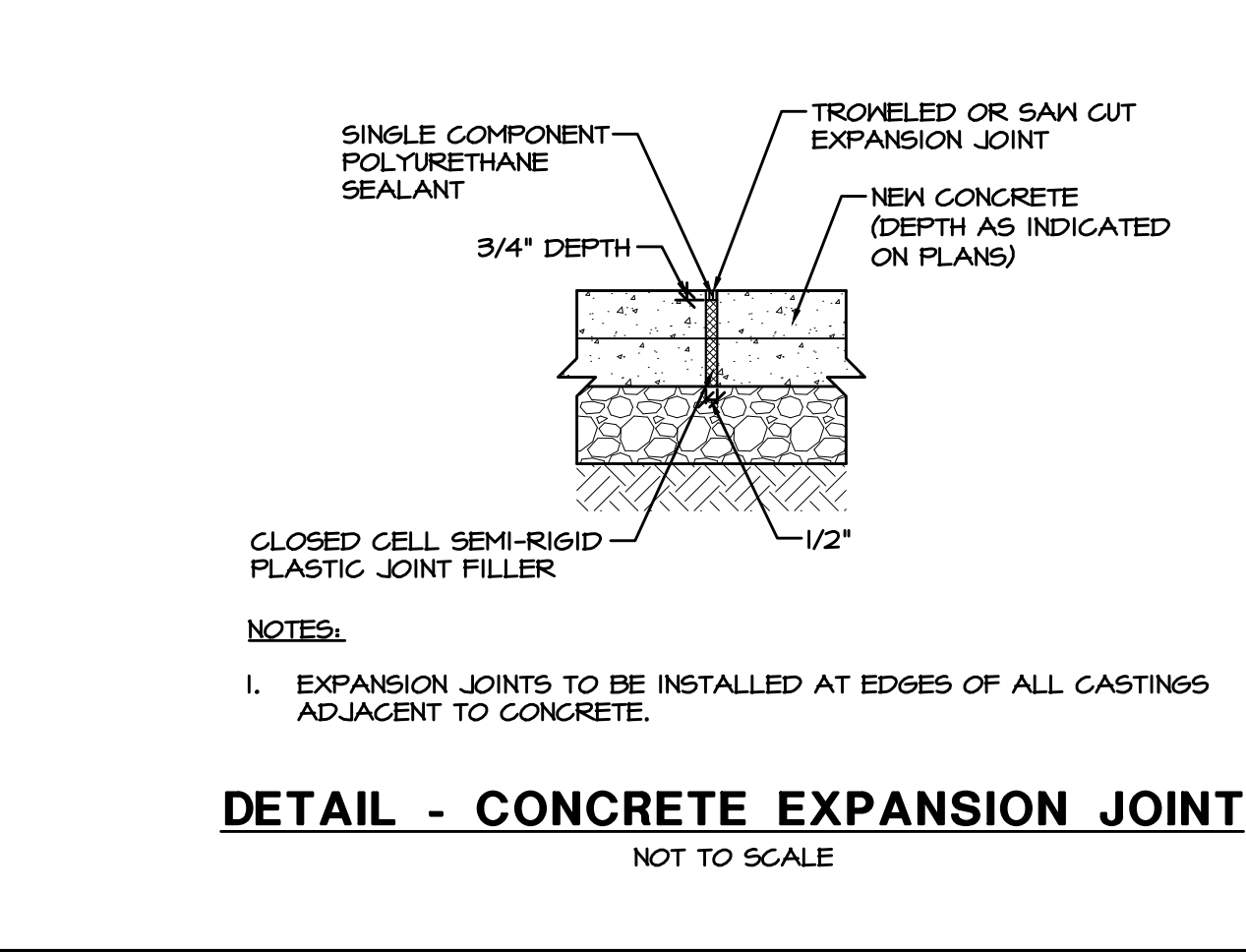
SIDEWALK & RAMPS STANDARD DETAIL DRAWING
 DATE: 2/1/2017
 SHEET NO.: 4.02



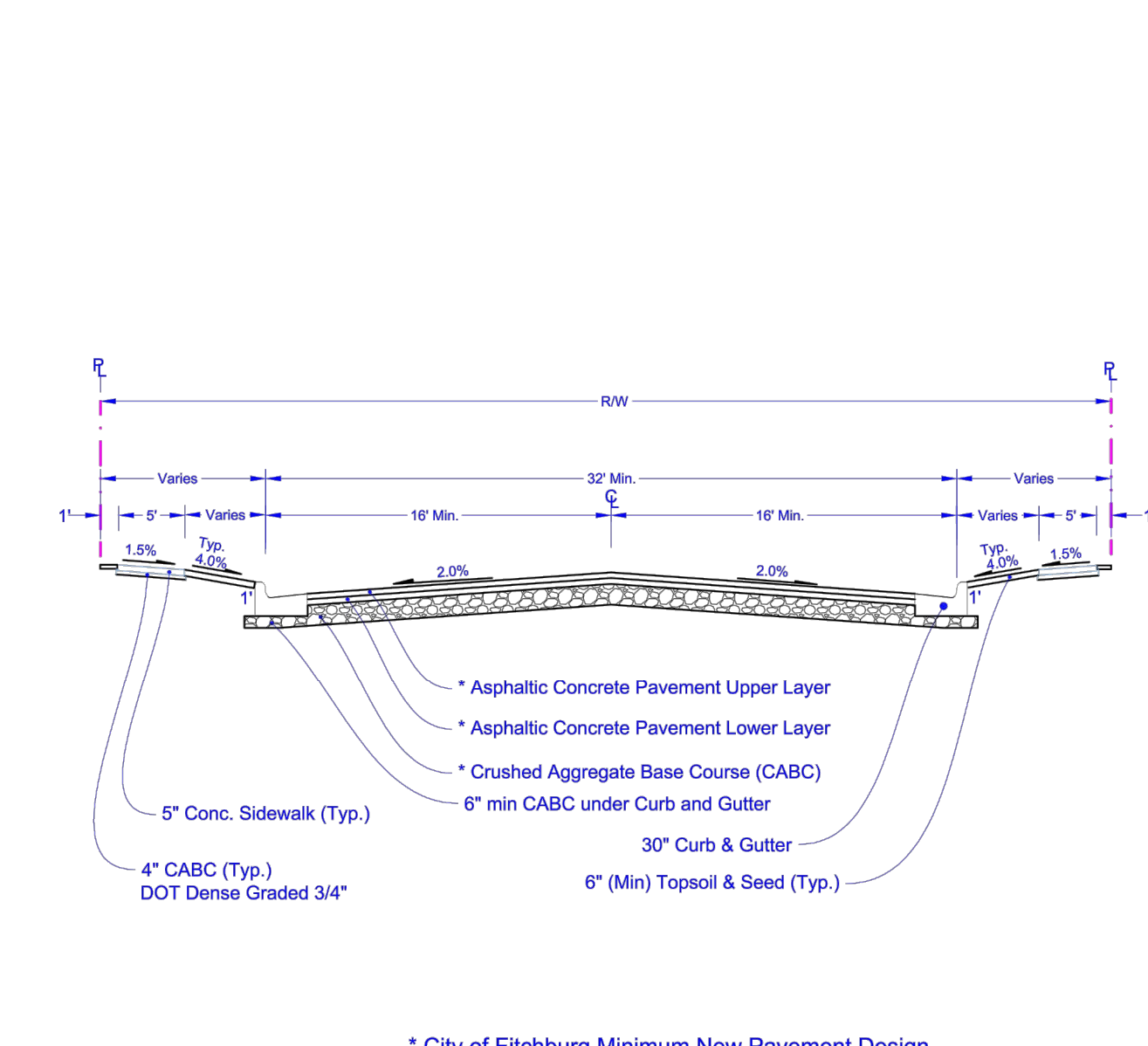
CONCRETE CURB AND GUTTER STANDARD DETAIL DRAWING
 DATE: 1/24/2014
 SHEET NO.: 4.01



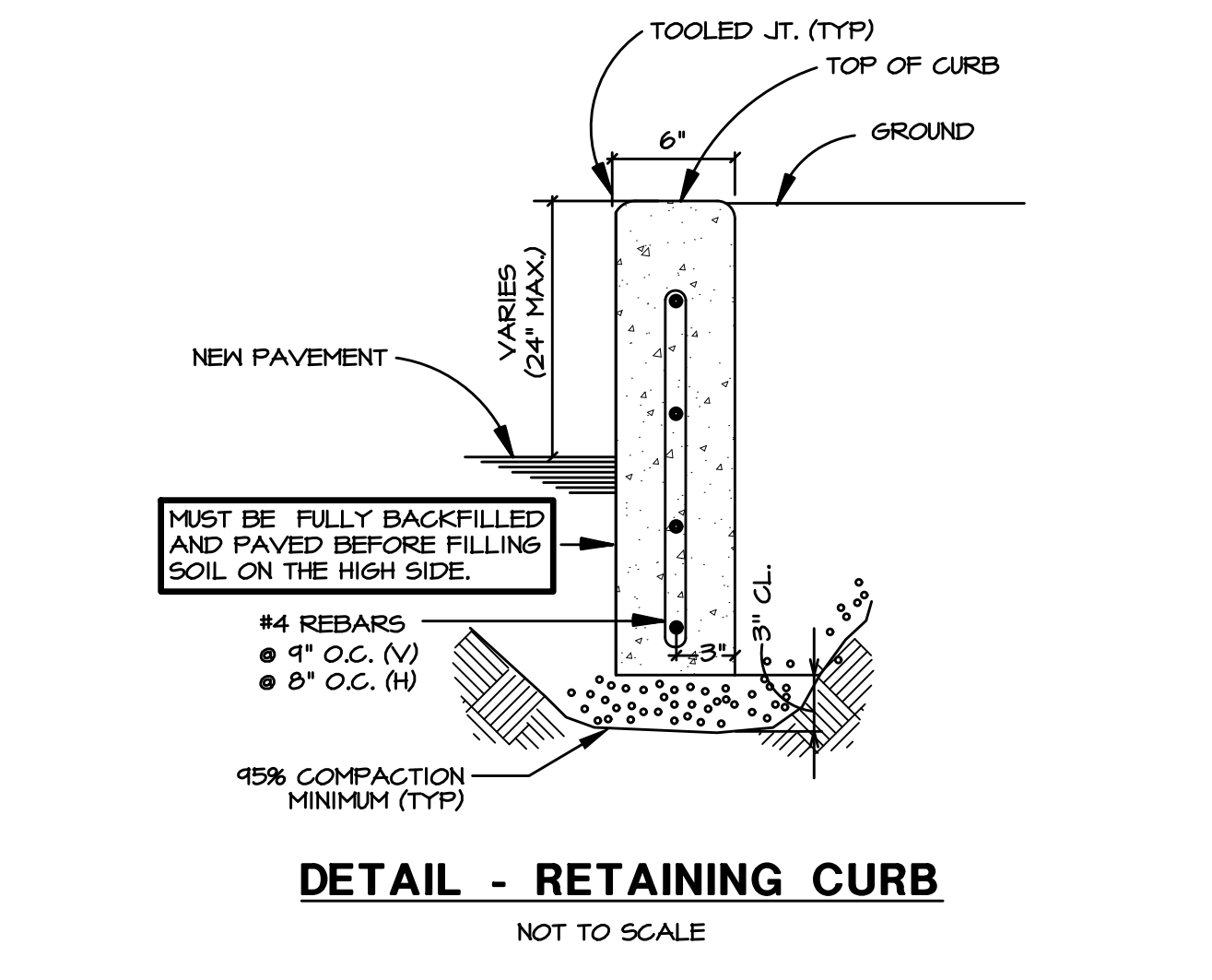
DETAIL - ACCESSIBLE SYMBOL
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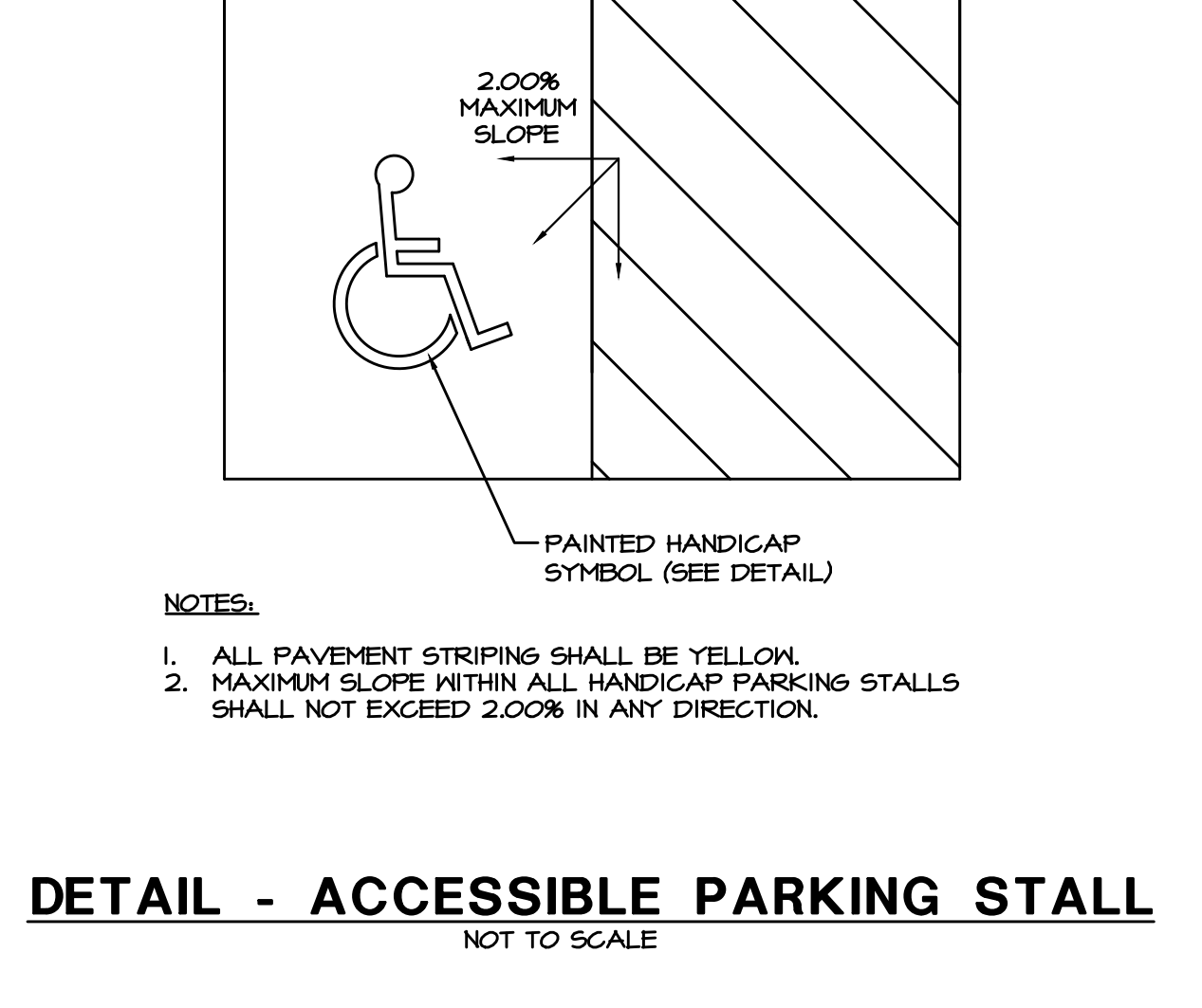
DETAIL - CONCRETE EXPANSION JOINT
 NOT TO SCALE



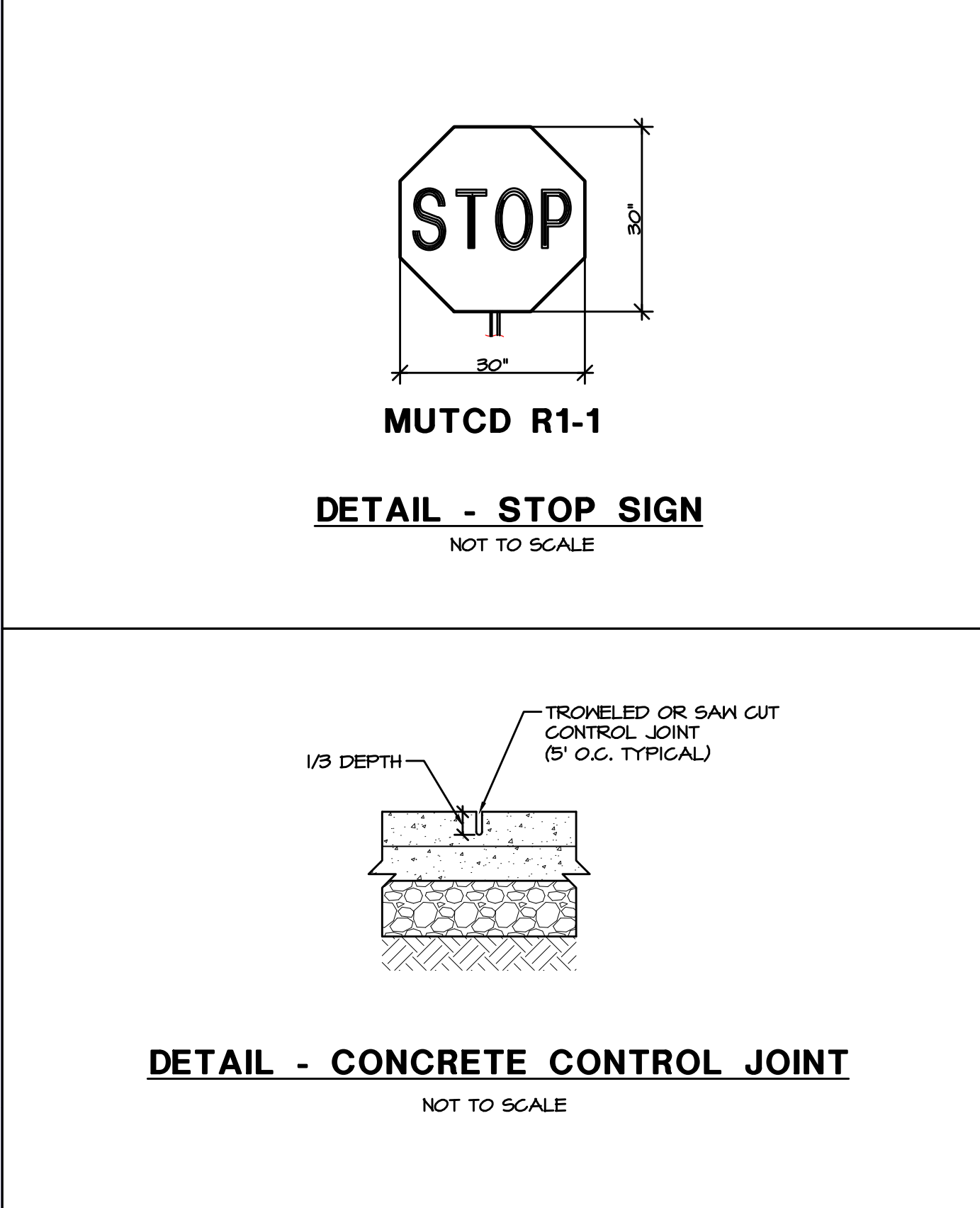
STREET TYPES STANDARD DETAIL DRAWING
 DATE: 2/1/2017
 SHEET NO.: 5.01



DETAIL - RETAINING CURB
 NOT TO SCALE



DETAIL - ACCESSIBLE PARKING STALL
 NOT TO SCALE



DETAIL - CONCRETE CONTROL JOINT
 NOT TO SCALE



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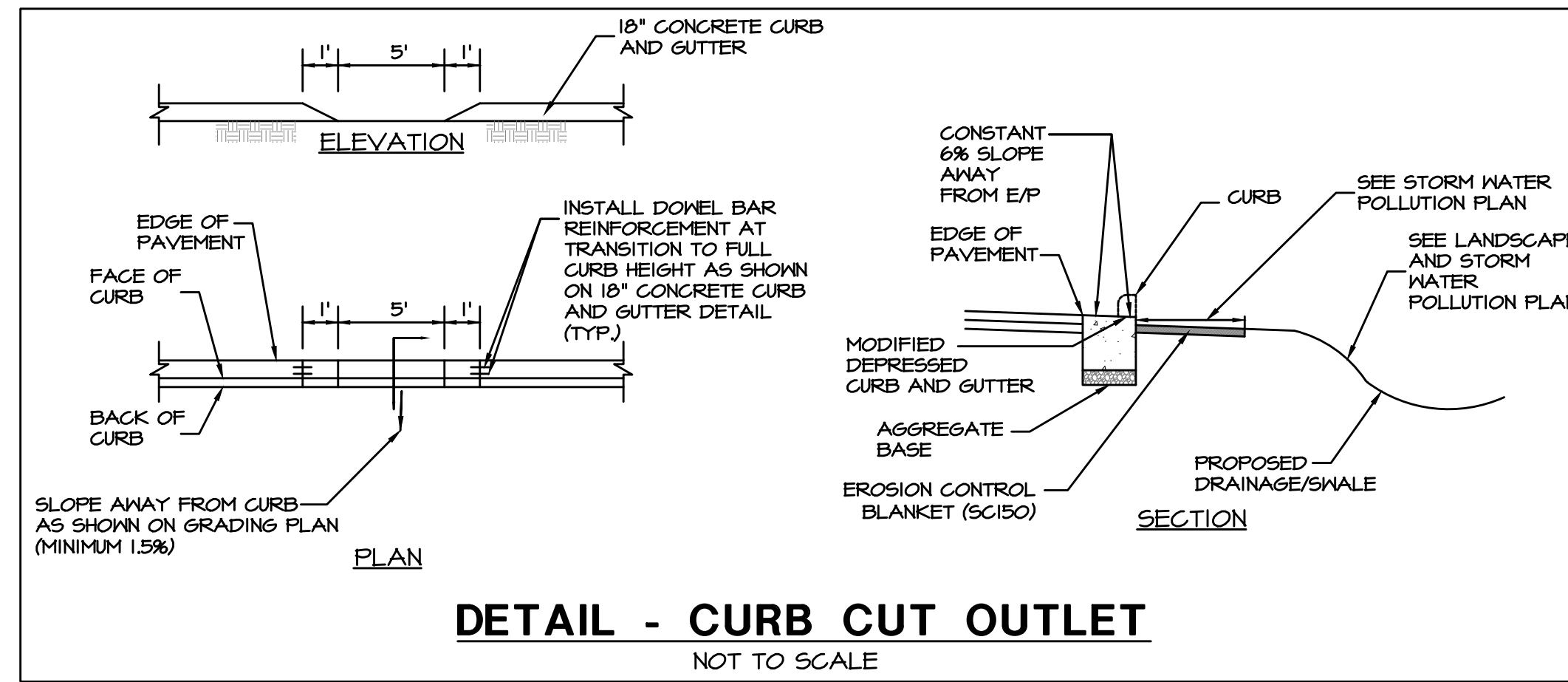
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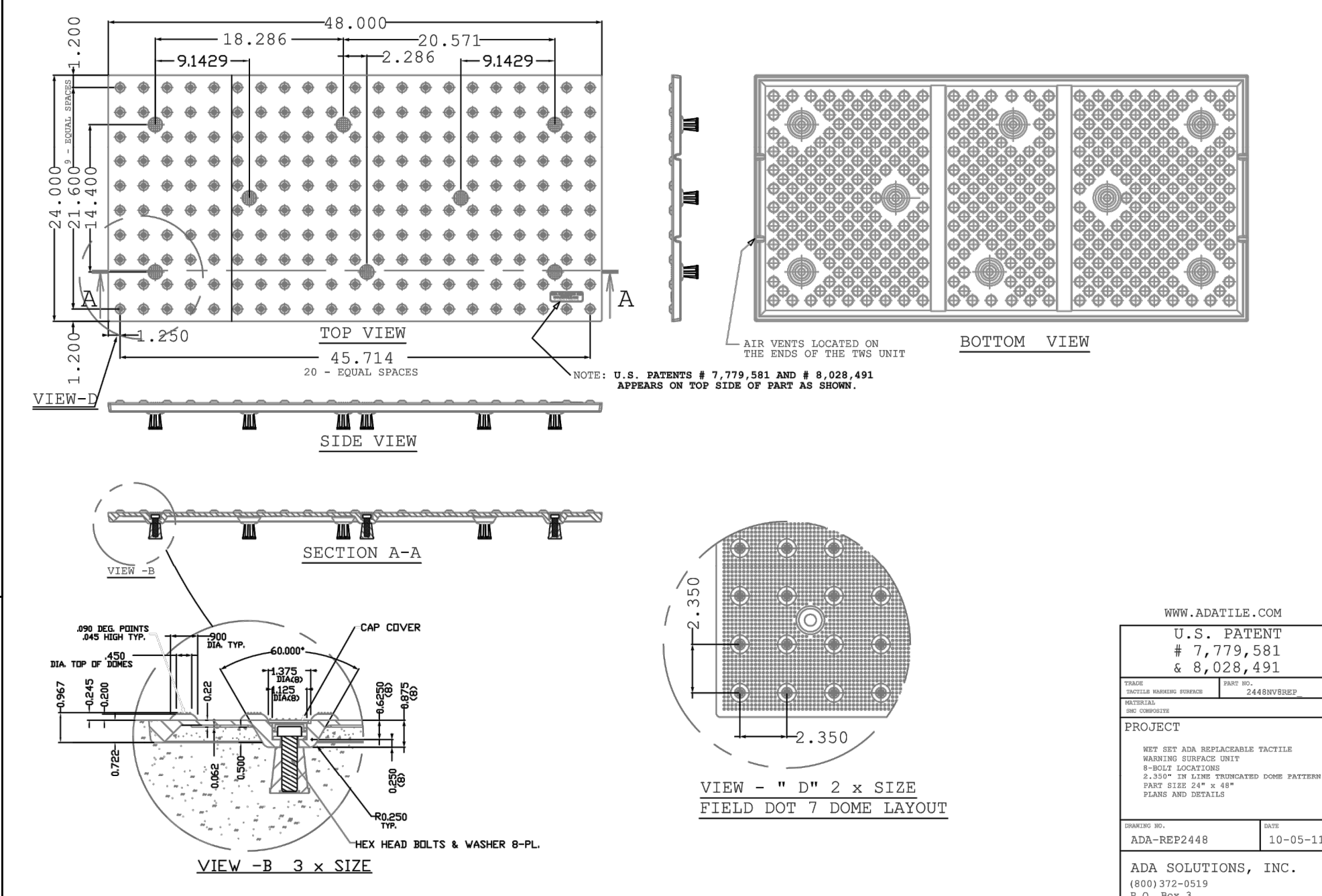
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SITE DEVELOPMENT DETAILS
C-3.1

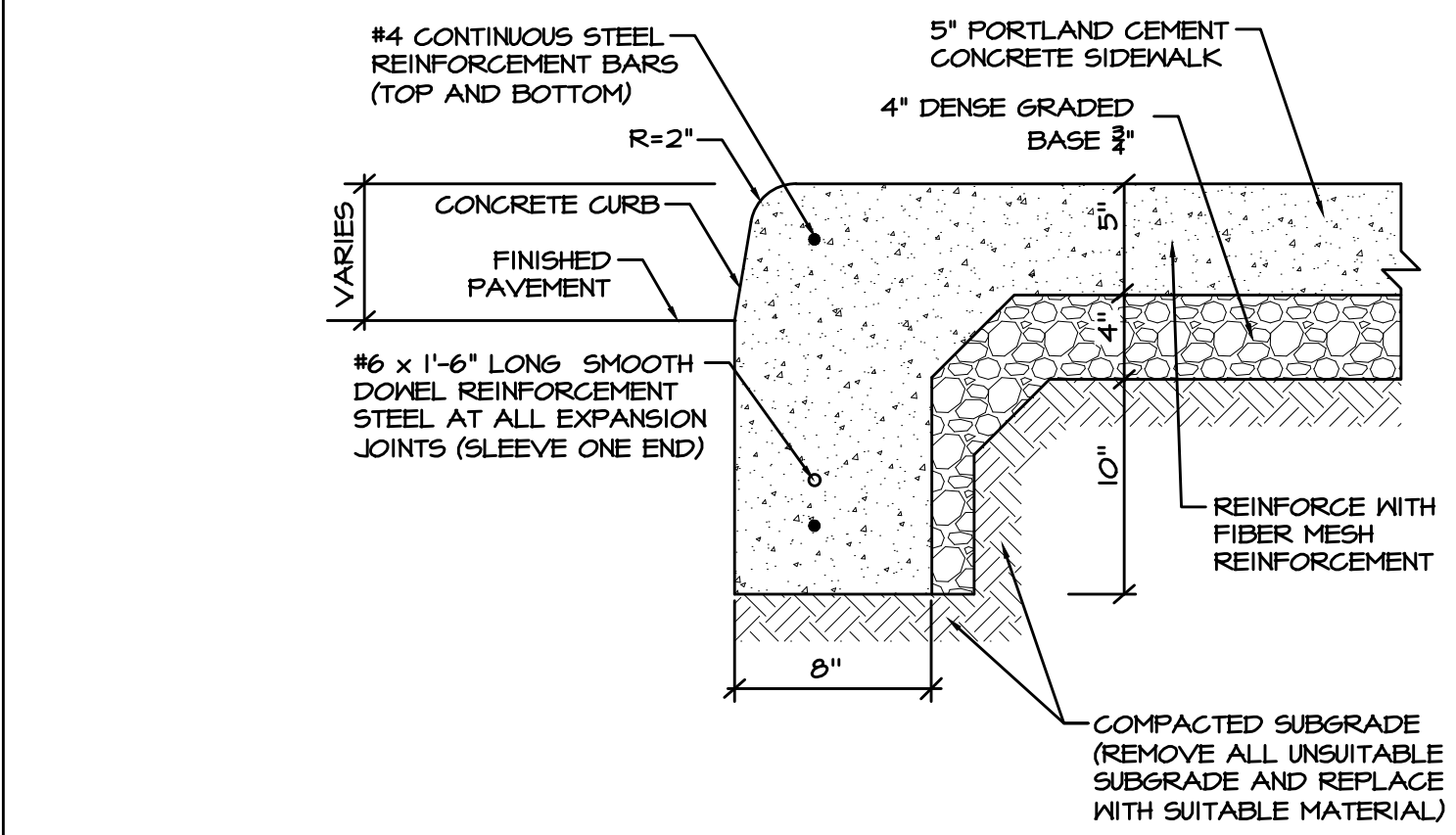
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DETAIL - CURB CUT OUTLET
NOT TO SCALE



DETAIL - DETECTABLE WARNING PLATE
NOT TO SCALE



- NOTES:**
1. 1" THICK PREFORMED EXPANSION JOINTS SHALL BE INSTALLED AT A MINIMUM OF 50 FOOT INTERVALS AND AT ALL CURB FC'S AND PT'S, CURB RETURNS, ENDS OF CONSTRUCTION AND 5 FEET ON EACH SIDE OF ANY UTILITY STRUCTURE CASTING THAT FALLS WITHIN THE CURB LINE. PROVIDE 1" x 1" x 18" SMOOTH EPOXY COATED DONEL BARS AT EXPANSION JOINTS WITH DONEL BAR AND PINCH CAP.
 2. CONTROL JOINTS SHALL BE SAHED PER DETAIL, TO A MINIMUM DEPTH OF 2" AND PLACED AT 10 FOOT INTERVALS. SAH CUTS SHALL BE SAHED NO SOONER THAN 6 HOURS AND NO LATER THAN 24 HOURS AFTER PLACEMENT OF CONCRETE.
 3. 2 CONTINUOUS NO. 4 BARS SHALL BE INSTALLED AND CENTERED OVER ALL TRENCH CROSSINGS SO BARS EXTEND 5 FEET BEYOND THE TRENCH ON ALL SIDES.
 4. DONEL BARS AT EXPANSION JOINTS MUST BE DRILLED AND NOT PUSHED THRU EXPANSION MATERIAL.

DETAIL - MONOLITHIC CONCRETE SIDEWALK
NOT TO SCALE

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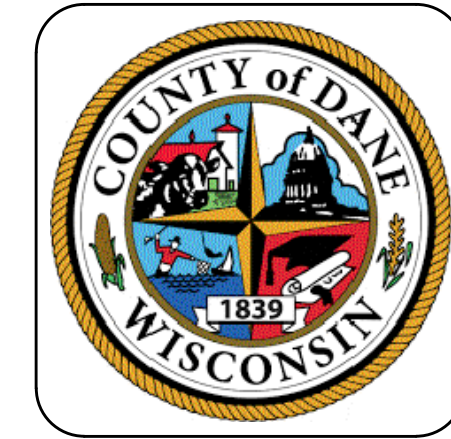
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SITE DEVELOPMENT DETAILS
C-3.2

WT JOB NUMBER - 2002139C

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GRADING LEGEND

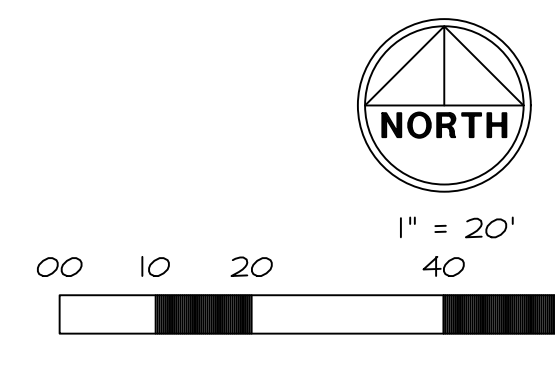
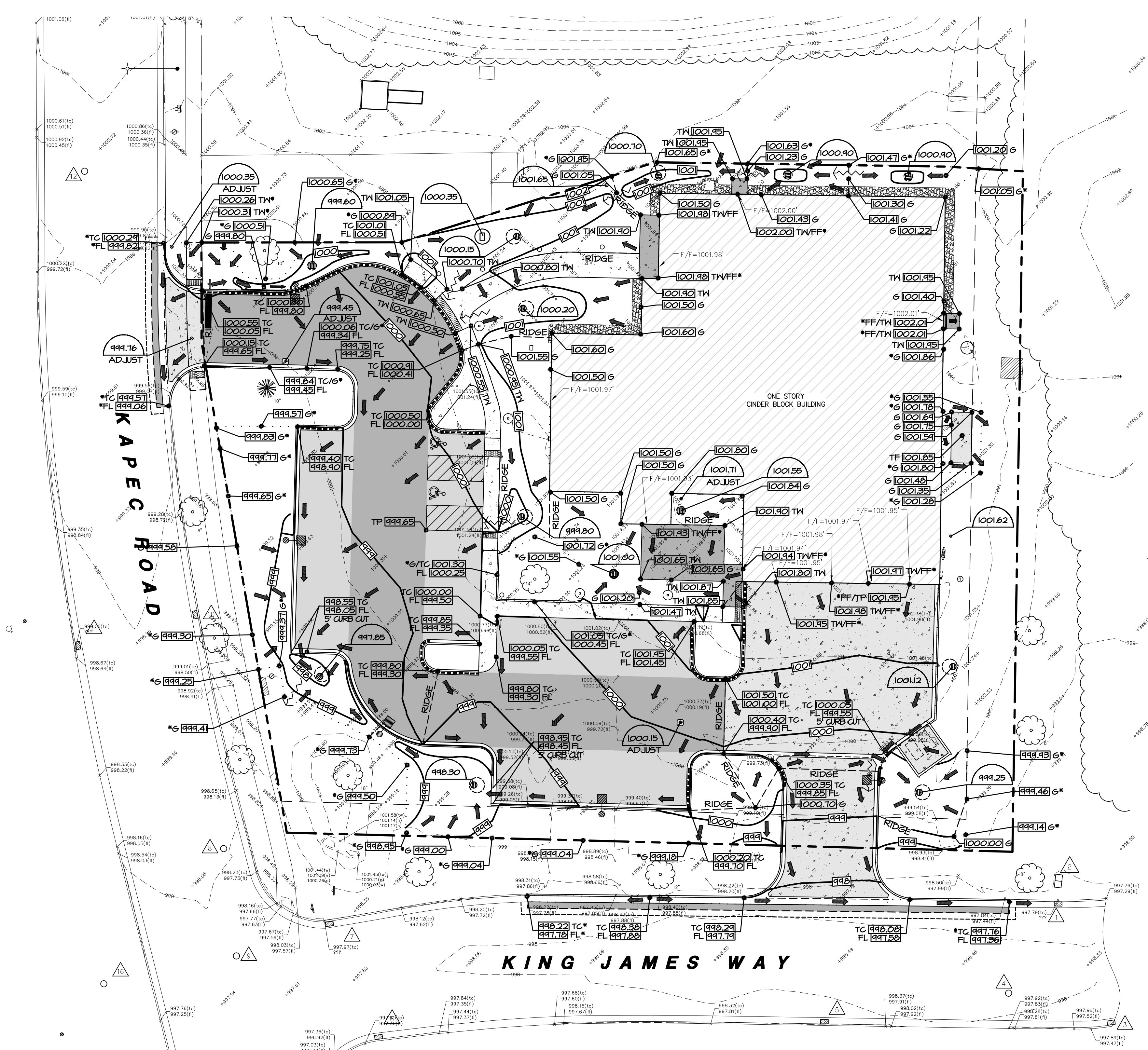
- EXISTING SPOT GRADE
- PROPOSED SPOT GRADE
- INTERPOLATED SPOT GRADE
- PROPOSED RIM ELEVATION
- EXISTING CONTOUR LINE
- PROPOSED CONTOUR LINE
- OVERLAND FLOW ARROW
- 100 YEAR OVERLAND FLOW ROUTE
- EMERGENCY OVERFLOW ARROW
- TOP OF PAVEMENT ELEVATION
- TOP OF SIDEWALK ELEVATION
- FINISHED GRADE ELEVATION
- FINISHED FLOOR ELEVATION
- TOP OF CURB ELEVATION
- FLOW LINE ELEVATION
- ADJUST EXISTING RIM ELEVATION
- TOP OF FOUNDATION ELEVATION
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING VALVE VAULT
- EXISTING B-BOX
- PROPOSED INLET
- PROPOSED OPEN LID MANHOLE / CATCH BASIN
- PROPOSED CLOSED LID MANHOLE

HATCH LEGEND

- NEW CONCRETE SIDEWALK**
5" PORTLAND CEMENT CONCRETE
4" CRUSHED AGGREGATE BASE COURSE (CABC), DOT DENSE GRADED 3/4" PER SECTION 305 WISDOT SPECIFICATIONS
- NEW CONCRETE PAVEMENT / CONCRETE PAD**
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW CONCRETE STOOP / CONCRETE PATIO**
8" PORTLAND CEMENT CONCRETE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW FULL DEPTH ASPHALT PAVEMENT**
1-3/4" HMA SURFACE COURSE
2-1/4" HMA BINDER COURSE
8" CRUSHED AGGREGATE BASE COURSE (CABC), UPPER 4" IS 1-1/4" DENSE GRADED BASE (DGB), BOTTOM 3" DGB PER SECTION 305 WISDOT SPECIFICATIONS
- NEW GRAVEL TRENCH DRAIN SYSTEM**

- SITE GRADING NOTES:**
- A. EXISTING CONDITIONS AND TOPOGRAPHY SHOWN REPRESENTS SITE CONDITIONS PER THE BOUNDARY AND TOPOGRAPHIC SURVEY LAST DATED 10-7-20 PREPARED BY WT GROUP. CONTRACTOR SHALL FIELD VERIFY EXISTING ELEVATIONS AND CONDITIONS (INCLUDING BUT NOT LIMITED TO VERIFICATION OF CONTROL AND ALL UTILITIES WHETHER DEPICTED OR NOT) PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 - B. ALL PROPOSED GRADES ARE GIVEN TO FINISHED GRADE, I.E. TOP OF PROPOSED ASPHALT, CONCRETE, TOP OF PROPOSED CURB, ETC. SEE DETAILS FOR PAVEMENT THICKNESS.
 - C. CONTRACTOR SHALL CONTACT DIGGERS HOTLINE (811 OR 1-800-242-8811) AND PRIVATE LOCATING SERVICE TO LOCATE ALL UNDERGROUND UTILITY LINES PRIOR TO STARTING ANY DEMOLITION AND/OR EXCAVATION. EXACT LOCATIONS OF ANY EXISTING ELECTRIC, GAS, TELEPHONE, ETC. LINES ARE UNKNOWN.
 - D. CONTRACTOR SHALL ENSURE POSITIVE SITE DRAINAGE AT THE END OF EACH WORKING DAY DURING CONSTRUCTION OPERATIONS. FAILURE TO PROVIDE ADEQUATE DRAINAGE WILL PRECLUDE THE CONTRACTOR FROM ANY POSSIBLE COMPENSATION REQUESTED DUE TO DELAYS OR UNSUITABLE MATERIALS CREATED AS A RESULT.
 - E. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS OUTSIDE OF CONSTRUCTION LIMITS TO ORIGINAL CONDITION OR BETTER.
 - F. CONTRACTOR SHALL REPAIR AT HIS EXPENSE ANY DAMAGE TO EXISTING ASPHALT, CONCRETE, CURBS, SIDEWALKS, ETC. RESULTING FROM CONSTRUCTION TRAFFIC AND/OR OPERATIONS. REPAIRS SHALL BE MADE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
 - G. CONTRACTOR TO UTILIZE CARE WHEN WORKING NEAR EXISTING UTILITIES TO REMAIN. ANY DAMAGE TO EXISTING UTILITIES NOT NOTED TO BE REMOVED SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER AND/OR ENGINEER.
 - H. ALL EXISTING TREES SHOWN ARE TO REMAIN UNLESS OTHERWISE NOTED.
 - I. ALL HANDICAP ACCESSIBLE ROUTES (SIDEWALKS, WALKWAYS, DRIVEWAYS, ETC.) SHALL MAINTAIN A MAXIMUM CROSS SLOPE OF 2.00% AND A MAXIMUM LONGITUDINAL SLOPE OF 5.00%. ACCESSIBLE PARKING STALLS SHALL MAINTAIN A MAXIMUM SLOPE OF 2.00% IN ALL DIRECTIONS.
 - J. VOIDS LEFT BY ANY ITEM REMOVED UNDER ANY PROPOSED BUILDING, PAVEMENT, OR WALK OR WITHIN 24" THEREOF SHALL BE BACKFILLED WITH ENGINEERED FILL ACCORDING TO THE GEOTECHNICAL REPORT.
 - K. ALL FIRE ACCESS LINES WITHIN THE PROJECT AREA SHALL REMAIN IN SERVICE. CLEAN OF DEBRIS, AND ACCESSIBLE FOR USE BY EMERGENCY VEHICLES.
 - L. CONSTRUCTION ACCESS POINTS TO THE SITE SHALL BE PROTECTED IN SUCH A WAY AS TO PREVENT TRACKING OF MUD OR SOIL ONTO PUBLIC THOROUGHFARES. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
 - M. ALL EXISTING SUBGRADE TO BE SCARIFIED (DISKED) TO A DEPTH OF 12" AND RE-COMPACTED, AND THEN TESTED USING A DYNAMIC CONE PENETROMETER. SEE ADDITIONAL REPORT FOR ADDITIONAL REQUIREMENTS.
 - N. ALL EXCESS SOILS THAT CANNOT BE USED AS SUITABLE FILL SHALL BE HAULED FROM THE SITE AND LEGALLY DISPOSED OF.
 - O. CONTRACTOR TO PROVIDE SOIL TESTING SERVICES FOR COMPLETION OF THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES FORMS AS PART OF THEIR CONTRACT.
 - P. PREPARE SUBGRADE AS SPECIFIED WITHIN THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC).
 - Q. ALL TOPSOIL BENEATH PROPOSED STRUCTURES AND PAVEMENT SHALL BE REMOVED. REFER TO THE GEOTECHNICAL EXPLORATION REPORT DATED AUGUST 17, 2020 PREPARED BY CONSTRUCTION GEOTECHNICAL CONSULTANTS, INC. (CGC) FOR EXISTING TOPSOIL DEPTHS.

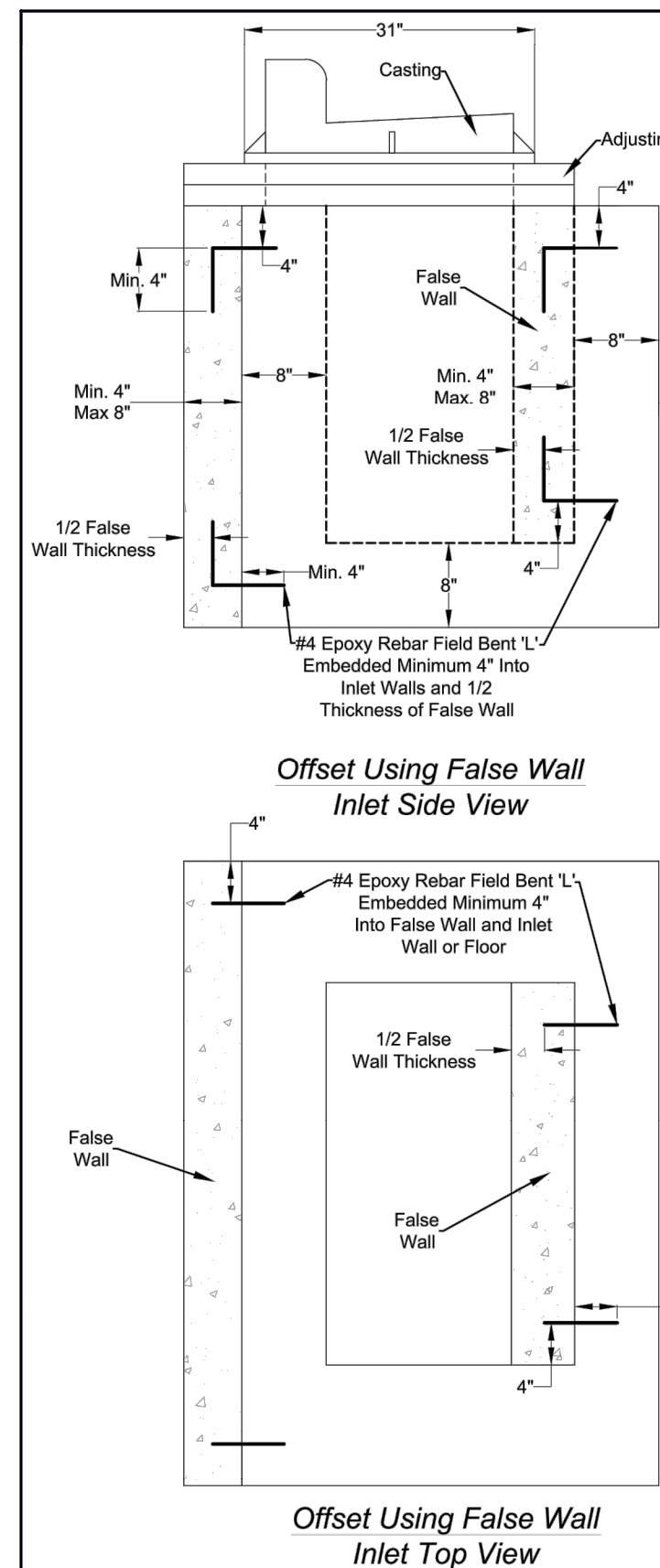
- EXISTING UTILITY DATA**
- 1. RIM=997.22' (STORM)
36"x18" CONCRETE STRUCTURE
IN=993.85' (18" RCP N/SSE)
RIM=997.95' (STORM)
12"x12" CONCRETE STRUCTURE
IN=991.80' (48"x76" RCP N)
ELLIPTICAL PIPE
 - 2. RIM=998.42' (STORM)
72" CONCRETE STRUCTURE
IN=990.23' (30" RCP N)
IN=990.47' (18" RCP SE)
IN=981.23' (42" RCP SE)
 - 3. RIM=1000.57' (STORM)
48" CONCRETE STRUCTURE
IN=995.85' (30" RCP N)
IN=993.23' (30" RCP S)
 - 4. RIM=997.10' (STORM)
36"x18" CONCRETE STRUCTURE
IN=994.79' (18" RCP NNW)
IN=994.79' (15" PVC S)
 - 5. RIM=998.34' (SANITARY)
48" CONCRETE STRUCTURE
IN=993.34' (12" RCP NE/S)
IN=993.66' (8" PVC W)
 - 6. RIM=997.65' (STORM)
36"x18" CONCRETE STRUCTURE
IN=992.90' (18" RCP N)
 - 7. RIM=997.26' (STORM)
36"x18" CONCRETE STRUCTURE
IN=993.61' (12" RCP NNW)
 - 8. RIM=997.31' (STORM)
36"x18" CONCRETE STRUCTURE
IN=992.54' (12" RCP NNW/SSE)
 - 9. RIM=998.05' (STORM)
CONCRETE STRUCTURE
UNABLE TO DETERMINE SIZE
IN=988.55' (53"x83" RCP E)
ELLIPTICAL PIPE
IN=988.55' (66" RCP SW)
IN=988.65' (36" RCP NW)
 - 10. RIM=997.87' (STORM)
60" CONCRETE STRUCTURE
IN=990.45' (42" RCP SSE/NW)
 - 11. RIM=998.51' (STORM)
36"x18" CONCRETE STRUCTURE
IN=992.68' (18" RCP NSW)



WT GROUP
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunications/Aviation
 Accessibility Consulting | Design & Program Management
 Engineering with Precision, Pace & Passion.

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WT JOB NUMBER - 2002139C



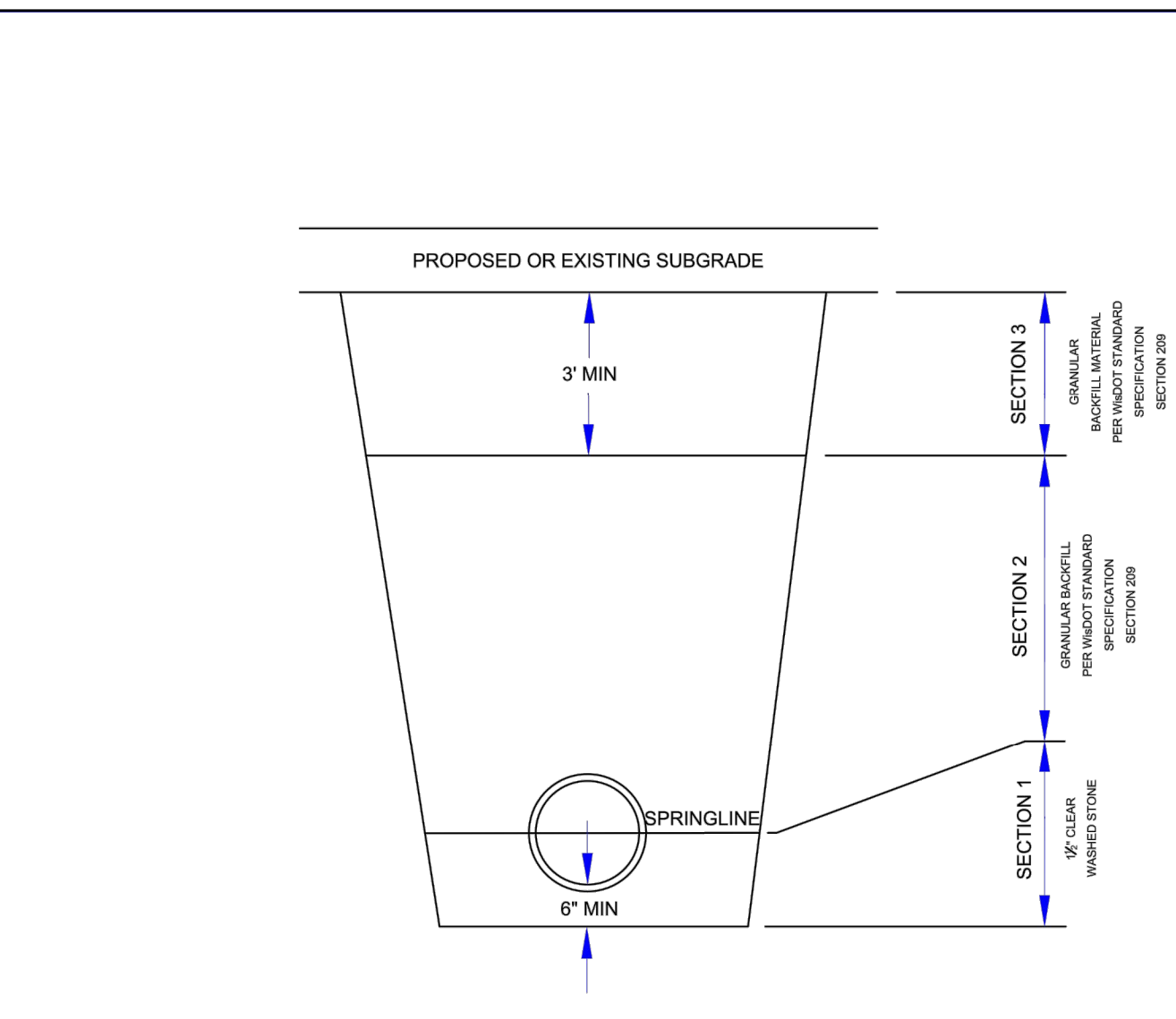
Note:

To insure the inlet casting is aligned correctly with the curb and gutter, an offset of the inlet casting may be required. The acceptable inlet casting offsets are shown and the guidelines are as follows:

- (1) If adjustment is required the inlet casting offset shall be obtained by the construction of two false walls with equal wall thickness varying from four to eight inches (4\"/>
- (2) If the adjustment required is greater than eight inches (8\"/>

These specifications are applicable for both poured-in-place and precast inlets. The detail shows a poured-in-place inlet. A precast inlet would only differ with a wall thickness of 5\"/>

	INLET FALSE WALL STANDARD DETAIL DRAWING	DATE: 1/8/2015
		SHEET NO.: 6.04



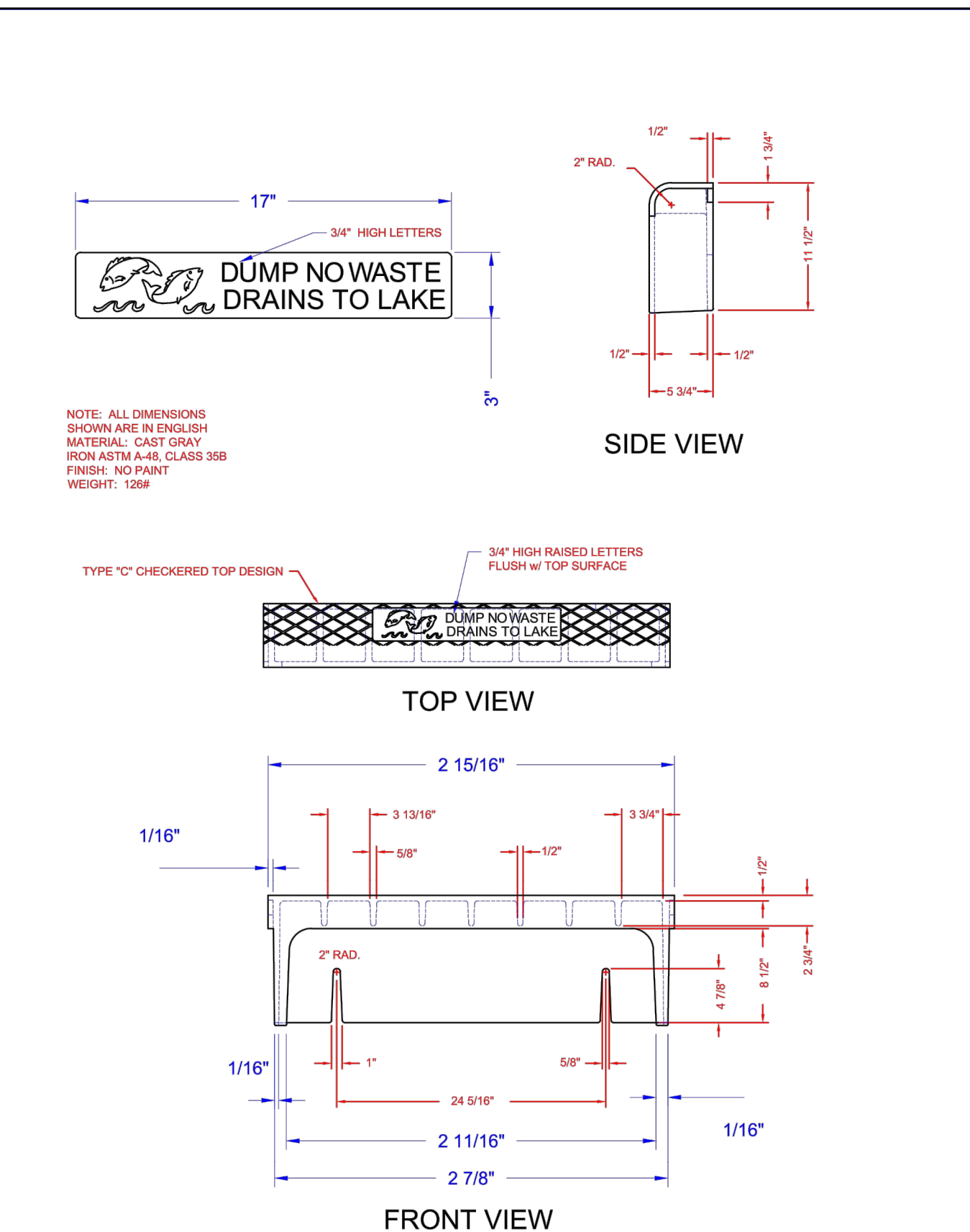
STANDARD TRENCH COMPACTION
ALL BACKFILL MATERIAL SHALL BE PLACED IN LIFTS NOT TO EXCEED 12\"/>

SECTION 1:
MECHANICALLY COMPACTED BEDDING AS REQUIRED BY THE SPECIFICATIONS. COMPACTION ACHIEVED WITH SMALLER PLATE COMPACTOR.

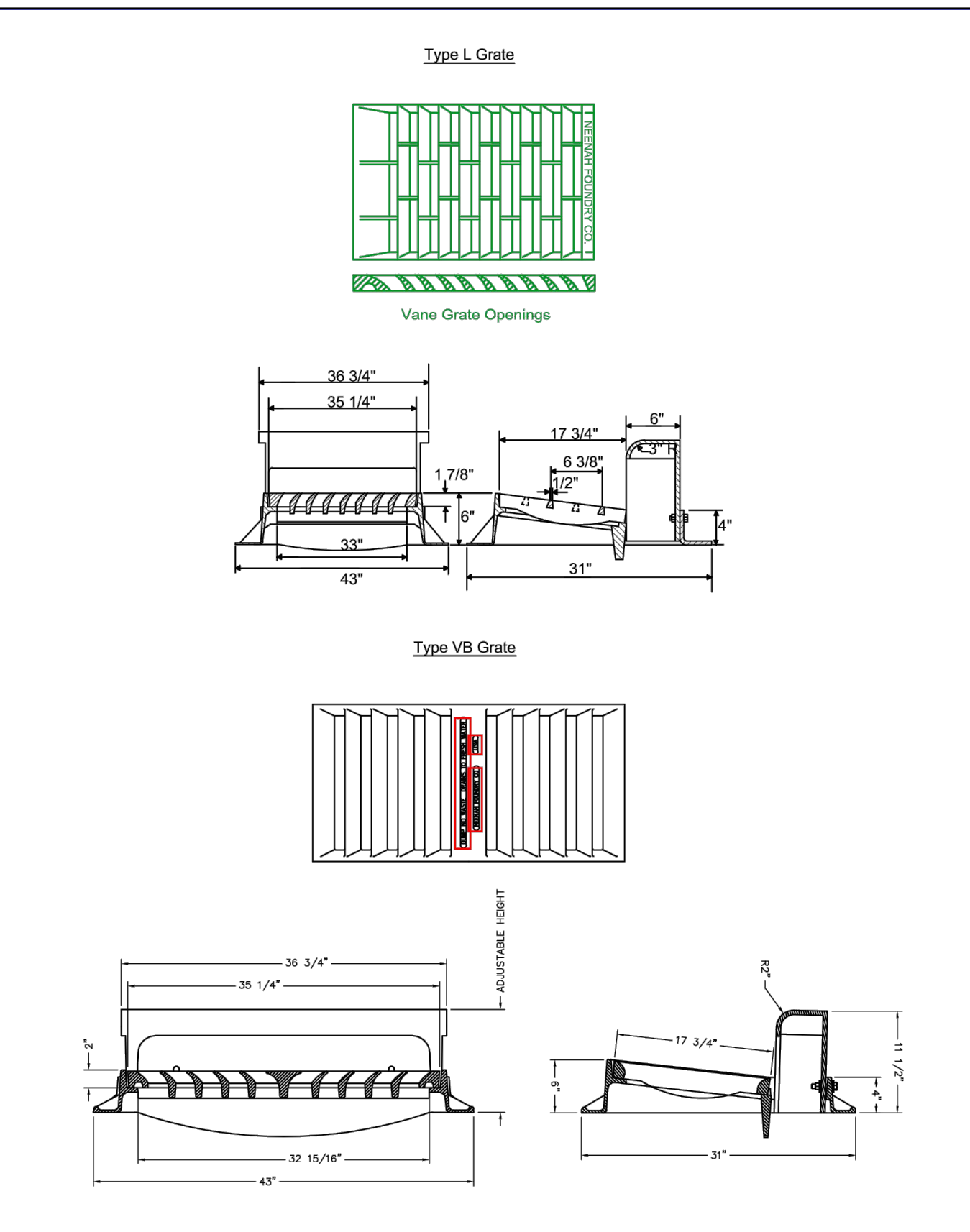
SECTION 2:
MINIMUM COMPACTION 90% MAXIMUM DENSITY. COMPACTION OF BACKFILL WITH BOMAG OR HOE-PAC SHALL NOT BEGIN UNTIL THE DEPTH OF BACKFILL MATERIAL IS TWO (2) FEET ABOVE THE TOP OF PIPE.

SECTION 3:
MINIMUM COMPACTION 95% MAXIMUM DENSITY.

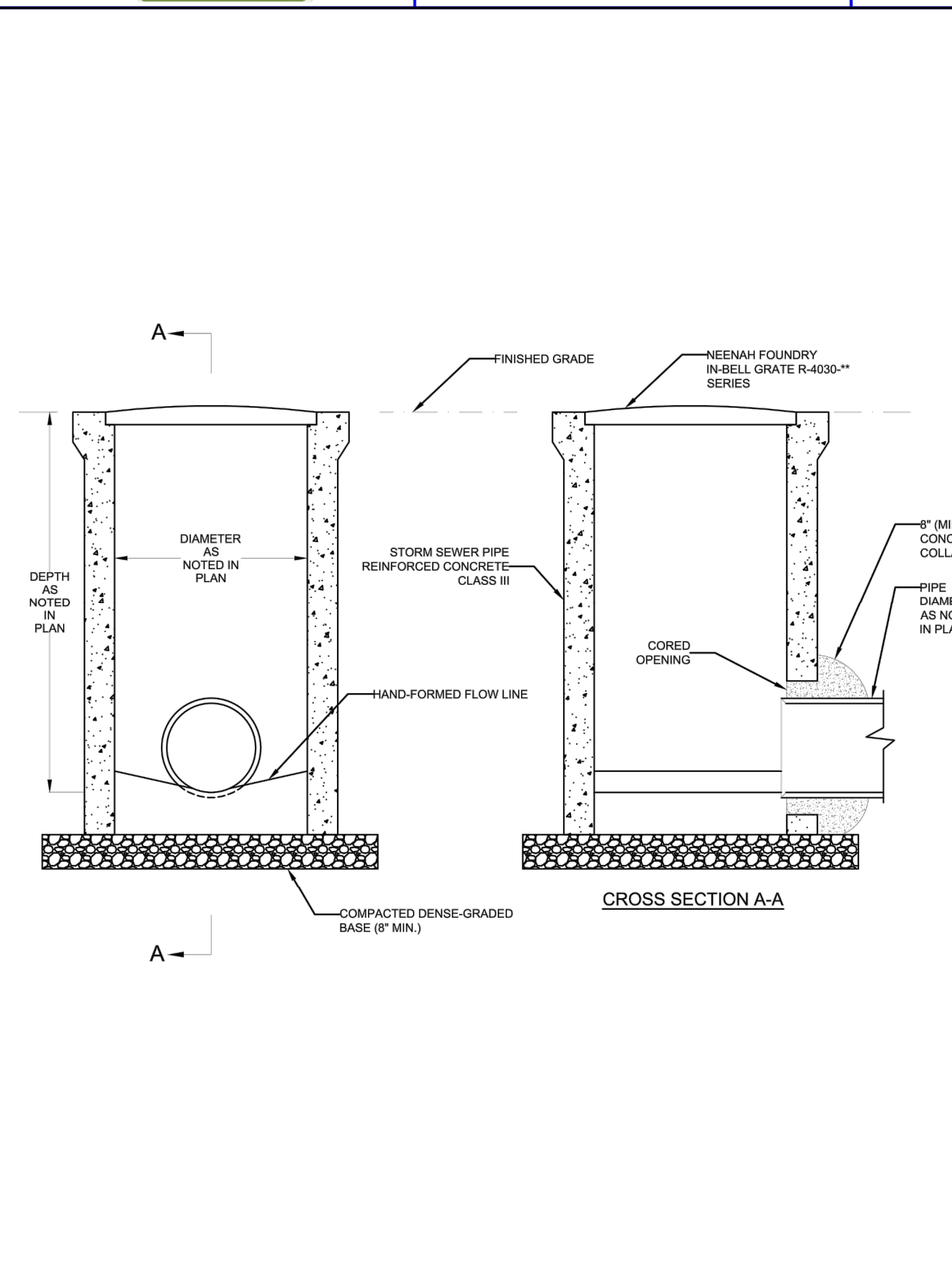
	STORM SEWER TRENCH STANDARD DETAIL DRAWING	DATE: 2/1/2017
		SHEET NO.: 6.01



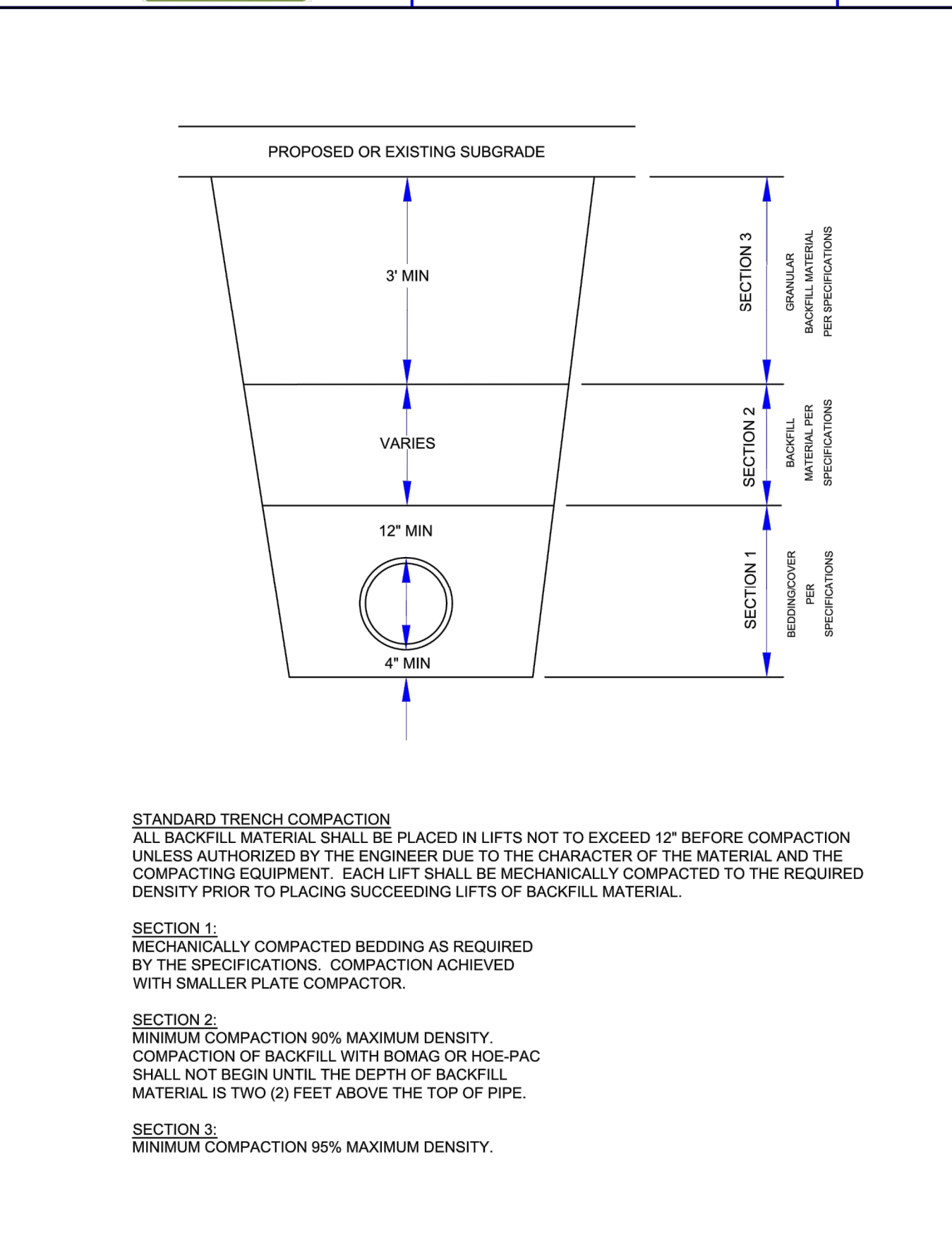
	CURB BOX STANDARD DETAIL DRAWING	DATE: 1/24/2014
		SHEET NO.: 6.02



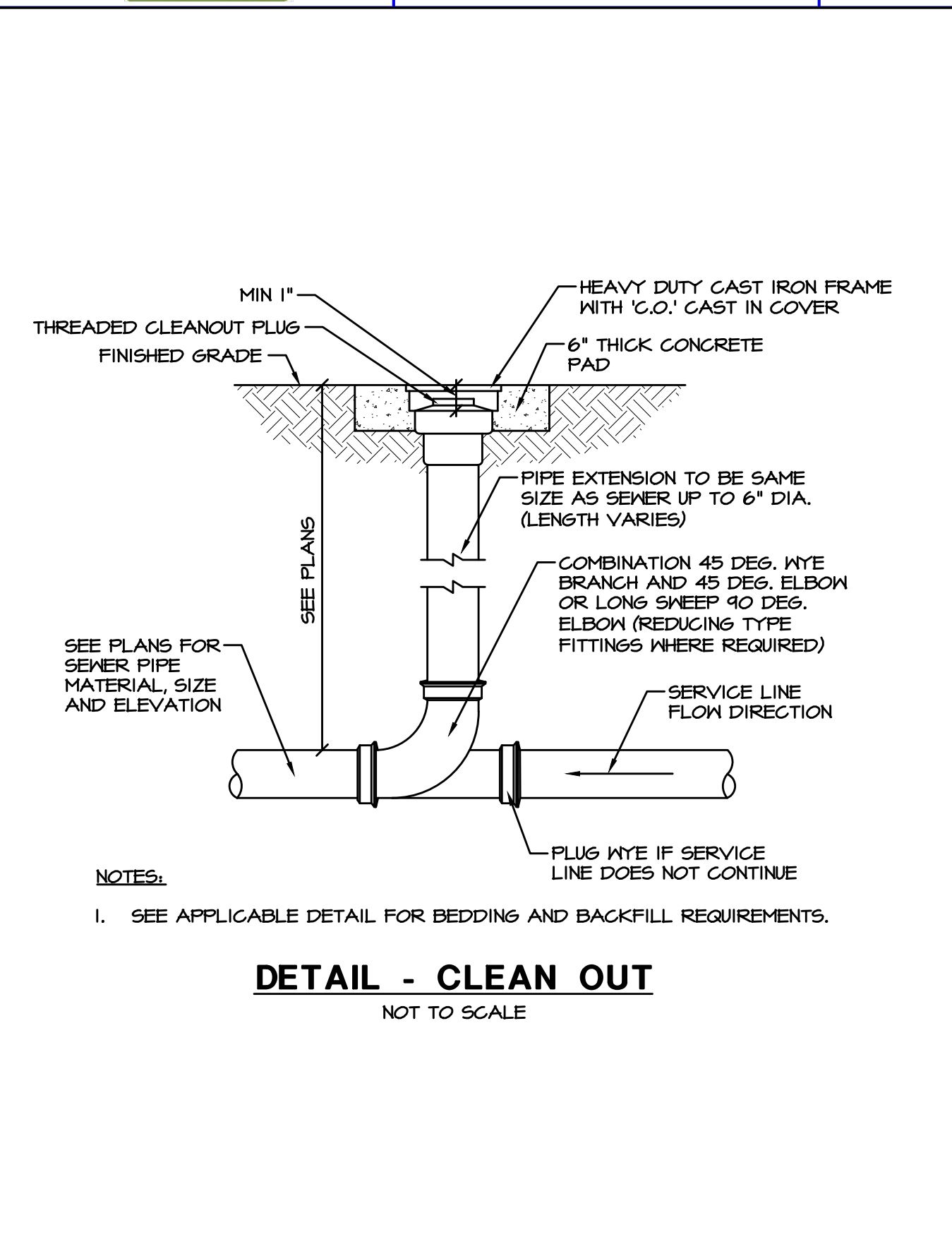
	INLET COVERS, TYPE H STANDARD DETAIL DRAWING	DATE: 1/31/2019
		SHEET NO.: 6.03



	CLASS III REINFORCED CONCRETE INLET STANDARD DETAIL DRAWING	DATE: 1/29/2019
		SHEET NO.: 6.07



	SANITARY SEWER & WATER MAIN TRENCH STANDARD DETAIL DRAWING	DATE: 1/24/2014
		SHEET NO.: 7.01

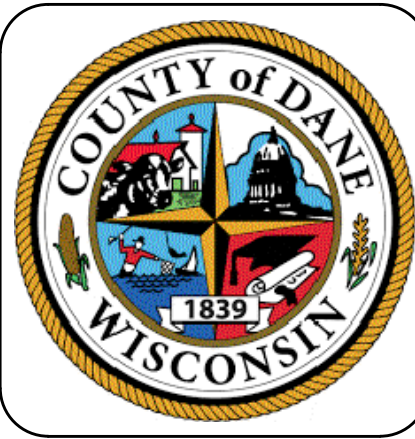


	SANITARY SEWER & WATER MAIN TRENCH STANDARD DETAIL DRAWING	DATE: 1/24/2014
		SHEET NO.: 7.01

PRAIRIE FORGE GROUP

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

ISSUE RECORD	
ADR	10-20-20

CHECKED BY
JEG

DRAWN BY
BRA

DATE
6/25/2020 2:26:36 PM

2020-001

SITE UTILITY DETAILS

C-5.1

WT JOB NUMBER - 2002139C

WT GROUP

Structural | Mechanical | Electrical | Plumbing
Civil | Land Survey | Telecommunications | Aquatics
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.

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DUPLEX ELECTRICAL ALTERNATING SYSTEM

Sequence of Operation for Duplex Panel

- Operation can begin after the following:
 - Correct voltage is applied to Panel
 - Panel is properly grounded
 - Pumps are connected correctly to Panel
 - Panel Circuit Breakers are closed
 - Floats are installed properly
 - Overload Protection is adjusted to Pump nameplate amps
 - Pump HVA Switches are set to "Auto"
 - Control On/Off Switch is set to "On"
- When the "Stop" and "Lead" floats are closed Pump 1 will energize and the Pump 1 Pump Run Light will illuminate. Pump 1 will remain operational until the "Stop" float opens.
- The next time the "Stop" and "Lead" floats are closed the Alternating Circuit will energize Pump 2 and the Pump 2 Pump Run Light will illuminate. Pump 2 will remain operational until the "Stop" float opens.
- If the float level continues to rise after the first pump will remain energized the "Lag" float will close. When the "Lag" float has closed the second Pump will Energize. Both Pumps will remain operational until the "Stop" float opens.

Electrical Alternator Control Panel - For Duplex Installations

An Electrical Alternator is used on a Duplex pump application when a demand for added protection in residential or commercial applications. With one pump operating, it handles normal flow, a second pump becomes operational in the event the water level continues to rise. The built-in alarm system, a standard feature, can be connected to sound when the second pump becomes operational (3 float with system) or independently (4 float with system). All electrical systems must be installed by a qualified electrician and according to the National Electrical Code. (See Section 430-71 through 430-113 plus any others that apply)

Control Panel Features:

- Hand-Off-Auto Toggle Switch for each pump
- Green pump run pilot light for each pump
- Alarm test and silence switches
- Red pilot light (Nema 1 Only) and audible alarm with 83 to 85 decibel rating for a high water condition
- Red Alarm Beacon included with Nema 4 enclosure
- Auxiliary Dry Contact
- High Water Alarm
- On Three Phase - Motor protective switch with overload protection
- Magnetic starter for each pump
- Alternating mechanism
- Numbered terminal strip for connecting pumps and variable level float switches
- Nema 1 - general purpose or Nema 4X - Watertight enclosures available
- Integral auxiliary terminal board connections (dry contact for remote alarm)
- 3 of 4 variable level float switch operation
- Three 20" float switches included with single phase panels
- 2 Year Warranty
- The use of off-the-shelf components provide for relatively easy field maintenance and repair
- First float switches not included with single phase panels (See FM0526)

CONTROL PANEL USED WITH THREE PHASE PUMPS

Order No.	Dimensions H x W x D	Volts	Amp Range
10-0982	12" x 10" x 4"	115/208/230	0-20

CONTROL PANEL USED WITH 2P FLOAT SWITCH

Order No.	Dimensions H x W x D	Volts	Amp Range
10-1001	12" x 10" x 4"	115	1-15
10-1040	12" x 10" x 4"	115	15-20
10-0992	12" x 10" x 4"	115/208/230	0-20

NEMA 4X DUPLEX CONTROL PANEL TO BE MOUNTED TO EXTERIOR OF BUILDING. PLUMBING CONTRACTOR SHALL VERY PROPER PUMP POWER & FLOAT SWITCH CORD LENGTHS REQUIRED TO REACH PANEL PRIOR TO ORDERING.

AUX. DRY CONTACT FOR REMOTE MONITORING OF HIGH WATER ALARM LOCATED INSIDE ENCLOSURE

UPPER POWDER COATED C.I. GUIDE RAIL BRACKET

36" DIAMETER ALUMINUM BOLT DOWN COVER WITH HINGED ACCESS HATCH. MINIMUM OPENING SHALL BE (18" X 28")

CONCRETE MANHOLE (BY OTHERS)

3" COMBINED PUMP DISCHARGE W/ PROPER LINK SEAL FOR PIPE PENETRATION THROUGH STRUCTURE

2" PVC SHUT-OFF VALVE

2" PVC QUIET CHECK VALVE

2" PVC PUMP DISCHARGE PIPING (BY PLUMBING CONTRACTOR)

PLUMBING CONTRACTOR SHALL DRILL 3/16" VENT HOLE IN DISCHARGE PIPE ABOVE TOP OF PUMP & BELOW THE CHECK VALVE.

RAIL SYSTEM

WEIGHTED VARIABLE LEVEL FLOAT SWITCH REMOVABLE FROM GRADE

ZOELLER SUMP PUMPS MODEL N153 115V, 1PH 1/2HP, 60HZ - 10.5 AMPS

DUPLEX STORM WATER LIFT STATION - (DSP-1) N.T.S.

Electrical Alternator Control Panel - For Duplex Installations

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10-0992	12" x 10" x 4"	115/208/230	0-20

CONTROL PANEL USED WITH 2P FLOAT SWITCH

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10-1040	12" x 10" x 4"	115	15-20
10-0992	12" x 10" x 4"	115/208/230	0-20

Branch circuit protection provided by installing enclosure.

Refer to FM0712 for correct selection of Electrical Alternator.

TOTAL DYNAMIC HEAD FLOW PER MINUTE

MODEL 151, 152, 153

Flow (GPM)	Head (ft)	Model 151	Model 152	Model 153
0	100	100	100	100
10	95	95	95	95
20	80	80	80	80
30	65	65	65	65
40	50	50	50	50
50	35	35	35	35
60	20	20	20	20
70	5	5	5	5

TECHNICAL DATA SHEET DOSE-MATE SERIES Models 151, 152, 153 Efficient Pumps

PRODUCT SPECIFICATIONS

Motor	Drive	Capacity	Efficiency
1/2 HP (115V, 1/2 HP) (151, 152)	115V	1.5 GPM	85%
1/2 HP (230V, 1/2 HP) (153)	230V	1.5 GPM	85%

SELECTION GUIDE

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch.
- See FM1272 for correct model of simplex control panel.
- See FM1273 for correct model of duplex control panel.

OPTIONAL PUMP STAND P/N 10-2421

- Reduces potential clogging by debris
- Reduces noise or leaks under pump
- Reduces vibration and noise
- Raises pump 2" (5 cm) off bottom of basin
- Includes pump 2" (5 cm) of bottom of basin
- 0240 or DN50 PVC piping
- Accommodates pump, venting and upper applications

CAUTION All installation of controls, protection devices and wiring should be done by a qualified licensed electrician. All electrical and safety codes should be followed including the most recent National Electrical Code (NEC) and the Occupational Safety and Health Act (OSHA).

DUPLEX STORM WATER LIFT STATION - 5415 KING JAMES WAY - FITZBURG, WI

ZOELLER PUMP COMPANY

TECHNICAL DATA SHEET DOSE-MATE SERIES Models 151, 152, 153 Efficient Pumps

PRODUCT SPECIFICATIONS

Motor	Drive	Capacity	Efficiency
1/2 HP (115V, 1/2 HP) (151, 152)	115V	1.5 GPM	85%
1/2 HP (230V, 1/2 HP) (153)	230V	1.5 GPM	85%

MODEL 151

MODELS 152 & 153

SELECTION GUIDE

- For automatic, use single piggyback variable level float switch or double piggyback variable level float switch.
- See FM1272 for correct model of simplex control panel.
- See FM1273 for correct model of duplex control panel.

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DUPLEX SUBMERSIBLE STORM WATER LIFT STATION SPECS - (DSP-1)

PROJECT: 5415 KING JAMES WAY - FITZBURG, WI

ENGINEER: JASON GREEN - W.T. CIVIL ENGINEERING, INC.

FURNISH (2) ZOELLER NON-AUTOMATIC, OIL-FREE, SUBMERSIBLE SUMP PUMPS, MODEL #N153 SINGLE SEAL WITH ELECTRICAL ALTERNATING SYSTEM. PUMPS SHALL HAVE A CAPACITY OF AT LEAST 70 GPM AGAINST A TOTAL DYNAMIC HEAD OF 10 FEET. NON-OVERLOADING MOTOR SPECIFICATION: 120 VOLT, 60 CYCLE, 1 PHASE, 1/2 HP, 10.5 AMPS AND SHALL HAVE A 50' LONG POWER CORD. ELECTRICIAN SHALL REMOVE ALL PLUGS FROM PUMP POWER CORDS AND HARD WIRE DIRECTLY INTO CONTROL PANEL. PLUMBING CONTRACTOR SHALL VERIFY REQUIRED CORD LENGTHS TO REACH THE CONTROL PANEL AND REQUIRED PUMP VOLTAGE/PHASE PRIOR TO BID AND BEFORE ORDERING PUMP SYSTEM. DISCHARGE TO BE 1-1/2" NPT CONVERTED TO 2" (VIA RAIL SYSTEM). PUMP SHALL BE MOUNTED ON RAIL SYSTEM WITH 1-1/2" 2" NPT DISCHARGE. PUMPS WILL SPACING 34" SOLIDS AND SHALL BE UL LISTED. FURNISH (1) ZOELLER #10-1041 NEMA 4X ELECTRICAL ALTERNATOR PANEL. PUMP SHALL BE UL LISTED AND SHALL INCLUDE AN ALTERNATING CIRCUIT, SEPARATE CONTACT RELAYS, RUN LIGHTS, CIRCUIT BREAKERS AND O-A SWITCHES FOR EACH PUMP. A NUMBERED TERMINAL STRIP, HIGH WATER ALARM, VISUAL LIGHT AND DRY AUXILIARY CONTACTS FOR REMOTE MONITORING OF THE HIGH WATER ALARM SHALL ALSO BE INCLUDED. PLUMBING CONTRACTOR SHALL VERIFY EXACT PUMP POWER CORD AND FLOAT SWITCH CORD LENGTHS REQUIRED TO REACH THE CONTROL PANEL PRIOR TO BID. ELECTRICIAN SHALL FURNISH (3) SEPARATE CIRCUITS, (1) FOR PUMP #1 (10.5 AMPS), (1) FOR PUMP #2 (10.5 AMPS) AND (1) FOR THE CONTROLS AND ALL REQUIRED ELECTRICAL CONDUIT, CORD GRIPS, CODE REQUIRED EXTERNAL DISCONNECTS, ETC. ELECTRICIAN SHALL LAND ALL PUMP POWER CORDS AND FLOAT SWITCH CORDS ON PROPER TERMINALS INSIDE CONTROL PANEL. FURNISH (1) ZOELLER #10-1883 VARIABLE LEVEL MECHANICAL FLOAT SWITCH WITH 60" CORDS WITH ADJUSTABLE WEIGHTS. FURNISH (2) ZOELLER #10-0304 2" WHITE PVC PLASTIC "QUIET" CHECK VALVE AND QUARTER TURN BALL VALVE SHUT-OFF. CHECK VALVE SHALL HAVE SOLVENT WELT UNION CHECK VALVE. FURNISH (2) ZOELLER #30-0131 (1-1/2" BY 2") POWDER COATED DUCTILE IRON GUIDE RAIL SYSTEM WITH 2" NPT DISCONNECT FITTING WITH POSITIVE MACHINE FIT AND O-RING SEAL. GUIDE RAIL PLATE AND UPPER RAIL SUPPORT BRACKET, 3/4" DIAMETER SCHEDULE 40 STAINLESS STEEL GUIDE RAIL PIPING SHALL BE FURNISHED BY PLUMBING CONTRACTOR. FURNISH (2) ZOELLER #10-2660 LIFTING BALLS TO BALANCE PUMP & RAIL PLATE VALVE. FURNISH (2) ZOELLER #30-0018 1/2" 0-7" STAINLESS STEEL LIFTING CABLES. FURNISH (1) ZOELLER #10-0438 WALL OR ACCESS FRAME MOUNTED STAINLESS STEEL FLOAT SWITCH BRACKET WITH (8) STAINLESS STEEL 7" HOOPS FOR PUMP POWER CORDS. FLOAT SWITCH CORDS AND LIFT CABLES. CONCRETE WET WELL SHALL BE 36" INSIDE DIAMETER. MINIMUM AND MAXIMUM AND SHAKESACK TOP. FURNISH (1) AK INDUSTRIES #LB-AS/HD (OR ZOELLER EQUIVALENT) 3/4" DIAMETER (40" ACTUAL DIAMETER) 3/4" THICK ALUMINUM BOLT DOWN COVER WITH HINGED ACCESS HATCH WITH 18" BY 18" MINIMUM OPENING ALLOWING EASY REMOVAL OF THE PUMPS. PLUMBING CONTRACTOR SHALL VERIFY HATCH OPENING SIZE FOR THE PUMPS BEING USED PRIOR TO ORDERING FROM ZOELLER/KING INDUSTRIES. PROVIDE PROPER LINK SEAL FOR 3" PUMP DISCHARGE PIPE PENETRATION THROUGH SIDEWALL OF MANHOLE STRUCTURE. ELECTRICAL SHALL PROVIDE PROPERLY SIZED AND SEALED CONDUITS FROM CONTROL PANEL LOCATION AT EXTERIOR BUILDING WALL UNDER SLAB TO PUMP STATION - SIZE FOR (2) PUMP POWER CORDS & (4) FLOAT SWITCH CORDS. RECOMMENDED FLOAT SWITCH - 12" OFF BOTTOM OF BASIN, LEAD FLOAT - 30" OFF BOTTOM OF BASIN, LAG FLOAT - 42" OFF BOTTOM OF BASIN AND ALARM FLOAT - 48" OFF BOTTOM OF BASIN OR JUST BELOW LOWEST INLET PIPE AT APPROX 42" BELOW GRADE. START-UP SERVICES SHALL BE PROVIDED AND PERFORMED AT JOB SITE BY AN AUTHORIZED REPRESENTATIVE OF ZOELLER PUMP COMPANY. THE START-UP REPORT SHALL BE COMPLETED IN THE PRESENCE OF THE INSTALLERS AND RETURNED TO ZOELLER PUMP COMPANY. PLEASE CONTACT HART, TRAVERS & ASSOCIATES, INC. @ 630.201.1160 TO ARRANGE SYSTEM START-UP.

COMPARE THESE FEATURES

- Float is constructed of durable PVC/polypropylene encasing variable level switch
- Standard mechanical variable level control switches are rated for 115/230 V, 5 Amps
- Low current mechanical variable level control switches are rated for 125 VAC/30 VDC, 0.1 Amps
- 182 Type SLOW CPE cord standard
- Cords are available in 15-55-50 foot lengths
- Temperature rating of 140°F (60°C)
- Approximately 1.5" liquid level differential in switching action

ADJUSTABLE WEIGHT: (P/N 10-0686) provides an accurate pivot point for suspended float switches.

- Grasper teeth on dip and weight channel securely lock float cable into place.
- Cable weight can be adjusted without the use of tools.

HOUSING: 181 (20.0" x 2.0" x 3.3" (17.1 cm x 8.4 cm)) Impact-resistant & non-conductive, PVC housing for liquids up to 140°F (60°C)

CLIP: Injection-molded acetal plastic

WIRE CABLE ACCOMMODATED: SVCK, SFTV, 182, 183, 184, 142, 143 SHIP WEIGHT: 2 lbs. (22 oz)

FLOAT SWITCH TREES

Mechanical Standard P/N	Low Current P/N	Cord Length	Mounting Method
10-0743	10-2060	15	Clamp
10-0744	10-2061	20	Clamp
10-1877	10-2062	25	Clamp
10-1878	10-2063	35	Clamp
10-1879	10-2064	50	Clamp
10-1880	10-2065	15	Adjustable Weight
10-1881	10-2066	25	Adjustable Weight
10-1882	10-2067	35	Adjustable Weight
10-1883	10-2068	50	Adjustable Weight

DO NOT USE WITH INTRINSICALLY SAFE CONTROL SYSTEMS.

FOR USE WITH INTRINSICALLY SAFE CONTROL SYSTEMS ONLY.

DAKE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY FITZBURG, WISCONSIN 53719

ISSUE RECORD

ADR	10-20-20

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SITE UTILITY DETAILS

C-5.2

WT JOB NUMBER - 2002139C

WT Group

Structural | Mechanical | Electrical | Plumbing

Civil | Land Survey | Interdisciplinary | Adaptive Accessibility | Consulting | Design & Program Management

Engineering with Precision, Pace & Passion.

2675 Pratum Avenue | Hoffman Estates, IL 60192
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wtengineering.com

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DUPLEX STORM WATER LIFT STATION - (DSP-1) N.T.S.

PROVIDE EXTERNAL DISCONNECT SWITCH # RE2'D BY CODE.

120V, 1PH POWER CIRCUITS (BY ELEC.)

ELEC CONDUIT(S) (BY ELEC.)

7"-6"

4" INLET PIPE FROM DRANTILE I.E. (-1/2" BELOW GRADE)

WEIGHTED VARIABLE LEVEL FLOAT SWITCH REMOVABLE FROM GRADE

ZOELLER SUMP PUMPS MODEL N153 115V, 1PH 1/2HP, 60HZ - 10.5 AMPS

36" DIAMETER ALUMINUM BOLT DOWN COVER WITH HINGED ACCESS HATCH. MINIMUM OPENING SHALL BE (18" X 28")

UPPER POWDER COATED C.I. GUIDE RAIL BRACKET

CONCRETE MANHOLE (BY OTHERS)

3" COMBINED PUMP DISCHARGE W/ PROPER LINK SEAL FOR PIPE PENETRATION THROUGH STRUCTURE

2" PVC SHUT-OFF VALVE

2" PVC QUIET CHECK VALVE

2" PVC PUMP DISCHARGE PIPING (BY PLUMBING CONTRACTOR)

PLUMBING CONTRACTOR SHALL DRILL 3/16" VENT HOLE IN DISCHARGE PIPE ABOVE TOP OF PUMP & BELOW THE CHECK VALVE.

RAIL SYSTEM

WEIGHTED VARIABLE LEVEL FLOAT SWITCH REMOVABLE FROM GRADE

ZOELLER SUMP PUMPS MODEL N153 115V, 1PH 1/2HP, 60HZ - 10.5 AMPS

DUPLEX STORM WATER LIFT STATION - (DSP-1) N.T.S.

Z-RAIL DISCONNECT SYSTEMS (1-1/4" - 3" NPT Discharge Pumps)

FEATURES:

- Stainless steel water and effluent pump systems
- For concrete, steel, or fiberglass tanks
- Removal of pump from ground level
- No confined space entry to service pump
- Removal of pump from ground level
- Disconnect fitting with positive machine fit and o-ring seal provides a reliable seal.
- Stainless steel 180 psi, supports a weight up to 300 lbs.
- Guide rails direct the pump to and from the disconnect fitting. Systems are supplied complete with disconnect fitting, guide plate, rail guide, and upper rail support bracket.
- All systems use 3" schedule 40 pipe rails (not included).

Specifications:

Rail System	Pump Discharge	Rail System Discharge	Materials of Construction*	Weight	Type
39-0134	1-1/4" V	2" V	powder coated, ductile iron	41	Z-Rail®
39-0135	1-1/4" V	2" V	powder coated, ductile iron w/ SS upper rail support brackets	43	Z-Rail®
39-0136	1-1/4" V	2" V	powder coated, ductile iron w/ SS upper rail support brackets for non-sparging	44	Z-Rail®
39-0140	1-1/4" V	2" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	44	Z-Rail®
39-0137	1-1/4" V	1-1/4" V	powder coated, ductile iron (B10815 only)	41	Z-Rail®
39-0138	1-1/4" H	1-1/4" V	powder coated, ductile iron w/ SS upper rail support bracket	43	Z-Rail®
39-0131	1-1/2" V	2" V	powder coated, ductile iron	41	Z-Rail®
39-0132	1-1/2" V	2" V	powder coated, ductile iron w/ SS upper rail support bracket	43	Z-Rail®
39-0133	1-1/2" V	2" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	44	Z-Rail®
39-0142	1-1/2" V	2" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	45	Z-Rail®
39-0128	2" V	2" V	powder coated, ductile iron	42	Z-Rail®
39-0129	2" V	2" V	powder coated, ductile iron w/ SS upper rail support bracket	43	Z-Rail®
39-0130	2" V	2" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	44	Z-Rail®
39-0141	2" V	2" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	44	Z-Rail®
39-0122	2" V	2" V	powder coated, ductile iron	42	Z-Rail®
39-0123	3" V	3" V	powder coated, ductile iron w/ SS upper rail support bracket	47	Z-Rail®
39-0134	3" V	3" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	47	Z-Rail®
39-0125	3" V	3" V	powder coated, ductile iron w/ SS upper rail support brass for non-sparging	47	Z-Rail®

ACCESSORIES

Part No.	Description	Weight	Type
39-0139	Intermediate rail bracket 1-1/2" 1-1/2" and 2" discharge - SS	4	Z-Rail®
39-0146	Intermediate stabilizer, SS, for 3" system	4	Z-Rail®
** 10-2660	SS fitting ball for 50, 100, 160, 200 series	1	Z-Rail®
** 10-2661	SS fitting ball for 140 series	1	Z-Rail®
** 10-2316	SS fitting ball for 130, 200 & 270 series	1	Z-Rail®
** 10-2629	SS fitting ball for 800, 850 & 801 series	1	Z-Rail®
** 10-0769	SS fitting ball for 160, 180, 280, 290, B10815 and B1819B20 series (See above)	1	Z-Rail®

CAUTION: Disconnect fitting, guide rail plate, rail guide and upper rail support bracket. SS fitting ball for 160, 180, 280, 290, B10815 and B1819B20 series only. Lifting balls are required on these models to balance pump and rail plate entry. Other models already include proper fitting ball.

CAUTION: Check check valve body always easy opening of condition inside the valve.

FLOAT SWITCH BRACKETS (For Use with Weighted Floats)

COMPARE THESE FEATURES

- Float is constructed of durable PVC/polypropylene encasing variable level switch
- Standard mechanical variable level control switches are rated for 115/230 V, 5 Amps
- Low current mechanical variable level control switches are rated for 125 VAC/30 VDC, 0.1 Amps
- 182 Type SLOW CPE cord standard
- Cords are available in 15-55-50 foot lengths
- Temperature rating of 140°F (60°C)
- Approximately 1.5" liquid level differential in switching action

ADJUSTABLE WEIGHT: (P/N 10-0686) provides an accurate pivot point for suspended float switches.

- Grasper teeth on dip and weight channel securely lock float cable into place.
- Cable weight can be adjusted without the use of tools.

HOUSING: 181 (20.0" x 2.0" x 3.3" (17.1 cm x 8.4 cm)) Impact-resistant & non-conductive, PVC housing for liquids up to 140°F (60°C)

CLIP: Injection-molded acetal plastic

WIRE CABLE ACCOMMODATED: SVCK, SFTV, 182, 183, 184, 142, 143 SHIP WEIGHT: 2 lbs. (22 oz)

FLOAT SWITCH TREES

Mechanical Standard P/N	Low Current P/N	Cord Length	Mounting Method
10-0743	10-2060	15	Clamp
10-0744	10-2061	20	Clamp
10-1877	10-2062	25	Clamp
10-1878	10-2063	35	Clamp
10-1879	10-2064	50	Clamp
10-1880	10-2065	15	Adjustable Weight
10-1881	10-2066	25	Adjustable Weight
10-1882	10-2067	35	Adjustable Weight
10-1883	10-2068	50	Adjustable Weight

DO NOT USE WITH INTRINSICALLY SAFE CONTROL SYSTEMS.

FOR USE WITH INTRINSICALLY SAFE CONTROL SYSTEMS ONLY.

DAKE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY FITZBURG, WISCONSIN 53719

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SITE UTILITY DETAILS

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WT JOB NUMBER - 2002139C

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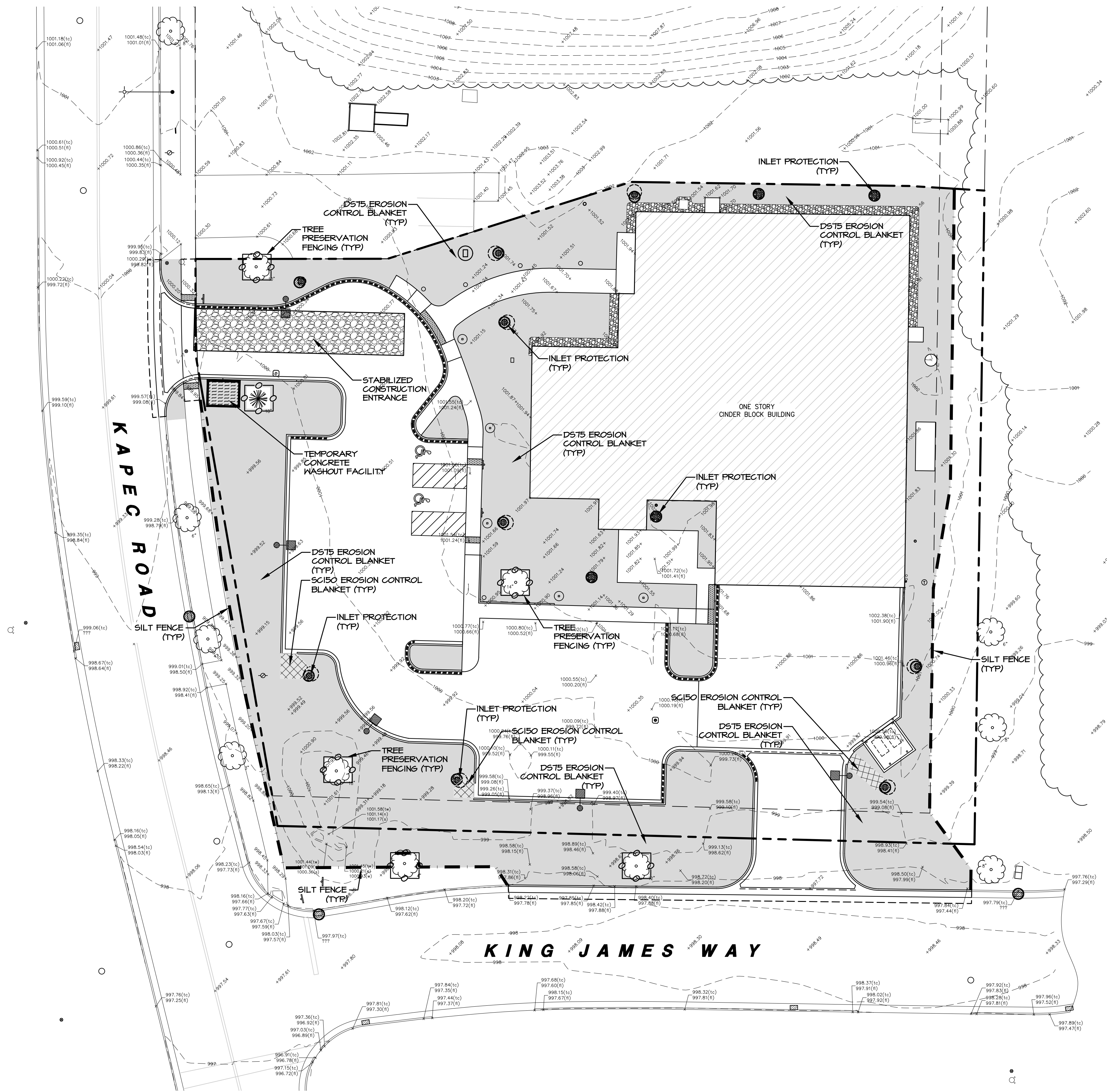
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PVC PLASTIC TYPE UNICHECKS

COMPARE THESE FEATURES

THE "QUIET CHECK" UNION CHECK VALVE WITH UNION CHECK VALVE

ITEM NUMBER	PIPE SIZE	VALVE BODY	WEIGHT EACH	LENGTH	CARTON QUANTITY
30-0040	1 1/4 inch	white	2 lbs.	9.50 inches	12
30-0041	1 1/4 inch	clear	2 lbs.	9.50 inches	12
30-0042	2 inches	white	3 lbs.	10.50 inches	12
30-0043	2 inches	clear	3 lbs.	10.50 inches</	



SWPPP NOTES:

- A. ALL DISTURBED GREEN SPACES ON THE SITE SHALL BE RESTORED ACCORDING TO THE SEED BED PREPARATION SPECIFICATIONS BELOW AND BLANKETED OR MATTED AS SHOWN ON THE PLANS.
- B. TEMPORARY OR PERMANENT STABILIZATION SHALL OCCUR IMMEDIATELY WHENEVER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE. TEMPORARY STABILIZATION SHALL CONSIST OF THE INSTALLATION OF TEMPORARY SEEDING.
- C. CONTRACTOR TO INSTALL TEMPORARY CONSTRUCTION ENTRANCES AS NECESSARY TO EXCAVATE AREAS AND HAUL SOILS ON-SITE. TRACKING OF DEBRIS ON SITE WILL NOT BE TOLERATED. ANY DEBRIS LEFT OUTSIDE OF THE PROJECT LIMITS MUST BE CLEANED IMMEDIATELY.
- D. EROSION CONTROL BLANKETS AND TURF REINFORCEMENT MATS SHALL BE INSTALLED USING 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. METAL STAKES AND STAPLES ARE PROHIBITED.
- E. CONTRACTOR SHALL PROVIDE ALL NECESSARY MAINTENANCE FOR THE SEDIMENT AND EROSION CONTROL MEASURES FOR THE DURATION OF THE PROJECT.
- F. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL STORMWATER POLLUTION PREVENTION PLAN (SWPPP) INSPECTIONS, INSPECTION REPORTS, CORRECTIVE ACTION FORMS, SWPPP AMENDMENT LOGS, SUBCONTRACTOR CERTIFICATIONS/AGREEMENTS, GRADING AND STABILIZATION ACTIVITIES LOGS, SWPPP TRAINING LOGS, AND DELEGATION OF AUTHORITY FORMS FOR THE DURATION OF THE PROJECT.
- G. CONTRACTOR SHALL PROVIDE COPIES OF ALL SWPPP REPORTS, FORMS, AND LOGS TO THE WT GROUP ONCE THE SITE HAS BEEN STABILIZED. THE CONTRACTOR SHALL MAINTAIN THESE DOCUMENTS FOR A PERIOD OF 3 YEARS FROM THE FINAL STABILIZATION OF THE SITE.
- H. FOLLOWING THE REMOVAL OF THE SILT FENCE, THE CONTRACTOR SHALL RESTORE THE SILT FENCE TRENCH WITH SOIL.
- I. CONTRACTOR SHALL INITIATE STABILIZATION OF ALL DISTURBED AREAS WITHIN ONE CALENDAR DAY.

SWPPP LEGEND

- +1000.00--- EXISTING SPOT GRADE
- 0000--- EXISTING CONTOUR LINE
- - - - - PROPOSED CONTOUR LINE
- OVERLAND FLOW ARROW
- 100 YEAR OVERLAND FLOW ROUTE
- EMERGENCY OVERFLOW ARROW
- ADJUST ADJUST EXISTING RIM ELEVATION
- EXISTING CLOSED MANHOLE
- EXISTING OPEN GRATE MANHOLE
- EXISTING BEEHIVE GRATE MANHOLE
- EXISTING CURB INLET
- EXISTING FIRE HYDRANT
- EXISTING B-BOX
- PROPOSED FIRE HYDRANT
- PROPOSED VALVE WITH VAULT
- PROPOSED B-BOX
- PROPOSED INLET
- PROPOSED OPEN LID MANHOLE / CATCH BASIN
- PROPOSED CLOSED LID MANHOLE
- PROPOSED RESTRICTOR STRUCTURE
- PROPOSED NYLOPLAST DRAIN BASIN
- PROPOSED FLARED END SECTION
- PROPOSED GREASE TRAP
- - - - - SILT FENCE
- FLEXSTORM CATCH-IN INLET PROTECTION
- ▽ RIP RAP
- ▨ FINE GRADE, FERTILIZE AND SEED, INSTALL DST5 EROSION CONTROL BLANKET WITH 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.
- ▨ TEMPORARY CONCRETE WASHOUT FACILITY
- ▨ STABILIZED CONSTRUCTION ENTRANCE
- ▨ FINE GRADE, FERTILIZE AND SEED, INSTALL SC150 EROSION CONTROL BLANKET WITH 6" BIO-STAKES AS MANUFACTURED BY NORTH AMERICAN GREEN. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS.

PRAIRIE FORGE GROUP
 300 CARDINAL DRIVE
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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
 5415 KING JAMES WAY
 FITCHBURG, WISCONSIN 53719

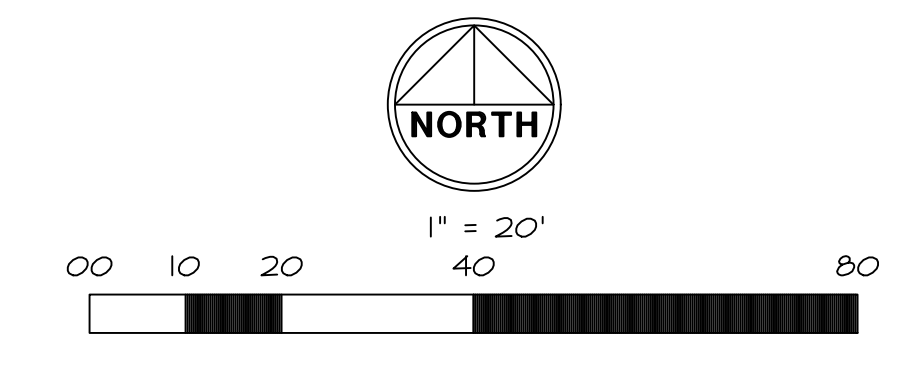
ISSUE RECORD

ADR	10-20-20

NOT FOR CONSTRUCTION

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STORMWATER POLLUTION PREVENTION PLAN
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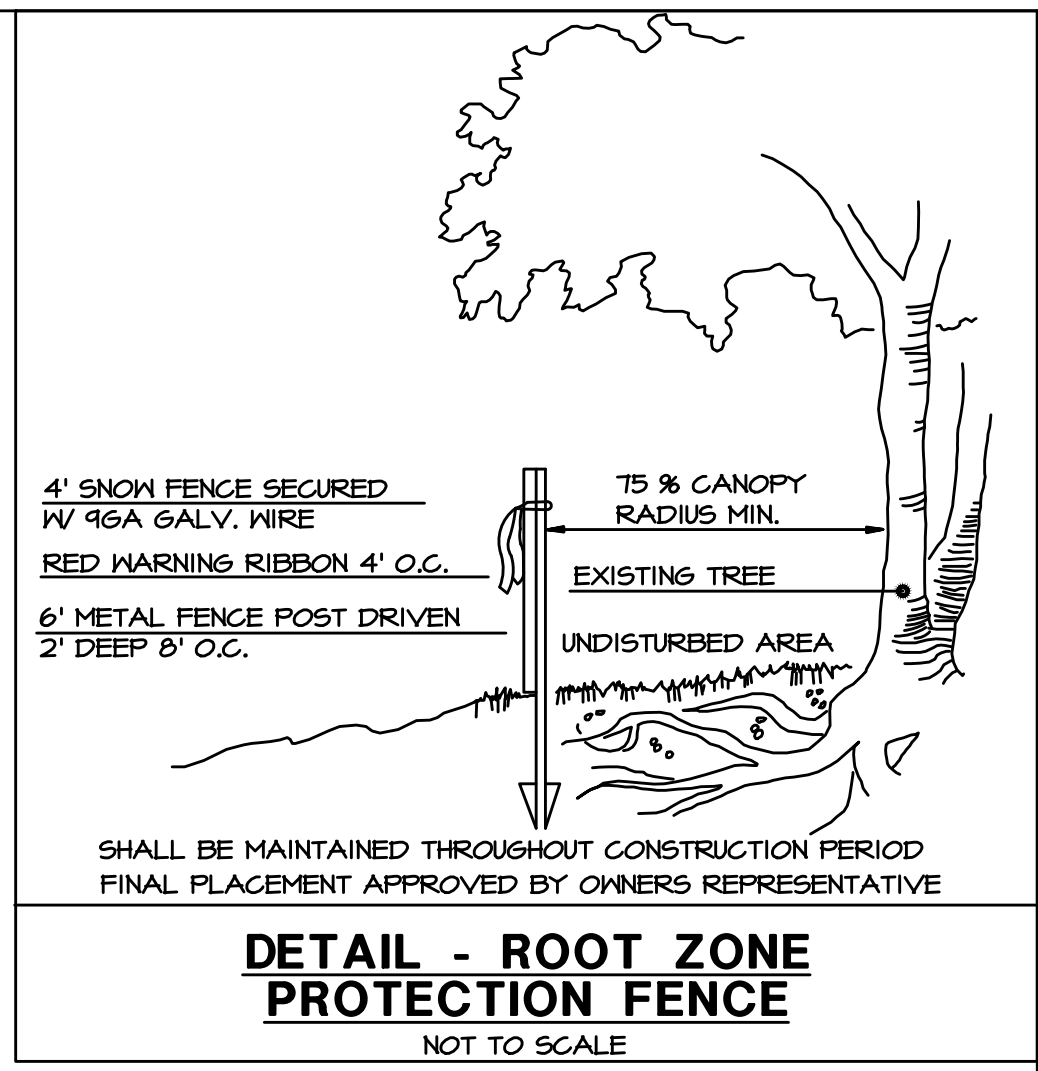


WT JOB NUMBER - 2002139C

WT Group
 Structural | Mechanical/Electrical/Plumbing
 Civil | Land Survey | Telecommunications/Aviation
 Accessibility Consulting | Design & Program Management
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4' SNOW FENCE SECURED
1/4\"/>

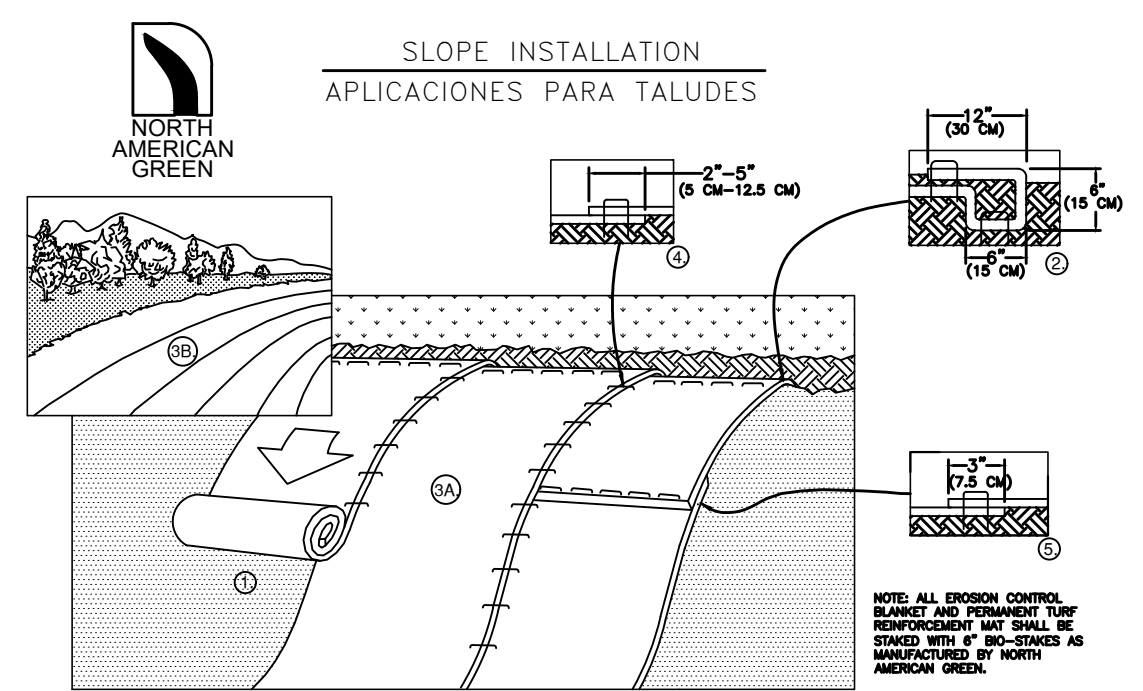
75% CANOPY
RADIUS MIN.

EXISTING TREE

UNDISTURBED AREA

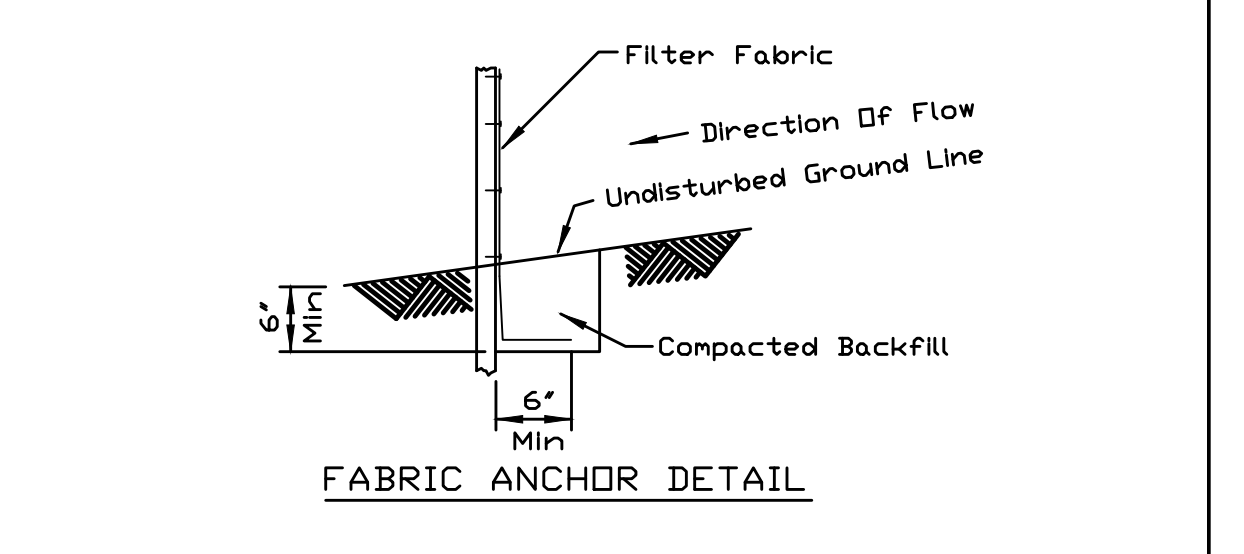
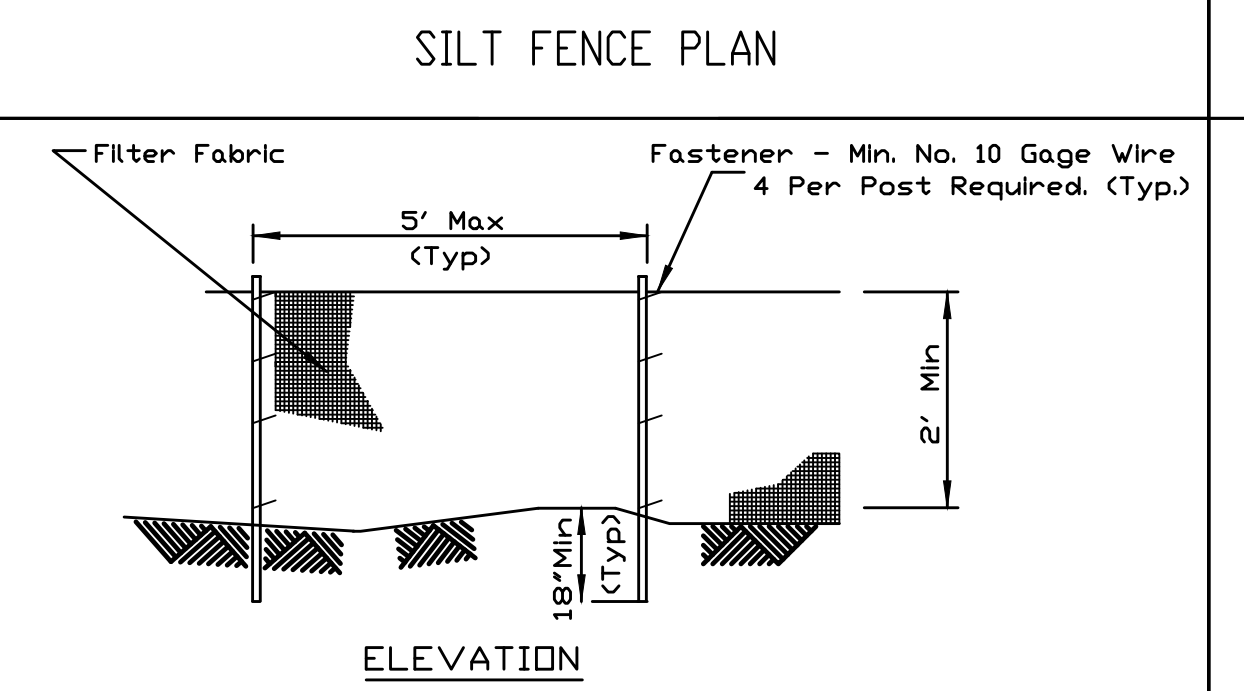
SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD
FINAL PLACEMENT APPROVED BY OWNERS REPRESENTATIVE

DETAIL - ROOT ZONE PROTECTION FENCE
NOT TO SCALE



- NOTES:**
- PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-0-SEED DO NOT SEED PREPARED AREA. CELL-0-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
 - BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30 CM) OF BLANKET EXTENDING BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE BLANKET.
 - ROLL THE BLANKETS (A) DOWN OR (B) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
 - THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON BLANKET TYPE.
 - CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLES) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE BLANKET WIDTH.

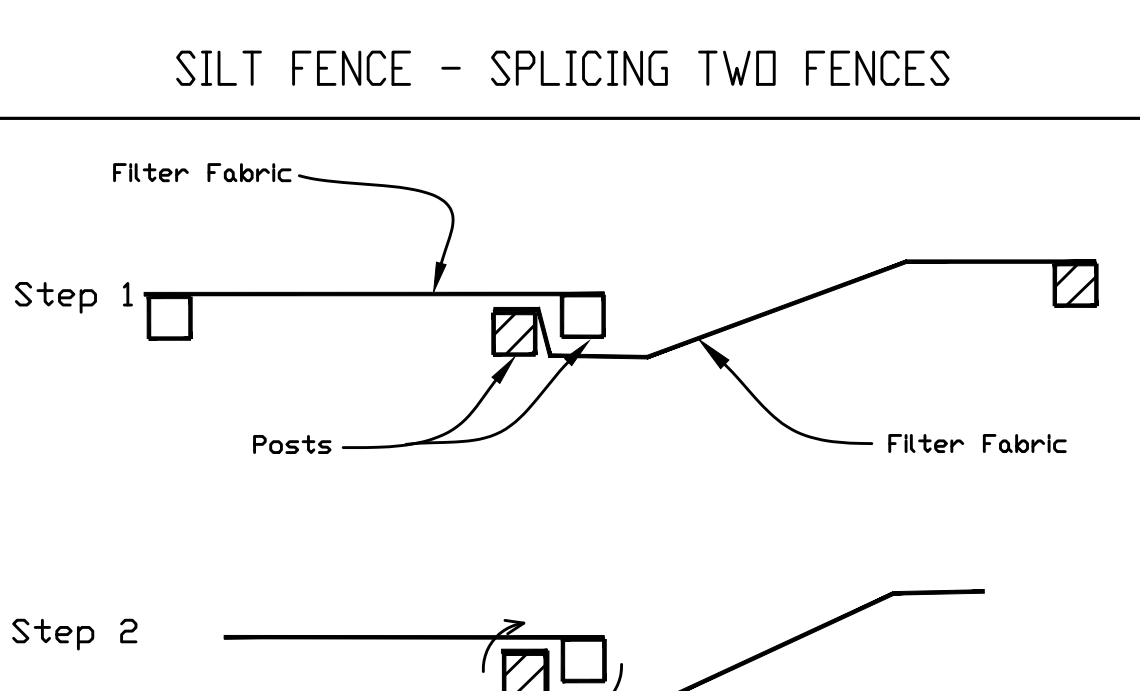
DETAIL - EROSION CONTROL BLANKET
NOT TO SCALE



- NOTES:**
- Temporary sediment fence shall be installed prior to any grading work in the area to be protected. They shall be maintained throughout the construction period and removed in conjunction with the final grading and site stabilization.
 - Filter fabric shall meet the requirements of material specification 592 Geotextile Table 1 or 2, Class I with equivalent opening size of at least 30 for nonwoven and 40 for woven.
 - Fence posts shall be either standard steel post or wood post with a minimum cross-sectional area of 3.0 sq. in.

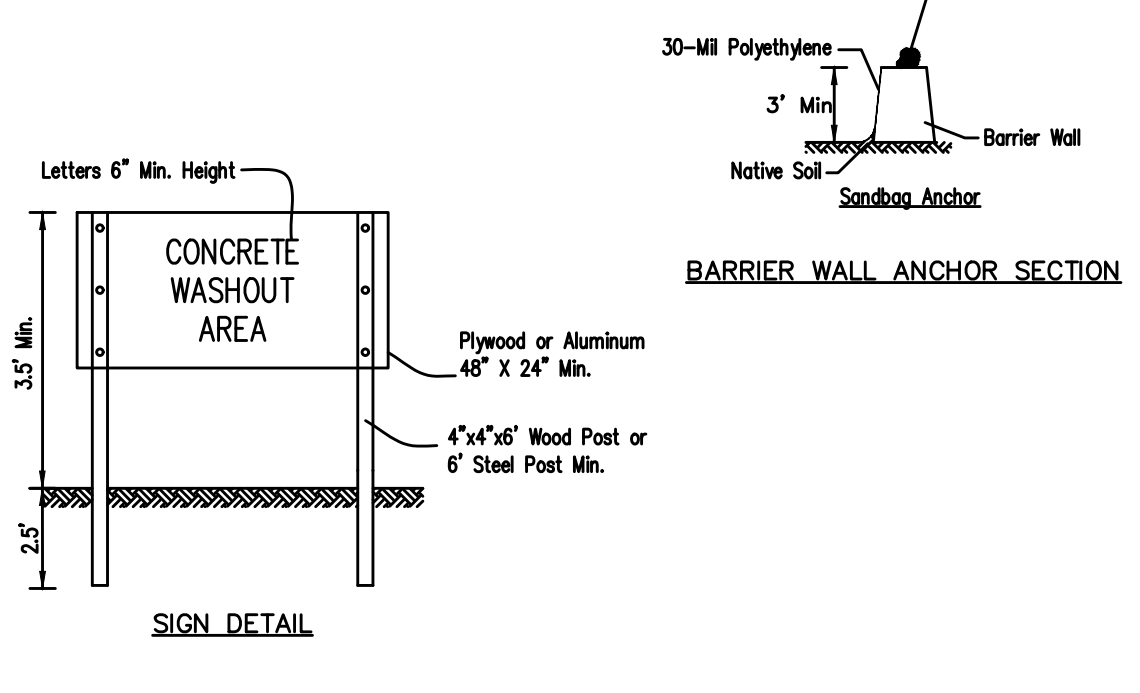
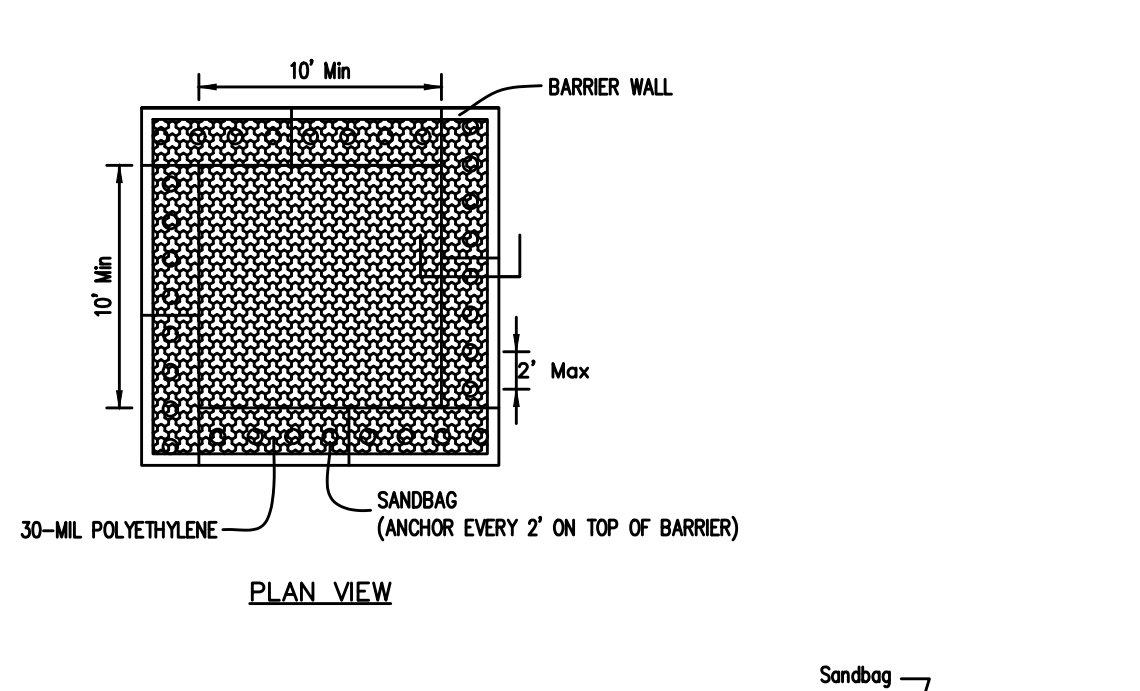
REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620A	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(W)
Designed	DATE	SHEET 1 OF 2	Designed	DATE	SHEET 1 OF 1
Checked	DATE	DATE 3-16-12	Checked	DATE	DATE 2-06-2012
Approved	DATE		Approved	DATE	

DETAIL - SILT FENCE
NOT TO SCALE



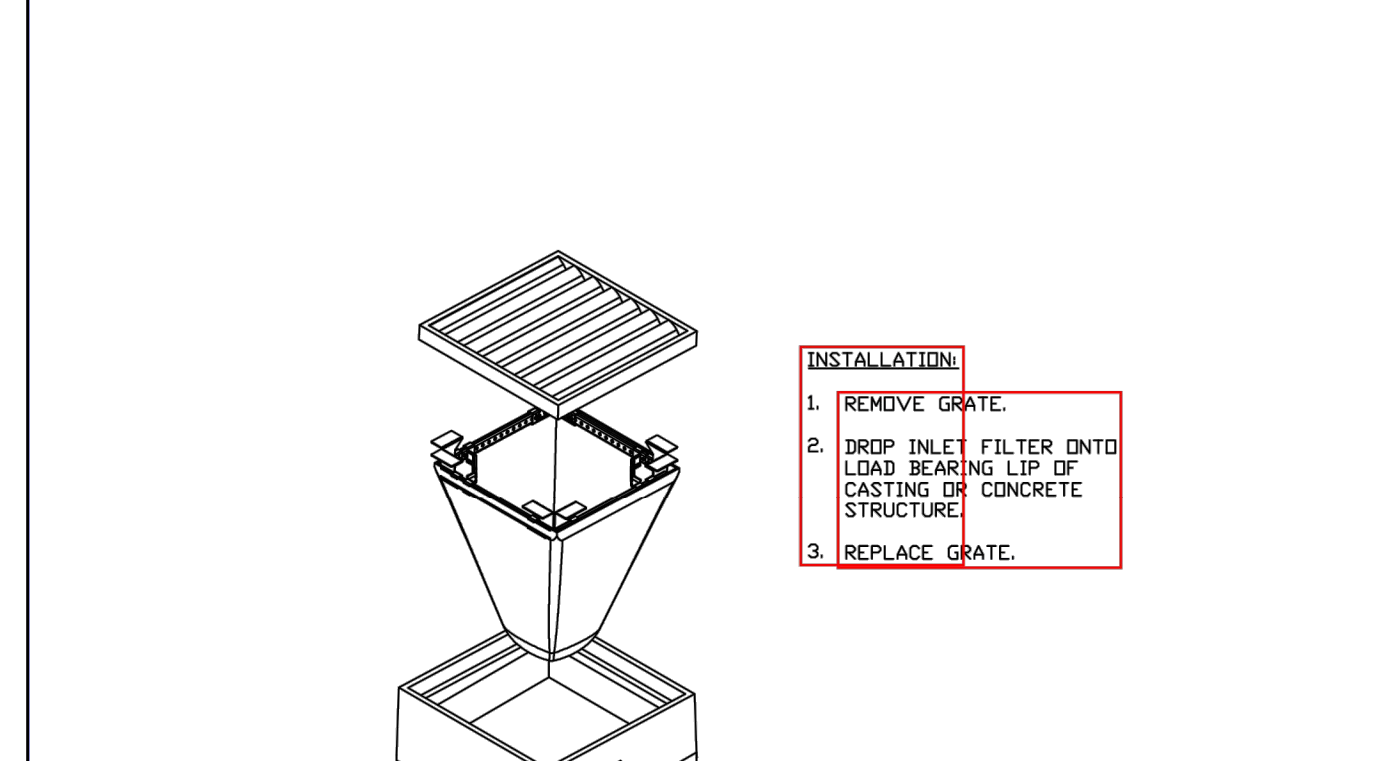
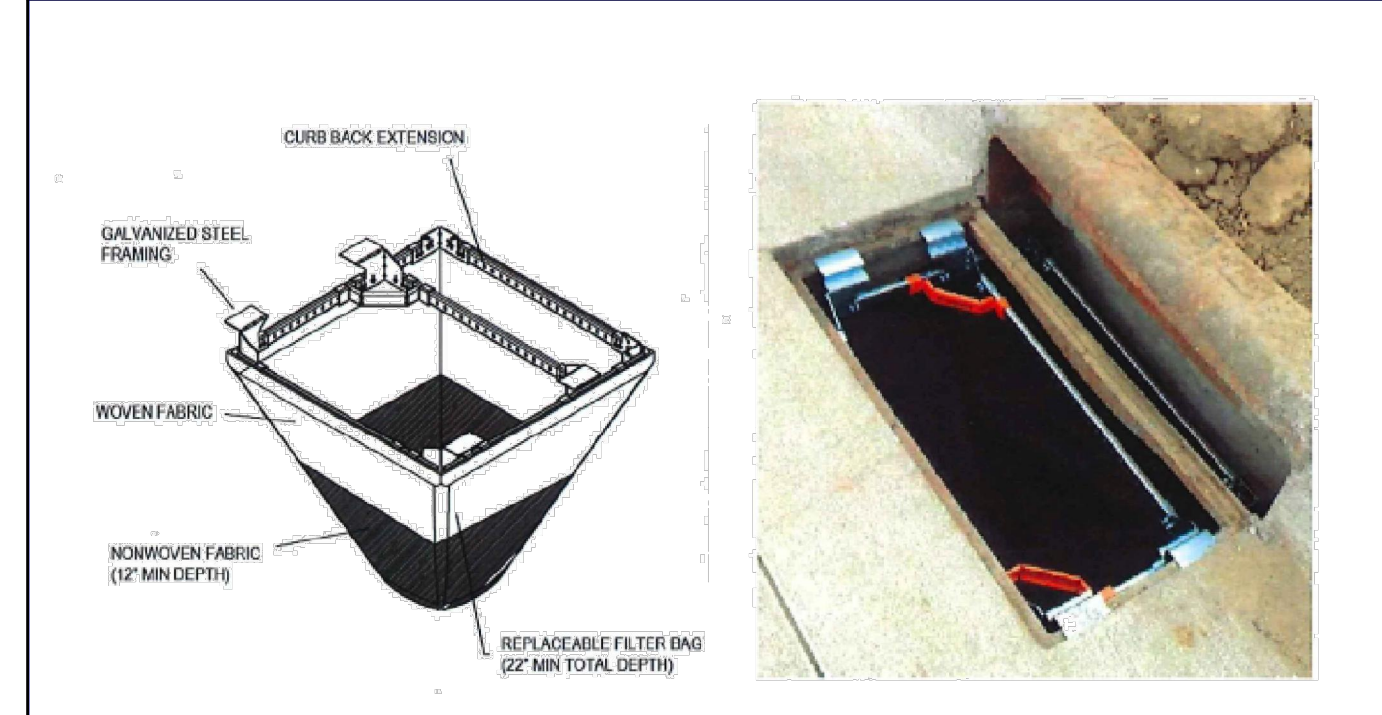
- Place the end post of the second fence inside the end post of the first fence. Rotate both posts at least 180 degrees in a clockwise direction to create a tight seal with the fabric material. Cut the fabric near the bottom of the stakes to accommodate the 6" flap.
- Drive both posts a minimum of 18 inches into the ground and bury the flap.
- Compact backfill (particularly at splices) completely to prevent stormwater piping.

REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(W)	REFERENCE Project	DATE	STANDARD DWG. NO. IUM-620B(W)
Designed	DATE	SHEET 1 OF 1	Designed	DATE	SHEET 1 OF 1
Checked	DATE	DATE 2-06-2012	Checked	DATE	DATE 2-06-2012
Approved	DATE		Approved	DATE	



- NOTES:**
- Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and/or slurry and returning the facilities to a functional condition.
 - Facility shall be cleaned or reconstructed in a new area once washout becomes two-thirds full.

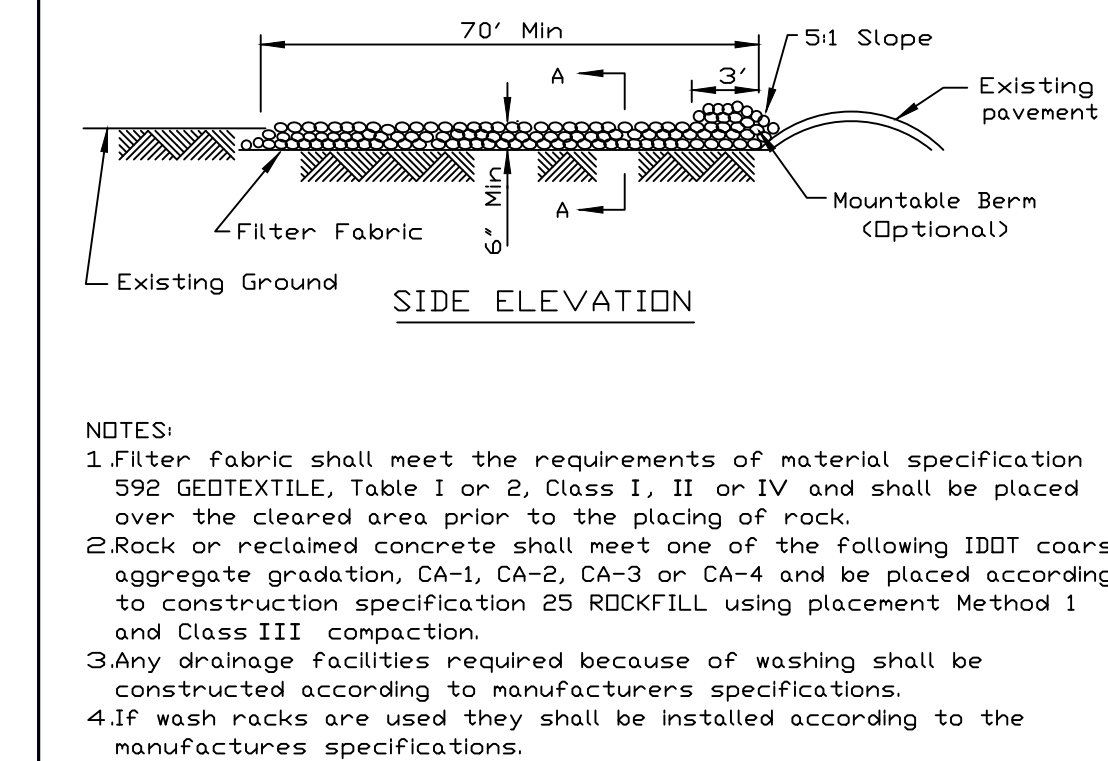
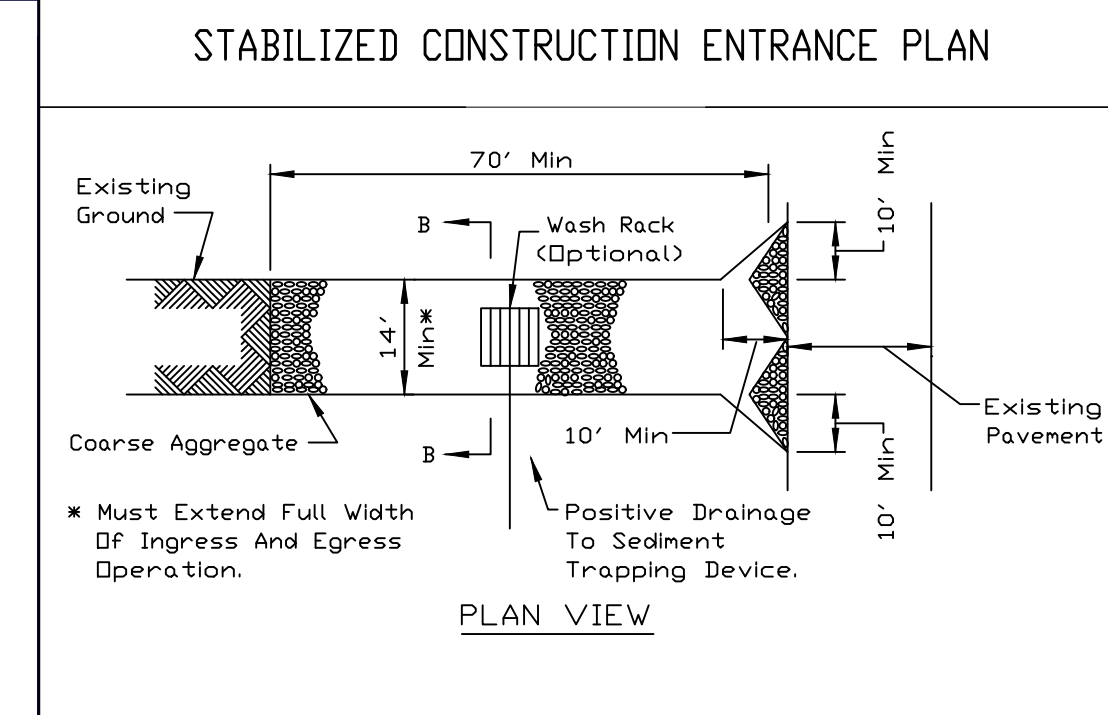
CONCRETE WASHOUT FACILITY



- NOTES:**
- Filter fabric shall meet the requirements of material specification 592 GEOTEXTILE, Table I or 2, Class I, II or IV and shall be placed over the cleared area prior to the placing of rock.
 - Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 RDCKFILL using placement Method 1 and Class III compaction.
 - Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
 - If wash racks are used they shall be installed according to the manufactures specifications.

REFERENCE Project	DATE	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	STANDARD DWG. NO. IL-630	REFERENCE Project	DATE	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	STANDARD DWG. NO. IL-630
Designed	DATE		SHEET 1 OF 2	Designed	DATE		SHEET 2 OF 2
Checked	DATE		DATE 8-18-94	Checked	DATE		DATE 8-18-94
Approved	DATE			Approved	DATE		

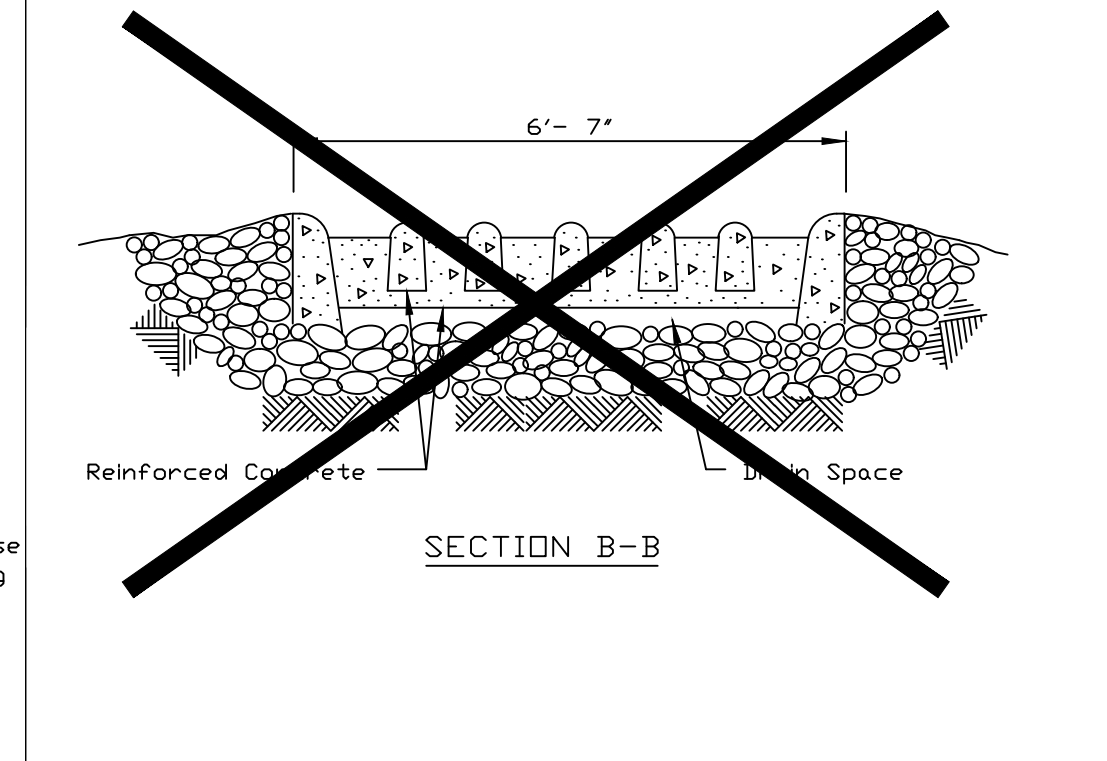
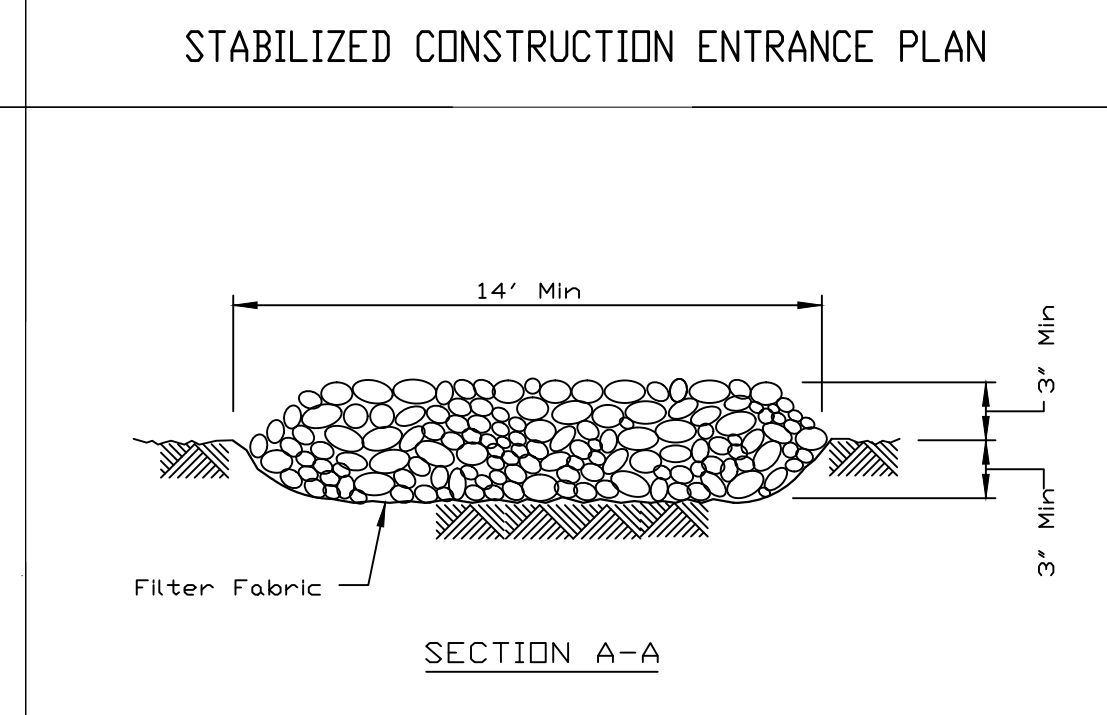
DETAIL - STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



- NOTES:**
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 - Rock or reclaimed concrete shall meet one of the following IDOT coarse aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according to construction specification 25 RDCKFILL using placement Method 1 and Class III compaction.
 - Any drainage facilities required because of washing shall be constructed according to manufacturers specifications.
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REFERENCE Project	DATE	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	STANDARD DWG. NO. IL-630	REFERENCE Project	DATE	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	STANDARD DWG. NO. IL-630
Designed	DATE		SHEET 1 OF 2	Designed	DATE		SHEET 2 OF 2
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DETAIL - STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE



- NOTES:**
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REFERENCE Project	DATE	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	STANDARD DWG. NO. IL-630	REFERENCE Project	DATE	U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ILLINOIS	STANDARD DWG. NO. IL-630
Designed	DATE		SHEET 1 OF 2	Designed	DATE		SHEET 2 OF 2
Checked	DATE		DATE 8-18-94	Checked	DATE		DATE 8-18-94
Approved	DATE			Approved	DATE		

DETAIL - STABILIZED CONSTRUCTION ENTRANCE
NOT TO SCALE

THE CITY OF Fitchburg PUBLIC WORKS

FRAMED INLET PROTECTION

DATE: 2/8/2019

SHEET NO.: 2.01

PRAIRIE FORGE GROUP

300 CARDINAL DRIVE
SUITE 160
SAINT CHARLES IL 60175
630.221.0671 | P
630.221.0718 | F
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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN 53719

ISSUE RECORD

ADR	10-20-20

NOT FOR CONSTRUCTION

CHECKED BY
JEG

DRAWN BY
BRA

DATE
6/25/2020 2:26:36 PM

2020-001

STORMWATER POLLUTION PREVENTION DETAILS

C-6.1

WT JOB NUMBER - 2002139C

WT Group

Structural | Mechanical | Electrical | Plumbing
Civil | Land Survey | Information Systems | Aquatics
Accessibility Consulting | Design & Program Management
Engineering with Precision, Pace & Passion.

2075 Pratum Avenue | Hoffman Estates, IL 60192
P: 224.290.6333 | F: 224.290.8444
wtgrouping.com

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Common Name	% by weight
Grasses	
Creeping Red Fescue	25.0%
Turf-Type Perennial Ryegrass	25.0%
Kentucky Bluegrass	50.0%
	100.00%

B. TURF GRASS SEED MIX FOR SHADY AREAS. SEED MIXTURE SHALL MATCH THE FOLLOWING CHART OR APPROVED EQUAL AND BE SEEDED AT A RATE OF 5 LBS./1000SQ.F.

Common Name	% by weight
Grasses	
Creeping Red Fescue	20.0%
Turf-Type Perennial Ryegrass	20.0%
Hard Fescue	20.0%
Chewings Fescue	20.0%
Kentucky Bluegrass	20.0%
	100.00%

C. DITCHES. SEED MIXTURE SHALL BE NO. 40 PER SECTION 630.2 OF THE WISDOT SPECIFICATIONS.

D. PONDS, SHALES, AND BIORETENTION FACILITIES. SEED MIXTURE SHALL BE NATIVE VEGETATION AS SPECIFIED IN THE SPECIAL PROVISIONS.

3.2.07 FERTILIZER

FERTILIZER SHALL BE TYPE B PER SECTION 624 OF THE WISDOT SPECIFICATIONS.

3.2.08 MULCH

A. CELLULOSE MULCH. MULCH SHALL BE CELLULOSE HYDRAULIC FIBER MULCH AS APPROVED BY ENGINEER.

B. LOOSE STRAW MULCH. LOOSE STRAW MULCH SHALL BE DERIVED FROM WHEAT, OATS, RICE, OR BARLEY AND SHALL BE NEED-FREE, NEED-FREE HAY DERIVED FROM NATIVE GRASSES IS ALSO ACCEPTABLE. USE OF HAY DERIVED FROM ALFALFA IS NOT ALLOWED.

3.2.09 EROSION MAT

EROSION MAT SHALL MEET TYPE I, URBAN, CLASS A (EXCEL SR-1 ALL NATURAL OR APPROVED EQUAL) FOR NON-CHANNEL AREAS AND TYPE II, CLASS C (ROLANCA'S BIOD-MAT TO OR APPROVED EQUAL) FOR CHANNEL AREAS. EROSION MAT FOR NON-CHANNEL AREAS SHALL BE SECURED WITH A BIODEGRADABLE PLASTIC EROSION MAT STAKES A MINIMUM OF FOUR (4) INCHES IN LENGTH WITH A BARBED HEAD. EROSION MAT FOR CHANNEL AREAS SHALL BE SECURED USING ROUND TOP METAL STAPLE WITH A MINIMUM OF EIGHT (8) INCHES IN LENGTH AND 1/2 GA.

3.2.10 RETAINING WALLS

A. BOULDER WALL. THE BOULDERS SHALL BE ROUND FIELDSTONE. THE STONE SHALL CONSIST OF VARYING SIZES AND HEIGHTS. THE MINIMUM HEIGHT SHALL BE 250 POUNDS.

B. MODULAR BLOCK WALL.

1. MASONRY UNITS SHALL BE KEYSTONE RETAINING UNITS, OR EQUAL, AS MANUFACTURED BY MADISON BLOCK AND STONE IN ACCORDANCE WITH ASTM C40 AND ASTM C140.

2. MASONRY UNITS SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 3000 PSI. THE CONCRETE SHALL HAVE A MAXIMUM MOISTURE ABSORPTION OF 8%.

3. STANDARD UNITS SHALL BE CLASSIC STRAIGHT SPLIT FACE, 8 INCHES HIGH BY 10 INCHES WIDE. TOP ROW OF UNITS SHALL HAVE A SMOOTH FACE. COLOR OF UNITS TO BE SELECTED BY OWNER.

4. CONNECTING PINS SHALL BE 1/2-INCH DIAMETER THERMOSET ISOPHTHALIC POLYESTER RESIN-POLYTRUDED FIBERGLASS REINFORCEMENT RODS. PINS SHALL HAVE A MINIMUM FLEXURAL STRENGTH OF 120,000 PSI AND SHORT BEAM SHEAR OF 6,400 POUNDS PER ASTM D4475.

5. BASE LEVELLING PAD MATERIAL SHALL BE 6 INCHES OF COMPACTED CRUSHED STONE, 3/8 INCH TO 3/4 INCH. FEA GRAVEL SHALL NOT BE ALLOWED.

6. UNIT FILL SHALL BE FREE DRAINING, WELL GRADED CRUSHED STONE, 3/8 INCH TO 3/4 INCH, WITH NO MORE THAN 5% PASSING THE NO. 200 SIEVE.

3.3 EXECUTION

3.3.01 SITE CLEARING

A. GENERAL. REMOVE TREE SHRUBS, GRASS AND OTHER VEGETATION, IMPROVEMENTS, OR OBSTRUCTIONS INTERFERING WITH INSTALLATION OF NEW CONSTRUCTION. REMOVE SUCH ITEMS ELSEWHERE ON SITE OR PREMISES AS SPECIFICALLY INDICATED. REMOVE AND LEGALLY DISPOSE OF ALL STUMPS AND ROOTS THAT ARE NOT SUITABLE FOR BACKFILL MATERIAL WITHIN THE RIGHT-OF-WAY.

WHEN REMOVING TREES, SPECIAL CARE SHALL BE TAKEN SO AS NOT TO DAMAGE SURROUNDING PRIVATE PROPERTY.

TREES AND SHRUBS MARKED FOR REMOVAL ON THE PLANS SHALL NOT BE REPLACED. CONTRACTOR SHALL REPLACE ALL OTHER REMOVED AND DAMAGED TREES, BUSHES AND SHRUBS WITHIN THE PROJECT LIMITS WITH NEW STOCK AT CONTRACTOR'S EXPENSE. NEW TREES SHALL BE LOCATED AS REQUESTED BY ENGINEER. IF THE BUSH OR SHRUB IS DAMAGED, OR DIES AFTER RESTORING, CONTRACTOR SHALL REPLACE IT WITH ONE OF SAME KIND AND SIZE UP TO A HEIGHT OF FOUR FEET (4). BUSHES AND SHRUBS BEYOND THIS HEIGHT SHALL BE REPLACED WITH ONE OF SAME KIND AND HEIGHT OF FOUR FEET (4).

B. TREE PROTECTION. CAREFULLY AND CLEANLY CUT ROOTS AND BRANCHES OF TREES INDICATED TO BE LEFT STANDING. WHERE SUCH ROOTS AND BRANCHES OBSTRUCT NEW CONSTRUCTION SEE SECTION 1.215 TREE PROTECTION.

TREES WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED. CONTRACTOR SHALL RETAIN THE SERVICES OF A PROFESSIONAL NURSERYMAN WHO IS A MEMBER OF THE NATIONAL ARBORIST ASSOCIATION TO DIRECT THEM ON THE PROPER REPAIR OF DAMAGED TREES. DAMAGED LIMBS AND ROOTS SHALL BE PRUNED OR DRESSED ACCORDING TO RECOMMENDATIONS OF THE NURSERYMAN. BACKFILL SHALL BE REPLACED AS SOON AS POSSIBLE TO REDUCE EXPOSURE OF ROOTS TO AIR. SCARPED AREAS ON TREES SHALL BE SUITABLY DRESSED.

C. TOPSOIL STRIPPING. STRIP TOPSOIL TO WHATEVER DEPTHS ENCOUNTERED IN A MANNER TO PREVENT INTERMIXING WITH UNDERLYING SUBSOIL OR OTHER OBJECTIONABLE MATERIAL.

1. REMOVE HEAVY GROWTHS OF GRASS FROM AREAS BEFORE STRIPPING.

2. WHERE TREES ARE INDICATED TO BE LEFT STANDING, STOP TOPSOIL STRIPPING AT DRIP LINE OF TREE TO PREVENT DAMAGE TO MAIN ROOT SYSTEM UNLESS DIRECTED OTHERWISE BY THE ENGINEER.

STOCKPILE TOPSOIL IN STORAGE PILES IN AREAS SHOWN, OR WHERE DIRECTED. CONSTRUCT STORAGE PILES TO FREELY DRAIN SURFACE WATER. COVER STORAGE PILES IF REQUIRED TO PREVENT WIND-BLOWN DUST.

3.3.02 EXCAVATION

UNLESS OTHERWISE SPECIFIED WITH APPROPRIATE BID ITEMS, EXCAVATION IS UNCLASSIFIED AND INCLUDES BUT NOT LIMITED TO SUBGRADE ELEVATIONS INDICATED, REGARDLESS OF CHARACTER OF MATERIALS AND OBSTRUCTIONS ENCOUNTERED.

WHEN EXCAVATION HAS REACHED REQUIRED SUBGRADE ELEVATIONS AND ALL UTILITY CROSSINGS HAVE BEEN INSTALLED, NOTIFY THE ENGINEER WHO WILL MAKE INSPECTIONS OF CONDITIONS. ENGINEER SHALL CHECK SUBGRADE ELEVATIONS AND VERIFY ALL UTILITY CROSSINGS HAVE BEEN INSTALLED. ONCE SUBGRADE ELEVATIONS ARE CORRECT AND ALL CROSSINGS HAVE BEEN INSTALLED, ENGINEER SHALL PERFORM A TEST ROLL PRIOR TO PLACEMENT OF BASE COURSE. IF UNSUITABLE BEARING MATERIALS ARE ENCOUNTERED AT REQUIRED SUBGRADE ELEVATIONS, CONTRACTOR SHALL CARRY EXCAVATIONS DEEPER AND REPLACE EXCAVATED MATERIAL AS DIRECTED BY ENGINEER.

BASE COURSE PLACED ON UNSTABLE FOUNDATION SHALL BE REMOVED AND REPLACED FOLLOWING UNDERCUT OF THE AFFECTED AREA, ALL AT CONTRACTOR'S EXPENSE.

UNDERCUT AREAS SHALL BE BACKFILLED WITH BREAKER RUN MATERIAL PER SECTION 5 - PAVEMENTS AND, WHERE REQUESTED BY ENGINEER IN THE FIELD, SHALL BE LINED WITH GEOTEXTILE MATERIAL. 1) TAPERED EDGES SHALL BE PROVIDED FOR ALL UNDERCUT AREAS AS DIRECTED BY ENGINEER. UNDERCUT SHALL BE CARRIED THROUGH UNTIL IT REACHES WHEN DIRECTED BY THE ENGINEER. SLOPE SIDES OF EXCAVATIONS SHALL COMPLY WITH LOCAL CODES AND ORDINANCES HAVING JURISDICTION. SHORE AND BRACE WHERE SLOPING IS NOT POSSIBLE BECAUSE OF SPACE RESTRICTIONS OR STABILITY OF MATERIAL EXCAVATED.

MAINTAIN SIDES AND SLOPES OF EXCAVATIONS IN SAFE CONDITION UNTIL COMPLETION OF BACKFILLINGS.

STOCKPILE SATISFACTORY EXCAVATED MATERIALS WHERE DIRECTED UNTIL REQUIRED FOR BACKFILL OR FILL. PLACE, GRADE AND SHAPE STOCKPILES FOR PROPER DRAINAGE.

ALL ABANDONED PRIVATE UTILITY PIPES THAT ARE EXPOSED DURING EXCAVATION SHALL BE PLUGGED WITH CONCRETE, UNLESS DIRECTED OTHERWISE BY THE PRIVATE UTILITY OWNER. CONTRACTOR SHALL NOTIFY ENGINEER AND OBTAIN APPROVAL OF ABANDONMENT PRIOR TO BACKFILLING.

LOCATE AND RETAIN SOIL MATERIAL AWAY FROM EDGE OF EXCAVATIONS. DO NOT STORE WITHIN DRIP LINE OF TREES INDICATED TO REMAIN.

A. EXCAVATION FOR STRUCTURES. CONFORM TO ELEVATIONS AND DIMENSIONS SHOWN WITHIN A TOLERANCE OF PLUS OR MINUS 0.10; AND EXTENDING A SUFFICIENT DISTANCE FROM FOOTINGS AND FOUNDATIONS TO PERMIT PLACING AND REMOVAL OF CONCRETE FORM WORK. INSTALLATION OF SERVICES, OTHER CONSTRUCTION, AND FOR INSPECTION.

B. EXCAVATION FOR FOOTINGS AND FOUNDATIONS. IN EXCAVATING FOR FOOTINGS AND FOUNDATIONS, TAKE CARE NOT TO DISTURB BOTTOM OF EXCAVATION. EXCAVATE BY HAND TO FINAL GRADE JUST BEFORE CONCRETE REINFORCEMENT IS PLACED. TRIM BOTTOMS TO REQUIRED LINES AND GRADES TO LEAVE SOLID BASE TO RECEIVE OTHER WORK.

C. FULVERIZE PAVEMENT. CONTRACTOR SHALL FULVERIZE THE FULL-DEPTH EXISTING ASPHALT SURFACE. THE FULVERIZED MATERIAL SHALL BE USED AS PART OF THE ROAD BASE. ANY SURPLUS GRINDINGS SHALL BE HAULED TO A CITY DESIGNATED SITE. BY THE CONTRACTOR. ALL LIMITS FOR THE FULVERIZED AREA SHALL BE SAUCUT TO PROVIDE BUTT JOINTS AT INTERSECTING STREETS AND DRIVEWAYS.

3.3.03 DISPOSAL OF WASTE MATERIALS

REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM OWNER'S PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER. BURNING ON OWNER'S PROPERTY IS NOT PERMITTED, UNLESS APPROVED BY THE CITY.

3.3.04 BACKFILL AND FILL

PLACE ACCEPTABLE SOIL MATERIAL LAYERS TO REQUIRED SUBGRADE ELEVATIONS, FOR EACH AREA CLASSIFICATION LISTED BELOW. CONTRACTOR SHALL BACKFILL EXCAVATIONS AS PROMPTLY AS WORK PERMITS.

A. IN EXCAVATIONS, USE SATISFACTORY EXCAVATED OR BORROW MATERIAL.

B. UNDER GRASSED AREAS, USE SATISFACTORY EXCAVATED OR BORROW MATERIAL.

C. UNDER WALLS, PAVEMENTS AND RIGHT-OF-WAY. SELECT FILL FOR THE FIRST THREE FEET (3') BELOW FINISHED SURFACE AND SATISFACTORY EXCAVATED OR BORROW MATERIAL BELOW THE FIRST THREE FEET (3') THAT WILL MEET THE COMPACTION REQUIREMENTS.

D. UNDER BUILDING SLABS, USE SELECT FILL MATERIAL.

3.3.05 COMPACTION

CONTROL SOIL COMPACTION DURING CONSTRUCTION PROVIDING MINIMUM PERCENTAGE OF DENSITY SPECIFIED FOR EACH AREA CLASSIFICATION.

COMPACT SOIL TO NOT LESS THAN THE FOLLOWING PERCENTAGES OF MAXIMUM DRY DENSITY FOR SOILS WHICH EXHIBIT A WELL-DEFINED MOISTURE DENSITY RELATIONSHIP (COHESIVE SOILS) DETERMINED IN ACCORDANCE WITH ASTM D 1587; AND NOT LESS THAN THE FOLLOWING PERCENTAGE OF MAXIMUM DRY DENSITY, DETERMINED IN ACCORDANCE WITH ASTM D 2049, FOR SOILS WHICH WILL NOT EXHIBIT A WELL-DEFINED MOISTURE-DENSITY RELATIONSHIP (COHESION LESS SOILS).

A. STRUCTURES, WALKWAYS AND PAVEMENTS. COMPACT TOP THREE FEET (3') OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM DRY DENSITY AND ALL LAYERS BELOW THREE FEET (3') AT 90% MAXIMUM DRY DENSITY.

B. LAWN OR UNPAVED AREAS. COMPACT TOP SIX INCHES (6") OF SUBGRADE AND EACH LAYER OF BACKFILL OR FILL MATERIAL AT 95% MAXIMUM DRY DENSITY FOR COHESIVE SOILS AND 90% MAXIMUM DRY DENSITY FOR COHESIONLESS SOILS.

C. FULVERIZED PAVEMENT. TO ACHIEVE COMPACTION, CONTRACTOR SHALL WATER AND ROLL THE FULVERIZED MATERIAL USING A VIBRATING ROLLER.

WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE MOISTURE CONDITIONED BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OF SUBGRADE, OR LAYER OF SOIL MATERIAL. APPLY WATER IN MANNER TO PREVENT FREE WATER APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS.

WHERE SUBGRADE OR LAYER OF SOIL MATERIAL IS TOO MOIST REMOVE AND REPLACE, OR SCARIFY AND AIR DRY, TO PERMIT COMPACTION TO SPECIFIED DENSITY. SOIL MATERIAL THAT HAS BEEN REMOVED BECAUSE IT IS TOO MOIST TO PERMIT COMPACTION MAY BE STOCKPILED OR SPREAD AND ALLOWED TO DRY. ASSIST DRYING BY DISKING, HARROWING OR FULVERIZING UNTIL MOISTURE CONTENT IS REDUCED TO A SATISFACTORY VALUE.

3.3.06 GEOTEXTILES

GEOTEXTILES SHALL BE PLACED AS REQUESTED BY THE ENGINEER TO STABILIZE SUBGRADE AREAS. CONSTRUCTION FABRIC SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

3.3.07 DEEP TILLING

PRIOR TO FINAL LANDSCAPING, THE SOIL STRUCTURE OF ALL AREAS THAT HAVE BEEN COMPACTED BY CONSTRUCTION EQUIPMENT SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS BY DEEP TILLING WITH A RIPPER OR SIMILAR TOOL FOLLOWED BY CHISEL PLOWING OR SIMILAR METHODS. THE CUTS SHALL BE MADE ON THE CONTOURS PERPENDICULAR TO THE DIRECTION OF SURFACE WATER FLOW. THE DEPTH OF TILLING SHALL BE AT LEAST 2 INCHES BELOW THE HARROW PLAN OR COMPACTED ZONE, AS DETERMINED BY A SOIL PROBE OR SOIL PENETROMETER, UP TO A MAXIMUM DEPTH OF 36 INCHES. THE MAXIMUM SPACING OF THE RIPPER CUTS SHALL BE 5 FEET. RIPPING SHALL BE FOLLOWED BY CHISEL PLOWING TO A DEPTH OF 12 INCHES, IN CASES WHERE THE DEPTH OF THE HARROW PLAN OR COMPACTED ZONE IS LESS THAN 10 INCHES. CHISEL PLOWING ALONE MAY BE USED WITHOUT PRIOR RIPPING.

3.3.08 TOPSOIL

TOPSOIL SHALL BE PLACED AND SPREAD AT A UNIFORM DEPTH. IF NO DEPTH IS SHOWN, PLACE AND SPREAD TOPSOIL TO A MINIMUM DEPTH OF SIX INCHES (6').

3.3.04 FINE GRADING

UNIFORMLY GRADE AREAS THAT ARE CALLED OUT FOR RESTORATION. BREAK DOWN ALL CLODS AND LUMPS WITHIN THE TOPSOIL USING THE APPROPRIATE EQUIPMENT, TO PROVIDE A UNIFORMLY TEXTURED SOIL. A SMOOTH FINISHED SURFACE SHALL BE PROVIDED WITHIN A TOLERANCE OF PLUS OR MINUS ONE-HALF INCH (1/2").

3.3.10 SEED RESTORATION

ALL AREAS DISTURBED BY GRADING, STREET, UTILITY, CURB AND GUTTER, AND SIDEWALK CONSTRUCTION, SHALL BE RESTORED. BACKSLOPES ADJACENT TO THE SIDEWALK SHALL BE SEED TO THE SLOPE INTERCEPT.

SEEDING SHALL BE PERFORMED IN ACCORDANCE WITH METHOD A OR A MODIFIED METHOD B OF SECTION 630 OF THE WISDOT SPECIFICATIONS AND APPLIED AT A RATE OF 5 LB/1000 SF.

HYDROMULCHING SHALL BE PERFORMED IN ACCORDANCE WITH METHOD B, OF SECTION 630 OF THE WISDOT SPECIFICATIONS, MODIFIED TO INCLUDE A MULCHING MATERIAL. . MULCH SHALL BE APPLIED IN AT LEAST TWO DIRECTIONS AT A RATE OF 2,000 POUNDS PER ACRE.

FOR RESTORATION OF AREAS UNDER 50 SQUARE FEET, LOOSE STRAW MAY BE HAND SCATTERED UNIFORMLY OVER THE SEEDED AREA IN LIEU OF HYDROMULCHING.

3.3.11 EROSION MAT

ALL EROSION MAT SHALL BE SECURED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR THE FOLLOWING, WHICHEVER IS MORE RESTRICTIVE. CLASS 1 URBAN TYPE A EROSION MAT SHALL BE SECURED WITH A MINIMUM 1.75 STAPLES PER SQUARE YARD. SPACING OF ANY SINGLE STAPLE SHALL NOT BE MORE THAN THREE FEET (3') FROM AN ADJOINING STAPLE. CLASS II, TYPE C MAT SHALL BE SECURED WITH A MINIMUM 9.5 STAPLES PER SQUARE YARD. SPACING SHALL NOT BE MORE THAN TWO FEET (2') FROM AN ADJOINING STAPLE. EROSION MAT IS NECESSARY FOR ALL SLOPES STEEPER THAN 5:1 WITH CLASS OF MAT SPECIFIED BY ENGINEER.

3.3.12 INFILTRATIVE PRACTICES

INFILTRATIVE PRACTICES (SUCH AS BIORETENTION BASINS AND INFILTRATION BASINS) SHALL BE CONSTRUCTED IN ACCORDANCE WITH DANE COUNTY / GREEN TIERS INFILTRATION PRACTICE CONSTRUCTION GUIDANCE DOCUMENT, AVAILABLE AT: [HTTPS://WWW.LWRP.COM/OFDANE.COM/DOCUMENTS/STORMWATER/INFILTRATION-PRACTICE-CONSTRUCTION-GUIDANCE.PDF](https://www.lwrp.com/OFDANE.COM/DOCUMENTS/STORMWATER/INFILTRATION-PRACTICE-CONSTRUCTION-GUIDANCE.PDF).

A GEOTECHNICAL ENGINEER SHALL BE ON SITE DURING CONSTRUCTION OF INFILTRATION PRACTICES TO VERIFY CONSTRUCTION OF PRACTICE. ALL MATERIALS USED, AND NATIVE SOILS. DOCUMENTATION FROM THIS PROFESSIONAL SHALL BE REQUIRED AS PART OF THE AS-BUILT CERTIFICATION.

DEEP TILL NATIVE SOILS PRIOR TO PLACING IMPORTED MATERIALS ON TOP, IF APPLICABLE. AFTER FINAL GRADING OF INFILTRATION PRACTICE, DEEP TILL THE ENTIRE PRACTICE PRIOR TO RESTORATION UPON ENGINEER'S DISCRETION.

3.3.13 RETAINING WALLS

A. BOULDER WALL. IN AREAS AS GENERALLY SHOWN ON THE DRAWINGS AND AS SPECIFICALLY NOTED IN THE FIELD BY THE ENGINEER. CONTRACTOR SHALL CONSTRUCT BOULDER RETAINING WALLS. THE STONE SHALL BE PLACED RANDOMLY. THE LARGER STONE SHALL BE PLACED AT THE BOTTOM. THE MINIMUM BATTER SHALL BE THREE INCHES (3') IN ONE VERTICAL FOOT UNLESS OTHERWISE ALLOWED BY ENGINEER. GEOTEXTILE FABRIC SHALL BE INSTALLED BEHIND THE WALL TO PREVENT THE BACKFILL FROM ERODING THROUGH THE JOINTS AND COURSES. BACKFILL SHALL MEET THE REQUIREMENTS OF SECTION 204 OF THE WISDOT SPECIFICATIONS. THE LAYOUT OF THE WALL SHALL BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION OF THE WALL. A SUITABLE FOUNDATION, AS APPROVED BY ENGINEER, SHALL BE PROVIDED TO PRECLUDE SETTLEMENT. THE WALL MAY BE CONSTRUCTED IN CONJUNCTION WITH THE NEW EMBANKMENT. SOME CHINKING MAY BE REQUIRED TO SECURE STABILITY OF THE STONES.

B. MODULAR BLOCK RETAINING WALL. MODULAR WALL UNITS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS.

- ASTM C40 - LOAD BEARING CONCRETE MASONRY UNITS.
- ASTM C140 - SAMPLING AND TESTING CONCRETE MASONRY UNITS.
- ASTM D4475 - APPARENT HORIZONTAL SHEAR STRENGTH OF FULTRUDED REINFORCED PLASTIC RODS BY THE SHORT-BEAM METHOD.
- ASTM D2394 - STRENGTH PROPERTIES ADHESIVES IN TWO-PLY WOOD CONSTRUCTION IN SHEAR BY TENSION LADING.

THE FIRST COURSE OF WALL UNITS SHALL BE PLACED ON THE BASE LEVELLING PAD. THE UNITS SHALL BE CHECKED FOR LEVEL AND ALIGNMENT. BOTTOM OF WALL SHALL BE A MINIMUM OF 12 INCHES BELOW FINISHED GRADE.

UNITS SHALL BE PLACED SIDE BY SIDE FOR FULL LENGTH OF WALL. ALIGNMENT MAY BE DONE BY A STRINGS OFFSET OR OFFSET FROM SIDEWALK.

UNITS SHALL BE INTERLOCKED WITH NON-CORROSIVE FIBERGLASS PINS. PINS SHALL PROTRUDE INTO ADJOINING COURSES ABOVE A MINIMUM OF ONE INCH (1"). TWO PINS REQUIRED PER UNIT.

UNIT FILL SHALL BE PLACED DIRECTLY BEHIND THE WALL TO A MINIMUM WIDTH OF 12 INCHES.

ALL VOIDS INSIDE AND BETWEEN UNITS AND DRAINAGE ZONE BEHIND UNITS SHALL BE FILLED WITH TAMPED UNIT FILL MATERIAL.

ALL CAPSTONE BLOCK SHALL BE ATTACHED WITH THE ADHESIVE PER THE MANUFACTURER'S INSTRUCTIONS.

3.3.14 MAINTENANCE

PROTECT NEELY GRADED AREAS FROM TRAFFIC AND EROSION. KEEP FREE OF TRASH AND DEBRIS. REPAIR AND RE-ESTABLISH GRADES IN SETTLED, ERODED, AND RUTTED AREAS TO SPECIFIED TOLERANCES.

WHERE SETTLING IS MEASURABLE OR OBSERVABLE AT EXCAVATED AREAS DURING GENERAL PROJECT NARRATIVE PERIOD, REMOVE SURFACE (PAVEMENT, LAWN OR OTHER FINISH), ADD BACKFILL MATERIAL, COMPACT, AND REPLACE SURFACE TREATMENT. RESTORE APPEARANCE, QUALITY, AND CONDITION OF SURFACE OR FINISH TO MATCH ADJACENT WORK, AND ELIMINATE EVIDENCE OF RESTORATION TO GREATEST EXTENT POSSIBLE.

3.3.15 RIPRAP

RIPRAP SHALL BE UNDERLINED WITH A GEOTEXTILE FABRIC AND SHALL BE PLACED AT THE ENDS OF PIPE OUTFALLS AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN ACCORDANCE WITH SECTION 606 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND IN ACCORDANCE WITH SECTION 645 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF TWO FEET (2') UNDER APRON ENDWALLS. RIPRAP SHALL EXTEND TO THE SPRING LINE OF THE ENDWALL. SUBSTITUTION OF RECYCLED CONCRETE FOR RIPRAP IS PROHIBITED. SEE STANDARD DETAIL DRAWING 6.06.

3.3.16 UTILITY LINE OPENINGS (ULO'S)

THIS WORK CONSISTS OF EXCAVATING TO UNCOVER UTILITIES FOR THE PURPOSE OF DETERMINING ELEVATION AND POTENTIAL CONFLICT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN THE FIELD. THE EXCAVATION SHALL BE DONE IN SUCH A MANNER THAT THE UTILITY IN QUESTION IS NOT DAMAGED, AND THE SAFETY OF THE WORKERS IS NOT COMPROMISED. THE UTILITY LINE OPENINGS SHALL BE PERFORMED AS SOON AS POSSIBLE AND AT LEAST THREE (3) DAYS IN ADVANCE OF PROPOSED UTILITY OR STREET CONSTRUCTION TO ALLOW ANY CONFLICTS TO BE RESOLVED WITH MINIMAL DISRUPTION ALL UTILITY LINE OPENINGS SHALL BE APPROVED AND COORDINATED WITH THE ENGINEER. STEPS FOR BASIC POTHOLING:

- A) SAW CUT PAVEMENT FULL-DEPTH WITH A BIT 12" TO 16A IN DIAMETER RESULTING IN A "CORE".
- B) REMOVE CORE AND SAVE FOR REUSE IF STRUCTURALLY SOUND.
- C) PLACE A PROTECTIVE STEEL RING TO PROTECT THE EDGE OF THE OPENING FROM DAMAGE.
- D) USE VACUUM EQUIPMENT TO EXCAVATE COMPACTED MATERIAL FROM THE BOTTOM OF BASE COURSE TO BENEATH THE UTILITY FACILITY.
- E) PERFORM UTILITY WORK (E.G., WATCH BORE HEAD, LEAK REPAIR, SERVICE CONNECTION).
- F) PROTECT UTILITY FACILITY WITH FINE MATERIAL.

- G) PLACE SELF-MIXING FLOWABLE FILL MATERIAL FROM THE TOP OF THE FINE MATERIAL TO BOTTOM OF THE BASE COURSE (FILL IS DESIGNED TO BE TRAFFIC-BEARING IN ~40 MINUTES).
- H) PLACE NON-SHRINK GROUT (GROUT IS DESIGNED TO BE TRAFFIC-BEARING IN ~40 MINUTES).
- I) PLACE THE REMOVED CORE (OR A GENERIC EQUIVALENT REPLACEMENT CORE) IN THE REMAINING OPENING (ORIGINAL ALIGNMENT AND ORIENTATION IS MAINTAINED IF REMOVED CORE IS USED) FORGING THE GROUT TO THE SURFACE TO FILL THE ANNULAR SPACE AND CORE EXTRACTION HOLE.
- J) SEAL THE RESTORED OPENING END

SECTION 4 - CONCRETE AND CONCRETE STRUCTURES

4.1 GENERAL

4.1.01 RELATED DOCUMENTS WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSTANDARDS.DOT.WI.GOV/STANDARDS/STDSPEC/INDEX.HTM](http://roadwaystandards.dot.wi.gov/standards/STDSPEC/INDEX.HTM)

4.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES THE PROVISION AND PLACEMENT OF CONCRETE FOR CURBS AND GUTTER, TRAFFIC MEDIANS, SIDEWALKS, CONCRES, DRIVEWAYS AND RELATED APPURTENANCES INCLUDING DETECTABLE WARNING FIELDS.

4.2 MATERIALS

4.2.01 CONCRETE

CONCRETE MATERIALS SHALL BE PROVIDED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 510 OF THE WISDOT SPECIFICATIONS.

THE CONCRETE SHALL BE SIX (6) BAG, AIR-ENTRAINED CONCRETE AS SUPPLIED BY A REPUTABLE READY-MIX SUPPLIER AND BE DESIGNED TO WITHSTAND 4,000 PSI IN 28 DAYS.

ALL CONCRETE SHALL BE AIR-ENTRAINED AND SHALL CONTAIN SEVEN (7) PERCENT AIR BY VOLUME, PLUS OR MINUS 1.5%.

SPECIAL HIGH EARLY STRENGTH (SHE) CONCRETE SHALL CONFORM TO SECTION 416 OF THE WISDOT SPECIFICATIONS.

ADDITION OF WATER TO CONCRETE ON SITE IS PROHIBITED.

MIX DESIGN ADJUSTMENTS MAY BE REQUESTED BY CONTRACTOR WHEN CHARACTERISTICS OF MATERIALS, JOB CONDITIONS, WEATHER, TEST RESULTS, OR OTHER CIRCUMSTANCES WARRANT; AT NO ADDITIONAL COST TO OWNER AND AS ACCEPTED BY ENGINEER. LABORATORY TEST DATA FOR REVISED MIX DESIGN AND STRENGTH RESULTS MUST BE SUBMITTED TO AND ACCEPTED BY ENGINEER BEFORE USING IN WORK.

COLOR CONCRETE:

- A) CONCRETE COLOR FOR CYCLE TRACKS SHALL BE "DCS GREEN W/ GREY CEMENT" H1004 OR AS APPROVED BY ENGINEER.
- B) CONCRETE COLOR FOR MEDIANS AND DECORATIVE TERRACES SHALL BE "RED BRICK" OR AS APPROVED BY ENGINEER. STAMP SHALL BE 4" X 8" RUNNING BOND PATTERN PERPENDICULAR TO CURB.
- C) CONCRETE COLOR FOR ROUNDABOUTS SHALL BE "DOT RED" OR AS APPROVED BY ENGINEER.

4.2.02 EXPANSION JOINT FILLER MATERIAL

ONE-HALF INCH (1/2") EXPANSION JOINT FILLER SHALL BE FURNISHED IN LENGTHS EQUAL TO THE JOINT WIDTH AND TO THE THICKNESS AND HEIGHT THAT IS REQUIRED. USE OF MULTIPLE FILLER SECTIONS AT A JOINT, STREET LIGHT BASE, VALVE BOX, OR MANHOLE TO ACHIEVE REQUIRED LENGTH, HEIGHT, AND/OR THICKNESS IS PROHIBITED.

EXPANDED POLYOLEFIN (EPOFOAM) JOINT FILLER TO BE USED AROUND ALL VALVE BOXES, LIGHT BASES, MANHOLES AND HYDRANTS IN THE CONCRETE. SEAL THE TOP 1/4" WITH MANUFACTURER SPECIFIED NP-1 SONGELASTIC CAULK.

4.2.03 DETECTABLE WARNING FIELDS

DETECTABLE WARNING FIELDS SHALL BE NENAH FOUNDRY'S DETECTABLE WARNING PLATE R-4484, NATURAL FINISH OR APPROVED EQUAL, CAST IRON PLATE. THE DETECTABLE WARNING FIELDS SHALL CONSIST OF A COMBINATION OF PANELS TO MEET THE SPECIFIED LENGTH AND WIDTH FOR FIELD. WARNING FIELDS SHALL BE THE COLOR OF THE DETECTABLE WARNING FIELDS SHALL BE NATURAL PATINA UNLESS OTHERWISE SPECIFIED IN PLANS.

RADIAL PLATES SHALL BE FROM THE WISDOT MANUFACTURER'S APPROVED LIST. THE CONTRACTOR SHALL SELECT THE APPROPRIATE RADIAL PLATE RADIUS THAT MATCHES THE INTERSECTION RADIUS DESIGN.

4.2.04 SIGN BASE

ALL SIGNS IN CONCRETE SHALL UTILIZE AN EIGHT INCH (8") V-LOG (23-VR1) AND WEDGE FOR A 2-3/8" GALVANIZED STEEL POST FOR THE BASE.

4.3 EXECUTION

4.3.01 GENERAL CONCRETE

PLACEMENT OF CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 415 OF THE WISDOT SPECIFICATIONS.

DEPOSIT AND CONSOLIDATE CONCRETE SLABS IN A CONTINUOUS OPERATION, WITHIN LIMITS OF CONSTRUCTION JOINTS, UNTIL THE PLACING OF A PANEL OR SECTION IS COMPLETED.

CONSOLIDATE CONCRETE DURING PLACING OPERATIONS SO THAT CONCRETE IS THOROUGHLY WORKED AROUND REINFORCEMENT AND OTHER EMBEDDED ITEMS AND INTO CORNERS.

BRING SLAB SURFACES TO CORRECT LEVEL WITH STRAIGHTEDGE AND STRIKE OFF. USE BULL FLOATS OR DARBIES TO SMOOTH SURFACE, FREE OF HUMPS OR HOLLOWNS. DO NOT DISTURB SLAB SURFACES PRIOR TO BEGINNING FINISHING OPERATIONS.

ALL EXPOSED NON-COLORED CONCRETE SURFACES SHALL BE PROTECTED DURING CURING WITH A WHITE PIGMENTED CURING COMPOUND. ALL COLORED CONCRETE SURFACES SHALL BE PROTECTED DURING CURING WITH CLEAR CURING COMPOUND.

CONCRETE TO BE REMOVED AND REPLACED SHALL BE SAUCUT AT THE NEAREST EXISTING JOINTS. INSTALL TWO (2) #4 EPOXY COATED TIE BARS, 12 INCHES (12") IN LENGTH, EXTENDING SIX INCHES (6") INTO THE EXISTING AND THE NEW CONCRETE AT THE JOINTS UNLESS DIRECTED BY THE ENGINEER.

NO CONCRETE WORK MAY TAKE PLACE WHILE IT IS RAINING. ALL CONCRETE POURED DURING RAIN EVENTS SHALL BE REMOVED AND REPLACED AT CONTRACTOR'S EXPENSE. ALTERING VISUALLY DAMAGED CONCRETE IS NOT ACCEPTABLE I.E. BRUSHING.

USE OF CONTRACTOR NAME STAMP TO MARK CONCRETE FOR PERMANENT IDENTIFICATION IS PROHIBITED.

24 HOURS PRIOR TO WORKING CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS OF CONCRETE OPERATIONS.

4.3.05 CYCLE TRACK

CYCLE TRACKS SHALL BE INSTALLED PER SIDEWALK REQUIREMENTS. CYCLE TRACK JOINTS SHALL BE SAIGCAT AT 1/8 INCH IN WIDTH AND, WHERE APPLICABLE, LINE UP WITH ADJACENT CURB JOINTS.

4.3.06 DETECTABLE WARNING FIELDS

DETECTABLE WARNING FIELDS ARE REQUIRED WHERE A SIDEWALK OR BIKE PATH CROSSES A VEHICULAR WAY (EXCLUDING DRIVEWAYS), WHERE A RAIL SYSTEM CROSSES PEDESTRIAN FACILITIES THAT ARE NOT SHARED WITH VEHICULAR WAYS, AT REFLECTING POOLS WITHIN THE PUBLIC RIGHT-OF-WAY, WHICH DOES NOT HAVE CURB OR RIM PROTRUDING ABOVE THE WALKING SURFACE, AT ISLANDS AND MEDIANS THAT ARE CUT THROUGH LEVEL WITH THE ROADWAY, AND AT ANY OTHER LOCATION REQUIRED BY ENGINEER.

DETECTABLE WARNING FIELDS FOR SIDEWALK AND BIKE PATH RAMPS SHALL EXTEND 24 INCHES IN THE DIRECTION OF THE PEDESTRIAN TRAVEL AND SHALL EXTEND THE FULL LENGTH OF THE CURB RAMP OR FLUSH SURFACE, A MINIMUM OF FIVE FEET (5') FOR SIDEWALK RAMPS AND A MINIMUM OF TEN FEET (10') FOR BIKE PATH RAMPS, WHEN POSSIBLE DETECTABLE WARNING FIELDS SHALL BE FLUSH TO THE FELT ON THE BACK OF CURB FOR STRAIGHT APPROACHES.

VOIDS MAY NOT EXIST BETWEEN THE DETECTABLE WARNING FIELD AND CONCRETE. IN THE EVENT VOIDS EXIST, THE WARNING PLATE AND CONCRETE SHALL BE REMOVED AND REPLACED. SLURRY OR CAULK REPAIRS ARE NOT PERMITTED.

SEE DETAILS FOR GUIDANCE ON WHEN TO USE RADIAL FIELD PLATES. WHEN SELECTING RADIAL PLATES, SLIGHT VARIANCE OF UP TO 3 FEET BETWEEN THE RADII OF THE DETECTABLE WARNING FIELD AND THE BACK OF CURB WILL PROVIDE A UNIFORM CONCRETE BORDER BETWEEN BACK OF CURB AND RADIAL FIELD. A MAXIMUM 3-INCH CONCRETE BORDER IS ALLOWABLE BETWEEN THE BACK OF CURB AND RADIAL DETECTABLE WARNING FIELD, WITH THE CONCRETE BORDER WIDTH VARIABLE UP TO 1 INCH.

WHEN RADIAL DETECTABLE WARNING FIELDS ARE USED, THE OUTERMOST RADIAL PLATES WILL NOT COINCIDE WITH THE CURB RAMP EDGES. THE OUTERMOST RADIAL PLATES WILL NEED TO BE FIELD CUT TO MATCH THE CURB RAMP EDGES. DEVELOP CONSTRUCTION DETAILS OF EACH CURB RAMP, INCLUDING THE LAYOUT OF INDIVIDUAL FULL-SIZE RADIAL PLATES AS WELL AS FLANKING CUT RADIAL PLATES. FIELD-CUT PLATES CANNOT BE SHORTER THAN 6 INCHES ALONG ANY CUT EDGE. DEVELOP CUT FULL-SIZE RADIAL PLATES WITHIN THE INTERIOR OF THE CURB RAMP LAYOUT, AS INTERMEDIATE JOINTS WITHIN THE WARNING FIELD MUST NOT BE FIELD CUT. THE RADIAL PLATE FINAL FIELD PLACEMENT MAY VARY, AS THE CONTRACTOR WILL DETERMINE THE FINAL WARNING FIELD CONFIGURATION AND ITS INDIVIDUAL PLATE LOCATIONS.

4.3.07 DRIVEWAYS

ALL COMMERCIAL DRIVEWAYS LOCATED ALONG A ROADWAY WITH CURB AND GUTTER SHALL CONFORM TO THESE SPECIFICATIONS UNLESS SPECIFICALLY PERMITTED OTHERWISE BY THE ENGINEER.

CONCRETE THICKNESS FOR DRIVEWAY APRONS SHALL BE SEVEN INCHES (7") AND THE CRUSHED AGGREGATE BASE THICKNESS SHALL BE A MINIMUM OF FOUR INCHES (4").

PROVIDE ONE-HALF INCH (1/2") EXPANSION JOINT FILLER AGAINST SIDEWALKS AND CURB AND GUTTER.

FOR RESIDENTIAL AND COMMERCIAL DRIVEWAY OPENINGS ALONG STREETS WITH EXISTING CURB AND GUTTER, THE CONTRACTOR SHALL EITHER REMOVE AND REPLACE EXISTING CURB AND GUTTER AT THE DRIVEWAY OPENING PER SPECIFICATIONS OR MAKE A PROFILE CURB CUT IN WHICH THE CURB HEAD IS CUT WITH A CONCRETE SAM SPECIFICALLY DESIGNED FOR THIS TYPE OF WORK.

4.3.08 PROTECTION OF CONCRETE

A. GENERAL. CONTRACTOR SHALL ERECT AND MAINTAIN SUITABLE BARRICADES TO PROTECT THE NEW CONCRETE, WHERE IT IS NECESSARY TO PROVIDE FOR PEDESTRIAN TRAFFIC, THE CONTRACTOR SHALL, AT HIS THEIR OWN COST, CONSTRUCT ADEQUATE CROSSINGS AS SHOWN ON THE DRAWINGS OR AS SPECIFIED. CROSSING CONSTRUCTION SHALL BE SUCH THAT NO LOAD IS TRANSMITTED TO THE NEW CONCRETE.

ANY PART OF THE WORK DAMAGED, UNDERMINED, OR VANDALIZED PRIOR TO FINAL ACCEPTANCE SHALL BE REPAIRED OR REPLACED AT THE EXPENSE OF THE CONTRACTOR.

APPLY CURING COMPOUND AS SOON AS THE CONCRETE IS DRY TO THE TOUCH AND WILL NOT BE MARRERD FROM STEPPING ON IT. IF CURING COMPOUND IS NOT APPLIED, CONCRETE MUST BE CURED WITH PLASTIC UNTIL STRENGTH OF 3,000 PSI IS ACHIEVED (7) DAYS, WHICHEVER COMES FIRST. REMOVAL OF PLASTIC, WHETHER TEMPORARY OR PERMANENT, DURING THIS TIME, IS PROHIBITED.

CONSTRUCTION ACTIVITIES AND VEHICULAR TRAFFIC SHALL NOT BE PERMITTED ADJACENT TO OR OVER NEWLY PLACED CONCRETE UNTIL A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI HAS BEEN ACHIEVED.

B. COLD WEATHER PROTECTION. PROTECT CONCRETE WORK FROM PHYSICAL DAMAGE OR REDUCED STRENGTH WHICH COULD BE CAUSED BY FROST, FREEZING ACTIONS, OR LOW TEMPERATURES, IN COMPLIANCE WITH ACI 306, WISDOT SPECIFICATIONS, AND AS HEREIN SPECIFIED.

AT ANY TIME OF THE YEAR, IF THE NATIONAL WEATHER SERVICE FORECAST FOR THE CONSTRUCTION AREA PREDICTS FREEZING TEMPERATURES WITHIN THE NEXT 24 HOURS, OR WHEN FREEZING TEMPERATURES ACTUALLY OCCUR, PROVIDE THE MINIMUM LEVEL OF THERMAL PROTECTION SPECIFIED BELOW FOR CONCRETE THAT HAS YET TO CONFORM TO THE OPENING CRITERIA SPECIFIED IN WISDOT 415.3.15.

Predicted or Actual Air Temperature Minimum Equivalent Level of Protection	
22 to <28 F	single layer of polyethylene
17 to <22 F	double layer of polyethylene
<17 F	6" of loose, dry straw or hay between two layers of polyethylene

UNLESS WRITTEN APPROVAL IS PROVIDED BY THE ENGINEER, SUSPEND CONCRETING OPERATIONS IF THE DECREASING AIR TEMPERATURE IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT FALLS BELOW 35 DEGREES FAHRENHEIT. DO NOT RESUME CONCRETING OPERATIONS UNLESS TEMPERATURES IN THE SHADE AND AWAY FROM ARTIFICIAL HEAT REACHES 32 DEGREES FAHRENHEIT AND IS RISING, AT ALL TIMES THE CONCRETE TEMPERATURE AT THE POINT OF PLACEMENT SHALL BE ABOVE 50 DEGREES FAHRENHEIT.

CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF THE CONCRETE PLACED. ANY CONCRETE DAMAGED BY FREEZING OR FROST ACTION DURING THE FIRST SEVEN (7) DAYS FOLLOWING ITS PLACEMENT SHALL BE REMOVED AND REPLACED BY THE CONTRACTOR AT CONTRACTOR'S EXPENSE.

CALCIUM CHLORIDE, SALT AND OTHER MATERIALS CONTAINING ANTIFREEZE AGENTS OR CHEMICAL ACCELERATORS SHALL NOT BE USED, UNLESS OTHERWISE ACCEPTED IN MIX DESIGNS.

C. HOT WEATHER PROTECTION. WHEN HOT WEATHER CONDITIONS EXIST THAT WOULD SERIOUSLY IMPAIR QUALITY AND STRENGTH OF CONCRETE, PLACE CONCRETE IN COMPLIANCE WITH AMERICAN CONCRETE INSTITUTE ACI 305.

4.4 FIELD QUALITY CONTROL AND TESTING

4.4.01 TESTING

OWNER WILL BE RESPONSIBLE FOR CONCRETE TESTING. CONTRACTOR SHALL COORDINATE TESTING WITH THE OWNER.

MATERIALS AND INSTALLED WORK MAY REQUIRE TESTING AND RETESTING AT ANY TIME DURING PROGRESS OF WORK. TESTS, INCLUDING RETESTING OF REJECTED MATERIALS AND INSTALLED WORK, SHALL BE DONE AT CONTRACTOR'S EXPENSE.

SECTION 5 - PAVEMENTS AND BASE COURSE

5.1 GENERAL

5.1.01 RELATED DOCUMENTS WISDOT SPECIFICATION, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSSTANDARDS.DOT.WI.GOV/STANDARDS/STNDSPEC/INDEX.HTM](http://roadwaysstandards.dot.wi.gov/standards/STNDSPEC/INDEX.HTM)

- OMIT THE FOLLOWING SECTIONS
- SECTION 440 RIDE QUALITY REQUIREMENTS AND TESTING
 - SECTION 455.2.2 AND 455.2.3 PG ASPHALT BINDER AND TACK COAT SAMPLING AND TESTING
 - SECTION 450.3.2.1 COLD WEATHER PAVING
 - SECTION 450.3.2.1.1 SAFETY EDGE
 - SECTION 460.2.B QMP SAMPLING AND TESTING
 - SECTION 460.3.3 NUCLEAR DENSITY TESTING

5.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES REQUIREMENTS FOR THE PROVISION AND PLACEMENT OF BASE COURSE, ASPHALTIC PAVEMENT, AND PAVEMENT MARKINGS.

5.1.03 SCHEDULE

UNLESS SPECIFIED DIFFERENTLY, ALL UPPER LAYER PAVING SHALL BE COMPLETE BY SEPTEMBER 15 AND ALL LOWER LAYER PAVING SHALL BE COMPLETED BY OCTOBER 31. ONLY PATCHING WILL BE ALLOWED AFTER THESE DATES AS APPROVED BY THE ENGINEER.

5.1.04 SUBMITTALS

PRIOR TO PAVING THE FOLLOWING ITEMS, SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL.

- HMA MIX DESIGN MEETING THE SPECIFICATIONS OF SECTION 1.2.04 SHOP DRAWINGS FOR EACH APPLICABLE ROADWAY PAVEMENT TYPE
- REGRESSION OF AIR VOIDS DOCUMENTATION, ALONG WITH NEWLY CALCULATED ρ_{AC} , VMA, VFB, AND GMB
- RAS STOCKPILE PRODUCTION SAMPLES, IF RAS IS USED IN THE MIX DESIGN

5.2 MATERIALS

5.2.01 CRUSHED AGGREGATE BASE COURSE

THE AGGREGATES SHALL CONSIST OF HARD, DURABLE PARTICLES OF CRUSHED STONE RESULTING FROM THE ARTIFICIAL CRUSHING OF ROCK, Boulders, OR LARGE COBBLESTONES SUBSTANTIALLY ALL FACES OF WHICH HAVE RESULTED FROM THE CRUSHING OPERATION, THE MATERIAL SHALL BE FREE FROM DIRT, ASPHALT, DEBRIS, FROZEN MATERIALS, ORGANIC MATTER, SHALE AND LUMPS OR BALLS OF CLAY.

THE DETERMINATION OF THE ACCEPTABILITY OF THE AGGREGATES WILL BE MADE BY VISUAL OBSERVATION AND/OR LABORATORY TEST. THE ENGINEER RESERVES THE RIGHT TO PROHIBIT THE USE OF MATERIAL FROM ANY SOURCE, PLANT, PIT, QUARRY OR DEPOSIT WHERE THE CHARACTER OF THE MATERIAL OR METHOD OF OPERATION IS NOT FURNISHING AGGREGATE THAT CONFORMS TO THE REQUIREMENTS OF THESE SPECIFICATION, UNLESS SATISFACTORY EVIDENCE IS SHOWN THAT MATERIAL CONFORMING TO THE SPECIFICATION REQUIREMENTS IS PRODUCED. NOTE: THE CITY SHALL BE NOTIFIED 24 HOURS PRIOR TO THE PLACEMENT OF BASE COURSE. IN GIVING THIS NOTICE, THE CONTRACTOR SHALL INDICATE THE SOURCE FOR THE BASE COURSE. IF DURING ROCKING OPERATIONS THE SOURCE CHANGES, THE CITY MUST BE NOTIFIED. THE CONTRACTOR TAKES ON THE FINANCIAL RESPONSIBILITY OF PLACEMENT OF THE BASE COURSE FROM THE NEW SOURCE IF THE MATERIAL IS UNSUITABLE.

UNLESS SPECIFIED DIFFERENTLY, BASE COURSE THICKNESS SHALL BE TWELVE-INCHES (12") CONSISTING OF THREE-INCH (3") DENSE IN THE BOTTOM SEVEN TO EIGHT INCHES (7'-8") AND ONE AND ONE-QUARTER INCH (1-1/4") DENSE IN THE TOP FOUR TO FIVE INCHES (4"-5") GRADATIONS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 305 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

5.2.02 UNSCREENED BREAKER RUN STONE THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 311 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER.

5.2.03 BREAKER RUN MATERIAL THE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF SECTION 311 WISDOT SPECIFICATIONS OR AS DIRECTED BY THE ENGINEER. ENGINEER RESERVES THE RIGHT TO REQUIRE MODIFICATIONS TO THE MATERIAL, IF MATERIAL DOES NOT CONTAIN SUFFICIENT GRADATION TO ELIMINATE VOIDS, DOES NOT PROVIDE ADEQUATE 54 TO 64" MATERIAL TO PROVIDE STRUCTURAL SUPPORT, AND/OR CONTAINS TOO MANY FINES. THE MATERIAL SHALL BE FREE FROM DIRT, ASPHALT, CONCRETE, DEBRIS, FROZEN MATERIALS, ORGANIC MATTER, SHALE AND LUMPS OR BALLS OF CLAY.

5.2.04 FLOWABLE FILL. FLOWABLE FILL SHALL BE EXCAVATABLE, HAVING STRENGTH GREATER THAN 200 PSI BUT NOT EXCEEDING 300 PSI. THE FOLLOWING FLOWABLE FILL MIX DESIGN IS RECOMMENDED.

FLOWABLE FILL MIX DESIGN		
Material	Unit	Quantity
Sand	lb.	3000
Water	Gal.	43
Fly Ash	lb.	200
Air Content	%	25 - 30
Cement	lb.	50

5.2.05 ASPHALTIC PAVEMENT

HMA MIX DESIGN. REFER TO WISDOT SPECIFICATIONS, SECTIONS 460.2.1 - 460.2.7 AND 460.3.2 EXCEPT WHEREIN MODIFIED OR APPENDED.

ASPHALT MIX DESIGN SHALL BE THE FOLLOWING UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS.

ASPHALT MIX TYPES		
HMA Type	Asphalt Material	Roadway Type
MT	58-28	Arterial
MT or LT	58-28H	Roundabouts & Turn Lanes*
LT	58-28	Collector & Residential
LT	58-28	Shared-use paths
LT	58-28H	Tennis Court / Basketball Court

*Surface Only			
ASPHALT MIX THICKNESS			
Nominal Maximum Aggregate Size (MMAS)	Use	Minimum Layer Thickness (in)	Maximum Layer Thickness (in)
3	Lower Layer	2.25	4.0
4	Lower Layer	1.75	3.0
5	Upper Layer	1.5	3.0
5	Basketball / Tennis Courts/ Shared-use Path	1.5	3.0

460.2.2.3 AGGREGATE GRADATION MASTER RANGE LOWER LAYER SHALL BE ASPHALT MIX GRADATION 4 AND UPPER LAYER SHALL BE ASPHALT MIX GRADATION 5. THE LOWER LAYER MAY BE ASPHALT MIX GRADATION 5 WHERE THE LOWER AND UPPER LAYERS ARE APPLIED IN THE SAME CALENDAR YEAR.

460.2.7 HMA MIX DESIGN (ROADWAY, ARTERIAL, COLLECTOR, RESIDENTIAL AND SHARED USE PATHS) ALL HMA MIX DESIGNS FOR ARTERIAL, COLLECTOR, RESIDENTIAL AND SHARED USE PATHS SHALL HAVE A TARGET OF 3.0% AIR VOIDS. THIS SHALL BE ACCOMPLISHED BY TAKING AN EXISTING MIX DESIGN THAT TARGETS 4.0% AIR VOIDS, AND INCREASING THE ASPHALT CONTENT TO ACHIEVE 3.0% AIR VOIDS. NEW VMA, VFA AND GMB JMF TARGETS WILL BE RECALCULATED WITH THE NEW ASPHALT CONTENT.

5.2.06 ADJUSTING RINGS

NON-ROCKING NEEHAH CAST IRON ADJUSTING RINGS OR APPROVED EQUAL. NEEHAH REFERENCE NO. 1550-1751 FOR 1-1/2" ADJUSTING RINGS AND NO. 1550-1201 FOR TWO INCH (2") ADJUSTING RINGS.

5.2.07 TACK COAT

TYPE MS-2, 95-1, 95-1H, C55-1, C55-1H, OR AN APPROVED MODIFIED EMULSIFIED ASPHALT. TACK NEEDS TO BREAK BEFORE PAVING COMMENCES.

5.2.08 PAVEMENT MARKINGS

PAVEMENT MARKINGS SHALL BE EPOXY PAINT UNLESS OTHERWISE DIRECTED BY ENGINEER.

5.2.04 CYCLE TRACK

GENERAL. FOR AREAS WHERE CYCLE TRACK TRANSITIONS TO ASPHALT PAVEMENT, INSTALL HIGH FRICTION COLORED SURFACE IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. USE COLOR-SAFE PAVEMENT MARKING WITH ANTI-SKID SURFACE BY TRANSCO INDUSTRIES OR AN APPROVED EQUAL. USE AN MMA BASED SYSTEM CAPABLE OF RETAINING AN AGGREGATE TOPPING UNDER VEHICULAR TRAFFIC CONDITIONS.

THE MMA BASED RESIN SYSTEM SHALL COMPLY WITH CHROMACRY REQUIREMENTS IN ACCORDANCE WITH MUTCD INTERIM APROVAL FOR OPTIONAL USE OF GREEN COLORED PAVEMENT FOR BIKE LANES.

MMA BASED RESIN SYSTEM. THE MMA BASED RESIN SYSTEM SHALL MEET THE FOLLOWING REQUIREMENTS:

Property	Value	Test Method
Tensile Strength @ 7 days, psi, minimum	1000	ASTM D 638
Hardness, Shore D, minimum	80	ASTM D 2240
Gel Time, minutes, minimum	10	ASTM D 2471
Cure Rate, hours, maximum	3	Film @ 75°F
Water Absorption @ 24 hours, max	0.25%	ASTM D 570
Aggregate: The aggregate shall be high friction crushed Bauxites, Granits, or gravel. The aggregate will be delivered to the construction site in clearly labeled bags or sacks. The aggregate shall be clean, dry and free from foreign matter. The aggregate shall meet the following requirements:		
Property	Value	Test Method
Aggregate Abrasion Value,	maximum 20	LA Abrasion
Aggregate Grading,		
No 6 Sieve Size,	minimum passing, 95%	
No 16 Sieve Size,	maximum passing, 5%	
Aggregate Color	Green	
Certification: Finished surface shall have a minimum 60 FN40R in accordance with ASTM E274 of aggregate bonded to a vehicular bearing surface using the modified epoxy binder.		

5.3 EXECUTION

5.3.01 BASE COURSE

PRIOR TO PLACEMENT OF THE BASE COURSE, THE SUBBASE SHALL BE TEST ROLLED WITHIN THE PRESENCE OF THE ENGINEER, GIVE A MINIMUM OF 24-HOURS NOTICE TO THE ENGINEER PRIOR TO TEST ROLLING. BASE COURSE GRADE SHALL BE SET TO ALLOW THICKNESS OF ASPHALTIC PAVEMENT SUCH THAT NEW ASPHALT IS 1/4" ABOVE CURB AND GUTTER.

DEPTH OF BASE COURSE SHALL MATCH EXISTING, TWELVE-INCH (12") MINIMUM.

EACH LAYER OF BASE COURSE SHALL BE WETTED AND ROLLED TO PROVIDE MAXIMUM COMPACTION IN ACCORDANCE WITH SECTION 301 OF THE WISDOT SPECIFICATIONS.

THE FINISHED BASE COURSE SHALL BE FINE GRADED IN PREPARATION FOR PAVING.

AFTER FINAL GRADING, CONTRACTOR SHALL MAINTAIN THE BASE COURSE UNTIL ASPHALTIC PAVING WORK HAS BEEN COMPLETED. ALL GRAVEL SURFACES DAMAGED DURING CONSTRUCTION SHALL BE REPLACED.

5.3.02 FLOWABLE FILL

FLOWABLE FILL IS REQUIRED AT ALL LOCATIONS WHERE STREETS CURB AND GUTTER, SIDEWALKS AND PAVEMENTS HAVE BEEN UNDERMINED.

5.3.03 FINISHING ROADWAY

THE FINISHED BASE COURSE SHALL BE FINE GRADED IN PREPARATION FOR ASPHALTIC PAVING. BASE COURSE RAMPS AT ALL EXISTING PAVEMENT SHALL BE REMOVED TO PROVIDE A FULL DEPTH BUTT JOINT.

IF CONTRACTOR CHOOSES TO USE ASPHALTIC RAMPS AT BUTT JOINTS DURING PAVING, RAMPS MUST BE REMOVED PRIOR TO PLACING BINDER.

5.3.04 NEW ROADWAYS

NEWLY CONSTRUCTED ROADWAYS SHALL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER, RECEIVE LOWER LAYER ONLY MMAS 4 (12.5MM). PLACEMENT OF THE UPPER LAYER(S) MMAS 5 (4.5M") SHALL BE POSTPONED AS DEEMED NECESSARY BY THE ENGINEER SO AS TO MINIMIZE DAMAGE CAUSED BY CONSTRUCTION TRAFFIC.

MANHOLE CASTINGS AND VALVE BOXES IN ROADWAYS TEMPORARILY RECEIVING THE LOWER LAYER ONLY SHALL BE SET TO LOWER LAYER GRADE. MANHOLE CASTINGS AND VALVE BOXES SHALL BE SET ONE-QUARTER INCH (1/4") BELOW FINAL GRADE IN ALL OTHER AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER. 65CABA AND MONOLITHIC RAMPING IS PROHIBITED.

IMMEDIATELY PRIOR TO PLACEMENT OF UPPER LAYER(S), CONTRACTOR SHALL INSTALL NON-ROCKING CAST IRON ADJUSTING RINGS ON ALL MANHOLES LOCATED WITHIN THE AREA TO BE PAVED AND RAISE ALL VALVE BOXES TO ONE-QUARTER INCH (1/4") BELOW FINAL GRADE.

5.3.05 ASPHALTIC PAVING

PRIOR TO COMMENCEMENT OF PAVING OPERATIONS, CONTRACTOR SHALL EXAMINE THE FINISHED ROAD BED. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY AREAS OF SUSPECTED INSTABILITY. THE ENGINEER MAY REQUIRE AN ADDITIONAL TEST ROLL IF THERE IS A RAIN EVENT BEFORE PAVING COMMENCES. THE PAVEMENT STRUCTURE FOR NEW ROADWAYS SHALL BE DETERMINED FROM THE STANDARD CROSS-SECTIONS ENCOUNTERED IN THE FIELD. 24 HOURS PRIOR TO PAVING CONTRACTOR SHALL NOTIFY ADJACENT PROPERTY OWNERS OF PAVING OPERATIONS.

ENGINEER SHALL CHECK GRADE OF BASE AND STRUCTURE ADJUSTMENTS PRIOR TO PAVING. 48-HOURS NOTICE SHALL BE PROVIDED TO ENGINEER PRIOR TO PAVING AFTER GRADING AND ADJUSTMENTS ARE COMPLETE.

ALL ADJACENT CONCRETE SURFACES SHALL BE INSTALLED AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI PRIOR TO PAVING.

CONTRACTOR SHALL NOT PAVE DURING RAIN EVENTS. CONTRACTOR SHALL OBTAIN APPROVAL FROM ENGINEER BEFORE COMMENCING PAVING ACTIVITIES AFTER RAIN EVENTS.

NEW FINISHED ASPHALTIC UPPER LAYER SHALL BE ONE-QUARTER INCH (1/4") ABOVE FLAG OF ADJACENT CURB AND GUTTER.

ALL MANHOLE CASTINGS AND VALVE BOXES WITHIN THE PAVING LIMITS OF THE STREET SHALL BE ADJUSTED TO A ONE-QUARTER INCH (1/4") BELOW THE FINISHED ASPHALTIC UPPER LAYER. FAILURE TO MEET THIS TOLERANCE MAY REQUIRE REMOVAL AND REPLACEMENT OF THE PAVEMENT, TO LIMITS DETERMINED BY ENGINEER, AT CONTRACTOR'S EXPENSE.

BASE COURSE AROUND MANHOLE CASTINGS AND VALVE BOXES SHALL BE HAND TRIMMED AND COMPACTED WITH A VIBRATORY PLATE COMPACTOR.

THE FITCHBURG UTILITY DEPARTMENT SHALL INSPECT THEIR VALVE BOXES AND MANHOLES PRIOR TO PAVING. CONTRACTOR SHALL PROVIDE TWO (2) DAYS NOTICE PRIOR TO PAVING TO COORDINATE THE INSPECTION OF THE WATER VALVES. FOR CITY OF FITCHBURG UTILITY, CALL (608)210-4210.

CONTRACTOR SHALL FURNISH CLASS I BARRICADES WITH FLASHERS ON ALL ADJUSTED CASTINGS UNTIL PAVING HAS BEEN COMPLETED. TOPS OF CASTINGS AND VALVE BOXES SHALL BE OILED, OR PROTECTED BY OTHER METHODS TO PREVENT SEALING OF LIDS AND FILLING OF LIFT HOLES DURING PAVING. UPON COMPLETION OF PAVING OPERATIONS, CONTRACTOR SHALL CHECK ALL CASTINGS AND VALVE BOXES TO INSURE THAT THE LIDS ARE CLEAN AND OPERATIONAL.

THE THICKNESS OF LOWER AND/OR UPPER COURSE MIXTURE SHALL BE INSTALLED IN ONE COURSE EACH. THE MIXTURE SHALL BE LAID AND COMPACTED SO THAT THE AVERAGE YIELDS IN POUNDS PER SQUARE YARD CONFORM TO THE FOLLOWING CHART:

SURFACE & BINDER YIELD - # / S.Y.		
Thickness	Min.	Max.
1"	112	118
1 1/2"	168	177
1 3/4"	195	206.5
2"	224	239
2 1/4"	252	265.5
2 1/2"	280	295
3"	336	354

WHENEVER THE YIELDS FALL BELOW THE MINIMUM ALLOWABLE YIELDS SPECIFIED ABOVE, THE ENGINEER SHALL DETERMINE THE CORRECTIVE ACTION TO BE TAKEN. THE CORRECTIVE ACTION MAY INCLUDE REMOVAL AND REPLACEMENT OF THE AREA OF DEFICIENT THICKNESS, AN OVERLAY WITH APPROVED MATERIAL OF THE AREA OF DEFICIENT THICKNESS, OR SUCH OTHER ACTION AS THE ENGINEER SHALL DETERMINE. THE AREA OF DEFICIENT THICKNESS SHALL BE DETERMINED ON THE BASIS OF STREET AREA, OR AREA COVERED IN ONE DAY'S OPERATION, WHICHEVER IS LESS. THE ENGINEER'S DETERMINATION WILL BE BASED ON THE CIRCUMSTANCES OF THE AREA INVOLVED, AND WILL INCLUDE A DETERMINATION OF THE DISTRIBUTION OF COSTS OF THE CORRECTIVE WORK REQUIRED.

WHEN THE AVERAGE YIELD ON A PROJECT EXCEEDS THE MAXIMUM ALLOWABLE YIELD, ALL EXCESS MATERIAL SHALL BE PAID FOR AT THE RATE OF ONE-HALF THE CONTRACT UNIT PRICE FOR THE TYPE OF MATERIAL INVOLVED. THE AVERAGE YIELD FOR THIS PURPOSE SHALL BE COMPUTED ON A DAILY BASIS, OR A STREET AREA, WHICHEVER COVERS THE SMALLEST AREA OF PAVING.

PLACE ASPHALT MIXTURE ON PREPARED SURFACE, SPREAD AND STRIKE-OFF. PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND COMPACTED THICKNESS.

PLACE ASPHALT IN STRIPS NOT LESS THAN TEN FEET (10') WIDE, UNLESS OTHERWISE ACCEPTABLE TO THE ENGINEER. COMPLETE LOWER COURSE FOR A SECTION BEFORE PLACING UPPER LAYER COURSE.

COLD WEATHER PAVING

CONTRACTOR SHALL NOT PLACE ASPHALTIC MIXTURE WHEN THE AIR TEMPERATURE APPROXIMATELY 3 FEET ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCE IS LESS THAN 40 DEGREES F UNLESS AN ENGINEER APPROVED COLD WEATHER PAVING PLAN IS IN EFFECT.

A COLD WEATHER PAVING PLAN SHALL BE SUBMITTED ANY TIME THE NATIONAL WEATHER SERVICE WEATHER FORECAST PREDICTS AMBIENT AIR TEMPERATURE LESS THAN 40 DEGREES F AT THE TIME OF PAVING. COLD WEATHER PAVING PLAN NEEDS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF PAVING DURING COLD WEATHER CONDITIONS.

COLD WEATHER PAVING PLAN SHALL INCLUDE CHANGES TO MIX DESIGN, AND ANY OPERATIONAL AND EQUIPMENT CHANGES PLANNED TO DEAL WITH COLD WEATHER CONDITIONS.

ENGINEER APPROVAL OR ACCEPTANCE OF COLD WEATHER PAVING PLAN DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR THE QUALITY OF HMA PAVEMENT PLACED IN COLD WEATHER UNDER ANY CIRCUMSTANCES.

IF CONTRACTOR FAILS TO FOLLOW APPROVED COLD WEATHER PAVING PLAN DURING PAVING OPERATIONS WILL BE TERMINATED AND ALL MATERIAL PLACED WITHOUT FOLLOWING APPROVED COLD WEATHER PAVING PLAN MAY BE REMOVED AT THE CONTRACTOR'S EXPENSE.

CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH COLD WEATHER PAVING PLAN AND NO ADDITIONAL COMPENSATION FOR SUCH SHALL BE CONSIDERED.

NO ASPHALT PAVEMENT SHALL BE PLACED UNLESS THE AIR TEMPERATURE IS 40 DEGREES F AND RISING FOR UPPER LAYER AND 34 DEGREES F AND RISING FOR LOWER LAYERS. AIR TEMPERATURE SHALL BE MEASURED 3 FEET ABOVE GRADE, IN SHADE, AND AWAY FROM ARTIFICIAL HEAT SOURCE.

5.3.06 ROLLING

BEGIN ROLLING WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. TWO OPERATIONAL ROLLERS MUST BE ON SITE AT ALL TIMES. IN THE EVENT A ROLLER DOES NOT WORK, THE PAVING OPERATION MUST CEASE IMMEDIATELY.

COMPACT MIXTURE WITH HOT HAND TAMPER OR VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS.

PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND ASPHALT HAS ATTAINED THE MAXIMUM DENSITY.

5.3.07 JOINTS

JOINTS BETWEEN OLD AND NEW PAVEMENTS OR BETWEEN SUCCESSIVE DAY'S WORK SHALL BE CONSTRUCTED AND TREATED AS TO ENSURE THOROUGH AND CONTINUOUS BOND BETWEEN THE OLD AND NEW MIXTURES.

A. TRANSVERSE JOINTS. TRANSVERSE JOINTS SHALL BE CONSTRUCTED BY CUTTING THE MATERIAL BACK FOR ITS FULL DEPTH SO AS TO EXPOSE THE FULL DEPTH OF THE COURSE. WHERE A HEADER IS USED, THE CUTTING MAY BE OMITTED PROVIDED THE JOINT CONFORMS TO THE SPECIFIED THICKNESS. THESE JOINTS SHALL BE TREATED WITH TACK COAT MATERIAL, SMOOTH AND TIGHT.

B. LONGITUDINAL JOINT. THE LONGITUDINAL JOINT SHALL BE MADE BY OVERLAPPING THE SCREED ON THE PREVIOUSLY LAID MATERIAL FOR A WIDTH OF NOT MORE THAN TWO INCHES (2"), AND DEPOSITING A SUFFICIENT AMOUNT OF ASPHALTIC MIXTURE SO THAT THE FINISHED JOINT WILL BE SMOOTH AND TIGHT.

LONGITUDINAL JOINTS IN THE UPPER LAYER COURSE SHALL AT NO TIME BE PLACED IMMEDIATELY OVER SIMILAR JOINTS IN THE LOWER LAYER COURSE BENEATH. A MINIMUM DISTANCE OF TWELVE INCHES (12") SHALL BE PERMITTED BETWEEN THE LOCATION OF THE JOINTS IN THE LOWER LAYER COURSE AND THE LOCATION OF SIMILAR JOINTS IN THE UPPER LAYER COURSE ABOVE. THESE JOINTS SHALL BE TREATED WITH TACK COAT MATERIAL TO FULLY COAT THE JOINT SURFACE.

HMA Pavement Densities shall conform to the following:

HMA PAVEMENT MINIMUM DENSITIES		
MINIMUM %DENSITY REQUIREMENT	UPPER LAYER	LOWER LAYER
Roadways	93.0	91.0
Basketball/Tennis Court/Shared-use Path	92%	92%

At the Engineer's discretion, if the average lot density falls below the minimum densities listed above, the material payment will be reduced based on the payment schedule below:

PAYMENT FACTORS	
PERCENT LOT DENSITY BELOW SPECIFIED MINIMUM	PAYMENT FACTOR (% of contract price)
From 0.0 to 0.5	98
From 0.6 - 1.5	95
From 1.6 to 3.0	85
Greater than 3.0	Remove & Replace at Contractor's expense

ASSESSED TONNAGE MAY INCLUDE UP TO THE TOTAL DAY'S PRODUCTION. ALL AVAILABLE TEST DATA WILL BE REVIEWED BY THE CITY AND TAKEN INTO CONSIDERATION. THE FINAL ASSESSED TONNAGE WILL BE DETERMINED BY THE CITY AT THE CITY'S SOLE DISCRETION.

HMA MIXTURE TESTING:

THE CITY SHALL USE A THIRD PARTY CONSULTANT WISDOT QUALIFIED LABORATORY FOR VERIFICATION OF HMA SAMPLES. THE TESTING MAY INCLUDE ANY OF THE FOLLOWING:

- GRADATION
- ASPHALT CONTENT (AASHTO T-164)
- AIR VOIDS
- VMA

ALL TEST RESULTS WILL BE MADE AVAILABLE TO THE CONTRACTOR.

Individual tests of the HMA pavement properties must conform to the requirements below as compared to the submitted mix design:

HMA VERIFICATION PRODUCTION TESTING	
HMA PROPERTY	ALLOWABLE JM/T TOLERANCE
#200 (0.075mm)	+/- 2.0%
%Va	+/- 1.3%
Asphalt Content (AASHTO T-164)	- 0.3%
Minimum % VMA	- 0.5%

At the Engineer's discretion, if the individual HMA property falls out of specification, the material payment will be reduced based on the payment schedule below.

HMA PAVEMENT REDUCTION OF PAYMENT SCHEDULE	
HMA PROPERTY	PAYMENT FACTOR (percent of contract price)
#200 (0.075mm)	95
Asphalt Content (AC) (AASHTO T-164)	90
%Va or %VMA	90

ASSESSED TONNAGE MAY INCLUDE UP TO THE TOTAL DAY'S PRODUCTION. ALL AVAILABLE TEST DATA WILL BE REVIEWED BY THE CITY AND TAKEN INTO CONSIDERATION. THE FINAL ASSESSED TONNAGE WILL BE DETERMINED BY THE CITY AT THE CITY'S SOLE DISCRETION.

IF MULTIPLE PAY FACTORS EXIST FOR THE SAME TONNAGE, THE ASSESSED PENALTY WILL USE THE LOWEST OF THE PAYMENT FACTORS. IT IS NOT INTENDED TO PENALIZE THE SAME MATERIAL TWICE.

THE CONTRACTOR MAY DISPUTE THE CITY'S QUALITY VERIFICATION TEST RESULTS BY HAVING THEIR RETAINED SAMPLE TESTED IN A SEPARATE, THIRD PARTY, WISDOT QUALIFIED LABORATORY. THE TEST RESULTS FROM THE CITY'S THIRD PARTY CONSULTANT LABORATORY AND THE CONTRACTOR'S THIRD PARTY LABORATORY WILL BE AVERAGED FOR PAY ADJUSTMENTS.

SECTION 6 - STORM SEWER

6.1 GENERAL

6.1.01 RELATED DOCUMENTS

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSTANDARDS.DOT.WIS.GOV/STANDARDS/STNSPEC/INDEX.HTM](http://roadwaystandards.dot.wis.gov/standards/stdnspec/index.htm)

CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, AVAILABLE AT: [HTTP://WWW.CITYOFMADISON.COM/BUSINESS/PW/SPECS.CFM](http://www.cityofmadison.com/business/pw/specs.cfm)

ASTM C16-90 - REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE

AASHTO M-198 - JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING FLEXIBLE WATER TIGHT GASKETS

6.2 MATERIALS

6.2.01 BEDDING AND COVER

BEDDING AND COVER MATERIAL SHALL BE WASHED STONE, ALL OF WHICH PASSES A 1-1/2" SIEVE.

6.2.02 GRANULAR BACKFILL

GRANULAR BACKFILL FOR STORM SEWER SHALL BE GRADE I OR GRADE 2 AS SPECIFIED IN SECTION 209 OF THE WISDOT SPECIFICATIONS. USE OF SCREENINGS FOR GRANULAR BACKFILL MATERIAL IS PROHIBITED. NO CLAY LUMPS AND/OR FROZEN MATERIAL SHALL BE PRESENT.

6.2.03 STORM SEWER PIPE

REINFORCED CONCRETE PIPE SHALL BE THE ONLY STORM SEWER MATERIAL APPROVED FOR USE WITHIN PUBLIC RIGHTS OF WAY WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE DEPARTMENT.

REINFORCED CONCRETE PIPE MEET THE STANDARD SPECIFICATIONS FOR REINFORCED CONCRETE CULVERT, STORM DRAIN, AND SEWER PIPE OF THE AMERICAN SOCIETY FOR TESTING MATERIALS, SERIAL DESIGNATION C76 FOR CIRCULAR PIPE, SERIAL DESIGNATION C307 FOR ELLIPTICAL PIPE. PROVIDE CLASS III UNLESS INDICATED OTHERWISE IN THE SPECIFICATIONS OR ON THE DRAWINGS.

JOINTS FOR CIRCULAR PIPE SHALL BE TONGUE AND GROOVE MEETING REQUIREMENTS OF ASTM C443.

6.2.04 APRON ENDWALLS REINFORCED CONCRETE PIPE APRON ENDWALLS SHALL BE THE ONLY ENDWALLS APPROVED FOR USE WITHIN PUBLIC RIGHTS OF WAY WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE DEPARTMENT. PUBLIC WORKS SHALL MATCH THE ADJACENT PIPE MATERIAL UNLESS OTHERWISE APPROVED BY THE DEPARTMENT.

CUTOFF WALLS SHALL BE INSTALLED ON APRON ENDWALLS LOCATED ON THE DOWNSTREAM END OF PIPES THAT ARE 24" OR GREATER, OR IF THE APRON ENDWALL IS LOCATED WITHIN THREE INCHES OF THE PERMANENT POOL ELEVATION.

6.2.05 PIPE GATES

PIPE GATES FOR REINFORCED CONCRETE PIPE APRON ENDWALLS SHALL BE PROVIDED IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, FOR ALL PIPES 15" IN DIAMETER AND LARGER THAT ARE UPSTREAM OR DOWNSTREAM OF A CLOSED SYSTEM. REFER TO THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION FOR THE SPECIFICATIONS AND STANDARD DETAIL DRAWINGS.

6.2.06 STORM SEWER STRUCTURES

STORM SEWER STRUCTURES LESS THAN OR EQUAL TO 6-FT IN DIAMETER SHALL BE PRECAST REINFORCED CONCRETE WITH CORED, NON-SCORED, SMOOTH-FORMED OPENINGS. ALL PRECAST STORM SEWER STRUCTURES LIDS SHALL BE TONGUE AND GROOVE. STORM SEWER STRUCTURES GREATER THAN 6-FT IN DIAMETER SHALL BE FIELD POURED, IN LIEU OF CORED OPENINGS, STRUCTURES MAY ALSO HAVE FORMED OPENINGS AND/OR BE POURED IN PLACE.

2 X 3 INLETS SHALL CONFORM TO WISDOT TYPE 2X3-FT INLETS, FOUR (4), FIVE (5), AND SIX (6) FOOT DIAMETER MANHOLES SHALL CONFORM TO WISDOT TYPE 4-FT DIAMETER, 5-FT DIAMETER, AND 6-FT DIAMETER MANHOLES, RESPECTIVELY.

MANHOLES SHALL BE REINFORCED CONCRETE CONFORMING TO THE STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS OF ASTM C418.

THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE CITY OF INLETS AND MANHOLES REQUIRE FALSE WALLS. FALSE WALLS SHALL FOLLOW STANDARD DETAIL DRAWING 6.04 AND MUST BE POURED PRIOR TO PLACEMENT OF CURB AND GUTTER.

ADJUSTING RINGS SHALL BE LADTECH HDPE ADJUSTING RINGS OR APPROVED EQUAL. THE FIRST ADJUSTING RING SHALL BE SEALED TO THE CONE AND THE LAST ADJUSTING RING SHALL BE SEALED TO THE CASTING USING PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8". AN APPROVED BUTYL SEALANT OR A 3/8" ROUND BUTYL SEALANT ROPE SHALL BE PLACED IN THE ANNULAR SPACE BETWEEN THE REMAINING RINGS. USE OF PHIMS TO ADJUST HDPE ADJUSTING RINGS IS PROHIBITED.

6.2.07 CASTINGS

CASTINGS FOR VARIOUS STRUCTURE TYPES SHALL BE PROVIDED AS FOLLOWS. CONTRACTOR SHALL CORRECTLY ORIENT THE INLET GRATES RELATIVE TO THE DIRECTION OF FLOW AS DIRECTED BY THE ENGINEER. INLET CURB BOX HEADS SHALL READ "DUMP NO WASTE DRAINS TO LAKE" PER STANDARD DETAIL DRAWING 6.02.

Structure Type	Neesah Casting Designator
Type 2x3-FT Inlet (Continuous Grate)	R-3067-7004-L (vane grate)
Type 2x3-FT Inlet (Low Point, single)	R-3067-7004-VB (two-way vane grate)
Type 2x3-FT Inlet (Low Point, twin)	R-3067-7004-L (vane grate)
Type 2x3-FT Inlet (Driveway)	R-3246-1 (grate as noted for conditions above)
Manhole	R-1550 (self seal, non-rock)

Non-rocking cast iron adjusting rings shall be as specified in SECTION 5 - PAVEMENTS.

6.3 EXECUTION

6.3.01 GENERAL

BEFORE THE START OF CONSTRUCTION, THE CONTRACTOR SHALL VERIFY EXISTING STORM SEWERS ELEVATIONS WITH PROPOSED PLAN ELEVATIONS. ALL SIGNIFICANT DIFFERENCES BETWEEN EXISTING STORM SEWER INVERTS AND PLAN INVERTS (GREATER THAN 0.1") SHALL BE REPORTED TO THE ENGINEER.

STORM SEWER SHALL BE INSTALLED TO AN ELEVATION TOLERANCE OF PLUS OR MINUS 0.1 FEET OF THE PLAN ELEVATION OR ELEVATION PROVIDED ON THE GRADE SHEET AT ANY POINT ALONG THE MAIN.

WHEN A SEWER CROSSES UNDER A WATER MAIN, PROVIDE A MINIMUM OF SIX INCHES (6") SEPARATION BETWEEN THE BOTTOM OF THE WATER MAIN AND THE TOP OF THE SEWER. WHEN A SEWER CROSSES OVER A WATER MAIN, PROVIDE A MINIMUM OF 18 INCHES SEPARATION BETWEEN THE TOP OF THE WATER MAIN AND THE BOTTOM OF THE STORM SEWER.

6.3.02 HANDLING OF MATERIALS

HANDLE MATERIALS WITH CARE TO AVOID DAMAGE. DO NOT DUMP OR DROP MATERIALS. REMOVE ALL DAMAGED OR FLAWED MATERIALS FROM THE SITE.

ARRANGE FOR SUITABLE SITES FOR MATERIAL STORAGE.

6.3.03 LAYING OF PIPE

THE TRENCH SHALL BE EXCAVATED TO AN ELEVATION AT LEAST SIX INCHES (6") BELOW THE ELEVATION ESTABLISHED FOR THE BOTTOM OF THE PIPE. THIS DEPTH SHALL BE BACKFILLED WITH BEDDING MATERIAL. BEDDING AND COVER MATERIAL SHALL BE USED FOR THE FULL CROSS SECTION OF THE EXCAVATED TRENCH TO THE SPRINGLINE OF THE PIPE. BEING INSTALLED. GRANULAR MATERIAL SHALL BE PROVIDED FROM THE SPRINGLINE OF THE PIPE TO THE PROPOSED PAVEMENT SUBGRADE.

COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 95% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, WITHIN THREE VERTICAL FEET (3') OF THE PAVEMENT SUBGRADE. COMPACTION OF GRANULAR BACKFILL MATERIAL SHALL MEET 90% MODIFIED PROCTOR, THE STANDARD SPECIFICATION OF ASTM D-1557, IN THE CROSS-SECTIONAL AREA OF THE TRENCH BETWEEN THE SPRINGLINE OF THE PIPE AND THE PLANE THREE VERTICAL FEET (3') FROM THE PROPOSED PAVEMENT SUBGRADE.

NOT MORE THAN 200 FEET OF TRENCH SHALL BE OPENED AT ANY ONE TIME. NOT MORE THAN 100 FEET OF TRENCH MAY BE OPENED IN ADVANCE OF THE COMPLETED PIPE LAYING OPERATIONS, AND NOT MORE THAN ONE STREET CROSSING MAY BE OBSTRUCTED BY THE SAME TRENCH AT ANY ONE TIME.

LAY PIPE UNIFORMLY TO LINE AND GRADE SO THAT THE FINISHED SEWER PRESENTS A UNIFORM BORE. NOTICEABLE VARIATIONS FROM STRAIGHT ALIGNMENT AND GRADE WILL BE SUFFICIENT CAUSE FOR REJECTION OF THE WORK.

COMMENCE AT THE LOWEST POINT AND PROCEED TO THE UPPER END. LAY PIPE WITH BELL-END POINTING UP-GRADE.

ALL STORM SEWER PIPE MUST EXTEND THROUGH THE ENTIRE STRUCTURE WALL PLUS TWO INCHES (2") BEYOND.

WHEN WORK HAS STOPPED FOR ANY REASON, SECURELY PLUG THE END OF THE PIPE.

PIPE JOINTING: ASSEMBLE JOINTS IN ACCORDANCE WITH THE PIPE MANUFACTURER'S INSTRUCTIONS.

CONCRETE PIPE PICK HOLES SHALL BE TAR SEALED WITH A FORMED CONCRETE PLUS, OR PLUGGED WITH A POPIT PLASTIC PLUS OR APPROVED ALTERNATIVE.

6.3.04 BEDDING AND COVER

PROVIDE A MINIMUM OF SIX INCHES (6") OF BEDDING MATERIAL UNDER THE PIPE BARREL AND UNDER THE APRON ENDWALLS. UNDER THE APRON ENDWALLS, SHOVEL-SLICE THE MATERIAL SO THAT IT FILLS AND SUPPORTS THE HAUNCH AREA AND ENCASES THE PIPE. IF EXCAVATION IS CARRIED DEEPER THAN SIX INCHES (6") BELOW THE PIPE BARREL, BACKFILL THE EXCESS DEPTH WITH BEDDING MATERIAL. AFTER THE PIPE HAS BEEN LAID AND JOINTED, FILL COVER MATERIAL BY HAND OR EQUALLY CAREFUL MEANS TO THE SPRINGLINE OF THE PIPE. COMPACT COVER MATERIAL USING TAMPING BARS AND/OR MECHANICAL TAMPERS.

SEE STANDARD DETAIL DRAWING 6.01 STORM SEWER TRENCH.

6.3.05 APRON ENDWALLS

JOINT TIES SHALL BE INSTALLED AT THE LAST UPSTREAM AND DOWNSTREAM TIE (2) JOINTS ON ANY PIPE RUN ENDING IN AN APRON ENDWALL. CONSTRUCTED WITH REINFORCED CONCRETE PIPE OR HORIZONTAL ELLIPTICAL REINFORCED CONCRETE PIPE OF ANY SIZE. RIPRAP, UNDERLINED WITH GEOTEXTILE FABRIC, SHALL BE PROVIDED AT THE ENDS OF THE APRON ENDWALL AS INDICATED ON THE PLANS OR AS DIRECTED BY THE ENGINEER. PLACEMENT SHALL BE IN ACCORDANCE WITH SECTION 6.06 OF THE WISDOT SPECIFICATIONS. GEOTEXTILE FABRIC SHALL EXTEND A MINIMUM OF TWO FEET (2') UNDER THE APRON ENDWALL. SEE STANDARD DETAIL DRAWING 6.06 RIP RAP AND ENDWALL INSTALLATION.

PICK HOLES SHALL BE SEALED WITH CONCRETE ON THE INSIDE AND THE OUTSIDE OF THE STRUCTURE PRIOR TO BACKFILLING.

6.3.06 PIPE GATES

PIPE GATES FOR REINFORCED CONCRETE APRON ENDWALLS SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF MADISON STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION.

6.3.07 STORM SEWER STRUCTURES

STORM SEWER STRUCTURES SHALL HAVE A MINIMUM OF THREE INCHES (3") AND A MAXIMUM OF NINE INCHES (9") OF ADJUSTING RINGS. ADJUSTING RINGS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS AND AS HEREIN SPECIFIED. PRIOR TO INSTALLATION OF ADJUSTING RINGS, CLEAN TOP OF CONCRETE STRUCTURE OF DEBRIS. PREPARE A FLAT SEALABLE SURFACE USING NON-SHRINK MORTAR (4000 PSI) IF THE TOP OF THE CONCRETE STRUCTURE IS TOO BADLY CHIPPED TO INSTALL THE RINGS CORRECTLY. RINGS FOR STORM SEWER MANHOLE STRUCTURES INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8" BETWEEN STRUCTURE AND FIRST RING WHERE THE FLAT AREA OF THE RING WILL BE IN CONTACT WITH THE STRUCTURE FOR THE ENTIRE 360 DEGREES, ONE (1) 1/4" BEAD OF SEALANT OR 3/8" ROUND BUTYL SEALANT ROPE ON THE ENTIRE 360 DEGREES OF EACH RING MAKE LIP, AND INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8" ON TOP OF THE UPPER RING IN A LOCATION SO THAT IT CONTACTS THE COVER FRAME THE FULL 360 DEGREES. MAKE SURE ALL LOOSE RUST IS REMOVED FROM THE CASTING BEFORE IT IS PLACED ON THE ADJUSTING RINGS.

STORM SEWER 2X3 INLETS, INSTALL PRE-COMPRESSED BUTYL RUBBER 3/8" X 3/8" BETWEEN STRUCTURE AND FIRST RING AND THE TOP RING AND THE CASTING. WRAP OUTSIDE OF THE ADJUSTING RINGS ON INLETS WITH MINIMUM FOUR (4) GUNITE NON-HOVEN FILTER FABRIC. LAP FILTER FABRIC OVER INLET STRUCTURE AND CASTING BY FOUR INCHES (4") AND ITSELF BY ONE FOOT (1'). FASTEN FILTER FABRIC IN PLACE DURING BACKFILL OPERATIONS. ALL ADJUSTMENT FOR MATCHING ROAD GRADE SHALL BE MADE BY UTILIZING A MOLDED AND INDEXED SLOPE RING. USE OF MORTAR OR SHIMS, OR MODIFYING ADJUSTING RINGS

TO MATCH ROAD GRADING IS PROHIBITED. A FALSE WALL MUST BE POURED IF A HORIZONTAL ADJUSTMENT IS NECESSARY, SEE STANDARD DETAIL DRAWING 6.04 INLET FALSE WALL.

STORM SEWER MANHOLE RIMS MAY NEED ADJUSTMENT FROM THE PLAN ELEVATION TO MEET FIELD CONDITIONS. THE COST OF THIS WORK SHALL BE INCIDENTAL TO THE CONTRACT.

POURED CONCRETE COLLARS SHALL BE VIBRATED AND TROWEL FINISHED. COLLAR SHALL BE EIGHT INCH BY EIGHT INCH (8"X8") ON THE EXTERIOR AND EXTEND AROUND THE ENTIRE PIPE ON BOTH SIDES. THE INSIDE AND OUTSIDE OF THE COLLARS SHALL BE COMPLETED AT THE SAME TIME. CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING. ALL STORM SEWER STRUCTURES SHALL HAVE A FIELD POURED BENCH WITH A POSITIVE FLOW CHANNEL AND BENCH. CONCRETE SHALL BE PER SECTION 4.2.01 - CONCRETE.

PICK HOLES SHALL BE SEALED WITH CONCRETE ON THE INSIDE AND THE OUTSIDE OF THE STRUCTURE PRIOR TO BACKFILLING.

6.3.08 CASTINGS

INLET CASTINGS SHALL BE SET TO FINAL GRADE WITH ADJUSTING RINGS PER SECTION 6.3.06 - STORM SEWER STRUCTURES PRIOR TO AND SEPARATE FROM POURING THE CURB AND GUTTER. INLET CASTINGS SHALL BE SET WITH AN EIGHT INCH (8") FLOW LINE DEPRESSION FROM THE TOP OF CURB. CONCRETE SHALL BE POURED BEHIND THE INLET CASTING SO AS TO COVER THE BOLT HOLES.

MANHOLE CASTINGS IN ROADWAYS TEMPORARILY RECEIVING LOWER COURSE ONLY, SHALL BE SET TO BINDER GRADE. MANHOLE CASTINGS SHALL BE SET TO FINISH GRADE IN ALL AREAS. CONCRETE COLLAR SHALL BE IN ALL OTHER AREAS UNLESS OTHERWISE DIRECTED BY ENGINEER. "SCAB" AND MONOLITHIC RAMPING IS PROHIBITED.

MANHOLE CASTINGS SET TO BINDER GRADE, SHALL BE BROUGHT TO ONE-QUARTER INCH (1/4") BELOW SURFACE GRADE IMMEDIATELY PRIOR TO PLACEMENT OF SURFACE COARSE, WITH NON-ROCKING CAST IRON ADJUSTMENT RINGS PER SECTION 5.2.06 - ADJUSTING RINGS.

6.3.09 EXISTING STORM SEWER CONNECTIONS

ALL STORM SEWER CONNECTIONS TO EXISTING STRUCTURES SHALL BE MADE BY USING A CORING MACHINE WITH A POURED CONCRETE COLLAR. THE INSIDE AND OUTSIDE OF THE POURED CONCRETE COLLAR SHALL BE COMPLETED AT THE SAME TIME. CONCRETE COLLAR SHALL BE VIBRATED AND TROWEL FINISHED. POURED CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING. FOR CONNECTIONS, THE CONTRACTOR SHALL HAVE THE OPTION OF USING AN APPROVED WATERTIGHT ADAPTOR FOR THE JOINT.

A POURED CONCRETE COLLAR MAY BE REQUIRED AT THE JUNCTION OF A NEW RCP PIPE TO AN EXISTING RCP PIPE WHEN IDENTIFIED ON THE PLANS OR DIRECTED BY ENGINEER. THE JUNCTION SHALL BE CLEAN CUT WITH NO GRIP. CONCRETE SHALL HAVE A MINIMUM OF ONE INCH (1") IN EITHER DIRECTION OF THE JOINT AND A MINIMUM THICKNESS AROUND THE PIPE OF EIGHT INCHES (8"). CONCRETE COLLAR SHALL BE VIBRATED AND TROWEL FINISHED. POURED CONCRETE COLLARS SHALL CURE FOR 24 HOURS AND BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILLING.

6.3.10 ABANDONMENT A. STRUCTURES, THE CASTING, ALL ADJUSTING RINGS, AND THE TOP THREE FEET (3') OF THE STRUCTURE SHALL BE REMOVED. CASTINGS ARE THE PROPERTY OF THE CITY. A HOLE SHALL BE CUT INTO THE BOTTOM OF THE STRUCTURE TO ACCOMMODATE DRAINAGE THROUGH THE STRUCTURE. ALL OPENINGS WITHIN THE STRUCTURE SHALL BE PLUGGED WITH CONCRETE. THE ENTIRE STRUCTURE SHALL BE COMPLETELY FILLED IN WITH GRANULAR MATERIAL OR CELLULAR CONCRETE. ALL DISTURBED AREAS SHALL BE BACKFILLED WITH THE REQUIRED BACKFILL MATERIAL.

B. PIPE THE APRON ENDWALL SHALL BE REMOVED. THE PIPE END SHALL BE PLUGGED WITH CONCRETE.

6.3.11 DENATERING

IF CONDITIONS WARRANT, CONTRACTOR SHALL FURNISH AND INSTALL WELL POINT SYSTEMS OR DEEP WELLS. SPACING AND DEPTH OF WELL POINTS OR DEEP WELLS SHALL BE ADEQUATE TO LOWER THE GROUND WATER TABLE BELOW THE TRENCH BOTTOM. NO EXTRA PAYMENT WILL BE MADE FOR DENATERING OF THE TRENCH WHETHER ACCOMPLISHED BY THE USE OF SUMPS AND PUMPS, WELL POINT SYSTEMS OR DEEP WELLS.

CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS DURING THE DENATERING OPERATION TO PROTECT ADJACENT STRUCTURES AGAINST SUBSIDENCE, FLOODING OR OTHER DAMAGE.

IN AREAS WHERE CONTINUOUS OPERATION OF DENATERING PUMPS IS NECESSARY, CONTRACTOR SHALL AVOID NOISE DISTURBANCE TO NEARBY RESIDENCES TO THE GREATEST EXTENT POSSIBLE BY USING ELECTRIC DRIVEN PUMPS, INTAKE AND EXHAUST SILENCERS OR HOUSING TO MINIMIZE NOISE.

UPON COMPLETION OF THE DENATERING PROJECT, ALL DENATERING WELLS SHALL BE PERMANENTLY ABANDONED. IF DENATERING WELLS ARE LESS THAN 25 FEET DEEP THEY SHALL BE PERMANENTLY ABANDONED BY REMOVING THE WELL CASING AND SCREENS AND FILLING THE BOREHOLE WITH BENTONITE. IF DENATERING WELLS ARE 25 FEET DEEP OR GREATER, THEY SHALL BE ABANDONED PER NR 912.26.

6.3.12 FROST CLEARANCES

STORM SEWERS OR CULVERTS, WHICH CROSS AN ACTIVE SEWER, WATER MAIN OR LATERAL SHALL HAVE A MINIMUM CLEAR VERTICAL CLEARANCE OF THREE FEET (3'). CROSSINGS WITH LESSER VERTICAL CLEARANCE SHALL BE PROTECTED FROM FROST DAMAGE BY PLACING AT LEAST TWO SHEETS (4'X8') OF TWO-INCH THICK R-10, 25 PSI, EXTRUDED POLYSTYRENE BOARD INSULATION FOUR INCHES (4") TOTAL STAGGERED AS DIRECTED BY THE ENGINEER.

6.4 FIELD QUALITY CONTROL AND TESTING

6.4.01 TELEVISION

ALL STORM SEWERS, PIPES AND STRUCTURES, SHALL BE TELEVISED.

CLOSED CIRCUIT TELEVISION SHALL BE UTILIZED FOR INSPECTING THE INTERIOR OF ALL COMPLETED SECTIONS OF THE MAINS. TELEVISION SHALL TAKE PLACE AFTER ALL UTILITIES ARE INSTALLED, BACKFILLED AND CONTACTED. ALL STORM SEWER HAS BEEN CLEANED. ALL STORM SEWER UNDERCUTS ARE COMPLETE, AND PRIOR TO PLACEMENT OF ANY HARD SURFACE. FLASH DRIVE RECORDINGS OF THESE INSPECTIONS AND WRITTEN AND PDF LOGS OF SAME SHALL BE SUBMITTED TO AND REVIEWED BY THE ENGINEER FIVE BUSINESS DAYS PRIOR TO THE PLACEMENT OF ANY HARD SURFACE. FLASH DRIVE RECORDINGS AND WRITTEN AND PDF LOGS SUBMITTED TO THE ENGINEER SHALL EXCLUSIVELY BE FOR STORM SEWER, OR FLASH DRIVE RECORDINGS AND WRITTEN AND PDF LOGS FOR SANITARY SEWER SHALL BE SUBMITTED SEPARATELY. INSPECTION RECORDS SHALL BE OF SUITABLE FORM AND SHALL INCLUDE, BUT NOT NECESSARILY BE LIMITED TO, THE FOLLOWING DATA:

PROJECT TITLE, OWNER NAME, DATE OF INSPECTION, TYPE OF PIPE AND SIZE

WEATHER

NAMES OF INSPECTORS AND TECHNICIANS

LOCATION OF LINE

MANHOLE NUMBERS, SECTION LENGTH

DIRECTION OF INSPECTION AND MEASUREMENTS

LOCATION, SIZE, AND DIRECTION OF ALL LATERALS, INCLUDING LATERALS EXTENDING FROM MANHOLES

GENERAL CONDITION OF LINE

DEFLECTIONS (VERTICAL AND HORIZONTAL)

JOINT CONDITIONS

POINTS OF INFILTRATION, LOCATIONS OF OBSTRUCTIONS

THE TELEVISION CAMERA USED SHALL BE SPECIFICALLY DESIGNED AND CONSTRUCTED FOR SEWER INSPECTION AND SHALL TAKE PICTURE IN COLOR, BLACK AND WHITE IMAGERY SHALL NOT BE ACCEPTED. LIGHTING FOR THE CAMERA SHALL BE OPERATIVE IN 100 PERCENT HUMIDITY CONDITIONS. THE CAMERA SHALL HAVE A MINIMUM OF 120X480 RESOLUTION. PICTURE QUALITY AND DEFINITION SHALL BE TO THE COMPLETE SATISFACTION OF THE OWNER. THE IMPROVEMENTS SHALL NOT BE ELIGIBLE FOR ACCEPTANCE PRIOR TO CONTRACTOR'S SUBMISSION OF TELEVISION RECORDS WHICH ARE DEEMED SATISFACTORY BY THE OWNER.

THE CONTRACTOR SHALL, PRIOR TO TELEVISION, DEPOSIT INTO THE NEW SEWER MAINS AND SERVICES A MINIMUM AMOUNT OF WATER AS DIRECTED BY THE ENGINEER TO ALLOW FOR INDICATION OF SAGS IN THE PIPE.

FLASH DRIVE RECORDS SHALL BE MADE OF ALL SECTIONS OF THE NEW SEWER MAIN. THE VIDEO SHALL BE MADE CONTINUOUSLY AS THE CAMERA IS PULLED OR DRIVEN THROUGH THE LINE AND SHALL INCLUDE A PANORAMA VIEW OF EACH MANHOLE, AS WELL AS CONFIRMATION THAT A PLUS HAS BEEN INSTALLED ON THE PIPE EACH RECORDING SHALL BE IN FLASH DRIVE FORMAT AND SHALL BE NUMBERED AND DATED. A LIST SHALL BE PROVIDED ON THE CONTAINER FOR EACH FLASH DRIVE INDICATING THE FLASH DRIVE NUMBER, PROJECT NAME AND SECTIONS OF SEWER INCLUDED. ALL RECORDINGS SHALL BE MADE ON NEW FLASH DRIVES AND THE FLASH DRIVES SHALL BECOME THE PROPERTY OF THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL SAFETY EQUIPMENT NECESSARY TO COMPLETE THE WORK IN COMPLIANCE WITH APPLICABLE OSHA AND DCOM STANDARDS.

SECTION 7 - WATER MAINS, HYDRANTS, AND SERVICE LATERALS

7.1 GENERAL

7.1.01 RELATED DOCUMENTS

MUCA SPECIFICATIONS, LATEST EDITION

AMERICAN WATER WORKS ASSOCIATION STANDARDS (AWWA), LATEST EDITION

WISDOT SPECIFICATIONS, LATEST REVISION AVAILABLE AT [HTTP://ROADWAYSTANDARDS.DOT.WIS.GOV/STANDARDS/STNSPEC/INDEX.HTM](http://roadwaystandards.dot.wis.gov/standards/stdnspec/index.htm)

7.1.02 DESCRIPTION OF WORK

THIS SECTION INCLUDES REQUIREMENTS FOR THE PROVISION AND INSTALLATION OF WATER MAINS, FIRE HYDRANTS, WATER SERVICES, AND RELATED FITTINGS.

7.2 MATERIALS

7.2.01 BEDDING AND COVER

BEDDING AND COVER MATERIAL FOR WATER MAIN, VALVES, HYDRANTS, HYDRANT LEADS, WATER SERVICES, AND RELATED FITTINGS, SHALL BE APPROVED BEDDING SAND WITH 100% OF MATERIAL PASSING A 3/8" SIEVE. NO NATIVE MATERIAL FROM TRENCH SHALL BE USED FOR BEDDING OR COVER MATERIAL. UNWASHED BANK RUN SAND AND CRUSHED BANK RUN GRAVEL WILL BE CONSIDERED GENERALLY ACCEPTABLE COVER MATERIAL.

7.2.02 GRANULAR BACKFILL

GRANULAR BACKFILL FOR WATER MAIN SHALL BE GRADE I OR GRADE 2 AS SPECIFIED IN SECTION 209 OF THE WISDOT SPECIFICATIONS. USE OF SCREENINGS FOR GRANULAR BACKFILL MATERIAL IS PROHIBITED. NO CLAY LUMPS AND/OR FROZEN MATERIAL SHALL BE PRESENT.

7.2.03 BACKFILL MATERIAL

WHEN THE TYPE OF BACKFILL MATERIAL IS NOT SPECIFIED, EXCAVATED BACKFILL MATERIAL MAY BE USED PROVIDED, THAT SUCH MATERIAL CONSISTS OF LOAM CLAY, SAND, GRAVEL, OR OTHER MATERIALS, WHICH, IN THE OPINION OF THE ENGINEER, ARE SUITABLE FOR BACKFILLING. ALL BACKFILL MATERIALS SHALL BE FREE FROM GUNDERS, ASHES, REFUSE, ORGANIC MATTER, BOULDERS, ROCKS OR STONE, FROZEN LUMPS OR OTHER SUCH DELETERIOUS, UNSUITABLE MATERIAL.

7.2.04 WATER MAIN PIPE, FITTINGS, AND ACCESSORIES

ALL WATER MAIN PIPE, FITTINGS AND SPECIALS SHALL BE DUCTILE IRON CONFORMING TO AWWA C151 AND SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA (U.S.) AND LABELED AS SUCH. ALL WATER MAIN PIPE AND FITTING MANUFACTURERS SHALL BE U.S. COMPANIES WITH THEIR HEADQUARTERS LOCATED IN THE U.S. USE OF FOREIGN MATERIALS IS PROHIBITED. THICKNESS CLASS AND JOINT STYLE SHALL BE AS SPECIFIED BELOW FOR TYPE OF INSTALLATION. USE OF POLYVINYL CHLORIDE WATER PIPE OR OTHER COMPOSITE MATERIALS IS NOT ALLOWED.

A. PIPE, ALL BURIED WATER MAIN PIPE SHALL BE PUSH-ON OR MECHANICAL JOINT AND MINIMUM SPECIAL THICKNESS CLASS 52 WITH A MINIMUM RATED WORKING PRESSURE OF 350 PSI. PIPE HALL THICKNESS SHALL ALSO MEET THE REQUIREMENTS OF AWWA C150 FOR BURIED PIPING WITH DEPTH AND COVER AS SHOWN IN FIGURE 1 FOR LAYING CONDITION TYPE 5 WITH THE ADDITION OF ONE FOOT (1') OF COVER OVER TOP OF PIPE. THE WORDS "DUCTILE IRON" OR "DIP" ALONG WITH THE HEIGHT AND THICKNESS CLASS OF PIPE SHALL BE PLAINLY MARKED ON THE EXTERIOR OF EACH WATER MAIN PIPE.

ALL PIPE SHALL BE FURNISHED WITH CABLE BOND CONDUCTOR OR ELECTROBOND CONDUCTIVITY STRIPS. THERMITE WELDED COATS ARE ALLOWED PROVIDED WELD POINTS ARE THOROUGHLY COVERED WITH BITUMASTIC MATERIAL.

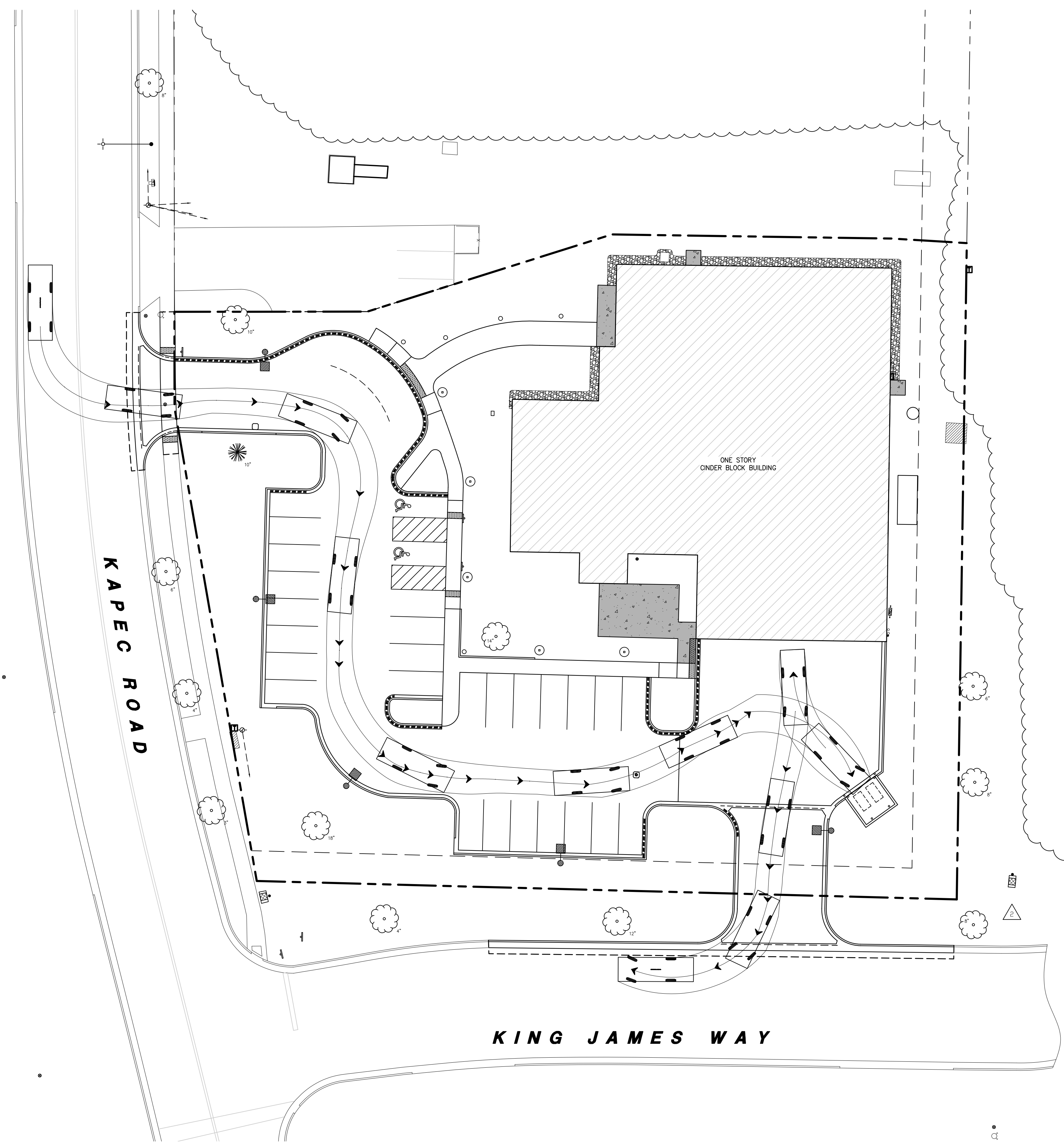
INNER SURFACES OF ALL DUCTILE IRON PIPING SHALL BE CEMENT MORTAR LINED AND COATED PER ANNA C104. ALL BURIED DUCTILE IRON PIPING SHALL BE COATED ON THE OUTSIDE PER ANNA C104.

ALL EXPOSED WATER MAIN, INTERIOR PIPING, AND PIPING IN PITS OR MANHOLES SHALL BE FLANGED JOINT AND MINIMUM SPECIAL THICKNESS CLASS 53 WITH A MINIMUM RATED WORKING PRESSURE OF 350 PSI. PIPE HALL THICKNESS SHALL ALSO MEET THE REQUIREMENTS OF AWWA C151 FOR FLANGED JOINT.

EXPOSED INTERIOR PIPING SHALL BE FURNISHED WITH OUTSIDE SURFACES PREPARED IN ACCORDANCE WITH NEAR WHITE GRADE NAPP 500-03, REMOVING ALL DIRT, RUST SCALE, AND FOREIGN MATERIALS. CLEANED SURFACES SHALL BE SHOP PRIMED. SHOP PRIMING SHALL BE WITH ONE COAT OF TNE66 64-1255 HI-BUILD EPOXOLINE PRIMER, OR EQUAL, APPLIED TO A MINIMUM OF 5.0-MILS DRY THICKNESS. PRIMER USED SHALL BE COMPATIBLE WITH PROPOSED FINISH COATS. CONTRACTOR TO VERIFY. ALL PIPING, SUPPORTS, AND APPURTENANCES SHALL BE FURNISHED SHOP PRIMED, CLEAN, AND READY TO ACCEPT FINISH PAINTING BY CONTRACTOR, WITH A MINIMAL AMOUNT OF SURFACE PREPARATION.

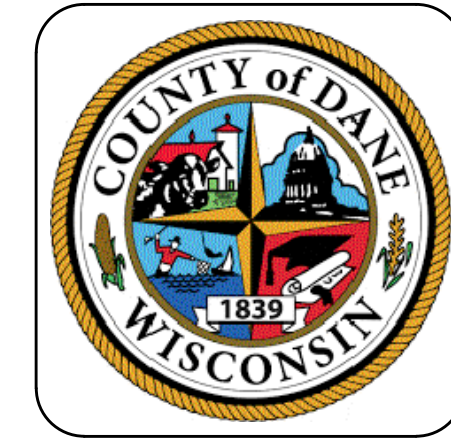
IN CASES WHERE CORPORATION STOPS ARE TO BE TAPPED INTO MAINS, PIPE HALL THICKNESS SHALL BE FURNISHED AS SPECIFIED IN ANNA C151. PIPE SADDLES MAY BE FURNISHED IN LIEU OF PIPE THICKNESS AS APPROVED BY UTILITY.

B. GASKETS. MECHANICAL JOINTS OR PUSH-ON JOINTS SHALL UTILIZE VULCANIZED SYNTHETIC RUBBER GASKETS AND SHALL CONFORM TO ANNA C111. BOLTS ON THE EXTERIOR JOINTS SHALL BE HIGH-STRENGTH LOW-ALLOY STEEL (CORTEN OR EQUAL) CONFORMING TO ANNA C111. CERTIFICATE TO THE EFFECT SHALL BE PROVIDED



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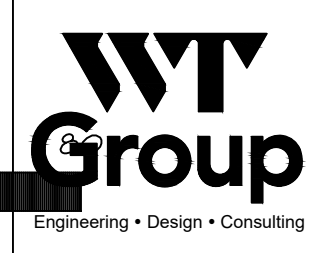
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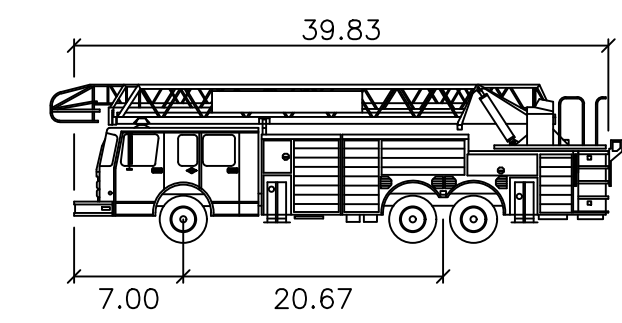
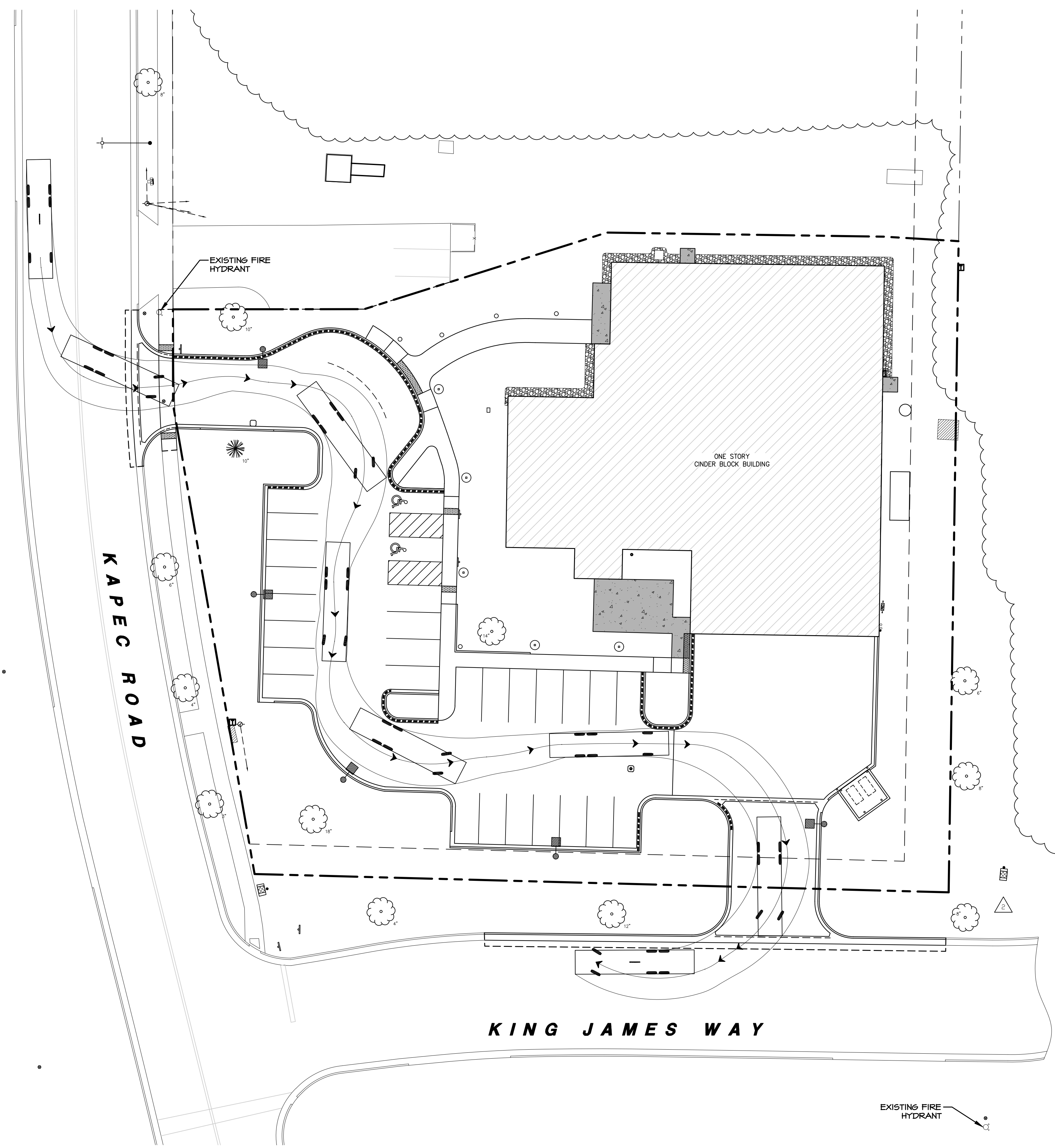
CIRCULATION PLAN - GARBAGE TRUCK
EX-1.0



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FIRE TRUCK

feet

Width : 8.00
 Track : 8.08
 Lock to Lock Time : 6.0
 Steering Angle : 37.0

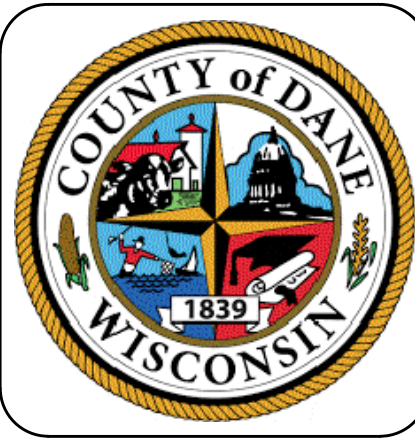
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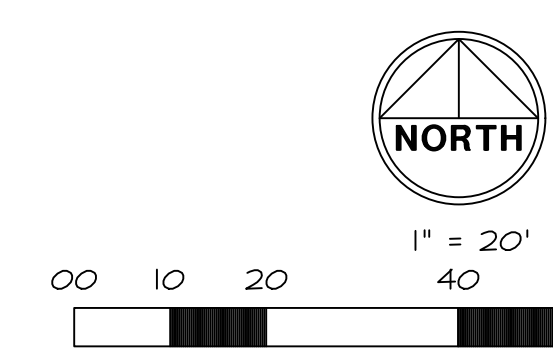
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CIRCULATION PLAN - FIRE TRUCK

EX-1.1



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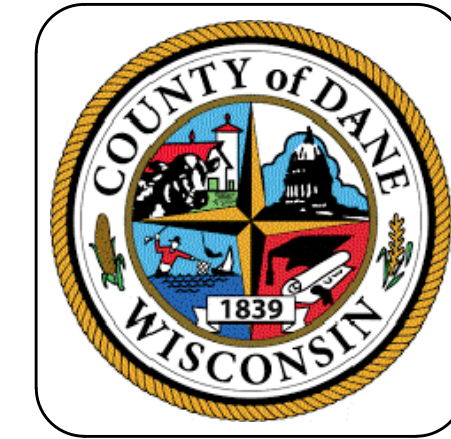
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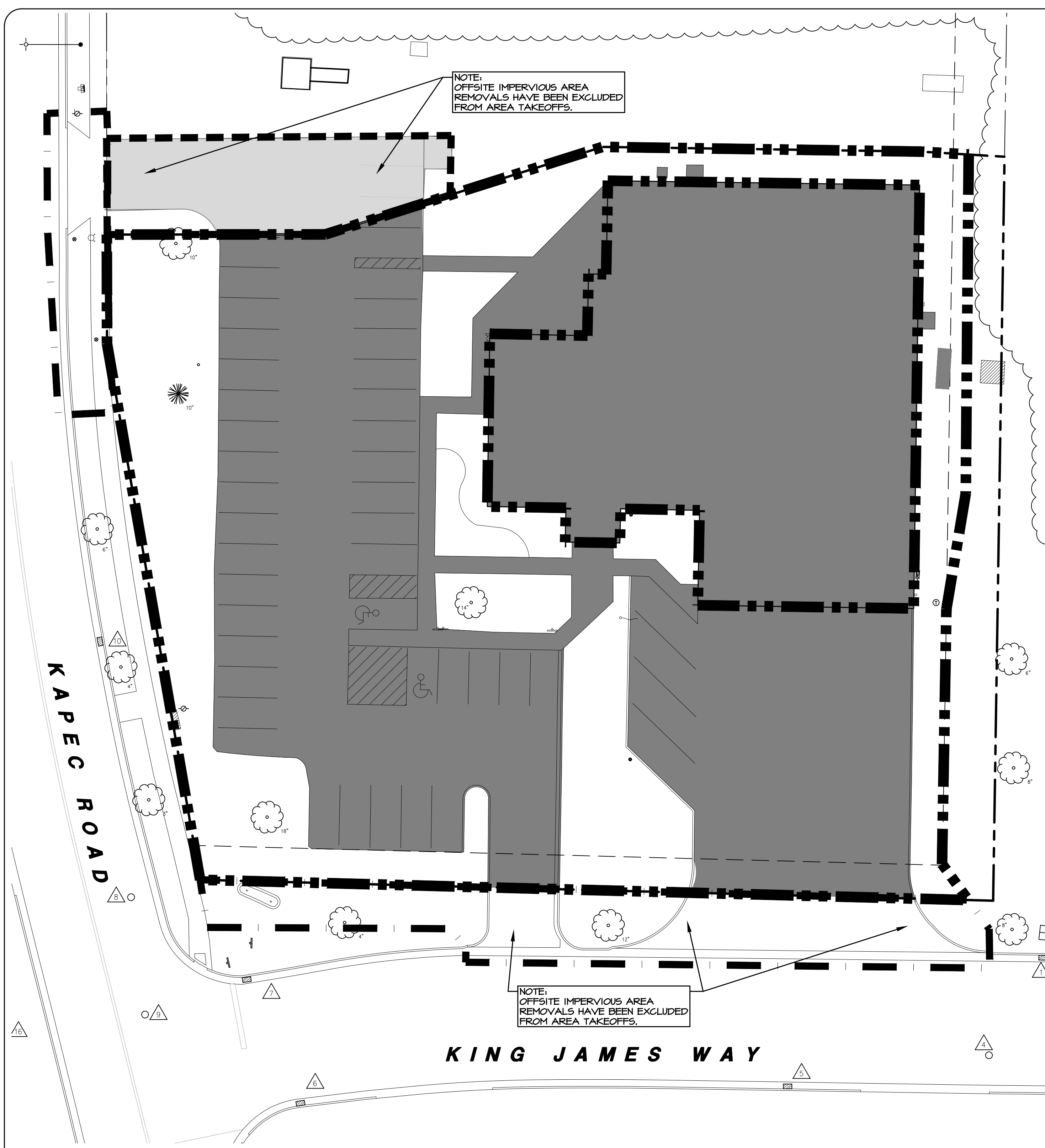
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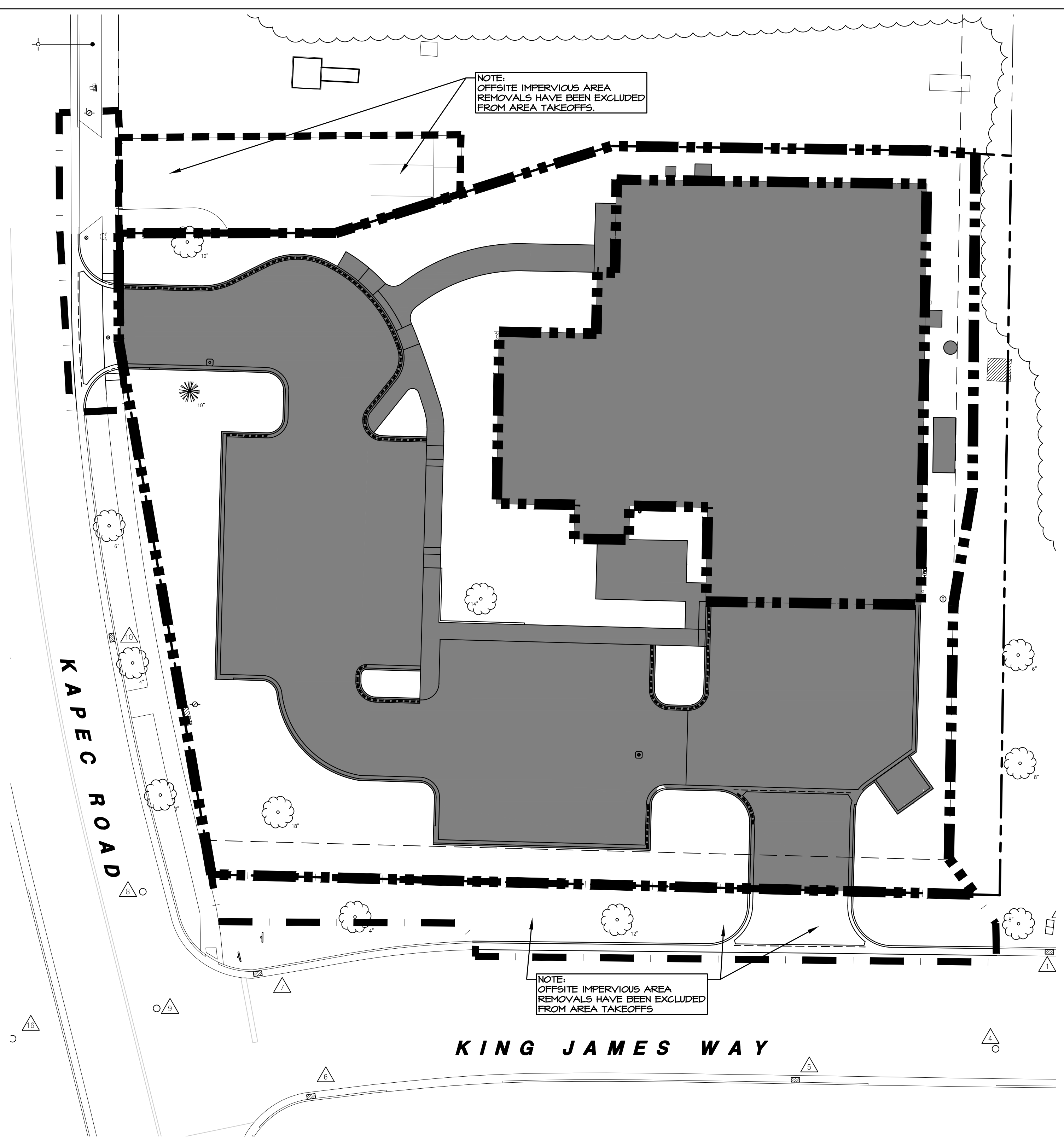
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EXISTING VS. PROPOSED CONDITION EXHIBIT
EX-2.0



EXISTING CONDITION

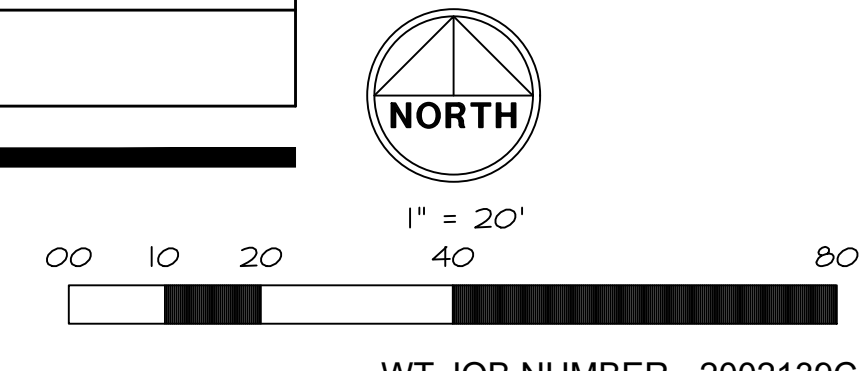
	AREA (ACRE)	AREA (SF)	PERCENT COVERAGE
IMPERVIOUS	0.7830	34,109	65.80%
PERVIOUS	0.4070	17,727	34.20%
TOTAL PROPERTY AREA	1.1900	51,836	
OFFSITE NORTH IMPERVIOUS AREA	0.0541	2,358	



PROPOSED CONDITION

	AREA (ACRE)	AREA (SF)	PERCENT COVERAGE
IMPERVIOUS ONSITE	0.7364	32,078	61.88%
PERVIOUS ONSITE	0.4536	19,758	38.12%
TOTAL PROPERTY AREA	1.1900	51,836	
OFFSITE NORTH IMPERVIOUS AREA	0.0000	0	

DISTURBED AREAS:	AREA (ACRE)	AREA (SF)
TOTAL DISTURBED AREA ONSITE:	0.8400	36,655
RIGHT OF WAY AREA OF DISTURBANCE	0.1300	5,703
OFFSITE NORTH AREA OF DISTURBANCE	0.0540	2,358
TOTAL DISTURBED AREA (THIS SITE), INCLUDING ON SITE AREAS, RIGHT-OF-WAY, AND AREA OFFSITE NORTH OF THE PROPERTY DISTURBANCES	1.0300	44,716



WT JOB NUMBER - 2002139C

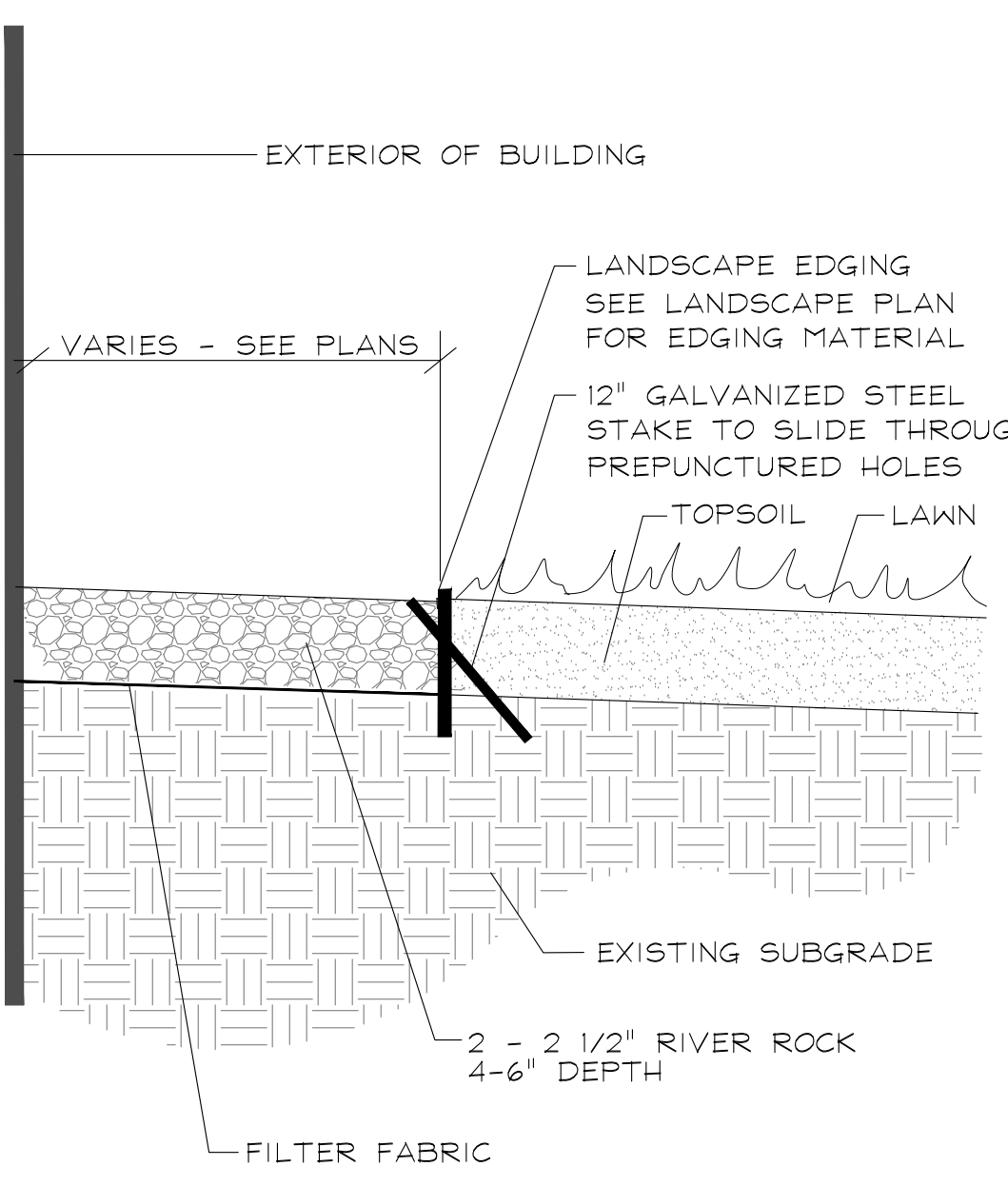
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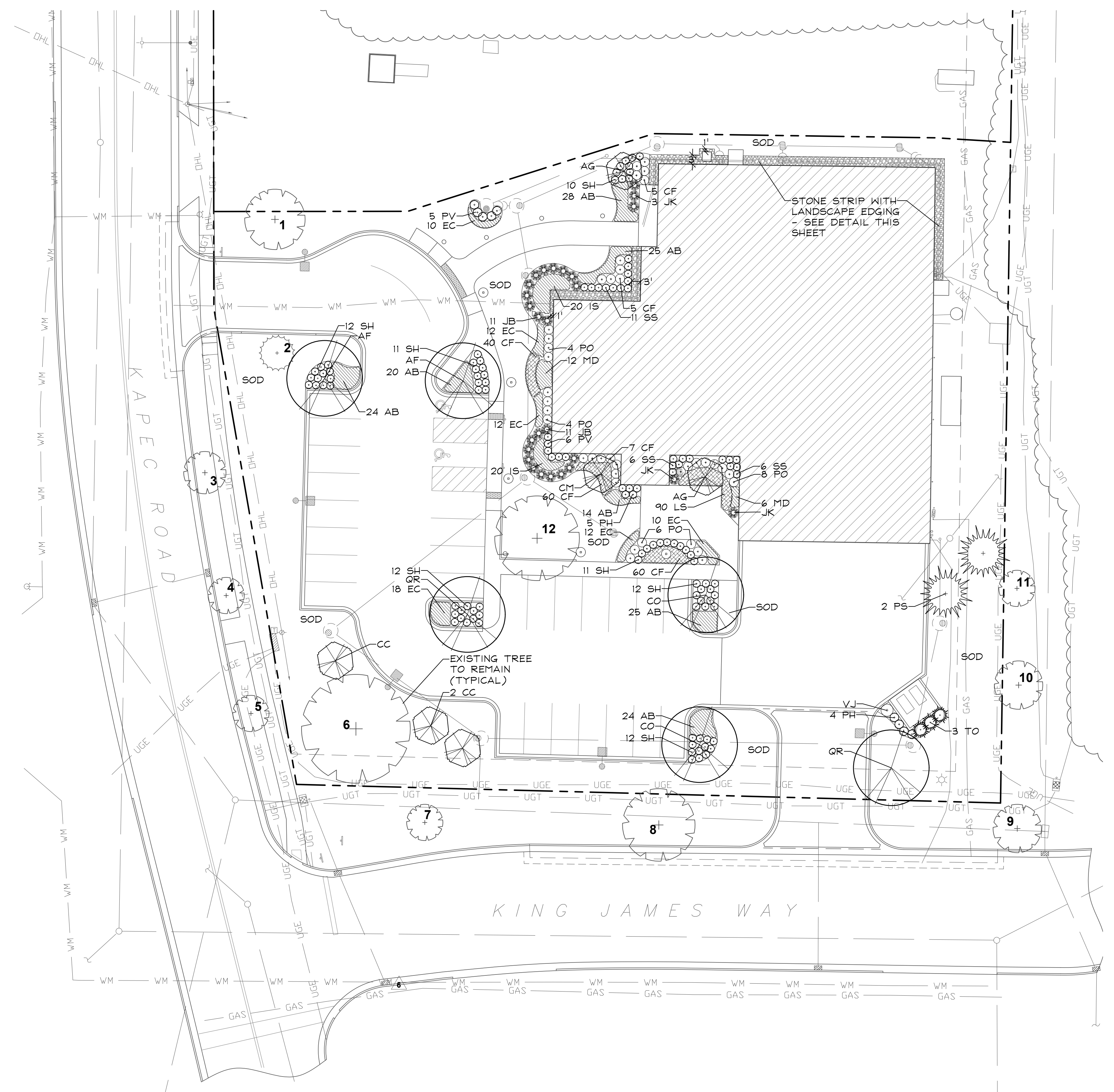
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 wtengineering.com
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PROPOSED PLANT LIST

Key	Qty	Botanical/Common Name	Size	Remarks
SHADE TREES				
AF	2	Acer x freemanii 'Manna' MARMO FREEMAN MAPLE	2 1/2" Cal.	
QR	2	Quercus rubra RED OAK	2 1/2" Cal.	
TC	2	Tilia cordata 'Greenspire' GREENSPIRE LITTLELEAF LINDEN	2 1/2" Cal.	
ORNAMENTAL TREES				
AG	2	Amelanchier x grandiflora APPLE SERVICEBERRY	8' Ht.	Multi-Stem
CC	3	Cercis canadensis EASTERN REDBUD	8' Ht.	Clump Form
CM	1	Cornus mas CORNELIANCHERRY DOGWOOD	2" Cal.	Tree Form
EVERGREEN TREES				
PS	2	Picea strobus EASTERN WHITE PINE	8' Ht.	
TO	3	Thuja occidentalis 'Techny' TECHN Y ARBORVITAE	6' Ht.	
DECIDUOUS SHRUBS				
CF	17	Cornus sericea 'Farrow' ARCTIC FIRE REDTWIN DOGWOOD	24" Tall	3' O.C.
PO	22	Physocarpus opulifolius 'Donna May' LITTLE DEVIL NINEBARK	24" Tall	3' O.C.
VJ	1	Viburnum x juddii JUDD VIBURNUM	36" Tall	4' O.C.
EVERGREEN SHRUBS				
JK	5	Juniperus chinensis 'Kallays Compact' KALLAYS COMPACT PFITZER JUNIPER	24" Wide	4' O.C.
JB	22	Juniperus conferta 'Blue Pacific' BLUE PACIFIC JUNIPER	24" Wide	4' O.C.
ORNAMENTAL GRASSES				
PH	9	Panicum virgatum 'Heavy Metal' HEAVY METAL SWITCHGRASS	#1	30" O.C.
PV	11	Panicum virgatum 'Shenandoah' SHENANDOAH RED SWITCHGRASS	#1	30" O.C.
SS	33	Schizachyrium scapanium LITTLE BLUESTEM	#1	30" O.C.
SH	80	Sporobolus heterolepis PRAIRIE DROPSEED	#1	30" O.C.
PERENNIALS				
AB	160	Allium 'Summer Beauty' SUMMER BEAUTY ONION	#1	18" O.C.
EC	74	Echinacea 'CBG Cone 2' PIXIE MEADOWBRITE CONEFLOWER	#1	18" O.C.
IS	40	Iris sibirica SIBERIAN IRIS	#1	18" O.C.
MD	18	Moranda didyma 'Raspberry Wine' RASPBERRY WINE BEEBALM	#1	24" O.C.
GROUNDCOVERS				
CF	160	Carex flacca BLUE SEDGE	#SP4	12" O.C.
LS	90	Liriope spicata CREEPING SPILYTURF	#SP4	12" O.C.
MISC. MATERIALS				
18		SHREDDED HARDWOOD MULCH	C.Y.	
1,765		SOD	S.Y.	
10		2" CLEAN RIVER ROCK	C.Y.	
198		BLACK METAL LANDSCAPE EDGING	L.F.	

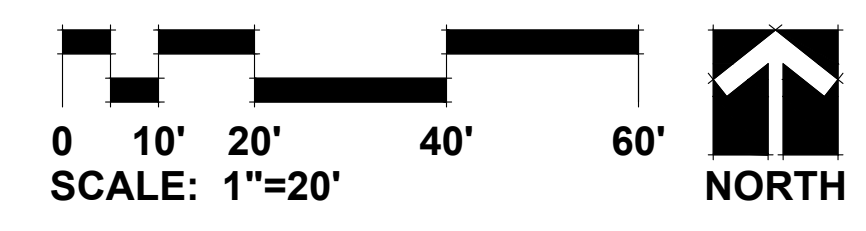


STONE STRIP DETAIL
SCALE: N.T.S.



EXISTING PLANT LIST

Tree #	Botanic Name	Common Name	Size (DBH)
1	Acer platanoides	Norway Maple	10"
2	Picea pungens 'Glauca'	Colorado Blue Spruce	10"
3	Gymnocladus dioicus	Kentucky Coffeetree	6"
4	Syringa reticulata	Japanese Tree Lilac	4"
5	Gymnocladus dioicus	Kentucky Coffeetree	3"
6	Gleditsia triacanthos inermis	Thornless Honeylocust	18"
7	Gymnocladus dioicus	Kentucky Coffeetree	4"
8	Gleditsia triacanthos inermis	Thornless Honeylocust	12"
9	Acer freemanii	Freeman Maple	8"
10	Quercus muehlenbergii	Chinkapin Oak	8"
11	Acer freemanii	Freeman Maple	6"
12	Gleditsia triacanthos inermis	Thornless Honeylocust	14"



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DANE COUNTY EMERGENCY MANAGEMENT REMODEL

5415 KING JAMES WAY
FITCHBURG, WISCONSIN

ISSUE RECORD

ADR	10-20-20

NOT FOR CONSTRUCTION

CHECKED BY
MGM

DRAWN BY
GFB

DATE
10/14/2020

PROJECT NUMBER
2020-001

LANDSCAPE PLAN

L-1

GRWA JOB NUMBER - WTE2020

GRWA
LAND PLANNING
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LANDSCAPE ARCHITECTURE
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LANDSCAPE WORK PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

The work shall consist of furnishing, transporting and installing all seeds, plants and other materials required for:

1. The establishment of trees, shrubs, perennial, annual and lawn areas as shown on Landscape Plan;
2. The provision of post-planting management as specified herein;
3. Any remedial operations necessary in conformance with the plans as specified in this document;
4. Permits which may be required.

1.2 QUALITY ASSURANCE

- A. Work shall conform to State of Wisconsin Horticultural Standards and local municipal requirements.
- B. Quality Control Procedures:

1. Ship landscape materials with certificates of inspection as required by governmental authorities. Comply with governing regulations applicable to landscape materials.
2. Do not make substitutions. If specified landscape material is not obtainable, submit to Landscape Architect proof of non-availability and proposal for use of equivalent material.
3. Analysis and Standards: Package standard products with manufacturer's certified analysis.

1.3 SUBMITTALS

- A. Planting Schedule

Submit three (3) copies of the proposed planting schedule showing dates for each type of planting

- B. Maintenance Instruction - Landscape Work

Submit two (2) copies of typewritten instructions recommending procedures to be established by the Owner for the maintenance of landscape work for one full year. Submit prior to expiration of required maintenance periods.

Instructions shall include: watering, fertilizing, spraying, mulching and pruning for plant material and trimming groundcover. Instructions for watering, fertilizing and mowing grass areas shall be provided ten (10) days prior to request for inspection for final acceptance. Landscape Architect shall receive copies of all instructions when issued.

- C. Submit two (2) copies of soil test of existing topsoil with recommendations for soil additive requirement to Landscape Architect for review and written approval.
- D. Submit two (2) samples of shredded hardwood bark mulch, erosion control blankets, and all other products and materials as specified on plans to Landscape Architect for review and written approval.
- E. Nursery packing lists indicating the species and quantities of material installed must be provided to the Owner and/or City upon request.

1.4 JOB CONDITIONS

- A. Examine and evaluate grades, soils and water levels. Observe the conditions under which work is to be performed and notify Landscape Architect of unsatisfactory conditions. Do not proceed with the work until unsatisfactory conditions have been corrected in an acceptable manner.
- B. Utilities: Review underground utility location maps and plans; notify local utility location service; demonstrate an awareness of utility locations; and certify acceptance of liability for the protection of utilities during course of work. Contractor shall be responsible for any damage to utilities or property.
- C. Excavation: When conditions detrimental to plant growth are encountered such as rubble fill, adverse drainage conditions or obstructions, notify Landscape Architect before planting.

1.5 GUARANTEES

- A. Guarantee seeded and sodded areas through the specified maintenance period and until final acceptance.
- B. Guarantee trees, shrubs, groundcover and perennials for a period of one year after date of acceptance against defects including death and unsatisfactory growth, except for defects resulting from neglect by Owner, abuse or damage by others or unusual phenomena or incidents which are beyond Landscape Installer's control.

LANDSCAPE WORK PART 2 - PLANT MATERIALS

2.1 LAWN SOD

Provide strongly rooted sod, not less than two (2) years old and free of weeds and undesirable native grasses. Provide only sod capable of growth and development when planted (viable, not dormant) and in strips not more than 18" wide x 4' long. Provide sod composed of a 5-way blend of Kentucky Bluegrass such as: Midnight, Allure, Viva, Washington, Liberty.

2.2 LAWN SEED MIXTURE

Grass Seed: Provide fresh, clean, new crop seed complying with the tolerance for purity and germination established by the Official Seed Analysts of North America. Provide seed of the grass species, proportions and maximum percentage of weed seed, as specified.

- A. Lawn Seed Mixture - 5 lbs./1,000 sq. ft.
- 50% Kentucky Bluegrass 98/85
 - 15% Cutter Perennial Ryegrass
 - 10% Spartan Hard Fescue
 - 10% Edge Perennial Ryegrass
 - 10% Express Perennial Ryegrass
 - 5% Pennium Creeping Red Fescue

2.3 GROUNDCOVERS, PERENNIALS AND ANNUALS

Provide plants established and well-rooted in removable containers or integral peat pots and with not less than the minimum number and length of runners required by ANSI Z60.1 for the pot size shown or listed.

2.4 TREES AND SHRUBS

- A. Name and Variety: Provide nursery grown plant material true to name and variety.
- B. Quality: Provide trees, shrubs and other plants complying with the recommendations and requirements of ANSI Z60.1 "Standard for Nursery Stock" and as further specified.
- C. Deciduous Trees: Provide trees of height and caliper listed or shown and with branching configuration recommended by ANSI Z60.1 for type and species required. Provide single stem trees except where special forms are shown or listed. Provide balled and burlapped (B&B) deciduous trees.
- D. Deciduous Shrubs: Provide shrubs of the height shown or listed and with not less than the minimum number of canes required by ANSI Z60.1 for the type and height of shrub required. Provide balled and burlapped (B&B) deciduous shrubs.

- E. Coniferous Evergreen: Provide evergreens of the sizes shown or listed. Dimensions indicate minimum spread for spreading and semi-spreading type evergreens and height for other types. Provide quality evergreens with well-balanced form complying with requirements for other size relationships to the primary dimension shown. Provide balled and burlapped (B&B) evergreen trees and containerized shrubs.
- F. Inspection: All plants shall be subject to inspection and review at the place of growth or upon delivery and conformity to specification requirements as to quality, right of inspection and rejection upon delivery at the site or during the progress of the work for size and condition of balls or roots, diseases, insects and latent defects or injuries. Rejected plants shall be removed immediately from the site.

2.6 PLANTING SOIL MIXTURE

Provide planting soil mixture consisting of clean uncompacted topsoil (stockpiled at site) for all planting pits, perennial, annual and groundcover areas. Topsoil shall be conditioned based on all recommendations resulting from the soil test in 1.3.C.

2.7 EROSION CONTROL

- A. Turf Seed Areas Erosion Control Blanket: North American Green DS75, or equivalent approved equal.

2.8 MULCH

Provide mulch consisting of shredded hardwood. Provide sample to Landscape Architect for approval prior to ordering materials.

LANDSCAPE WORK PART 3 - EXECUTION

3.1 PLANTING SCHEDULE

At least thirty (30) days prior to the beginning of work in each area, submit a planting schedule for approval by the Landscape Architect.

3.2 PLANTINGS

- A. Sodding New Lawns

1. Remove existing grass, vegetation and turf. Dispose of such material legally off-site, do not turn over into soil being prepared for lawns.
 2. Till to a depth of not less than 6"; apply soil amendments as needed; remove high areas and fill in depressions; till soil to a homogenous mixture of fine texture, remove lumps, clods, stones over 1" diameter, roots and other extraneous matter. Dispose of such material legally off-site.
 3. Sodded areas shall receive an application of commercial fertilizer at the rate of 10 lbs. per 1,000 sq. ft. and shall have an analysis of 16-8-8.
 4. Lay sod within 24 hours from time of stripping.
 5. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips; do not overlap. Stagger strips to offset joints in adjacent courses. Work from boards to avoid damage to subgrade or sod. Tamp or roll lightly to ensure contact with subgrade. Work sifted soil into minor cracks between pieces of sod; remove excess to avoid smothering of adjacent grass.
 6. Water sod thoroughly with a fine spray immediately after planting.
- B. Seeding New Lawns

1. Remove existing grass, vegetation and turf. Dispose of such material legally off-site. Do not turn over into soil being prepared for lawns.
2. Till to a depth of not less than 6"; apply soil amendments; remove high areas and fill in depressions; till soil to a homogenous mixture of fine texture, remove lumps, clods, stones over 1" diameter, roots and other extraneous matter. Dispose of such material legally off-site.
3. Seeded lawn areas shall receive an application of commercial fertilizer at the rate of 5 lbs. per 1,000 sq. ft. and shall be 6-24-24. Fertilizer shall be uniformly spread and mixed into the soil to a depth of 1" inches.
4. Do not use wet seed or seed which is moldy or otherwise damaged in transit or storage.
5. Sow seed using a spreader or seeding machine. Do not seed when wind velocity exceeds five (5) miles per hour. Distribute seed evenly over entire area by sowing equal quantity in two directions at right angles to each other.
6. Sow not less than specified rate.
7. Rake lawn seed lightly into top 1" of soil, roll lightly and water with a fine spray.
8. After the seeding operation is completed, spray a wood fiber mulch (Conweb 2000 with tacifier or approved equal) over the entire grassed area at the rate of 2,000 lbs. per acre. Use a mechanical spray unit to insure uniform coverage. Exercise care to protect buildings, automobiles and people during the application of the mulch.

C. Groundcover and Perennial Beds

Groundcover, perennials, and annuals shall be planted in continuous beds of planting soil mixture a minimum of 8" deep. Install per spacing indicated on plan.

D. Trees and Shrubs

1. Set balled and burlapped (B&B) stock plumb and in center of pit or trench with top of ball at an elevation that will keep the root flare exposed upon backfill and mulching. Remove burlap from top and sides of balls; retain on bottoms. When set, place additional topsoil backfill around base and sides of ball and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
2. Dish top of backfill to allow for mulching. Provide additional backfill berm around edge of excavations to form shallow saucer to collect water.
3. Mulch pits, trenches and planted areas. Provide not less than 2" thickness of mulch and work into top of backfill and finish level with adjacent finish grades. Maintain exposed root flare at all times.
4. Prune only injured or dead branches from flowering trees, if any. Protect central leader of tree during shipping and pruning operations. Prune shrubs to retain natural character in accordance with standard horticultural practices.
5. Remove and replace excessively pruned or ill-formed stock resulting from improper pruning.
6. The Contractor shall be wholly responsible for assuring that all trees are planted in a vertical and plumb position and remain so throughout the life of this contract and guarantee period. Trees may or may not be staked and guyed depending upon the individual preference of the Contractor; however, any bracing procedure(s) must be approved by the Owner prior to its installation.

3.3 INITIAL MAINTENANCE

- A. Begin maintenance immediately after planting, continuing until final acceptance. A minimum of thirty (30) days.
- B. Maintain planted and seeded areas by watering, rolling/regrading, replanting and implementing erosion control as required to establish vegetation free of eroded or bare areas.

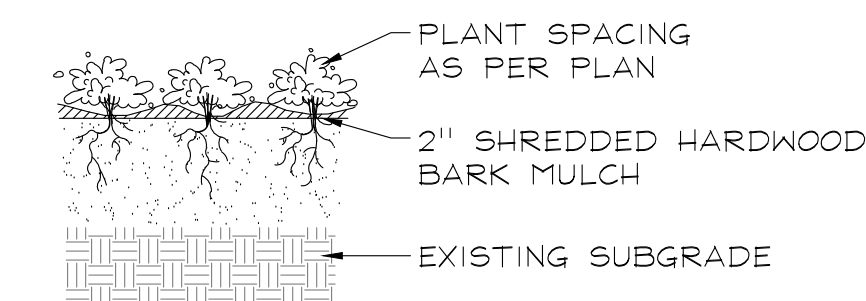
3.4 CLEAN UP AND PROTECTION

- A. During landscape work, store materials and equipment where directed. Keep pavements clean and work areas and adjoining areas in an orderly condition.
- B. Protect landscape work and materials from damage due to landscape operations, operations by other trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape work as directed by Landscape Architect.

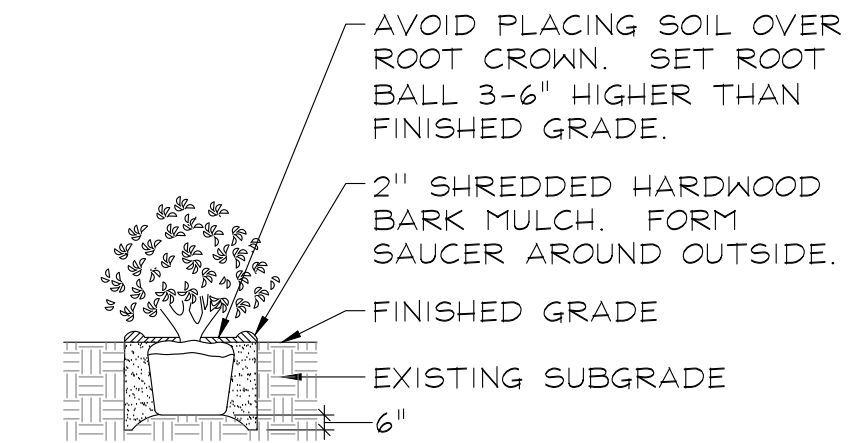
3.5 INSPECTION AND ACCEPTANCE

- A. The Landscape Architect reserves the right to inspect seeds, plants, trees and shrubs either at place of growth or at site before planting for compliance with requirements for name, variety, size, quantity, quality and mix proportion.
- B. Supply written affidavit certifying composition of seed mixtures and integrity of plant materials with respect to species, variety and source.
- C. Notify the Landscape Architect within five (5) days after completing initial and/or supplemental plantings in each area.
- D. When the landscape work is completed, including maintenance, the Landscape Architect will, upon request, make a final inspection to determine acceptability. After final acceptance, the Owner will be responsible for maintenance.

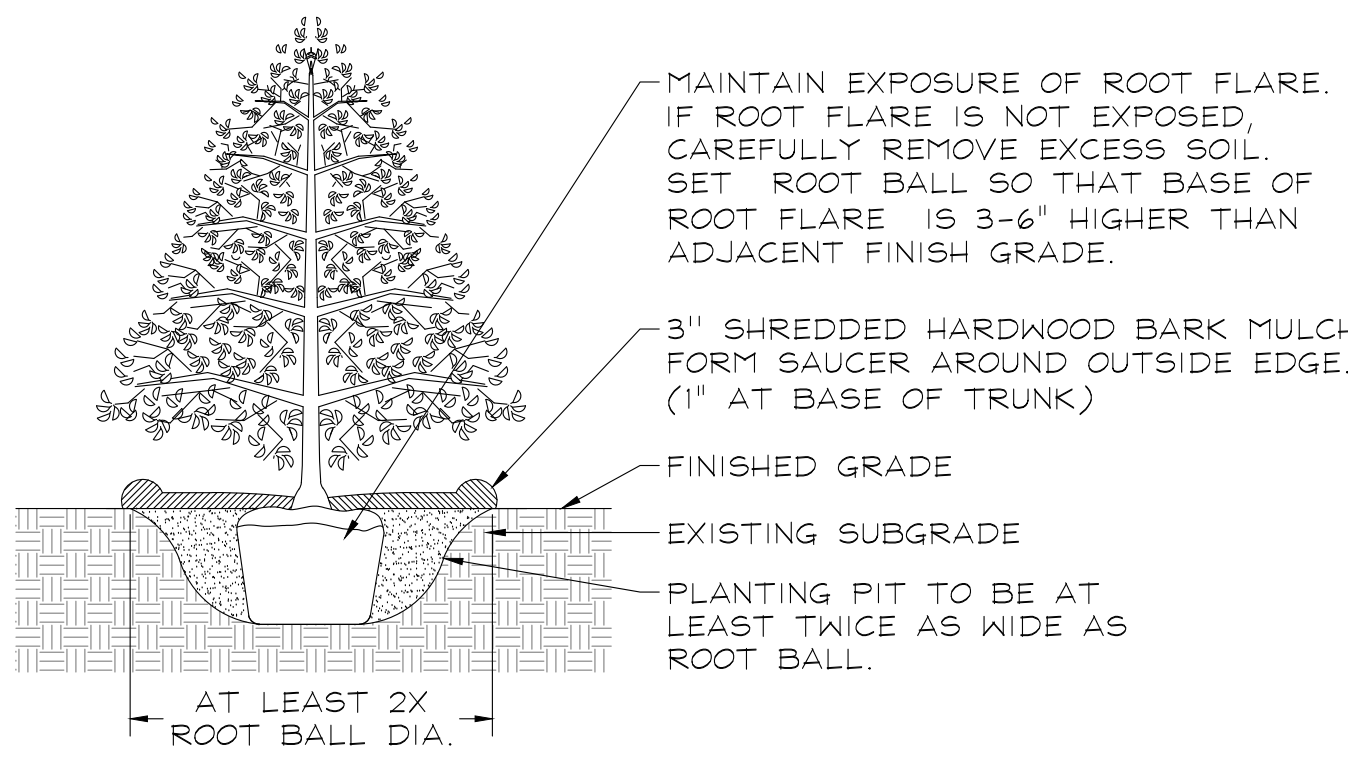
PLANTING DETAILS



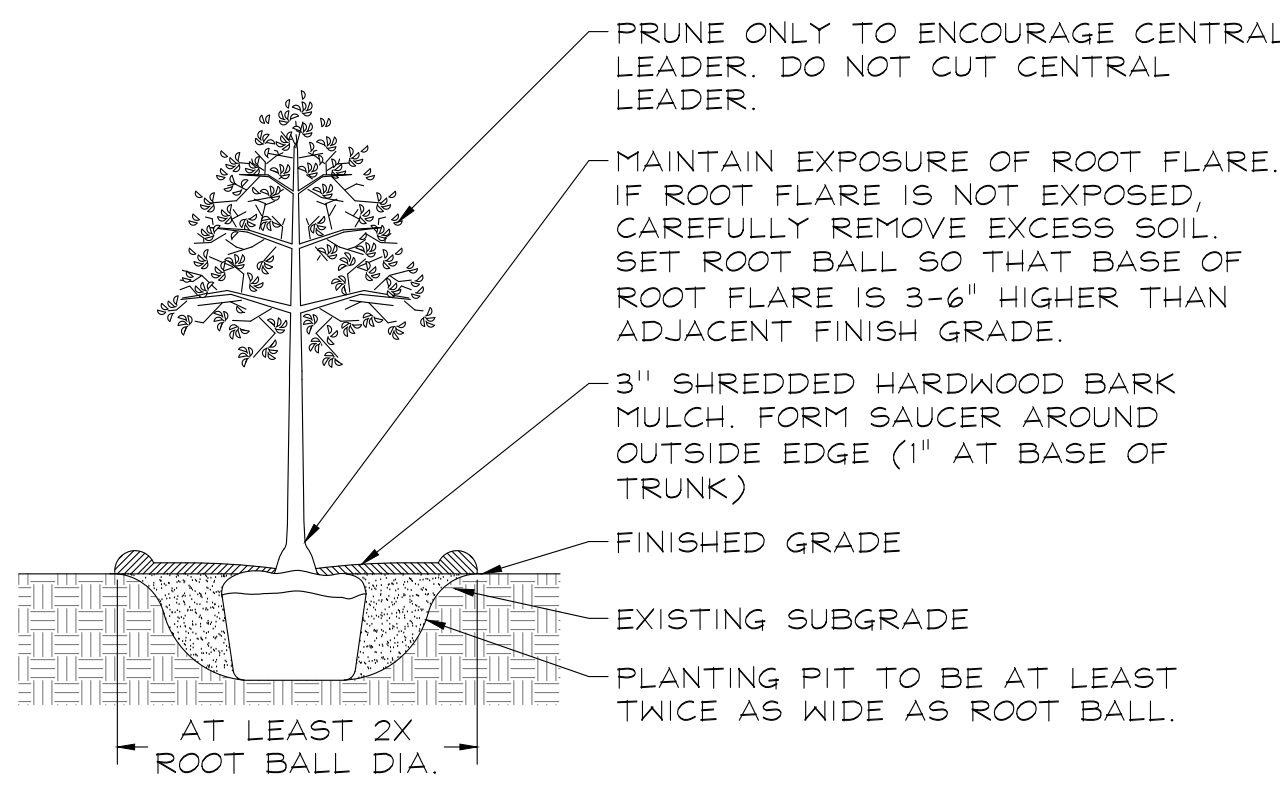
PERENNIALS AND GROUNDCOVERS
NOT TO SCALE



DECIDUOUS AND EVERGREEN SHRUBS
NOT TO SCALE



EVERGREEN TREES
NOT TO SCALE



DECIDUOUS TREES
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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITZBURG, WISCONSIN

ISSUE RECORD	
ADR	10-20-20

CHECKED BY	MGM
DRAWN BY	GFB
DATE	10/14/2020
PROJECT NUMBER	2020-001

LANDSCAPE SPECIFICATIONS

L-2

GRWA JOB NUMBER - WTE2020

GARY R. WEBER ASSOCIATES, INC.

LAND PLANNING
BIOLOGICAL CONSULTING
LANDSCAPE ARCHITECTURE

402 W. LIBERTY DRIVE
WHEATON, ILLINOIS 60157
PHONE: 630-660-1191

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ZONING ANALYSIS	
REQUIREMENTS	PROPOSED
EXISTING ADDRESS: 5415 KING JAMES WAY	ADDRESS: _____ KAPEC ROAD
ZONE: B-G GENERAL BUSINESS	USE: GOVERNMENT OFFICES
MIN. LOT AREA: 8,000 SQUARE FEET	EXISTING LOT AREA: 51,836 SQUARE FEET (1.19 ACRE)
MIN. LOT WIDTH: 60 FEET	EXISTING LOT WIDTH: 191.26 FEET
MIN. FRONT SETBACK: 20 FEET	EXG. FRONT SETBACK: 101.55 FEET
MIN. SIDE SETBACK: 10 FEET	EXG. SIDE SETBACK: 10 FEET
MIN. SIDE STREET S.B.: 15 FEET	SIDE STREET S.B.: 22.96 FEET
MIN. REAR SETBACK: 10 FEET	REAR SETBACK: 20.06 FEET
MAX. BUILDING HEIGHT: 42 FEET, OR 3 STORIES	EXG. BUILDING HEIGHT: 22.75 FEET, 1 STORY
MIN. OPEN SPACE: 25%	OPEN SPACE: 38.12 %
	IMPERVIOUS SURFACE RATIO: 61.88 %
PARKING REQUIREMENT: OFFICE = 1 STALL PER 300 GSF OF BUILDING AREA	PARKING REQUIREMENT: OFFICE AREA = 7,360 GSF / 300 = 24.5 = 25 PARKING STALLS

SITE PLAN LEGEND

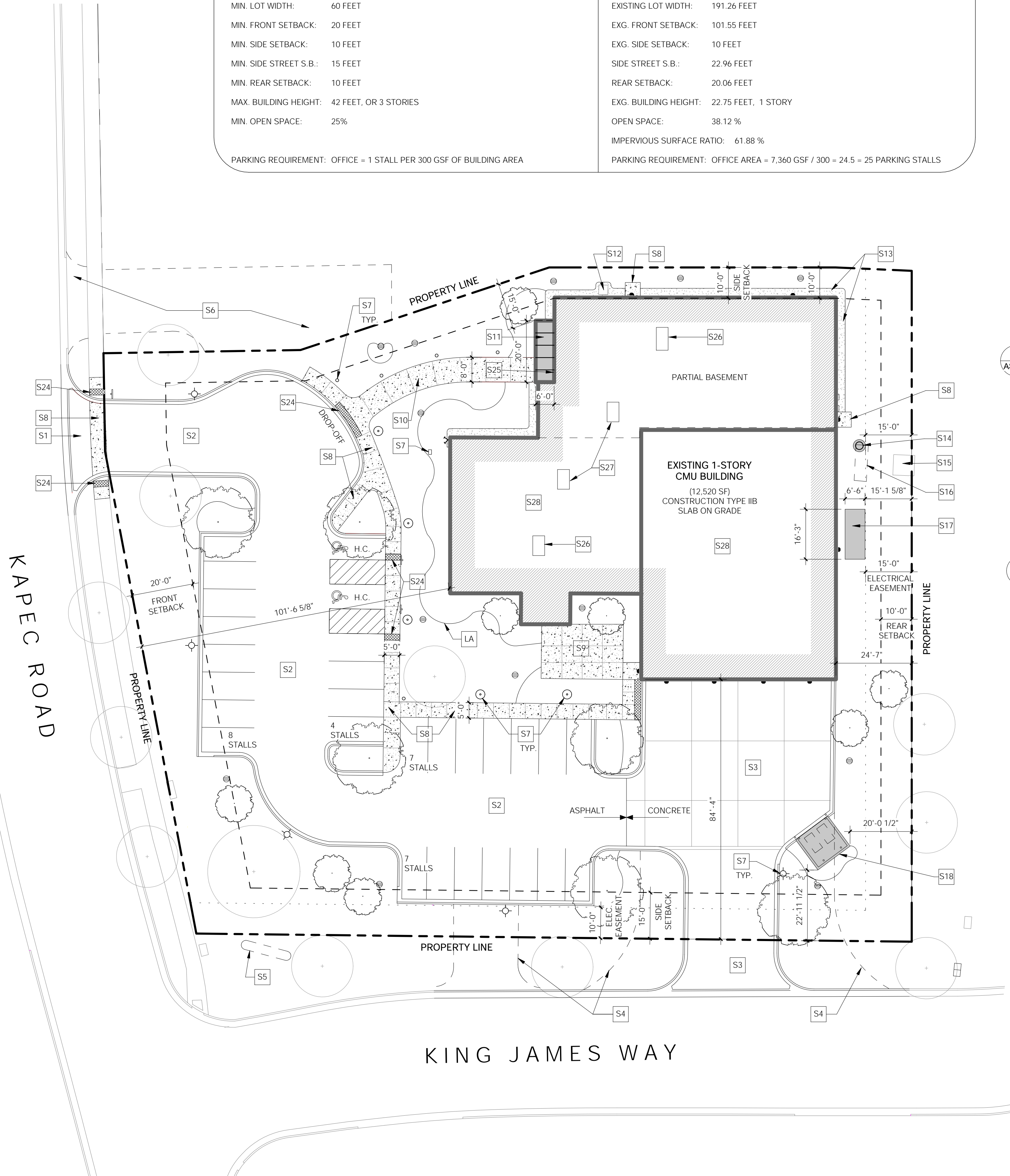
- EXISTING TREE TO REMAIN
- EXISTING LIGHT POLE
- NEW LIGHT FIXTURE - 20' POLE
- NEW LIGHT FIXTURE - 10' POLE
- NEW LIGHT FIXTURE - BOLLARD TYPE
- NEW BUILDING MOUNTED LIGHT FIXTURE
- EXISTING FIRE DEPARTMENT CONNECTION
- NEW DRAINAGE STRUCTURE - SEE CIVIL DRAWINGS
- NEW TREE, SEE LANDSCAPE PLAN
- NEW CONCRETE SIDEWALK

SITE PLAN GENERAL NOTES

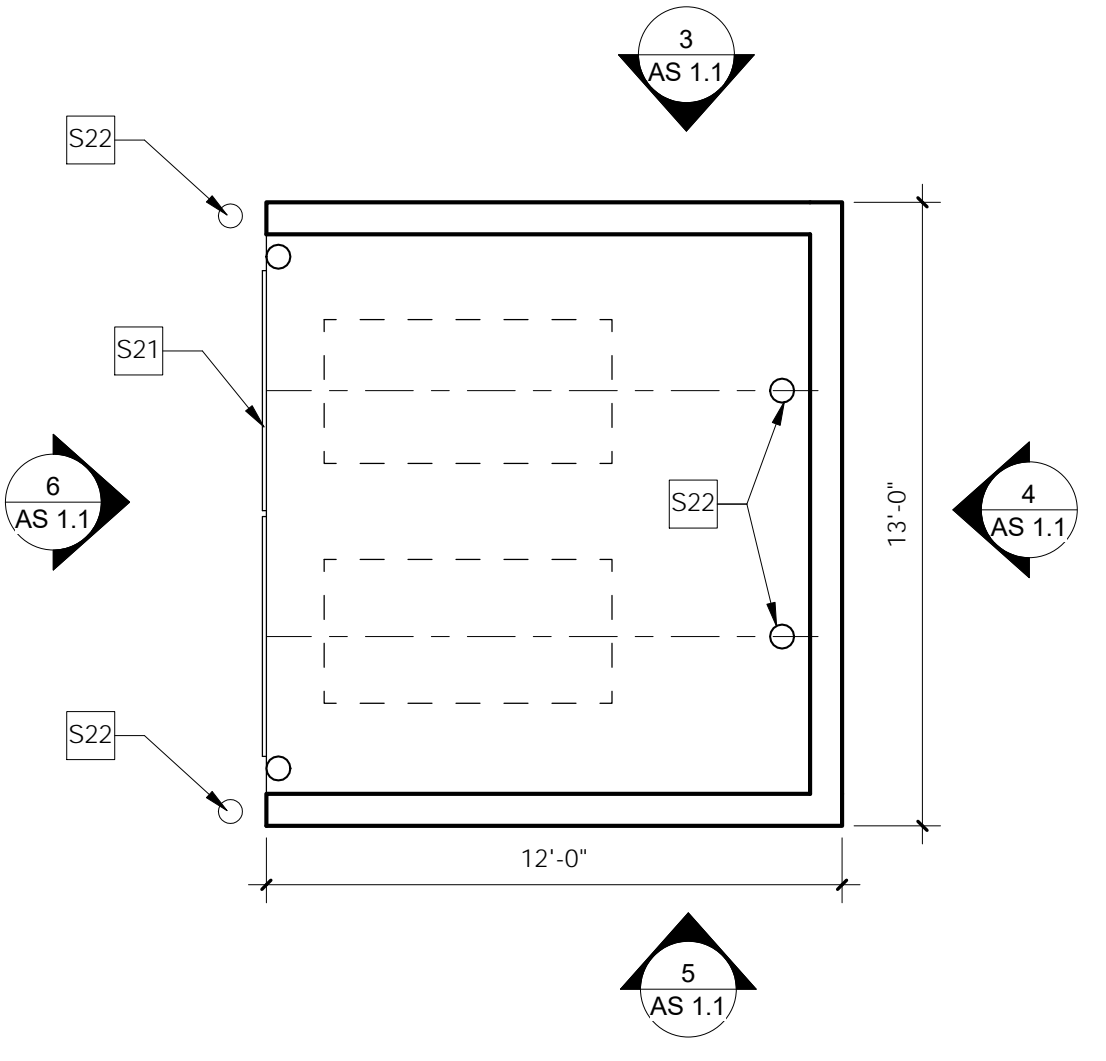
- REFER TO CIVIL DRAWINGS FOR ADDITIONAL SITE INFORMATION, INCLUDING DRAINAGE PLANS.
- EXISTING VEGETATION AND LANDSCAPING TO REMAIN WHEREVER POSSIBLE. COORDINATE WITH OWNER.
- PROTECT EXISTING TREES UNLESS NOTED OTHERWISE. SEE LANDSCAPE DWGS.

SITE PLAN KEY NOTES

- S1 NEW CONCRETE APRON + CURB CUT - SEE CIVIL DWGS.
- S2 NEW ASPHALT DRIVE + PARKING LOT (26 STALLS + 2 ADA STALLS) SEE CIVIL DWGS.
- S3 NEW CONCRETE DRIVE - SEE CIVIL DWGS.
- S4 EXISTING DRIVEWAYS AND CURB CUTS TO BE REMOVED - SEE CIVIL DWGS.
- S5 EXISTING MONUMENTAL SIGN + MASONRY BASE TO BE REMOVED.
- S6 EXISTING CURB CUT AND DRIVEWAY TO BE REMOVED BY OTHERS.
- S7 NEW SITE LIGHTING, SEE ELECTRICAL DRAWINGS.
- S8 NEW CONCRETE SIDEWALKS / STOOPS.
- S9 NEW CONCRETE PATIO.
- S10 NEW CONCRETE ACCESSIBLE MAIN ENTRY WALKWAY.
- S11 NEW GLASS + METAL ENTRY CANOPY.
- S12 EXISTING RADIO TOWER AND CONCRETE PAD.
- S13 STONE PERIMETER EDGING - SEE CIVIL + LANDSCAPE DWGS.
- S14 PROPOSED RADIO TOWER.
- S15 EXISTING TRANSFORMER.
- S16 EXISTING GENERATOR + CONC. PAD TO BE REMOVED.
- S17 NEW GENERATOR + CONC. PAD.
- S18 NEW TRASH ENCLOSURE, SEE DWGS. ON AS 1.1
- S24 ACCESSIBLE WALK / RAMP - SEE CIVIL DWGS.
- S25 ACCESSIBLE BUILDING ENTRANCE.
- S26 NEW ROOF TOP AIR HANDLING UNIT IN EXISTING LOCATION.
- S27 NEW ROOF TOP AIR HANDLING UNIT.
- S28 NEW ROOFING, MODIFIED BITUMINOUS MEMBRANE.
- LA SEE LANDSCAPE PLAN FOR PLANTING AND TREE DETAILS.

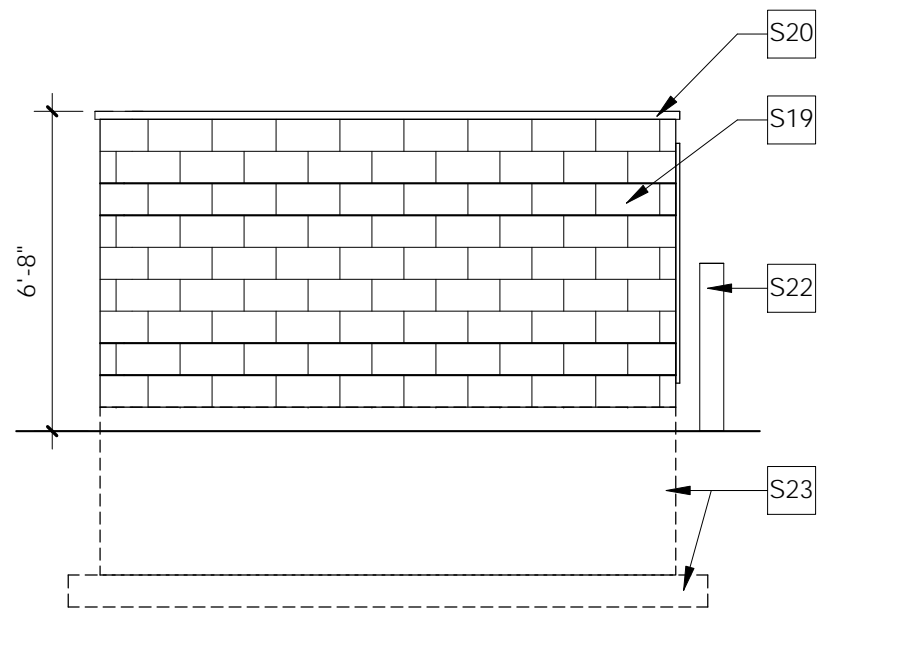


1 ARCHITECTURAL SITE PLAN
SCALE 1" = 20'-0"

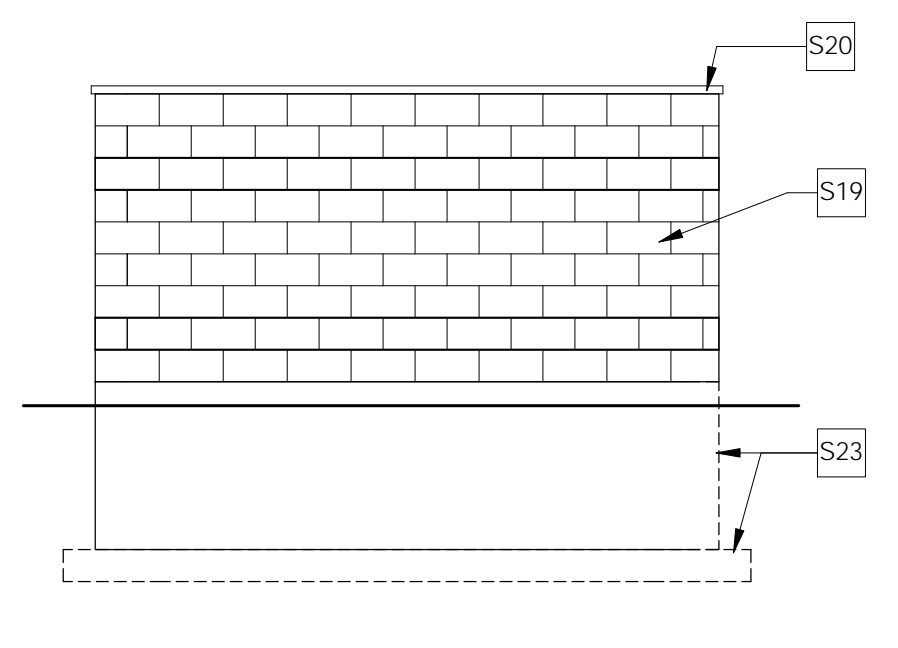


2 TRASH ENCLOSURE PLAN
SCALE 1/4" = 1'-0"

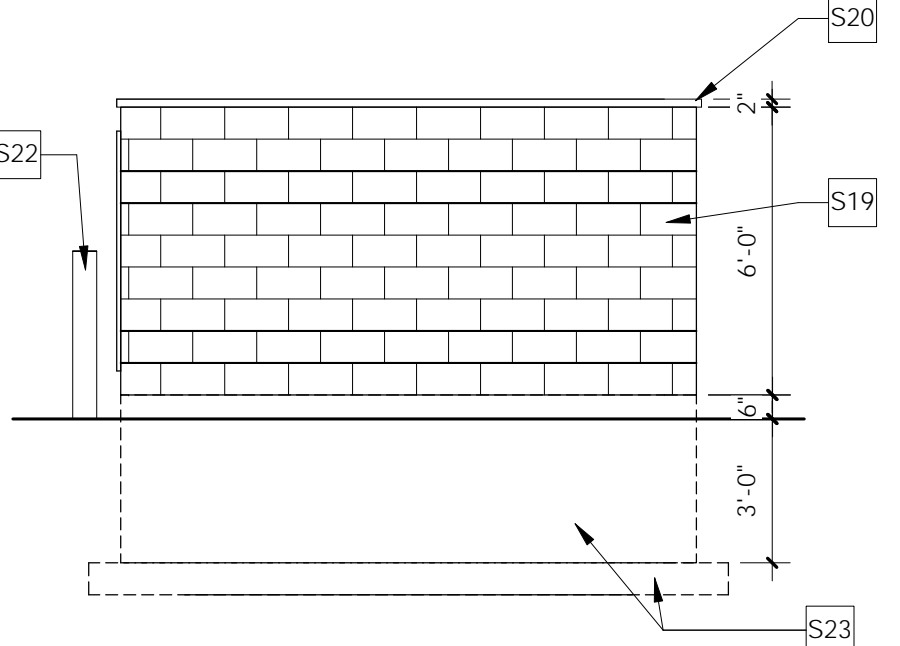
- TRASH ENCLOSURE KEY NOTES:**
- S19 CONCRETE MASONRY UNIT WALL - COLOR + PATTERN TO MATCH EXISTING BUILDING.
 - S20 METAL COPING - COLOR TO MATCH METAL FASCIA OF BUILDING.
 - S21 VINYL PLANK GATE ON GALVANIZED STEEL FRAME.
 - S22 STEEL BOLLARD - CONCRETE FILLED.
 - S23 CONCRETE FOUNDATION AND FOOTING.



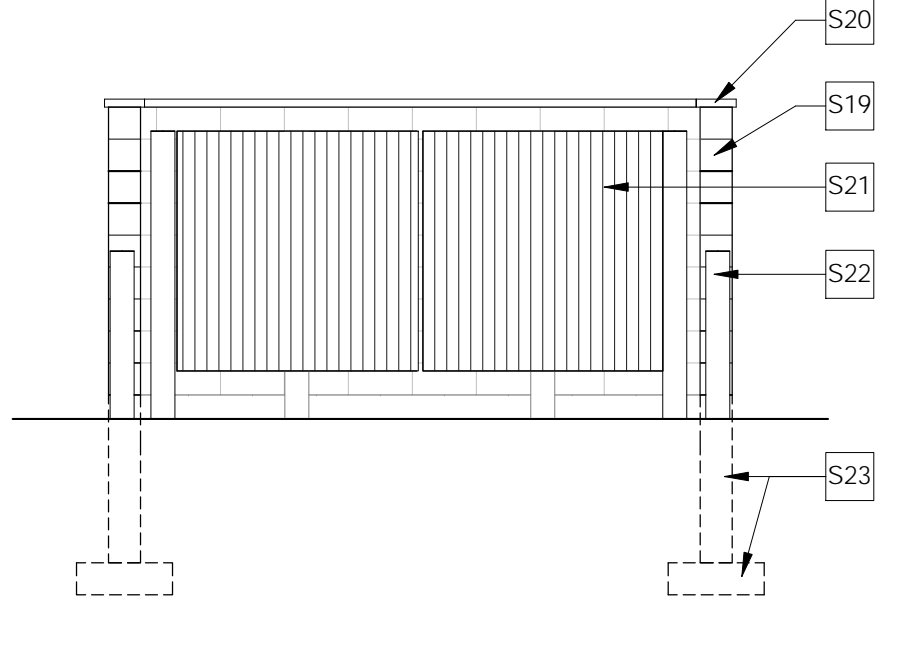
3 TRASH ENCLOSURE - EAST
SCALE 1/4" = 1'-0"



4 TRASH ENCLOSURE - SOUTH
SCALE 1/4" = 1'-0"



5 TRASH ENCLOSURE - WEST
SCALE 1/4" = 1'-0"



6 TRASH ENCLOSURE - NORTH
SCALE 1/4" = 1'-0"

PRAIRIE FORGE GROUP
300 CARDINAL DRIVE
SAINT CHARLES, IL 60175
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630.221.0118 | F
www.prairieforgroup.com

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY
FITCHBURG, WISCONSIN

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 APPROVED
 APPROVED AS NOTED
APPROVED BY / DATE:

ISSUE RECORD

DD SET	08/04/20
ADR	10/20/20
NOT FOR CONSTRUCTION	

PROJECT ARCHITECT
RBS
DRAWN BY
LMB
DATE
10/19/2020 11:32:32 AM
PROJECT NUMBER
2020-001

SITE PLAN
AS 1.1

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 5415 KING JAMES WAY
 FITCHBURG, WISCONSIN

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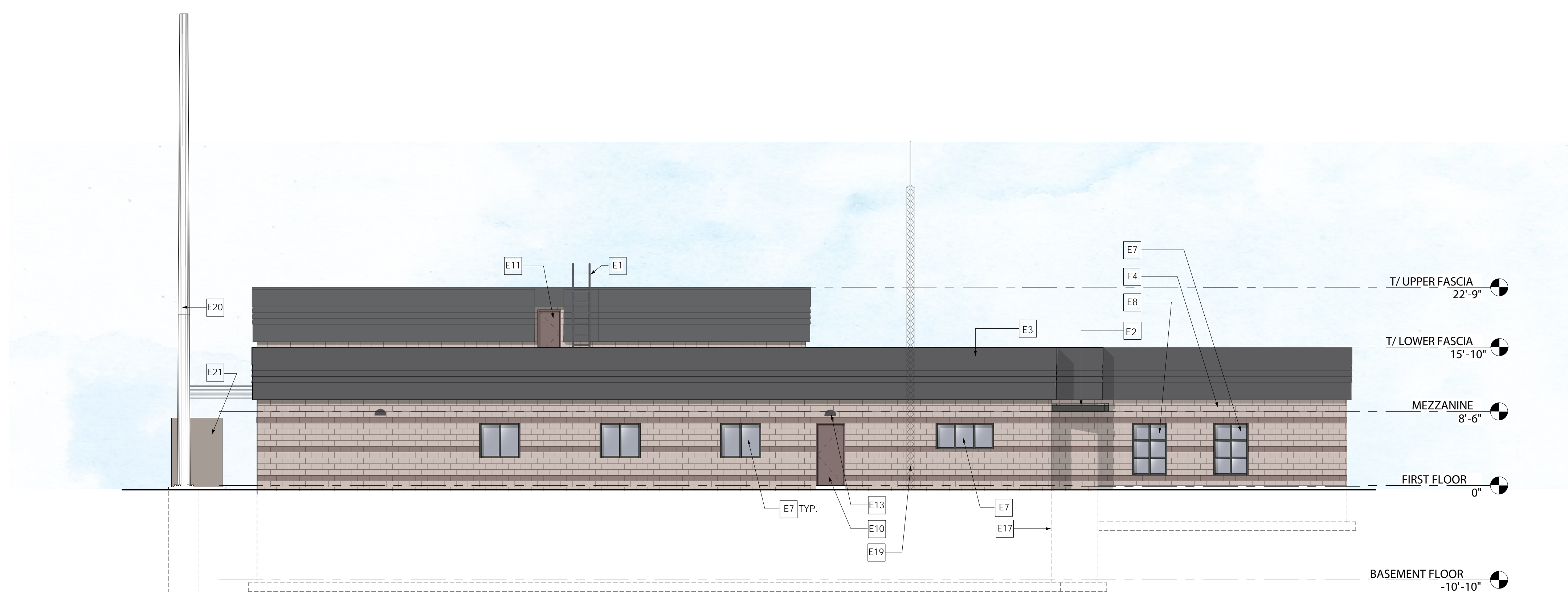
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DRAWN BY
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DATE
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PROJECT NUMBER
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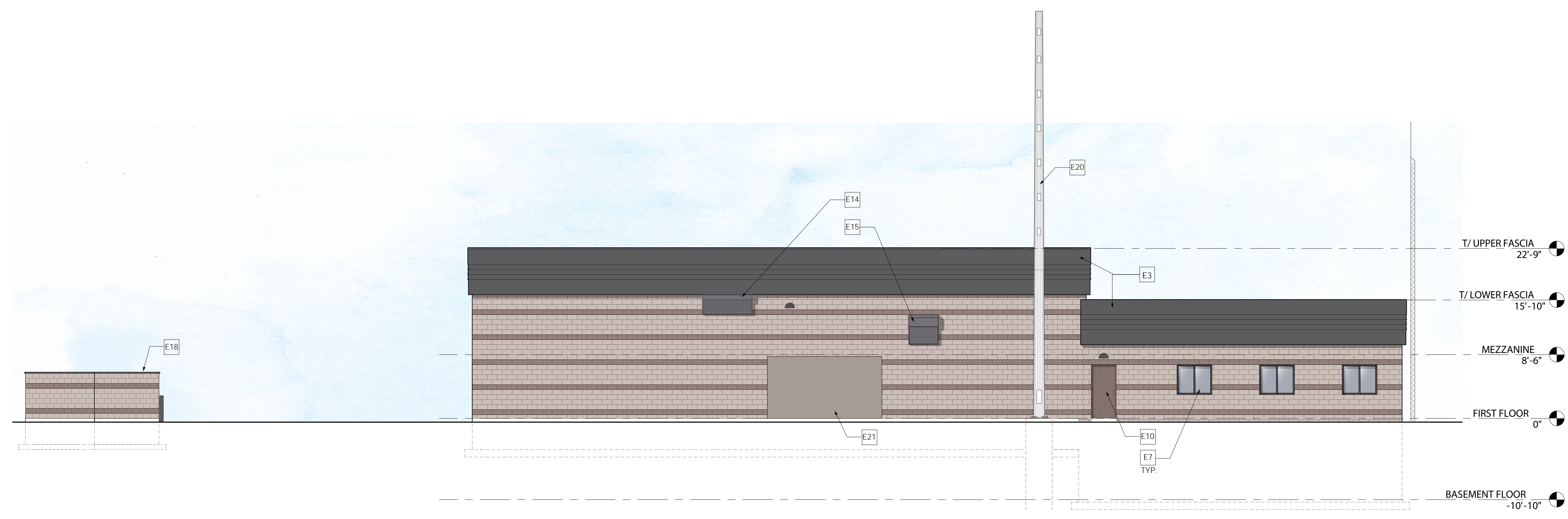
BUILDING ELEVATIONS
A 2.1

EXTERIOR ELEVATIONS KEY NOTES

- E1 NEW ROOF ACCESS LADDER.
- E2 NEW STEEL STRUCTURE (COLOR: BLACK) AND TEMPERED GLASS CANOPY.
- E3 EXISTING METAL FASCIA PAINTED. COLOR: SW7076 CYBERSPACE.
- E4 EXISTING ARCHITECTURAL CONCRETE MASONRY UNIT WALL. SPLIT-FACE TEXTURE WITH SMOOTH HORIZONTAL BANDS.
- E5 EXISTING TILE COLOR ACCENTS.
- E6 EXISTING COLORED TILE TO BE REMOVED AND REPLACED WITH NEW CEMENT FIBER SIDING, SMOOTH TEXTURE. COLOR: SW 7026 GRIFFIN.
- E7 EXISTING WINDOW OPENING WITH NEW FIXED FRAME ALUMINUM WINDOWS. FRAME COLOR: BLACK.
- E8 NEW FIXED FRAME ALUMINUM WINDOW TO MATCH SIZE OF EXISTING.
- E9 NEW FIXED FRAME ALUMINUM WINDOW TO INFILL EXISTING DOOR OPENING.
- E10 EXISTING DOOR LOCATION. NEW INSULATED METAL DOOR AND FRAME PAINTED. COLOR: SW7026 GRIFFIN.
- E11 NEW INSULATED METAL DOOR AND FRAME PAINTED. COLOR: SW7026 GRIFFIN.
- E12 EXISTING DOOR LOCATION. NEW ALUMINUM FRAME STOREFRONT DOOR. FRAME COLOR: BLACK.
- E13 NEW BUILDING MOUNTED LIGHT FIXTURE. COLOR: BLACK.
- E14 EXISTING MECHANICAL HOOD.
- E15 EXISTING EXHAUST HOOD REMOVED AND REPLACED WITH NEW FAN AND HOOD.
- E16 NEW RAISED METAL SIGNAGE. COLOR: BLACK.
- E17 EXISTING POURED CONCRETE FOUNDATION.
- E18 NEW TRASH ENCLOSURE OF CONCRETE MASONRY UNIT WALL, COLOR AND PATTERN TO MATCH EXISTING BUILDING. METAL COPING COLOR: SW7076 CYBERSPACE. BROWN VINYL PLANK GATE ON GALVANIZED STEEL FRAME.
- E19 EXISTING RADIO TOWER.
- E20 NEW STEEL MONOPOLE RADIO TOWER ON CONCRETE FOUNDATION. HEIGHT: 60'
- E21 NEW GENERATOR ON CONCRETE PAD. WEATHER ENCLOSURE COLOR: CUMMINS BEIGE.



1 NORTH ELEVATION
 SCALE 1/8" = 1'-0"



2 EAST ELEVATION
 SCALE 1/8" = 1'-0"

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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
 5415 KING JAMES WAY
 FITCHBURG, WISCONSIN

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	10/20/20

PROJECT ARCHITECT
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DATE
 10/20/2020
PROJECT NUMBER
 2020-001

BUILDING ELEVATIONS
A 2.2

EXTERIOR ELEVATIONS KEY NOTES

- E1 NEW ROOF ACCESS LADDER.
- E2 NEW STEEL STRUCTURE (COLOR: BLACK) AND TEMPERED GLASS CANOPY.
- E3 EXISTING METAL FASCIA PAINTED. COLOR: SW7076 CYBERSPACE.
- E4 EXISTING ARCHITECTURAL CONCRETE MASONRY UNIT WALL. SPLIT-FACE TEXTURE WITH SMOOTH HORIZONTAL BANDS.
- E5 EXISTING TILE COLOR ACCENTS.
- E6 EXISTING COLORED TILE TO BE REMOVED AND REPLACED WITH NEW CEMENT FIBER SIDING. SMOOTH TEXTURE. COLOR: SW 7026 GRIFFIN.
- E7 EXISTING WINDOW OPENING WITH NEW FIXED FRAME ALUMINUM WINDOWS. FRAME COLOR: BLACK.
- E8 NEW FIXED FRAME ALUMINUM WINDOW TO MATCH SIZE OF EXISTING.
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- E21 NEW GENERATOR ON CONCRETE PAD. WEATHER ENCLOSURE COLOR: CUMMINS BEIGE.



1 SOUTH ELEVATION
 SCALE 1/8" = 1'-0"



2 WEST ELEVATION
 SCALE 1/8" = 1'-0"



DANE COUNTY EMERGENCY MANAGEMENT REMODEL
 5415 KING JAMES WAY
 FITCHBURG, WI 53719

ISSUE RECORD

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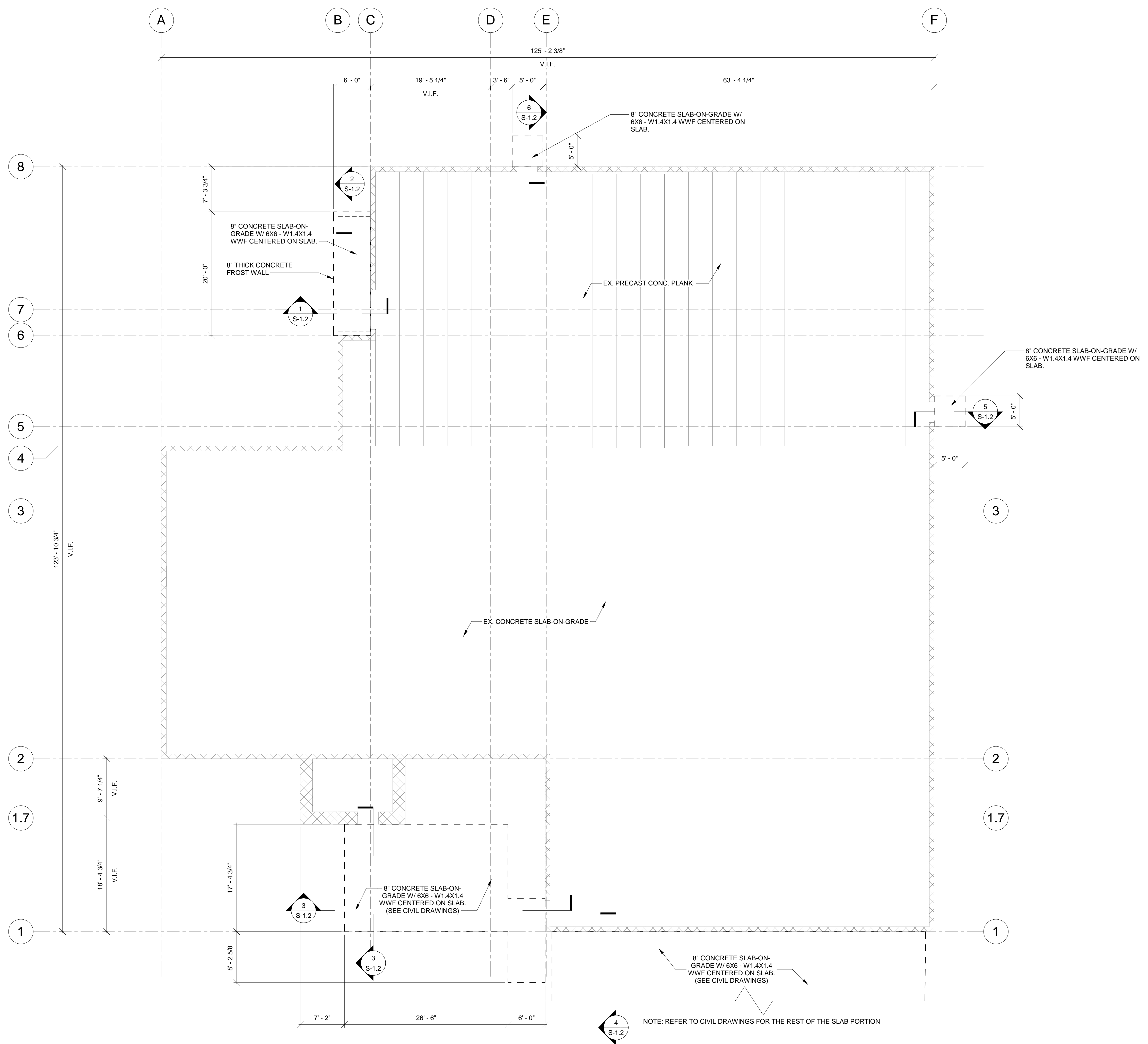
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DATE
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PROJECT NUMBER
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1ST FLOOR SLAB PLAN
S-1.1



1 1ST FLOOR SLAB PLAN
 1/8" = 1'-0"



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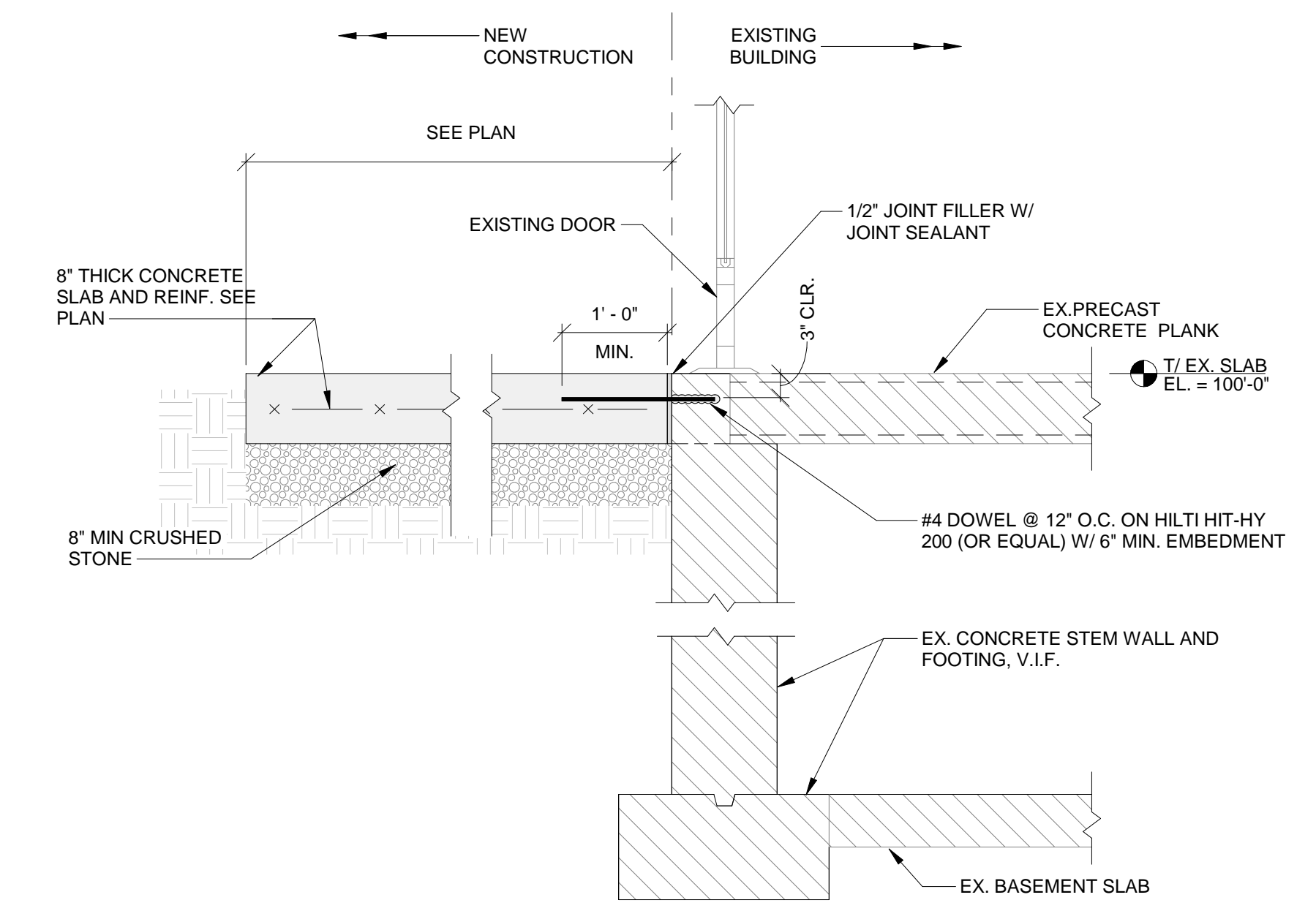
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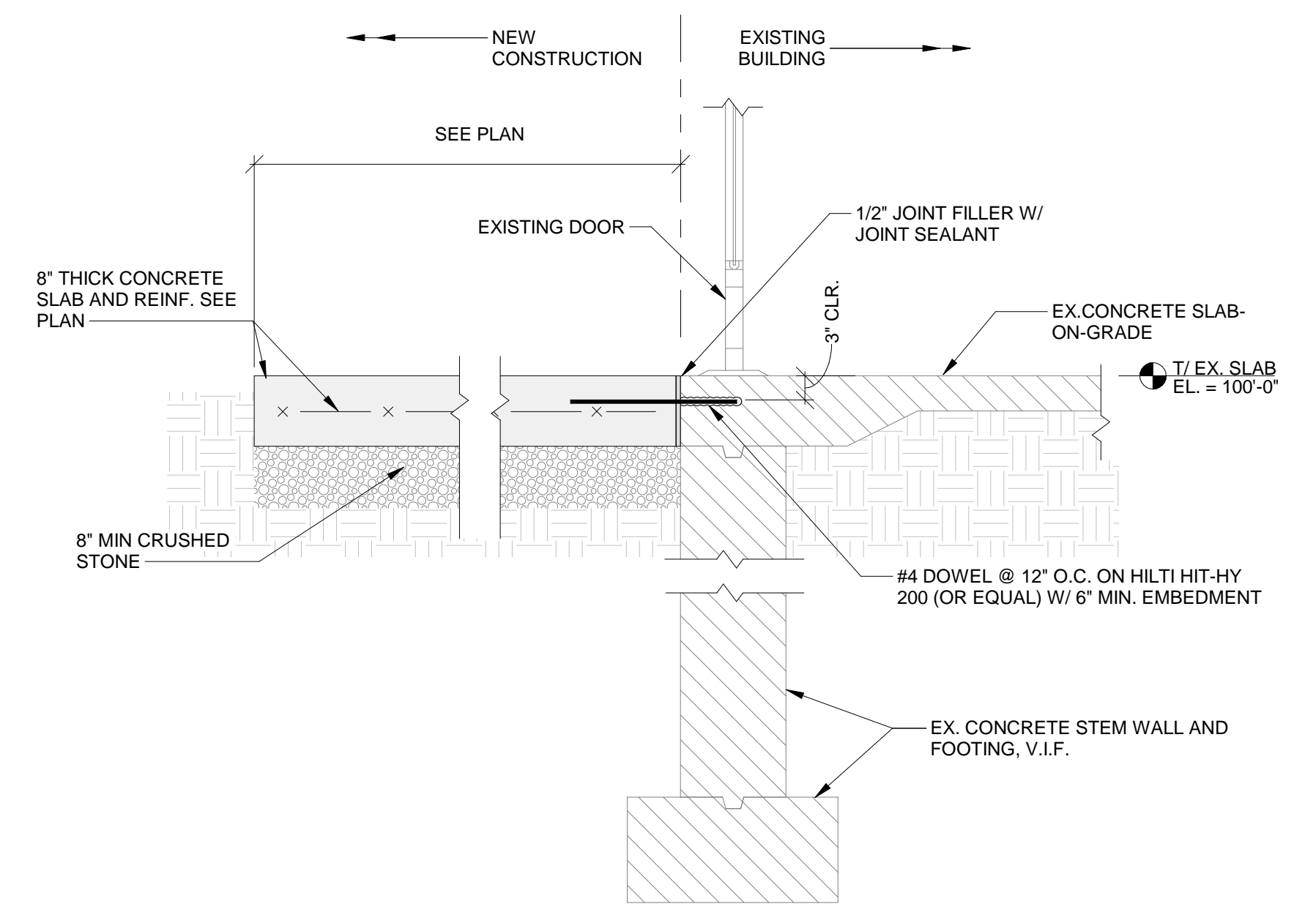
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PROJECT NUMBER
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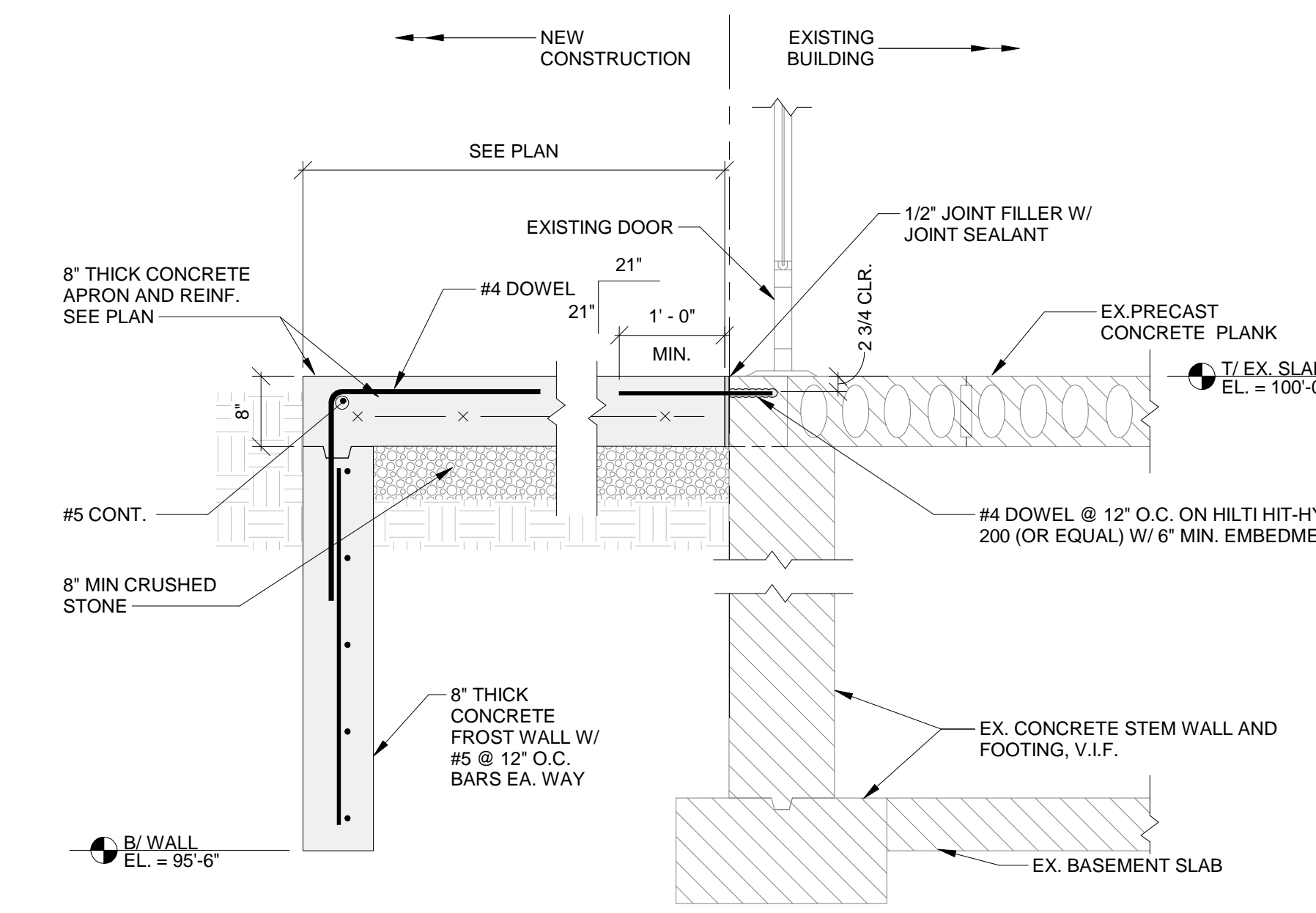
CONCRETE PAVEMENT AND SIDE WALK SECTIONS
S-1.2



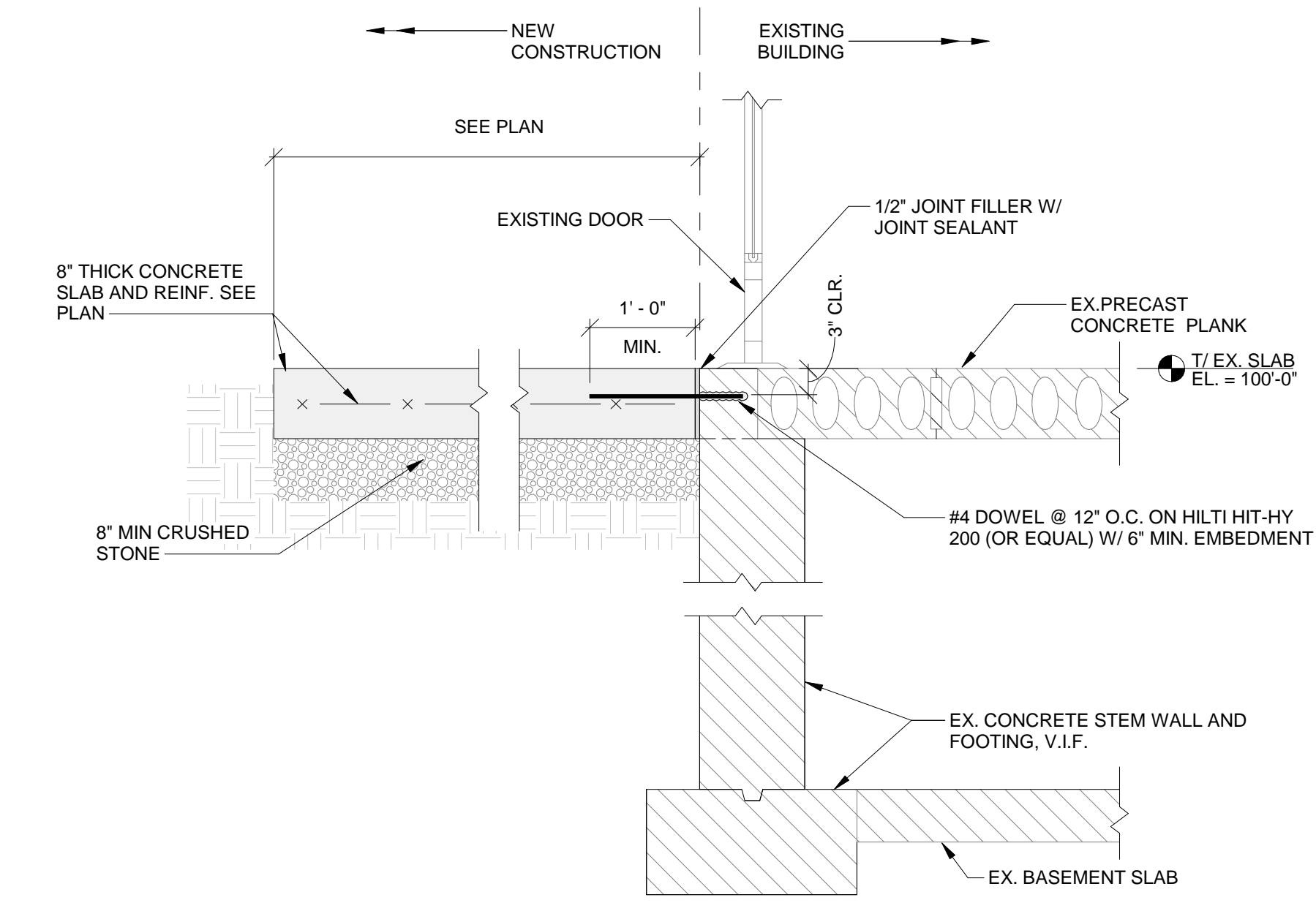
5 SECTION
3/4" = 1'-0"



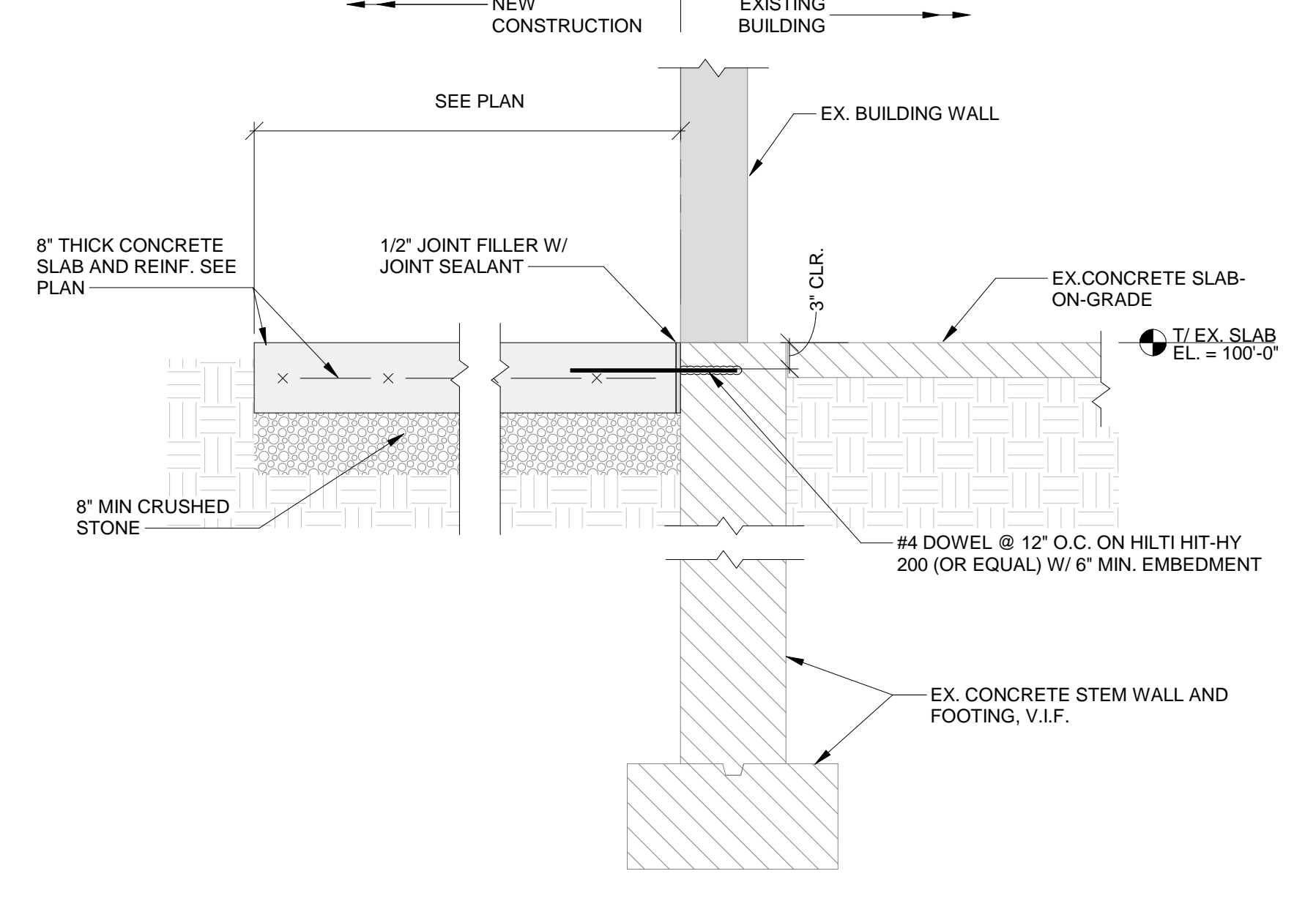
3 SECTION
3/4" = 1'-0"



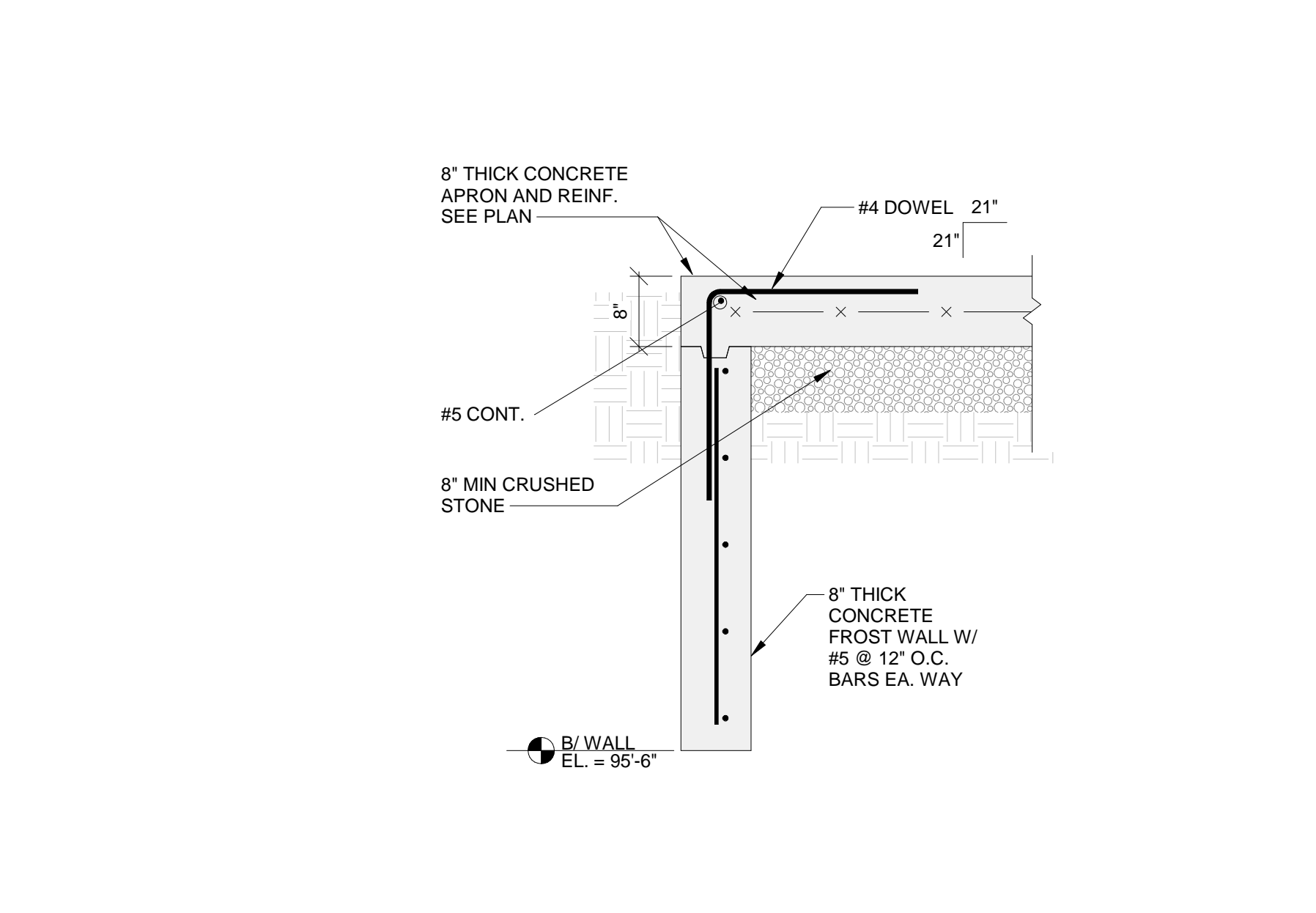
1 SECTION
3/4" = 1'-0"



6 SECTION
3/4" = 1'-0"



4 SECTION
3/4" = 1'-0"



2 SECTION
3/4" = 1'-0"



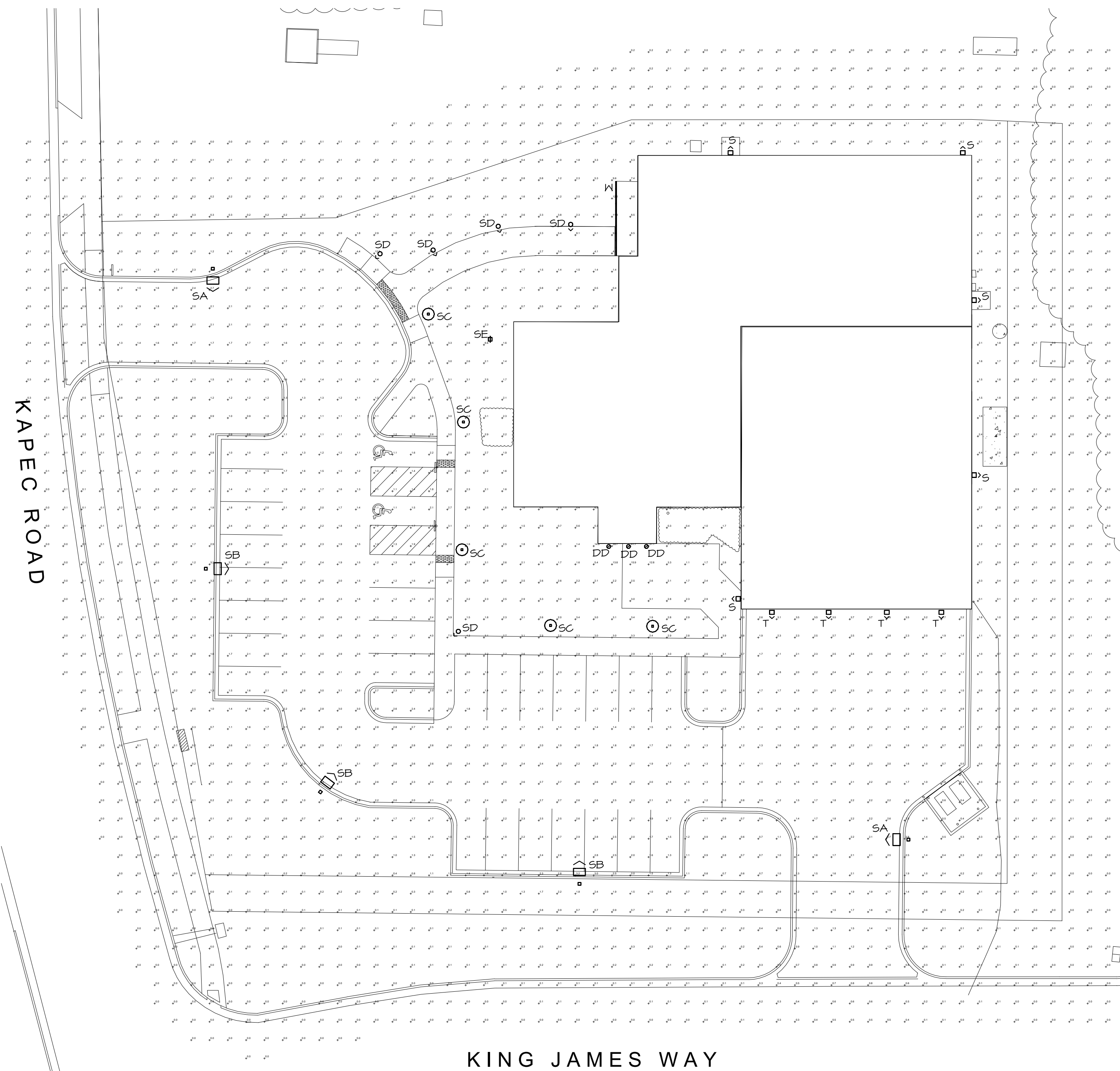
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Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Filename	Lumens per Lamp	Lumen Multiplier	LLF	Wattage	Efficiency	Distribution
SA	SA	2	Lithonia Lighting	DSX0 LED P3 40K T3M MVOLT HS	DSX0 LED P3 40K T3M MVOLT with houseside shield	LED	1	DSX0_LED_P3_40K_T3M_MVOL_T_HS.ies	6649	1	0.94	71	100%	TYPE III, SHORT, BUG RATING: B1 - U0 - G2
SB	SB	3	Lithonia Lighting	DSX0 LED P4 40K TFTM MVOLT HS	DSX0 LED P4 40K TFTM MVOLT with houseside shield	LED	1	DSX0_LED_P4_40K_TFTM_MVOL_LT_HS.ies	8243	1	0.94	92	100%	TYPE III, VERY SHORT, BUG RATING: B1 - U0 - G2
SC	SC	5	Lithonia Lighting	RADPT P1 40K SYM	RADEAN Post-Top with P1 4000K Symmetric distribution	LED	1	RADPT_P1_40K_SYM.ies	3344	1	0.94	25.4134	100%	TYPE VS, BUG RATING: B2 - U1 - G1
SD	SD	5	Lithonia Lighting	RADB LED P4 40K ASY DBLXD	RADB LED P4 40K ASY DBLXD	LED	1	RADB_LED_P4_40K_ASY_DBLXD.ies	1266	1	0.94	18.59	100%	TYPE I, VERY SHORT, BUG RATING: B0 - U1 - G0
SE	SE	1	Lithonia Lighting	DSXF1 LED P1 40K WFR	DSXF1 LED P1 40K WFR	LED	1	DSXF1_LED_P1_40K_WFR.ies	Absolute	1	0.94	21	100%	6 X 5
S	S	5	Lithonia Lighting	WSQ LED P1 SR2 40K MVOLT	WSQ LED WITH P1-PERFORMANCE PACKAGE, 4000K, AND SR2 OPTIC TYPE	LED	1	WSQ_LED_P1_SR2_40K_MVOL_T.ies	2251	1	0.94	19.56	100%	TYPE II, MEDIUM, BUG RATING: B1 - U0 - G1
T	T	4	Lithonia Lighting	WSQ LED P1 SR4 40K MVOLT	WSQ LED WITH P1-PERFORMANCE PACKAGE, 4000K, AND SR4 OPTIC TYPE	LED	1	WSQ_LED_P1_SR4_40K_MVOL_T.ies	2190	1	0.94	19.56	100%	TYPE IV, SHORT, BUG RATING: B1 - U0 - G1
W	W	10	LLI Architectural Lighting	LLI-ANG-SF-5.9W-30K-24V-12IN	Wet Location 5.9W 3000K LED tape w/ Angled Extrusion and Frosted Lens	LED	1	LLI-ANG-SF-5-9W-30K-24V-1.ies	682	1	0.94	10	100%	
DD	DD	3	Gotham Architectural Lighting	EVO6 40/20 AR MD LSS	EVO 6IN ROUND, 80 CRI, 4000K, 2000LM, MED DIST, CLEAR, SEMI-SPEC	LED	1	EVO6_40_20_AR_MD_LSS.ies	1991	1	0.94	19.7	100%	DIRECT, SC-0=0.89, SC-90=0.88

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone #1	+	1.2 fc	41.7 fc	0.0 fc	N/A	N/A

Luminaire Locations											
No.	Label	Location						Aim			
		X	Y	Z	MH	Orientation	Tilt	X	Y	Z	
1	S	129425.00	-151184.60	9.00	9.00	0.00	0.00	129425.00	-151184.60	0.00	
2	S	129358.40	-151144.30	9.00	9.00	0.00	0.00	129358.40	-151144.30	0.00	
3	S	129360.50	-151266.20	9.00	9.00	270.00	0.00	129360.50	-151266.20	0.00	
4	S	129425.00	-151232.40	9.00	9.00	0.00	0.00	129425.00	-151232.40	0.00	
5	S	129421.90	-151144.30	9.00	9.00	0.00	0.00	129421.90	-151144.30	0.00	
1	SA	129407.00	-151332.00	20.00	20.00	270.00	0.00	129407.00	-151332.00	0.00	
2	SA	129216.90	-151176.00	20.00	20.00	180.00	0.00	129216.90	-151176.00	0.00	
1	SB	129317.10	-151344.10	20.00	20.00	0.00	0.00	129317.10	-151344.00	0.00	
2	SB	129215.00	-151258.00	20.00	20.00	90.00	0.00	129215.00	-151258.00	0.00	
3	SB	129246.30	-151319.00	20.00	20.00	37.15	0.00	129246.30	-151318.10	0.00	
1	SC	129337.10	-151273.70	10.00	10.00	0.00	0.00	129337.10	-151273.70	0.00	
2	SC	129309.20	-151273.50	10.00	10.00	0.00	0.00	129309.20	-151273.50	0.00	
3	SC	129285.00	-151252.80	10.00	10.00	0.00	0.00	129285.00	-151252.80	0.00	
4	SC	129275.80	-151188.40	10.00	10.00	0.00	0.00	129275.80	-151188.40	0.00	
5	SC	129285.40	-151217.90	10.00	10.00	0.00	0.00	129285.40	-151217.90	0.00	
1	SD	129262.60	-151171.90	10.00	10.00	221.64	0.00	129262.60	-151171.90	0.00	
2	SD	129277.10	-151170.90	10.00	10.00	152.25	0.00	129277.10	-151170.90	0.00	
3	SD	129294.90	-151164.40	10.00	10.00	162.83	0.00	129294.90	-151164.40	0.00	
4	SD	129314.70	-151163.90	10.00	10.00	179.63	0.00	129314.70	-151163.90	0.00	
5	SD	129284.00	-151275.10	10.00	10.00	221.64	0.00	129284.00	-151275.10	0.00	
1	SE	129325.10	-151251.90	10.00	10.00	0.00	0.00	129325.10	-151251.90	0.00	
2	SE	129335.40	-151251.90	10.00	10.00	0.00	0.00	129335.40	-151251.90	0.00	
3	SE	129330.50	-151251.90	10.00	10.00	0.00	0.00	129330.50	-151251.90	0.00	
1	SF	129292.70	-151195.30	1.50	1.50	90.00	0.00	129292.70	-151195.30	0.00	
1	T	129369.70	-151269.90	16.00	16.00	180.00	0.00	129369.70	-151269.90	0.00	
2	T	129416.00	-151269.90	16.00	16.00	180.00	0.00	129416.00	-151269.90	0.00	
3	T	129401.10	-151269.90	16.00	16.00	180.00	0.00	129401.10	-151269.90	0.00	
4	T	129385.20	-151269.90	16.00	16.00	180.00	0.00	129385.20	-151269.90	0.00	
1	W	129327.10	-151171.30	9.00	9.00	0.00	0.00	129327.10	-151171.30	0.00	
2	W	129327.10	-151169.30	9.00	9.00	0.00	0.00	129327.10	-151169.30	0.00	
3	W	129327.10	-151167.30	9.00	9.00	0.00	0.00	129327.10	-151167.30	0.00	
4	W	129327.10	-151165.30	9.00	9.00	0.00	0.00	129327.10	-151165.30	0.00	
5	W	129327.10	-151163.30	9.00	9.00	0.00	0.00	129327.10	-151163.30	0.00	
6	W	129327.10	-151161.20	9.00	9.00	0.00	0.00	129327.10	-151161.20	0.00	
7	W	129327.10	-151159.20	9.00	9.00	0.00	0.00	129327.10	-151159.20	0.00	
8	W	129327.10	-151157.20	9.00	9.00	0.00	0.00	129327.10	-151157.20	0.00	
9	W	129327.10	-151155.20	9.00	9.00	0.00	0.00	129327.10	-151155.20	0.00	
10	W	129327.10	-151153.20	9.00	9.00	0.00	0.00	129327.10	-151153.20	0.00	



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DANE COUNTY EMERGENCY MANAGEMENT REMODEL
 5415 KING JAMES WAY
 FITCHBURG, WISCONSIN

ISSUE RECORD	
ADR	10-20-20

CHECKED BY
 STT
 DRAWN BY
 JAT,KJS,MOV
 DATE
 6/25/2020 2:26:36 PM
 2020-001

ELECTRICAL SITE PHOTOMETRIC PLAN
 ESP1.0



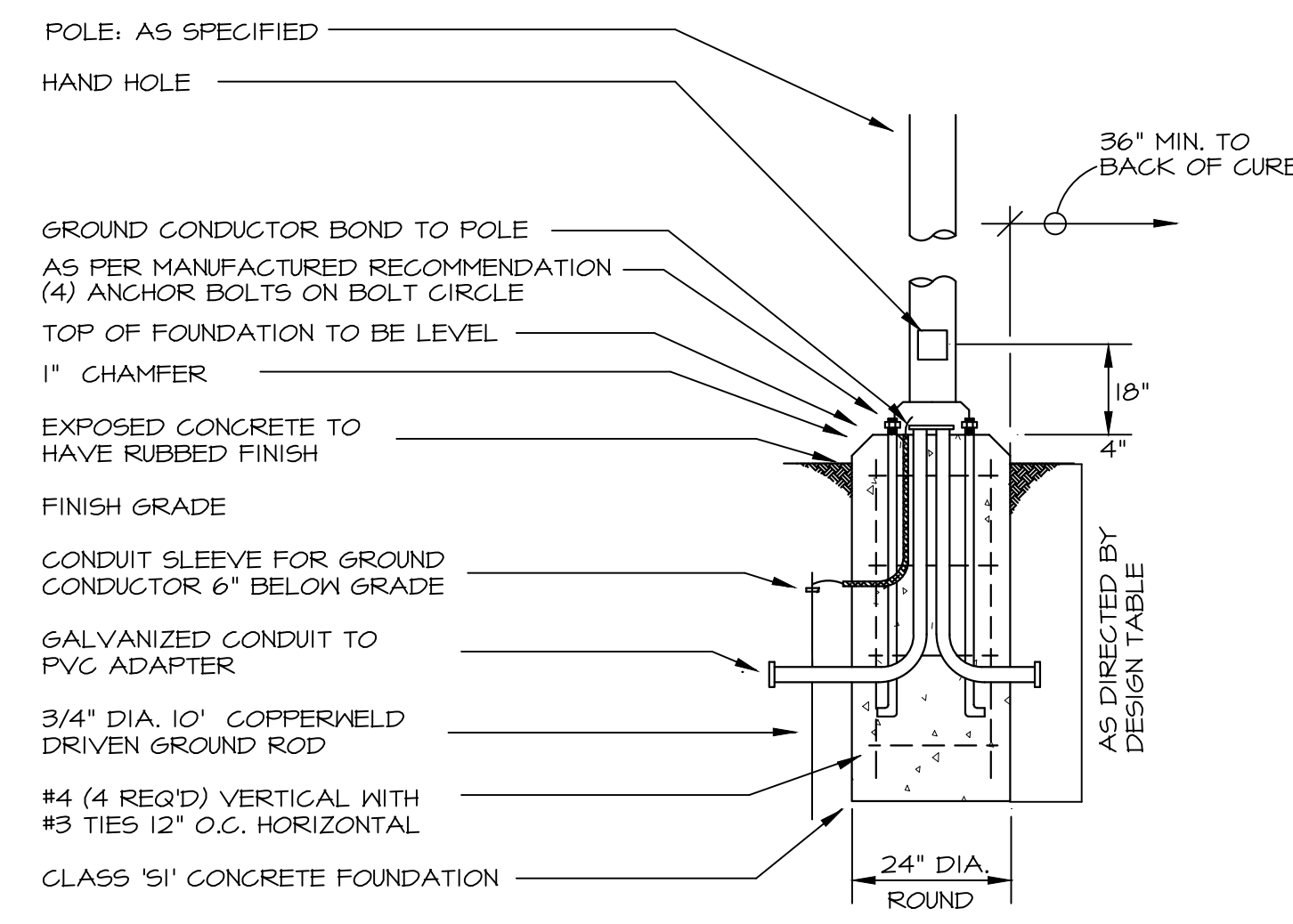
DANE COUNTY EMERGENCY
 MANAGEMENT REMODEL
 5415 KING JAMES WAY
 FITCHBURG, WISCONSIN

ISSUE RECORD

ADR	10-20-20

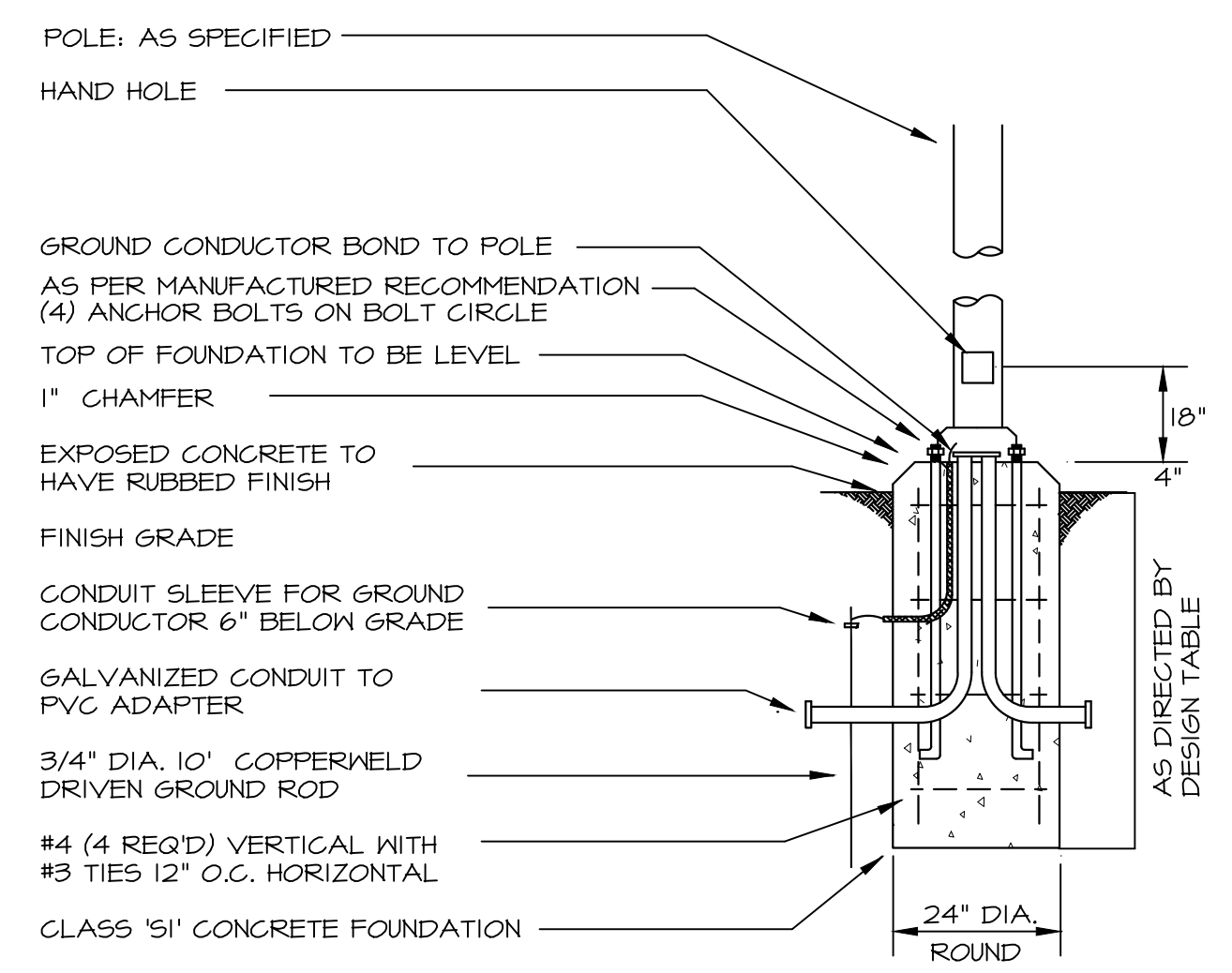
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 2020-001

ELECTRICAL
 SITE PLAN
 ES1.0



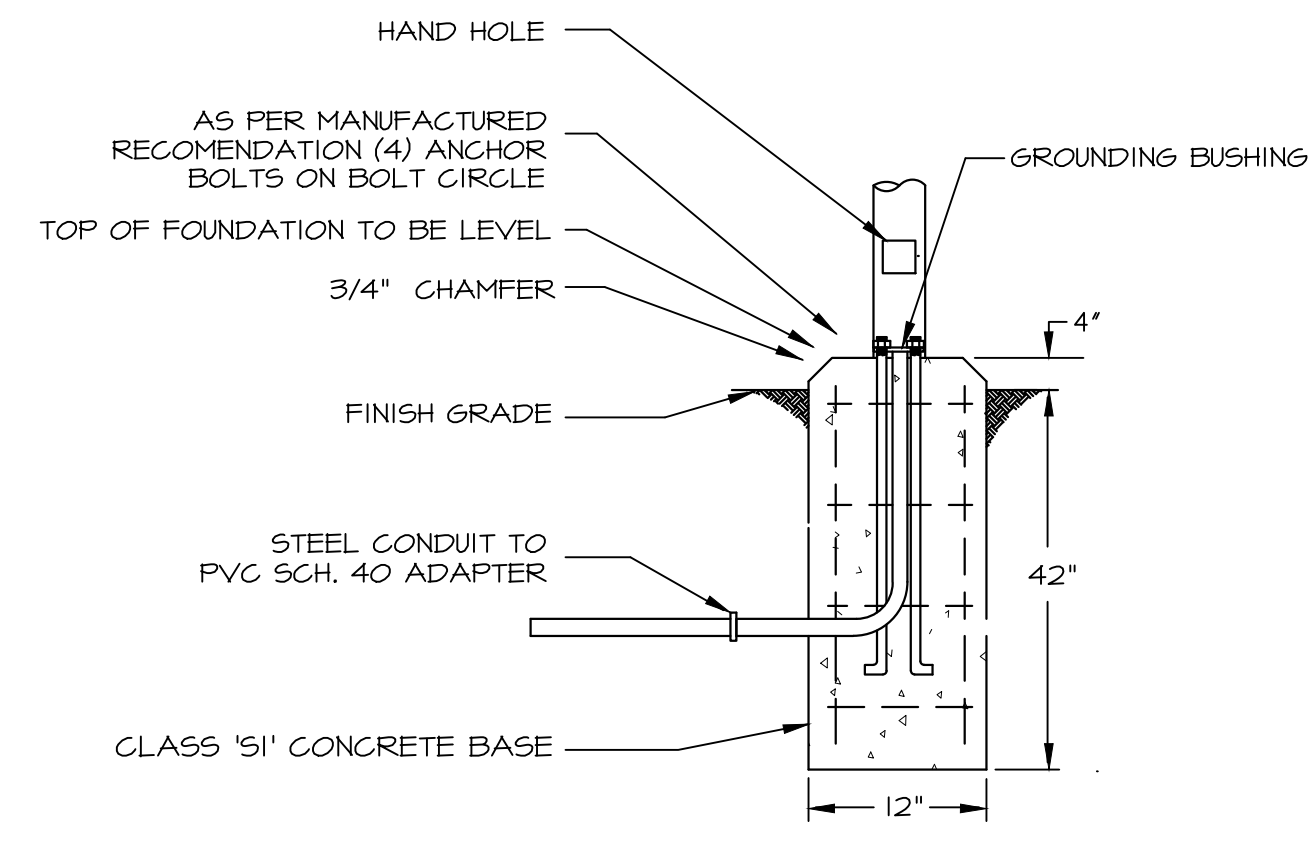
TYPE SA & SB POLE BASE DETAIL
 NOT TO SCALE

TYPE OF SOIL		DESIGN DEPTH OF FOUNDATION (IN FEET)
DESCRIPTIONS	STANDARDS	20' POLE
1. SOFT CLAY	QU-.025-0.5 TSF	14.0
2. MED. STIFF CLAY	QU-.05-1.0 TSF	9.5
3. STIFF CLAY	QU-1.0-2.0 TSF	7.5

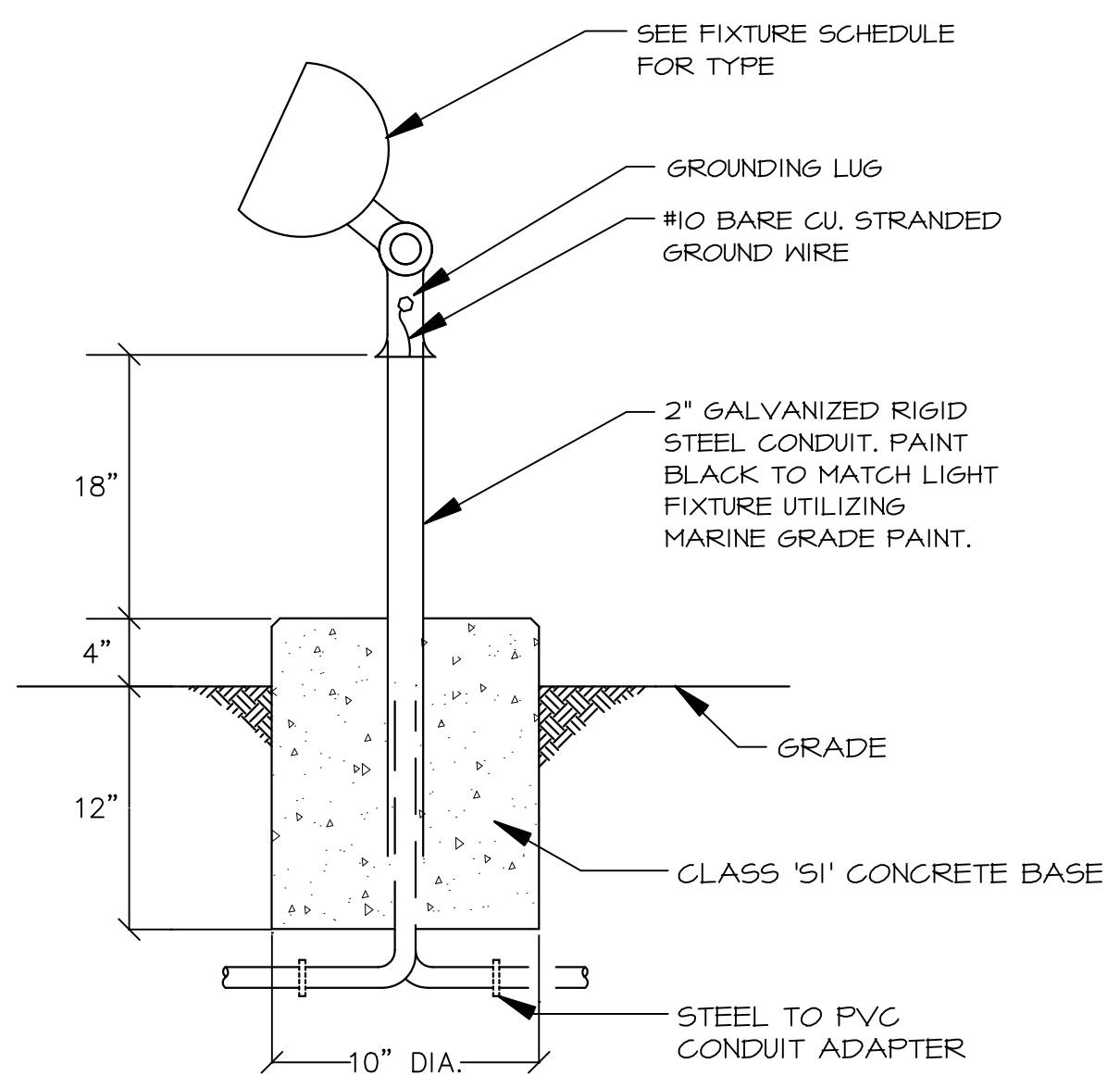


TYPE SC POLE BASE DETAIL
 NOT TO SCALE

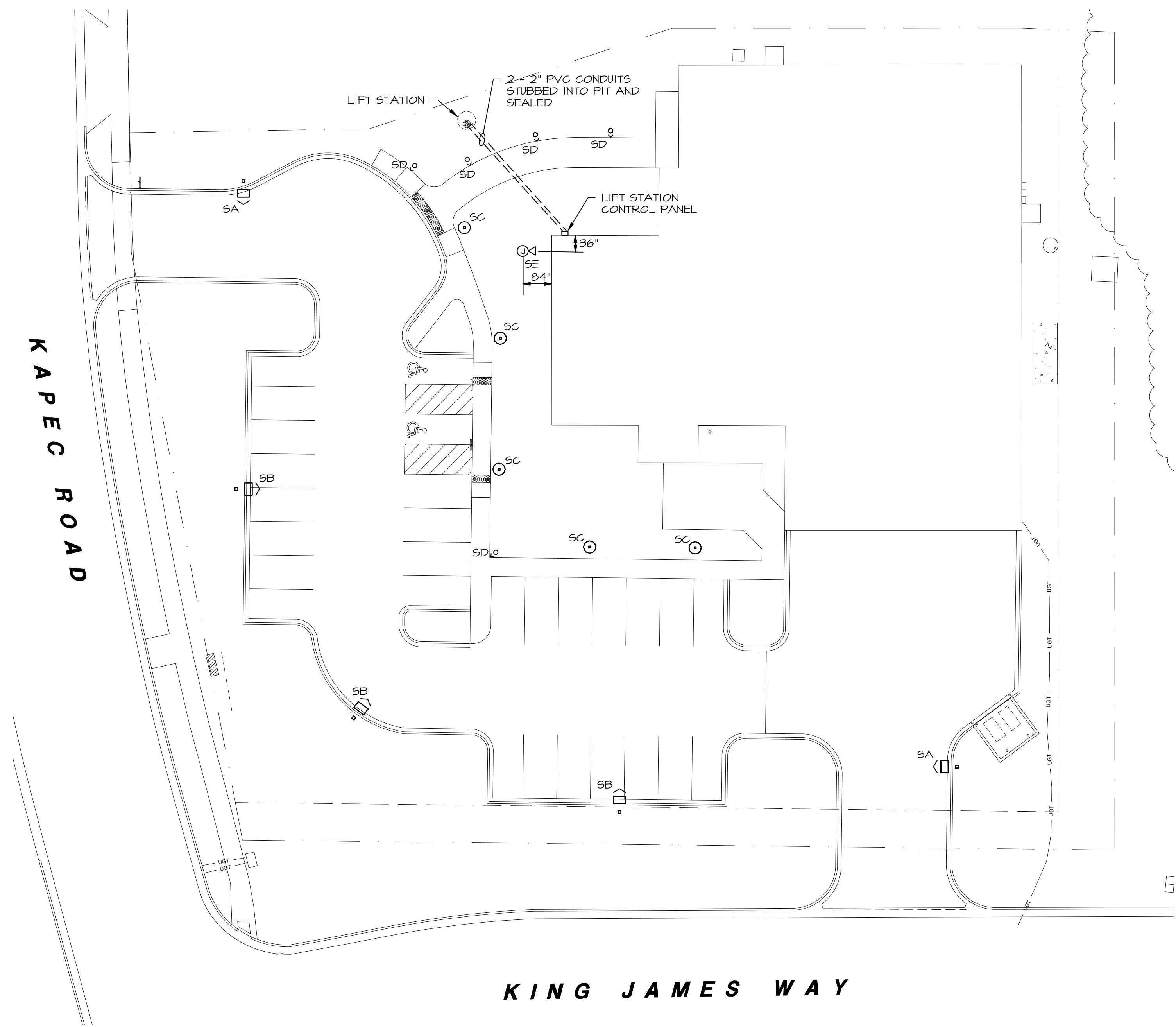
TYPE OF SOIL		DESIGN DEPTH OF FOUNDATION (IN FEET)
DESCRIPTIONS	STANDARDS	10' POLE
1. SOFT CLAY	QU-.025-0.5 TSF	12.0
2. MED. STIFF CLAY	QU-.05-1.0 TSF	8.5
3. STIFF CLAY	QU-1.0-2.0 TSF	6.5



TYPE SD BOLLARD BASE DETAIL
 NOT TO SCALE



DETAIL - TYPE SE FLOOD LIGHT
 NOT TO SCALE



SITE LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION & FEATURES	LAMPS	MOUNTING	VOLT	SPECIFIED MANUFACTURER AND CATALOG NUMBER
		TYPE	CLG./POLE-TYPE		
SA	POLE MOUNTED LUMINAIRE	71W LED	20'-0" POLE	208	LITHONIA #DSXO-LED-P3-40K-T3M-MVOLT-RPA-H5-DBLXD W/ #R55-20-4B-DM19A5-DBLXD POLE
SB	POLE MOUNTED LUMINAIRE	92W LED	20'-0" POLE	208	LITHONIA #DSXO-LED-P4-40K-TFTM-MVOLT-RPA-H5-DBLXD W/ #R55-20-4B-DM19A5-DBLXD POLE
SC	POLE MOUNTED LUMINAIRE	25W LED	10'-0" POLE	208	LITHONIA #RADPT-LED-PI-40K-5YM-MVOLT-RADPT20-DBLXD W/ #R55-10-4B-T20-DBLXD POLE
SD	41.5"H BOLLARD	19W LED	BASE	208	RADB-LED-P4-40K-ASY-MVOLT-BTSDBLXD-BGFDLXD-DBLXD
SE	FLOODLIGHT	21W LED	2" GR5/BASE	208	LITHONIA #DSXFI-LED-PI-40K-WFR-MVOLT-IS-BDLXD

- NOTES:**
- VERIFY TYPE OF MOUNTING FOR ALL LIGHTING FIXTURES PRIOR TO ORDERING.
 - PROVIDE ALL ADDITIONAL HARDWARE FOR FIXTURE MOUNTING AS REQUIRED AT NO EXTRA COST.
 - THE FIXTURE SCHEDULE DOES NOT NECESSARILY LIST ALL ACCESSORIES AND HARDWARE NECESSARY FOR THE COMPLETION OF INSTALLATION. NOR DOES IT DETAIL THE CEILING CONSTRUCTION TO BE ENCOUNTERED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROPERLY DETERMINE AND PROVIDE CORRECT COMPONENTS, ACCESSORIES, AND HARDWARE AS REQUIRED FOR THE INSTALLATION.
 - CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS AND CIVIL CONTRACTOR FOR EXACT LIGHTING FIXTURE LOCATION.
 - ALL LAMPS SHALL BE 4000K, UNLESS OTHERWISE INDICATED.



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**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



EXISTING SOUTH ELEVATION



EXISTING WEST ELEVATION

**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



EXISTING NORTH ELEVATION



EXISTING EAST ELEVATION



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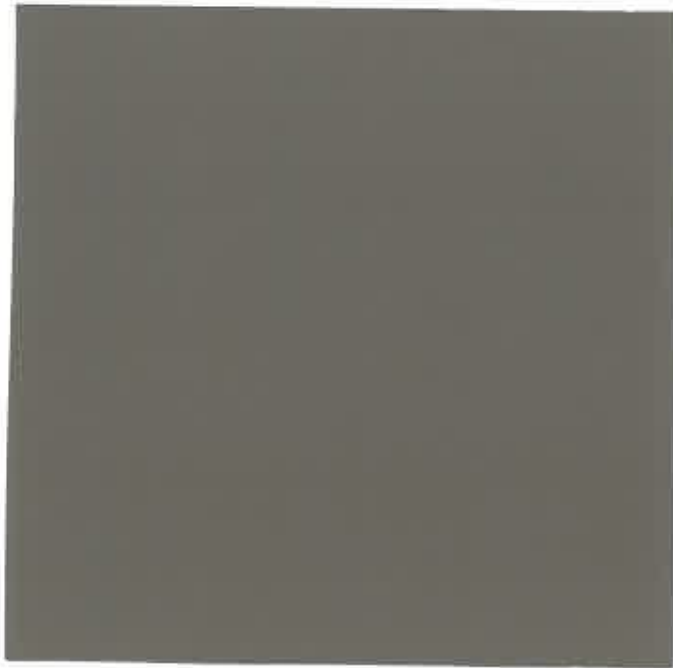
**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



EXISTING METAL FASCIA - PAINTED

COLOR: SW7076 CYBERSPACE

**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



EXTERIOR METAL DOORS - PAINTED

OVERHEAD METAL DOORS - PAINTED

NEW SIDING - PAINTED

COLOR: SW7026 GRIFFIN

**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



NEW WINDOW FRAMES

COLOR: BLACK

**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



GENERATOR ENCLOSURE

COLOR: CUMMINGS BEIGE



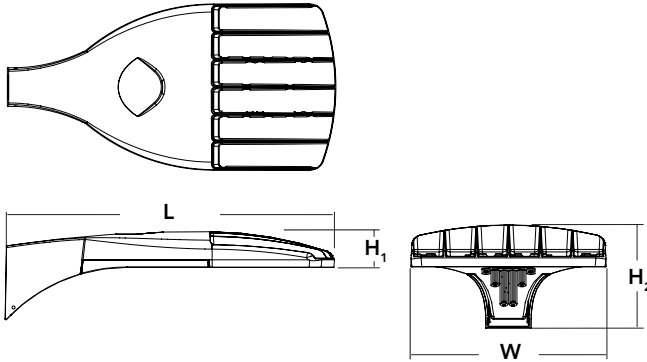
D-Series Size 0 LED Area Luminaire



d[#]series

Specifications

EPA:	0.95 ft ² (.09 m ²)
Length:	26" (66.0 cm)
Width:	13" (33.0 cm)
Height ₁ :	3" (7.62 cm)
Height ₂ :	7" (17.8 cm)
Weight (max):	16 lbs (7.25 kg)



Catalog
Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED		Color temperature		Distribution		Voltage	Mounting			
Series	LEDs									
DSX0 LED	Forward optics		30K	3000 K	T1S	Type I short (Automotive)	T5S	Type V short ³	MVOLT ^{5,6}	Shipped included SPA Square pole mounting RPA Round pole mounting ⁷ WBA Wall bracket ³ SPUMBA Square pole universal mounting adaptor ⁸ RPUMBA Round pole universal mounting adaptor ⁸ Shipped separately KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) ⁹
	P1	P4 ¹ P7 ¹	40K	4000 K	T2S	Type II short	T5M	Type V medium ³	120 ⁶	
	P2	P5	50K	5000 K	T2M	Type II medium	T5W	Type V wide ³	208 ⁶	
	P3	P6			T3S	Type III short	BLC	Backlight control ⁴	240 ⁶	
	Rotated optics				T3M	Type III medium	LCCO	Left corner cutoff ⁴	277 ⁶	
	P10 ²	P12 ²			T4M	Type IV medium	RCCO	Right corner cutoff ⁴	347 ⁶	
	P11 ²	P13 ^{1,2}			TFTM	Forward throw medium			480 ⁶	
					TSVS	Type V very short ³				

Control options	Other options	Finish (required)
Shipped installed	Shipped installed	DDBXD Dark bronze
NLTAIR2 nLight AIR generation 2 enabled ^{10,11}	HS House-side shield ¹⁹	DBLXD Black
PIRHN Network, high/low motion/ambient sensor ¹²	SF Single fuse (120, 277, 347V) ⁶	DNAXD Natural aluminum
PER NEMA twist-lock receptacle only (control ordered separate) ¹³	DF Double fuse (208, 240, 480V) ⁶	DWHXD White
PER5 Five-pin receptacle only (control ordered separate) ^{13,14}	L90 Left rotated optics ²	DDBTXD Textured dark bronze
PER7 Seven-pin receptacle only (leads exit fixture) (control ordered separate) ^{13,14}	R90 Right rotated optics ²	DBLTXD Textured black
DMG 0-10V dimming extend out back of housing for external control (control ordered separate) ¹⁵	DDL Diffused drop lens ¹⁹	DNATXD Textured natural aluminum
	HA 50°C ambient operations ¹	DWHGXD Textured white
	Shipped separately	
	BS Bird spikes ²⁰	
	EGS External glare shield	



Ordering Information

Accessories

Ordered and shipped separately.

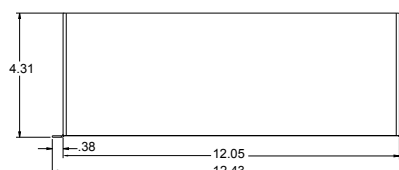
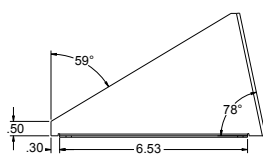
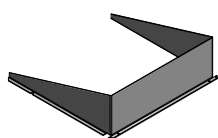
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²¹
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²¹
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²¹
DSHORT SBK U	Shorting cap ²¹
DSX0HS 20C U	House-side shield for P1,P2,P3 and P4 ¹⁹
DSX0HS 30C U	House-side shield for P10,P11,P12 and P13 ¹⁹
DSX0HS 40C U	House-side shield for P5,P6 and P7 ¹⁹
DSX0DDL U	Diffused drop lens (polycarbonate) ¹⁹
PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish) ²²
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) ¹⁷
DSX0EGS (FINISH) U	External glare shield

For more control options, visit [DTL](#) and [ROAM](#) online. Link to [nLight Air 2](#)

NOTES

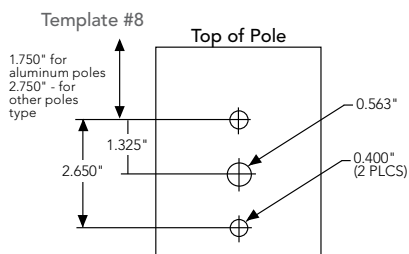
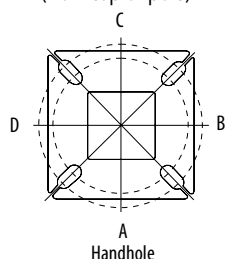
- 1 HA not available with P4, P7, and P13.
- 2 P10, P11, P12 and P13 and rotated options (L90 or R90) only available together.
- 3 Any Type 5 distribution with photocell, is not available with WBA.
- 4 Not available with HS or DDL.
- 5 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- 6 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- 7 Suitable for mounting to round poles between 3.5" and 12" diameter.
- 8 Universal mounting brackets intended for retrofit on existing pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8.
- 9 Must order fixture with SPA mounting. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
- 10 Must be ordered with PIRHN.
- 11 Sensor cover available only in dark bronze, black, white and natural aluminum colors.
- 12 Must be ordered with NLTAIR2. For more information on nLight Air 2 visit [this link](#).
- 13 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- 14 If ROAM[®] node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
- 15 DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
- 16 Reference Controls Options table on page 4.
- 17 Reference Motion Sensor Default Table on page 4 to see functionality.
- 18 Not available with other dimming controls options.
- 19 Not available with BLC, LCCO and RCCO distribution.
- 20 Must be ordered with fixture for factory pre-drilling.
- 21 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
- 22 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8

EGS – External Glare Shield



Drilling

HANDHOLE ORIENTATION (from top of pole)



Tenon Mounting Slipfitter

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 90°	3 at 120°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-390	AST20-320	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
Minimum Acceptable Outside Pole Dimension							
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"		4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

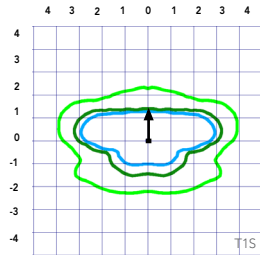
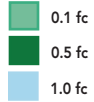
DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

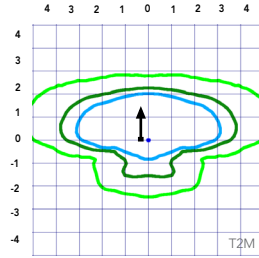
Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 LED	0.950	1.900	1.830	2.850	2.850	3.544

Isofootcandle plots for the DSX0 LED 40C 1000 40K. Distances are in units of mounting height (20').

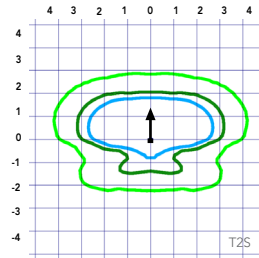
LEGEND



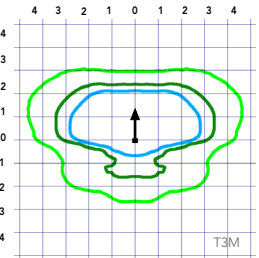
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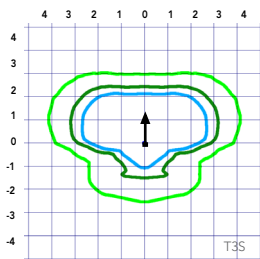
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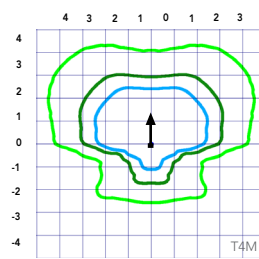
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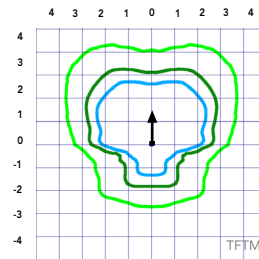
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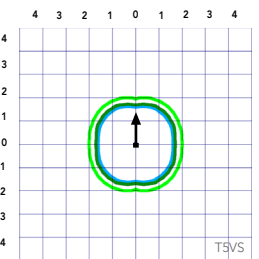
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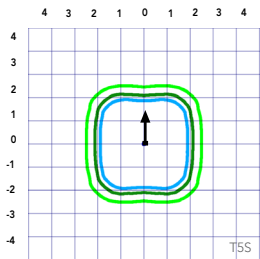
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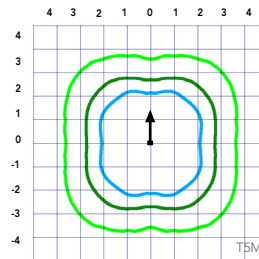
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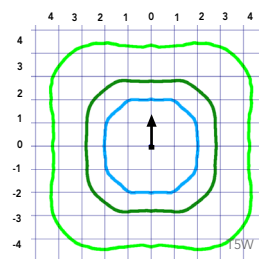
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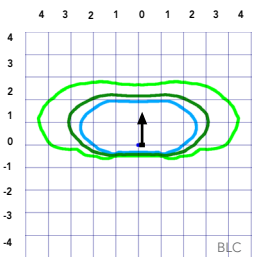
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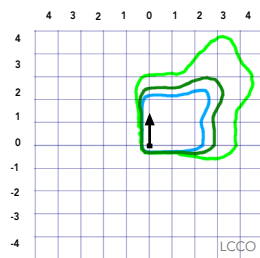
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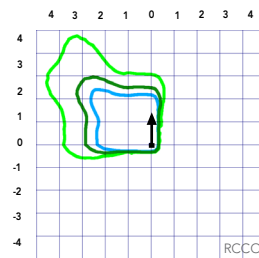
Test No. LTL23451P25 tested in accordance with IESNA LM-79-08.



Test No.



Test No.



Test No.

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°C	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings

Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*for use with separate Dusk to Dawn or timer.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current	Wattage	120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	20	530	38	0.32	0.18	0.15	0.15	0.10	0.08
	P2	20	700	49	0.41	0.23	0.20	0.19	0.14	0.11
	P3	20	1050	71	0.60	0.37	0.32	0.27	0.21	0.15
	P4	20	1400	92	0.77	0.45	0.39	0.35	0.28	0.20
	P5	40	700	89	0.74	0.43	0.38	0.34	0.26	0.20
	P6	40	1050	134	1.13	0.65	0.55	0.48	0.39	0.29
	P7	40	1300	166	1.38	0.80	0.69	0.60	0.50	0.37
Rotated Optics (Requires L90 or R90)	P10	30	530	53	0.45	0.26	0.23	0.21	0.16	0.12
	P11	30	700	72	0.60	0.35	0.30	0.27	0.20	0.16
	P12	30	1050	104	0.88	0.50	0.44	0.39	0.31	0.23
	P13	30	1300	128	1.08	0.62	0.54	0.48	0.37	0.27

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	20	530	38W	T1S	4,369	1	0	1	115	4,706	1	0	1	124	4,766	1	0	1	125
				T2S	4,364	1	0	1	115	4,701	1	0	1	124	4,761	1	0	1	125
				T2M	4,387	1	0	1	115	4,726	1	0	1	124	4,785	1	0	1	126
				T3S	4,248	1	0	1	112	4,577	1	0	1	120	4,634	1	0	1	122
				T3M	4,376	1	0	1	115	4,714	1	0	1	124	4,774	1	0	1	126
				T4M	4,281	1	0	1	113	4,612	1	0	2	121	4,670	1	0	2	123
				TFTM	4,373	1	0	1	115	4,711	1	0	2	124	4,771	1	0	2	126
				TSVS	4,548	2	0	0	120	4,900	2	0	0	129	4,962	2	0	0	131
				T5S	4,552	2	0	0	120	4,904	2	0	0	129	4,966	2	0	0	131
				T5M	4,541	3	0	1	120	4,891	3	0	1	129	4,953	3	0	1	130
				TSW	4,576	3	0	2	120	4,929	3	0	2	130	4,992	3	0	2	131
				BLC	3,586	1	0	1	94	3,863	1	0	1	102	3,912	1	0	1	103
				LCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
				RCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
P2	20	700	49W	T1S	5,570	1	0	1	114	6,001	1	0	1	122	6,077	2	0	2	124
				T2S	5,564	1	0	2	114	5,994	1	0	2	122	6,070	2	0	2	124
				T2M	5,593	1	0	1	114	6,025	1	0	1	123	6,102	1	0	1	125
				T3S	5,417	1	0	2	111	5,835	1	0	2	119	5,909	2	0	2	121
				T3M	5,580	1	0	2	114	6,011	1	0	2	123	6,087	1	0	2	124
				T4M	5,458	1	0	2	111	5,880	1	0	2	120	5,955	1	0	2	122
				TFTM	5,576	1	0	2	114	6,007	1	0	2	123	6,083	1	0	2	124
				TSVS	5,799	2	0	0	118	6,247	2	0	0	127	6,327	2	0	0	129
				T5S	5,804	2	0	0	118	6,252	2	0	0	128	6,332	2	0	1	129
				T5M	5,789	3	0	1	118	6,237	3	0	1	127	6,316	3	0	1	129
				TSW	5,834	3	0	2	119	6,285	3	0	2	128	6,364	3	0	2	130
				BLC	4,572	1	0	1	93	4,925	1	0	1	101	4,987	1	0	1	102
				LCCO	3,402	1	0	2	69	3,665	1	0	2	75	3,711	1	0	2	76
				RCCO	3,402	1	0	2	69	3,665	1	0	2	75	3,711	1	0	2	76
P3	20	1050	71W	T1S	7,833	2	0	2	110	8,438	2	0	2	119	8,545	2	0	2	120
				T2S	7,825	2	0	2	110	8,429	2	0	2	119	8,536	2	0	2	120
				T2M	7,865	2	0	2	111	8,473	2	0	2	119	8,580	2	0	2	121
				T3S	7,617	2	0	2	107	8,205	2	0	2	116	8,309	2	0	2	117
				T3M	7,846	2	0	2	111	8,452	2	0	2	119	8,559	2	0	2	121
				T4M	7,675	2	0	2	108	8,269	2	0	2	116	8,373	2	0	2	118
				TFTM	7,841	2	0	2	110	8,447	2	0	2	119	8,554	2	0	2	120
				TSVS	8,155	3	0	0	115	8,785	3	0	0	124	8,896	3	0	0	125
				T5S	8,162	3	0	1	115	8,792	3	0	1	124	8,904	3	0	1	125
				T5M	8,141	3	0	2	115	8,770	3	0	2	124	8,881	3	0	2	125
				TSW	8,204	3	0	2	116	8,838	4	0	2	124	8,950	4	0	2	126
				BLC	6,429	1	0	2	91	6,926	1	0	2	98	7,013	1	0	2	99
				LCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
				RCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
P4	20	1400	92W	T1S	9,791	2	0	2	106	10,547	2	0	2	115	10,681	2	0	2	116
				T2S	9,780	2	0	2	106	10,536	2	0	2	115	10,669	2	0	2	116
				T2M	9,831	2	0	2	107	10,590	2	0	2	115	10,724	2	0	2	117
				T3S	9,521	2	0	2	103	10,256	2	0	2	111	10,386	2	0	2	113
				T3M	9,807	2	0	2	107	10,565	2	0	2	115	10,698	2	0	2	116
				T4M	9,594	2	0	2	104	10,335	2	0	3	112	10,466	2	0	3	114
				TFTM	9,801	2	0	2	107	10,558	2	0	2	115	10,692	2	0	2	116
				TSVS	10,193	3	0	1	111	10,981	3	0	1	119	11,120	3	0	1	121
				T5S	10,201	3	0	1	111	10,990	3	0	1	119	11,129	3	0	1	121
				T5M	10,176	4	0	2	111	10,962	4	0	2	119	11,101	4	0	2	121
				TSW	10,254	4	0	3	111	11,047	4	0	3	120	11,186	4	0	3	122
				BLC	8,036	1	0	2	87	8,656	1	0	2	94	8,766	1	0	2	95
				LCCO	5,979	1	0	2	65	6,441	1	0	2	70	6,523	1	0	3	71
				RCCO	5,979	1	0	2	65	6,441	1	0	2	70	6,523	1	0	3	71

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	40	700	89W	T1S	10,831	2	0	2	122	11,668	2	0	2	131	11,816	2	0	2	133
				T2S	10,820	2	0	2	122	11,656	2	0	2	131	11,803	2	0	2	133
				T2M	10,876	2	0	2	122	11,716	2	0	2	132	11,864	2	0	2	133
				T3S	10,532	2	0	2	118	11,346	2	0	2	127	11,490	2	0	2	129
				T3M	10,849	2	0	2	122	11,687	2	0	2	131	11,835	2	0	2	133
				T4M	10,613	2	0	3	119	11,434	2	0	3	128	11,578	2	0	3	130
				TFTM	10,842	2	0	2	122	11,680	2	0	2	131	11,828	2	0	2	133
				TSVS	11,276	3	0	1	127	12,148	3	0	1	136	12,302	3	0	1	138
				T5S	11,286	3	0	1	127	12,158	3	0	1	137	12,312	3	0	1	138
				T5M	11,257	4	0	2	126	12,127	4	0	2	136	12,280	4	0	2	138
				T5W	11,344	4	0	3	127	12,221	4	0	3	137	12,375	4	0	3	139
				BLC	8,890	1	0	2	100	9,576	1	0	2	108	9,698	1	0	2	109
				LCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
				RCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
P6	40	1050	134W	T1S	14,805	3	0	3	110	15,949	3	0	3	119	16,151	3	0	3	121
				T2S	14,789	3	0	3	110	15,932	3	0	3	119	16,134	3	0	3	120
				T2M	14,865	3	0	3	111	16,014	3	0	3	120	16,217	3	0	3	121
				T3S	14,396	3	0	3	107	15,509	3	0	3	116	15,705	3	0	3	117
				T3M	14,829	2	0	3	111	15,975	3	0	3	119	16,177	3	0	3	121
				T4M	14,507	2	0	3	108	15,628	3	0	3	117	15,826	3	0	3	118
				TFTM	14,820	2	0	3	111	15,965	3	0	3	119	16,167	3	0	3	121
				TSVS	15,413	4	0	1	115	16,604	4	0	1	124	16,815	4	0	1	125
				T5S	15,426	3	0	1	115	16,618	4	0	1	124	16,828	4	0	1	126
				T5M	15,387	4	0	2	115	16,576	4	0	2	124	16,786	4	0	2	125
				T5W	15,506	4	0	3	116	16,704	4	0	3	125	16,915	4	0	3	126
				BLC	12,151	1	0	2	91	13,090	1	0	2	98	13,255	1	0	2	99
				LCCO	9,041	1	0	3	67	9,740	1	0	3	73	9,863	1	0	3	74
				RCCO	9,041	1	0	3	67	9,740	1	0	3	73	9,863	1	0	3	74
P7	40	1300	166W	T1S	17,023	3	0	3	103	18,338	3	0	3	110	18,570	3	0	3	112
				T2S	17,005	3	0	3	102	18,319	3	0	3	110	18,551	3	0	3	112
				T2M	17,092	3	0	3	103	18,413	3	0	3	111	18,646	3	0	3	112
				T3S	16,553	3	0	3	100	17,832	3	0	3	107	18,058	3	0	3	109
				T3M	17,051	3	0	3	103	18,369	3	0	3	111	18,601	3	0	3	112
				T4M	16,681	3	0	3	100	17,969	3	0	3	108	18,197	3	0	3	110
				TFTM	17,040	3	0	3	103	18,357	3	0	4	111	18,590	3	0	4	112
				TSVS	17,723	4	0	1	107	19,092	4	0	1	115	19,334	4	0	1	116
				T5S	17,737	4	0	2	107	19,108	4	0	2	115	19,349	4	0	2	117
				T5M	17,692	4	0	2	107	19,059	4	0	2	115	19,301	4	0	2	116
				T5W	17,829	5	0	3	107	19,207	5	0	3	116	19,450	5	0	3	117
				BLC	13,971	2	0	2	84	15,051	2	0	2	91	15,241	2	0	2	92
				LCCO	10,396	1	0	3	63	11,199	1	0	3	67	11,341	1	0	3	68
				RCCO	10,396	1	0	3	63	11,199	1	0	3	67	11,341	1	0	3	68

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Rotated Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	30	530	53W	T1S	6,727	2	0	2	127	7,247	3	0	3	137	7,339	3	0	3	138
				T2S	6,689	3	0	3	126	7,205	3	0	3	136	7,297	3	0	3	138
				T2M	6,809	3	0	3	128	7,336	3	0	3	138	7,428	3	0	3	140
				T3S	6,585	3	0	3	124	7,094	3	0	3	134	7,183	3	0	3	136
				T3M	6,805	3	0	3	128	7,331	3	0	3	138	7,424	3	0	3	140
				T4M	6,677	3	0	3	126	7,193	3	0	3	136	7,284	3	0	3	137
				TFTM	6,850	3	0	3	129	7,379	3	0	3	139	7,472	3	0	3	141
				TSVS	6,898	3	0	0	130	7,431	3	0	0	140	7,525	3	0	0	142
				T5S	6,840	2	0	1	129	7,368	2	0	1	139	7,461	2	0	1	141
				T5M	6,838	3	0	1	129	7,366	3	0	2	139	7,460	3	0	2	141
				TSW	6,777	3	0	2	128	7,300	3	0	2	138	7,393	3	0	2	139
				BLC	5,626	2	0	2	106	6,060	2	0	2	114	6,137	2	0	2	116
				LCCO	4,018	1	0	2	76	4,328	1	0	2	82	4,383	1	0	2	83
				RCCO	4,013	3	0	3	76	4,323	3	0	3	82	4,377	3	0	3	83
				P11	30	700	72W	T1S	8,594	3	0	3	119	9,258	3	0	3	129	9,376
T2S	8,545	3	0					3	119	9,205	3	0	3	128	9,322	3	0	3	129
T2M	8,699	3	0					3	121	9,371	3	0	3	130	9,490	3	0	3	132
T3S	8,412	3	0					3	117	9,062	3	0	3	126	9,177	3	0	3	127
T3M	8,694	3	0					3	121	9,366	3	0	3	130	9,484	3	0	3	132
T4M	8,530	3	0					3	118	9,189	3	0	3	128	9,305	3	0	3	129
TFTM	8,750	3	0					3	122	9,427	3	0	3	131	9,546	3	0	3	133
TSVS	8,812	3	0					0	122	9,493	3	0	0	132	9,613	3	0	0	134
T5S	8,738	3	0					1	121	9,413	3	0	1	131	9,532	3	0	1	132
T5M	8,736	3	0					2	121	9,411	3	0	2	131	9,530	3	0	2	132
TSW	8,657	4	0					2	120	9,326	4	0	2	130	9,444	4	0	2	131
BLC	7,187	3	0					3	100	7,742	3	0	3	108	7,840	3	0	3	109
LCCO	5,133	1	0					2	71	5,529	1	0	2	77	5,599	1	0	2	78
RCCO	5,126	3	0					3	71	5,522	3	0	3	77	5,592	3	0	3	78
P12	30	1050	104W					T1S	12,149	3	0	3	117	13,088	3	0	3	126	13,253
				T2S	12,079	4	0	4	116	13,012	4	0	4	125	13,177	4	0	4	127
				T2M	12,297	3	0	3	118	13,247	3	0	3	127	13,415	3	0	3	129
				T3S	11,891	4	0	4	114	12,810	4	0	4	123	12,972	4	0	4	125
				T3M	12,290	3	0	3	118	13,239	4	0	4	127	13,407	4	0	4	129
				T4M	12,058	4	0	4	116	12,990	4	0	4	125	13,154	4	0	4	126
				TFTM	12,369	4	0	4	119	13,325	4	0	4	128	13,494	4	0	4	130
				TSVS	12,456	3	0	1	120	13,419	3	0	1	129	13,589	4	0	1	131
				T5S	12,351	3	0	1	119	13,306	3	0	1	128	13,474	3	0	1	130
				T5M	12,349	4	0	2	119	13,303	4	0	2	128	13,471	4	0	2	130
				TSW	12,238	4	0	3	118	13,183	4	0	3	127	13,350	4	0	3	128
				BLC	10,159	3	0	3	98	10,944	3	0	3	105	11,083	3	0	3	107
				LCCO	7,256	1	0	3	70	7,816	1	0	3	75	7,915	1	0	3	76
				RCCO	7,246	3	0	3	70	7,806	4	0	4	75	7,905	4	0	4	76
				P13	30	1300	128W	T1S	14,438	3	0	3	113	15,554	3	0	3	122	15,751
T2S	14,355	4	0					4	112	15,465	4	0	4	121	15,660	4	0	4	122
T2M	14,614	3	0					3	114	15,744	4	0	4	123	15,943	4	0	4	125
T3S	14,132	4	0					4	110	15,224	4	0	4	119	15,417	4	0	4	120
T3M	14,606	4	0					4	114	15,735	4	0	4	123	15,934	4	0	4	124
T4M	14,330	4	0					4	112	15,438	4	0	4	121	15,633	4	0	4	122
TFTM	14,701	4	0					4	115	15,836	4	0	4	124	16,037	4	0	4	125
TSVS	14,804	4	0					1	116	15,948	4	0	1	125	16,150	4	0	1	126
T5S	14,679	3	0					1	115	15,814	3	0	1	124	16,014	3	0	1	125
T5M	14,676	4	0					2	115	15,810	4	0	2	124	16,010	4	0	2	125
TSW	14,544	4	0					3	114	15,668	4	0	3	122	15,866	4	0	3	124
BLC	7919	3	0					3	62	8531	3	0	3	67	8639	3	0	3	67
LCCO	5145	1	0					2	40	5543	1	0	2	43	5613	1	0	2	44
RCCO	5139	3	0					3	40	5536	3	0	3	43	5606	3	0	3	44

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (0.95 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programming and are suitable for mounting heights up to 30 feet.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 0 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 0 utilizes the AERIS™ series pole drilling pattern (template #8). Optional terminal block and NEMA photocontrol receptacle are also available.

LISTINGS

UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C to 50°C ambient with HA option. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.





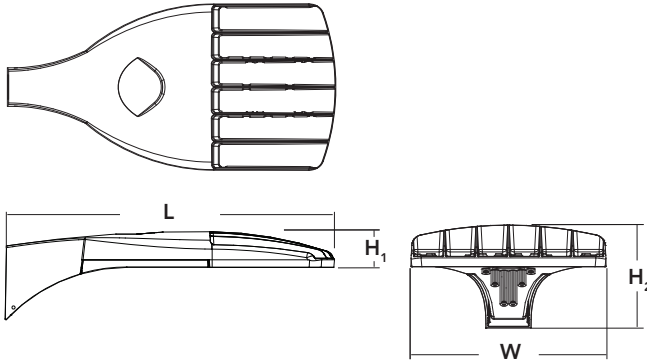
D-Series Size 0 LED Area Luminaire



d[#]series

Specifications

EPA:	0.95 ft ² (.09 m ²)
Length:	26" (66.0 cm)
Width:	13" (33.0 cm)
Height₁:	3" (7.62 cm)
Height₂:	7" (17.8 cm)
Weight (max):	16 lbs (7.25 kg)



Catalog Number

Notes

Type SB

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 400W metal halide with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX0 LED	P4	40K	TFTM	MVOLT	RPA	
Series	LEDs	Color temperature	Distribution	Voltage	Mounting	
DSX0 LED	Forward optics P1 P4 ¹ P7 ¹ P2 P5 P3 P6 Rotated optics P10 ² P12 ² P11 ² P13 ^{1,2}	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short (Automotive) T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium T5VS Type V very short ³	T5S Type V short ³ T5M Type V medium ³ T5W Type V wide ³ BLC Backlight control ⁴ LCCO Left corner cutoff ⁴ RCCO Right corner cutoff ⁴	MVOLT ^{5,6} 120 ⁶ 208 ⁶ 240 ⁶ 277 ⁶ 347 ⁶ 480 ⁶	Shipped included SPA Square pole mounting RPA Round pole mounting ⁷ WBA Wall bracket ³ SPUMBA Square pole universal mounting adaptor ⁸ RPUMBA Round pole universal mounting adaptor ⁸ Shipped separately KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish) ⁹
				HS	DBLXD	
Control options				Other options		
Shipped installed				Shipped installed		
NLTAIR2	nLight AIR generation 2 enabled ^{10,11}		PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc ^{16,17}	HS House-side shield ¹⁹	DDBXD Dark bronze	
PIRHN	Network, high/low motion/ambient sensor ¹²		PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc ^{16,17}	SF Single fuse (120, 277, 347V) ⁶	DBLXD Black	
PER	NEMA twist-lock receptacle only (control ordered separate) ¹³		PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc ^{16,17}	DF Double fuse (208, 240, 480V) ⁶	DNAXD Natural aluminum	
PER5	Five-pin receptacle only (control ordered separate) ^{13,14}		PIRH1FC3V High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc ^{16,17}	L90 Left rotated optics ²	DWHXD White	
PER7	Seven-pin receptacle only (leads exit fixture) (control ordered separate) ^{13,14}		FAO Field adjustable output ¹⁸	R90 Right rotated optics ²	DDBTXD Textured dark bronze	
DMG	0-10V dimming extend out back of housing for external control (control ordered separate) ¹⁵			DDL Diffused drop lens ¹⁹	DBLTXD Textured black	
				HA 50°C ambient operations ¹	DNATXD Textured natural aluminum	
				Shipped separately	DWHGXD Textured white	
				BS Bird spikes ²⁰		
				EGS External glare shield		



Ordering Information

Accessories

Ordered and shipped separately.

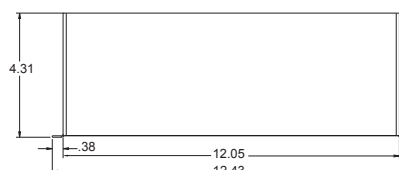
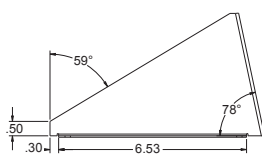
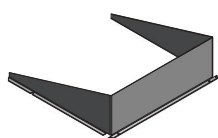
DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) ²¹
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) ²¹
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) ²¹
DSHORT SBK U	Shorting cap ²¹
DSX0HS 20C U	House-side shield for P1,P2,P3 and P4 ¹⁹
DSX0HS 30C U	House-side shield for P10,P11,P12 and P13 ¹⁹
DSX0HS 40C U	House-side shield for P5,P6 and P7 ¹⁹
DSX0DDL U	Diffused drop lens (polycarbonate) ¹⁹
PUMBA DDBXD U*	Square and round pole universal mounting bracket adaptor (specify finish) ²²
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) ¹⁷
DSX0EGS (FINISH) U	External glare shield

For more control options, visit [DTL](#) and [ROAM](#) online. Link to [nLight Air 2](#)

NOTES

- 1 HA not available with P4, P7, and P13.
- 2 P10, P11, P12 and P13 and rotated options (L90 or R90) only available together.
- 3 Any Type 5 distribution with photocell, is not available with WBA.
- 4 Not available with HS or DDL.
- 5 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- 6 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- 7 Suitable for mounting to round poles between 3.5" and 12" diameter.
- 8 Universal mounting brackets intended for retrofit on existing pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8.
- 9 Must order fixture with SPA mounting. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
- 10 Must be ordered with PIRHN.
- 11 Sensor cover available only in dark bronze, black, white and natural aluminum colors.
- 12 Must be ordered with NLTAIR2. For more information on nLight Air 2 visit [this link](#).
- 13 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting Cap included.
- 14 If ROAM[®] node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Shorting Cap included.
- 15 DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
- 16 Reference Controls Options table on page 4.
- 17 Reference Motion Sensor Default Table on page 4 to see functionality.
- 18 Not available with other dimming controls options.
- 19 Not available with BLC, LCCO and RCCO distribution.
- 20 Must be ordered with fixture for factory pre-drilling.
- 21 Requires luminaire to be specified with PER, PER5 or PER7 option. See Controls Table on page 4.
- 22 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8

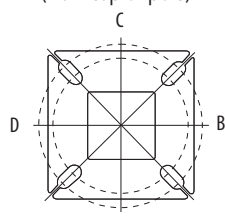
EGS – External Glare Shield



Drilling

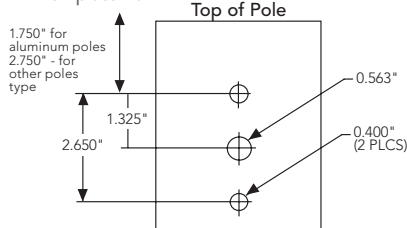
HANDHOLE ORIENTATION

(from top of pole)



A
Handhole

Template #8



Tenon Mounting Slipfitter

Tenon O.D.	Single Unit	2 at 180°	2 at 90°	3 at 90°	3 at 120°	4 at 90°
2-3/8"	AST20-190	AST20-280	AST20-290	AST20-390	AST20-320	AST20-490
2-7/8"	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS
Minimum Acceptable Outside Pole Dimension							
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"		3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"		4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

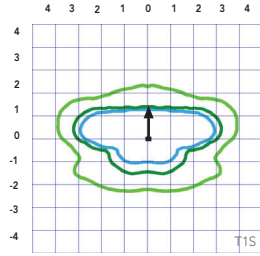
DSX0 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

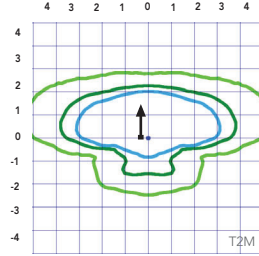
Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX0 LED	0.950	1.900	1.830	2.850	2.850	3.544

Isofootcandle plots for the DSX0 LED 40C 1000 40K. Distances are in units of mounting height (20').

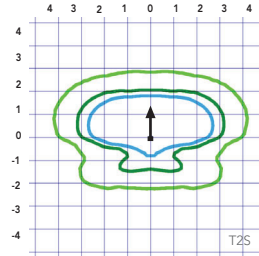
LEGEND



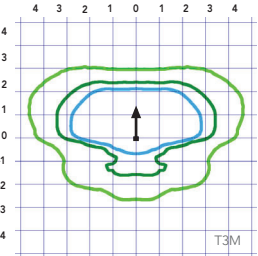
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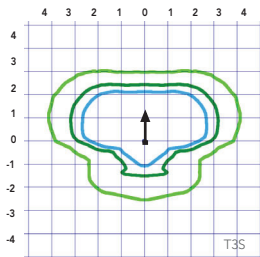
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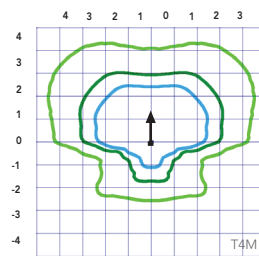
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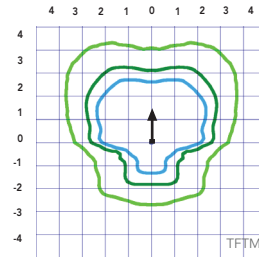
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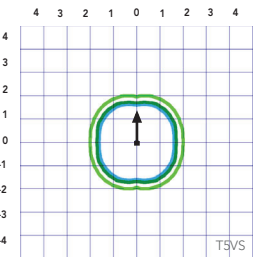
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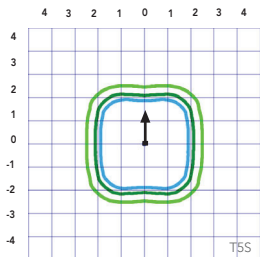
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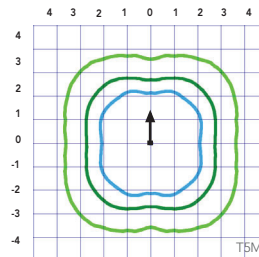
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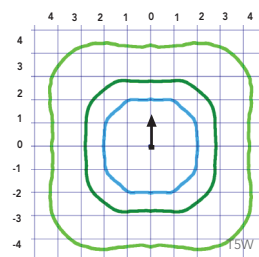
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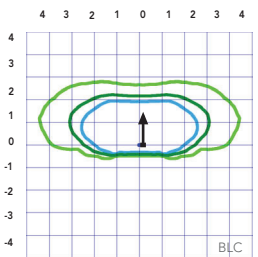
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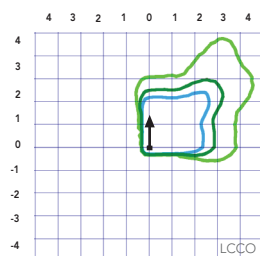
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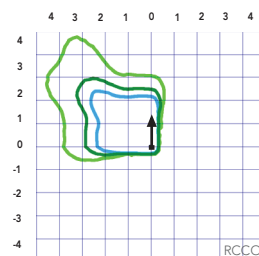
Test No. LTL23451P25 tested in accordance with IESNA LM-79-08.



Test No.



Test No.



Test No.

Performance Data

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Lumen Multiplier
0°C	32°F	1.04
5°C	41°F	1.04
10°C	50°F	1.03
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°C	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	Lumen Maintenance Factor
25,000	0.96
50,000	0.92
100,000	0.85

Motion Sensor Default Settings

Option	Dimmed State	High Level (when triggered)	Photocell Operation	Dwell Time	Ramp-up Time	Ramp-down Time
PIR or PIRH	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	5 min	3 sec	5 min
*PIR1FC3V or PIRH1FC3V	3V (37%) Output	10V (100%) Output	Enabled @ 1FC	5 min	3 sec	5 min

*for use with separate Dusk to Dawn or timer.

Electrical Load

					Current (A)					
	Performance Package	LED Count	Drive Current	Wattage	120	208	240	277	347	480
Forward Optics (Non-Rotated)	P1	20	530	38	0.32	0.18	0.15	0.15	0.10	0.08
	P2	20	700	49	0.41	0.23	0.20	0.19	0.14	0.11
	P3	20	1050	71	0.60	0.37	0.32	0.27	0.21	0.15
	P4	20	1400	92	0.77	0.45	0.39	0.35	0.28	0.20
	P5	40	700	89	0.74	0.43	0.38	0.34	0.26	0.20
	P6	40	1050	134	1.13	0.65	0.55	0.48	0.39	0.29
	P7	40	1300	166	1.38	0.80	0.69	0.60	0.50	0.37
Rotated Optics (Requires L90 or R90)	P10	30	530	53	0.45	0.26	0.23	0.21	0.16	0.12
	P11	30	700	72	0.60	0.35	0.30	0.27	0.20	0.16
	P12	30	1050	104	0.88	0.50	0.44	0.39	0.31	0.23
	P13	30	1300	128	1.08	0.62	0.54	0.48	0.37	0.27

Controls Options

Nomenclature	Description	Functionality	Primary control device	Notes
FAO	Field adjustable output device installed inside the luminaire; wired to the driver dimming leads.	Allows the luminaire to be manually dimmed, effectively trimming the light output.	FAO device	Cannot be used with other controls options that need the 0-10V leads
DS	Drivers wired independently for 50/50 luminaire operation	The luminaire is wired to two separate circuits, allowing for 50/50 operation.	Independently wired drivers	Requires two separately switched circuits. Consider nLight AIR as a more cost effective alternative.
PERS or PER7	Twist-lock photocell receptacle	Compatible with standard twist-lock photocells for dusk to dawn operation, or advanced control nodes that provide 0-10V dimming signals.	Twist-lock photocells such as DLL Elite or advanced control nodes such as ROAM.	Pins 4 & 5 to dimming leads on driver, Pins 6 & 7 are capped inside luminaire
PIR or PIRH	Motion sensors with integral photocell. PIR for 8-15' mounting; PIRH for 15-30' mounting	Luminaires dim when no occupancy is detected.	Acuity Controls SBGR	Also available with PIRH1FC3V when the sensor photocell is used for dusk-to-dawn operation.
NLTAIR2 PIRHN	nLight AIR enabled luminaire for motion sensing, photocell and wireless communication.	Motion and ambient light sensing with group response. Scheduled dimming with motion sensor over-ride when wirelessly connected to the nLight Eclipse.	nLight Air rSDGR	nLight AIR sensors can be programmed and commissioned from the ground using the CIAIRity Pro app.

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	20	530	38W	T1S	4,369	1	0	1	115	4,706	1	0	1	124	4,766	1	0	1	125
				T2S	4,364	1	0	1	115	4,701	1	0	1	124	4,761	1	0	1	125
				T2M	4,387	1	0	1	115	4,726	1	0	1	124	4,785	1	0	1	126
				T3S	4,248	1	0	1	112	4,577	1	0	1	120	4,634	1	0	1	122
				T3M	4,376	1	0	1	115	4,714	1	0	1	124	4,774	1	0	1	126
				T4M	4,281	1	0	1	113	4,612	1	0	2	121	4,670	1	0	2	123
				TFTM	4,373	1	0	1	115	4,711	1	0	2	124	4,771	1	0	2	126
				TSVS	4,548	2	0	0	120	4,900	2	0	0	129	4,962	2	0	0	131
				T5S	4,552	2	0	0	120	4,904	2	0	0	129	4,966	2	0	0	131
				T5M	4,541	3	0	1	120	4,891	3	0	1	129	4,953	3	0	1	130
				TSW	4,576	3	0	2	120	4,929	3	0	2	130	4,992	3	0	2	131
				BLC	3,586	1	0	1	94	3,863	1	0	1	102	3,912	1	0	1	103
				LCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
				RCCO	2,668	1	0	1	70	2,874	1	0	2	76	2,911	1	0	2	77
P2	20	700	49W	T1S	5,570	1	0	1	114	6,001	1	0	1	122	6,077	2	0	2	124
				T2S	5,564	1	0	2	114	5,994	1	0	2	122	6,070	2	0	2	124
				T2M	5,593	1	0	1	114	6,025	1	0	1	123	6,102	1	0	1	125
				T3S	5,417	1	0	2	111	5,835	1	0	2	119	5,909	2	0	2	121
				T3M	5,580	1	0	2	114	6,011	1	0	2	123	6,087	1	0	2	124
				T4M	5,458	1	0	2	111	5,880	1	0	2	120	5,955	1	0	2	122
				TFTM	5,576	1	0	2	114	6,007	1	0	2	123	6,083	1	0	2	124
				TSVS	5,799	2	0	0	118	6,247	2	0	0	127	6,327	2	0	0	129
				T5S	5,804	2	0	0	118	6,252	2	0	0	128	6,332	2	0	1	129
				T5M	5,789	3	0	1	118	6,237	3	0	1	127	6,316	3	0	1	129
				TSW	5,834	3	0	2	119	6,285	3	0	2	128	6,364	3	0	2	130
				BLC	4,572	1	0	1	93	4,925	1	0	1	101	4,987	1	0	1	102
				LCCO	3,402	1	0	2	69	3,665	1	0	2	75	3,711	1	0	2	76
				RCCO	3,402	1	0	2	69	3,665	1	0	2	75	3,711	1	0	2	76
P3	20	1050	71W	T1S	7,833	2	0	2	110	8,438	2	0	2	119	8,545	2	0	2	120
				T2S	7,825	2	0	2	110	8,429	2	0	2	119	8,536	2	0	2	120
				T2M	7,865	2	0	2	111	8,473	2	0	2	119	8,580	2	0	2	121
				T3S	7,617	2	0	2	107	8,205	2	0	2	116	8,309	2	0	2	117
				T3M	7,846	2	0	2	111	8,452	2	0	2	119	8,559	2	0	2	121
				T4M	7,675	2	0	2	108	8,269	2	0	2	116	8,373	2	0	2	118
				TFTM	7,841	2	0	2	110	8,447	2	0	2	119	8,554	2	0	2	120
				TSVS	8,155	3	0	0	115	8,785	3	0	0	124	8,896	3	0	0	125
				T5S	8,162	3	0	1	115	8,792	3	0	1	124	8,904	3	0	1	125
				T5M	8,141	3	0	2	115	8,770	3	0	2	124	8,881	3	0	2	125
				TSW	8,204	3	0	2	116	8,838	4	0	2	124	8,950	4	0	2	126
				BLC	6,429	1	0	2	91	6,926	1	0	2	98	7,013	1	0	2	99
				LCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
				RCCO	4,784	1	0	2	67	5,153	1	0	2	73	5,218	1	0	2	73
P4	20	1400	92W	T1S	9,791	2	0	2	106	10,547	2	0	2	115	10,681	2	0	2	116
				T2S	9,780	2	0	2	106	10,536	2	0	2	115	10,669	2	0	2	116
				T2M	9,831	2	0	2	107	10,590	2	0	2	115	10,724	2	0	2	117
				T3S	9,521	2	0	2	103	10,256	2	0	2	111	10,386	2	0	2	113
				T3M	9,807	2	0	2	107	10,565	2	0	2	115	10,698	2	0	2	116
				T4M	9,594	2	0	2	104	10,335	2	0	3	112	10,466	2	0	3	114
				TFTM	9,801	2	0	2	107	10,558	2	0	2	115	10,692	2	0	2	116
				TSVS	10,193	3	0	1	111	10,981	3	0	1	119	11,120	3	0	1	121
				T5S	10,201	3	0	1	111	10,990	3	0	1	119	11,129	3	0	1	121
				T5M	10,176	4	0	2	111	10,962	4	0	2	119	11,101	4	0	2	121
				TSW	10,254	4	0	3	111	11,047	4	0	3	120	11,186	4	0	3	122
				BLC	8,036	1	0	2	87	8,656	1	0	2	94	8,766	1	0	2	95
				LCCO	5,979	1	0	2	65	6,441	1	0	2	70	6,523	1	0	3	71
				RCCO	5,979	1	0	2	65	6,441	1	0	2	70	6,523	1	0	3	71

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Forward Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P5	40	700	89W	T1S	10,831	2	0	2	122	11,668	2	0	2	131	11,816	2	0	2	133
				T2S	10,820	2	0	2	122	11,656	2	0	2	131	11,803	2	0	2	133
				T2M	10,876	2	0	2	122	11,716	2	0	2	132	11,864	2	0	2	133
				T3S	10,532	2	0	2	118	11,346	2	0	2	127	11,490	2	0	2	129
				T3M	10,849	2	0	2	122	11,687	2	0	2	131	11,835	2	0	2	133
				T4M	10,613	2	0	3	119	11,434	2	0	3	128	11,578	2	0	3	130
				TFTM	10,842	2	0	2	122	11,680	2	0	2	131	11,828	2	0	2	133
				TSVS	11,276	3	0	1	127	12,148	3	0	1	136	12,302	3	0	1	138
				T5S	11,286	3	0	1	127	12,158	3	0	1	137	12,312	3	0	1	138
				T5M	11,257	4	0	2	126	12,127	4	0	2	136	12,280	4	0	2	138
				T5W	11,344	4	0	3	127	12,221	4	0	3	137	12,375	4	0	3	139
				BLC	8,890	1	0	2	100	9,576	1	0	2	108	9,698	1	0	2	109
				LCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
				RCCO	6,615	1	0	3	74	7,126	1	0	3	80	7,216	1	0	3	81
P6	40	1050	134W	T1S	14,805	3	0	3	110	15,949	3	0	3	119	16,151	3	0	3	121
				T2S	14,789	3	0	3	110	15,932	3	0	3	119	16,134	3	0	3	120
				T2M	14,865	3	0	3	111	16,014	3	0	3	120	16,217	3	0	3	121
				T3S	14,396	3	0	3	107	15,509	3	0	3	116	15,705	3	0	3	117
				T3M	14,829	2	0	3	111	15,975	3	0	3	119	16,177	3	0	3	121
				T4M	14,507	2	0	3	108	15,628	3	0	3	117	15,826	3	0	3	118
				TFTM	14,820	2	0	3	111	15,965	3	0	3	119	16,167	3	0	3	121
				TSVS	15,413	4	0	1	115	16,604	4	0	1	124	16,815	4	0	1	125
				T5S	15,426	3	0	1	115	16,618	4	0	1	124	16,828	4	0	1	126
				T5M	15,387	4	0	2	115	16,576	4	0	2	124	16,786	4	0	2	125
				T5W	15,506	4	0	3	116	16,704	4	0	3	125	16,915	4	0	3	126
				BLC	12,151	1	0	2	91	13,090	1	0	2	98	13,255	1	0	2	99
				LCCO	9,041	1	0	3	67	9,740	1	0	3	73	9,863	1	0	3	74
				RCCO	9,041	1	0	3	67	9,740	1	0	3	73	9,863	1	0	3	74
P7	40	1300	166W	T1S	17,023	3	0	3	103	18,338	3	0	3	110	18,570	3	0	3	112
				T2S	17,005	3	0	3	102	18,319	3	0	3	110	18,551	3	0	3	112
				T2M	17,092	3	0	3	103	18,413	3	0	3	111	18,646	3	0	3	112
				T3S	16,553	3	0	3	100	17,832	3	0	3	107	18,058	3	0	3	109
				T3M	17,051	3	0	3	103	18,369	3	0	3	111	18,601	3	0	3	112
				T4M	16,681	3	0	3	100	17,969	3	0	3	108	18,197	3	0	3	110
				TFTM	17,040	3	0	3	103	18,357	3	0	4	111	18,590	3	0	4	112
				TSVS	17,723	4	0	1	107	19,092	4	0	1	115	19,334	4	0	1	116
				T5S	17,737	4	0	2	107	19,108	4	0	2	115	19,349	4	0	2	117
				T5M	17,692	4	0	2	107	19,059	4	0	2	115	19,301	4	0	2	116
				T5W	17,829	5	0	3	107	19,207	5	0	3	116	19,450	5	0	3	117
				BLC	13,971	2	0	2	84	15,051	2	0	2	91	15,241	2	0	2	92
				LCCO	10,396	1	0	3	63	11,199	1	0	3	67	11,341	1	0	3	68
				RCCO	10,396	1	0	3	63	11,199	1	0	3	67	11,341	1	0	3	68

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Contact factory for performance data on any configurations not shown here.

Rotated Optics																			
Power Package	LED Count	Drive Current	System Watts	Dist. Type	30K (3000 K, 70 CRI)					40K (4000 K, 70 CRI)					50K (5000 K, 70 CRI)				
					Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P10	30	530	53W	T1S	6,727	2	0	2	127	7,247	3	0	3	137	7,339	3	0	3	138
				T2S	6,689	3	0	3	126	7,205	3	0	3	136	7,297	3	0	3	138
				T2M	6,809	3	0	3	128	7,336	3	0	3	138	7,428	3	0	3	140
				T3S	6,585	3	0	3	124	7,094	3	0	3	134	7,183	3	0	3	136
				T3M	6,805	3	0	3	128	7,331	3	0	3	138	7,424	3	0	3	140
				T4M	6,677	3	0	3	126	7,193	3	0	3	136	7,284	3	0	3	137
				TFTM	6,850	3	0	3	129	7,379	3	0	3	139	7,472	3	0	3	141
				TSVS	6,898	3	0	0	130	7,431	3	0	0	140	7,525	3	0	0	142
				T5S	6,840	2	0	1	129	7,368	2	0	1	139	7,461	2	0	1	141
				T5M	6,838	3	0	1	129	7,366	3	0	2	139	7,460	3	0	2	141
				TSW	6,777	3	0	2	128	7,300	3	0	2	138	7,393	3	0	2	139
				BLC	5,626	2	0	2	106	6,060	2	0	2	114	6,137	2	0	2	116
				LCCO	4,018	1	0	2	76	4,328	1	0	2	82	4,383	1	0	2	83
				RCCO	4,013	3	0	3	76	4,323	3	0	3	82	4,377	3	0	3	83
P11	30	700	72W	T1S	8,594	3	0	3	119	9,258	3	0	3	129	9,376	3	0	3	130
				T2S	8,545	3	0	3	119	9,205	3	0	3	128	9,322	3	0	3	129
				T2M	8,699	3	0	3	121	9,371	3	0	3	130	9,490	3	0	3	132
				T3S	8,412	3	0	3	117	9,062	3	0	3	126	9,177	3	0	3	127
				T3M	8,694	3	0	3	121	9,366	3	0	3	130	9,484	3	0	3	132
				T4M	8,530	3	0	3	118	9,189	3	0	3	128	9,305	3	0	3	129
				TFTM	8,750	3	0	3	122	9,427	3	0	3	131	9,546	3	0	3	133
				TSVS	8,812	3	0	0	122	9,493	3	0	0	132	9,613	3	0	0	134
				T5S	8,738	3	0	1	121	9,413	3	0	1	131	9,532	3	0	1	132
				T5M	8,736	3	0	2	121	9,411	3	0	2	131	9,530	3	0	2	132
				TSW	8,657	4	0	2	120	9,326	4	0	2	130	9,444	4	0	2	131
				BLC	7,187	3	0	3	100	7,742	3	0	3	108	7,840	3	0	3	109
				LCCO	5,133	1	0	2	71	5,529	1	0	2	77	5,599	1	0	2	78
				RCCO	5,126	3	0	3	71	5,522	3	0	3	77	5,592	3	0	3	78
P12	30	1050	104W	T1S	12,149	3	0	3	117	13,088	3	0	3	126	13,253	3	0	3	127
				T2S	12,079	4	0	4	116	13,012	4	0	4	125	13,177	4	0	4	127
				T2M	12,297	3	0	3	118	13,247	3	0	3	127	13,415	3	0	3	129
				T3S	11,891	4	0	4	114	12,810	4	0	4	123	12,972	4	0	4	125
				T3M	12,290	3	0	3	118	13,239	4	0	4	127	13,407	4	0	4	129
				T4M	12,058	4	0	4	116	12,990	4	0	4	125	13,154	4	0	4	126
				TFTM	12,369	4	0	4	119	13,325	4	0	4	128	13,494	4	0	4	130
				TSVS	12,456	3	0	1	120	13,419	3	0	1	129	13,589	4	0	1	131
				T5S	12,351	3	0	1	119	13,306	3	0	1	128	13,474	3	0	1	130
				T5M	12,349	4	0	2	119	13,303	4	0	2	128	13,471	4	0	2	130
				TSW	12,238	4	0	3	118	13,183	4	0	3	127	13,350	4	0	3	128
				BLC	10,159	3	0	3	98	10,944	3	0	3	105	11,083	3	0	3	107
				LCCO	7,256	1	0	3	70	7,816	1	0	3	75	7,915	1	0	3	76
				RCCO	7,246	3	0	3	70	7,806	4	0	4	75	7,905	4	0	4	76
P13	30	1300	128W	T1S	14,438	3	0	3	113	15,554	3	0	3	122	15,751	3	0	3	123
				T2S	14,355	4	0	4	112	15,465	4	0	4	121	15,660	4	0	4	122
				T2M	14,614	3	0	3	114	15,744	4	0	4	123	15,943	4	0	4	125
				T3S	14,132	4	0	4	110	15,224	4	0	4	119	15,417	4	0	4	120
				T3M	14,606	4	0	4	114	15,735	4	0	4	123	15,934	4	0	4	124
				T4M	14,330	4	0	4	112	15,438	4	0	4	121	15,633	4	0	4	122
				TFTM	14,701	4	0	4	115	15,836	4	0	4	124	16,037	4	0	4	125
				TSVS	14,804	4	0	1	116	15,948	4	0	1	125	16,150	4	0	1	126
				T5S	14,679	3	0	1	115	15,814	3	0	1	124	16,014	3	0	1	125
				T5M	14,676	4	0	2	115	15,810	4	0	2	124	16,010	4	0	2	125
				TSW	14,544	4	0	3	114	15,668	4	0	3	122	15,866	4	0	3	124
				BLC	7919	3	0	3	62	8531	3	0	3	67	8639	3	0	3	67
				LCCO	5145	1	0	2	40	5543	1	0	2	43	5613	1	0	2	44
				RCCO	5139	3	0	3	40	5536	3	0	3	43	5606	3	0	3	44

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 0 reflects the embedded high performance LED technology. It is ideal for many commercial and municipal applications, such as parking lots, plazas, campuses, and pedestrian areas.

CONSTRUCTION

Single-piece die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. Modular design allows for ease of maintenance and future light engine upgrades. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (0.95 ft²) for optimized pole wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Precision-molded proprietary acrylic lenses are engineered for superior area lighting distribution, uniformity, and pole spacing. Light engines are available in 3000 K, 4000 K or 5000 K (70 CRI) configurations. The D-Series Size 0 has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) configurations consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (up to L85/100,000 hours at 25°C). Class 1 electronic drivers are designed to have a power factor >90%, THD <20%, and an expected life of 100,000 hours with <1% failure rate. Easily serviceable 10kV surge protection device meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

STANDARD CONTROLS

The DSX0 LED area luminaire has a number of control options. DSX Size 0, comes standard with 0-10V dimming driver. Dusk to dawn controls can be utilized via optional NEMA twist-lock photocell receptacles. Integrated motion sensors with on-board photocells feature field-adjustable programming and are suitable for mounting heights up to 30 feet.

nLIGHT AIR CONTROLS

The DSX0 LED area luminaire is also available with nLight® AIR for the ultimate in wireless control. This powerful controls platform provides out-of-the-box basic motion sensing and photocontrol functionality and is suitable for mounting heights up to 40 feet. Once commissioned using a smartphone and the easy-to-use CLAIRITY app, nLight AIR equipped luminaires can be grouped, resulting in motion sensor and photocell group response without the need for additional equipment. Scheduled dimming with motion sensor over-ride can be achieved when used with the nLight Eclipse. Additional information about nLight Air can be found [here](#).

INSTALLATION

Included mounting block and integral arm facilitate quick and easy installation. Stainless steel bolts fasten the mounting block securely to poles and walls, enabling the D-Series Size 0 to withstand up to a 3.0 G vibration load rating per ANSI C136.31. The D-Series Size 0 utilizes the AERIS™ series pole drilling pattern (template #8). Optional terminal block and NEMA photocontrol receptacle are also available.

LISTINGS

UL Listed for wet locations. Light engines are IP66 rated; luminaire is IP65 rated. Rated for -40°C to 50°C ambient with HA option. U.S. Patent No. D672,492 S. International patent pending.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color temperature only.

WARRANTY

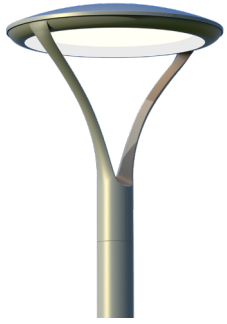
5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application.

All values are design or typical values, measured under laboratory conditions at 25 °C.

Specifications subject to change without notice.





Radean Post Top LED Area Luminaire



Catalog
Number

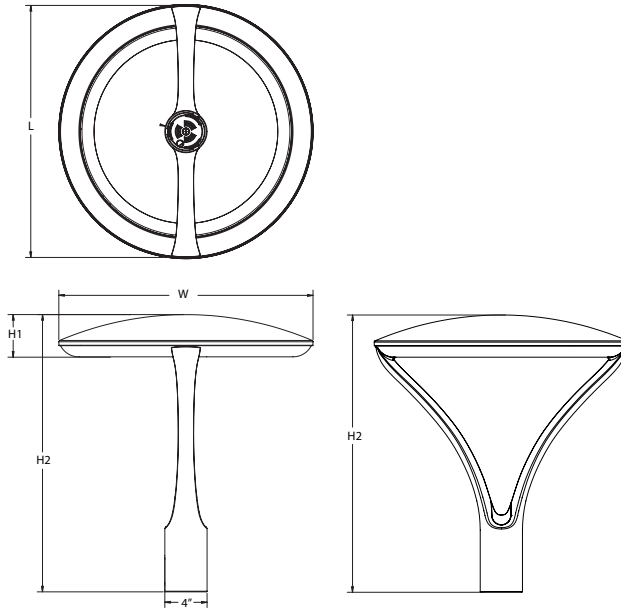
Notes

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Specifications

EPA:	1.02 ft ² (0.105 m ²)
Length:	24" (61cm)
Width:	24" (61cm)
H1 Luminaire Height:	4" (10.16cm)
H2 Luminaire Height:	26" (66.04cm)
Weight:	38lbs (17.24Kg)



Introduction

The architecturally-inspired shape of the RADEAN™ post top area luminaire embodies the grace and strength of the RADEAN family. The twin copper-core cast aluminum arms support the slender superstructure, creating a beautiful sculpture by day transforming into a beacon of comfort by night. Triangular arms redirect reflection maintaining its visually quiet appearance. With sleek lines and simple silhouettes, these LED luminaires use specialized lighting and visual comfort to transform common areas like courtyards, outdoor retail locations, universities and corporate campuses into pedestrian-friendly nighttime environments.

Ordering Information

EXAMPLE: RADPT LED P3 30K SYM MVOLT PT4 PIR DNAXD

Series	Performance package	Color temperature	Distribution	Voltage	Mounting (required)
RADPT LED	P1 3,000 Lumens P2 5,000 Lumens P3 7,000 Lumens P4 10,000 Lumens P5 15,000 Lumens	27K 2700K 30K 3000K 35K 3500K 40K 4000K 50K 5000K	SYM Symmetric type V ASY Asymmetric type IV PATH Pathway Type III	MVOLT ¹ 277 ¹ 120 ¹ 347 208 ¹ 480 240 ¹	PT4 ² Slips inside a 4" OD round metal pole RADPT20 Slips over a 2 3/8" diameter tenon RADPT25 Slips over a 2 7/8" diameter tenon

Control options	Other options	Shipped installed	Finish (required)
Shipped installed NLTAIR2 nLight AIR 2.0 enabled ³ PIR Bi-level motion/sensor (100% to 30%) ^{4,5,6,7} PE Button photocell ⁶ FAO Field adjustable output ^{4,8}	SF Single Fuse ¹ DF Double Fuse ¹ R90 Rotated optics ⁹	Shipped installed HS Houseside shield ¹⁰	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DDBTXD Textured dark bronze DBLTXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white

W/ 10'-0" POLE



COMMERCIAL OUTDOOR

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RADPT LED
Rev. 05/05/20

Ordering Information

Accessories

Ordered and shipped separately.

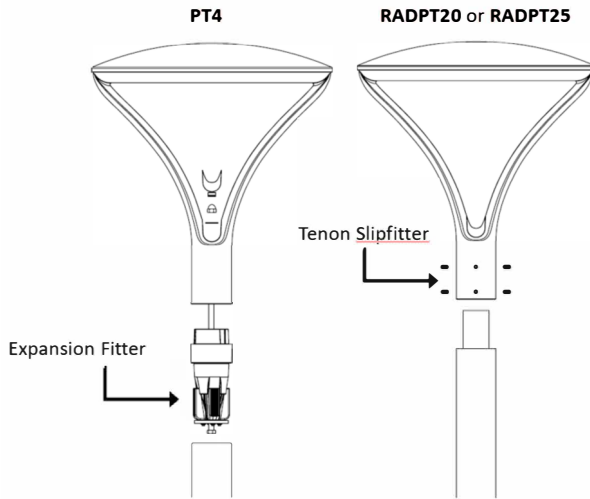
RADHS	Houseside shield (shield is white)
RADCS DDBXD U	Decorative clamshell base for 4" RSS pole (specify finish)
RADFBC DDBXD U	Full base cover for 4" RSS pole (specify finish)

For more control options, visit [DTL](#) and [ROAM](#) online.

NOTES

- 1 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
- 2 Required nominal 4" round straight metal pole.
- 3 NLTAIR2 not available with PIR, PE or FAO. Must link to external nLight Air network.
- 4 PIR will work with FAO, if adjustable low-end trim is required.
- 5 PIR must specify 120V, 277V, 347V or 480V. Not available in MVOLT, 208V or 240V.
- 6 PE and PIR are available together.
- 7 PIR for use on mounting heights under 20'.
- 8 Field adjustable high-end trim.
- 9 For left rotation, select R90 and rotate luminaire 180° on pole.
- 10 Also available as a separate accessory; see Accessories information at left. HS not available with R90. Shield is field rotatable shield in 180° increments.

Mounting

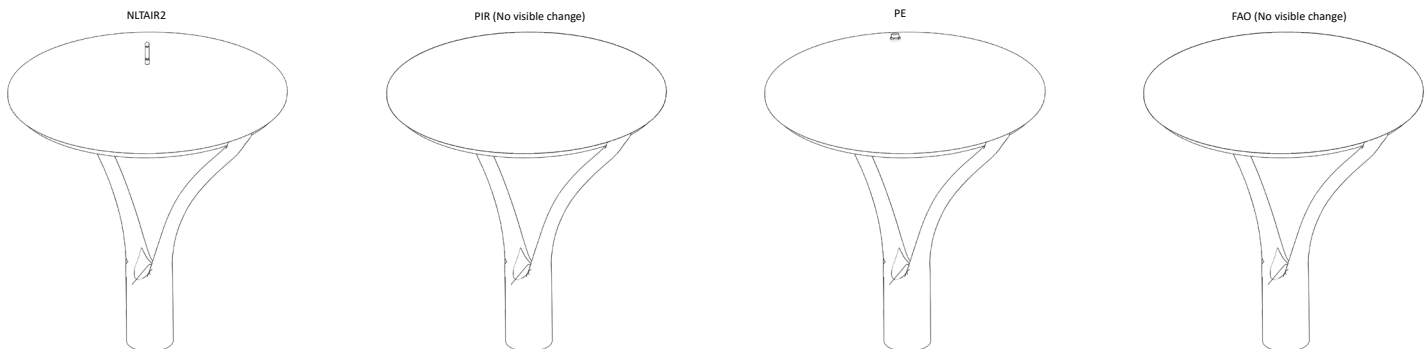


Recommended Poles for use with RADEAN RADPT LED Luminaires.

Acuity Part Number	Description	For luminaires	Used with Mounting
RSS 10 4B PT DDBXD	10' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 12 4B PT DDBXD	12' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 14 4B PT DDBXD	14' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 16 4B PT DDBXD	16' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 18 4B PT DDBXD	18' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 20 4B PT DDBXD	20' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 25 4B PT DDBXD	25' Round Straight Steel - 4" O.D. - Open Top	RADPT LED	PT4
RSS 10 4B T20 DDBXD	10' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 12 4B T20 DDBXD	12' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 14 4B T20 DDBXD	14' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 16 4B T20 DDBXD	16' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 18 4B T20 DDBXD	18' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 20 4B T20 DDBXD	20' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20
RSS 25 4B T20 DDBXD	25' Round Straight Steel - 4" O.D. - Tenon Top	RADPT LED	RADPT20

* Customer must verify pole loading per required design criteria and specified wind speed. Consult pole specification sheet for additional details.

Control Options



Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Contact factory for performance data on any configurations not shown here.

Performance Package	Input Wattage	Distribution	2700K					3000K					3500K					4000K					5000K				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
P1	25	ASY	2,924	2	1	2	115	3,022	2	2	2	119	3,095	2	2	2	122	3,168	2	2	2	125	3,168	2	2	2	125
		PATH	2,529	2	1	2	100	2,613	2	2	2	103	2,676	2	2	2	105	2,739	2	2	2	108	2,739	2	2	2	108
		SYM	3,086	2	1	1	121	3,189	2	1	1	126	3,266	2	1	1	129	3,344	2	1	1	132	3,344	2	1	1	132
P2	38	ASY	4,521	3	2	3	119	4,672	3	2	3	123	4,785	3	2	3	126	4,898	3	2	3	129	4,898	3	2	3	129
		PATH	3,909	2	2	2	103	4,040	2	2	2	106	4,137	2	2	2	109	4,235	3	2	3	111	4,235	3	2	3	111
		SYM	4,772	2	2	1	126	4,931	3	2	1	130	5,050	3	2	1	133	5,169	3	2	1	136	5,169	3	2	1	136
P3	54	ASY	6,387	3	2	3	119	6,600	3	2	3	123	6,760	3	2	3	126	6,919	3	2	3	129	6,919	3	2	3	129
		PATH	5,523	3	2	3	103	5,707	3	2	3	106	5,845	3	2	3	109	5,983	3	2	3	112	5,983	3	2	3	112
		SYM	6,741	3	2	2	126	6,966	3	2	2	130	7,135	3	2	2	133	7,303	3	2	2	136	7,303	3	2	2	136
P4	86	ASY	10,150	4	2	4	118	10,489	4	2	4	122	10,742	4	2	4	125	10,996	4	2	4	128	10,996	4	2	4	128
		PATH	8,777	3	2	3	102	9,070	3	2	3	106	9,289	3	2	3	108	9,509	3	2	3	111	9,509	3	2	3	111
		SYM	10,713	3	2	2	125	11,071	3	2	2	129	11,338	3	2	2	132	11,606	3	2	2	135	11,606	3	2	2	135
P5	123	ASY	14,250	4	2	4	116	14,724	4	2	4	120	15,081	4	3	4	123	15,437	4	3	4	126	15,437	4	3	4	126
		PATH	12,322	4	2	4	101	12,733	4	3	4	104	13,041	4	3	4	106	13,349	4	3	4	109	13,349	4	3	4	109
		SYM	15,040	4	2	3	123	15,541	4	2	3	127	15,917	4	2	3	130	16,293	4	2	3	133	16,293	4	2	3	133

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient	LAT Factor	
0°C	32°F	1.06
5°C	41°F	1.05
10°C	50°F	1.04
15°C	59°F	1.02
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
35°C	95°F	0.98
40°C	104°F	0.96

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **RADPT LED** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

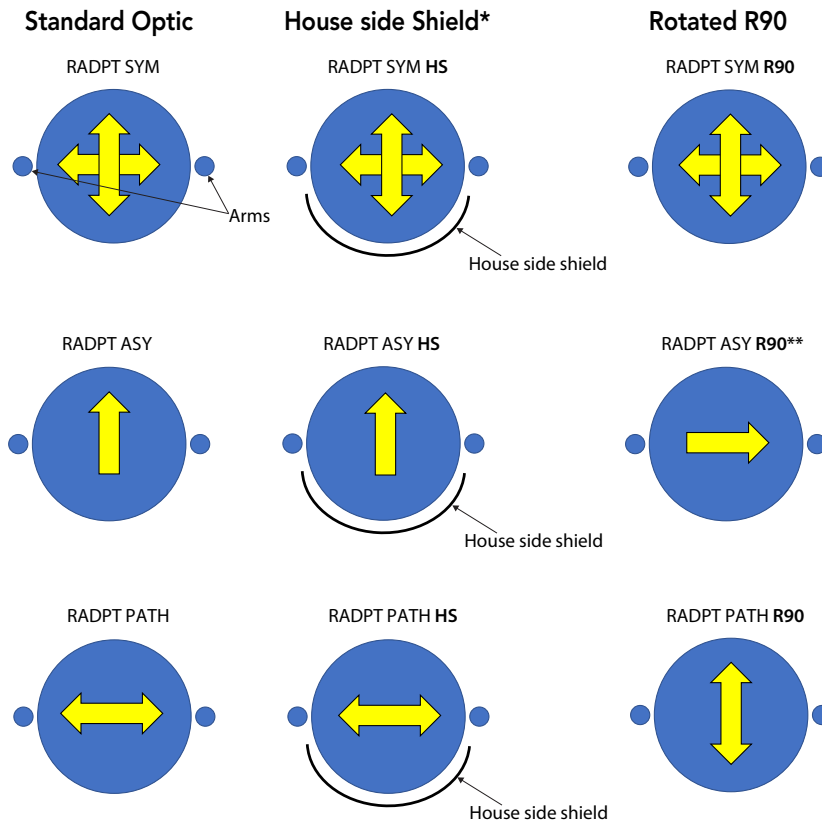
	Projected LED Lumen Maintenance			
	0	25,000	50,000	100,000
P1	1.00	0.96	0.91	0.82
P2	1.00	0.96	0.91	0.82
P3	1.00	0.96	0.91	0.82
P4	1.00	0.96	0.91	0.82
P5	1.00	0.95	0.89	0.78

Electrical Load

Lumen Package	LED Drive Current	Voltage	Wattage		Current (A)					
					120	208	240	277	347	480
P1	500	42.8	21.4	Input Current	0.22	0.13	0.11	0.1	0.08	0.06
				System Watts	26	26	26	27	25	26
P2	770	43	33.1	Input Current	0.33	0.19	0.16	0.14	0.11	0.08
				System Watts	39	39	39	39	38	38
P3	1100	43.2	47.5	Input Current	0.46	0.26	0.23	0.2	0.16	0.12
				System Watts	55	54	54	54	54	54
P4	900	87.3	78.6	Input Current	0.73	0.42	0.36	0.32	0.25	0.18
				System Watts	87	86	86	86	86	86
P5	1250	88.2	110.2	Input Current	1	0.58	0.5	0.44	0.35	0.25
				System Watts	120	119	119	119	120	120



Isofootcandle plots are considered to be representative of available optical distributions.



*HS not available with R90

**For L90, use R90 and rotate luminaire 180° on pole

FEATURES & SPECIFICATIONS

INTENDED USE

Pedestrian areas such as parks, campuses, pathways, courtyards and pedestrians malls.

CONSTRUCTION

Single-piece die-cast aluminum housing with nominal wall thickness of 0.125" on a 6mm thick acrylic waveguide is fully gasketed with a single piece tubular silicone gasket.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum and white. Available in textured and non-textured finishes.

OPTICS

6MM thick acrylic waveguide with 360° flexible LED board. Available in 2700K, 3000K, 3500K, 4000K and 5000K (70CRI) CCT configurations.

ELECTRICAL

Light engine consists of 96 high-efficacy LEDs mounted to a flexible circuit board and aluminum heat sink, ensuring optimal thermal management and long life. Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Easily-serviceable 10kV surge protection device meets a minimum Category C Low for operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Standard post-top mounting configuration fits into a 4" OD open pole top (round pole only). Alternate tenon (2-3/8" or 2-7/8") mounting also available.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less.

WARRANTY

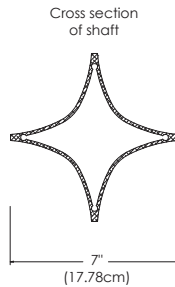
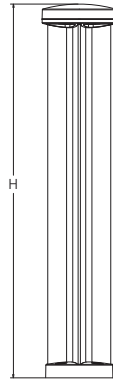
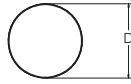
5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/customer-support/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



RADEAN Bollard

LED Site Luminaire



Catalog Number

Notes

Type SD

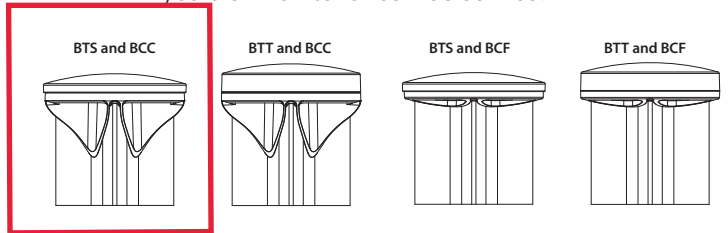
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Specifications

Diameter: D = 8.25" (20.96cm)
Height: H = 41.5" Standard (105.41cm)
Weight (max): 20lbs (9.07Kg)

Introduction

The Radean LED Bollard is an award-winning, energy-saving, long-life solution designed to perform the way a bollard should. The Radean LED Bollard's rugged construction, durable finish and long-lasting LEDs will provide years of maintenance-free service.



Ordering Information

EXAMPLE: RADB LED P4 30K SYM MVOLT BTS BCCDNATXD DBLXD

RADB LED	P4	40K	ASY	MVOLT	BTSDBLXD		
Series	Performance Package	Color temperature	Distribution	Voltage	Control options	Bollard top (required)	
RADB LED	P1	27K 2700 K	ASY Asymmetric ²	MVOLT ³	Shipped installed PE Photoelectric cell, button type ^{4,5} DMG 0-10V dimming driver (no controls) E7WH Emergency battery backup, Certified in CA Title 20 MAEDBS1 ^{6,7} FAO Field adjustable output ⁵ PIR Motion sensor Bi-level ^{3,5,6,7}	Slim Top BTS Slim top, painted to match shaft ^{5,8}	Tall Top BTT Tall top painted to match shaft ⁸
	P2	30K 3000 K	SYM Symmetric ¹	120		BTSDWHXD Slim top, white ^{5,8}	BTDBLXDX Tall top, black textured ⁸
	P3	35K 3500 K		208 ³		BTSDBLXDX Slim top, black texture ^{5,8}	BTDBLXD Tall top, black ⁸
	P4	40K 4000 K		240 ³		BTSDDBTXDX Slim top, dark bronze textured ^{5,8}	BTDDDBTXDX Tall top, dark bronze textured ⁸
	P5 ¹	50K 5000 K		277		BTSDDBXDX Slim top, dark bronze ^{5,8}	BTDDDBXD Tall top, dark bronze ⁸
				347	BTSDNATXDX Slim top, natural aluminum textured ^{5,8}	BTDDNATXDX Tall top, natural aluminum textured ⁸	
				480	BTSDNAXDX Slim top, natural aluminum ^{5,8}	BTDDNAXDX Tall top, natural aluminum	
					BTSDWHGXDX Slim top, white textured ⁸	BTDDWHGXDX Tall top, white ⁸	

BCCDBLXD		DBLXD	
Bollard crown (required)		Other options	Finish (required)
Deep Crown BCC Deep crown, painted to match shaft ⁸ BCCDWHXD Deep crown, white ⁸ BCCDBLXD Deep crown, black ⁸ BCCDBLXDX Deep crown, black textured ⁸ BCCDDBTXDX Deep crown, dark bronze textured ⁸ BCCDDBXDX Deep crown, dark bronze ⁸ BCCDNATXDX Deep crown, natural aluminum textured ⁸ BCCDNAXDX Deep crown, natural aluminum ⁸ BCCDWHGXDX Deep crown, white textured ⁸	Flat Crown BCF Flat crown, painted to match shaft ⁸ BCFDBLXDX Flat crown, black textured ⁸ BCFDBLXDX Flat crown, black ⁸ BCFDDBTXDX Flat crown, dark bronze textured ⁸ BCFDDBXDX Flat crown, dark bronze ⁸ BCFDNATXDX Flat crown, natural aluminum textured ⁸ BCFDNAXDX Flat crown, natural aluminum ⁸ BCFDWHGXDX Flat crown, white textured ⁸ BCFDWHXDX Flat crown, white ⁸	H24 ^{6,9} 24" overall height H30 ^{6,9} 30" overall height H36 ^{6,9} 36" overall height L/AB Without anchor bolts	DDBXDX Dark bronze DBLXDX Black DNAXDX Natural aluminum DWHXDX White DDBTXDX Textured dark bronze DBLXDX Textured black DNATXDX Textured natural aluminum DWHGXDX Textured white

Accessories

Ordered and shipped separately.

RADBAB U	Anchor bolts (4)	RK1RADB BCKIT (FINISH) U	Base cover with bolt caps
RADBABC DDBXDX U	Replacement anchor bolt covers (specify finish) (4)	RK1RADB EMTESTMAG U	Emergency test stylus

NOTES

- P5 only available in SYM distribution.
- ASY has only two illuminated quadrants driven at higher drive currents to generate similar output as the SYM-4-quadrant product.
- PIR not available with 208V or 240V.
- PE only available with ASY.
- PE, PIR and FAO not available with BTS.

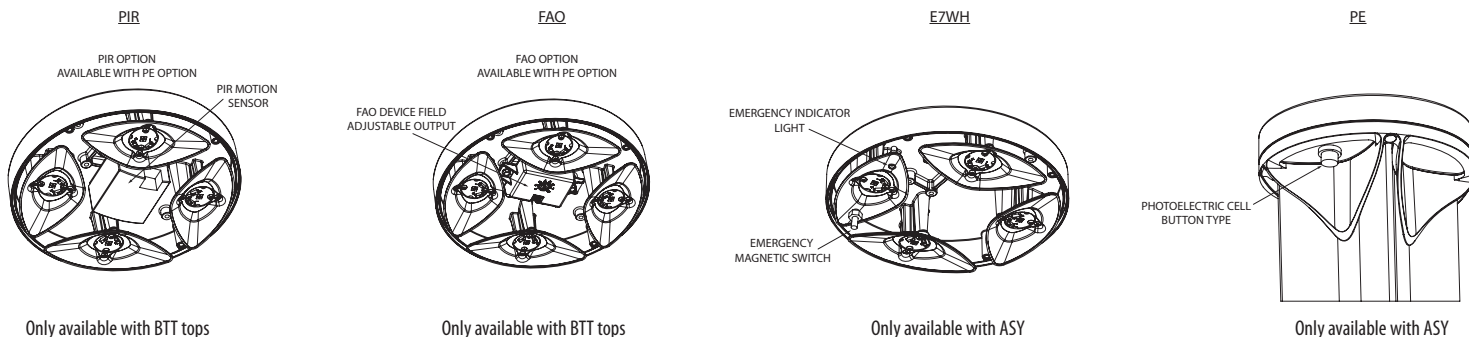
- E7WH and PIR only available in full height. Not available with H24, H30 or H36.
- PIR not available with E7WH.
- Architectural and custom colors available (additional leadtimes and cost may apply).
- 42" Height is standard. H24, H30 and H36 have longer leadtimes.



COMMERCIAL OUTDOOR

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com
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Options



Performance Data

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%.

Performance Data DNAXD Finish*

Light Engines	Performance Package	System Watts	2700K					3000K					3500K					4000K					5000K				
			Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW	Lumens	B	U	G	LPW
"Symmetric (4 light engines)"	P1	5	345	0	1	0	66	362	0	1	0	69	370	0	1	0	71	380	0	1	0	73	382	0	1	0	73
	P2	8	644	0	1	0	81	677	0	1	0	85	692	0	1	0	87	711	0	1	0	89	713	0	1	0	89
	P3	13	1036	1	1	0	77	1088	1	1	0	81	1112	1	1	0	83	1142	1	1	0	85	1146	1	1	0	85
	P4	19	1460	1	1	0	79	1534	1	1	0	83	1568	1	1	0	84	1610	1	1	0	87	1616	1	1	0	87
	P5	32	2314	1	1	0	72	2430	1	1	0	75	2484	1	1	0	77	2551	1	1	0	79	2561	1	1	0	79
"Asymmetric (2 light engines)"	P1	5	312	0	1	0	60	328	0	1	0	63	335	0	1	0	64	344	0	1	0	66	346	0	1	0	66
	P2	8	584	0	1	0	73	613	0	1	0	77	627	0	1	0	78	644	0	1	0	81	646	0	1	0	81
	P3	13	938	0	1	0	70	985	0	1	0	73	1007	0	1	0	75	1035	0	1	0	77	1038	0	1	0	77
	P4	19	1323	0	1	0	71	1390	0	1	0	75	1420	0	1	0	76	1459	0	1	0	78	1464	0	1	0	79

*Note: Lumen output varies based on finish. Silver color shown, for black (worst) or white (best) photometry, see specific photometric files downloadable from www.acuitybrands.com

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the platforms noted in a 25°C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Projected LED Lumen Maintenance				
	25,000	50,000	75,000	100,000
P1	0.94	0.89	0.85	0.80
P2	0.94	0.89	0.85	0.80
P3	0.94	0.89	0.85	0.80
P4	0.94	0.89	0.85	0.80
P5	0.94	0.89	0.85	0.80

Lumen Ambient Temperature (LAT) Multipliers

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

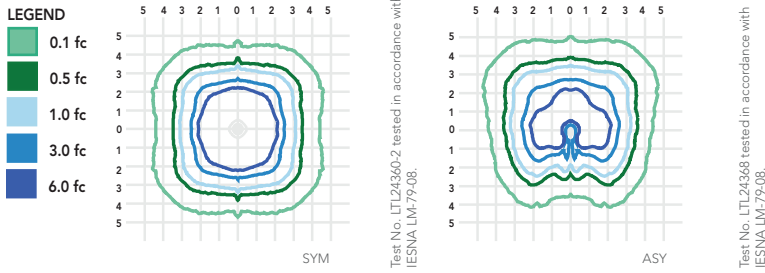
Ambient	LAT Factor	
0	32°F	1.03
5	41°F	1.03
10	50°F	1.02
15	59°F	1.01
20	68°F	1.01
25	77°F	1
30	86°F	0.99
35	95°F	0.99
40	104°F	0.98

Electrical Load

	Current (Amp)						Current (Amp)			
	Watts @120V (W)	Watts @277V (W)	@120V (A)	@208V (A)	@240V (A)	@277V (A)	Watts (@347V)	Watts (@480V)	@347V (A)	@480V (A)
P1 ASY	5	6	0.0445	0.0299	0.0276	0.0262	10	10	0.0443	0.0319
P2 ASY	9	10	0.0751	0.0471	0.0429	0.0399	14	14	0.0505	0.0364
P3 ASY	14	15	0.1147	0.0699	0.0627	0.0571	18	18	0.0611	0.0441
P4 ASY	19	19	0.1586	0.0928	0.0819	0.0735	23	23	0.0709	0.0513
P1 SYM	5	6	0.0444	0.0301	0.0279	0.0265	9	9	0.0441	0.0319
P2 SYM	9	10	0.0734	0.0461	0.0421	0.0391	13	13	0.0502	0.0363
P3 SYM	13	14	0.112	0.067	0.0598	0.0544	18	18	0.0602	0.0435
P4 SYM	18	19	0.1535	0.0902	0.0796	0.0713	22	22	0.0691	0.0499
P5 SYM	31	31	0.2597	0.1527	0.1326	0.1149	35	36	0.1079	0.079



Isofootcandle plots for the RADB. Distances are in units of mounting height (3.5').



FEATURES & SPECIFICATIONS

INTENDED USE

The rugged construction and maintenance-free performance of the Radean LED Bollard is ideal for illuminating building entryways, walking paths and pedestrian plazas, as well as any other location requiring a low-mounting-height light source.

CONSTRUCTION

One-piece extruded aluminum shaft with thick side walls for extreme durability, and die-cast reflector and top cap. Four 3/8" x 16" anchor bolts with double nuts and washers and 5-2/3" max. bolt circle template ensure stability. Overall height is 42" standard.

FINISH

Exterior parts are protected by a zinc-infused super durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering for maximum retention of gloss and luster. A tightly controlled multi-stage process ensures a minimum 3-mil thickness for a finish that can withstand the elements without cracking or peeling. Available in both textured and non-textured finishes.

OPTICS

Two optical distributions are available: symmetrical and asymmetrical. IP66 sealed LED light engine provides smoothly graduated illumination. Light engines are available in 2700K, 3000K, 3500K, 4000K or 5000K.

ELECTRICAL

Light engines consist of high-efficacy LEDs mounted to metal-core circuit boards to maximize heat dissipation and promote long life (L80/100,000 hours at P5 at 25°C). Class 2 electronic drivers are designed for an expected life of 100,000 hours with < 1% failure rate. Electrical components are mounted on a removable power tray.

LISTINGS

CSA certified to U.S. and Canadian standards. Light engines are IP66 rated. Rated for -40°C minimum ambient. Emergency battery backup rated for -10°C minimum ambient. International Dark-Sky Association (IDA) Fixture Seal of Approval (FSA) is available for all products on this page utilizing 3000K color or less.

WARRANTY

Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application and color. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



d^{series}

D-Series Size 1 LED Flood Luminaire



Catalog
Number

Notes

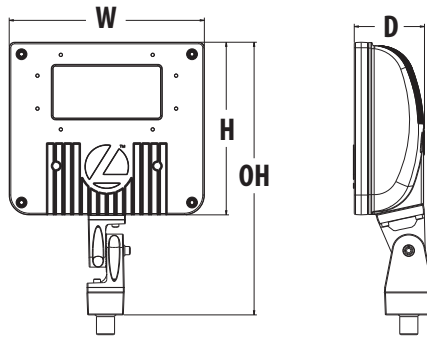
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Specifications

EPA:	0.6 ft ² (0.05 m ²)
Depth:	3-1/8" (8.0 cm)
Width:	8-7/8" (22.4 cm)
Height:	7-3/4" (19.8 cm)
Overall Height:	12" (30.5 cm)
Weight:	7.2 lbs (3.3 kg)



Introduction

The D-Series floodlights feature a site-wide offering to meet specifier's every floodlighting need in application. The D-Series flood offers three sizes delivering 3,000 to 27,000 lumens. Available with seven precision optics, three mountings and three color temperatures, D-Series floodlights offer vast design capabilities while delivering significant energy savings and long life.

The DSXF1 delivers 3,000 to 5,500 lumens, meeting a large breadth of illumination requirements for design and renovation when replacing 70W to 150W HID floodlights. All configurations are made in North America allowing for quick delivery.

Ordering Information

EXAMPLE: DSXF1 LED P1 40K MSP MVOLT THK DDBXD

Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting	Options	Finish (required)
DSXF1 LED	P1 P2	30K 3000K 40K 4000K 50K 5000K	WFL Wide flood (6X6) FL Flood (5X5) MFL Medium flood (4X4) WFR Wide flood rectangular (6X5) HMF Horizontal medium flood (6X4) MSP Medium spot (4X4) NSP Narrow spot (3X3)	MVOLT ¹ 120 ² 208 ² 240 ² 277 ² 347 ^{2,3}	Shipped included THK Knuckle with 1/2" NPS threaded pipe IS Integral slipfitter (fits 2-3/8" O.D. tenon) YKC62 Yoke with 16-3 SO cord Shipped separately⁴ DSXF1/2TS Tenon slipfitter (2-3/8" O.D. THK required) FTS CG6 Tenon Slipfitter (fits 2-3/8" to 2-7/8" O.D. tenon. YKC62 required)	Shipped installed PE Photocontrol, button style ⁵ PEX Photocontrol external adjustable ⁵ SF Single fuse (120, 277, 347V) ² DF Double fuse (208, 240) ² DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) Shipped separately³ UBV Upper/bottom visor (universal) FV Full visor VG Vandal guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White

Accessories

Ordered and shipped separately.

DSXF1/2TS DDBXD U	Slipfitter for 1-1/4" to 2-3/8" OD tenons; mates with 1/2" threaded knuckle (specify finish)
FRWB DDBXD U	Radius wall bracket, 2-3/8" OD tenon (specify finish)
FSPB DDBXD U	Steel square pole bracket, 2-3/8" OD tenon (specify finish)
DSXF1UBV DDBXD U	Upper/bottom visor accessory (specify finish)
DSXF1FV DDBXD U	Full visor accessory (specify finish)
DSXF1VG U	Vandal guard accessory

For more mounting options, visit our [Floodlighting Accessories](#) pages.

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number	CI Code
DSXF1 LED P1 40K WFL MVOLT THK DDBXD	DSXF1 LED P1 40K	*240TJH
DSXF1 LED P1 50K WFL MVOLT THK DDBXD	DSXF1 LED P1 50K	*240TJG
DSXF1 LED P2 40K WFL MVOLT THK DDBXD	DSXF1 LED P2 40K	*240TJL
DSXF1 LED P2 50K WFL MVOLT THK DDBXD	DSXF1 LED P2 50K	*240TJJ
DSXF1/2 Slip-fitter Tenon Accessory DDBXD	DSXF1/2TS DDBXD U	*216GSK

NOTES

- MVOLT driver operates on line voltage from 120-277V.
- Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V.
- Not available with option PEX.
- Also available as accessories; see Accessories information at left.
- Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option. Photocontrol PEX requires 120, 208, 240 or 277 voltage option.



Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown within applicable tolerances. Actual performance may differ as a result of end-user environment and application. Actual wattage may differ by +/- 8% when operating between 120-480V +/- 10%. Contact factory for performance data on any configurations not shown here.

Performance Package	System Watts	Dist. Type	Field Angle		Beam Angle		30K (3000K, 70 CRI)			40K (4000K, 70 CRI)			50K (5000K, 70 CRI)																																																																																																																																																																																																									
			°H	°V	°H	°V	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW																																																																																																																																																																																																							
			<table border="1"> <tr> <td rowspan="7">P1</td> <td rowspan="7">21W</td> <td>NSP</td> <td>37</td> <td>38</td> <td>18</td> <td>19</td> <td>16,316</td> <td>2,601</td> <td>124</td> <td>18,039</td> <td>2,876</td> <td>137</td> <td>18,039</td> <td>2,876</td> <td>137</td> </tr> <tr> <td>MSP</td> <td>51</td> <td>51</td> <td>27</td> <td>28</td> <td>9,908</td> <td>2,578</td> <td>123</td> <td>10,954</td> <td>2,850</td> <td>136</td> <td>10,954</td> <td>2,850</td> <td>136</td> </tr> <tr> <td>MFL</td> <td>60</td> <td>60</td> <td>46</td> <td>45</td> <td>4,027</td> <td>2,435</td> <td>116</td> <td>4,452</td> <td>2,692</td> <td>128</td> <td>4,452</td> <td>2,692</td> <td>128</td> </tr> <tr> <td>FL</td> <td>84</td> <td>91</td> <td>59</td> <td>72</td> <td>2,255</td> <td>2,682</td> <td>128</td> <td>2,494</td> <td>2,965</td> <td>141</td> <td>2,494</td> <td>2,965</td> <td>141</td> </tr> <tr> <td>WFL</td> <td>109</td> <td>101</td> <td>86</td> <td>85</td> <td>1,494</td> <td>2,766</td> <td>132</td> <td>1,652</td> <td>3,058</td> <td>146</td> <td>1,652</td> <td>3,058</td> <td>146</td> </tr> <tr> <td>WFR</td> <td>103</td> <td>92</td> <td>80</td> <td>71</td> <td>1,809</td> <td>2,794</td> <td>133</td> <td>2,000</td> <td>3,089</td> <td>147</td> <td>2,000</td> <td>3,089</td> <td>147</td> </tr> <tr> <td>HMF</td> <td>124</td> <td>63</td> <td>100</td> <td>48</td> <td>2,001</td> <td>2,329</td> <td>111</td> <td>2,212</td> <td>2,575</td> <td>123</td> <td>2,212</td> <td>2,575</td> <td>123</td> </tr> <tr> <td rowspan="7">P2</td> <td rowspan="7">42W</td> <td>NSP</td> <td>37</td> <td>38</td> <td>18</td> <td>19</td> <td>29,740</td> <td>4,741</td> <td>113</td> <td>32,881</td> <td>5,242</td> <td>125</td> <td>32,881</td> <td>5,242</td> <td>125</td> </tr> <tr> <td>MSP</td> <td>51</td> <td>51</td> <td>27</td> <td>28</td> <td>18,060</td> <td>4,699</td> <td>112</td> <td>19,967</td> <td>5,195</td> <td>124</td> <td>19,967</td> <td>5,195</td> <td>124</td> </tr> <tr> <td>MFL</td> <td>60</td> <td>50</td> <td>46</td> <td>45</td> <td>7,340</td> <td>4,439</td> <td>106</td> <td>8,115</td> <td>4,908</td> <td>117</td> <td>8,115</td> <td>4,908</td> <td>117</td> </tr> <tr> <td>FL</td> <td>84</td> <td>91</td> <td>59</td> <td>72</td> <td>4,111</td> <td>4,889</td> <td>116</td> <td>4,545</td> <td>5,406</td> <td>129</td> <td>4,545</td> <td>5,405</td> <td>129</td> </tr> <tr> <td>WFL</td> <td>109</td> <td>101</td> <td>86</td> <td>85</td> <td>2,568</td> <td>4,753</td> <td>113</td> <td>3,011</td> <td>5,573</td> <td>133</td> <td>3,011</td> <td>5,573</td> <td>133</td> </tr> <tr> <td>WFR</td> <td>103</td> <td>92</td> <td>80</td> <td>71</td> <td>3,297</td> <td>5,094</td> <td>121</td> <td>3,645</td> <td>5,631</td> <td>134</td> <td>3,645</td> <td>5,632</td> <td>134</td> </tr> <tr> <td>HMF</td> <td>124</td> <td>63</td> <td>100</td> <td>48</td> <td>3,647</td> <td>4,245</td> <td>101</td> <td>4,032</td> <td>4,693</td> <td>112</td> <td>4,032</td> <td>4,693</td> <td>112</td> </tr> </table>															P1	21W	NSP	37	38	18	19	16,316	2,601	124	18,039	2,876	137	18,039	2,876	137	MSP	51	51	27	28	9,908	2,578	123	10,954	2,850	136	10,954	2,850	136	MFL	60	60	46	45	4,027	2,435	116	4,452	2,692	128	4,452	2,692	128	FL	84	91	59	72	2,255	2,682	128	2,494	2,965	141	2,494	2,965	141	WFL	109	101	86	85	1,494	2,766	132	1,652	3,058	146	1,652	3,058	146	WFR	103	92	80	71	1,809	2,794	133	2,000	3,089	147	2,000	3,089	147	HMF	124	63	100	48	2,001	2,329	111	2,212	2,575	123	2,212	2,575	123	P2	42W	NSP	37	38	18	19	29,740	4,741	113	32,881	5,242	125	32,881	5,242	125	MSP	51	51	27	28	18,060	4,699	112	19,967	5,195	124	19,967	5,195	124	MFL	60	50	46	45	7,340	4,439	106	8,115	4,908	117	8,115	4,908	117	FL	84	91	59	72	4,111	4,889	116	4,545	5,406	129	4,545	5,405	129	WFL	109	101	86	85	2,568	4,753	113	3,011	5,573	133	3,011	5,573	133	WFR	103	92	80	71	3,297	5,094	121	3,645	5,631	134	3,645	5,632	134	HMF	124	63	100	48	3,647	4,245	101	4,032	4,693	112
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Lumen Ambient Temperature (LAT) Multipliers

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

Ambient	
0°C	32°F
10°C	50°F
20°C	68°F
25°C	77°F
30°C	86°F
40°C	104°F

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXF1 LED P2** platform noted in a 25C ambient, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.97	0.96	0.95

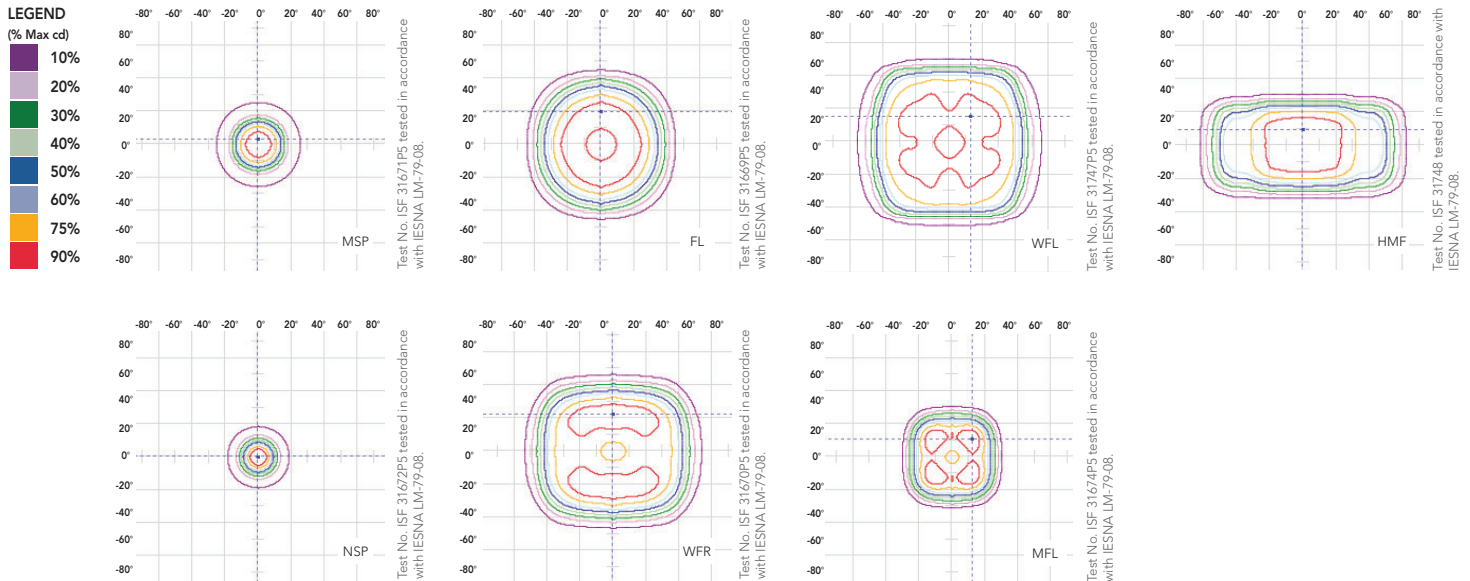
Electrical Load

Light Engines	System Watts	Current (A)					
		120	208	240	277	347	480
P1	21W	0.18	0.1	0.09	0.08	0.07	-
P2	42W	0.35	0.20	0.18	0.15	0.12	-

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [D-Series Flood Size 1 homepage](#).

Iscandela plots for the DSXF1 LED P2 40K.



Mounting, Options and Accessories



THK - Knuckle with 1/2" NPS threaded pipe



YKC62 - Yoke with 50 cord
H= 4-1/4" (10.7 cm)
D= 2-1/4" (5.7 cm)



IS - Integral slipfitter
H= 2-1/2" (6.3 cm)
ID= 2-3/8" (6.0 cm)
OD= 3-1/2" (8.8 cm)



UBV - Upper/bottom visor
W= 5-1/4" (13.3 cm)
H= 2-1/2" (6.3 cm)
D= 3" (7.6 cm)



FV - Full visor
W= 5-1/4" (13.3 cm)
H= 2-1/2" (6.3 cm)
D= 3" (7.6 cm)



VG - Vandal guard
W= 6-1/2" (16.5 cm)
H= 4" (10.1 cm)

FEATURES & SPECIFICATIONS

INTENDED USE

The sleek and compact design of the D-Series floodlights reflects the embedded high performance LED technology while offering a clean aesthetic suitable for specification and general purpose floodlighting applications. Three sizes are available with seven precision optics allowing for maximum design versatility. DSXF1 delivers 3,000 to 5,500 lumens and is ideal for commercial lighting applications including new construction and replacing 70W to 150W HID floodlights. DSXF1 is ideal for security, facade, flagpole, column grazing and signage lighting applications.

CONSTRUCTION

The DSXF1 LED floodlight features rugged die-cast aluminum construction with integral heat sink fins that optimize thermal management through conductive and convective cooling. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. The housing and lens frame are completely sealed against moisture and environmental contaminants providing an IP66 rating. Low EPA (0.6 ft²) for optimized wind loading. DSXF1 is 1.5G vibration rated per ANSI C136.31.

FINISH

Exterior painted parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, and white. Available in textured and non-textured finishes.

OPTICS

Seven unique precision-molded vacuum-metalized specular reflectors are engineered for superior field-to-beam ratios, uniformity and spacing. Light engines are available in 3000K, 4000K or 5000K (minimum 70 CRI) configurations. Optional visors offer additional versatility when shielding is required.

ELECTRICAL

Light engine(s) consist of chip-on-board (COB) LEDs directly coupled to the housing to maximize heat dissipation and promote long life. Class 2 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Standard 6kV surge protection meets a minimum Category C Low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Integral adjustable knuckle with 1/2-14 NPT threaded pipe, tenon slipfitter, or yoke mounting, facilitates quick and easy installation to a variety of mounting accessories. DSXF3 features a glass lens enclosure that is protected to IP66 and is rated for lighting aimed up above 90°. Suitable for mounting within 4 feet of ground.

LISTINGS

CSA Certified to meet U.S. and Canadian standards. Suitable for wet locations. Rated for -40°C minimum ambient.

DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



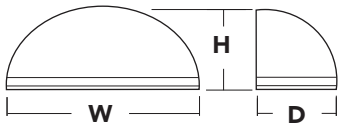
WSQ LED Architectural Wall Sconce



Inverted available with WLU option only.

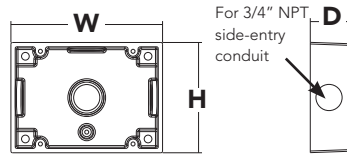
Specifications Luminaire

Height: 9-3/8" (23.8 cm)
Width: 18" (45.7 cm)
Depth: 9" (22.8 cm)
Weight: 17 lbs (7.7 kg)



Optional Back Box (BBW)

Height: 4" (10.2 cm)
Width: 5-1/2" (14.0 cm)
Depth: 1-1/2" (3.8 cm)



Catalog Number

Notes

Type S

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

Classic Architectural Wall Sconce with the LED technology. Long-life, maintenance-free product with typical energy savings of 80% compared to metal halide versions. The integral battery backup option provides emergency egress lighting, without the use of a back-box or remote gear, so installations maintain their aesthetic integrity. The WSQ LED is ideal for replacing existing 50 – 250W metal halide wall-mounted products. The expected service life is 20+ years of nighttime use.

Ordering Information

EXAMPLE: WSQ LED P2 40K SR3 MVOLT DDBTXD

WSQ LED	P1	40K	SR2	MVOLT+			DBLXD
Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting	Options	Finish (required)
WSQ LED	P1 P2 P3 P4	30K 40K 50K	SR2 Type II SR3 Type III SR4 Type IV	MVOLT ¹ 120 208 240 277 347 480	Shipped included (blank) Surface mount Shipped separately ² BBW Surface-mounted back box	Shipped installed PE Photoelectric cell, button type ^{2,3} SF Single fuse (120, 277, 347V) ⁴ DF Double fuse (208, 240, 480V) ⁴ DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) E20WC Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C) ⁵ E10WH Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C) ⁵ WLU Wet location door for up orientation ⁶ PIR Motion/ambient light sensor ⁷ DS Dual switching ⁸ SPD Separate Surge Protection ⁹ Shipped separately VG Vandal guard WG Wire guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

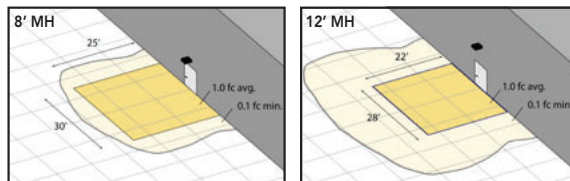
Emergency Battery Operation

The emergency battery backup (E20WC & E10WH options) is integral to the luminaire - no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All E20WC & E10WH configurations include an independent secondary driver with an integral relay to immediately detect AC power loss.

The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per [International Building Code Section 1006](#) and [NFPA 101 Life Safety Code Section 7.9](#), provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions.

The examples below show illuminance of 1 fc average and 0.1 fc minimum of the P1 power package Type IV product in emergency mode.

WSR P1 LED 40K SR4 MVOLT E20WC
10' x 10' Gridlines
8' and 12' Mounting Height



NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- Not available with 480V option.
- PE option is voltage specific.
- Single fuse (SF) requires 120V, 277V or 347V options. Double fuse (DF) requires 208V, 240V or 480V options.
- Not available with 347V or 480V. Not available with WLU.
- WLU not available with PIR, E20WC or E10WH.
- See PIR Table for default settings.
- Only available with P3 & P4 packages. Provides 50/50 luminaire operation via two independent drivers and light engines on two separate circuits. Not available with E20WC, E10WH, WLU, SF, or DF. When ordered with photocell (PE) or motion sensor (PIR), only the primary power source leads will be controlled.
- See electrical section on page 2 for more details.



Commercial Outdoor

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-7378 • www.lithonia.com
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WSQ-LED
Rev. 04/22/19

Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

Performance Package	System Watts (MVOLT)	Dist. Type	30K (3000K, 70CRI)		40K (4000K, 70CRI)		50K (5000K, 70CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
P1	20W	SR2	2,111	108	2,251	115	2,305	118
		SR3	2,104	108	2,244	115	2,298	117
		SR4	2,053	105	2,189	112	2,242	115
P2	29W	SR2	2,943	101	3,139	108	3,214	110
		SR3	2,934	101	3,129	107	3,204	110
		SR4	2,863	98	3,053	105	3,126	107
P3	40W	SR2	4,500	114	4,799	122	4,913	125
		SR3	4,486	114	4,784	122	4,898	125
		SR4	4,377	111	4,667	119	4,779	122
P4	61W	SR2	6,159	102	6,567	108	6,724	111
		SR3	6,139	101	6,547	108	6,703	110
		SR4	5,991	99	6,388	105	6,541	108

Motion/Ambient Sensor Default Settings

	Dimmed State	High Level (when triggered)	Photocell Operation	Ramp-up Time	Dwell Time	Ramp-down Time
*PIR	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	3 sec	5 min	5 min

*PIR USES SFOD 7

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Normalized Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **MRW LED P4** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25000	50000	100000	L90
Lumen Maintenance Factor	1	0.96	0.95	0.92	>60000

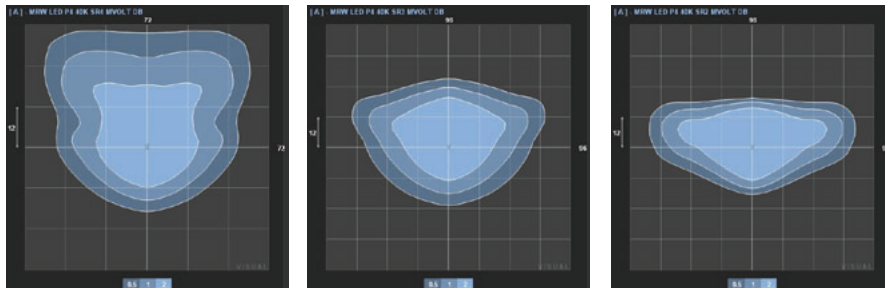
Electrical Load

Power Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	20W	0.17	0.10	0.09	0.08	0.06	0.05
P2	29W	0.26	0.15	0.13	0.12	0.09	0.07
P3	40W	0.37	0.21	0.18	0.16	0.13	0.09
P4	61W	0.59	0.33	0.18	0.25	0.19	0.14

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [WSQ LED homepage](#).

Isfootcandle plots for the WSQ LED P4 40K SR2, SR3, and SR4. Distances are in units of mounting height (12').



FEATURES & SPECIFICATIONS

INTENDED USE

The classic architectural shape of the WSQ LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long life LEDs and driver make this luminaire nearly maintenance-free.

CONSTRUCTION

The die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS

Precision-molded acrylic lenses are engineered for superior distribution, uniformity, and spacing in wall-mount applications. Light engines are 4000K (70 CRI). The WSQ LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

ELECTRICAL

Light engine(s) consist of 8 high-efficacy LEDs mounted to a metal core circuit board and integral aluminum heat sinks to maximize heat dissipation and promote long life (100,000 hrs at 25°C, L77). Class 2 electronic driver has a power factor >90%, THD <20%, and a minimum 6 KV surge protection. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections.

LISTINGS

CSA certified to U.S. and Canadian standards. Light engines are IP66 rated; luminaire is IP65 rated and suitable for wet locations when mounted with the lenses down. WLU option offers wet location listing in "up" orientation. Rated for -30°C minimum ambient. DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



Commercial Outdoor

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WSQ-LED
Rev. 04/22/19



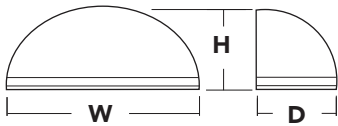
WSQ LED Architectural Wall Sconce



Inverted available with WLU option only.

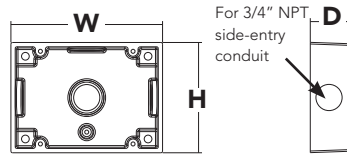
Specifications Luminaire

Height: 9-3/8" (23.8 cm)
Width: 18" (45.7 cm)
Depth: 9" (22.8 cm)
Weight: 17 lbs (7.7 kg)



Optional Back Box (BBW)

Height: 4" (10.2 cm)
Width: 5-1/2" (14.0 cm)
Depth: 1-1/2" (3.8 cm)



Catalog Number

Notes

Type T

Hit the Tab key or mouse over the page to see all interactive elements.

Introduction

Classic Architectural Wall Sconce with the LED technology. Long-life, maintenance-free product with typical energy savings of 80% compared to metal halide versions. The integral battery backup option provides emergency egress lighting, without the use of a back-box or remote gear, so installations maintain their aesthetic integrity. The WSQ LED is ideal for replacing existing 50 – 250W metal halide wall-mounted products. The expected service life is 20+ years of nighttime use.

Ordering Information

EXAMPLE: WSQ LED P2 40K SR3 MVOLT DDBTXD

WSQ LED	P1	40K	SR4	MVOLT+			DBLXD
Series	Performance Package	Color Temperature	Distribution	Voltage	Mounting	Options	Finish (required)
WSQ LED	P1 P2 P3 P4	30K 40K 50K	SR2 Type II SR3 Type III SR4 Type IV	MVOLT ¹ 120 208 240 277 347 480	Shipped included (blank) Surface mount Shipped separately ² BBW Surface-mounted back box	Shipped installed PE Photoelectric cell, button type ^{2,3} SF Single fuse (120, 277, 347V) ⁴ DF Double fuse (208, 240, 480V) ⁴ DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately) E20WC Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C) ⁵ E10WH Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C) ⁵ WLU Wet location door for up orientation ⁶ PIR Motion/ambient light sensor ⁷ DS Dual switching ⁸ SPD Separate Surge Protection ⁹ Shipped separately VG Vandal guard WG Wire guard	DBBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White DSSXD Sandstone DDBTXD Textured dark bronze DBLBXD Textured black DNATXD Textured natural aluminum DWHGXD Textured white DSSTXD Textured sandstone

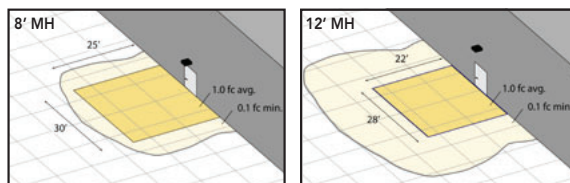
Emergency Battery Operation

The emergency battery backup (E20WC & E10WH options) is integral to the luminaire - no external housing required! This design provides reliable emergency operation while maintaining the aesthetics of the product. All E20WC & E10WH configurations include an independent secondary driver with an integral relay to immediately detect AC power loss.

The emergency battery will power the luminaire for a minimum duration of 90 minutes (maximum duration of three hours) from the time supply power is lost, per [International Building Code Section 1006](#) and [NFPA 101 Life Safety Code Section 7.9](#), provided luminaires are mounted at an appropriate height and illuminate an open space with no major obstructions.

The examples below show illuminance of 1 fc average and 0.1 fc minimum of the P1 power package Type IV product in emergency mode.

WSR P1 LED 40K SR4 MVOLT E20WC
10' x 10' Gridlines
8' and 12' Mounting Height



NOTES

- MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
- Not available with 480V option.
- PE option is voltage specific.
- Single fuse (SF) requires 120V, 277V or 347V options. Double fuse (DF) requires 208V, 240V or 480V options.
- Not available with 347V or 480V. Not available with WLU.
- WLU not available with PIR, E20WC or E10WH.
- See PIR Table for default settings.
- Only available with P3 & P4 packages. Provides 50/50 luminaire operation via two independent drivers and light engines on two separate circuits. Not available with E20WC, E10WH, WLU, SF, or DF. When ordered with photocell (PE) or motion sensor (PIR), only the primary power source leads will be controlled.
- See electrical section on page 2 for more details.



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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts.

Performance Package	System Watts (MVOLT)	Dist. Type	30K (3000K, 70CRI)		40K (4000K, 70CRI)		50K (5000K, 70CRI)	
			Lumens	LPW	Lumens	LPW	Lumens	LPW
P1	20W	SR2	2,111	108	2,251	115	2,305	118
		SR3	2,104	108	2,244	115	2,298	117
		SR4	2,053	105	2,189	112	2,242	115
P2	29W	SR2	2,943	101	3,139	108	3,214	110
		SR3	2,934	101	3,129	107	3,204	110
		SR4	2,863	98	3,053	105	3,126	107
P3	40W	SR2	4,500	114	4,799	122	4,913	125
		SR3	4,486	114	4,784	122	4,898	125
		SR4	4,377	111	4,667	119	4,779	122
P4	61W	SR2	6,159	102	6,567	108	6,724	111
		SR3	6,139	101	6,547	108	6,703	110
		SR4	5,991	99	6,388	105	6,541	108

Motion/Ambient Sensor Default Settings

	Dimmed State	High Level (when triggered)	Photocell Operation	Ramp-up Time	Dwell Time	Ramp-down Time
*PIR	3V (37%) Output	10V (100%) Output	Enabled @ 5FC	3 sec	5 min	5 min

*PIR USES SFOD 7

Lumen Ambient Temperature (LAT) Multipliers

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

Ambient		Normalized Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **MRW LED P4** platform in a **25°C ambient**, based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25000	50000	100000	L90
Lumen Maintenance Factor	1	0.96	0.95	0.92	>60000

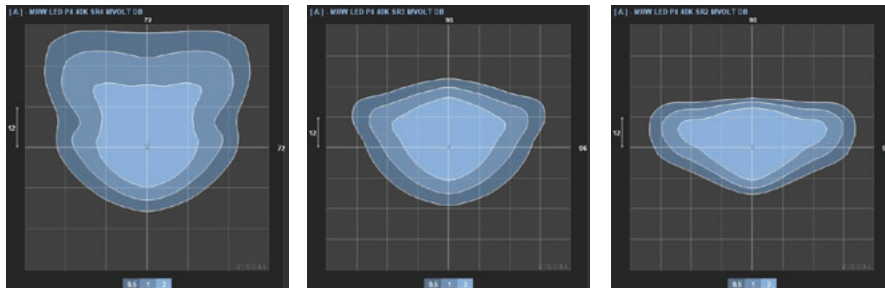
Electrical Load

Power Package	System Watts	Current (A)					
		120V	208V	240V	277V	347V	480V
P1	20W	0.17	0.10	0.09	0.08	0.06	0.05
P2	29W	0.26	0.15	0.13	0.12	0.09	0.07
P3	40W	0.37	0.21	0.18	0.16	0.13	0.09
P4	61W	0.59	0.33	0.18	0.25	0.19	0.14

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's [WSQ LED homepage](#).

Isfootcandle plots for the WSQ LED P4 40K SR2, SR3, and SR4. Distances are in units of mounting height (12').



FEATURES & SPECIFICATIONS

INTENDED USE

The classic architectural shape of the WSQ LED was designed for applications such as hospitals, schools, malls, restaurants, and commercial buildings. The long life LEDs and driver make this luminaire nearly maintenance-free.

CONSTRUCTION

The die-cast aluminum housing integrates secondary heat sinks to optimize thermal transfer from the internal light engine heat sinks and promote long life. The driver is mounted in direct contact with the casting for a low operating temperature and long life. The die-cast door frame is fully gasketed with a one-piece solid silicone gasket to keep out moisture and dust, providing an IP65 rating for the luminaire.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling. Standard Super Durable colors include dark bronze, black, natural aluminum, sandstone and white. Available in textured and non-textured finishes.

OPTICS

Precision-molded acrylic lenses are engineered for superior distribution, uniformity, and spacing in wall-mount applications. Light engines are 4000K (70 CRI). The WSQ LED has zero uplight and qualifies as a Nighttime Friendly™ product, meaning it is consistent with the LEED® and Green Globes™ criteria for eliminating wasteful uplight.

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A universal mounting plate with integral mounting support arms allows the fixture to hinge down for easy access while making wiring connections.

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WARRANTY

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.



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WSQ-LED
Rev. 04/22/19



ANGLED EXTRUSION + LED TAPELIGHT



SPECIFICATIONS

FINISH	Silver, Black, White
LENS	Frosted, Clear, White
WATTAGE	2.2W/ft to 7.0W/ft
IP RATING	IP20 dry, IP65 wet
CCT / COLOR	2200K - 5200K; RGB; variable white
BEAM SPREAD	104° with frosted lens
INPUT VOLTAGE	24VDC
LENGTH	Made to order. Actual lengths vary by LED tapelight cutpoints.
OUTPUT	200 to 800 lm/ft delivered through Frosted lens
LENS APPEARANCE	Diode-free appearance options available with frosted lens
LEDS	Single binned LEDs +/- 30-70 CCT, MacAdam 3 SDCM
MATERIAL	Extrusion - Anodized aluminum; Lens - Polycarbonate
MOUNTING	Mounting clips recommended - see below
POWER SUPPLY	Requires a 24V power supply - see below
WARRANTY	IP20 - 5 year limited, IP65/68 - 3 year limited

5 YEAR LIMITED WARRANTY



ASSEMBLED IN THE USA

FEATURES & RECOMMENDED APPLICATIONS

Surface-mount extrusion for corner applications. Curved lens increases beam spread for a wide distribution of light. Good for accent, general, under cabinet, displays, shelving, signage.



PRODUCT: LLI-ANG-SF-H4.4W-30K-24V-48IN, 48INSLEF



ANGLED EXTRUSION + LED TAPELIGHT

ORDERING GUIDE

← PRODUCT CODE

PROFILE	1a. FINISH	1b. LENS	2. LED	3. IP RATING	4. CCT / COLOR	INPUT	5. LENGTH	6. MOUNTING	REQUIRED FOR LAYOUT PURPOSES →																				
LLI-ANG	S	F	2.2W	[blank]	30K	24V	48IN	[blank]	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="3">FRONT CONNECTION</th> <th colspan="3">REAR CONNECTION*</th> </tr> <tr> <td>7. LEAD LENGTH</td> <td>8. LEAD TYPE</td> <td>9. FEED TYPE</td> <td>10. LEAD LENGTH</td> <td>11. LEAD TYPE</td> <td>12. FEED TYPE</td> </tr> <tr> <td>48IN</td> <td>SL</td> <td>EF</td> <td colspan="3" style="text-align: center;">[blank]</td> </tr> </table>			FRONT CONNECTION			REAR CONNECTION*			7. LEAD LENGTH	8. LEAD TYPE	9. FEED TYPE	10. LEAD LENGTH	11. LEAD TYPE	12. FEED TYPE	48IN	SL	EF	[blank]		
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48IN	SL	EF	[blank]																										
	FINISH Silver Black White	LENS Frosted Clear White	WATTS/FT 2.2-7.0 W/ft	IP RATING [blank] - IP20 65 - IP65	WHITE 22K-52K Warm Fade Variable White COLOR RGB		Enter desired length in inches. Nominal length only. For actual length, please contact us.	Default: [blank] - Clip	Default: [48INSLEF] - 48" Soldered Lead, End feed																				
Example part number: LLI-ANG-SF-4.4W-65-35K-24V-48IN, 48INSLEF									More LED tapelight and color options available upon request. Visit www.lliighting.com or contact us for details.																				

1. FINISH & LENS

1a. FINISH	1b. LENS
S	F
S Silver Anodized finish	F Frosted lens
B Black Powder Coat finish	C Clear lens
W White Powder Coat finish	W White lens (special order)

2-4. RECOMMENDED LED TAPELIGHT OPTIONS

2. LED	3. IP RATING	4. CCT / COLOR	FROSTED LENS APPEARANCE	DELIVERED LM/FT*
H4.4W	[blank]	30K		
Default: [blank] - IP20				
2.2W (White)	[blank] / 65	22K / 27K / 30K / 35K / 42K / 52K	●●●● IMAGING	190 lm/ft
T2.5W (White)	[blank] / 65	22K / 27K / 30K / 35K / 42K / 52K	■ NO IMAGING	200 lm/ft
4.4W (White)	[blank] / 65	22K / 27K / 30K / 35K / 42K / 52K	●●●● SEMI IMAGING	293 lm/ft
T5.0W (White)	[blank] / 65	22K / 27K / 30K / 35K / 42K / 52K	■ NO IMAGING	390 lm/ft
H4.4W (White)	[blank] / 65	22K / 27K / 30K / 35K / 42K / 52K	■ NO IMAGING	470 lm/ft
T5.9W (White)	[blank] / 65	22K / 27K / 30K / 35K / 42K / 52K	●●●● SEMI IMAGING	797 lm/ft
WF3.5W (Warm Fade) ■■	[blank] / 65	27D (18-27K) / 30D (18-30K)	●●●● SEMI IMAGING	270 lm/ft
VW5.9W (Variable White) ■■■	[blank] / 65	2K6 (25-65K)	●●●● IMAGING	216 lm/ft
TC4.4W (RGB) ■■■■	[blank] / 65	RGB	●●●● IMAGING	N/A

More LED tapelight options available (e.g. output, CCT/color, high 95+ CRI). Click here or go to www.lliighting.com.

* Output data based on Frosted lens, Silver Anodized finish, IP20 tapelight @ 3000K. To calculate output for other extrusion+tapelight combinations, see page 3.

5. LENGTH

5. LENGTH

48IN

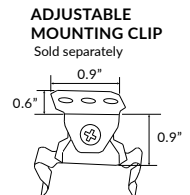
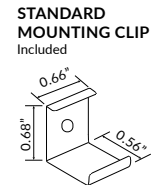
Enter desired length in inches. Nominal length only. Actual lengths vary by LED tapelight cutpoints. Contact us for actual lengths. Lengths <94" are shipped as factory assembled. For all lengths >94", will ship cut to spec and unassembled. Minimal field assembly required.

6. MOUNTING

6. MOUNTING

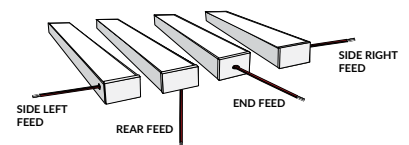
[blank]

[blank] Standard Clip
ADJ Adjustable Clip (sold separately)



7-12. LEAD LENGTH, LEAD TYPE, & FEED TYPE (required for layout purposes, default shown in grey)

FRONT CONNECTION			REAR CONNECTION		
7. LEAD LENGTH	8. LEAD TYPE	9. FEED TYPE	10. LEAD LENGTH	11. LEAD TYPE	12. FEED TYPE
48IN	SL	EF	[blank]	[blank]	[blank]
Default: [48INSLEF] - 48" Soldered Lead, End feed			Default: [blank] - no rear connection		
Enter desired lead length in inches	SL Soldered lead	EF End Feed	Enter desired lead length in inches	SL Soldered lead	EF End Feed
	MBC Male barrel	RF Rear Feed		MBC Male barrel	RF Rear Feed
	FBC Female barrel	SR Side Right Feed		FBC Female barrel	SR Side Right Feed
		SL Side Left Feed			SL Side Left Feed





ANGLED EXTRUSION + LED TAPELIGHT

LUMEN OUTPUT MULTIPLIERS (FOR ESTIMATING DELIVERED LUMENS)

COLOR TEMPERATURE	LUMEN MULTIPLIER
2200K	0.8
2700K	0.9
3000K	1
3500K	1.1
4200K	1.2
5200K	1.25

IP RATING	LUMEN MULTIPLIER
IP20	1
IP65	0.9

FINISH	LUMEN MULTIPLIER
Silver Anodized	1
Black Anodized	0.9
White Powder Coat	1.1

EXAMPLE: White Powder Coat Extrusion, 2.2W, IP65, 5200K

(Output @ 30K) x (Color temperature lumen multiplier) x (IP rating lumen multiplier) x (Finish lumen multiplier) = Estimated delivered lm/ft

$$190 \text{ lm/ft} \times 1.25 \times 0.9 \times 1.1 = 235 \text{ lm/ft}$$

TECHNICAL DATA

LED TAPELIGHT	WATTAGE	CRI	MAXIMUM RUN	CUT POINTS*
2.2W (White)	2.2 W/ft	90+	60 ft	3.9"
T2.5W (White)	2.5 W/ft	90+	20 ft	1"
4.4W (White)	4.4 W/ft	90+	32 ft	2"
T5.0W (White)	5.0 W/ft	90+	13 ft	1"
H4.4W (White)	4.4 W/ft	90+	32 ft	2"
T5.9W (White)	5.9 W/ft	90+	20 ft	2"
WF3.5W (Warm Fade)	3.5 W/ft	90+	16 ft	2.5"
VW5.9W (Variable White)	5.9 W/ft	90+	32 ft	2"
TC4.4W (Tight Pitch RGB)	4.4 W/ft	—	32 ft	2"

*Overall Extrusion+LED tapelight length will be rounded up or down based on nearest LED tapelight cut point.

PHOTOMETRY

LLI-ANG-SF-4.4W-30K-24V*	BEAM SPREAD	POLAR CHART	CONICAL CHART																															
<table border="1"> <tr> <td>POWER (W/ft)</td> <td>4.4W</td> </tr> <tr> <td>OUTPUT (lm/ft)</td> <td>293 lm/ft</td> </tr> <tr> <td>COLOR TEMPERATURE</td> <td>3000K</td> </tr> <tr> <td>BEAM SPREAD</td> <td>104°</td> </tr> <tr> <td>EFFICACY (lm/W)</td> <td>68 lm/W</td> </tr> </table>	POWER (W/ft)	4.4W	OUTPUT (lm/ft)	293 lm/ft	COLOR TEMPERATURE	3000K	BEAM SPREAD	104°	EFFICACY (lm/W)	68 lm/W	<p>104°</p>		<p>ILLUMINANCE AT A DISTANCE</p> <table border="1"> <tr> <th>Distance from light source</th> <th>Beam width</th> <th>Footcandles @ beam center</th> </tr> <tr> <td>1.7 ft</td> <td>4.4 ft</td> <td>23.7 fc</td> </tr> <tr> <td>3.3 ft</td> <td>8.5 ft</td> <td>6.3 fc</td> </tr> <tr> <td>5.0 ft</td> <td>12.9 ft</td> <td>2.7 fc</td> </tr> <tr> <td>6.7 ft</td> <td>17.2 ft</td> <td>1.5 fc</td> </tr> <tr> <td>8.3 ft</td> <td>21.3 ft</td> <td>1 fc</td> </tr> <tr> <td>10.0 ft</td> <td>25.7 ft</td> <td>0.7 fc</td> </tr> </table>	Distance from light source	Beam width	Footcandles @ beam center	1.7 ft	4.4 ft	23.7 fc	3.3 ft	8.5 ft	6.3 fc	5.0 ft	12.9 ft	2.7 fc	6.7 ft	17.2 ft	1.5 fc	8.3 ft	21.3 ft	1 fc	10.0 ft	25.7 ft	0.7 fc
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6.7 ft	17.2 ft	1.5 fc																																
8.3 ft	21.3 ft	1 fc																																
10.0 ft	25.7 ft	0.7 fc																																

*Information for other options available upon request. IES files for extrusion+tapelight available upon request.



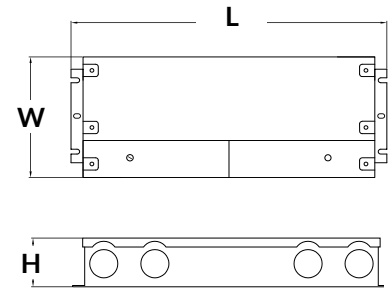
POWER SUPPLIES (SOLD SEPARATELY)

DIMMABLE ELECTRONIC 0-10V

Optimal performance dims to 0%.*



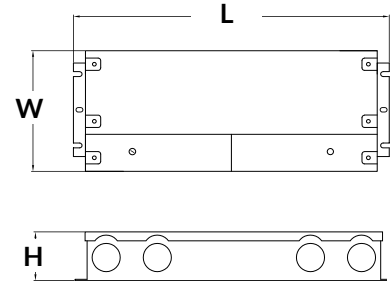
PART NUMBER	CAPACITY	OUTPUT	CLASS	LOCATION	L	W	H
LLI-PS-DE010-030W-24V-KO	30W	24V	CLASS 2	WET	6.5"	3.6"	1.6"
LLI-PS-DE010-060W-24V-KO	60W	24V	CLASS 2	WET	7.4"	3.6"	1.6"
LLI-PS-DE010-096W-24V-KO	96W	24V	CLASS 2	WET	8.7"	3.7"	1.7"
LLI-PS-DE010-200W-24V-KO	200W	24V	CLASS 1	WET	10.2"	4.1"	1.8"
LLI-PS-DE010-300W-24V-KO	300W	24V	CLASS 1	WET	10.9"	4.3"	1.8"



NON-DIMMABLE ELECTRONIC



PART NUMBER	CAPACITY	OUTPUT	CLASS	LOCATION	L	W	H
LLI-PS-NDE-030W-24V-KO	30W	24V	CLASS 2	WET	6.5"	3.5"	1.02"
LLI-PS-NDE-060W-24V-KO	60W	24V	CLASS 2	WET	7.4"	3.5"	1.2"
LLI-PS-NDE-096W-24V-KO	96W	24V	CLASS 2	WET	8.7"	3.7"	1.7"
LLI-PS-DEC-200W-24V-KO	200W	24V	CLASS 1	WET	10.3"	4.1"	1.8"
LLI-PS-DEC-300W-24V-KO	300W	24V	CLASS 1	WET	10.9"	4.3"	1.8"

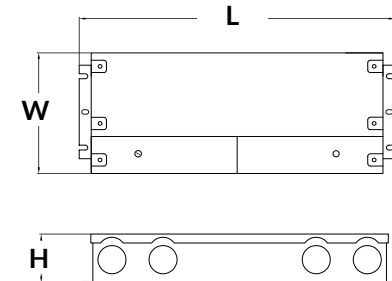


UNIVERSAL DIMMABLE ELECTRONIC FLICKER-FREE

Optimal performance dims to 2-5%.



PART NUMBER	CAPACITY	OUTPUT	CLASS	LOCATION	L	W	H
LLI-PS-UDEFF-030W-24V-KO	30W	24V	CLASS 2	WET	6.5"	3.6"	1.0"
LLI-PS-UDEFF-060W-24V-KO	60W	24V	CLASS 2	WET	7.4"	3.6"	1.0"
LLI-PS-UDEFF-096W-24V-KO	96W	24V	CLASS 2	WET	8.7"	3.7"	1.6"
LLI-PS-UDEFF-200W-24V-KO	200W	24V	CLASS 1	WET	10.2"	4.1"	1.8"
LLI-PS-UDEFF-300W-24V-KO	300W	24V	CLASS 1	WET	11.0"	4.3"	1.8"

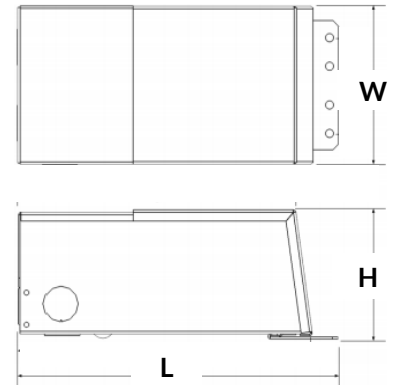


DIMMABLE MAGNETIC

Optimal performance dims to 5-10%.*



PART NUMBER	CAPACITY	OUTPUT	CLASS	LOCATION	L	W	H
LLI-PS-DM-020W-24V-KO	30W	24V	CLASS 2	NEMA 3R	7.38"	2.11"	1.60"
LLI-PS-DM-040W-24V-KO	60W	24V	CLASS 2	NEMA 3R	7.38"	2.11"	1.60"
LLI-PS-DM-060W-24V-KO	100W	24V	CLASS 2	NEMA 3R	8.13"	3.93"	1.59"
LLI-PS-DM-100W-24V-KO	200W	24V	CLASS 2	NEMA 3R	8.13"	3.93"	1.59"
LLI-PS-DM-150W-24V-KO	150W	24V	CLASS 1	NEMA 3R	8.79"	4.15"	3.41"
LLI-PS-DM-200W-24V-KO	200W	24V	CLASS 1	NEMA 3R	8.79"	4.15"	3.41"
LLI-PS-DM-300W-24V-KO	300W	24V	CLASS 1	NEMA 3R	8.79"	4.15"	3.41"
LLI-PS-DM-300W-24V-CL2-KO	6 x 50W	24V	CLASS 2	NEMA 3R	10.29"	5.69"	3.43"
LLI-PS-DM-600W-24V-KO	2 x 300W	24V	CLASS 1	NEMA 3R	10.29"	6.79"	4.68"

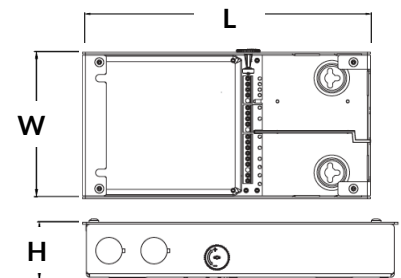


LUTRON HI-LUME PREMIER 0.1% DIMMABLE ELECTRONIC

Soft-on, Fade-to-Black, continuous flicker-free dimming from 100% to 0.1.



PART NUMBER	CAPACITY	OUTPUT	CLASS	LOCATION	L	W	H
L3D0-96W24V-U	96W	24V	CLASS 2	INDOOR	10.5"	5.5"	2.0"



*Performance can be affected by driver loading and dimmer type.



CONTROLS (SOLD SEPARATELY)

FIXTURE SPECIFICATIONS

INTENDED USE

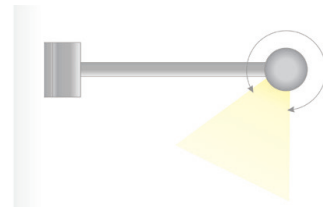
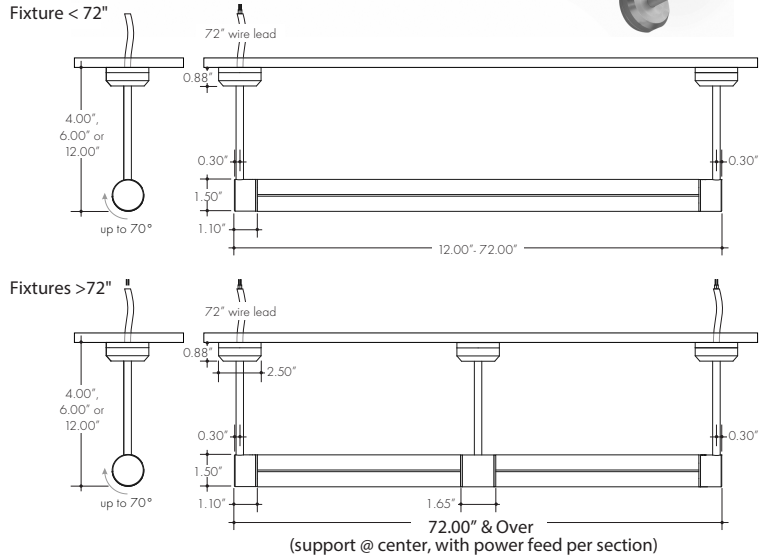
Our outdoor architectural specification-grade linear wall-mounted light showcases signs or works of art. The fixture comes with an option to extend the length for lighting wider wall areas. Constant and evenly distributed illumination from beginning to the end of runs adds value to commercial or residential settings. Made in America.

FEATURES

- Construction:** Extruded aluminum
- Lens:** Glare-free snap in frosted or clear acrylic for even distribution
- CRI:** 90+
- Voltage:** 24VDC
- Wattage:** 10 W/ft
- Lumens:** 410 lms/ft
- Average Life:** 50,000 hours
- Warranty:** 3 Years Carefree for Parts & Components (Labor Not Included)
- Listings:** cULus, Made in the USA, RoHS



Profile Dimensions



Fixture Head Rotates 70°

SPEC
GRADE

LIMITED 3-YEAR
WARRANTY

UL
LISTED

MADE IN
THE USA

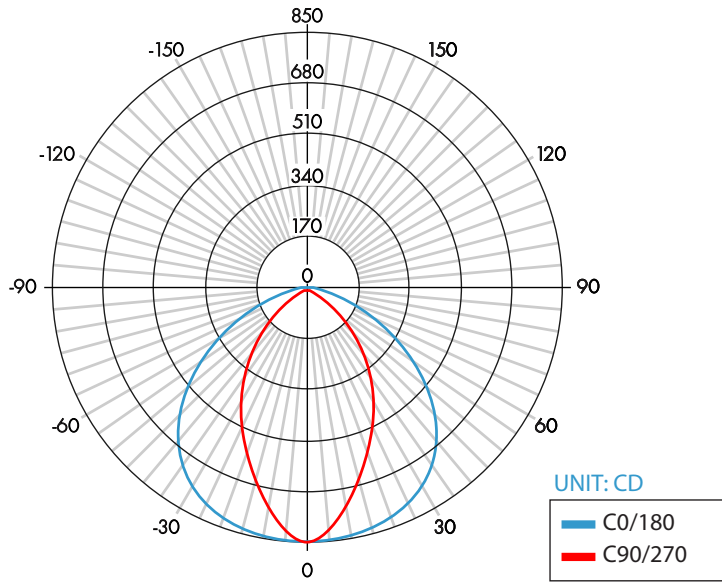
WET LOCATION
SUITABLE

RoHS COMPLIANT

ORDERING INFORMATION Example: (11704-24-27K-6-SA-F-ND)

Model	Length	Color Temp	Arm Length	Finish	Lens	Remote Power Supply
11704	24 2'	27K 2700K	4 4"	SA Silver <small>Standard</small>	F Frosted	ND Non-Dimming
	36 3'	30K 3000K	6 6"	WH White	C Clear	MLV Magnetic Low Voltage (120 V)
	48 4'	35K 3500K	12 12"	BK Black		ELV Electronic Low Voltage (120 V)
	72 6'	40K 4000K		BZ Bronze		IGELV Inground Electronic Low Voltage (120 V)
	XX Custom <small>Specify in 4" Increments (12" - 232")</small>					010 0 - 10 V (120/277 V)

Photometry



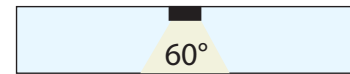
11704-48-40K-4-SA-XX

Zonal Lumen Summary 4000K

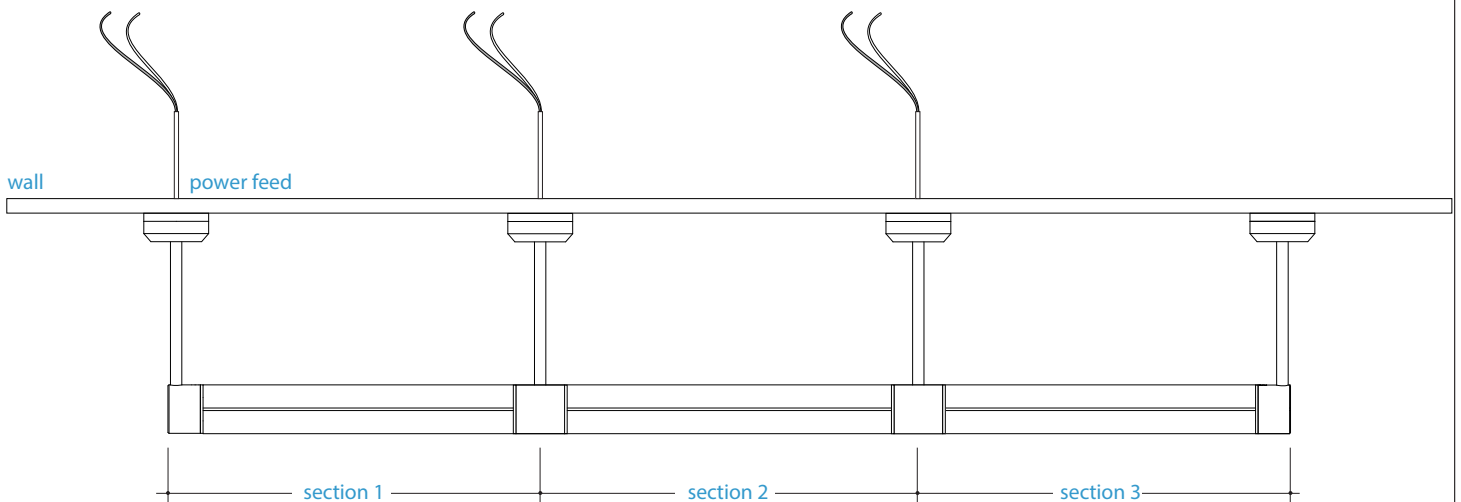
Zone	Lumen	% Fixture
0-30	582	35%
0-40	892	54%
0-60	1393	85%
0-90	1625	99%
0-180	1641	100%

Total

Beam Angle



Sample System Layout



COLOR TEMPERATURE GUIDE



2700K	3000K	3500K	4000K	5000K
WARM WHITE	SOFT WHITE GLOW	NEUTRAL GLOW	DAYLIGHT GLOW	CRYSTAL WHITE GLOW
friendly personal intimate	soft warm pleasing	sociable inviting non-threatening	neat clean efficient	bright cool alert
HOMES LIBRARIES RESTAURANTS	HOMES HOTEL ROOMS LOBBIES RETAIL STORES	EXECUTIVE OFFICES RECEPTION AREAS SUPERMARKETS	OFFICES CLASSROOMS MASS MERCHANDISERS SHOWROOMS	GRAPHICS INDUSTRY HOSPITALS GALLERIES BEAUTY SALONS
✓	✓	✓	✓	✗

**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



NO ROOF TOP EQUIPMENT VISIBLE FROM KING JAMES WAY

**DANE COUNTY EMERGENCY MANAGEMENT REMODEL
5415 KING JAMES WAY, FITCHBURG, WI.
PROJECT NO. 2020-001**



NO ROOF TOP EQUIPMENT VISIBLE FROM KAPEC ROAD