

22 East Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

Towne Park

100 Jefferson St. Algonquin, IL 60102

Village of Algonquin
2200 Harnish Dr. Algonquin, IL 60102

Issue for Construction May 7th, 2024

Project Team

Landscape Architect

Hitchcock Design Group 22 East Chicago Avenue, Suite 200A Naperville, Illinois 60540 T 630.961.1787

Civil Engineer

Sheets C-series

Sheets: L-series

Christopher B. Burke Engineering, Ltd. 9575 West Higgins Road, Suite 600 Rosemont, Illinois 60018 T 847.823.0520

Electrical Engineer

Architect

Sheets E-series

Nova Engineering P.C. 2338 South Cline Avenue Schererville, Indiana 46375 T 219.865.3352

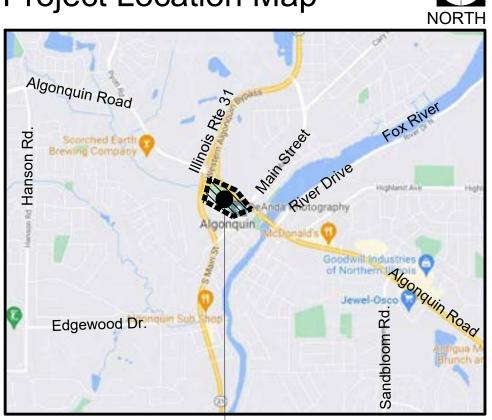
Sheets A-series

Dewberry Architects Inc. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

General Notes

- Basemap information obtained from plans prepared by Chistopher B. Burke Engineering received October 20, 2021 and April 17, 2023.
- Verify site conditions and information on drawings.
 Promptly report any concealed conditions, mistakes, discrepancies or deviations from the information shown in the Contract Documents. The Owner is not responsible for unauthorized changes or extra work required to correct unreported discrepancies.
- 3. Secure and pay for permits, fees and inspections necessary for the proper execution of this work. Comply with codes applicable to this work.
- 4. Refer to specifications for additional conditions, standards and notes.
- 5. The plans and specifications are intended to be completed entirely by the contractor. Unless clearly identified as "By Owner," all work contained within is the responsibility of the general contractor.

Project Location Map



Project Location

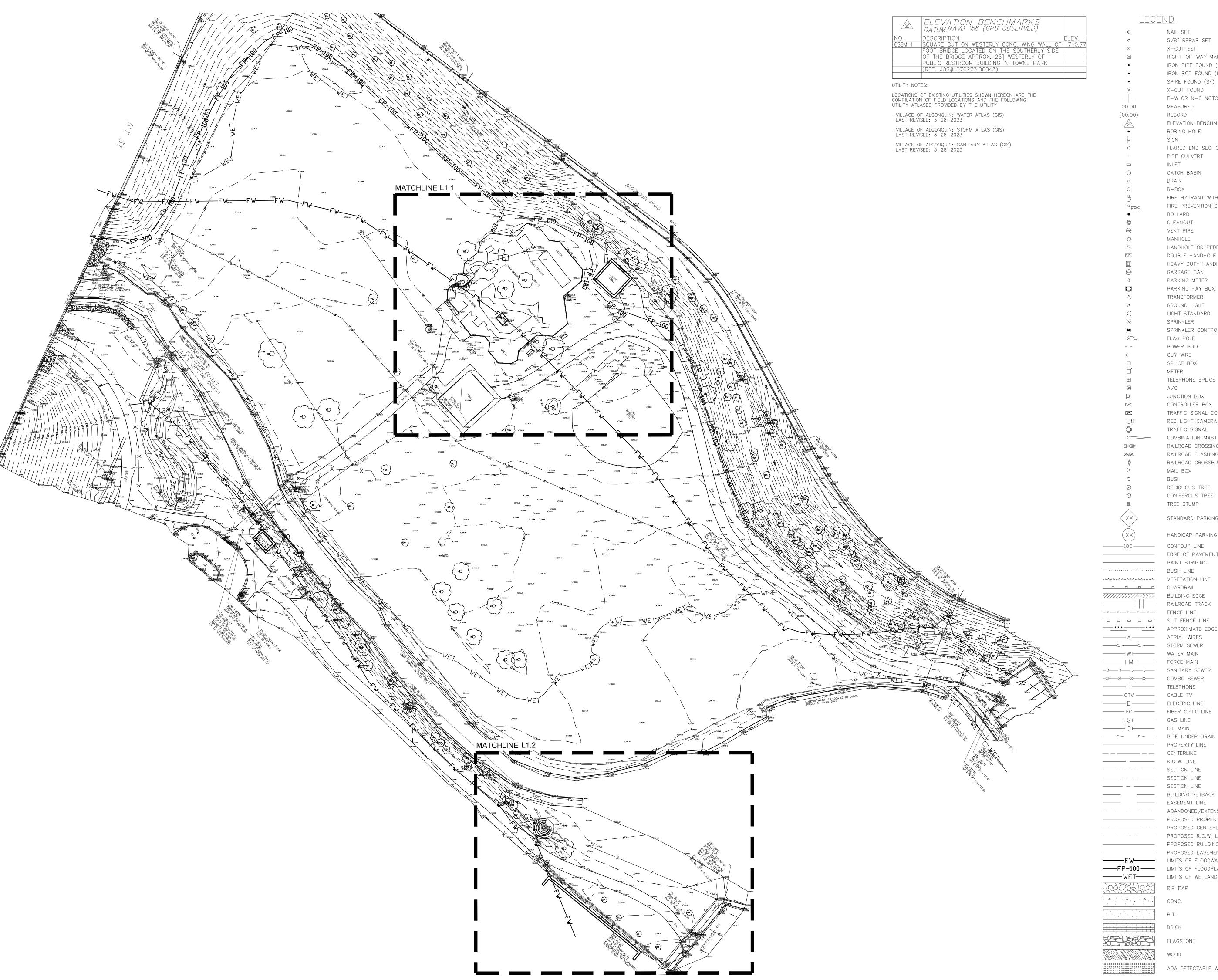
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NAIL SET 5/8" REBAR SET X-CUT SET RIGHT-OF-WAY MARKER (MARKER) IRON PIPE FOUND (IPF) IRON ROD FOUND (IRF) SPIKE FOUND (SF) X-CUT FOUND E-W OR N-S NOTCH FOUND MEASURED RECORD ELEVATION BENCHMARK BORING HOLE SIGN

FLARED END SECTION PIPE CULVERT INLET CATCH BASIN DRAIN B-BOX

FIRE HYDRANT WITH WATER VAULT FIRE PREVENTION STANDPIPE BOLLARD CLEANOUT

VENT PIPE MANHOLE HANDHOLE OR PEDESTAL DOUBLE HANDHOLE HEAVY DUTY HANDHOLE GARBAGE CAN PARKING METER PARKING PAY BOX

TRANSFORMER GROUND LIGHT LIGHT STANDARD SPRINKLER SPRINKLER CONTROL VALVE

FLAG POLE POWER POLE GUY WIRE SPLICE BOX METER TELEPHONE SPLICE BOX

A/C JUNCTION BOX CONTROLLER BOX TRAFFIC SIGNAL CONTROLLER RED LIGHT CAMERA TRAFFIC SIGNAL

COMBINATION MAST ARM RAILROAD CROSSING GATE RAILROAD FLASHING SIGNAL RAILROAD CROSSBUCK MAIL BOX BUSH

DECIDUOUS TREE CONIFEROUS TREE TREE STUMP

> STANDARD PARKING SPACES HANDICAP PARKING SPACES

------ EDGE OF PAVEMENT ------PAINT STRIPING BUSH LINE VEGETATION LINE ____ GUARDRAIL 7//////// BUILDING EDGE

RAILROAD TRACK - x - - x - - x - - x - FENCE LINE SILT FENCE LINE APPROXIMATE EDGE OF WATER AERIAL WIRES

STORM SEWER ────────── WHEEN MAIN ---- FM --- FORCE MAIN ->-->-> SANITARY SEWER ___________________COMBO SEWER

TELEPHONE ----- CTV ----- CABLE TV ELECTRIC LINE — FO — FIBER OPTIC LINE -----G ⊢----- GAS LINE OIL MAIN

— — — CENTERLINE ------ R.O.W. LINE —— — — SECTION LINE ----- SECTION LINE ----- SECTION LINE

----- BUILDING SETBACK LINE ----- EASEMENT LINE - - - - ABANDONED/EXTENSION LINE — — — PROPOSED CENTERLINE

----- PROPOSED R.O.W. LINE ----FW---- LIMITS OF FLOODWAY ----FP-100---- LIMITS OF FLOODPLAIN

ADA DETECTABLE WARNING



22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

> PREPARED FOR Village of Algonquin

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PROJECT Towne Park

100 Jefferson St. Algonquin, IL 60102

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Architect

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> Issue for Construction May 7, 2024 **REVISIONS**

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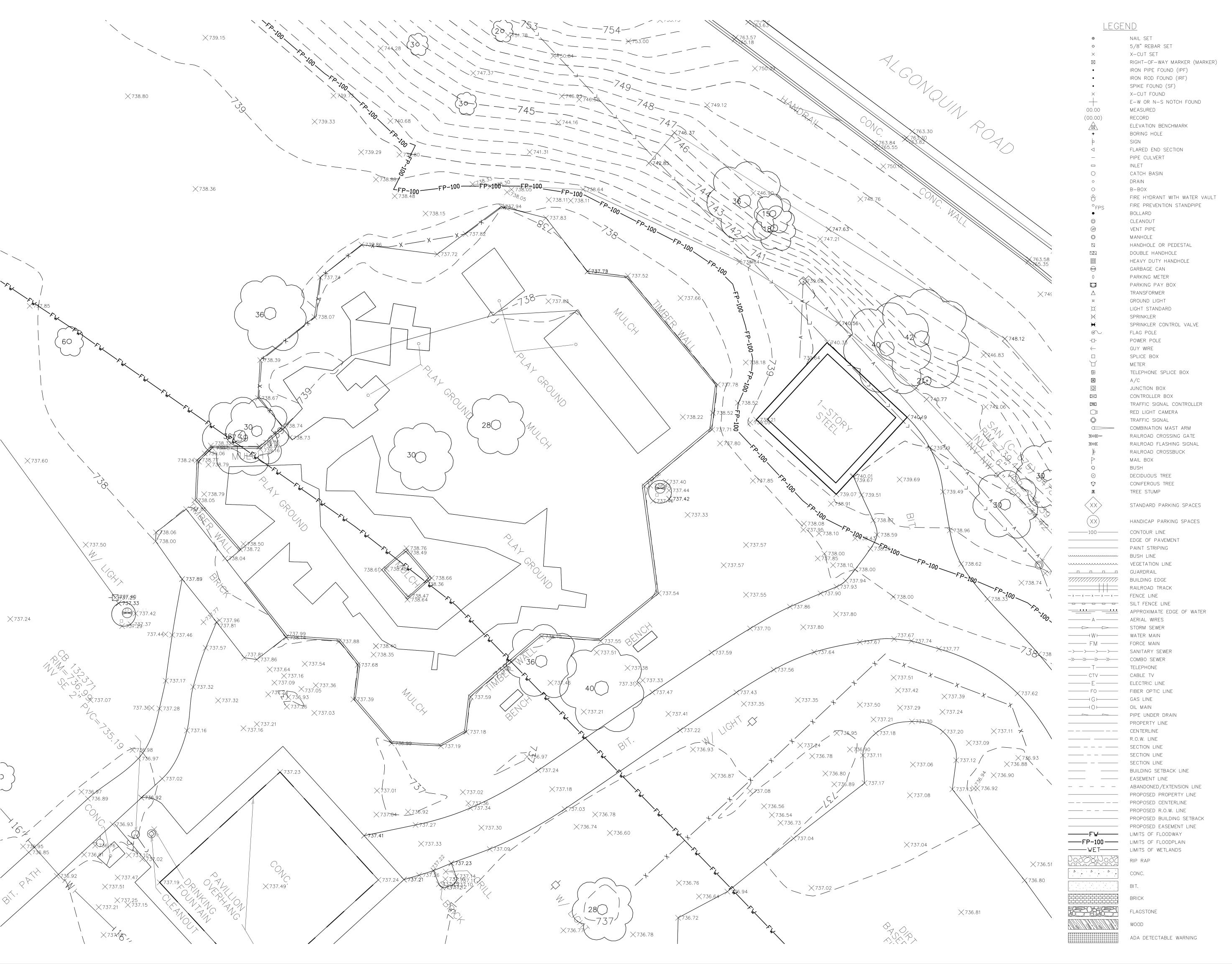
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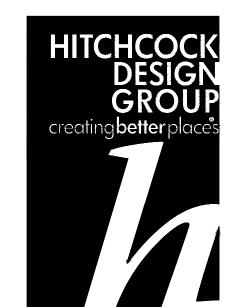
SHEET TITLE **Existing Conditions**

Plan

SCALE IN FEET

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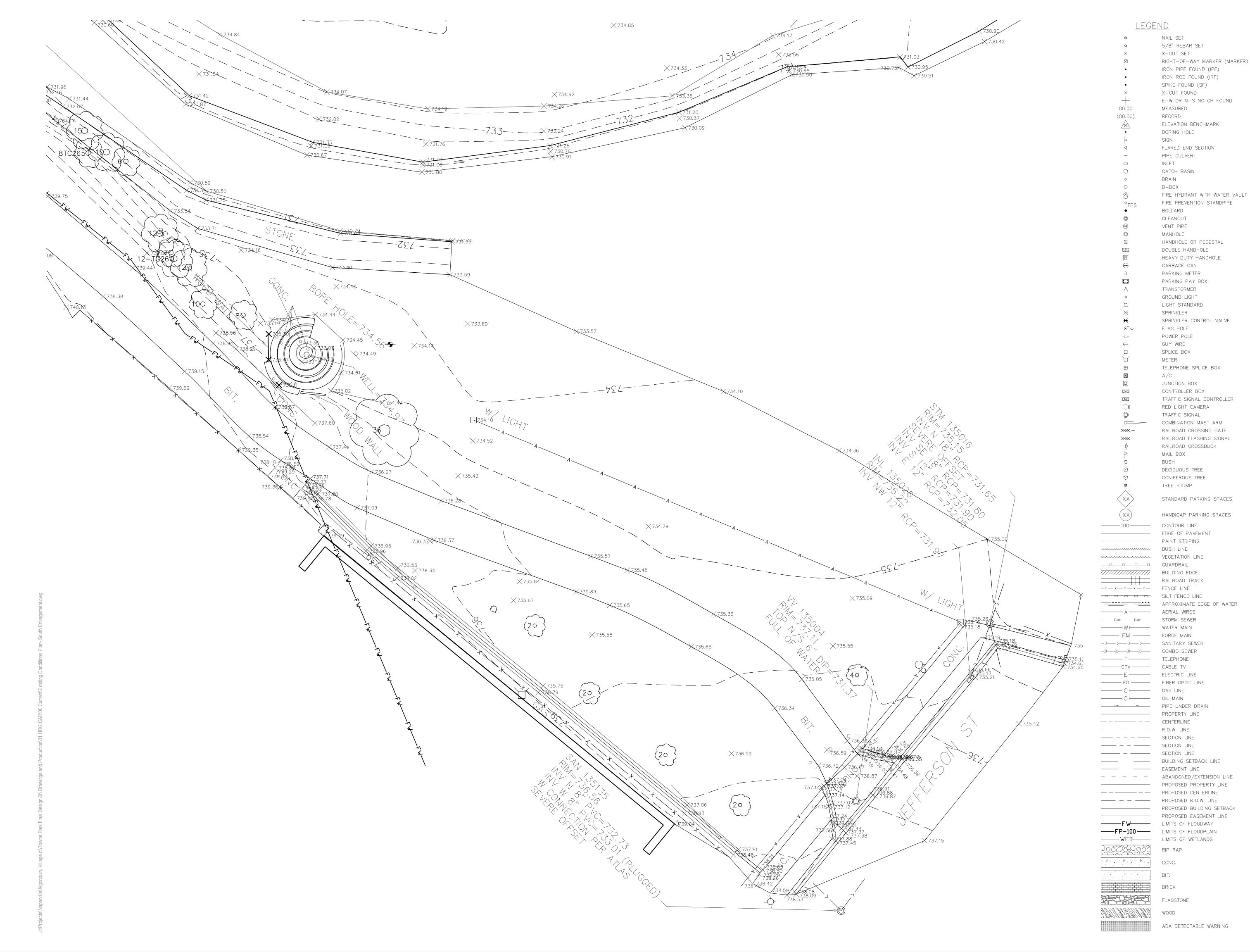
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Existing Conditions Plan- North Enlargement

SCALE IN FEET 1" = 10'

10'

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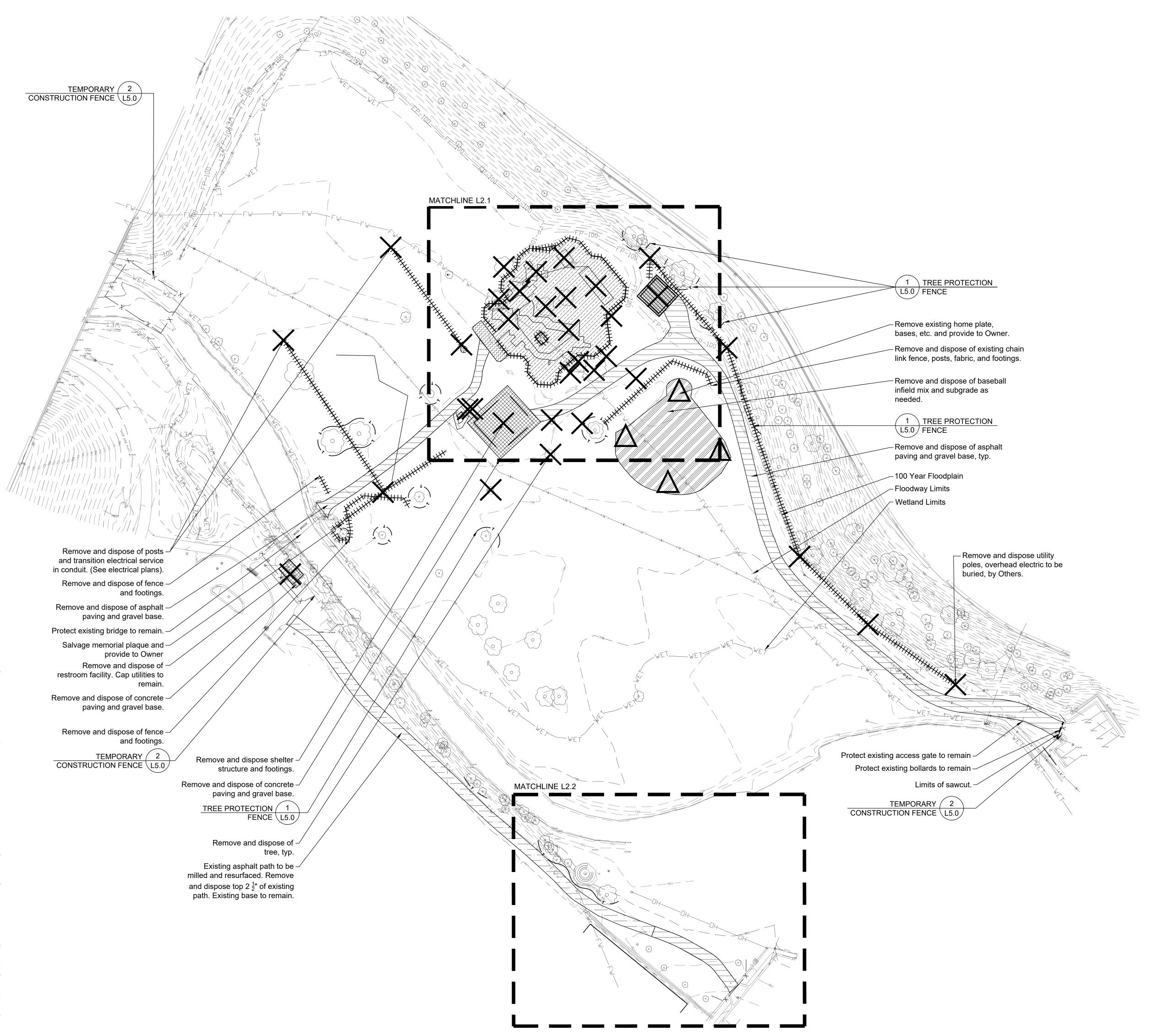
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Existing Conditions Plan- South Enlargement

SCALE IN FEET 1" = 10'

10' I SHE

SHEET NUMBER



SITE PREPARATION AND REMOVALS NOTES

- 1. Contractor shall install construction fence at the limits of construction prior to beginning work. Maintain and adjust construction fencing as needed during progress of construction. Staging and construction access shall be approved by Owner.
- 2. Contractor shall install tree protection fencing as shown on the plans prior to beginning work. Maintain and adjust tree protection fencing as needed during progress of construction. Storage of materials, vehicular access, and all other construction activities are strictly prohibited within the limits of the tree protection fencing.
- 3. Plans indicate general location and limits of removals. Contractor shall perform removals only as necessary for construction of proposed improvements. No additional payments will be made for removals or restoration not required to construct the improvements as drawn and specified. Refer to Layout Plan for more specific information regarding proposed improvements and verify conditions in the field prior to performing removals.
- 4. Sawcut and remove concrete paving to nearest joint where indicated. All saw cuts required for removal items to be included in the unit cost of that particular pay item.
- 5. Tree stumps shall be ground to a minimum depth of 18" below existing grade or as required to properly perform the
- 6. Remove and dispose of turf where planting beds are designated. Refer to Planting Plan for limits of proposed landscape improvements.
- 7. Where turf or plantings are proposed in existing paved areas, remove all base material.
- 8. Remove all utilities designated for removal to extent required for improvements, unless otherwise noted. Cap ends of any remaining underground conduit and piping, and pull all electrical wire out at source.
- 9. Items indicated for Removal shall include complete removal of above grade item and below grade appurtances (foundations, urban fill, wiring, piping, etc.) including disposal off-site following applicable codes and ordinances, unless otherwise shown on the plans.
- 10. Items indicated as Remove and Salvage shall include careful protection, removal, and storage of items. For reinstall items, Contractor shall store during construction. All other Salvage items shall be delivered to location as indicated by owner unless otherwise shown on the plans.
- 11. Contractor to protect all existing utilities and all other site features not designated for removal. Contractor is responsible for replacing/repairing any existing utilities or other site features damaged during construction to the original condition at no cost to the Owner.
- otherwise indicated in the Contract Documents. 13. Contractor shall coordinate all work so public sidewalk

(electrical, sanitary, storm) during construction unless

12. Contractor responsible for maintaining existing utility services

- remains open throughout construction. 14. Refer to civil, electrical, and architectural plans for additional
- utility adjustments and removals.
- 15. Refer to specifications for additional conditions, standards

SITE PREPARATION AND REMOVALS LEGEND

Remove and dispose concrete paving and gravel base. Remove subgrade material as Remove and dispose asphalt paving and

gravel base. Remove subgrade material as Remove and salvage unit paving. Remove and dispose of gravel base and remove

subgrade material as needed.

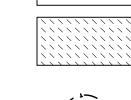
subgrade material as needed.

Remove all playground equipment, footings, and wood fiber surfacing. Remove subgrade material as needed.

Remove and dispose of shrubs, understory

Remove infield mix and miscellaneous

Mill and dispose top $2\frac{1}{2}$ " of asphalt paving, gravel base to remain.



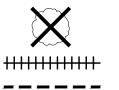
Tree Protection Fence

Item to be salvaged

Item to be removed

plants, and mulch bed.





Item to be removed Limit of sawcut Floodway

——wet——wet— Wetland Limits

Construction Fence 100 Year Floodplain



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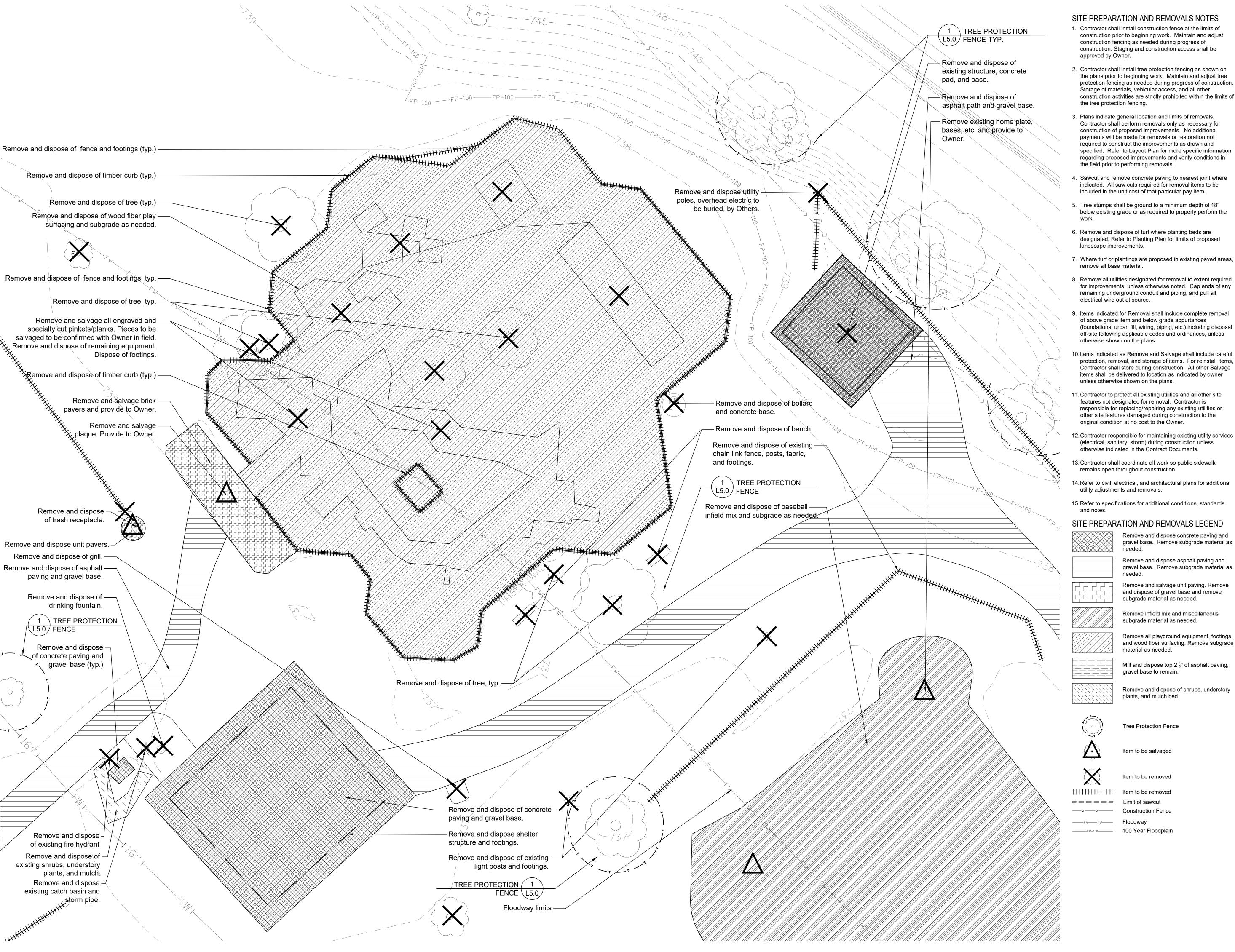
Site Preparation and Removals Plan

SCALE IN FEET

0' 20' 40'

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- otherwise indicated in the Contract Documents.
- remains open throughout construction.
- 15. Refer to specifications for additional conditions, standards

SITE PREPARATION AND REMOVALS LEGEND

Remove and dispose concrete paving and gravel base. Remove subgrade material as

Remove and dispose asphalt paving and gravel base. Remove subgrade material as

Remove and salvage unit paving. Remove and dispose of gravel base and remove subgrade material as needed.

Remove infield mix and miscellaneous subgrade material as needed.

> material as needed. Mill and dispose top $2\frac{1}{2}$ " of asphalt paving,

Remove and dispose of shrubs, understory

Tree Protection Fence

Item to be removed

Item to be removed

Limit of sawcut Construction Fence Floodway

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Towne Park

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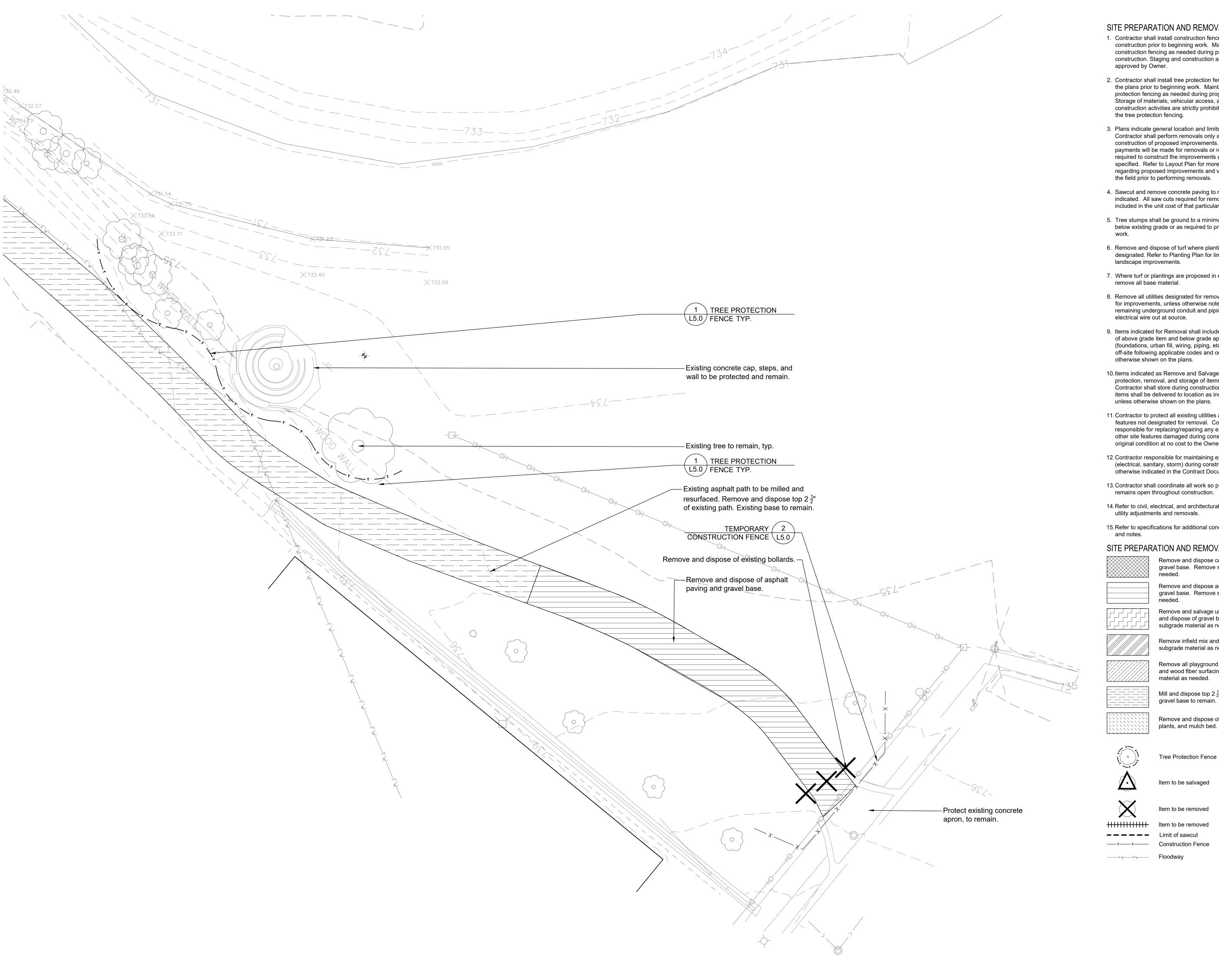
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Site Preparation and Removals Plan-North Enlargement

> SCALE IN FEET 1" = 10'

SHEET NUMBER







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- 12. Contractor responsible for maintaining existing utility services (electrical, sanitary, storm) during construction unless otherwise indicated in the Contract Documents.
- 13. Contractor shall coordinate all work so public sidewalk remains open throughout construction.
- 14. Refer to civil, electrical, and architectural plans for additional utility adjustments and removals.
- 15. Refer to specifications for additional conditions, standards

SITE PREPARATION AND REMOVALS LEGEND

Remove and dispose concrete paving and gravel base. Remove subgrade material as

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Remove and salvage unit paving. Remove and dispose of gravel base and remove subgrade material as needed.

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Remove all playground equipment, footings, and wood fiber surfacing. Remove subgrade material as needed.

Mill and dispose top $2\frac{1}{2}$ of asphalt paving, gravel base to remain.

Remove and dispose of shrubs, understory plants, and mulch bed.

Item to be removed

++++++++++ Item to be removed **____** Limit of sawcut — x— x— Construction Fence





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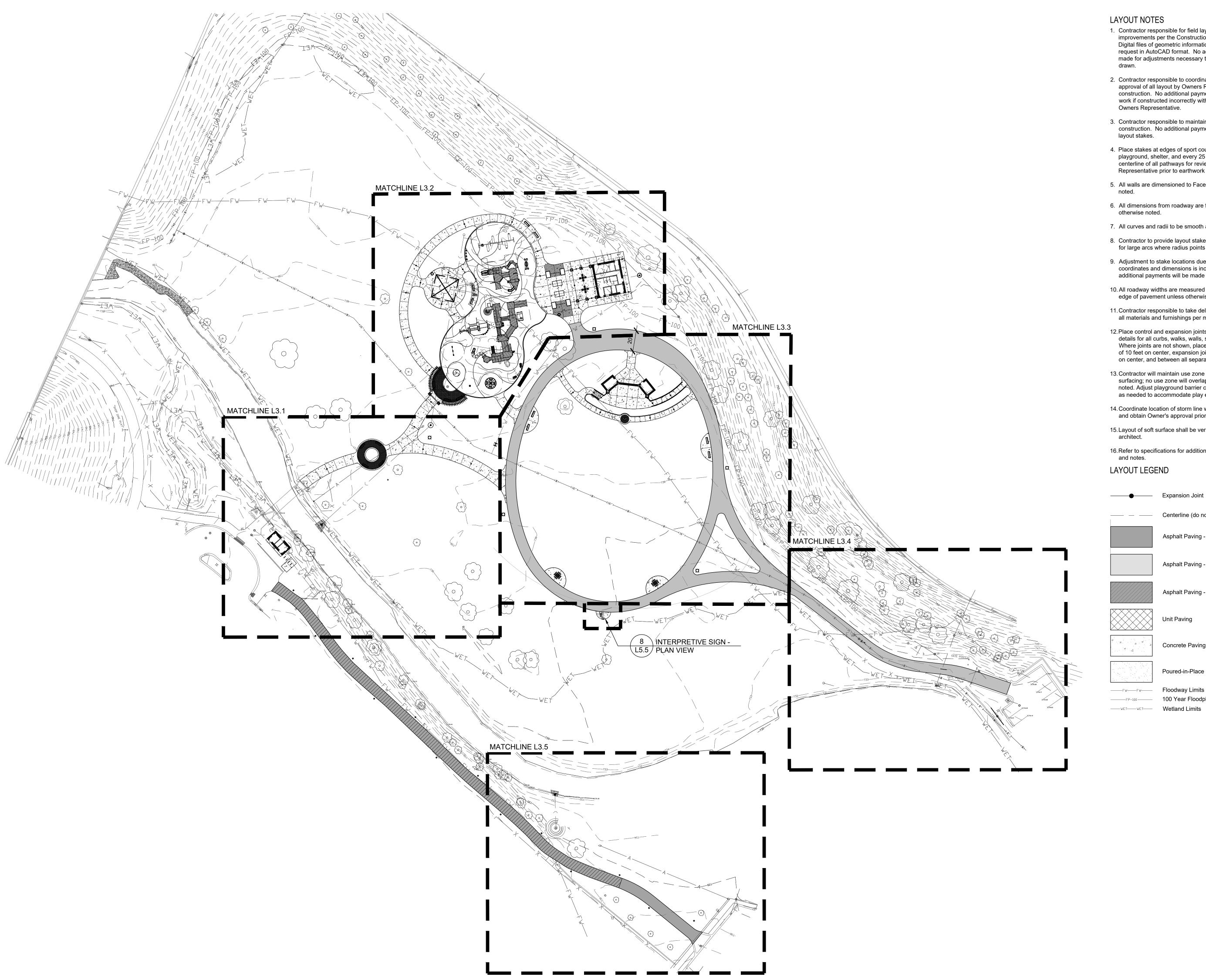
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Site Preparation and Removals Plan-South Enlargement

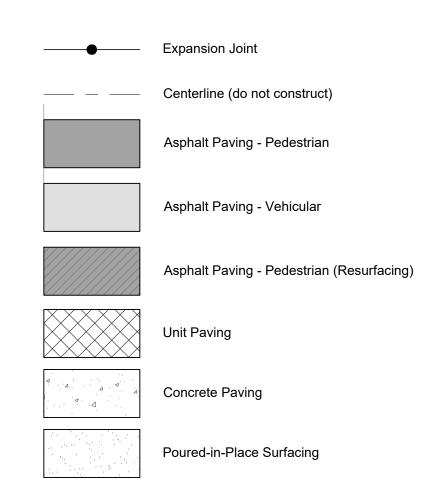
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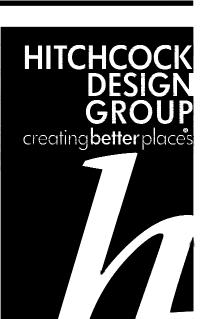


- 1. Contractor responsible for field layout of all new improvements per the Construction Layout specification. Digital files of geometric information will be provided upon request in AutoCAD format. No additional payment will be made for adjustments necessary to construct the work as
- 2. Contractor responsible to coordinate work in order to obtain approval of all layout by Owners Representative prior to construction. No additional payment will be made to correct work if constructed incorrectly without pre-approval by Owners Representative.
- 3. Contractor responsible to maintain all layout stakes during construction. No additional payment will be made to replace layout stakes.
- 4. Place stakes at edges of sport courts, fields, limits of playground, shelter, and every 25 feet on center along centerline of all pathways for review by the Owner's Representative prior to earthwork operations.
- 5. All walls are dimensioned to Face of Wall unless otherwise
- 6. All dimensions from roadway are from Back of Curb unless otherwise noted.
- 7. All curves and radii to be smooth and not segmented.
- 8. Contractor to provide layout stakes every 10 feet minimum for large arcs where radius points are not accessible.
- 9. Adjustment to stake locations due to discrepancies between coordinates and dimensions is incidental to the contract. No additional payments will be made for this work.
- 10. All roadway widths are measured from edge of pavement to edge of pavement unless otherwise shown on the plans.
- 11. Contractor responsible to take delivery, assemble and install all materials and furnishings per manufacturer's instructions.
- 12. Place control and expansion joints as shown on plans and details for all curbs, walks, walls, steps, and concrete paving. Where joints are not shown, place control joints a maximum of 10 feet on center, expansion joints a maximum of 30 feet on center, and between all separate pours.
- 13. Contractor will maintain use zone requirements within soft surfacing; no use zone will overlap or be tangent unless noted. Adjust playground barrier curb and/or adjacent paving as needed to accommodate play equipment fall zones.
- 14. Coordinate location of storm line with playground footings and obtain Owner's approval prior to installation.
- 15. Layout of soft surface shall be verified in field by landscape
- 16. Refer to specifications for additional conditions, standards and notes.

LAYOUT LEGEND



100 Year Floodplain Limits



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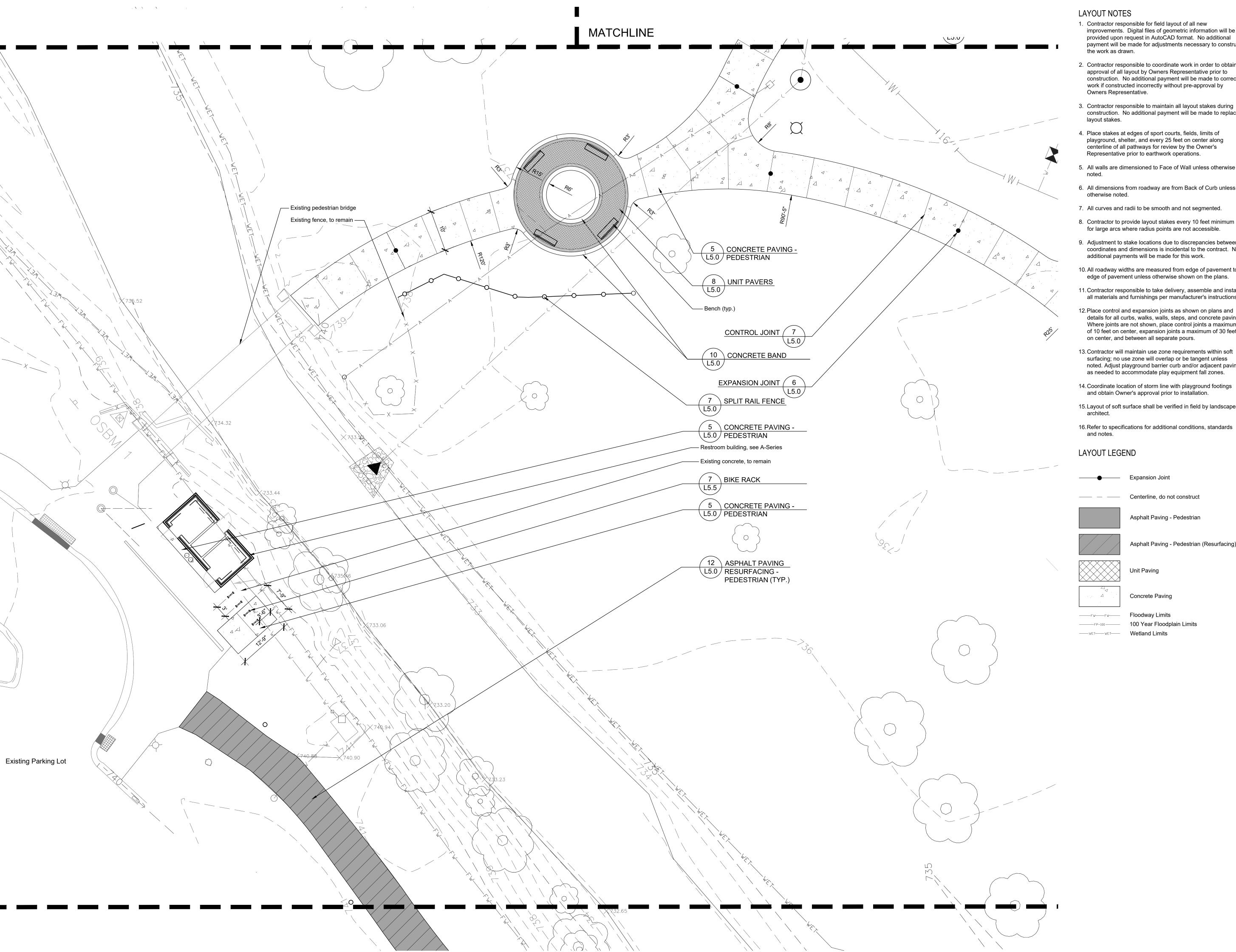
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Layout And Materials Plan -Overall

SCALE IN FEET

SHEET NUMBER

0' 20' 40'



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- 6. All dimensions from roadway are from Back of Curb unless otherwise noted.
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- 8. Contractor to provide layout stakes every 10 feet minimum for large arcs where radius points are not accessible.
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- 11. Contractor responsible to take delivery, assemble and install
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- and obtain Owner's approval prior to installation.
- 15. Layout of soft surface shall be verified in field by landscape
- 16. Refer to specifications for additional conditions, standards and notes.

LAYOUT LEGEND

—— Expansion Joint Asphalt Paving - Pedestrian

Asphalt Paving - Pedestrian (Resurfacing)

100 Year Floodplain Limits

Wetland Limits

Unit Paving

Concrete Paving Floodway Limits

> Issue for Construction May 7, 2024 **REVISIONS**

22 E. Chicago Avenue

Naperville, IL 60540 T 630.961.1787

PREPARED FOR

Village of

Algonquin

2200 Harnish Dr.

PROJECT

Algonquin, IL 60102

Towne Park

Christopher B. Burke Engineering, Ltd.

9575 W. Higgins Road, Suite 600

100 Jefferson St.

CONSULTANTS

Rosemont, IL 60018 T 847.823.0500

Electrical Engineer Nova Engineering

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Dewberry Architects Inc.

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T 219.865.3352

Civil Engineer

Algonquin, IL 60102

hitchcock**design**group.com

Suite 200A

No Date

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BND /CNO SHEET TITLE

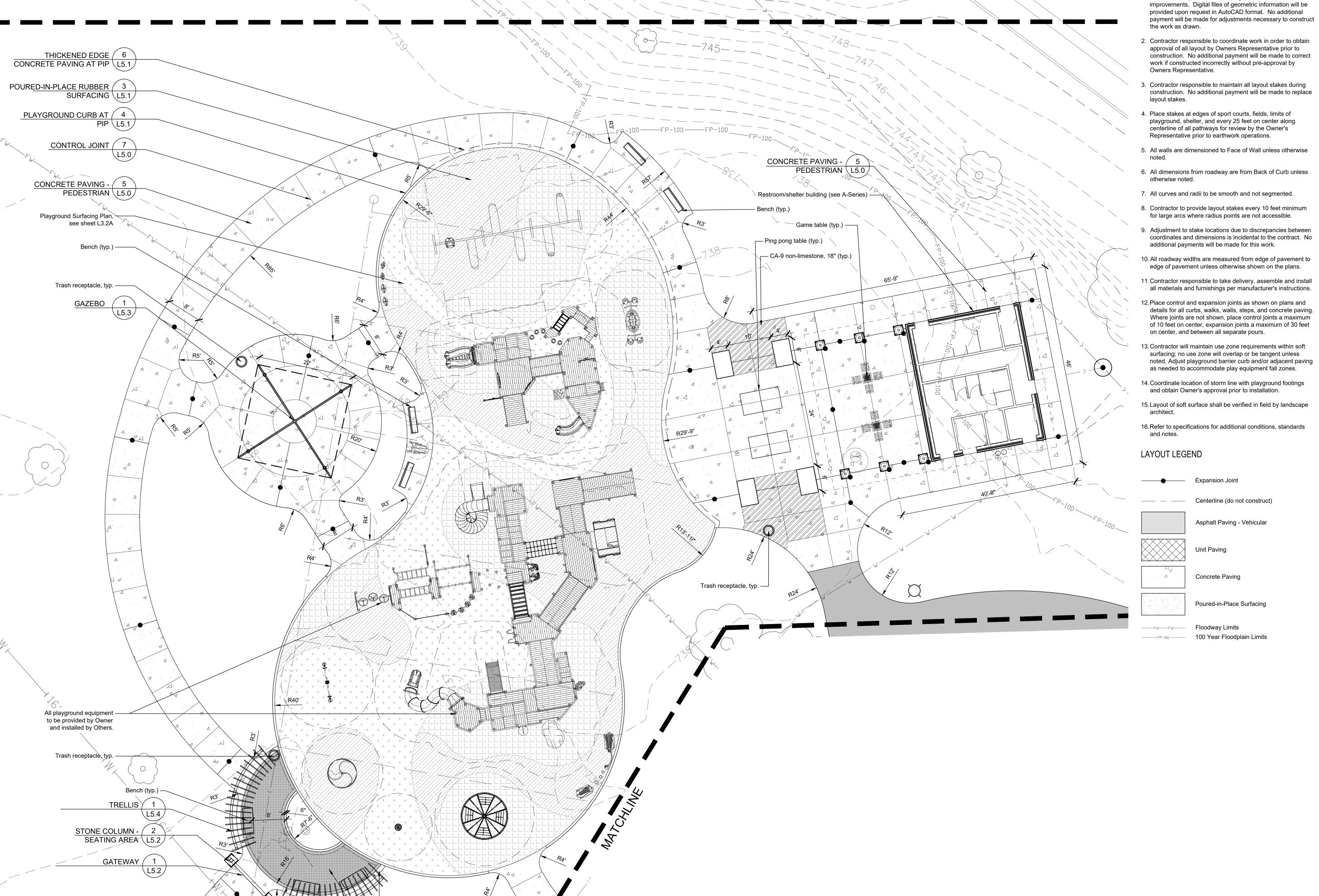
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Layout and Materials Plan-Main Entry

SCALE IN FEET

SHEET NUMBER





10 CONCRETE BAND L5.0

8 UNIT PAVERS

MATCHLINE

LAYOUT NOTES

- Contractor responsible for field layout of all new improvements. Digital files of geometric information will be provided upon request in AutoCAD format. No additional payment will be made for adjustments necessary to construct
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- 15. Layout of soft surface shall be verified in field by landscape

Issue for Construction May 7, 2024 **REVISIONS**

22 E. Chicago Avenue

hitchcock**design**group.com

Naperville, IL 60540

PREPARED FOR

Village of

Algonquin

2200 Harnish Dr.

PROJECT

Algonquin, IL 60102

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Electrical Engineer Nova Engineering

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Architect

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Dewberry Architects Inc.

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Algonquin, IL 60102

T 630.961.1787

Suite 200A

No Date

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BND /CNO SHEET TITLE

Layout and

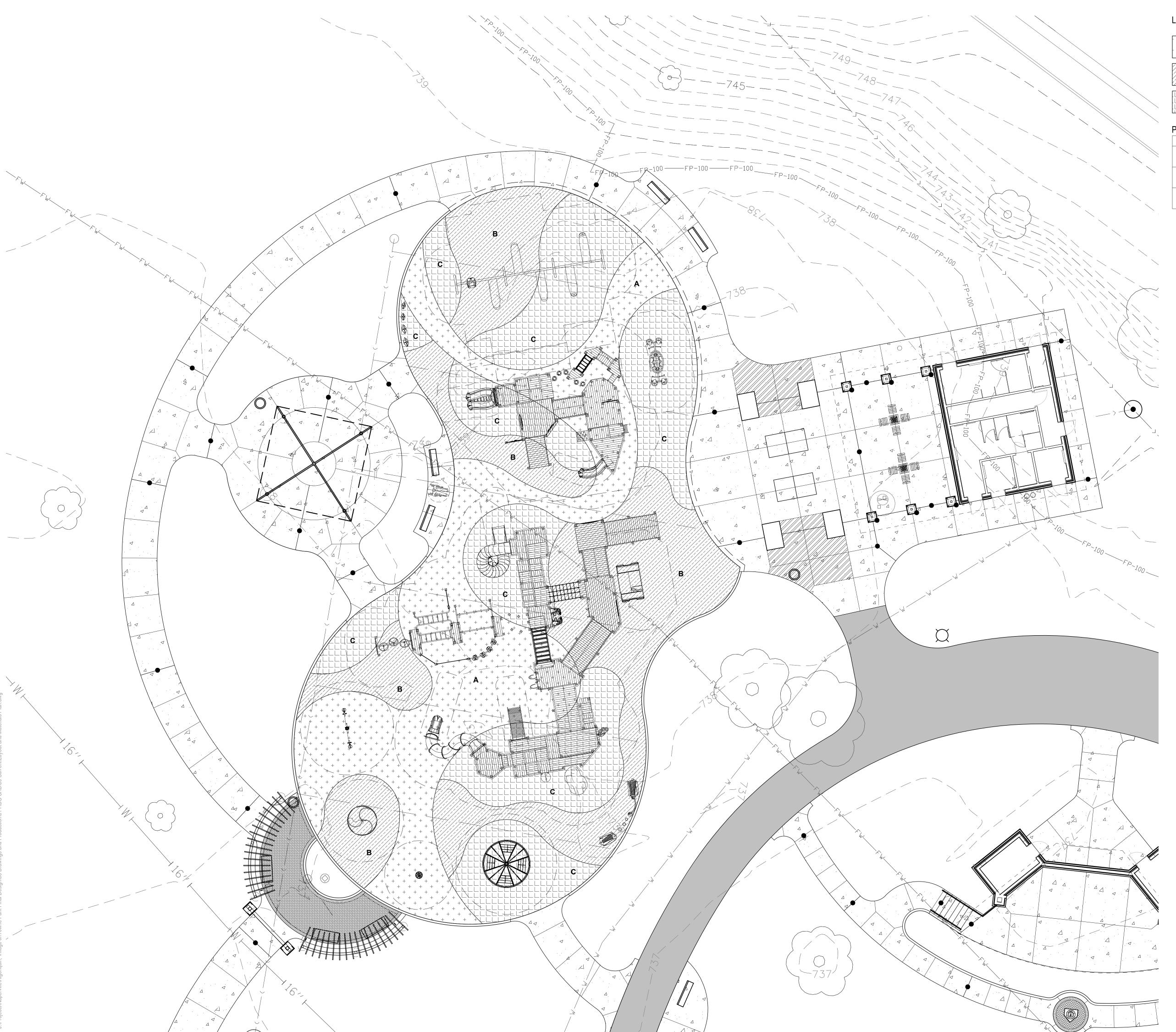
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Materials Plan-Playground

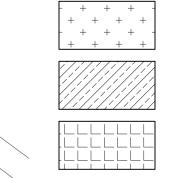
SCALE IN FEET

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SHEET NUMBER



LAYOUT LEGEND



DLAV SLIDEACING MIX SCHEDLILE

| PLAY SURFACING MIX SCHEDULE | | |
|-----------------------------|--|--|
| | Mix (% of Granules) | |
| Α | Light Blue Mix (60% Light Blue, 30% Standard Blue, 10% Black) | |
| В | Light Green Mix (60% Light Green, 30% Standard Green, 10% Black) | |
| С | Dark Green Mix (60% Standard Green, 30% Light Green, 10% Black) | |



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PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT Towne Park

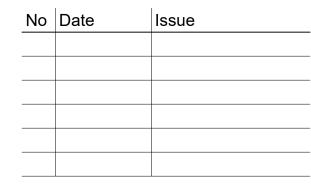
100 Jefferson St. Algonquin, IL 60102

CONSULTANTS Civil Engineer
Christopher B. Burke Engineering, Ltd.
9575 W. Higgins Road, Suite 600
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Issue for Construction May 7, 2024 REVISIONS



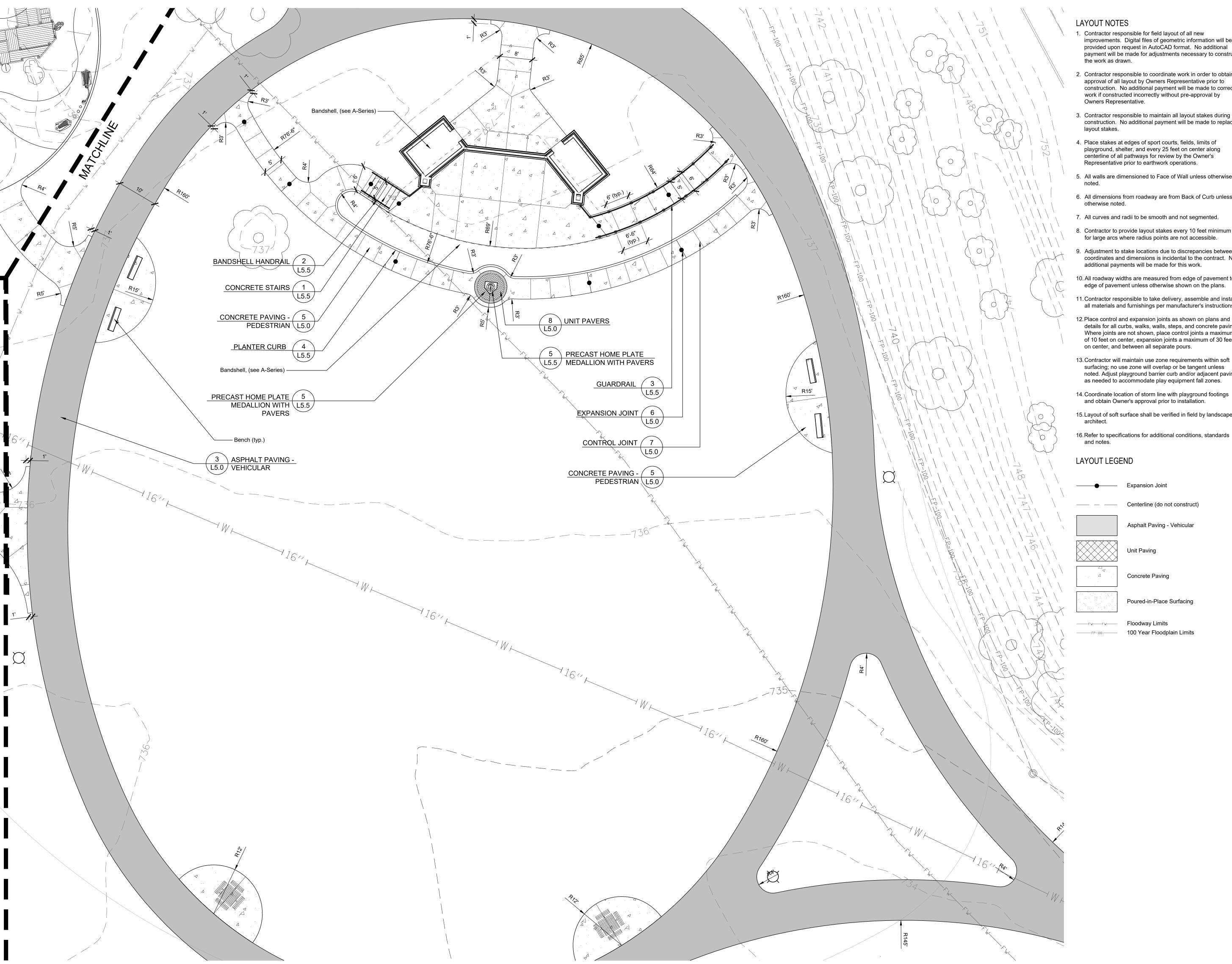
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SHEET TITLE Layout and Materials Plan- Playground Surfacing Plan

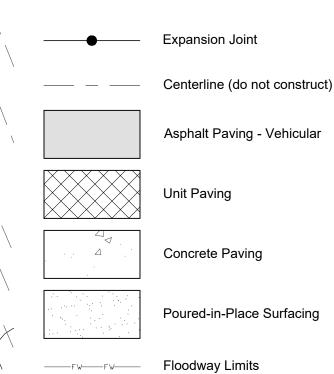
SCALE IN FEET 1" = 10'





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LAYOUT LEGEND



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PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

Towne Park 100 Jefferson St. Algonquin, IL 60102

CONSULTANTS Civil Engineer Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road, Suite 600 Rosemont, IL 60018

> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

T 847.823.0500

Architect

Dewberry Architects Inc. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

Issue for Construction May 7, 2024

REVISIONS

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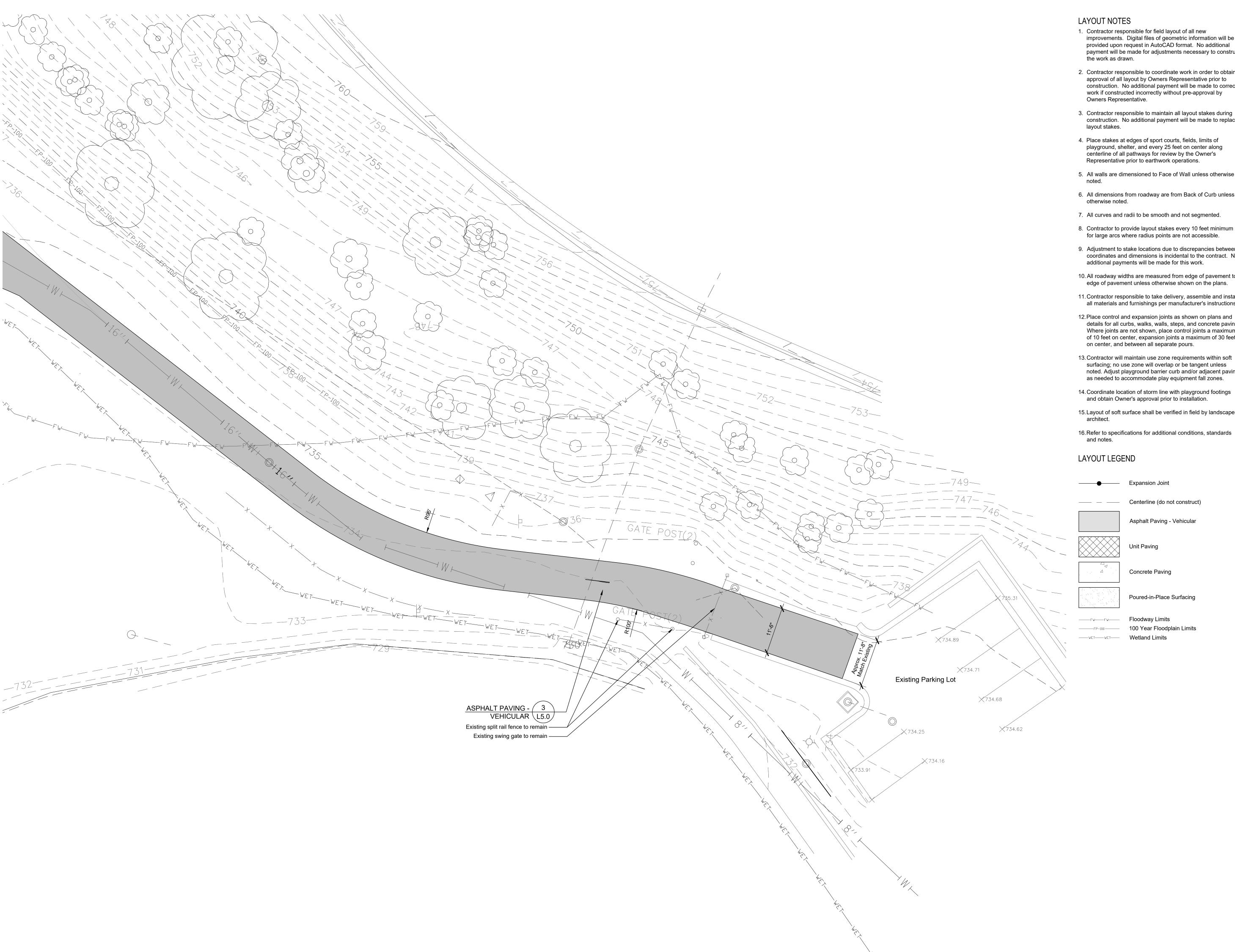
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Layout and Materials Plan-Bandshell

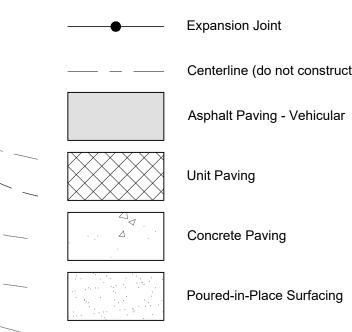
SCALE IN FEET

SHEET NUMBER



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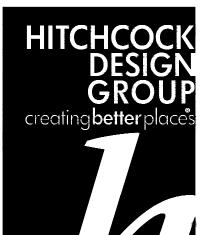
LAYOUT LEGEND



Floodway Limits

Wetland Limits

100 Year Floodplain Limits



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PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

Towne Park 100 Jefferson St.

Algonquin, IL 60102 CONSULTANTS

Civil Engineer Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road, Suite 600 Rosemont, IL 60018 T 847.823.0500

> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

Dewberry Architects Inc.

132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

Issue for Construction May 7, 2024 **REVISIONS**

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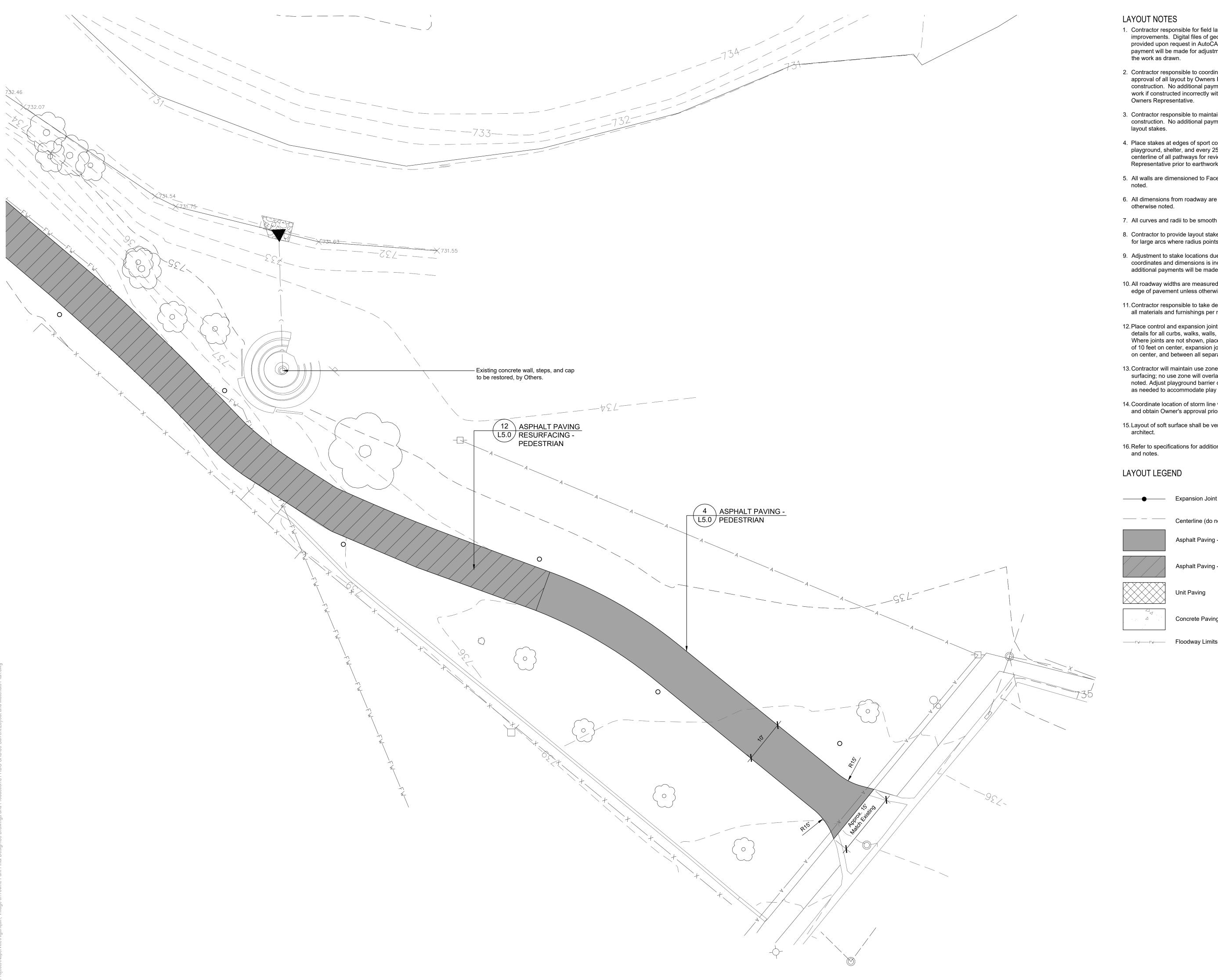
SHEET TITLE

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Layout and Materials Plan-East Pathway

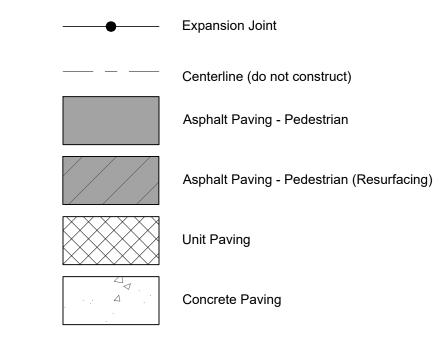
SCALE IN FEET

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LAYOUT LEGEND



22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

> PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

CONSULTANTS

Towne Park 100 Jefferson St.

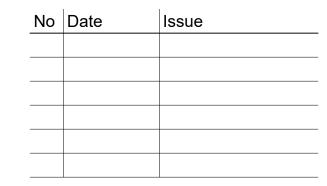
Algonquin, IL 60102

Civil Engineer Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road, Suite 600 Rosemont, IL 60018 T 847.823.0500

> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

Dewberry Architects Inc. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

> Issue for Construction May 7, 2024 **REVISIONS**



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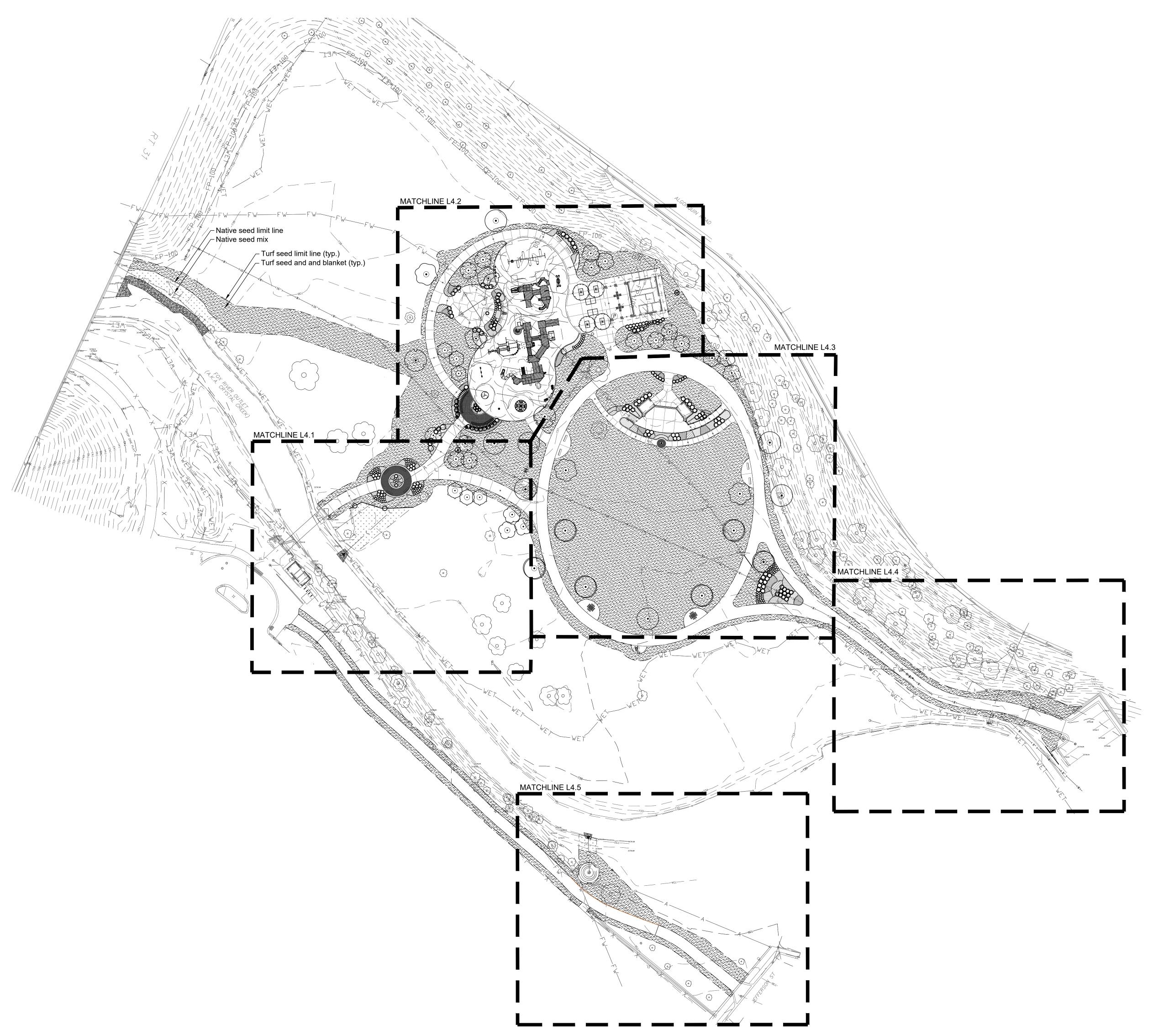
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Layout and

Materials Plan-South Connection

SCALE IN FEET

SHEET NUMBER



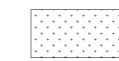
PLANTING NOTES

- 1. Seed limit line is approximate. Seed to limits of grading and disturbance. Contractor responsible for restoration of any unauthorized disruption outside of designated construction
- 2. Contractor responsible for erosion control in all seeded areas.
- 3. Tree mulch rings in turf areas are 5 foot diameter, typical. Contractor shall provide a mulch ring around all existing trees within the limit of work. Remove all existing grass from area to be mulched and provide a typical v-trench edge.
- 4. Bedlines are to be spade cut to a minimum depth of 3 inches unless otherwise shown on the plans. Curved bedlines are to be smooth and not segmented.
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- 6. Plants and other materials are quantified and summarized for the convenience of the Owner and jurisdictional agencies only. Confirm and install sufficient quantities to complete the work as drawn and specified. No additional payments will be made for materials required to complete the work as drawn and specified.
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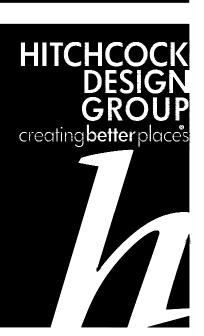
PLANTING LEGEND



Turf Seed and Blanket



Native Seed



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PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

Towne Park

100 Jefferson St. Algonquin, IL 60102 CONSULTANTS

Civil Engineer Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road, Suite 600 Rosemont, IL 60018 T 847.823.0500

> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

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Issue for Construction May 7, 2024 REVISIONS

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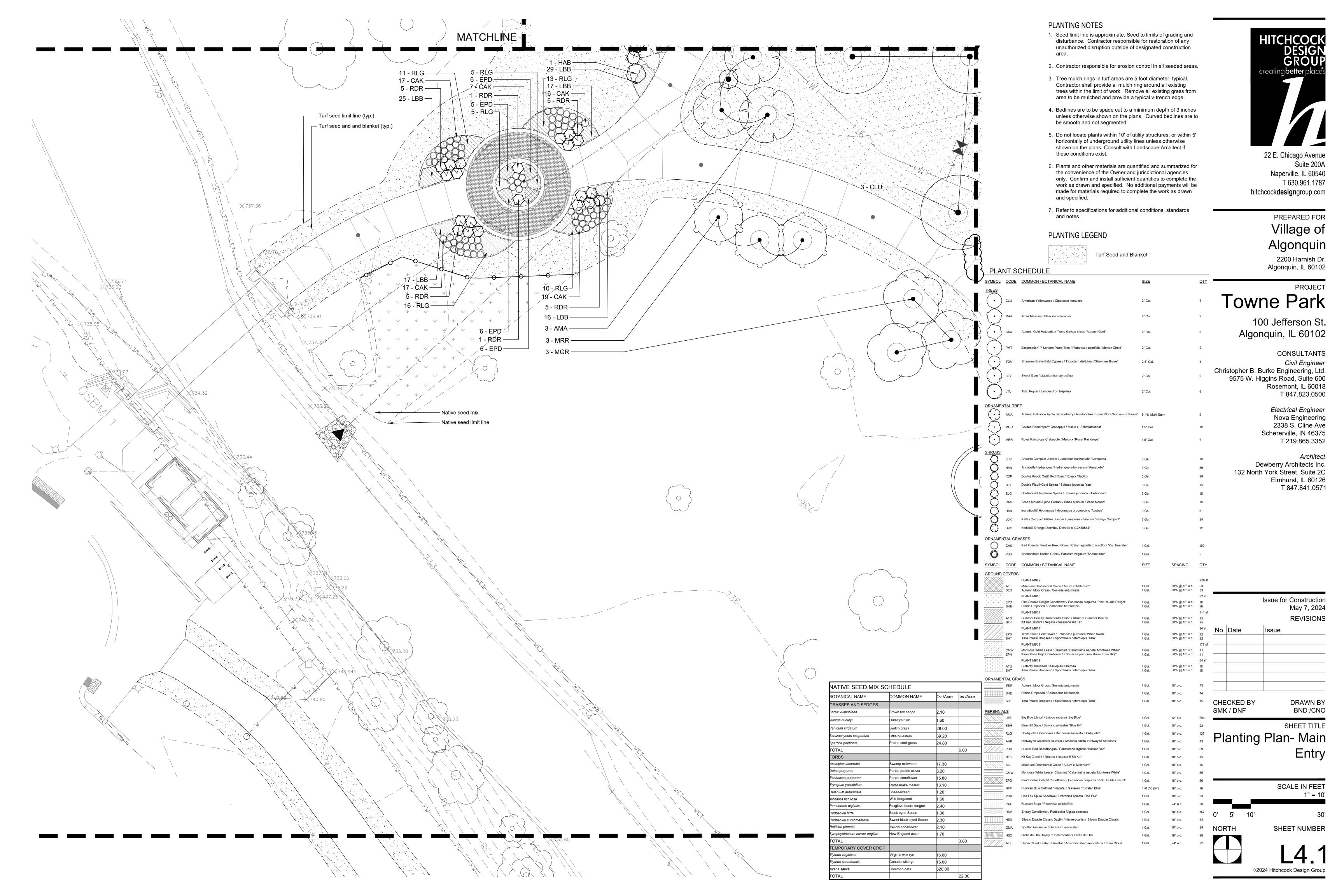
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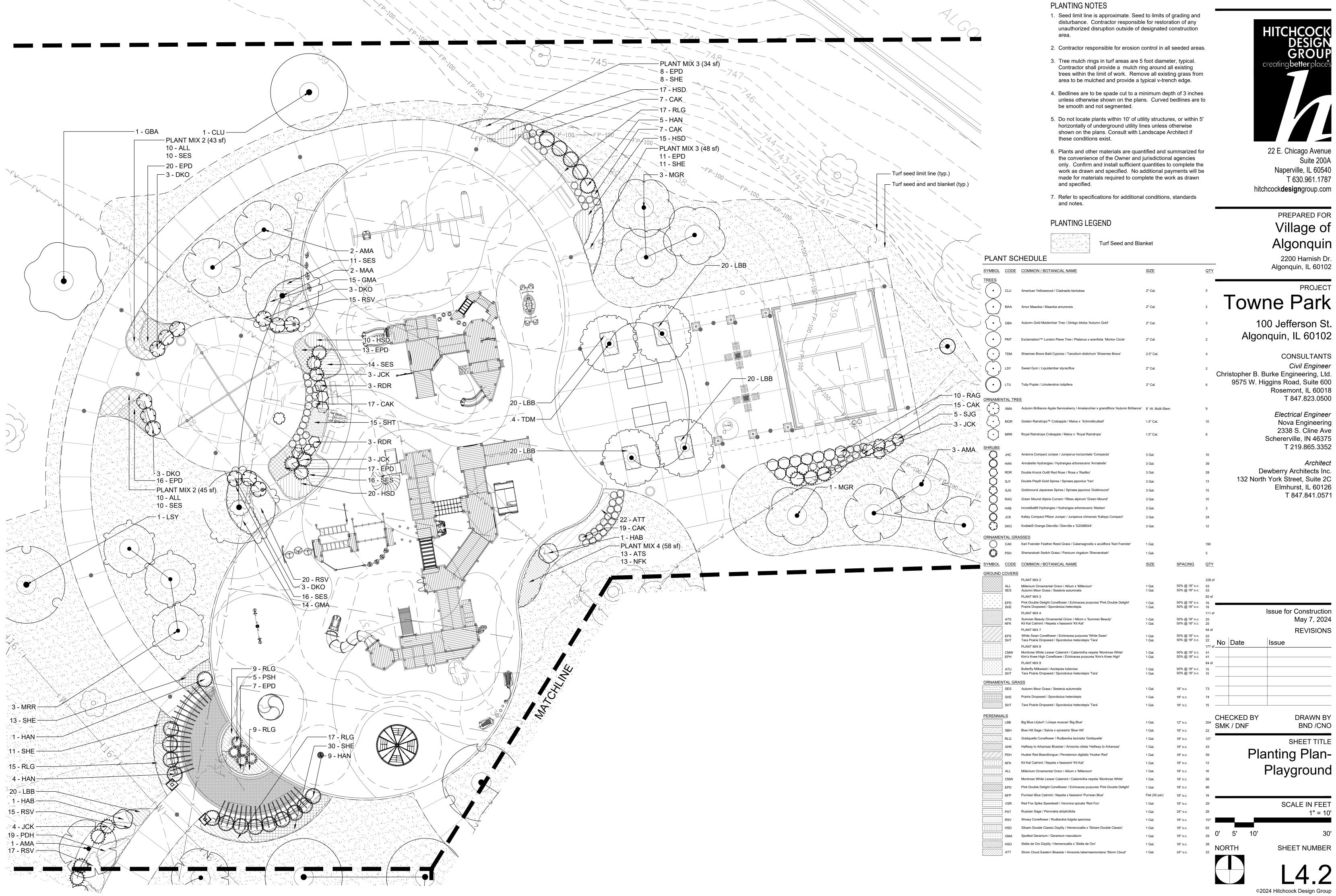
Planting Plan-Overall

SCALE IN FEET

SHEET NUMBER



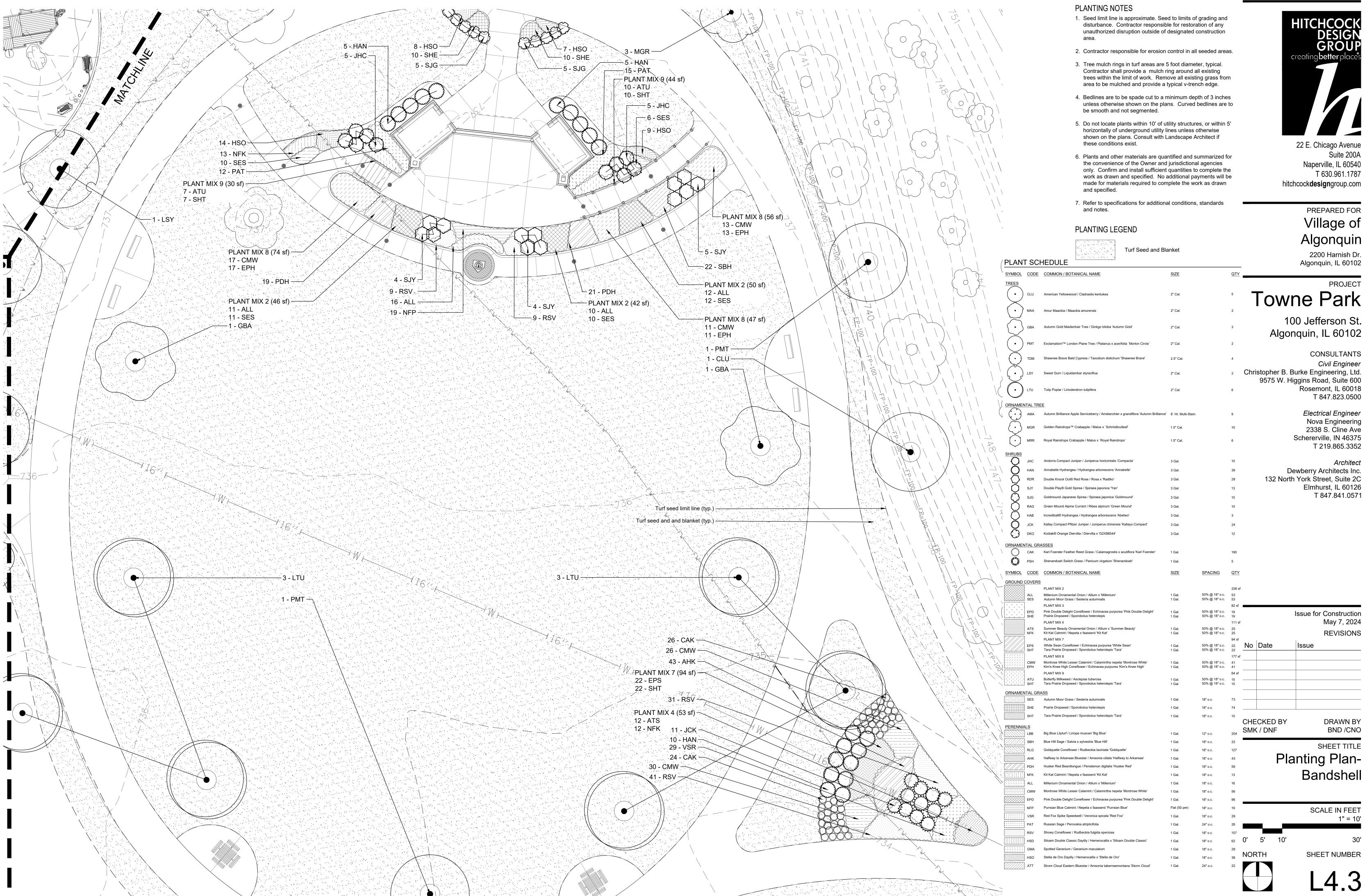




Algonquin, IL 60102

Nova Engineering 2338 S. Cline Ave T 219.865.3352

May 7, 2024 **REVISIONS**



Village of Algonquin

PROJECT

100 Jefferson St. Algonquin, IL 60102

9575 W. Higgins Road, Suite 600 Rosemont, IL 60018 T 847.823.0500

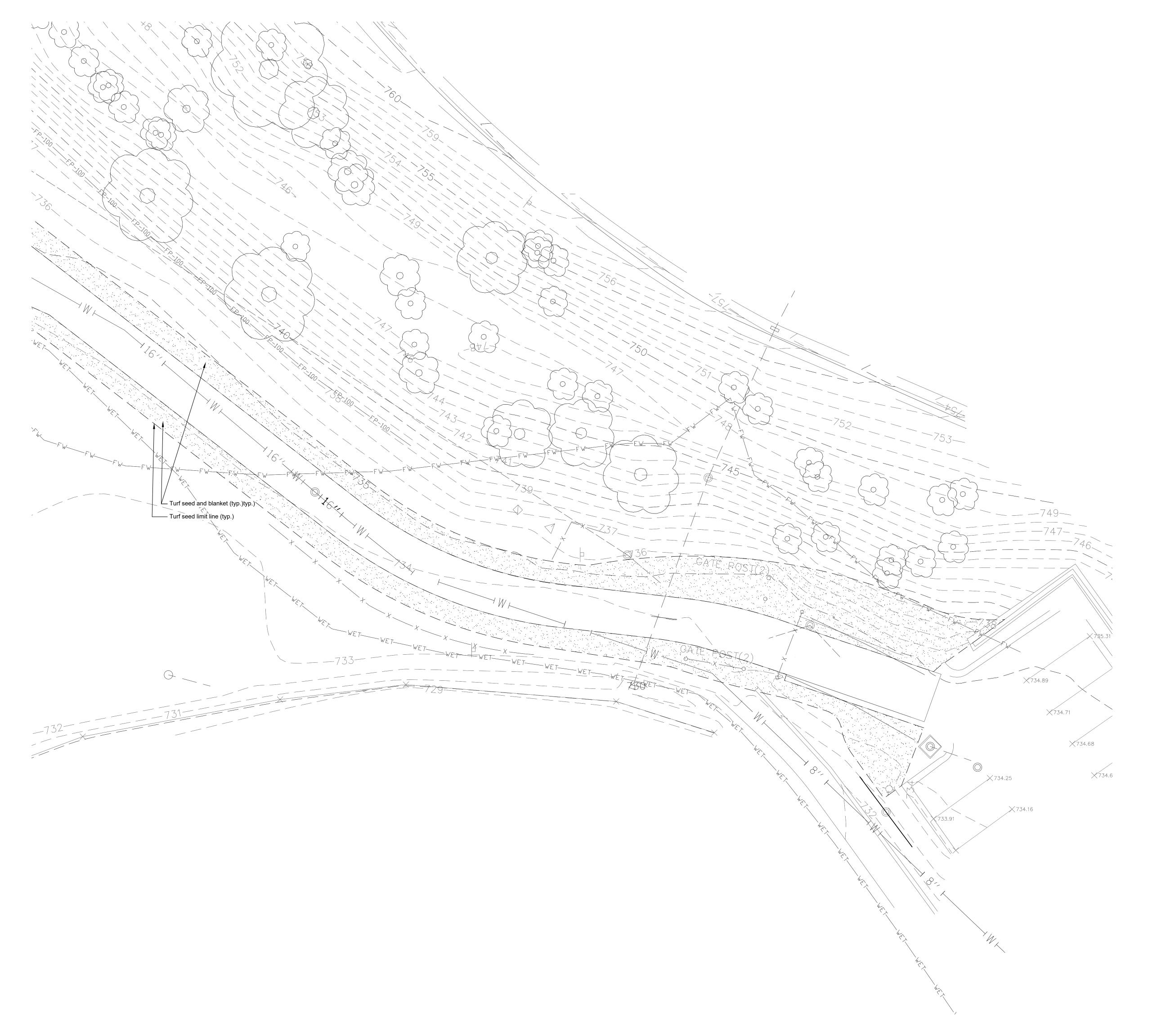
Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

Dewberry Architects Inc. Elmhurst, IL 60126 T 847.841.0571

Issue for Construction May 7, 2024 REVISIONS

Bandshell

SCALE IN FEET



PLANTING NOTES

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PLANTING LEGEND



Turf Seed and Blanket



22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

Towne Park 100 Jefferson St.

Algonquin, IL 60102 CONSULTANTS

Civil Engineer Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road, Suite 600 Rosemont, IL 60018 T 847.823.0500

> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

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Issue for Construction May 7, 2024 REVISIONS

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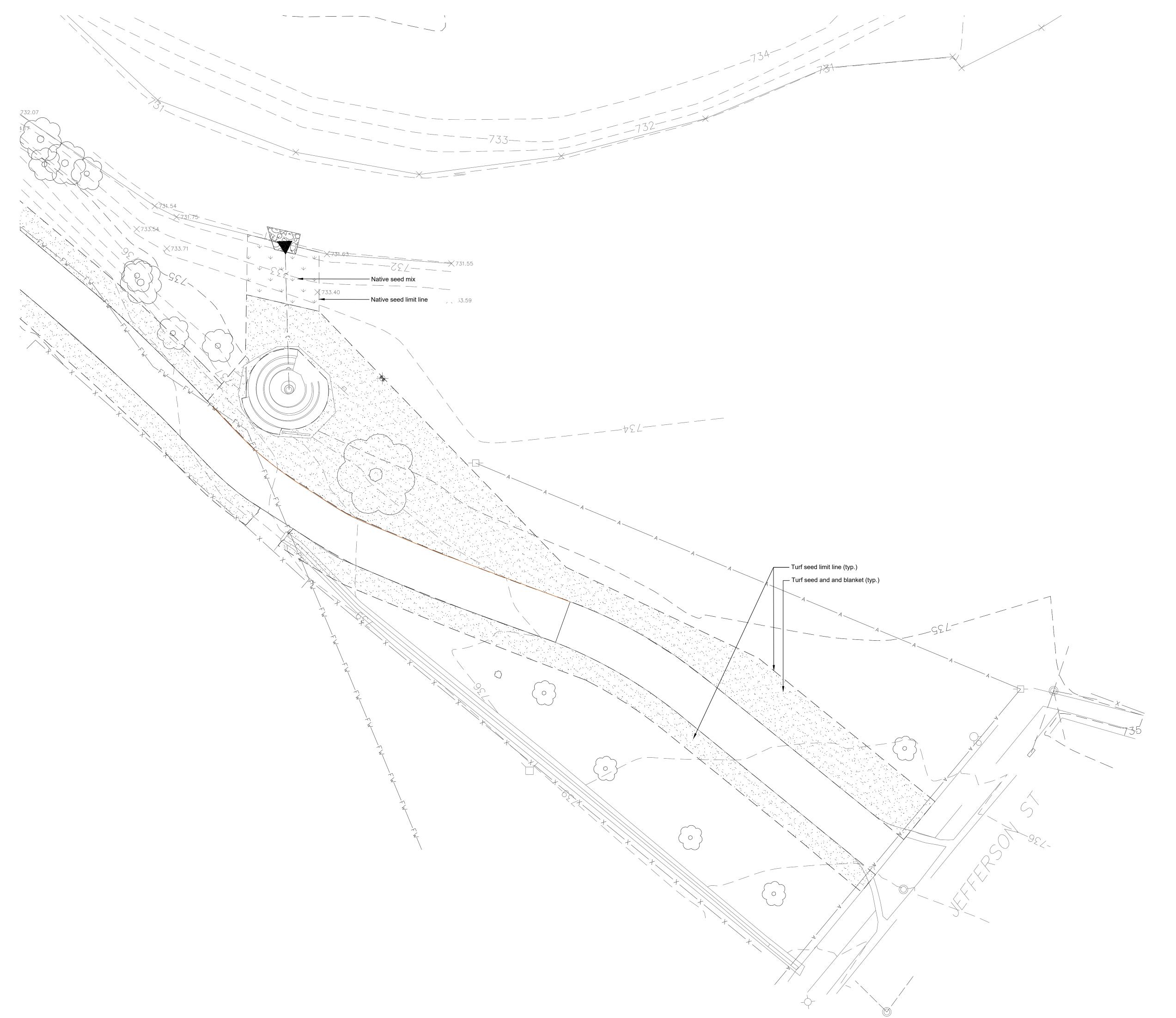
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SHEET TITLE

DRAWN BY BND /CNO

Planting Plan- East Pathway

SCALE IN FEET



PLANTING NOTES

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PLANTING LEGEND

Turf Seed and Blanket

| BOTANICAL NAME | COMMON NAME | Oz./Acre | bs./Acre |
|------------------------------|------------------------|----------|----------|
| GRASSES AND SEDGES | | | |
| Carex vulpinoidea | Brown fox sedge | 2.10 | |
| Juncus dudleyi | Dudley's rush | 1.60 | |
| Panicum virgatum | Switch grass | 29.00 | |
| Schizachyrium scoparium | Little bluestem | 39.20 | |
| Spartina pectinata | Prairie cord grass | 24.80 | |
| TOTAL | | | 6.00 |
| FORBS | | | |
| Asclepias incarnata | Swamp milkweed | 17.30 | |
| Dalea purpurea | Purple prairie clover | 3.20 | |
| Echinacea purpurea | Purple coneflower | 15.80 | |
| Eryngium yuccifolium | Rattlesnake master | 13.10 | |
| Helenium autumnale | Sneezeweed | 1.20 | |
| Monarda fistulosa | Wild bergamot | 1.60 | |
| Penstomen digitalis | Foxglove beard tongue | 2.40 | |
| Rudbeckia hirta | Black eyed Susan | 1.00 | |
| Rudbeckia subtomentosa | Sweet black-eyed Susan | 2.30 | |
| Ratibida pinnata | Yellow coneflower | 2.10 | |
| Symphyotrichum novae-angliae | New England aster | 1.70 | |
| TOTAL | | | 3.80 |
| TEMPORARY COVER CROP | | | |
| Elymus virginicus | Virginia wild rye | 16.00 | |
| Elymus canadensis | Canada wild rye | 16.00 | |
| Avena sativa | Common oats | 320.00 | |
| TOTAL | | | 22.00 |



22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

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CONSULTANTS

Civil Engineer

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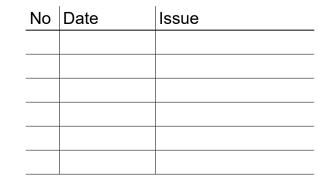
Rosemont, IL 60018

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Electrical Engineer
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SHEET TITLE

DRAWN BY BND /CNO

Planting Plan-South Connection

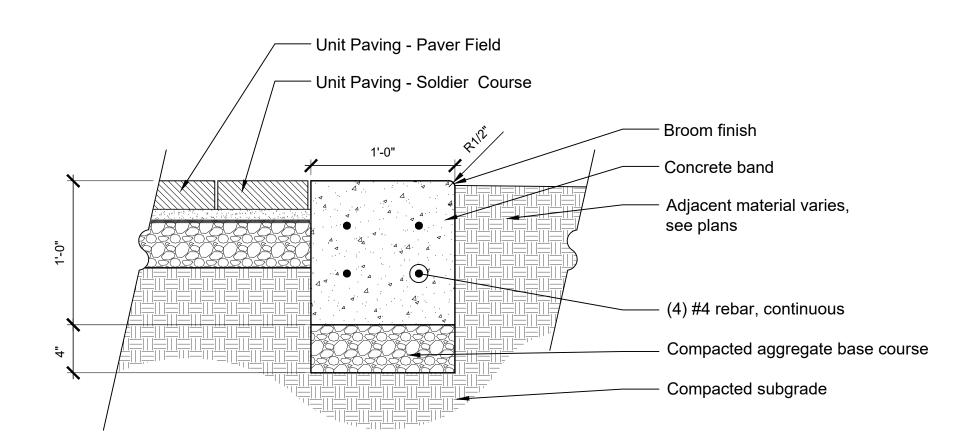
> SCALE IN FEET 1" = 10'

0' 5'

30' SHEET NUMBER

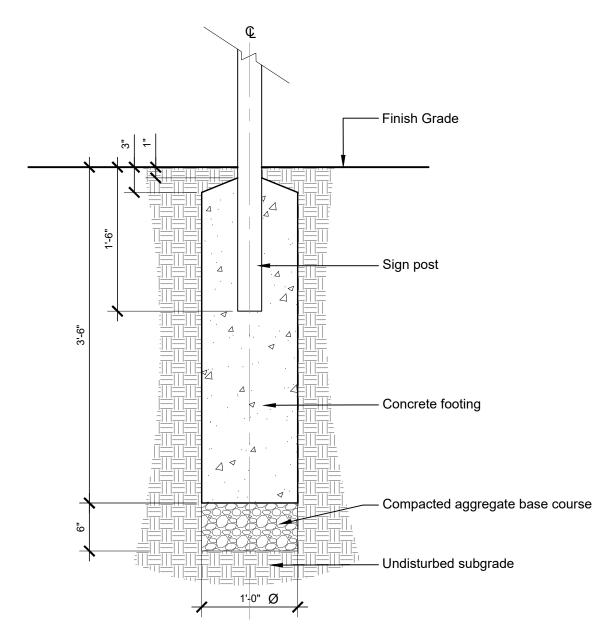


L4.5

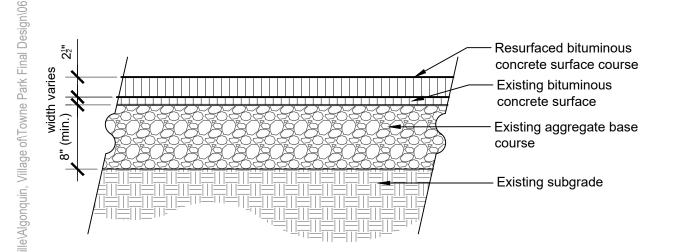


CONCRETE BAND

1 1/2" = 1'-0"



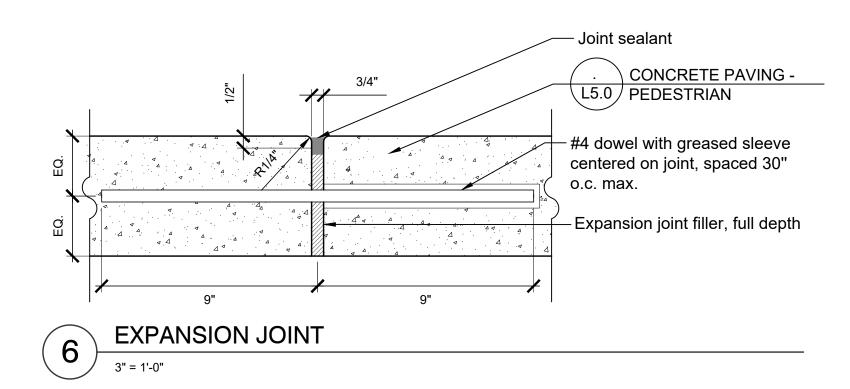
SIGN FOOTING

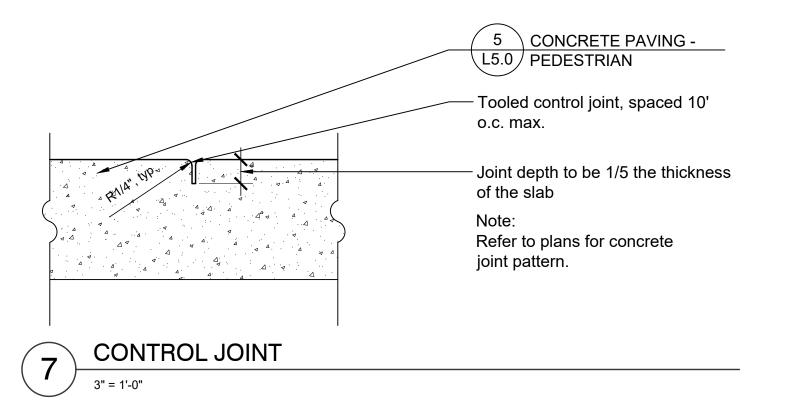


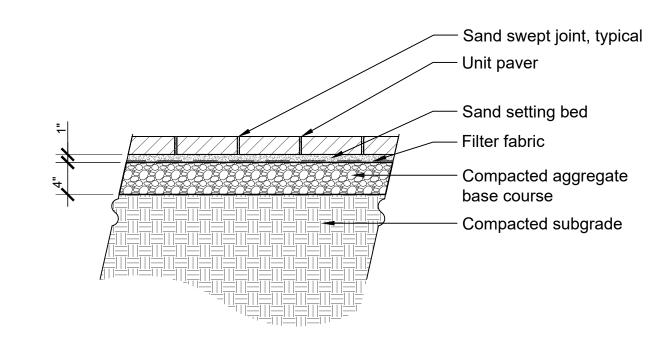
ASPHALT PAVING RESURFACING - PEDESTRIAN

Width varies see plans 4' minimum - Medium broom finish - Compacted aggregate base course, ca-6 Compacted subgrade

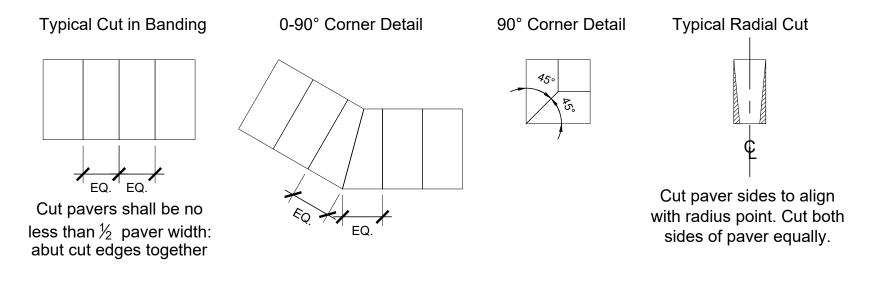
CONCRETE PAVING - PEDESTRIAN 1 1/2" = 1'-0" P-NN-VIL-TOWN-03



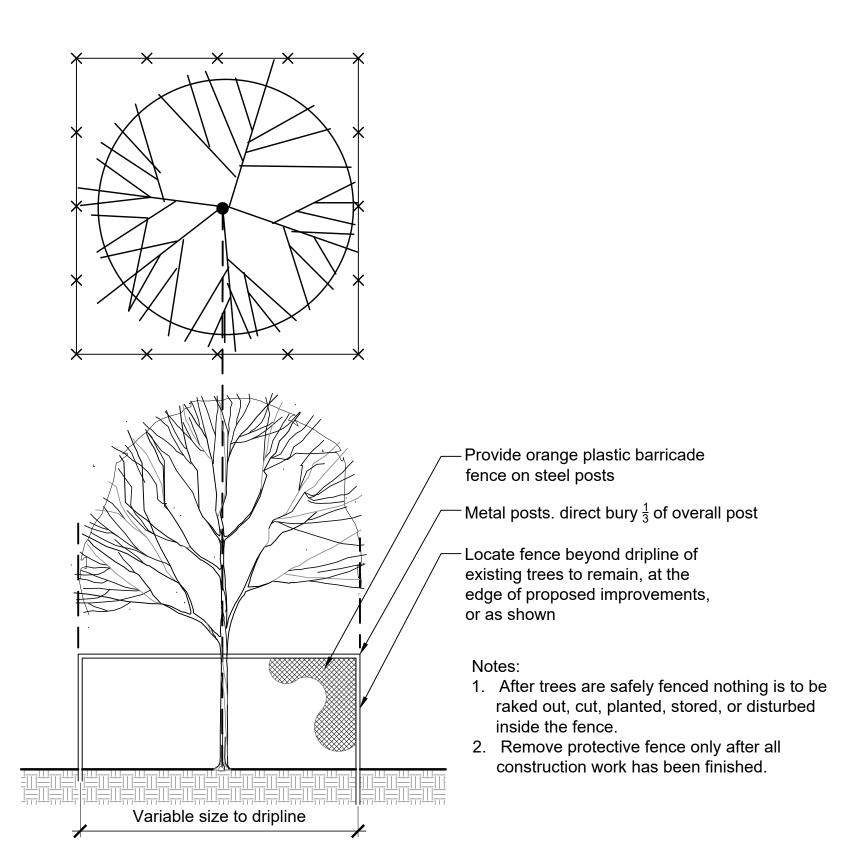




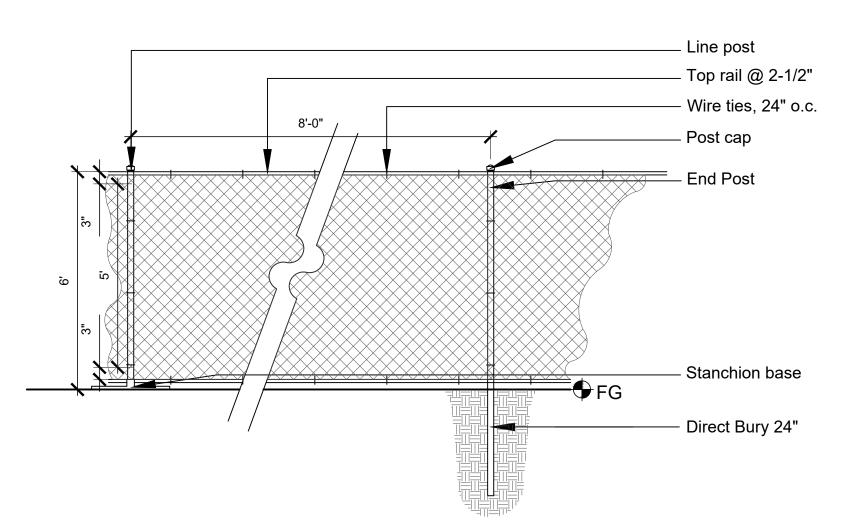
UNIT PAVERS



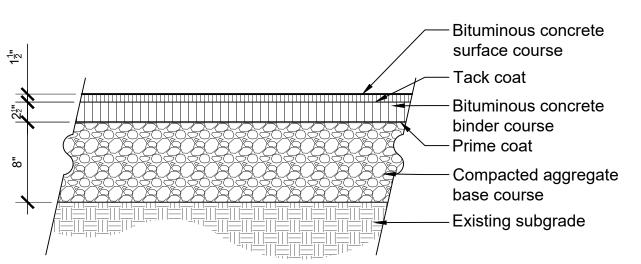
TYPICAL PAVER CUTS



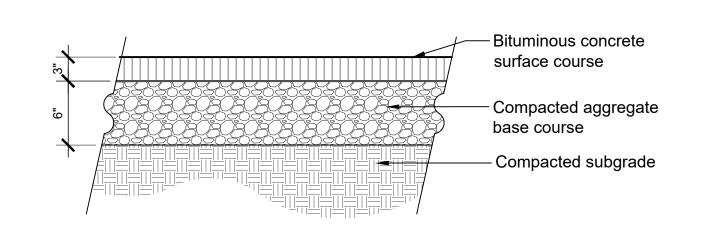
TREE PROTECTION FENCE 1/2" = 1'-0"



TEMPORARY CONSTRUCTION FENCE



ASPHALT PAVING - VEHICULAR 3



ASPHALT PAVING - PEDESTRIAN

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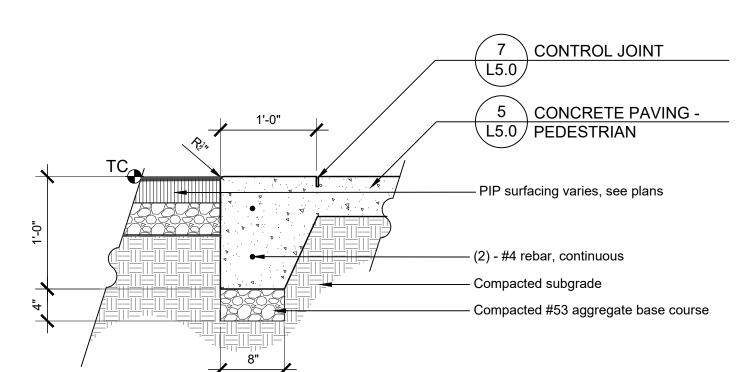
SHEET TITLE Details

SCALE IN FEET

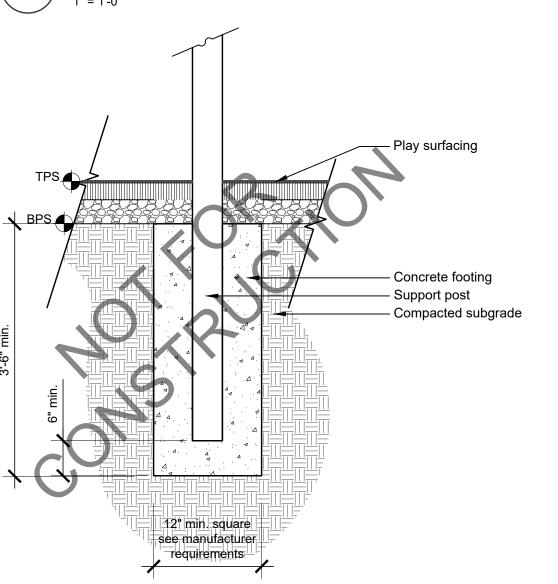
SHEET NUMBER

Place Expansion Joints 30' o.c. unless otherwise noted.

EXPANSION JOINT AT PLAYGROUND CURB

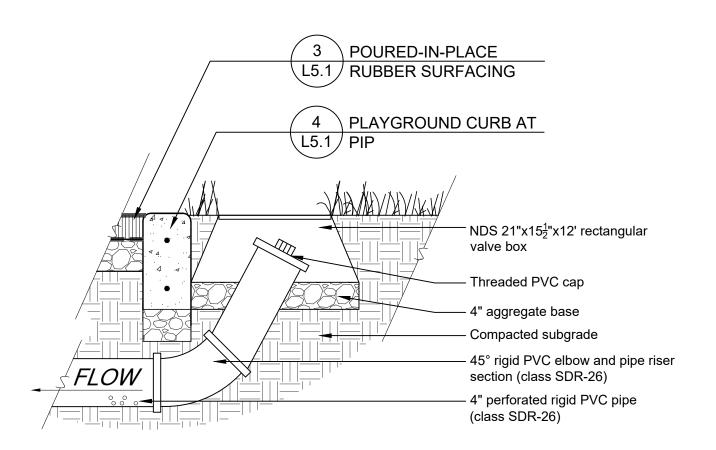


THICKENED EDGE CONCRETE PAVING AT PIP 6

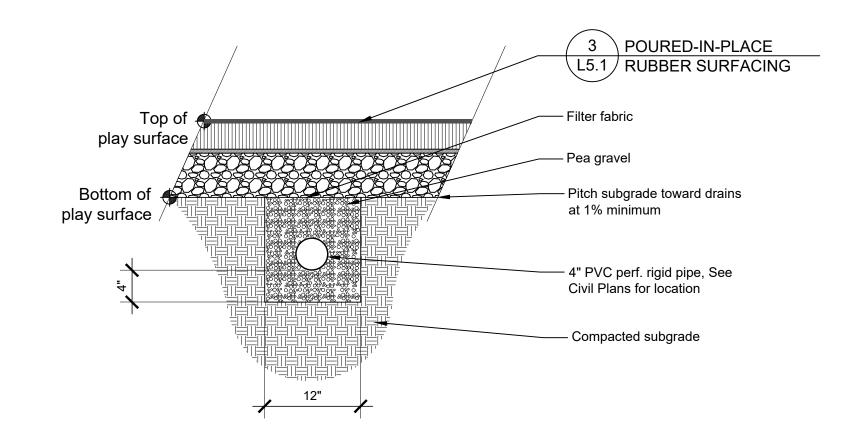


PLAY STRUCTURE POST FOOTING

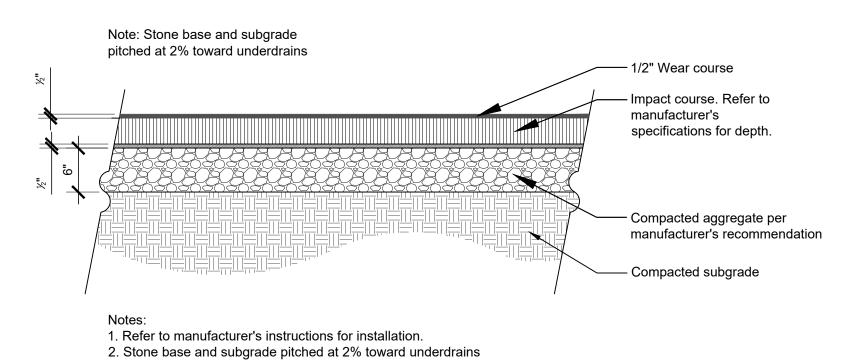
3/4" = 1'-0"



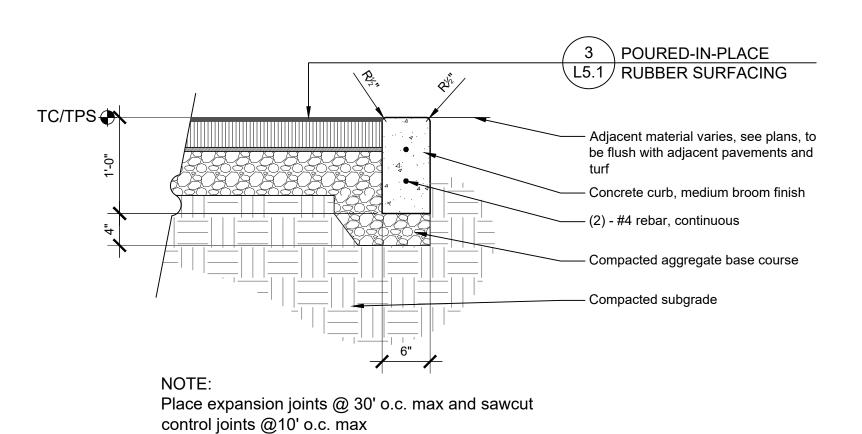
PLAYGROUND CLEANOUT AT POUR IN PLACE



PLAYGROUND UNDERDRAIN AT POUR IN PLACE 1" = 1'-0"



POURED-IN-PLACE RUBBER SURFACING



PLAYGROUND CURB AT PIP 1" = 1'-0"



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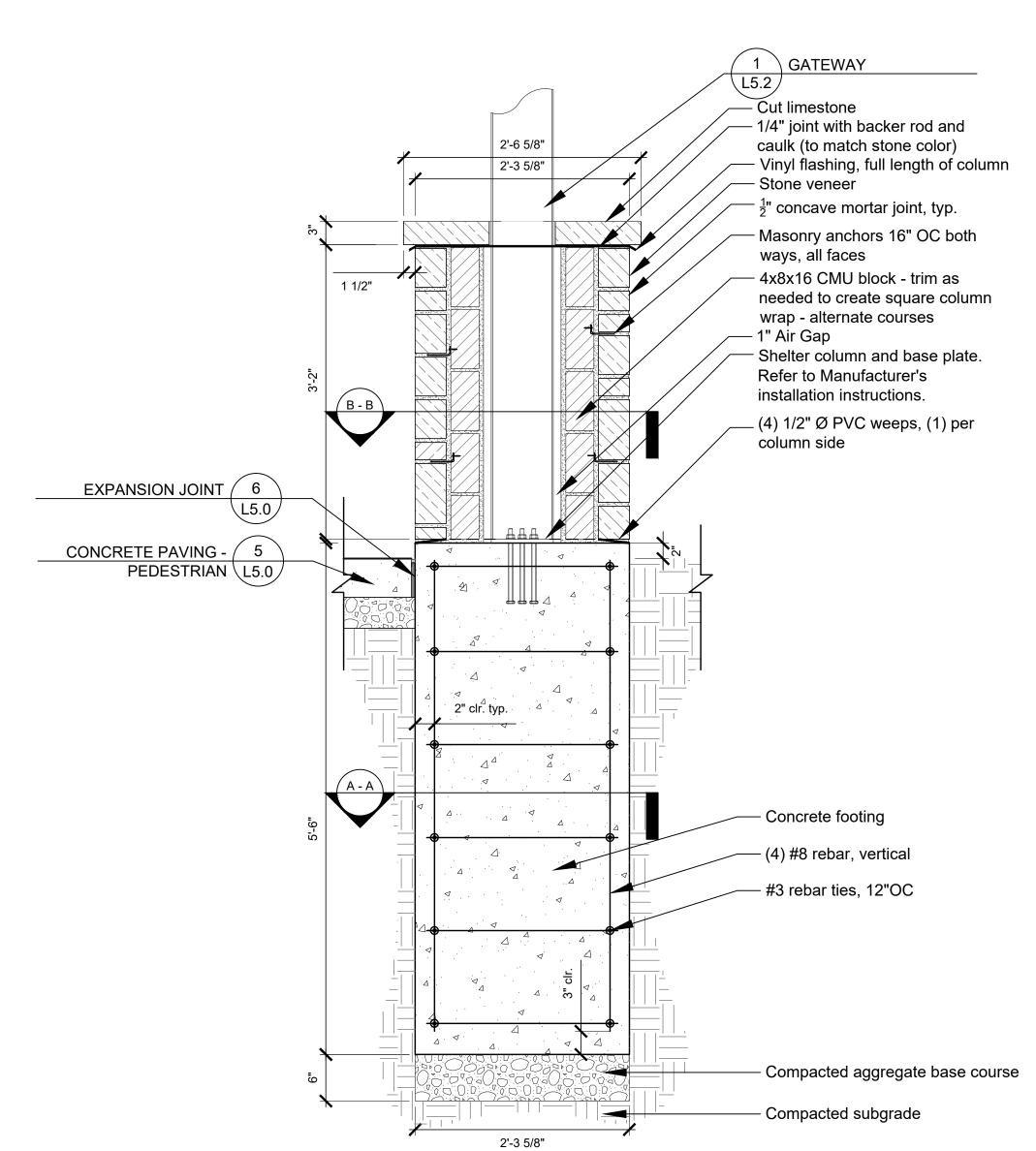
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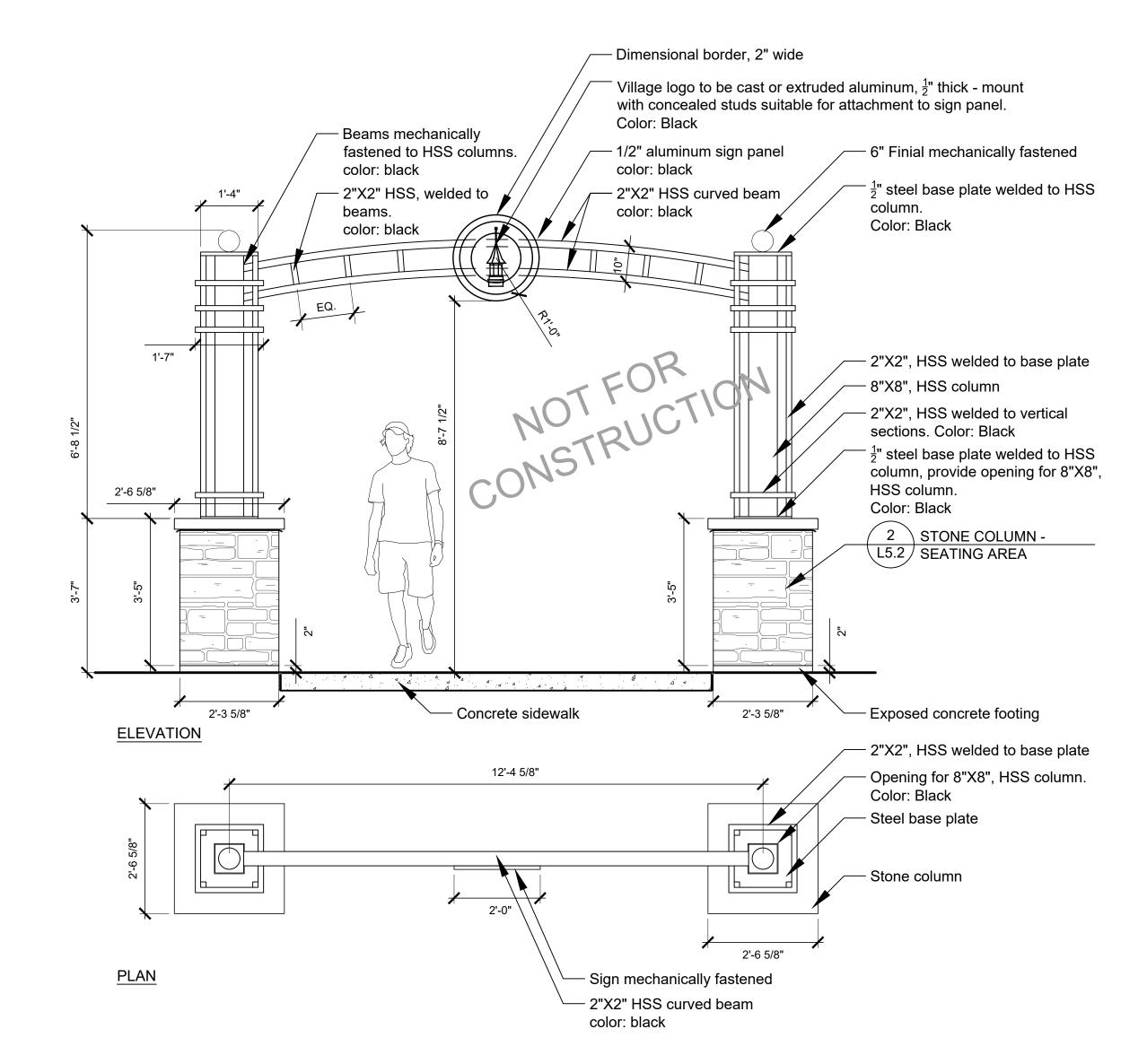
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> SHEET TITLE **Details**

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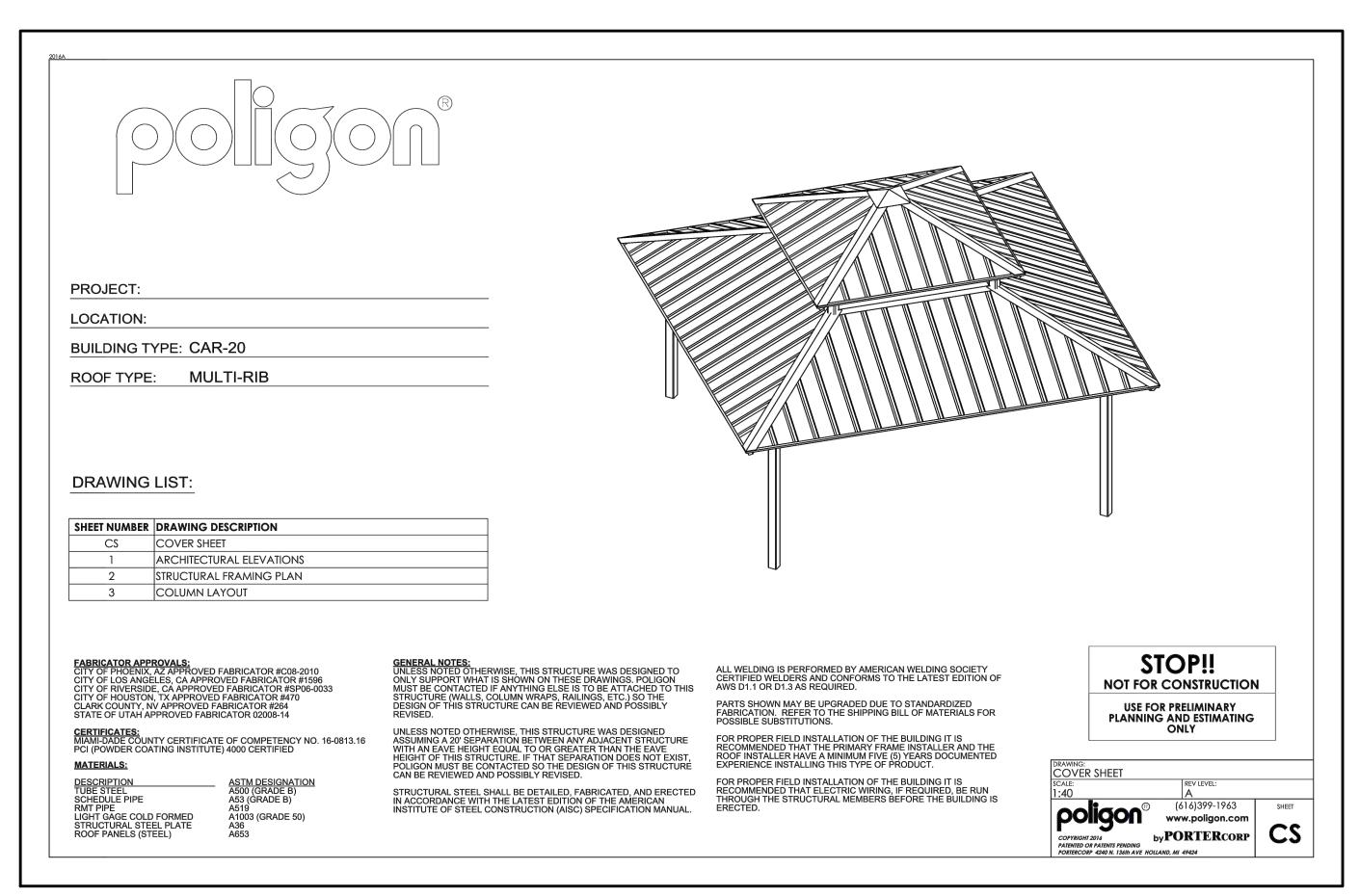
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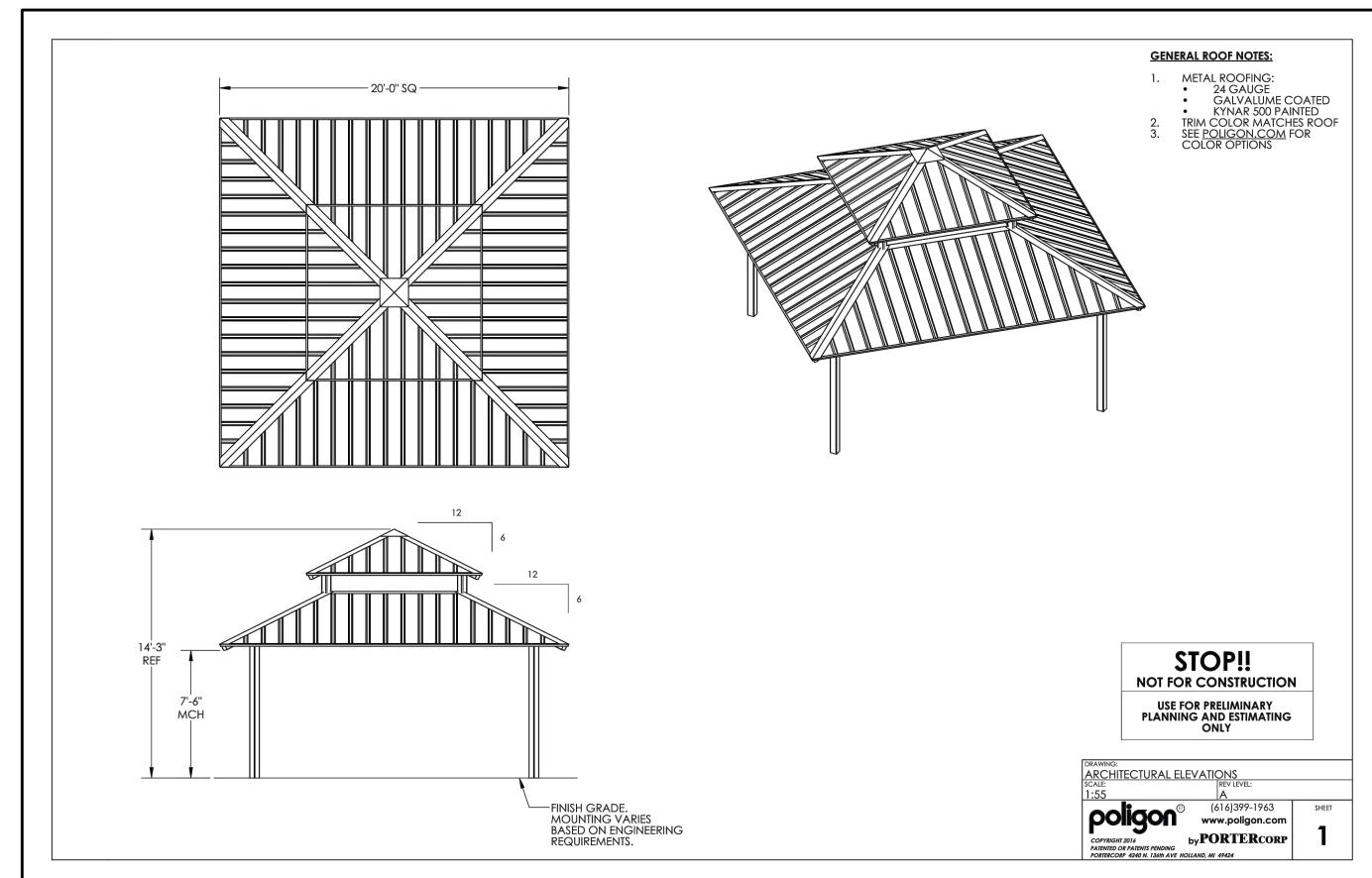
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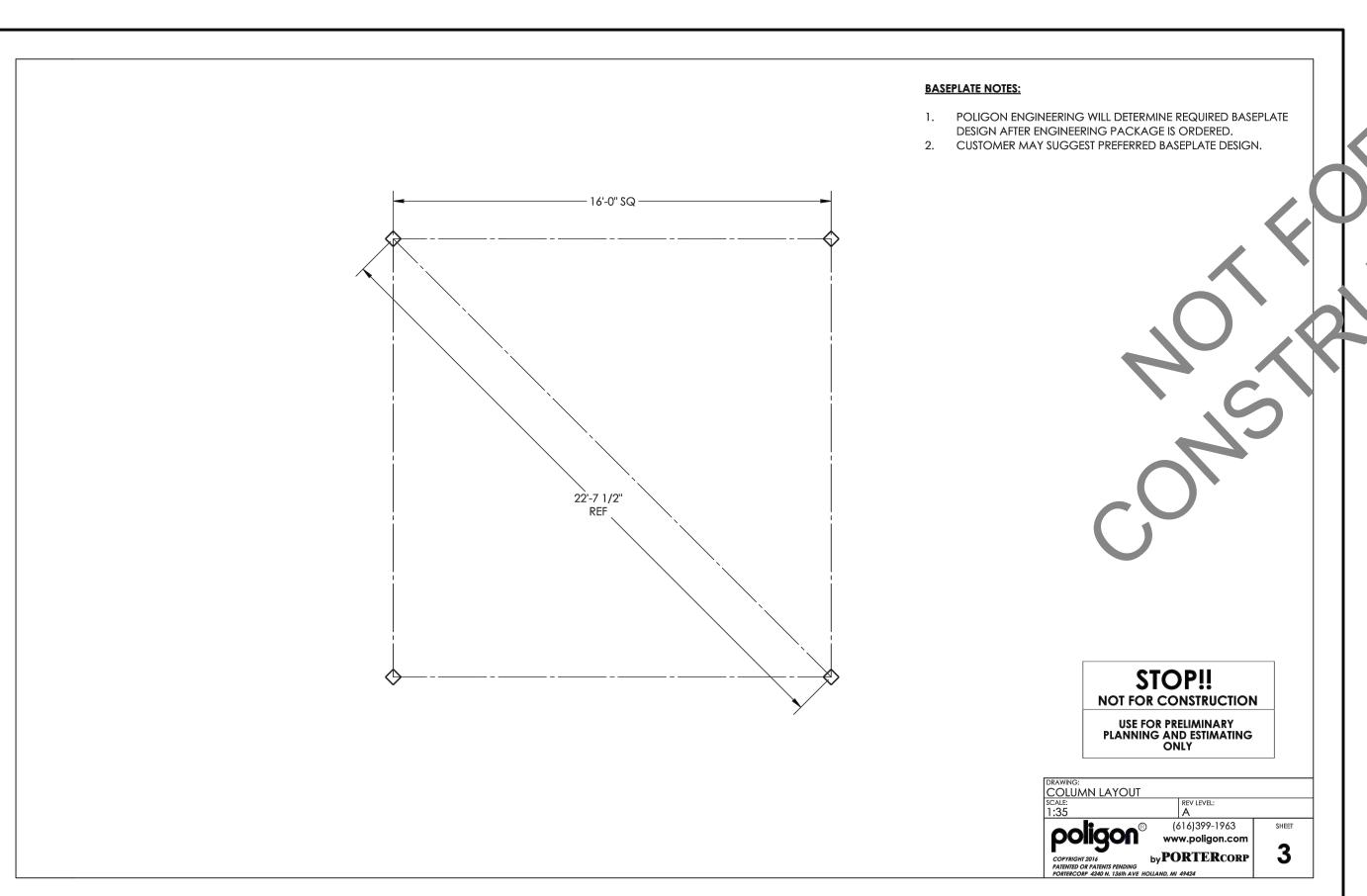
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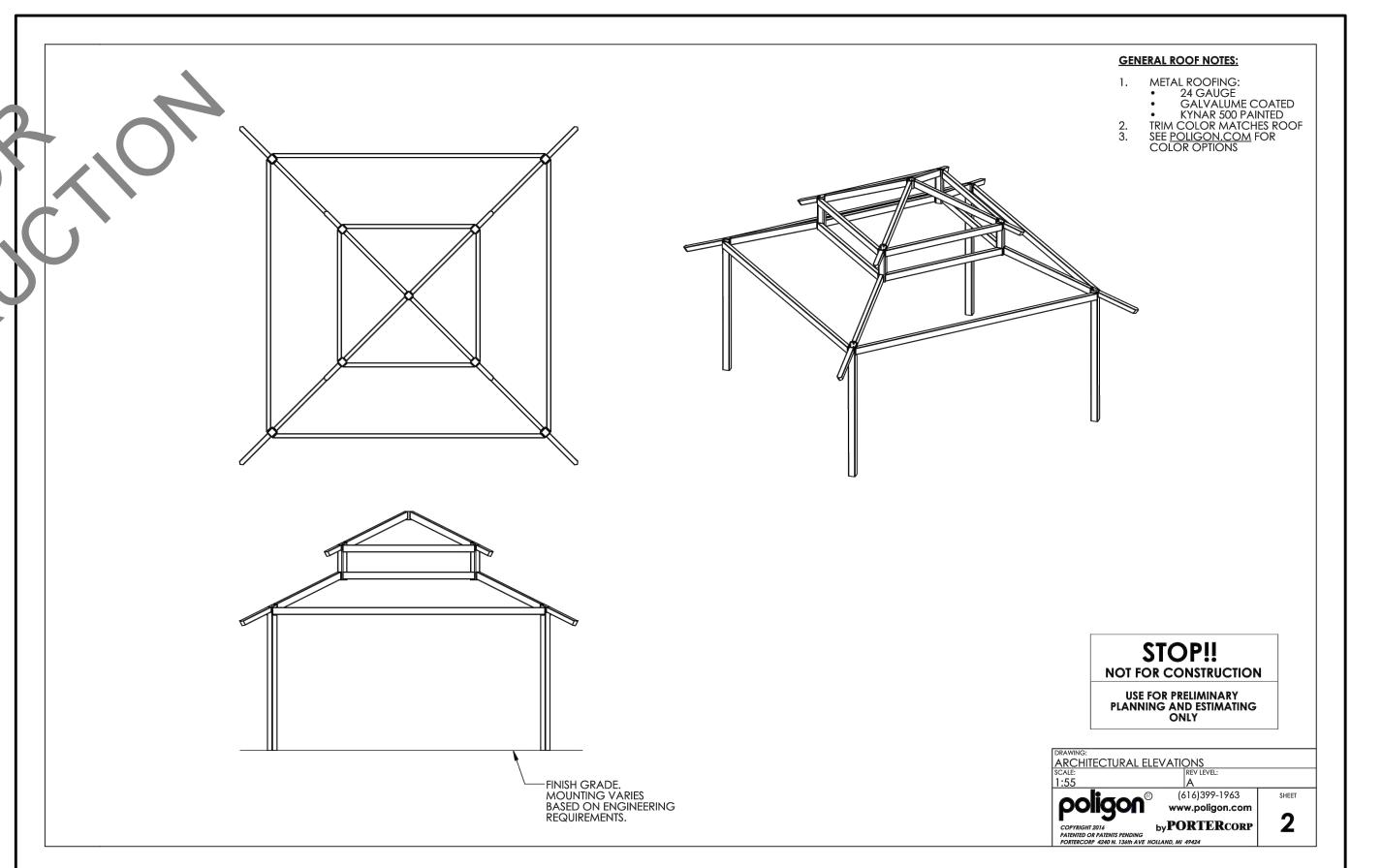
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GATEWAY









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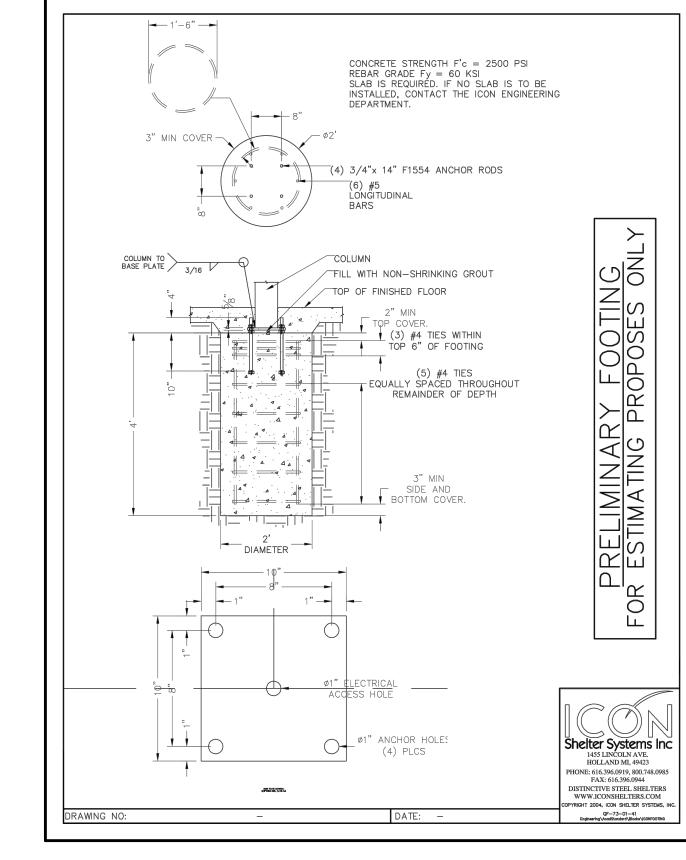
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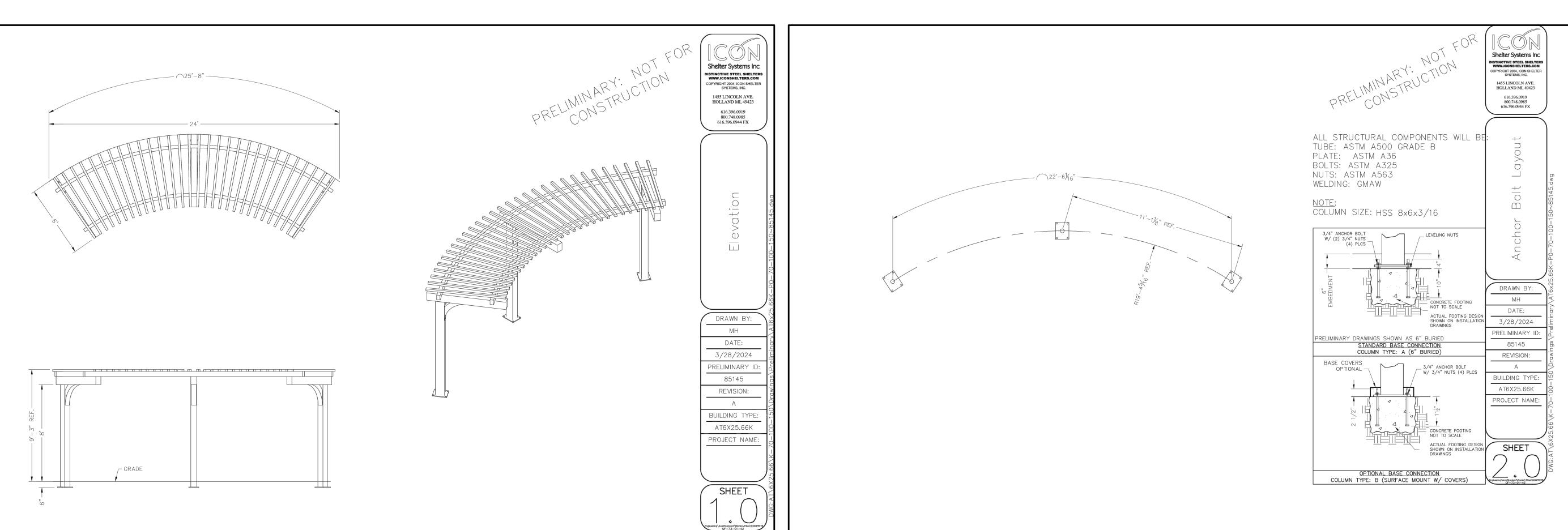
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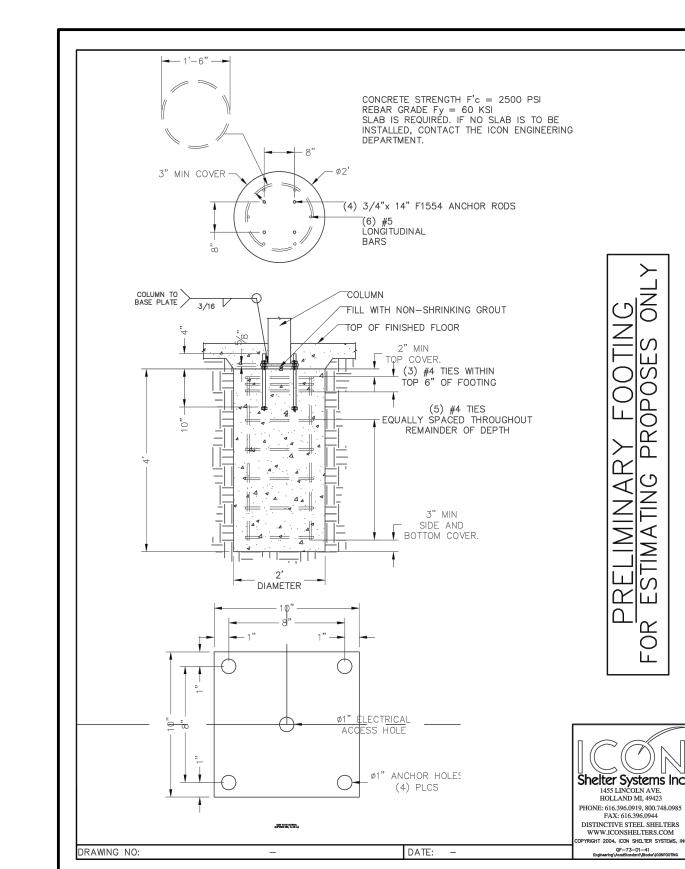
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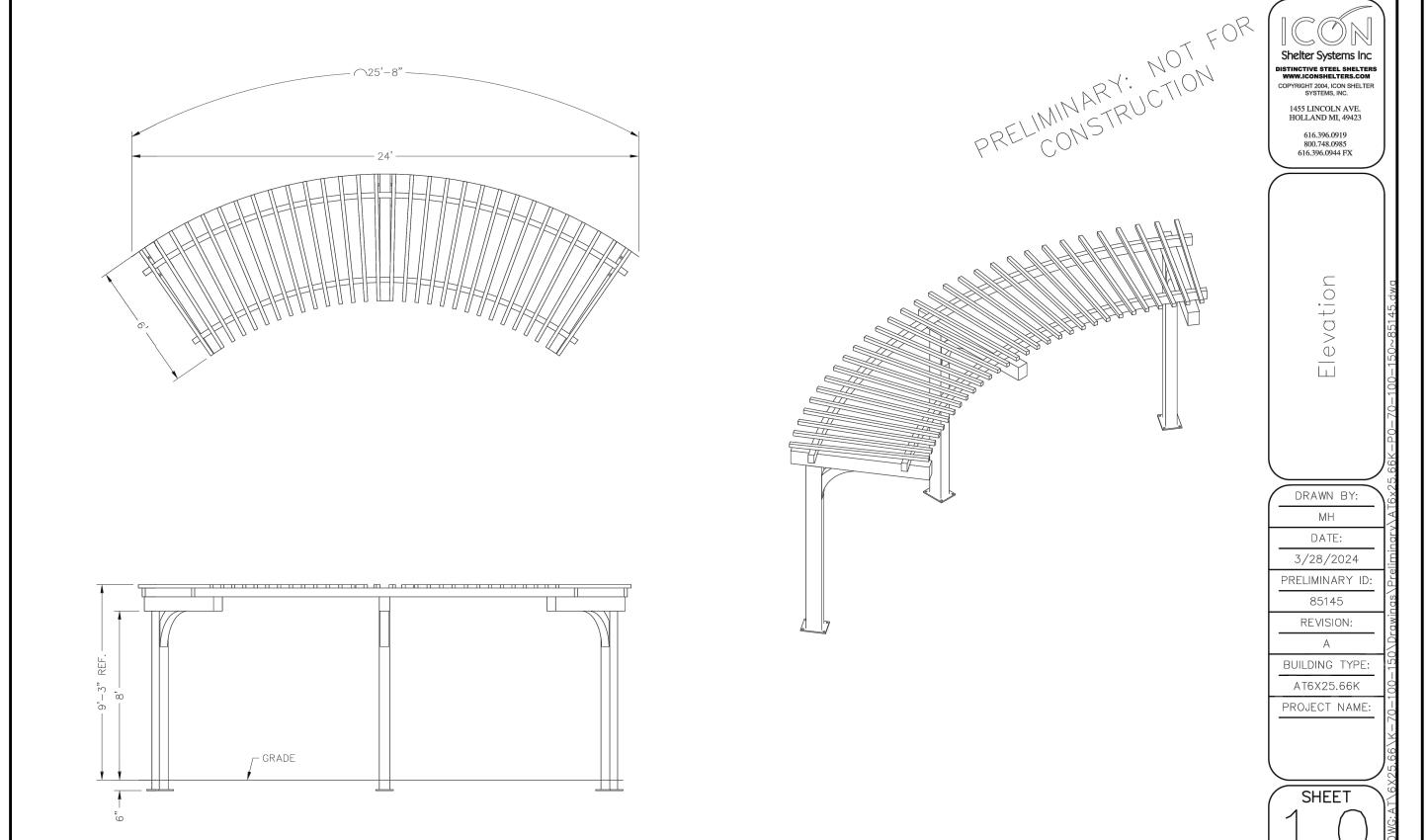
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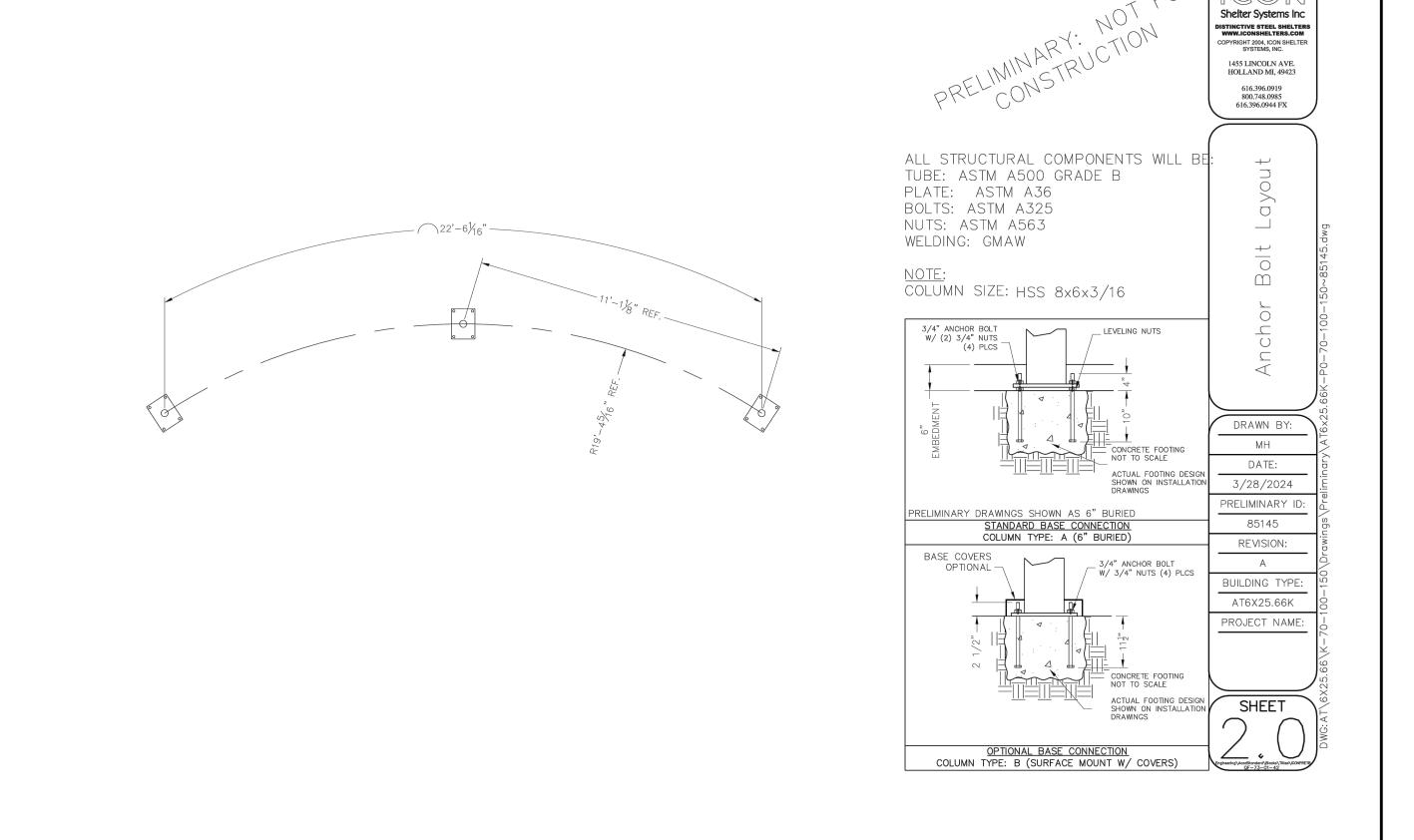
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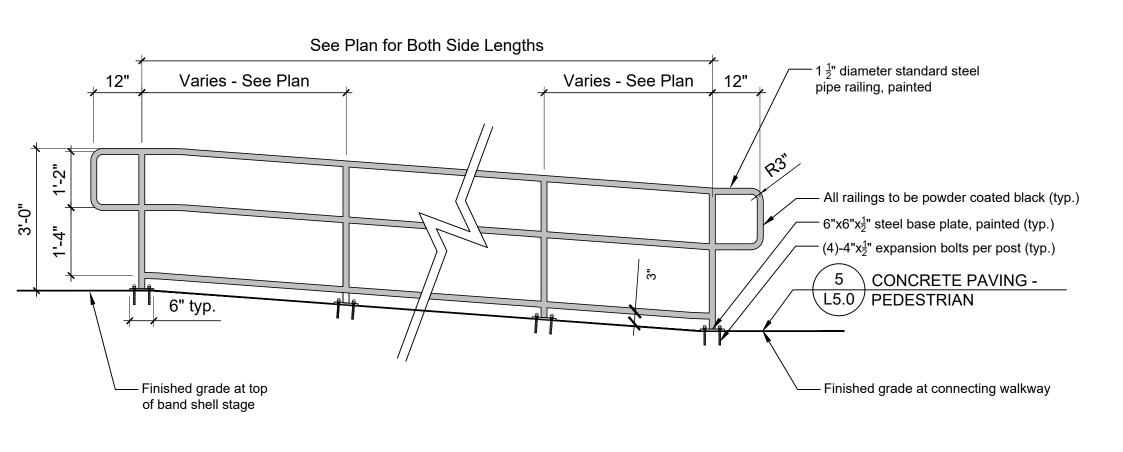
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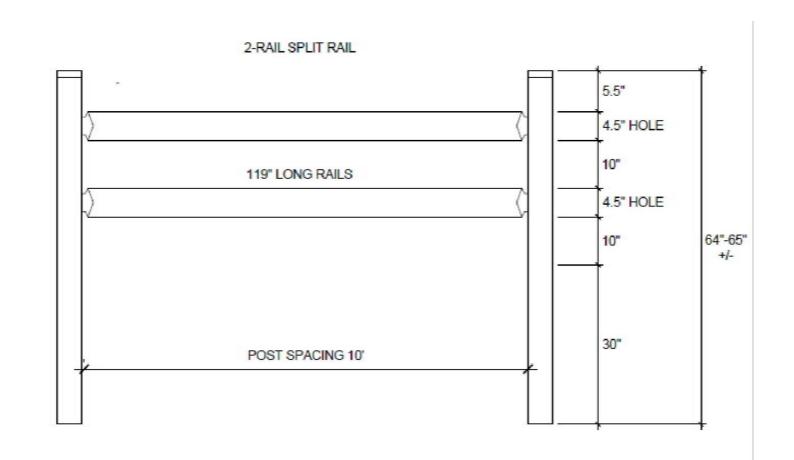
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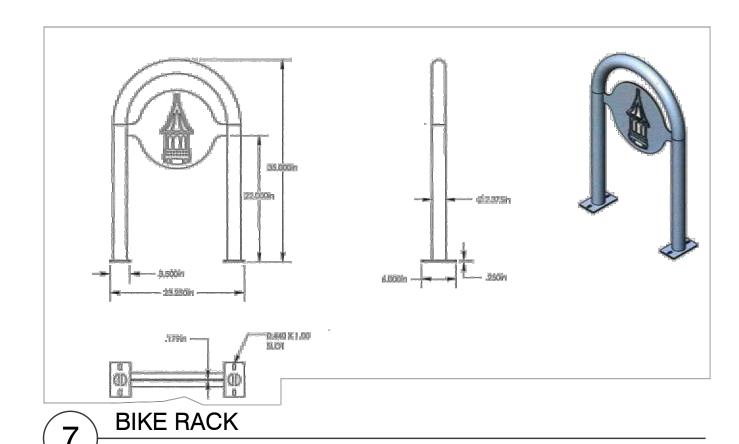


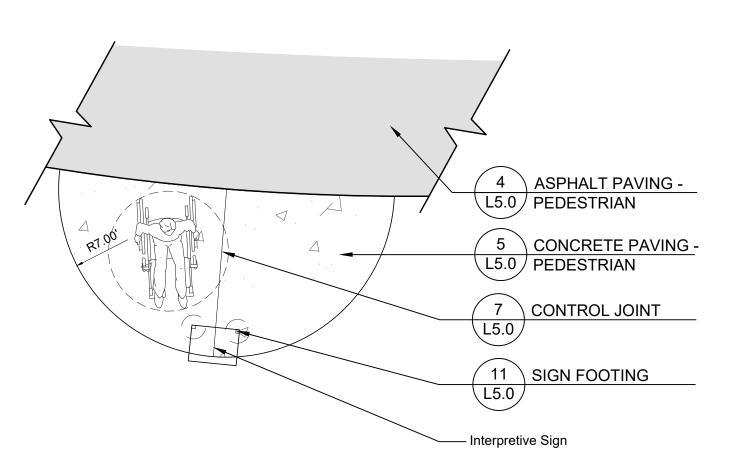


GUARDRAIL 1/2" = 1'-0"

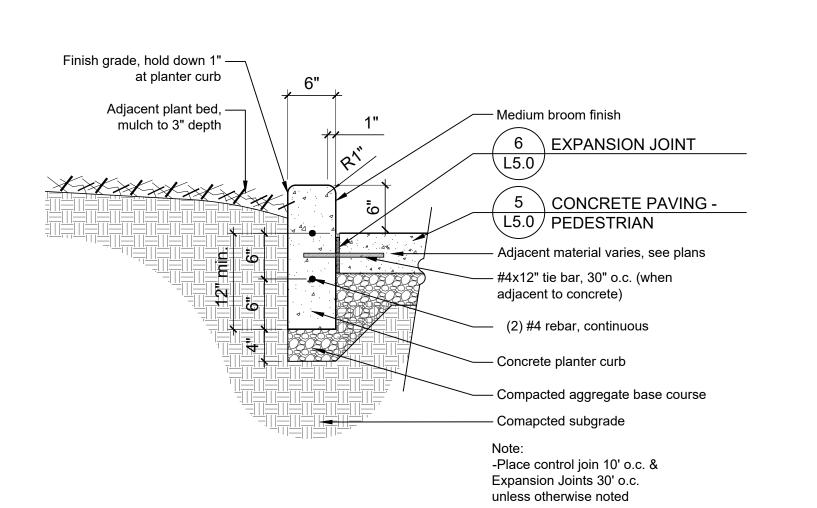


SPLIT RAIL FENCE

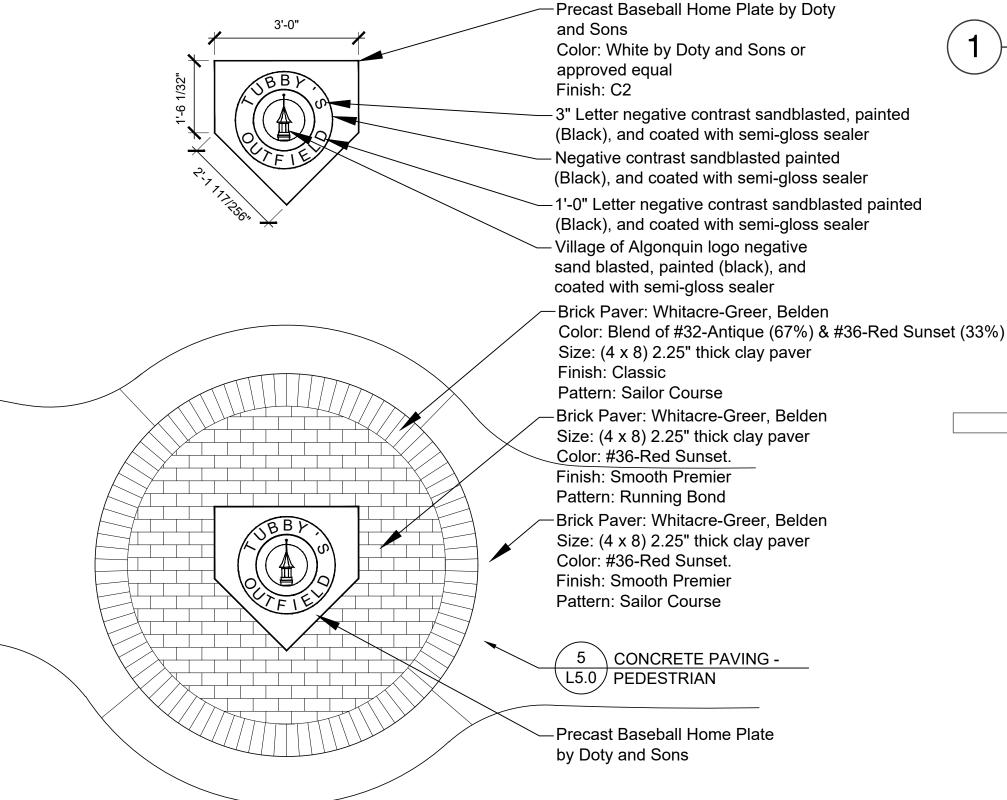




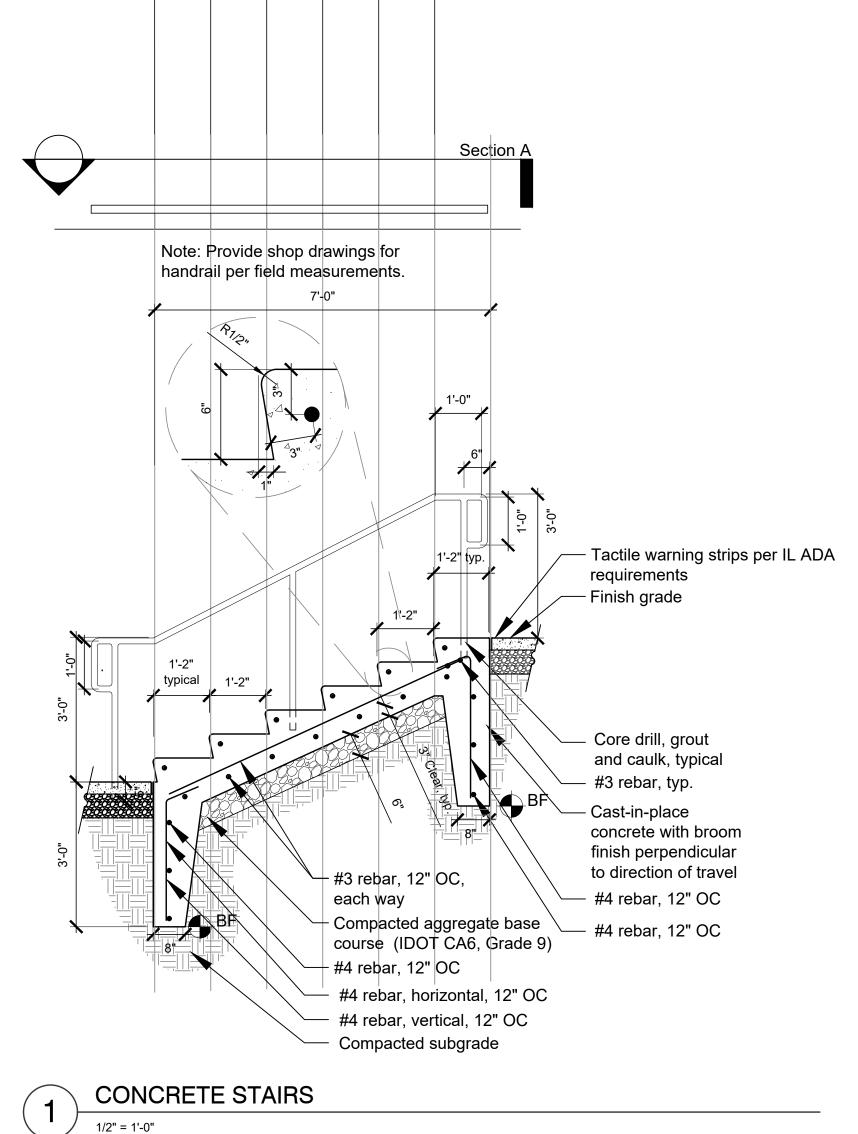
INTERPRETIVE SIGN - PLAN VIEW

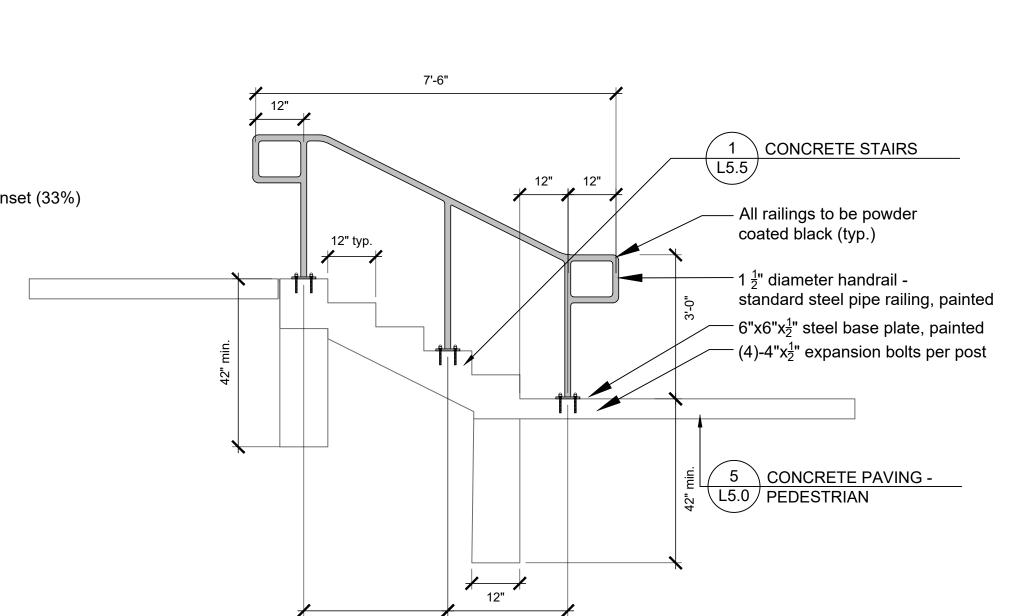


PLANTER CURB



PRECAST HOME PLATE MEDALLION WITH PAVERS





BANDSHELL HANDRAIL



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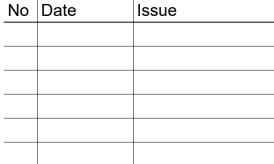
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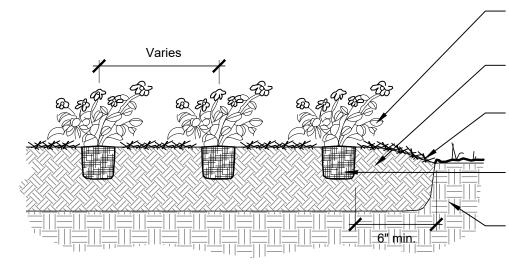
> SHEET TITLE **Details**

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SCALE IN FEET

SHEET NUMBER



Set plants at same level as grown in container

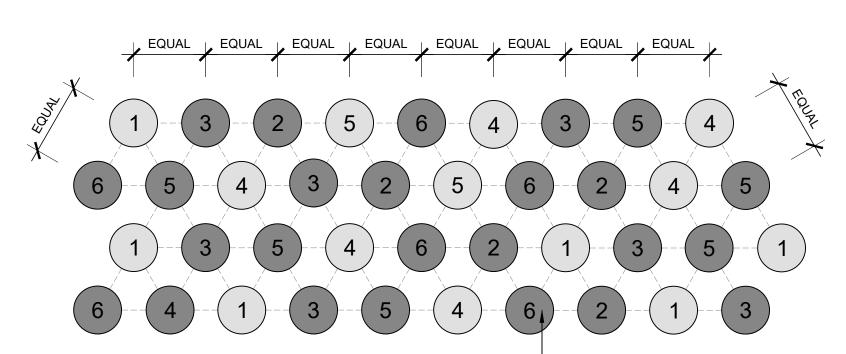
Prepare entire planting bed to a 12" min. depth with amended topsoil
2" deep mulch. Work mulch under branches.

— Remove containers and any wrapping, tag, twine, wires, etc.

Undisturbed subgrade

Note:
Root mass of pot bound plants should be loosened before planting

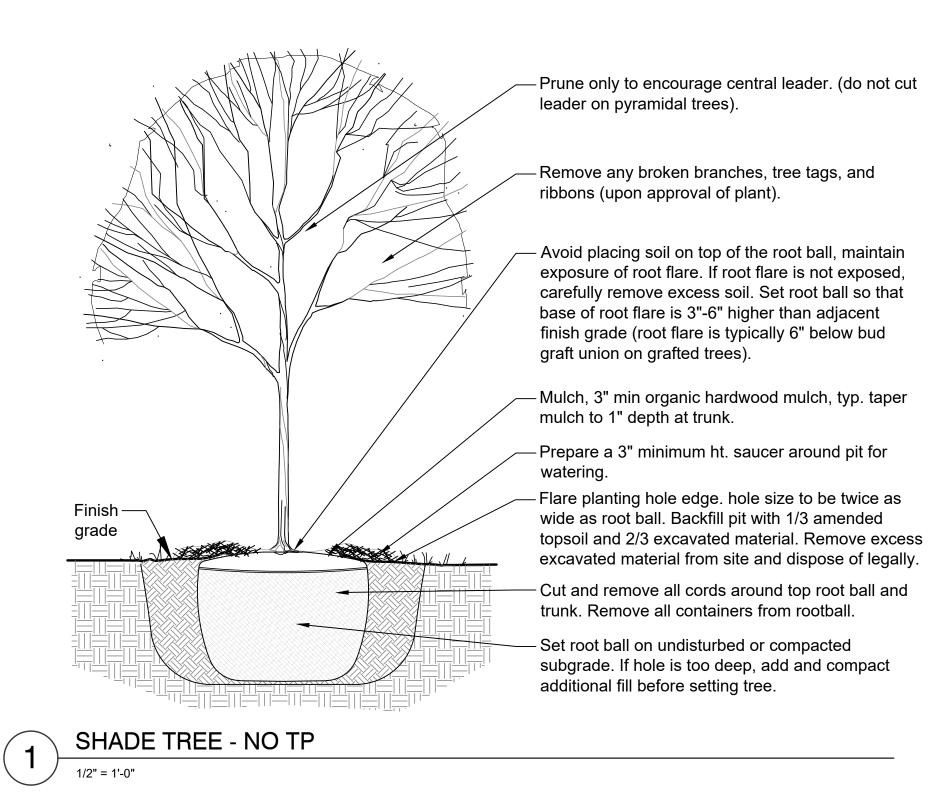




Note: 1. Spa

 Spacing is to be triangular
 Intent is for plant species to be randomly placed when multiple species are within one bed Plant species quantities spacing's vary per planting bed, see planting plans for individual beds.





Remove a ribbons (u rubber hos inner/large and the property of the property of

Remove any broken branches, tree tags and ribbons (upon approval of plant) .Black rubber hose, attach to (2) minimum inner/larger canes

- Avoid placing soil on top of the root ball, maintain exposure of root flare. If root flare is not exposed, carefully remove excess soil. Set root ball so that base of root flare is 3"-6" higher than adjacent finish grade.

— Mulch 3" min organic hardwood mulch, tapering to 1" at trunk.

Prepare a 3" minimum saucer around pit, discard excess excavated material.

— Flare planting hole edge, hole size to be

— Flare planting hole edge. hole size to be twice as wide as root ball. Backfill pit with 1/3 amended topsoil and 2/3 excavated material. Remove excess excavated material from site and dispose of legally.

 Cut all ropes, wires and burlap from trunk and top of rootball remove all containers from rootball.

 Top of rootball to be 2" above finished grade, mulch to be no deeper than 2" within 6" of tree trunk.

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Suite 200A

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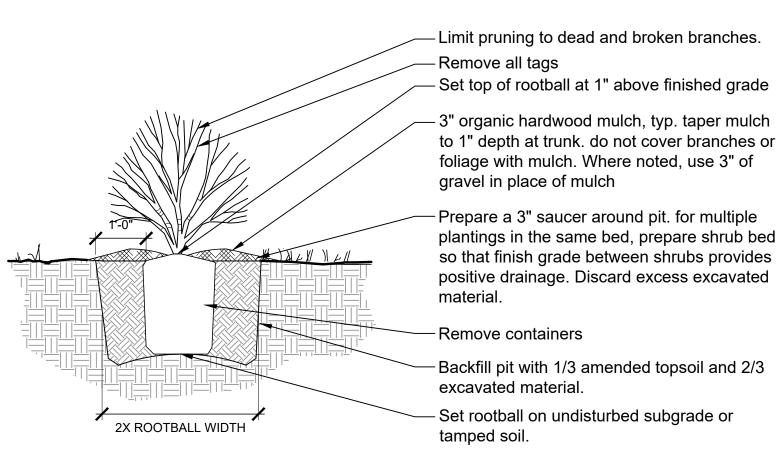
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ORNAMENTAL TREE PLANTING

1/2" = 1'-0"



SHRUB PLANTING

(3)





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Grading

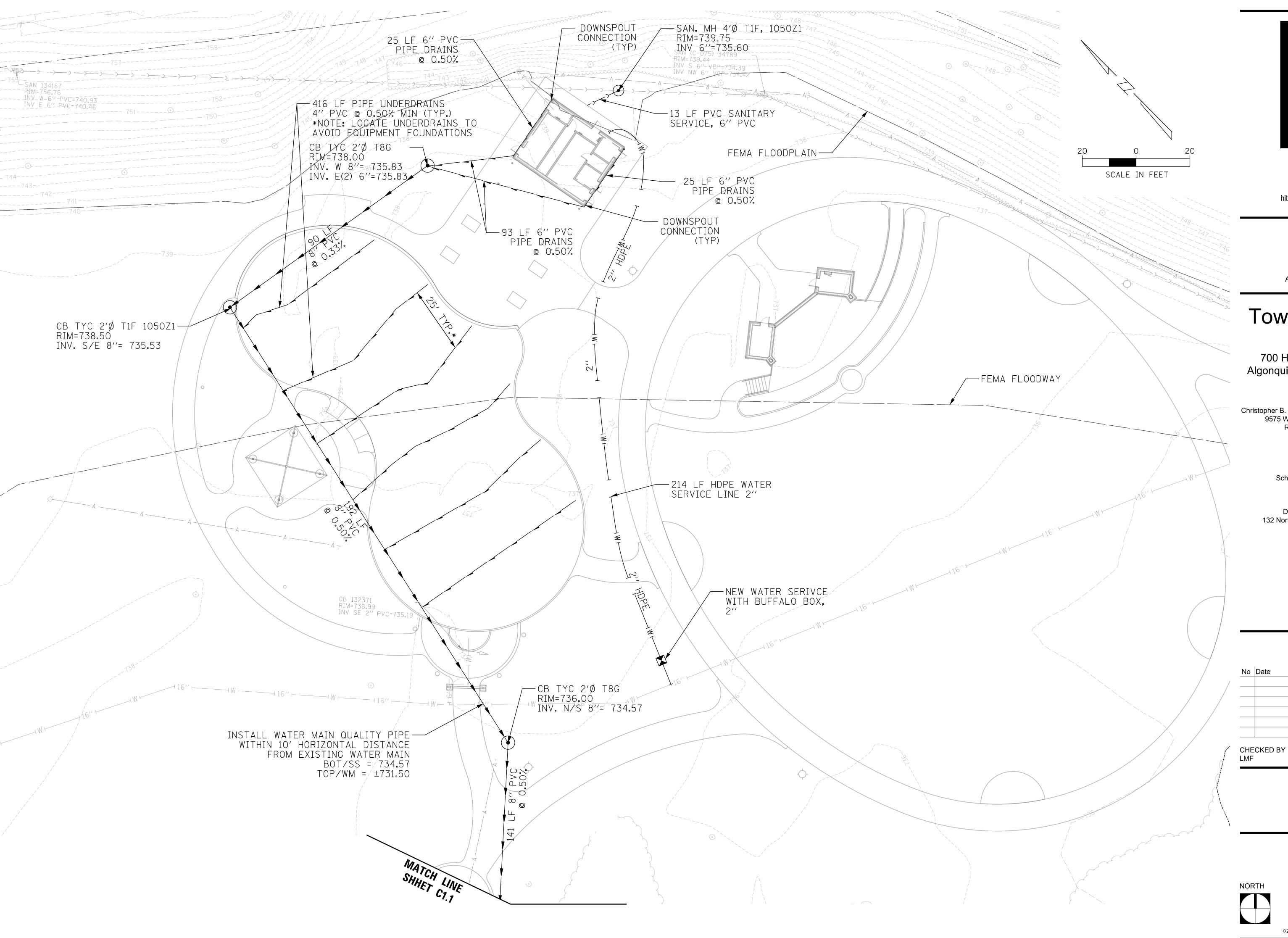
Plan

SCALE IN FEET

20' 40'

NORTH SHEET

G1.0



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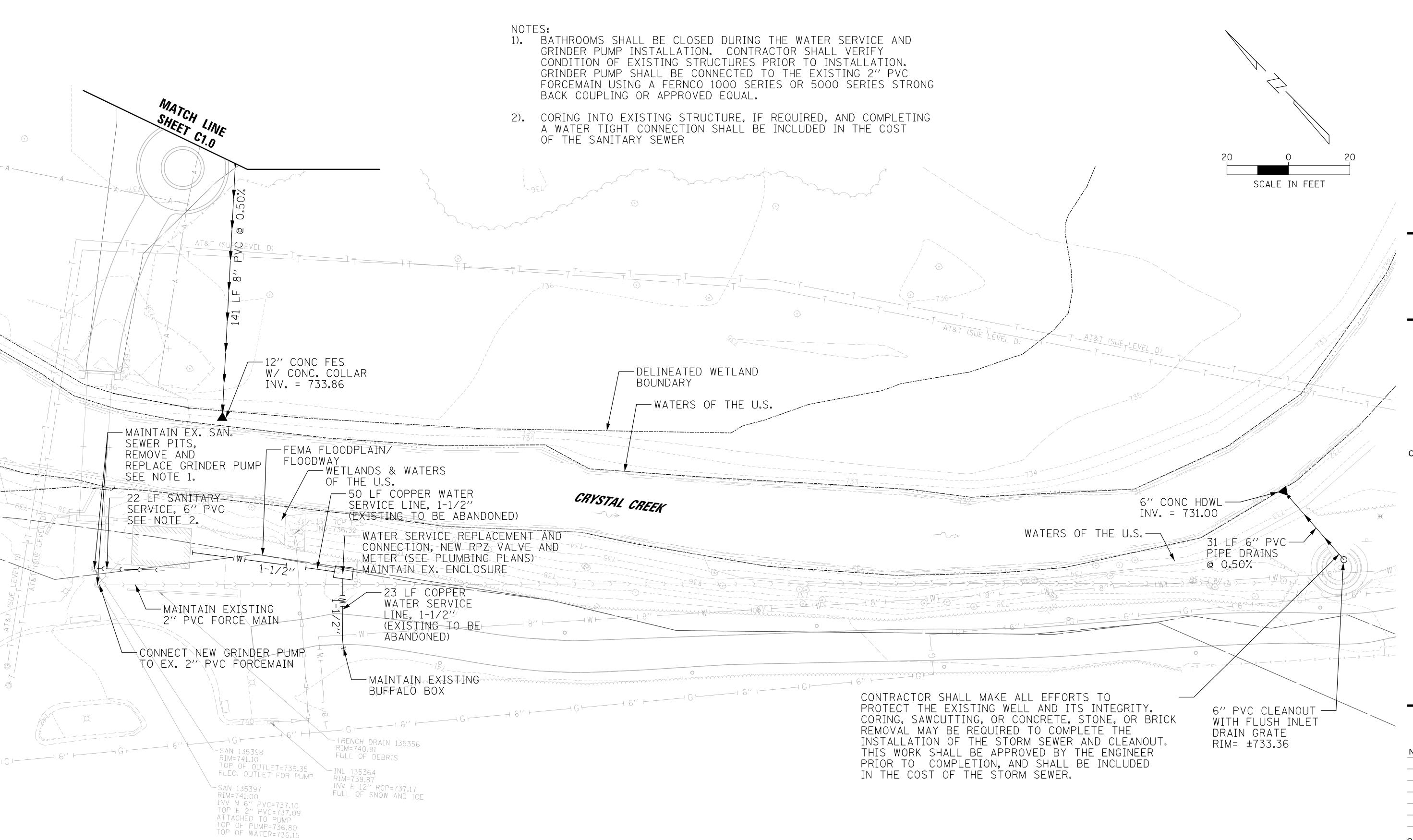
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SHEET TITLE Proposed **Utility Plan**

SHEET NUMBER



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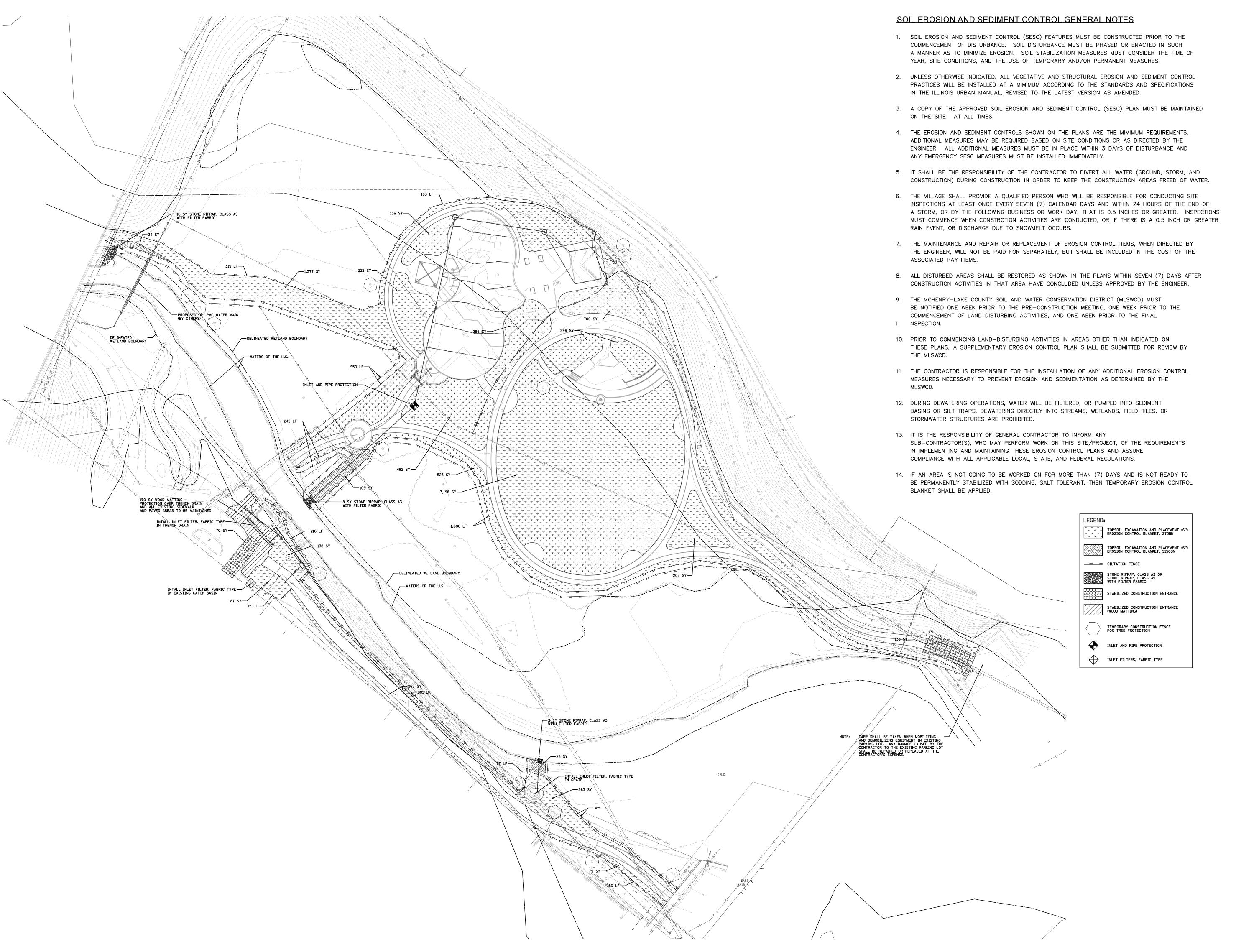
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Utility Plan

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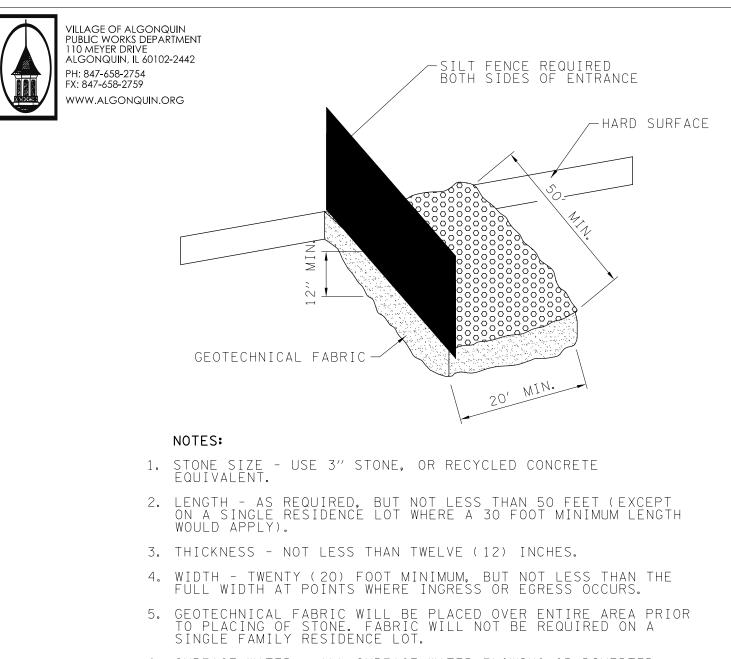
REVISIONS No Date

CHECKED BY

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Soil Erosion and **Sediment Control** Plan

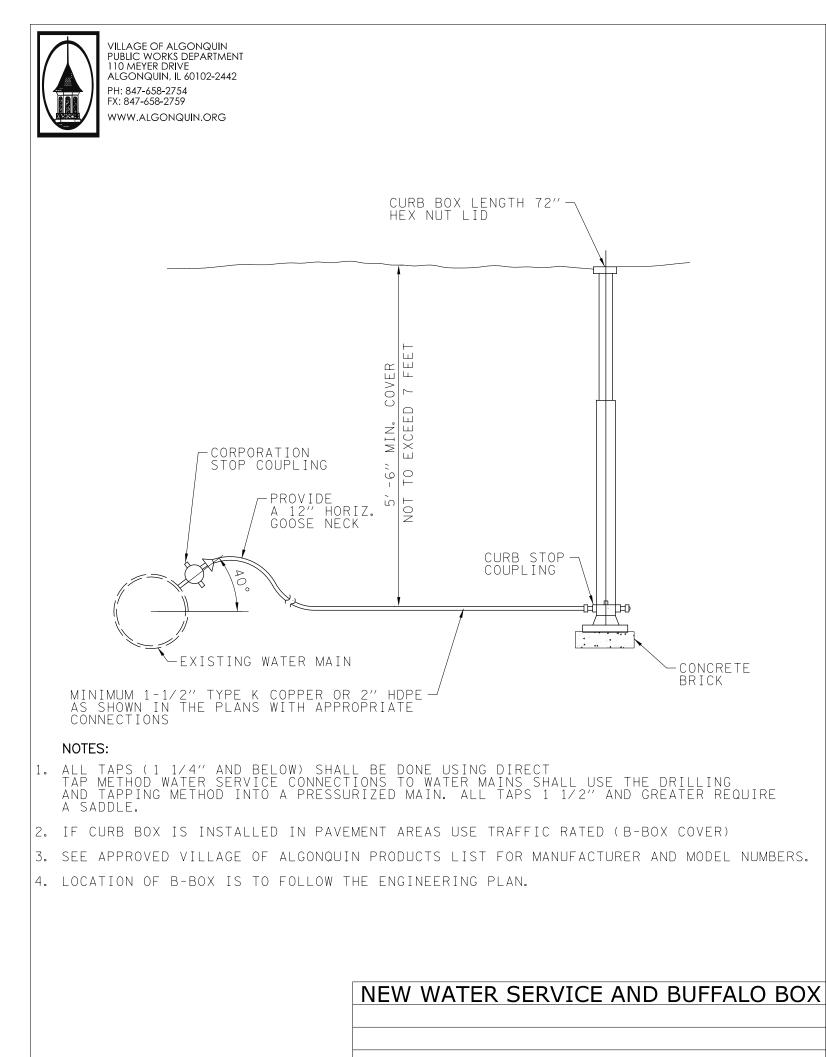
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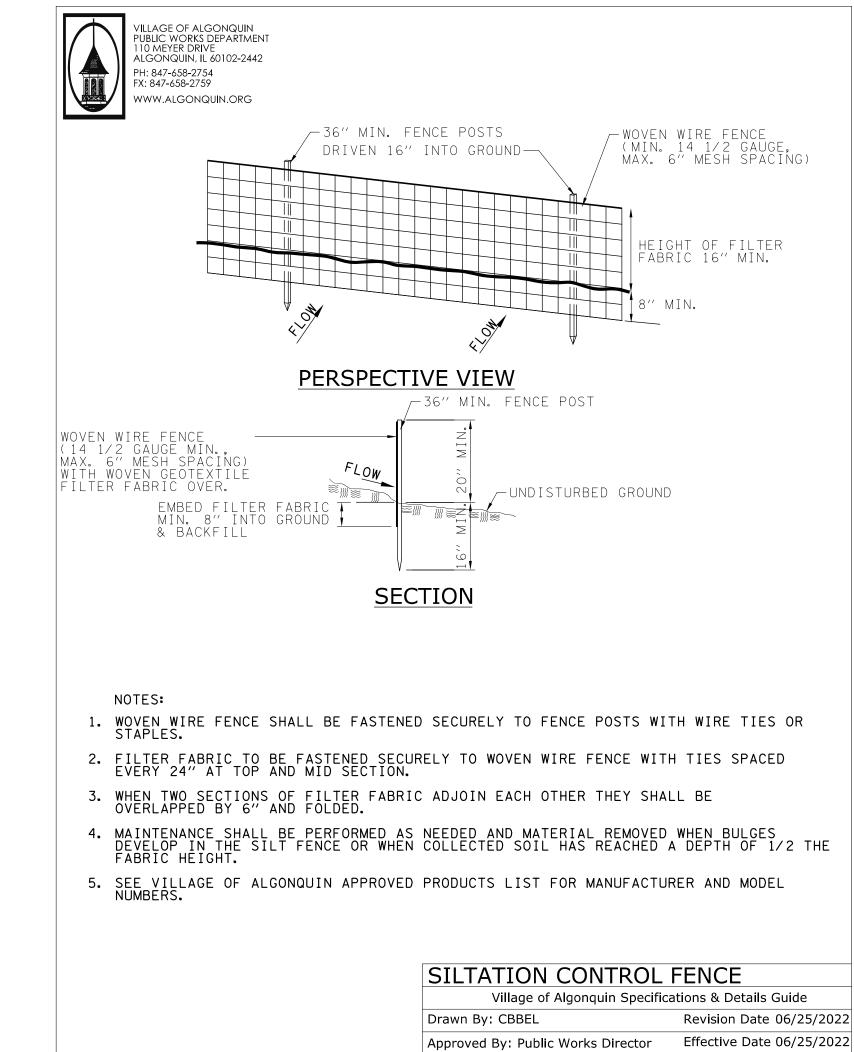


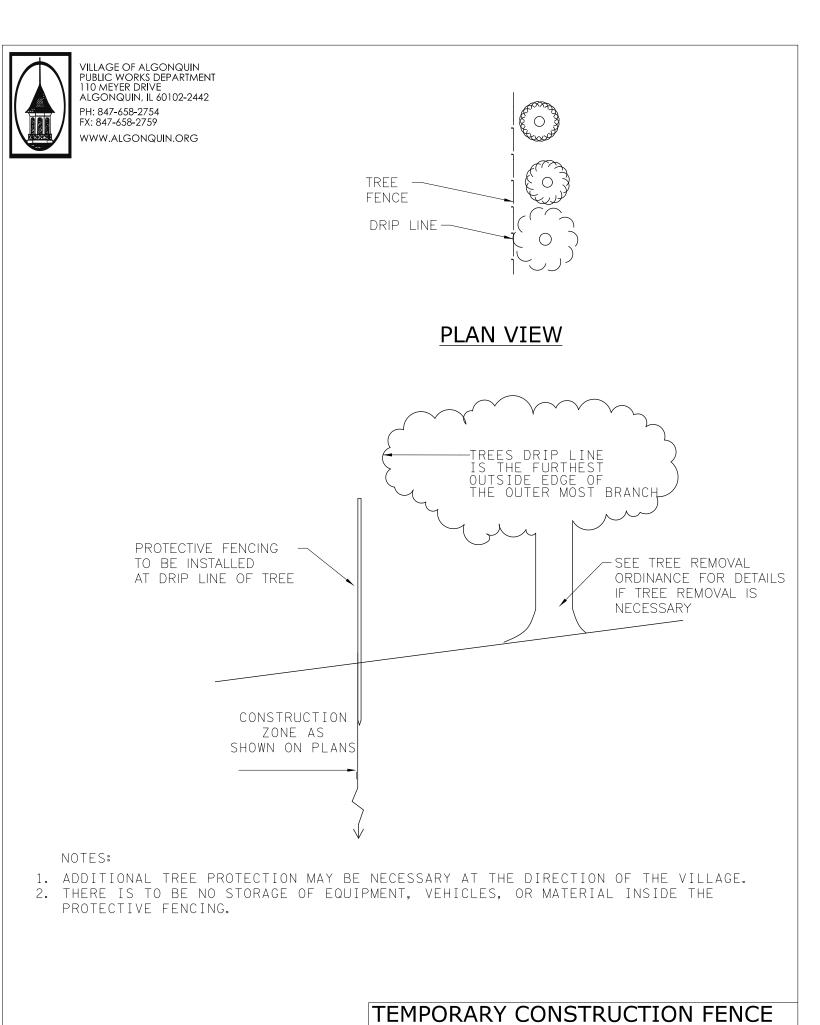
- 6. SURFACE WATER ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
- 7. MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATIFY.
- 8. WASHING WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING
- 9. SILT FENCE SHALL LINE BOTH SIDES OF THE ENTRANCE WAY FOR THE ENTIRE LENGTH. THIS WILL ENCOURAGE THE FULL USE OF THE DESIRED ENTRANCE.

CONSTRUCTION ENTRANCE Village of Algonquin Specifications & Details Guide Drawn By: CBBEL Revision Date 06/25/2022

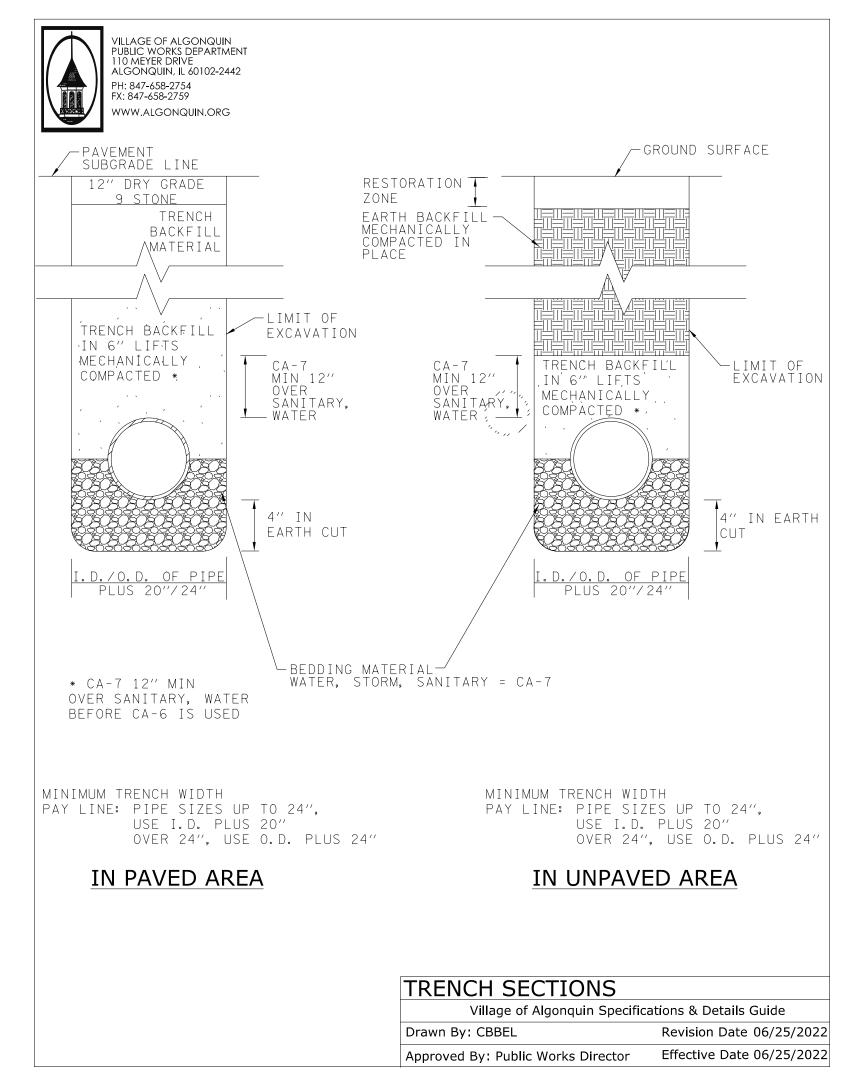
Approved By: Public Works Director Effective Date 06/25/2022

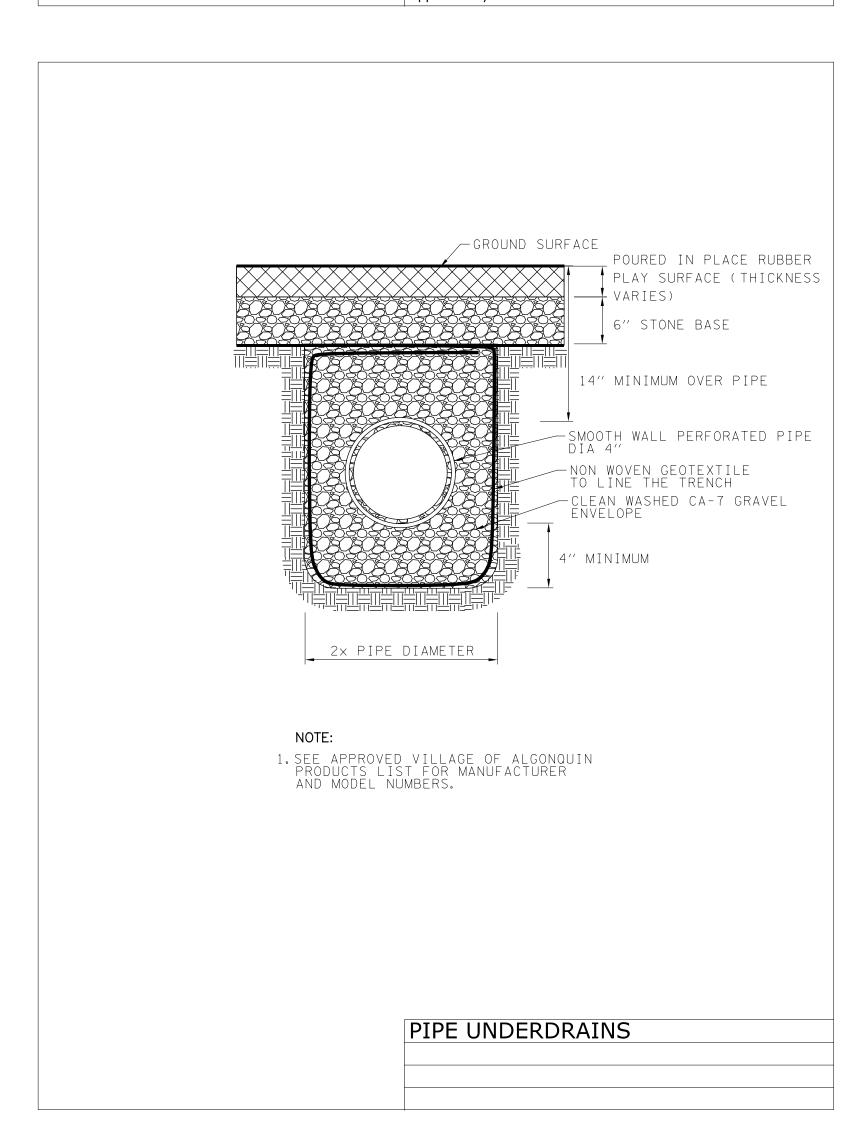


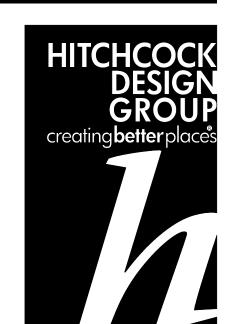




FOR TREE PROTECTION







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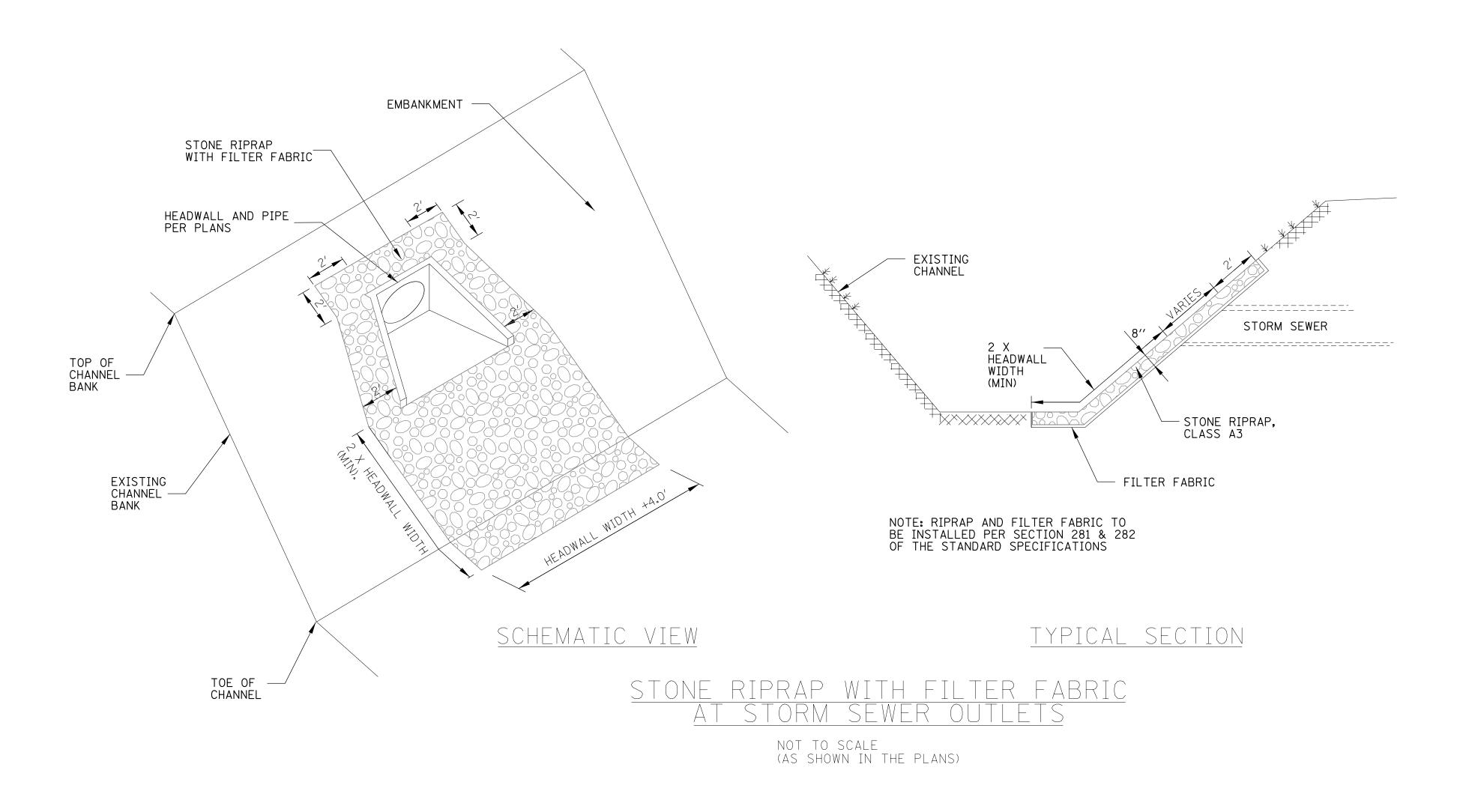
Architect Dewberry Architects, Ltd. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

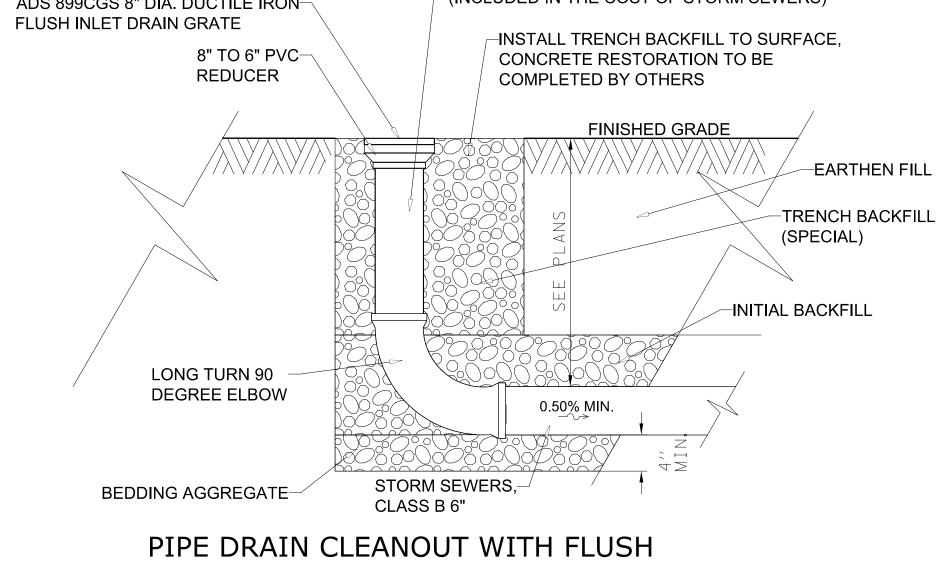
| | Issue for Construction May 7, 2024 | |
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| No Date | REVISIONS Issue | |
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| CHECKED BY | DRAWN BY | |

SHEET TITLE Construction Details

DJK

SHEET NUMBER





INLET DRAIN GRATE DETAIL

─6" PVC STORM SEWER CLEANOUT (INCLUDED IN THE COST OF STORM SEWERS) ADS 899CGS 8" DIA. DUCTILE IRON-

Towne Park

22 E. Chicago Avenue

Naperville, IL 60540

PREPARED FOR

Village of

Algonquin

2200 Harnish Drive

Algonquin, Illinois 60102

hitchcock**design**group.com

T 630.961.1787

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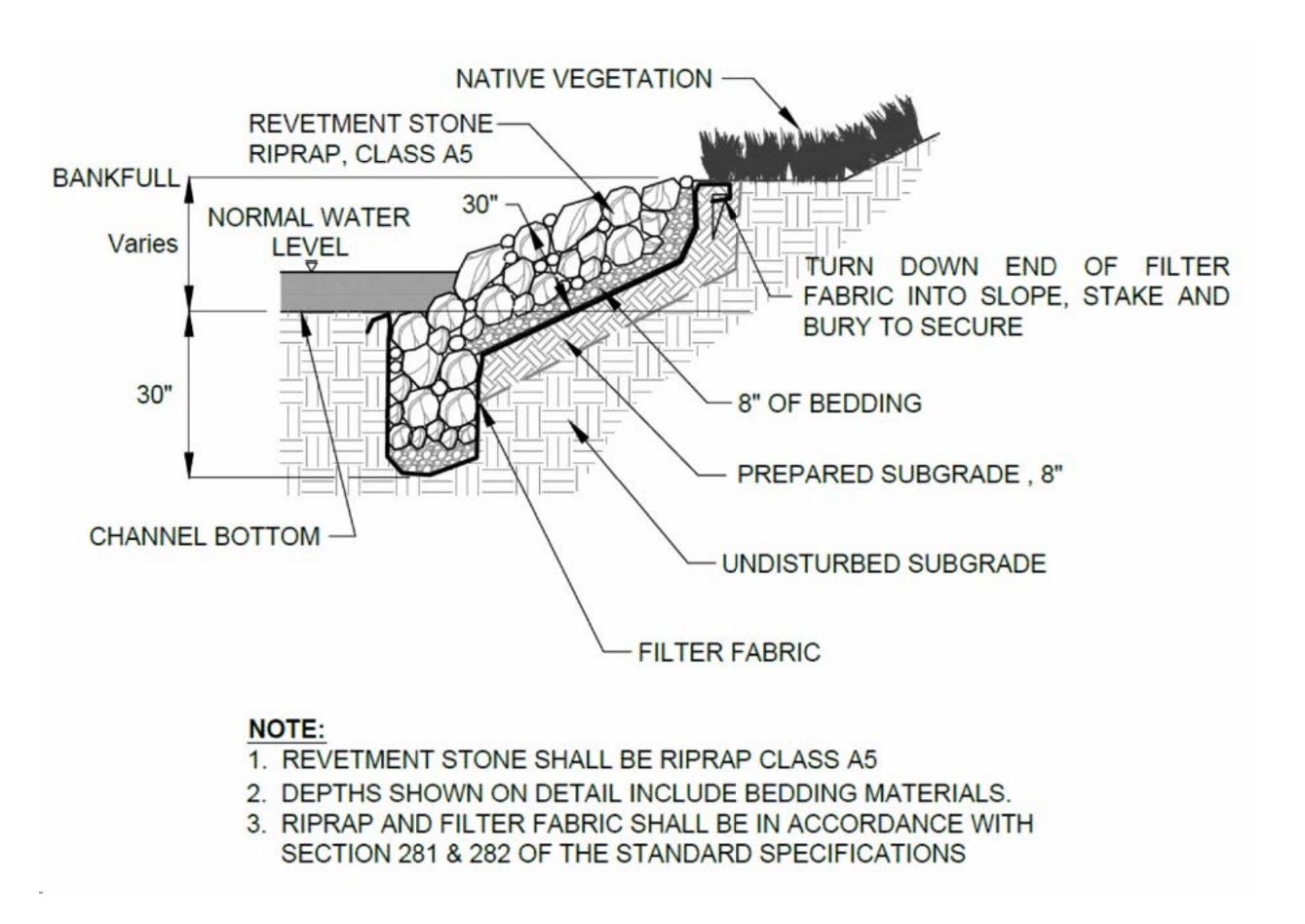
Issue for Construction May 7, 2024 **REVISIONS** -TRENCH BACKFILL, SPECIAL **CHECKED BY** DRAWN BY DJK

SHEET TITLE

Construction **Details**

SHEET NUMBER

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4" PVC RISER (INCLUDED IN THE

COST OF PIPE DRAINS)

BEDDING AGGREGATE-

0.50% MIN.

SEE SPECIFICATIONS FOR DETAILS

0.50% MIN.

-PIPE DRAIN-

(PVC)

PIPE DRAINS DOWNSPOUT

CONNECTION DETAIL

-CONNECT TO DOWNSPOUT

PROPOSED SIDEWALK

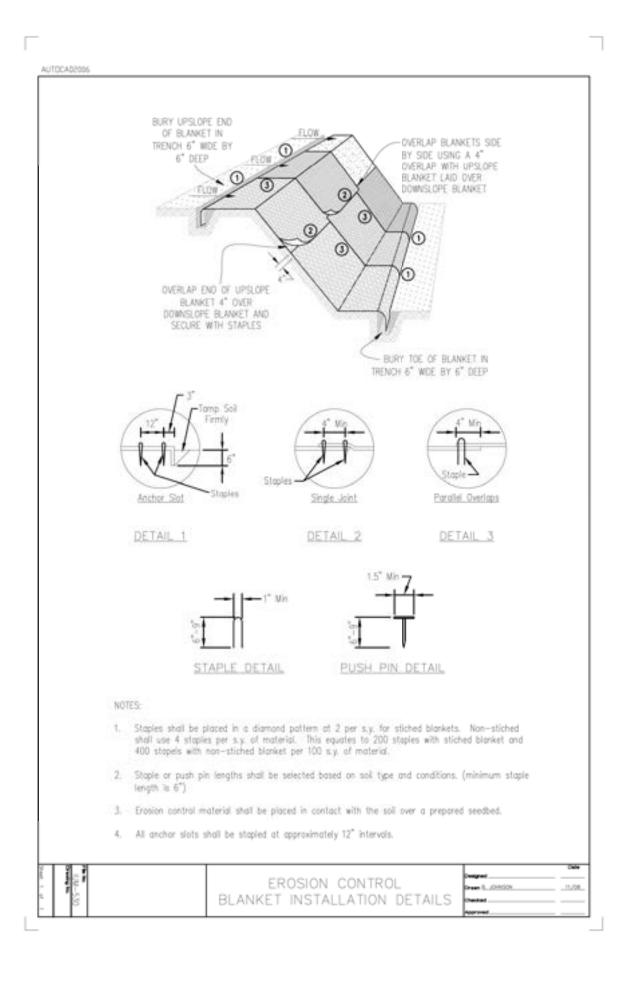
& AGG. SUBBASE

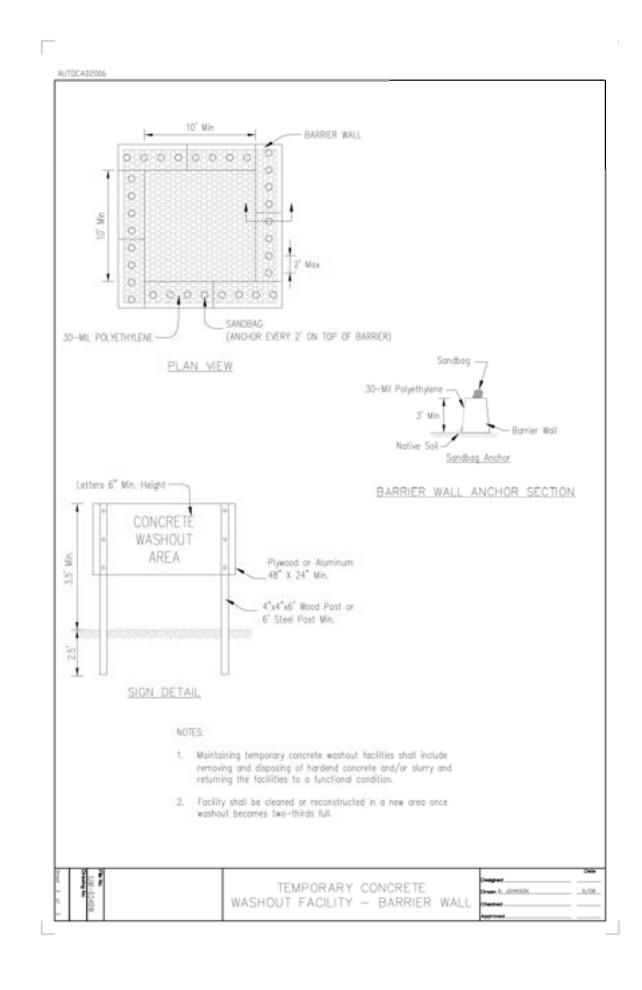
WITH TRANSITION

FINISHED GRADE

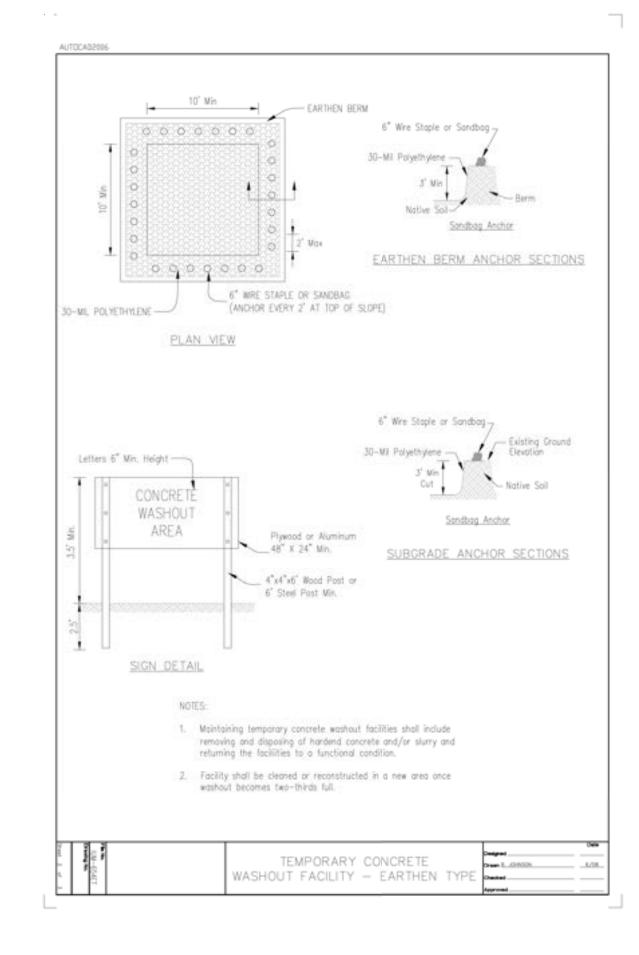
STONE RIPRAP WITH FILTER FABRIC CHANNEL BANK REPAIR

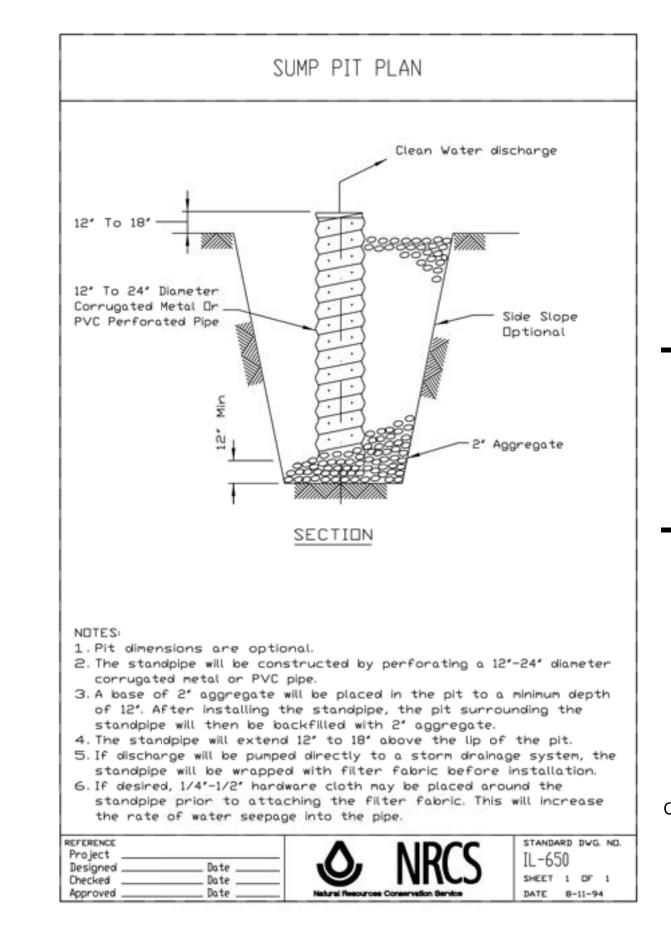
NOT TO SCALE (AS SHOWN IN THE PLANS)





WORK AREA







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> PREPARED FOR Village of Algonquin 2200 Harnish Drive

Algonquin, Illinois 60102

Towne Park

700 Highland Avenue Algonquin, Illinois 60102

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No Date

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May 7, 2024

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DJK

-STRAW WATTLE STAKED IN PLACE STRAW WATTLE STAKED IN PLACE -MIN. 5' WIDE COLLAR OF STONE AROUND ENTIRE BAG CA-7 BEDDING STONE 6" OF CA-1 AGGREGATE --FILTER BAG -CAPPED WITH 3" OF CA-7 BEDDING STONE STRAW WATTLE -TRENCHED 4" INTO SUBGRADE SUB GRADE -GEOTEXTILE FABRIC SECTION 'A'

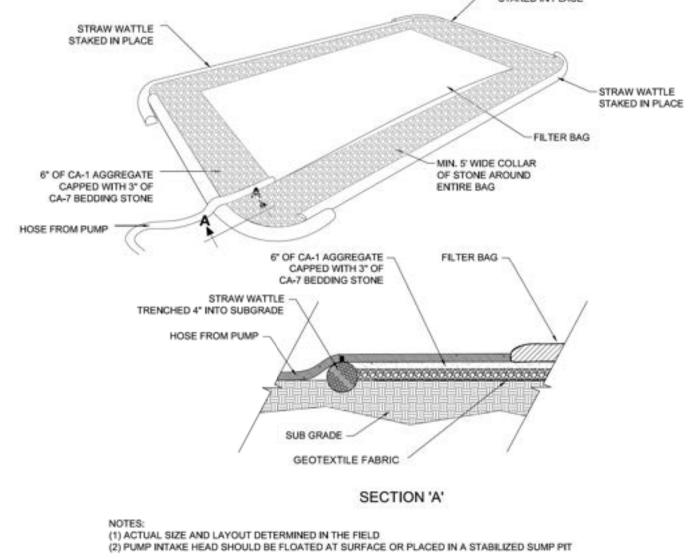
DEWATERING FILTER PAD

- WATER METER, BALL VALVES, COUPLINGS, AND BACKFLOW PREVENTOR (SEE PLUMBING PLANS) EXISTING ENCLOSURE -TO BE MAINTAINED TYPE L COPPER -REDUCER, AS REQUIRED TRANSITION COUPLING FROM TYPE K TO TYPE L COPPER, TYP. — CONCRETE PAD 5" THICK MIN. WITH 8 GAUGE WIRE MESH FINISH GRADE — INCREASER, AS REQUIRED − TYPE K TYPE K —/ COPPER COPPER WATER SERVICE -LINE 1-1/2" WATER SERVICE LINE 1-1/2"-TRANSITION COUPLE TO EXISTING SERVICE PIPING-EXISTING CURB STOP (TO BE MAINTAINED) — EXISTING SERVICE PIPING — EXISTING CORPORATION STOP COUPLING — EXISTING SERVICE CONNECTION (NOTE 3)— 1. EXACT LOCATION OF WATER SERVICES TO BE COORDINATED WITH OWNER'S REPRESENTATIVE.

> WATER SERVICE REPLACEMENT AND CONNECTION

3. ENCLOSURE DIMENSIONS SHOWN ARE APPROXIMATE. CONCRETE PAD SHALL BE AS COMPACT AS POSSIBLE TO FIT EXISTING ENCLOSURE. CONTRACTOR TO COORDINATE.

2. WATER SERVICE FITTINGS TO CONFORM TO MUNICIPAL ORDINANCE AND STANDARDS.



SHEET NUMBER

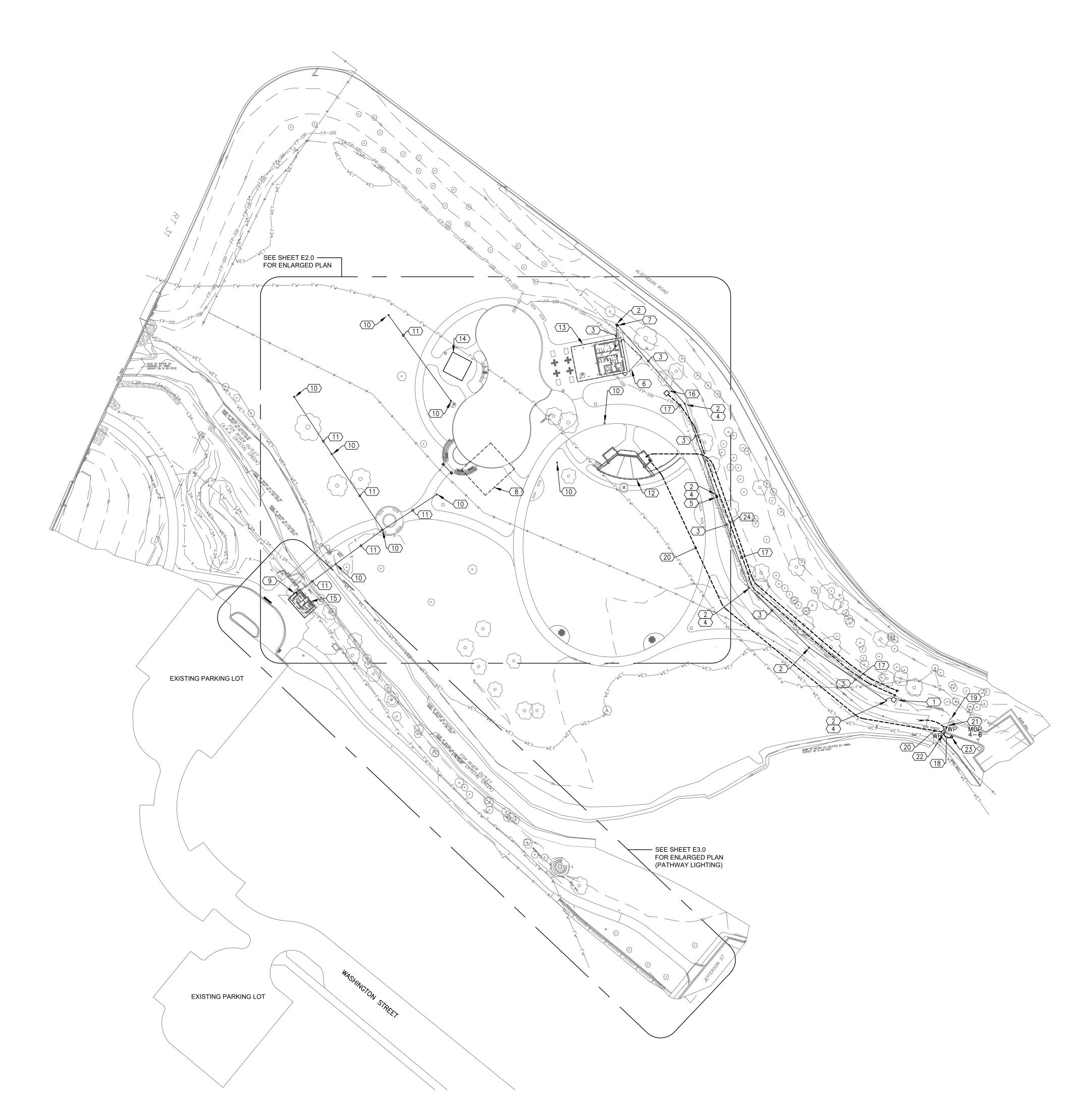
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SANDBAG COFFERDAM

MIN. 6" FREEBOARD

MEAN WATER ELEV.

-30 MIL. POLYETHELENE PLASTIC
COVERED WITH (1) LAYER OF SAND BAGS



SHEET NOTES

- EXISTING UTILITY COMPANY PAD MOUNTED TRANSFORMER TO BE REMOVED BY UTILITY COMPANY.
- 2. EXISTING UTILITY COMPANY POLE TO BE REMOVED BY UTILITY COMPANY.
- 3. EXISTING UTILITY OVERHEAD ELECTRIC TO BE REMOVED BY UTILITY COMPANY
- 4. EXISTING UTILITY POLE LIGHT AND ASSOCIATED WIRING TO BE REMOVED BACK TO SOURCE.
- 5. EXISTING OVERHEAD ELECTRIC SERVICE DROP, METER, DISCONNECT SWITCH, ETC. TO BE REMOVED COMPLETE AS REQUIRED. FIELD VERIFY EXACT EXTENT OF REMOVAL.
- 6. EXISTING ONE STORY METAL BUILDING TO BE REMOVED. REMOVE EXISTING BUILDING SERVICE INCLUDING METER, PANEL, FEEDER ETC. COMPLETE AS REQUIRED. FIELD VERIFY EXACT EXTENT OF REMOVAL.
- 7. EXISTING OVERHEAD ELECTRIC SERVICE DROP, METER, PANEL, FEEDERS, ETC. TO BE REMOVED COMPLETE AS REQUIRED. FIELD VERIFY EXACT EXTENT OF REMOVAL.
- 8. EXISTING SHELTER TO BE REMOVED. REMOVE EXISTING ELECTRICAL LIGHTING, DEVICES, CONDUIT AND WIRE ETC. COMPLETE AS REQUIRED.
- 9. EXISTING TOILET BUILDING TO BE REMOVED. REMOVE EXISTING BUILDING PANEL, FEEDER ETC. COMPLETE AS REQUIRED. FIELD VERIFY EXACT EXTENT OF REMOVAL.
- 10. EXISTING UTILITY POLE, LIGHT AND ASSOCIATED WIRING TO BE REMOVED.
- 11. EXISTING OVERHEAD ELECTRIC TO BE REMOVED BACK TO SOURCE.
- 12. PROPOSED BAND SHELL.
- 13. PROPOSED SHELTER AND TOILETS.
- 14. PROPOSED GAZEBO.
- 15. PROPOSED TOILETS.
- 16. PAD MOUNTED TRANSFORMER BY COMED. E.C. TO PROVIDE CONCRETE PAD AND BARRIER POSTS PER COMED REQUIREMENTS. COORDINATE EXACT LOCATION WITH COMED AND OWNER/LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. COMED TO EXTEND EXISTING PRIMARY CABLE TO NEW PAD MOUNTED TRANSFORMER LOCATION.
- 17. PROVIDE 4" CONDUIT FROM PAD MOUNTED TRANSFORMER TO PROPERTY LINE AS DIRECTED BY COMED FOR PRIMARY CABLE. COORDINATE AND VERIFY ALL REQUIREMENTS WITH COMED.
- 18. FURNISH AND INSTALL ONE 1 1/2" UNDERGROUND PVC CONDUIT RACEWAY FROM GATE CONTROLLER TO CARD READER GOOSE NECK LOCATION AT ENTRANCE GATE FOR SONITROL SYSTEM. VERIFY EXACT STUB UP LOCATION AND GATE CONTROLLER CONNECTION REQUIREMENTS WITH LANDSCAPE ARCHITECT/ OWNER & EQUIPMENT SUPPLIER.
- 19. PROPOSED ENTRANCE GATE.
- 20. FURNISH AND INSTALL ONE 1 1/2" UNDERGROUND PVC CONDUIT RACEWAY STUB 6" ABOVE FLOOR WITH PULL ROPE FROM ELECTRICAL/ STORAGE 109 (BANDSHELL) TO WP JUNCTION BOX AT ENTRANCE GATE CONTROLLER FOR SONITROL SYSTEM. VERIFY EXACT STUB UP LOCATION AT BUILDING LOCATION AND GATE CONNECTION REQUIREMENTS WITH LANDSCAPE ARCHITECT/ OWNER & EQUIPMENT SUPPLIER.
- 21. FURNISH AND INSTALL ENTRANCE GATE CONNECTION COMPLETE AS REQUIRED. VERIFY EXACT ELECTRICAL CONNECTION REQUIREMENTS WITH GATE SUPPLIER PRIOR TO ROUGH—IN. VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT/OWNER. 1"C. 2#6+1#6 GRD.
- 22. GATE CONTROLLER.
- 23. GATE CARD READER GOOSE NECK.
- 24. FURNISH AND INSTALL ONE 3" CONDUIT STUBBED 6" ABOVE FLOOR WITH PULL ROPE TO PROPERTY LINE FOR DATA/PHONE SERVICE. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY.

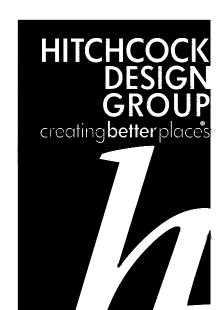
GENERAL NOTES

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- B. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL NEW WORK WITH EXISTING CONDITIONS.
- C. CONDUIT ROUTING IS DIAGRAMMATIC. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND ADJUST AS REQUIRED.
- D. CONTRACTOR SHALL BE AWARE OF POSSIBLE CONFLICTS BETWEEN NEW AND EXISTING UTILITIES AND COORDINATE AS REQUIRED. PROTECT ALL EXISTING UTILITIES AS REQUIRED DURING CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING UTILITIES BEFORE BEGINNING WORK. ANY UTILITIES DAMAGED BY CONTRACTOR SHALL BE REPAIRED BY CONTRACTOR TO OWNERS SATISFACTION.
- E. VERIFY ALL LOCATIONS OF LIGHT FIXTURES, POLES WITH LANDSCAPE ARCHITECT/ OWNER PRIOR TO ROUGH-IN.
- F. ALL DAMAGED CONCRETE SIDEWALKS, ASPHALT, STAIRS, PAVERS, ETC., DISTURBED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR.
- G. ALL ELECTRICAL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL AMENDMENTS IN EFFECT AT THE TIME OF CONSTRUCTION.
- H. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ELECTRICAL PERMIT AND COORDINATING SITE INSPECTIONS THROUGH THE VILLAGE OF ALGONQUIN.
- I. ELECTRICAL SERVICE INSTALLATION SHALL MEET THE VILLAGE OF ALGONQUIN CODE
- LICHTING AND POLE BASE INSTALLATION SHALL MEET THE VILLAGE OF ALCONOLIN
- J. LIGHTING AND POLE BASE INSTALLATION SHALL MEET THE VILLAGE OF ALGONQUIN CODE OF ORDINANCES REQUIREMENTS.
- K. SEE BANDSHELL, SHELTER/TOILET AND TOILET BUILDING DRAWINGS ETC. FOR ADDITIONAL WORK REQUIRED BY THE ELECTRICAL CONTRACTOR FOR EACH OF THE BUILDINGS. VERIFY MANUFACTURER, MODEL NUMBER, STYLE, COLOR, ACCESSORIES, OPTIONS, ETC. WITH ARCHITECT & G.C. PRIOR TO ORDERING, ROUGH—IN, OR INSTALLATION. COORDINATE LOCATION AND INSTALLATION WITH BUILDING SUPPLIER.

LEGEND

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OF ORDINANCES REQUIREMENTS.



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Village of Algonquin

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Towne Park

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SHEET TITLE
Electrical
Overall Site Plan

DRAWN BY

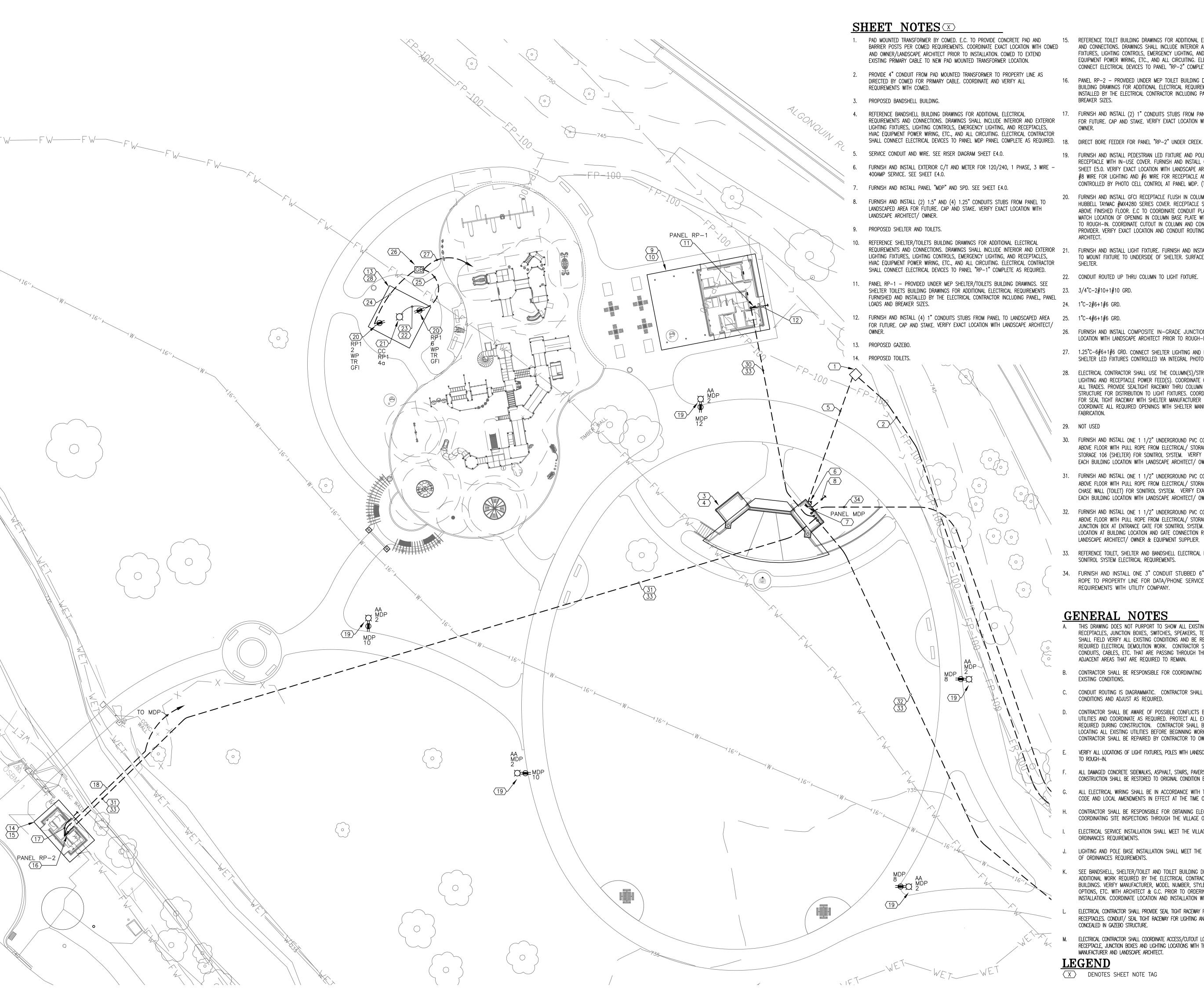
SCALE IN FEET

1" = 50

ORTH SHEET NUMBER

0' 25' 50'

E1.0
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- REFERENCE TOILET BUILDING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS AND CONNECTIONS. DRAWINGS SHALL INCLUDE INTERIOR AND EXTERIOR LIGHTING FIXTURES, LIGHTING CONTROLS, EMERGENCY LIGHTING, AND RECEPTACLES, HVAC EQUIPMENT POWER WIRING, ETC., AND ALL CIRCUITING. ELECTRICAL CONTRACTOR SHALL CONNECT ELECTRICAL DEVICES TO PANEL "RP-2" COMPLETE AS REQUIRED.
- 16. PANEL RP-2 PROVIDED UNDER MEP TOILET BUILDING DRAWINGS. SEE TOILET BUILDING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING PANEL, PANEL LOADS AND
- 17. FURNISH AND INSTALL (2) 1" CONDUITS STUBS FROM PANEL TO LANDSCAPED AREA FOR FUTURE. CAP AND STAKE. VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT/
- FURNISH AND INSTALL PEDESTRIAN LED FIXTURE AND POLE WITH POLE MOUNTED RECEPTACLE WITH IN-USE COVER. FURNISH AND INSTALL CONCRETE BASE. SEE DETAIL SHEET E5.0. VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT/OWNER. 1"C. USE #8 WIRE FOR LIGHTING AND #6 WIRE FOR RECEPTACLE AND #6 GRD., LIGHTS CONTROLLED BY PHOTO CELL CONTROL AT PANEL MDP. (TYPICAL TYPE AA).
- 20. FURNISH AND INSTALL GFCI RECEPTACLE FLUSH IN COLUMN. FURNISH AND INSTALL HUBBELL TAYMAC #MX4280 SERIES COVER. RECEPTACLE SHALL BE MOUNTED 24" ABOVE FINISHED FLOOR. E.C TO COORDINATE CONDUIT PLACEMENT IN FOUNDATION TO MATCH LOCATION OF OPENING IN COLUMN BASE PLATE WITH GAZEBO PROVIDER PRIOR TO ROUGH-IN. COORDINATE CUTOUT IN COLUMN AND CONDUIT ROUTING WITH GAZEBO PROVIDER. VERIFY EXACT LOCATION AND CONDUIT ROUTING WITH LANDSCAPE
- FURNISH AND INSTALL LIGHT FIXTURE. FURNISH AND INSTALL ALL REQUIRED HARDWARE TO MOUNT FIXTURE TO UNDERSIDE OF SHELTER. SURFACE MOUNT FIXTURE TO
- 22. CONDUIT ROUTED UP THRU COLUMN TO LIGHT FIXTURE.
- 23. 3/4"C-2#10+1#10 GRD.
- 24. 1"C-2#6+1#6 GRD.
- 26. FURNISH AND INSTALL COMPOSITE IN-GRADE JUNCTION BOX. COORDINATE EXACT LOCATION WITH LANDSCAPE ARCHITECT PRIOR TO ROUGH-IN. SEE DETAIL SHEET E5.0.
- 27. 1.25"C-6#6+1#6 GRD. CONNECT SHELTER LIGHTING AND RECEPTACLES TO PANEL RP1. SHELTER LED FIXTURES CONTROLLED VIA INTEGRAL PHOTO CELL WITH MOTION SENSOR.
- ELECTRICAL CONTRACTOR SHALL USE THE COLUMN(S)/STRUCTURE FOR THE SHELTER LIGHTING AND RECEPTACLE POWER FEED(S). COORDINATE CONDUIT PLACEMENT WITH ALL TRADES. PROVIDE SEALTIGHT RACEWAY THRU COLUMN UP TO JUNCTION BOX IN STRUCTURE FOR DISTRIBUTION TO LIGHT FIXTURES. COORDINATE OPENINGS IN COLUMN FOR SEAL TIGHT RACEWAY WITH SHELTER MANUFACTURER PRIOR TO INSTALLATION. COORDINATE ALL REQUIRED OPENINGS WITH SHELTER MANUFACTURER PRIOR TO FABRICATION.
- FURNISH AND INSTALL ONE 1 1/2" UNDERGROUND PVC CONDUIT RACEWAY STUB 6" ABOVE FLOOR WITH PULL ROPE FROM ELECTRICAL/ STORAGE 109 (BANDSHELL) TO STORAGE 106 (SHELTER) FOR SONITROL SYSTEM. VERIFY EXACT STUB UP LOCATION AT EACH BUILDING LOCATION WITH LANDSCAPE ARCHITECT/ OWNER & EQUIPMENT SUPPLIER.
- 31. FURNISH AND INSTALL ONE 1 1/2" UNDERGROUND PVC CONDUIT RACEWAY STUB 6" ABOVE FLOOR WITH PULL ROPE FROM ELECTRICAL/ STORAGE 109 (BANDSHELL) TO CHASE WALL (TOILET) FOR SONITROL SYSTEM. VERIFY EXACT STUB UP LOCATION AT EACH BUILDING LOCATION WITH LANDSCAPE ARCHITECT/ OWNER & EQUIPMENT SUPPLIER.
- FURNISH AND INSTALL ONE 1 1/2" UNDERGROUND PVC CONDUIT RACEWAY STUB 6" ABOVE FLOOR WITH PULL ROPE FROM ELECTRICAL/ STORAGE 109 (BANDSHELL) TO WP JUNCTION BOX AT ENTRANCE GATE FOR SONITROL SYSTEM. VERIFY EXACT STUB UP LOCATION AT BUILDING LOCATION AND GATE CONNECTION REQUIREMENTS WITH LANDSCAPE ARCHITECT/ OWNER & EQUIPMENT SUPPLIER.
- 33. REFERENCE TOILET, SHELTER AND BANDSHELL ELECTRICAL PLANS FOR ADDITIONAL SONITROL SYSTEM ELECTRICAL REQUIREMENTS.
- 34. FURNISH AND INSTALL ONE 3" CONDUIT STUBBED 6" ABOVE FLOOR WITH PULL ROPE TO PROPERTY LINE FOR DATA/PHONE SERVICE. VERIFY ALL REQUIREMENTS WITH UTILITY COMPANY.

GENERAL NOTES

- A. THIS DRAWING DOES NOT PURPORT TO SHOW ALL EXISTING LIGHT FIXTURES, RECEPTACLES, JUNCTION BOXES, SWITCHES, SPEAKERS, TELECOM, ETC. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND BE RESPONSIBLE FOR ALL REQUIRED ELECTRICAL DEMOLITION WORK. CONTRACTOR SHALL ALSO FIELD VERIFY ALL CONDUITS, CABLES, ETC. THAT ARE PASSING THROUGH THIS AREA AND SERVE ADJACENT AREAS THAT ARE REQUIRED TO REMAIN.
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- VERIFY ALL LOCATIONS OF LIGHT FIXTURES, POLES WITH LANDSCAPE ARCHITECT/ OWNER PRIOR
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- COORDINATING SITE INSPECTIONS THROUGH THE VILLAGE OF ALGONQUIN. ELECTRICAL SERVICE INSTALLATION SHALL MEET THE VILLAGE OF ALGONQUIN CODE OF
- LIGHTING AND POLE BASE INSTALLATION SHALL MEET THE VILLAGE OF ALGONQUIN CODE
- OF ORDINANCES REQUIREMENTS.
- SEE BANDSHELL, SHELTER/TOILET AND TOILET BUILDING DRAWINGS ETC. FOR ADDITIONAL WORK REQUIRED BY THE ELECTRICAL CONTRACTOR FOR EACH OF THE BUILDINGS. VERIFY MANUFACTURER, MODEL NUMBER, STYLE, COLOR, ACCESSORIES, OPTIONS, ETC. WITH ARCHITECT & G.C. PRIOR TO ORDERING, ROUGH-IN, OR INSTALLATION. COORDINATE LOCATION AND INSTALLATION WITH BUILDING SUPPLIER.
- ELECTRICAL CONTRACTOR SHALL PROVIDE SEAL TIGHT RACEWAY FOR ALL GAZEBO LIGHTING AND RECEPTACLES. CONDUIT/ SEAL TIGHT RACEWAY FOR LIGHTING AND RECEPTACLES SHALL BE CONCEALED IN GAZEBO STRUCTURE.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ACCESS/CUTOUT LOCATIONS REQUIRED FOR RECEPTACLE, JUNCTION BOXES AND LIGHTING LOCATIONS WITH THE GAZEBO STRUCTURE MANUFACTURER AND LANDSCAPE ARCHITECT.

<u>LEGEND</u>

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PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

Towne Park 100 Jefferson St.

Algonquin, IL 60102

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> **Issue for Construction** May 7, 2024

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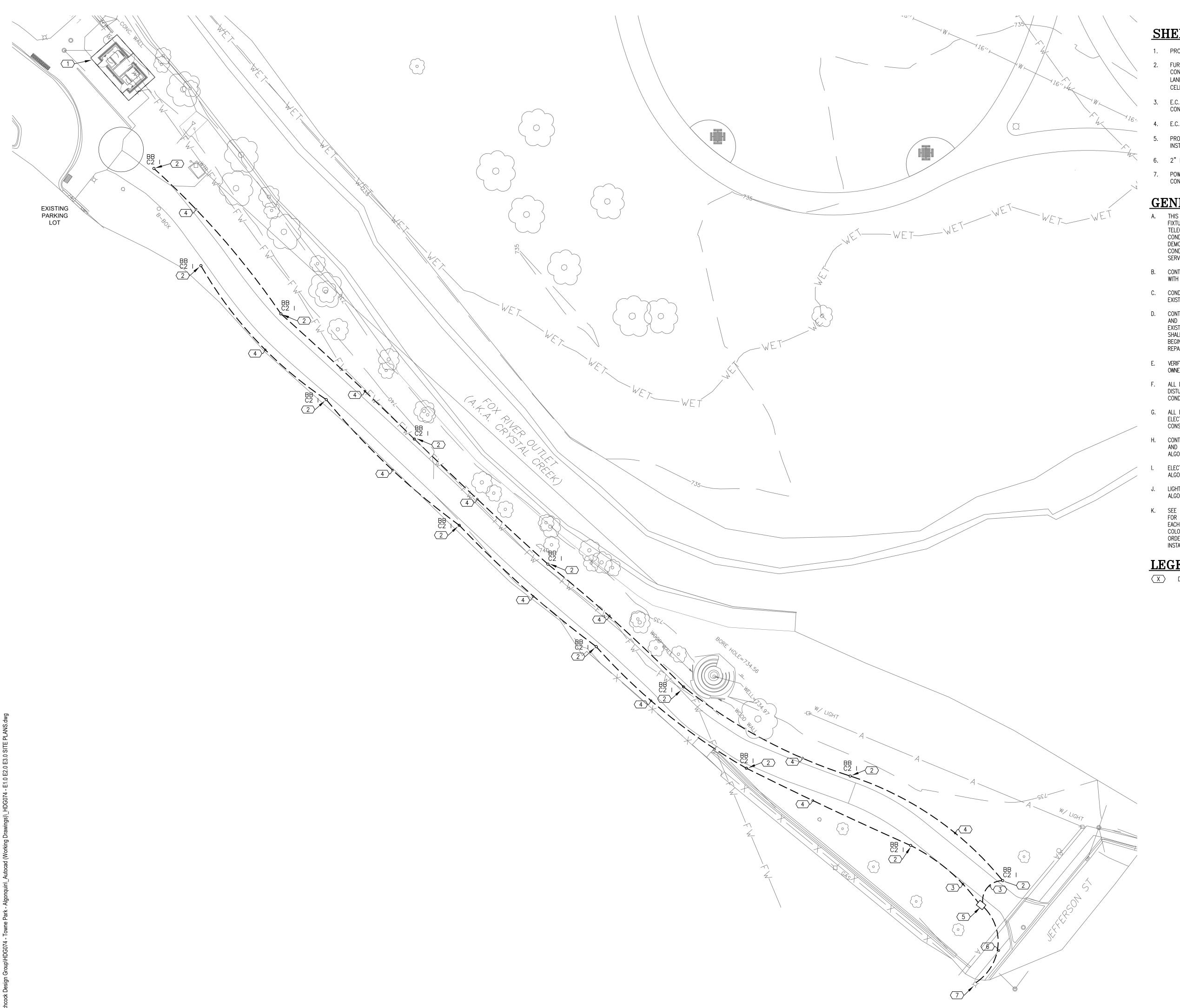
SHEET TITLE

Electrical Enlarged Site Plan

SCALE IN FEET 1" = 20'

SHEET NUMBER





SHEET NOTES

- 1. PROPOSED TOILETS.
- FURNISH AND INSTALL LED BOLLARD FIXTURE. FURNISH AND INSTALL CONCRETE BASE. SEE DETAIL SHEET E5.0. VERIFY EXACT LOCATION WITH LANDSCAPE ARCHITECT/OWNER. LIGHTS CONTROLLED BY EXISTING PHOTO CELL AT CONTROLLER CABINET. (TYPICAL TYPE BB)
- E.C. TO FURNISH AND INSTALL 1"C-2#6+1#6 GRD. E.C TO MAKE CONNECTIONS AT COMPOSITE IN-GRADE JUNCTION BOX.
- 4. E.C. TO FURNISH AND INSTALL 1"C-2#6+1#6 GRD.
- PROPOSED 11"X17" COMPOSITE IN-GRADE JUNCTION BOX TO BE INSTALLED BY OTHERS.
- 6. 2" HDPE NON-METALLIC CONDUIT AND ELECTRICAL CABLE BY OTHERS.
- 7. POWER FOR PATHWAY LIGHTING FROM EXISTING ROADWAY LIGHTING POLE. CONNECTION TO BE COMPLETED BY OTHERS.

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- G. ALL ELECTRICAL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL AMENDMENTS IN EFFECT AT THE TIME OF
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ELECTRICAL PERMIT AND COORDINATING SITE INSPECTIONS THROUGH THE VILLAGE OF
- ELECTRICAL SERVICE INSTALLATION SHALL MEET THE VILLAGE OF ALGONQUIN CODE OF ORDINANCES REQUIREMENTS.
- LIGHTING AND POLE BASE INSTALLATION SHALL MEET THE VILLAGE OF ALGONQUIN CODE OF ORDINANCES REQUIREMENTS.
- K. SEE BANDSHELL, SHELTER/TOILET AND TOILET BUILDING DRAWINGS ETC. FOR ADDITIONAL WORK REQUIRED BY THE ELECTRICAL CONTRACTOR FOR EACH OF THE BUILDINGS. VERIFY MANUFACTURER, MODEL NUMBER, STYLE, COLOR, ACCESSORIES, OPTIONS, ETC. WITH ARCHITECT & G.C. PRIOR TO ORDERING, ROUGH-IN, OR INSTALLATION. COORDINATE LOCATION AND

LEGEND

X DENOTES SHEET NOTE TAG

22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

Towne Park 100 Jefferson St.

Algonquin, IL 60102 CONSULTANTS

Civil Engineer Christopher B. Burke Engineering, Ltd. 9575 W. Higgins Road, Suite 600 Rosemont, IL 60018 T 847.823.0500

> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

Dewberry Architects Inc. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

Issue for Construction May 7, 2024 REVISIONS

| INO | Date | issue |
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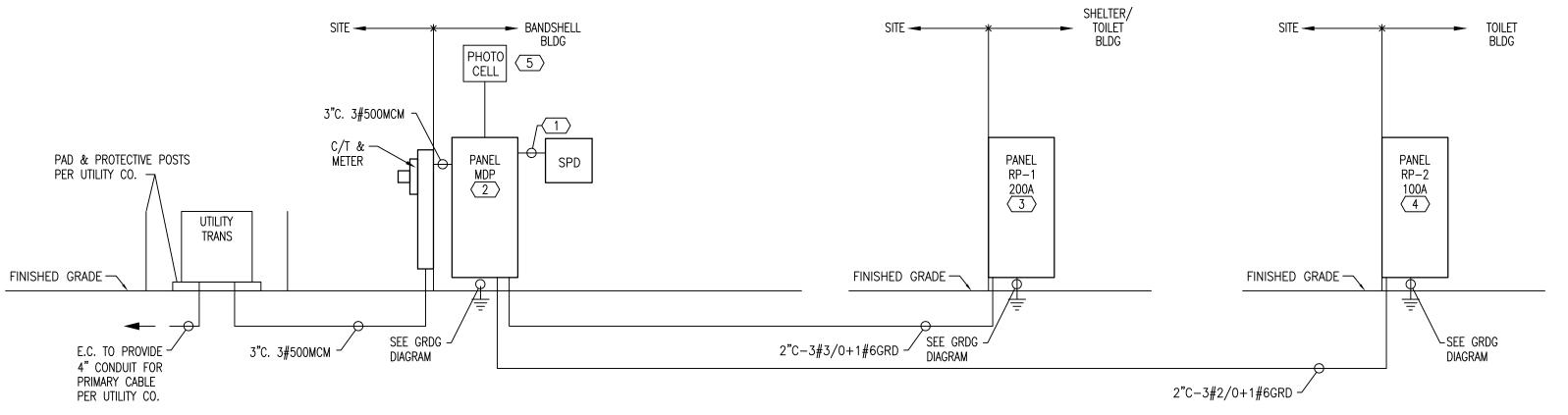
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SHEET TITLE Electrical

DRAWN BY RB

Enlarged Site Plan Pathway Lighting

SCALE IN FEET



PANELBOARD RP-

∽ 3/4"C − #6

SCALE: NONE

250.53(B)

3/4" X 10' COPPER CLAD STEEL GROUND RODS.

THE TWO GROUND RODS SHALL BE SPACED A

MINIMUM OF SIX FEET (6') APART. ARTICLE: NEC

PANELBOARD MDP

PANELBOARD RP-2

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3/4°C -

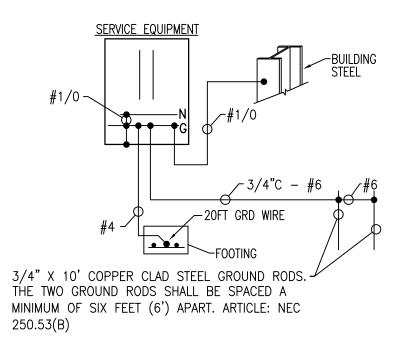
3/4" X 10' COPPER CLAD STEEL GROUND RODS. THE TWO GROUND RODS SHALL BE SPACED A

MINIMUM OF SIX FEET (6') APART. ARTICLE: NEC

250.53(B)

3 | GROUNDING DIAGRAM - PANELS RP-1 & RP-2

| RISER DIAGRAM SCALE: NONE 120/240V, 1 PHASE, 3W



2 | GROUNDING DIAGRAM - PANEL MDP SCALE: NONE



* DENOTES LOAD TYPE PROVIDED UNDER MEP BANDSHELL DRAWINGS.

SHEET NOTES **(III)**

- FEEDER SIZE PER MANUFACTURERS REQUIREMENTS.
- 2. BANDSHELL CIRCUITS AS NOTED PROVIDED UNDER MEP BANDSHELL BUILDING DRAWINGS. SEE BANDSHELL BUILDING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- 3. PANEL RP-1 PROVIDED UNDER MEP RESTROOM/SHELTER BUILDING DRAWINGS. SEE RESTROOM/SHELTER BUILDING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING PANELS, PANEL LOADS AND BREAKER SIZES.
- 4. PANEL RP-2 PROVIDED UNDER MEP RESTROOM/SHELTER BUILDING DRAWINGS. SEE RESTROOM/SHELTER BUILDING DRAWINGS FOR ADDITIONAL ELECTRICAL REQUIREMENTS FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR INCLUDING PANELS, PANEL LOADS AND BREAKER SIZES.
- 5. LOCATE PHOTO—CELL UNDER ROOF OVERHANG ON WALL. VERIFY EXACT LOCATION IN FIELD.

GENERAL NOTE:

A. VERIFY INTERRUPTING RATING WITH UTILITY COMPANY PRIOR TO ORDERING EQUIPMENT.

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> > Architect

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SHEET TITLE Electrical Details

DRAWN BY

SCALE IN FEET

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SHEET NUMBER

TYPE "AA" 1 | LIGHT FIXTURE DETAIL





5054 93

50L35K

TYPE "CC" **5 | LIGHT FIXTURE DETAIL**

5054 93 54 117

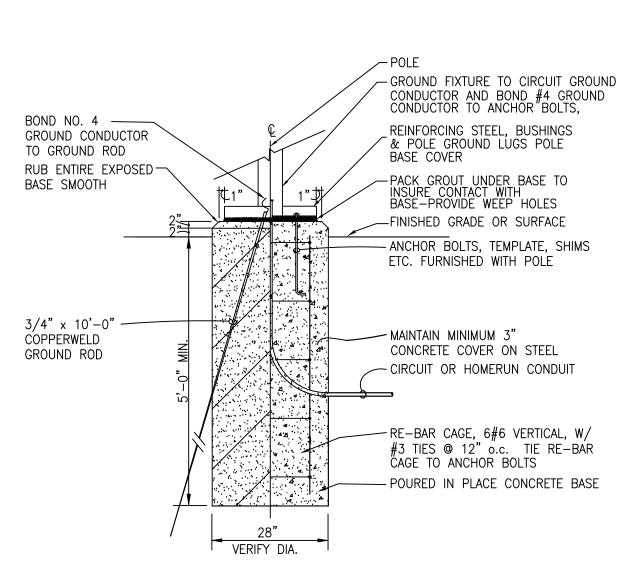
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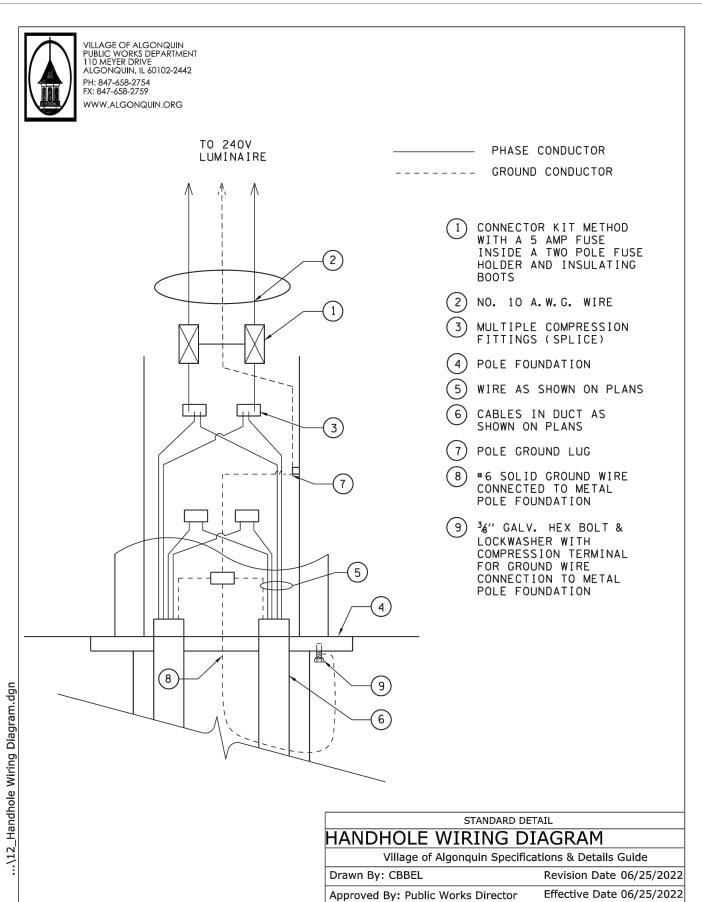
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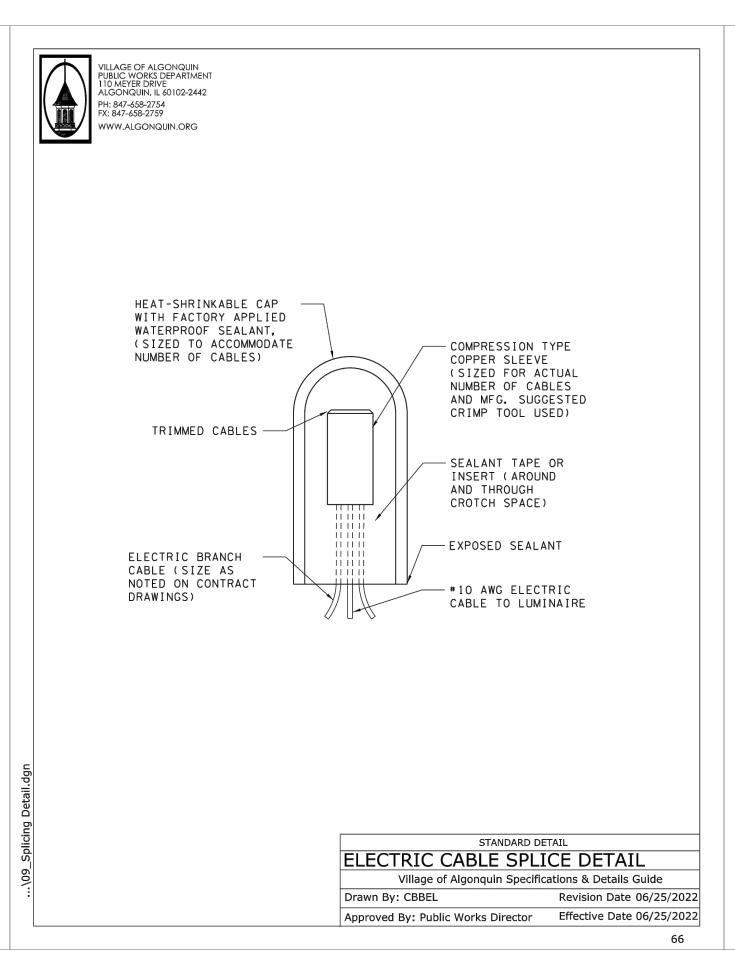


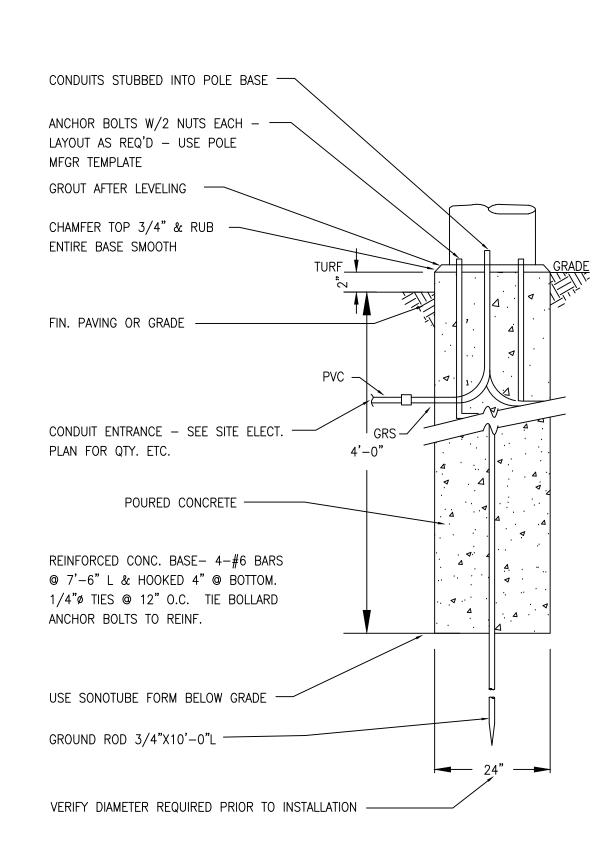
TYPE "AA" 2 | LIGHT BASE DETAIL

BASE TO SET ON UNDISTURBED SOIL. SET ALL FIXTURES TRUE & PLUMB. VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION. COMPACTABLE BACKFILL TO 95%. 3500 PSI 14 DAY STRENGTH CONCRETE HOLE FOR BASE SHALL BE AUGERED. PLACE CONCRETE SAME DAY AS AUGER. 7. DESIGNS BY STRUCTURAL ENGINEER SHALL BE FOLLOWED.



69





Sternberg Lighting
ESTABLISHED 1923 / EMPLOYEE GOINED

5201LED BARRINGTON

RANGE L70 520-590 MINIMUM 100,000 HOURS

Electronic Driver

The LED driver shall be U.L. Recognized. It shall

optimized performance and longevity. It shall

be supplied with a quick-disconnect electrical

connector on the power supply, providing easy

power connections and fixture installation. It

shall have overload, overheat and short circuit

cordance with IEEE/ANSI C62.41.2 guidelines, II

shall be a high efficiency driver with a THD less

than 20% and a high power factor greater than .9. It shall be dimming capable using a O-10v signal, consult factory for more information.

Four 3/4" diameter, hot-dipped galvanized "L type anchor bolts shall be provided with the

in a 16" bolt circle. A door shall be provided

secured with tamper proof stainless steel

the access door.

Warranty

19.7

| BOLLARD FIXTURE DETAIL

TYPE "BB"

for wiring and anchor bolt access. It shall be

hardware. Post will be provided with a ground

ing stud mounted on the base floor opposite

Seven-year limited warranty. See product and

30

5201LED-48"

finish warranty guide for details.

protection, and have a DC voltage output,

constant current design, 50/60HZ. It shall be supplied with line-ground, line-neutral and

be securely mounted inside the bollard, for

SERIES

201LED 50" | 1L | 30(00) | TS | MDL07 |

Traditional ornamental cast aluminum bollard

vertical slots and an internal white acrylic lens

which creates uniform illumination with a high

level of visual comfort. The bollard shall be UL

The bollard is made of heavy wall 356 alloy cast aluminum with a 1" thick floor cast as ar

integral part of the bollard. The high tensile

tially welded internally and externally to the

bollard for added strength. The removable

The luminaire shall use high output, high

brightness LED's, consisting of a two piece

assembly complete with Chip on Board (COI

LED component and COB holder frame. The

recyclable: they shall also be protected from

of 1 to 3 mils. They shall not contain lead, mer

curv or any other hazardous substances and

data shall be determined in accordance with

IESNA LM-80. The High Performance white

of original brightness (lumen maintenance), rated at 25°C. The High Brightness, High Output LED's shall be 4000K (2700K, 3000K, 3500K

minimum of 70 CRI. Consult factory for custom

_____ (see table) delivered initial lumen rating

when operated at steady state with an average

The luminaire shall be provided with an individual collimating type acrylic optic applied to the COB (Chip On Board) LED assembly. The luminaire shall provide a symmetric distribu tion with near perfect surface brightness and

or 5000K option) color temperature with a

ambient temperature of 25°C (77°F)

Performance

1L4075-MOL07

1L3015-MOL07

1L27TS-MOL07

LED's will have a life expectancy of approx mately 100 000 hours with not less than 70

LED's and printed circuit boards shall be 100%

noisture and corrosion by a conformal coating

with removable cap. The bollard includes 12

Specifications

listed in US and Canada

bollard cap is cast aluminum.

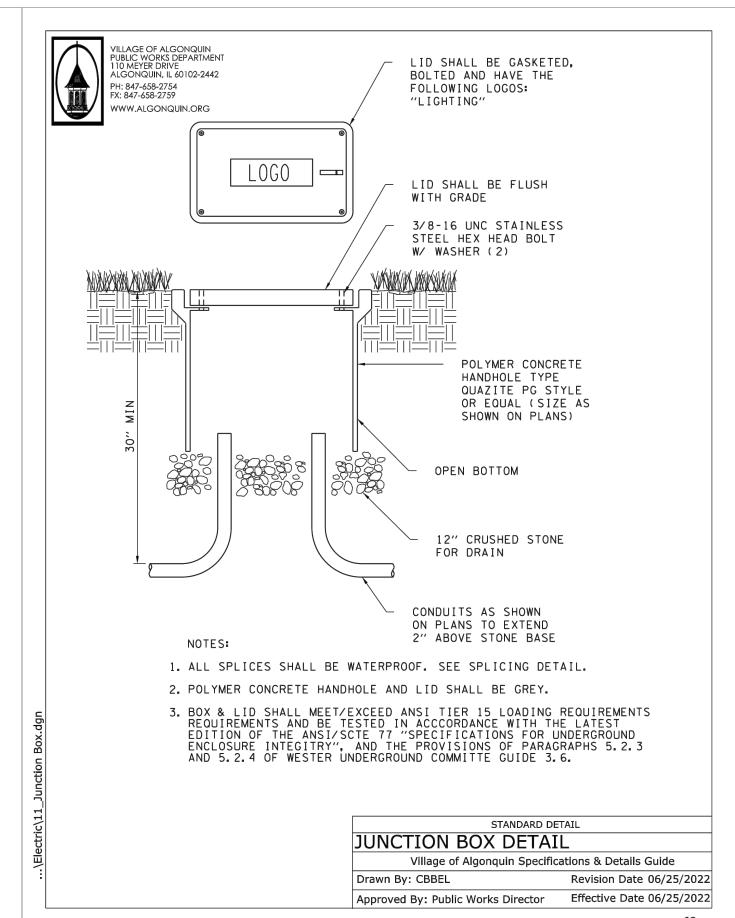
TYPE "BB" 4 | BOLLARD BASE DETAIL

BASE TO SET ON UNDISTURBED SOIL.

SET ALL FIXTURES TRUE & PLUMB. VERIFY ALL DIMENSIONS PRIOR TO INSTALLATION. COMPACTABLE BACKFILL TO 95%. 3000 PSI 28 DAY STRENGTH CONCRETE

HOLE FOR BASE SHALL BE AUGERED. PLACE CONCRETE SAME DAY AS AUGER.

7. DESIGNS BY STRUCTURAL ENGINEER SHALL BE FOLLOWED.





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CHECKED BY

SHEET TITLE Electrica **Details**

DRAWN BY

SCALE IN FEET

SHEET NUMBER

H1212FD

SITE ELECTRICAL SPECIFICATIONS

- 1. THE CONTRACTOR SHALL FURNISH ALL LABOR AND MATERIALS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF THE SYSTEMS INDICATED ON THE DRAWINGS AND IN THE SPECIFICATIONS.
- 2. ALL WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER AND COMPLY WITH ALL APPLICABLE LOCAL, STATE AND NATIONAL CODES AND ORDINANCES AND THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY. ALL EQUIPMENT SHALL BE U.L. (OR OTHER NATIONALLY RECOGNIZED TESTING COMPANY) LISTED.
- 3. ALL DRAWINGS ARE DIAGRAMMATIC IN NATURE. CONTRACTOR SHALL INSTALL SYSTEMS TO MEET FIELD CONDITIONS. CONTRACTOR SHALL COORDINATE ALL WORK WITH RESPECTIVE TRADES, AND VERIFY LOCATIONS FROM THE
- ARCHITECTURAL DRAWINGS, SUPPLIER DRAWINGS, AND FIELD DIMENSIONS. 4. CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE FULL EXTENT OF THE WORK AND THE WORKING CONDITIONS.
- 5. THE DRAWINGS AND SPECIFICATIONS HAVE BEEN DEVELOPED FOR ONE (1) PRIME 2. CONTRACTOR. THEY ARE NOT INTENDED TO DIVIDE THE WORK BETWEEN CONTRACTORS. COORDINATE INTERFACES WITH GENERAL CONTRACTOR.
- 6. ARRANGE AND PAY FOR ALL COST CHARGEABLE TO THE OWNER BY UTILITY COMPANIES FOR ELECTRICAL SERVICES FOR THE PROJECT INCLUDING TELEPHONE AND ELECTRICAL SERVICE.
- EQUIPMENT WITH THE ASSOCIATED VENDOR AND/OR CONTRACTOR AND THE AUTHORITY HAVING JURISIDICTION (AHJ) PRIOR TO ORDERING EQUIPMENT AND ROUGH-IN:
 - A. BANDSHELL BUILDING
 - SHELTER / TOILET BUILDING
 - C. TOILET BUILDING
 - GAZEBO STRUCTURE

OBTAIN AND PAY FOR ALL LICENSES, PERMITS AND INSPECTIONS FOR ALL WORK COVERED BY THIS CONTRACT. ALL CERTIFICATES OF INSPECTION SHALL BE DELIVERED SITE LIGHTING TO THE OWNER.

CONSTRUCTION POWER

PROVIDE TEMPORARY POWER AND LIGHTING FOR THE JOB SITE DURING CONSTRUCTION.

ELECTRIC UTILITY COMPANY

- 1. COORDINATE WITH THE ELECTRIC UTILITY COMPANY FOR THE FURNISHING OF ELECTRICAL SERVICE TO THE BUILDING.
- 2. PROVIDE ALL REQUIRED PADS, POSTS, CONDUIT, GROUNDING, ETC. AS REQUIRED MAIN DISTRIBUTION PANEL (MDP: FOR A COMPLETE AND OPERATIONAL UTILITY SERVICE
- 3. ALL EQUIPMENT SHALL BE SIZED TO MEET OR EXCEED THE AVAILABLE SHORT CIRCUIT CURRENT. VERIFY WITH UTILITY COMPANY. FOR BASE BID, ALL DISTRIBUTION EQUIPMENT SHALL BE RATED AS SHOWN ON THE DRAWINGS. CONTRACTOR SHALL VERIFY THIS VALUE WITH UTILITY COMPANY PRIOR TO ORDERING EQUIPMENT.
- 4. VERIFY VOLTAGE AVAILABILITY AND SERVICE ENTRANCE CONFIGURATION WITH UTILITY COMPANY PRIOR TO ORDERING EQUIPMENT.

ELECTRICAL TIE-INS

COORDINATE WITH THE BUILDING OWNER FOR THE FURNISHING OF ELECTRICAL POWER 1. DISCONNECT SWITCHES SHALL BE UL LISTED, HEAVY DUTY, HORSEPOWER RATED, FOR THE PROJECT

TELE/DATA SERVICE

- 1. PROVIDE TELE/DATA SERVICE CONDUIT(S) AS DIRECTED BY OWNER'S SERVICE
- 2. CONNECT 120VAC POWER TO TELEPHONE EQUIPMENT AS REQUIRED.

- 1. ALL ELECTRICAL WORK SHALL BE INSTALLED IN A METAL CONDUIT SYSTEM, INCLUDING LOW VOLTAGE WIRING.
- 2. SERVICE ENTRANCE CONDUIT, EXTERIOR CONDUIT AND CONDUIT EXPOSED TO WEATHER AND SHALL BE RIGID GALVANIZED STEEL.
- 3. CONDUIT IN WET LOCATIONS SHALL BE RIGID GALVANIZED STEEL
- 4. UNDERGROUND FEEDER AND UNDERGROUND BRANCH CONDUITS SHALL BE RIGID GALVANIZED STEEL OR SCHEDULE 40 PVC AS PERMITTED BY CODE. RIGID GALVANIZED STEEL CONDUIT SHALL BE USED FOR MAKING FINAL TURNS OUT OF EQUIPMENT PADS AND FINISHED FLOOR. EXTERIOR UNDERGROUND CONDUITS SHALL BE INSTALLED 36" BELOW GRADE. CONDUIT BELOW CONCRETE FLOOR SLAB SHALL BE A MINIMUM OF 6" BELOW BOTTOM OF SLAB.
- 5. ALL CONDUIT IN DRY LOCATIONS SHALL BE EMT.
- 6. MINIMUM SIZE CONDUIT ABOVE GRADE SHALL BE 1/2". MINIMUM SIZE CONDUIT BELOW GRADE SHALL BE 3/4".

WIRE (120V AND ABOVE):

- 1. ALL WIRE SHALL BE COPPER WITH 600V INSULATION. CONDUCTORS SHALL BE STRANDED FOR SIZES NO. 8 AWG AND LARGER, SOLID FOR SIZES NO. 10 AWG AND SMALLER.
- 2. TYPE THWN SHALL BE USED INDOORS NOT INCLUDING SERVICES.
- 3. TYPE XHHW SHALL BE USED BELOW SLABS, SERVICE ENTRANCES AND EXTERIOR UNDERGROUND WORK, INCLUDING SITE LIGHTING.
- 4. MINIMUM SIZE SHALL BE #12. RUNS OVER 75' SHALL BE MINIMUM #10 UNLESS NOTED OTHERWISE.

SPLICES AND TERMINATIONS

1. ALL SPLICES AND PIGTAIL CONNECTIONS FOR INDOOR AND DRY LOCATIONS FOR CABLE SIZES NUMBER 10 AWG AND SMALLER SHALL BE MADE UP WITH PREINSULATED SPRING CONNECTORS, 3M COMPANY "SCOTCHLOCK," IDEAL INDUSTRIES, INC., WIRENUTS, OR APPROVED EQUAL. SPLICES FOR CABLE SIZES SPD (PANELBOARD): NUMBER 8 AWG AND LARGER SHALL BE BUTT SPLICE TYPE CONSISTING OF LONG BARREL COPPER ONLY TYPE COMPRESSION CONNECTOR. SPLICE SHALL BE COVERED WITH EITHER A COLD SHRINK CONNECTOR INSULATOR OR HEAT SHRINK CONNECTOR INSULATOR.

2. OUTDOOR SPLICES — SEE DETAIL SHEET E5.0

BRANCH WIRING:

- CONDUITS AND BOXES SHALL BE CONCEALED WHEREVER POSSIBLE.
- CONNECT EQUIPMENT AND DEVICES TO THE CIRCUITS AND SWITCH LEGS SHOWN. ARCS SHOWN ON DRAWINGS REPRESENT SWITCH ARRANGEMENT ONLY, AND ARE NOT INTENDED TO SHOW CONDUIT ROUTINGS.
- EACH CIRCUIT SHALL HAVE AN INDEPENDENT NEUTRAL
- AMPACITIES OF CONDUCTORS WHEN MORE THAN THREE (3) CURRENT -CARRYING CONDUCTORS ARE PLACED IN A RACEWAY SHALL BE DERATED PER CODE.
- WHERE WIRE SIZES MUST BE INCREASED TO LIMIT VOLTAGE DROP, CONTRACTOR 3. SHALL COORDINATE TERMINAL SIZES AT TERMINATIONS.

WIRING DEVICES:

- WIRING DEVICES SHALL BE 20 AMPERE, UL/FED SPEC LISTED, BACK AND SIDE
- WIRED, WITH COLOR AS SELECTED AND APPROVED BY THE ARCHITECT. PROVIDE COMMON COVER PLATE FOR GANGED DEVICES. COVERS FOR SURFACE MOUNTED BOXES SHALL BE APPROPRIATE FOR THE BOX TYPE.
- FOR RECEPTACLES IN EXTERIOR LOCATIONS, PROVIDE CAST ALUMINUM WHILE-IN-USE WEATHERPROOF COVERS, HUBBELL TAYMAC #MX4280
- VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECT & LATEST ADA REQUIREMENTS PRIOR TO INSTALLATION 7. CONTRACTOR SHALL VERIFY ALL ELECTRICAL REQUIREMENTS FOR THE FOLLOWING 5. CONDUCTORS SHALL BE ATTACHED TO DEVICES BY MEANS OF SCREW TERMINALS
 - OR SCREW CLAMPS. WIRING DEVICES SHALL BE HUBBELL OR PASS & SEYMOUR CONSTRUCTION SERIES.

LIGHTING FIXTURES:

- FURNISH FIXTURES AND LAMPS AS SPECIFIED IN THE FIXTURE SCHEDULE
- PROVIDE ADEQUATE SUPPORT FOR ALL FIXTURES.
- 3. VERIFY MOUNTING HEIGHT OF ALL WALL MOUNTED FIXTURES WITH ARCHITECT PRIOR TO INSTALLATION.

1. SITE LIGHTING TERMINATIONS — SEE DETAIL SHEET 5.0.

CURRENT TRANSFORMER AND METER CABINET:

- SHALL BE RATED AS SHOWN ON THE DRAWINGS ENCLOSURE SHALL BE NEMA TYPE 3R FOR OUTDOOR USE.
- ENCLOSURE SHALL CONTAIN METER SOCKET.
- 4. CT CABINET SHALL BE APPROVED BY THE LOCAL UTILITY COMPANY.

- MDP SHALL BE PANELBOARD TYPE CONSTRUCTION WITH DEVICES AND RATINGS AS SHOWN ON THE DRAWINGS.
- 2. ALL BUSSES SHALL BE COPPER. NEUTRAL SHALL BE 100% RATED. PROVIDE 1 THE CONTRACTOR SHALL LABEL EQUIPMENT WITH ½" DYMO TAPE. COPPER GROUND BUS.
- 3. DETERMINE SETTINGS AND ADJUST BREAKERS TO PROVIDE SELECTIVE COORDINATION.
- 4. PROVIDE NAMEPLATE FOR PANEL, AND TYPEWRITTEN DIRECTORY.

MANUFACTURED BY EATON, SIEMENS, SQUARE D OR EQUAL.

DISCONNECT SWITCHES:

- FUSIBLE OR NON_FUSIBLE AS INDICATED ON THE DRAWINGS.
- 2. DISCONNECT SWITCHES SHALL BE RATED AT 600 VOLTS FOR 480 VOLTS AC CIRCUITS AND 240 VOLTS AC FOR 208 VOLTS AC AND 120 VOLTS AC CIRCUITS.
- 3. DISCONNECT SWITCHES SHALL HAVE A SHORT-CIRCUIT RATING OF 100,000
- 4. DISCONNECT SWITCHES SHALL HAVE THE PROPER NEMA RATING FOR THE AREA IN WHICH THEY ARE INSTALLED. 5. EACH DISCONNECT SWITCH SHALL HAVE AN EXTERNAL HANDLE THAT CAN BE
- PADLOCKABLE IN THE "OFF" POSITION. THE HANDLE OPERATION SHALL BE 1. UPON COMPLETION OF WORK, TEST EACH SYSTEM TO BE FREE OF GROUNDS NON_TEASIBLE, QUICK MAKE_QUICK BREAK.
- 6. ALL CURRENT CARRYING PARTS SHALL BE COPPER. LUGS SHALL BE UL LISTED, MECHANICAL WITH SADDLES, CAST COPPER. 2. CHECK ALL FIXTURES FOR BURNT OUT OR DAMAGED LAMPS AND REPLACE.
- 7. MANUFACTURED BY GE "TH" SERIES, SQUARE D "H" SERIES, OR SIEMENS "VB-2" SERIES.

<u>PANELBOARDS:</u>

- ALL BUSSES SHALL BE COPPER.
- 2. BRANCH BREAKERS SHALL BE PLUG-IN TYPE, OR BOLT-ON IF REQUIRED BY LOCAL CODES.
- 3. PROVIDE NAMEPLATE FOR PANEL AND TYPEWRITTEN DIRECTORY FOR EACH PANELBOARD.
- 4. PANELBOARDS SHALL BE MANUFACTURED BY, EATON, SIEMENS, OR SQUARE D. LOAD CENTERS ARE NOT ACCEPTABLE.

SPD (SERVICE):

- 1. SPD SHALL BE RATED 100KA PER MODE (7 MODES), 200KA PER PHASE, 200KA 5. LIGHT FIXTURES SCCR, AND MOUNTED IN ITS OWN ENCLOSURE.
- 2. FEATURES SHALL INCLUDE LED INDICATOR LIGHTS FOR POWER AND PROTECTIVE 7. SPD STATUS FOR EACH MODE, SURGE RATED FUSES WITH 200KA INTERRUPTING 8. BOLLARD LIGHTS RATING, INTEGRAL FUSING FOR EACH PHASE AND NEUTRAL, THERMAL PROTECTION FOR EACH SURGE COMPONENT AND IMMEDIATE INDICATION OF A CHANGE IN COMPONENT STATUS, ALARM MONITORING WITH AUDIBLE ALARM, INCLUDING TEST AND SILENCE SWITCH AND FORM "C" ALARM RELAY.
- 3. SPD SHALL BE CURRENT TECHNOLOGY CGSERIES, GE TYPE HE, HUBBELL HBLXX320, MERSEN XT SERIES..
- 4. SPD SHALL BE NRTL LISTED TO UL 1449 EFFECTIVE MARCH 2022.

- 1. SPD SHALL BE RATED 50KA PER MODE (7 MODES), 100KA PER PHASE, 200KA SCCR, AND MOUNTED IN ITS OWN ENCLOSURE.
- FEATURES SHALL INCLUDE LED INDICATOR LIGHTS FOR POWER AND PROTECTIVE STATUS FOR EACH MODE, SURGE RATED FUSES WITH 200KA INTERRUPTING RATING, INTEGRAL FUSING FOR EACH PHASE AND NEUTRAL, THERMAL PROTECTION FOR EACH SURGE COMPONENT AND IMMEDIATE INDICATION OF A CHANGE IN COMPONENT STATUS, ALARM MONITORING WITH FORM "C" ALARM RELAY.
- SPD SHALL BE CURRENT TECHNOLOGY CGSERIES, GE TYPE ME, HUBBELL HBLXX100, MERSEN XP SERIES.
- 4. SPD SHALL BE NRTL LISTED TO UL 1449 EFFECTIVE MARCH 2022.

FIXTURE SCHEDULE

ALL FIXTURE FINISHES SHALL BE SELECTED BY OWNER/ ARCHITECT.

(VERIFY EXACT MANUFACTURER, FIXTURE STYLE, POLE STYLE, HEIGHT, ETC. WITH VILLAGE PRIOR TO ORDERING FIXTURES)

1. GROUNDING SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL INSPECTION

2. INTERIOR METAL WATER PIPING MORE THAN 5 FEET FROM POINT OF BUILDING

4. GROUNDING FOR REMOTE BUILDING AND STRUCTURES SHALL COMPLY WITH

THE RESTROOM BUILDING IS PROVIDED BY OTHERS. ALL WIRING, CONDUIT,

2. SEE BANDSHELL - SHELTER TOILET - TOILET BUILDING DRAWINGS FOR

1. EXISTING GROUNDING SYSTEM SHALL BE TESTED AND THE NECESSARY

BRANCH CONDUIT, BONDED AT EACH TERMINATION.

BANDSHELL - SHELTER/TOILET - TOILET BUILDING

CONTRACTOR UNLESS NOTED OTHERWISE.

ADDITIONAL ELECTRICAL REQUIREMENTS.

ENTRANCE SHALL NOT BE USED AS PART OF THE GROUNDING ELECTRODE

SYSTEM OR AS A CONDUCTOR TO INTERCONNECT ELECTRODES THAT ARE PART

PROVIDE A SEPARATE, INSULATED GROUNDING CONDUCTOR IN EACH FEEDER AND

WIRING DEVICES, BOXES, FITTINGS, OCCUPANCY SENSORS, POWER PACKS, EXIT SIGNS, EMERGENCY LIGHTING, DISCONNECT SWITCHES, PANELS, TRANSFORMERS,

TIMERS, DEVICES, LIGHTING, ETC. SHALL BE FURNISHED AND INSTALLED BY THE

CORRECTIONS SHALL BE MADE TO BRING THE GROUNDING SYSTEM INTO CODE

REMOVED MUST BE DEACTIVATED AND THE WIRING SHALL BE REMOVED BACK TO

THE NEAREST DEVICE THAT IS CONNECTED TO THE SAME CIRCUIT THAT IS TO

TO THE NEAREST DEVICE NOT BEING REMOVED OR BACK TO A POINT WHERE

ALL EXISTING ELECTRICAL EQUIPMENT, DEVICES AND JUNCTION BOXES BEING

3. ALL EXISTING CONDUIT MUST BE REMOVED FROM THE DEVICE BEING REMOVED

THE CONDUIT ENTERS A WALL, FLOOR OR CEILING NOT BEING REMOVED.

THE EXISTING EQUIPMENT MUST REMAIN IN OPERATION DURING CONSTRUCTION.

RECONNECT EXISTING CIRCUITS DISRUPTED BY NEW DEMOLITION WORK THAT ARE

REQUIRED TO REMAIN IN OPERATION DURING AND/OR AFTER CONSTRUCTION.

7. THE OWNER MUST APPROVE ANY REQUIRED OUTAGES TO UPGRADE SERVICE OR

2. ALL MAJOR ELECTRICAL EQUIPMENT SHALL BE IDENTIFIED WHICH SHALL INCLUDE

3. PROTECTIVE DEVICES IN MDP'S SHALL BE LABELLED WITH THE LOAD SERVED.

4. PROVIDE PANEL AND CIRCUIT NUMBER IDENTIFICATION ON ALL JUNCTION AND

6. SERVICE EQUIPMENT SHALL BE LABELED LISTING AVAILABLE FAULT CURRENT.

1. PROVIDE AS-BUILT DRAWINGS PER VILLAGE OF ALGONQUIN REQUIREMENTS AND

CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND WIRING TO BE FREE FROM

SUBMIT SHOP DRAWINGS FOR THE FOLLOWING EQUIPMENT FOR APPROVAL BY THE

MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE (1) YEAR FROM DATE

AND/OR FAULTS. TEST FOR PROPER OPERATION. IF ANY DEFECTS ARE FOUND,

5. APPLY THE FACTORY SUPPLIED ARC FLASH WARNING LABELS TO ALL

SWITCHBOARDS AND PANELS AS REQUIRED PER NEC 110.16.

7. PROVIDE NEW TYPEWRITTEN SCHEDULES FOR PANELBOARDS.

TAKE IMMEDIATE ACTION TO REMEDY.

MDP, PANELBOARDS, MOTOR STARTERS, DISCONNECT SWITCHES, SWITCHES, ETC.

6. CONTRACTOR SHALL PROVIDE ALL MATERIAL AND LABOR TO REFEED OR

RECONNECT OR TEMPORARILY FEED EXISTING EQUIPMENT.

4. REMOVE INDICATED EXISTING ELECTRICAL DEVICES AS SHOWN AND PROVIDE

GROUND ROD.

OF GROUNDING SYSTEM.

ARTICLE 250.32.

RENOVATION/DEMOLITION:

COMPLIANCE.

COVER PLATES

TO INSTALL EQUIPMENT.

PULL BOXES.

AS-BUILT DRAWINGS:

FILE TYPE.

GUARANTEE:

OF ACCEPTANCE.

SHOP DRAWINGS

METERING CABINET

3. PANELBOARDS

4. WIRING DEVICES

6. PEDESTRIAN LIGHT POLES

ENGINEER:

1. MDP

AUTHORITY, WITH CONNECTIONS TO BUILDING STEEL, METAL PIPING SYSTEMS AND

DECORATIVE LED FIXTURE & POLE, TYPE T3 DISTRIBUTION, LED, 120V, 26 WATTS, 2880 LUMENS, MULTI-TAP BALLAST, ON 14' POLE, CONCRETE BASE. PROVIDE ALL ACCESSORIES TO POLE MOUNT, COLOR/ FINISH AS SELECTED BY ARCHITECT. (BLACK POWDER COATED)

STERNBERG LIGHTING — OLD TOWN FIXTURE #PTA850SRED-5P-12L30T3-MDL008-A-BK

STERNBERG LIGHTING - BARRINGTON 5200 SERIES POLE #5214-TFP6-C-BK, 14' HEIGHT, 6" TO 3" DIAMETER, CAST TAPERED FLUTED POLE WITH INTEGRAL BASE WITH ACCESS DOOR.

LED BOLLARD FIXTURE, 120V, 30W LED LAMP, COLOR 3000K, 575 LUMENS, CONCRETE BASE SEE DETAIL. FINISHES AS SELECTED BY ARCHITECT.

STERNBERG LIGHTING BARRINGTON SERIES #5201LED 50" 1L30TS-MDL07 FDH BK

VERIFY FIXTURE HEIGHT, LAMP COLOR, ETC. FIXTURE TO MATCH EXISTING DOWNTOWN LED BOLLARD

KENALL #H1212FD-PP-COLOR-50L35K-120V-BPC-MS

GAZEBO — CEILING MOUNTED LED CANOPY FIXTURE WITH DIE CAST ALUMINUM HOUSING AND IMPACT RESISTANT POLYCARBONATE LENS, PHOTO CELL. MOTION SENSOR 20 MINUTE TIME OUT. DIMS DOWN TO 30%, 120V, 54.0W, 5054 LUMENS, COLOR 3500K. FINISHES AS SELECTED BY ARCHITECT

ELECTRICAL SYMBOL LIST DUPLEX RECEPTACLE OUTLET, 20A, 120V "A" DENOTES PANELBOARD, "2" DENOTES CIRCUIT NUMBER OTHER ABBREVIATIONS: WP = WEATHERPROOF WHILE IN USE <u>TR = TAMPER AND WEATHER RESISTANT</u> GFI DUPLEX RECEPTACLE **WEATHERPROOF** JUNCTION BOX SIZE AND TYPE AS REQUIRED BY CODE. TIMER **PANELBOARD** FUSED DISCONNECT SWITCH GROUNDING ELECTRODE CONDUCTOR TO BLDG STEEL, WATER SERVICE, AND GROUND ROD " DENOTES LIGHT FIXTURE TYPE "D" DENOTES PANELBOARD DENOTES CIRCUIT NUMBER a" DENOTES SWITCH LEG

DESIG

22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock**design**group.com

PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT

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Issue for Construction May 7, 2024 **REVISIONS**

| No | Date | Issue |
|----|------|-------|
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| | | |
| | | |
| | | |

SHEET TITLE Electrical Specification

DRAWN BY

SCALE IN FEET



CHECKED BY

SHEET NUMBER

STANDARD ABBREVIATIONS

RCP

RD

REF

REINF

REQD

RFG

RFM

RH RO

RSF RST

RTF

SCHED

SCR

SD

SECT

SH SHT

SHTHG

SHV SLNT SND SNDU

SOG

SPCG SPEC

SPKR SQ

SS SST

STD

STL

STL JST

STL LNTL

STL RF DK

STL PL

STL TR

STRUCT

STN

SUSP

SV

T/S

TC TD TER THK TOB TOC

TOF TOM

TOS

TOW

VCT

VIF

VWC

WC

WD WDW

WP

WT

- POLYVINYL CHLORIDE

- RISER, RADIUS, THERMAL

RESISTANCE (R-VALUE)

- RESILIENT BASE

RECEPTACLE

- PARTITION

- PAVING

PTDR

PVC

- POUNDS PER SQUARE FOOT

- PAPER TOWEL DISPENSER

- PAPER TOWEL DISPENSER &

- PAPER TOWEL RECEPTACLE

VERT

SWP SYMM

SYNTH

- REINFORCE

- REQUIRED

- ROOFING

- RIGHT HAND

- SCHEDULE

- SECTION

- SHEET

- STOREFRONT

- SHEATHING

- SHELVING

- SLAB ON GRADE

- SPECIFICATION

- SEALANT

- SPACING

- SPEAKER

- SQUARE

- STANDARD

- STEEL JOIST

- STEEL LINTEL

- STEEL PLATE

- STEEL TRUSS

- STRUCTURAL

- SHEET VINYL

- SYMMETRICAL

- SYNTHETIC

- TILE, TREAD

- TUB/SHOWER

- TRENCH DRAIN - TERRAZZO

- TOP OF BEAM

- TOP OF WALL

- TOWEL RACK

- VERTICAL

- VERIFY IN FIELD

- WALL COVERING

- WOOD, WOOD DOOR

- WELDED WIRE FABRIC

- WALL PATTERN, WATERPROOFING

- WEIGHT, WINDOW TREATMENT

- WIDE, WEST

- WINDOW

- VINYL COMPOSITION TILE

- VINYL WALL COVERING

- THICK

- SUSPEND

- STEEL

- STAIN

| AB ACST ADDL | - ANCHOR BOLT - ACOUSTIC(AL) - ADDITIONAL | FURG C FURN FWC | - FURRING CHANNEL - FURNACE - FABRIC WALLCOVERING |
|--------------------|---|-----------------------|---|
| ADDN ADH | - ADDITION - ADHESIVE | GA | - GAGE, GAUGE |
| ADJ | - ADJACENT, ADJOINING, | GALV | - GALVANIZED |
| AED | ADJUSTABLE - AUTOMATED EXTERNAL | GB GFRC | - GRAB BAR - GLASS-FIBER REINFORCED |
| AFF | DEFIBRILLATOR - ABOVE FINISH FLOOR | GL | CONCRETE - GLASS |
| ALT | - ALTERNATE | GL BLK | - GLASS BLOCK |
| ALUM ANCH | - ALUMINUM - ANCHOR | GLZ CMU GRFG | GLAZED CONCRETE MASONRY UNIT GLASS-FIBER REINFORCED GYPSUM |
| ANOD AP | - ANODIZE(D) - ACCESS PANEL | GT GWH | - GROUT - GAS FIRED WATER HEATER |
| APC | - ACOUSTICAL PANEL CEILING | GYP BD | - GYPSUM WALL BOARD |
| APPROX ASPH | - APPROXIMATE - ASPHALT | Н | - HIGH, HATCH (ROOF) |
| AUTO AVE | - AUTOMATIC - AVERAGE | HB HDNR | - HOSE BIB - HARDENER |
| AWT | - ACOUSTICAL WALL TREATMENT | HDW | - HARDWARE |
| BAL SHT | - BALANCE SHEET | HDWD HM | - HARDWOOD - HOLLOW METAL |
| BC BCS | - BRICK COLOR - BABY CHANGING STATION | HORIZ HR | - HORIZONTAL - HANDRAIL |
| BD | - BOARD | HT | - HEIGHT |
| BG BITUM | - BUMPER GUARD - BITUMINOUS | HTG HVAC | - HEATING - HEATING, VENTILATING, AND AIR |
| BLDG BLKG | - BUILDING - BLOCKING (WOOD) | | CONDITIONING |
| BOT | - BOTTOM | ID | - INSIDE DIAMETER, INSIDE DIMENSIO |
| BRDG BRG | - BRIDGING - BEARING | IF INCL | - INSIDE FACE - INCLUDED |
| BRK PV BRKT | - BRICK PAVERS - BRACKET | INSUL INT | - INSULATION - INTERIOR |
| BSMT | - BASEMENT | INV | - INVERT |
| BTWN BUR | - BETWEEN - BUILT UP ROOFING | JT | - JOINT |
| CAB CB | - CABINET - CHALKBOARD | KD KOP | - KNOCKED DOWN - KNOCK OUT PANEL |
| CC CCT | - CUBICLE CURTAIN - CUBICLE CURTAIN TRACK | L | - LONG, ANGLE |
| CFMF CG | - COLD-FORMED METAL FRAMING - CORNER GUARD | LAM LAV | - LAMINATE(D) - LAVATORY |
| CH | - COAT HOOK | LH | - LEFT HAND |
| CIP CONC CJ | - CAST-IN-PLACE CONCRETE - CONTROL JOING, CONSTRUCTION | LINO LKR | - LINOLEUM - LOCKER |
| CLG | JOINT - CEILING | LL LLH | - LIVE LOAD, LOW LEVEL - LONG LEG HORIZONTAL |
| CLR | - CLEAR | LLV | - LONG LEG VERTICAL |
| CMU CNTR | - CONCRETE MASONRY UNIT - COUNTER | LT LVL | - LIGHT - LEVEL |
| COL | - CLEAN OUT, CASED OPENING - COLUMN | LVR | - LOUVER |
| COMB | - COMBINATION, COMBINED | MAS | - MASONRY |
| COMP COMPT | - COMPRESSIBLE - COMPARTMENT | MATL MAX | - MATERIAL - MAXIMUM |
| CONC CONC CTG | - CONCRETE - CONCRETE COATING | MB MBH | - MARKERBOARD - MOB/BROOM HOLDER |
| COND | - CONDITION | MECH | - MECHANICAL |
| CONT | - CONTINUOUS - CONTRACTOR | MED MEZZ | - MEDIUM - MEZZANINE |
| CORR CPRS | - CORRIDOR - COMPRESSIBLE | MFR MH | - MANUFACTURER - MANHOLE |
| CPT | - CARPET | MI | - MIRROR |
| CR CRL | - CLOSET ROD - CRASH RAIL | MIN MISC | - MINIMUM, MINUTE - MISCELLANEOUS |
| CRS CTR | - COLD-ROLLED STEEL - CENTER(S) | MO MOD | - MASONRY OPENING - MODEL, MODULE, MODULAR |
| CUH | - CABINET UNIT HEATER | MSB | - MOP SERVICE BASIN |
| CUV | - CABINET UNIT VENTILATOR - CURTAINWALL | MT MTL | - MOUNT - METAL |
| D DC | - DEEP, DEPTH, PENNY NAIL - DISPLAY CASE | NDU NIC | - NEEDLE DISPOSAL UNIT - NOT IN CONTRACT, NOISE ISOLATIO |
| DET DETN | - DETAIL - DETENTION | NO | CLASS - NUMBER |
| DF | - DRINKING FOUNTAIN | NOM | - NOMINAL |
| DIA DIM | - DIAMETER - DIMENSION | NTS | - NOT TO SCALE |
| DN DP | - DOWN - DECORATIVE PANEL | OA OC | - OVERALL - ON CENTER |
| DR | - DOOR | OD | - OUTSIDE DIAMETER, OUTSIDE |
| DS DWG | - DOWNSPOUT - DRAWING(S) | OF | DIMENSION - OUTSIDE FACE |
| EHD | - ELECTRIC HAND DRYER | OFD OH | - OVERFLOW DRAIN - OVERHEAD |
| EJ | - EXPANSION JOINT | OH DR | - OVERHEAD DOOR |
| ELEC | - ELEVATION - ELECTRIC, ELECTRICAL | OP OPH | - OPERABLE PARTITION - OPPOSITE HAND |
| ELEV EMBED | - ELEVATOR - EMBEDMENT | OPNG OPP | - OPENING - OPPOSITE |
| EMER | - EMERGENCY | OS | - OVERFLOW SCUPPER |
| EPDM | - ETHYLENE PROPYLENE DIENE MONOMER | PC | - PORTLAND CEMENT, POINT |
| EQ EQUIP | - EQUAL - EQUIPMENT | PCC | OF CURVE, POLYCARBONATE - PRECAST CONCRETE |
| ES EW | - EXPOSED STRUCTURE - EACH WAY | PERIM PJ | - PERIMETER - PROJECTOR |
| EWC | - ELECTRIC WATER COOLER | PL | - PLATE, PLASTIC LAMINATE |
| EWH EXIST | - ELECTRIC WATER HEATER - EXISTING | PLAS PLBG | - PLASTER - PLUMBING |
| EXP | - EXPANSION | PLYWD PS | - PLYWOOD - PROJECTION SCREEN |
| EXT | - EXTERIOR | гΟ | * I NOULO HON SUNEEN |

- REFLECTED CEILING PLAN - ROOF DRAIN, ROAD - REFERENCE, REFRIGERATOR - RESILIENT FLOORING - REMOVABLE FLOOR MAT - ROUGH OPENING - RESINOUS FLOORING - REINFORCING STEEL - RESILIENT TILE FLOORING - ROOF VENT, ROOF VENTILATOR - SEALED CONCRETE - SHOWER CURTAIN ROD - SOLID CORE WOOD DOOR - SOAD DISPENSER - SHINGLES, SINGLE HUNG (WINDOW) - SANITARY NAPKIN DISPENSER - SANITARY NAPKIN DISPOSAL UNIT - SERVICE SINK, SOLID SURFACING - STAINLESS STEEL, SHOWER SEAT - STEEL ROOF DECK - SHEET WALL PROTECTION - TONGUE AND GROOVE - TOWEL BAR, TACKBOARD - TOILET COMPARTMENT - TOP OF CONCRETE, TOP OF CURB - TOP OF FOOTING - TOP OF MASONRY - TOP OF SLAB, TOP OF STEEL - TOILET PAPER HOLDER - TUBE STEEL, TRANSITION STRIP - UNLESS NOTED OTHERWISE

STANDARD DETAILING SYMBOLS PLAN / DETAIL SIM Room Name ROOM TAG REF. CALLOUT **DOOR / BORROWED** \ A101/ LITE TAG AREA TO BE ROOM NUMBER-- 101 SHEET REF. | ENLARGED <u>_ _ _ _ _</u> **ROOM NAME ROOM NUMBER WINDOW TAG** 101 BASE FINISH-**BUILDING/WALL ROOM FINISH** RB-X TAG WALL FINISH-PT-X SHEET REF. CPT-X FLOOR FINISH-X#XX 1HR WALL TAG COMMENTS: 22 NOTES (AS NEEDED)-DETAIL REF. <u> Area Name</u> **DETAIL SECTION AREA TAG** AREA SQUARE FURNITURE, → 150 SF FOOTAGE CASEWORK, & SHEET REF.-**EQUIPMENT TAG** ELEVATION REF. --**EXTERIOR CEILING TAG REVISION TAG** CEILING HEIGHT -**ELEVATION** - A101 SHEET REF.-(ABOVE FINISH FLOOR) (00 00 00.A1) ELEVATION REF. — 1 **KEYNOTE TAG** LEVEL NAME FIRST FLOOR LEVEL LINE **INTERIOR** → A101 **ELEVATION** LEVEL ELEVATION - 100' - 0" SHEET REF.-**SPOT ELEVATION** SYMBOL VIEW NAME-GRID NUMBER OR **GRID LINE VIEW TITLE LETTER** -VIEW DESIGNATION View Name Scale: 1/8" = 1'-0" INDICATES PLAN NORTH /-VIEW SCALE-INDICATES TRUE NORTH VIEW REF/SHEET REF WHERE VIEW IS REFERENCED

STANDARD DRAFTING SYMBOLS 0 **NEW DOOR EXISTING DOOR EXISTING DOOR** FLOOR MOUNTED **WALL MOUNTED FLOOR MOUNTED** TO BE DEMOLISHED **WATER CLOSET TANKLESS WATER TANKLESS WATER** CLOSET CLOSET WALL MOUNTED COUNTER MOUNTED **ELECTRIC WATER TOILET PARTITIONS** WALL MOUNTED **GRAB BAR** LAVATORY COOLER LAVATORY URINAL

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| S-011 | STRUCTURAL SCHEDULES AND DETAILS | | | |
| S-111 | FOUNDATION PLANS AND DETAILS | | | |
| S-112 | FOUNDATION PLANS AND DETAILS | | | |
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| S-200 | FOUNDATION DETAILS AND SECTIONS | | | |
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| AD-101 A-111 A-112 A-113 A-130 A-201 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 A-301 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS BUILDING SECTIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 A-301 A-311 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS BUILDING SECTIONS WALL SECTIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 A-301 A-311 A-312 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS BUILDING SECTIONS WALL SECTIONS WALL SECTIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 A-301 A-311 A-312 A-411 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS BUILDING SECTIONS WALL SECTIONS INTERIOR ELEVATIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 A-301 A-311 A-312 A-411 A-412 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS BUILDING SECTIONS WALL SECTIONS INTERIOR ELEVATIONS INTERIOR ELEVATIONS INTERIOR ELEVATIONS | | | |
| AD-101 A-111 A-112 A-113 A-130 A-201 A-202 A-203 A-301 A-311 A-312 A-411 A-412 A-511 | SITE DEMOLITION PLAN FIRST FLOOR ANNOTATION & DIMENSION PLAN FIRST FLOOR CEILING AND FINISH PLANS ROOF PLANS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS BUILDING SECTIONS WALL SECTIONS WALL SECTIONS INTERIOR ELEVATIONS INTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR SECTIONS WALL SECTIONS INTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR ELEVATIONS EXTERIOR SECTION DETAILS | | | |

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| P-201 | PLUMBING SCHEMATICS |
| P-202 | PLUMBING SCHEMATICS |
| P-301 | PLUMBING DETAILS |
| P-302 | PLUMBING DETAILS |
| P-303 | PLUMBING DETAILS |
| P-401 | PLUMBING SCHEDULES |
| P-501 | PLUMBING SPECIFICATIONS |
| P-502 | PLUMBING SPECIFICATIONS |
| 23 MECHA | - |
| M-001 | MECHANICAL SYMBOLS, NOTES, AND ABBREVIATION |
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SHEET NAME

SHEET NO.

| E-001 | ELECTRICAL SYMBOLS, NOTES, AND ABBREVIATION |
|-------|---|
| | · |
| E-102 | ELECTRICAL POWER NEW WORK PLAN |
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| E-402 | ELECTRICAL DETAILS |
| E-501 | ELECTRICAL SPECIFICATIONS |
| E-502 | ELECTRICAL SPECIFICATIONS |

BUILDING CODE SYNOPSIS

APPLICABLE CODES

BUILDING:

MECHANICAL:

ELECTRICAL

ENERGY:

2018 INTERNATIONAL BUILDING CODE, W/LOCAL AMENDMENTS 2018 INTERNATIONAL EXISTING BUILDING CODE, W/ LOCAL AMENDMENTS ACCESSIBILITY: 2018 ILLINOIS ACCESSIBILITY CODE PLUMBING: ILLINOIS STATE PLUMBING CODE (CURRENT VERSION) LIFE SAFETY:

NFPA 101, 2015 EDITION 2018 INTERNATIONAL FIRE CODE W/ LOCAL AMENDMENTS

FIRE PREVENTION: SPRINKLER SYSTEMS: NFPA 13, 2015 EDITION 2018 INTERNATIONAL MECHANICAL CODE W/ LOCAL AMENDMENTS 2017 NATIONAL ELECTRICAL CODE W/ LOCAL AMENDMENTS ILLINOIS ENERGY CONSERVATION CODE, 2018 EDITION

USE GROUP CLASSIFICATION: ASSEMBLY A-5 - OUTDOOR ACTIVITIES

CONSTRUCTION TYPE IIB (TABLE 504.3)

ALLOWABLE HEIGHT UNLIMITED STORIES, 55 FT (UNSPRINKLED) UNLIMITED SF PER FLOOR ALLOWABLE AREA

TOTAL UNLIMITED SF PER FLOOR

PROPOSED BUILDING -

FIRE SUPPRESSION:

SHELTER BLDG: 15'-1" TOILET BLDG: 11'-6" BANDSHELL: 25'-7" PROPOSED HEIGHT PROPOSED GROSS AREA SHELTER BLDG: 1,472 SF TOILET BLDG: 228 SF BANDSHELL: 1,375 S

TYPE IIB - UNPROTECTED CONSTRUCTION TYPE:

FIRE RESISTANCE RATINGS:

STRUCTURAL FRAME 0 HOUR BEARING WALLS 0 HOUR EXTERIOR 0 HOUR INTERIOR

NONBEARING WALL & PARTITIONS **EXTERIOR** 0 HOUR (TABLE 601) 0 HOUR INTERIOR

UNSPRINKLERED

FLOOR CONSTRUCTION* 0 HOUR **ROOF CONSTRUCTION*** 0 HOUR

| OCCUPANT LOAD: | SHELTER BLDG: 39 TOILET BLDG: 5 BANDSHELL: 75 OCCUPANTS | | |
|--|---|---------------------------|--|
| (TABLE 1004.1.2) | STORAGE 1/300 SF ASSEMBLY + STAGES AND PLATFORMS 1/15 SF LOCKER 1/50 SF | | |
| EGRESS: | | | |
| NUMBER OF EXITS REQUIRED: FIRST FLOOR = | (IBC TABLE 1006.2.1) 1 EXITS | EXITS PROVIDED 1 EXITS | |

REQUIRED EXIT WIDTH (IBC 1005.3) STAIRWAYS= .3"/ OCCUPANT DOORS, RAMPS, CORRIDORS .15"/OCCUPANT 36" DOOR/34" CLEAR PROVIDED

MAX. TRAVEL DISTANCE: (IBC TABLE 1017.2) FULLY SPRINKLERED: 250 FT MAX. DEAD END DISTANCE: (IBC 1020.4) 20 FT GROUP A OCC. =

EMERGENCY LIGHTING: (IBC 1008) EGRESS ILLUMINATION REQUIRED

PLUMBING SUMMARY: (ILLINOIS PLUMBING CODE Section 890.810, Appendix A - Table B) **BUILDING TYPE:**

ASSEMBLY SPACES

OCCUPANCY-(PER ILLINOIS PLUMBING CODE Section 890.810.2.A.ii) AS FOLLOWS: AMPHITHEATER SEATING 20,700 SF 414 OCC 186 OCC 600 OCC PLAYGROUND TOTAL

REQUIRED NUMBER OF FIXTURES (BASED ON 600 OCCUPANTS) - ASSEMBLY SPACES: MALÈ OCCUPANTS = 300 OCC FEMALE OCCUPANTS = 300 OCC WATER CLOSETS: URINALS: LAVATORIES:

DRINKING FOUNTAINS: 1/ EACH SET @ RESTROOM (EXISTING IN ADJACENT SITE) OTHER FIXTURES: (PROVIDED) 1 SERVICE SINKS

| PROVIDED PLUMBING FIXTURE MATRIX | | | | |
|----------------------------------|----------------|-------|--|--|
| FIXTURE TYPE | FIRST FLOOR | TOTAL | | |
| - WATER CLOSET | | 10 | | |
| * MEN | 3 (+2 URINALS) | | | |
| * WOMEN | 5 | | | |
| - LAVATORIES | | 8 | | |
| * MEN | 4 | | | |
| * WOMEN | 4 | | | |

ALTERNATES

ALTERNATE #1

DRINKING FOUNTAINS

BASE BID - INCLUDE MASONRY COLUMN BASES AT SHELTER BUILDING ALT BID - DELETE MASONRY COLUMN BASES AT SHELTER BUILDING

ALTERNATE #2 BASE BID - PROVIDE STANDING SEAM METAL ROOF AT SHELTER, RESTROOM AND BANDSHELL BUILDINGS AS DESIGNED AND DETAILED ALT BID - PROVIDE ARCHITECTURAL SHINGLE ROOF AT SHELTER RESTROOM. AND BANDSHELL BUILDINGS IN LIEU OF STANDING SEAM **ROOF**



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PROJECT

Towne Park

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ISSUED FOR CONSTRUCTION

Issue

4 05/07/24 ISSUE FOR CONSTRUCTION

No Date

No. Date Issue **CHECKED BY** DRAWN BY

SHEET TITLE

INDEX AND CODE **SYNOPSIS**

SCALE

SHEET NUMBER

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- FLOOR DRAIN

- FOUNDATION

- FINISH FLOOR

- FIRE EXTINGUISHER

- FIRE HOSE CABINET

- FLOOR PATTERN

- FIRE EXTINGUISHER CABINET

- FIBER REINFORCED PLASTIC

- FABRIC

- FINISH

- FLOOR

- FOOTING

- FLASHING

FDTN

FEC

FHC

FLASH

FLP

FTG

```
GENERAL NOTES
1.1 CODES AND DESIGN CRITERIA
     BUILDING CODE: INTERNATIONAL BUILDING CODE 2018
 b RISK CATEGORY II
1.2 DESIGN LOADS
     ROOF LOAD
     DEAD LOAD 25 PS
     LIVE LOAD 30 PSF
     MECHANICAL EQUIPMENT SEE PLAN
 c FLOOR LOAD
     LIVE LOAD 100 PSF AT BAND SHELL STAGE
  d SNOW LOAD
      GROUND SNOW LOAD Pg 25 PSF
      IMPORTANCE FACTOR Is 1.0
      SNOW EXPOSURE FACTOR Ce 1.0
      SNOW THERMAL FACTOR Ct 1.0
      FLAT ROOF SNOW LOAD Pf 17.5 PSF
 e WIND LOADS (ASCE7-16)
       BASIC WIND SPEED 107 mph (3 SEC GUST)
        RISK CATEGORY II
        WIND EXPOSURE B
        INTERNAL PRESSURE COEFFICIENT +/- .18
      COMPONENTS & CLADDING
        TRIBUTARY AREA 20 SQUARE FEET
              ROOF ZONE 1 +11.9/-40.2 PSF
              ROOF ZONE 2 +11.9/-50.7 PSF
              ROOF ZONE 3 +11.9/-59.7 PSF
        WALLS (TRIBUTARY AREA > 20 SQUARE FEET)
              WALL ZONE 4 +20.8/-22.6 PSF
              WALL ZONE 5 +20.8/-27.2 PSF
              NET WIND UPLIFT (ASCE7-16)
      NET UPLIFT 15 PSF (WITHIN 10 FT OF ROOF EDGE)
      NET UPLIFT 10 PSF (TYP UN)
f SEISMIC LOADS
      RISK CATEGORY II
      SEISMIC IMPORTANCE FACTOR 1.0
      Ss 0.118 Sds 0.126
      S1 0.06 Sd1 0.097
      SITE CLASS D
      SEISMIC DESIGN CATEGORY B
      BASIC SEISMIC FORCE RESISTING SYSTEM: INTERMEDIATE CMU SHEAR WALLS
      RESPONSE MODIFICATION FACTOR R 3.5
      SEISMIC RESPONSE COEFFICIENT Cs
      DESIGN BASE SHEAR (LRFD) RESTROOM BLDG. 1k / SHELTER BLDG. 3k / BAND SHELL 4k
      ANALYSIS PROCEDURE EQUIVALENT LATERAL FORCE
1.3 GENERAL REQUIREMENTS
a DEFINITIONS
      PRIMARY STRUCTURAL SYSTEM IS THE COMPLETED COMBINATION OF ELEMENTS WHICH SERVE TO
      SUPPORT THE BUILDING'S SELF-WEIGHT, THE APPLICABLE LIVE LOAD, AND THE ENVIRONMENTAL
      LOADS SUCH AS WIND, SEISMIC.
      PRE-ENGINEERED STRUCTURAL ELEMENTS ARE STRUCTURAL ELEMENTS WHICH ARE SPECIFIED BY
      THE OWNER AS DESIGN DELEGATED ITEMS TO BE THE DESIGN RESPONSIBILITY OF A SPECIALTY
      STRUCTURAL ENGINEER (SSE)
      SPECIAL INSPECTION IS INSPECTION PERFORMED BY A QUALIFIED PERSON, APPROVED BY THE
      BUILDING OFFICIAL, FOR THE TYPES OF WORK REQUIRING INSPECTION PER THE GOVERNING CODES
      AND CONTRACT DOCUMENTS.
      SPECIALTY STRUCTURAL ENGINEER (SSE) IS A LICENSED PROFESSIONAL/STRUCTURAL ENGINEER,
      NOT THE SER, WHO IS RESPONSIBLE FOR SEALING PLANS AND DESIGNS FOR PRE-ENGINEERED
      STRUCTURAL ELEMENTS WHICH ARE NECESSARY FOR THE STRUCTURE TO BE COMPLETED AND THE
      OWNER HAS DESIGNATED AS DESIGN DELEGATED ITEMS.
      STRUCTURAL ENGINEER OF RECORD (SER) IS THE STRUCTURAL ENGINEER WHO IS LEGALLY
      ELIGIBLE TO SEAL THE STRUCTURAL DOCUMENTS FOR A BUILDING PROJECT. THE SER IS
      RESPONSIBLE FOR THE DESIGN OF THE PRIMARY STRUCTURAL SYSTEM.
      DESIGNATED REPRESENTATIVE FOR CONSTRUCTION (DRC - I.E., CONSTRUCTION MANAGER OR
      GENERAL CONTRACTOR) IS RESPONSIBLE FOR THE OVERALL CONSTRUCTION OF THE PROJECT
      INCLUDING PROJECT SCHEDULING, JOB SITE SAFETY AND MEANS AND METHODS OF
      SPECIAL INSPECTOR: A QUALIFIED PERSON EMPLOYED OR RETAINED BY AN APPROVED AGENCY AND
      APPROVED BY THE BUILDING OFFICIAL AS HAVING THE COMPETENCE NECESSARY TO INSPECT A
      PARTICULAR TYPE OF CONSTRUCTION REQUIRING SPECIAL INSPECTION.
     THE STRUCTURAL DRAWINGS ARE TO BE USED IN CONJUNCTION WITH THE SPECIFICATIONS AND
      THE GEOTECHNICAL REPORT.
      THE DRC SHALL COORDINATE WITH THE MECHANICAL AND ARCHITECTURAL DRAWINGS
      AND WITH THE MECHANICAL CONTRACTOR, THE LOCATION OF ALL MECHANICAL EQUIPMENT.
d THE DRC SHALL NOTIFY THE ARCHITECT IF THE WEIGHTS OF MECHANICAL UNITS ETC. ARE
      DIFFERENT FROM THE WEIGHTS POSTED ON THE DESIGN DRAWINGS. DISCREPANCIES
      SHALL BE RESOLVED BEFORE PROCEEDING WITH CONSTRUCTION.
e THE DRC SHALL NOTIFY THE ARCHITECT/ENGINEER IMMEDIATELY OF ANY DISCREPANCIES TO AVOID
      THE POSSIBILITY OF UNNECESSARY FUTURE PROBLEMS AND POSSIBLE FIELD ORDERS.
      FAILURE TO DO SO WILL PUT THE FULL RESPONSIBILITY OF CORRECTION ON THE DRC.
f THE DRC SHALL COORDINATE THE WORK OF ALL TRADES AND MAKE NECESSARY
      INVESTIGATIONS AND FIELD MEASUREMENTS.
   DO NOT SCALE DRAWINGS.
     THE SER HAS NO SUPERVISORY RESPONSIBILITY, HAS NO CONTROL OF OR
      RESPONSIBILITY FOR THE MEANS, METHODS, TECHNIQUES, PROCEDURES OR SEQUENCE OF
      CONSTRUCTION, HAS NO RESPONSIBILITY FOR THE FAILURE OF ANY CONTRACTOR TO
      PERFORM THE WORK IN ACCORDANCE WITH THE DESIGN DOCUMENTS AND NO RESPONSIBILITY TO
      DEVISE, IMPLEMENT OR ENFORCE ANY SAFETY PRECAUTIONS OR PROGRAMS FOR THE PROJECT
1.4 SLEEVES, ANCHORAGES, OPENINGS, ETC.
a IN GENERAL, STRUCTURAL DRAWINGS DO NOT SHOW EQUIPMENT PADS, DRAINS, HOLES,
      ANCHORAGES, INSERTS AND SLEEVES FOR ITEMS PASSING THROUGH OR ATTACHED TO CONCRETE
      OR FRAMING. REFER TO ARCHITECTURAL, MECHANICAL, AND ELECTRICAL
      DRAWINGS AND PROJECT SPECIFICATIONS. ADJUST EQUIPMENT PADS AND SUB FRAMING TO FIT
      EQUIPMENT FURNISHED.
b PROVIDE SUB FRAMING FOR EQUIPMENT SUPPORTED ON OR SUSPENDED FROM THE
      STRUCTURE.
1.5 STRUCTURAL STABILITY AND CONSTRUCTION
a INDIVIDUAL STRUCTURAL COMPONENTS ARE DESIGNED TO SUPPORT LOADS IN THEIR
      FINAL ERECTED POSITION AS PART OF THE TOTAL COMPLETED STRUCTURE.
b DRC TO PROVIDE TEMPORARY GUYING AND BRACING AS REQUIRED UNTIL ALL
      CONSTRUCTION AFFECTING LATERAL STABILITY IS COMPLETED.
c DRC SHALL BE SOLELY RESPONSIBLE FOR STABILITY OF STRUCTURE, ITS PARTS BY USE OF
      GUYING, BRACING, SHORING, BARRICADES, SAFETY RAILINGS AND DEVICES DURING THE
      ENTIRE PERIOD OF CONSTRUCTION.
d DRC SHALL BE SOLELY RESPONSIBLE FOR ALL JOB SITE SAFETY AND MEANS AND METHOD OF
      CONSTRUCTION.
1.6 SHOP DRAWINGS AND TEST REPORTS
a DRC SHALL CHECK ALL SHOP DRAWINGS BEFORE SUBMITTAL TO SER FOR REVIEW.
b DRC SHALL PREPARE A SHOP DRAWING SUBMITTAL SCHEDULE WITH A MINIMUM OF TWO
      WEEKS INCLUDED FOR THE SER'S REVIEW OF EACH SUBMITTAL LISTED BELOW.
    REVIEW BY SER WILL BE FOR CONFORMANCE TO GENERAL LAYOUT AND DESIGN INTENT ONLY.
     CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ACCURACY OF DIMENSIONS,
      FABRICATION, FIT UP OF PARTS AND BILLS OF MATERIALS.
e CONTRACTOR SHALL COORDINATE WORK OF VARIOUS TRADES AND MAKE NECESSARY
      FIELD MEASUREMENTS.
f THE CONTRACT SPECIFICATIONS PROVIDE A COMPLETE LISTING OF SUBMITTALS. THE
      FOLLOWING IS A SUMMARY OF THE REQUIRED SUBMITTALS:
      CONCRETE MIX DESIGNS WITH ASSOCIATED HISTORICAL TEST DATA
      REINFORCING STEEL PLACEMENT DRAWINGS PER ACI 315
      CONCRETE MASONRY
          PRODUCT DATA SHEETS
          REINFORCING STEEL PLACEMENT DRAWINGS
      STRUCTURAL STEEL
          STRUCTURAL STEEL SHOP DRAWINGS
          CONNECTION DESIGN SIGNED AND SEALED BY LICENSED SSE.
      WOOD PRODUCTS (WOOD TRUSSES/ENGINEERED WOOD PRODUCTS)
           DESIGN CALCULATIONS SIGNED AND SEALED BY LICENSED SSE.
      MISCELLANEOUS METALS (STAIRS/HANDRAIL/GUARD RAIL/LADDERS ETC.)
          STRUCTURAL STEEL SHOP DRAWINGS
           DESIGN CALCULATIONS SIGNED AND SEALED BY LICENSED SSE.
1.7 DEFERRED SUBMITTALS - OWNER SPECIFIED DESIGN DELEGATED COMPONENTS
 a CERTAIN COMPONENTS OF THE COMPLETED CONSTRUCTION ARE DESIGN DELEGATED TO
      THE MANUFACTURER OF THE COMPONENT. THE MANUFACTURER'S SSE SHALL BE
      RESPONSIBLE FOR THE DESIGN OF THE COMPONENT. THE FOLLOWING ARE DESIGNATED TO BE
      DESIGN DELEGATED COMPONENTS ON THIS PROJECT:
b STRUCTURAL STEEL CONNECTIONS
     MISCELLANEOUS METALS (STAIRS, GUARDRAIL, HANDRAIL, LADDERS, ETC.)
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PERFORMED IN SUCH A WAY AS TO AFFECT THE STRUCTURAL INTEGRITY OF THE
   REMAINING PORTION OF THE BUILDING.
  THE CONTRACTOR SHALL NOTIFY THE SER IMMEDIATELY OF ANY STRUCTURAL ITEMS
   WHICH NEED TO BE DEMOLISHED BUT ARE NOT CLEARLY IDENTIFIED ON THE
   STRUCTURAL OR ARCHITECTURAL DRAWINGS.
  THE CONTRACTOR SHALL MINIMIZE THE EXTENT OF THE DEMOLITION TO THE EXISTING
   STRUCTURE TO ONLY THAT REQUIRED TO INSTALL THE NEW BUILDING MODIFICATIONS.
1.9 STRUCTURAL TESTS AND INSPECTIONS (IBC 2018)
   AN INDEPENDENT APPROVED AGENCY SHALL PROVIDE SPECIAL INSPECTIONS AND TESTS DURING CONSTRUCTION
    IN ACCORDANCE WITH CHAPTER 17 OF IBC 2018.
    THE APPROVED AGENCY'S SPECIAL INSPECTOR SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE TO THE
    APPROVED DESIGN DRAWINGS AND SPECIFICATIONS.
    THE APPROVED AGENCY SHALL KEEP RECORDS OF ALL SPECIAL INSPECTIONS AND TESTS AND SUBMIT REPORTS
    TO THE BUILDING OFFICIAL AND THE SER.
    ALL DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DRC FOR CORRECTION. IF
    UNCORRECTED, THE APPROVED AGENCY SHALL NOTIFY THE BUILDING OFFICIAL AND THE SER.
    REFER TO IBC 2018 1704.5 FOR SUBMITTALS TO THE BUILDING OFFICIAL IN ADDITION TO THE REPORTS.
    THE APPROVED AGENCY SHALL SUBMIT A FINAL REPORT STATING WHETHER THE WORK REQUIRING SPECIAL
    INSPECTION WAS IN CONFORMANCE WITH THE APPROVED CONTRACT DOCUMENTS AND THE APPLICABLE
    WORKMANSHIP PROVISIONS OF THIS CODE.
    OUALITY CONTROL SHALL BE THE RESPONSIBILITY OF THE FABRICATOR/ERECTOR IN
    ACCORDANCE WITH AISC360-16 CHAPTER N.
   JOB SITE VISITS BY THE SER DO NOT CONSTITUTE AN OFFICIAL SPECIAL INSPECTION.
STATEMENT OF SPECIAL INSPECTIONS:
   REFER TO THE REFERENCED DOCUMENTS (IBC 2018 CHAPTER 17, AISC 360-16 CHAPTER N, ACI530-13 CHAPTER 3)
    FOR ADDITIONAL DESCRIPTIONS OF REQUIREMENTS.
   STRUCTURAL OBSERVATIONS FOR SEISMIC NOT REQUIRED
    STRUCTURAL OBSERVATIONS FOR WIND NOT REQUIRED
    THE FOLLOWING LIST OF MATERIALS AND WORK REQUIRE SPECIAL INSPECTIONS (P) PERIODIC; (C) CONTINUOUS
STRUCTURAL STEEL (1705.2 - AISC360-16 CHAPTER N)
   INSPECTION TASKS PRIOR TO WELDING SHOP/FIELD (AISC360-16 TABLE N5.4-1 & AWS D1.1)
   REVIEW WELDING PROCEDURE SPECIFICATIONS (WPS) & WELDING CONSUMABLES (C)
   FIT UP GROOVE AND FILLET WELDS (P)
    CONFIGURATION OF ACCESS HOLES (P)
    INSPECTION TASKS DURING WELDING SHOP/FIELD (AISC360-16 TABLE N5.4-2 & AWS D1.1)
    QUALIFIED WELDERS (C)
    CONTROL AND HANDLING OF CONSUMABLES (C)
    NO WELDING OVER TACK WELDS (C)
   ENVIRONMENTAL CONDITIONS (C
    WPS FOLLOWED (C)
    WELDING TECHNIQUES (C)
    INSPECTION TASKS AFTER WELDING SHOP/FIELD (AISC360-16 TABLE N5.4-3 & AWS D1.1)
    WELDS CLEANED (C)
    SIZE, LENGTH, LOCATION OF WELDS (C)
    WELDS MEET VISUAL ACCEPTANCE CRITERIA (C)
   CJP GROOVE WELD NDT PER AWS D1.1 (C)
   INSPECTION TASKS PRIOR TO BOLTING (AISC360-16 TABLE N5.6-1)
   BOLT MATERIAL GRADE
    PROPER FASTENERS USED PER CONTRACT DOCUMENTS (P)
    PROPER BOLTING PROCEDURE SELECTED FOR JOINT DETAIL (P)
   CONNECTION ELEMENTS INCLUDING FAYING SURFACES MEET REQUIREMENTS (P)
    PROPER STORAGE OF FASTENER COMPONENTS (P)
   INSPECTION TASKS DURING BOLTING (AISC360-16 TABLE N5..6-2)
   FASTENER ASSEMBLIES, OF SUITABLE CONDITION, PLACED IN ALL HOLES AND POSITIONED AS REQUIRED (P).
   JOINT BROUGHT TO SNUG TIGHT CONDITION (P)
    FASTENER COMPONENT NOT TURNED BY WRENCH PREVENTED FROM ROTATING (P)
   FASTENERS PRETENSIONED PER RCSC SPECIFICATION (P)
    INSPECTION TASKS AFTER BOLTING (AISC360-16 TABLE N5.6-3)
   DOCUMENT ACCEPTED OR REJECTED BOLTED CONNECTIONS (C)
    INSPECTION OF ANCHOR RODS IN CONFORMANCE WITH CONTRACT DOCUMENTS. (P)
    INSPECTION OF STEEL FRAME/CONNECTION DETAILS IN CONFORMANCE WITH CONTRACT DOCUMENTS. (P)
    INSPECTION OF STEEL ELEMENTS OF COMPOSITE CONSTRUCTION PRIOR TO CONCRETE PLACEMENT (AISC360-16 TABLE
   PLACEMENT OF STEEL DECK (C)
   PLACEMENT OF STEEL HEADED STUD (C)
   DOCUMENT ACCEPTANCE OR REJECTION (C)
   INSPECTION OF METAL DECK DIAPHRAGM CONNECTIONS TO STEEL FRAMING. (P)
   OPEN WEB STEEL JOISTS (IBC 2018 TABLE 1705.2.3)
   END CONNECTIONS (P)
    BRIDGING (P)
    MEMBER SIZES IN ACCORDANCE WITH CONTRACT DOCUMENTS (P)
   COLD FORMED STEEL FRAMING
   MATERIAL GRADES (P)
  FRAMING DETAILS AND CONNECTIONS PER CONTRACT DOCUMENTS (P)
CONCRETE CONSTRUCTION (IBC 2018 TABLE 1705.3)
   REINFORCEMENT PLACEMENT (P)
   REINFORCING BAR WELDING (P)
    ANCHORS CAST IN CONCRETE (P)
   POST INSTALLED ANCHORS
   ADHESIVE (C)
   MECHANICAL (P)
    VERIFY USE OF REQUIRED MIX (P)
    STRENGTH, SLUMP, AIR, TEMPERATURE TEST OF CONCRETE PRIOR TO PLACEMENT (C)
    CONCRETE PLACEMENT (C)
    VERIFY MAINTENANCE OF SPECIFIED CURING TEMPERATURE AND TECHNIQUES (P)
   INSPECT ERECTION OF PRECAST MEMBERS INCLUDING CONNECTIONS (P)
 ) INSPECT FORMWORK (P)
MASONRY CONSTRUCTION (TMS 402-16 LEVEL B QUALITY ASSURANCE TABLE 3.1.2)
   VERIFY COMPLIANCE WITH APPROVED SUBMITTALS (P)
   AS MASONRY CONSTRUCTION BEGINS, VERIFY COMPLIANCE OF THE FOLLOWING:
    PROPORTIONS OF SITE-PREPARED MORTAR (P)
    CONSTRUCTION OF MORTAR JOINTS (P)
    GRADE AND SIZE OF REBAR (P)
    LOCATION OF REINFORCEMENT AND CONNECTORS 9P)
    PRIOR TO GROUTING, VERIFY COMPLIANCE OF FOLLOWING:
   GRADE, TYPE AND SIZE OF REINFORCEMENT AND ANCHOR BOLTS (P)
    PLACEMENT OF REINFORCEMENT AND CONNECTORS (P)
    PROPORTIONS OF SITE PREPARED GROUT
   CONSTRUCTION OF MORTAR JOINTS (P)
   VERIFY DURING CONSTRUCTION:
   SIZE AND LOCATION OF STRUCTURAL ELEMENTS (P)
   TYPE, SIZE AND LOCATION OF ANCHORS INCLUDING OTHER DETAILS OF ANCHORAGE TO MASONRY (P)
    WELDING OF REINFORCEMENT (C).
   PREPARTION, CONSTRUCTION AND PROTECTION OF MASONRY DURING COLD/HOT WEATHER (P)
    PLACEMENT OF GROUT (C)
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OBSERVE PREPARATION OF GROUT SPECIMENS, MORTAR SPECIMENS AND/OR PRISMS. (P)

VERIFY SLUMP FLOW AND VISUAL STABILITY INDEX.

VERIFICATION OF f`m PRIOR TO CONSTRUCTION

WOOD TRUSSES, OPEN WEB COMPOSITE TRUSSES, ENGINEERED WOOD PRODUCTS

THE MANUFACTURER SHALL BE RESPONSIBLE FOR RETAINING THE SERVICES OF A

THE SSE SHALL DESIGN AND DETAIL COMPONENTS TO MEET GOVERNING BUILDING

OTHER WORK AS LISTED ON DRAWINGS, SPECIFICATIONS AND CUSTOMARY INDUSTRY

LICENSED SPECIALTY STRUCTURAL ENGINEER (SSE) IN THE STATE HAVING JURISDICTION

CODES, STANDARDS AND THE SPECIFIED PERFORMANCE CRITERIA. SIGNED AND SEALED

SSE SUBMITTALS WILL BE REVIEWED BY THE SER FOR LOADING CRITERIA AND GENERAL

THE ARCHITECTURAL/STRUCTURAL DEMOLITION DRAWINGS INDICATE THE GENERAL

THE DRC SHALL CAREFULLY REMOVE ONLY THE EXISTING ITEMS IDENTIFIED ON THE

c IN NO CASE SHALL THE REMOVAL OF ANY PORTION OF THE EXISTING STRUCTURE BE

CALCULATIONS SHALL BE SUBMITTED FOR RECORD. THE DESIGN DELEGATED SSE SHALL BE SOLELY

AREAS OF DEMOLITION. THE DRC SHALL VERIFY IN THE FIELD ALL ITEMS TO BE REMOVED TO MEET

TEMPORARY SHORING AND BRACING

1.8 DEMOLITION

STANDARDS. WHERE DELEGATION OF DESIGN IS SPECIFIED,

RESPONSIBLE FOR THE DESIGN OF THE COMPONENT.

CONFORMANCE TO THE PRIMARY STRUCTURAL SYSTEM.

THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

ARCHITECTURAL AND STRUCTURAL DRAWINGS.

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WOOD CONSTRUCTION (IBC 2018 1705.5)
     VERIFY MATERIAL GRADE (P)
     MEMBER SIZES, FRAMING AND DETAILS CONFORM TO CONTRACT DOCUMENTS (P)
     DIAPHRAGM AND SHEAR WALL SHEATHING SIZE/GRADE AND NAIL SIZE AND PATTERNS CONFORM TO CONTRACT
     DOCUMENTS. (P)
     HOLD DOWNS/STRAPS INSTALLED PER MANUFACTURER INSTRUCTIONS AND PER CONTRACT DOCUMENTS.
 SOILS (IBC 2018 TABLE 1705.6)
     VERIFY BEARING CAPACITY BELOW SHALLOW FOUNDATIONS (P)
     VERIFY EXCAVATIONS EXTEND TO PROPER DEPTH AND REACHED PROPER MATERIAL (P).
     PERFORM CLASSIFICATION AND TESTING OF COMPACTED MATERIAL (P)
     VERIFY USE OF PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION OF
     COMPACTED MATERIAL (C).
     PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECT SUBGRADE AND VERIFY THAT SITE HAS BEEN PROPERLY PREPARED (P)
     VERIFY SOIL IMPROVEMENT HAS BEEN PERFORMED PROPERLY (P)
 2 FOUNDATIONS
2.1 GENERAL
 a THE FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL REPORT No. 27037 PREPARED
     BY SMC AND DATED MAR 20, 2023. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL
     GEOTECHNICAL REQUIREMENTS.
 b SUMMARY OF GEOTECHNICAL DESIGN VALUES
     SHALLOW STRIP AND SPREAD FOOTINGS
      ALLOWABLE SOIL BEARING PRESSURE 2,000 PSF
     DEPTH OF FOOTING BELOW FINISHED GRADE 48"
     BASEMENT (RESTRAINED), RETAINING WALLS (UNRESTRAINED) WALLS
     BACKFILL - GRANULAR
     DENSITY - 115 PCF
     ACTIVE LATERAL PRESSURE (UN RESTRAINED) - 45 PSF/FT
     AT REST LATERAL PRESSURE (RESTRAINED) - 65 PSF/FT
     SURCHARGE COEFFICIENT (UN-RESTRAINED) - .3 X LOAD(PSF) - PSF
     SURCHARGE COEFFICIENT (RESTRAINED) - .5 X LOAD (PSF) - PSF
     COEFFICIENT OF SLIDING RESISTANCE - .4
 CONTRACTOR SHALL LOCATE ALL EXISTING BELOW GRADE UTILITIES AND INTERFERENCES PRIOR
     TO START OF WORK. NOTIFY THE SER OF ANY INTERFERENCE.
d REFER TO CIVIL DRAWINGS FOR ALL SOIL IMPROVEMENT, SITE PREPARATION, GRADING, EROSION
     PROTECTION AND SITE UTILITY WORK.
e STRIP TOPSOIL OVER THE ENTIRE BUILDING AREA.
f PROTECT ALL EXPOSED SURFACES IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
 g MAINTAIN ALL EXCAVATIONS FREE OF WATER CONTINUOUSLY
h DRC SHALL BE RESPONSIBLE FOR ALL SHORING/BRACING OF EXCAVATIONS.
i ALL SHALLOW FOUNDATIONS SHALL BE LOCATED SHALL BEAR AT SUFFICIENT DEPTH TO PROVIDE
      ADEQUATE FROST COVERAGE PER LOCAL REQUIREMENTS.
     A GEOTECHNICAL TESTING SERVICE SHALL CONFIRM ALL SOIL BEARING CAPACITIES PRIOR TO
     PLACEMENT OF CONCRETE FOUNDATIONS.
k ALL STRUCTURAL FILL AND GENERAL FILL SHALL MEET THE REQUIREMENTS OF THE GEOTECHNICAL
     REPORT INCLUDING MATERIAL SPECIFICATION AND COMPACTION REQUIREMENTS.
I ALL BASEMENT AND RETAINING WALLS ARE DESIGNED CONSIDERING A GRANULAR BACKFILL
     MATERIAL
m SUBSURFACE WATER CONDITIONS ENCOUNTERED DURING SOIL BORINGS AT DEPTH RANGING FROM
      2 FEET TO 8 FEET. PROPER DEWATERING REQUIREMENTS PER KANE COUNTY STORM WATER
     ORDINANCE SHALL BE FOLLOWED. SUBSURFACE WATER DEPTHS ARE VARIABLE AND SHOULD BE
     CONSIDERED DURING BIDING AND CONSTRUCTION.
3 CONCRETE CONSTRUCTION
 3.1 CAST IN PLACE CONCRETE
a GENERAL REQUIREMENTS
      ALL WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301-10, SPECIFICATION FOR
     STRUCTURAL CONCRETE, EXCEPT AS MODIFIED BY THE REQUIREMENTS OF THE CONTRACT
     SUBMITTALS
     CONCRETE MIXES WITH HISTORICAL TEST DATA.
     MATERIAL CERTIFICATES: CEMENT, AGGREGATES, ADMIXTURES, REINFORCING STEEL
     REINFORCING STEEL PLACEMENT DRAWINGS
     PRODUCTS
     REINFORCING BARS: ASTM A615 GRADE 60
     REINFORCING BARS WELDABLE: ASTM A706 GRADE 60
     PLAIN WIRE FABRIC: ASTM A185
     PORTLAND CEMENT: ASTM C150 TYPE I OR II.
      AGGREGATES: ASTM C33
      WATER: POTABLE ASTM C94
     ADMIXTURES
     AIR ENTRAINING ASTM C260
     CHEMICAL ADMIXTURES ASTM C 494
      AIR CONTENT FOR CONCRETE EXPOSED TO WEATHER: 4 TO 7%.
     CONCRETE STRENGTH: F'C 4,000 PSI AT 28 DAYS
     MIXING PER ASTM C94
     CURING COMPOUNDS: ASTM C309 OR C1315
     EXECUTION
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CONCRETE COVER

DIRECTIONS.

SHOWN OTHERWISE.

3.2 PRECAST CONCRETE SLABS

CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3"

ALL FOOTINGS, WALL FOOTINGS, GRADE BEAMS AND PILE/CAISSON CAPS SHALL BE FORMED

LAP SPLICE LENGTHS PER ACI 318 CHAPTERS 12 USING A CLASS B SPLICE. ALL WELDED WIRE

PROVIDE 2-#5 BARS X OPENING WIDTH PLUS 4 FEET (2 FEET EACH SIDE) EACH FACE, UNLESS

PRECAST CONCRETE SLABS ARE DESIGNATED AS A DELEGATED DESIGN ITEM AND SHALL BE

EQUAL STRENGTH AND THICKNESS BY OTHER MANUFACTURERS MAY BE SUBSTITUTED.

AS THOSE MANUFACTURED BY THE FLEXICORE COMPANY. APPROVED ALTERNATE SECTIONS OF

COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 5000 PSI MINIMUM AT 28 DAYS; RELEASE

COORDINATE WITH OTHER TRADES FOR INSTALLATION OF ITEMS TO BE CAST-IN HOLLOW CORE

RE-ENTRANT CORNERS, VERY THIN WIDTHS, ETC. TOPPINGS DESIGNATED TO BE STRUCTURAL

SHALL BE LOCATED A MAXIMUM OF 15' ON CENTER AND LOCATED OVER A GROUT JOINT.

HOOK TOP BARS AT ALL CONCRETE EDGES, AT ALL WALL AND SLAB OPENINGS,

PLACEMENT OF CONCRETE IN COLD WEATHER SHALL COMPLY WITH ACI306

PLACEMENT OF CONCRETE IN HOT WEATHER SHALL COMPLY WITH ACI305

TOLERANCES SHALL MEET ACI 117, ACI 301 AND ACI 318 AS A MINIMUM.

DESIGNED BY THE CONTRACTOR'S LICENSED PROFESSIONAL ENGINEER

FABRICATE PRECAST CONCRETE SLABS IN ACCORDANCE WITH PCI MNL-116.

STRENGTH AT PRESTRESS SHALL NOT BE LESS THAN 3500 PSI.

CONCRETE EXPOSED TO EARTH OR WEATHER 2"

CONCRETE NOT EXPOSED TO WEATHER 1-1/2"

FABRIC SHALL BE LAPPED ONE GRID MINIMUM

HOOK ENDS OF BARS INTERRUPTED BY OPENINGS.

ALL EMBEDDED PLATES SHALL BE ASTM A36.

ACCESSORIES (SEE TMS602) MIXING (SEE TMS602) FABRICATION TOP OF ALL WIDE FLANGE AND CHANNEL LINTELS. EXECUTION INSPECTION (SEE TMS602) MASONRY ERECTION CONSTRUCT MASONRY IN RUNNING BOND UNLESS NOTED. ALL MASONRY SHALL BE FULL BEDDED IN MORTAR (FACE AND WEBS). ALL MASONRY LOCATED BELOW GRADE SHALL BE GROUTED SOLID. PROVIDE CONTINUOUS GALVANIZED, HORIZONTAL MASONRY REINFORCING AT 16" ON CENTER (ALTERNATE CMU COURSES) MINIMUM. UNDER ALL BEAM AND JOIST BEARINGS, FILL UNITS 2 CMU COURSES DEEP X 32" WIDE MINIMUM PROVIDE A CONTINUOUS BOND BEAM UNDER ALL JOIST BEARINGS, AT ALL SILLS, AT TOPS OF ALL WALLS AND 8'-0" O.C. VERTICAL CAST IN DOVETAIL ANCHOR SLOTS AT 16" O.C. HORIZONTALLY AT ALL CONCRETE WALLS ADJACENT TO OR ABUTTING MASONRY CONSTRUCTION. PROVIDE A MINIMUM OF 2 - #5 VERTICAL BARS FOR THE FULL HEIGHT OF MASONRY WALLS AT ENDS OF WALLS, EACH SIDE OF OPENINGS AND EACH SIDE OF CONTROL JOINTS UNLESS NOTED. PROVIDE VERTICAL CONTROL JOINTS AT A MINIMUM SPACING OF 1-1/2 TIMES THE HEIGHT OF THE WALL OR 20'-0" WHICHEVER IS LESS. REFER TO ARCHITECTURAL DRAWINGS. ALL OPENINGS IN MASONRY WALLS SHALL HAVE A LINTEL PER THE LINTEL SCHEDULE. LINTELS SHALL HAVE A MINIMUM BEARING OF 8" UNLESS NOTED. ALL NON-LOAD BEARING CMU WALLS SHALL BE CONSTRUCTED ON 10" THICK BY 24" WIDE. THICKENED SLABS; REINFORCE WITH 2-#5 CONTINUOUS BARS AND PROVIDE #5 DOWELS AT 24" ON CENTER FOR THE CMU REINFORCING UNLESS NOTED OTHERWISE. 5.1 STRUCTURAL STEEL a GENERAL ALL STRUCTURAL STEEL WORK SHALL CONFORM TO THE AISC 360-16 "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS", "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS" 2009, "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES," 2010 THE PROVISIONS OF THE ALLOWABLE STRENGTH DESIGN METHOD (ASD) WAS USED AS A BASIS FOR DESIGN. ALL FORCES/REACTIONS INDICATED ON THE DESIGN DOCUMENTS ARE THEREFORE NON-FACTORED ASD FORCES/REACTIONS. THE CONTRACTOR'S STRUCTURAL STEEL DETAILER SHALL PREPARE STEEL ERECTION AND SHOP DRAWINGS IN ACCORDANCE WITH THE GUIDELINES AND GOOD PRACTICES NOTED IN THE AISC "DETAILING FOR STEEL CONSTRUCTION." THIRD EDITION OPTION 3 OF THE AISC CODE OF STANDARD PRACTICE 303-10 3.12 WHEREBY THE STEEL CONNECTIONS ARE CONSIDERED A DELEGATED DESIGN ELEMENT TO BE DESIGNED BY THE DRC'S SSE IS TO BE FOLLOWED. SUBMITTALS CHECKED STEEL SHOP DRAWINGS: PREPARED IN ACCORDANCE WITH AISC DETAILING FOR STEEL MATERIALS CONNECTIONS LOCATE JOINTS AS SHOWN ON PLANS; WHERE NOT SHOWN, CONTROL OR CONSTRUCTION JOINTS SHALL BE PLACED IN ACCORDANCE WITH ACI RECOMMENDATIONS I.E., A MAXIMUM PANEL SIZE (IN FEET) EQUAL TO APPROXIMATELY THREE TIMES THE THICKNESS OF THE SLAB (IN INCHES) IN BOTH FORCE METHOD. b PRECAST SLABS AS INDICATED ON PLANS, SECTIONS AND DETAILS ARE DESIGNATED AND SHOWN c EXECUTION REFER TO CONCRETE NOTES FOR TOPPING REQUIREMENTS. TOPPING SHALL HAVE CONTROL JOINTS SAW CUT A MAXIMUM OF 20'-0" ON CENTER AND AT ALL LOCATIONS OF CRACK POTENTIAL SUCH AS 5.2 STEEL BAR JOISTS SHALL HAVE CONTROL JOINTS LOCATED PARALLEL WITH THE SPAN OF THE PLANK ONLY AND THEY

4.1 UNIT MASONRY

FOLLOWING NOTES.

SUBMITTALS

MATERIALS

DEFINITIONS (SEE TMS602)

REFERENCES (SEE TMS602)

MATERIAL CERTIFICATES:

QUALITY ASSURANCE

a GENERAL

CONSTRUCTION 3RD ED. CONNECTION CALCULATIONS PREPARED, SIGNED AND SEALED BY DRC'S SSE. MATERIAL CERTIFICATES (UPON REQUEST) WELDING CERTIFICATES (UPON REQUEST) ALL STRUCTURAL STEEL SHAPES SHALL BE ASTM A992 (Fy=50 ksi) ALL STRUCTURAL STEEL PLATES AND ANGLES SHALL BE ASTM A36 (Fy=36 KSI). ALL STRUCTURAL TUBES SHALL BE ASTM A500 GRADE B (Fy=46 KSI). ALL STRUCTURAL PIPES SHALL BE ASTM A53 GRADE B (Fy=35 KSI). ALL ANCHOR RODS ASTM F1554-36 ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY "STRUCTURAL WELDING CODE", ALL WELD ELECTRODES SHALL BE E70XX AND ALL WELDING SHALL BE PERFORMED BY CERTIFIED WELDERS. ALL WELDING SHALL BE TO CLEAN BARE STEEL. PROVIDE FULL SIZE 1/4" SETTING PLATES ON 4,000 PSI NON-SHRINK GROUT FOR ALL COLUMNS AND (4)-3/4" DIAMETER ASTM F-1554-36 ANCHOR BOLTS, UNLESS NOTED. ERECT ALL MEMBERS WITH NATURAL CAMBER UP, EXCEPT FOR CERTAIN CANTILEVERED MEMBERS. PROVIDE SUB-FRAMING FOR EQUIPMENT SUPPORTED ON OR SUSPENDED FROM THE STRUCTURE. ALL STEEL SHALL BE SHOP COATED WITH FABRICATOR'S STANDARD PRIME PAINT MEETING MPI#79 AS A MINIMUM. MASK SURFACES TO BE FIELD WELDED AND AT BOLT HOLES IN FAYING SURFACES OF SLIP CRITICAL BOLTED CONNECTIONS. OPTION 3 OF THE AISC CODE OF STANDARD PRACTICE 303-10 3.12 WHEREBY THE STEEL CONNECTIONS ARE CONSIDERED A DELEGATED DESIGN ELEMENT TO BE DESIGNED BY THE DRC'S SSE IS TO BE FOLLOWED. CONNECTIONS SHOWN ON THE DESIGN DRAWINGS ARE CONCEPTUAL ONLY. CONNECTIONS SHALL BE IN ACCORDANCE WITH AISC 360-10 USING ALLOWABLE STRENGTH (ASD) DESIGN BASIS. POSTED CONNECTION FORCES ARE ASD. DESIGN SHEAR CONNECTIONS FOR THE LARGER OF POSTED FORCES ON THE DESIGN DRAWINGS AND 50% (75% FOR COMPOSITE BEAMS) OF THE MAXIMUM TOTAL LOAD FOR THE SPECIFIED BEAM AND SPAN IN AISC "STEEL CONSTRUCTION MANUAL" TABLE 3-6. MOMENT ALONG WITH THE SHEAR LOADS NOTED ABOVE. AXIALLY LOADED MEMBERS. REQUIRED TO MEET AISC MINIMUMS. "EFFECTIVE" SIZE SHOWN ON THE DRAWINGS. STEEL JOIST INSTITUTE'S (SJI) CODE OF STANDARD PRACTICE.

DESIGN MOMENT CONNECTIONS FOR FULL MOMENT CAPACITY OF THE MEMBER OR THE POSTED AXIALLY LOADED MEMBERS SHALL BE DESIGNED USING THE POSTED LOADS AND THE AISC UNIFORM ALL SHEAR CONNECTIONS SHALL BE AS A MINIMUM FULL DEPTH OF MEMBER. ALL BOLTS SHALL BE ASTM A325 FULLY TENSIONED BEARING BOLTS WITH SHORT SLOTTED HOLES UNLESS NOTED. A325 SLIP CRITICAL BOLTS SHALL BE USED FOR ALL MOMENT CONNECTIONS AND ALL WELD SIZES SHOWN ARE SIZED FOR LOAD ONLY. WELDS SHALL BE INCREASED IN SIZE AS ALL GROOVE WELDS SHOWN ARE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE. WELDS NOTED AS PARTIAL PENETRATION GROOVE WELDS SHOW "EFFECTIVE" SIZE OF WELD. WELD JOINTS SHALL BE DETAILED BASED ON PROCESS USED AND POSITION OF WELD TO MEET THE VERIFY THAT FIELD CONDITIONS ARE ACCEPTABLE AND ARE READY TO RECEIVE WORK. STEEL ERECTION TOLERANCES SHALL BE IN ACCORDANCE WITH THE CODE OF STANDARD PRACTICE. a STEEL BAR JOISTS SHALL BE DESIGNED, MANUFACTURED AND ERECTED IN ACCORDANCE WITH THE JOISTS SHALL BE DESIGNED FOR THE LOADS INDICATED ABOVE. IN ADDITION TO THE LIVE LOADS LISTED ABOVE, THE BOTTOM CHORD OF THE JOISTS SHALL BE DESIGNED FOR A CONCENTRATED LOAD OF 300 LBS AT ANY LOCATION ALONG THE LENGTH OF THE BAR JOIST. PROVIDE BRIDGING IN ACCORDANCE WITH SJI REQUIREMENTS. MAXIMUM LIVE LOAD DEFLECTION L/360; TOTAL LOAD L/240. JOISTS SHALL BE REINFORCED WHERE CONCENTRATED LOADS ARE PLACED BETWEEN PANEL POINTS IN ACCORDANCE WITH THE JOIST MANUFACTURER'S RECOMMENDATIONS. JOISTS SHALL BE PRIMED PAINTED WITH MANUFACTURER'S STANDARD PRIMER UNLESS NOTED OTHERWISE IN THE PROJECT SPECIFICATION.

4 MASONRY CONSTRUCTION 5.3 MISCELLANEOUS METALS a ALL MISCELLANEOUS METALS WORK (GRATING, STAIR TREADS, SAFETY PLATE, STAIR STRINGERS, LADDERS AND GUARDRAILS/HANDRAILS) ARE DESIGNATED AS DELEGATED DESIGN ITEMS TO BE MASONRY CONSTRUCTION AND MATERIALS, INCLUDING COMPOSITION, QUALITY, STORAGE, DESIGNED BY THE DRC'S SSE. HANDLING, PREPARATION AND PLACEMENT OF MATERIALS, QUALITY ASSURANCE FOR MATERIALS b MISCELLANEOUS METALS SHALL MEET THE DESIGN REQUIREMENTS OF THE BUILDING CODE NOTED AND MASONRY, AND CONSTRUCTION OF MASONRY SHALL COMPLY TO ALL REQUIREMENTS OF ABOVE AND OSHA AND ASCE 7 SECTION 4.4. "SPECIFICATIONS FOR MASONRY STRUCTURES" (TMS 402/TMS 602) EXCEPT AS MODIFIED BY THE c FLOOR GRATING SHALL BE SERRATED GALVANIZED WELDED GRATING (19W4) WITH 1-1/4" DEEP X 3/16" BEARING BARS SPACED 1-3/16" ON CENTER AND CROSS BARS SPACED 4" ON CENTER. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. d STAIR TREADS SHALL HAVE THE SAME PATTERN AS THE GRATING AND HAVE AN ABRASIVE NOSING FULL ALLOWABLE STRESSES WERE USED FOR THE ASD DESIGN OF THE MASONRY THEREFORE ALL ON THE FRONT EDGE. GRATING SHALL CONFORM TO ANSI-NAAM MBG531. MASONRY WORK SHALL BE INSPECTED AND QUALITY ASSURANCE MEASURES WILL BE IMPLEMENTED. e STANDARD GALVANIZED GRATING CLIPS SHALL BE USED TO ATTACH GRATING TO THE SUPPORT STEEL. ALL EDGES SHALL BE BANDED. ALL OPENINGS AROUND PENETRATIONS EXCEEDING 1-1/2" DIAMETER SHALL BE PROTECTED BY 4" TOE PLATES. OPENINGS GREATER THAN 8" DIAMETER SHALL COMPRESSIVE STRENGTH OF MASONRY F'M SHALL BE 1,500 PSI. (MINIMUM). BE PROTECTED BY TOE PLATES AND HANDRAIL f CHECKERED SAFETY PLATE: GALVANIZED ASTM A36 SAFETY PLATE. 1/4" THICK EXCLUSIVE OF MIX DESIGNS AND TEST RESULTS FOR MORTAR TO COMPLY WITH ASTM C270 HEIGHT OF RAISED PATTERN. MIX DESIGNS AND TEST RESULTS FOR GROUT TO COMPLY WITH ASTM C476 g GUARDRAIL/HANDRAIL SHALL BE DESIGNED TO MEET CODES LISTED ABOVE. POSTS AND RAILS SHALL BE A MINIMUM 1-1/2" DIAMETER STANDARD GALVANIZED PIPE (ASTM A53 GR B) WITH ALL WELDED JOINTS AND FIELDED BOLTED TO STRINGERS. POSTS SHALL BE SPACED NO GREATER THAN TESTING AGENCY SHALL COMPLY WITH THE REQUIREMENTS OF ASTM C 1093. 4'-0" ON CENTER. SHOP FABRICATE IN AS LARGE OF SECTIONS AS POSSIBLE FOR EASE OF ERECTION. ALL EDGES SHALL BE ROUNDED AND WELDS GROUND SMOOTH. MORTAR: CONFORM TO ASTM C270 TYPE S PORTLAND CEMENT TYPE 1 OR 2, LOW ALKALI PER ASTM h GUARDRAIL AND HANDRAIL SHALL NOT BE USED AS LIFE LINE TIE OFFS. C150 NON AIR ENTRAINED OR HYDRATED LIME PER ASTM C207 TYPE S. i SWING GATES AND CHAINS SHALL CONFORM TO ALL APPLICABLE CODES. GROUT: CONFORM TO ASTM C476 WITH A COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. LADDERS AND SAFETY CAGES (AS REQUIRED) ASTM A36 - GALVANIZED MASONRY UNITS NORMAL WEIGHT 2 CELLS PER ASTM C90 TYPE I OR TYPE II. REINFORCING STEEL PER ASTM A615 JOINT REINFORCING PER ASTM A 951 WELDED WIRE FABRIC PER ASTM A18 6 WOOD CONSTRUCTION ANCHOR BOLTS HEADED ASTM A307. 6.1 DIMENSIONAL LUMBER STEEL LINTELS ASTM A36 (A992 WIDE FLANGE SHAPES). GALVANIZE ALL LINTELS IN EXTERIOR a ALL WOOD CONSTRUCTION SHALL CONFORM TO THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION - ASD" LATEST EDITION. b STRUCTURAL WOOD SHALL BE DOUGLAS FIR-LARCH @ 19% MAX. M.C. WITH MINIMUM IN GRADE STRESS VALUES AS FOLLOWS: c BEAMS/POSTS < 5" WIDE DF NO 2 OR BETTER ALL LINTELS AND STEEL CONSTRUCTION ADJACENT TO OR ABUTTING MASONRY SHALL BE PROVIDED d FB = 850 PSI FV=180 PSI E= 1,600 KSI WITH GALVANIZED MASONRY TIES AT 16" O.C. PROVIDE 5/8" DIAMETER X 4" STUDS @ 32" O.C. ON e POSTS >= 5"X5 DF NO 1 OR BETTER f FB = 1200 PSI FV=170 PSI E= 1,600 KSI g ALL NAILS SHALL BE COMMON NAILS (6d - 2" LONG .113" SHANK DIA; 8d - 2-1/2" LONG .131 SHANK DIA; 10d - 3" LONG .148" SHANK DIA; 16d - 3-1/2" LONG .162" SHANK DIA.). DO NOT WET CONCRETE MASONRY UNITS BEFORE PLACING REINFORCEMENT: PLACE h LEAD HOLES SHALL BE PRE DRILLED FOR ALL LAG SCREWS PER NDS REQUIREMENTS REINFORCEMENT IN GROUT SPACES WITH REBAR POSITIONERS PRIOR TO PLACING GROUT. 6.2 LAMINATED VENEER LUMBER (LVL) REINFORCEMENT SPLICES SHALL BE LAPPED 48 TIMES THE BAR DIAMETER BUT NOT LESS THAN18". a ALL LAMINATED VENEER HEADERS AND BEAMS SHALL BE THOSE SUPPLIED AND MANUFACTURED

ACCORDING TO THE SPECIFICATIONS OF REDBUILT OR APPROVED EQUAL WITH MINIMUM PROPERTIES AS FOLLOWS: b Fb-2900 PSI c Fv=285 PSI d E=2,000,000 PSI e ALL MULTIPLE PIECE MEMBERS SHALL BE NAILED OR THROUGH BOLTED TOGETHER IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS. 6.3 PARALLEL STRAND LUMBER (PSL) a ALL PARALLEL STRAND LUMBER SHALL BE ACCORDING TO THE SPECIFICATIONS OF REDBUILT OR

APPROVED EQUAL WITH MINIMUM PROPERTIES AS FOLLOWS: b Fb = 2900 PSI Fc = 2900 PSI (PARALLEL TO GRAIN)

d Fv = 290 PSI

e E = 2,000,000 PSI6.4 WOOD SHEATHING

a ALL SHEATHING FOR ROOFS AND WALLS SHALL BE APA RATED EXTERIOR SHEATHING. b SHEATHING FOR SHEAR WALLS SHALL BE STRUCTURAL I.

c IF NOT LISTED ON THE PLANS, THE MINIMUM RATING SHALL BE 40/20 WITH A NAILING PATTERN OF 8d @ 6" ON ALL EDGES. d ROOF SHEATHING SHALL BE PLACED IN A STAGGERED PATTERN WITH THE LONG DIMENSION OF THE SHEETS SPANNING PERPENDICULAR TO THE SUPPORT MEMBERS.

e FREE EDGES OF THE ROOF SHEATHING SHALL BE BLOCKED WITH 2X FRAMING IF NOTED ON THE PLANS. IF NOT NOTED TO BE BLOCKED, EDGES SHALL HAVE A MINIMUM OF 2 "H" CLIPS BETWEEN SUPPORTS f ALL EDGES OF SHEAR WALL SHEATHING SHALL BE BLOCKED WITH 2X FRAMING (3X FRAMING IF

STUDS ARE GREATER THAN 2X). g ALL NAILS SHALL BE PLACED WITH THE HEAD FLUSH WITH SHEATHING SURFACE. DO NOT

h ALL NAILS SHALL BE COMMON NAILS (6d - 2" LONG .113" SHANK DIA; 8d - 2-1/2" LONG .131 SHANK DIA; 10d - 3" LONG .148" SHANK DIA; 16d - 3-1/2" LONG .162" SHANK DIA.).

6.5 WOOD ROOF DECK a WOOD ROOF DECK IS DESIGNATED AS A DESIGN DELEGATED ITEM AND SHALL BE DESIGNED BY THE DRC'S SSE FOR INDICATED LOADS b WOOD ROOF DECK SHALL BE 3" NOMINAL DOUGLAS FIR SELECT STRUCTURAL TONGUE AND GROOVE

DECK PLACED THREE SPAN CONTINUOUS IN RANDOM PATTERN. TOE NAIL ALONG COURSES 8d@24". NAIL TO SUPPORTS WITH 20d @ 9". c PLYWOOD SHEATHING 1/2" APA 32/16 SHALL BE PLACED ON TOP OF THE TONGUE AND GROOVE

DECK AND NAILED WITH 8d@6" ALL EDGES. NAILS SHALL NOT PENETRATE EXPOSED FACE OF TONGUE AND GROOVE DECKING. d SUBMIT CALCULATIONS SHOWING ALL LOADING AND DESIGN CHECKS SIGNED AND SEALED BY

DRC'S SSE. 6.6 GLUE LAMINATED WOOD ARCHES AND BEAMS a GLUE LAMINATED ARCHES AND BEAMS ARE DESIGNATED AS A DESIGN DELEGATED ITEM AND SHALL

BE DESIGNED BY THE CONTRACTOR'S LICENSED PROFESSIONAL ENGINEER FOR INDICATED LOADS. b MATERIALS, MANUFACTURE AND QUALITY CONTROL SHALL BE IN CONFORMANCE WITH AMERICAN NATIONAL STANDARD ANSI/AITC A190.1, "STRUCTURAL GLUED LAMINATED TIMBER".

STRUCTURAL ABBREVIATIONS LEGEND:

ARCH - ARCHITECTURAL DRAWINGS

CGF - COMPACTED GRANULAR FILL

CMU - CONCRETE MASONRY UNITS

MEP - MECHANICAL, ELECTRICAL, PLUMBING DRAWINGS

A.B.S. - ANCHOR BOLTS

B/ - BOTTOM OF

CL - CENTERLINE

CONT. - CONTINUOUS

E - EXISTING MATERIAL

CONC - CONCRETE

HD - HOLD DOWN

- POUNDS

N - NEW MATERIAL

PSF - POUNDS PER SQUARE FOOT

PSI - POUNDS PER SQUARE INCH

PCF - POUNDS PER CUBIC FOOT

O.C. - ON CENTER

RD - ROOF DRAIN

SOG - SLAB ON GRADE

U.N. - UNLESS NOTED

VB - VAPOR BARRIER

VIF - VERIFY IN FIELD

- POUNDS OR NUMBER

SSE - SPECIALTY STRUCTURAL ENGINEER

SER - STRUCTURAL ENGINEER OF RECORD

COR - CONTRACTING OFFICER'S REPRESENTATIVE

CONTRACTOR - DESIGNATED REPRESENTATIVE FOR CONSTRUCTION

STL - STEEL

T/ - TOP OF

W/ - WITH

HKD - HOOKED

FT - F00T

k - KTP

BOTT. - BOTTOM

c SHOP DRAWINGS SHALL BE FURNISHED BY THE FABRICATOR d CALCULATIONS FOR ALL MEMBERS SHALL BE PREPARED BY DRC'S SSE. e ALLOWABLE DESIGN VALUES SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS. APPEARANCE SHALL BE ARCHITECTURAL GRADE. g MEMBERS SHALL BE MARKED WITH A QUALITY MARK INDICATING CONFORMANCE WITH ANSI/AITC

h SUBMIT CALCULATIONS SHOWING ALL LOADING AND DESIGN CHECKS SIGNED AND SEALED BY DRC'S SSE.

05/07/24 **CHECKED BY**

STRUCTURAL

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> > **PROJECT**

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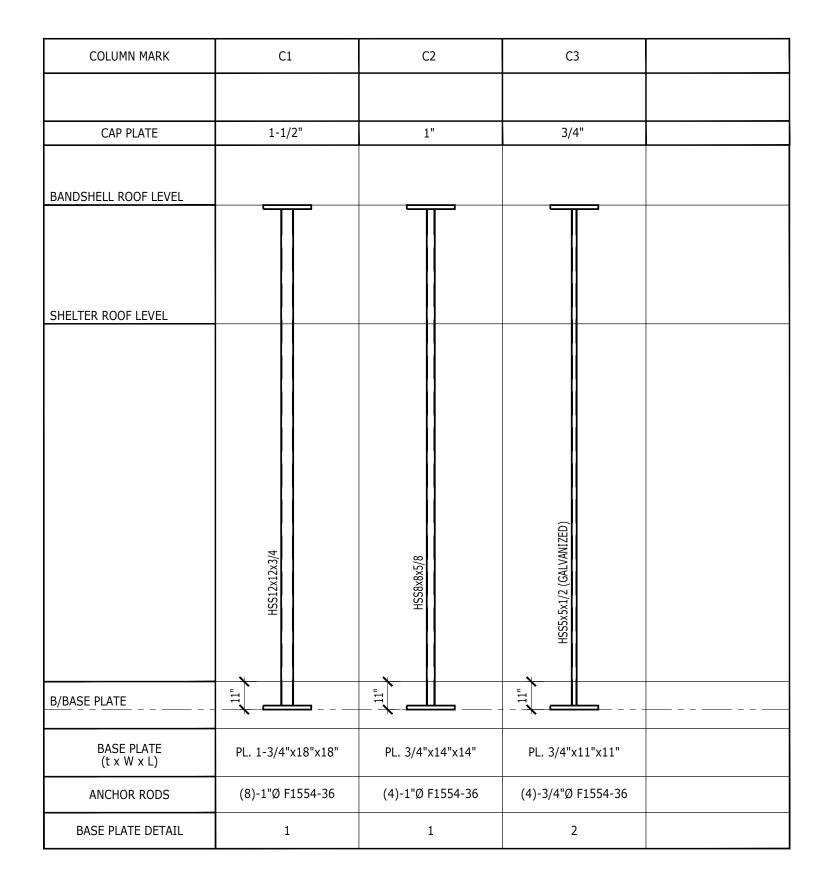


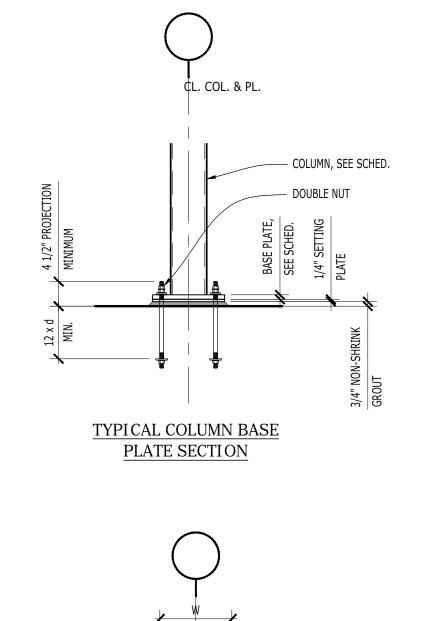
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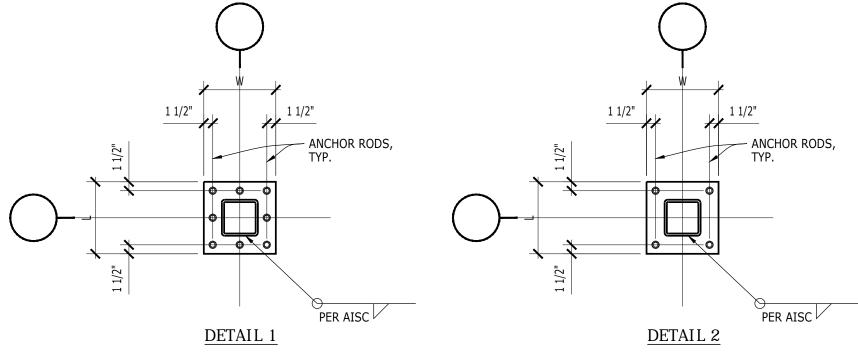
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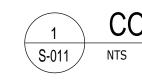
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SCALE



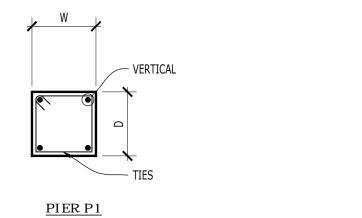


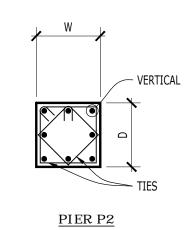




COLUMN SCHEDULE

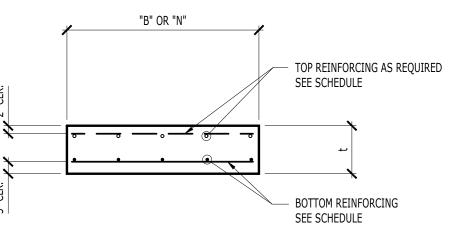
| PIER MARK | PIER WIDTH | PIER LENGTH | VERTICAL REINFORCING | REINFORCING TIES | REMARKS |
|-----------|------------|-------------|-------------------------|---------------------|---------------------|
| P1 | 16" | 16" | 4-#5 | #3 @ 12" O.C. | T/ PIER EL.(-)1'-0" |
| P2 | 24" | 24" | 8-#6 | #3 @ 12" O.C. | SEE PLAN |

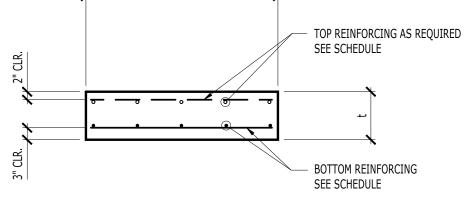




| | CONCRETE PIER SCHEDUL |
|-------|-----------------------|
| (2 \ | CONCILL LIEU SCHEDUL |
| S-011 | NTS |

| FOOTING | FOOTING SIZE | REINFORCING EACH WAY | DEMARKS |
|---------|-------------------|----------------------|---------|
| MARK | (t x B x N) | BOTTOM, U.N. | REMARKS |
| F4.0 | 4'-0"x4'-0"x1'-0" | 5-#5 | - |
| F6.0 | 6'-0"x6'-0"x1'-2" | 7-#6 | |
| F7.0 | 7'-0"x7'-0"x1'-5" | 8-#6 | |



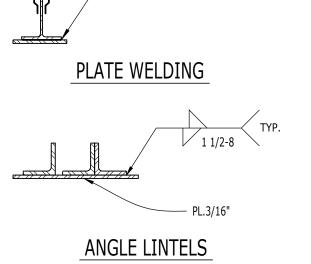


| 3 | FOOTING SCHEDULE |
|-------|------------------|
| S-011 | NTS |

| ntel Iark | WALL TYPE | LINTEL SHAPE | LINTEL SIZE | END BEARING | REMARKS | |
|--------------|-------------------|--------------|-------------------------------------|--------------|---------|--|
| L1 | 4" BRICK + 8" CMU | | (3) L3 1/x3 1/2x5/16 + PL. 5/16" | 8", EACH END | - | |
| L2 | 6" CMU | | 6"x16" LINTEL BEAM W/ 2-#5 | 8", EACH END | | |
| L3 | 8" CMU | • | 8"x16" LINTEL BEAM W/ 2-#5 | 8", EACH END | | |
| | | | | | | |

LINTEL SCHEDULE

NOTE: PROVIDE LINTELS AS SPECIFIED PER LINTEL SCHEDULE. WHERE LINTELS ARE NOT SPECIFIED, SELECT LINTEL FROM SCHEDULE WHICH IS MOST APPROPRIATE FOR CASE INVOLVED. EXTEND LINTELS PAST BRICK AND CAVITY & BEAR COMPLETELY ON CMU.
ALL LINTELS IN EXTERIOR CONSTRUCTION SHALL BE HOT-DIP GALVANIZED



GALV. MASONRY TIES @ 16" O.C., EACH SIDE

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REVISIONS

| No | Date | Issue |
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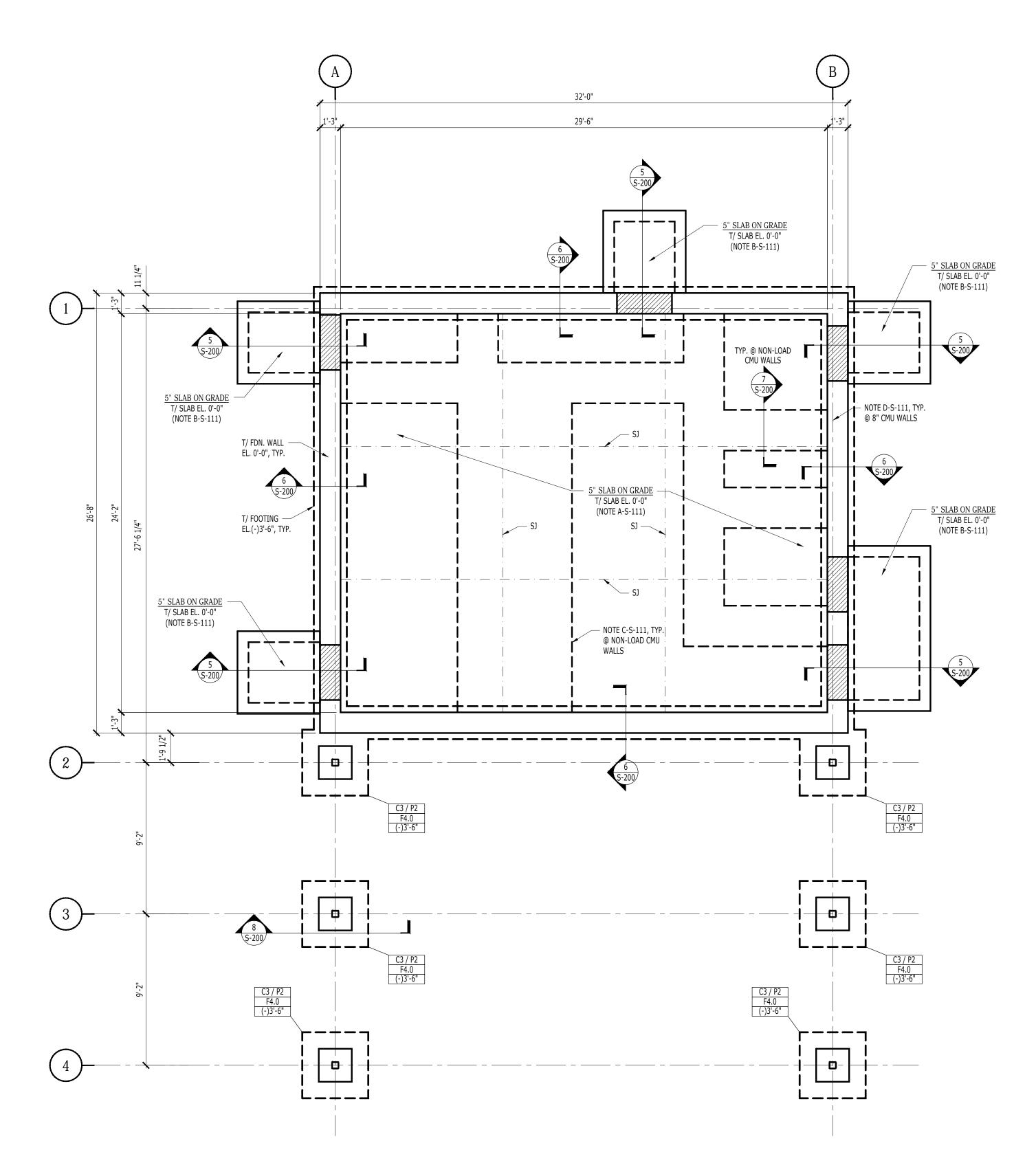
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> SHEET TITLE STRUCTURAL SCHEDULES AND DETAILS

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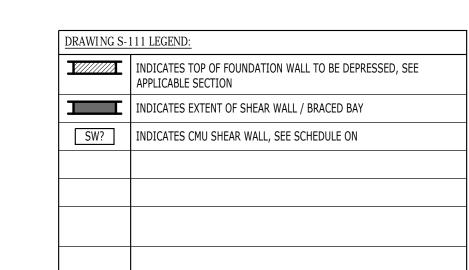
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SHEET NUMBER



DRAWING S-111 GENERAL NOTES:

C? / P? - INDICATES COLUMN MARK / PIER MARK; SEE 1 & 2 / S-011 - INDICATES FOOTING MARK; SEE 3 / S-011 - INDICATES TOP OF FOOTING ELEVATION BELOW FINISH GRADE, SEE CIVIL SHEETS FOR GRADING PLAN.



DRAWING S-111 KEYNOTES:

A-S-111: PROVIDE 5" SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE FABRIC LOCATED IN TOP 1/3 OF SLAB DEPTH WITH 3/4" MINIMUM COVER. PLACE SLAB ON VAPOR BARRIER OVER 6" OF COMPACTED GRANULAR FILL. SLOPE SLAB TO FLOOR DRAINS. SEE ARCHITECTURAL AND PLUMBING SHEETS FOR DRAIN LOCATIONS AND SLOPE.

B-S-111: PROVIDE 5" SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE FABRIC LOCATED IN TOP 1/3 OF SLAB DEPTH WITH 3/4" MINIMUM COVER. PLACE SLAB OVER 6" OF COMPACTED GRANULAR FILL. SLOPE SLAB TO DRAIN AWAY FROM BUILDING PER ARCHITECTURAL SHEETS.

C-S-111: PROVIDE 10" THICKENED SLAB UNDER AREA OF NON-LOAD BEARING CMU WALLS, SEE 7 / S-200. REINFORCE WITH 3-#5 BOTTOM BARS. CONTINUE FLOOR REINFORCING THROUGH THICKENED SLAB. COORDINATE WITH ARCHITECTURAL SHEETS FOR EXACT CMU WALL LOCATIONS.

PROVIDE #5 @ 48" O.C. 8" CMU WALL REINFORCING, FULL HEIGHT OF WALL IN GROUTED CELLS. PROVIDE MATCHING DOWELS IN FOUNDATION WALL. PROVIDE ADDITIONAL 2-#5 CMU REINFORCING, FULL HEIGHT OF WALL IN GROUTED CELLS IN CORNERS, ALL EDGES OF OPENINGS, AND EACH SIDE OF CONTROL JOINTS. PROVIDE MATCHING DOWELS FROM FOUNDATION WALL. COORDINATE WITH ARCHITECTURAL SHEETS FOR WALL EDGES AND JOINT LOCATIONS.



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FOUNDATION

DLANG AND

PLANS AND DETAILS

SCALE

SHEET NUMBER

S-11′

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21'-4"

18'-10"

- <u>5" SLAB ON GRADE</u> -T/ SLAB EL. 0'-0" (NOTE A|S-111)

5" SLAB ON GRADE T/ SLAB EL. 0'-0" (NOTE B-S-111)

5'-0" TYP.

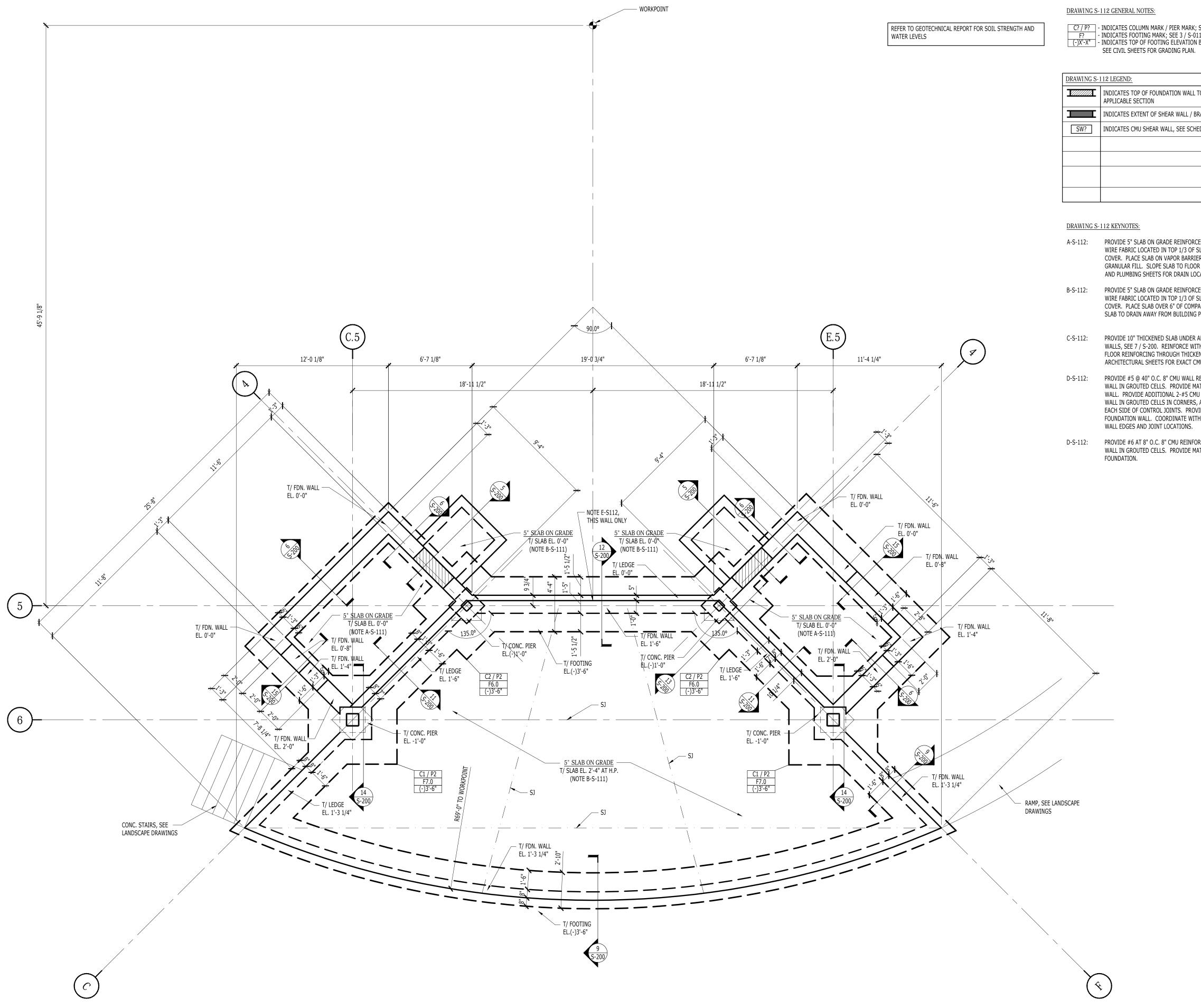
T/ FDN. WALL -EL. 0'-0", TYP.

T/ FOOTING — EL.(-)3'-6", TYP. 5" SLAB ON GRADE T/ SLAB EL. 0'-0" (NOTE B-S-111)

- NOTE C-S-111

— NOTE D-S-111, TYP. @ 8" CMU WALLS

5" SLAB ON GRADE T/ SLAB EL. 0'-0" (NOTE B-S-111)



FOUNDATION PLAN - AMPITHEATER

C? / P? - INDICATES COLUMN MARK / PIER MARK; SEE 1 & 2 / S-011
F? - INDICATES FOOTING MARK; SEE 3 / S-011
- INDICATES TOP OF FOOTING ELEVATION BELOW FINISH GRADE,

INDICATES TOP OF FOUNDATION WALL TO BE DEPRESSED, SEE INDICATES EXTENT OF SHEAR WALL / BRACED BAY INDICATES CMU SHEAR WALL, SEE SCHEDULE ON

- A-S-112: PROVIDE 5" SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE FABRIC LOCATED IN TOP 1/3 OF SLAB DEPTH WITH 3/4" MINIMUM COVER. PLACE SLAB ON VAPOR BARRIER OVER 6" OF COMPACTED GRANULAR FILL. SLOPE SLAB TO FLOOR DRAINS. SEE ARCHITECTURAL AND PLUMBING SHEETS FOR DRAIN LOCATIONS AND SLOPE.
- B-S-112: PROVIDE 5" SLAB ON GRADE REINFORCED WITH 6x6-W2.9xW2.9 WELDED WIRE FABRIC LOCATED IN TOP 1/3 OF SLAB DEPTH WITH 3/4" MINIMUM COVER. PLACE SLAB OVER 6" OF COMPACTED GRANULAR FILL. SLOPE SLAB TO DRAIN AWAY FROM BUILDING PER ARCHITECTURAL SHEETS.
- PROVIDE 10" THICKENED SLAB UNDER AREA OF NON-LOAD BEARING CMU WALLS, SEE 7 / S-200. REINFORCE WITH 3-#5 BOTTOM BARS. CONTINUE FLOOR REINFORCING THROUGH THICKENED SLAB. COORDINATE WITH ARCHITECTURAL SHEETS FOR EXACT CMU WALL LOCATIONS.
- PROVIDE #5 @ 40" O.C. 8" CMU WALL REINFORCING, FULL HEIGHT OF WALL IN GROUTED CELLS. PROVIDE MATCHING DOWELS IN FOUNDATION WALL. PROVIDE ADDITIONAL 2-#5 CMU REINFORCING, FULL HEIGHT OF WALL IN GROUTED CELLS IN CORNERS, ALL EDGES OF OPENINGS, AND EACH SIDE OF CONTROL JOINTS. PROVIDE MATCHING DOWELS FROM FOUNDATION WALL. COORDINATE WITH ARCHITECTURAL SHEETS FOR WALL EDGES AND JOINT LOCATIONS.
- PROVIDE #6 AT 8" O.C. 8" CMU REINFORCING EACH FACE, FULL HEIGHT OF WALL IN GROUTED CELLS. PROVIDE MATCHING DOWELS FORM



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PREPARED FOR Village of Algonquin

2200 Harnish Dr. Algonquin, IL 60102

PROJECT Towne Park

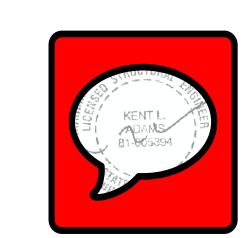
100 Jefferson St. Algonquin, IL 60102

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SHEET TITLE

FOUNDATION PLAN AND DETAILS

SCALE

DRAWN BY PW

ROOF FRAMING PLAN - SHELTER BUILDING

1/4"=1'-0"

0 1/2 4' 8' S-130

DRAWING S-130 GENERAL NOTES:

| DRAWING S-130 LEGEND: | | |
|-----------------------|---|--|
| SW? | INDICATES CMU SHEAR WALL, SEE SCHEDULE ON S0.11 | |
| | INDICATES EXTENT OF SHEAR WALL / BRACED BAY | |
| BP? | INDICATES BEARING PLATE MARK, SEE SCHEDULE ON S0.11 | |
| | | |
| (L?) | INDICATES LINTEL MARK, SEE SCHEDULE ON S0.11 | |
| RHC | INDICATES RECESSED HEATER CABINET, SEE MECHANICAL SHEETS FOR SIZE AND LOCATIONS | |
| • | | |

DRAWING S-130 KEYNOTES:

A-S-130: PROVIDE 3x6 TONGUE & GROOVED DOUG-FIR SELECT STRUCTURAL DECK LAID 3 SPANS CONTINUOUS IN A RANDOM PATTER FOR SPANS SHOWN. TOTAL DEFLECTION SHALL NOT EXCEED L/240. PLACE 1/2" EXTERIOR PLYWOOD SHEATHING OVER DECKING. NAIL PLYWOOD TO DECKING WITH 10d NAILS @ 12" O.C.

B-S-130: PROVIDE 3/4" EXTERIOR APA SPAN RATED PLYWOOD FLOOR SHEATHING. NAIL WITH 8d NAILS @ 6" O.C. AT EDGES AND 12" O.C. AT INTERMEDIATE SUPPORTS.

— NOTE C-S-130, TYP. 8" CMU WALL REINF.

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DETAILS

SHEET TITLE ROOF FRAMING PLANS AND

SCALE

SHEET NUMBER

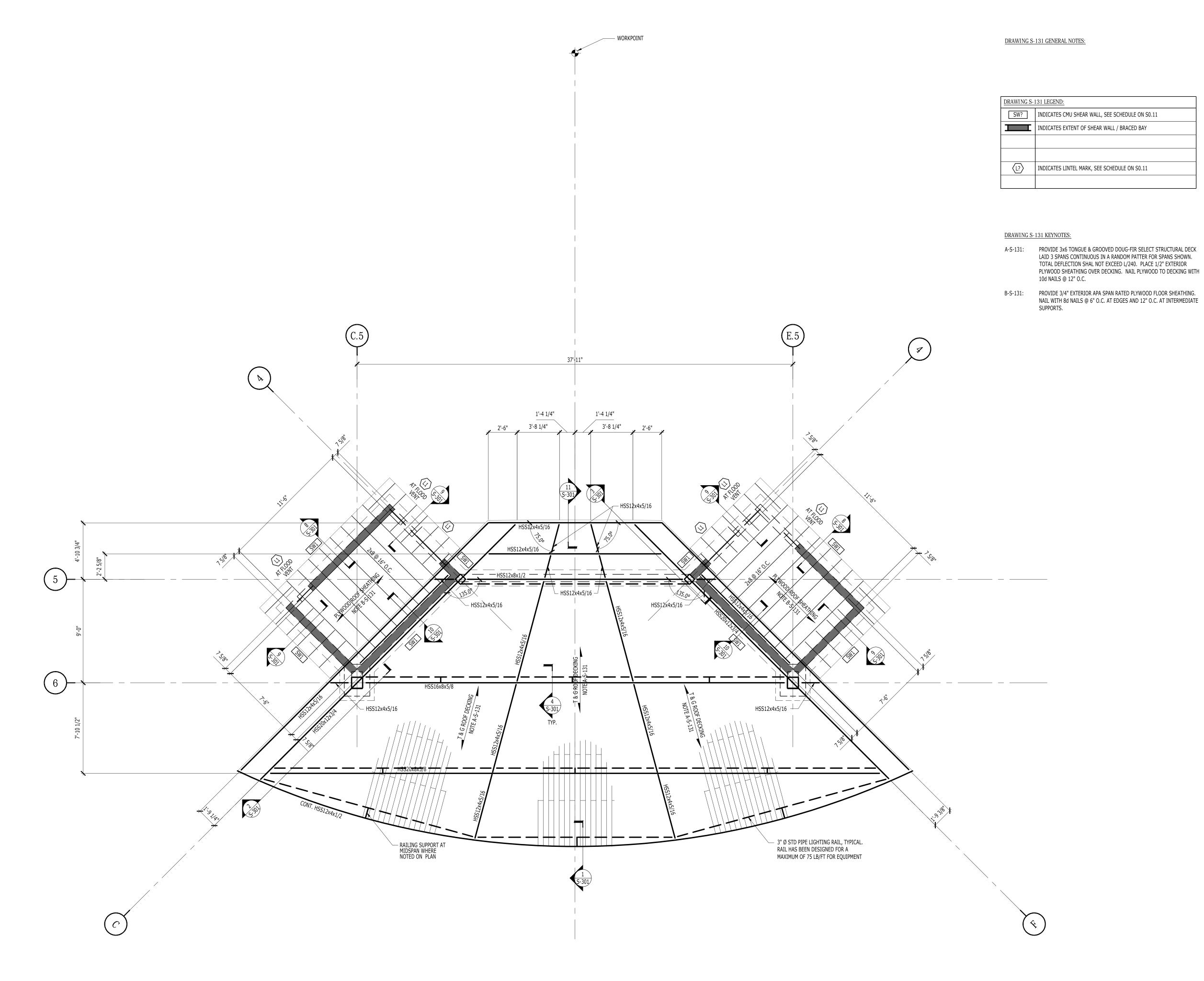
S-130

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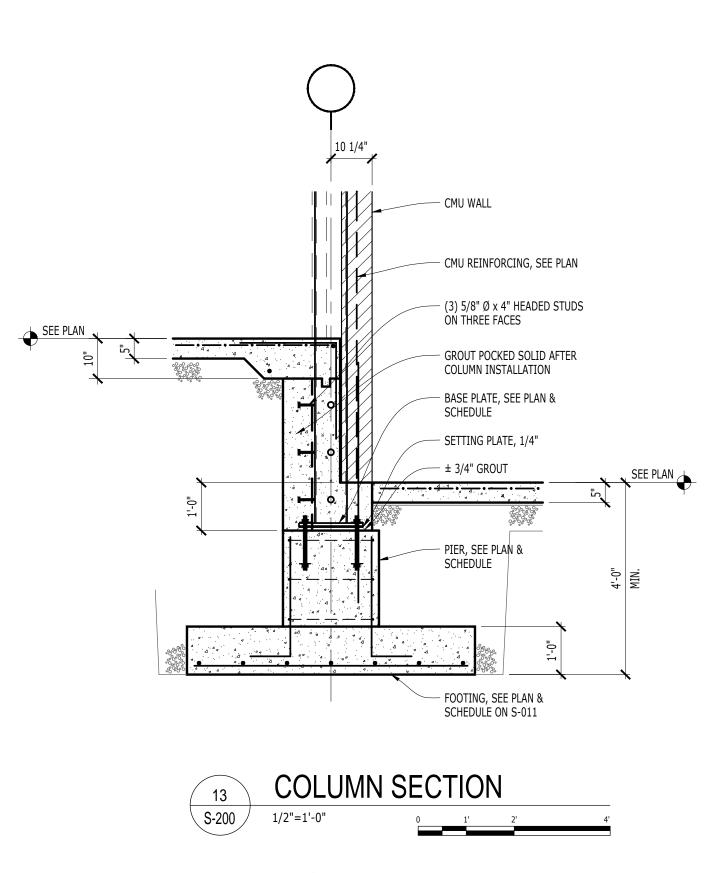
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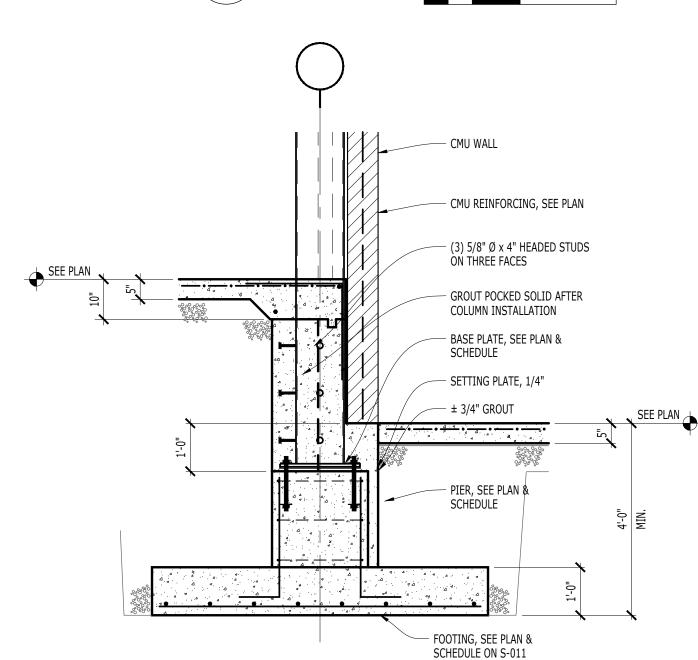
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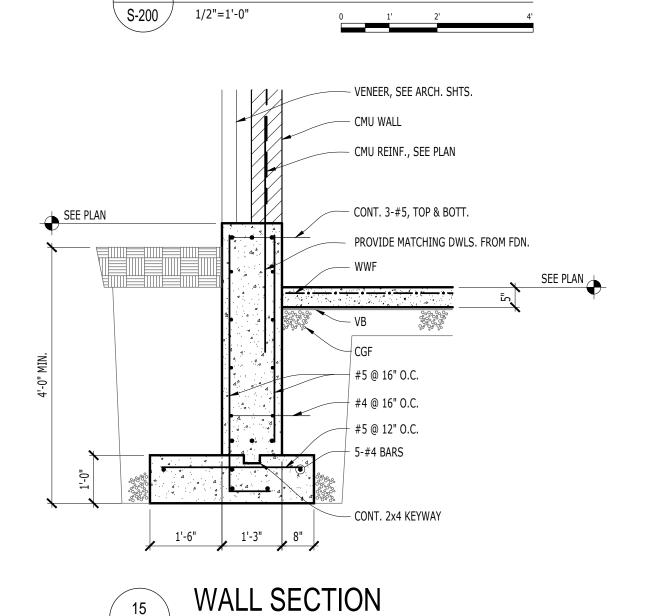
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SHEET TITLE ROOF FRAMING PLAN AND

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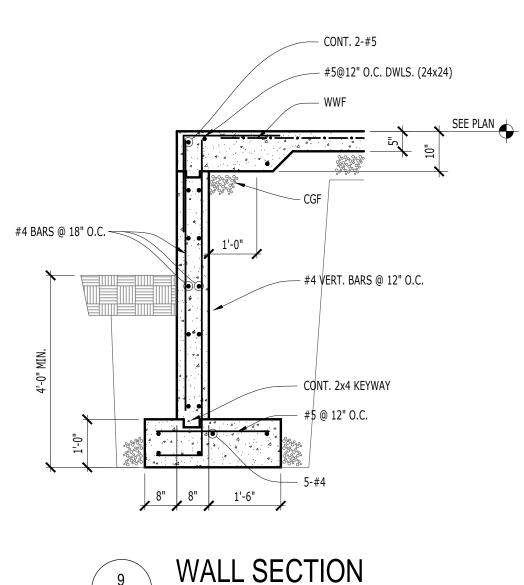




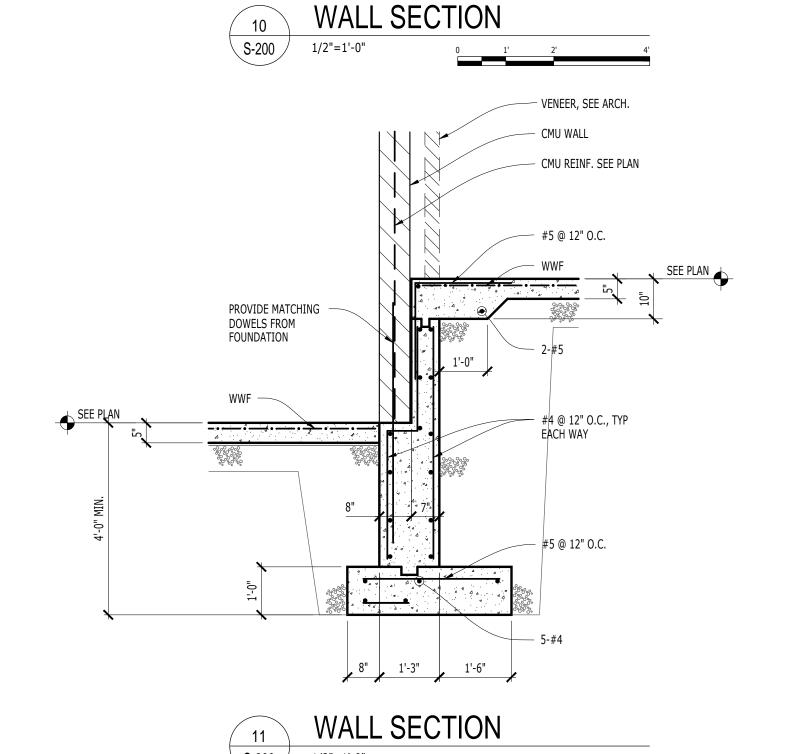


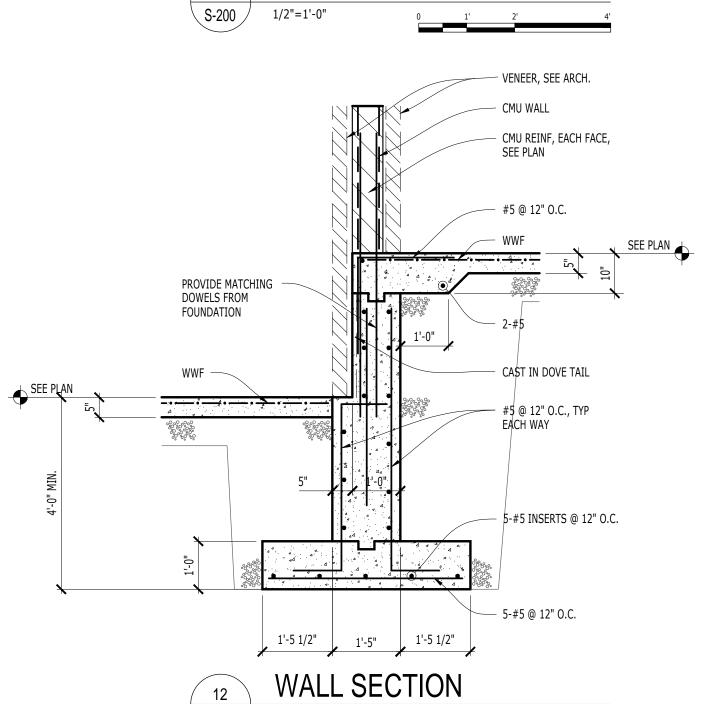
S-200

COLUMN SECTION

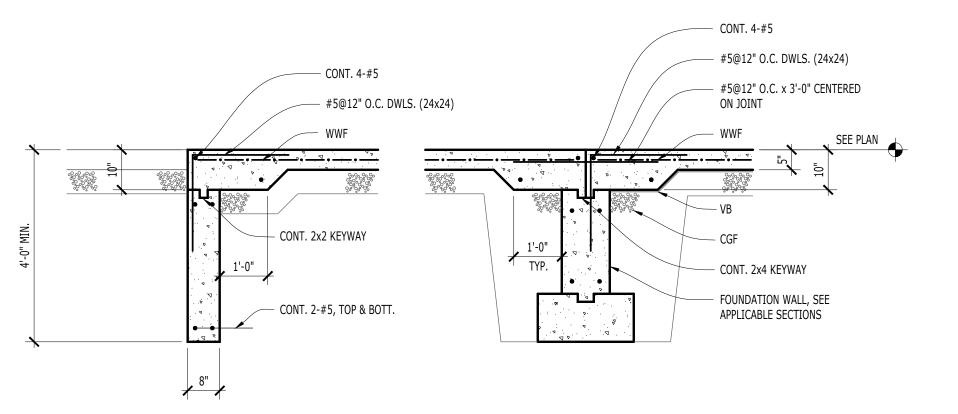




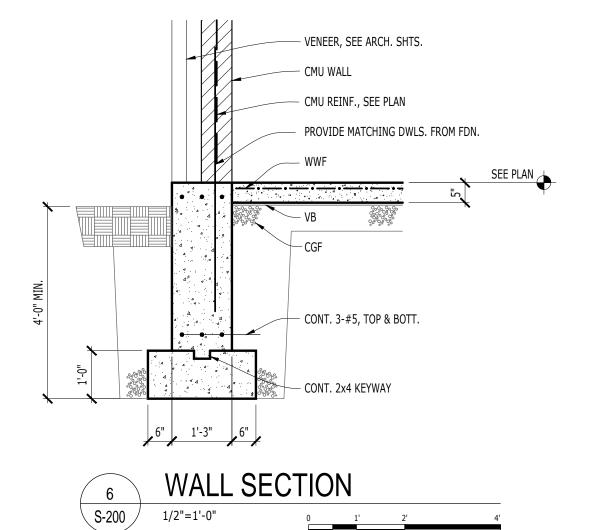


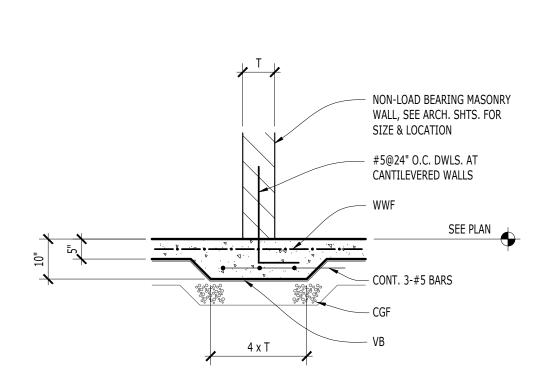


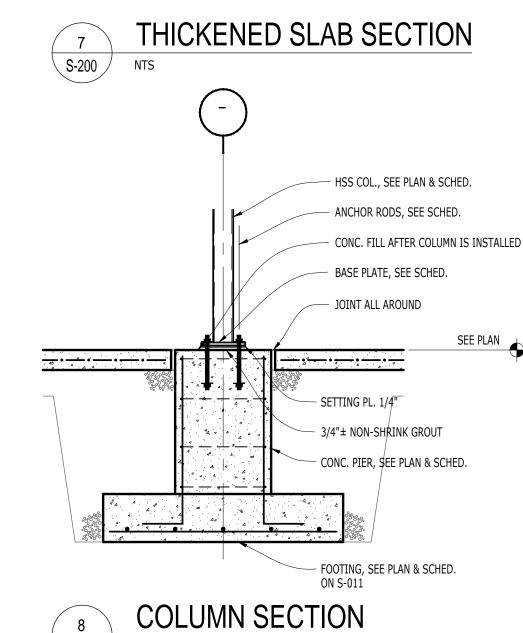
S-200



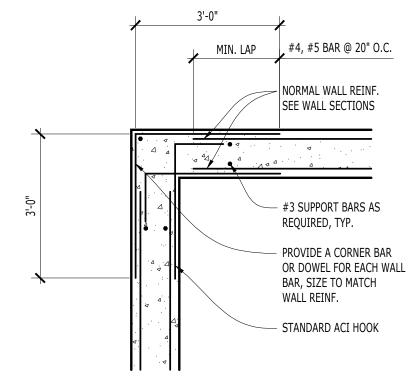




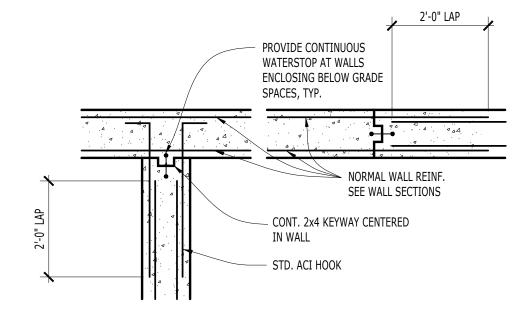




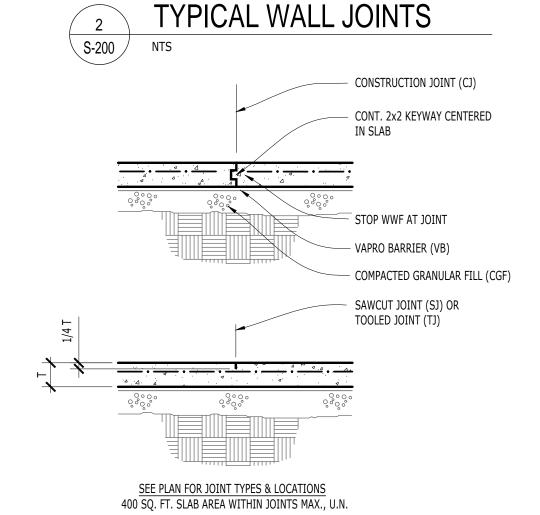
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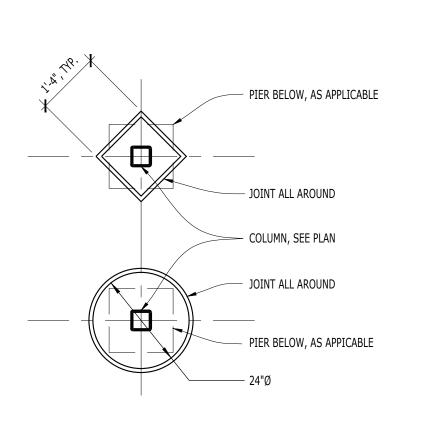




PROVIDE CONCRETE WALL JOINTS @ 40'-0" O.C., MAX.











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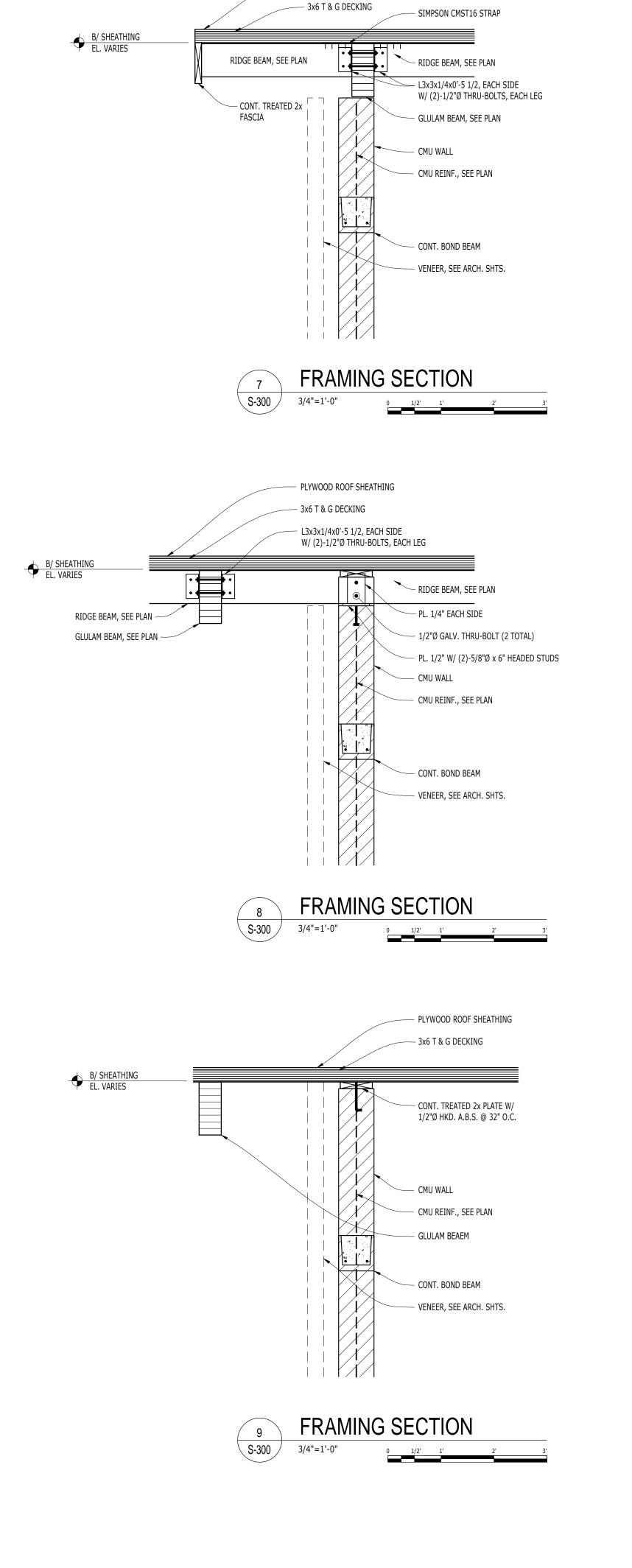
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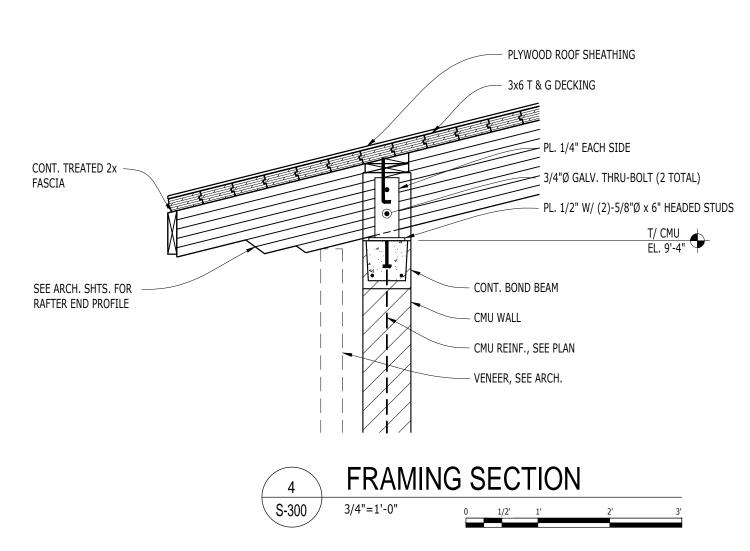
SHEET TITLE **FOUNDATION DETAILS AND** SECTIONS

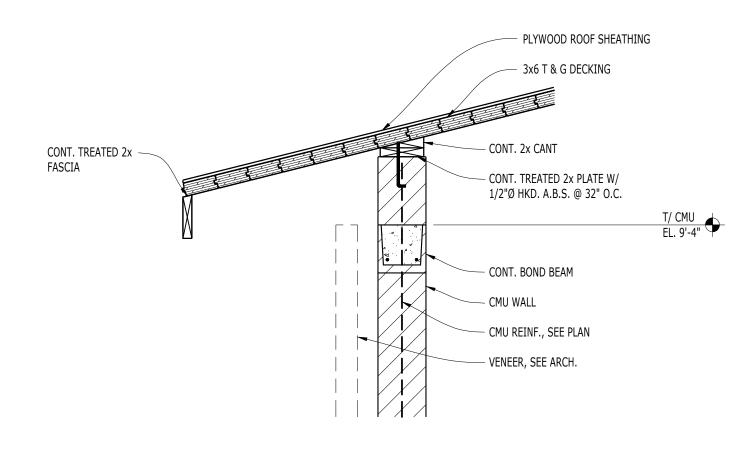
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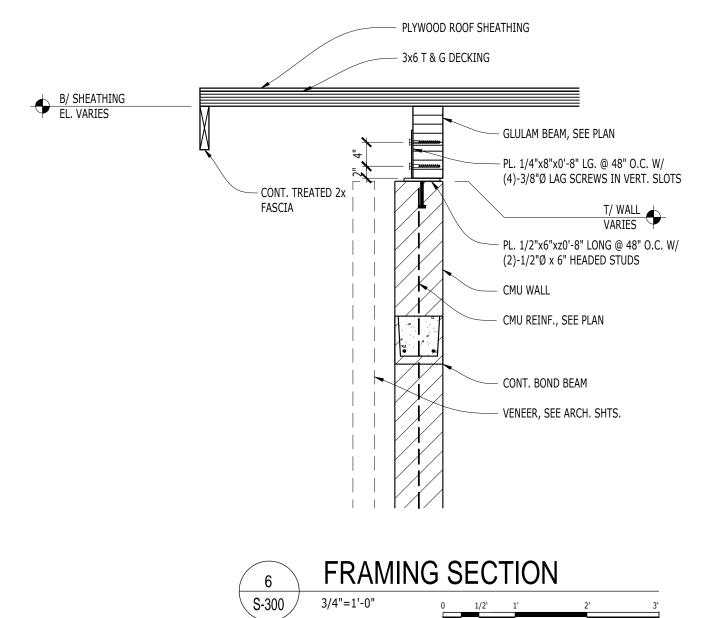


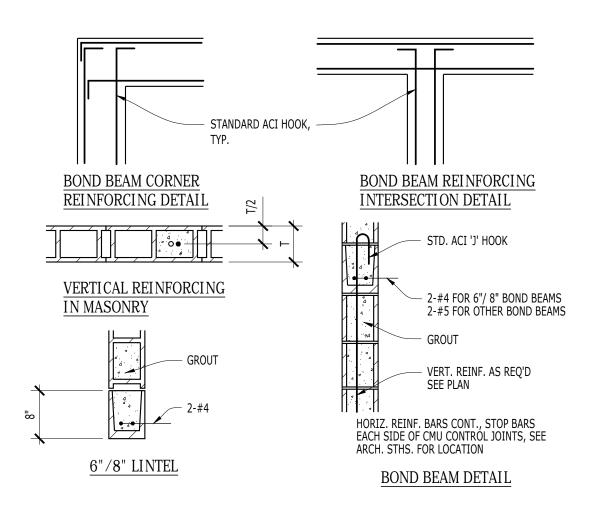
PLYWOOD ROOF SHEATHING











GROUTING NOTES:

GROUT FOR VERTICAL REINFORCED WALL, BOND BEAM, FILLED BLOCK, ANCHOR BOLTS, ETC. SHALL CONFORM TO THE FOLLOWING PROPORTIONS:

1) PORTLAND CEMENT - 1 PART BY VOLUME

2) HYDRATED LIME OR LIME PUTTY - 1/10 PART BY VOLUME 3) CLEAN SHARP SAND - 2 1/2 TO 3 TIMES THE SUM OF VOLUMES 1) & 2).

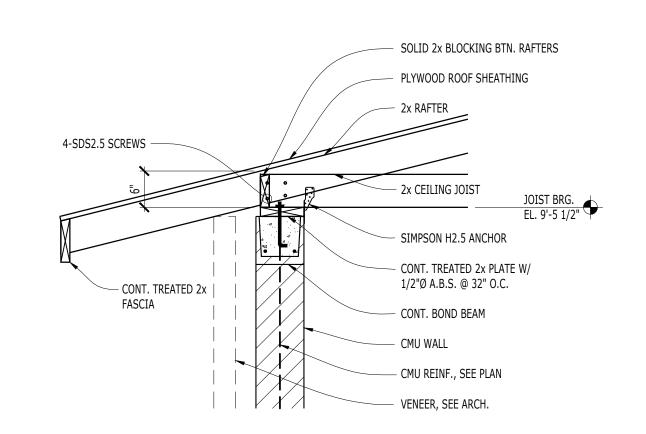
- GROUT SHALL BE MACHINE MIXED WITH SUFFICIENT WATER TO PERMIT POURING INTO CAVITY.
- GROUT SHALL DEVELOP A COMPRESSIVE STRENGTH OF 3000 psi @ 28 DAYS.
- GROUT SHALL BE PUDDLED AS NECESSARY TO INSURE COMPLETE BOND.

PERMIT SUFFICIENT TIME BETWEEN GROUT LIFTS TO AVOID BLOWOUTS.

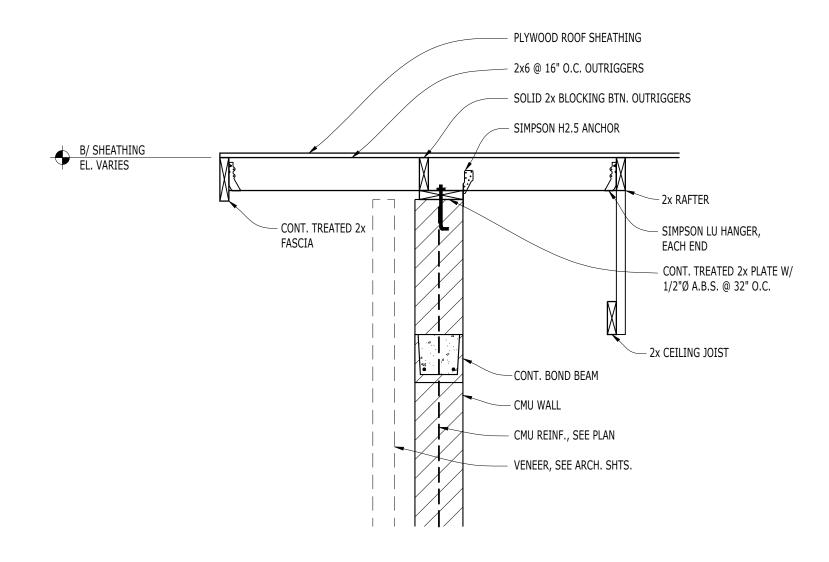
- WIRE REINFORCING SHALL BE IN PLACE TO GROUTING.

- REFER TO STRUCTURAL NOTES FOR ADDITIONAL REQUIREMENTS.

TYPICAL MASONRY GROUTING DETAILS AND NOTES NTS











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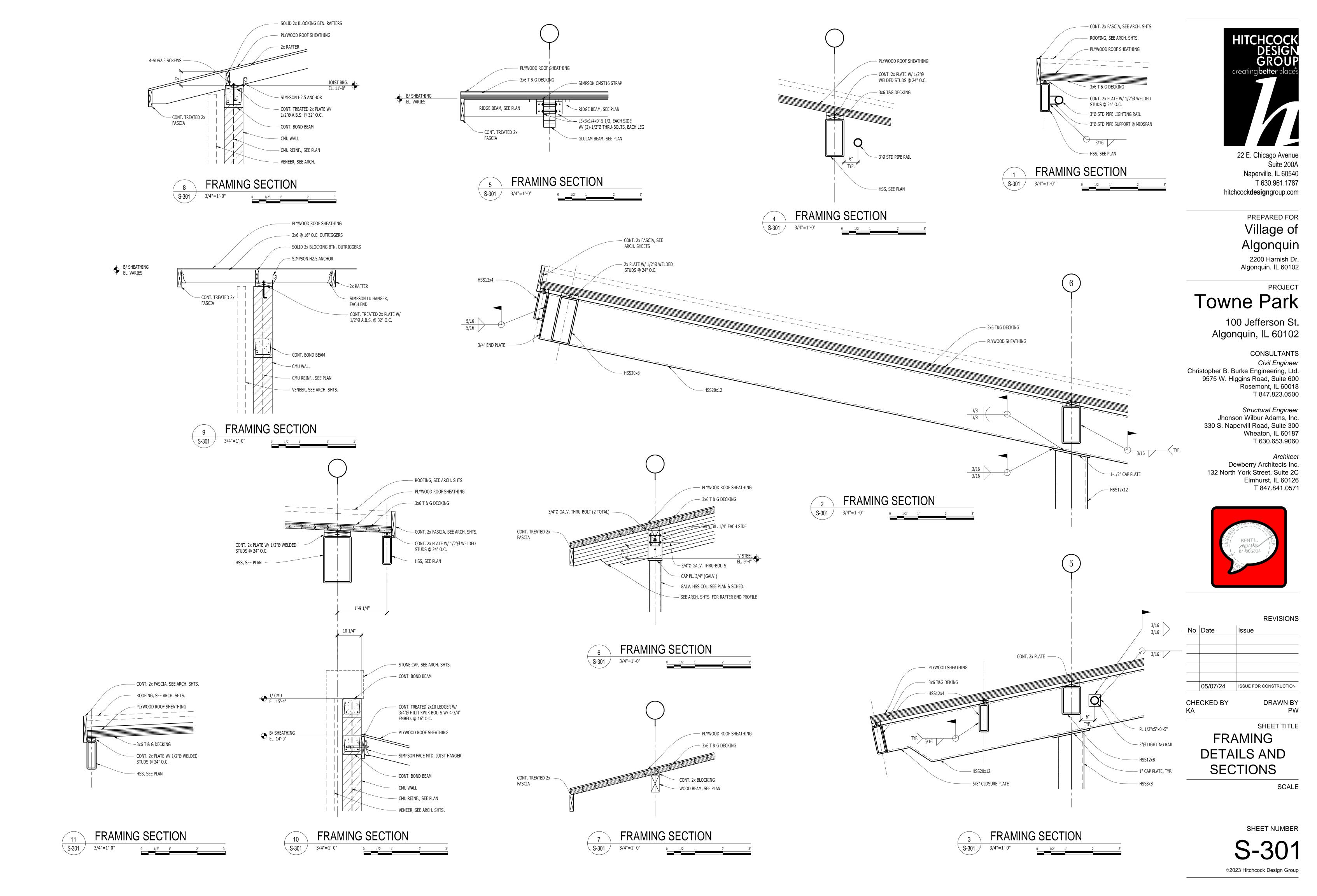
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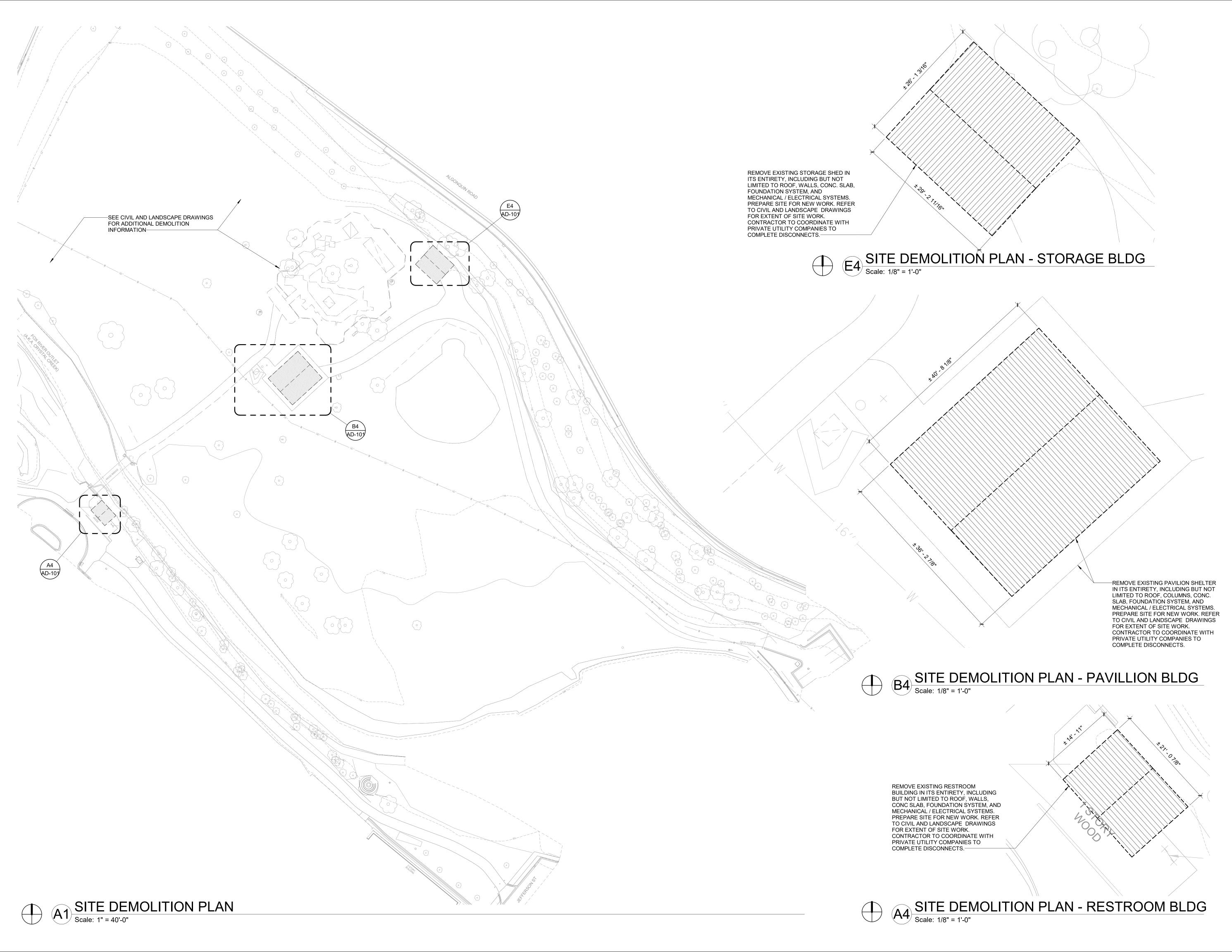
FRAMING
DETAILS AND
SECTIONS

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2200 Harnish Dr. Algonquin, IL 60102

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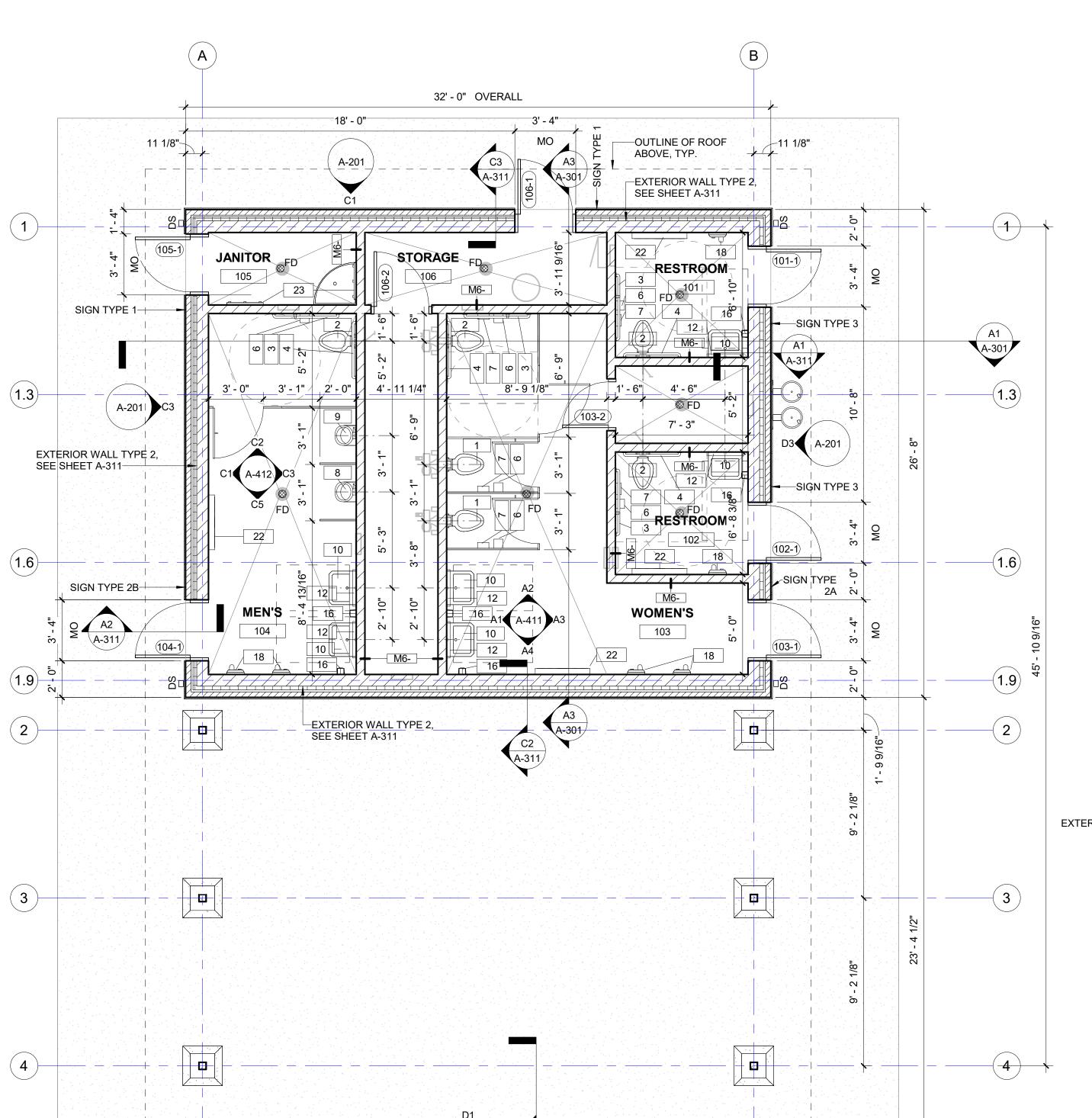
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SHEET TITLE

SITE DEMOLITION PLAN

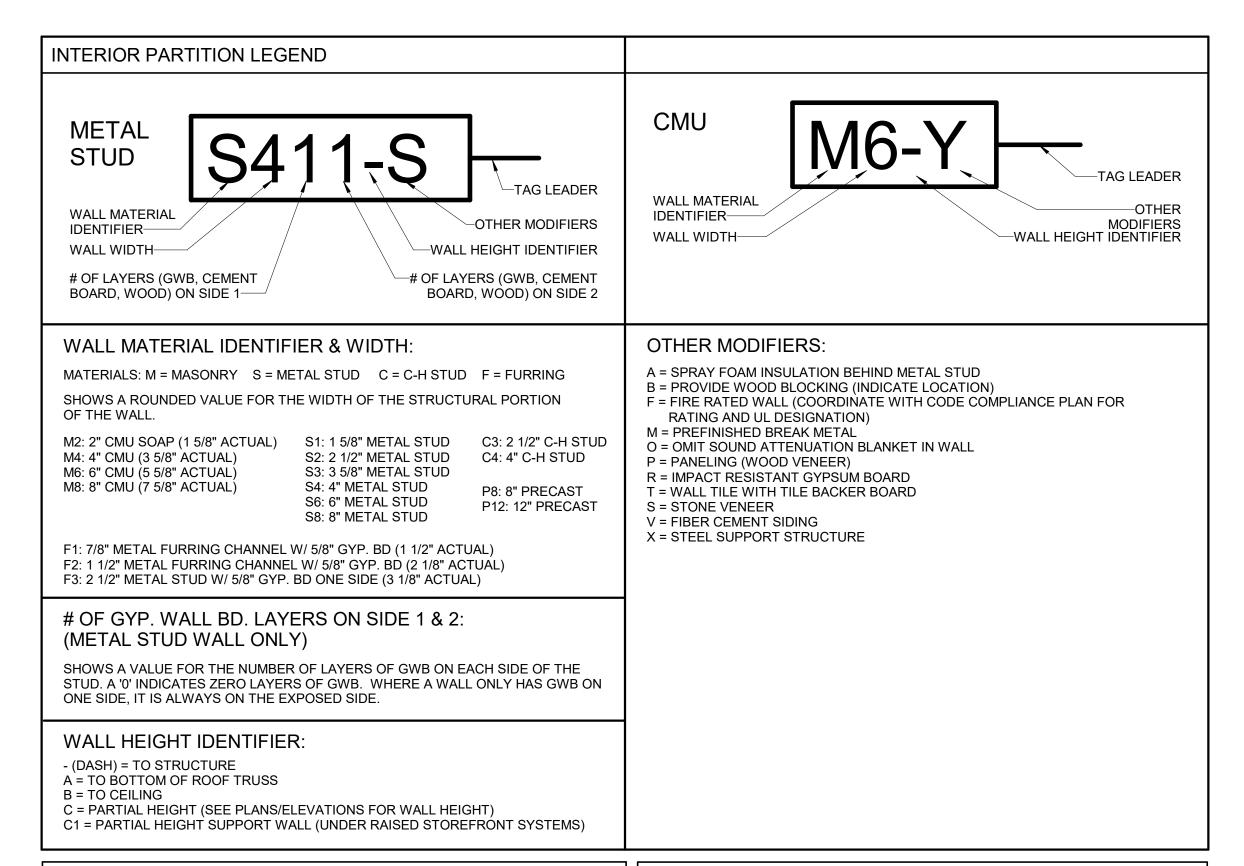
SCALE

AD-101



FIRST FLOOR ANNOTATION AND DIMENSION PLAN - SHELTER

Scale: 1/4" = 1'-0"



ANNOTATION PLAN GENERAL NOTES

- 1. ANY SITE WORK IS SHOWN FOR REFERENCE ONLY. REFER TO CIVIL AND
- LANDSCAPE DRAWINGS FOR EXTENT OF SITE WORK. 2. REFER TO STRUCTURAL NOTES FOR ADDITIONAL REINFORCING
- REQUIREMENTS. 3. REFER TO SHEET A-601 FOR TYPICAL DOORS AND FRAMES. 4. ANY MEP EQUIPMENT SHOWN IS FOR REFERENCE ONLY. REFER TO MEP
- DRAWINGS FOR ADDITIONAL INFORMATION ON MECHANICAL, ELECTRICAL, AND PLUMBING WORK. 5. INTERIOR FLOOR WHERE FLOOR DRAIN PRESENT. SLOPE FLOOR TO FLOOR

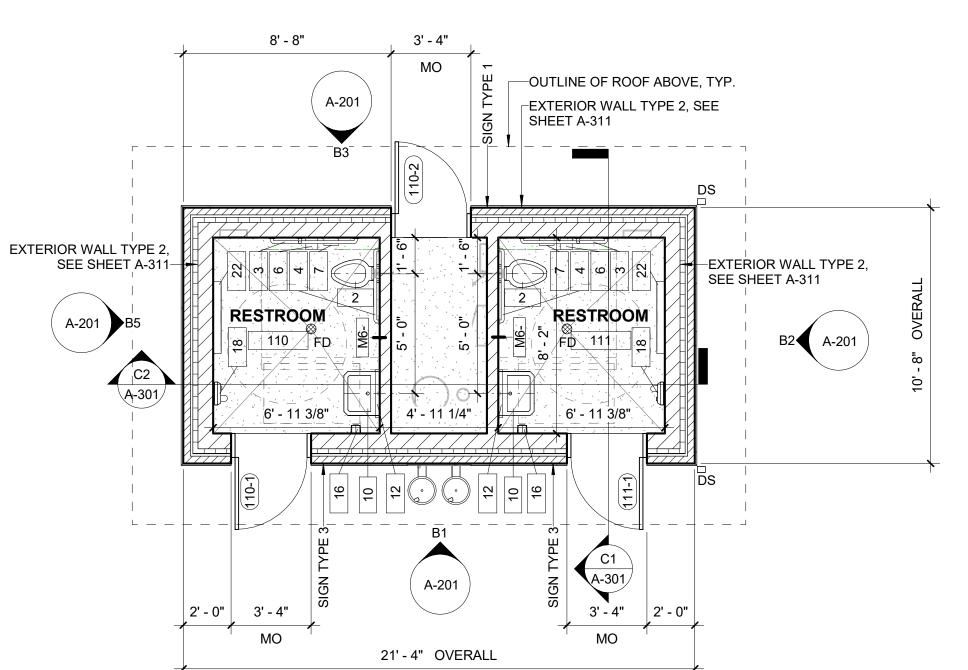
DRAIN; MIN: 1/8" / 12" AND MAX: 1/4" / 12". REF PLUMBING DRAWINGS.

DIMENSION PLAN GENERAL NOTES

- 1. INTERIOR DIMENSIONS ARE TO FACE OF METAL STUD OR CMU UNIT AND TO
- CENTERLINES OF COLUMNS, U.N.O. 2. REFER TO CODE PLANS FOR GRAPHIC REPRESENTATION AND U.L. DESIGNS
- OF RATED WALLS AND SMOKE PARTITIONS. 3. EXTEND PARTITIONS TO UNDERSIDE OF STRUCTURE/DECK, U.N.O.
- 4. FINAL WALL PREP REQUIREMENTS ARE BASED ON FINISH SHOWN IN ROOM FINISH SCHEDULE AND WITH THE SPECIFICATIONS.
- BACK-TO-BACK OUTLETS CANNOT OCCUPY SAME STUD CAVITY SPACE. IN ACOUSTICALLY TREATED WALLS, PROVIDE ACOUSTIC PUTTY PADS AROUND OUTLET BOXES.
- . SEE PLANS AND DETAIL PLANS FOR CHASE DIMENSIONS. REFER TO DETAIL PLANS AND SECTIONS FOR FURTHER DESCRIPTION OF INTERIOR PARTITIONS.

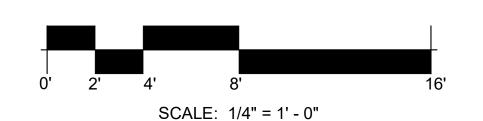
ANNOTATION & DIMENSION PLAN LEGEND

1 SPECIALTY EQUIPMENT TAG
SEE FIXTURE MOUNTING HEIGHTS ON SHEET A-411



FIRST FLOOR ANNOTATION AND DIMENSION PLAN - TOILET

Scale: 1/4" = 1'-0"



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SHEET TITLE FIRST FLOOR

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ANNOTATION & DIMENSION PLAN

SCALE

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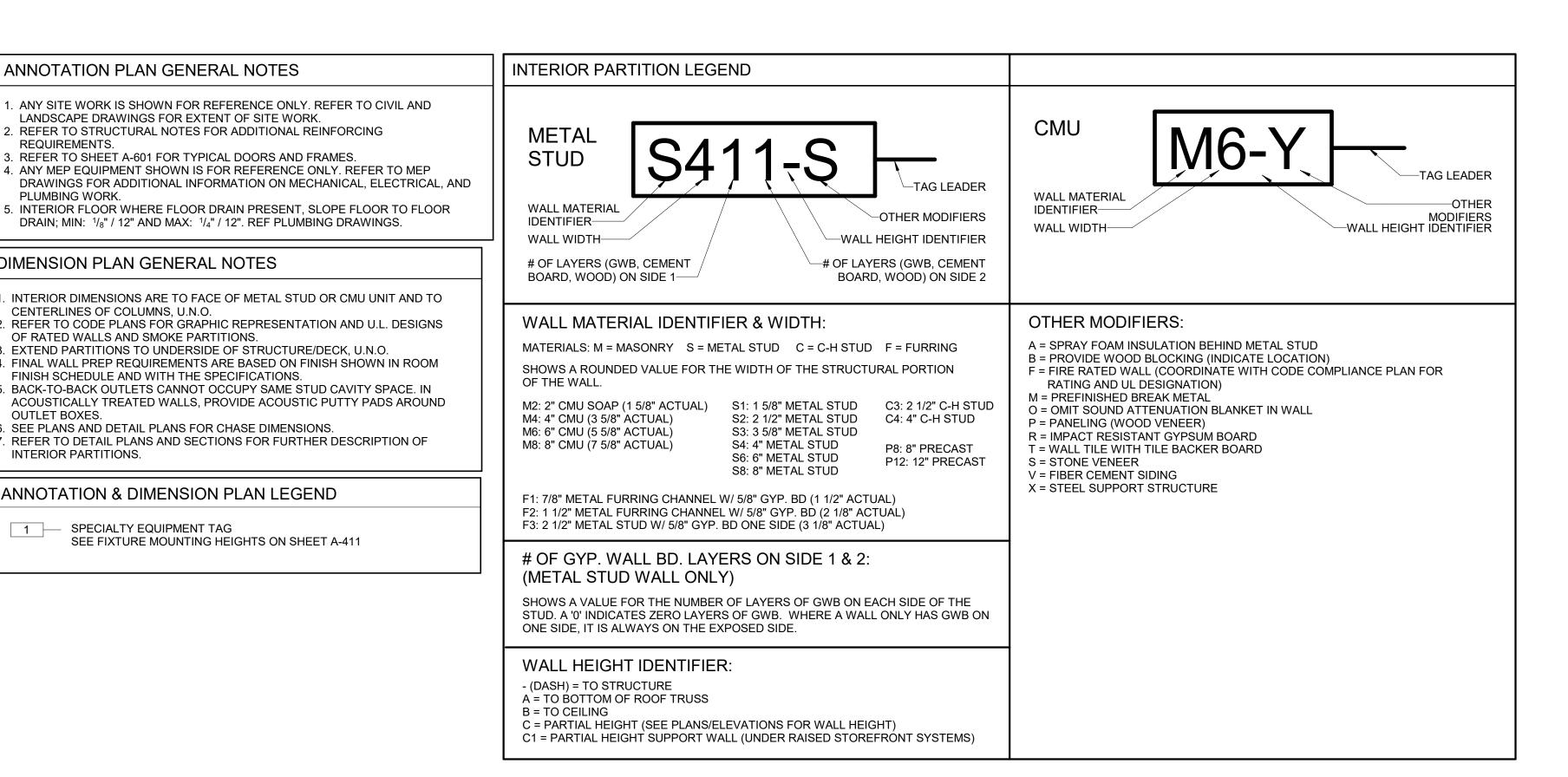
ANNOTATION PLAN GENERAL NOTES 1. ANY SITE WORK IS SHOWN FOR REFERENCE ONLY. REFER TO CIVIL AND LANDSCAPE DRAWINGS FOR EXTENT OF SITE WORK. 2. REFER TO STRUCTURAL NOTES FOR ADDITIONAL REINFORCING REQUIREMENTS. 3. REFER TO SHEET A-601 FOR TYPICAL DOORS AND FRAMES. 4. ANY MEP EQUIPMENT SHOWN IS FOR REFERENCE ONLY. REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION ON MECHANICAL, ELECTRICAL, AND PLUMBING WORK. 5. INTERIOR FLOOR WHERE FLOOR DRAIN PRESENT, SLOPE FLOOR TO FLOOR DRAIN; MIN: 1/8" / 12" AND MAX: 1/4" / 12". REF PLUMBING DRAWINGS. **DIMENSION PLAN GENERAL NOTES** . INTERIOR DIMENSIONS ARE TO FACE OF METAL STUD OR CMU UNIT AND TO CENTERLINES OF COLUMNS, U.N.O. 2. REFER TO CODE PLANS FOR GRAPHIC REPRESENTATION AND U.L. DESIGNS OF RATED WALLS AND SMOKE PARTITIONS. 3. EXTEND PARTITIONS TO UNDERSIDE OF STRUCTURE/DECK, U.N.O. 4. FINAL WALL PREP REQUIREMENTS ARE BASED ON FINISH SHOWN IN ROOM FINISH SCHEDULE AND WITH THE SPECIFICATIONS. 5. BACK-TO-BACK OUTLETS CANNOT OCCUPY SAME STUD CAVITY SPACE. IN ACOUSTICALLY TREATED WALLS, PROVIDE ACOUSTIC PUTTY PADS AROUND OUTLET BOXES. 6. SEE PLANS AND DETAIL PLANS FOR CHASE DIMENSIONS.

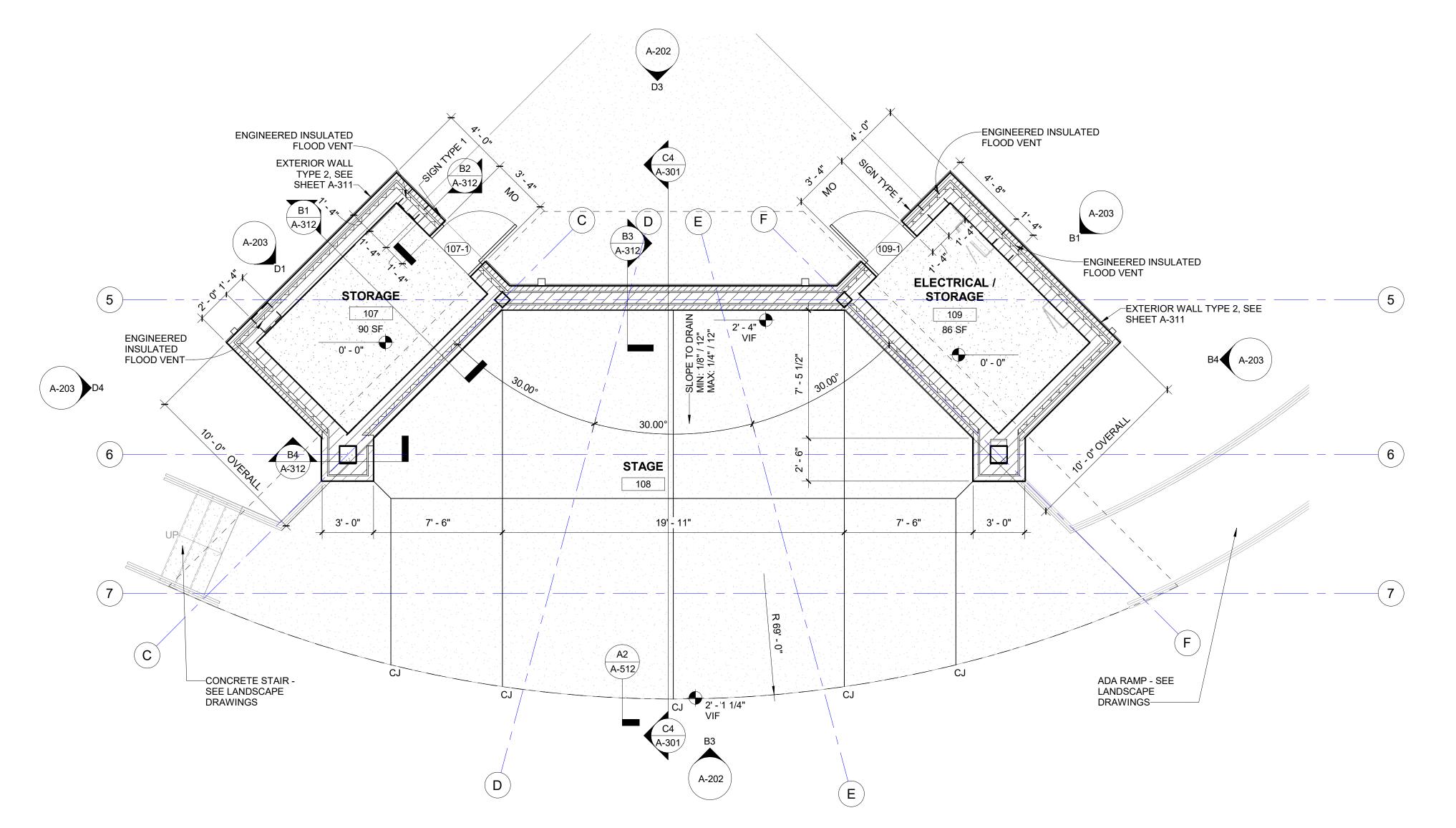
ANNOTATION & DIMENSION PLAN LEGEND

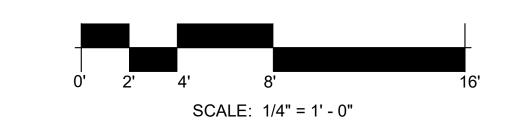
SEE FIXTURE MOUNTING HEIGHTS ON SHEET A-411

1 SPECIALTY EQUIPMENT TAG

INTERIOR PARTITIONS.









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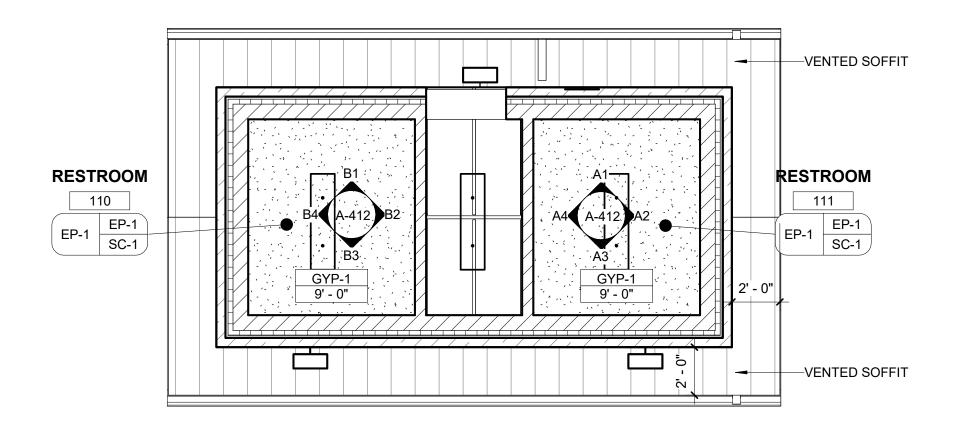
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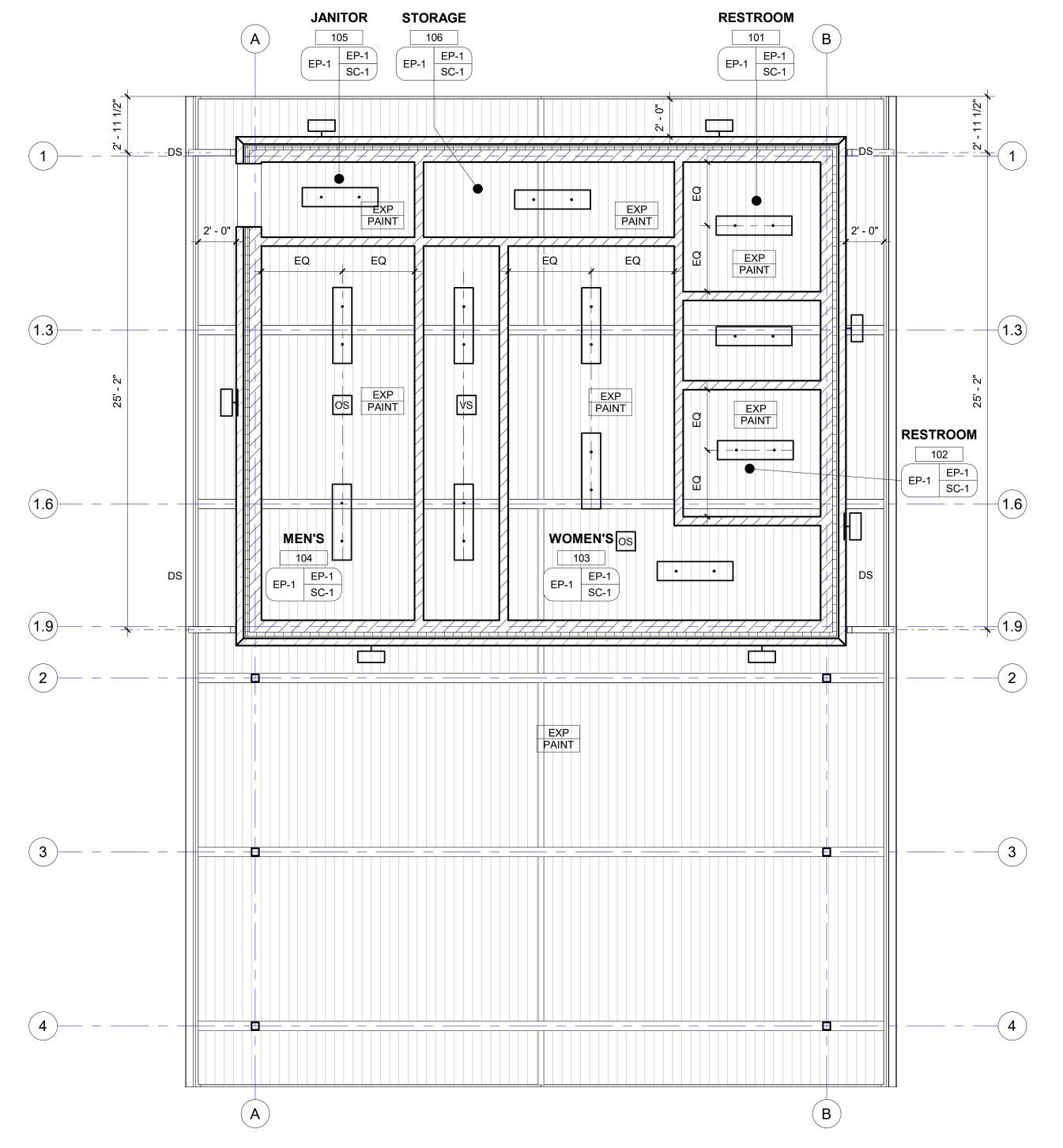
FIRST FLOOR **ANNOTATION &** DIMENSION PLAN

SCALE

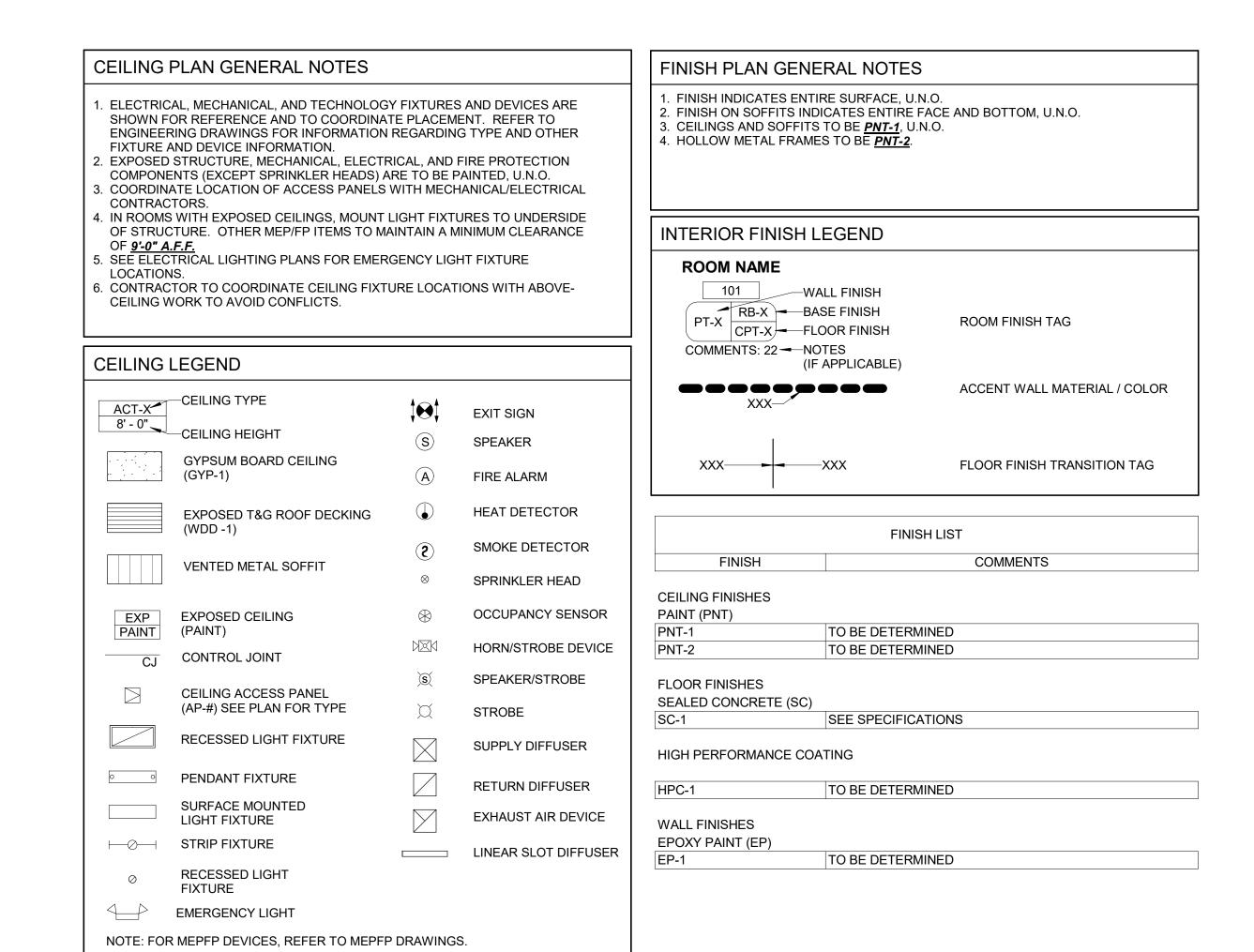


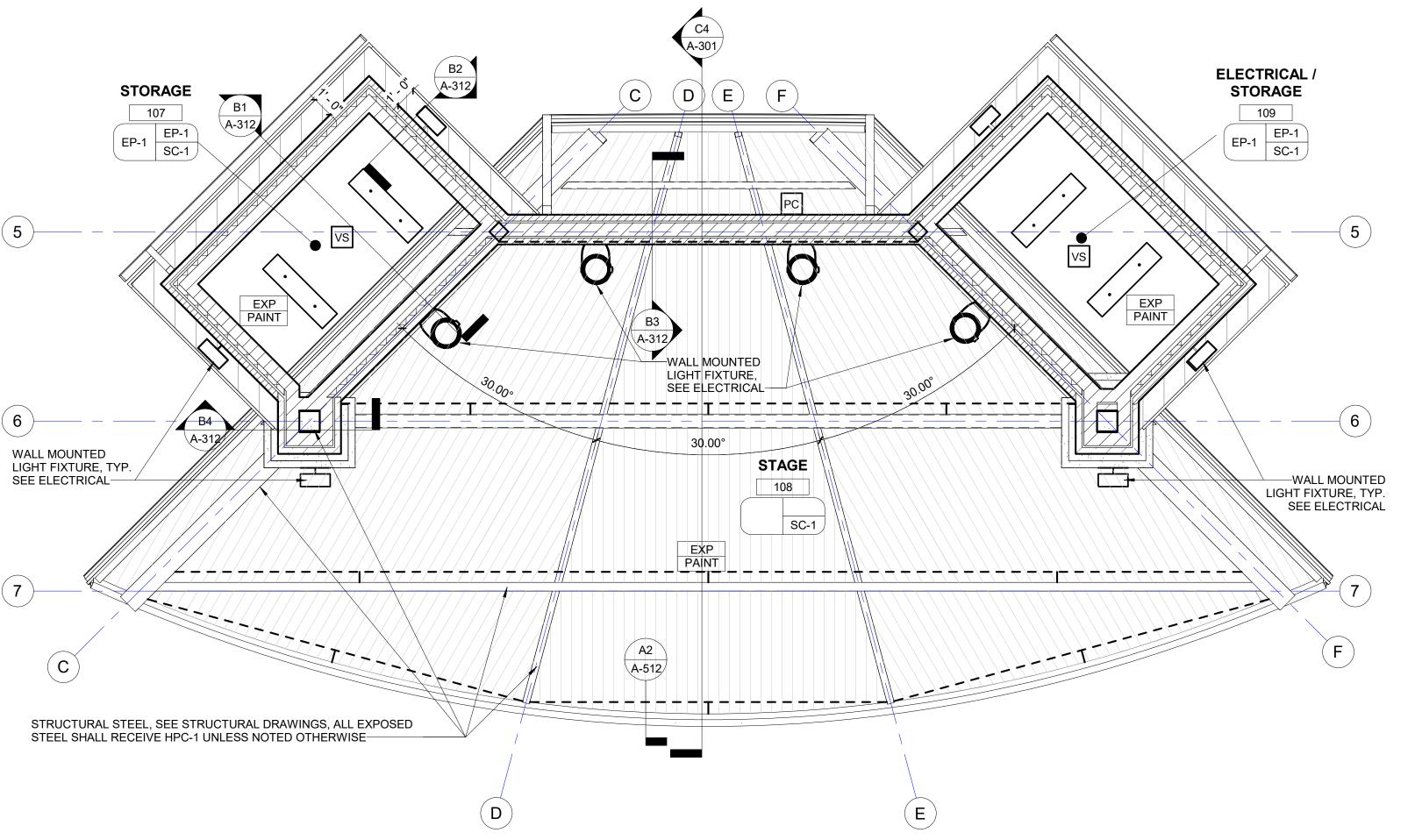
FIRST FLOOR REFLECTED CEILING PLAN - TOILET

Scale: 1/4" = 1'-0"











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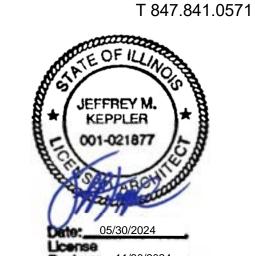
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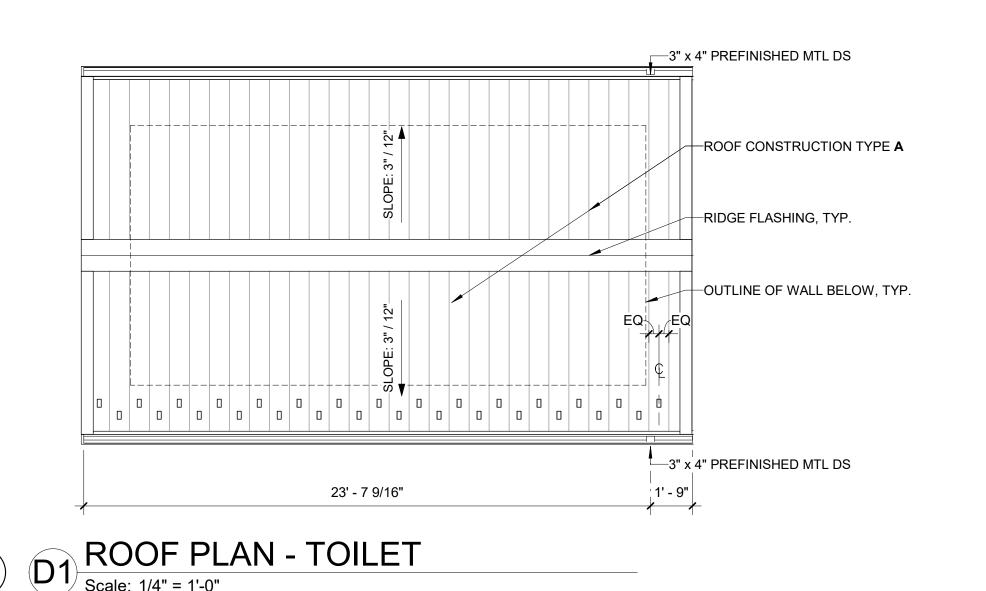
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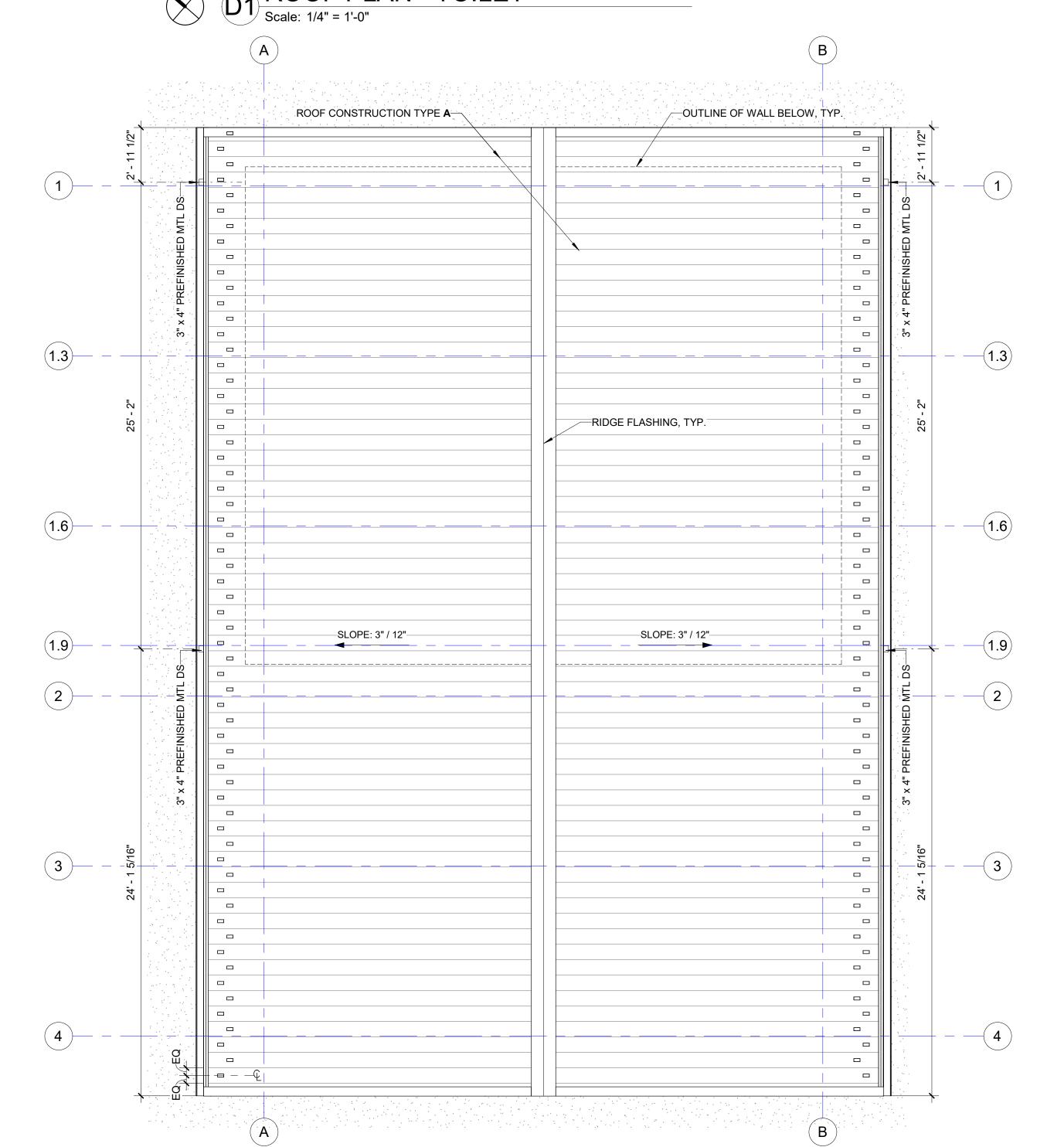
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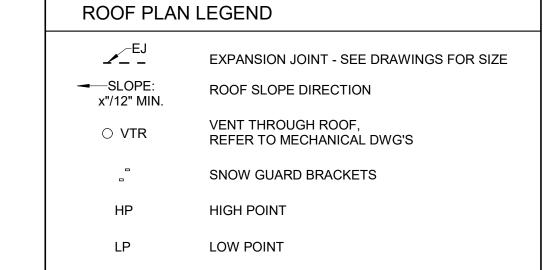
> SHEET TITLE FIRST FLOOR

CEILING AND FINISH PLANS

SCALE







DOWNSPOUT

ROOF CONSTRUCTION TYPE ROOF CONSTRUCTION TY

DS

ROOF CONSTRUCTION TYPE **B**

5"x5" PREFINISHED
MTL DS

ROOF CONSTRUCTION TYPE A
- STANDING SEAM METAL ROOF
- ICE AND WATER SHIELD
- 5" MINIMUM INSULATION (MIN R-30)

- VAPOR BARRIER - 1/2" EXTERIOR PLYWOOD SHEATHING - WD T&G DECK (REFER TO STRUCTURAL DRAWINGS)

ROOF CONSTRUCTION TYPE B
- STANDING SEAM METAL ROOF

- STANDING SEAM METAL ROOF - ICE AND WATER SHIELD

- 1/2" EXTERIOR PLYWOOD SHEATHING- WD T&G DECK (REFER TO STRUCTURAL DRAWINGS)

ROOF CONSTRUCTION TYPE A

SCALE: 1/4" = 1' - 0"

3"x4" PREFINISHED MTL DS

ΖΈ

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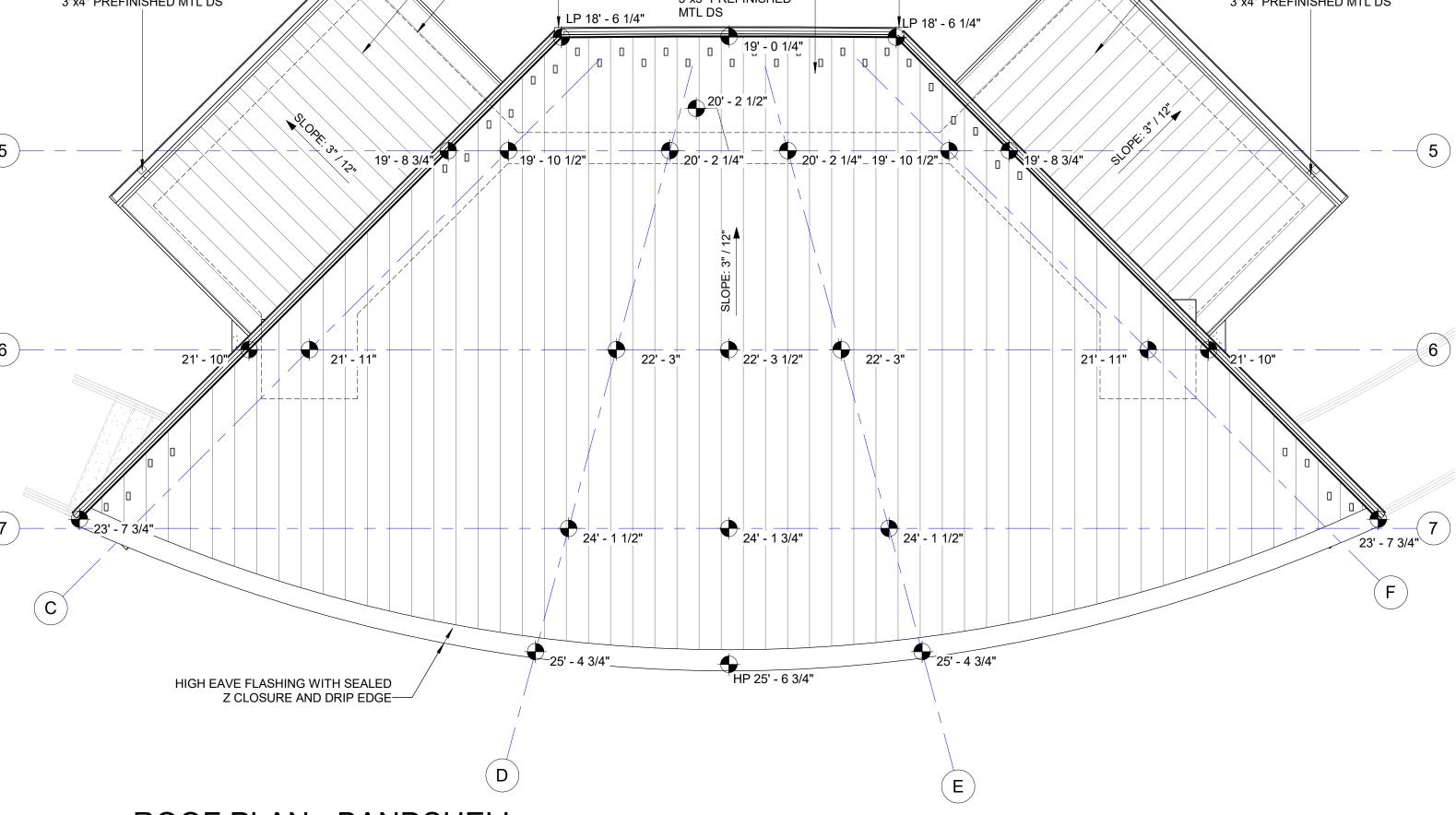
SHEET TITLE

ROOF PLANS

SCALE

SHEET NUMBER

A-130
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-5"x5" PREFINISHED

ROOF CONSTRUCTION TYPE A

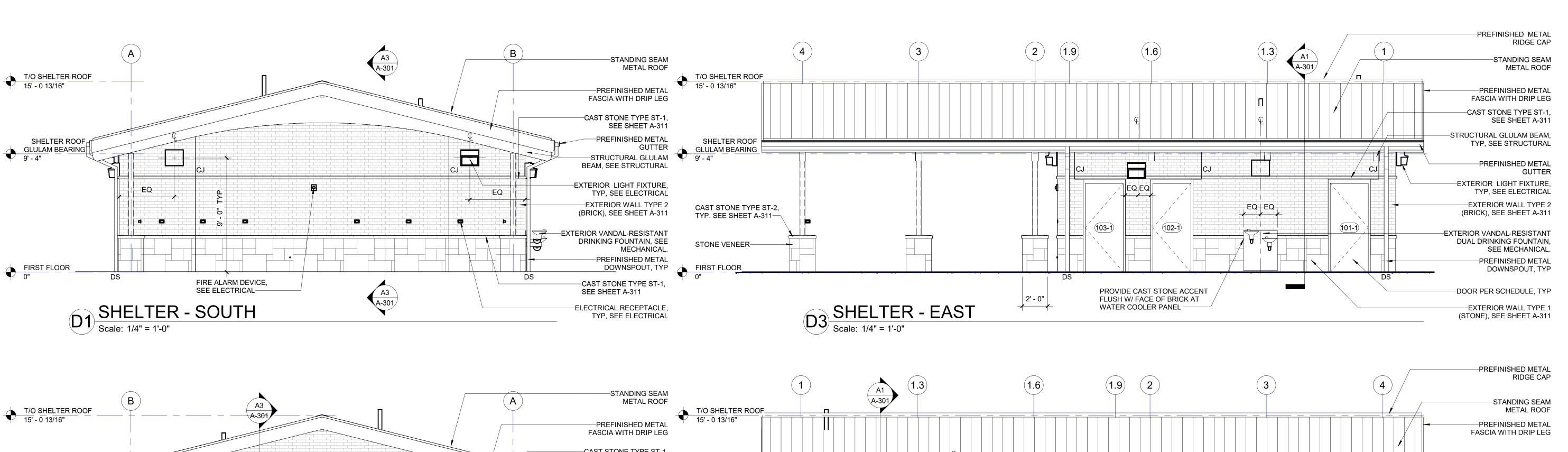
—OUTLINE OF WALL BELOW, TYP.

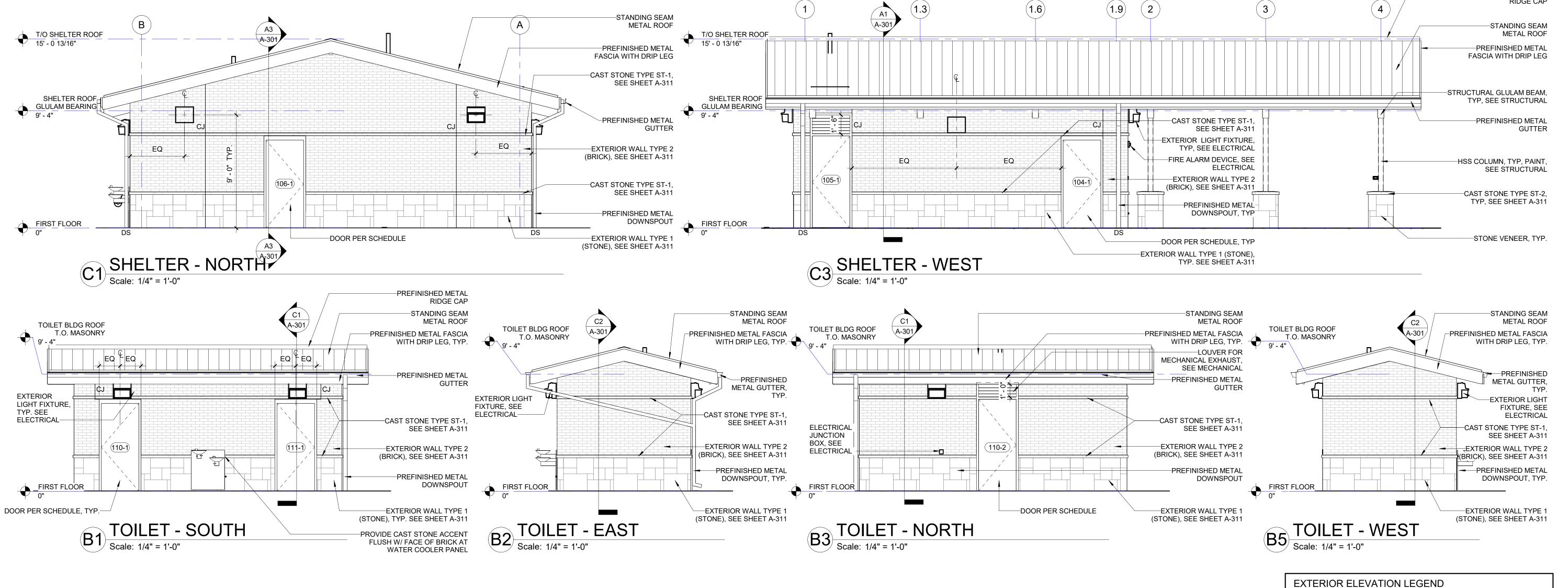
3"x4" PREFINISHED MTL DS

ROOF PLAN - SHELTER

Scale: 1/4" = 1'-0"







DRAWN BY CHECKED BY

NOTES: SEE SHEET A-311 FOR EXTERIOR

PROVIDE SMOOTH STONE BEHIND ALL BUILDING SYSTEM DEVICES MOUNTED ON STONE INCLUDING

BUT NOT LIMITED TO SWITCHES, ELECTRICAL OUTLETS, DATA

PORTS, FIRE ALARM DEVICES, WALL MOUNTED LIGHT FIXTURES, ETC.

WALL TYPES

STONE WALL

BRICK WALL

CMU WALL

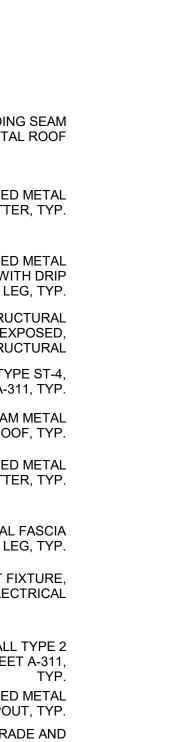
STANDING SEAM METAL ROOF

SHEET TITLE **EXTERIOR**

ELEVATIONS

SCALE

JNF



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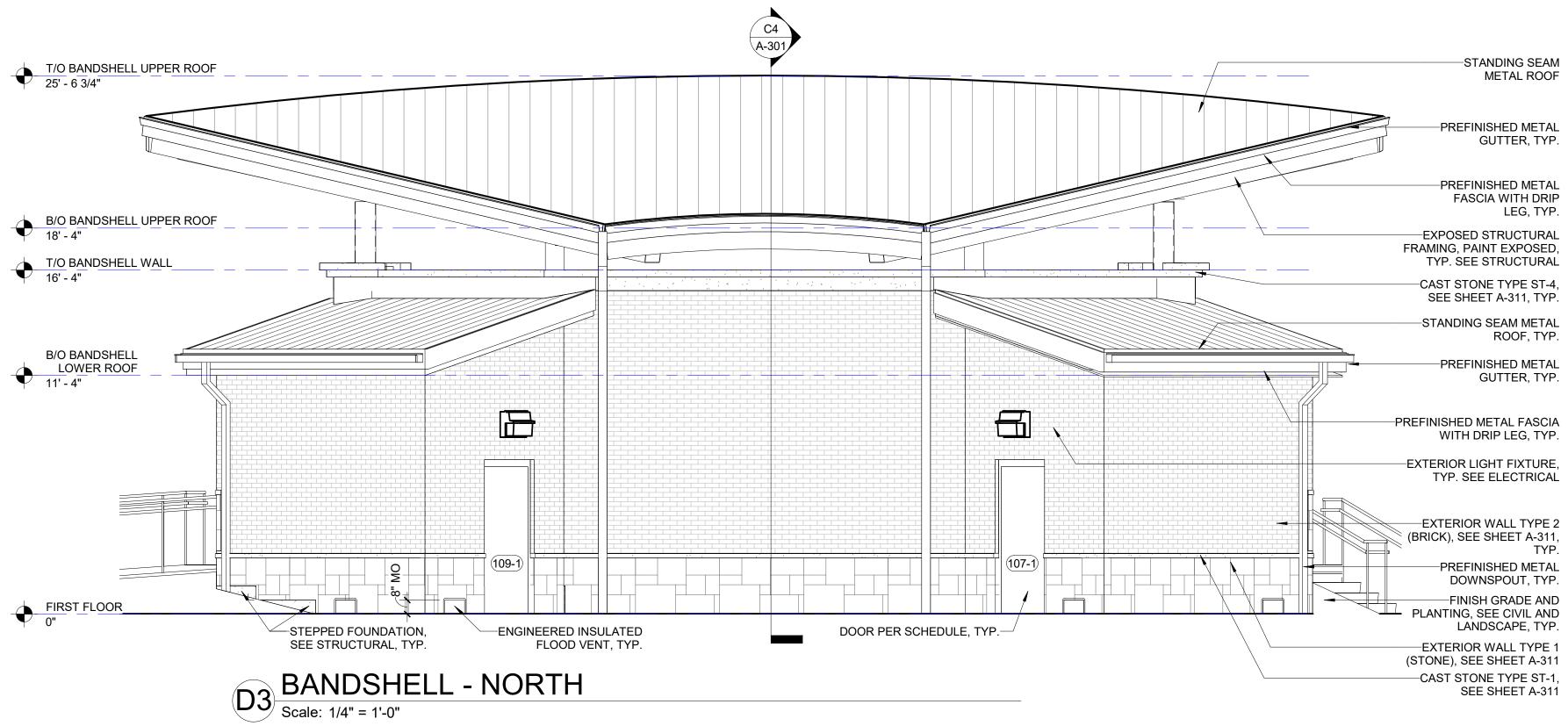
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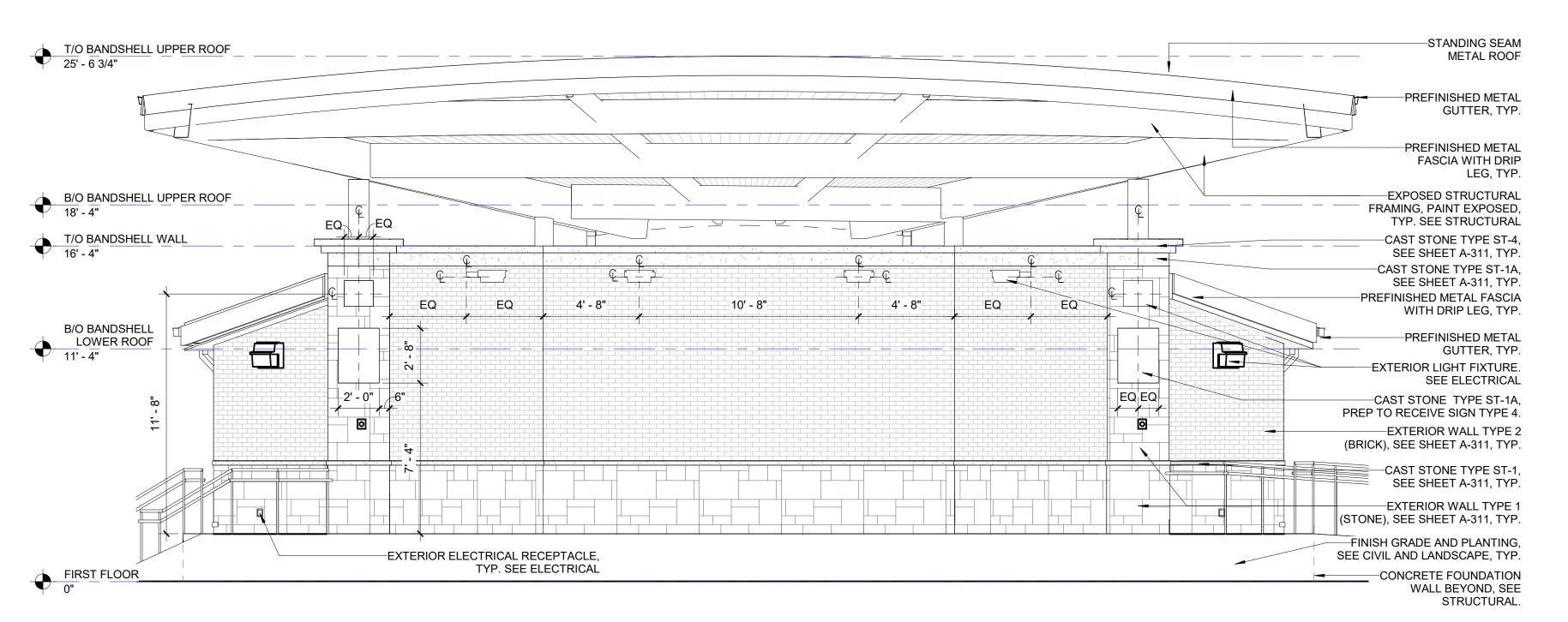
EXTERIOR ELEVATIONS

SCALE

SHEET NUMBER

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B3 BANDSHELL - SOUTH
| Scale: 1/4" = 1'-0"



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JNF SHEET TITLE

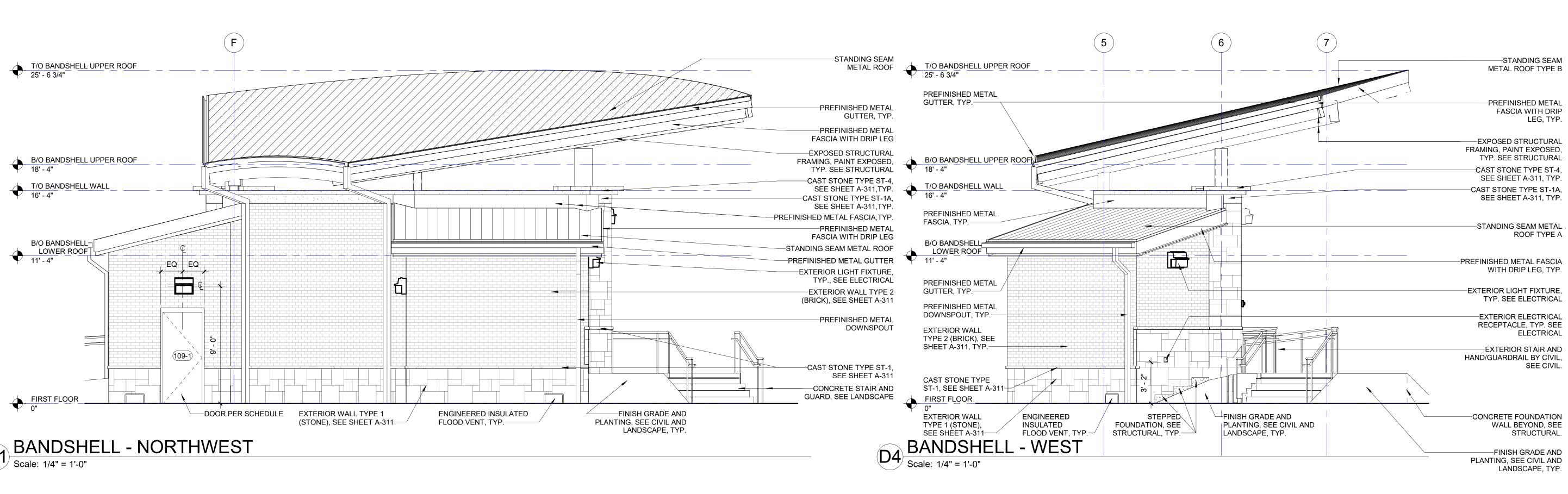
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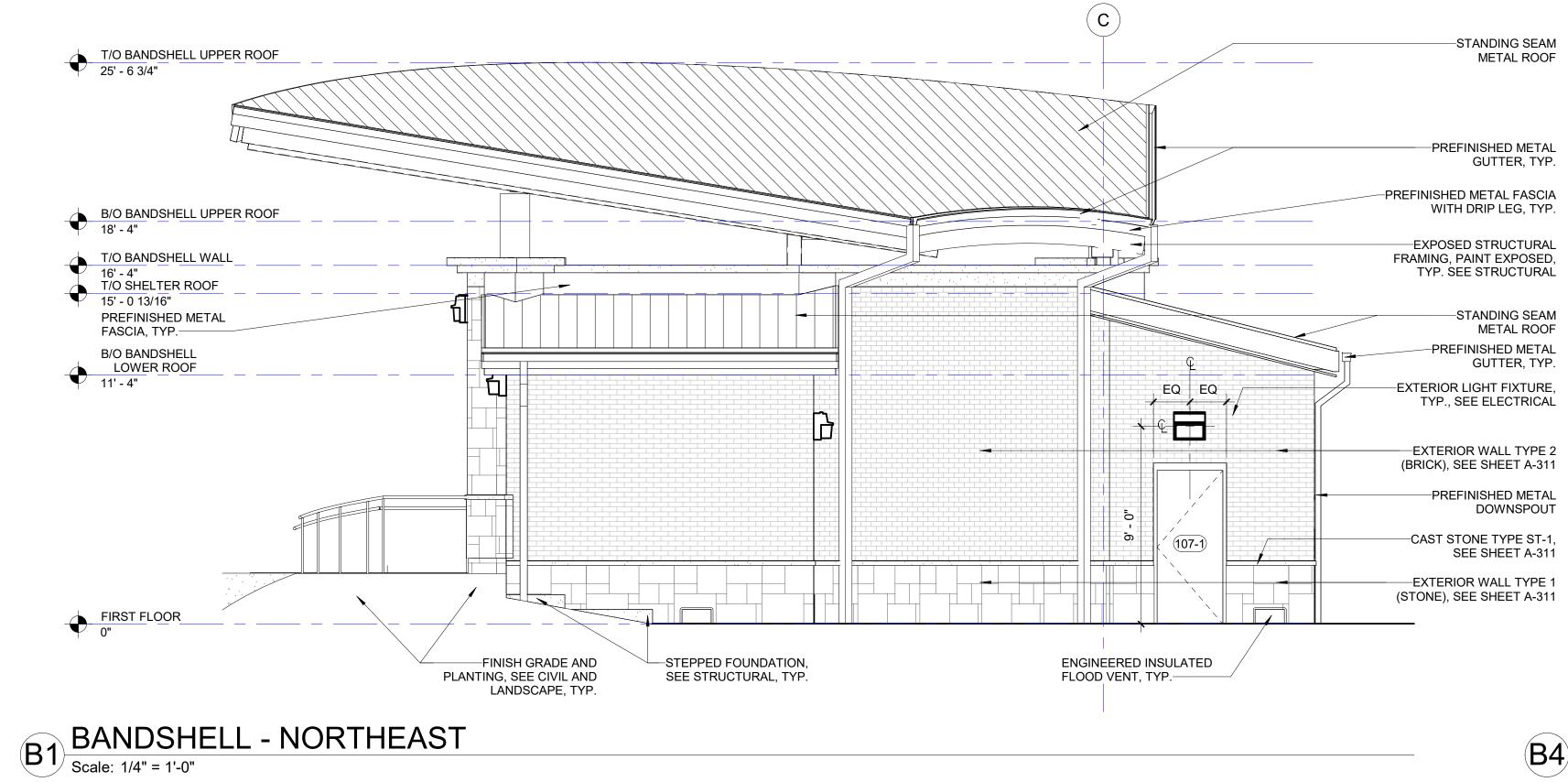
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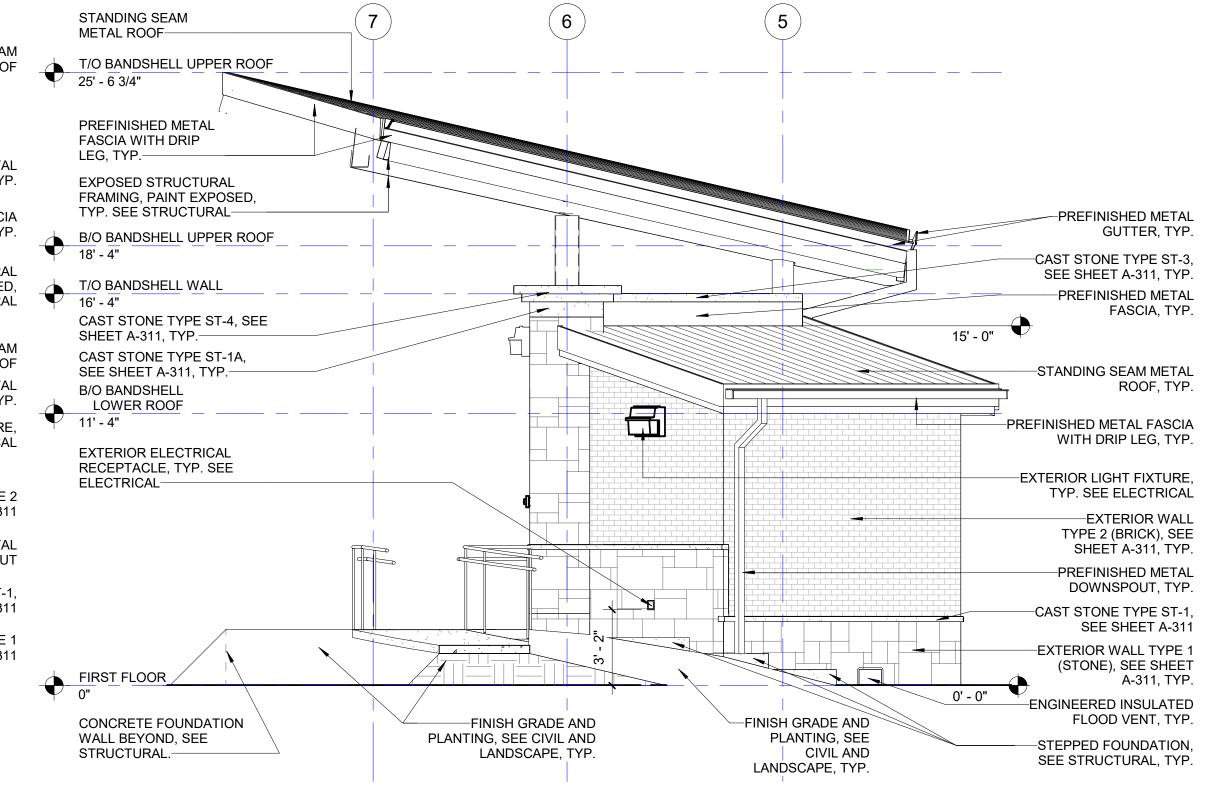
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SHEET NUMBER

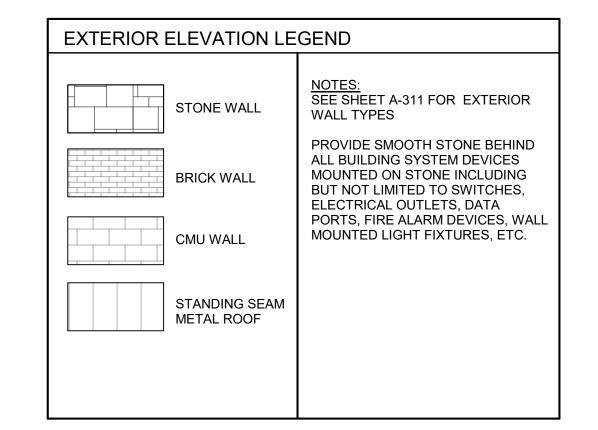
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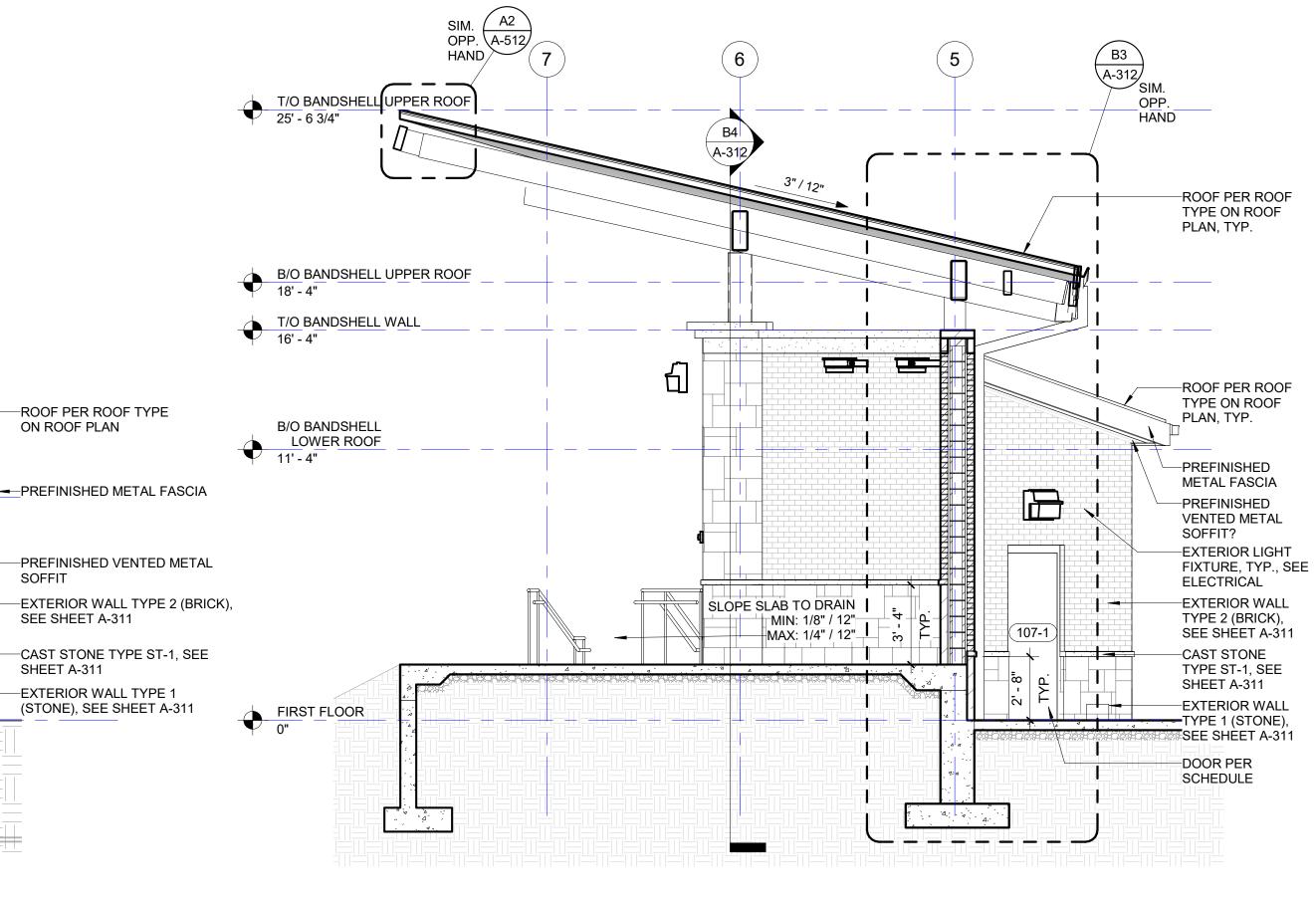






BANDSHELL - EAST
Scale: 1/4" = 1'-0"







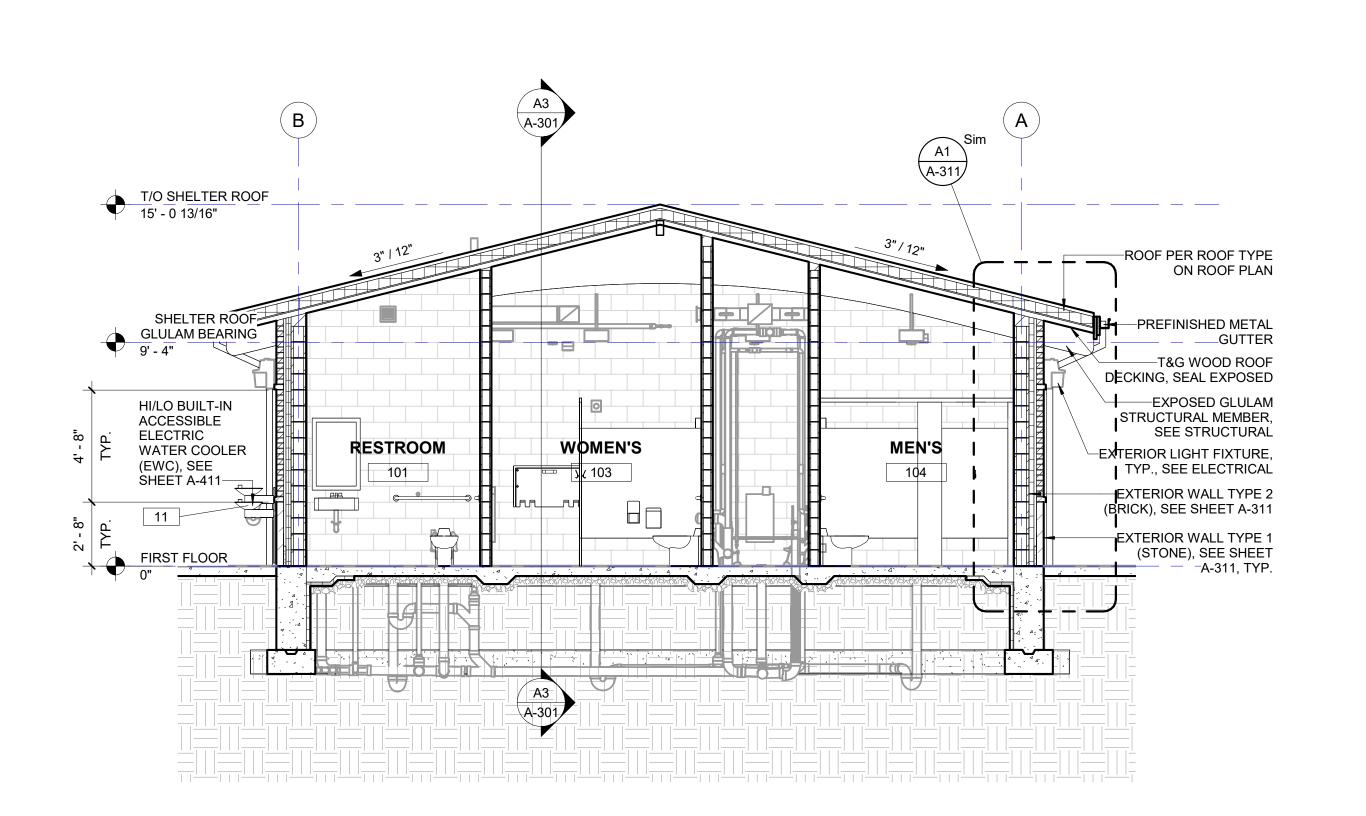
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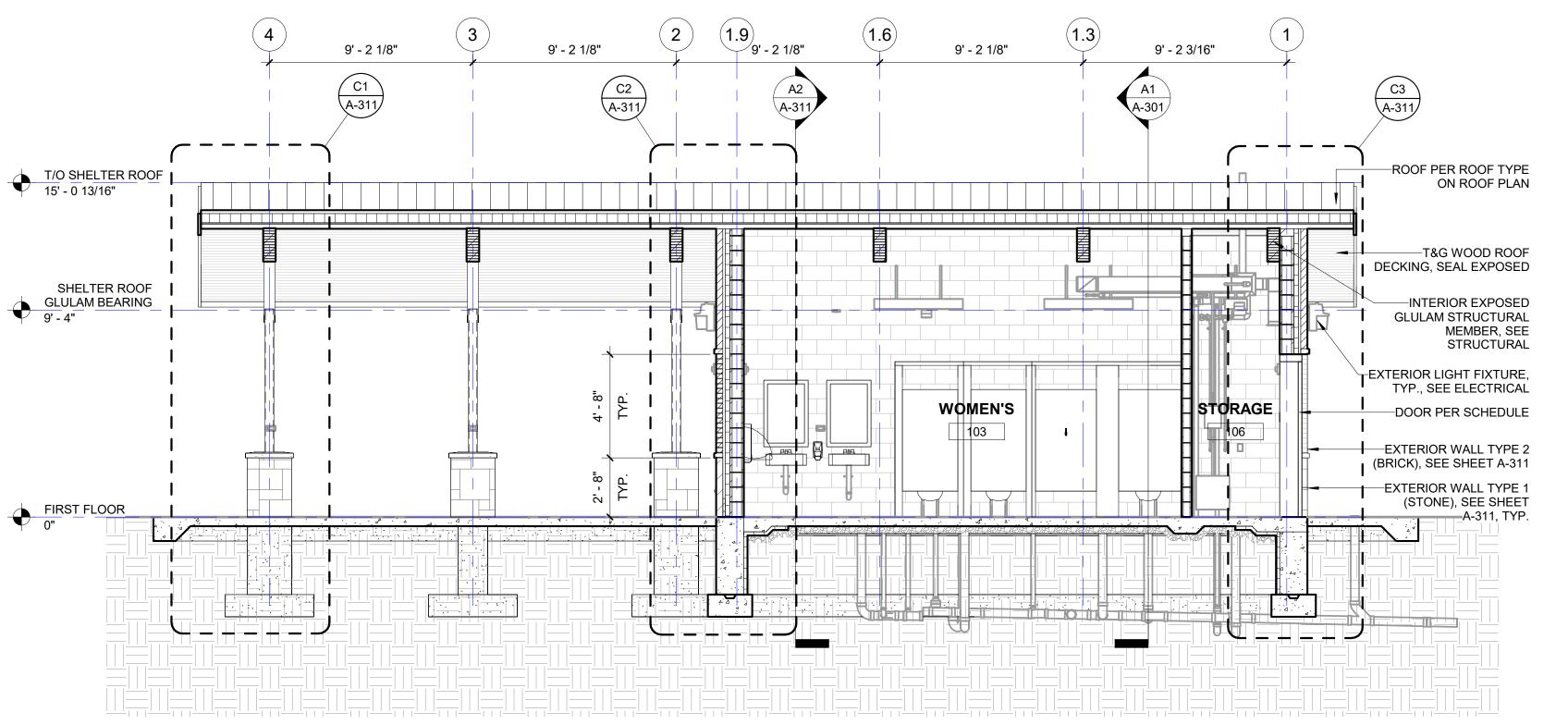
SEE SHEET A-311

TOILET BLDG ROOF T.O. MASONRY

FIRST FLOOR







A3 Scale: 1/4" = 1'-0"

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BUILDING **SECTIONS**

SCALE

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C2 A-301

C1 TOILETS BLDG SECTION - SW/NE

Scale: 1/4" = 1'-0"

TOILET BLDG ROOF
T.O. MASONRY
9' - 4"

FIRST FLOOR
0"

ROOF PER ROOF TYPE
ON ROOF PLAN

--PREFINISHED METAL GUTTER

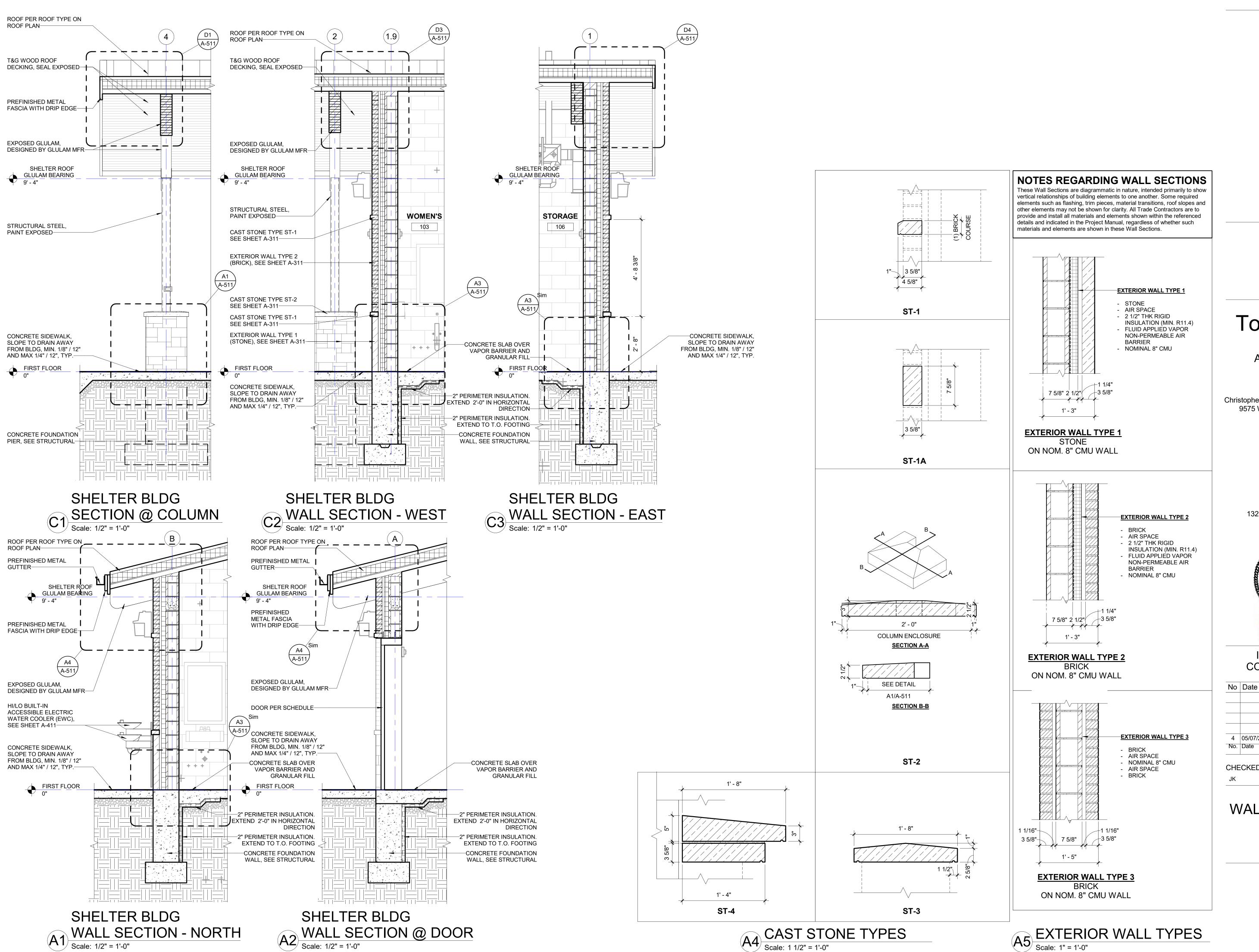
-PREFINISHED VENTED METAL SOFFIT

EXTERIOR WALL TYPE 2 (BRICK), SEE SHEET A-311 —CAST STONE TYPE ST-1, SEE SHEET A-311

-EXTERIOR WALL TYPE 1 (STONE), SEE SHEET A-311, TYP.

-PREFINISHED METAL

DOWNSPOUT



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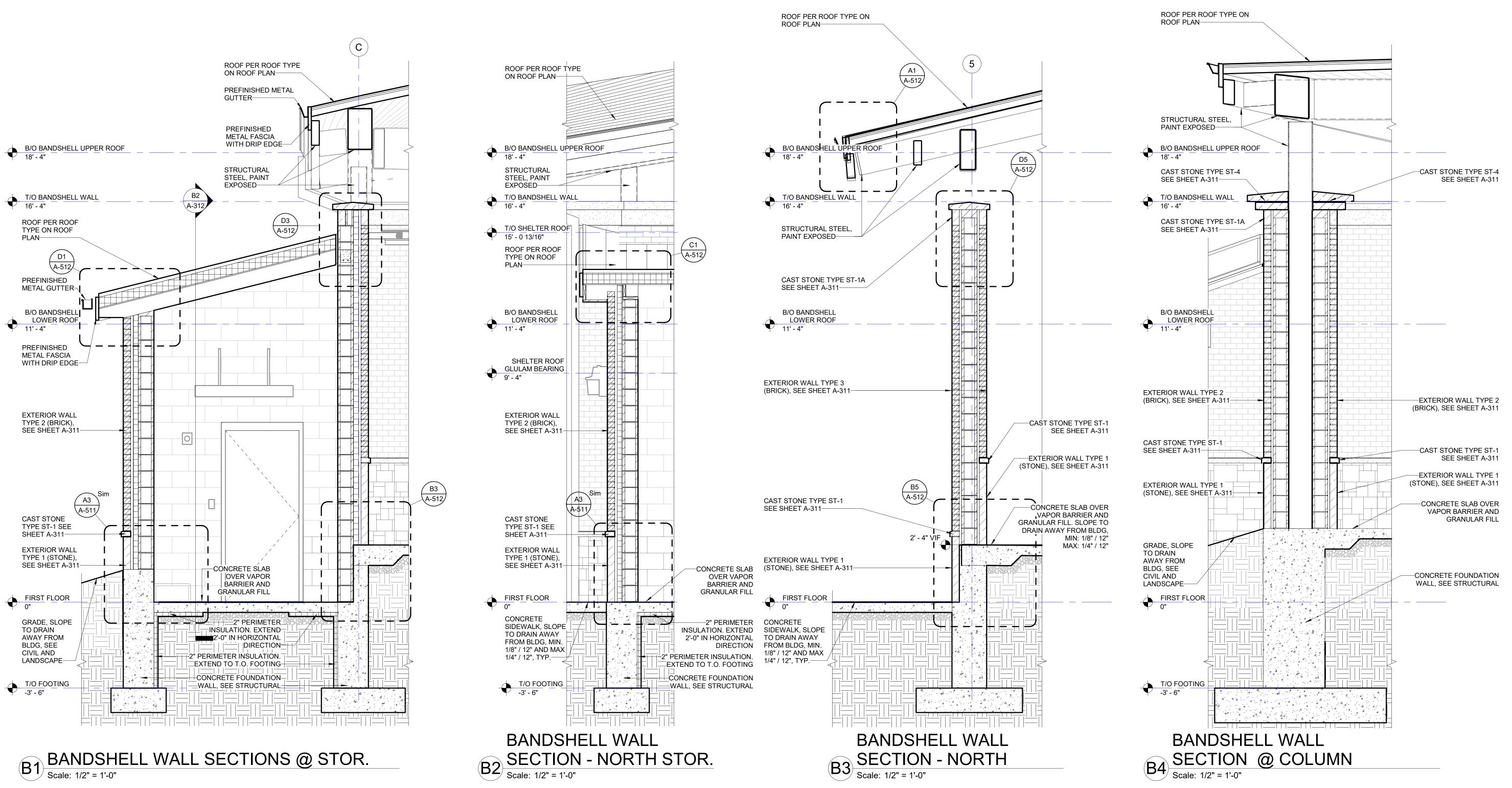


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| | | SHEET TITLE |

WALL SECTIONS

SCALE





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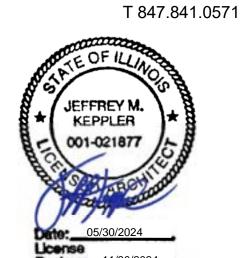
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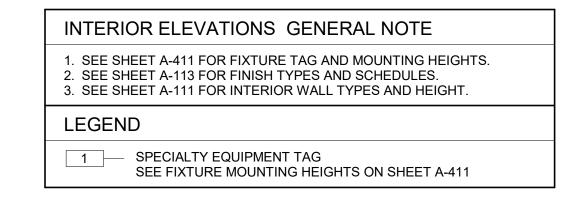
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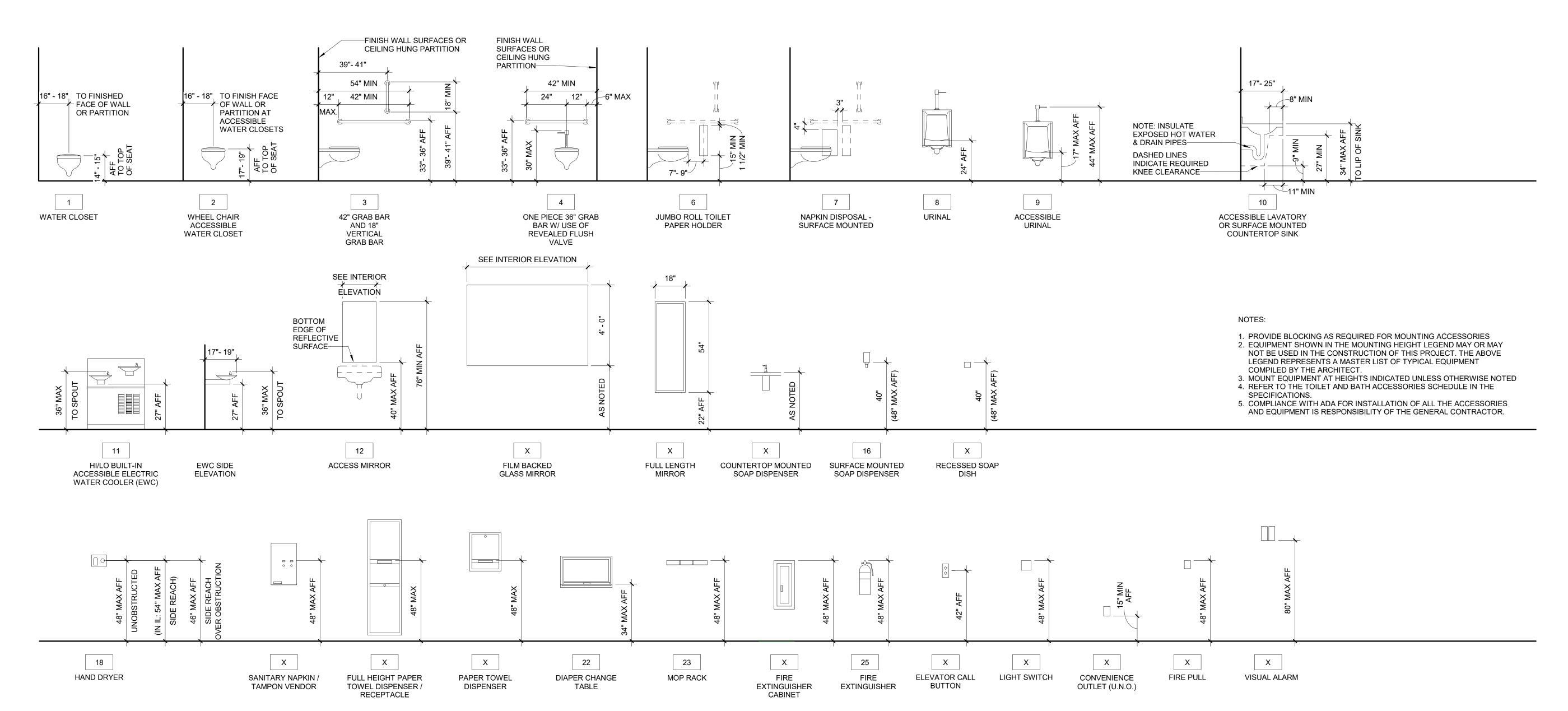
WALL SECTIONS

SCALE

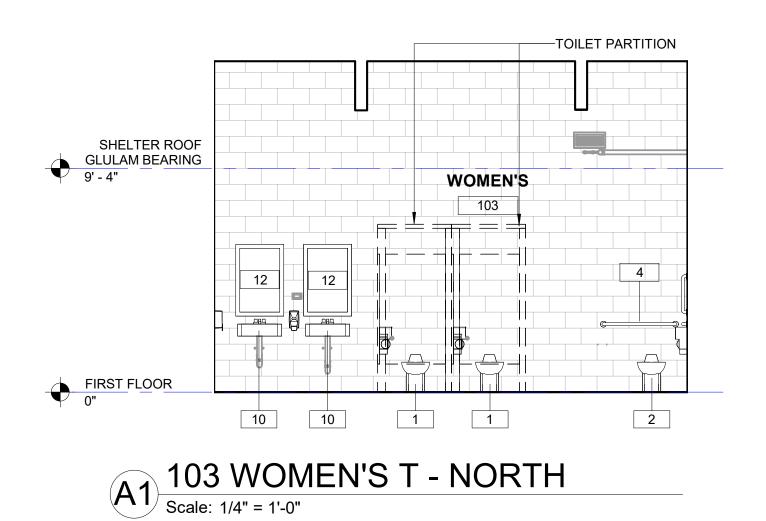
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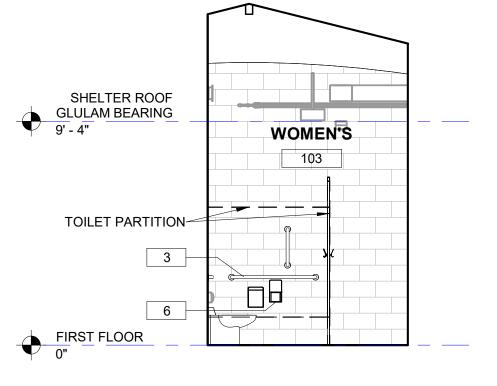
A-312

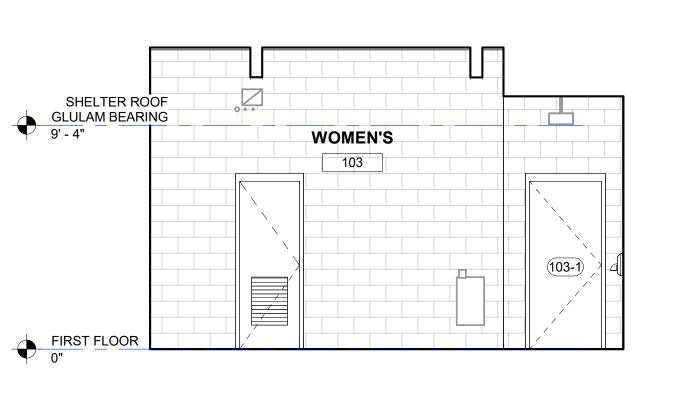


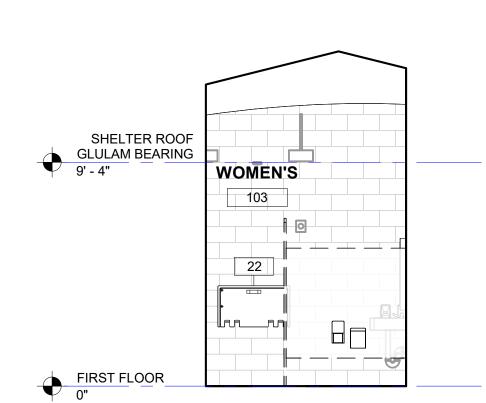


B1 FIXTURE MOUNTING HEIGHTS Scale: 3/8" = 1'-0"





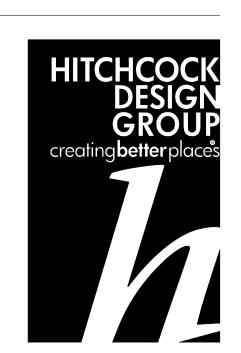












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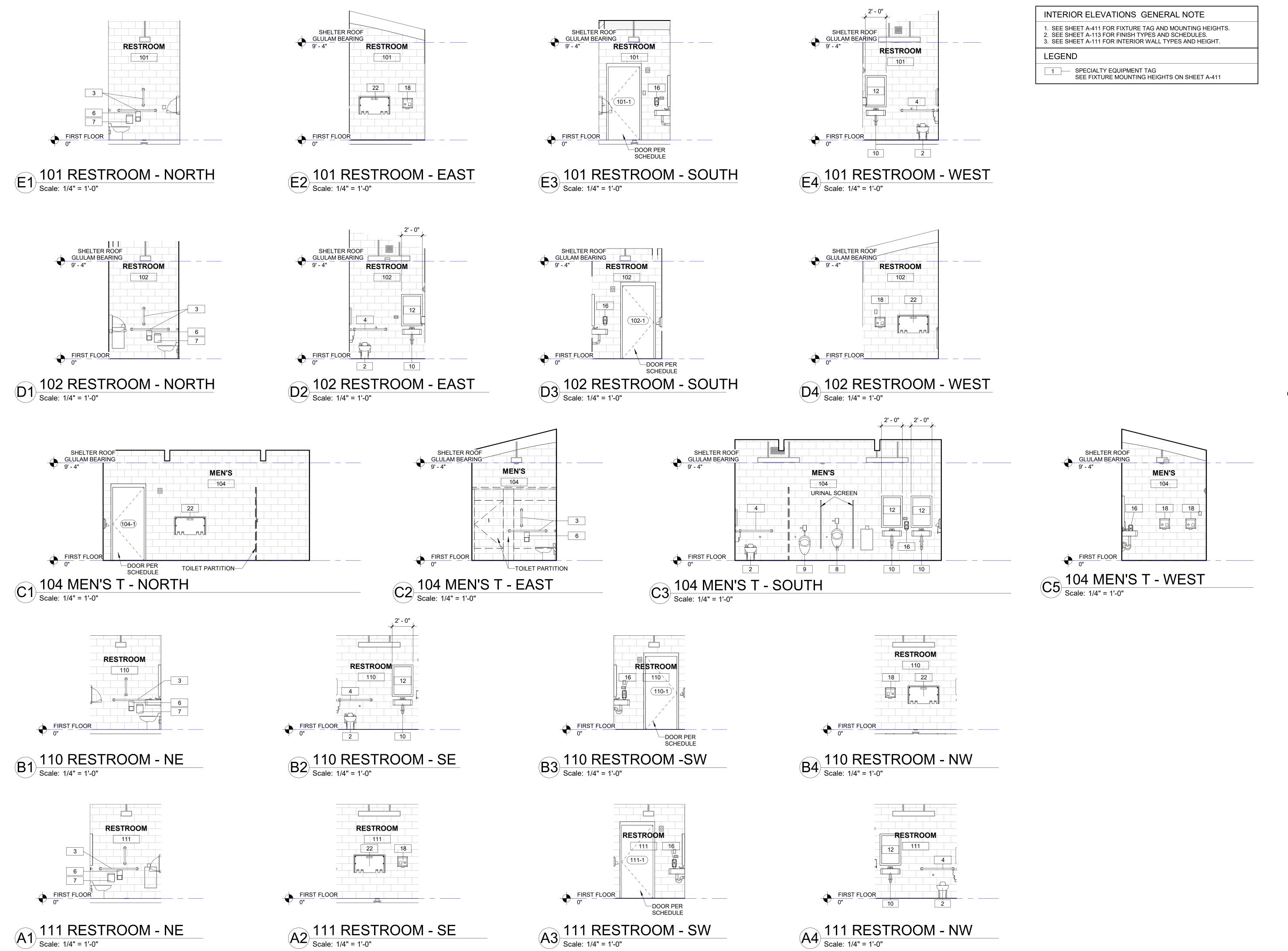
No Date

INTERIOR ELEVATIONS

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SCALE

A-41



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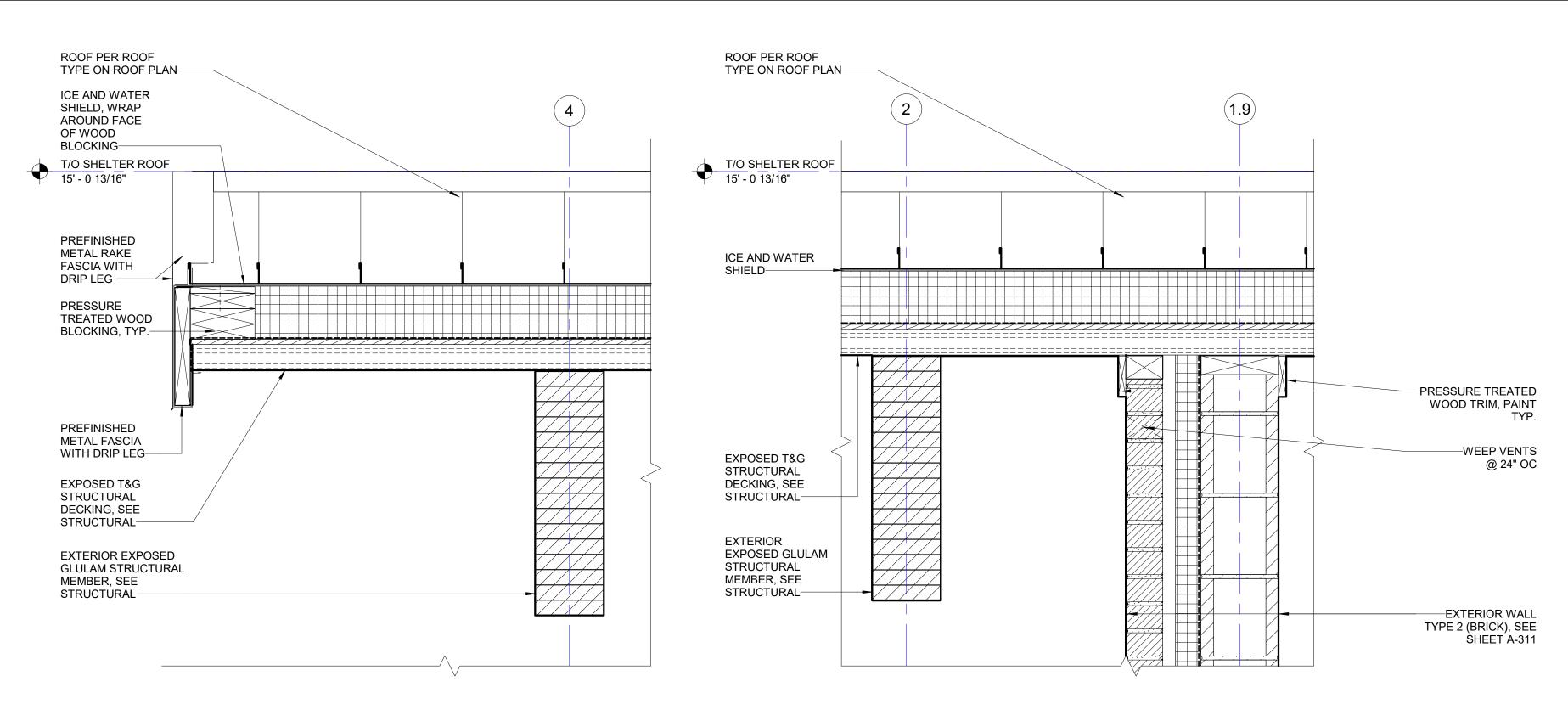
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SHEET TITLE

INTERIOR

ELEVATIONS

SCALE

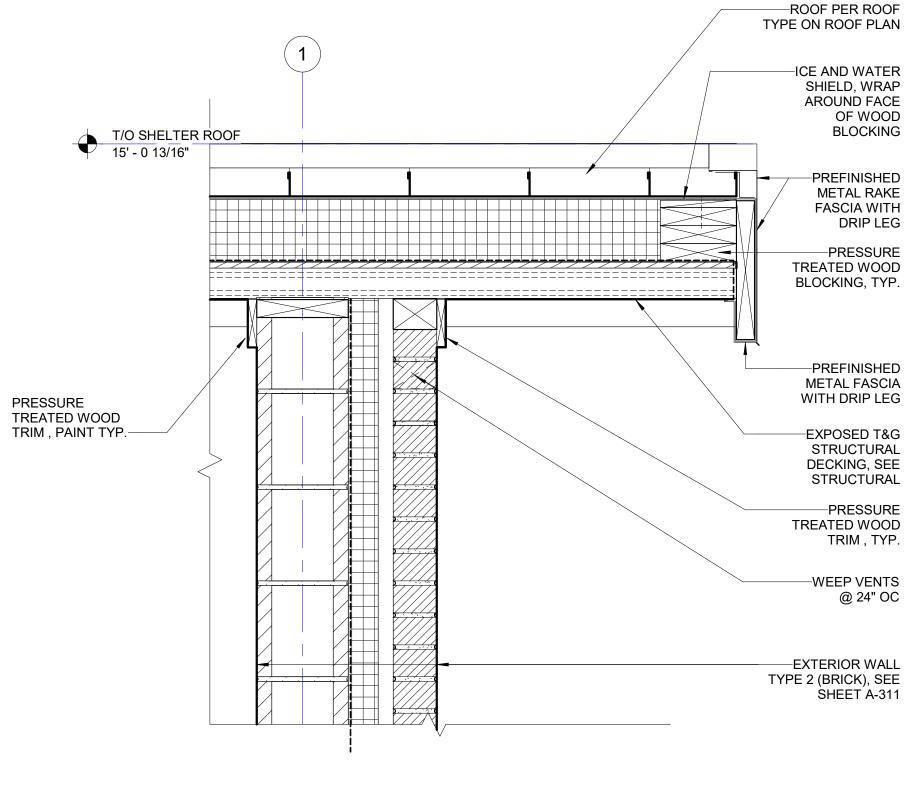


SHELTER BLDG SECTION DETAIL -

D1 EXTERIOR WEST @ ROOF RAKE
Scale: 1 1/2" = 1'-0"

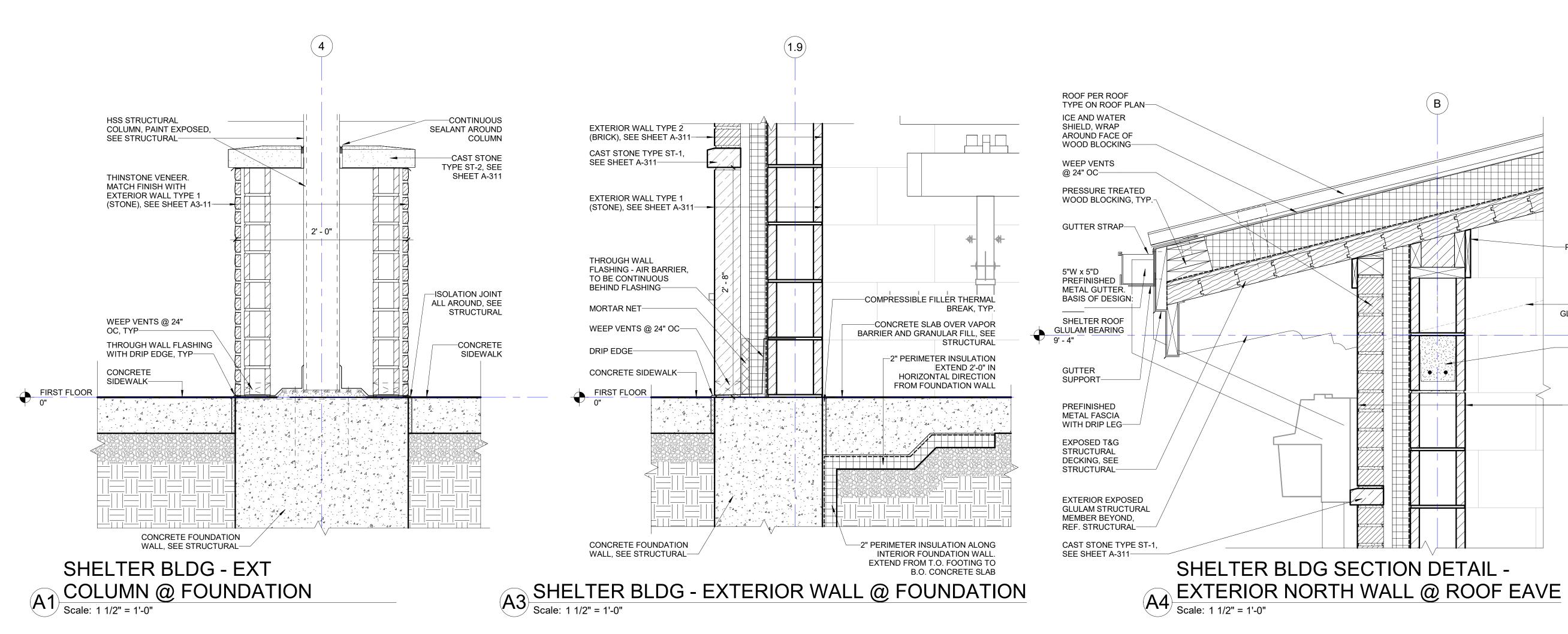
SHELTER BLDG SECTION DETAIL -D3 EXTERIOR WEST WALL @ ROOF

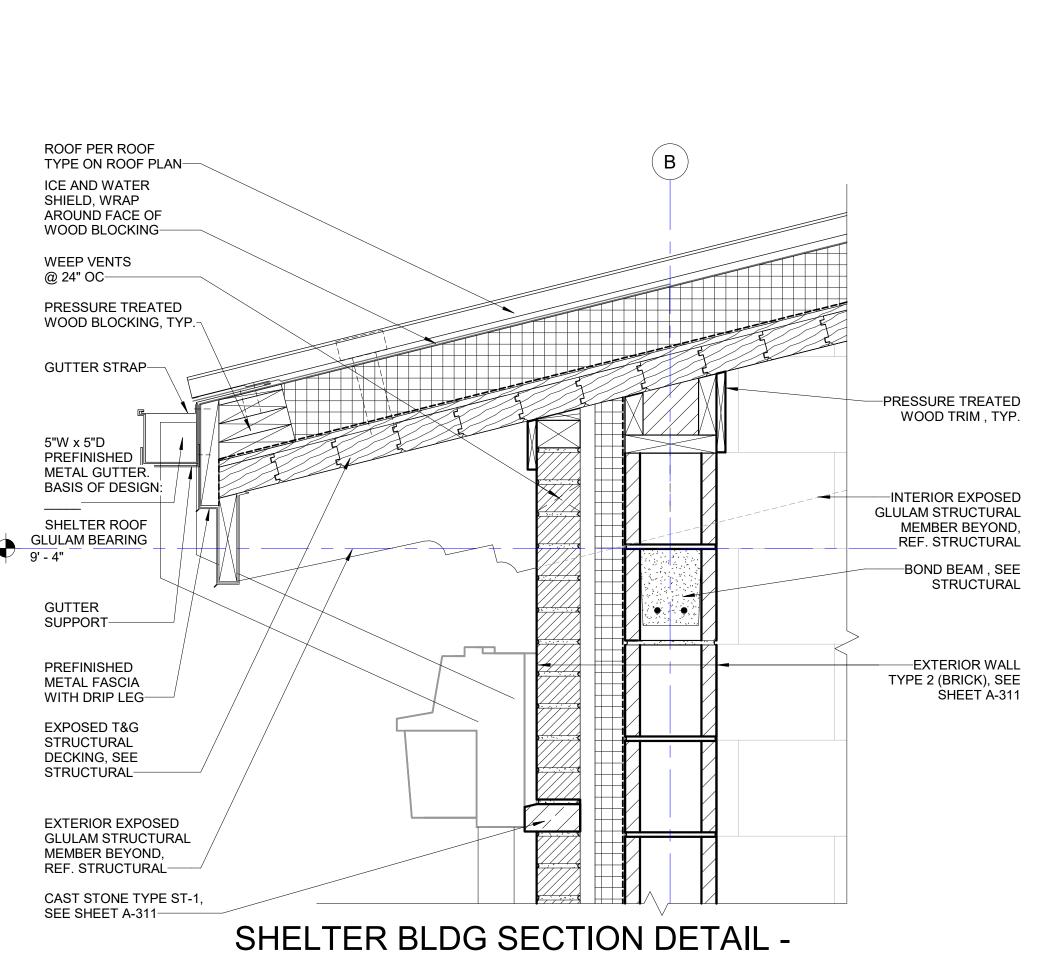
Scale: 1 1/2" = 1'-0"



SHELTER BLDG SECTION DETAIL -D4 EXTERIOR EAST WALL @ ROOF RAKE

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





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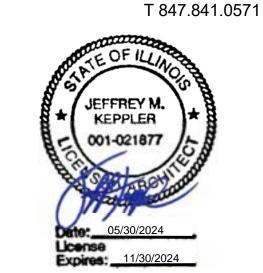
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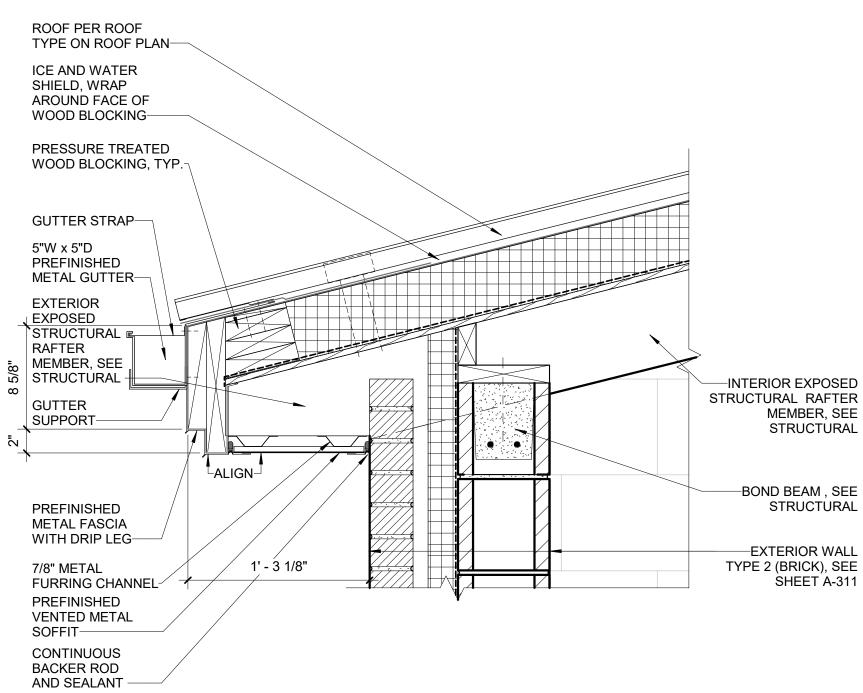
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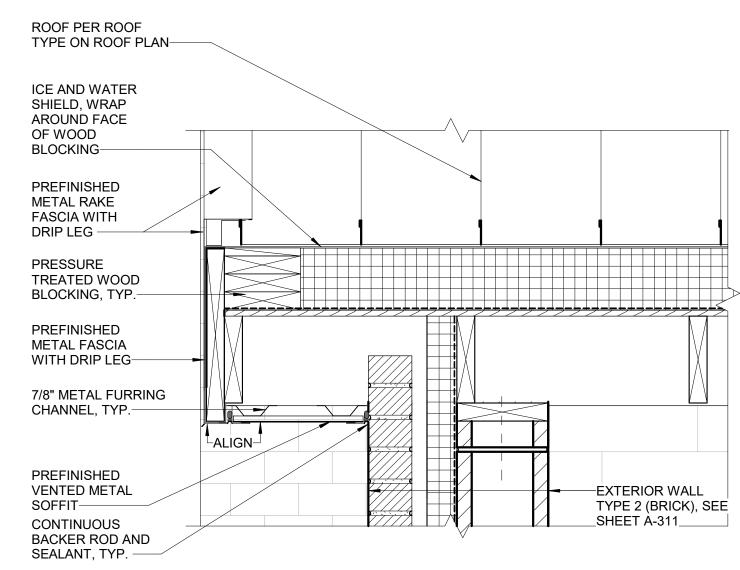
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EXTERIOR SECTION DETAILS

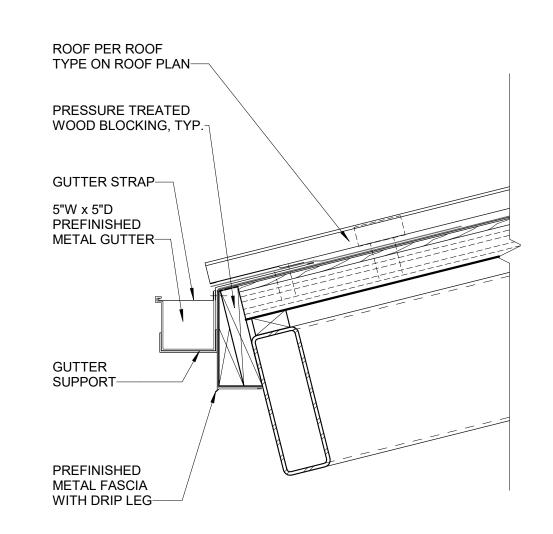
SCALE



BANDSHELL BLDG SECTION DETAIL EXTERIOR WALL @ LOWER ROOF EAVE Scale: 1 1/2" = 1'-0"

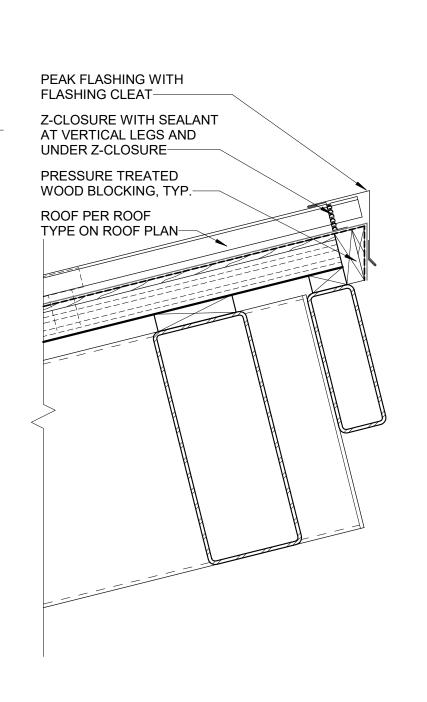


BANDSHELL BLDG SECTION DETAIL EXTERIOR WALL @ LOWER ROOF RAKE Scale: 1 1/2" = 1'-0"



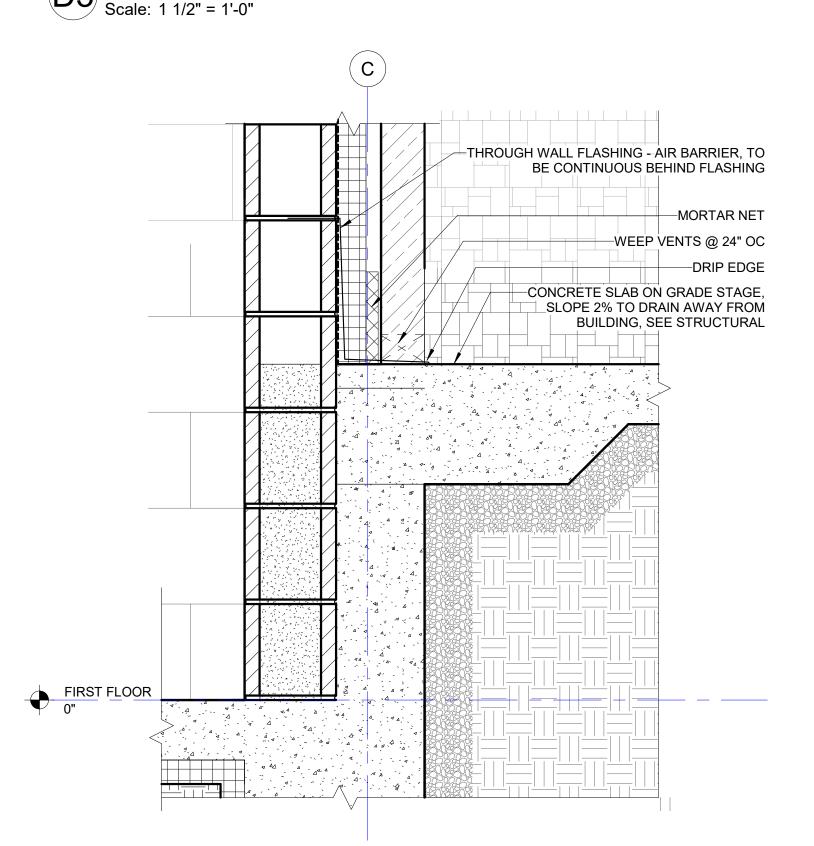
BANDSHELL BLDG SECTION DETAIL EXTERIOR UPPER ROOF @ LOWER EAVE

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

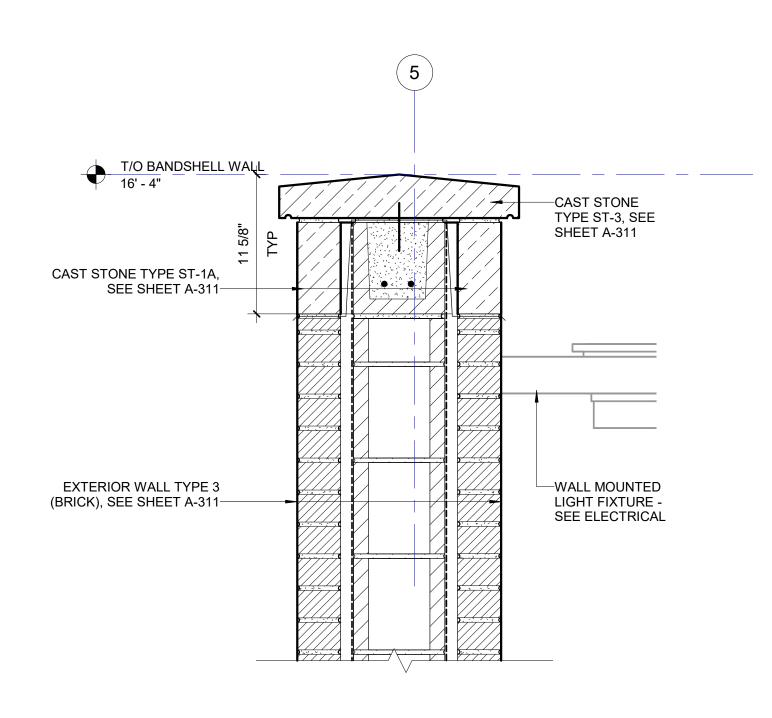


1' - 8" HSS STRUCTURAL COLUMN BEYOND, PAINT EXPOSED, SEE STRUCTURAL T/O BANDSHELL WALL CAST STONE TYPE ST-1A, SEE SHEET A-311, ENTIRE LENGTH OF WALL THROUGH-WALL FLASHING WITH DRIP LEG-PREFINISHED METAL HEADWALL REGLET. COLOR TO MATCH METAL ROOF-T/O SHELTER ROOF ICE AND WATER SHIELD, WRAPAROUND FACE OF BLOCKING-**Z-CLOSURES** WITH SEALANT AT VERTICAL **LEGS AND** UNDER Z-CLOSURES-PRESSURE TREATED WOOD BLOCKING, TYP. BOND BEAM, TYP SEE STRUCTURAL **EXTERIOR WALL** TYPE 2 (BRICK), SEE SHEET A-311

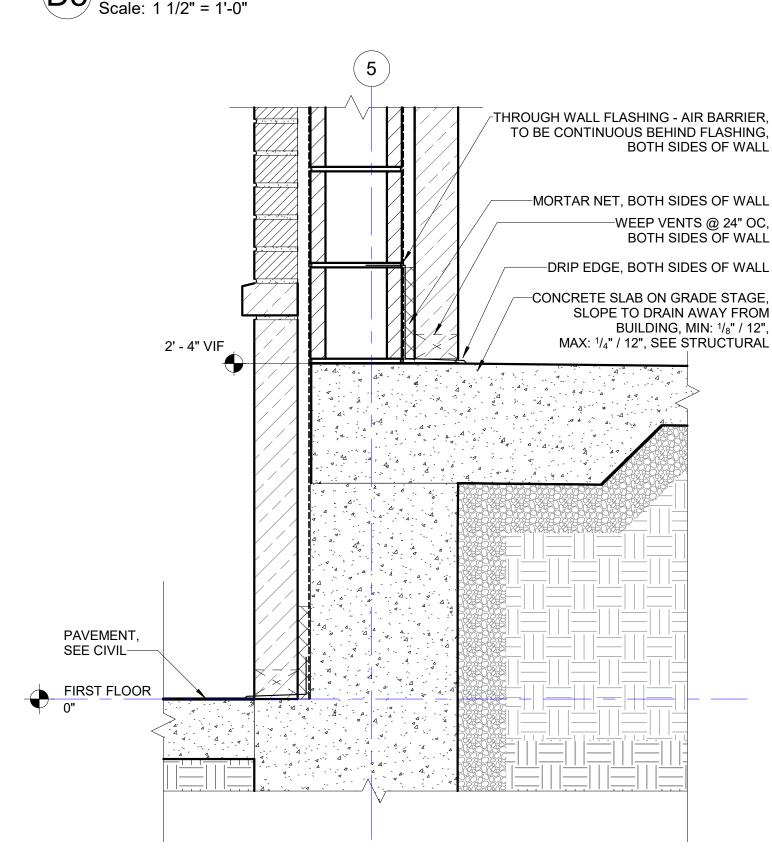
BANDSHELL BLDG SECTION DETAIL EXTERIOR WALL @ ROOF ENDWALL Scale: 1 1/2" = 1'-0"



BANDSHELL BLDG SECTION DETAIL EXTERIOR SOUTHEAST WALL @ FOUNDATION
Scale: 1 1/2" = 1'-0"



BANDSHELL BLDG SECTION DETAIL EXTERIOR WALL @ COPING Scale: 1 1/2" = 1'-0"



BANDSHELL BLDG SECTION DETAIL EXTERIOR NORTH WALL @ FOUNDATION

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



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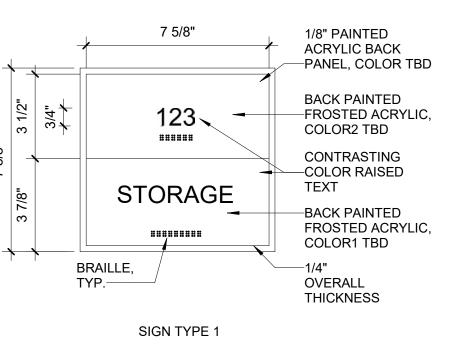
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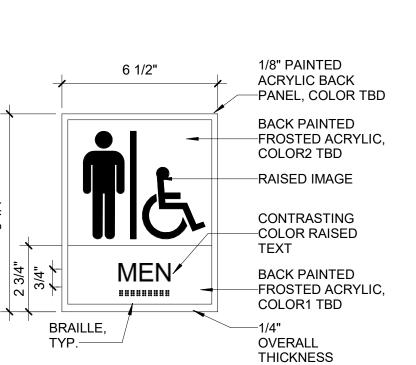
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SHEET NUMBER

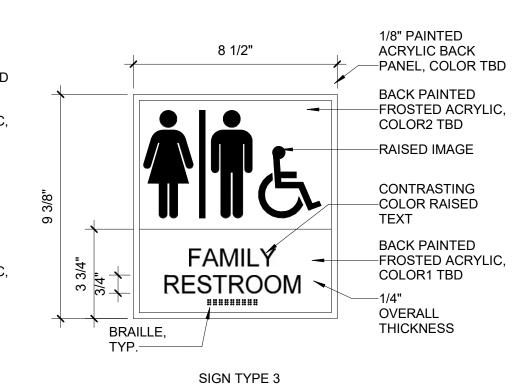
A-512



1/8" PAINTED ACRYLIC BACK 6 1/2" -PANEL, COLOR TBD **BACK PAINTED** -FROSTED ACRYLIC, COLOR2 TBD -RAISED IMAGE CONTRASTING -COLOR RAISED TEXT BACK PAINTED FROSTED ACRYLIC, COLOR1 TBD BRAILLE, TYP.— OVERALL THICKNESS SIGN TYPE 2A

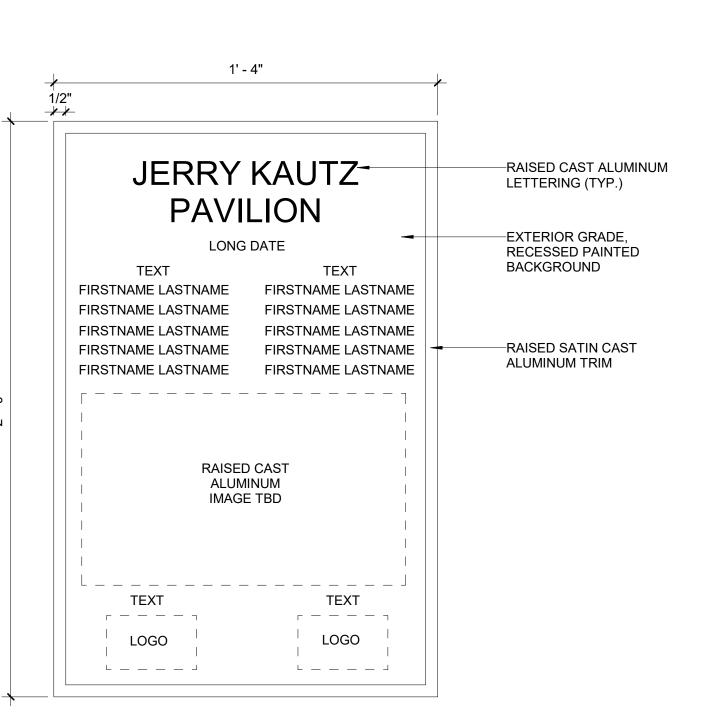


SIGN TYPE 2B



NOTES:

- 1. ALL INTERIOR AND EXTERIOR STORAGE, ELECTRICAL, MECHANICAL, CUSTODIAL, HOUSEKEEPING AND IT ROOMS OR CLOSETS SHALL BE LABELED AS SUCH ON THE EXTERIOR OF THE DOORS.
- 2. THE OUTSIDE DOOR TO THE FIRE ALARM CONTROL PANEL ROOM MUST READ "FACP" ON THE EXTERIOR SIDE OF THE DOOR. LETTERING SHALL BE 4" MINIMUM IN SIZE AND OF CONTRASTING COLOR TO THE DOOR.



SIGN TYPE 4 (DEDICATION PLAQUE)

A3 Scale: 3" = 1'-0"

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igoriquiri, iL 60 io

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JK JK

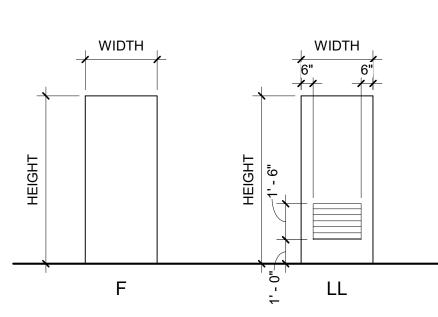
SHEET TITLE

SIGNAGE DETAILS

SCALE

SHEET NUMBER

A-52



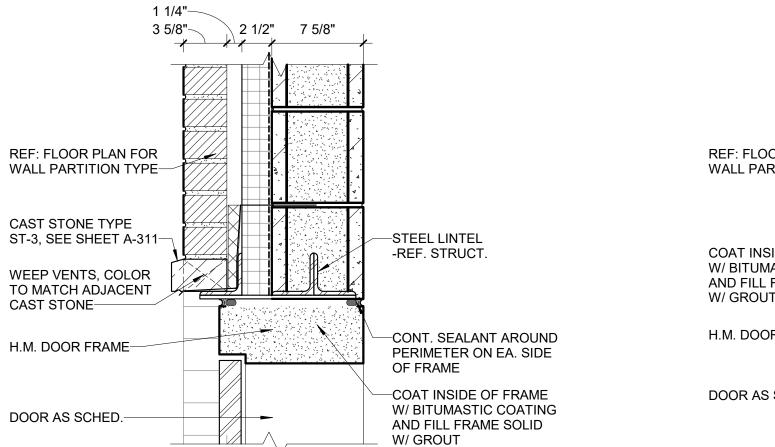
*LOUVER LOCATION TO BE 6" OR AS REQUIRED BY DOOR MFR FOR EDGE DISTANCE TO HARDWARE CUTOUTS. COORDINATE WITH DOOR AND HARDWARE SUPPLIERS.

DOOR PANEL TYPES

Scale: 1/4" = 1' 0" Scale: 1/4" = 1'-0"

D1 DOOR FRAME TYPES

Scale: 1/4" = 1'-0"



-REF. FLOOR PLAN FOR WALL PARTITION TYPE

REINFORCED CMU JAMB

-FLUID APPLIED VAPOR NON-PERMEABLE

AIR BARRIER, WRAP AROUND OPENING

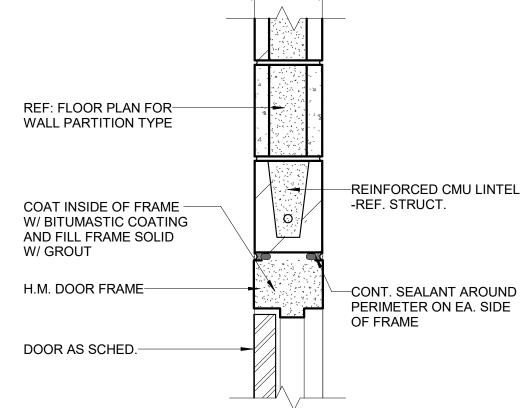
-MASONRY DOOR FRAME ANCHORS-

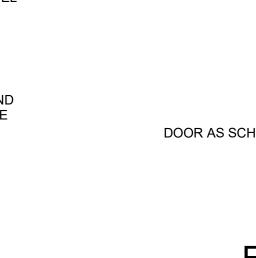
KEYED TO VERTICAL REINF.

-H.M. DOOR FRAME

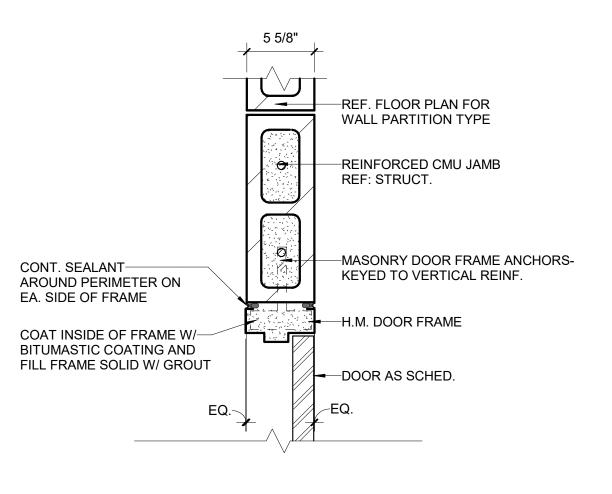
-DOOR AS SCHED.

REF: STRUCT.



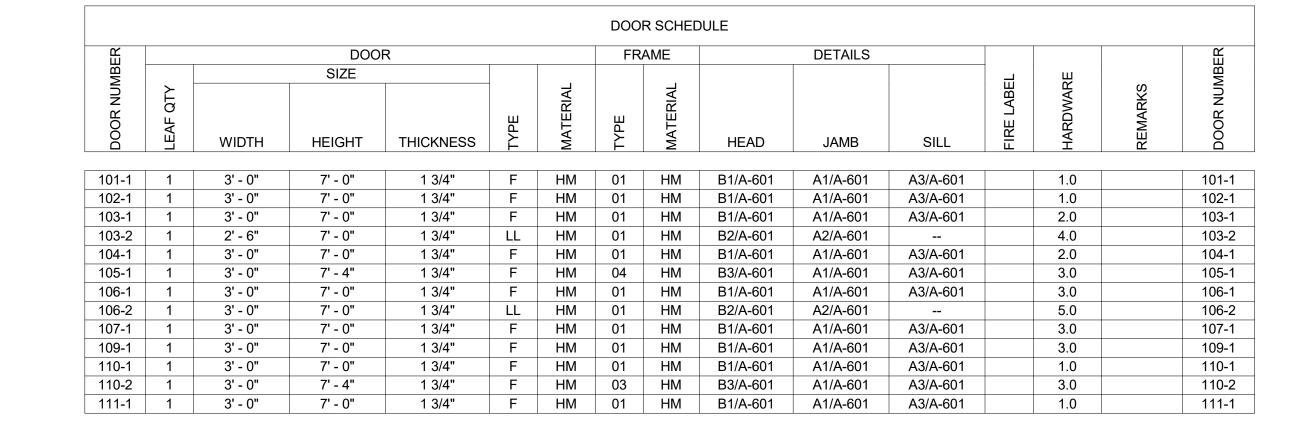


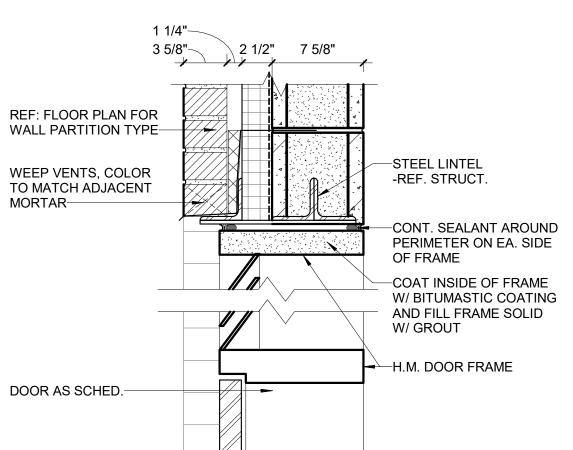












EXT MASONRY DOOR B3 HEAD W/ LOUVER Scale: 1 1/2" = 1'-0"

> -DOOR AS SCHEDULED -DOOR SWEEP -ALUMINUM THRESHOLD SET IN FULL BED OF SEALANT THERMAL BREAK FLOORING AS — SCHEDULED *O. *O. *O. NOTE: PROVIDE A.D.A. COMPLIANT THRESHOLD.



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SHEET TITLE DOOR SCHEDULES,

ELEVATIONS & PLAN DETAILS

SCALE

SHEET NUMBER

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B1 EXT MASONRY DOOR HEAD

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

CONT. SEALANT WITH

PERIMETER ON EA.

SIDE OF FRAME-

BACKER ROD AROUND

COAT INSIDE OF FRAME W/

BITUMASTIC COATING AND

FILL FRAME SOLID W/ GROUT-

| PL | UMBI | NG SYMBOLS |
|--|------|-------------------------------------|
| | DCW | DOMESTIC COLD WATER |
| | DHW | DOMESTIC HOT WATER |
| | DTW | DOMESTIC HOT WATER RETURN |
| DWS | DTW | DOMESTIC TEMPERED WATER |
| MW | MW | MAKE-UP WATER |
| NP | NP | NON-POTABLE |
| V | ٧ | VENT |
| SAN | SAN | SANITARY |
| GW | GW | GARAGE WASTE |
| KW | KW | KITCHEN WASTE |
| VW | VW | VACUUM WASTE |
| ST | ST | STORM |
| | | BALL VALVE |
| ─ ──── | | GATE VALVE |
| | | BALANCING VALVE |
| | | CHECK VALVE |
| ——▶—— | | PRESSURE REDUCING VALVE |
| —————————————————————————————————————— | | BACKFLOW PREVENTER |
| 2" (50) | | PIPE SIZE (FIXTURE UNIT VALUE) |
| 3 | | PIPE CAP |
| | | FLOOR CLEANOUT |
| II | | WALL CLEANOUT |
| | | PIPE UP OR RISE |
| | | PIPE DOWN OR DROP |
| <u> </u> | | AIR CHAMBER |
| | | DIRECTION OF FLOW |
| | | DIRECTION OF PIPE PITCH, DOWN |
| | | DEMOLISHED PIPE |
| # (#) | | KEYED NOTE |
| (2) | | POINT OF DEMOLITION / DISCONNECTION |
| • | | POINT OF NEW CONNECTION |
| XX ## | | PLUMBING RISER TAG |
| NOTE NOT ALL OVAROUS | | OVE MAY BE LIGED OR ADDEAD IN THESE |

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.

| | | NG ABBRE | |
|----------------------------------|--|-------------|--|
| ACW | AUTOMATIC CLOTHES WASHER | KS | KITCHEN STACK |
| AD | AREA DRAIN | KEC | KITCHEN EQUIPMENT CONTRACTOR |
| AFF | ABOVE FINISHED FLOOR | KED | KITCHEN EQUIPMENT DESIGNER |
| AMP | AMPERE | KW | KITCHEN WASTE OR KILOWATT |
| ANB | ACID NEUTRALIZING BASIN | L / LAV | LAVATORY |
| ANSI | AMERICAN NATIONAL STANDARDS INSTITUTE | LS | LAB SINK |
| AP | ACCESS PANEL | LT | LAUNDRY TUB |
| ASME | AMERICAN SOCIETY OF MECHANICAL ENGINEERS | MB | MOP BASIN |
| ASSE | AMERICAN SOCIETY OF SAFETY ENGINEERS | MC | MECHANICAL CONTRACTOR |
| | AMERICAN SOCIETY FOR TESTING AND MATERIALS | | MANUFACTURERS STANDARDIZATION SOCIETY |
| AV | ACID/CHEMICAL VENT | NC | NEW CONNECTION OR NORMALLY CLOSED |
| | ACID/CHEMICAL VENT THRU ROOF | NIC | NOT IN CONTRACT |
| AW | ACID/CHEMICAL WASTE | NPS | NOMINAL PIPE SIZE |
| | | | NON POTABLE WATER |
| BFP | BACKFLOW PREVENTER | NO | NORMALLY OPEN |
| BOP | BOTTOM OF PIPE | NSF | NATIONAL SCIENCE FOUNDATION |
| | | _ | NOT TO SCALE |
| BT | BATH TUB | OD | |
| CA | COMPRESSED AIR | OSD | OVERFLOW DRAIN OPEN SITE DRAIN |
| CIEDI | CAST IRON | | |
| | | | OUTSIDE STEM AND YOKE |
| | CEILING | P | PUMP |
| CO | CLEANOUT | PA | PIPE ANCHOR |
| | CONNECTION | PC | PLUMBING CONTRACTOR |
| | DOMESTIC COLD WATER | PD | PUMP DISCHARGE |
| DHW | DOMESTIC HOT WATER | PDI | PLUMBING & DRAINAGE INSTITUTE |
| DHWR | DOMESTIC HOT WATER RETURN | PE | PROFESSIONAL ENGINEER |
| DTW | DOMESTIC TEMPERED WATER | PH | PHASE |
| DBCV | DOUBLE CHECK VALVE | PIV | POST INDICATOR VALVE |
| DCV | DUAL CHECK VALVE | PPM | PARTS PER MILLION |
| DCDA | DOUBLE CHECK DETECTOR ASSEMBLY | PRV | PRESSURE REDUCING VALVE |
| DDV | DRAIN DOWN VALVE | PS | PLUMBING STACK |
| DDCV | DOUBLE-DETECTOR CHECK VALVE | PSI | POUNDS PER SQUARE INCH |
| DF | DRINKING FOUNTAIN | ORD | OVERFLOW ROOF DRAIN |
| DFU | DRAINAGE FIXTURE UNIT | RCP | RECIRCULATION PUMP |
| DIA | DIAMETER | RD | ROOF DRAIN |
| DN | DOWN | RH | ROOF HYDRANT |
| DS | DOWNSPOUT | ROB | ROD OUT BASIN |
| DSN | DOWNSPOUT NOZZLE | RPDA | REDUCED PRESSURE DETECTOR ASSEMBLY |
| DT | DRAIN TILE | RPM | REVOLUTIONS PER MINUTE |
| DW | DISHWASHER | RPZ | REDUCED PRESSURE ZONE BACKFLOW PREVENTER |
| DWH | DOMESTIC WATER HEATER | | SANITARY WASTE |
| | DOMESTIC WATER SOFTENER | SC | SITE UTILITY CONTRACTOR |
| EC | ELECTRICAL CONTRACTOR | SE | SEWAGE EJECTOR |
| EEW | EMERGENCY EYE AND FACE WASH | SH | SHOWER |
| | ETHYLENE PROPYLENE DIENE MONOMER | SI | SOLIDS INTERCEPTOR |
| | | | SINK |
| ECH | EXPANSION TANK EMEDICENCY SHOWED | SK SP | SUMP PUMP |
| ESH | EMERGENCY SHOWER | | |
| ESP | ELEVATOR SUMP PUMP | SQ | SQUARE FEET |
| ETR | EXISTING TO REMAIN | SS | SERVICE SINK |
| | ELECTRIC WATER COOLER | S.S. | STAINLESS STEEL |
| EWH | ELECTRIC WATER HEATER | ST | STORM |
| FCO | FLOOR CLEANOUT | SST | SECONDARY STORM (OVERFLOW) |
| FD | FLOOR DRAIN | ТВ | THRUST BLOCK |
| FOG | FATS, OILS AND GREASE | TD | TRENCH DRAIN |
| FPS | FEET PER SECOND | TMV | THERMOSTATIC MIXING VALVE |
| FS | FLOOR SINK | TPRV | TEMPERATURE AND PRESSURE REDUCING VALVE |
| FT | FEET | TYP | TYPICAL |
| G | NATURAL GAS | UR | URNIAL |
| GC | GENERAL CONTRACTOR | V | VENT |
| | GROUND CLEANOUT | VB | VACUUM BREAKER |
| GI | GREASE INTERCEPTOR | | VENT THRU ROOF |
| | GALLONS PER DAY | W | WASTE |
| GPH | GALLONS PER HOUR | WC | WATER CLOSET |
| GPM | GALLONS PER MINUTE | | WALL CLEANOUT |
| ∵ v. | GREASE TRAP | WF | WASH FOUNTAIN |
| GT | GARAGE WASTE | WH | WALL HYDRANT |
| | 1380 813E VVB.31E | ٧٧⊓ | VVALL I I I DIVANI |
| GW | | 14/114 | WATER HAMMER ARRESTOR |
| GW HB | HOSE BIBB | | WALL SUPPLY BOY |
| GW HB HD | HOSE BIBB HEAD | WSB | WALL SUPPLY BOX |
| GT GW HB HD HP HX | HOSE BIBB | WSB WSFU | |

DRAWINGS.

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE USED OR APPEAR IN THESE

IWB ICE MACHINE/REFRIGERATOR WALL BOX

DRAWINGS.

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE USED OR APPEAR IN THESE



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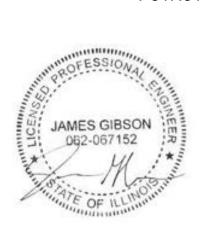
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SHEET TITLE

PLUMBING SYMBOLS, NOTES, AND ABBREVIATIONS

SCALE

SHEET NUMBE

P-001

PLUMBING FLOOR DRAIN ELEVATION NOTES EACH FLOOR DRAIN SHOWN IN THE PLUMBING DRAWINGS TO BE AT THE FOLLOWING ELEVATION. SHELTER RESTROOM 101 (-1/2") RESTROOM 102 (-1/2") CHASE BETWEEN 102/103 (-7/16") WOMEN'S 103 (-1/2") MEN'S 104 (-1/2") JANITOR 105 (-7/16") STORAGE 106 (-7/16") TOILET RESTROOM 110 (-1/2")

RESTROOM 111 (-1/2")

PLUMBING WASTE/VENT NEW WORK PLAN -

SHELTER - UNDERGROUND

SCALE: 1/4" = 1'-0"

GENERAL PLUMBING NEW WORK SHEET NOTES

- THE SPACES WILL NOT BE HEATED DURING COLD WINTER MONTHS. PITCH WATER PIPE TO DRAIN TO DRAIN DOWN VALVES; ADD ADDITIONAL VALVES AS NECESSARY.
- THE SANITARY PIPE FOR ALL PLUMBING FIXTURES SHALL DROP TO A MINIMUM OF 4-FT BELOW GRADE IN ALL INSTANCES.
- THE FLOOR DRAINS P-TRAP SHALL DROP TO A MINIMUM OF 4-FT BELOW GRADE IN ALL INSTANCES.
- THE MOP BASIN P-TRAP SHALL DROP TO A MINIMUM OF 4-FT BELOW GRADE.
- THE INCOMING WATER SERVICE PIPING SHALL BE A MINIMUM OF 4-FT BELOW GRADE.

KEYED PLUMBING NEW WORK SHEET NOTES

- ROUTE FROM METER AND RPZ BACKFLOW PREVENTER (RPZ-1) UNDER PLASTIC ROCK (SIMILAR TO EXISTING); CONFIGURE AND INSTALL TO BE FULLY WINTERIZED. BACKFLOW FURNISHED AND INSTALLED BY PC (COORDINATE WITH SC). METER FURISHED BY VILLAGE WATER DEPT. AND INSTALLED BY PC (COORDINATE WITH VILLAGE WATER DEPT.)
- 2" INCOMING WATER SERVICE PIPE BY SC; TRANSITION TO PC AT 1-FT ABOVE FLOOR. CONTRACTOR TO INSTALL PIPING TO NOT BE A TRIPPING HAZARD.
- STACKED METER AND RPZ BACKFLOW PREVENTER INDOORS; CONFIGURE AND INSTALL TO BE FULLY

4" UP TO FCO-

2" V UP-

4" UP TO CO(TG)—

__4" UP TO WC

-4" BY SC; CONTINUED ON CIVIL DRAWINGS

__2" DCW UP

RESTROOM

111

2" DCW-

4" UP TO WC-

TO FD

RESTROOM

110

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RESTROOM

111

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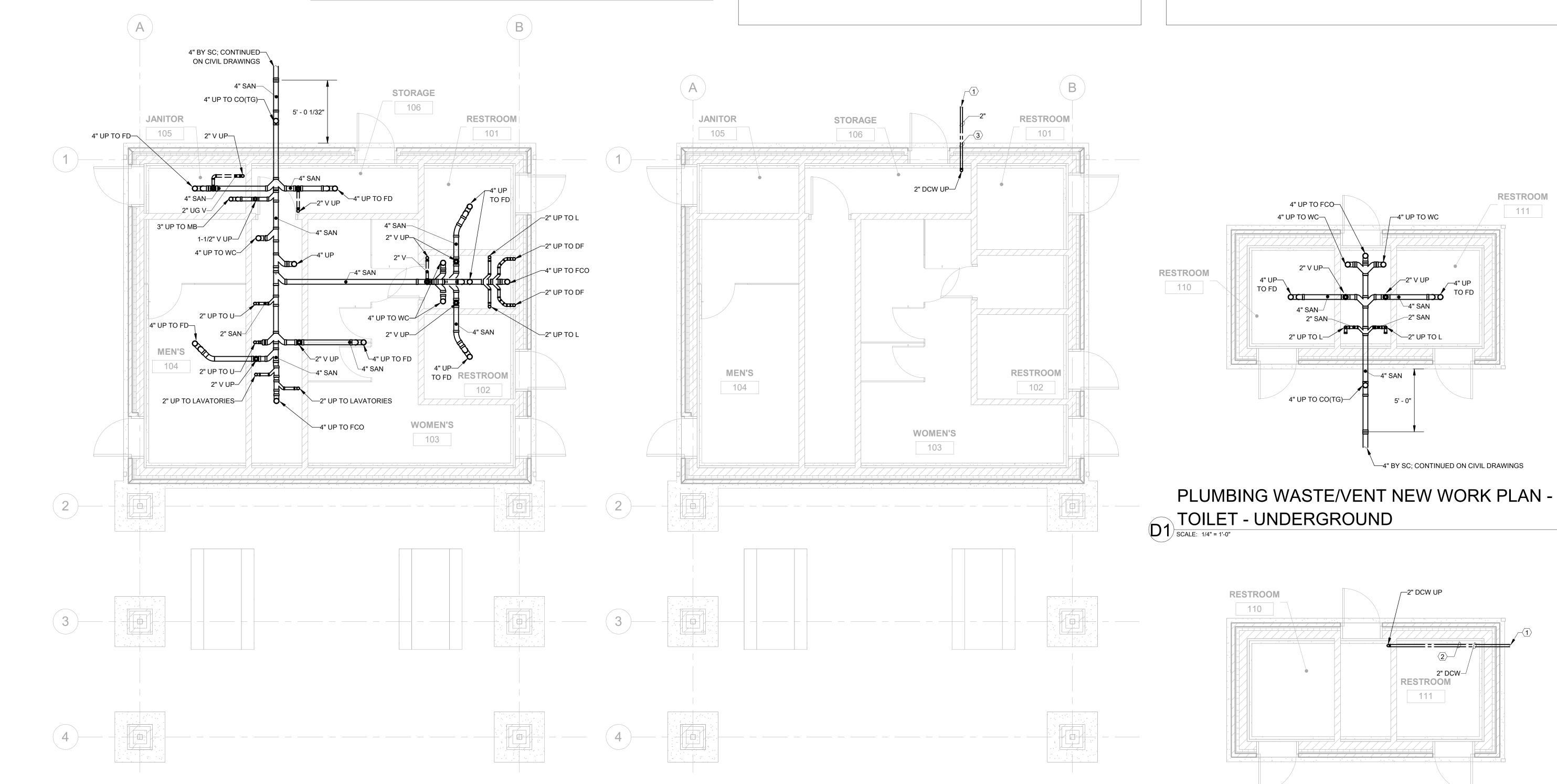
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PLUMBING NEW WORK PLAN -UNDERGROUND

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SCALE: 1/4" = 1' - 0"

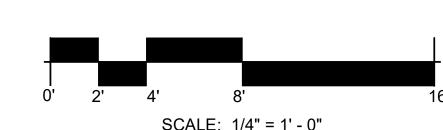


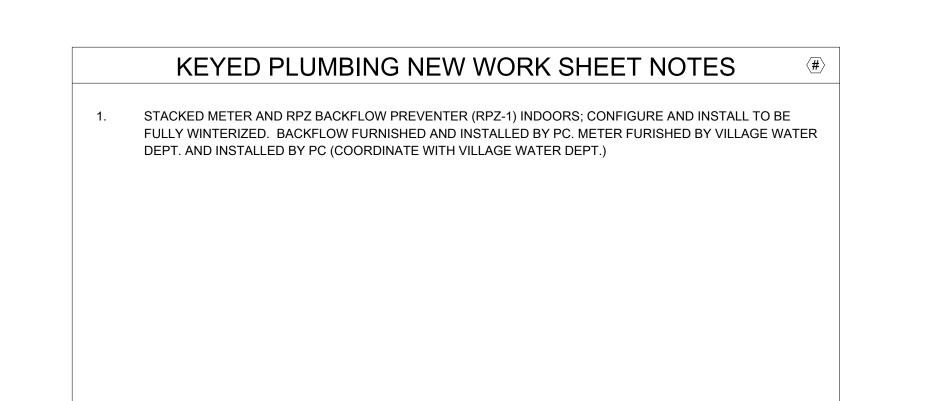
PLUMBING DOMESTIC WATER NEW WORK PLAN - SHELTER - UNDERGROUND

SCALE: 1/4" = 1'-0"

PLUMBING DOMESTIC WATER NEW WORK PLAN - TOILET - UNDERGROUND

SCALE: 1/4" = 1'-0"

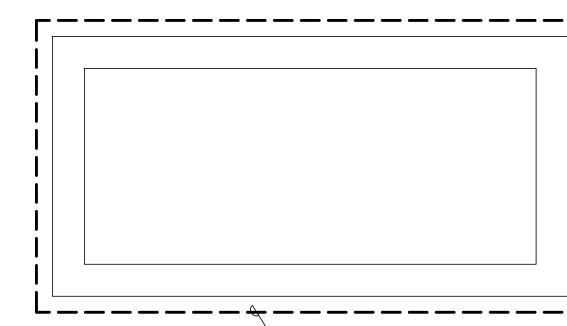




<u>L-1</u> <u>W/TMV-1</u>

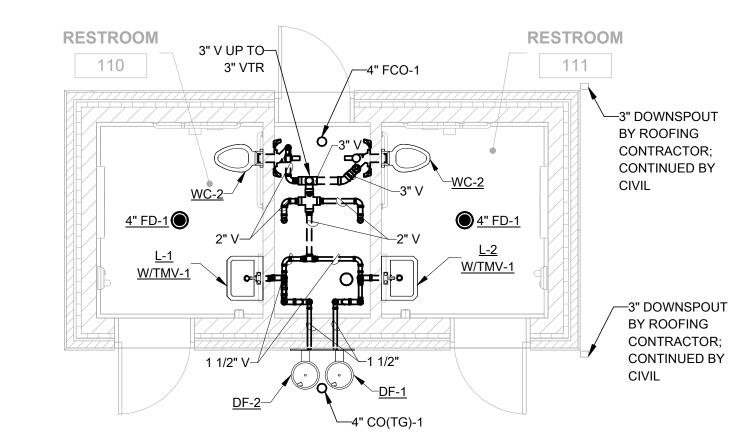
WOMEN'S

103



-DEMOLISH EXISTING TOILET ROOM SANITARY WASTE, VENT, AND WATER PIPING; PREPARE FOR NEW CONSTRUCTION.

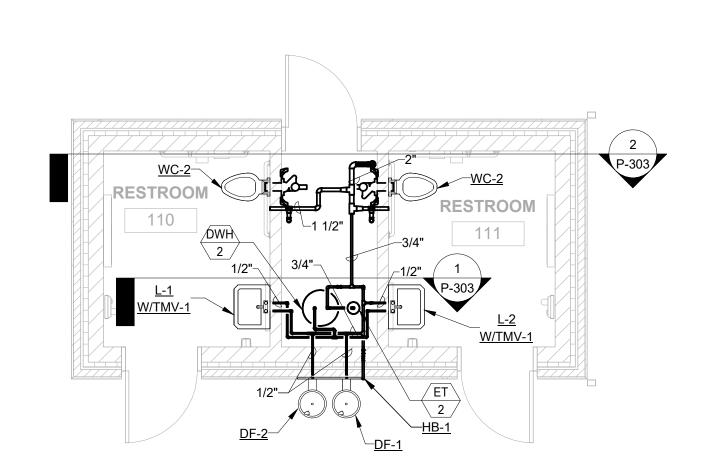
PLUMBING DEMOLITION PLAN - TOILET SCALE: 1/4" = 1'-0"



PLUMBING WASTE/VENT NEW WORK PLAN -

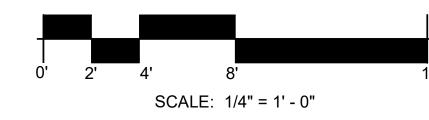
TOILET

SCALE: 1/4" = 1'-0"



PLUMBING DOMESTIC WATER NEW WORK





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PLUMBING NEW **WORK PLAN - FIRST** FLOOR

MEN'S

104

<u>L-1</u> <u>W/TMV-1</u>

SHELTER
SCALE: 1/4" = 1'-0"

---4" CO(TG)-1

STORAGE

106

7—3" DOWNSPOUT BY ROOFING CONTRACTOR;

W/TMV-1

-1-1/4" V DN

2" W DN

-1 1/4" V

`−1-1/4" V DN

RESTROOM

RESTROOM

102

WOMEN'S

103

2" W DN

PLUMBING WASTE/VENT NEW WORK PLAN -

CONTINUED BY CIVIL (TYP 4)

MEN'S

104

2

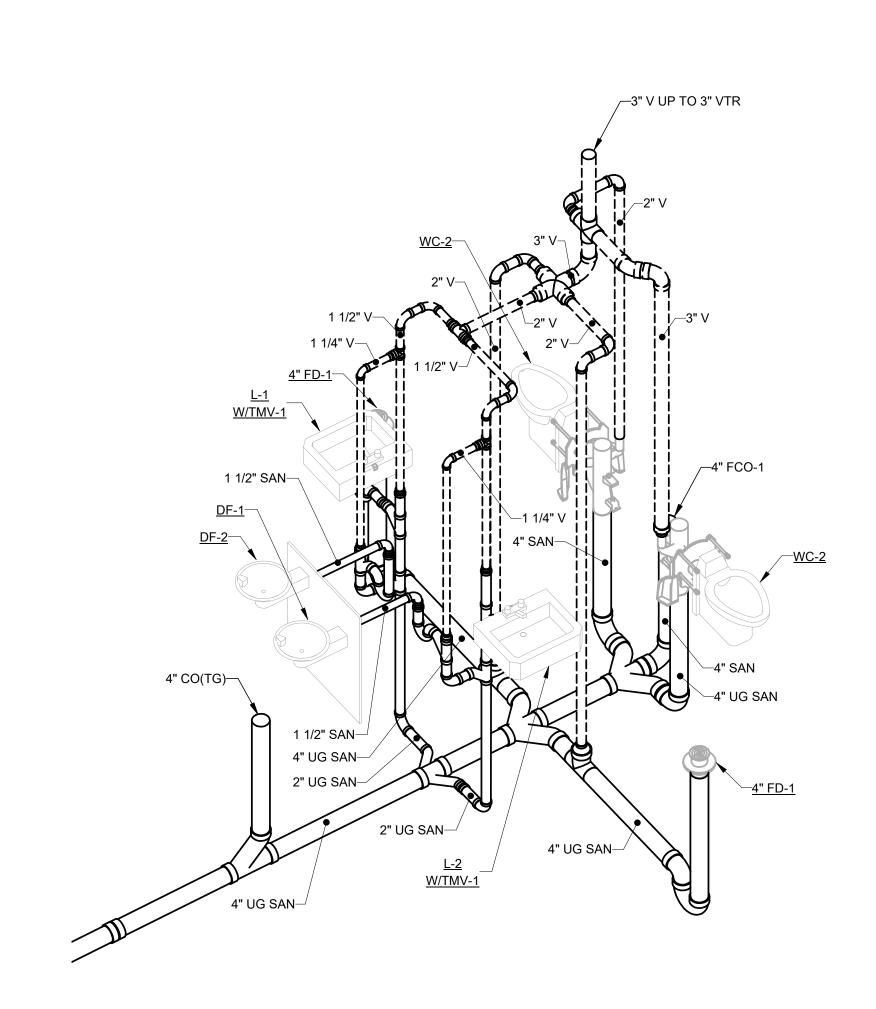
PLAN - SHELTER

SCALE: 1/4" = 1'-0"

<u>L-2</u> <u>W/TMV-1</u>

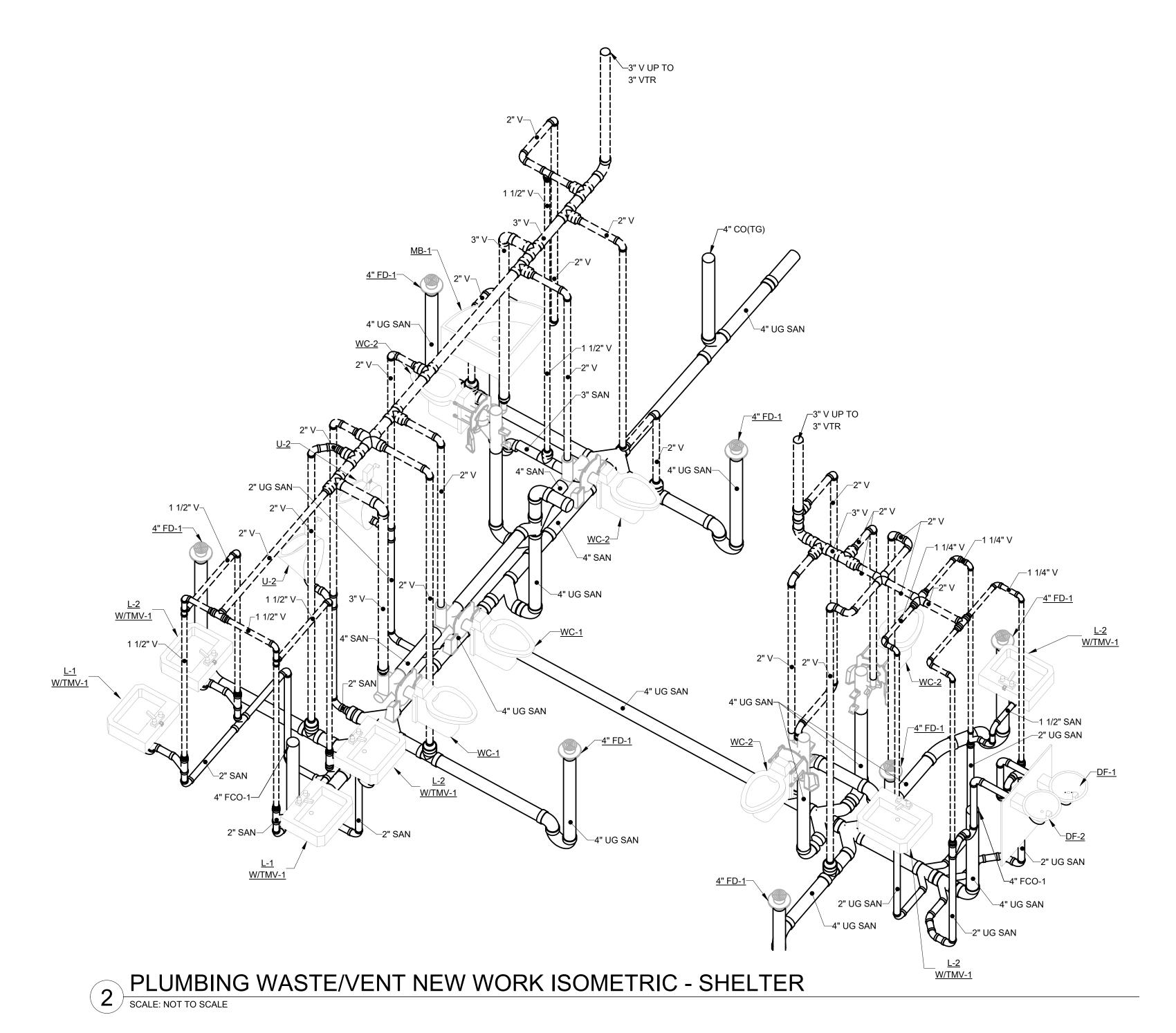
<u>L-1</u> <u>W/TMV-1</u>

PLUMBING DOMESTIC WATER NEW WORK



PLUMBING WASTE/VENT NEW WORK ISOMETRIC - TOILET

SCALE: NOT TO SCALE



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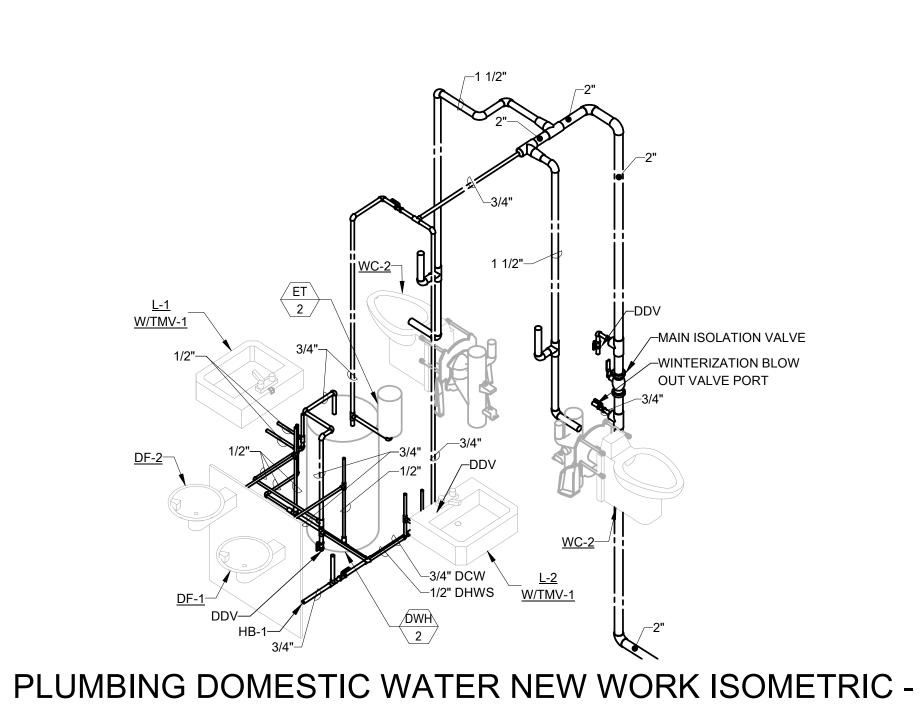
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PLUMBING SCHEMATICS

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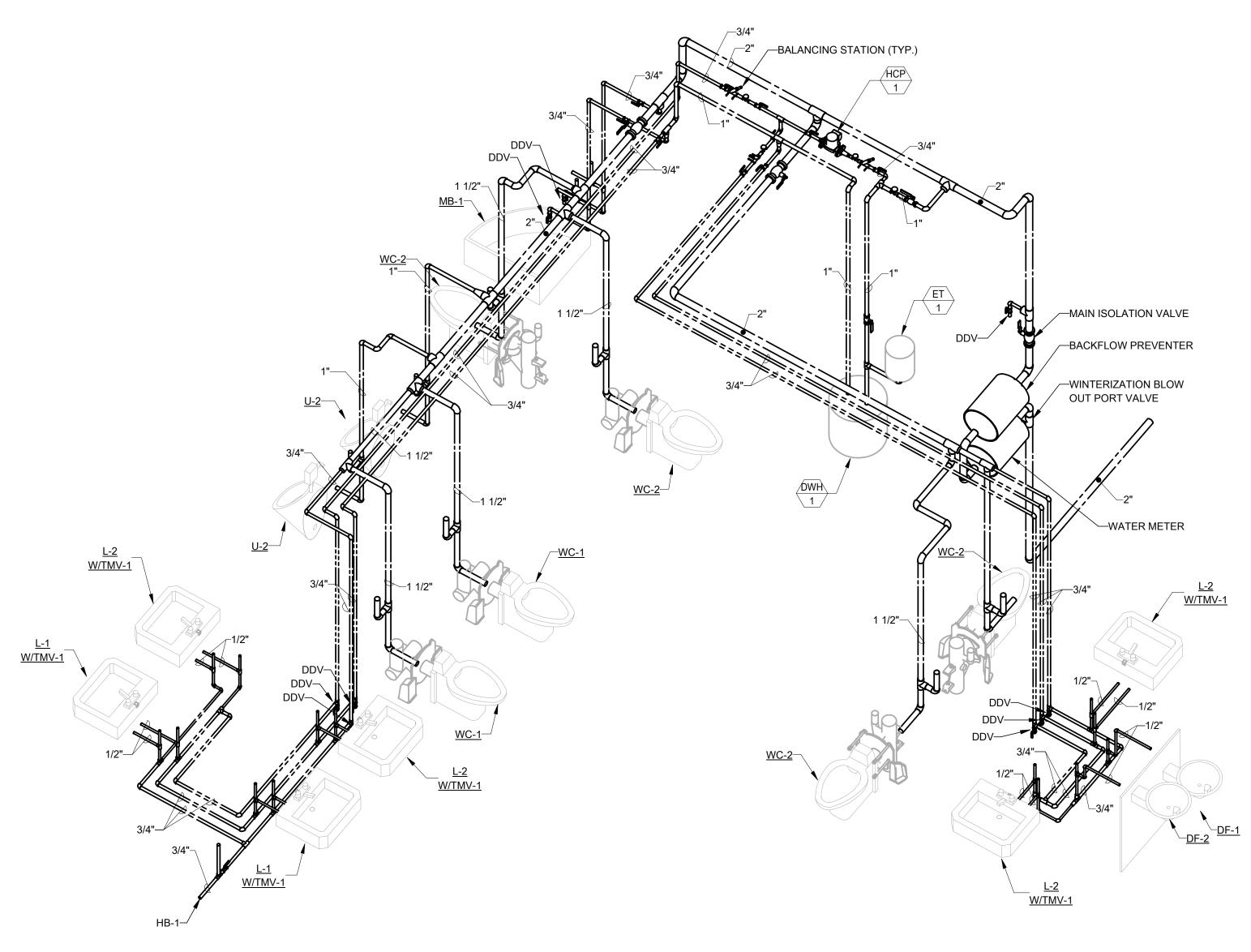


TOILET

SCALE: NOT TO SCALE

PLUMBING DOMESTIC WATER NEW WORK ISOMETRIC -

2 SHELTER
SCALE: NOT TO SCALE



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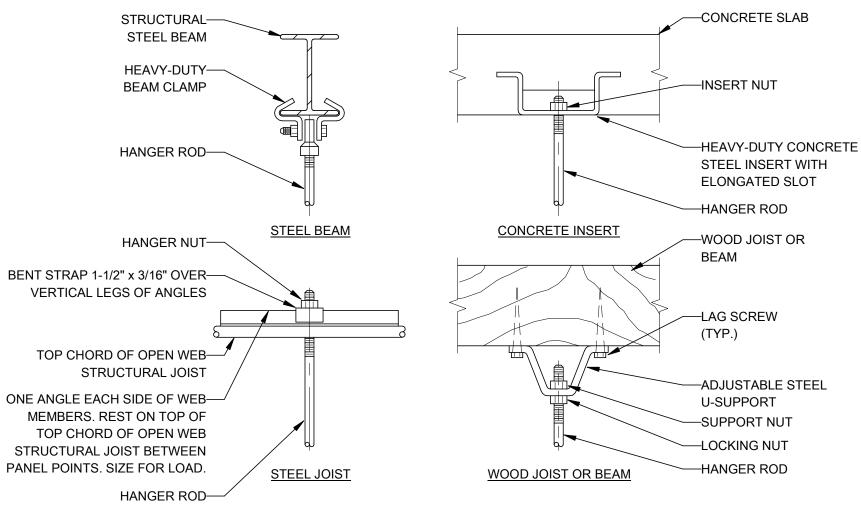
PLUMBING SCHEMATICS

SCA

DRAWN BY

SHEET NUMBER

P-202



| PIPE HANGERS AN | ND SUPPORTS (HORIZONTAL STEEL | AND COPPER PIPING) |
|-------------------|-------------------------------|--------------------|
| NOMINAL PIPE SIZE | DISTANCE BETWEEN SUPPORTS | HANGER ROD DIAMETE |
| 1/2" | 6' | 3/8" |
| 3/4" TO 1-1/2" | 6' | 1/2" |
| 2" TO 2-1/2" | 10' | 1/2" |
| 3" AND 4" | 12' | 5/8" |
| 6" TO 12" | 14' | 7/8" |

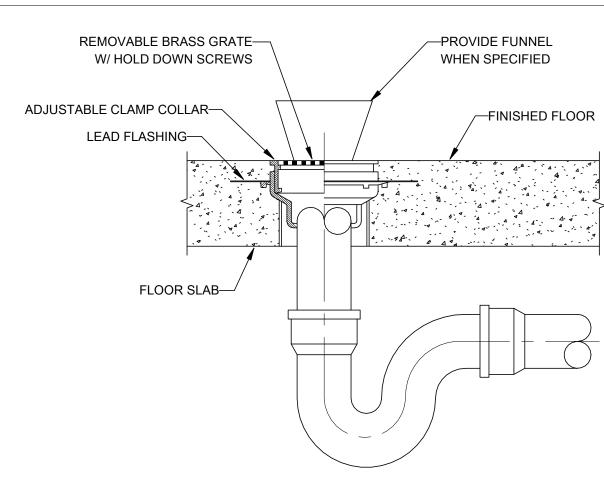
PLACE HANGER WITHIN 1 FOOT OF EACH HORIZONTAL ELBOW. SUPPORT HORIZONTAL SOLID WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGERS

VERTICAL PIPING:

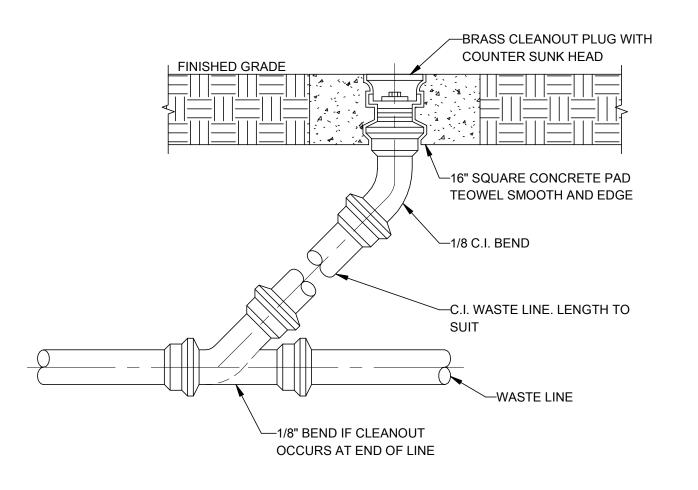
- SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
- SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.

WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS. WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.

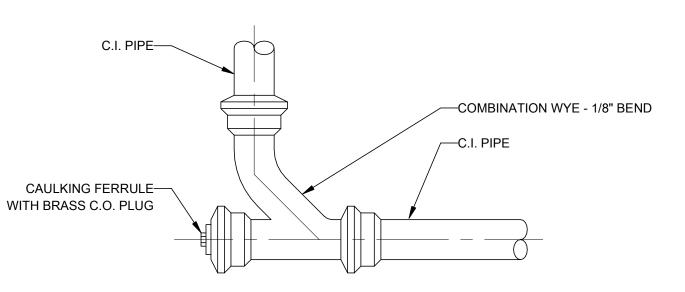
PIPE HANGER DETAIL SCALE: NOT TO SCALE



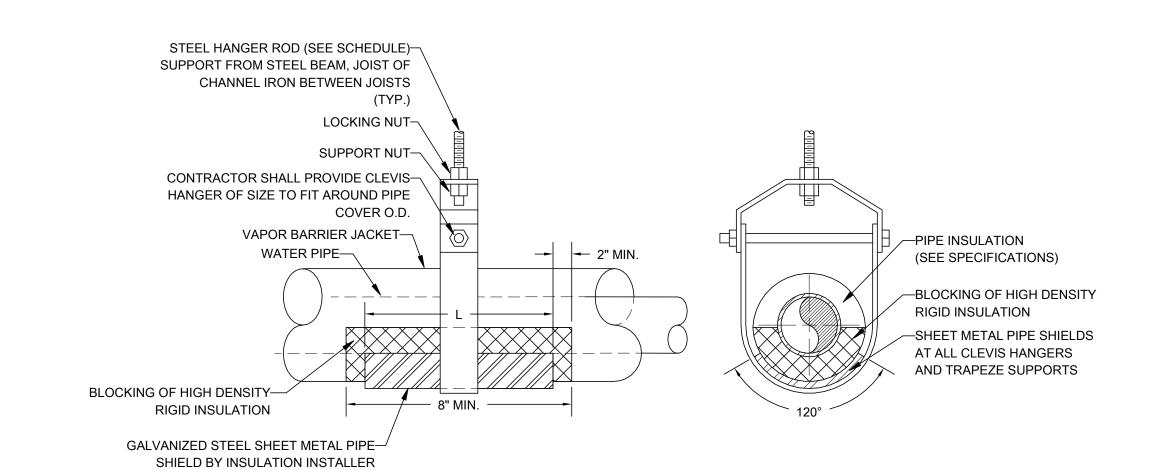
7 FLOOR DRAIN DETAIL SCALE: NOT TO SCALE



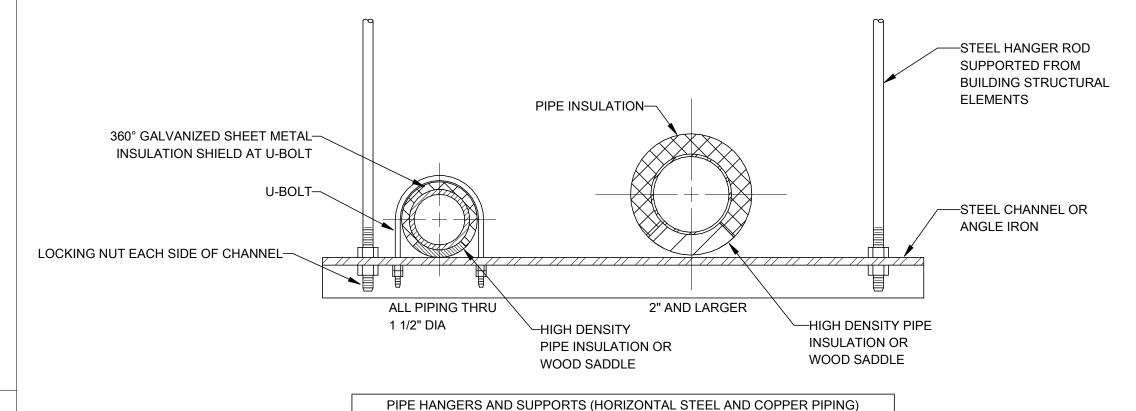




EXPOSED CLEANOUT DETAIL



| PIPE INSULATI | PIPE INSULATION SHIELD SCHEDULE | | | | | | | | | | |
|------------------------|---------------------------------|--------|--|--|--|--|--|--|--|--|--|
| PIPE SIZE LENGTH GAUGE | | | | | | | | | | | |
| UP TO 3/4" | 8" | 20 GA. | | | | | | | | | |
| 1"-2" | 12" | 18 GA. | | | | | | | | | |
| 2 1/2"-4" | 12" | 16 GA. | | | | | | | | | |
| 5" & 6" | 18" | 16 GA. | | | | | | | | | |
| 8" & UP | 24" | 14 GA. | | | | | | | | | |



| 1 11 2 11/11/02/10/11 | 12 001 1 01110 (11011120111112 0122 | - 7 11 11 10 0 0 1 1 E 1 1 1 1 1 1 1 1 0 j |
|-----------------------|--|--|
| NOMINAL PIPE SIZE | DISTANCE BETWEEN SUPPORTS | HANGER ROD DIAMETERS |
| 1/2" | 6' | 3/8" |
| 3/4" TO 1-1/2" | 6' | 1/2" |
| 2" TO 2-1/2" | 10' | 1/2" |
| 3" AND 4" | 12' | 5/8" |
| 6" TO 12" | 14' | 7/8" |
| | NOMINAL PIPE SIZE 1/2" 3/4" TO 1-1/2" 2" TO 2-1/2" 3" AND 4" | 1/2" 6' 3/4" TO 1-1/2" 6' 2" TO 2-1/2" 10' 3" AND 4" 12' |

NOTES:

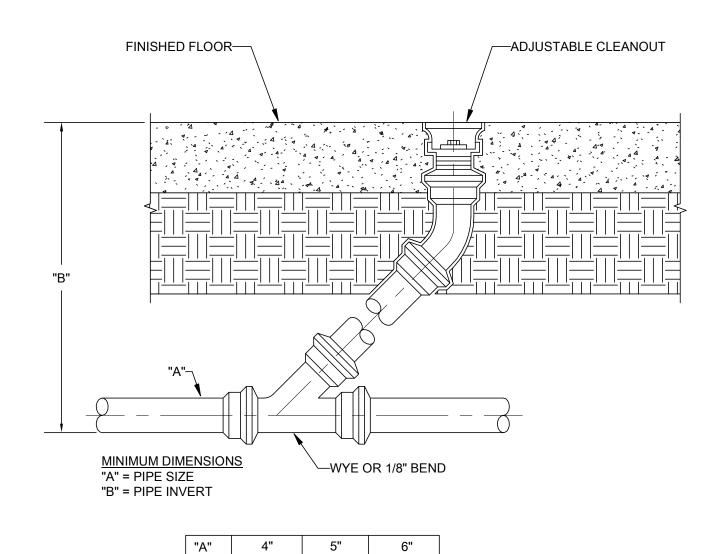
PLACE HANGER WITHIN 1 FOOT OF EACH HORIZONTAL ELBOW. SUPPORT HORIZONTAL SOLID WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGERS.

VERTICAL PIPING:

- SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
- SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.
- WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS.
- WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNNECTED HORIZONTAL PIPNG.

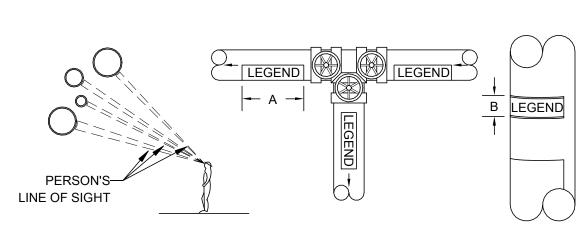
4 PIPE HANGER DETAIL (WATER AND WASTE)

SCALE: NOT TO SCALE



CLEANOUT TO FINISHED FLOOR DETAIL SCALE: NOT TO SCALE

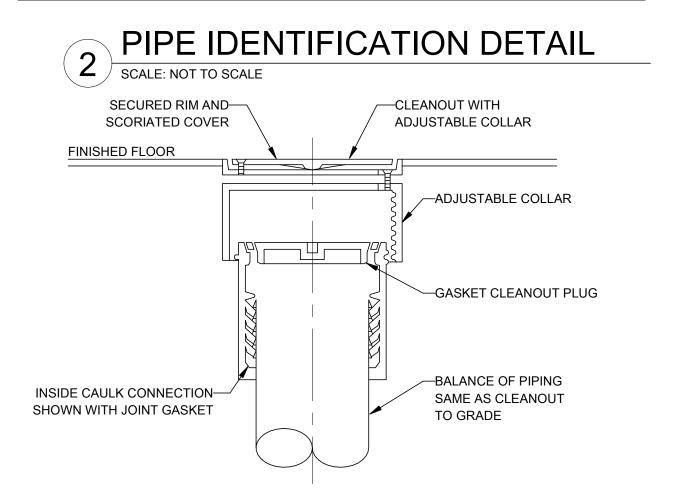
"B" 1'-8 1/2" 1'-9 1/2" 1'-10 3/4"



IDENTIFICATION MARKERS ARE TO BE PLACED ON ALL COVERED AND UNCOVERED PIPES AT 50'-0" INTERVALS, ADJACENT TO ALL VALVES OR BRANCHES, AND LOCATED AT BOTH SIDES OF A WALL/FLOOR PENETRATION. ARROWS OF SAME COLOR SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING THE DIRECTION OF FLOW.

| SIZE (| OF LEGEND LETTERS | 3 |
|------------------|-------------------|---------|
| OUTSIDE | LENGTH OF | SIZE OF |
| DIAMETER OF PIPE | COLOR | LETTERS |
| OF COVERING | FIELD "A" | "B" |
| 3/4" TO 1-1/4" | 8" | 1/2" |
| 1-1/2" TO 2" | 8" | 3/4" |
| 2'-1/2" TO 6" | 12" | 1-1/4" |
| 8" TO 10" | 24" | 2-1/2" |
| OVER 10" | 32" | 3-1/2" |

| PLAN TAG | SERVICE | IDENTIFICATION MARKER |
|---|--|---|
| SAN V ST NP ??? CW HW | SANITARY VENT STORM NON-POTABLE COLD WATER RAINWATER HARVESTED WATER DOMESTIC COLD WATER DOMESTIC HOT WATER DOMESTIC HOT WATER | WHITE LETTERING ON GREEN BACKGROUND WHITE LETTERING ON GREEN BACKGROUND WHITE LETTERING ON GREEN BACKGROUND BLACK LETTERING ON YELLOW BACKGROUND WHITE LETTERING ON PURPLE BACKGROUND WHITE LETTERING ON GREEN BACKGROUND BLACK LETTERING ON YELLOW BACKGROUND BLACK LETTERING ON YELLOW BACKGROUND |



FLOOR CLEANOUT DETAIL
SCALE: NOT TO SCALE



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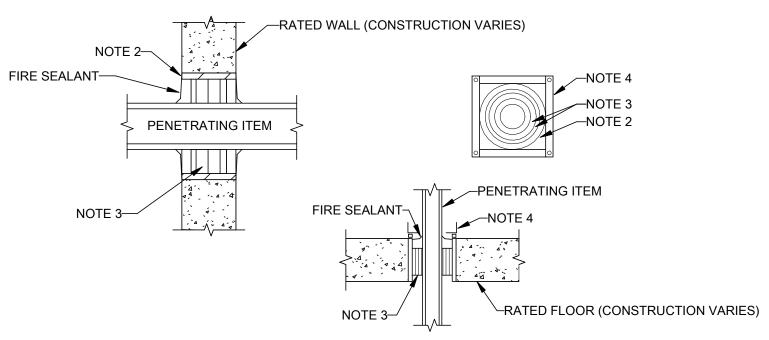
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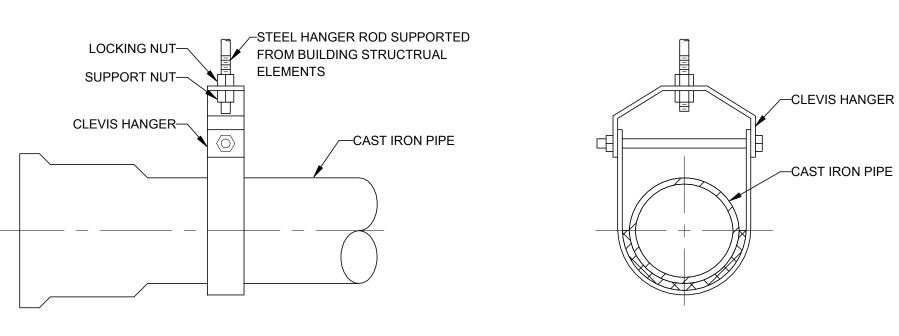
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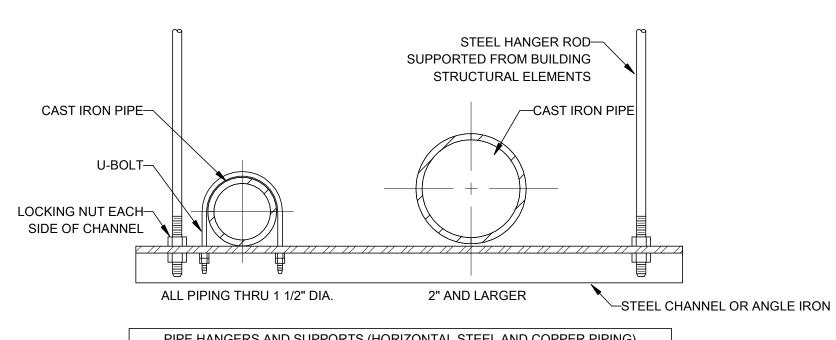
- 1. THIS DETAIL APPLIES TO ALL ITEMS PENETRATING WALLS OR FLOORS. THE INTENT IS TO MAINTAIN THE FIRE RATING AND TO ALLOW LONGITUDINAL MOVEMENT.
- 2. SCHEDULE 5 PIPE SLEEVE EMBEDDED IN WALL OR FLOOR, OR SMOOTH CORE DRILL. EACH CONTRACTOR FURNISHES SLEEVE, COORDINATES SLEEVE LOCATIONS AND DEBURS SLEEVE. THE GENERAL CONTRACTOR (GC) SHALL INSTALL SLEEEVE. SLEEVE SIZE SHALL ALLOW ANNULAR SPACE REQUIRED BY THE SELECTED FIRESTOP SYSTEM.
- 3. INSTALL BACKING MATERIAL SUCH AS MINERAL WOOL SAFING, AS REQUIRED FOR FIRESTOP SYSTEM. INSTALL IN ACCORDANCE WITH FIRESTOP SYSTEM APPLICATION LISTING. SECURE TO WALL OR FLOOR TO ALLOW LONGITUDINAL MOVEMENT OF PENETRATING ITEM WITHOUT MOVEMENT OF FIRE BARRIER.
- 4. WATER-TIGHT WELDED 1"x1" 20 GAUGE MINIMUM GALVANIZED SHEET METAL ANGLE FRAME, BY CONTRACTOR IN EQUIPMENT ROOMS FOR WATER STOP. PLACE A BEAD OF WATERPROOF SEALANT BETWEEN FLOOR AND BOTTOM OF ANGLE FRAME. SECURE TO FLOOR WITH MASONRY ANCHORS IN CORNERS AND ON 12" MAXIMUM CENTERS. MULTIPLE PENETRATING ITEMS MAY BE ENCLOSED IN ONE FRAME.
- 5. RESULTANT ASSEMBLY TO MAINTAIN APPLICABLE UL RATING.





NOTES:

 CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS.



| PIPE HANGERS AND SUPPORTS (HORIZONTAL STEEL AND COPPER PIPING) | | | | | | | |
|--|---------------------------|----------------------|--|--|--|--|--|
| NOMINAL PIPE SIZE | DISTANCE BETWEEN SUPPORTS | HANGER ROD DIAMETERS | | | | | |
| 1/2" | 6' | 3/8" | | | | | |
| 3/4" TO 1-1/2" | 6' | 1/2" | | | | | |
| 2" TO 2-1/2" | 10' | 1/2" | | | | | |
| 3" AND 4" | 12' | 5/8" | | | | | |
| 6" TO 12" | 14' | 7/8" | | | | | |

NOTES:

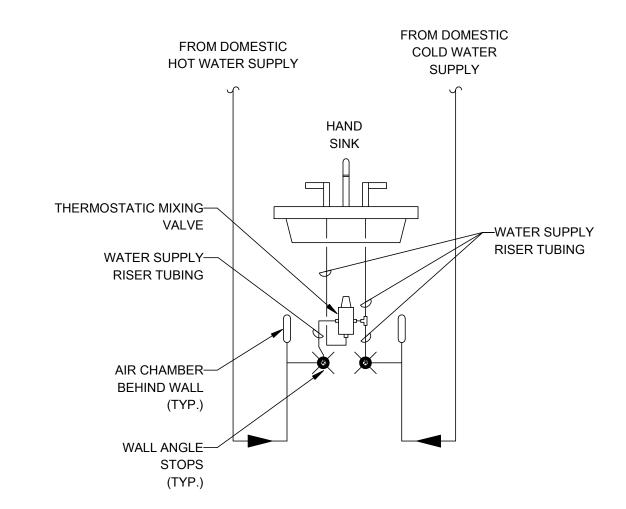
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VERTICAL PIPING:

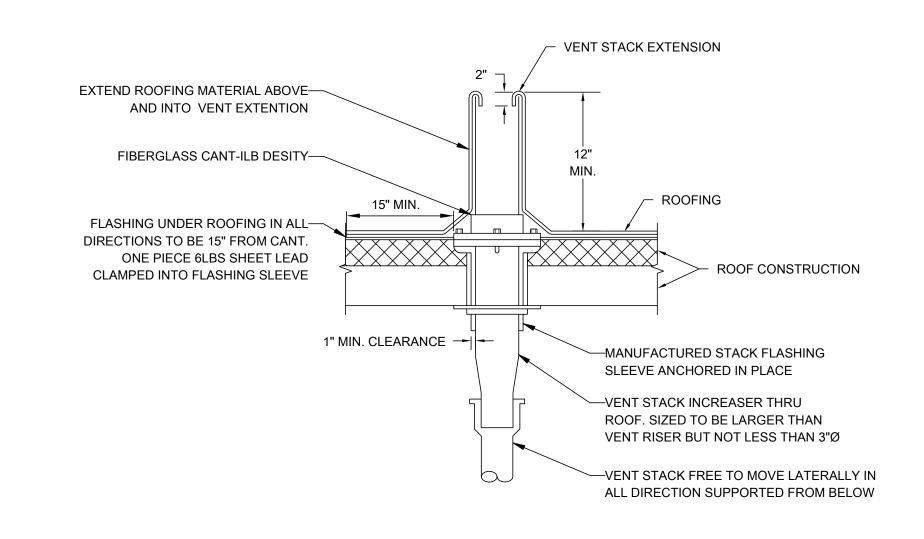
- SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
- 2. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.

WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION, PROVIDE MULTIPLE OR TRAPEZE HANGERS. WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZONTAL PIPING.





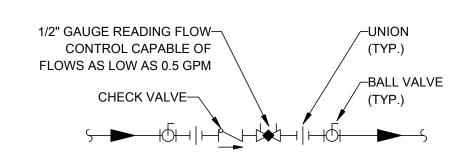
THERMOSTATIC MIXING VALVE DETAIL



NOTES:

1. VENT STACK OUTLET TO BE 10 FT. (MIN.) FROM ANY WALL OR STRUCTURE OR 3 FT. ABOVE STRUCTURE.

4 VENT THRU ROOF DETAIL SCALE: NOT TO SCALE



NOTES

1. CONTRACTOR SHALL BALANCE THE ENTIRE HOT WATER RETURN SYSTEM SO THAT SIMILAR HOT WATER DELIVERY TIMES ARE ACHIEVED FOR EACH HOT WATER RISER IN THE BUILDING. BALANCING IS COMPLETE WHEN THE DELIVERY TIME TO GET HOT WATER IS EQUAL FOR THE FARTHEST RUN AS WELL AS THE SHORTEST RUN OF PIPE.

DOMESTIC HOT WATER RETURN BALANCING STATION

HITCHCOCK DESIGN GROUP creating better place's

22 E. Chicago Avenue Suite 200A Naperville, IL 60540 T 630.961.1787 hitchcock **design** group.com

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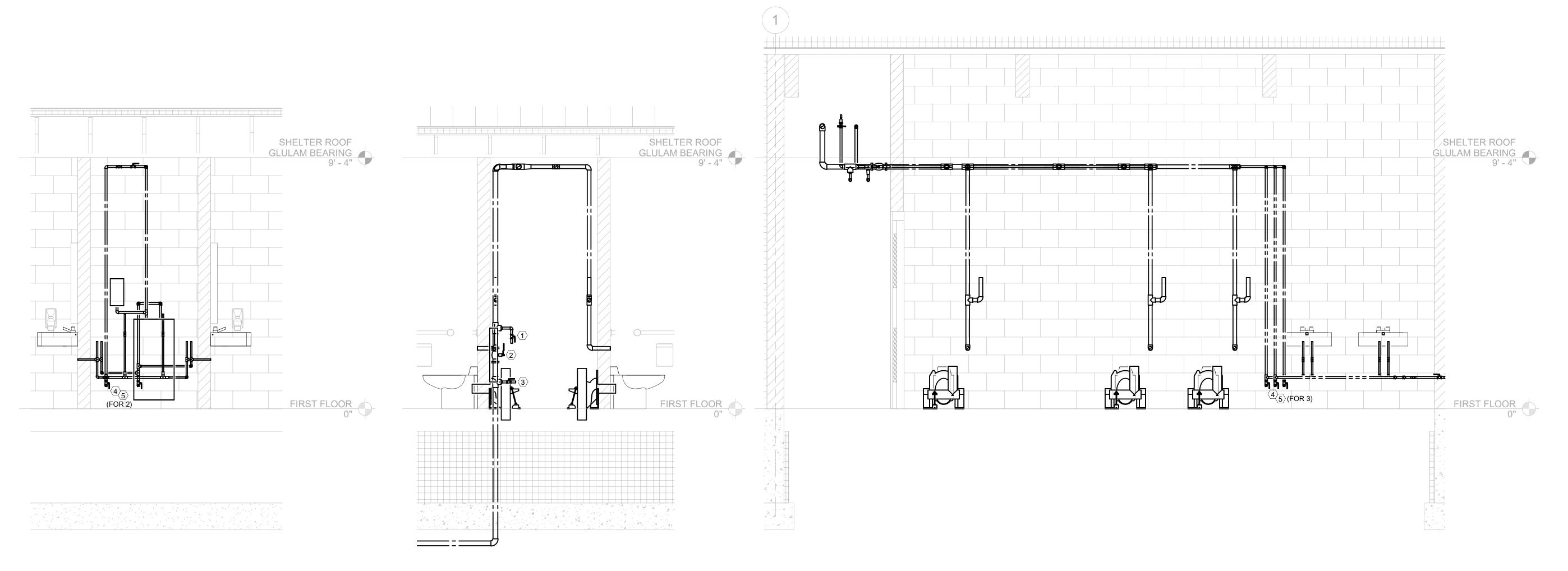
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PLUMBING DETAILS

SCALE

SHEET NUMBER

P-302





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> Electrical Engineer Nova Engineering 2338 S. Cline Ave Schererville, IN 46375 T 219.865.3352

Dewberry Architects Inc. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571

KEYED PLUMBING NEW WORK SHEET NOTES

PIPE OUTLET AFTER THE VALVE.

WATER SERVICE ISOLATION VALVE.

ITS INCOMING WATER SERVICE.

INFORMATION.

AT THE PIPE OUTLET AFTER THE VALVE.

WATER SERVICE MAIN DRAIN DOWN VALVE SO THE BUILDING CAN BE DRAINED DOWN TO WINTERIZE THE

BUILDING PIPING SYSTEMS. ALL DRAIN DOWN VALVE SHALL BE PROVIDED WITH A THREADED CAP AT THE

AIR COMPRESSOR PURGE PORT WITH BALL VALVE FOR BLOWING OUT THE INCOMING UNDERGROUND WATER SERVICE WHICH CANNOT BE DRAINED DOWN TO WINTERIZE THE BUILDING PIPING SYSTEMS AND

AUXILARY DRAIN DOWN VALVE SO THE BUILDING CAN BE DRAINED DOWN TO WINTERIZE THE BUILDING

IF ADDITIONAL LOW POINTS ARE INSTALLED IN THE PIPING SYSTEM ADDITIONAL DRAIN DOWN VALVES WILL BE REQUIRED TO BE INSTALLED BY THE PLUMBING CONTRACTOR AT NO COST TO THE OWNER.

GENERAL PLUMBING NEW WORK SHEET NOTES

THIS SHEET IS SHOWING THE DRAIN DOWN VALVE INFORMATION; SEE OTHER SHEETS FOR ADDITIONAL

NECESSARY DRAIN DOWN VALVES. ALL DRAIN DOWN VALVE SHALL BE PROVIDED WITH A THREADED CAP

PIPING SYSTEMS; EACH LOW POINT IN THE WATER PIPING SYSTEM SHALL BE PROVIDED WITH



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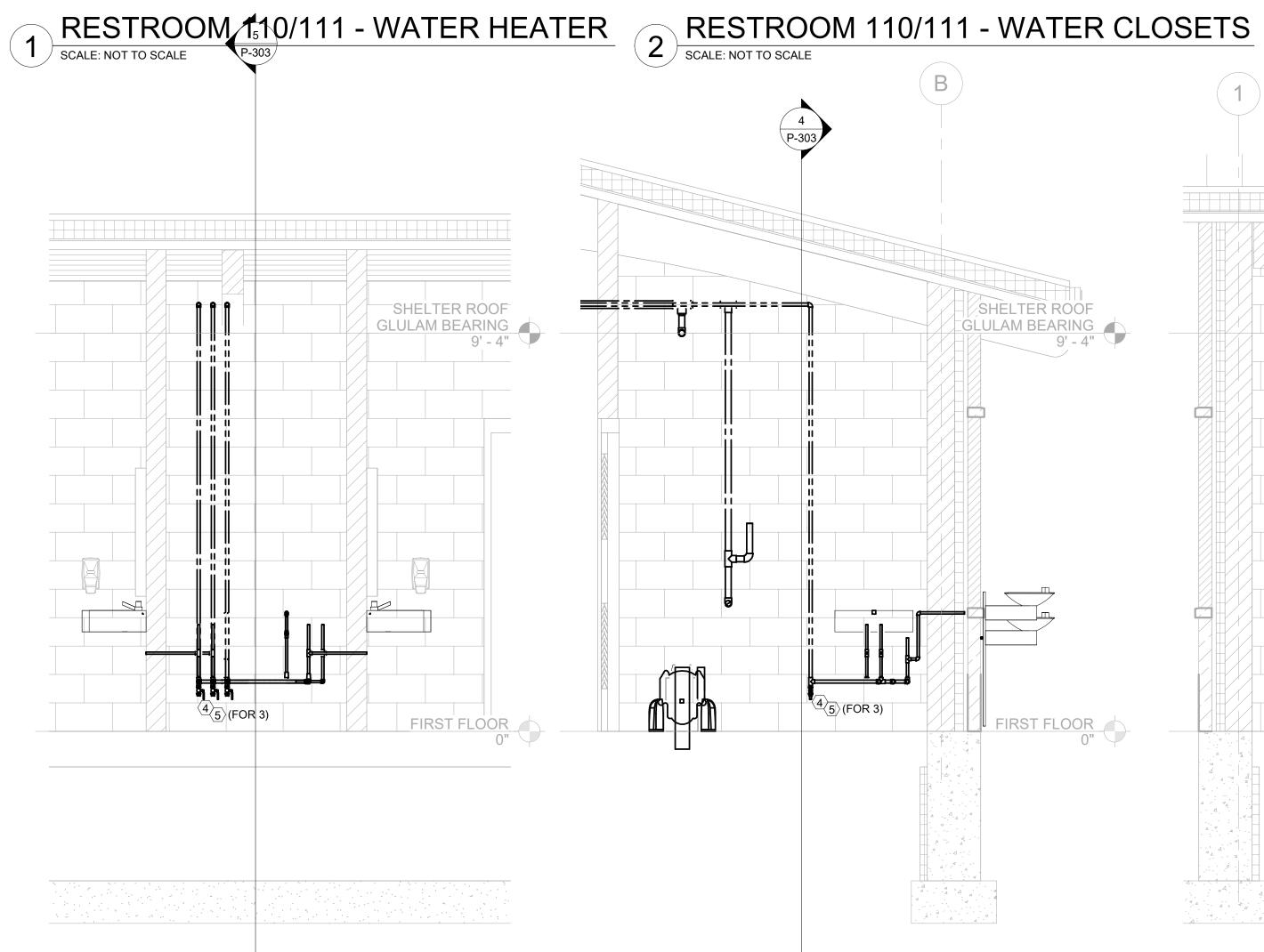
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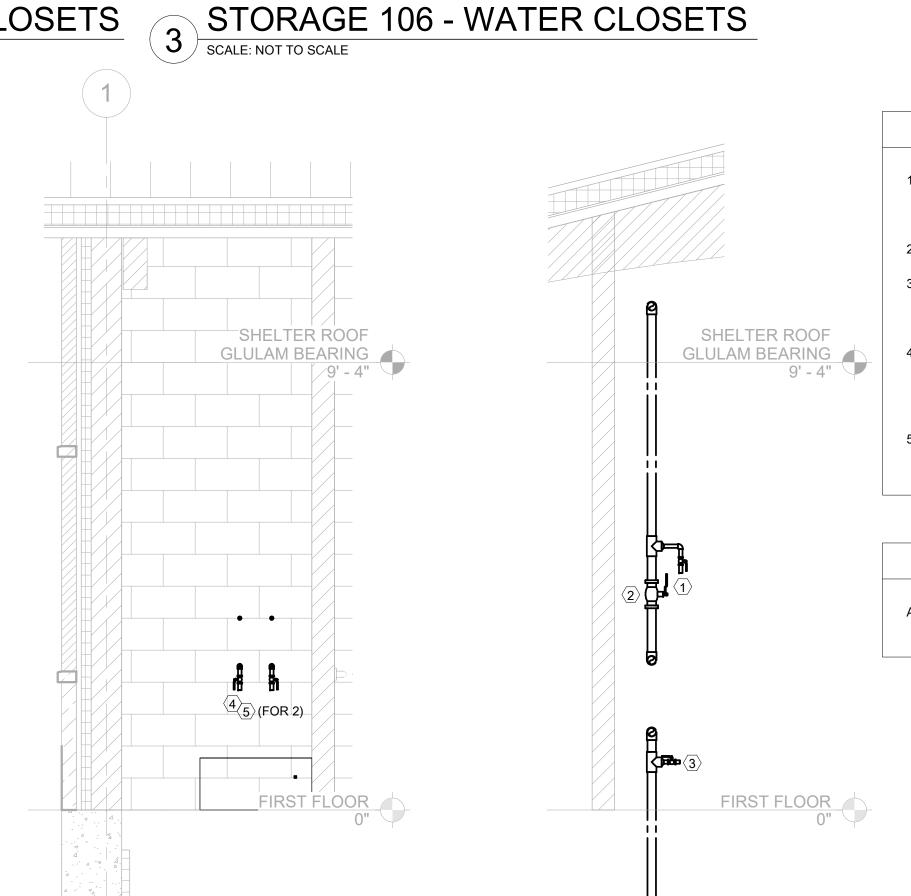
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6 JANITOR 105
SCALE: NOT TO SCALE

7 STORAGE 106 - WATER SERVICE
SCALE: NOT TO SCALE





RESTROOM 101/102 - LAVATORY

SCALE: NOT TO SCALE

SCALE: NOT TO SCALE

SCALE: NOT TO SCALE

SCALE: NOT TO SCALE

| | PLUMBING FIXTURE SCHEDULE | | | | | | | | | | | | | | |
|------|---------------------------|----------------------------------|-----|---------------------|-----------------------|---------------|-----------------------|---|----------------|------------------|--|------------------------------------|----------------|-------------------|--------------------|
| ABB. | NO. | FIXTURE | ADA | SIZE | TYPE | MANUFACTURER | MODEL NO. | COLOR | TRAP | CARRIER | MOUNTING HEIGHT | SUPPLY FITTING | OPERATION TYPE | STOP VALVE | NOTES |
| WC | 1 | WATER CLOSET | N/A | ELONGATED | WALL MOUNTED TOP-SPUD | ACORN | R2105-T-1 | STAINLESS STEEL | INTEGRAL | SMITH 200 SERIES | TOP OF TOILET SEAT AT 16-18 IN. AFF | SLOAN ROYAL 116-1.6 | MANUAL | INTEGRAL | 1, 3 |
| WC | 2 | WATER CLOSET | YES | ELONGATED | WALL MOUNTED TOP-SPUD | ACORN | R2105-T-1 | STAINLESS STEEL | INTEGRAL | SMITH 200 SERIES | TOP OF TOILET SEAT AT 17-19 IN. AFF | SLOAN ROYAL 116-1.6 | MANUAL | INTEGRAL | 1, 2, 3, 11 |
| U | 1 | URINAL | N/A | 14" x 26" x 12" | WALL MOUNTED TOP-SPUD | ACORN | 2162-T-1-FVBO | STAINLESS STEEL | INTEGRAL | SMITH 600 SERIES | RIM AT MAXIMUM OF 17" AFF | SLOAN ROYAL 186-1.0 | MANUAL | INTEGRAL | 4, 8 |
| U | 2 | URINAL | YES | 14" x 26" x 12" | WALL MOUNTED TOP-SPUD | ACORN | 2162-T-1-FVBO | STAINLESS STEEL | INTEGRAL | SMITH 600 SERIES | RIM AT 24" AFF | SLOAN ROYAL 186-1.0 | MANUAL | INTEGRAL | 2, 4, 8, 12 |
| L | 1 | SINGLE USER LAVATORY | YES | 18" x 15" | WALL MOUNTED | ACORN | 1950-1-9-H34-AB-TPT | STAINLESS STEEL | MCGUIRE 8902CF | SMITH 700 SERIES | RIM AT MAXIMUM OF 34 IN. AFF | CHICAGO FAUCETS 802-VE2805-665ABCP | MANUAL | MCGUIRE H2167CCLK | 2, 6, 7, 9, 10, 13 |
| L | 2 | SINGLE USER LAVATORY | YES | 18" x 15" | WALL MOUNTED | ACORN | 1950-1-9-H34-AB-TPT | STAINLESS STEEL | MCGUIRE 8902CF | SMITH 700 SERIES | RIM AT MAXIMUM OF 34 IN. AFF | CHICAGO FAUCETS 802-VE2805-665ABCP | MANUAL | MCGUIRE H2167CCLK | 2, 6, 7, 9, 10, 13 |
| DF | 1 | DRINKING FOUNTAIN (LO) | YES | 15" x 18" x 16-1/2" | WALL MOUNTED | ACORN | 2012-ADA-1-BC-3-AB-FP | STAINLESS STEEL | MCGUIRE 8912CF | SMITH 800 SERIES | LOW SPOUT HT. AT 36 IN. AFF | INTEGRAL | MANUAL | INTEGRAL | 2, 8 |
| DF | 2 | DRINKING FOUNTAIN (HI) | YES | 15" x 18" x 16-1/2" | WALL MOUNTED | ACORN | 2012-ADA-1-BC-3-AB-FP | STAINLESS STEEL | MCGUIRE 8912CF | SMITH 800 SERIES | HIGH SPOUT HT. AT 40-1/2 IN. AFF | INTEGRAL | MANUAL | INTEGRAL | 2, 8 |
| НВ | 1 | EXTERIOR NON-FREEZE HOSE BIBB | N/A | 6-1/2" x 7-1/2" | WALL MOUNTED | WOODFORD MFG. | B67 | BRASS FINISH, FINAL APPROVAL BY ARCHITECT | N/A | N/A | BOTTOM OF WALL BOX AT 24 IN. ABOVE FINISHED GRADE | INTEGRAL | N/A | INTEGRAL | 16 |
| МВ | 1 | MOP BASIN | N/A | 24" x 24" x 10" | FLOOR MOUNTED | ACORN | TRH-242410 | TERRAZO | 3" P-TRAP | N/A | FAUCET OUTLET 40 IN. AFF | CHICAGO FAUCETS 917-RCF | MANUAL | MCGUIRE H2167CCLK | 14, 15 |

1. TOILET BOWL IS WITH INTEGRAL TOILET SEAT SURFACE.

2. FIXTURE SHALL BE HANDICAPPED ACCESSIBLE.

MANUAL FLUSHVALVE (1.6 GPF).

4. MANUAL FLUSHVALVE (1.0 GPF).

5. PROVIDE MCGUIRE 155A STRAINER WITH TAILPIECE.

6. PROVIDE MCGUIRE 155WC STRAINER WITH TAILPIECE. INSULATE WATER SUPPLIES AND DRAIN PIPING.

PROVIDE FLOOR MOUNTED WALL CARRIER WITH SQUARE FLOOR PLATES, HEAVIER GAUGE 14 CONSTRUCTION, AND FREEZE RESISTANT BOX.

9. PROVIDE CODE COMPLIANT THERMOSTATIC MIXING VALVE FOR ALL PUBLIC LAVATORIES.

10. SLOW-CLOSING METERING LAVATORY FAUCET; AND 0.5 GPM PRESSURE COMPENSATING, VANDAL-RESISTANT NON-AERATOR. 11. PER ILLINOIS ACCESSIBILITY ACT, THE HEIGHT OF WATER CLOSETS SHALL BE 17 IN. TO 19 IN. AFF, MEASURED TO THE TOP OF THE TOILET SEAT. (ADAAG 4.16.2)

12. PER ILLINOIS ACCESSIBILITY ACT, URINALS SHALL BE STALL-TYPE OR WALL-HUNG WITH AN ELONGATED RIM AT A MAXIMUM OF 17 IN. AFF. (ADAAG 4.18.2)

13. PER ILLINOIS ACCESSIBILITY ACT, LAVATORIES SHALL BE MOUNTED WITH THE RIM OR COUNTER SURFACE NO HIGHER THAN 34 IN. AFF. PROVIDE A CLEARANCE OF AT LEAST 29 IN. AFF TO BOTTOM OF THE APRON. KNEE AND TOE CLEARANCE SHALL COMPLY WITH ILLUSTRATION B, FIG. 31. (ADAAG 4.19.2)

14. PROVIDE THE FOLLOWING ACCESSORIES WITH MOP BASIN: MOP HANGER (MODEL KMH), HIGH IMPACT-RESISTANT VINYL BUMPER GUARDS (MODEL KBGV), AND DURAGUARD WALL GUARDS (MODEL KWG).

MOUNT VACUUM BREAKER 7'-6" AFF.

FREEZELESS WALL HYDRANT WITH INTEGRAL ASSE 1052 DOUBLE CHECK BACKFLOW PREVENTER.

| | | | - | | | | | | | |
|--------|------------------------------------|---|--------------|--------------------|-----------|-------------------------|-------------------------------|---------------------------|-------------|--|
| | THERMOSTATIC MIXING VALVE SCHEDULE | | | | | | | | | |
| EQUIP. | TAG | DESCRIPTION | FIXTURE TYPE | MANUFACTURER | MODEL NO. | MINIMUM FLOW (GPM) | MAXIMUM FLOW (GPM) | FLOW AT 10 PSI (GPM) | NOTES | |
| ABB. | NO. | BESSAII TION | TIXTORE THE | WWW. WOT NO FOREIX | WOBEL NO. | WINNING WIT EOW (OF WI) | IVI OTIVICIVI I EOVV (OI IVI) | 1 20 1 7 1 10 1 01 (OI W) | | |
| TMV | 1 | UNDER FIXTURE THERMOSTATIC MIXING VALVE | LAVATORIES | SYMMONS | 8-210-CK | 0.25 | 0.5 | 2.06 | 1,2,3,4,5,6 | |

1 COMPLY WITH ASSE 1070, NSF/ANSI 61.9 & 372 AND ASME A112.18.1.

2. 1/2" MALE NPT, 1/2" FEMALE SWEAT CONNECTION SIZE.

3. LEAD FREE BRASS, BRONZE AND STAINLESS STEEL CONSTRUCTION.

4. INCLUDES CHECKS/STRAINERS ON INLETS.

5. TAMPER RESISTANT PROTECTIVE CAP.

6. MOUNT DEVICE BENEATH FIXTURES INDICATED IN A LOCATION THAT DOES NOT INTERFERE WITH ADA KNEE CLEARANCE REQUIREMENTS.

| | | | | PUMP S | CHEDULE | • | | | | | | | | |
|------|--------|------------------|------------------|------------------|-----------|--------|-----|---------------|---------------------|-------|---------|------|-------|-----------|
| EQUI | P. TAG | | | | | | | | | ELE | CTRICAL | | | |
| ABB. | NO. | SERVICE | LOCATION | MANUFACTURER | MODEL NO. | TYPE | GPM | HEAD (FT.) | MOTOR (HP/WATTS) | VOLTS | PHASE | CYC. | RPM | NOTES |
| НСР | 1 | HOT WATER RETURN | JANITOR'S CLOSET | BELL AND GOSSETT | NBF-25 | INLINE | 3 | 10 | 125 WATTS | 115 | 1 | 60 | 2,950 | 1,2,3,4,5 |
| | | | | | | | | | | | | | | |

1. PUMP SHALL BE LEAD-FREE BRONZE CIRCULATOR FOR POTABLE WATER SYSTEMS.

2. PROVIDE AQUASTAT FOR CONTROL OPERATION.

3. CONTRACTOR TO INCLUDE TIMER CONTROL.

4. PUMP SHALL INCLUDE 3-SPEED OPERTATION; SET PUMP ON 'SPEED 1' SETTING.

ADDITIONAL ACCEPTABLE MANUFACTURERS: GRUNDFOS AND TACO.

| - | DRAIN SCHEDULE | | | | | | | | | | | |
|--------|----------------|---------------------|-----------|--------------------------------------|-----------|-----------------------------|-------|--|--|--|--|--|
| ABB. | NO. | MANUFACTURER | MODEL NO. | TYPE | SIZE | TOP FINISH | NOTES | | | | | |
| FD | 1 | SMITH | 2010-A | FLOOR DRAIN | SEE PLANS | STANDARD | 1,2 | | | | | |
| FD | 2 | NOT USED | | | | | | | | | | |
| FD | 3 | NOT USED | | | | | | | | | | |
| FCO | 1 | SMITH | 4031 | FLOOR CLEANOUT (MECHANICAL AREAS) | SEE PLANS | STANDARD | - | | | | | |
| wco | - | SMITH | 4472 | WALL CLEANOUT | SEE PLANS | STAINLESS STEEL ROUND COVER | - | | | | | |
| CO(TG) | 1 | CLEANOUT (TO GRADE) | SEE PLANS | SMITH | 4250 | STANDARD | - | | | | | |

 PROVIDE WITH VANDAL PROOF SCREWS. 2. PROVIDE WITH ROUND HEEL-PROOF GRATE.

| | | | BACK | FLOW PREVENTER SCHEDULE | | |
|--------|-----------------------|--------------|-----------|-------------------------|------|------------|
| EQUIP. | UIP. TAG MANUFACTURER | | MODEL NO. | SERVICE | SIZE | NOTES |
| ABB. | NO. | MANUFACTURER | MODEL NO. | SERVICE | SIZE | NOTES |
| RPZ | 1 | WATTS | LF009 | DOMESTIC WATER SERVICE | 2" | 1, 2, 3, 4 |
| NOTES: | • | | • | | | |

1. PROPERLY INSTALL AND SUPPORT PER MANUFACTURER'S INSTRUCTIONS.

2. PROVIDE APPROPRIATE CLEARANCES IN FRONT AND BACK.

ROUTE DISCHARGE TO APPROPRIATE SANITARY RECEPTOR WITH CODE COMPLIANT AIR GAP.

VERIFY ACCEPTANCE OF MODEL WITH AHJ.

| | | | | | ELE | CTRICAL W | ATER HEAT | ER SCHEDU | JLE | | | | | |
|-------|--------|----------|-----------------|------------|-----------|-----------------------|---------------------|------------------------|--------------------------|-----------------|----------------|--|-------|--|
| EQUIF | P. TAG | | | | | STORAGE | | RECOVERY | | OPERATIONAL | VOLTS / PH FLA | | NOTES | |
| ABB. | NO. | TYPE | LOCATION | MFR | MODEL NO. | CAPACITY (GALLONS) | COIL RATING (KW) | AT 100°F RISE (GPH) | DIMENSIONS HT" X DIA" | WEIGHT (LBS) | | | | |
| EWH | 1 | ELECTRIC | MECHANICAL ROOM | A.O. SMITH | DEL-10-4 | 10 | 4 | 16 | 18-1/4" X 18" DIA. | 140 | 208V / 1PH | | 1,2 | |
| EWH | 2 | ELECTRIC | MECHANICAL ROOM | A.O. SMITH | DEL-6-2 | 6 | 2 | 16 | 15-1/2" X 14-1/4" DIA. | 90 | 208V / 1PH | | 1,2 | |
| | | | | | | | | | | | | | | |

1. PROVIDE DRAIN PAN AND FLOOR STAND FOR ELEVATATION OF THE EQUIPMENT. THE UNIT CANNOT SIT ON FLAT GROUND OR RAISED CONCRETE PAD AS IT NEEDS TO BE DRAINED DOWN FOR ANNUAL WINTERIZATION.

2. PROVIDE CODE COMPLIANT SAFETY DEVICES, VALVE LOCATIONS, AND DISCHARGE PIPING OF ANY SAFETY DEVICE. DISCHARGE PIPING FOR TEMPERATURE AND PRESSURE RELIEF VALVE SHALL BE IN PROXIMITY TO REQUIRED FLOOR DRAIN OR APPROVED

| | | | | | EXPANSION | N TANK SCHED | ULE | | | | |
|------|--------|---------|-----------------|--------------|-----------|---------------------------|---------------------------------|-------------------|--------------------|---------------------------|---------------|
| EQUI | P. TAG | | | | | | | WORKING | | | |
| ABB. | NO. | SERVICE | LOCATION | MANUFACTURER | MODEL | TOTAL VOLUME (GALLONS) | MAXIMUM ACCEPTANCE (GALLONS) | PRESSURE (PSI) | SIZE (APPROX) | MAX CAPACITY WEIGHT (LBS) | NOTES |
| ET | 1 | EWH-1 | MECHANICAL ROOM | AMTROL | ST-5C-DD | 2 | 0.9 | 150 | 24" DIA. X 37" HT. | 30 | 1, 2, 3, 4, 5 |
| ET | 2 | EWH-2 | MECHANICAL ROOM | AMTROL | ST-5C-DD | 2 | 0.9 | 150 | 24" DIA. X 37" HT. | 30 | 1, 2, 3, 4, 5 |

1. PLUMBING CONTRACTOR SHALL PROPERLY CHARGE EXPANSION TANK PRIOR TO INSTALLATION PER MANUFACTURER GUIDELINES.

2. PROVIDE 4" CONCRETE PAD FOR FLOOR MOUNTED EQUIPMENT.

3. THERMAL EXPANSION TANK SHALL BE CONNECTED TO THE COLD WATER SUPPLY TO THE WATER HEATER WITH NO VALVES OR OTHER DEVICES LOCATED BETWEEN THE EXPANSION TANK AND THE WATER HEATER.

4. TANK SHALL BE ASME RATED.

5. MOUNT TANK IN THE VERTICAL UP ORIENTATION SO FOR ANNUAL WINTERIZATION ACTIVITIES THE UNIT IS ALLOWED TO FULLY DRAIN.

| | | | F | PUBLIC PLUME | BING FIXTURE | PIPE CONNE | CTION SCHE | DULE | | | |
|-------|--------|---------------------------|-----------------|--------------------|--------------------|----------------------|----------------------------|--------------------|------------------------|----------------|----------------|
| EQUIF | P. TAG | FIVE UP TYPE DECORPTION | DRAINAGE FIXURE | WATER FIXTURE UNIT | ANNUAL IN TRAD OUT | MINIMUM MANAGER OUTE | MANUAL IN A V (EN EX 017 E | OW IN ET DIDE 0175 | LINA INII ET DIDE OLZE | CW AIR CHAMBER | HW AIR CHAMBER |
| ABB. | NO. | FIXTURE TYPE DESCRIPTION | UNIT | WATER FIXTURE UNIT | MINIMUM TRAP SIZE | MINIMUM WASTE SIZE | MINIMUM VENT SIZE | CW INLET PIPE SIZE | HW INLET PIPE SIZE | PIPE SIZE | PIPE SIZE |
| WC | # | WATER CLOSET - FLUSHVALVE | 8 | 10 | INTEGRAL | 4" | 2" | 1" | | 1" | |
| WC | # | WATER CLOSET - FLUSH TANK | 4 | 5 | INTEGRAL | 4" | 2" | 3/8" | | 1/2" | |
| U | # | URINAL | 3 | 5 | 2" | 2" | 1-1/2" | 3/4" | | 3/4" | |
| U | # | URINAL | 3 | 10 | 2" | 2" | 1-1/2" | 1" | | 1" | |
| L | # | LAVATORY | 2 | 2 | 1-1/2" | 1-1/2" | 1-1/2" | 3/8" | 3/8" | 1/2" | 1/2" |
| MB | # | MOP BASIN | 3 | 3 | 3" | 3" | 1-1/2" | 1/2" | 1/2" | 3/4" | 3/4" |
| SS | # | SERVICE SINK | 3 | 3 | 3" | 3" | 1-1/2" | 1/2" | 1/2" | 3/4" | 3/4" |
| SH | # | SHOWER | 3 | 4 | 2" | 2" | 1-1/2" | 1/2" | 1/2" | 3/4" | 3/4" |
| EWC | # | ELECTRIC WATER COOLER | 0.5 | 0.25 | 1" | 1-1/4" | 1-1/4" | 3/8" | | 1/2" | |
| DF | # | DRINKING FOUNTAIN | 0.5 | 0.25 | 1" | 1-1/4" | 1-1/4" | 3/8" | | 1/2" | |
| SK | # | SINK | 2 | 3 | 1-1/2" | 1-1/2" | 1-1/2" | 1/2" | 1/2" | 3/4" | 3/4" |
| SK | # | SCULLERY/POT SINK | 4 | 4 | 1-1/2" | 1-1/2" | 1-1/2" | 1/2" | 1/2" | 3/4" | 3/4" |
| FD | # | FLOOR DRAIN | 2 | | 2" | 2" | 1-1/2" | | | | |
| FD | # | FLOOR DRAIN | 5 | | 3" | 3" | 1-1/2" | | | | |
| FD | # | FLOOR DRAIN | 6 | | 4" | 4" | 2" | | | | |

| | SERIES LEAD FREE F | | | ATER HAMMER | ARRESTOR | WITH POLYPRO | PLENE PISTON, | | |
|----------------|---------------------|------------|-----------|-------------|----------|--------------|---------------|-------|--|
| DM O-RING SEAL | ., AND BRASS NPT TH | IREADED CO | NNECTION. | | | | | | |
| | CONNECTION | | DIME | NSIONS | | | | | |
| SIZE (DN) | T | , | Ą | В | | PDI SIZE | FIXTURE UNITS | NOTES | |
| | THREADED | in | mm | in | mm | | | | |
| LF15M2-A-DR | 1/2" | 1 1/8 | 28.5 | 5 15/16 | 150.9 | А | 1-11 | 1 | |
| LF15M2-B-DR | 3/4" | 1 3/8 | 34.9 | 8 9/16 | 218.0 | В | 12-32 | 1 | |
| LF15M2-C-DR | 1" | 1 5/8 | 41.3 | 8 13/16 | 223.5 | С | 33-60 | 1 | |
| LF15M2-D-DR | 1" | 2 1/8 | 54.0 | 9 15/16 | 252.5 | D | 31-113 | 1 | |
| LF15M2-E-DR | 1" | 2 1/8 | 54.0 | 12 11/16 | 322.5 | E | 114-154 | 1 | |
| LF15M2-F-DR | 1" | 2 5/8 | 66.7 | 11 5/32 | 283.5 | F | 155-330 | 1 | |

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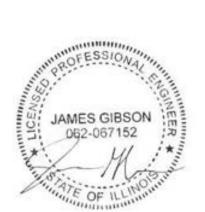
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REVISIONS

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CHECKED BY

SHEET TITLE PLUMBING SCHEDULES

DRAWN BY

I. GENERAL NOTES

- A. ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN CONFORMANCE WITH ALL GOVERNING NATIONAL, STATE, AND LOCAL CODES HAVING JURISDICTION.
- B. CONTRACTOR SHALL REVIEW THE ENTIRE SET OF CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL ARCHITECTURAL, CIVIL, SITE, LANDSCAPING, STRUCTURAL, MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS, AS WELL AS ALL SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS. THIS CONTRACTOR SHALL VISIT THE SITE AND MAKE A DETAILED INSPECTION OF THE SPECIFIED WORK TO DEVELOP KNOWLEDGE OF ALL CONDITIONS PERTINENT TO THE COMPLETION OF HIS WORK. THIS CONTRACTOR SHALL FULLY COORDINATE HIS WORK WITH THE WORK PERFORMED BY OTHER TRADES AND/OR CONTRACTORS, AND SHALL MAKE SUCH FIELD ADJUSTMENTS AS ARE REQUIRED TO ACCOMMODATE FIELD CONDITIONS. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO OWNER.
- SHOULD CONTRACTOR FIND DISCREPANCIES IN, OR OMISSIONS FROM, THE DRAWINGS, SPECIFICATIONS, OR OTHER CONTRACT DOCUMENTS, OR DISCREPANCIES BETWEEN ACTUAL FIELD CONDITIONS AND THOSE REPRESENTED IN THE DRAWINGS, OR CONFLICTS BETWEEN HIS WORK AND THAT OF OTHER TRADES, OR BE IN DOUBT AS TO THE MEANING OF ANY CONTRACT DOCUMENTS, CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND THE ENGINEER IN WRITING AND SHALL OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF SUCH NOTIFICATION SHALL BE CONSTRUED AS CONTRACTOR'S REPRESENTATION THAT NO DISCREPANCIES OR CONFLICTS EXIST. ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THIS REQUIREMENT.
- D. THE DRAWINGS INDICATE DIAGRAMMATICALLY THE INTENT, REQUIREMENTS FOR, AND LOCATION OF THE WORK INCLUDED UNDER THIS CONTRACT. ALL WORK REQUIRED TO AFFECT THE INDICATED DESIGN, INCLUDING DETAILS NOT SHOWN BUT WHOSE INCLUSION WOULD BE DEEMED A REQUIREMENT BY A KNOWLEDGEABLE TRADESMAN, BUILDING ENGINEER, OR TECHNICIAN, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- E. IT IS THE INTENT OF THESE DOCUMENTS THAT THE CONTRACTOR PROVIDE ALL LABOR, MATERIAL. EQUIPMENT, AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES, CONTROLS, AND APPURTENANCES REQUIRED TO SET THE NEW SYSTEMS INTO OPERATION, UNLESS OTHERWISE NOTED.
- F. CONTRACTOR SHALL VERIFY ALL MOUNTING, ARRANGEMENTS, HEIGHTS, AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, WEIGHT, OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY SPECIFIC REQUIREMENTS AND BASE HIS WORK ON THEM. THE SAME CARE SHALL BE TAKEN WITH RESPECT TO INFORMATION FURNISHED BY THIS CONTRACTOR TO HIS SUBCONTRACTORS OR TO OTHER CONTRACTORS EMPLOYED BY THE OWNER ON THIS PROJECT. THIS CONTRACTOR SHALL BE FINANCIALLY RESPONSIBLE FOR ANY CHANGE ORDERS NECESSITATED BY INACCURATE OR INCORRECT INFORMATION FURNISHED TO OTHER CONTRACTORS. NO ADDITIONS TO THE CONTRACT AMOUNT WILL BE PERMITTED FOR ITEMS INSTALLED IN WRONG LOCATIONS OR IN CONFLICT WITH OTHER
- G. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING FOR AND OBTAINING ALL APPLICABLE PERMITS. THIS CONTRACTOR SHALL PAY ALL PERMIT FEES, PLAN REVIEW FEES, LICENSE FEES, AND INSPECTIONS APPLICABLE TO HIS WORK, AND SUCH COSTS SHALL BE INCLUDED IN HIS BID UNLESS. OTHERWISE NOTED. THIS CONTRACTOR SHALL ALSO INCLUDE IN HIS BID ALL FEES ASSOCIATED WITH THE SERVICES OF A PERMIT EXPEDITER AS MAY BE REQUIRED TO MEET THE PROJECT SCHEDULE
- H. CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK AND SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY LAWS, INCLUDING THE REQUIREMENTS OF OSHA. HE SHALL ALSO PROVIDE ALL NECESSARY SIGNS, LIGHTS, AND BARRICADES REQUIRED FOR THE SAFETY OF ALL OTHER PERSONS WHO MIGHT COME IN CONTACT WITH THE CONSTRUCTION BEING PERFORMED UNDER THIS CONTRACT.
- I. ALL PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND/OR REPLACED TO MATCH EXISTING CONSTRUCTION BY THIS CONTRACTOR AND TO THE SATISFACTION OF THE OWNER AND AUTHORITIES HAVING JURISDICTION.
- J. CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE BUILDING OWNER'S REPRESENTATIVE REGARDING WORKSITE ACCESS, BUILDING RULES, AND REGULATIONS, INCLUDING WORKING HOURS, REFUSE DISPOSAL, DUMPSTER LOCATION, SECURITY, INTERRUPTIONS OF BUILDING UTILITIES OR FUNCTIONS, OWNERSHIP OF SALVAGED MATERIALS, PARKING, AND ANY OTHER ITEMS DEEMED TO BE OF MUTUAL INTEREST.
- K. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO STORE AND PROTECT FROM DAMAGE ALL EQUIPMENT AND MATERIALS IN A MANNER THAT WILL MAINTAIN AN ORDERLY, CLEAN APPEARANCE. DAMAGED EQUIPMENT AND MATERIAL IS SUBJECT TO REJECTION BY THE OWNER'S REPRESENTATIVE. REPLACEMENT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- L. PROVIDE ALL HOLES, SLEEVES, CUTTING, PATCHING, AND SEALING FOR INSTALLATION OF THIS WORK, SEALING SHALL CONFORM TO THE FIRE RATING OF ALL BUILDING ASSEMBLIES, ALL EXTERIOR PENETRATIONS SHALL BE MADE WEATHER TIGHT.
- M. CONTRACTOR IS RESPONSIBLE FOR LOCATING AND SCANNING OBSTRUCTIONS/REINFORCEMENTS WHERE PENETRATIONS ARE TO BE MADE. ANY DAMAGE RESULTING FROM PENETRATIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED AT NO ADDITIONAL COST TO THE OWNER
- N. CONTRACTOR SHALL VERIFY LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATING ACTIVITIES OR UNDERGROUND WORK, PROVIDE SOIL EROSION AND SEDIMENT CONTROL FOR EXCAVATION OF THE AREA ACCORDING TO ALL AUTHORITIES HAVING JURISDICTION.
- O. CONTRACTOR SHALL NOT MODIFY OR REMOVE ANYTHING FOUND TO BE IN THE PATH OF NEW SYSTEMS TO BE INSTALLED WITHOUT PRIOR APPROVAL BY THE ENGINEER.
- P. ALL ROOFING WORK SHALL BE BY OWNER APPROVED ROOFING CONTRACTOR(S) TO MAINTAIN ROOF WARRANTIES. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE ROOFING CONTRACTOR(S) TO ENSURE WEATHER TIGHT CONSTRUCTION AND TIMELY COMPLETION OF ALL
- Q. THE CONTRACTOR IS RESPONSIBLE FOR THE CONTINUOUS CLEANING OF ALL DUST AND DEBRIS RESULTING FROM THEIR WORK.
- R. CONTRACTOR TO DETERMINE REQUIRED SYSTEM SHUTDOWNS, MAXIMUM DURATION OF SYSTEM SHUTDOWN SHALL BE AT THE DISCRETION OF THE OWNER'S REPRESENTATIVE. SHUTDOWN SHALL BE COORDINATED ON THE JOB SITE WITH THE OWNER'S REPRESENTATIVE. CONTRACTOR SHALL PROVIDE A MINIMUM OF ONE (1) WEEK ADVANCE NOTICE OF SYSTEM SHUTDOWNS.
- S. CONTRACTOR AND SUB-CONTRACTORS SHALL BE PROPERLY LICENSED, BONDED, AND INSURED AND CAPABLE OF PERFORMING QUALITY WORKMANSHIP OF THEIR TRADE ON THIS PROJECT,
- T. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES. AND SAFETY.
- U. REMOVAL AND RESTORATION OF FINISHED SURFACES AS REQUIRED TO COMPLETE THIS SCOPE OF WORK IS THE RESPONSIBILITY OF THIS CONTRACTOR.
- V. CONTRACTOR SHALL COORDINATE USE OF THE BUILDING ELEVATOR(S) AND DELIVERIES WITH THE
- W. MAINTAIN ALL MANUFACTURER RECOMMENDED AND CODE REQUIRED CLEARANCES.
- X. CONTRACTOR SHALL PROVIDE TRAINING TO THE OPERATING STAFF FOR NEW SYSTEMS AND EQUIPMENT. REFER TO OWNER TRAINING SPECIFICATION SECTION FOR ADDITIONAL INFORMATION.

II. GENERAL DEMOLITION NOTES

- A. ALL WORK SHALL BE PERFORMED IN A CLEAN AND WORKMANLIKE MANNER. CARE SHALL BE EXERCISED TO MINIMIZE ANY INCONVENIENCE OR DISTURBANCE TO OTHER AREAS OF THE BUILDING WHICH ARE TO REMAIN IN OPERATION.
- B. ALL DEMOLITION AS CALLED FOR ON THE DEMOLITION DRAWINGS SHALL BE UNDER THIS CONTRACTOR'S WORK.
- C. CONTRACTOR SHALL VISIT THE BUILDING, BEFORE SUBMITTING HIS BID, TO VERIFY ALL DIMENSIONS AND EXISTING CONDITIONS WHICH MAY AFFECT HIS WORK, NOT ALL EXISTING DUCTWORK, PIPING. EQUIPMENT, ETC. MAY BE INDICATED ON DOCUMENTS.
- D. THE INTENT OF THE DEMOLITION IS TO REMOVE THE ITEMS IN THEIR ENTIRETY. THIS INCLUDES ALL ASSOCIATED SUPPORT BASES, ANCHORAGE, HANGERS, CONTROLS INCLUDING WIRING AND CONDUIT EXPOSED IN MECHANICAL ROOMS, PIPING, DUCTWORK, WIRING, ETC. CAP EXISTING SYSTEMS TO REMAIN AT ACTIVE MAINS OR OTHER ACTIVE BRANCH LINES. DEAD END LENGTHS SHALL BE CODE COMPLIANT. LABEL ABANDONED CONTROLS CONDUIT AND WIRE.
- E. BEFORE STARTING ANY DEMOLITION WORK ON EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION, THE ELECTRICAL CONTRACTOR SHALL DISCONNECT THE POWER AND REMOVE CONDUIT, WIRING, DISCONNECT SWITCHES, AND STARTERS UNDER THIS CONTRACT.
- F. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUOUS CLEANUP THROUGHOUT THE COURSE OF THE DEMOLITION WORK.
- G. ALL EQUIPMENT, MATERIAL, ETC. THAT IS DEMOLISHED SHALL BE REMOVED FROM THE BUILDING SITE BY THIS CONTRACTOR IN A PROPER AND LEGAL MANNER. NO ITEM WHICH IS DEMOLISHED MAY BE REUSED UNLESS SPECIFICALLY NOTED.
- H. ANY CONTROLS HARDWARE OR PROGRAMMING NO LONGER NECESSARY TO ACCOMPLISH THE SEQUENCE OF OPERATIONS SHALL BE DECOMMISSIONED.
- ALL DEMOLITION WORK OF THE EXISTING CONTROLS FOR EQUIPMENT SHOWN ON THE DRAWINGS TO BE DEMOLISHED SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR. THIS CONTRACTOR SHALL MODIFY THE EXISTING CONTROLS AS REQUIRED TO ENSURE OPERATION OF EXISTING EQUIPMENT TO REMAIN. ALL EXISTING CONTROLS SHOWN TO BE DEMOLISHED SHALL BE REMOVED AND TURNED OVER TO THE OWNER.

III. SHOP DRAWINGS, SUBMITTALS, AND AS-BUILTS

- CONTRACTOR SHALL SUBMIT TO THE ENGINEER COORDINATED SHOP DRAWINGS. SHOP DRAWINGS SHALL BE 1/4" SCALE AND SHALL INDICATE LAYOUT OF ALL EQUIPMENT, PIPING, GAUGES, SENSORS, GRAPHICS, CONTROLS NETWORK ARCHITECTURE, CONTROL POINTS LIST, OPERATING SEQUENCES, CONTROL DEVICES WITH SETTINGS OR ADJUSTABLE RANGES, ETC. SHOP DRAWINGS SHALL INCLUDE ALL PIPE SIZES, PIPE SLOPES, CAPACITIES, ELEVATIONS, CLEANOUT LOCATIONS, VALVE LOCATIONS, DRAIN DOWN LOCATIONS, ACCESS PANEL LOCATIONS, FIXTURES, DRAINS, UNDERGROUND COMPONENTS, ETC. CONTRACTOR SHALL PROCEED WITH SITE WORK ONLY AFTER RECEIVING SHOP DRAWINGS MARKED REVIEWED.
- B. SHOULD CONDITIONS NECESSITATE ANY REARRANGEMENTS, CONTRACTOR SHALL SUBMIT TO THE ENGINEER SHOP DRAWINGS SHOWING SUCH CHANGES. CONTRACTOR SHALL PROCEED WITH SITE WORK ONLY AFTER RECEIVING SHOP DRAWINGS MARKED REVIEWED.
- C. CONTRACTOR SHALL SUBMIT TO THE ENGINEER MANUFACTURERS' SUBMITTALS FOR ALL EQUIPMENT AND ACCESSORIES. CONTRACTOR SHALL PROCEED WITH PROCUREMENT ONLY AFTER RECEIVING SUBMITTALS MARKED REVIEWED.
- D. CONTRACTOR SHALL SUBMIT TO THE ENGINEER ONE (1) FULL-SIZE PAPER COPY AND AN ELECTRONIC FILE OF THE AS-BUILT DRAWINGS. RECORD LOCATIONS OF CONTROL COMPONENTS, INCLUDING CONTROL UNITS, GAUGES, AND SENSORS. REVISE SHOP DRAWINGS TO REFLECT ACTUAL INSTALLATION AND OPERATING SEQUENCES.
- E. CONTRACTOR SHALL SUBMIT TO THE ENGINEER ONE (1) PAPER COPY AND AN ELECTRONIC FILE OF ALL EQUIPMENT INFORMATION. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS. PARTS LISTS, SUBMITTALS, AND DESCRIPTIVE LITERATURE.

IV. MATERIALS AND EQUIPMENT

- A. ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE NEW, UNLESS OTHERWISE STATED IN THESE CONTRACT DOCUMENTS, AND FREE FROM DEFECTS.
- B. ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS.
- C. CONTRACTOR IS REQUIRED TO REVIEW ALL DRAWINGS. MATERIALS AND EQUIPMENT SHOWN ON THE SCHEDULES AND DETAILS SHALL BE INCLUDED IN BASE BID. NO MATERIAL OR EQUIPMENT SUBSTITUTIONS WILL BE CONSIDERED AFTER THE AWARD OF CONTRACT. IF CONTRACTOR DESIRES TO SUBSTITUTE MATERIAL OR EQUIPMENT, CONTRACTOR MUST SUBMIT AS ALTERNATE WITH HIS BASE BID A LIST OF SUCH ITEMS INDICATING ITEM, MANUFACTURER, MODEL NUMBER, AND AMOUNT TO BE ADDED TO OR DEDUCTED FROM THE BASE BID. EACH SUCH MATERIAL OR EQUIPMENT SUBSTITUTION ITEM SHALL BE LISTED SEPARATELY.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE PURCHASE, DELIVERY, RECEIVING. UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING OF ALL NEW EQUIPMENT FURNISHED BY THE CONTRACTOR OR PROVIDED TO THE CONTRACTOR BY THE OWNER, AND SHALL SECURE SUCH EQUIPMENT FROM DAMAGE UNTIL TIME OF FINAL ACCEPTANCE BY THE OWNER.
- E. CONTRACTOR SHALL FURNISH AND INSTALL ALL STRUCTURE, SLEEVES, SHIMS, ETC. REQUIRED TO LEVEL AND SUPPORT EQUIPMENT AND MATERIALS. INSTALL NONMETALLIC NON-SHRINK GROUT FOR LEVELING EQUIPMENT BASES.
- F. CONTRACTOR SHALL VERIFY ALL PHYSICAL, ELECTRICAL, INGRESS, ETC. REQUIREMENTS FOR ALL EQUIPMENT PRIOR TO ORDERING.
- G. CONTRACTOR SHALL SUBMIT TO OWNER THE PROPOSED LABELS/IDENTIFICATION PRODUCT FOR EACH PIECE OF EQUIPMENT PRIOR TO ORDERING, EQUIPMENT LABELS/IDENTIFICATION SHALL CONFORM TO THE FOLLOWING:
- MATERIAL AND THICKNESS: MULTILAYER, MULTICOLOR, PLASTIC LABELS FOR MECHANICAL. ENGRAVING, 1/8 INCH THICK, AND HAVING PREDRILLED HOLES FOR ATTACHMENT HARDWARE.
- LETTER COLOR: WHITE.
- BACKGROUND COLOR: BLUE.
- MAXIMUM TEMPERATURE: ABLE TO WITHSTAND TEMPERATURES UP TO 160 DEG F.
- 5. MINIMUM LABEL SIZE: LENGTH AND WIDTH VARY FOR REQUIRED LABEL CONTENT, BUT NOT LESS THAN 2-1/2 BY 3/4 INCH.
- MINIMUM LETTER SIZE: 1/4 INCH FOR NAME OF UNITS IF VIEWING DISTANCE IS LESS THAN 24 INCHES, 1/2 INCH FOR VIEWING DISTANCES UP TO 72 INCHES, AND PROPORTIONATELY LARGER LETTERING FOR GREATER VIEWING DISTANCES. INCLUDE SECONDARY LETTERING TWO-THIRDS TO THREE-FOURTHS THE SIZE OF PRINCIPAL LETTERING.
- FASTENERS: STAINLESS-STEEL RIVETS OR SELF-TAPPING SCREWS.
- 8. ADHESIVE: CONTACT-TYPE PERMANENT ADHESIVE, COMPATIBLE WITH LABEL AND WITH
- H. EQUIPMENT DATA, LABELS, AND OTHER IDENTIFICATION SHALL NOT BE OBSTRUCTED.
- CONTRACTOR SHALL PROVIDE FILTERS, STRAINER SCREENS, ETC. FOR ALL NEW EQUIPMENT DURING CONSTRUCTION. REPLACE FILTERS, STRAINERS SCREENS, ETC. WITH FINAL FILTERS, STRAINER SCREENS, ETC. AT COMPLETION OF PROJECT AND PRIOR TO TEST AND BALANCE.
- ALL EQUIPMENT INCLUDING BUT NOT LIMITED TO WATER HEATERS, PUMPS, PRESSURE REDUCING VALVES, ETC. LOCATED ABOVE FINISHED CEILINGS TO BE PROVIDED WITH A REMOVABLE DRAIN PAN. DRAIN PAN DISCHARGE SHALL BE THROUGH AN INDIRECT WASTE PIPE BY MEANS OF AN AIR GAP OR WITH UL508 OVERFLOW SWITCH AND ALARM WHEN MEANS OF WASTE PIPE IS NOT
- K. PROVIDE UNIONS OR FLANGES AT ALL PIPING CONNECTIONS TO EQUIPMENT, CONTROL VALVES, PRESSURE REDUCING VALVES, BACK FLOW PREVENTION, ETC. ARRANGE CONNECTIONS SO THAT EQUIPMENT SERVED MAY BE REMOVED WITHOUT DISTURBING PIPING OR VALVES.

V. OWNER TRAINING

- A. THE CONTRACTOR SHALL PROVIDE DEMONSTRATION AND TRAINING TO OWNER'S PERSONNEL FOR NEW SYSTEMS AND EQUIPMENT. THE COSTS ASSOCIATED WITH THIS SHALL BE INCLUDED AS PART OF THE BASE BID UNLESS OTHERWISE NOTED.
- B. ALL EQUIPMENT MANUALS, INSTALLATION OPERATION AND MAINTENANCE MANUALS, ETC. SHALL BE TURNED OVER TO THE OWNER PRIOR TO COMMENCING OWNER DEMONSTRATION AND TRAINING. REFER TO PROJECT CLOSEOUT DOCUMENT REQUIREMENTS FOR ADDITIONAL INFORMATION.
- C. CONTRACTOR SHALL PROVIDE A MINIMUM OF 4 HOURS OF TRAINING OVER 1 VISIT ON SITE FOR OWNER PERSONNEL.
- D. OWNER TRAINING SHALL BE CONDUCTED AFTER FUNCTIONAL TESTING IS COMPLETE AS APPROVED. BY THE ENGINEER AND (WHERE APPLICABLE) COMMISSIONING AUTHORITY.
- E. COORDINATE TRAINING WITH OWNER, ENGINEER & COMMISSIONING AUTHORITY.

VI. PIPING - POTABLE

- COMPLY WITH PROVISIONS OF COPPER DEVELOPMENT ASSOCIATION'S "COPPER TUBE HANDBOOK", ALL POTABLE WATER PIPING AND SYSTEM COMPONENTS SHALL COMPLY WITH NSF/ANSI 61 AND NSF/ANSI 372.
- SYSTEM COMPONENTS WHICH REQUIRE OBSERVATION, OPERATION, OR MAINTENANCE, SUCH AS VALVES, GAUGES, CONTROLS, STRAINERS, UNIONS, ETC., SHALL BE READILY ACCESSIBLE. THEY SHALL NOT BE CONCEALED IN CHASES OR ABOVE CEILINGS WITHOUT PROVISION FOR ACCESS, VALVES WHICH ARE NOT ACCESSIBLE FROM NORMAL WORKING LEVEL SHALL BE INSTALLED WITH CHAIN WHEELS OR EXTENSIONS.
- INSTALL PIPING TO PERMIT COMPLETE SYSTEM DRAINING.
- INSTALL INTERIOR AND EXTERIOR PIPING AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS. DIAGONAL RUNS ARE PROHIBITED, EXCEPT WHERE INDICATED OR APPROVED PRIOR TO INSTALLATION, RUN PIPING IN WALL CHASES, PIPE SHAFTS, HUNG CEILINGS, RECESSES, ETC. AS APPLICABLE. DO NOT RUN SERVICE PIPING IN FLOOR SLAB UNLESS SPECIFICALLY NOTED ON DRAWINGS. PIPING SHALL NOT BE COVERED OR CLOSED UNTIL TESTING IS COMPLETED.
- 5. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION PLUS 1-INCH CLEARANCE AROUND
- 6. MECHANICAL FITTINGS WILL NOT BE ALLOWED. MECHANICAL FITTINGS MAY BE BID AS AN ALTERNATE WHERE EXPOSED AND ACCESSIBLE IN MECHANICAL ROOMS.

B. UNDERGROUND PIPING

- 2 INCH NPS AND SMALLER: TYPE "K" PRE-INSULATED SOFT COPPER TUBING, NO JOINTS, ENCLOSED IN PVC SLEEVE WHICH ALLOWS FOR A MINIMUM OF 1" AIR GAP AROUND THE COPPER TUBE AND CONFORMING TO ASTM A 674.
- 2 INCH NPS AND SMALLER: COPPER PIPING, TYPE K; WROUGHT-COPPER, SOLDER-JOINT. PRESSURE FITTINGS; AND SOLDERED JOINTS.
- 3 INCH NPS (DN80) AND LARGER: CLASS 56 CEMENT LINED DUCTILE IRON, MECHANICAL JOINT, DUCTILE-IRON FITTINGS; AND RESTRAINED, GASKETED JOINTS.

C. ABOVE GROUND PIPING

1. ALL PIPE SIZES: ALL PIPING SHALL BE TYPE 'L' HARD COPPER PIPING WITH 95/5 SOLDER JOINT

D. INSULATION

- FURNISH AND INSTALL ALL NEW PIPING, VALVES, FITTINGS, ETC. AND EXISTING PIPING AS INDICATED ON THE DOCUMENTS WITH FIBERGLASS MOLDED PIPE INSULATION APPLIED WITH AN ALL-SERVICE VAPOR BARRIER JACKET, STAPLED, WITH THE SEAMS, JOINTS, AND STAPLES PAINTED WITH VAPOR-PROOF MASTIC. ALL INSULATION MATERIALS SHALL COMPLY WITH CODE REQUIRED FLAME SPREAD RATINGS.
- 2. ALL DAMAGED INSULATION (RESULTING FROM IMPLEMENTATION OF THIS PROJECT) ON EXISTING PIPING TO REMAIN SHALL BE REPLACED
- MINIMUM INSULATION THICKNESS SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE AND ALL APPLICABLE CODES:
- a. DOMESTIC COLD WATER PIPING: 1"
- b. DOMESTIC HOT WATER PIPING (1.25 NPS AND SMALLER): 1" c. DOMESTIC HOT WATER PIPING (1.5 NPS AND LARGER): 1-1/2"
- d. TEPID WATER PIPING: 1"
- VAPOR BARRIER JACKET SHALL HAVE FACTORY-APPLIED VAPOR RETARDER COMPOSED OF A WHITE KRAFT FACING REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM. LAP ADHESIVE SHALL BE COMPATIBLE WITH INSULATION.
- 5. FURNISH AND INSTALL PVC COVERS FOR ALL VALVES AND ALL PIPE FITTINGS.
- FURNISH AND INSTALL ALL EXTERIOR INSULATED PIPING WITH '3M VENTURECLAD PLUS 1579 SERIES' MULTI-LAYERED ALUMINUM LAMINATE, SELF ADHESIVE, JACKETING SYSTEM. PROVIDE WITH EMBOSSED FINISH AND COLOR SELECTED BY OWNER.
- 7. ALL INSULATION SHALL BE APPLIED AFTER SUCCESSFUL PRESSURE TESTING OF PIPE.

E. VALVES

- VALVES SHALL BE INSTALLED AS A MEANS OF ISOLATION FOR ALL EQUIPMENT, INDIVIDUAL FIXTURES, GROUPING OF FIXTURES, SEPARATE ROOMS, GROUPING OF ROOMS, PORTIONS OF THE SYSTEM AND RISERS. EACH INDIVIDUAL BATHROOM AND KITCHEN SHALL HAVE VALVES AS A MEANS OF ISOLATION. ALL REQUIRED VALVES ARE NOT SHOWN ON FLOOR PLANS OR RISER DIAGRAMS.
- 2. LOCATIONS WHERE NEW PIPING IS CONNECTED TO EXISTING SHALL BE PROVIDED WITH A NEW VALVE. PIPING THAT IS UNAFFECTED BY THIS PROJECT SHALL BE EXEMPT.
- MAKE PROVISIONS FOR DRAINING ALL LOW POINTS OF ALL PIPING SYSTEMS WHETHER INDICATED ON THE DRAWINGS OR NOT, USING A BALL VALVE AND THREADED HOSE CONNECTION WITH CAP. DRAINS SHALL NOT BE LESS THAN 3/4".
- INSTALL ALL VALVES WITH STEMS IN EITHER AN UPRIGHT (PREFERRED) OR HORIZONTAL POSITION. CONTROL VALVES SHALL BE INSTALLED WITH ACTUATOR UPWARD UNLESS NOTED OTHERWISE, OPEN VALVE HANDLE POSITION SHALL BE IN THE DIRECTION OF FLOW.
- 5. PROVIDE PRESSURE REDUCING VALVES TO NOT EXCEED THE MANUFACTURER RECOMMENDED PRESSURE RATING OF EQUIPMENT OR FIXTURE.
- ISOLATION VALVES SHALL BE MSS SP-61, RATED FOR ZERO LEAKAGE.

BALL VALVES (4 NPS AND SMALLER)

- b. 2 PIECE LEAD-FREE BRASS BODY 600# WOG RATED, FULL PORT

WITHOUT BREAKING VAPOR SEALS OR DISTURBING INSULATION

- LEAD-FREE FORGED BRASS BALL d. MINIMUM 2-1/4" VALVE EXTENSION OR GREATER TO ALLOW OPERATION OF VALVES
- e. PTFE SEAT AND PACKING LEVER HANDLE THREADED ENDS
- ACCEPTABLE MANUFACTURERS: APOLLO, LEGEND, MILWAUKEE, NIBCO
- 8. BUTTERFLY VALVES (5 NPS AND LARGER)
- b. LUG TYPE WITH CAST IRON OR DUCTILE IRON BODY
- STAINLESS STEEL SHAFT d. PTFE SEAT/SEALS
- TEN POSITION LEVER HANDLE FLANGED ENDS
- ACCEPTABLE MANUFACTURERS: APOLLO, NIBCO, MILWAUKEE

BUTTERFLY VALVES, HIGH PERFORMANCE (5 NPS AND LARGER)

- b. LUG TYPE WITH LEAD FREE CARBON STEEL OR STAINLESS STEEL BODY
- STAINLESS STEEL SHAFT
- RTFE SEAT/SEALS e. TEN POSITION LEVER HANDLE
- FLANGED ENDS
- g. ACCEPTABLE MANUFACTURERS: MILWAUKEE OR EQUAL

SWING CHECK VALVE (2 NPS AND SMALLER)

- a. MSS SP-80
 - BRONZE BODY, BRONZE TRIM
 - COMPOSITION SWING DISC THREADED ENDS
- e. ACCEPTABLE MANUFACTURERS: APOLLO, NIBCO, MILWAUKEE

11. SPRING LOADED CHECK VALVE (2.5 NPS AND LARGER)

- a. MSS SP-125
- DUCTILE IRON BODY, BRONZE OR STAINLESS STEEL TRIM
- SPRING LOADED WAFER AND EPDM SEAT
- FLANGED ENDS e. ACCEPTABLE MANUFACTURERS:
- APOLLO, NIBCO, MILWAUKEE
- 12. BALANCING VALVES (3 NPS AND SMALLER)
- GLASS AND CARBON FILLED TFE SEAT RINGS
- BRASS WITH EPT CHECK VALVES FOR READOUT VALVES EPDM STEM "O" RING

BRASS BODY ASTM B584-844, BRASS BALL ASTM B16 C36000

- SHALL BE DESIGNED TO PRESET BALANCE POINTS FOR PROPORTIONAL SYSTEM BALANCE PRIOR TO SYSTEM START UP., VALVES TO HAVE MEMORY STOP FEATURE TO ALLOW VALVE TO BE CLOSED FOR SERVICE AND THEN RE-OPENED TO SET POINT WITHOUT DISTURBING THE BALANCE POSITION.
- f. THREADED CONNECTION
- MAXIMUM WORKING PRESSURE OF 300 PSIG
- h. ACCEPTABLE MANUFACTURERS: BELL AND GOSSETT OR EQUAL

F. ACCESSORIES

- STRAINERS (UP TO AND INCLUDING 3")
- a. THREADED BRASS BODY
- ACCEPTABLE MANUFACTURERS: KECKLEY, WATTS, APOLLO, NIBCO

STRAINERS (4" AND UP)

THERMOMETERS

- b. Y PATTERN WITH 20 MESH STAINLESS STEEL PERFORATED SCREEN ACCEPTABLE MANUFACTURERS:

b. Y PATTERN WITH 20 MESH STAINLESS STEEL PERFORATED SCREEN

- KECKLEY, WATTS, APOLLO, NIBCO
- SELECT INSTRUMENT RANGE SO THE ORDINARY OPERATING CONDITION IS IN THE MIDDLE AREA OF THE INSTRUMENT SCALE STRAIGHT STEM TYPE IN SEPARABLE WELLS
- c. SWIVEL MOUNTING SET WITH POSITIVE LOCKING DEVICE, TO BE EASILY READ FROM THE
- d. SIZE: 9" SCALE
- e. ACCEPTABLE MANUFACTURERS: WATTS, WEISS
- PRESSURE GAUGES
- a. SELECT INSTRUMENT RANGE SO THE ORDINARY OPERATING CONDITION IS IN THE MIDDLE AREA OF THE INSTRUMENT SCALE
- b. 4" MINIMUM DIAMETER, LIQUID FILLED TYPE, DRAWN STEEL, DIAL TYPE, PSI SCALE MID SCALE ACCURACY: ONE PERCENT
- d. BLACK SCALE ON WHITE BACKGROUND e. ACCEPTABLE MANUFACTURERS:

WATTS, WEISS

- 5. PRESSURE GAUGE TAPPINGS GAGE COCK: TEE OR LEVER HANDLE, BRASS.
- BALL VALVE: BRASS, 1/4" NPT.
- PULSATION DAMPER: PRESSURE SNUBBER, BRASS WITH 1/4" CONNECTIONS d. SYPHON: STEEL, SCHEDULE 40, 1/4" ANGLE OR STRAIGHT PATTERN.
- e. ACCEPTABLE MANUFACTURERS: WATTS, WEISS

AIR VENTS

- MANUAL TYPE: 6" OR LESS SHORT VERTICAL SECTIONS OF PIPE WITH ISOLATING BALL
- VALVE TO/FROM AIR CHAMBER, WITH 1/8" BRASS NEEDLE VALVE AT TOP OF CHAMBER FLOAT TYPE: CAST IRON BODY, CAST IRON COVER, STAINLESS STEEL SEAT AND FLOAT: SUITABLE FOR SYSTEM OPERATING TEMPERATURE AND PRESSURE; WITH ISOLATING BALL
- c. ACCEPTABLE MANUFACTURERS:

METRAFLEX OR EQUAL

- REDUCERS IF A REDUCTION IS REQUIRED AT EQUIPMENT OR PIPING ACCESSORY, THE REDUCER SHALL
 - BE INSTALLED ABUTTING THE INLET AND/OR OUTLET OF THE DEVICE. USE ECCENTRIC REDUCING FITTINGS OR ECCENTRIC REDUCING COUPLINGS WHERE
- REQUIRED TO PREVENT POCKETING OF AIR AND LIQUID. WHERE ECCENTRIC REDUCERS ARE USED, THE STRAIGHT SIDE SHOULD BE INSTALLED ON TOP FOR PUMP SUCTION AND ON THE BOTTOM FOR ALL OTHER LINES .

AIR CHAMBERS

- PROVIDE MINIMUM 12" LONG AIR CHAMBERS FOR HOT AND COLD WATER CONNECTIONS TO ALL SUPPLY FIXTURES.
- PROVIDE MINIMUM 24" LONG AIR CHAMBERS AT THE TOP OF ALL HOT AND COLD WATER RISERS.

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WATER HAMMER ARRESTORS

- MAINTENANCE FREE PISTON STYLE
- NPT SOLID HEX BRASS ADAPTOR CONNECTION.
- PDI LISTED PDI WH201.
- d. ASSE 1010 APPROVED.

LARGER PIPE CONNECTION:

- e. FACTORY PRE-CHARGED WITH AIR AND PERMANENTLY SEALED. COPPER BODY, POLYPROPYLENE PISTON, EPDM O-RING. g. PROVIDE ACCESS FOR FUTURE REPLACEMENT.
- INSTALL AIR VENTS AT HIGH POINTS IN ALL PIPING AND AS REQUIRED FOR SYSTEM VENTING.
- 11. INSTALL DRAIN VALVES AT LOW POINTS IN PIPING AND AS REQUIRED FOR SYSTEM DRAINAGE. DRAINS SHALL NOT BE LESS THAN 3/4".
- 12. RELIEF VALVES SHALL BE OF ASME CODE CONSTRUCTION AND MEET OR EXCEED LOCAL CODES. AND ORDINANCES.
- 13. INSTALL UNIONS IN PIPING ADJACENT TO EACH PIECE OF EQUIPMENT HAVING A 4-INCH OR SMALLER PIPE CONNECTION.
- 14. INSTALL FLANGES IN PIPING ADJACENT TO EACH PIECE OF EQUIPMENT HAVING A 5-INCH OR
- 15. INSTALL DI-ELECTRIC FITTINGS TO CONNECT PIPING MATERIALS OF DISSIMILAR METALS.

G. PIPE LABELING

- 1. STENCIL TYPE MARKERS WILL NOT BE PERMITTED. ONLY FACTORY MANUFACTURED MARKERS AS FOLLOWS WILL BE ACCEPTABLE:
- FOR INDOOR USE, UTILIZE ADHESIVE PIPE MARKERS LARGEST SIZE POSSIBLE GIVEN THE PIPE OR INSULATION OUTER DIAMETER, WITH BOTH ENDS SECURED WITH ARROW TAPE OF MATCHING SIZE AND COLOR SCHEME.
- FOR OUTDOOR USE, UTILIZE "STRAP AROUND" TYPE SECURED WITH HEAVY DUTY ZIP TIES.
- IDENTIFICATION MARKERS SHALL BE PLACED ON ALL EXPOSED AND CONCEALED PIPES AT 20'-0" INTERVALS, AT ALL VALVES AND BRANCHES, AND ON BOTH SIDES OF WALLS WHERE PIPES PASS THROUGH, ARROWS OF SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW.
- 3. COORDINATE COLOR SCHEME WITH EXISTING PIPING AND SUBMIT TO ENGINEER PRIOR TO ORDERING.

H. VALVE IDENTIFICATION

- FURNISH AND INSTALL TAGS FOR ALL NEW VALVES.
- 2. VALVE TAGS SHALL HAVE UNIQUE NUMBERS AND SHALL BE COORDINATED WITH THE ENGINEER PRIOR TO ORDERING.
- VALVE TAGS SHALL BE BRASS MATERIAL AND SHALL BE FASTENED WITH A STURDY CHAIN.
- VALVE TAG NUMBERS SHALL BE INDICATED ON THE AS-BUILT DRAWINGS. AS-BUILT DRAWINGS SHALL INCLUDE VALVE SCHEDULE TO BE DISPLAYED WITHIN THE BUILDING.

VII. PIPING - WASTE, VENT, AND STORM

A. GENERAL

- COMPLY WITH PROVISIONS OF CAST IRON SOIL PIPE INSTITUTE (CISPI) HANDBOOK, COPPER DEVELOPMENT ASSOCIATION'S "COPPER TUBE HANDBOOK", AND AMERICAN SOCIETY OF TESTING AND MATERIALS (ASTM).
- 2. SYSTEM COMPONENTS WHICH REQUIRE OBSERVATION, OPERATION, OR MAINTENANCE, SUCH AS VALVES, CLEANOUTS, DRAINS, EQUIPMENT, CONTROLS, UNIONS, ETC., SHALL BE READILY ACCESSIBLE. THEY SHALL NOT BE CONCEALED IN CHASES OR ABOVE CEILINGS WITHOUT PROVISION FOR ACCESS.
- 3.º INSTALL PIPING WITH SLOPE TO ALLOW FOR PROPER FUNCTIONALITY. PIPING SHALL BE
- INSTALLED WITH THE MINIMUM FOLLOWING SLOPES OR AS DICTATED ON THE DRAWINGS:
- SANITARY, WASTE, AND VENT PIPING 3" AND SMALLER: 1/4" PER FOOT
- 4" AND LARGER: 1/8" PER FOOT
- 4. INSTALL INTERIOR AND EXTERIOR PIPING AT RIGHT ANGLES OR PARALLEL TO BUILDING WALLS DIAGONAL RUNS ARE PROHIBITED, EXCEPT WHERE INDICATED OR APPROVED PRIOR TO INSTALLATION. RUN PIPING IN WALL CHASES, PIPE SHAFTS, HUNG CEILINGS, RECESSES, ETC. AS APPLICABLE, DO NOT RUN SERVICE PIPING IN FLOOR SLAB UNLESS SPECIFICALLY NOTED ON DRAWINGS. PIPING SHALL NOT BE COVERED OR CLOSED UNTIL TESTING IS COMPLETED.
- 5. PROVIDE WASTE AND STORM CLEANOUTS AT THE BASE OF RISERS, ENDS OF HORIZONTAL MAINS, CHANGES IN DIRECTION, CODE SPECIFIED INTERVALS OR AS SPECIFIED IN DOCUMENTS. INTENT IS TO ALLOW ALL WASTE AND STORM PIPING TO BE RODDED AFTER INSTALLATION.
- 6. FOR VENTS PENETRATING ROOFS, PROVIDE 24 INCH SQUARE FLASHING AND TURN VENT FLASHING DOWN INTO VENT PIPE.
- 7. INSTALL PIPING TO ALLOW APPLICATION OF INSULATION PLUS 1-INCH CLEARANCE AROUND
- 8. ALL CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED IN USA BY A MEMBER OF CISPI.

B. UNDERGROUND PIPING

- ALL PIPE SIZES: HUB-AND-SPIGOT, CAST-IRON SOIL PIPE AND FITTINGS, SERVICE CLASS ASTM A 74 WITH COMPRESSION JOINTS AND ASTM C 564 RUBBER GASKETS.
- FORCE MAINS:
- FOR 4 INCH AND SMALLER: ALL PIPING SHALL BE TYPE 'L' HARD COPPER PIPING WITH 95/5 SOLDER JOINT FITTINGS.
- b. FOR 5" AND LARGER: TYPE 'L' HARD COPPER PIPING WITH 95/5 SOLDER JOINT FITTINGS OR DUCTILE-IRON PIPE WITH PUSH-ON-JOINT DUCTILE-IRON FITTINGS; GASKETS; AND GASKETED JOINTS.

C. ABOVE GROUND PIPING

- 2-1/2" INCH AND SMALLER: ALL PIPING SHALL BE TYPE 'M' HARD COPPER PIPING WITH SOLDER JOINT DRAINAGE FITTINGS.
- 2. 3* AND LARGER: HUBLESS, CAST-IRON SOIL PIPE AND FITTINGS, SERVICE CLASS ASTM A 888 OR CISPI 301 WITH NO-HUB COUPLINGS ASTM C 1277 OR CISPI 310, STAINLESS-STEEL CORRUGATED SHIELD WITH STAINLESS-STEEL BANDS AND TIGHTENING DEVICES; AND ASTM C 564, RUBBER SLEEVE WITH INTEGRAL, CENTER PIPE STOP; INSTALL WITH THRUST RESTRAINTS FOLLOWING CISPI RECOMMENDATIONS.

FORCE MAINS:

- FOR 4 INCH AND SMALLER: ALL PIPING SHALL BE TYPE 'L' HARD COPPER PIPING WITH 95/5
- FOR 5" AND LARGER: TYPE 'L' HARD COPPER PIPING WITH 95/5 SOLDER JOINT FITTINGS OR SCHEDULE 40 STEEL PIPING WITH THREADED JOINT FITTINGS

E. LABELING

- UN-INSULATED PIPING: CLEAN PIPE WHICH COULD IMPAIR BOND AS REQUIRED TO ADHERE STENCIL TYPE MARKERS SPRAY PAINTED WITH EXTERIOR GLOSS ACRYLIC ENAMEL. UTILIZE LARGEST SIZE POSSIBLE GIVEN THE PIPE OUTSIDE DIAMETER.
- 2. INSULATED STORM PIPING: STENCIL TYPE MARKERS WILL NOT BE PERMITTED. ONLY FACTORY MANUFACTURED MARKERS AS FOLLOWS WILL BE ACCEPTABLE:
- a. FOR INDOOR USE, UTILIZE ADHESIVE PIPE MARKERS LARGEST SIZE POSSIBLE GIVEN THE PIPE OR INSULATION OUTER DIAMETER, WITH BOTH ENDS SECURED WITH ARROW TAPE OF MATCHING SIZE AND COLOR SCHEME.
- IDENTIFICATION MARKERS SHALL BE PLACED ON ALL EXPOSED AND CONCEALED PIPES AT 20"-0" INTERVALS, AT ALL VALVES AND BRANCHES, AND ON BOTH SIDES OF WALLS WHERE PIPES PASS THROUGH, ARROWS OF SAME COLOR AS IDENTIFICATION MARKERS SHALL ALSO BE PLACED ON PIPES POINTING AWAY FROM MARKER INDICATING DIRECTION OF FLOW.
- 4. COORDINATE COLOR SCHEME WITH EXISTING PIPING AND SUBMIT TO ENGINEER PRIOR TO ORDERING.

F. VALVES

- VALVES SHALL BE INSTALLED AS A MEANS OF ISOLATION FOR EACH PIECE OF EQUIPMENT.
- INSTALL ALL VALVES WITH STEMS IN EITHER AN UPRIGHT (PREFERRED) OR HORIZONTAL
- POSITION, OPEN VALVE HANDLE POSITION SHALL BE IN THE DIRECTION OF FLOW.
- ISOLATION VALVES SHALL BE MSS SP-61, RATED FOR ZERO LEAKAGE.
- BALL VALVES (2-1/2" NPS AND SMALLER)
- a. MSS SP-110
- 2 PIECE BRASS BODY 600# WOG RATED, FULL PORT FORGED BRASS BALL
- d. PTFE SEAT AND PACKING
- e. LEVER HANDLE THREADED ENDS
- g. ACCEPTABLE MANUFACTURERS:
- APOLLO, LEGEND, MILWAUKEE, NIBCO

5. BUTTERFLY VALVES (3" NPS AND LARGER)

- b. LUG TYPE WITH CAST IRON OR DUCTILE IRON BODY
- STAINLESS STEEL SHAFT d. PTFE SEAT/SEALS
- e. TEN POSITION LEVER HANDLE f. FLANGED ENDS
- g. ACCEPTABLE MANUFACTURERS: APOLLO, NIBCO, MILWAUKEE

A. TESTING

VIII. TESTING AND CLEANING

- PRIOR TO ANY TESTING, ALL NEW WATER PIPING SYSTEMS SHALL BE FLUSHED USING WATER. LOW POINT DRAINS SHALL BE OPENED AND THE SYSTEMS PROVED TO BE DRAINABLE.
- 2. SUBJECT ALL CLOSED SYSTEMS OPERATING UNDER PRESSURE TO HYDROSTATIC PRESSURE TESTS THAT IS NOT LESS THAN 80 PSIG AND 1.5 TIMES THE SYSTEM'S WORKING PRESSURE FOR A MINIMUM OF 1 HOUR OR AS SPECIFICALLY INDICATED. TEST PRESSURE SHALL NOT EXCEED MAXIMUM PRESSURE RATING FOR ANY VESSEL, PUMP, VALVE, OR OTHER COMPONENT IN SYSTEM UNDER TEST.
- 3. ALL OPEN SYSTEMS, SEWERS, ETC., SHALL BE TESTED WITH WATER AT A MINIMUM OF TEN (10) FOOT OF HEAD; THE WATER LEVEL SHALL BE MAINTAINED IN THE PORTION BEING TESTED FOR AT LEAST 15 MINUTES.
- 4. ALL PIPING SYSTEMS SHALL BE TESTED. IF LEAKS OCCUR, THE PIPE OR FITTING SHALL BE REMOVED AND REPLACED AND THE SYSTEM RETESTED.
- 5. SUBMIT REPORTS WITHIN 48 HOURS OF TEST DATES TO ENGINEER INDICATING TEST DATE, STARTING AND ENDING TEST PRESSURES OR WATER LEVELS, AND DURATION, AS WELL AS CERTIFICATION OF SUCCESSFUL TEST.
- 6. PIPING SHALL NOT BE CONCEALED, BACKFILLED, INSULATED, OR SIMILAR UNTIL PRESSURE TESTING IS COMPLETE AND REVIEWED.

B. CLEANING

- AFTER SUCCESSFUL TESTING OF THE PIPING SYSTEMS, FLUSH AND DRAIN AT A MINIMUM OF 3 FEET PER SECOND NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED USING CLEAN POTABLE WATER UNTIL NO DIRTY WATER APPEARS AT
- 2. AFTER FLUSHING, USE PURGING AND DISINFECTING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION. IF PROCEDURES ARE NOT PRESCRIBED BY THE AUTHORITY, USE PROCEDURES IN ANSI/AWWA STANDARD C651 AND/OR ANSI/AWWA STANDARD
- 3. IF WATER IS NOT CHLORINATED, DISINFECTION OF PIPING SHALL BE PER THE AUTHORITY HAVING JURISDICTION.

IX. SUPPORTS, EXPANSION AND SLEEVES

- 1. PROVIDE THE NECESSARY HANGERS AND ACCESSORIES FOR THE PROPER SUPPORT OF PIPING, EQUIPMENT, ETC.
- 2. ALL NEW HORIZONTAL PIPING SHALL BE SUPPORTED BY STEEL CLEVIS OR TRAPEZE HANGERS OR BRACKETS AT SUFFICIENT INTERVALS TO MAINTAIN A STRAIGHT LINE, BUT NOT TO EXCEED 10 FEET SPACING ON CENTERS OF HANGERS IN ANY CASE, WITH A SEPARATE HANGER FOR EACH BRANCH, HANGERS SHALL BE LOCATED TO AVOID UNDUE STRESS ON JOINTS, SUPPORT ALL HUB AND NO HUB PIPING WITHIN 18" OF BOTH SIDES OF EACH JOINT.
- 3. SPRING TYPE HANGERS SHALL BE INSTALLED ON THE FIRST 20 FEET OF HORIZONTAL PIPING ON BOTH SIDES OF ROTATING EQUIPMENT.
- 4. WHERE INSULATED PIPE IS SUPPORTED, PROVIDE SADDLES, BLOCKS OR OTHER METHOD APPROVED BY ENGINEER TO PROTECT INSULATION FROM BEING CRUSHED.
- 5. PIPE SUPPORT SHALL NOT BE FROM DUCTWORK, CONDUIT, OR OTHER PIPING BUT FROM THE PERMANENT BUILDING STRUCTURE.
- 6. HANGER RODS SHALL BE FULL-DIAMETER STEEL WITH THREADED ENDS FOR FIELD CUTTING AND THREAD EXTENDING AS REQUIRED.
- 7. HANGER RODS SHALL NOT BE BENT OR ALTERED IN ANY MATTER AND SHALL BE INSTALLED PLUMB AND TRUE. THE ROD SUPPORTING THE HANGER SHALL BE NO LONGER THAN 1/2" BELOW
- THE LOWER NUT. PROVIDE ROLLER SUPPORTS TO ALLOW FOR PIPE MOVEMENT WHEREVER THE LENGTH OF PIPE AND/OR THE EXPANSION OF THE PIPE REQUIRE. FIXED PIPE SUPPORTS THAT DO NOT ALLOW

FOR THE NATURAL MOVEMENT OF PIPING DUE TO EXPANSION ARE NOT ALLOWED UNLESS

VERTICAL PIPE RISERS SHALL BE ANCHORED AND EXPANSION COMPENSATION MEANS SHALL BE PROVIDED PER THE DRAWINGS. ALL VERTICAL PIPE RISERS SHALL BE SUPPORTED AT EACH FLOOR BY 1-1/2" X 1/4" BAR CLAMPS ATTACHED TO PIPES AND RESTING ON THE FLOOR CONSTRUCTION.

B. PIPE EXPANSION

OTHERWISE NOTED.

- CONTRACTOR TO ACCOUNT FOR THERMAL PIPE EXPANSION AND CONTRACTION TO PREVENT ADVERSE EFFECTS TO PIPING SYSTEM AND BUILDING. THIS INCLUDES ALL CLEARANCES. ANCHORING, GUIDES, PIPE MOVEMENT, ETC.
- 2. EFFORT HAS BEEN MADE WITHIN THE CONTRACT DOCUMENTS TO ACCOUNT FOR THERMAL EXPANSION AND CONTRACTION BASED ON THE ENGINEER'S LAYOUT OF THE PIPING SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR CONFIRMING THE FINAL LOCATIONS, QUANTITIES & DESIGN OF ALL ANCHORS, GUIDES, SUPPORTS, EXPANSION DEVICES, ETC.
- DESIGN & PRODUCT SUBMITTALS THE CONTRACTOR SHALL PROVIDE SUBMITTALS TO THE ENGINEER FOR ALL ANCHORS, GUIDES, SUPPORTS, EXPANSION DEVICES, ETC. THESE SUBMITTALS SHALL OUTLINE QUANTITIES, LOCATIONS, ETC THAT REFLECT FIELD CONDITIONS AND CONTRACTOR'S FINAL LAYOUT OF PIPING EQUIPMENT.

C. PIPE SLEEVES

- PROVIDE ALL PIPE OPENINGS THROUGH WALLS, PARTITIONS, SLABS, ETC. WITH SLEEVES HAVING AN INTERNAL DIAMETER AT LEAST 1" LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE AND INSULATION. SET SLEEVES IN PLACE BEFORE POURING CONCRETE.
- PROVIDE ESCUTCHEONS FITTING OVER THE SLEEVES ON BOTH SIDES OF THE PENETRATION FOR ALL PIPES EXPOSED TO VIEW PASSING THROUGH WALLS, FLOORS, CEILINGS, PARTITIONS,



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I. GENERAL NOTES

- ALL WORK PERFORMED UNDER THIS CONTRACT SHALL BE IN CONFORMANCE WITH ALL GOVERNING NATIONAL, STATE, AND LOCAL CODES HAVING JURISDICTION.
- CONTRACTOR SHALL REVIEW THE ENTIRE SET OF CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, ALL ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS, AS WELL AS ALL SPECIFICATIONS AND INSTRUCTIONS TO BIDDERS. THIS CONTRACTOR SHALL VISIT THE SITE AND MAKE A DETAILED INSPECTION OF THE SPECIFIED WORK TO DEVELOP KNOWLEDGE OF ALL CONDITIONS PERTINENT TO THE COMPLETION OF HIS WORK. THIS CONTRACTOR SHALL FULLY COORDINATE HIS WORK WITH THE WORK PERFORMED BY OTHER TRADES AND/OR CONTRACTORS, AND SHALL MAKE SUCH FIELD ADJUSTMENTS AS ARE REQUIRED TO ACCOMMODATE FIELD CONDITIONS.
- IT IS THE INTENT OF THESE DOCUMENTS THAT THE CONTRACTOR PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, AND TOOLS FOR THE COMPLETE INSTALLATION OF ALL WORK SHOWN ON THE PLANS AND/OR DESCRIBED HEREIN, INCLUDING ALL DEVICES, CONTROLS, AND APPURTENANCES REQUIRED TO SET THE NEW SYSTEMS INTO OPERATION, UNLESS OTHERWISE NOTED.
- CONTRACTOR SHALL VERIFY ALL MOUNTING, ARRANGEMENTS, HEIGHTS, AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, WEIGHT, OR LOCATION SHALL NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY TO VERIFY SPECIFIC REQUIREMENTS AND BASE HIS WORK ON THEM. THE SAME CARE SHALL BE TAKEN WITH RESPECT TO INFORMATION FURNISHED BY THIS CONTRACTOR TO HIS SUBCONTRACTORS OR TO OTHER CONTRACTORS EMPLOYED BY THE OWNER ON THIS PROJECT.
- CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKMEN IN ALL PHASES OF WORK AND SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY LAWS, INCLUDING THE REQUIREMENTS OF OSHA. HE SHALL ALSO PROVIDE ALL NECESSARY SIGNS, LIGHTS, AND BARRICADES REQUIRED FOR THE SAFETY OF ALL OTHER PERSONS WHO MIGHT COME IN CONTACT WITH THE CONSTRUCTION BEING PERFORMED UNDER THIS CONTRACT.
- ALL PUBLIC AND PRIVATE PROPERTY DAMAGED AS A RESULT OF WORK PERFORMED UNDER THIS CONTRACT SHALL BE REPAIRED AND/OR REPLACED TO MATCH EXISTING CONSTRUCTION BY THIS CONTRACTOR AND TO THE SATISFACTION OF THE OWNER AND AUTHORITIES HAVING JURISDICTION.
- CONTRACTOR SHALL MAKE ALL ARRANGEMENTS WITH THE BUILDING OWNER'S REPRESENTATIVE REGARDING WORKSITE ACCESS, BUILDING RULES, AND REGULATIONS, INCLUDING WORKING HOURS, REFUSE DISPOSAL, DUMPSTER LOCATION, SECURITY, PARKING, AND ANY OTHER ITEMS DEEMED TO BE OF MUTUAL INTEREST.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO STORE AND PROTECT FROM DAMAGE ALL EQUIPMENT AND MATERIALS IN A MANNER THAT WILL MAINTAIN AN ORDERLY, CLEAN APPEARANCE. DAMAGED EQUIPMENT AND MATERIAL IS SUBJECT TO REJECTION BY THE OWNER'S REPRESENTATIVE.
- PROVIDE ALL HOLES, SLEEVES, CUTTING, PATCHING, AND SEALING FOR INSTALLATION OF THIS WORK. SEALING SHALL CONFORM TO THE FIRE RATING OF ALL BUILDING ASSEMBLIES, ALL EXTERIOR PENETRATIONS SHALL BE MADE WEATHER TIGHT.
- CONTRACTOR SHALL BE PROPERLY LICENSED, BONDED, AND INSURED AND CAPABLE OF PERFORMING QUALITY WORKMANSHIP ON THIS PROJECT.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, AND SAFETY
- MAINTAIN ALL MANUFACTURER RECOMMENDED AND CODE REQUIRED CLEARANCES.
- CONTRACTOR SHALL PROVIDE TRAINING TO THE OPERATING STAFF FOR NEW SYSTEMS AND EQUIPMENT.

II. SUBMITTALS

- CONTRACTOR SHALL SUBMIT TO THE ENGINEER MANUFACTURERS' SUBMITTALS FOR ALL EQUIPMENT AND ACCESSORIES. CONTRACTOR SHALL PROCEED WITH PROCUREMENT ONLY AFTER RECEIVING SUBMITTALS MARKED REVIEWED.
- CONTRACTOR SHALL SUBMIT TO THE ENGINEER AN ELECTRONIC FILE OF ALL EQUIPMENT INFORMATION. INCLUDE OPERATIONAL AND MAINTENANCE INSTRUCTIONS PARTS LISTS, SUBMITTALS, AND DESCRIPTIVE LITERATURE

III. MATERIALS AND EQUIPMENT

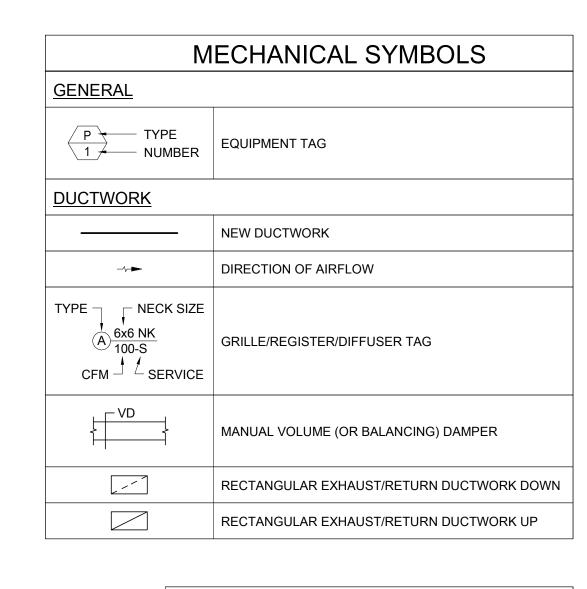
- ALL MATERIALS AND EQUIPMENT INSTALLED UNDER THIS CONTRACT SHALL BE NEW.
- ALL MATERIALS AND EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS' RECOMMENDATIONS.
- CONTRACTOR IS REQUIRED TO REVIEW ALL DRAWINGS. MATERIALS AND EQUIPMENT SHOWN ON THE SCHEDULES AND DETAILS SHALL BE INCLUDED IN BASE BID.
- CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING THE PURCHASE, DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING OF ALL NEW EQUIPMENT FURNISHED BY THE CONTRACTOR AND SHALL SECURE SUCH EQUIPMENT FROM DAMAGE UNTIL TIME OF FINAL ACCEPTANCE BY THE OWNER.

IV. DUCTWORK

- A. GENERAL
- 1. IN GENERAL, THE COMPLETE SHEET METAL DUCTWORK SYSTEMS FURNISHED UNDER THIS CONTRACT, SHALL BE CONSTRUCTED AND INSTALLED IN STRICT CONFORMANCE WITH THE STANDARDS AS SET FORTH IN THE "DUCT MANUAL AND SHEET METAL CONSTRUCTION FOR VENTILATING AND AIR-CONDITIONING SYSTEMS" AS PUBLISHED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. (SMACNA).
- ELBOWS SHALL BE CONSTRUCTED WITH THE INSIDE RADIUS NOT LESS THEN 1/2 THE DUCT WIDTH IN THE SAME PLANE. WHERE STANDARD RADIUS ELBOWS CANNOT BE INSTALLED DUE TO SPACE CONSTRAINTS, SQUARE ELBOWS WITH DOUBLE THICKNESS TURNING VANES MAY BE INSTALLED WHERE APPROVED BY ENGINEER. CROSS-BRAKE OR BEAD SURFACES WIDER THAN 18" FOR RIGIDITY.
- TRANSFORM DUCT SIZES GRADUALLY, NOT EXCEEDING 15 DEGREES DIVERGENCE AND 30 DEGREES CONVERGENCE.
- ALL DUCT SIZES SHOWN ON PLANS SHALL BE INSIDE CLEAR DIMENSIONS.
- 5. UPON COMPLETION OF THE INSTALLATION OF DUCTWORK CLEAN ENTIRE SYSTEM OF DEBRIS
- PROTECT DUCTWORK FROM THE ELEMENTS AND FOREIGN MATERIAL AND COMPLY WITH INTERMEDIATE DUCT CLEANLINESS LEVEL IN ACCORDANCE WITH SMACNA'S "DUCT CLEANLINESS FOR NEW CONSTRUCTION GUIDELINES"
- THIS CONTRACTOR SHALL INSTALL FLEXIBLE DUCT CONNECTIONS BETWEEN EACH PIECE OF EQUIPMENT HAVING A FAN, AND ITS SUPPLY, RETURN, AND EXHAUST DUCTWORK. CONNECTIONS WHEN COMPLETED SHALL BE AIRTIGHT, AND SHALL BE INSTALLED IN AN APPROVED MANNER. FLEXIBLE CONNECTIONS SHALL BE NEOPRENE MATERIAL, TO INSURE AGAINST TRANSMISSION OF VIBRATION FROM THE FAN TO THE DUCTWORK.
- DUCTWORK MATERIAL
- NON-COMBUSTIBLE OR CONFORMING TO REQUIREMENTS FOR CLASS 1 AIR DUCT MATERIALS
- OR UL 181.
- 2. STEEL DUCTS SHALL MEET ASTM A653 / A653M, GALVANIZED COATING DESIGNATION G90, AND MILL PHOSPHATIZED FINISHES FOR SURFACES EXPOSED TO VIEW.
- REINFORCEMENT PLATES AND SHAPES: ASTM A36 / A36M, STEEL PLATES, SHAPES, AND BARS; BLACK AND GALVANIZED.
- TIE RODS: GALVANIZED STEEL, 1/4" MINIMUM DIAMETER FOR LENGTHS 36" OR LESS; 3/8" MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36".
- SHEET METAL MATERIALS AND SUPPORTS SHALL COMPLY WITH SMACNA "HVAC DUCT CONSTRUCTION STANDARDS" FOR APPLICABLE MATERIALS, MATERIAL THICKNESSES, AND DUCT CONSTRUCTION METHODS BASED ON APPLICABLE PRESSURE CLASSES. SHEET METAL MATERIALS SHALL BE FREE OF PITTING, SEAM MARKS, ROLLER MARKS, STAINS, DISCOLORATIONS, AND OTHER IMPERFECTIONS.
- DUCTWORK SUPPORTS AND CONNECTIONS
- COMPLY WITH SMACNA'S "HVAC DUCT CONSTRUCTION STANDARDS" FOR HANGERS AND SUPPORTS AND HANGER SPACING.
- INSTALL HANGERS AND SUPPORTS WITHIN 24" OF EACH ELBOW AND WITHIN 48" OF EACH BRANCH INTERSECTION.
- HANGERS EXPOSED TO VIEW SHALL BE THREADED ROD AND ANGLE OR CHANNEL SUPPORTS.
- INSTALL UPPER ATTACHMENTS TO STRUCTURES. SELECT AND SIZE WITH PULL OUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
- HANGER RODS FOR NON-CORROSIVE ENVIRONMENTS SHALL BE CADMIUM PLATED STEEL RODS AND NUTS.
- STEEL CABLES FOR GALVANIZED STEEL DUCTS SHALL BE GALVANIZED STEEL COMPLYING WITH ASTM A603. STEEL CABLE END CONNECTIONS SHALL BE CADMIUM PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL, AND BOLTS DESIGNED FOR DUCT HANGER SERVICE; WITH AN
- AUTOMATIC LOCKING AND CLAMPING DEVICE.
- D. DUCTWORK ACCESSORIES
- EACH SHEET METAL DUCT TEE AND BRANCH TAKE OFF FITTING SHALL BE EQUIPPED WITH A LOCKING TYPE MANUAL VOLUME DAMPER SUITABLE FOR PROPER BALANCING. EACH SUPPLY, RETURN AND EXHAUST AIR REGISTER, DIFFUSER, TROFFER, GRILLE, ETC. SHALL BE DIRECTLY SERVED BY DUCTWORK WHICH INCLUDES A LOCKING TYPE MANUAL VOLUME DAMPER SUITABLE FOR PROPER BALANCING. MANUAL VOLUME DAMPER SHALL BE "RUSKIN" OR APPROVED EQUIVALENT WITH MINIMUM 20 GAUGE GALVANIZED STEEL BLADES AND FRAME AND SYNTHETIC BEARINGS.
- PROVIDE CANVAS TYPE FLEXIBLE AIR DUCTS FOR CONNECTIONS BETWEEN BRANCH LOW PRESSURE DUCTWORK AND DIFFUSERS, GRILLES, AND REGISTERS, INSTALL WITH A GALVANIZED STEEL STRAP, CADMIUM PLATED, AND FASTENED WITH A SLOTTED BOLT.

V. SYSTEM START-UP, TESTING, ADJUSTING AND BALANCING (TAB)

- A. UPON SUBSTANTIAL COMPLETION OF SYSTEMS INSTALLATION, AND PRIOR TO ACCEPTANCE BY THE ENGINEER AND OWNER, THIS CONTRACTOR SHALL SUBCONTRACT A TAB CONTRACTOR WHO'S TECHNICIANS ARE NEBB OR AABC CERTIFIED. TAB SUBCONTRACTOR SHALL NOT BE AFFILIATED WITH THE CONTRACTOR.
- TEST PROCEDURES SHALL BE PER LATEST EDITIONS OF NEBB, AABC, OR TESTING, ADJUSTING, AND BALANCING CHAPTER OF ASHRAE APPLICATIONS HANDBOOK.
- PRIOR TO ALL TAB PROCEDURES PROCEEDING, SYSTEMS INSTALLATION, STARTUP, AND OPERATION SHALL BE IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND PER THE MINIMUM REQUIREMENTS OF NEBB, AABC, OR ASHRAE. IF DEFICIENCIES ARE FOUND WHICH PREVENT PROPER TAB PROCEDURES AND REPEATABLE RESULTS, THIS CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESULTING COSTS.
- D. THE , ENGINEER SHALL BE NOTIFIED WHEN TAB SCOPE WILL BEGIN ON SITE, AUTHORIZED REPRESENTATIVE OF THE OWNER MAY BE IN ATTENDANCE IF DEEMED NECESSARY.
- THIS CONTRACTOR TO ASSIST THE TAB CONTRACTOR AS REQUIRED TO ENSURE REPEATABLE RESULTS. THIS CONTRACTOR SHALL PROVIDE THE TAB CONTRACTOR WITH ALL REQUIRED DOCUMENTATION TO SUPPORT TAB SCOPE.
- F. TAB CONTRACTOR SCOPE SHALL INCLUDE ALL NEW SYSTEMS AND EQUIPMENT
- TAB CONTRACTOR SCOPE SHALL INCLUDE EXISTING SYSTEMS AS IDENTIFIED IN THE DOCUMENTS OR AS REQUIRED FOR A FULLY FUNCTIONAL AND FULLY BALANCED
- TAB CONTRACTOR SHALL PROVIDE REPORT IN ACCORDANCE WITH UTILIZED STANDARD ALONG WITH AN EXECUTIVE SUMMARY STATING THE EXTENT OF SYSTEM COMPLIANCE, SYSTEM DEFICIENCIES, AND RECOMMENDED CHANGES. THIS REPORT SHALL BE SUBMITTED WITHIN THIRTY (30) DAYS OF COMPLETION OF THIS SCOPE OF



MECHANICAL ABBREVIATIONS

AFF ABOVE FINISHED FLOOR CFM CUBIC FEET PER MINUTE EXHAUST EXHAUST AIR

EAD EXHAUST AIR DAMPER EAT ENTERING AIR TEMPERATURE

EBB ELECTRIC BASEBOARD ELECTRICAL CONTRACTORR EXHAUST FAN

ESP EXTERNAL STATIC PRESSURE EUH ELECTRIC UNIT HEATER EWT ENTERING WATER TEMPERATURE

FAHRENHEIT FLEXIBLE CONNECTOR (OR CONNECTION)

FFA FROM FLOOR ABOVE FFB FROM FLOOR BELOW

FPM FEET PER MINUTE FILL SYSTEM HORSEPOWER

LEAVING AIR TEMPERATURE MBH THOUSAND BRITISH THERMAL UNITS PER HOUR

MC MECHANICAL CONTRACTOR MINIMUM CIRCUIT AMPACITY

MOCP MAXIMUM OVERCURRENT PROTECTION

MOD MOTOR OPERATED DAMPER NOT IN CONTRACT NECK

NTS NOT TO SCALE PC PLUMBING CONTRACTOR

STATIC PRESSURE

SS STAINLESS STEEL SST SATURATED SUCTION TEMPERATURE THERMOSTAT

TRANSFER TFA TO FLOOR ABOVE TFB TO FLOOR BELOW

TSP TOTAL STATIC PRESSURE VD VOLUME DAMPER

WC WATER COLUMN WALL LOUVER

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> SHEET TITLE **MECHANICAL**

SYMBOLS, NOTES, AND ABBREVIATIONS

SCALE

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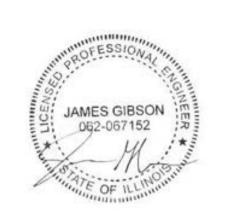
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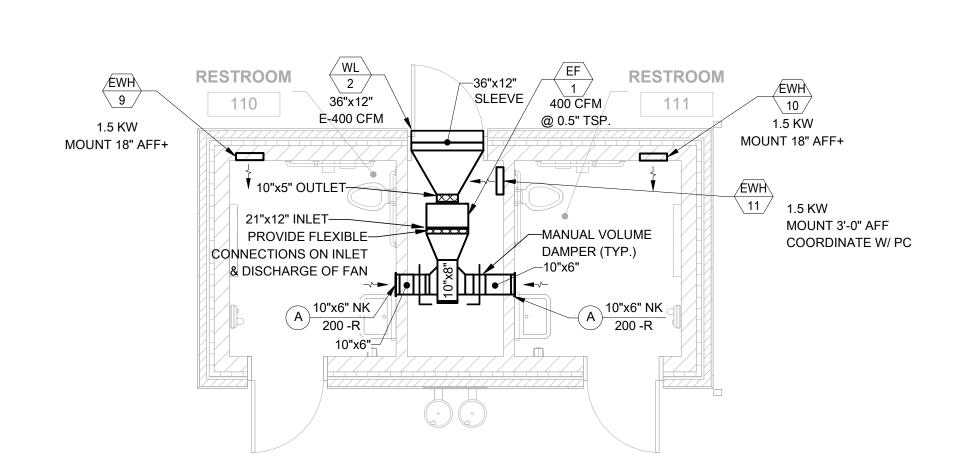
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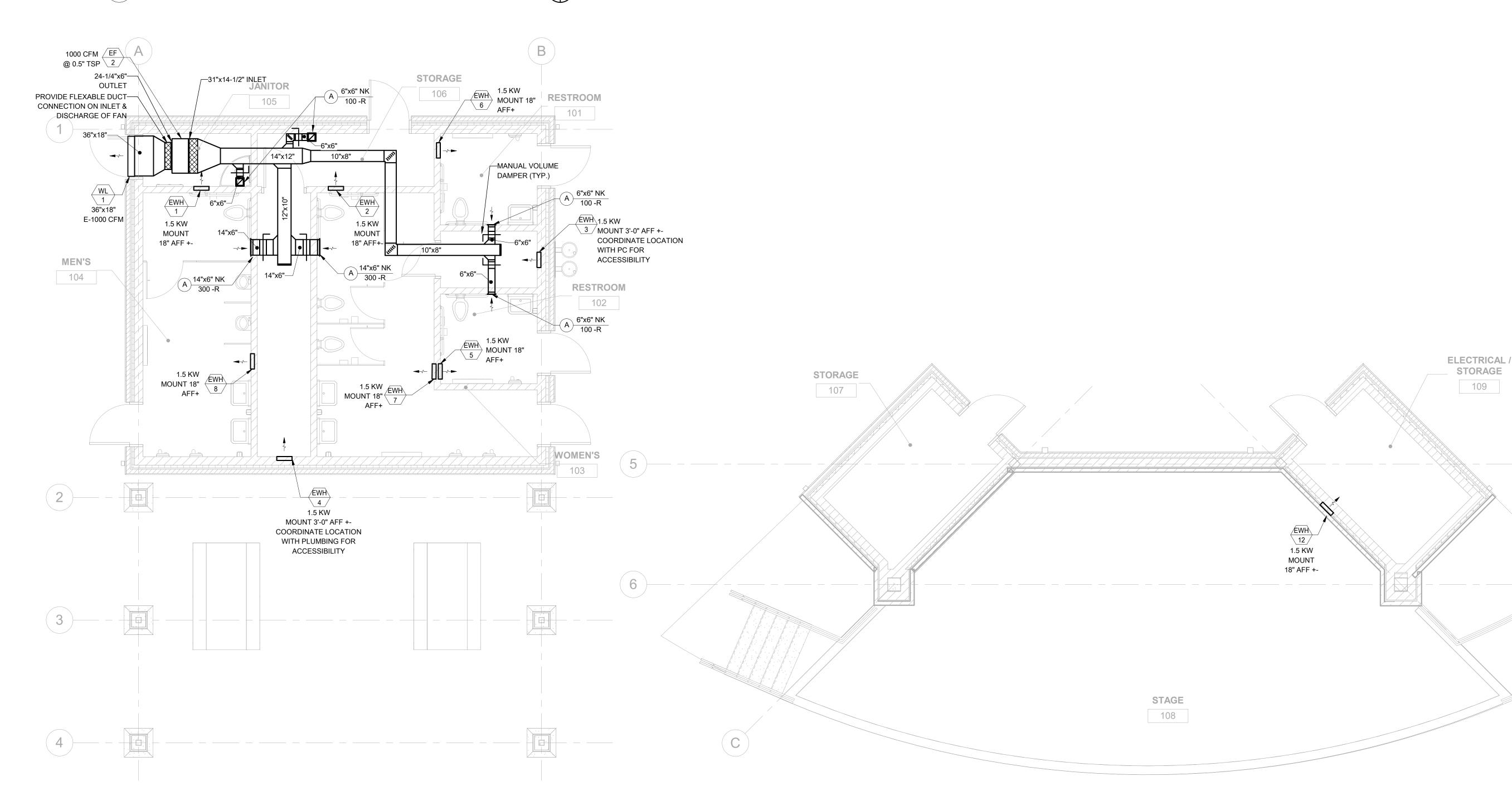
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MECHANICAL NEW WORK PLAN

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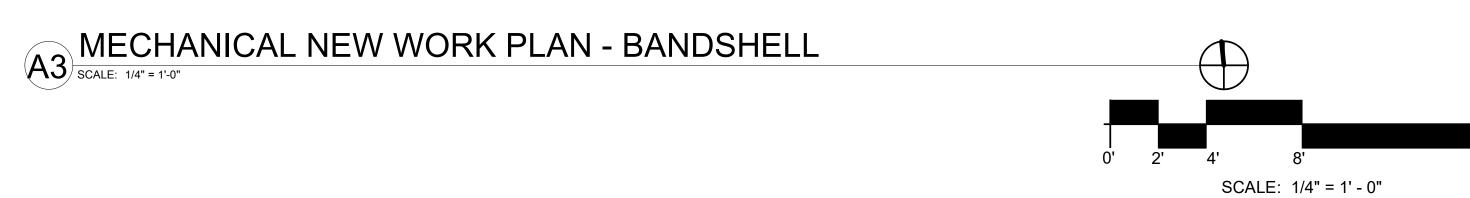


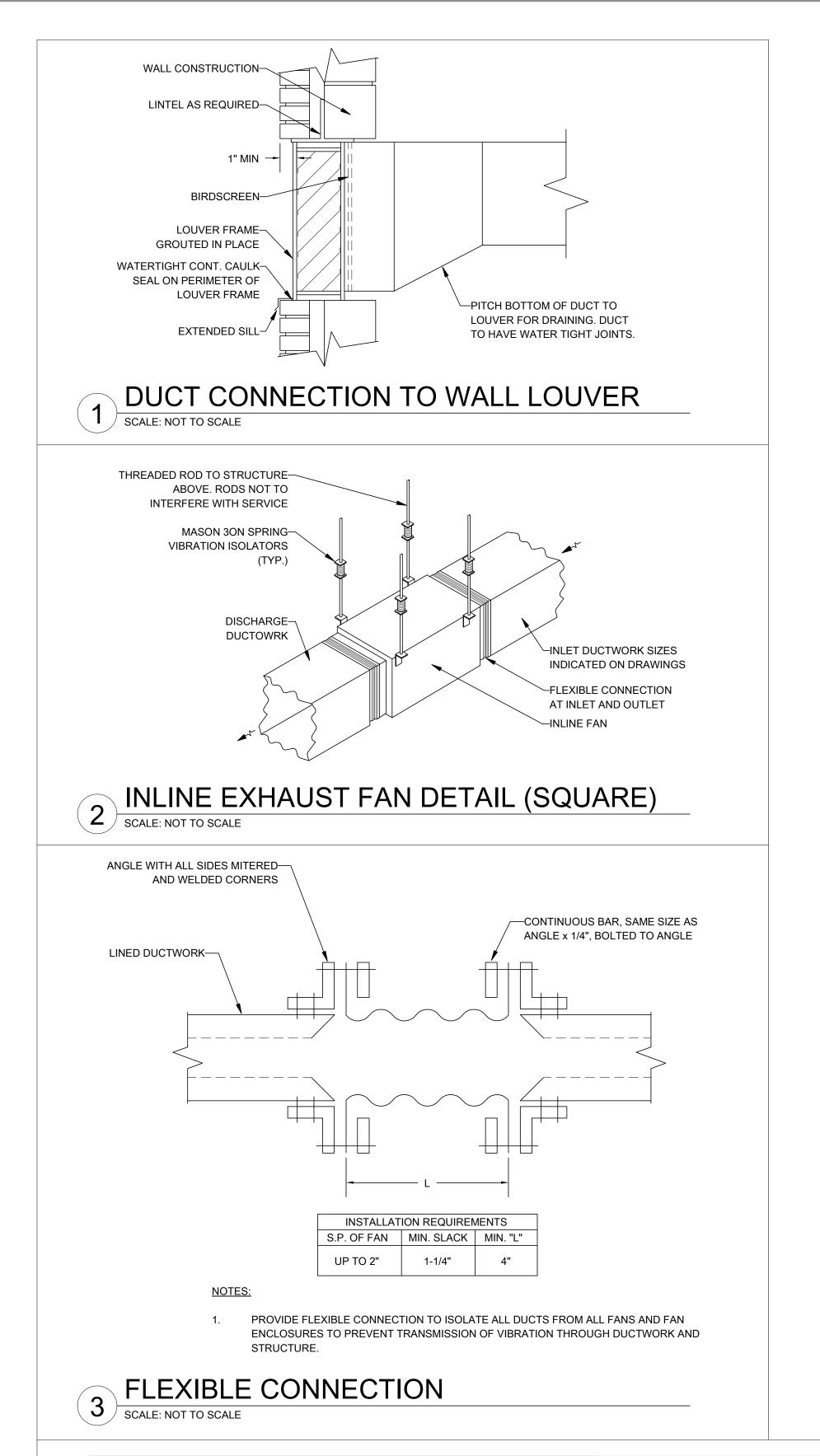
MECHANICAL NEW WORK PLAN - TOILET SCALE: 1/4" = 1'-0"

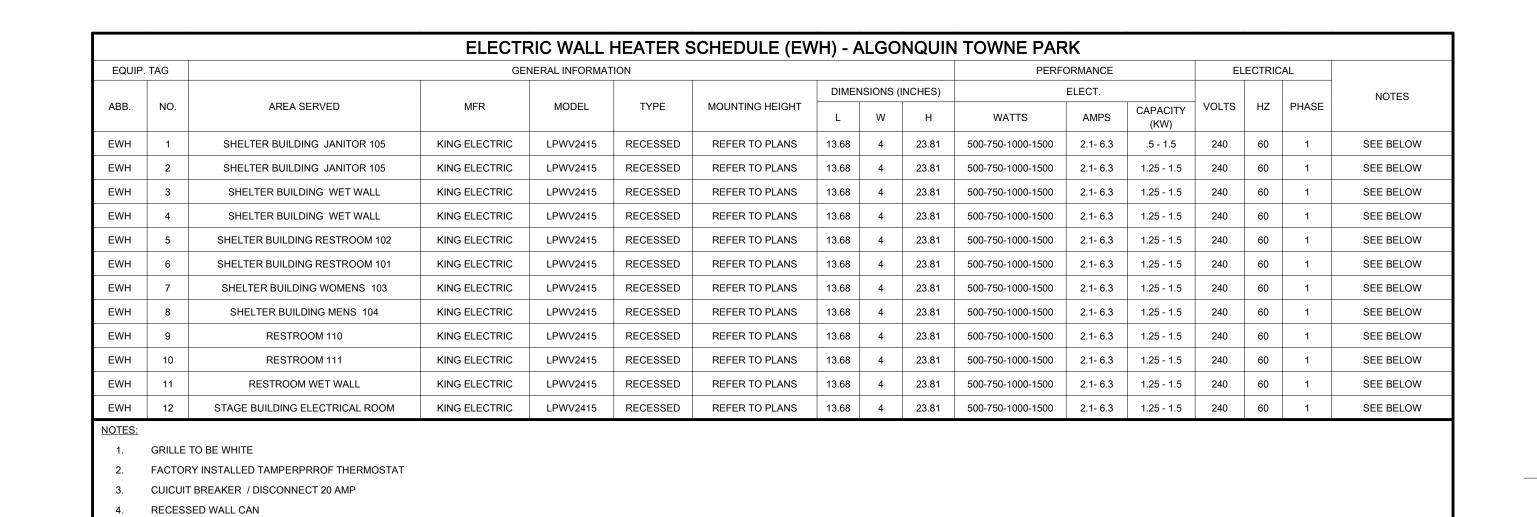












| | | | | | | | AUSI FAIN | SCHEDULE | (⊏୮) - | ALGONQUIN TOWNE | FAR | KN. | | | | | | | | |
|--------|-----|------------------|-------------|------------|--------|----------|---------------|-----------------|--------|----------------------------|-------|----------------|-------|-----------|------|----------|-------|----|-------|----------|
| EQUIP. | TAG | | | | | | | | | | | PERF | ORMAN | CE | | M | IOTOR | | | |
| ABB. | NO. | AREA SERVED | LOCATION | MFR | SERIES | MODEL | TYPE | ARRANGEMENT | DRIVE | SHUTTER SIZE (IN.) | CFM | SP (IN. WC) | SONE | ВНР | RPM | HP | VOLTS | HZ | PHASE | NOTES |
| EF | 1 | TOILET BUILDING | WET WALL | LOREN COOK | GEMINI | GNVF-700 | INLINE BLOWER | CEILING MOUNTED | DIRECT | DISCHARGE BACKDRAFT DAMPER | 400 | 0.5 | 4 | 67 WATTS | 1314 | 4.4 AMPS | 115 | 60 | 1 | SEE BELC |
| EF | 2 | SHELTER BUILDING | JANITOR 105 | LOREN COOK | GEMINI | GNVF-900 | INLINE BLOWER | CEILING MOUNTED | DIRECT | DISCHARGE BACKDRAFT DAMPER | 1,000 | 0.5 | 3.5 | 164 WATTS | 1036 | 6.6 AMPS | 115 | 60 | 1 | SEE BELC |

| NEMA 3 WEATHERPROOF DISCONNECT SWITCH |
|--|
| ON / OFF CONTROL TIME CLOCK PROVIDED AND INSTALLED BY EC |
| SPRING VIBRATION ISOLATORS |
| |

FAN MOUNTED SPEED CONTROL (ECM MOTOR)

5. THERMAL OVERLOADFAN DELAY SWITCH

6. cULus APPROVAL

7. 3/16" PLATE STEEL GRILLE

8. FAN / HEAT/ OFF SWITCH

5 YEAR WARANTY

| | | | | | WALL | LOUV | ERS (WL |) - ALG(| ONQUIN | TOWNE | PARK | | | | |
|--------|-----|------------------------|-----------------|-------------|--------|----------|------------|------------|------------|-------------|------------------|-------------------|------------------------|------------------|-----------|
| EQUIP. | TAG | AG GENERAL PERFORMANCE | | | | | | | | | | | | | |
| ABB. | NO. | SERVICE | BUILDING SERVED | LOCATION | MFR | MODEL | FRAME TYPE | DEPTH (IN) | WIDTH (IN) | HEIGHT (IN) | AIRFLOW (CFM) | FREE AREA (SF) | FACE VELOCITY (FPM) | MAX APD (IN.WC.) | NOTES |
| WL | 1 | EXHAUST AIR | SHELTER | JANITOR 105 | RUSKIN | ELF81S30 | CHANNEL | 4" | 36 | 18 | 1,000 | 1.95 | 512.82 | 0.03 | SEE BELOW |
| WL | 2 | EXHAUST AIR | TOILET | WET WALL | RUSKIN | ELF81S30 | CHANNEL | 4" | 36 | 12 | 400 | 1.15 | 347.82 | 0.03 | SEE BELOW |

- ALUMINUM BIRDSCREEN.
- 2. STANDARD COLOR SELECTED BY ARCHITECT
- 3. NON-DRAINABLE BLADES
- 4. LOUVER TO HAVE A MINIMUM OF 53% FREE AREA

| (| GRIL | LES, F | REGISTERS, AND D | DIFFUS | ERS (GI | RD) - ALGOI | NQUIN TOW | NE PA | RK |
|---------------|-------|--------|-------------------------|---------|----------|----------------|----------------|---------|--------|
| EQUIP. TAG | MFR | MODEL | TYPE | SERVICE | MATERIAL | MOUNTING | SIZE | MAX. NC | NOT |
| Α | TITUS | 350FL | LOUVERED EXHAUST GRILLE | EXHAUST | ALUMINUM | WALL / SURFACE | REFER TO PLANS | 30 | SEE BE |

- 1. COLOR AND FINISH SHALL BE APPLIANCE WHITE
- SURFACE MOUNTED FLANGED FRAME WITH SCREW FASTENING.
- 3. 3/4" BLADE" SPACING, 35 DEGREE DEFLECTION,

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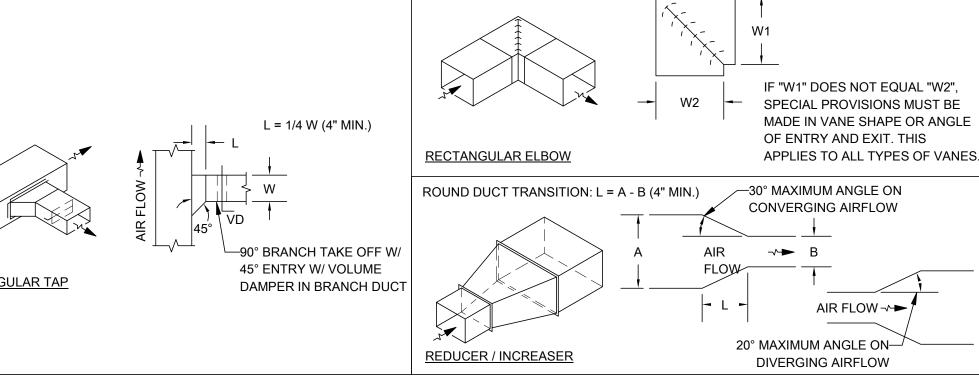
MECHANICAL **DETAILS AND** SCHEDULES

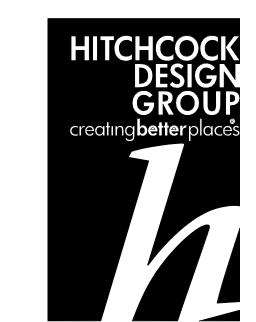
4 TYPICAL DUCT CONSTRUCTION DETAILS

SCALE: NOT TO SCALE

FLAT ON BOTTOM DUCT THRU WALL-RECTANGULAR TAP VERTICAL-DUCT RISER TYPICAL RETURN DUCT CONNECTIONS

VOLUME DAMPER-





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ELECTRICAL SYMBOLS, NOTES, AND ABBREVIATIONS

SCALE

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GENERAL ELECTRICAL NEW WORK SHEET NOTES

SINGLE LINE DIAGRAM SYMBOLS

PANELBOARD

TRANSFORMER

NON-FUSED SWITCH

SWITCH AMPERAGE)

CIRCUIT BREAKER

PUSH BUTTON (MAKE)

PUSH BUTTON (BREAK)

GROUND ROD

RESISTANCE

SOLENOID

GENERATOR

UTILITY METER

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE

USED OR APPEAR IN THESE DRAWINGS.

USED OR APPEAR IN THESE DRAWINGS.

WALL MOUNTED EXIT SIGN

DIRECTION OF LIGHTED FACES.

ELECTRIC OVERLOAD

CABLE TERMINATION

GROUND FAULT RELAY

RELAY

CIRCUIT BREAKER (DRAW OUT)

CUSTOMER METER (kW, V, A, P.F.)

NORMALLY CLOSED (NC) CONTACT

NORMALLY OPEN (NO) CONTACT

400:5 CURRENT TRANSFORMER (RATIO EX: 400:5)

AUTOMATIC TRANSFER SWITCH

CONTROL OR POTENTIAL TRANSFORMER

BUS DUCT (## DENOTES RATING/TYPE)

GROUNDING ELECTRODE CONDUCTOR

EMERGENCY LIGHTING SYMBOLS

REQUIRED EGRESS EMERGENCY LIGHT FIXTURES

FIXTURES, CONTINUOUSLY ON

"XX" INDICATES INSCRIPTION, ARROWS, AND SINGLE OR DOUBLE

SHADED LIGHT FIXTURES SHALL BE EMERGENCY LIGHT

FACED AS SHOWN BELOW. SHADED QUADRANTS INDICATES

FUSE

XX YY

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 \ll \Longrightarrow |

SWITCHBOARD, SWITCHGEAR

TRANSFORMER "Y" CONFIGURATION

TRANSFORMER "DELTA" CONFIGURATION

FUSED SWITCH (XX DENOTES FUSE AMPERAGE, YY DENOTES

A. ALL OCCUPANT SENSORS SHALL BE INSTALLED AT THE SAME LEVEL AS THE LIGHT FIXTURE.

REFERENCE LIGHTING FIXTURES SCHEDULE FOR ADDITIONAL INFORMATION ON LIGHTING FIXTURES. REFERENCE LIGHTING CONTROL DETAILS FOR ADDITIONAL INFORMATION ON LIGHTING CONTROLS.

ALL NEW FIRE ALARM DEVICES AND COMPONENTS SHALL BE COMPATIBLE WITH NEW FIRE ALARM SYSTEM LOCATED IN NEW ELECTRICAL ROOM.

ALL NEW FIRE ALARM VISUALS DEVICES SHALL BE SYNCHRONIZED. PROVIDE COMPLETE PROGRAMMING TO ENSURE ALL FIRE ALARM DEVICES AND COMPONENTS ARE FULLY FUNCTIONAL AND OPERATIONS.

REFERENCE EQUIPMENT SCHEDULE FOR ELECTRICAL INFORMATION ON MECHANICAL AND PLUMBING EQUIPMENT. COORDINATE ALL REQUIREMENTS WITH MECHANICAL AND PLUMBING DRAWINGS PRIOR TO INSTALLATION.

COORDINATE ALL MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.

LIGHTING SYMBOLS

2' x 4' LIGHT FIXTURE

1' x 4' LIGHT FIXTURE

2' x 2' LIGHT FIXTURE

 $\overline{\Delta \Delta \Delta \Delta}$

⁹DS1

"X" -

PCX.

DENOTES 1

DENOTES

DENOTES

OUTDOOR

INDOOR OR

RECESSED CAN DOWNLIGHT

SQUARE CAN DOWNLIGHT

STRIP LIGHT FIXTURE

WALL MOUNTED LIGHT FIXTURE

WALL MOUNTED 1'x4' FIXTURE

SITE LIGHT - POLE MOUNTED

GROUND FLOOD LIGHT

WALL MOUNTED SWITCH:

3; THREE WAY SWITCH

4: FOUR WAY SWITCH

K: KEYED SWITCH

ARCHITECT:

BLANK: SINGLE POLE SWITCH

AMBIENT LIGHT OVERRIDE

WALL MOUNTED DIMMER SWITCH:

NOTE: ALL WITH COLOR CHANGE KIT\

WALL MOUNTED LOW VOLTAGE SWITCH

BANKS OF LIGHTING

LV1: ONE BUTTON

LV2: TWO BUTTON

PHOTOCELL

INDOOR: 1

OUTDOOR: 0

NOTE: NOT ALL SYMBOLS LISTED ABOVE MAY BE

USED OR APPEAR IN THESE DRAWINGS.

LV3: THREE BUTTON

TRACK LIGHT

SITE LIGHT - PEDESTRIAN OF LOW LEVEL TYPE

x: LOWERCASE LETTERS DENOTE SWITCH LEG

WALL MOUNTED OCCUPANCY SENSOR SWITCH. "X" DENOTES

OS1: INFRARED-ULTRASOUND TYPE W/OVERRIDE SWITCH AND

OS2: INFRARED-ULTRASOUND TYPE W/OVERRIDE SWITCH AND

DS1: SLIDE DIMMER WITH BUTTON AND LEG LOCATOR LIGHT

DUAL TECHNOLOGY CEILING MOUNTED OCCUPANCY OR

VACANCY SENSOR W/RELAY AND POWER PACK

AMBIENT LIGHT OVERRIDE WITH CONTROL FOR TWO SEPERATE

THE COLOR OF THE SWITCH TO BE DETERMINED BY THE

REFERENCE SITE PLANS AS PART OF SHEET SERIES 'E1' FOR SCOPE OF WORK RELATED TO UTILITY EQUIPMENT, OVERALL SITE INFORMATION, AND KEYPLAN.

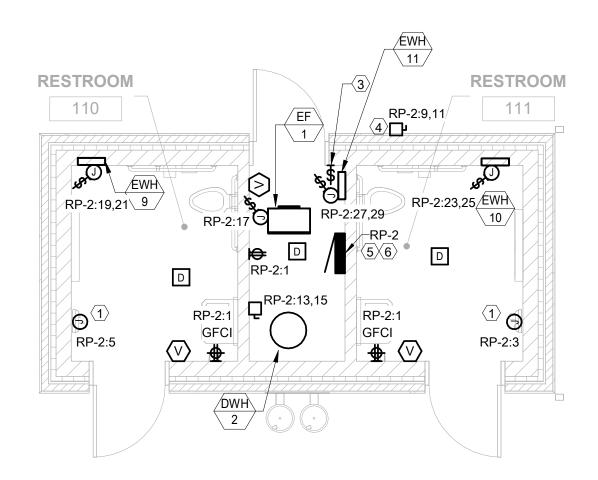
INSTANTANEOUS SHORT CIRCUIT

JUNCTION BOX

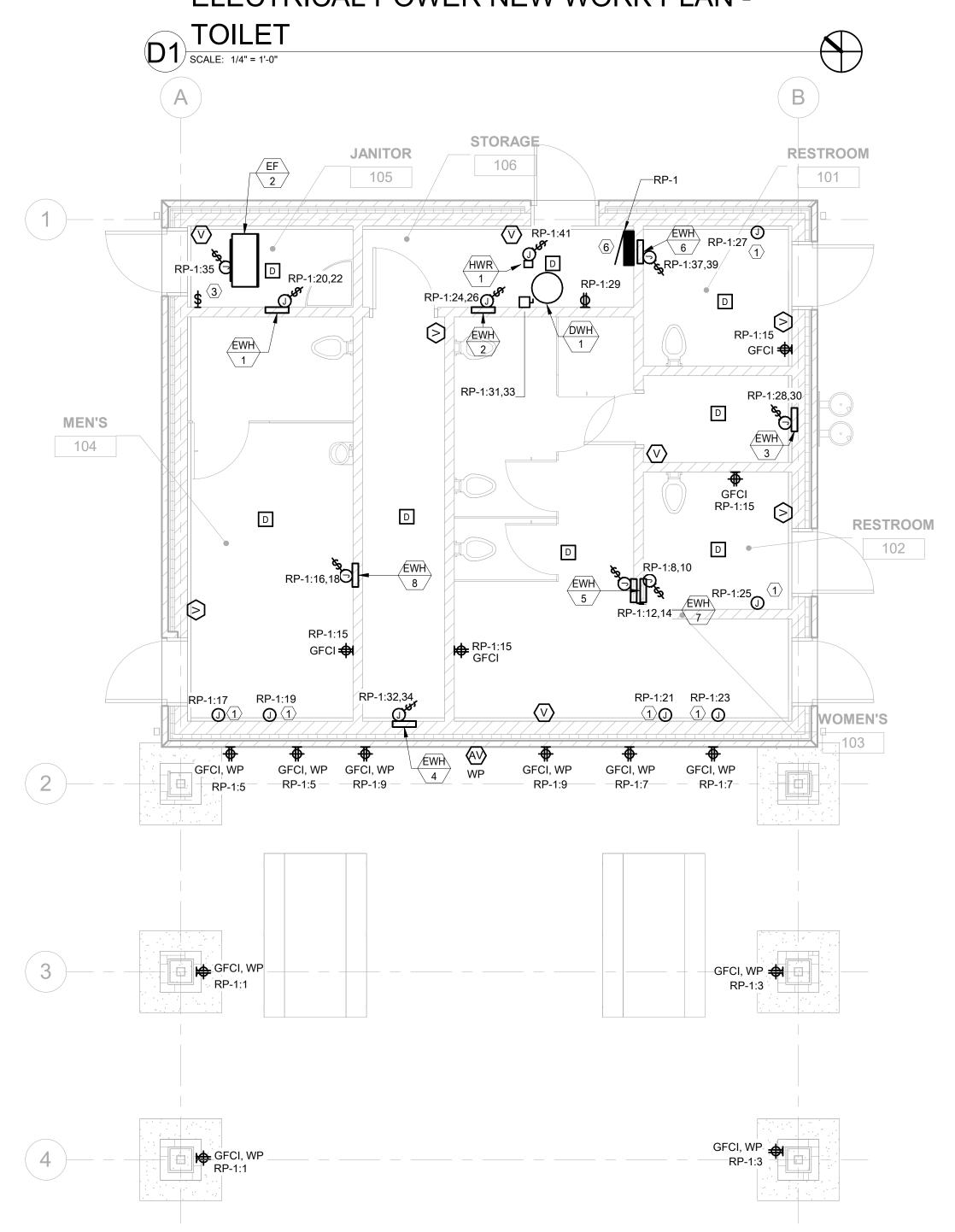
XFMR TRANSFORMER

YR YEAR

NOTE: NOT ALL ABBREVIATIONS LISTED ABOVE MAY BE USED OR APPEAR IN THESE DRAWINGS.



ELECTRICAL POWER NEW WORK PLAN -



ELECTRICAL POWER NEW WORK PLAN -



GENERAL ELECTRICAL NEW WORK SHEET NOTES

ALL ELECTRICAL OUTLETS IN BANDSHELL STORAGE ROOMS SHALL BE MOUNTED AT MIN 38" AFF. FINAL LOCATIONS TO BE COORDINATED WITH ARCHITECT PRIOR TO INSTALLATION.

STORAGE

107

GFCI, WP RP-3:9 RP-3:11

RP-3:11

(AV) WP GFCI, WP RP-3:9

KEYED ELECTRICAL NEW WORK SHEET NOTES

- 1. PROVIDE 120V HARDWIRED POWER FOR WALL MOUNTED HAND DRYER. COORDINATE ALL REQUIREMENTS WITH MANUFACTURER.
- 2. EQUIPMENT NOTED FOR REFERENCE ONLY AND PART OF THE SITE PLAN SCOPE OF WORK. REFER TO SERIES 'E1' FOR SITE PLAN SCOPE OF WORK AND INFORMATION ON EQUIPMENT.
- TIMECLOCK FOR EXHAUST FAN. REFERENCE EQUIPMENT SCHEDULE FOR INFORMATION.
- FURNISH AND INSTALL 30A/2P, NEMA 3R, NON-FUSED DISCONNECT FOR SANITARY PUMP. COORDINATE ALL REQUIREMENTS FOR PUMP WITH OWNER PRIOR TO INSTALLATION.
- 5. FURNISH AND INSTALL UNISTRUT AS REQUIRED TO RUN PLUMBING PIPING BEHIND ELECTRICAL PANELBOARD. CONTRACTOR TO NOT RUN PIPING ABOVE THE PANEL AND TO MAINTAIN 3 FOOT CLEARANCE IN FRONT OF ELECTRICAL PANEL.
- FURNISH AND INSTALL 3/4" BY 10' LONG GROUND ROD FOR NEW ELECTRICAL PANEL. BOND GROUND ROD WITH #6 GROUND WIRE TO PANELBOARD.

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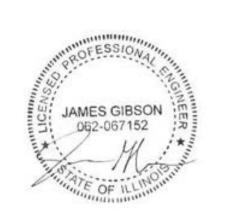
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SHEET TITLE

ELECTRICAL POWER NEW WORK PLAN

SCAL

SHEET NUMBER

E-102

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ELECTRICAL POWER NEW WORK PLAN - BANDSHELL

SCALE: 1/4" = 1'-0"

₹ RP-3:13

STAGE

108

RP-3:13

₹ RP-3:13

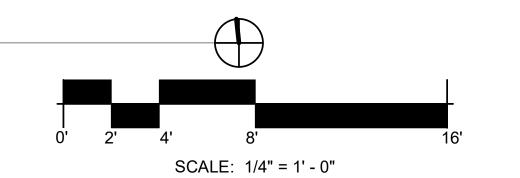
RP-3:15 🕱

GFCI, WP

EWH 12

GFCI, WP

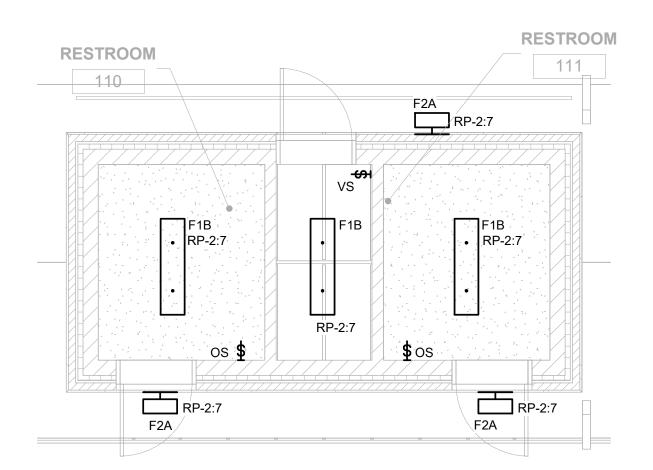
GFCI, WP



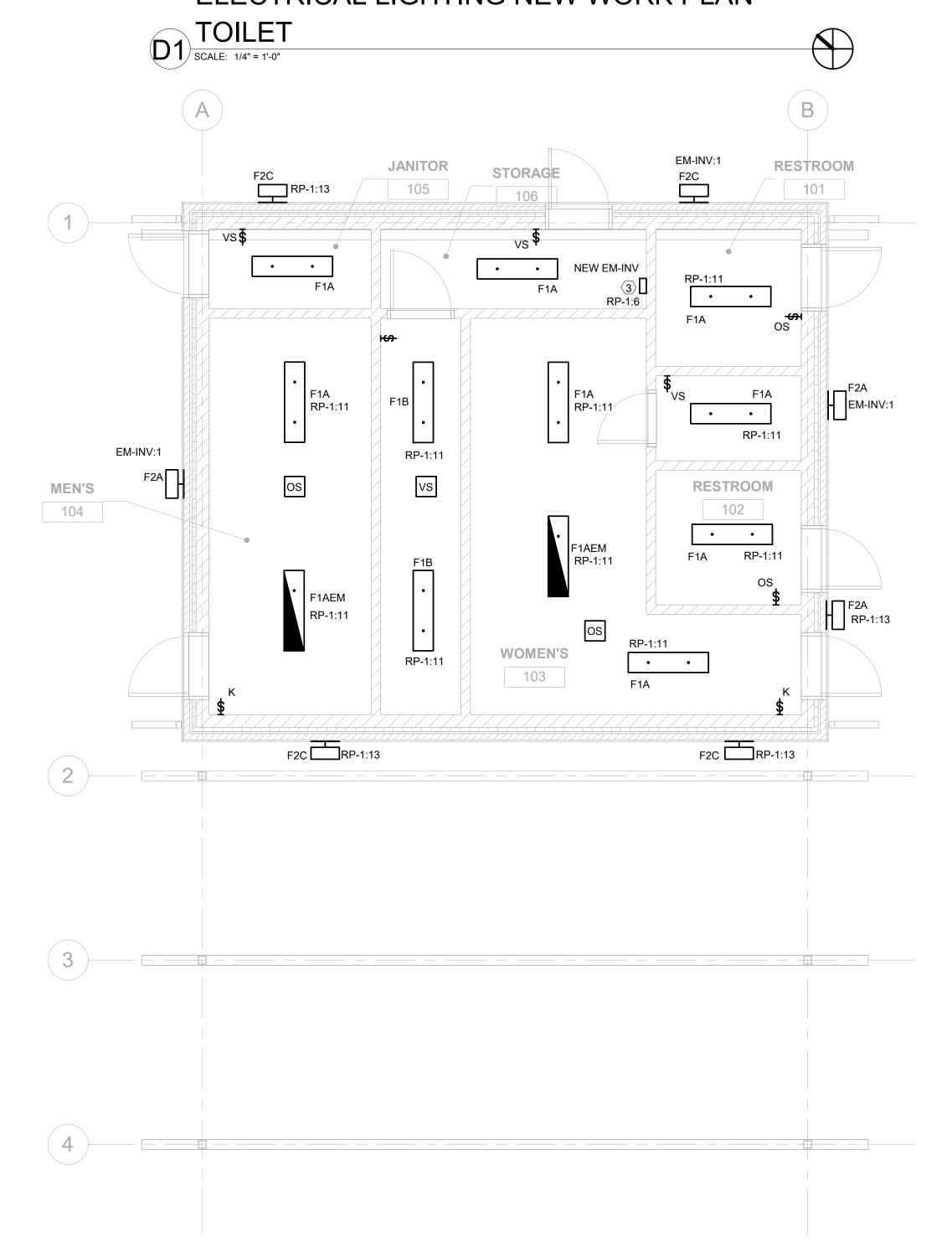
ELECTRICAL /
__STORAGE

109

6



ELECTRICAL LIGHTING NEW WORK PLAN -



ELECTRICAL LIGHTING NEW WORK PLAN -



KEYED ELECTRICAL NEW WORK SHEET NOTES

- FURNISH AND INSTALL NEW PHOTOCELL FOR CONTROL OF SITE WALKWAY LIGHTING. REFER TO LIGHTING CONTROL DETAILS FOR PHOTOCELL INFORMATION. REFER TO SITE LIGHTING PLANS FOR ADDITIONAL INFORMATION ON SITE LIGHTING FIXTURES.
- FURNISH AND INSTALL LIGHTING CONTROL PANEL FOR TIMECLOCK AND EXTERIOR CONTROLS OF LIGHTING INTERIOR AND EXTERIOR LIGHTING FIXTURES. REFER TO LIGHTING CONTROL DETAILS AND SEQUENCE OF OPERATIONS FOR ADDITIONAL INFORMATION.
- FURNISH AND INSTALL NEW LIGHTING INVERTER, TYPE SI-125 BY ASSURANCE EMERGENCY LIGHTING. INVERTER TO BE CIRCUITED TO PANEL INDICATED AND TO SUPPORT OUTDOOR FIXTURES AS NOTED

ELECTRICAL / STORAGE

109

—LIGHTING CONTROL

PANEL (2)

FURNISH AND INSTALL TOUCHSCREEN FOR CONTROL OF OUTDOOR RGBW FIXTURES IN ZONE 'a'. REFERENCE LIGHTING CONTROL DETAIL AND SCHEDULE FOR ADDITIONAL INFORMATION.

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ELECTRICAL LIGHTING NEW WORK PLAN

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ELECTRICAL LIGHTING NEW WORK PLAN - BANDSHELL
SCALE: 1/4" = 1'-0"

STAGE

108

PC (1)

a F3
RP-3:21

STORAGE

107

c F2D RP-3:21

d F2D RP-3:21 //

F3 RP-3:21

RP-3:19 VS

RP-3:19

| ROOM DESCRIPTION | LIGHTING CONTROL |
|--|--|
| EXTERIOR STAGE FIXTURES | PHOTOCELL, TIMECLOCK CONTROLLED GROUP FIXTURES INTO ZONES AS NOTED ON DRAWINGS ZONE a FIXTURES TO BE MANUAL ON WITH DMX DIMMING. CONTROLLED VIA TOUCHSCREEN LOCATED IN ELECTRICAL ROOM ZONE b FIXTURES FIXTURES TO BE MANUAL ON WITH 0-10V DIMMING VIA DIMMING SWITCH LOCATED IN ELECTRICAL ROOM ZONE c AND d FIXTURES TO BE PHOTOCELL OR TIMECLOCK ON ALL FIXTURES TO TURN OFF WHEN DAYLIGHTING IS PRESENT OR PER TIMECLOCK TIMECLOCK CONTROL SCHEDULE TO BE COORDINATED WITH OWNER |
| EXTERIOR FIXTURES SHELTER AND TOILETS | PHOTOCELL, OCCUPANCY CONTROLLED AFTER SUNSET: PHOTOCELL ON TO 50%, FIXTURES TO FADE UP TO 100% WITH MOTION AFTER 15 MINS OF NO NOTION, DIM TO 50% ALL FIXTURES TO TURN OFF WHEN DAYLIGHTING IS PRESENT |
| STORAGE RM 106 & 107, ELEC RM 109, JANITOR 105, WET ROOMS | VACANCY SENSOR CONTROLLED MANUAL SWITCH ON, AUTO OFF WHEN UNOCCUPIED AFTER 20 MINS |
| ALL RESTROOMS | OCUPANCY SENSOR CONTROLLED, AS SHOWN ON PLANS AUTO ON, AUTO OFF WHEN UNOCCUPIED AFTER 20 MINS UPON LOSS OF POWER EM LIGHTING TO TURN ON AS NOTED ON PLANS |

LIGHTING CONTROL SYSTEM BASIS OF DESIGN IS THE NX PRODUCT.

ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL SOFTWARE AND HARDWARE TO PROVIDE A COMPLETE AND OPERABLE LIGHTING CONTROL SYSTEM INCLUDING BUT NOT LIMITED TO BRIDGES, SMART SENSORS (OCCUPANCY AND PHOTOSENSORS), WALL STATIONS, POWER SUPPLIES, COMMUNICATIONS MODULES, CABLING, START UP AND COMMISSIONING. CONTRACTOR SHALL INCLUDE TASK TUNING LIGHTING DURING FINAL SETUP.

| | | | LIGHTING FIXTUR | RE SCHE | EDULE | | | | | | |
|-------|-------------------|--|----------------------|---------|-------------|-----|--------|-------|-------|----------|-----------|
| | | | | | COLOR | | | | | | |
| TAG | MANUFACTURER | MODEL | LAMP SOURCE & DRIVER | DIMMING | TEMPERATURE | CRI | LUMENS | WATTS | VOLT | MOUNTING | NOTES |
| F1A | COLUMBIA LIGHTING | LXEM-4-35-ML-RA-E-U-TP-XEDPM | LED | - | 3500 | 80 | 4533 | 38.5W | 120 V | PENDANT | 1,2,3,4,5 |
| F1AEM | COLUMBIA LIGHTING | LXEM-4-35-ML-RA-E-U-ELL14-TP-XEDPM | LED | - | 3500 | 80 | 4533 | 38.5W | 120 V | PENDANT | 1,2,3,4,5 |
| F1B | COLUMBIA LIGHTING | LXEM-4-35-LW-RA-E-U-TP | LED | - | 3500 | 80 | 3726 | 26W | 120 V | PENDANT | 1,2,3,4,5 |
| F2A | KIM LIGHTING | WDS-D-24L-30-3K8-4W-UNV-XX-SCP-8F-SCPREMOTE | LED | 0-10V | 3000 | 80 | 3000 | 30W | 120 V | SURFACE | 1,2,7 |
| F2C | KIM LIGHTING | WDS-D-24L-30-3K8-4W-UNV-XX-SCP-20F-SCPREMOTE | LED | 0-10V | 3000 | 80 | 3000 | 30W | 120 V | SURFACE | 1,2,7 |
| F2D | KIM LIGHTING | WDS-D-24L-40-3K8-4W-UNV-XX | LED | 0-10V | 3000 | 80 | 4500 | 40W | 120 V | SURFACE | 1,2,7 |
| F3 | INSIGHT LIGHTING | PS17-MO-RGBA-Q-60-EXA-120-DMXFX-XX-CDS-RDM | LAMP SOURCE & DRIVER | DMX | - | - | 6600 | 150W | 120 V | SURFACE | 1,2,7 |

LIGHTING FIXTURE SCHEDULE NOTES

- 1. COORDINATE FINISHES WITH ARCHITECT. REFER TO ARCHITECTURAL RCP FOR FIXTURE LENGTH DIMENSIONS AND INSTALLATION FINISHES PER INSTANCE WITH ARCHITECT.
- 2. FURNISH WITH INTEGRAL FUSE (BY MANUFACTURER) OR INLINE FUSE (BY ELECTRICAL CONTRACTOR). FUSE AMPACITY RATING SHALL BE 125% OF FULL LOAD AMPS OF LIGHT FIXTURE OR NEXT STANDARD SIZE.
- 3. FURNISH WITH STEM WHERE REQUIRED. COORDINATE WITH ARCHITECT FOR MOUNTING ELEVATION. FURNISH STEM LENGTH AS REQUIRED.
- 4. FURNISH DRIVER FOR EACH 4FT LENGTH OF LIGHT FIXTURE.
- FINISH CONTINUOUS LENGTH WITH END PLATE/FINISH.
- 6. COORDINATE WITH ARCHITECTURAL DRAWINGS AND ELEVATIONS FOR PENDANT LENGTHS. CONFIRM PENDANT LENGTH WITH ARCHITECT PRIOR TO ORDERING.
- PROVIDE LIGHT FIXTURE MANUFACTURER AND MODEL NUMBER AS NOTED, OR SUBMIT EQUAL FOR APPROVAL. ELECTRICAL CONTRACTOR MUST PROVE EQUALITY BY SUBMITTING PHOTOMETRICS SPECIFIC TO PROJECT AND MATCH THE FOLLOWING: LUMENS, WATTAGE, VOLTAGE, MOUNTING, LAMP COLOR SOURCE TEMPERATURE, STYLE, 0-10V DIMMING, AND NRTL LISTINGS. STYLE MUST INCLUDE HOUSING MATERIAL, DIMENSIONAL SIZES, AND FINISHES.

| UTILITY | UTILITY, MAIN DISTRIBUTION PANEL 'MDP', MAIN GROUNDING, AND ASSOCIATED SCOPE OF WORK DEFINED ON SITE PLANS, SHEET 'E4.0'. INFORMATION SHOWN FOR REFERENCE ONLY |
|--|---|
| NEW (3)#1, (1)#6 BARE COPPER GROUND IN 2" PVC SCH 40 UNDERGROUND CONDUIT, COORDINATE WITH SITE PLANS SHOWN FOR REFERENCE ONLY NEW RP-2 TOILET 110 | NEW (3)#3, (1)#8G IN 1-1/4"C, COORDINATE WITH SITE PLANS, SHOWN FOR REFERENCE ONLY NEW (3)#3/0, (1)#6G IN 2" PVC SCH40 UNDERGROUND CONDUIT, COORDINATE WITH SITE PLANS, SHOWN FOR REFERENCE ONLY NEW RP-3 STORAGE 109 STORAGE 106 |





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ELECTRICAL SINGLE LINE DIAGRAM & SCHEDULES

SCALE

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L-30 I

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HVAC/PLUMBING/FIRE PROTECTION/MOTOR EQUIPMENT WIRING SCHEDULE

| TAG | DESCRIPTION | VOLT | PHASE | LOAD | | | | OCPD | | FEEDE | R/BRANC | H WIRIN | G | | EQI | UIPMENT | CONTR | OLLER | | | | | | LOCAL | DISCON | IECT SW | ITCH | | | | | EQUIPM | ENT CC | NNECTI | ON | | | |
|--------|----------------------|------|--------|------|-----|-----|------|--------|------|-------|---------|---------|-----|---------|---------|---------|----------|-------|----------|------|------|-------|----------|-------|--------|---------|------|----------|------|--------|----------|--------|--------|--------|------|-------|------------------|-----|
| 146 | DESCRIPTION | VOLI | FIIAGE | HP | KW | FL | A MC | A SIZE | POLE | SETS | NO. | SIZE | GND | D. COND | UIT P.E | 3 F.B | I.B SIZE | TYPE | DISC. SW | OCPD | POLE | ENCL. | SEE NOTE | P.B | F.B | I.B | SIZE | TYPE | POLE | ENCL. | SEE NOTE | P.B | F.B | I.B | RECP | P. CI | PC HWC FWC SEE N | OTE |
| EWH-1 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-2 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-3 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-4 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | _ | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-5 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | - |
| EWH-6 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-7 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-8 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-9 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-10 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-11 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EWH-12 | ELECTRIC WALL HEATER | 240 | 1 | - | 1.5 | 6.3 | 3 - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | | - | - | - | - | - | - | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | _ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | _ | - | | | |
| EF-1 | EXHAUST FAN | 120 | 1 | - | - | 4.4 | 4 - | 15 | 1 | 1 | 2 | 12 | 12 | 3/4" | ' E.C | C - | | TC | - | - | - | - | 7 | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| EF-2 | EXHAUST FAN | 120 | 1 | - | - | 6.0 | 6 - | 15 | 1 | 1 | 2 | 12 | 12 | 3/4" | E.C | C - | | TC | - | - | - | - | 7 | - | - | - | - | - | - | - | 6 | E.C | - | - | - | | - YES YES - | |
| | | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | | _ | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | _ | | | |
| DWH-1 | WATER HEATER | 240 | 1 | - | 4 | - | - | 25 | 2 | 1 | 2 | 10 | 10 | 3/4" | · - | - | | - | - | - | - | - | - | E.C | - | - | 30 | NON-FUSE | 2 | NEMA 1 | 3 | E.C | - | - | - | | - YES YES - | |
| DWH-2 | WATER HEATER | 240 | 1 | - | 2 | - | - | 15 | 2 | 1 | 2 | 12 | 12 | 3/4" | ' - | - | - - | - | - | - | - | - | - | E.C | - | - | 20 | TS | 2 | NEMA 1 | 5 | E.C | - | - | - | | - YES YES - | |
| HWR-2 | RECIRCULATION PUMP | 120 | - | - | 0.2 | - | - | 15 | 1 | 1 | - | 12 | 12 | FALS | SE - | - | | - | - | - | - | - | - | E.C | - | - | 15 | TS | 1 | NEMA 1 | 5 | E.C | - | - | - | | - YES YES - | |
| | | _ | _ | _ | | _ | _ | _ | | | | | | | | | | | _ | | | | | | | | | _ | | | _ | _ | | | | | _ _ _ | |

| DWH-2 | WATER HEATER | 240 | 1 | _ | 2 | | 15 | 2 1 | 2 | 12 | 12 3 | 3/4" - | | - | - | | | - | - | E.C | | 20 | TS | 3 | 2 NEMA | 1 ' | 5 E | .C - | | - | - | YES | YES | _ |
|---------|------------------------------------|-------------------|-------------|-------------|-------------|--------------|----------|-----|--------|-----|--------------|--------------|---------------|-----------|----|-------|--------|--------------|------------|-----------|-----------|------------------------|------------|----------------------|---------------|----------|------------|---------|----------|---------|------|-----|-----|---|
| HWR-2 | RECIRCULATION PUMP | 120 | - | - | 0.2 | | 15 | 1 1 | - | 12 | 12 FA | ALSE - | | - | - | | | - | - | E.C | | 15 | TS | 3 | 1 NEMA | 1 / | 5 E | .C - | | - | - | YES | YES | - |
| | | - | - | - | - | | - | | - | - | - | | | - | - | | - - | - | - | - | - - | - | - | | | | - | - - | | - | - | - | - | - |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GENERAL | NOTES: | | | | | | | | PB: | | PROVIDED BY | (FURNISH AND | D INSTALL) | | NO | TE #1 | E.C. S | SHALL PROV | /IDE MOUI | NTING/RAC | CKING FO | R STARTE | R TYPES (F | FVNR, FV | R, PRMS, 2SP1 | W, & 2SP | 2W) | | | | | | | |
| 1 | E.C. SHALL REVIEW THE ARCHITECT | TURAL, MECHANICA | AL, PLUMBIN | G, AND FIRE | E PROTECTI | ON CONTRAC | СТ | | FB: | | FURNISHED B | ·Υ | | | | | E.C. S | SHALL PROV | /IDE THER | RMAL OVE | RLOADS F | OR START | ERS PER | OEM/FIEL | D VERIFICATIO | N | | | | | | | | |
| | DOCUMENTS, AND SHOP DRAWINGS | S FOR FINAL EQUIP | MENT LOCA | TION, ELEV | ATION, AND | POWER | | | IB: | | INSTALLED BY | 1 | | | | | E.C. S | SHALL PROV | /IDE TWO | SETS OF I | FORM "C" | AUX CONT | ACTS FOR | R ALL STA | ARTER TYPES | | | | | | | | | |
| | REQUIREMENTS PRIOR TO INSTALLI | NG CONDUITS. | | | | | | | ENCL.: | | NEMA ENCLOS | SURE | | | | | E.C. S | SHALL PROV | /IDE 120Va | ac CONTR | OL COIL F | OR START | ERS TYPE | S (FVNR, | FVR, 2SP1W, 8 | ኔ 2SP2W) |) | | | | | | | |
| 2 | E.C. SHALL REVIEW THE LOAD REQU | JIREMENTS WITH T | HE OEM PRI | OR TO INST | FALLING CO | NDUIT. | | | HWC: | | HARD WIRE C | ONNECTION | | | | | E.C. S | SHALL PROV | /IDE 24Va | c CONTRO | L COIL FO | OR POWER | RELAYS/N | MANUAL S | STARTER "PRM | IS" | | | | | | | | |
| 3 | E.C. SHALL VEFIRY IN THE FIELD THE | OCPD REQUIREM | IENTS WITH | THE OEM P | RIOR TO INS | STALLING CON | NDUIT. | | FWC: | | FLEXIABLE WI | HIP CONDUIT | | | NO | TE #2 | E.C. S | SHALL PROV | /IDE MOUI | NTING/RAG | CKING FO | R VARIABL | E FEQUEN | NCY CON | TROLLER "VFD' | " | | | | | | | | |
| | OCPD RATINGS ARE DERIVED FROM | THE OEM'S SPECI | FICATIONS. | | | | | | CPC: | | CORD AND PL | LUG CONNECTI | TON | | | | E.C. S | SHALL CALIB | BRATE SO | LID STATE | OVERLO | ADS PER C | DEM/FIELD | VERIFICA | ATION RESULT | S | | | | | | | | |
| 4 | E.C. SHALL VERIFY IN THE FIELD THE | E CONTACTOR/STA | RTER/VFD/P | RMS/OEM (| CONTROLLE | R/DISCONNEC | СТ | | FVNR: | | FULL VOLTAG | E NON-REVER | RSING MAGNETI | C STARTER | | | E.C. S | SHALL PROV | /IDE FOUF | R SETS OF | FORM "C | " AUX CON | TACTS WI | THIN THE | VFD ENCLOSU | JRE | | | | | | | | |
| | RATINGS WITH THE OEM PRIOR TO I | NSTALLING CONDU | JIT. | | | | | | VFD: | | | EQUENCY CON | | | | | E.C. S | SHALL PROV | /IDE OEM | START-UF | AND CO | MMISSIONII | NG OF VF | D PRIOR 1 | TO FINAL PUNC | CHLIST | | | | | | | | |
| 5 | E.C. SHALL VERIFY IN THE FIELD THE | E THERMAL OVERL | OAD RATING | S WITH TH | E OEM. | | | | TS: | | TOGGLE SWIT | | | | NO | TE #3 | E.C. S | SHALL PROV | /IDE MOUI | NTING/RAC | CKING FO | R DISCON | NECT SWIT | TCHES | | | | | | | | | | |
| | PROVIDE OVERLOADS PER OEM RE | COMMENDATIONS. | | | | | | | FUSE | | FUSE DISCON | NECT SWITCH | -1 | | | | ALL D | ISCONNECT | T SWITCH | ES SHALL | BE WITH | IN SIGHT O | F THE MO | TOR/EQU | IPMENT | | | | | | | | | |
| 6 | E.C. SHALL VERIFY IN THE FIELD WIT | TH THE OEM PRIOR | TO INSTALL | .ING CONDL | JIT. | | | | NON-FU | JSE | | DISCONNECT S | | | | | AND S | SHALL NOT E | EXCEED A | A MAXIMU | M DISTAN | CE OF 5 FE | ET FROM | THE MOT | OR/EQUIPMEN | ıΤ | | | | | | | | |
| | E.C. SHALL LOCATE THE DISCONNE | CT SWITCH WITHIN | 5FT AND W | THIN SIGHT | r of the EQ | UIPMENT. | | | TC: | | TIMECLOCK C | | - | | | | MAXIN | MUM HEIGHT | T AFF OF | DISCONNE | ECT SWIT | CH HANDL | E SHALL N | IOT EXCE | ED 6'-3" | | | | | | | | | |
| 7 | E.C. SHALL PROVIDE CONNECTIONS | TO MOTOR/LISTED | D EQUIPMEN | T. PROVIDE | A Cu EQUI | PMENT GROU | JND(EGC) | | | | | | | | NO | TE #4 | E.C. S | SHALL VERIF | FY MOTOR | R ROTATIO | N AND OF | PERATION | WITH THE | OEM | | | | | | | | | | |
| | FROM THE DISCONNECT SWITCH TO | THE MOTOR/LISTE | ED EQUIPME | NT CONNE(| CTION POINT | T/JUNCTION B | BOX. | | | | | | | | | | REPR | RESENTATIVI | E PROIR 1 | TO ENERG | SIZING MO | TOR(S)/EQ | UIPMENT | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | E.C. S | SHALL PROV | /IDE GRO | UNDING AI | ND BOND | ING PER TH | HE OEM SF | PECIFICA | TIONS | | | | | | | | | |
| | | | | | | | | | | | | | | | | | EQUIF | PMENT FLEX | X WHIPS S | SHALL NOT | T EXCEED | 72" MAXIN | IUM LENG | TH | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | VERIF | Y ALL CPC I | NEMA CO | NNECTION | NS WITH T | ГНЕ ОЕМ Р | RIOR TO IN | NSTALLA ⁻ | TION | | | | | | | | | |
| | | | | | | | | | | | | | | | NO | TE #5 | E.C SI | HALL PROVI | IDE USER | TOGGLE/ | KEY SWIT | CH @ 48" A | AFF. | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | TE #6 | | ONNECT IS II | | | | • | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | TE #7 | E.C. S | SHALL PROV | VIDE TIME | CLOCK FO | OR EXHAL | JST FANS. ⁻ | TYPE SPE | C & IOM B | SY ALDES OR A | PPROVE' | D EQUAL. R | EFER TO | PLANS FC | OR LOCA | TION | | | |

| | | | _ | | | | | _ | _ | _ | | | | | | | | | |
|---------|----------------|---------------------------------------|---------|----------|------|---------|------------------------|-------------------|----------|-----------|-----------|--------|----------|---------|--|--|--|--|--|
| F | PANEL | .BOARD: RP | -2 | | | | | LOCATION: | | | | | | | | | | | |
| VOLTA | GE: 240/12 | 0-1 PHASE-3W | | | | | | | C | В ТҮРЕ | : BOLT-ON | | | | | | | | |
| 1 | PE: MLO | · · · · · · · · · · · · · · · · · · · | | | | | | | | | :: NEMA 1 | | | | | | | | |
| • | PE: COPPE | ER | | | | | | М | IAX CKT. | | | | | | | | | | |
| | IPS: 100 A | | | | | | | MOUNTING: SURFACE | | | | | | | | | | | |
| OCPD AM | IPS: | | | | | CU | CU NEUTRAL BUS RATING: | | | | | | | | | | | | |
| OCPD C | PT: | | | | | | NEU | JTRAL B | ONDING | 3 No | | | | | | | | | |
| 1 | NG: 22 KAI | r. | | | | | | | J EQ. G1 | | | | | | | | | | |
| BUS C | | | | | | | | | INTEGR | | | | | | | | | | |
| 2000 | | | | | | | | | IIII | , LE OI D | - | | | | | | | | |
| | | | | | Α | В | Α | В | | | | | | | | | | | |
| СКТ | | SERVES | C/B | POLE | , , | | , , | | POLE | C/B | | SERVES | | CKT | | | | | |
| RP-2:1 | TOIL FT 11 | 0/111 RECEPT | 20 A | 1 | 540 | | 0 | | 1 | | Spare | | | RP-2:2 | | | | | |
| RP-2:3 | _ | 1 DED CIRCUIT | 20 A | 1 | 0.0 | 1000 | | 0 | 1 | 20 A | Spare | | | RP-2:4 | | | | | |
| RP-2:5 | | 0 DED CIRCUIT | 20 A | 1 | 1000 | | 0 | | 1 | 20 A | Spare | | | RP-2:6 | | | | | |
| RP-2:7 | TOILETS | | 20 A | 1 | | 168 | | 0 | 1 | 20 A | Spare | | | RP-2:8 | | | | | |
| RP-2:9 | SANITARY | | 20 A | 2 | 916 | 100 | 0 | | 1 | 20 A | Spare | | | RP-2:10 | | | | | |
| RP-2:11 | | | | | | 916 | | 0 | 1 | 20 A | Spare | | | RP-2:12 | | | | | |
| RP-2:13 | DWH-2 | | 20 A | 2 | 1000 | | 0 | | 1 | 20 A | Spare | | | RP-2:14 | | | | | |
| RP-2:15 | | | | | | 1000 | | 0 | 1 | 20 A | Spare | | | RP-2:16 | | | | | |
| RP-2:17 | EF-1 | | 15 A | 1 | 528 | | 0 | | 1 | 20 A | Spare | | | RP-2:18 | | | | | |
| RP-2:19 | EWH-9 | | 15 A | 2 | | 750 | | 0 | 1 | 20 A | Spare | | | RP-2:20 | | | | | |
| RP-2:21 | | | | | 750 | | 0 | | 1 | 20 A | Spare | | | RP-2:22 | | | | | |
| RP-2:23 | EWH-10 | | 15 A | 2 | | 750 | | 0 | 1 | 20 A | Spare | | | RP-2:24 | | | | | |
| RP-2:25 | | | | | 750 | | 0 | | 1 | 20 A | Spare | | | RP-2:26 | | | | | |
| RP-2:27 | EWH-11 | | 15 A | 2 | | 750 | | 0 | 1 | 20 A | Spare | | | RP-2:28 | | | | | |
| RP-2:29 | | | | | 750 | | 0 | | 1 | 20 A | Spare | | | RP-2:30 | | | | | |
| | 1 | TOTAL P | ER PHAS | SE (VA): | 623 | 34 VA | 533 | 4 VA | | | | | ' | | | | | | |
| 1 | | CONNECTED AM | PS PER | PHASE: | 5 | 2 A | 44 | I A | | | | | | | | | | | |
| 1 | | TOTAL CO | NNECTE | ED (VA): | 115 | 67 VA | | | _ | | | | | | | | | | |
| 1 | | TOTAL CON | INECTED | AMPS: | 4 | 8 A | | | | | | | | | | | | | |
| | | TOTA | L DEMAN | ND (VA): | 116 | 09 VA | | | | | | | | | | | | | |
| | | TOTAL | DEMAND | | | 8 A | | | | | | | | | | | | | |
| LOAD T | YPES: | CONNECTED LOAD: | | ND FAC | TOR: | | 1AND LO | DAD: | NOTES | i: | | | | | | | | | |
| | LIGHTING: | 168 VA | 125.00% | | | 210 VA | | | | | | | <u> </u> | | | | | | |
| RECI | EPTACLES: | 540 VA | 100.00% | | | 540 VA | | | | | | | | | | | | | |
| | MOTORS: | | 100.00% | | | 528 VA | | | | | | | | | | | | | |
| | HEATING: | 4500 VA | 100.00% |) | | 4500 VA | ١ | | | | | | | | | | | | |
| | COOLING: | | | | | | | | | | | | | | | | | | |
| Α | PPLIANCE: | | | | | | | | | | | | | | | | | | |
| | OTHERS: | 5831 VA | 100.00% |) | | 5831 VA | ١ | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | |

| | MDP SCHEDULE SHOWN FOR REFERENCE ONLY. REFER TO SITE PLANS FOR FULL SCOPE OF WORK. | | | | | | | | | | | | | | |
|---|---|-----------------|---------|--------------------|-------|-------|--------------------|---|-------|----|------|------|-------|--------|-------|
| | PANELBOARD: MDP | | | | | | | LOCATION: ELECTRICAL / | | | | | | | |
| MAIN BUS BUS OCPD OCPD INT. RA | VOLTAGE: 240/120-1 PHASE-3W MAIN TYPE: MCB BUS TYPE: COPPER BUS AMPS: 400 A OCPD AMPS: 400 A OCPD OPT: INT. RATING: 42 KAIC BUS OPT. | | | | | | | C/B TYPE: BOLT-ON ENCLOSURE: NEMA 1 MAX CKT. POLES: 8 MOUNTING: SURFACE CU NEUTRAL BUS RATING: 100.00% NEUTRAL BONDING Yes CU EQ. GND. BUS: Yes INTEGRAL SPD: | | | | | | | |
| | | | | | А | В | С | Α | В | С | | | | | |
| CKT | | SERVES | C/B | POLE | | | | | | | POLE | | | SERVES | CKT |
| MDP:1 | RP-1 | | 100 A | 2 | 14515 | | | 6234 | | | 2 | 60 A | RP-2 | | MDP:2 |
| MDP:3 | | | | | | 14644 | | | 5334 | | | | | | MDP:4 |
| MDP:5 | RP-3 | | 200 A | 2 | 4584 | | | 0 | | | 1 | | Spare | | MDP:6 |
| MDP:7 | | | | | | 3012 | | | 0 | | 1 | 20 A | Spare | | MDP:8 |
| | TOTAL PER PHASE (VA): 25333 VA 22989 VA CONNECTED AMPS PER PHASE: 211 A 192 A TOTAL CONNECTED (VA): 48322 VA TOTAL CONNECTED AMPS: 201 A TOTAL DEMAND (VA): 48854 VA | | | | | | | | | | | | | | |
| | TOTAL DEMAND AMPS: 204 A | | | | | | | 44115.1 | 0.4.5 | | | | | | |
| LOAD | TYPES: | CONNECTED LOAD: | | DEMAND FACTOR: | | | DEMAND LOA | | | NO | TES: | | | | |
| | LIGHTING: | | | 125.00% 100.00% | | | 2663 VA 9480 VA | | | | | | | | |
| RE | CEPTACLES: | | 100.00% | | | | 1520 VA | | | | | | | | |
| | MOTORS: HEATING: | | 100.00% | | | | 8000 V | | | | | | | | |
| | COOLING: | 10000 VA | 100.0 | <i>J</i> O /0 | | ' | 0000 V | ^_ | | | | | | | |
| | APPLIANCE: | | | | | | | | | | | | | | |
| | OTHERS: 15831 VA 100.0 | | | 00% | | 1 | 5831 V | /A | | | | | | | |



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Dewberry Architects Inc. 132 North York Street, Suite 2C Elmhurst, IL 60126 T 847.841.0571



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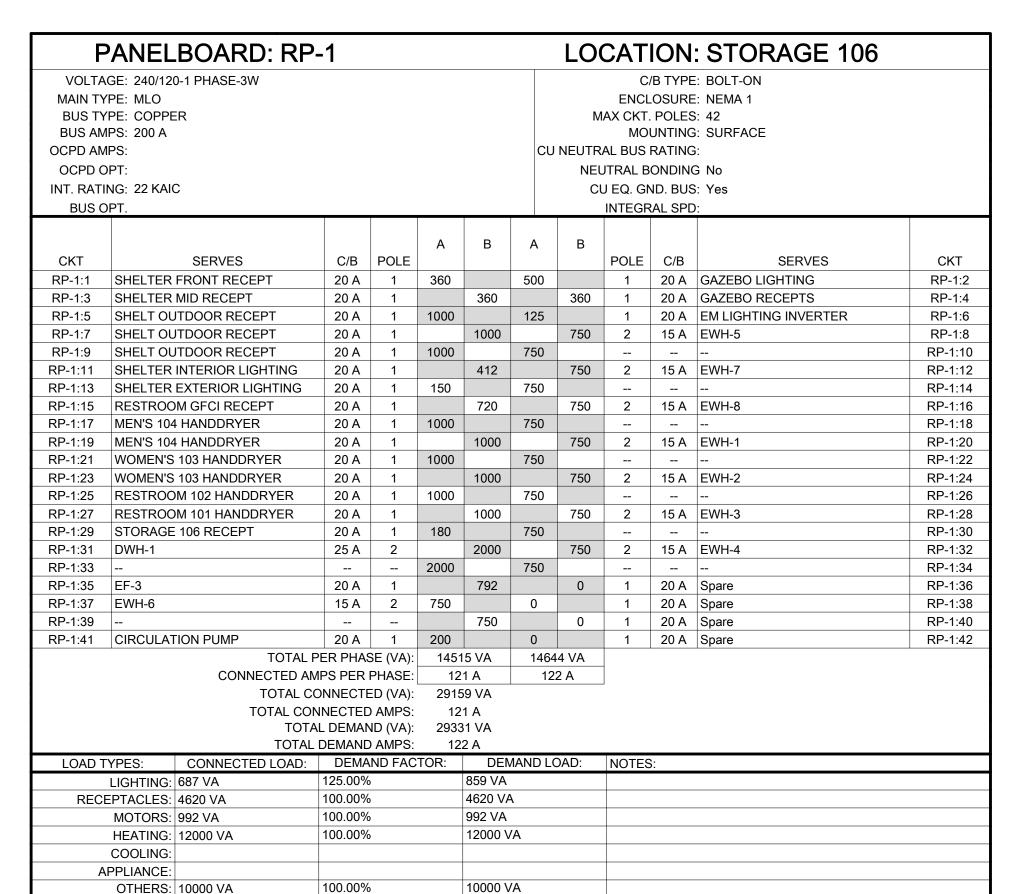
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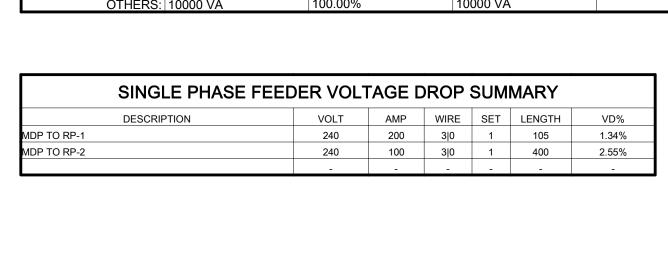
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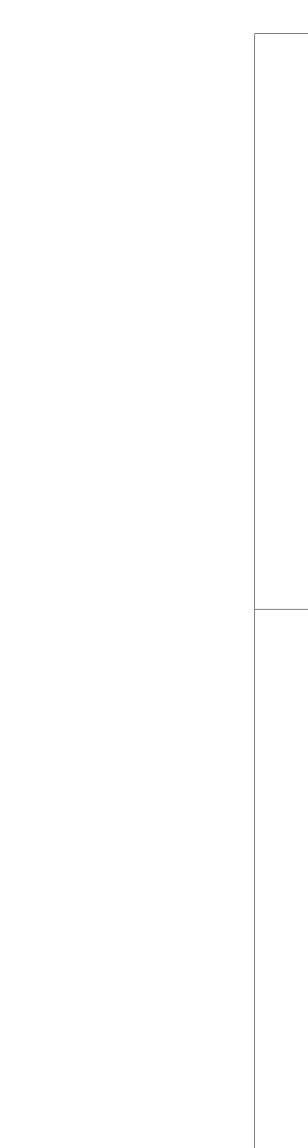
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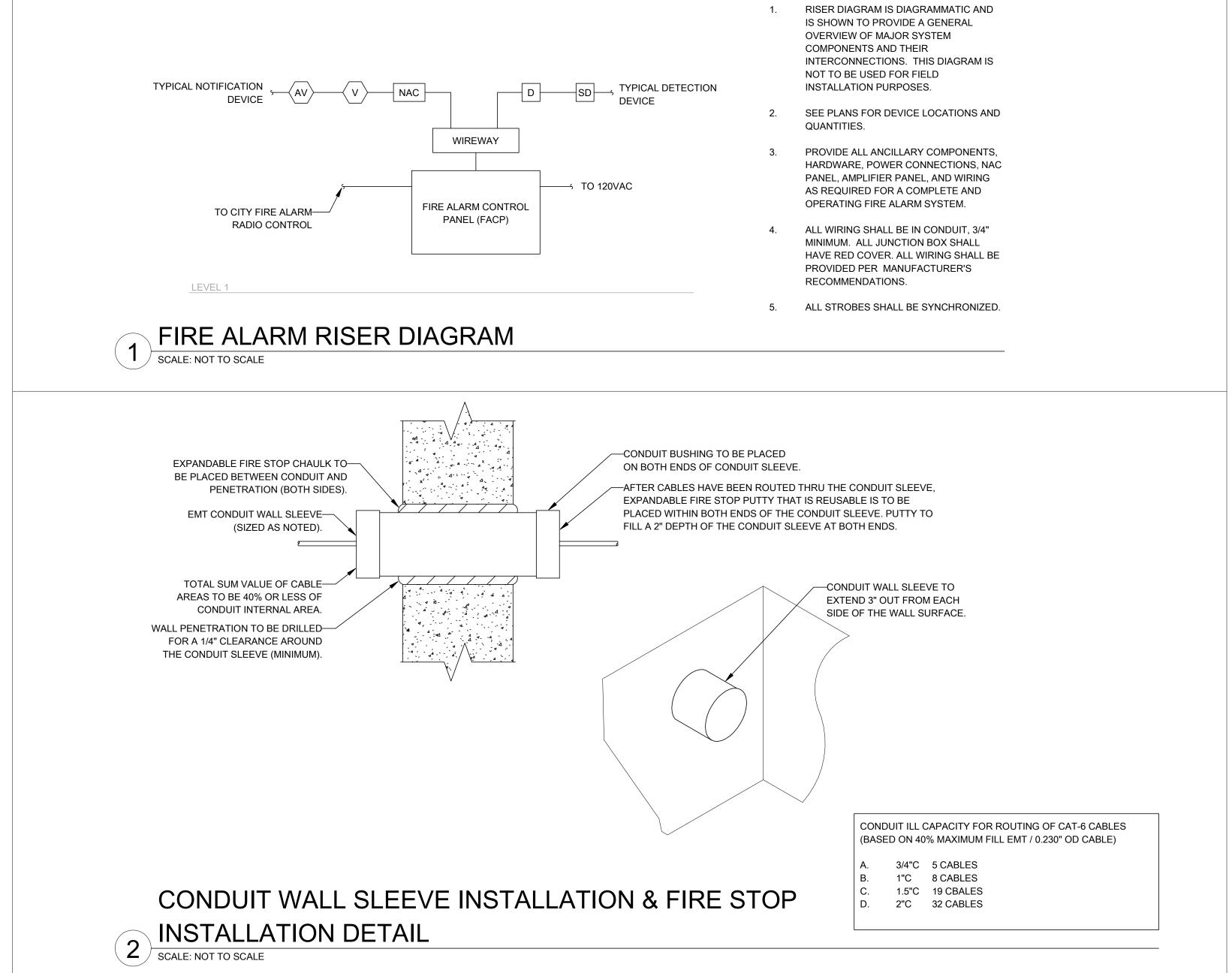
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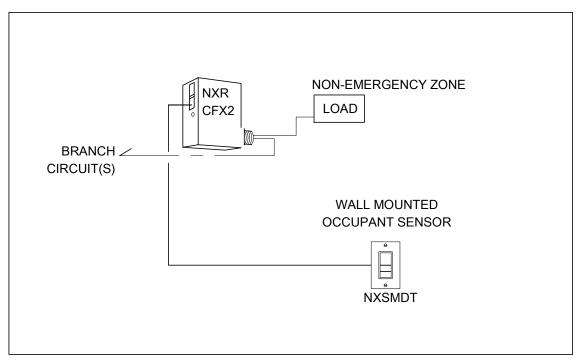
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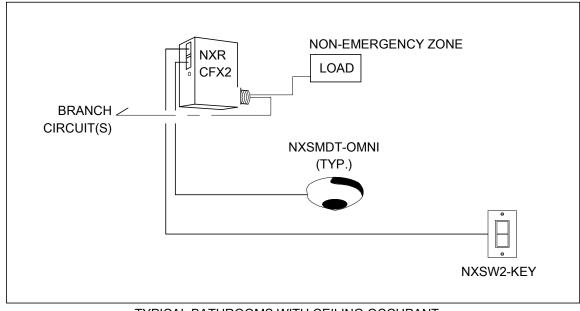




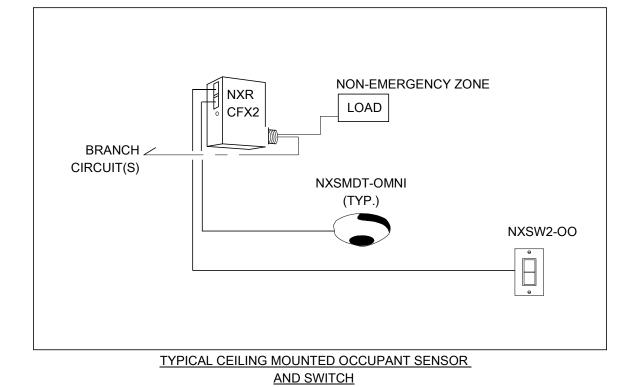


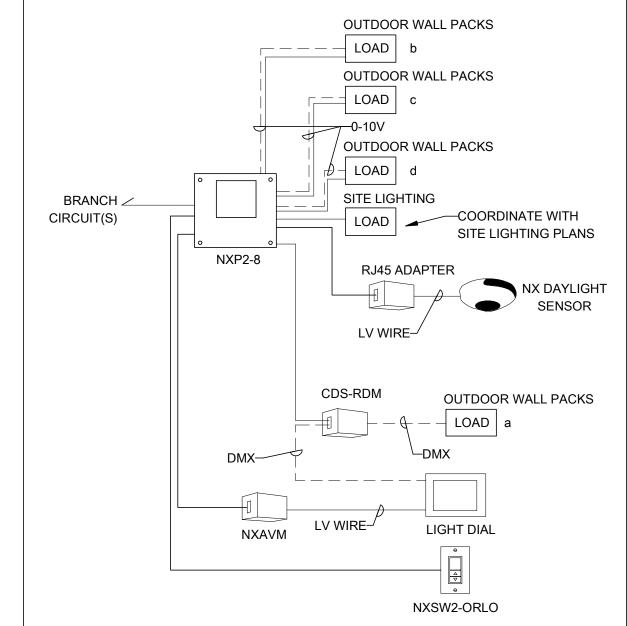


TYPICAL SINGLE WALL MOUNTED OCCUPANT SENSOR ROOM

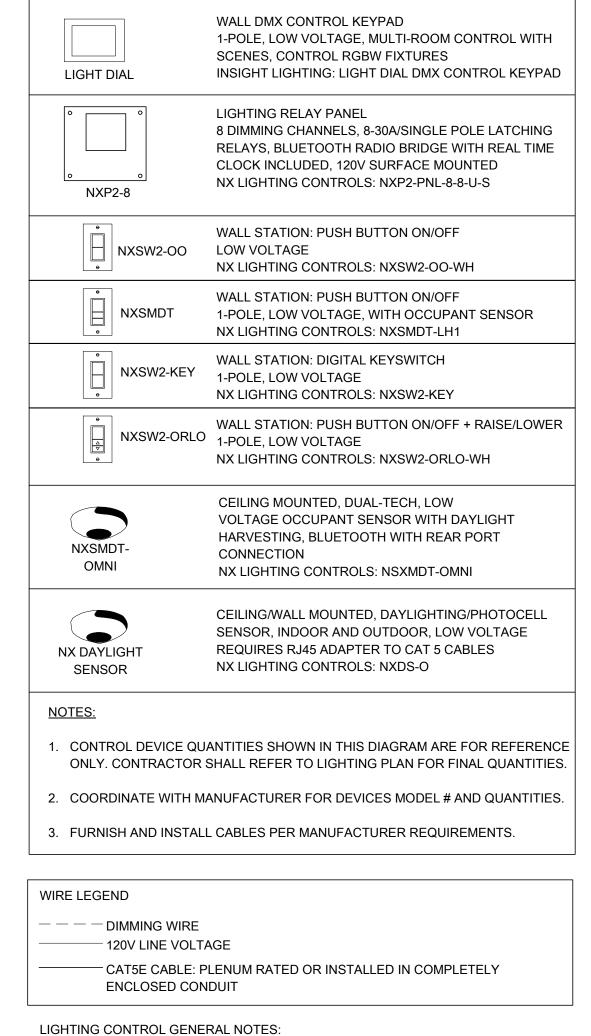


TYPICAL BATHROOMS WITH CEILING OCCUPANT SENSOR AND KEYED SWITCH



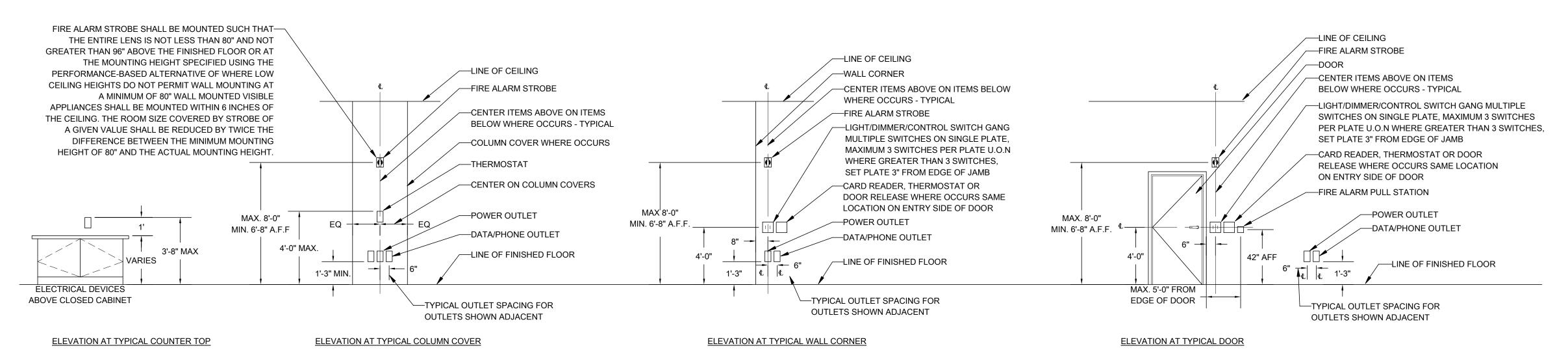


STAGE EXTERIOR LIGHTING CONTROLS



- OCCUPANT SENSOR, DAYLIGHT SENSOR, AND SWITCH QUANTITIES: PROVIDE QUANTITIES OF NOTED DEVICES AS SHOWN ON FLOOR PLANS. BUT NO LESS THAN ONE OF EACH DEVICE INDICATED ON THE WIRING DIAGRAMS. LIGHTING CONTROLS VENDOR MUST PROVIDE ALL ADDITIONAL APPARATUSES AND DEVICES REQUIRED FOR A FULLY FUNCTIONAL SYSTEM AS NOTED ON THIS SHEET, ON THE DRAWING SET, AND AS REQUIRED IN THE PROJECT SPECIFICATION BOOK.
- LIGHTING VENDOR TO CONFIRM QUANTITIES AND TYPE OF RELAY POWER PACKS REQUIRED MEET PROJECT SPECIFICATIONS AND DESIGN DRAWINGS. ALL LAYOUTS SHOW MINIMUM NUMBER OF DEVICES AND MUST BE EXPANDED TO APPLY TO EACH SPACE WITHIN PROJECT.





- REFER TO ARCHITECTURAL DRAWINGS FOR ADA ROOM HEIGHT REQUIREMENTS
- NOT ALL ABOVE DEVICES AND DIMENSIONS MAY BE USED OR APPEAR IN THE DESIGN DRAWINGS.
- ALL ABOVE HEIGHT DIMENSIONS ARE FOR REFERENCE ONLY AND SUBJECT TO APPROVAL BY THE LOCAL AUTHORITY HAVING JURISDICTION AND ARCHITECT

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> > Architect

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ELECTRICAL DETAILS

SCALE

DRAWN BY

I. GENERAL CONDITIONS AND REQUIREMENTS

- A. ALL ELECTRICAL WORK INCLUDING BUT NOT LIMITED TO INSTALLATION, GROUNDING, EQUIPMENT, AND DEVICES SHALL CONFORM TO THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION AND APPLICABLE NATIONAL, STATE, CITY, AND MUNICIPAL BUILDING CODES.
- B. ALL ELECTRICAL WORK SHALL CONFORM TO NATIONAL AND LOCAL STANDARDS AND GUIDELINES INCLUDING BUT NOT LIMITED TO THE LATEST VERSIONS OF THE FOLLOWING:
- 1. ANSI AMERICAN NATIONAL STANDARDS INSTITUTE
- 2. ILLUMINATING ENGINEERING SOCIETY OF NORTH AMERICA (IES)
- 3. NATIONAL ELECTRICAL SAFETY CODE (NESC)
- NFPA NATIONAL FIRE PROTECTION ASSOCIATION: STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE (NFPA 70E)
- UNDERWRITERS LABORATORY (OR OTHER RECOGNIZED INSPECTING AGENCY)
- C. ALL MATERIALS SHALL BE LISTED BY AN APPROVED LABORATORY AND SHALL BE NEW AND THE BEST OF THEIR RESPECTIVE KINDS AND SHALL BE INSTALLED AND APPLIED AS INTENDED AND REQUIRED BY THE MANUFACTURER.
- D. ELECTRICAL WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:
- 1. ALL MATERIALS
- EQUIPMENT, TOOLS, AND LABOR REQUIRED FOR A COMPLETE AND CODE COMPLIANT SYSTEM.
- ANY OSHA REQUIREMENTS THAT MAY APPLY TO THE WORK UNDER THIS CONTRACT INCLUDING BUT NOT LIMITED TO SAFETY MEETINGS, STRICT LOCK/OUT/TAG/OUT PROCEDURES, AND PROPER PROTECTIVE EQUIPMENT.
- LABOR AND SPECIALTY MODELING SOFTWARE REQUIRED FOR INTERDISCIPLINARY COORDINATION AND FAMILIARIZATION WITH SITE CONDITIONS.
- 5. TRAINING AND GATHERING OF DOCUMENTATION FOR CLOSEOUT PROCEDURES.
- E. THE DRAWINGS AND SPECIFICATIONS SHALL BE UNDERSTOOD TO COVER COMPLETE SYSTEMS ACCORDING TO THEIR INTENT AND MEANING AS DESCRIBED HEREIN. THIS SPECIFICATION IS INCLUSIVE FOR EACH ITEM, REQUIRING ALL LABOR, MATERIAL AND EQUIPMENT NECESSARY TO PROPERLY INSTALL, ALTER, ADJUST AND PUT IN OPERATION THE COMPLETE ELECTRICAL SYSTEM.
- F. THIS CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ALL ELECTRICAL COMPONENTS AND SYSTEMS AS REQUIRED FOR A FULLY FUNCTIONAL SYSTEM AND AS DESCRIBED HEREIN. ALL EQUIPMENT AND DEVICES SPECIFIED AND ADDITIONALLY REQUIRED WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR. IT WILL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO PURCHASE ALL EQUIPMENT AND FURNISH LABOR AND EQUIPMENT FOR A COMPLETE CODE COMPLIANT OPERATING ELECTRICAL SYSTEM.
- G. THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER LAYOUT AND CONSTRUCTION OF THE WORK INCLUDED IN THIS CONTRACT, INSTALLED ACCORDING TO THE APPLICABLE BUILDING CODES.
- H. SPECIFIC VOLTAGE AND CURRENT REQUIREMENTS ON THE ELECTRICAL DRAWINGS SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO VERIFY THE VOLTAGE PRIOR TO PURCHASING OR ROUGH-IN WORK. THIS CONTRACTOR SHALL REVIEW ALL DEVICES AND EQUIPMENT FURNISHED BY HIS/HER CONTRACT AND THOSE FURNISHED BY OTHER CONTRACTORS ARE IN AGREEMENT WITH THE DATA SHOWN ON THE DRAWINGS. THE E.C. SHALL PROVIDE FEEDERS, CABLE AND DEVICES THAT ARE IN ACCORDANCE WITH CODE.
- ITEMS, ACCESSORIES, AND DEVICES REASONABLY INFERABLE AS NECESSARY FOR THE COMPLETE AND PROPER OPERATION OF ANY SYSTEM SHALL BE PROVIDED BY THE CONTRACTOR FOR SUCH SYSTEM(S), WHETHER THEY ARE SPECIFICALLY CALLED FOR BY THE DRAWINGS AND/OR SPECIFICATIONS OR NOT.
- J. THE DRAWINGS MAY NOT SHOW COMPLETE OR ACCURATE DETAILS OF THE EXISTING FACILITY IN EVERY RESPECT. EXACT LOCATIONS AND RELATIONS ARE TO BE DETERMINED IN THE FIELD AND SHALL BE TO THE SATISFACTION OF THE OWNER. THIS CONTRACTOR SHALL VERIFY AND BE RESPONSIBLE FOR ALL FIELD MEASUREMENTS AND EXACT EQUIPMENT LOCATIONS.
- K. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF CONDUIT AND RACEWAYS ARE SHOWN FOR CONCEPT. BUT DO NOT INTEND TO SHOW EVERY RISE, DROP, OFFSET, FITTING, NOR EVERY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN ELEVATION DUE TO COORDINATION WITH THE WORK OF OTHER TRADES AND BUILDING CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
- L. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLEARNESS OF PRESENTATION. ENGINEER HAS RIGHT TO MOVE ANY EQUIPMENT OR DEVICE BY 10 FEET WITHOUT ANY ADDITIONAL COST TO OWNER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO ROUGH-IN.
- M. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL X-RAY IMAGING, CORING, CUTTING, PATCHING, REPAIRING AND REFINISHING OF BUILDING CONSTRUCTION REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK. ALL PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE NEW CONSTRUCTION AS CLOSELY AS POSSIBLE. CARE SHALL BE TAKEN SO AS NOT TO DAMAGE ANY EXISTING BUILDING CONSTRUCTION OR ITEMS THAT ARE TO REMAIN. ANY EXISTING FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR, TO THE SATISFACTION OF THE ENGINEER AND OWNER.
- N. THIS CONTRACTOR IS RESPONSIBLE FOR SCHEDULING DELIVERY, RECEIVING, UNLOADING, UNCRATING, STORING, SETTING IN PLACE, AND PROTECTING FROM DAMAGE, VANDALISM, THEFT OR WEATHER ALL NEW EQUIPMENT FURNISHED BY THIS CONTRACTOR FOR THE ENTIRETY OF CONSTRUCTION. THIS REQUIREMENT ALSO APPLIES TO ITEMS FURNISHED BY THE OWNER TO THE ELECTRICAL CONTRACTOR. THIS CONTRACTOR SHALL COORDINATE THE DELIVERY TO MEET THE PROJECT COMPLETION DATES AS ESTABLISHED BY THE OWNER.
- REFER TO ARCHITECTURAL DRAWINGS FOR EXISTING BUILDING CONSTRUCTION THAT IS TO REMAIN AND, THEREFORE, SUBJECT TO PATCHING, REPAIRING, AND REFINISHING.
- P. ANY ITEMS AND EQUIPMENT SCHEDULED TO BE REMOVED THAT THE OWNER WANTS TO RETAIN SHALL BE REMOVED CAREFULLY (SO AS NOT TO DAMAGE THEM) AND TURNED OVER TO THE OWNER. ALL OTHER ITEMS TO BE REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND REMOVED FROM THE SITE.
- Q. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEANUP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEANUP, THE ENGINEER WILL DIRECT ANOTHER CONTRACTOR TO PERFORM THE CLEAN-UP AND THE NEGLIGENT CONTRACTOR SHALL PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ENGINEER.
- R. ACCESS TO WORK AREAS, INCLUDING WORK SCHEDULED THEREIN, MUST HAVE PRIOR APPROVAL OF THE OWNER. ALL WORK AREAS WILL BE KEPT CLEAN BY THIS CONTRACTOR WITH THOROUGH CLEAN UP AT END OF EACH DAY'S WORK. ALL EXISTING ELECTRIC SERVICE EQUIPMENT IS TO REMAIN OPERATIONAL DURING THE CONSTRUCTION PERIOD. ANY TEMPORARY WIRING OR REROUTING OF CIRCUITRY TO ACHIEVE THIS IS BY THE ELECTRICAL CONTRACTOR.
- S. CONTRACTOR SHALL FURNISH MATERIALS AND USE INSTALLATION METHODS SUITABLE FOR THE ENVIRONMENTAL CONDITIONS OF THE AREA IN WHICH EQUIPMENT, FIXTURES AND DEVICES ARE INSTALLED.
- T. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CUT AND REINFORCED AS REQUIRED BY FIELD CONDITIONS AND LOCATIONS AND SIZES SHALL BE CHECKED AND APPROVED BY ENGINEER BEFORE CONTRACTOR CUTS ANY BUILDING STRUCTURAL MEMBER.
- U. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACT DRAWINGS (BEFORE SUBMITTING THEIR BIDS) TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTORS WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.

- V. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. IF MATERIAL IS STORED OUTSIDE OF THE BUILDING, IT MUST BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") ON 6' x 6' PLANKS AND/OR WOOD PALLETS. ALL PIPING AND DUCTWORK WILL HAVE THE ENDS CLOSED TO KEEP OUT DIRT AND OTHER DEBRIS. NO EQUIPMENT SHALL BE STORED ON THE SITE UNLESS IT IS SITTING ON WOOD PLANKS AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS. ALL MATERIALS AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WATERPROOF TARPS OR VISQUIN.
- W. ELECTRICAL CONTRACTOR SHALL COORDINATE ALL NON-ACCESSIBLE SYSTEM DEVICES, PULL BOXES AND EQUIPMENT, ETC. TO ACCESSIBLE CEILING AREAS. E.C. SHALL INCLUDE ALL COMPLETE COSTS FOR RELOCATION AND VERIFY SUCH CONDITIONS WITH ARCHITECTURAL CEILING PLANS PRIOR TO FINAL BID.
- X. ELECTRICAL CONTRACTOR SHALL FOLLOW NEMA NO. PB-1.1 1979 PUBLICATION, PART V PROCEDURES PRIOR TO ENERGIZATION OF ANY SWITCHGEAR. THE ELECTRICAL CONTRACTOR SHALL USE ONLY TRAINED AND AUTHORIZED PROFESSIONAL ELECTRICAL CRAFT PERSONS. THE E.C. SHALL FURNISH ANY PERSONNEL SAFETY EQUIPMENT, LADDERS, MAN-LIFTS, AND POWERED HAND TOOLS THAT MAY BE REQUIRED. ALL POWERED TOOLS SHALL BE IN GOOD CONDITION WITH ALL GROUND CONDUCTOR IN PROPER OPERATION.
- Y. VERIFY CODE CLEARANCES FOR ALL NEW ELECTRICAL WORK BEFORE PROCEEDING WITH CONSTRUCTION. PROVIDE ADEQUATE WORKING CLEARANCES, DEDICATED EQUIPMENT SPACE, AND LEAK PROTECTION SYSTEMS AS REQUIRED BY APPLICABLE ELECTRICAL CODES. COORDINATE USAGE OF AVAILABLE SPACE WITH ALL TRADES. IN THE EVENT OF CONFLICTS, NOTIFY THE ENGINEER BEFORE PROCEEDING WITH THE WORK.

II. CONFLICT IN DOCUMENTS

A. GENERALLY, THE DRAWINGS ESTABLISH THE LOCATION, QUANTITY AND RELATIONSHIP OF THE PARTS OF THE WORK, AND THE SPECIFICATIONS DEFINE THE TYPE AND QUALITY OF MATERIALS AND WORKMANSHIP. WORK SHOWN IN THE DRAWINGS AND NOT MENTIONED IN THE SPECIFICATIONS, OR REQUIRED BY THE SPECIFICATIONS AND NOT SHOWN ON THE DRAWINGS, SHALL BE PROVIDED AS IF FULLY PROVIDED FOR IN BOTH. IN THE CASE OF CONFLICTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, OR WITHIN EITHER DOCUMENT, THE ENGINEER SHALL DETERMINE THE INTENT. IN SUCH CASES, IN GENERAL, THE MORE STRINGENT REQUIREMENT CONCERNING GREATER QUANTITY, QUALITY AND/OR RESULTING IN A HIGHER COST SHALL GOVERN WITHOUT FURTHER COST TO THE OWNER.

III. SHUT-DOWN OF SYSTEM

- COORDINATE AND SEQUENCE DEMOLITION SO AS NOT TO CAUSE SHUTDOWN OF OPERATION OF SURROUNDING AREAS.
- B. SHUT-DOWN PERIODS:
 - ARRANGE TIMING OF SHUT-DOWN PERIODS OF SYSTEM, SERVICE WITH OWNER. DO NOT SHUT DOWN ANY SERVICE, WITHOUT PRIOR WRITTEN APPROVAL. PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
- 2. KEEP SHUT-DOWN PERIOD TO MINIMUM OR USE INTERMITTENT PERIOD AS DIRECTED BY THE
- MAINTAIN LIFE-SAFETY SYSTEM IN FULL OPERATION IN OCCUPIED FACILITIES, OR PROVIDE NOTICE MINIMUM 15 WORKING DAYS IN ADVANCE.
- 4. THE SYSTEM SHUT-DOWN SHALL BE DONE DURING OFF-BUSINESS HOURS.

IV. VISIT TO SITE

- A. THIS CONTRACTOR SHALL CAREFULLY EXAMINE THE ENTIRE SET OF CONTRACT DOCUMENTS, VISIT THE SITE, AND FULLY FAMILIARIZE HIMSELF/HERSELF AS TO ALL CONDITIONS AND MATTERS THAT CAN AFFECT THE WORK OR THE COST THEREOF. THIS CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ENGINEER IN WRITING, AND PRIOR TO BID, OF DISCREPANCIES OR OMISSIONS FROM THE DRAWINGS, SPECIFICATIONS OR OTHER DOCUMENTS. OBTAIN CLARIFICATION PRIOR TO SUBMITTING ANY BID. LACK OF NOTIFICATION SHALL BE INTERPRETED TO INDICATE NO DISCREPANCIES OR CONFLICTS EXIST AND ADDITIONAL COMPENSATION WILL NOT BE GRANTED AFTER AWARD OF CONTRACT FOR ANY WORK REQUIRED TO COMPLY WITH THESE REQUIREMENTS OR INTENT.
- B. SUBMISSION OF PROPOSALS SHALL BE CONSIDERED EVIDENCE THAT THE CONTRACTOR HAS VISITED AND EXAMINED THE SITE
- C. NO EXTRA PAYMENT WILL BE ALLOWED THE CONTRACTOR FOR EXTRA WORK CAUSED BY FAILURE TO VISIT, EXAMINE AND VERIFY.
- D. THE ENGINEER WILL MAKE PERIODIC VISITS TO THE JOBSITE TO OBSERVE THE PROGRESS OF THE WORK AND TO OBSERVE ITS ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE ENGINEER IS NOT A GUARANTOR OF THE CONTRACTOR'S WORK, RESPONSIBLE FOR JOBSITE SAFETY, RESPONSIBLE FOR SUPERINTENDING, OR IN CHARGE OF THE ERECTION AND/OR CONSTRUCTION OF THE WORK. THE ENGINEER IS NOT RESPONSIBLE FOR SAFETY OR ADEQUACY OF ANY SHIPMENT, BUILDING, SCAFFOLDING, FORMS OR OTHER WORK AIDS USED.

V. LAWS, ORDINANCES, AND REGULATIONS

- A. ALL SYSTEMS SHALL CONFORM IN FULL AND/OR PART SHALL CONFORM TO ALL PERTINENT LAWS, ORDINANCES AND REGULATIONS OF ALL BODIES HAVING JURISDICTION AT ALL GOVERNING LEVELS, NOTWITHSTANDING ANYTHING IN THESE DRAWINGS OR SPECIFICATIONS TO THE CONTRARY. IN CASE OF CONFLICT BETWEEN GOVERNING LEVELS, THE MORE STRINGENT LAWS SHALL APPLY.
- B. THE CONTRACTOR SHALL PAY ALL FEES AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS REQUIRED BY ANY AUTHORITY HAVING JURISDICTION IN CONNECTION WITH HIS WORK.
- C. WHERE APPLICABLE, ALL NEW MATERIAL SHALL BEAR THE UNDERWRITER'S (UL) SEAL OF APPROVAL, AS WELL AS THOSE SEALS OF ALL MUNICIPALITIES HAVING JURISDICTION. CERTIFICATES TO THIS AFFECT TO BE FURNISHED TO ARCHITECT UPON REQUEST.
- D. THE ELECTRICAL CONTRACTOR SHALL SECURE AND PAY FOR ALL LICENSES REQUIRED BY THE GOVERNING BODIES TO OPERATE AS AN ELECTRICAL CONTRACTOR FOR THIS PROJECT.

VI. WORKMANSHIP

- A. ALL WORK TO BE PERFORMED SHALL BE DONE BY QUALIFIED MECHANICS. ALL MECHANICS IN THE EMPLOY OF THIS CONTRACTOR ON THIS PROJECT SHALL BE SKILLED IN THE PHASES OF THE WORK TO WHICH THEY ARE USED.
- B. ALL WORK MUST BE DONE IN WORKMANLIKE MANNER TO THE COMPLETE SATISFACTION OF THE ENGINEER. ALL MATERIAL SHALL BE NEW, OF THE QUALITY SPECIFIED, FREE FROM DEFECTS AND IN FIRST-CLASS CONDITION. ALL VERTICAL CONDUITS SHALL BE PLUMB.
- C. THE COMPLETE SYSTEM SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRICAL CODE AND AS MAY BE MODIFIED BY LOCAL AMENDMENTS.
- D. THIS CONTRACTOR SHALL ESTABLISH SAFE WORKING PROCEDURES FOR THE PROTECTION OF THE WORKING CREW AND NON-WORKING OCCUPANTS IN ALL PHASES OF WORK, COMPLYING WITH THE APPLICABLE PROVISIONS OF ALL CITY, STATE AND FEDERAL SAFETY LAWS (OSHA). THIS SHALL INCLUDE "LOCK-OUT/TAG-OUT" AND REQUIRED GROUNDING. WORK UNDER THIS CONTRACT SHALL NOT BE DONE ON ENERGIZED CIRCUITS.

VII. MATERIALS AND EQUIPMENT

A. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND SHALL CONFORM TO THE GRADE, QUALITY AND STANDARD SPECIFIED HEREIN. ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE, IN ACCORDANCE WITH ENGINEERING DATA, RATINGS OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING OF BIDS.

- B. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USED, UNLESS INDICATED OTHERWISE, THE ENGINEER MAKES NO REPRESENTATION AS TO WHETHER OR NOT ANY HAZARDOUS OR CONTAMINATED MATERIALS (INCLUDING BUT NOT LIMITED TO ASBESTOS, PCB'S, CONTAMINATED SOILS, ETC.) ARE PRESENT WITHIN THE EXISTING BUILDING OR ON THE SITE. WORK SHOWN ON THE DRAWINGS AND/OR INDICATED IN THE SPECIFICATIONS SHALL NOT BE CONSTRUED TO CALL FOR CONTACT WITH ANY OF THESE MATERIALS. IF THESE MATERIALS ARE ENCOUNTERED OR SUSPECTED THE CONTRACTOR SHALL NOT DISTURB THEM AND SHALL CONTACT THE ENGINEER IMMEDIATELY.
- C. ALL INSTRUMENTS, APPARATUS AND EQUIPMENT SHALL BE TESTED AND PROVED TO BE ELECTRICALLY AND MECHANICALLY WITHOUT DEFECTS. THE ELECTRICAL SYSTEM SHALL BE TESTED FOR GROUNDS OR SHORTS. IF THE TROUBLE IS WITHIN THE CIRCUIT WIRING, ALL SHORTED OR GROUNDED WIRES SHALL BE REPLACED AND THEN RE-TESTED. ALL METERS, CABLES, EQUIPMENT OR APPARATUS NECESSARY FOR MAKING ALL TESTS SHALL BE FURNISHED AND PROVIDED BY THIS CONTRACTOR. ANY TESTING OR EQUIPMENT MUST CONFORM TO OSHA REQUIREMENTS.

VIII. COORDINATION WITH OTHER TRADES

- A. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ENGINEER AND OWNERS STIPULATION AS CALLED FOR IN THE SPECIFICATION AND/OR AS DIRECTED.
- B. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE LABOR AND SOFT MATERIALS REQUIRED FOR COORDINATING CONSTRUCTION INSTALLATION ELECTRONICALLY WITH OTHER TRADES USING CURRENT SOFTWARE AND MODELING SYSTEMS. THE CONTRACTOR SHALL CONFIRM MODELING REQUIREMENTS PRIOR TO BID.
- C. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING HIS WORK WITH THAT WORK OF THE OTHER TRADES. CONTRACTOR IS COMPLETELY RESPONSIBLE IF FAILURE ON HIS PART TO COORDINATE EFFORTS RESULTS IN EXTRA WORK HAVING TO BE DONE TO COMPLETE A TASK. AS SUCH, HIS FAILURE SHALL NOT BE THE BASIS FOR ANY EXTRA CHARGE AGAINST THE OWNER.
- D. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH THEIR WORK WILL BE INSTALLED IS CLEAR OF OBSTRUCTIONS. WORK SHALL BE INSTALLED TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITION AT ALL POINTS IN THE BUILDING. WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE, CONTRACTOR SHALL NOTIFY ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND/OR SHOP DRAWINGS ON LOCATIONS AND SIZES OF CONDUITS, RACEWAYS, EQUIPMENT, FRAMES, BOXES, SLEEVES AND OPENINGS, ETC. NEEDED FOR THEIR WORK TO PERMIT OTHER TRADES AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
- E. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS, AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTOR SHALL VERIFY EXACT LOCATIONS OF ALL ELECTRICAL DEVICES AND EQUIPMENT PRIOR TO ROUGH-IN WITH FIELD CONDITIONS, SHOP DRAWINGS AND WORK OF OTHER TRADES. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THEIR WORK IF SAME WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
- F. REFER TO THE ARCHITECTURAL, MECHANICAL AND PLUMBING SHEETS AND SPECIFICATIONS FOR EQUIPMENT LOCATIONS, LOADS, AND ADDITIONAL REQUIREMENTS.
- G. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT LOCATION OF HVAC EQUIPMENT TO BE WIRED PRIOR TO ROUGH-IN.
- H. THE EC SHALL REVIEW AND BE FAMILIAR WITH THE MECHANICAL DRAWINGS AND SCHEDULES FOR FINAL EQUIPMENT SELECTION. THE EC SHALL VERIFY HORSEPOWER, VOLTAGE, PHASES, AMPACITY, AND SPECIAL MOUNTING BEFORE SUBMITTING HIS BID. ANY SPECIAL CONDITIONS OR CONFLICTS MUST BE INDICATED IN WRITING TO THE ENGINEER PRIOR TO OR AT THE TIME OF BID.
- I. BEFORE STARTING ANY DEMOLITION ON HVAC EQUIPMENT WHICH HAS AN ELECTRICAL CONNECTION. THE MECHANICAL CONTRACTOR SHALL MEET WITH THE ELECTRICAL CONTRACTOR TO IDENTIFY ALL SUCH EQUIPMENT. THE ELECTRICAL CONTRACTOR WILL DISCONNECT THE POWER TO EACH UNIT, REMOVE CONDUIT, WIRING, DISCONNECT SWITCHES, AND STARTERS UNDER HIS CONTRACT. MECHANICAL CONTRACTOR WILL REMOVE ALL EQUIPMENT, ELECTRICAL TEMPERATURE CONTROL AND WIRING UNDER HIS CONTRACT. MECHANICAL CONTRACTOR SHALL NOT START DEMOLITION UNTIL ALL ELECTRICAL POWER HAS BEEN SAFELY DISCONNECTED FROM EQUIPMENT TO BE DEMOLISHED.

IX. SUBMITTALS

- A. THE CONTRACTOR SHALL PROVIDE COMPLETE SHOP DRAWINGS INDICATING EQUIPMENT, DEVICE, AND RACEWAY LOCATIONS, INVERTS FOR OUTDOOR DEVICES, AND COMPLETE INSTALLATION DRAWINGS. THE DRAWINGS SHALL BE MAINTAINED AT THE JOB SITE AND SHALL BE UPDATED AND MAINTAINED IN AS NEAR AS POSSIBLE TO THE "AS INSTALLED" STATUS OF THE PROJECT AND SHALL BE KNOWN AS "CONTRACT RECORD DOCUMENTS". THE DRAWINGS SHALL BE REVISED IN AN AUTOCAD FORMAT AND SUBMITTED TO THE ENGINEER FOR REVIEW. THE FINAL ELECTRICAL PAYOUT SHALL NOT BE MADE TO THE EC UNTIL THE CONTRACT RECORD DOCUMENTS HAVE BEEN RECEIVED AND REVIEWED BY THE ENGINEER. THE ENGINEER WILL PROVIDE WRITTEN CONFIRMATION TO THE OWNER AND GENERAL CONTRACTOR FOR FINAL PAYOUT BASED ON THE REVIEW OF THE CONTRACT RECORD DOCUMENTS.
- B. PROVIDE PRODUCT DATA FOR ALL EQUIPMENT AND DEVICES SUCH AS PANELBOARDS, DISCONNECT SWITCHES, CONDUIT & JUNCTION BOXES, WIRING, GROUNDING MATERIALS, WIRING DEVICES, EMERGENCY GENERATOR, PIPING MATERIALS, VALVES, ETC.
- C. PROVIDE DIMENSIONAL DRAWINGS, MANUFACTURERS' TECHNICAL DATA, PERFORMANCE, ELECTRICAL CHARACTERISTICS, RATINGS, AND FINISHES. INCLUDE WIRING DIAGRAMS FOR POWER, SIGNAL, AND CONTROL WIRING.
- PROVIDE OPERATION AND MAINTENANCE DATA FOR ALL EQUIPMENT AND DEVICES INCLUDING MANUFACTURER'S WRITTEN INSTRUCTIONS FOR TESTING AND ADJUSTING EQUIPMENT AND DEVICES
- E. PROVIDE SHOP DRAWINGS FOR CONDUITS LARGER THAN 1" AND ALL EXPOSED RACEWAYS.

X. IDENTIFICATION

- A. IN ADDITION TO THE REQUIREMENTS OF THE ELECTRICAL CODE AND OSHA, INSTALL AN IDENTIFICATION SIGN WHICH CLEARLY INDICATES INFORMATION REQUIRED FOR USE AND MAINTENANCE OF ITEMS SUCH AS PANELBOARDS, MOTOR CONTROLLERS (VFD. STARTERS, ETC.), SAFETY SWITCHES, CONTROL DEVICES AND OTHER SIGNIFICANT EQUIPMENT. NAMEPLATES SHALL BE LAMINATED BLACK PHENOLIC RESIN WITH A WHITE CORE WITH ENGRAVED LETTERING, A MINIMUM OF 6 MM (1/4_INCH) HIGH.
- B. PROVIDE PANELBOARD AND CIRCUIT NUMBER TAG ON EACH RECEPTACLE.

XI. FIRESTOPPING

- APPLY UL LISTED FIRE STOPPING TO PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES FOR ELECTRICAL INSTALLATIONS TO RESTORE ORIGINAL FIRE-RESISTANCE RATING OF ASSEMBLY.
- B. PROVIDE FIRE PUTTY TO MEET FIRE RATED ENCLOSURE UL LISTING REQUIREMENTS ON ALL ELECTRICAL BOXES INSTALLED ON THE FIRE RATED WALLS AND CEILINGS.

XII. CLOSEOUT PROCEDURES

. TESTING

- PERFORM TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL, MECHANICAL, AND ELECTRICAL INSPECTIONS.
- 2. PERFORM INSULATION-RESISTANCE TESTS IN ACCORDANCE WITH IEEE 43.
- 3. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN.
- PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION.
- PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS.

6. PERFORM EMERGENCY SYSTEM (GENERATOR, TRANSFER SWITCH, EMERGENCY LIGHTING, BATTERIES, ETC.) TESTS RECOMMENDED BY MANUFACTURER INCLUDING VISUAL AND MECHANICAL AND ELECTRICAL INSPECTIONS. FUNCTIONALLY TEST EQUIPMENT TO ENSURE IT IS INSTALLED PER DESIGN INCLUDING EMERGENCY LIGHTING BLACKOUT TEST. PROVIDE OPERATIONAL TEST AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, CONFIRM PROPER OPERATION. PROVIDE WRITTEN REPORT OF THE RESULTS OF TESTS AND INSPECTIONS.

B. GUARANTEE

- THIS CONTRACTOR SHALL UNCONDITIONALLY GUARANTEE IN WRITING ALL MATERIAL, EQUIPMENT AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE BY OWNER. THE CONTRACTOR SHALL PROVIDE FREE SERVICE FOR ALL EQUIPMENT INVOLVED IN HIS CONTRACT DURING THIS GUARANTEE PERIOD.
- THE GUARANTEE SHALL INCLUDE RESTORATION TO ITS ORIGINAL CONDITION OF ALL ADJACENT WORK THAT MUST BE DISTURBED IN FULFILLING THIS GUARANTEE.
- ALL SUCH REPAIRS AND/OR REPLACEMENTS SHALL BE MADE WITHOUT DELAY AND AT THE CONVENIENCE OF THE DEVELOPER AND TENANT.

C. WARRANTY

 INSTALLER AND MANUFACTURERS AGREE TO REPAIR OR REPLACE MATERIALS OR WORKMANSHIP THAT FAIL WITHIN SPECIFIED WARRANTY PERIOD. WARRANTY PERIOD SHALL BE ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION.

D. INSPECTION

- ALL ELECTRICAL WORK IS TO BE INSPECTED AND APPROVED BY THE AUTHORIZED REPRESENTATIVE BEFORE THE SYSTEM IS ENERGIZED. DUPLICATE CERTIFICATES OF THIS APPROVAL SHALL BE DELIVERED TO THE ENGINEER.
- ALL FEES FOR THIS INSPECTION AND APPROVAL SHALL BE BORNE BY THE CONTRACTOR AND ARE TO BE INCLUDED IN HIS/HER BID. NO EXTRA COMPENSATION SHALL BE ALLOWED FOR THIS SERVICE.

E. CLOSEOUT DOCUMENT AND EQUIPMENT TURNOVER

- PROVIDE FINAL AS-BUILT DRAWINGS IN ELECTRONIC PDF FORMAT TO OWNER AND ENGINEER SHOWING FINAL INSTALLED CONDITIONS AND BEFORE FINAL PAYMENT WILL BE ISSUED.
- THE AS-BUILT DRAWINGS SHALL DIAGRAMMATICALLY INDICATE THE INSTALLED CONDITION, CIRCUIT NUMBERS, AND LOCATION OF THE DEVICES FOR ALL WORK. THESE DRAWINGS SHALL BE CONSIDERED CONTRACT RECORD DOCUMENTS AND SHALL ACCURATELY REFLECT THE ACTUAL INSTALLATION OF THE ELECTRICAL COMPONENTS AND CONDUITS.
- 3. PROVIDE ALL EQUIPMENT INSTALLATION, MAINTENANCE, AND INSTRUCTION MANUALS.
- TURN OVER ALL KEYS, SPARE MATERIALS, STOCK ITEMS, AND OTHER EQUIPMENT PURCHASED AS PART OF THE CONTRACT AND BELONGING TO THE OWNER.

XIII. HANGERS AND SUPPORT SYSTEMS

- A. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR CONDUIT, FIXTURES, DEVICES, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
- B. THIS CONTRACTOR SHALL VERIFY ALL EQUIPMENT AND DEVICE MOUNTING ARRANGEMENTS, HEIGHTS, AND LOCATIONS PRIOR TO ROUGH-IN. ANY MENTION OF A SPECIFIC MOUNTING ARRANGEMENT, HEIGHT, OR LOCATION SHALL NOT RELIEVE THIS CONTRACTOR OF THE RESPONSIBILITY TO COORDINATE LOCATIONS AND SPECIFIC REQUIREMENTS WITH THE EQUIPMENT FURNISHED BY OTHER TRADES IN THE SAME AREA. NO ADDITION TO THE CONTRACT SUM WILL BE PERMITTED FOR WRONG OR CONFLICTING LOCATIONS. THE OWNER RESERVES THE RIGHT TO RELOCATE ANY DEVICE 10' 0' PRIOR TO ROUGH-IN WITHOUT ANY ADDITIONAL CHARGE BY THIS CONTRACTOR. THIS CONTRACTOR SHALL FULLY COORDINATE ELECTRICAL WORK WITH THE INSTALLATION OF WORK BY ALL OTHER TRADES AND MAKE NECESSARY FIELD ADJUSTMENTS AS REQUIRED TO ACCOMMODATE THE ELECTRICAL INSTALLATION. ALL OF THE ABOVE SHALL BE INCLUDED IN THE SCOPE OF WORK AT NO ADDITIONAL COST TO THE OWNER.
- C. ALL CONDUITS SHALL BE RIGIDLY SUPPORTED BY MEANS OF APPROVED CONDUIT HANGERS OR CLAMPS FIRMLY ANCHORED IN PLACE AND SPACED AT INTERVALS NOT TO EXCEED 7'-0". ALL EXPOSED CONDUIT SHALL BE RACKED AND PARALLEL OR PERPENDICULAR TO WALLS AND STRUCTURAL MEMBERS, WITH 90° BENDS WHERE REQUIRED. PULL AND JUNCTION BOXES SHALL BE HELD TO A MINIMUM. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL RODS, ANGLES, RAILS, STRUTS, BRACE PLATES, PLATFORMS, ETC.. REQUIRED FOR SUSPENSION OR SUPPORT OF CONDUIT AND EQUIPMENT AND ALL STRAPS, CLAMPS, THREADED RODS, TURNBUCKLES, ANCHORS, FASTENERS, AND MISCELLANEOUS SPECIALTIES FOR THE ATTACHMENT OF HANGERS AND SUPPORTS TO THE STRUCTURE. ALL CONDUIT FASTENERS, STRAPS, SUPPORTS AND ETC., MUST BE "BOLT-ON" GALVANIZED STEEL ON EXPOSED CONSTRUCTION. SINGLE CONDUIT SUPPORTS SHALL BE MINNERALIC OR EQUAL.
- D. IN SUSPENDED CEILINGS, SUPPORT CONDUIT AND JUNCTION BOXES DIRECT FROM THE STRUCTURAL SLAB, DECK, OR FRAMING PROVIDED FOR THAT PURPOSE. THE CONDUITS SHALL NOT BE CLIPPED TO THE CEILING SUPPORT WIRES OR SPLICE UNLESS THE CEILING SYSTEM HAS BEEN SPECIFICALLY DESIGNED FOR THAT PURPOSE AND APPROVAL GRANTED BY ENGINEER.

XIV. RACEWAY, JUNCTION BOX, AND PULL BOX SYSTEMS

- A. THIS CONTRACTOR SHALL INSTALL SIZE OF CONDUIT CALLED FOR ON DRAWINGS AND SHALL NOT REDUCE SIZE OF CONDUITS TO SUIT WIRE FILL CAPACITY. MINIMUM SIZE OF CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. THIS CONTRACTOR SHALL LEAVE A WIRE PULLING LINE IN ALL CONDUITS WHICH ARE NOT FILLED TO CAPACITY. THE E.C. SHALL VERIFY ALL CONDUIT SIZE PRIOR TO INSTALLATION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICT.
- B. THE RACEWAY SYSTEM SHALL BE METALLIC, ELECTRICAL METALLIC TUBING "EMT" IN TRADE SIZED CONCEALED WHEREVER POSSIBLE. ALL FITTINGS SHALL BE COMPRESSION TYPE ONLY EXCEPT WHERE PVC IS ALLOWED BY CONTRACT DOCUMENTS.

C. CONDUIT USED OUTDOORS AND NOT BELOW GRADE OR EXPOSED TO WEATHER SHALL BE TYPE

INTERMEDIATE METALLIC CONDUIT "IMC" OR RIGID GALVANIZED METAL CONDUIT "RMC" WITH THREADED COUPLINGS. PROVIDE MEYERS HUBS AT NON/CAST TYPE JUNCTION/PULL BOXES AND SWITCH/RECEPTACLE OUTLETS.

D. CONDUIT USED OUTDOORS, BELOW GRADE, EMBEDDED IN CONCRETE, OR EXPOSED TO WEATHER

SHALL BE TYPE RIGID GALVANIZED METAL CONDUIT "RMC" WITH THREADED COUPLINGS. PROVIDE

- MEYERS HUBS AT NON/CAST TYPE JUNCTION/PULL BOXES AND SWITCH/RECEPTACLE OUTLETS.

 E. DIRECT BURIED UNDERGROUND CONDUIT SHALL BE HEAVY WALL SCH.80, UL LISTED PVC TYPE
- F. ALL CONDUITS SHALL BE RUN PARALLEL AND/OR PERPENDICULAR TO CONSTRUCTION LINES OF THE BUILDING AND IN THE CASE OF CEILING AND FLOOR RUNS, CONDUITS SHALL BE GROUPED AND SUPPORTED WITH TRAPEZE/TYPE RACKS OR STANDOFFS WITH INDIVIDUAL CONDUITS SEPARATELY ACCESSIBLE FOR REPLACEMENT AND MAINTENANCE.
- G. ALL WIRING INCLUDING ALL LOW VOLTAGE CABLING BEHIND THE WALL AND ABOVE THE NON-ACCESSIBLE CEILING SHALL BE INSTALLED IN CONDUIT.
- H. JUNCTION BOXES, PULL BOXES AND TERMINAL BOXES SHALL BE INSTALLED WHERE SHOWN ON THE DRAWINGS AND AT OTHER LOCATIONS AS REQUIRED TO FACILITATE THE PULLING OF
- I. PULL BOXES SHALL BE CODE SIZED AND SHALL BE CONSTRUCTED OF CODE GAUGE GALVANIZED SHEET STEEL. EACH BOX SHALL BE PROVIDED WITH A SCREW-ON REMOVABLE COVER. PROVIDE FLANGED COVERS ON FLUSH BOXES. BOXES SHALL BE SMOOTH, SQUARE AND SET PARALLEL WITH WALLS AND CEILING.
- J. ALL BOXES SHALL BE PROVIDED IN LOCATIONS WHERE REASONABLE ACCESS CAN BE OBTAINED IN THE FUTURE WITHOUT REQUIRING REMOVAL OF BUILDING ELEMENTS OR FINISHES. IT SHALL BE THE SOLE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO RELOCATE BOXES TO ACCESSIBLE AREAS WHERE INACCESSIBILITY IS DETERMINED BY THE INSPECTOR OR ENGINEER.
- K. REMOVE ALL UNUSED AND ABANDONED CONDUIT AND RACEWAY COMPLETELY.
- L. ANY SURFACE RACEWAY USED ON A FINISHED SURFACE MUST BE METALLIC RACEWAY, WIREMOLD OR EQUAL. IF RACEWAY USED FOR POWER AND DATA, THEN MUST BE DUAL CHANNEL WITH PARTITION. SUBMIT FOR APPROVAL BY ENGINEER PRIOR TO INSTALLATION.

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- M. FINAL CONNECTIONS TO MOVABLE DEVICES, OR DEVICES THAT MAY TRANSMIT VIBRATION SHALL BE MADE THROUGH FLEXIBLE METALLIC CONDUIT OR LIQUID-TIGHT FLEXIBLE CONDUIT. (MOTORS, TRANSFORMERS, DUCT MOUNTED DEVICES, ETC.)
- N. ENDS OF ALL METALLIC CONDUITS SHALL BE EQUIPPED WITH INSULATED GROUNDING BUSHINGS FOR DEDICATED CONDUITS SERVING GROUNDING CONDUCTORS. ALL METALLIC CONDUIT SERVING FEEDERS AND BRANCH CIRCUITS SHALL BE EQUIPPED WITH INSULATED ANTI-SHORT FITTINGS AT ENDS. ENDS OF ALL CONDUITS SHALL BE TEMPORARILY CAPPED PRIOR TO INSTALLATION AND DURING CONSTRUCTION TO EXCLUDE FOREIGN MATERIAL. UPON THE COMPLETION OF CONSTRUCTION THE OPEN END OF CONDUITS OR SLEEVES SHALL BE SEALED WATERTIGHT.
- O. EACH LIGHT, RECEPTACLE OR OTHER MISCELLANEOUS DEVICE SHALL BE PROVIDED WITH A GALVANIZED OR SHERARDIZED PRESSED STEEL OUTLET BOX OF THE KNOCKOUT TYPE, OR NOT LESS THAN NO. 14 U.S. GAUGE STEEL. CONDUITS SHALL BE FASTENED WITH LOCK NUTS AND BUSHINGS. ALL UNUSED BOX KNOCKOUTS MUST BE LEFT SEALED. THERE MUST BE SUFFICIENT ROOM FOR WIRES AND BUSHINGS, AND DEEP BOXES SHALL BE INSTALLED WHERE REQUIRED. BOXES SHALL BE SECURELY AND ADEQUATELY SUPPORTED.
- P. WHERE FLOOR FITTINGS REQUIRE PENETRATION OF THE FLOOR SLAB, THERE SHALL BE A STANDARD DEVICE LISTED BY UL FOR THE PURPOSE AND HAVE A UL FIRE RATING EQUAL TO THE FLOOR RATING. ALL CORE SIZES AND LOCATIONS SHALL BE SUBMITTED TO ENGINEER FOR APPROVAL AND SUBMISSION TO STRUCTURAL ENGINEER PRIOR TO CORING. THE ELECTRICAL CONTRACTOR MUST PROVIDE FLOOR X-RAY SERVICES TO DETECT AND AVOID EXISTING EMBEDDED SYSTEMS PRIOR TO CORING.
- Q. ALL CONDUIT RUNS SHALL BE INSTALLED ABOVE AND OVER TOP OF ALL NEW DUCTWORK, PIPING, CONDUITS, PULL BOXES, ETC. WITH PROVISION FOR ALL NECESSARY ACCESSIBLE PULL BOXES. CONDUIT MAY NOT EXCEED CODE ALLOWED NUMBER OF BENDS.
- R. CONDUIT RUNS OR PULL BOXES SHALL NOT BLOCK OR PREVENT FULL ACCESS OR OPERATION OF HVAC EQUIPMENT, ACCESS DOORS, PIPING VALVES, JUNCTION BOXES, MAIN RETURN AIR DUCTS, PULL BOXES, CLEAN OUTS, ETC.
- S. FLEXIBLE METAL CONDUIT SHALL NOT BE LONGER THAN 6'0" LONG.

XV. WIRE AND WIRING METHOD

- A. ALL CONDUCTORS SHALL BE COPPER IN SIZES AS SHOWN OR REQUIRED BY LOADS SERVED. ALL CABLE SHALL BE 600/VOLT INSULATION RATED AT 75 DEGREES C, WITH TERMINATIONS AND LOADS SERVED RATED AT 75 DEGREES C. INDOOR DRY LOCATIONS SHALL BE TYPE "THHN" AND WET LOCATIONS (EXPOSED, BELOW THE SLAB, AND BELOW GRADE) SHALL BE TYPE "XHHW".
- B. A SEPARATE NEUTRAL CONDUCTOR AND GREEN GROUND WIRE SHALL BE INSTALLED FOR EACH FEEDER AND BRANCH CIRCUIT.
- C. EACH BRANCH CIRCUIT SHALL HAVE A DEDICATED NEUTRAL WIRE. A SHARED NEUTRAL IS NOT ALLOWED.
- D. MINIMUM SIZE CONDUCTOR SHALL BE #12 EXCEPT FOR CONTROL, FIRE ALARM AND SIGNAL CABLES. CONDUCTORS AND ASSOCIATED RACEWAYS SHALL BE INCREASED FOR VOLTAGE DROP COMPENSATION AS CALCULATED ACCORDING TO ELECTRICAL CODE REQUIREMENTS.
- E. THE E.C. SHALL FURNISH AND INSTALL LUG KITS TO MATCH THE CABLE SIZES AS SHOWN ON THE DRAWINGS. TYPICAL FOR ALL ELECTRICAL AND MECHANICAL EQUIPMENT. ANY AND ALL REQUIRED LUG KITS SHALL BE INCLUDED IN THE BASE BID. CABLE SIZE REDUCING PINS SHALL NOT BE AN ACCEPTABLE ALTERNATIVE TO LUG KITS.
- F. REMOVE ALL UNUSED AND ABANDONED WIRING, INCLUDING LOW VOLTAGE, COMPLETELY BACK TO SOURCE.
- G. ALL COMMUNICATION CABLING INSTALLED IN PLENUM AIR SPACES SHALL BE IN CONDUIT, WITHOUT ANY EXCEPTIONS.
- H. ALL PLENUM AIR SPACES AREA SHALL BE IN CONDUIT WITH PLENUM RATED BOX.
- E.C SHALL PROVIDE ALL FEEDER & BRANCH CIRCUITS SIZED BASED ON VOLTAGE DROP REQUIRED PER LOCAL CODE.

J. CONDUCTOR SPLICING

- 1. SPLICING WIRES SHALL BE DONE ONLY IN ACCESSIBLE OUTLET JUNCTION OR PULL BOXES.
- SPLICES SHALL BE MADE STRICTLY IN ACCORDANCE WITH THE INSTRUCTIONS OF THE CABLE MANUFACTURER USING THE METHODS AND MATERIALS RECOMMENDED BY HIM.
- 3. FOR #10 AND #12 WIRE SPLICES SHALL BE MADE WITH SCOTCH-LOK CONNECTORS.
- WIRE #6 AND LARGER SHALL BE CONNECTED WITH BURNDY OR EQUAL SOLDERLESS MECHANICAL LUG AND PAINTED WITH INSULATING VARNISH.
- ALL CONNECTIONS SHALL BE PROPERLY TAPED WITH SCOTCH ELECTRICAL TAPE #22, #33 OR APPROVED EQUAL.
- ALL GROUND SPLICES AND GROUND CONNECTIONS TO DEVICES WITHIN METALLIC BOXES SHALL BE BONDED TO BOX USING APPROPRIATELY SIZED PIGTAIL CONNECTIONS OR OTHER UL APPROVED BONDING METHOD.

XVI. GROUNDING AND BONDING

- A. EQUIPMENT GROUNDING CONDUCTORS SHALL BE UL 83 INSULATED STRANDED COPPER, UNLESS OTHERWISE INDICATED ON THE DRAWINGS. INSULATION COLOR SHALL BE CONTINUOUS GREEN FOR ALL EQUIPMENT GROUNDING CONDUCTORS. BONDING CONDUCTORS SHALL BE ASTM B8 BARE STRANDED COPPER, EXCEPT THAT SIZES NO. 10 AWG AND SMALLER SHALL BE ASTM B1 SOLID BARE COPPER WIRE. CONDUCTOR SIZES SHALL NOT BE LESS THAN WHAT IS SHOWN ON THE DRAWINGS AND NOT LESS THAN REQUIRED BY THE NEC, WHICHEVER IS GREATER. A GROUND CONDUCTOR SHALL BE INSTALLED IN EVERY RACEWAY AND BONDED TO ALL BOXES AND ENCLOSURES EXCEPT FOR THE SERVICE LATERALS. THE GROUND CONDUCTOR SHALL BE BONDED IN EVERY ENCLOSURE.
- FURNISH AND INSTALL PIGTAILED AND BOND THE JUNCTION BOX, WHEREVER CIRCUIT CONDUCTORS ARE SPLICED IN A JUNCTION BOX.
- C. FURNISH AND INSTALL THE BONDING OF THE WATER PIPE SYSTEM AT THE WATER HEATER. THE WATER HEATER SHALL BE JUMPERED BETWEEN THE COLD AND HOT WATER PIPES WITH A JUMPER SIZED ACCORDING TO NEC TABLE 250.66, PER NEC 250.104(A)(1); PER NEC 250.104(B). SEE ALSO NEC 250.53(D)(1).

XVIII. DISCONNECT SWITCHES

A. ALL FUSED (FD) AND NON-FUSED (NF) DISCONNECTS SHALL BE SQUARE D COMPANY OR APPROVED EQUAL, 3-POLE HEAVY DUTY TYPE ONLY. ALL UNITS INSTALLED OUTDOORS SHALL BE RATED WEATHERPROOF NEMA 3R. MANUFACTURERS: SCHNEIDER SQUARE D, EATON, GENERAL ELECTRIC, SIEMENS, OR APPROVED EQUAL.

XX. PANELBOARDS

- A. PROVIDE PANELBOARDS WITH ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES: LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, MARKED FOR INTENDED LOCATION AND APPLICATION AND THAT COMPLY WITH NEMA PB 1.
- B. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PANELBOARDS BY:
- 1. SQUARE D
- 2. SIEMENS
- 3. GENERAL ELECTRIC
- 4. EATON
- 5. APPROVED EQUAL

C. SURFACE MOUNTED (AS SHOWN IN PLAN), DEAD-FRONT CABINETS RATED FOR ENVIRONMENTAL CONDITIONS AT INSTALLED LOCATION.

- D. PANELBOARD TRIM AND FRONT COVER SHALL BE HINGED DOOR-IN-DOOR SYLE.
- E. INDOOR DRY AND CLEAN LOCATIONS: NEMA 250, TYPE 1). PROVIDE GALVANIZED STEEL CABINETS TO HOUSE PANELBOARDS FLUSH AND SURFACE-MOUNTED, DEAD-FRONT CABINETS.
- F. FACTORY FINISHED WITH MANUFACTURER'S STANDARD TWO-COAT, BAKED-ON FINISH.
- G. PROVIDE DIRECTORY CARD WITH TRANSPARENT COVER PERMANENTLY MOUNT ON INSIDE OF
- H. PHASE, NEUTRAL, AND GROUND BUSES AND BARS SHALL BE TINNED COPPER MATERIAL AND BUS SHALL BE FULLY RATED THE ENTIRE LENGTH OF ENCLOSURE. PROVIDE FULL-SIZED NEUTRAL WITH FULL-CAPACITY BONDING STRAP FOR SERVICE ENTRANCE APPLICATIONS. MAIN AND NEUTRAL LUGS SHALL BE MECHANICAL TYPE, WITH A LUG ON THE NEUTRAL BAR FOR EACH POLE IN THE PANELBOARD AND WITH A LUG ON THE GROUND BAR FOR EACH POLE IN THE PANEL BOARD.
- I. PANELBOARDS SHALL BE STANDARD MANUFACTURED PRODUCTS. ALL COMPONENTS WITHIN ONE ASSEMBLY SHALL BE OF THE SAME MANUFACTURER. ALL PANELBOARDS SHALL BE DEAD FRONT TYPE. ALL PANELBOARDS SHALL BE COMPLETELY FACTORY ASSEMBLED WITH MOLDED CASE CIRCUIT BREAKERS AND ARRANGED SO THAT IT WILL BE POSSIBLE TO SUBSTITUTE A 2_POLE BREAKER FOR TWO SINGLE POLE BREAKERS, AND A 3_POLE BREAKER FOR THREE SINGLE POLE BREAKERS, WHEN TRIP IS 30 AMPS OR LESS AND FRAME SIZE IS 100 AMPERES OR LESS, WITHOUT HAVING TO DRILL AND TAP THE MAIN BUS BARS AT BUS STRAPS.CIRCUIT BREAKERS SHALL BE BOLT-ON CONNECTED TO THE PANELBOARD, MINIMUM INTERRUPTING CAPACITY SHALL BE 14,000 AIC FOR 277/480 VOLT CIRCUIT BREAKERS AND 10,000 AIC FOR 120/208 VOLT CIRCUIT BREAKERS. PLUG-IN CIRCUIT BREAKERS ARE NOT APPROVED.
- J. PANELBOARD FAULT WITHSTAND RATING SHALL BE INCREASED BY THE ELECTRICAL CONTRACTOR AS A RESULT OF SHORT-CIRCUIT STUDY RESULTS AT NO ADDITIONAL COST TO PROJECT.
- K. ALL NEW CIRCUIT BREAKERS FOR THE EXISTING PANELBOARDS SHALL BE COMPATIBLE WITH THE EXISTING EQUIPMENT. AIC RATINGS SHALL MATCH THE ORIGINAL EQUIPMENT AIC RATINGS.
- CIRCUIT BREAKERS SERVING HAND DRYERS AND WATER COOLERS SHALL BE GFCI TYPE, WHERE APPLICABLE.
- M. PROVIDE A TYPEWRITTEN DIRECTORY OF ALL CIRCUITS IN THE PANELBOARD.

XXII. WIRING DEVICES

DOORS.

- A. LIST OF APPROVED MANUFACTURERS SHALL BE THE FOLLOWING OR AS OTHERWISE NOTED ON DESIGN DRAWINGS:
- 1. POWER DEVICES:
- a LEVITON
 b HUBBELL
- c. LEGRAND
- 2. LIGHTING DEVICES:
- a. AS NOTED ON DRAWINGS
- B. TAMPER RESISTANT, GFCI, ARC-FAULT, WEATHER RESISTANT, USB, AND OTHER SPECIALTY TYPE RECEPTACLES SHALL BE PROVIDED WHERE REQUIRED BY CODE AND THE CONSTRUCTION DOCUMENTS.
- C. DUPLEX RECEPTACLES SHALL BE SINGLE PHASE, 20 AMPERE, 120 VOLTS, 2_POLE, 3_WIRE, AND CONFORM TO STANDARD NEMA WD 1 HEAVY DUTY TYPE. THE UNGROUNDED POLE OF EACH RECEPTACLE SHALL BE PROVIDED WITH A SEPARATE TERMINAL. ALL OUTDOOR RECEPTACLES SHALL HAVE METALIC LOCKABLE WHILE IN USE COVERS. COLOR SHALL BE SELECTED BY ARCHITECT.
- D. GROUND FAULT INTERRUPTER DUPLEX RECEPTACLES SHALL BE AN INTEGRAL UNIT SUITABLE FOR MOUNTING IN A STANDARD OUTLET BOX. GROUND FAULT INTERRUPTERS SHALL BE PREMIUM GRADE AND CONSIST OF A DIFFERENTIAL CURRENT TRANSFORMER, SOLID STATE SENSING CIRCUITRY AND A CIRCUIT INTERRUPTER SWITCH. IT SHALL BE RATED FOR OPERATION ON A 60 HZ, 120 VOLT, 20-AMPERE BRANCH CIRCUIT. DEVICES SHALL MEET UL 943.
- E. TOGGLE SWITCHES SHALL BE SINGLE UNIT TOGGLE, BUTT CONTACT, QUIET AC TYPE, HEAVY_DUTY GENERAL-PURPOSE USE WITH AN INTEGRAL SELF GROUNDING MOUNTING STRAP, LISTED BY UNDERWRITERS LABORATORIES, INC., AND MEET THE REQUIREMENTS OF NEMA WD 1, HEAVY_DUTY AND UL 20 RATED FOR 20 AMPERES AT 120-277 VOLTS AC.
- F. WIRING DEVICES SHALL BE PROVIDED AS FOLLOWS OR EQUAL, UNLESS NOTED OTHERWISE:
- 1. DUPLEX RECEPTACLE LEVITON # BR20.
- 2. GFCI RECEPTACLE LEVITON # N7599-HG
- 3. SINGLE POLE SWITCH LEVITON # 1221
- ALL OUTDOOR RECEPTACLES SHALL HAVE IN-USE COVERS AS MANUFACTURED BY TAYMAC OR APPROVED EQUAL.
- G. WALL PLATESS FOR SWITCHES AND RECEPTACLES SHALL BE TYPE 302 BRUSHED STAINLESS STEEL IN PUBLIC AREAS AND GALVANIZED STEEL IN MAINTENANCE AREAS. ALL DEVICES MOUNTED EXPOSED TO WEATHER SHALL BE MOUNTED IN CAST ALUMINUM ENCLOSURES THAT ARE NEMA RATED 3R OR 4. WIRE DEVICES MANUFACTURERS LEVITON, HUBBELL OR APPROVED EQUAL.
- H. REFER TO ARCHITECTURAL AND THEATER DRAWINGS FOR ELECTRICAL WIRING DEVICE MOUNTING AND ELEVATION FINAL INFORMATION.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ENGINEER/OWNER FOR EXACT LOCATION OF LIGHT SWITCHES. STANDARD MOUNTING LOCATION SHALL BE ON DOOR LOCK STILE SIDE, MOUNTED AT A CONSISTENT HEIGHT FROM FLOOR, AND MOUNTED A CONSISTENT DISTANCE FROM DOOR JAMB.

XXIII. LIGHTING FIXTURES

- A. LIGHT FIXTURES SHALL BE PROVIDED AS SPECIFIED ON DRAWINGS. ALL FIXTURES SHALL BE MOUNTED IN PLACE, PROPERLY WIRED, TESTED AND LEFT READY FOR OPERATION BY THE ELECTRICAL CONTRACTOR.
- B. HANGING DEVICES, BRACKETS, ENCLOSURES AND OTHER ACCESSORIES SHALL BE PROVIDED FOR A COMPLETE INSTALLATION AND SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR.
- C. LIGHT FIXTURES SHALL BE AIRCRAFT CABLE OR ROD SUPPORTED FROM THE STRUCTURE.
- D. FLEXIBLE CONDUIT CONNECTIONS TO RECESSED LIGHTING FIXTURES SHALL BE MADE WITH FLEXIBLE STEEL CONDUIT, 3/8 INCH MINIMUM.
- E. THE CONTRACTOR SHALL VERIFY THE CEILING CONSTRUCTION TYPE BEFORE ORDERING LIGHTING FIXTURES WITH ARCHITECTURAL DETAILS TO CONFIRM PROPER MOUNTING.
- F. FOR EXACT LOCATION OF LIGHTING FIXTURES REFER TO ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS. WHERE CONFLICTS EXIST BETWEEN ARCHITECTURAL AND ELECTRICAL DRAWINGS, COORDINATE WITH ARCHITECT IN FIELD PRIOR TO ROUGH-IN.

XXIV. FIRE ALARM SYSTEM

- A. ELECTRICAL CONTRACTOR TO HIRE A LICENSED FIRE ALARM CONTRACTOR TO DESIGN AND INSTALL ALL FIRE ALARM DEVICES IN ACCORDANCE WITH THE LOCAL FIRE CODE AND NFPA 72 AS REQUIRED. THIS LICENSED INDIVIDUAL SHALL BE CERTIFIED BY THE NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGY (NICET). THE FIRE ALARM SYSTEM SHALL COMPLY WITH REQUIREMENTS FOR THE OCCUPANCY AND BUILDING TYPE AS STATED ON THE ARCHITECTURAL DRAWINGS.
- B. THE FIRE ALARM CONTACTOR / DESIGNER SHALL SUBMIT PLANS TO THE LOCAL FIRE. DEPARTMENT AND THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO PERFORMING ANY FIRE ALARM SYSTEM WORK. UPON COMPLETION OF THE INSTALLATION, A LICENSED INDIVIDUAL WITH SPECIFIC AUTHORITY GIVEN BY LOCAL
- C. FIRE DEPARTMENT SHALL PERFORM AN ON-SITE INSPECTION AND CERTIFY IN WRITING THAT THE INSTALLATION MEETS THE STANDARDS PROVIDED BY LAW AND IS IN COMPLIANCE WITHT THE
- D. PROVIDE NOTIFICATION APPLIANCE CONTROL PANEL (NAC) AS REQUIRED FOR NEW FIRE ALARM NOTIFICATION DEVICES, FURNISH AND INSTALL NEW FIRE ALARM CABLE TO CONNECT TO NEW FACP, FURNISH AND INSTALL A 120V 20A DEDICATED POWER CONNECTION FROM THE NEAREST PANELBOARD, PROVIDE A SMOKE DETECTOR ABOVE THE NAC PANEL.
- E. ALL NEW INITIATION DEVICES SHALL BE ADDRESSABLE TYPE ONLY.

PLANS OF THE LICENSED FIRE ALARM PLANNING SUPERINTENDENT.

- F. EACH DEVICE SHALL BE PROGRAMMED WITH DEDICATED ADDRESS.
- G. ALL VISUAL DEVICES SHALL BE SYNCHRONIZED.
- H. ALL FIRE ALARM DEVICES AND BOXES SHALL BE RED IN COLOR.
- IF LOCAL CODE ALLOWED THEN INSTALL ALL FIRE ALARM CABLE IN FREE AIR ABOVE THE ACCESSIBLE CEILING. OTHERWISE, COMPLETE CONDUIT SYSTEM SHALL BE INSTALLED
- J. FURNISH AND INSTALL NEW NOTIFICATION APPLIANCE CIRCUIT PANEL WITH BATTERY BACKUP AS REQUIRED
- K. FURNISH AND INSTALL 120V DEDICATED POWER TO NOTIFICATION APPLIANCE CIRCUIT PANEL, AMPLIFIER PANEL, FACP, AND FAAP FROM THE NEAREST EMERGENCY PANELBOARD.

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