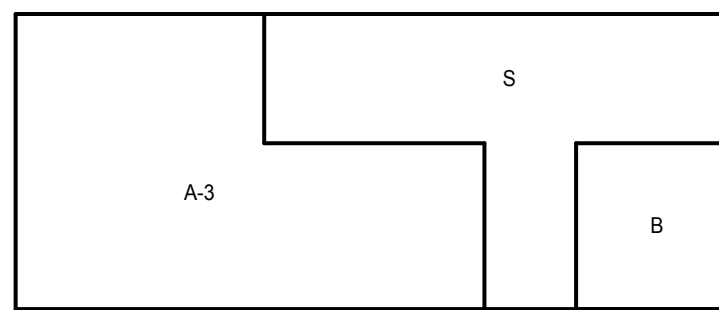


PRINTED: Thursday, November 7, 2024, 1:47 PM

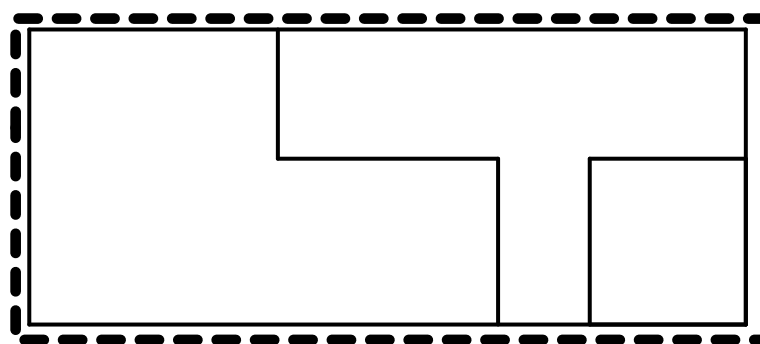
CODE SUMMARY:

A EXISTING BUILDING: NO
 B NEW BUILDINGS OR ADDITIONS: YES
 Exceeds Threshold Building Limits: NO
 C USE GROUP CLASSIFICATION: A-3, B, S



D HEIGHT AND AREA COMPUTATION (TABLE 504.3):

D1 BUILDING HEIGHT:
 Actual Building Height: 21 feet
 Allowable Building Height (TABLE 504.3): 60 feet
 D2 NUMBER OF STORIES (TABLE 504.4):
 A-3 OCCUPANCY
 Allowed: 2 with sprinklers
 Actual: 1 with sprinklers
 D3 OPEN PERIMETER COMPUTATION:



Total Perimeter 250 Total Open Perimeter 214 ft.
 % increase for open perimeter $W = 30$
 $= 100 \times (\text{Open Perimeter} / \text{Total Perimeter} - .25) \times (W/30)$
 $= 100 \times (214/250 - .25) \times (30/30)$
 $= 61$

D4 TABULAR AREA ADJUSTMENTS:
 Entire Building: % increase tabular area 100% % increase for open perimeter 61% Total % increase for tabular area adjustment 161%

D5 BUILDING AREA (TABLE 506.2) FOR LARGEST FLOOR:
 a.) ALLOWABLE AREA Main Level: A-3: 1.61 x 24,000 (S1) = 38,640 SF
 b.) ACTUAL FLOOR AREA Main Level: 3,168 sq ft
 ACTUAL FLOOR AREA IS LESS THAN ALLOWABLE

F CONSTRUCTION TYPE:
 Minimum Type of Construction Required: All Floors: VB
 Actual Type of Construction Provided: All Floors: VB

G MEANS OF EGRESS
 MAIN FLOOR (GRADE)
 Occupant Load: 44
 Egress capacity (1005.3.2 Exception 1): 0.15 inch/occupant
 Total exit capacity: 1,120

H FIRE RESISTANCE RATING OF STRUCTURAL ELEMENTS
 REFER TO CONSTRUCTION DOCUMENTS FOR THE FOLLOWING:
 Walls (Table 601):
 Load Bearing: 0 HR
 Non Load Bearing: 0 HRS ($x \geq 30$)
 Fire Walls and Party Walls: N/A
 Fire Separation Assemblies:
 Fire enclosure of exits (1019): 1 HR
 Shafts (713.4): 1 HR
 Mixed Use Separation/Fire Barrier (707): 2 HR
 Other Non Bearing Partitions (601): 0 HRS
 Interior Bearing Walls, Bearing Partitions, Columns, Girders, Trusses and Framing (Tbl. 601): 0 HR
 Supporting more than one floor: 0 HR
 Supporting one roof: 0 HR
 Structural members supporting wall: 0 HR
 Floor Construction including Beams (Tbl. 601): 0 HR

PLUMBING FIXTURES

44 people

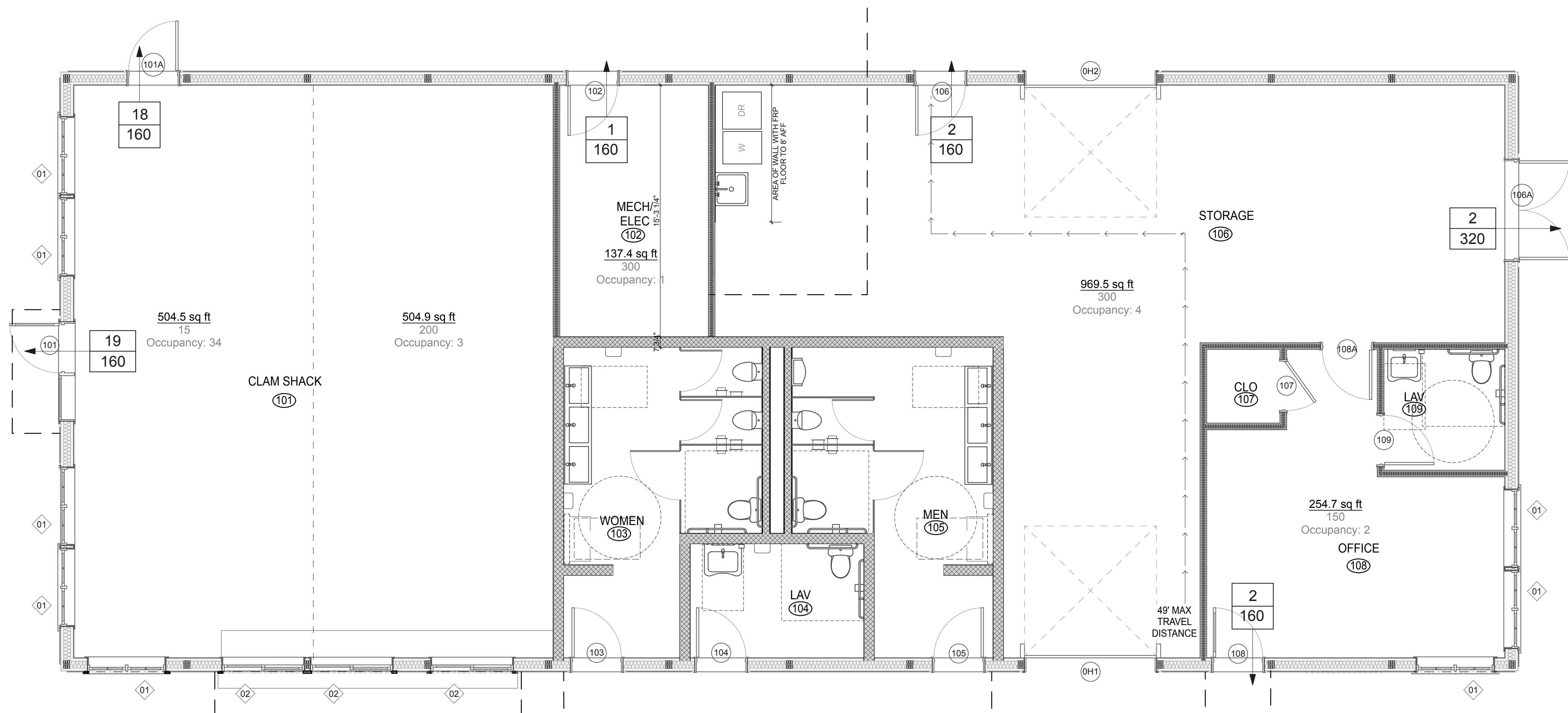
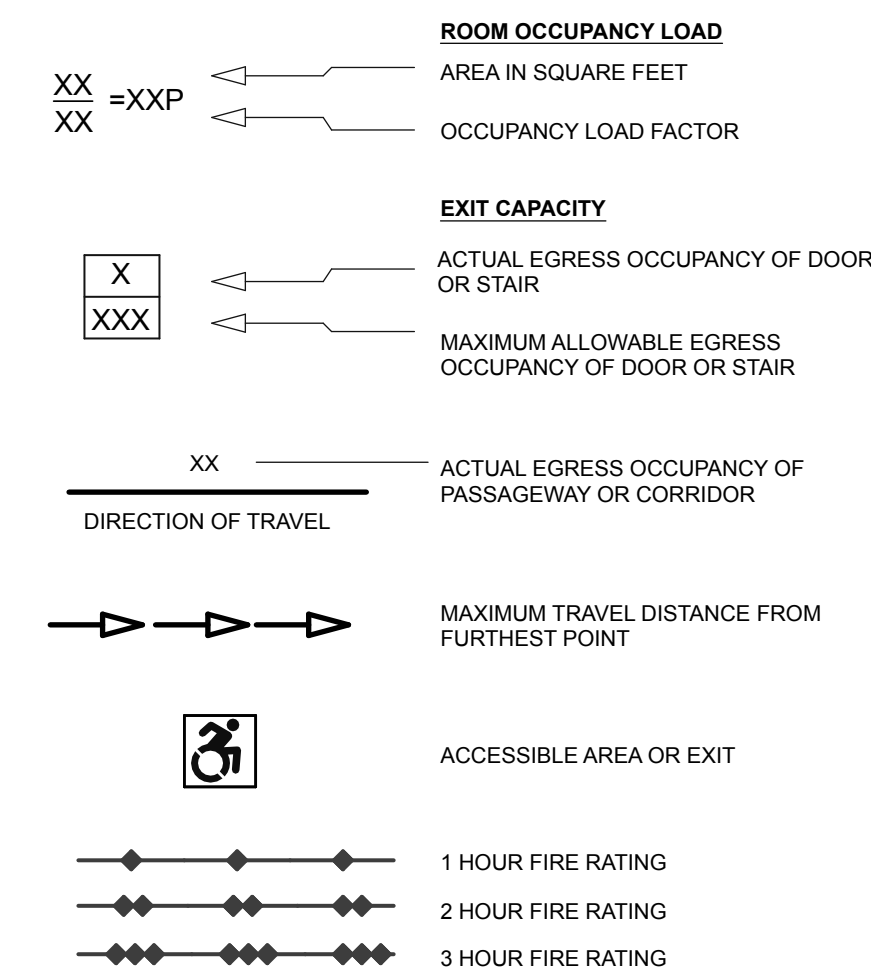
Assembly: (44 people)

	REQUIRED	PROVIDED
Male Water Closets (22p) 1 per 75 = 1	Total= 1	4
Female Water Closets (22p) 1 per 75	Total= 1	4
Male Lavatories (22p) 1 per 200 = 1	Total= 1	4
Female Lavatories (22p) 1 per 200 = 1	Total= 1	4
Shower - not required		
Drinking Fountains Not required per 410.4		
Service sinks	1	1

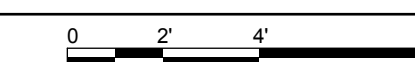
RHODE ISLAND STATE BUILDING CODE INFORMATION:

2021 RHODE ISLAND BUILDING CODE (2018 INTERNATIONAL BUILDING CODE, BY REFERENCE)
 2021 RHODE ISLAND FIRE CODE (NFPA 1) (NFPA FIRE CODE 2018 EDITION, BY REFERENCE)
 2021 RHODE ISLAND PLUMBING CODE (2018 INTERNATIONAL PLUMBING CODE, BY REFERENCE)
 2021 RHODE ISLAND MECHANICAL CODE (2018 INTERNATIONAL MECHANICAL CODE, BY REFERENCE)
 2021 RHODE ISLAND ELECTRICAL CODE (2020 NEC, BY REFERENCE)
 2021 STATE OF RHODE ISLAND ENERGY CONSERVATION CODE (2018 INTERNATIONAL ENERGY CONSERVATION CODE, BY REFERENCE)
 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN (ADA)
 RHODE ISLAND ACCESSIBILITY CODE 2009 (A117.1, 2009)

CODE SYMBOLS LEGEND



A2 CODE PLAN
 A-002 SCALE: 1/4" = 1'-0"



650 Ten Rod Road
 North Kingstown, RI 02852
 v: 401.846.9583

Civil Engineers
 Joe Casali Engineers
 300 Post Road
 Warwick, RI 02888
 Phone: (401) 944-1300

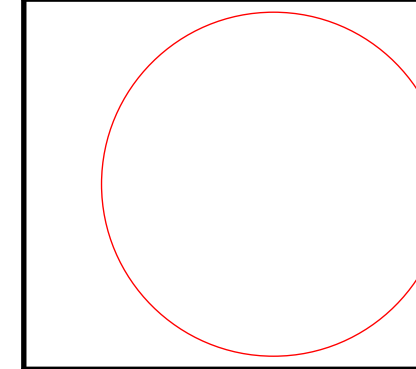
Mechanical, Electrical,
 Plumbing Engineers:
 Andre Gill Engineering
 North Smithfield, RI 02886
 Phone: (401) 441-3414

Structural Engineers:
 C.A. Priezer Associates
 50 Freeway Drive
 Cranston, RI 02920
 Phone: (401) 785-2690

Landscape Architects:
 Diane C. Soule & Associates
 422 Farmum Pike
 Smithfield, Rhode Island
 Phone: (401) 231-0736

**CRESCENT PARK
 NEW BUILDING**
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:



**CODE SHEET
 NEW BUILDING**

DATE: 10/31/24

NCA JOB NO.: 23100

DRAWING NO.:

A-002

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MAP 413, BLOCK 13, PARCEL 1
 (684 & 700 BULLOCKS POINT AVES.)
 N/F CITY OF E. PROVIDENCE
 AREA: 153,058 SQ. FT. (3.51 ACRES)

MAP 313 BLOCK 12 PARCEL 1
 NOW OR FORMERLY
 CITY OF EAST PROVIDENCE - PARKS
 145 TAUNTON AVENUE
 EAST PROVIDENCE, RI 02914
 DEED BOOK 582 PAGE 22
 SQUARE FOOTAGE = 198,914.32
 ACRES = 4.56

MAP 414 BLOCK 13 PARCEL 8
 NOW OR FORMERLY
 CITY OF EAST PROVIDENCE - PARKS
 145 TAUNTON AVENUE
 EAST PROVIDENCE, RI 02914
 DEED BOOK 1790 PAGE 59
 SQUARE FOOTAGE = 100,251.77
 ACRES = 2.30

PROPOSED LIMIT OF
 DISTURBANCE (TYP.)

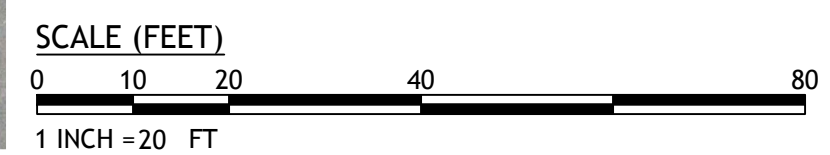
EXISTING PROPERTY
 LINE (TYP.)

CAROUSEL

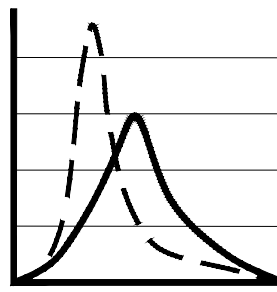
CRESCENT VIEW AVENUE

BULLOCKS POINT AVENUE

BEACH ROAD



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 COLLABORATIVE
 ARCHITECTS

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**CRESCENT PARK
 NEW BUILDING**
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:

**OVERALL
 PROJECT
 LOCATION MAP**

DATE: 10/31/24

NCA/JCE JOB NO.: 23100/23-32

DRAWING NO.:

C0.2

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SUBSURFACE EXPLORATION DATA:

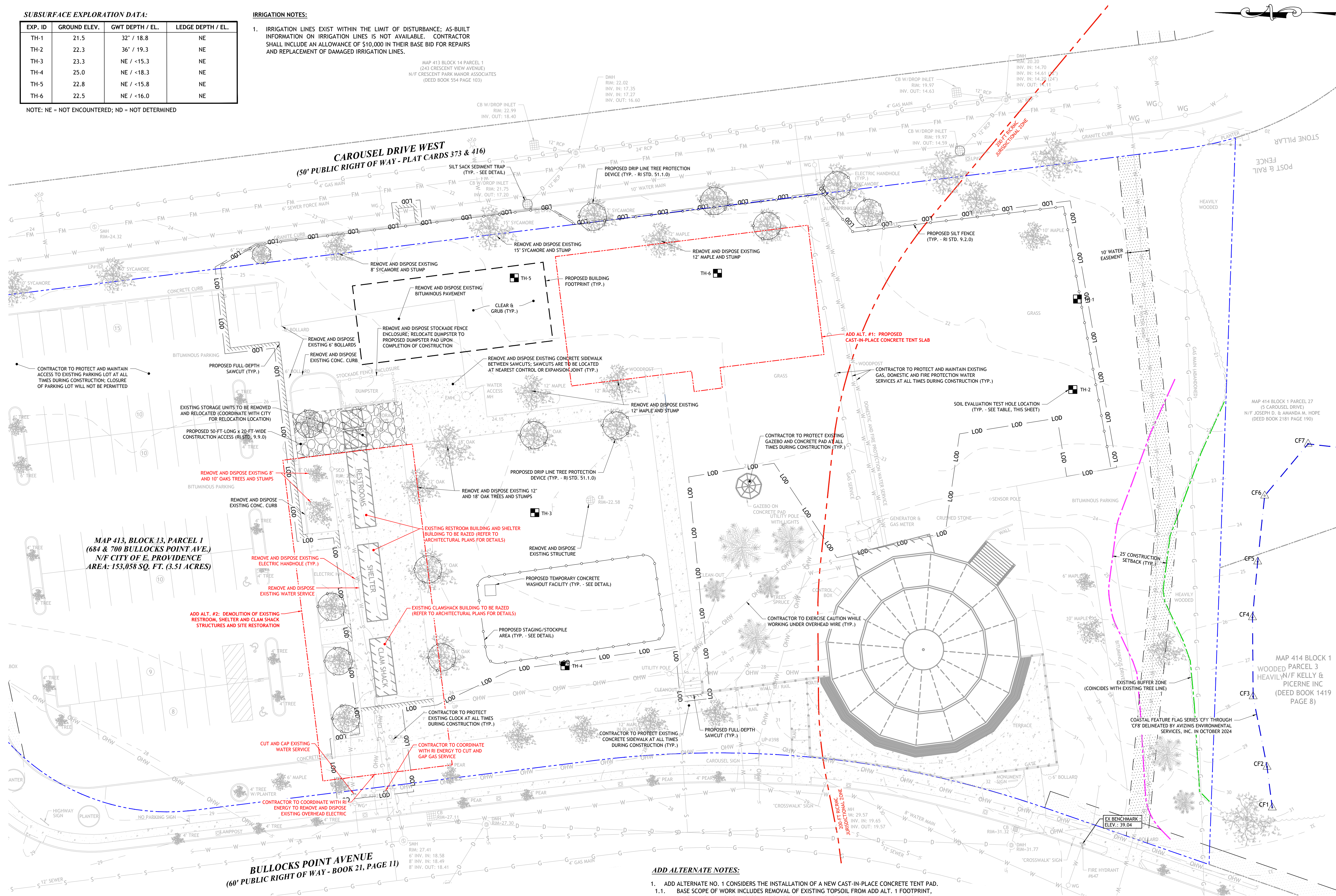
EXP. ID	GROUND ELEV.	GWT DEPTH / EL.	LEDGE DEPTH / EL.
TH-1	21.5	32' / 18.8	NE
TH-2	22.3	36' / 19.3	NE
TH-3	23.3	NE / <15.3	NE
TH-4	25.0	NE / <18.3	NE
TH-5	22.8	NE / <15.8	NE
TH-6	22.5	NE / <16.0	NE

NOTE: NE = NOT ENCOUNTERED; ND = NOT DETERMINED

IRRIGATION NOTES:

- IRRIGATION LINES EXIST WITHIN THE LIMIT OF DISTURBANCE; AS-BUILT INFORMATION ON IRRIGATION LINES IS NOT AVAILABLE. CONTRACTOR SHALL INCLUDE AN ALLOWANCE OF \$10,000 IN THEIR BASE BID FOR REPAIRS AND REPLACEMENT OF DAMAGED IRRIGATION LINES.

MAP 413 BLOCK 14 PARCEL 1
(243 CRESCENT VIEW AVENUE)
N/F CRESCENT PARK MANOR ASSOCIATES
(DEED BOOK 554 PAGE 103)



650 Ten Rod Road
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**CRESCENT PARK
NEW BUILDING
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915**

REVISIONS:

NO.	DESCRIPTION
CF1	EXISTING BUFFER ZONE (COINCIDES WITH EXISTING TREE LINE)
CF2	COASTAL FEATURE FLAG SERIES 'CF1' THROUGH 'CF8' DELINEATED BY ANZINIS ENVIRONMENTAL SERVICES, INC. IN OCTOBER 2024
CF3	
CF4	
CF5	
CF6	
CF7	
CF8	

DATE: 10/31/24

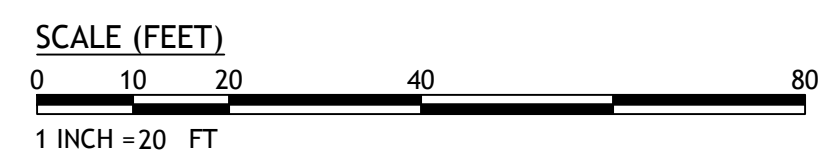
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DRAWING NO.:

C1.0

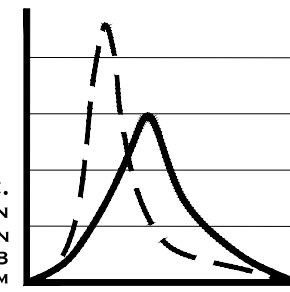
ADD ALTERNATE NOTES:

- ADD ALTERNATE NO. 1 CONSIDERS THE INSTALLATION OF A NEW CAST-IN-PLACE CONCRETE TENT PAD.
 - BASE SCOPE OF WORK INCLUDES REMOVAL OF EXISTING TOPSOIL FROM ADD ALT. 1 FOOTPRINT, MINOR REGRADING AS NECESSARY TO ACCOMMODATE PROPOSED SITE GRADES, AND RESTORATION WITH MINIMUM 6-INCHES OF LOAM AND SEED.
- ADD ALTERNATE NO. 2 CONSIDERS THE DEMOLITION OF THE EXISTING RESTROOM STRUCTURE, SHELTER STRUCTURE AND CLAM SHACK STRUCTURE, AND SITE RESTORATION.
 - BASE SCOPE OF WORK INCLUDES MAINTAINING AND PROTECTING THESE EXISTING FACILITIES AT ALL TIMES DURING CONSTRUCTION.
 - IF ADD ALTERNATE NO. 2 IS EXECUTED, THESE EXISTING FACILITIES ARE TO REMAIN AND BE PROTECTED UNTIL ALL BASE SCOPE OF WORK IS COMPLETED. UPON COMPLETION OF THE BASE SCOPE OF WORK, ADD ALTERNATE NO. 2 MAY COMMENCE.

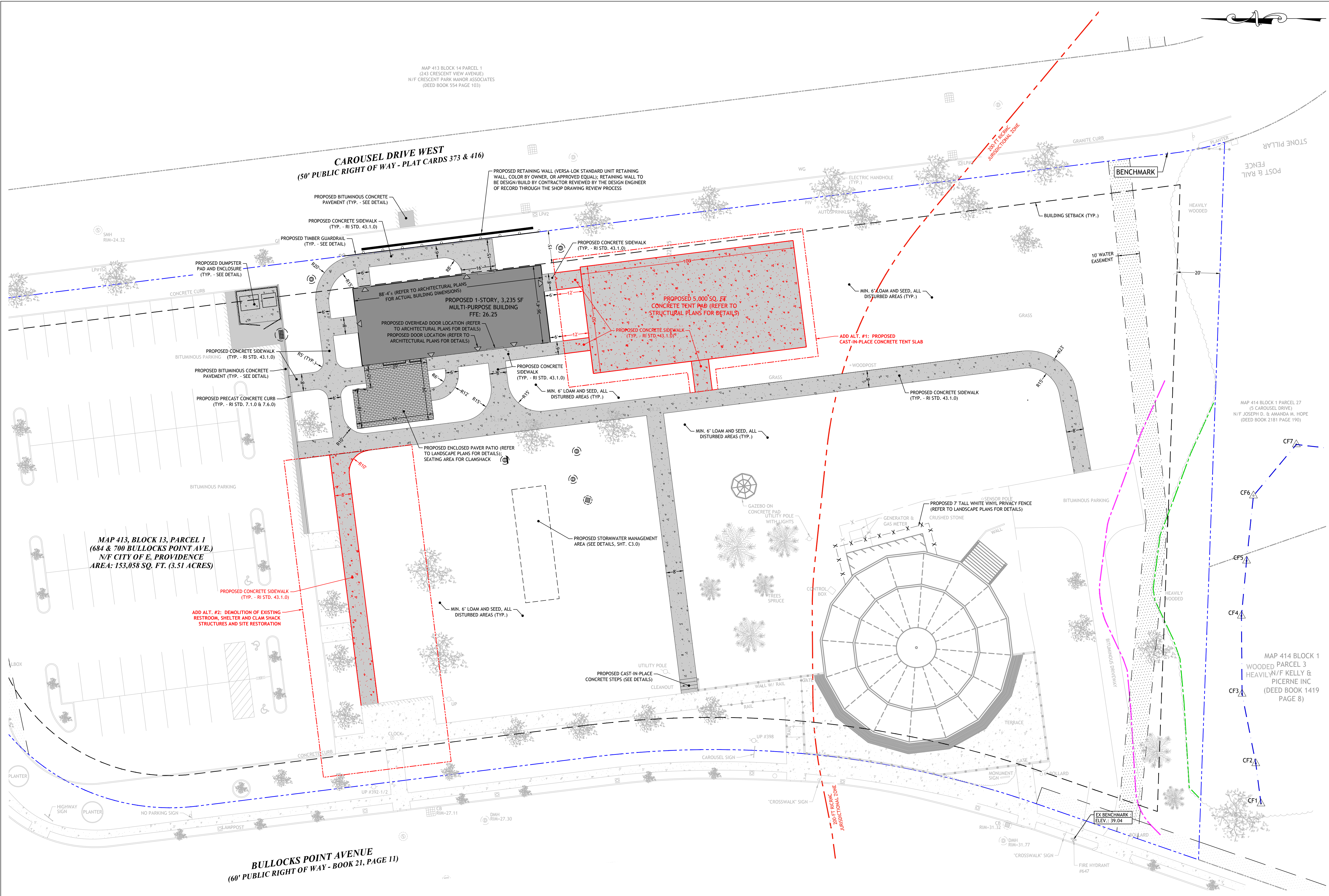


JCE

JOE CASALI ENGINEERING, INC.
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**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915



REVISIONS:

SITE PLAN

DATE: 10/31/24

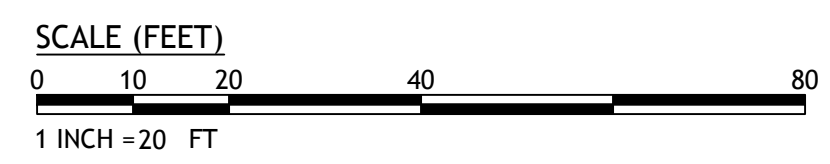
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DRAWING NO.:

C2.0

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QUALIFIED PERVIOUS AREA NOTES:

- AREAS DESIGNATED AS QUALIFIED PERVIOUS AREAS ON THIS PLAN MUST BE PROTECTED AT ALL TIMES DURING CONSTRUCTION FROM ANY UNNECESSARY COMPACTION FROM CONSTRUCTION EQUIPMENT. SUITABLE MEASURES OF PROTECTION INCLUDE SILT FENCE OR SNOW FENCE.
- IN THE EVENT THAT COMPACTION OF DESIGNATED QUALIFIED PERVIOUS AREAS OCCURS, THE CONTRACTOR SHALL SUITABLY AMEND, TILL AND RE-VEGETATED ONCE CONSTRUCTION IS COMPLETE TO RESTORE INFILTRATION CAPACITY.
- PROPOSED TENT PAD AND CONCRETE SIDEWALKS SHALL BE PITCHED SLIGHTLY (NO GREATER THAN 1%) TOWARDS QUALIFIED PERVIOUS AREAS.

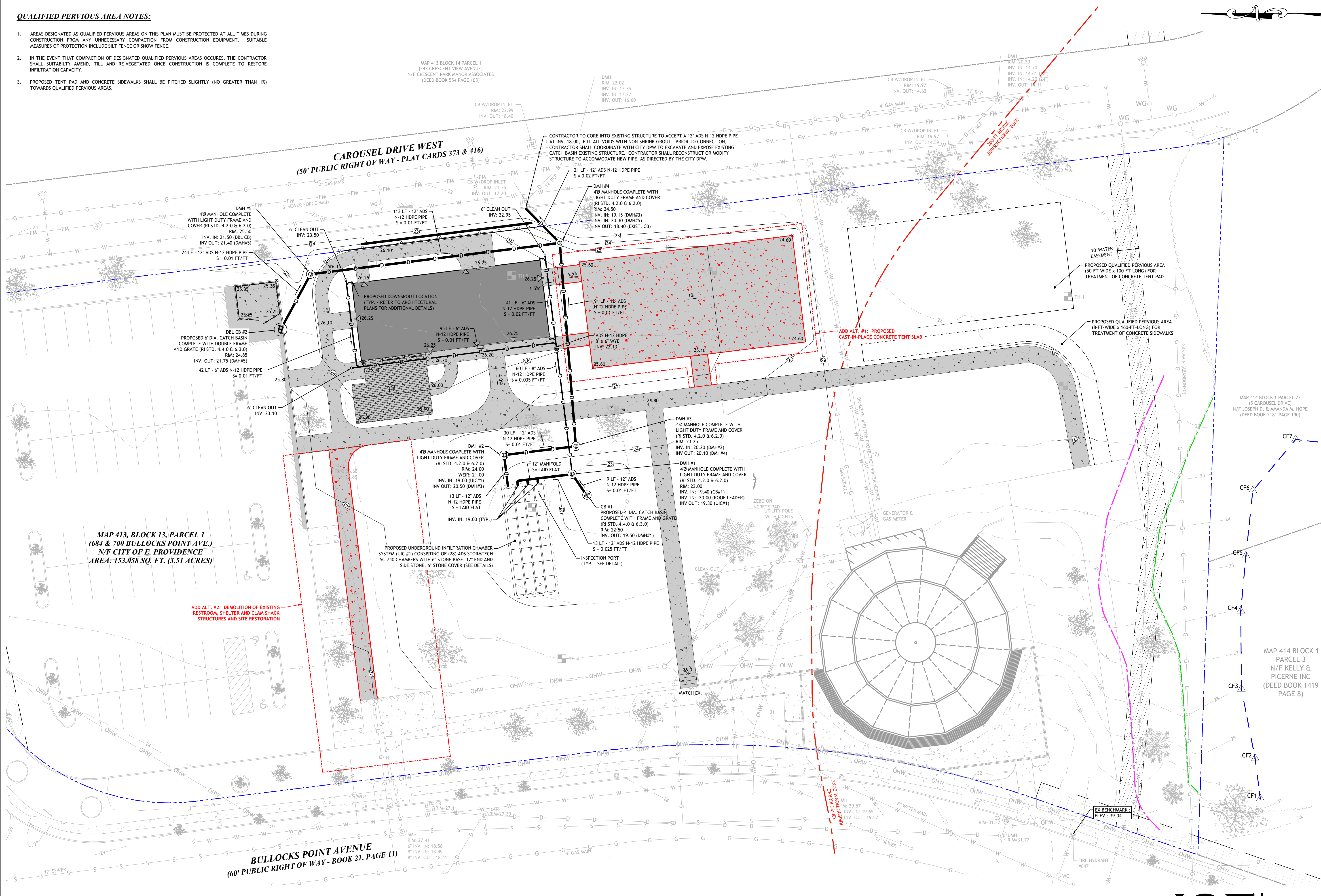
650 Ten Rod Road
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Civil Engineers
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MAP 413, BLOCK 13, PARCEL 1
 (684 & 700 BULLOCKS POINT AVE.)
 N/F CITY OF E. PROVIDENCE
 AREA: 153,058 SQ. FT. (3.51 ACRES)

ADD ALT. #2: DEMOLITION OF EXISTING RESTROOM, SHELTER AND CLEAN SHACK STRUCTURES AND SITE RESTORATION

BULLOCKS POINT AVENUE
 (60' PUBLIC RIGHT OF WAY - BOOK 21, PAGE 11)

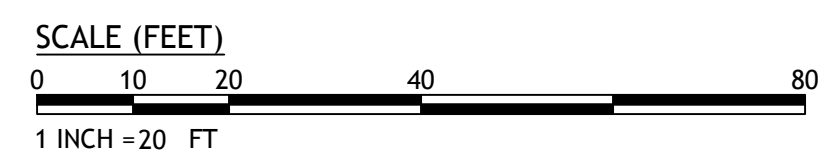
**CRESCENT PARK
 NEW BUILDING**
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:

NO.	DESCRIPTION
CF1	
CF2	
CF3	
CF4	
CF5	
CF6	
CF7	

GRADING & DRAINAGE PLAN

DATE: 10/31/24
 NCA/JCE JOB NO.: 23100/23-32
 DRAWING NO.: **C3.0**



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**CRESCENT PARK
 NEW BUILDING**
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:

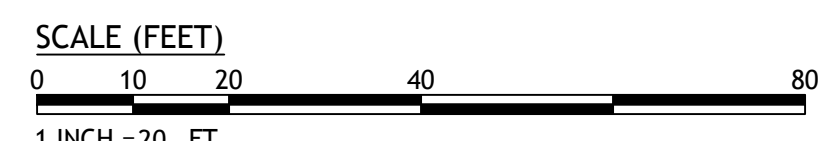
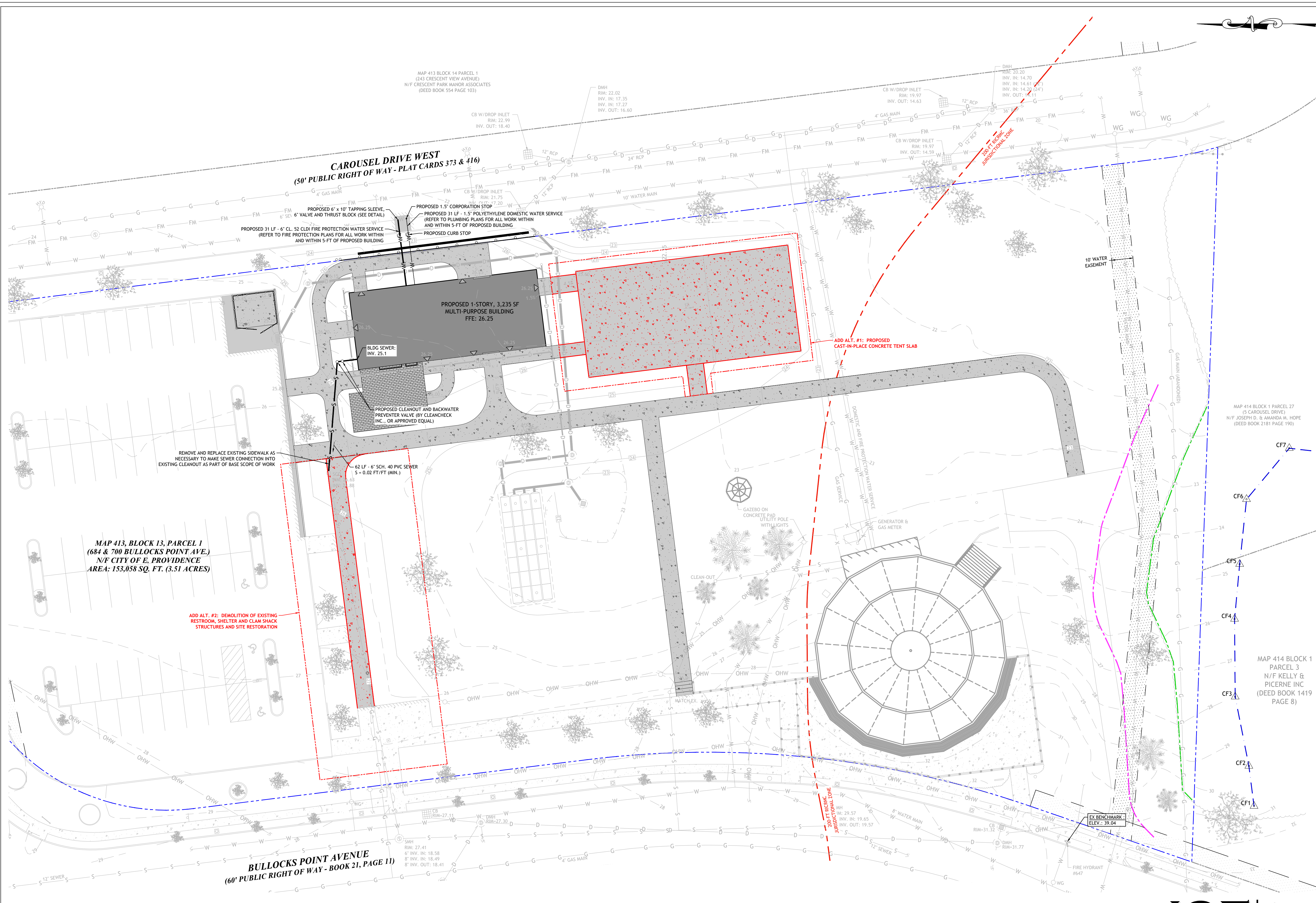
UTILITY PLAN

DATE: 10/31/24

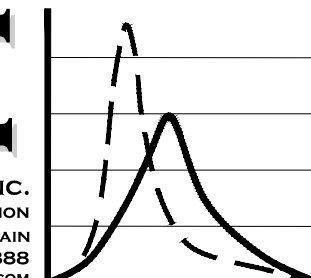
NCA/JCE JOB NO.: 23100/23-32

DRAWING NO.:

C4.0



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 DRAINAGE - WETLANDS - HSDB - TRAFFIC - FLOODPLAIN
 300 POST ROAD, WARWICK, RI 02888
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MAP 413, BLOCK 13, PARCEL 1
 (684 & 700 BULLOCKS POINT AVE.)
 N/F CITY OF E. PROVIDENCE
 AREA: 153,058 SQ. FT. (3.51 ACRES)

ADD ALT. #2: DEMOLITION OF EXISTING
 RESTROOM, SHELTER AND CLAM SHACK
 STRUCTURES AND SITE RESTORATION

REMOVE AND REPLACE EXISTING SIDEWALK AS
 NECESSARY TO MAKE SEWER CONNECTION INTO
 EXISTING CLEANOUT AS PART OF BASE SCOPE OF WORK

BULLOCKS POINT AVENUE
 (60' PUBLIC RIGHT OF WAY - BOOK 21, PAGE 11)

CAROUSEL DRIVE WEST
 (50' PUBLIC RIGHT OF WAY - PLAT CARDS 373 & 416)

MAP 413 BLOCK 14 PARCEL 1
 (243 CRESCENT VIEW AVENUE)
 N/F CRESCENT PARK MANOR ASSOCIATES
 (DEED BOOK 554 PAGE 103)

MAP 414 BLOCK 1 PARCEL 27
 N/F JOSEPH D. & AMANDA M. HOPE
 (DEED BOOK 2181 PAGE 190)

MAP 414 BLOCK 1
 PARCEL 3
 N/F KELLY &
 PICERNE INC
 (DEED BOOK 1419
 PAGE 8)

**CRESCENT PARK
 NEW BUILDING**
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:

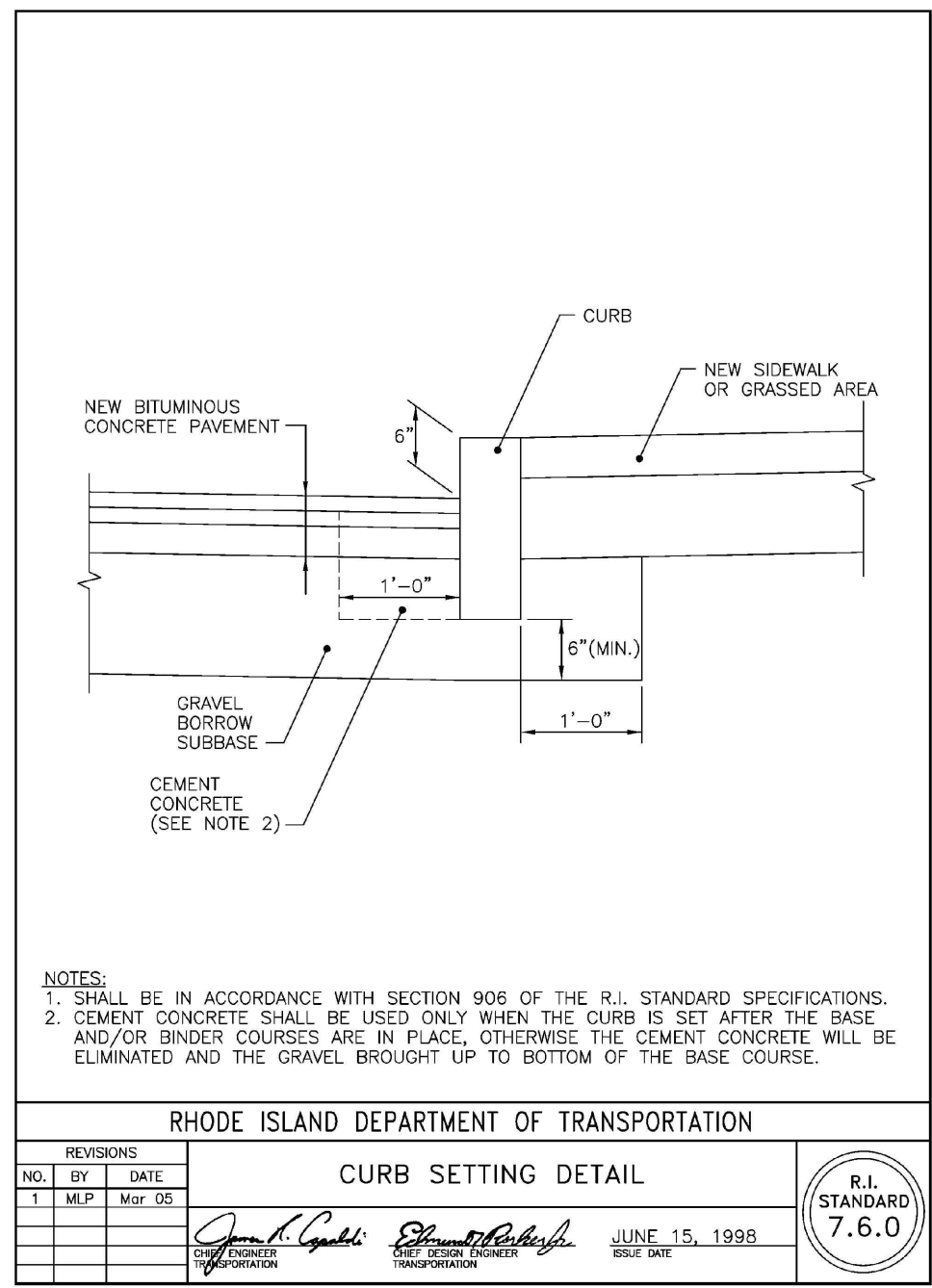
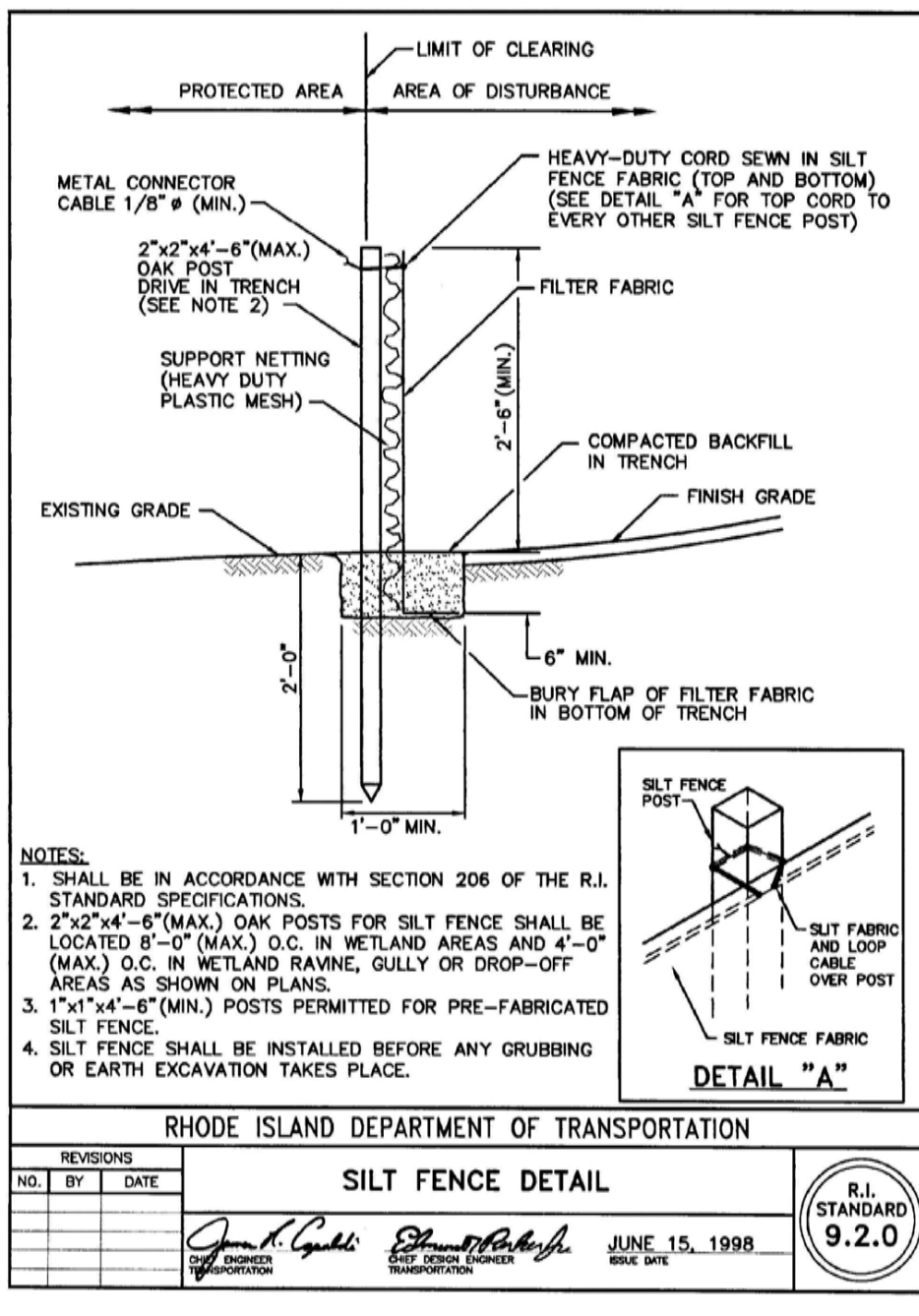
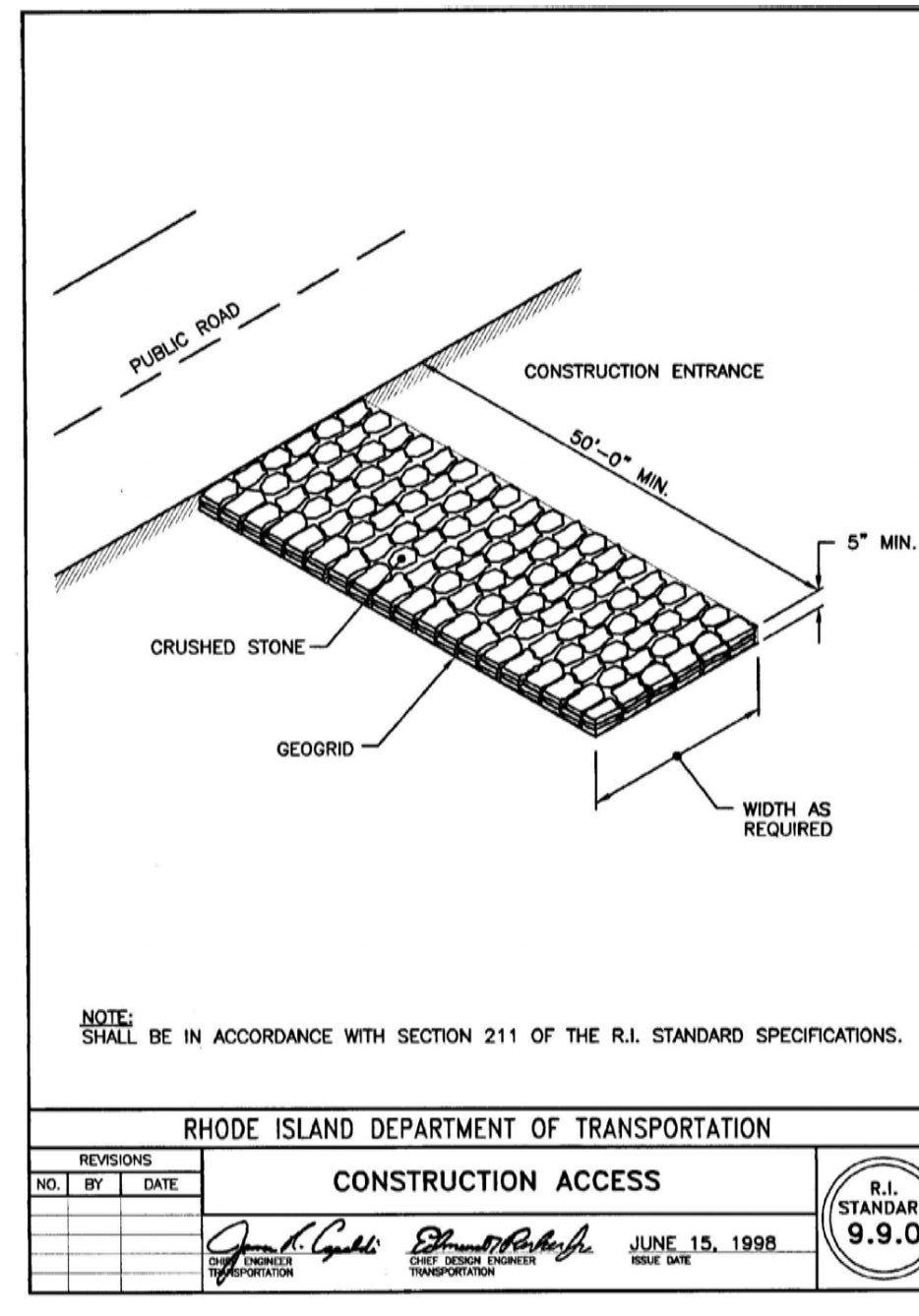
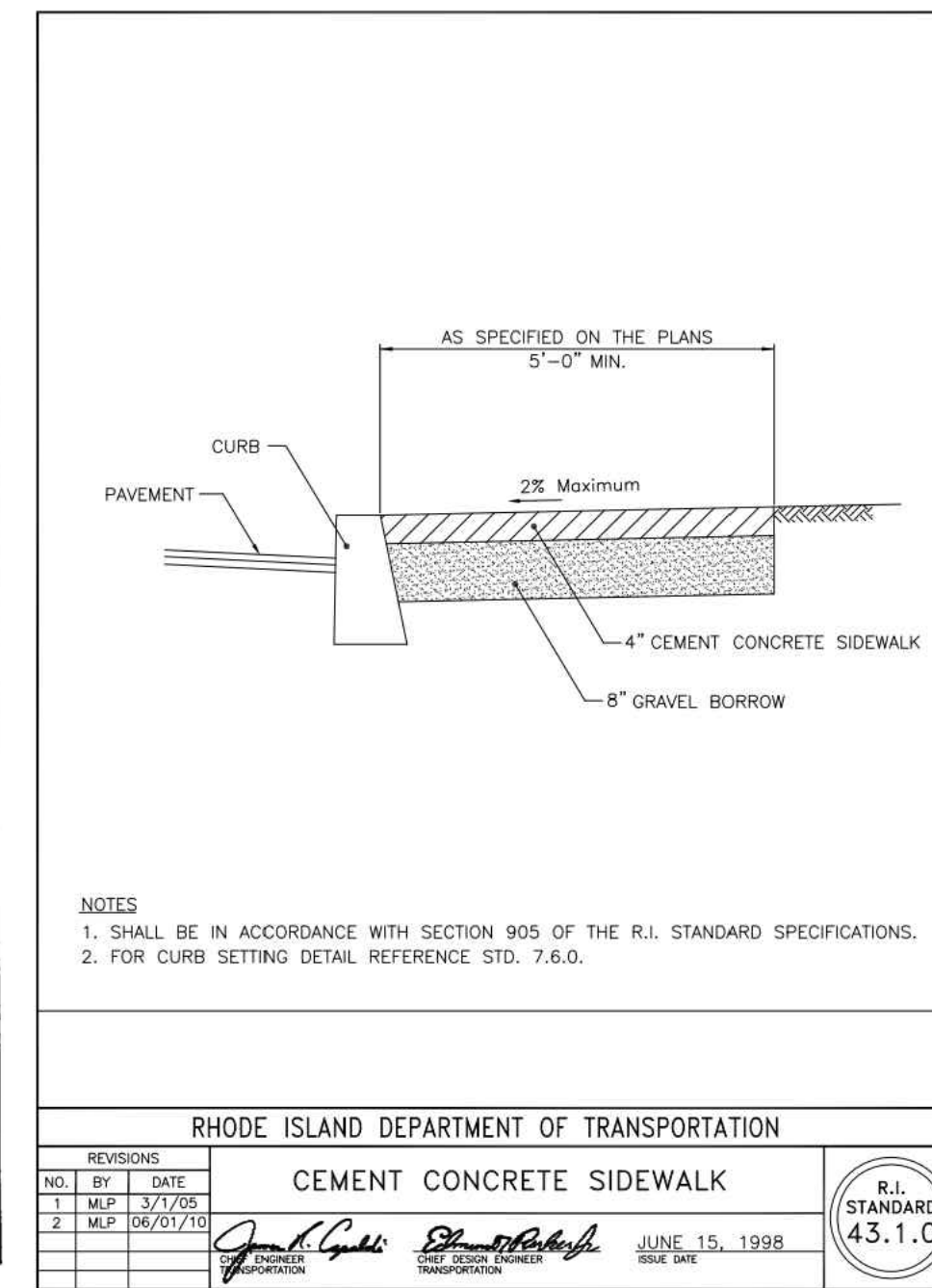
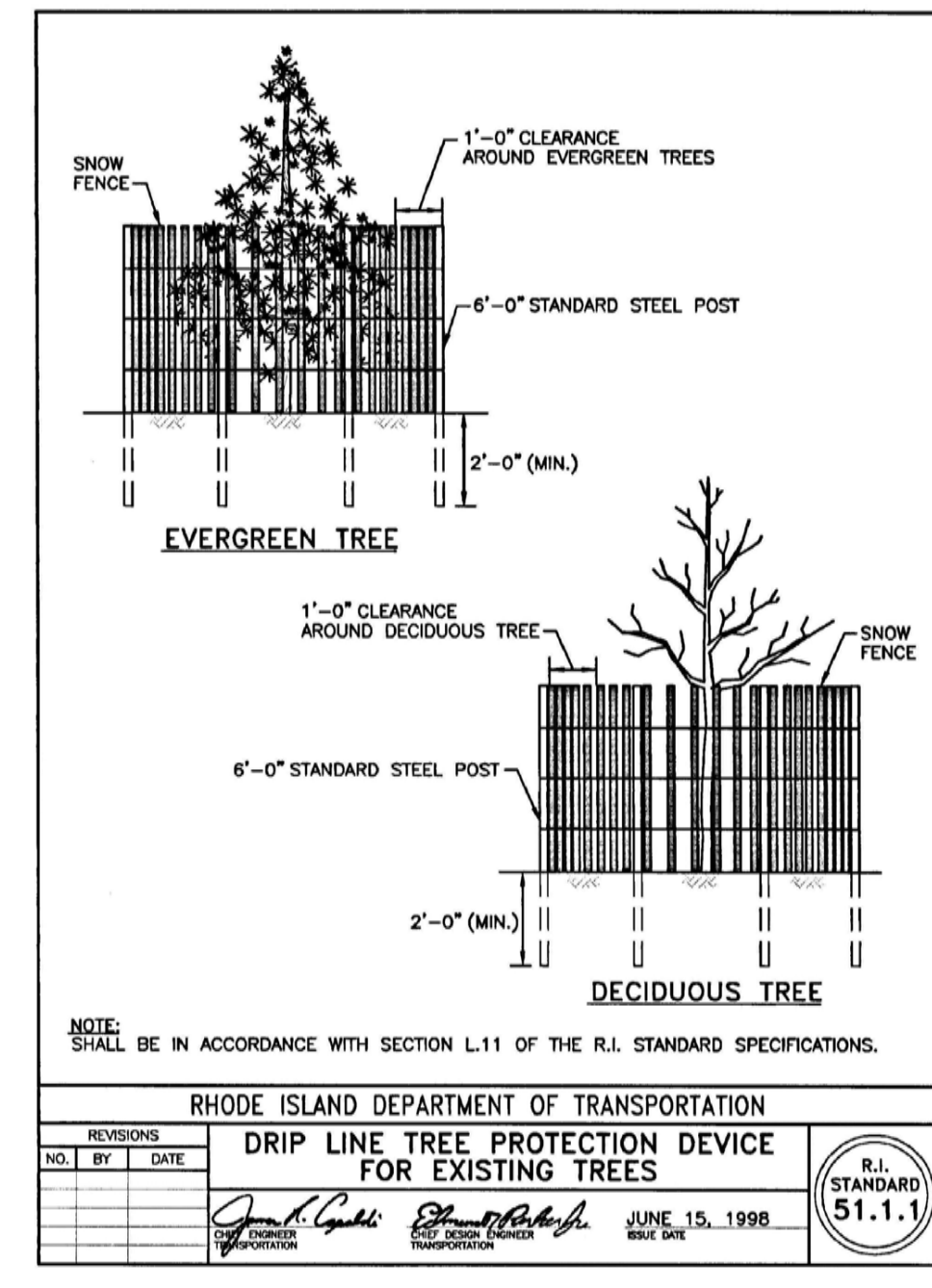
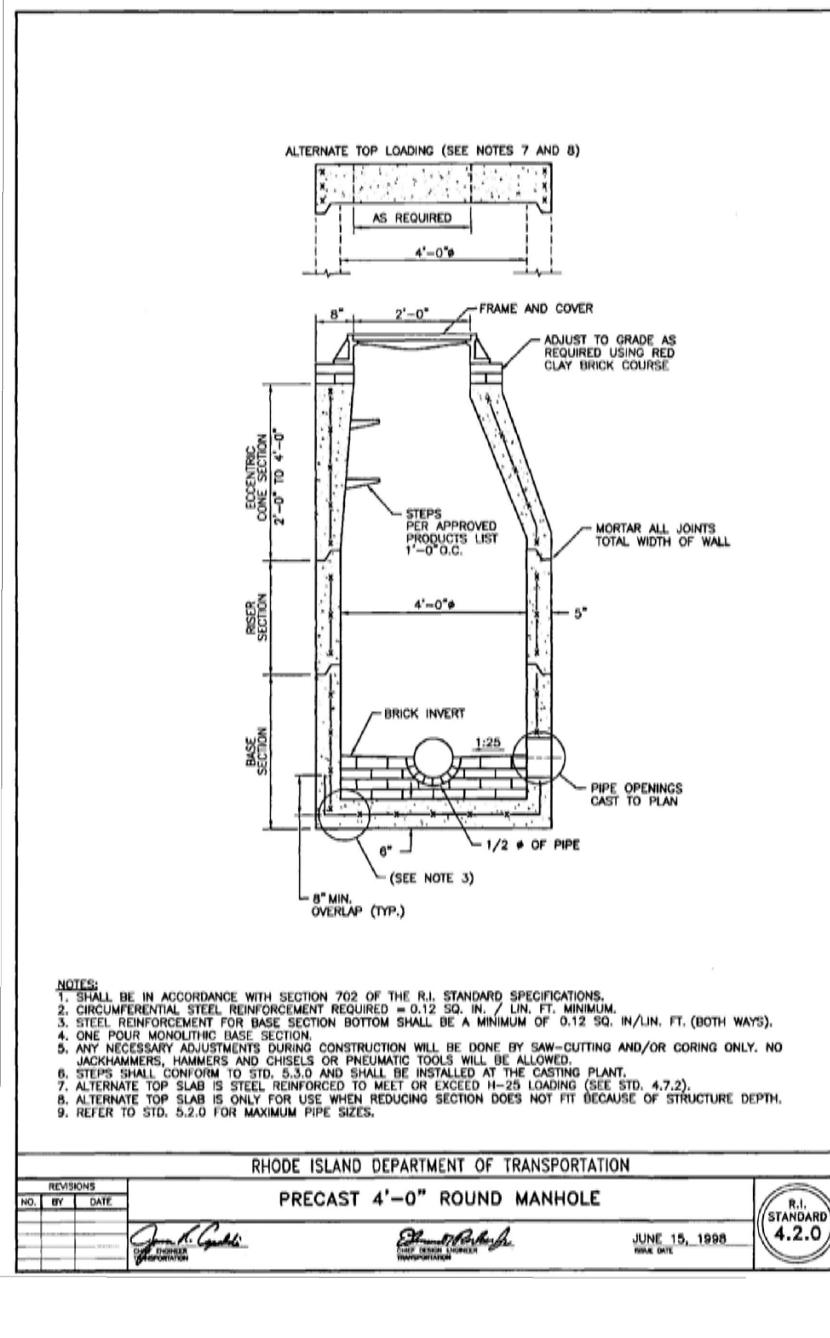
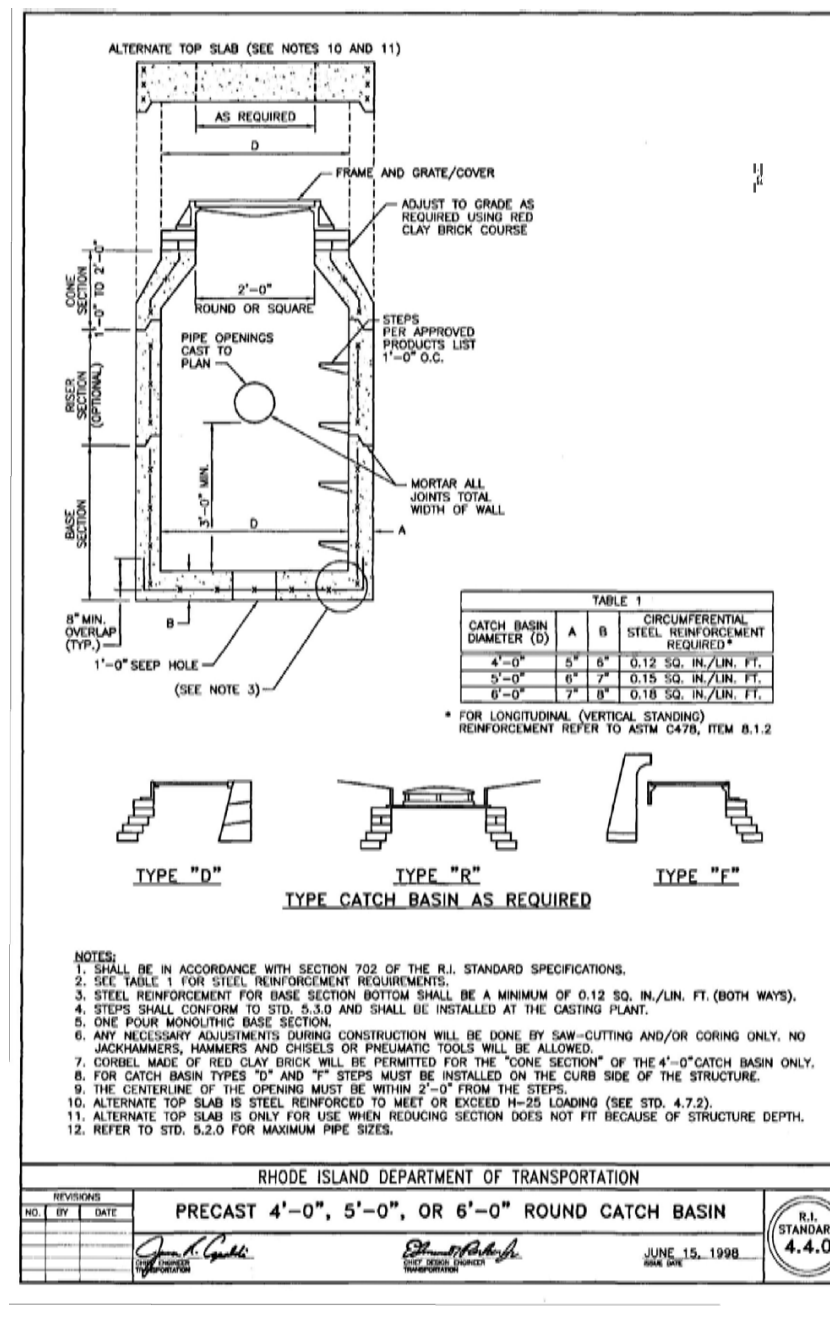
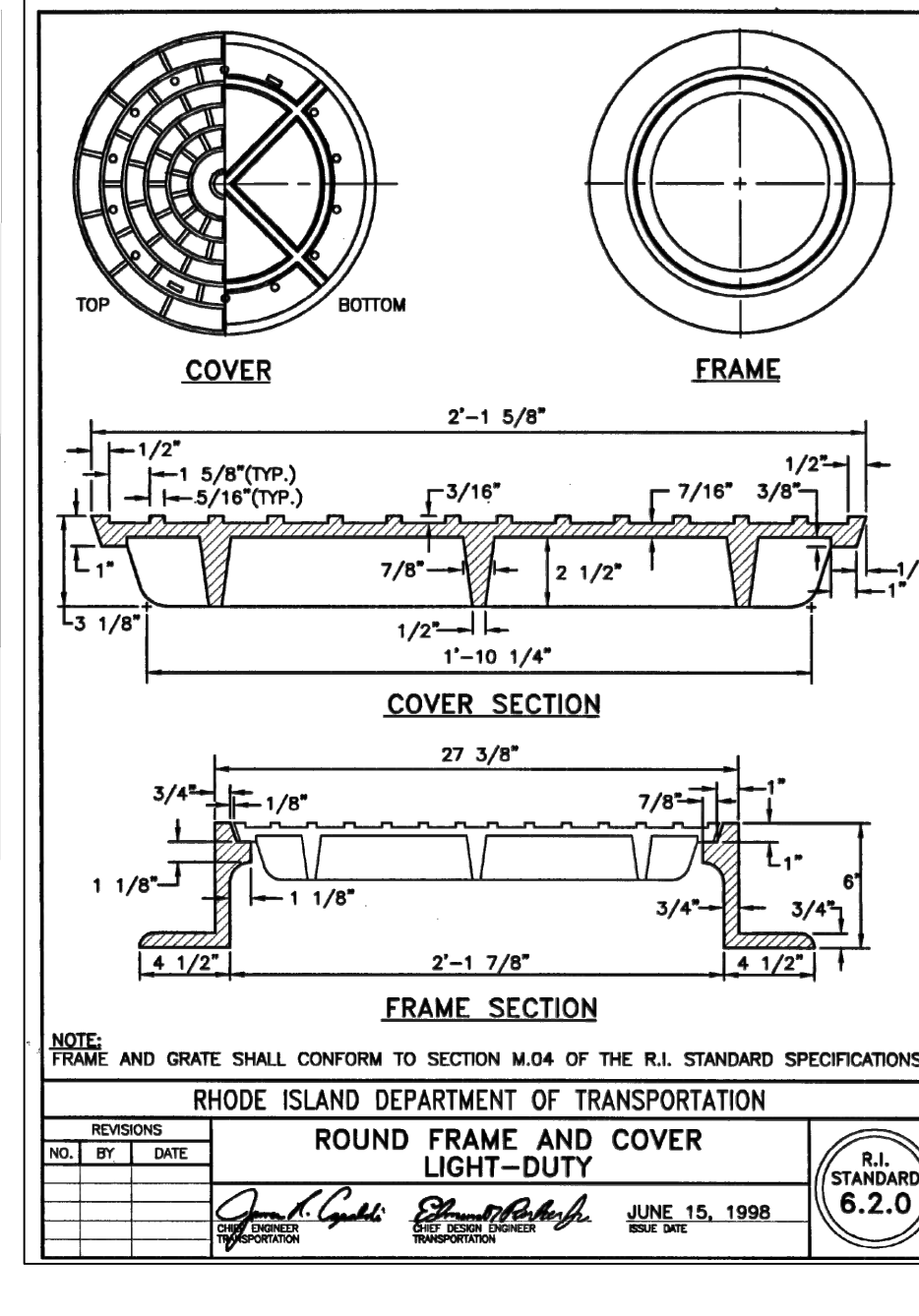
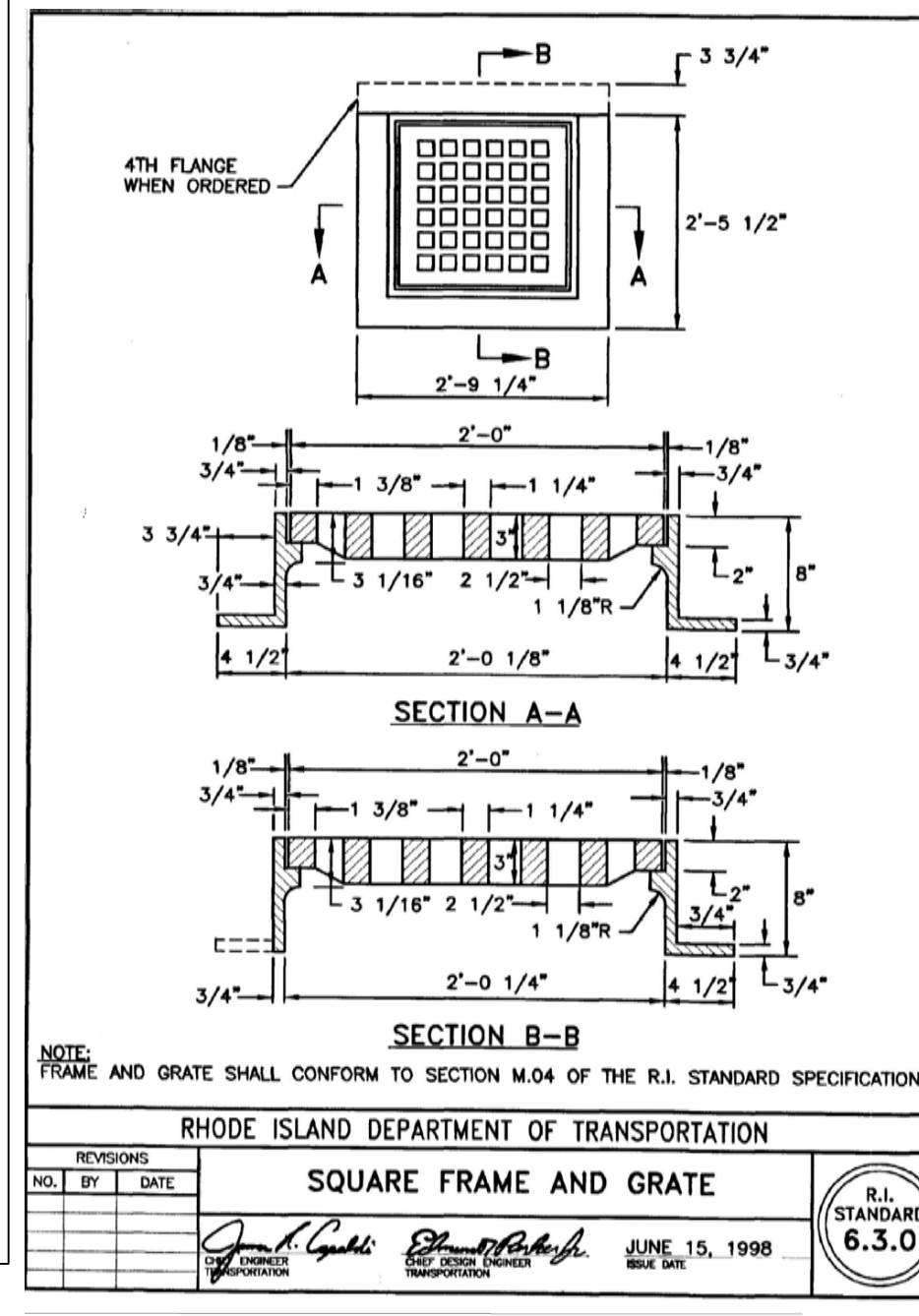
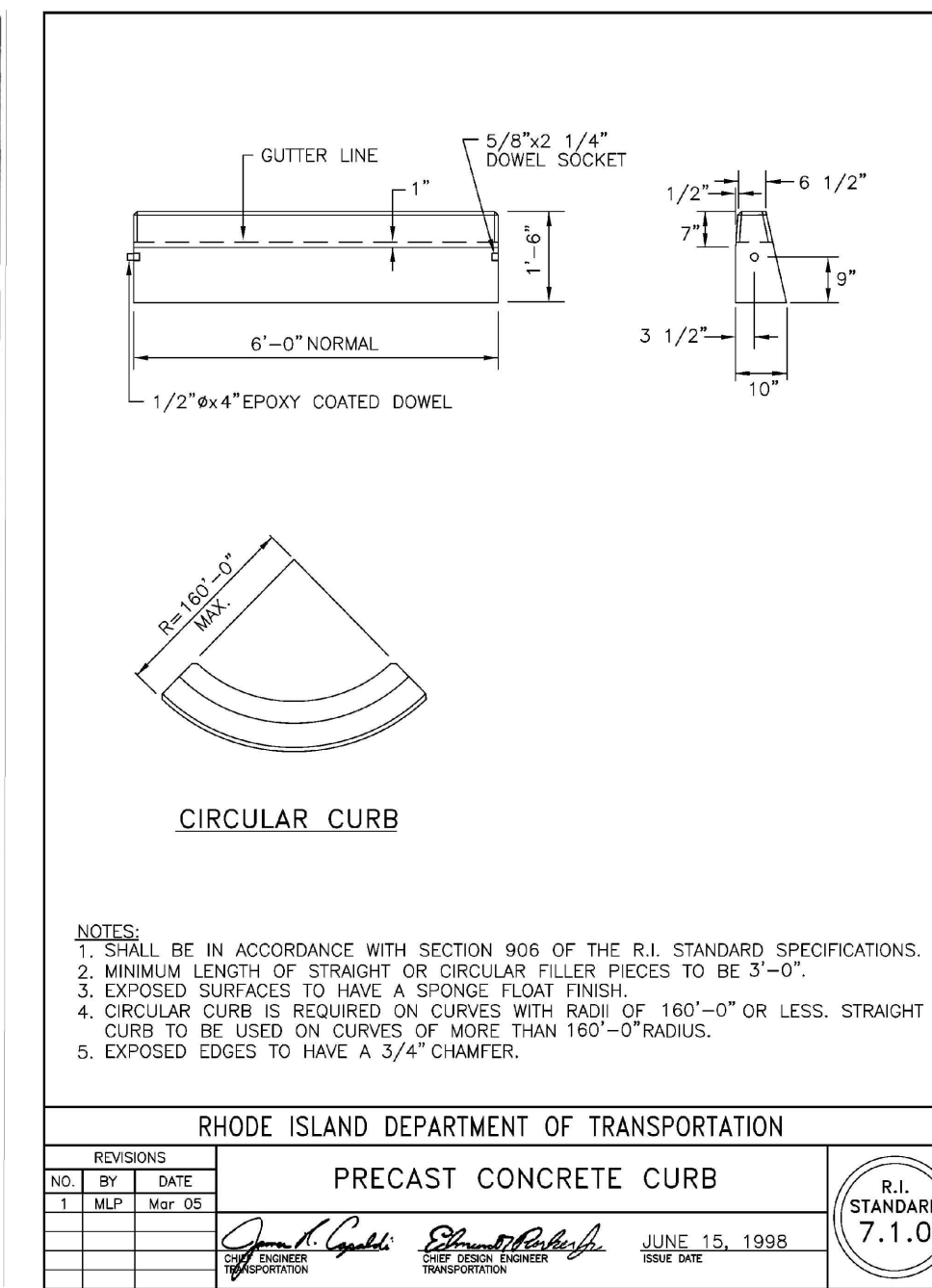
DETAILS I

DATE: 10/31/24

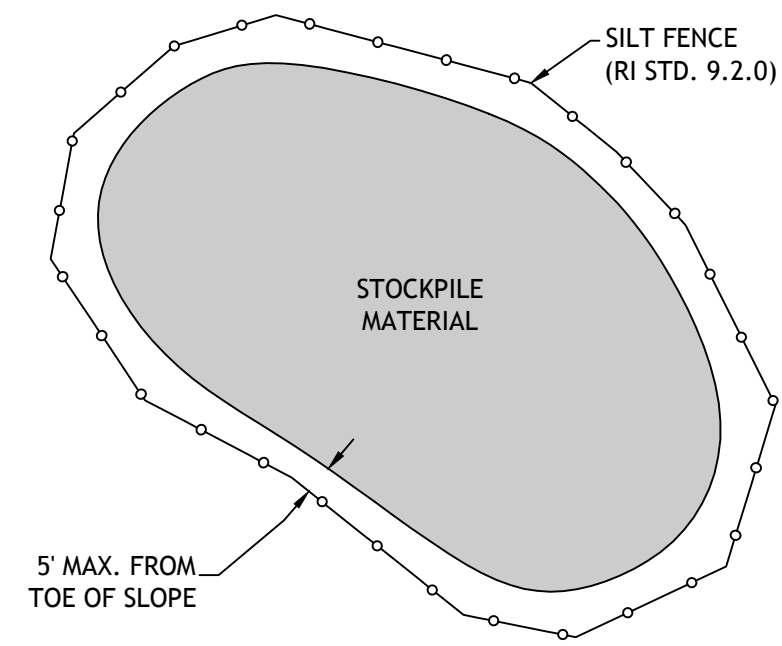
NCA/JCE JOB NO.: 23100/23-32

DRAWING NO.:

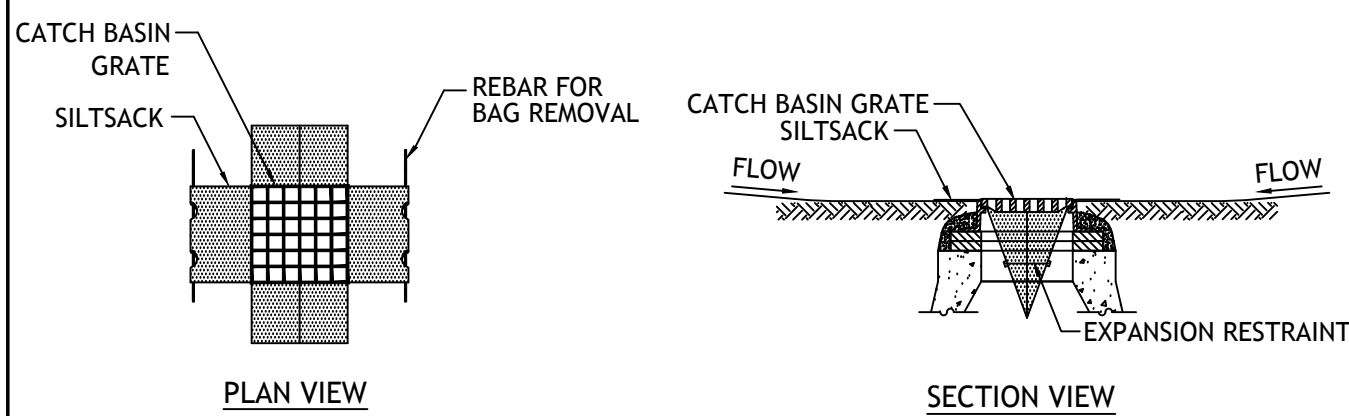
C5.0



NOTE TO CONTRACTOR:
CONTRACTOR TO COORDINATE WITH OWNER ON LOCATION OF CONSTRUCTION TRAILER AND STAGING AREAS



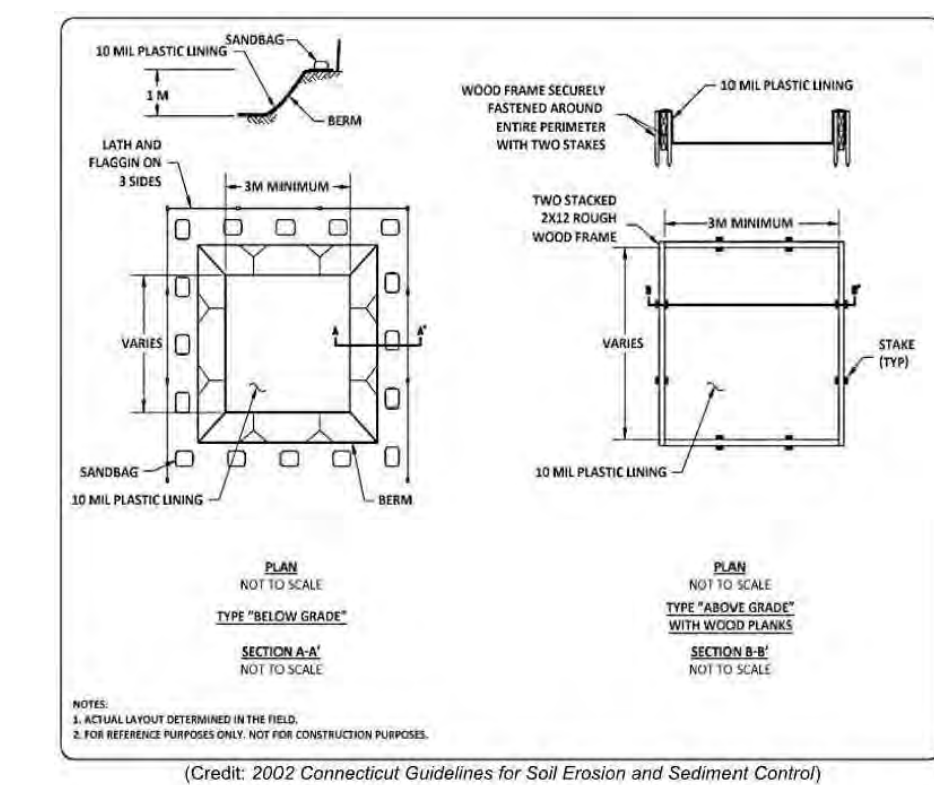
1 STOCKPILE DETAIL
NOT TO SCALE



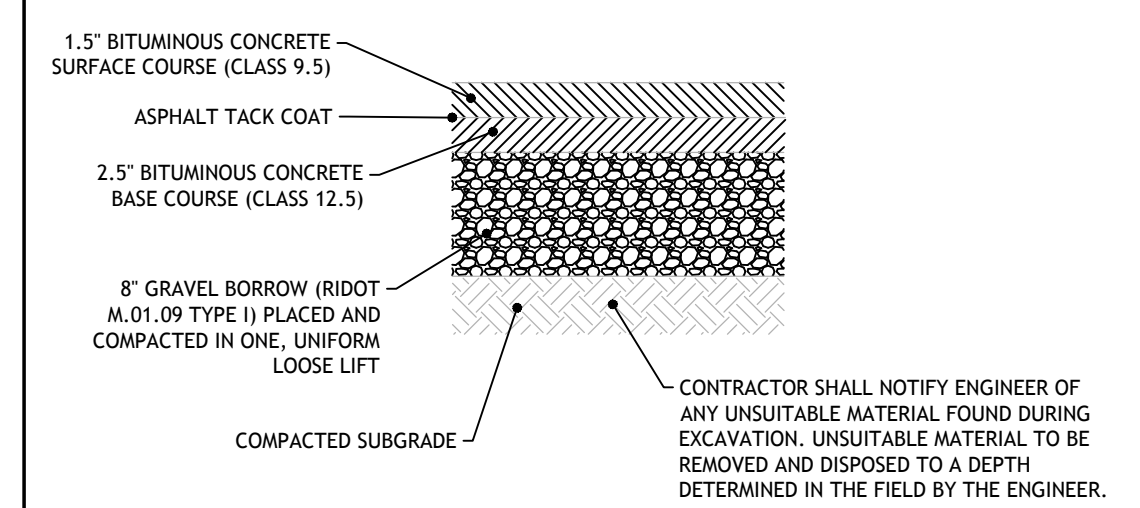
NOTES:

- INSTALL SILTSACKS IN CATCH BASINS AT THE LOCATIONS SHOWN ON THE EXISTING CONDITIONS & SITE PREPARATION PLANS BEFORE COMMENCING ANY LAND DISTURBING ACTIVITIES.
- GRATE TO BE PLACED OVER SILTSACK. SILTSACK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS AND CLEANING OR REPLACEMENT SHALL BE PERFORMED PROMPTLY AS NEEDED. MAINTAIN UNTIL UPSTREAM AREAS HAVE BEEN PERMANENTLY STABILIZED

2 SILTSACK SEDIMENT TRAP
NOT TO SCALE



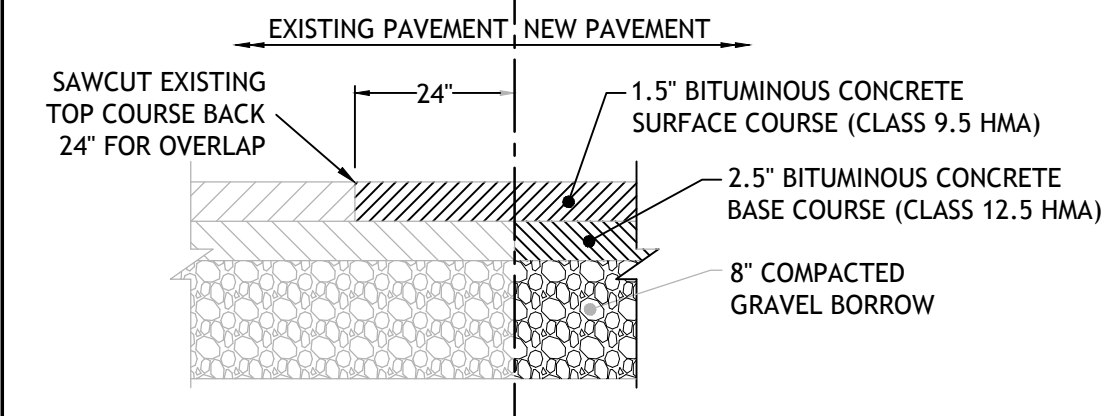
3 TEMP. CONCRETE WASHOUT FACILITY
NOT TO SCALE



NOTES:

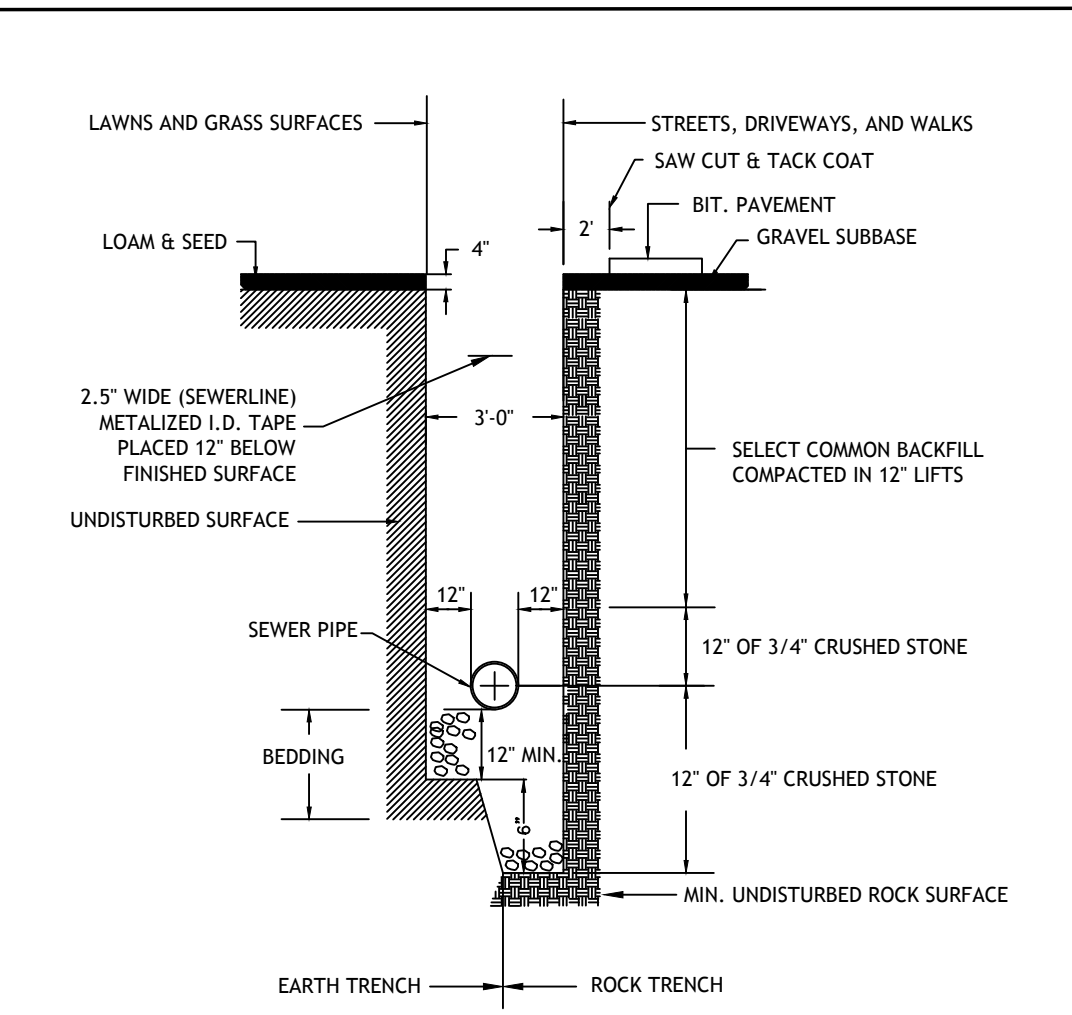
- MATERIALS SHALL BE IN ACCORDANCE WITH UFC 3-250-01 (PAVEMENT DESIGN FOR ROADS AND PARKING AREAS), UFC 3-201-01 (CIVIL ENGINEERING) AND THE RIDGE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, AUGUST 2023, WHICHEVER IS MORE STRINGENT.
- IF UNSUITABLE MATERIALS ARE ENCOUNTERED AT SURGRADE ELEVATION, THE CONTRACTOR SHALL NOTIFY THE ENGINEER. THE DEPTH OF UNSUITABLE MATERIAL TO BE DETERMINED IN THE FIELD. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE THE UNSUITABLE MATERIALS AND REPLACE WITH SUITABLE MATERIAL APPROVED BY THE ENGINEER.
- MINIMUM COMPACTION FOR GRAVEL BORROW SUB-BASE AND SUBGRADE: 95% MODIFIED PROCTOR.

4 BITUMINOUS CONCRETE PAVEMENT
NOT TO SCALE



NOTE:
PROVIDE BITUMINOUS TACK COAT AT ALL SAWCUTS.

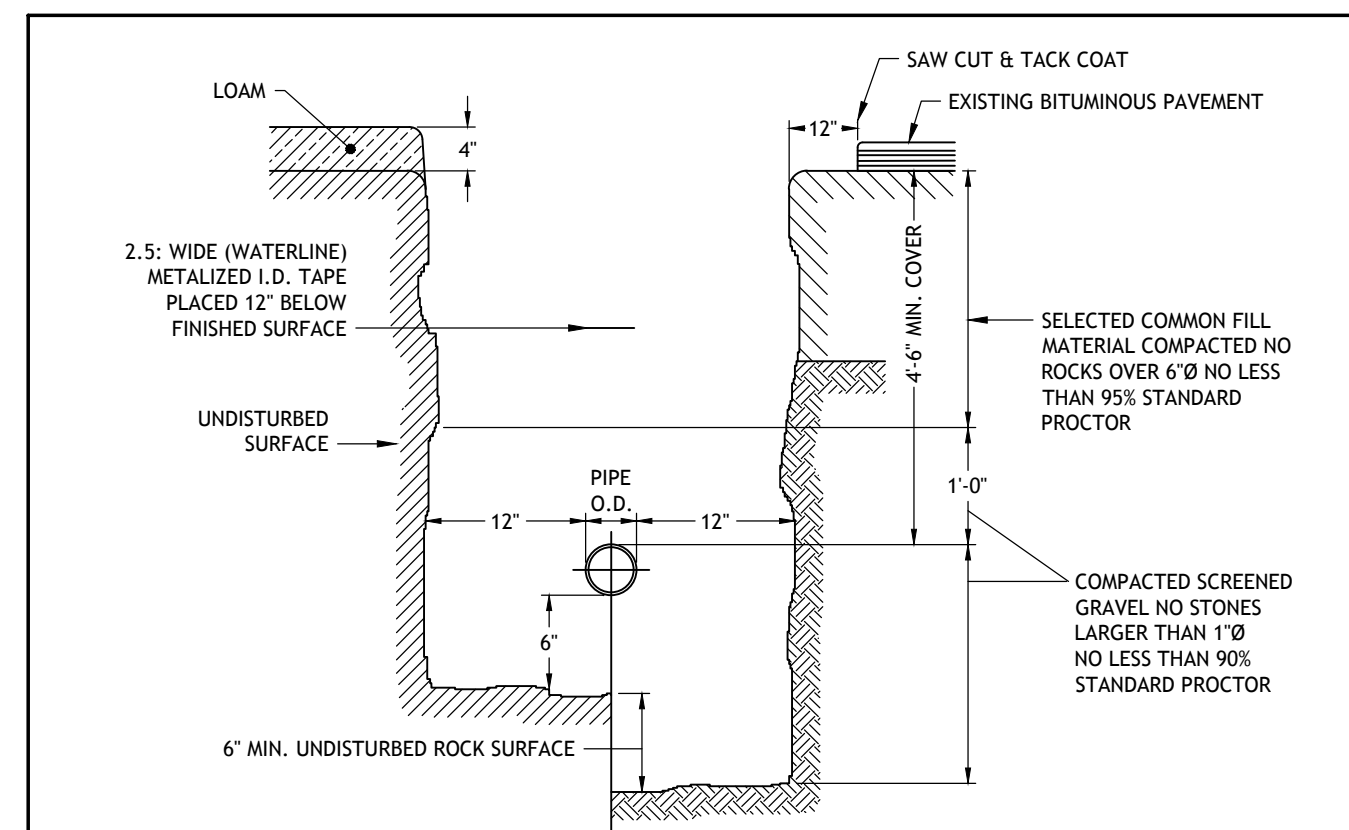
5 PAVEMENT CUT AND MATCH DETAIL
NOT TO SCALE



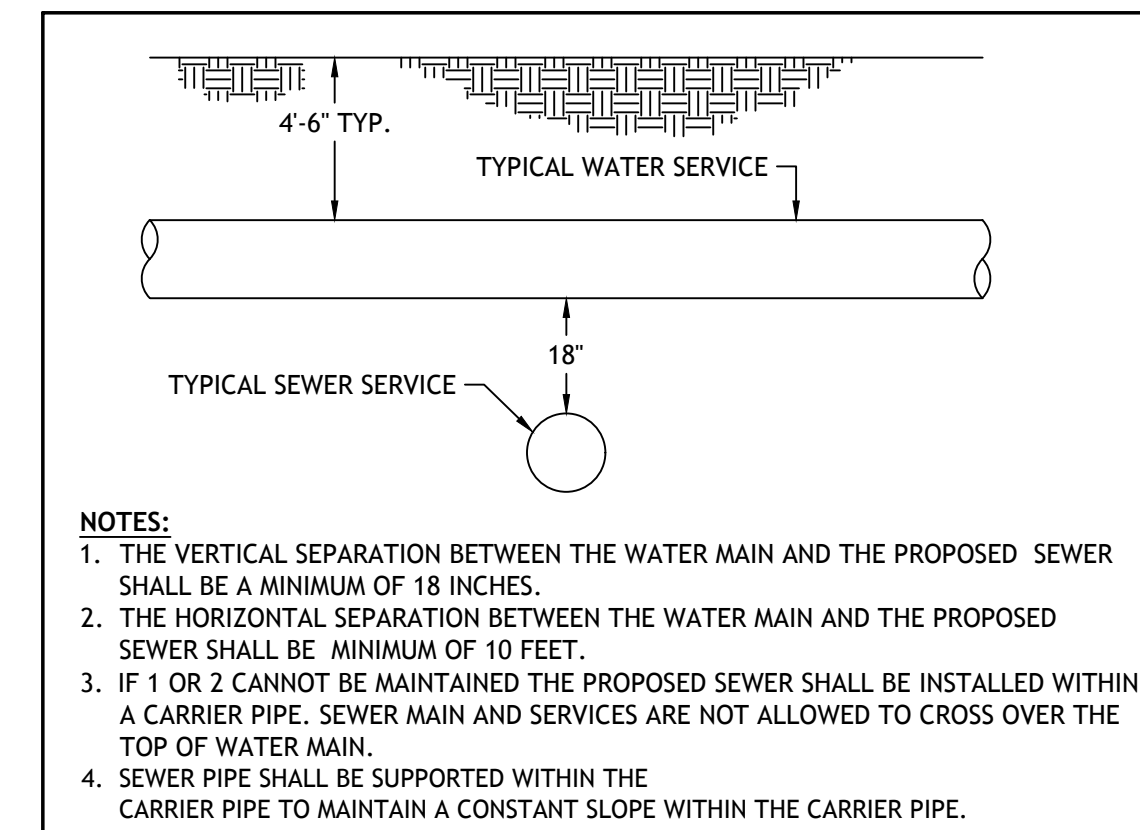
NOTES:

- 3/4 INCH CRUSHED STONE FOUNDATION SHALL BE PLACED 12" UNDER THE PIPE UP TO THE PIPE GRADE. THE PIPE LAID THEREON, AND 3/4 INCH CRUSHED STONE PULLED AGAINST THE PIPE SIDE TO FIRMLY HOLD THE PIPE IN PLACE. NO BLOCKS OR STONES SHALL BE USED TO SUPPORT THE PIPE.
- 3/4 INCH CRUSHED STONE HAUNCHING SHALL BE BROUGHT LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPE. 3/4 INCH CRUSHED STONE BLANKET SHALL BE PLACED 12" ABOVE THE PIPE.

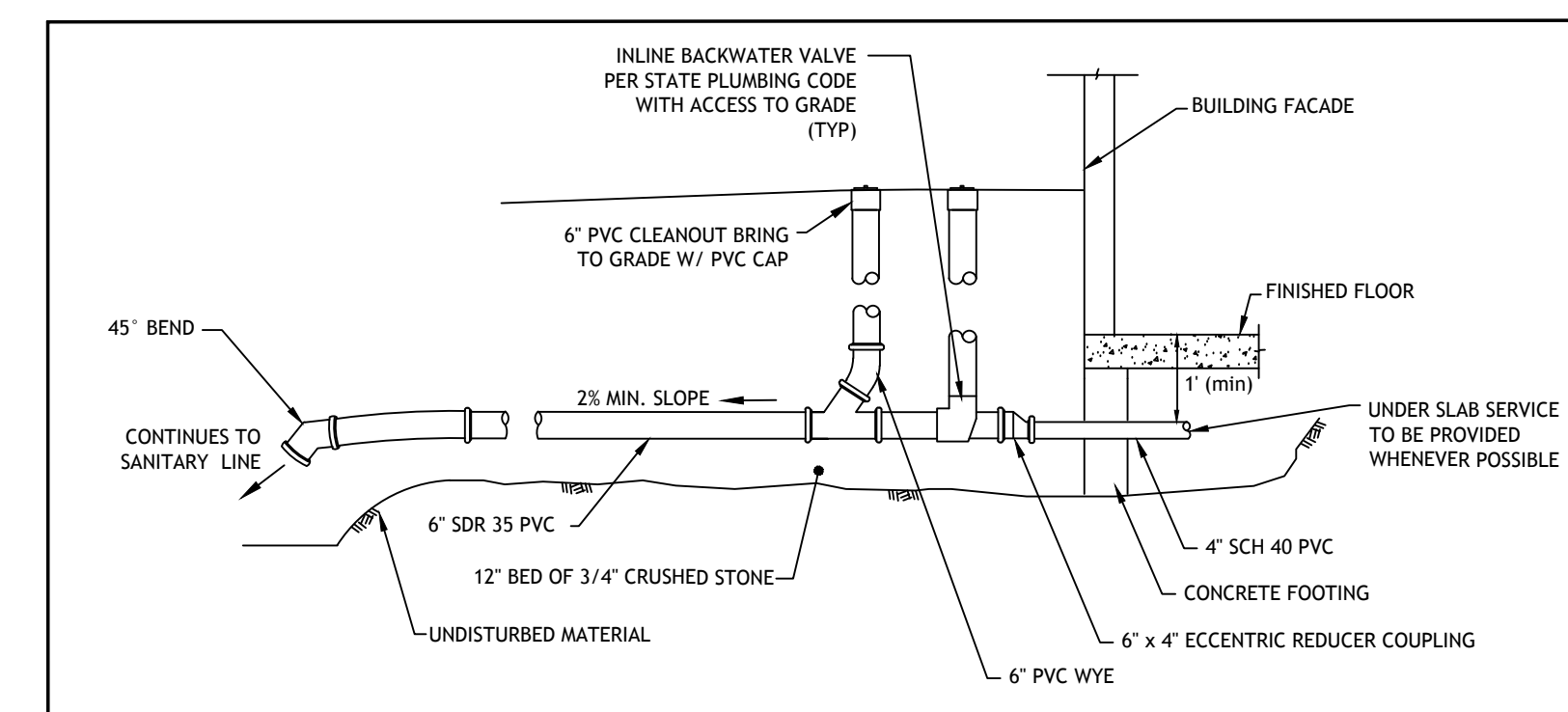
6 TYPICAL SEWER LINE TRENCH DETAIL
NOT TO SCALE



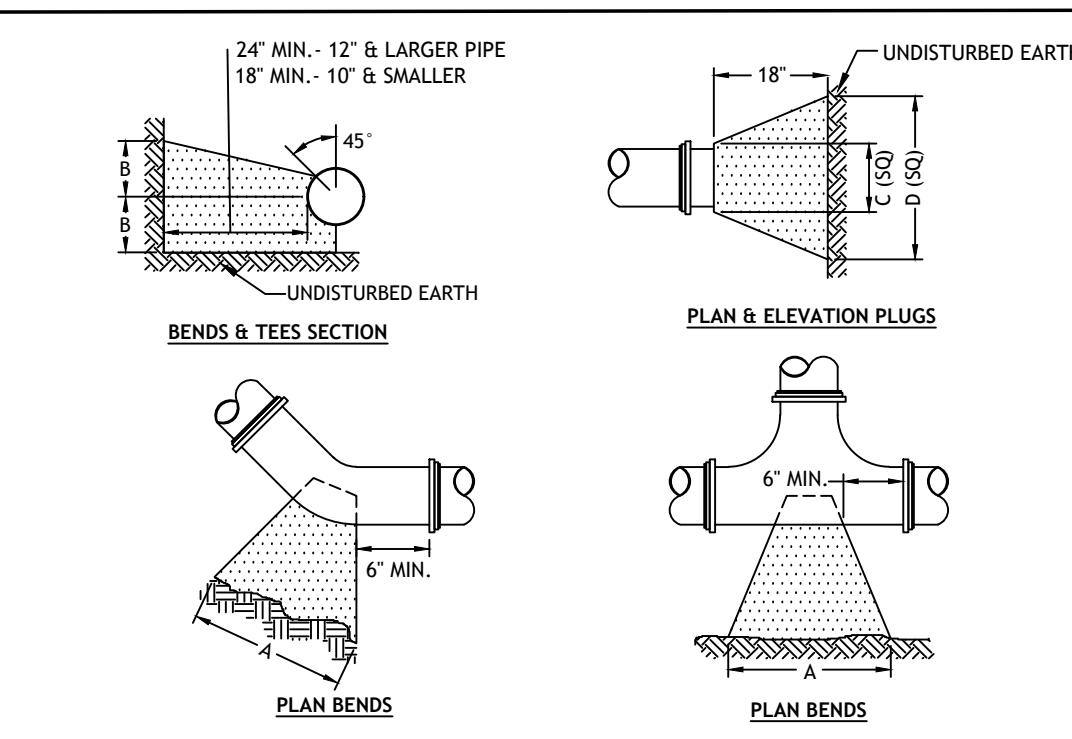
7 WATER TRENCH DETAIL
NOT TO SCALE



8 SEWER/WATER SEPARATION DETAIL
NOT TO SCALE



9 GRAVITY SEWER BUILDING CONNECTION DETAIL
NOT TO SCALE

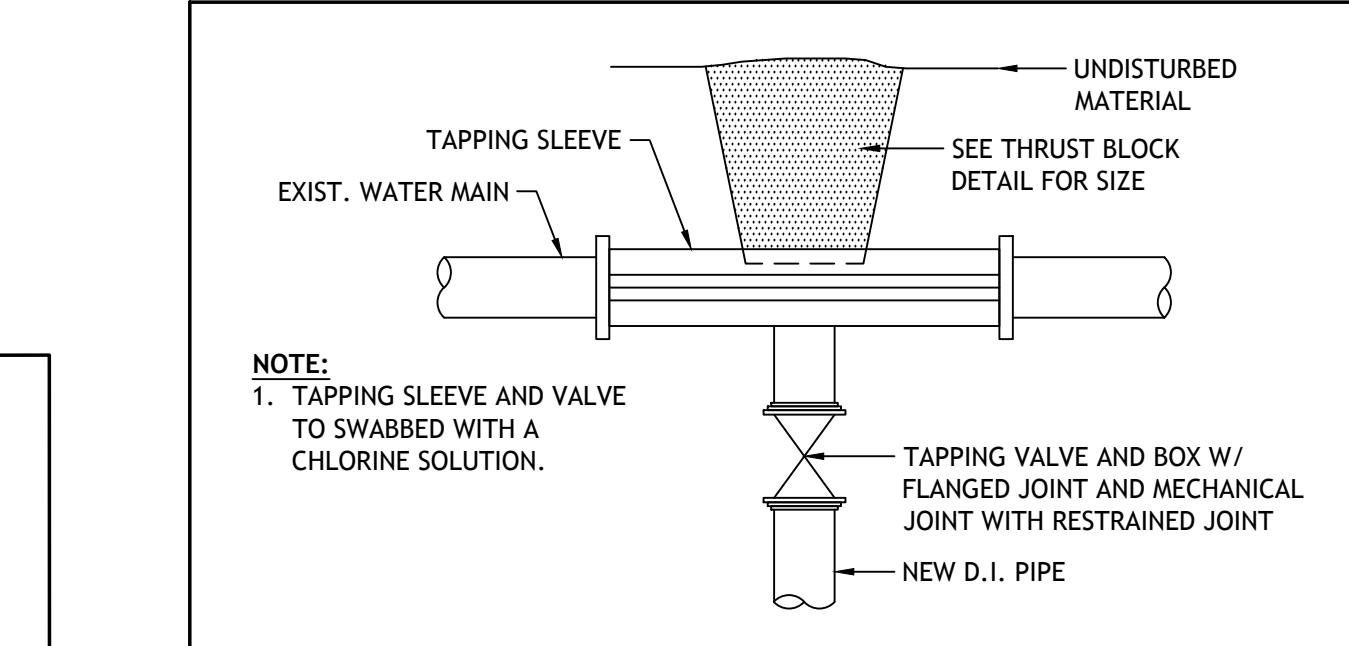


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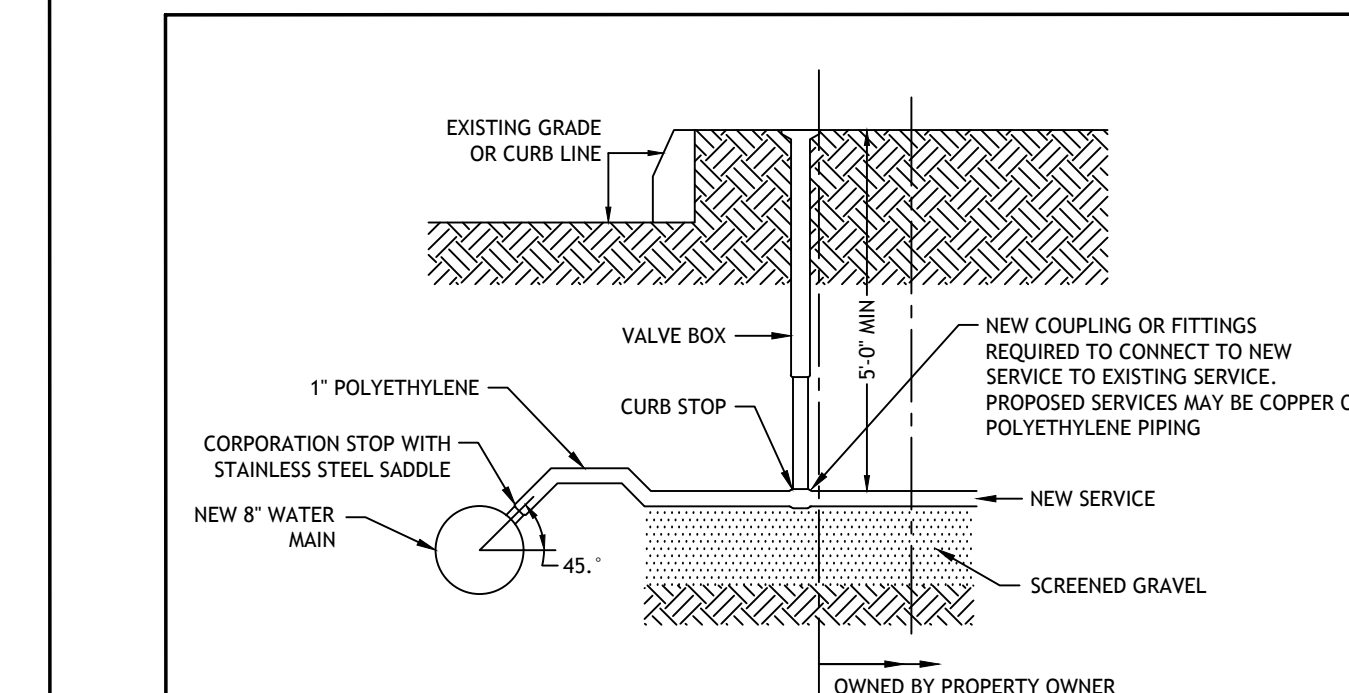
- ALL CONCRETE SHALL BE 4000 P.S.I. @ 28 DAYS.
- CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.
- FORMS TO BE USED AS NECESSARY.
- ALL BOLTS AND NUTS TO BE PROTECTED FROM CONCRETE AND EASILY ACCESSIBLE WHEN THRUST BLOCK INSTALLED.

SIZE	TEES		PLUGS		90° BEND		45° BEND		22.1/2° BEND		11.1/4° BEND	
	A	B	C	D	A	B	A	B	A	B	A	B
4"	22"	12"	22"	12"	24"	16"	20"	10"	14"	7"	11"	5"
6"	30"	18"	30"	18"	35"	22"	27"	15"	19"	12"	13"	8"
8"	38"	24"	38"	24"	46"	29"	33"	22"	25"	14"	19"	10"
10"	41"	28"	41"	28"	48"	34"	36"	24"	27"	17"	21"	11"

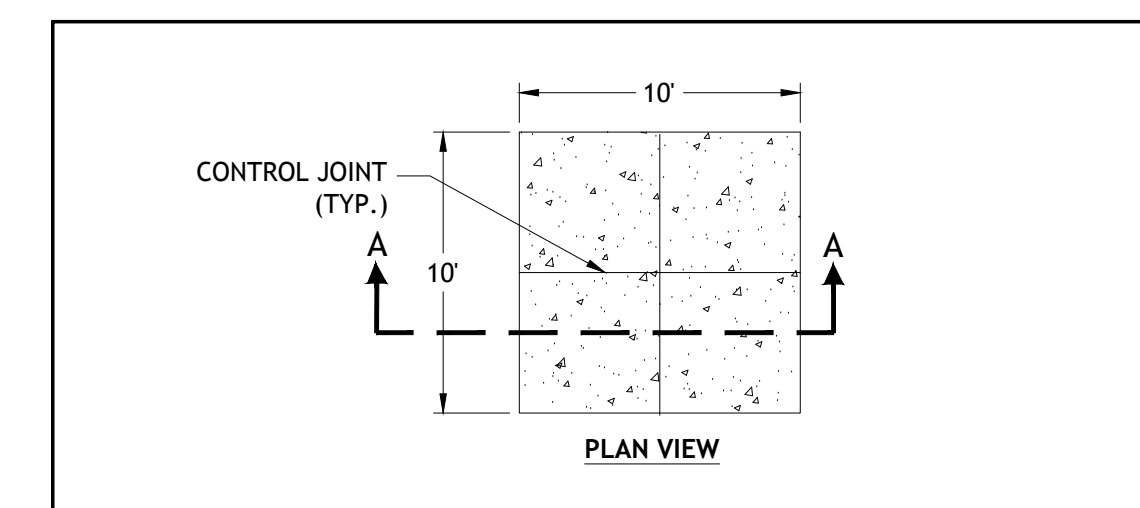
10 THRUST BLOCK DETAIL
NOT TO SCALE



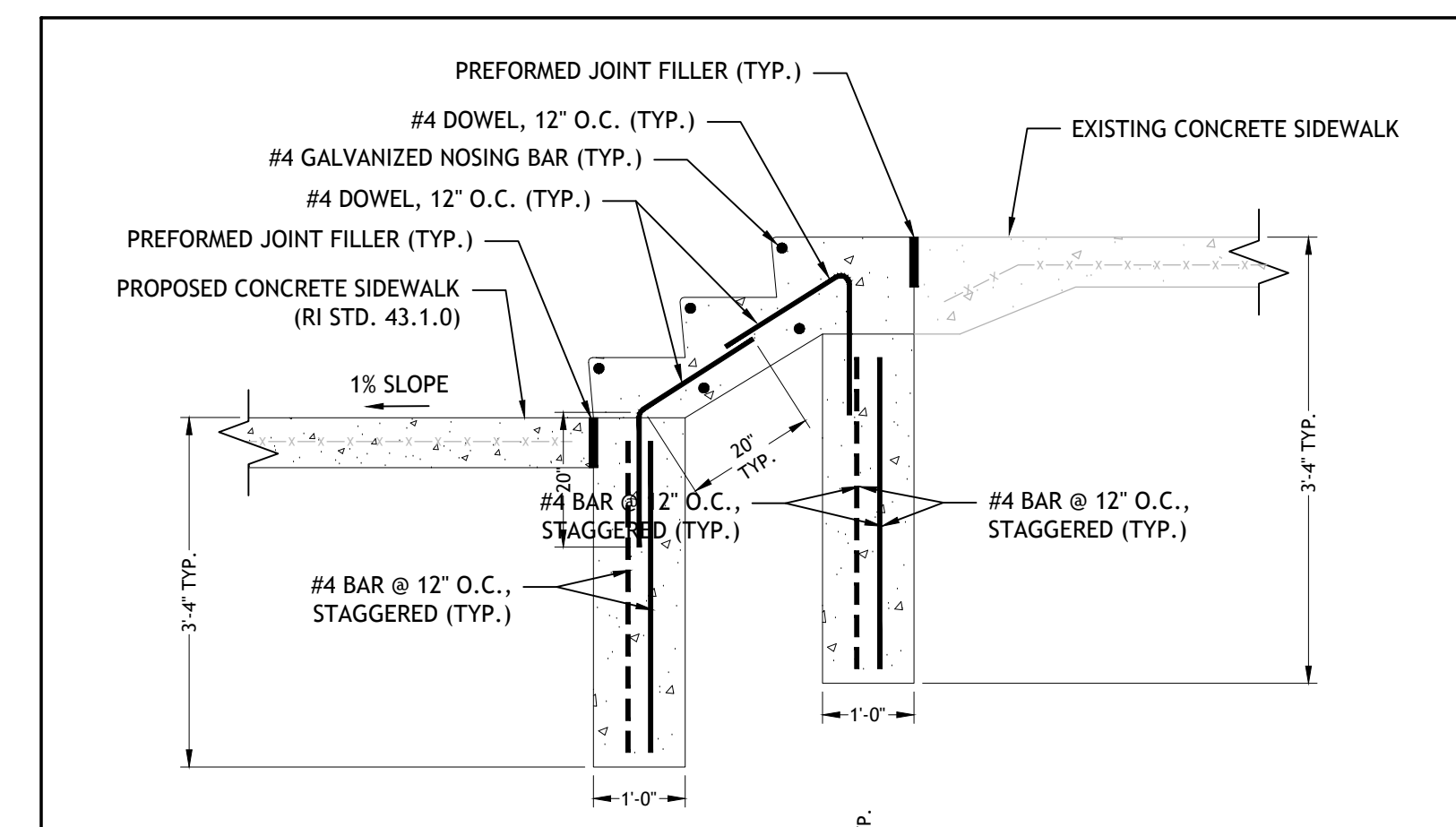
11 TAPPING SLEEVE AND VALVE
NOT TO SCALE



12 TYPICAL WATER SERVICE CONNECTION WITH COPORATION STOP AND CURB STOP
NOT TO SCALE



13 DUMPSTER PAD DETAIL
NOT TO SCALE



14 CONCRETE STEPS DETAILS
NOT TO SCALE

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Smithfield, Rhode Island
Phone: (401) 231-0736

REVISIONS:

DATE: 10/31/24

NCA/JCE JOB NO.: 23100/23-32

DRAWING NO.:

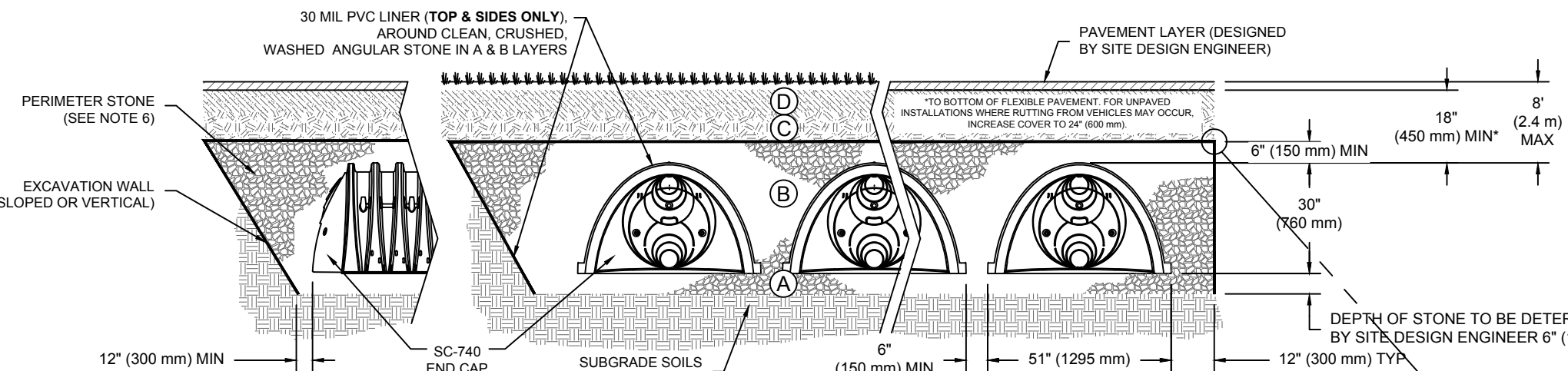
C5.1

DETAILS II

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	FINAL FILL: FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A
C	INITIAL FILL: FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE OF LAYER 'B' TO 18" (450 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145 ¹ A-1, A-2, A-3 OR AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10
B	EMBEDMENT STONE: FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, WASHED, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57
A	FOUNDATION STONE: FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, WASHED, CRUSHED, ANGULAR STONE	AASHTO M43 ¹ 3, 357, 4, 467, 5, 56, 57

- PLEASE NOTE:
- THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, WASHED, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".
 - STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 6" (150 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
 - WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT. FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.



- NOTES:**
- SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 - "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
 - THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 - PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 - ONCE LAYER 'C' IS PLACED, ANY SOIL MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

15 STORMTECH SC-740 CROSS SECTION DETAIL
NOT TO SCALE

SC-740 STANDARD CROSS SECTION

DATE: 11/18/14
DRAWN: JLM
CHECKED: JLM
PROJECT #:

REV: 01/01/15
DESCRIPTION: REVISED TO ADD THE SC-740 CHAMBER TO THE LIST OF ACCEPTABLE MATERIALS FOR THE STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE.

4660 TREHMAN BLVD
SMITHFIELD, RI 02888
1-800-733-7473

ADS

SHEET 1 OF 1

NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	51.0" X 30.0" X 85.4"	(1295 mm X 762 mm X 2169 mm)
CHAMBER STORAGE	45.9 CUBIC FEET (1.30 m ³)	
MINIMUM INSTALLED STORAGE*	74.9 CUBIC FEET (2.12 m ³)	
WEIGHT	75.0 lbs. (33.6 kg)	

*ASSUMES 6" (152 mm) STONE ABOVE, BELOW, AND BETWEEN CHAMBERS

PART #	STUB	A	B	C
SC740PE01T / SC740PE01PC	6" (150 mm)	10.9" (277 mm)	18.0" (450 mm)	0.5" (13 mm)
SC740PE02B / SC740PE02PC	8" (200 mm)	12.2" (310 mm)	16.6" (419 mm)	0.6" (15 mm)
SC740PE03T / SC740PE03PC	10" (250 mm)	13.4" (340 mm)	14.5" (368 mm)	0.7" (18 mm)
SC740PE04B / SC740PE04PC	12" (300 mm)	14.7" (373 mm)	12.5" (318 mm)	1.2" (30 mm)
SC740PE05T / SC740PE05PC	15" (375 mm)	18.4" (467 mm)	9.0" (229 mm)	1.2" (30 mm)
SC740PE06B / SC740PE06PC	18" (450 mm)	19.7" (500 mm)	5.0" (127 mm)	1.3" (33 mm)
SC740PE07T / SC740PE07PC	24" (600 mm)	18.5" (470 mm)	---	1.6" (41 mm)
SC740PE08B / SC740PE08PC	---	---	---	0.1" (3 mm)

ALL STUBS, EXCEPT FOR THE SC740PE24B ARE PLACED AT BOTTOM OF END CAP SUCH THAT THE OUTSIDE DIAMETER OF THE STUB IS FLUSH WITH THE BOTTOM OF THE END CAP. FOR ADDITIONAL INFORMATION CONTACT STORMTECH AT 1-888-892-2694.

* FOR THE SC740PE24B THE 24" (600 mm) STUB LIES BELOW THE BOTTOM OF THE END CAP APPROXIMATELY 1.75" (44 mm). BACKFILL MATERIAL SHOULD BE REMOVED FROM BELOW THE N-12 STUB SO THAT THE FITTING SITS LEVEL.

NOTE: ALL DIMENSIONS ARE NOMINAL.

16 SC-740 TECHNICAL SPECIFICATION
NOT TO SCALE

NOTES FOR THE INSTALLATION OF THE SC-740 SYSTEM

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
 - STONESHOOTER LOCATED OFF THE CHAMBER BED.
 - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
 - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
- THE FOUNDATION STONE SHALL BE LEVELLED AND COMPACTED PRIOR TO PLACING CHAMBERS.
- JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
- MAINTAIN MINIMUM - 6" SPACING BETWEEN THE CHAMBER ROWS.
- EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE 3/4-2".
- THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
- ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

- STORMTECH SC-310 & SC-740 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- THE USE OF CONSTRUCTION EQUIPMENT OVER SC-310 & SC-740 CHAMBERS IS LIMITED:
 - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
 - NO RUBBER TIRE LOADERS, DUMP TRUCKS, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
 - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH SC-310/SC-740/DC-780 CONSTRUCTION GUIDE".
- FULL 35" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO THE CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

CONTACT STORMTECH AT 1-888-892-2694 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.



650 Ten Rod Road
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v. 401.846.9583

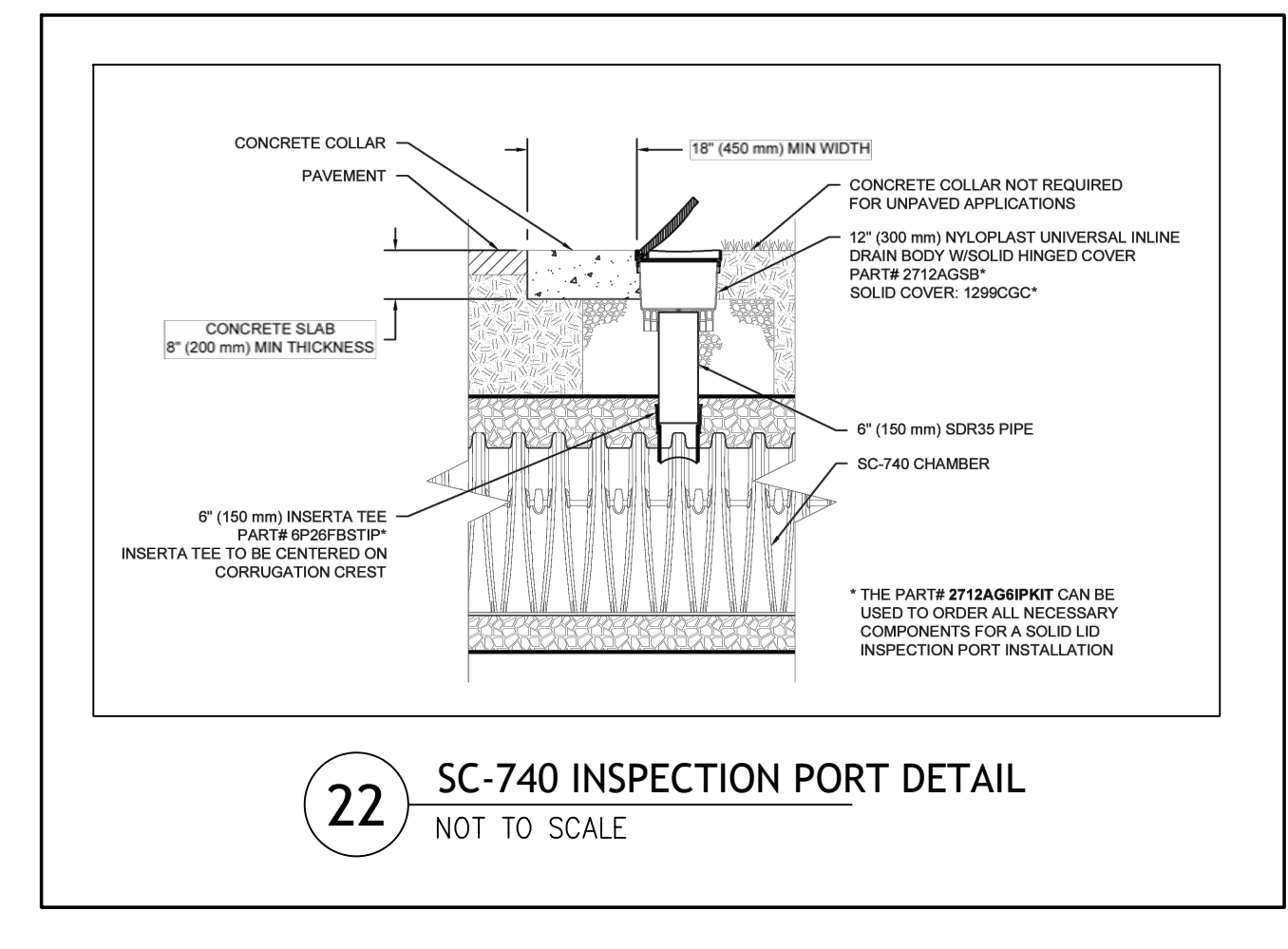
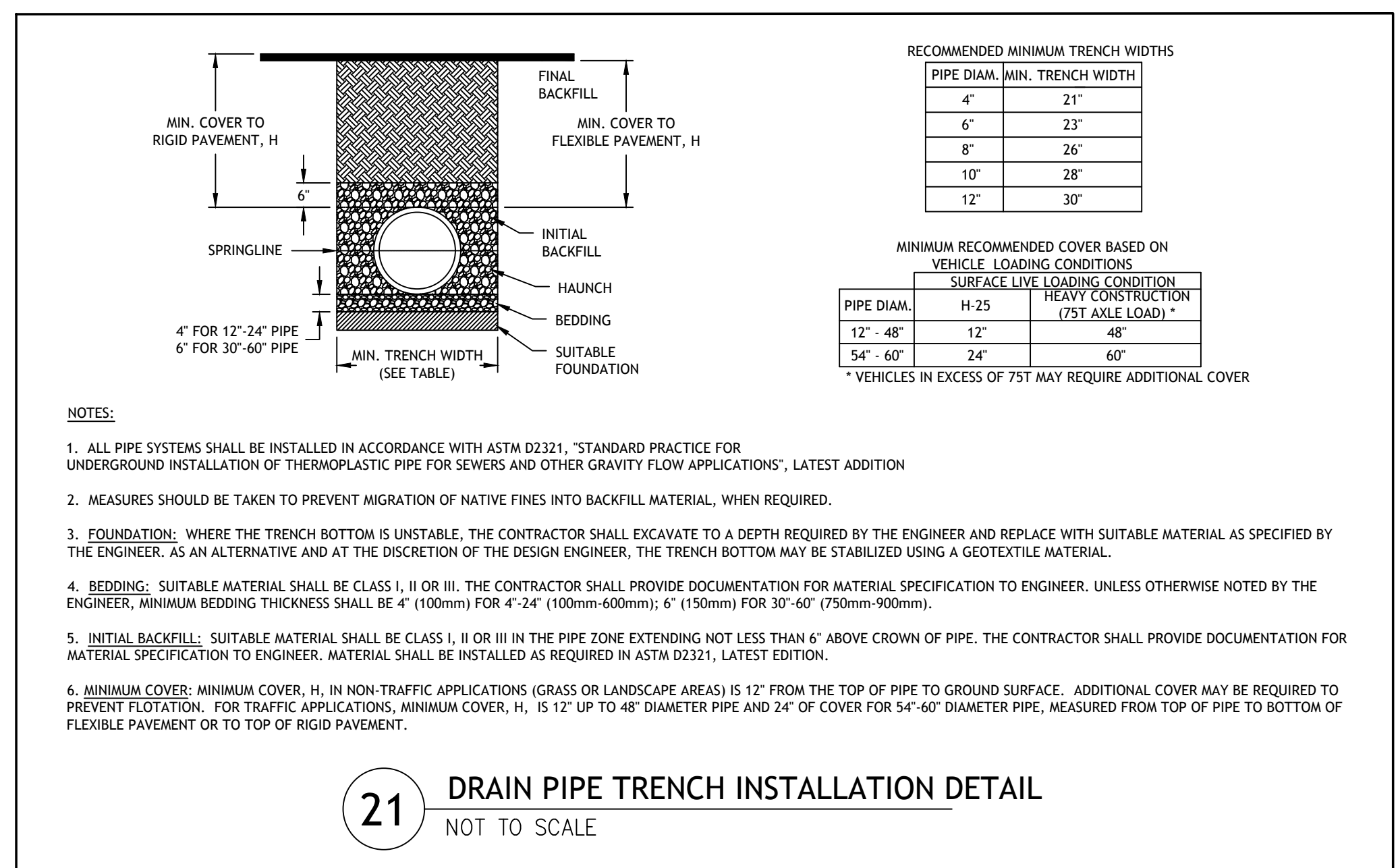
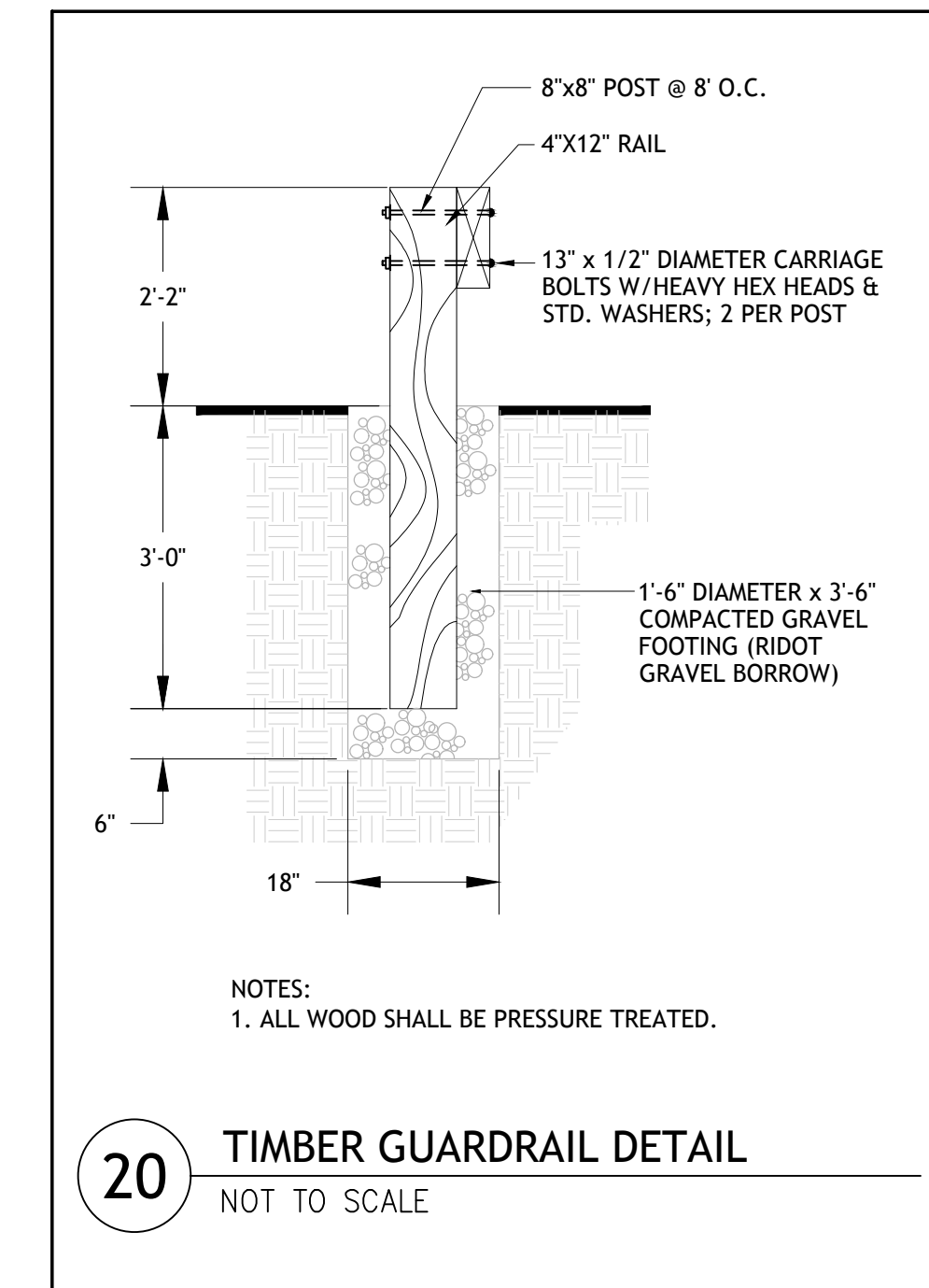
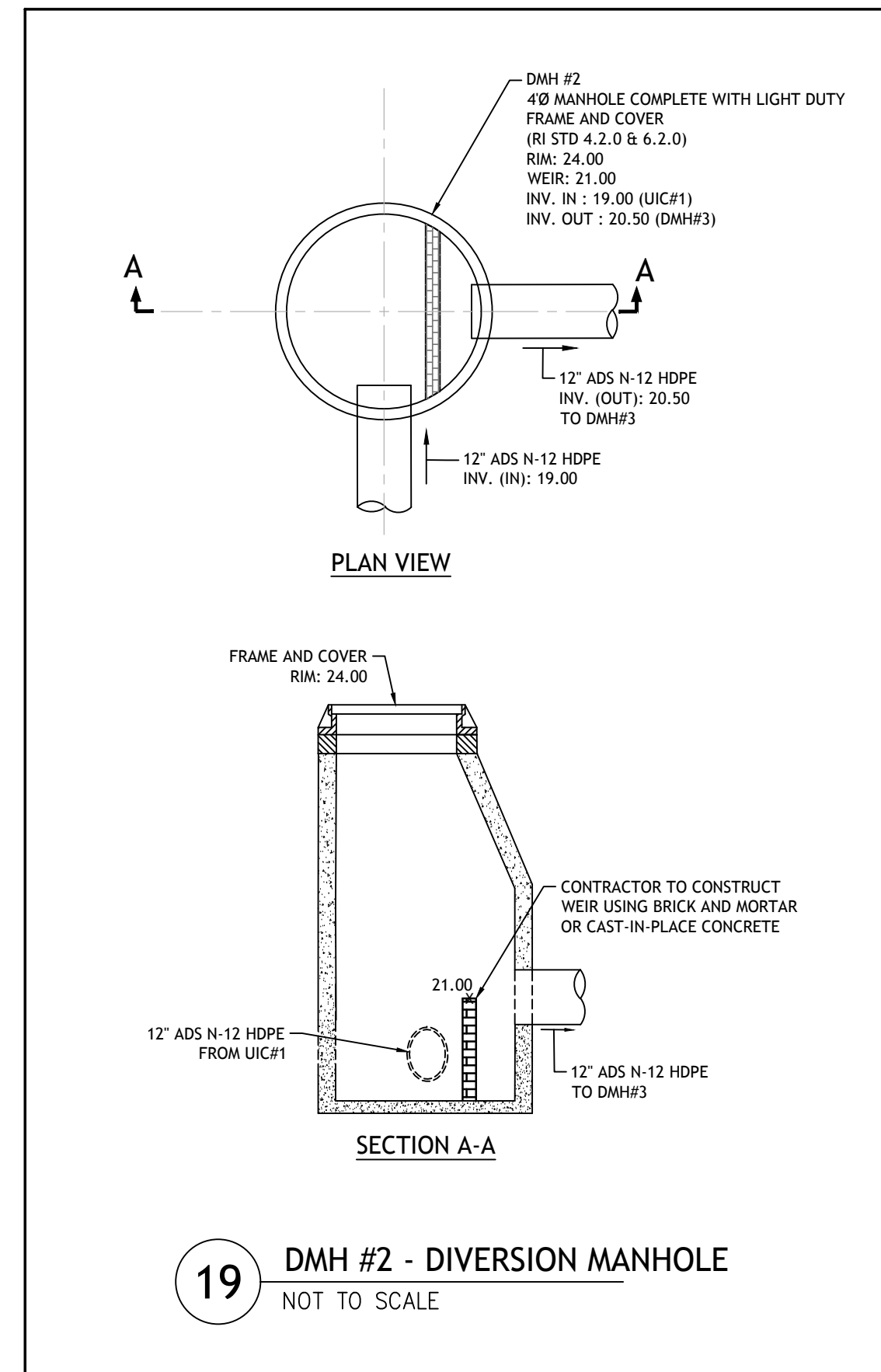
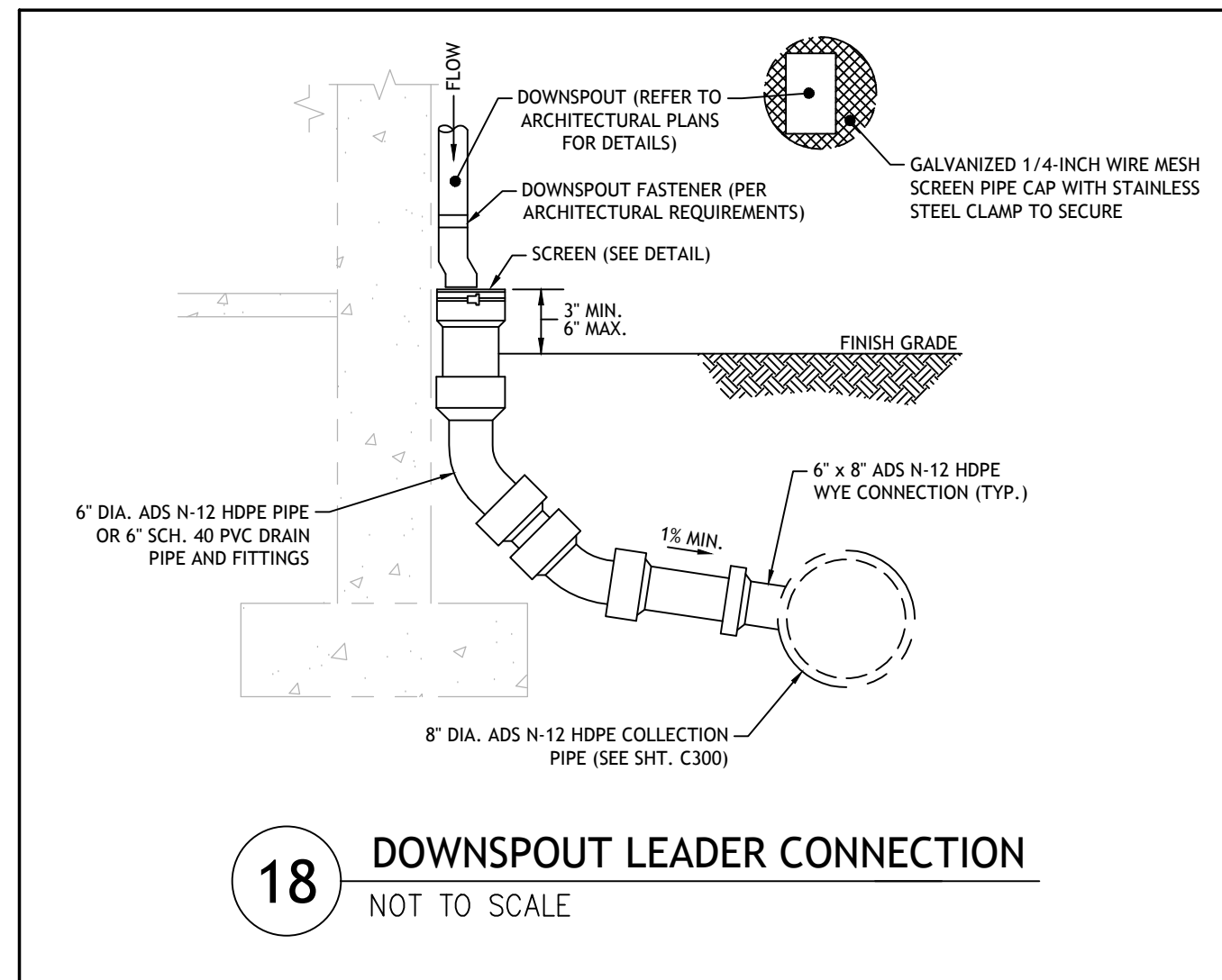
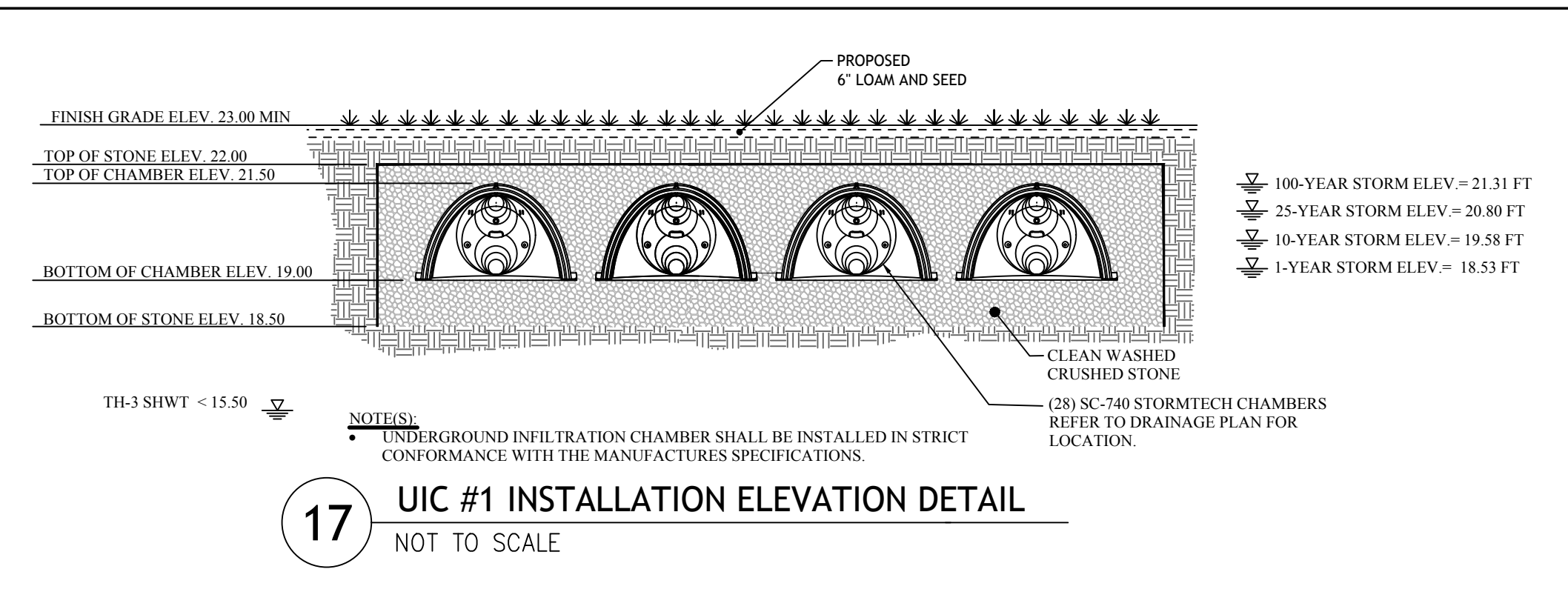
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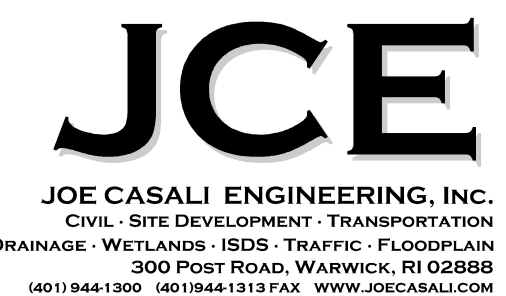
**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915



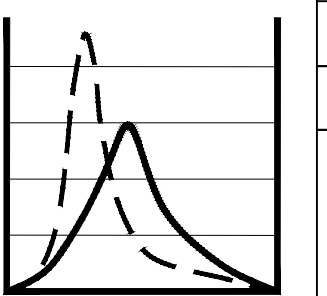
REVISIONS:

NO.	DESCRIPTION	DATE

DATE: 10/31/24
NCA/JCE JOB NO.: 23100/23-32
DRAWING NO.: **C5.2**



JOE CASALI ENGINEERING, INC.
CIVIL, SITE DEVELOPMENT, TRANSPORTATION
DRAINAGE, WETLANDS, H2S, TRAFFIC, FLOODPLAIN
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(401) 944-1300 (401) 944-1313 FAX WWW.JOECASALI.COM





**NORTHEAST
COLLABORATIVE
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**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:

90% CONSTRUCTION
DOCUMENTS
NOT FOR CONSTRUCTION

**LANDSCAPE
PLAN**

DATE: 9/27/24

NCA/JCE JOB NO.: 23100/23-32

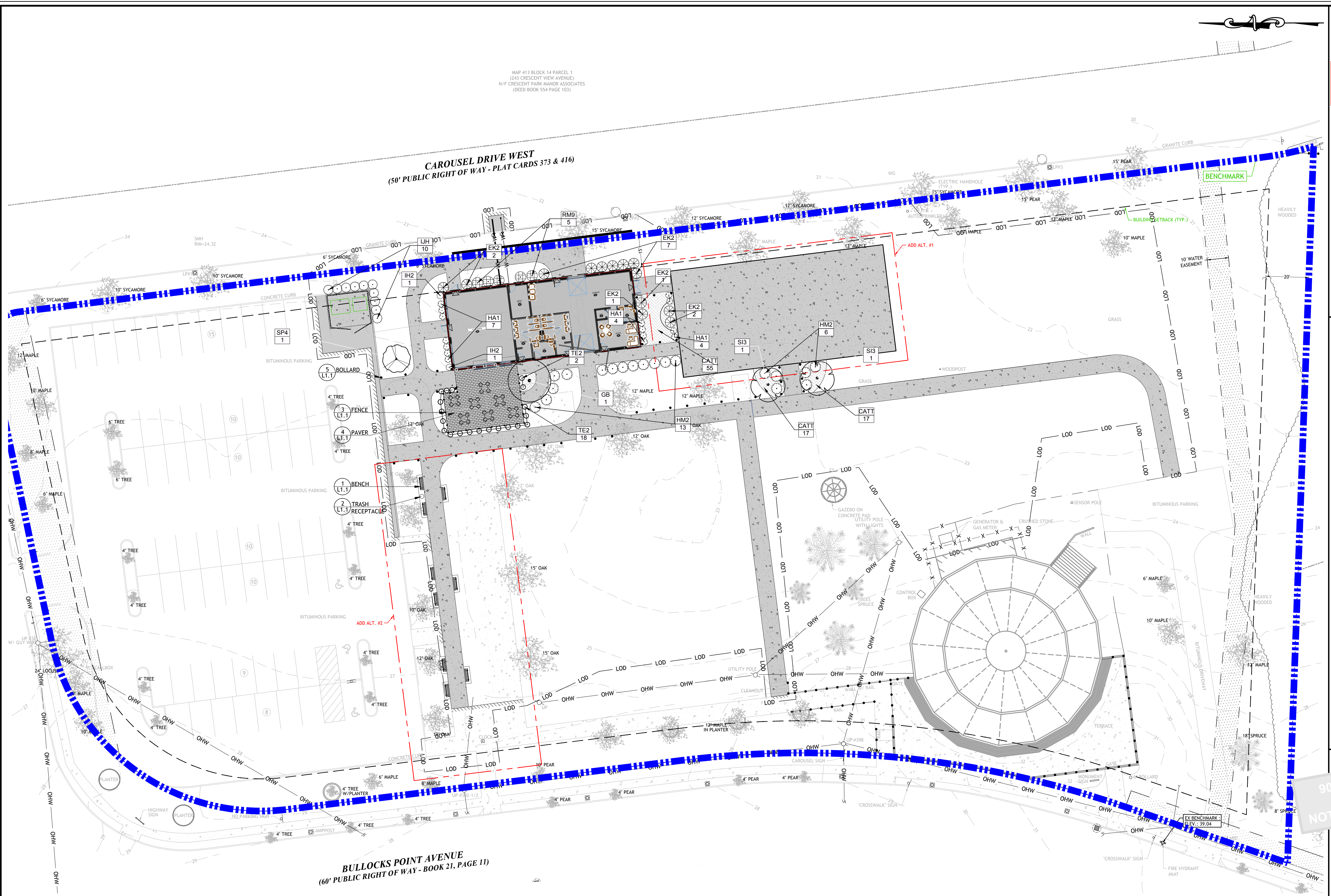
DRAWING NO.:

L1.0

Diane C. Soule & Associates, ASLA
Landscape Architecture

422 Farnum Pike
Smithfield, Rhode Island 02917
www.dianesouleandassociates.com

401.231.0736
email: dcsa@dcasa.wa



LANDSCAPE PLAN
(see L1.1 for Plant schedule)

MAP 413 BLOCK 14 PARCEL 1
(243 CRESCENT VIEW AVENUE)
N/F CRESCENT PARK MANOR ASSOCIATES
(DEED BOOK 554 PAGE 103)

CAROUSEL DRIVE WEST
(50' PUBLIC RIGHT OF WAY - PLAT CARDS 373 & 416)

BULLOCKS POINT AVENUE
(60' PUBLIC RIGHT OF WAY - BOOK 21, PAGE 11)

GENERAL NOTES

DESIGN LOADS (EXCEPT AS NOTED):

BUILDING CODE: RHODE ISLAND STATE BUILDING CODE SBC-1 (2018 INTERNATIONAL BUILDING CODE W/ 2021 RI AMENDMENTS)

FOUNDATION CRITERIA:
GROUND SNOW: 30 PSF
FROST DEPTH: 3'-4"
SAFE SOIL BEARING CAPACITY: 2500 PSF (ASSUMED)

SEISMIC FACTORS:
GROUND ACCELERATIONS: Ss= .169g, S1=.058g
DESIGN ACCELERATIONS: Sds= .180g, Sd1=.093g
SEISMIC IMPORTANCE FACTOR (Ie): 1.0
RISK CATEGORY: II
SEISMIC DESIGN CATEGORY: B
SEISMIC SITE CLASS: D
LATERAL FORCE RESISTING SYSTEM TO BE DESIGNED BY PRE-ENGINEERED METAL BUILDING MANUFACTURER.

ROOF CRITERIA:
FLAT ROOF SNOW LOAD (Pf): 30 PSF
SNOW EXPOSURE FACTOR (Ce): 1.0
SNOW LOAD IMPORTANCE FACTOR (Is): 1.0
THERMAL FACTOR (Ct): 1.0

WIND CRITERIA:
ULTIMATE DESIGN WIND SPEED (V ULT): 126 MPH
NOMINAL DESIGN WIND SPEED (V ASD): 98 MPH
RISK CATEGORY: II
WIND EXPOSURE: B
INTERNAL PRESSURE COEFF. (Gcpi): ±0.18

GENERAL NOTES

GENERAL NOTES:

1. THE GENERAL CONTRACTOR SHALL PROVIDE ANY NEW FIELD INFORMATION AS THE CONSTRUCTION WORK PROGRESSES AND SHALL FOLLOW ANY MODIFICATIONS TO THE DESIGN AS A RESULT OF UNANTICIPATED FIELD CONDITIONS.
2. THE GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AS THEY RELATE TO NEW CONSTRUCTION AND REPORT ANY DISCREPANCIES TO THE ARCHITECT AND/OR ENGINEER PRIOR TO THE PREPARATION OF SHOP DRAWINGS AND CONSTRUCTION.
3. ALL WORK SHALL BE COORDINATED WITH THE ARCHITECTURAL, ELECTRICAL AND MECHANICAL DRAWINGS. ANY INTERFERENCES OR CONFLICTS IN DIMENSIONS SHALL BE REPORTED TO THE ARCHITECT AND/OR ENGINEER PRIOR TO THE START OF CONSTRUCTION.
4. THE GENERAL CONTRACTOR SHALL REVIEW SHOP DRAWINGS FOR ALL APPLICABLE TRADES AND COORDINATE THEM BETWEEN DISCIPLINES PRIOR TO SUBMITTING THEM FOR ENGINEER REVIEW AND COMMENT. MATERIAL SHALL NOT BE FABRICATED NOR DELIVERED TO THE CONSTRUCTION SITE UNTIL THE ENGINEER HAS REVIEWED THE SHOP DRAWINGS.
5. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO PROVIDE ALL NECESSARY SHORING OR TEMPORARY SUPPORT OF THE STRUCTURE FOR EACH CONSTRUCTION PHASE.
6. DETAILS, SECTIONS AND NOTES CONTAINED IN THESE STRUCTURAL DRAWINGS SHALL BE TYPICAL FOR ALL SIMILAR CONDITIONS (U.O.N.)
7. SPECIAL INSPECTION REQUIRED PER IBC CHAPTER 17. OWNER SHALL HIRE SPECIAL INSPECTION COORDINATOR, TESTING LAB AND INSPECTION FIRM TO COMPLETE REPORTS REQUIRED BY CODE AND COORDINATE TIMES TO REVIEW INSPECTION WITH CONTRACTOR. SEE SHEET S-0.1 FOR REQUIRED SPECIAL INSPECTION TABLES.

FOUNDATION NOTES:

1. ALL SOIL CONTAINING ORGANIC OR UNSUITABLE BEARING MATERIAL SHALL BE REMOVED FROM THE BUILDING FOOTPRINT.
2. ALL SOIL SUPPORTED FOOTINGS SHALL BE FOUNDED UPON COMPACTED NATURAL SUBGRADE OR COMPACTED BANK RUN GRAVEL FILL WITH A SAFE BEARING CAPACITY OF NOT LESS THAN 2500 PSF (ASSUMED). COORDINATE SITE SPECIFIC SUBGRADE PREPARATION REQUIREMENTS WITH OWNER'S GEOTECHNICAL REPORT.
3. ROCK SHALL BE EXCAVATED A MINIMUM OF 6" BELOW BOTTOM OF FOOTING ELEVATION AND COVERED WITH (MIN. 12") LAYER OF COMPACTED GRAVEL.
4. A MODIFIED PROCTOR TEST SHALL BE PERFORMED BY A SOILS TESTING LAB ON EACH TYPE OF SOIL TO BE COMPACTED.
5. SOIL SHALL BE COMPACTED TO NOT LESS THAN 95% OF MAXIMUM DRY DENSITY PER ASTM D1557 IN LIFTS NOT TO EXCEED 6" LOOSE DEPTH.
6. FIELD DENSITY TESTS SHALL BE PERFORMED BY AN INDEPENDENT SOILS TESTING LAB TO VERIFY COMPACTION. A COPY OF ALL TEST REPORTS SHALL BE FILED WITH THE ARCHITECT.
7. BACKFILL SYMMETRICALLY AGAINST ALL FOUNDATION WALLS IN INCREMENTS NOT TO EXCEED 2 FEET MAXIMUM DIFFERENTIAL.
8. SEE PLUMBING AND ELECTRICAL DRAWINGS FOR UNDER FLOOR SYSTEMS AND SPECIAL GRANULAR FILL MATERIAL REQUIREMENTS.
9. NO FOOTINGS OR SLABS SHALL BE POURED INTO OR AGAINST SUBGRADE CONTAINING FREE WATER OR ICE.
10. ALL SLABS-ON-GRADE SHALL BE PLACED ON A 15 MIL VAPOR BARRIER OVER A MIN. 6" COMPACTED STRUCTURAL FILL. COORDINATE ADDITIONAL SUBGRADE PREPARATION REQUIREMENTS WITH GEOTECHNICAL REPORT.

THIRD PARTY DELEGATED DESIGN NOTES:

SUBSTANTIATING ENGINEERING DESIGN AND CALCULATIONS PREPARED UNDER THE DIRECTION OF AND STAMPED BY A P.E. REGISTERED IN THE STATE OF RHODE ISLAND FOR THE FOLLOWING ITEMS:

- PRE-ENGINEERED BUILDING SYSTEM
- FASTENING OF ANY ARCHITECTURAL FINISHES TO STRUCTURE (EXCEPT DRYWALL)
- HANGING EQUIPMENT ATTACHMENT TO STRUCTURE

CONCRETE COVER REQUIREMENTS	
FOOTINGS – BOTTOM	3"
FOOTINGS – TOP & SIDES	2"
WALLS – SIDES	2"
PIERS – SIDES	2"

MINIMUM LAP SPLICE LENGTH IN CONCRETE	
BAR SIZE	LAP SPLICE LENGTH, in.
#4	24"
#5	30"
#6	36"
#7	54"
#8	62"

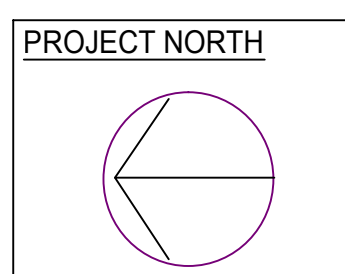
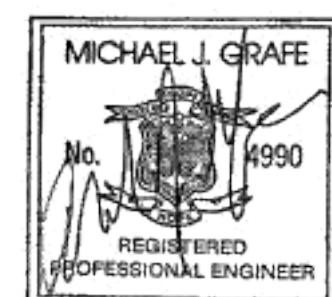
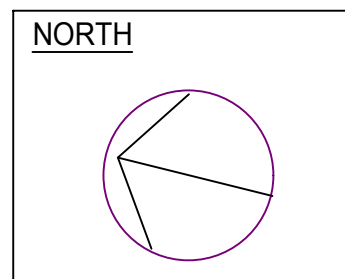
NOTE: THE LENGTHS PROVIDED IN THE TABLE ABOVE ARE BASED ON f'c=4000 PSI CONCRETE.

CONCRETE NOTES:

1. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF NOT LESS THAN 4000 PSI AT 28 DAYS (U.N.O.)
2. ALL CONCRETE WALLS, FOOTINGS AND CONCRETE EXPOSED TO THE WEATHER SHALL CONTAIN AN APPROVED AIR ENTRAINING ADMIXTURE. AIR CONTENT SHALL BE 4-12% TO 7%.
3. ALL CONCRETE SHALL CONTAIN AN APPROVED WATER-REDUCING ADMIXTURE.
4. A SET OF FOUR (4) CONCRETE TEST CYLINDERS SHALL BE TAKEN BY AN INDEPENDENT CONCRETE TESTING LAB ON EACH DAY WHEN CONCRETE PLACEMENT EXCEEDS 5 CUBIC YARDS. ONE CYLINDER SHALL BE BROKEN AT 7 DAYS, TWO AT 28 DAYS, AND ONE AT 56 DAYS. A COPY OF ALL TEST REPORTS SHALL BE FILED WITH THE ARCHITECT.
5. NO CALCIUM CHLORIDE SHALL BE USED IN ANY CONCRETE.
6. A MIX DESIGN AND ACI 214 STRENGTH TEST EVALUATION SHALL BE SUBMITTED FOR APPROVAL FOR EACH TYPE OF CONCRETE.
7. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60 (U.N.O.).
8. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION, SHOWING REINFORCING DETAILS, STEEL SIZES, SPACING AND PLACEMENT OF REINFORCING.
9. ALL REINFORCING BAR SPLICES SHALL CONFORM TO REQUIREMENTS OF ACI 318-14, BUT IN NO CASE SHALL THEY BE LESS THAN 2'-0".
10. DOWELS SHALL MATCH SIZE AND SPACING OF MAIN REINFORCING.
11. CONSTRUCTION JOINTS IN ALL WALLS SHALL BE NOT FURTHER APART THAN 40 FEET IN ANY DIRECTION. SEE PLAN FOR LOCATION OF SLAB CONSTRUCTION AND/OR SHRINKAGE JOINTS.
12. ALL WELDED WIRE FABRIC SHALL BE GALVANIZED AND SHALL CONFORM TO ASTM A1060, Fy = 60 KSI.
13. ALL WELDED WIRE FABRIC SHALL BE LAPPED TWO (2) FULL MESH PANELS AT SIDES AND ENDS AND BE SECURELY WIRED TOGETHER.
14. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL FLOOR FINISHES, FLOOR DEPRESSIONS AND CUT OUTS.
15. COORDINATE ALL FOUNDATION PENETRATIONS WITH ARCHITECT, PLUMBING, MECHANICAL, ELECTRICAL CONTRACTORS AND LOCAL AGENCIES.

MASONRY NOTES:

1. MASONRY WALLS ARE DESIGNED IN ACCORDANCE WITH NCMA "SPECIFICATIONS FOR THE CONSTRUCTION OF LOAD BEARING CONCRETE MASONRY," AND TMS BUILDING CODE FOR MASONRY STRUCTURES TMS 402-2016.
2. MASONRY SHALL BE HOLLOW CONCRETE UNITS CONFORMING TO ASTM C90, WITH AN AVERAGE NET AREA COMPRESSIVE STRENGTH OF 2000 PSI.
3. MORTAR SHALL CONFORM TO ASTM C270, TYPE S (LIME), AND BE PROPORTIONED TO YIELD A COMPRESSIVE STRENGTH OF 1800 PSI AT 28 DAYS BY THE PROPERTY METHOD. COMPRESSIVE STRENGTH RESULTS OF FIELD SAMPLED MORTAR IS TO BE USED TO EVALUATE MORTAR CONSISTENCY ONLY AND IS NOT A BASIS FOR REJECTING MORTAR QUALITY.
4. GROUT FOR REINFORCED MASONRY SHALL CONFORM TO ASTM C476, TYPE PL AND HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2000 PSI AT 28 DAYS WHEN FIELD TESTED IN ACCORDANCE WITH ASTM C1019.
5. MASONRY WALLS CONSTRUCTED SHALL YIELD A NET AREA COMPRESSIVE STRENGTH OF FM = 2200 PSI.
6. ALL REINFORCING BARS SHALL BE ASTM A615 GRADE 60 (U.N.O.). PROVIDE TIES FOR ALL VERTICAL BARS, LOCATING BARS WITHIN A TOLERANCE OF ±1/2 INCH OF THE CENTERLINE.
7. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL PRIOR TO FABRICATION, SHOWING REINFORCING DETAILS, STEEL SIZES, SPACING AND PLACEMENT OF REINFORCING. LIFT HEIGHTS MUST BE CLEARLY LABELED ON SHOP DRAWING SECTIONS/ELEVATIONS, AND MUST BE REVIEWED AND APPROVED BY THE CONTRACTOR PRIOR TO SUBMITTAL FOR ENGINEERING REVIEW.
8. PRIOR TO GROUTING CELLS, BARS AND CELLS SHALL BE INSPECTED BY THE TESTING AGENCY/ENGINEER. A CLEANOUT HOLE IS REQUIRED AT BASE OF VERTICALLY REINFORCED CELLS DURING HIGH-LIFT GROUTING PROCEDURES. THE DESIGN OF REINFORCED MASONRY CONSTRUCTION IS BASED ON ALLOWABLE STRESSES PREDICATED WITH INSPECTION PROVISIONS REQUIRING QUALIFIED MASONRY INSPECTION TO TAKE PLACE ON A CONTINUOUS BASIS WHENEVER MASONRY IS BEING PLACED.
9. REINFORCED MASONRY WALLS SHALL HAVE BOND BEAMS AT THE TOP OF WALL. BOND BEAMS SHALL BE REINFORCED WITH (2) #5 HORIZONTAL BARS. BOND BEAM REINFORCING SHALL BE EXTENDED INTO AND BE CONTINUOUS WITH ALL INTERSECTING BOND BEAMS. MASONRY OPENINGS GREATER THAN 16" WIDE REQUIRE 8" HIGH LINTEL BLOCK WITH 2 #5 BARS HORIZONTAL.
10. MASONRY BLOCK CELLS CONTAINING VERTICAL REINFORCING, MASONRY LINTEL BLOCKS, AND MASONRY BOND BEAMS CONTAINING HORIZONTAL REINFORCING SHALL BE GROUTED SOLID, FILLING CELLS WITH MORTAR IS UNACCEPTABLE.
11. PROVIDE #5 VERTICAL REINFORCING BARS IN (2) CELLS ADJACENT TO WINDOWS AND DOOR OPENINGS AND AT ALL CORNERS AND DISCONTINUOUS EDGES, UNLESS NOTED OTHERWISE.
12. UNLESS NOTED OTHERWISE, ALL MASONRY WALLS SHALL BE REINFORCED VERTICALLY WITH MINIMUM #5 VERTICAL BARS AT 48" O.C.
13. PLACEMENT OF PIPE OR CONDUIT WITHIN REINFORCED CELLS IS PROHIBITED.
14. STARTER COURSES OF ALL CMU WALLS SHALL BE GROUTED SOLID.
15. STANDARD LOW LIFT AND HIGH LIFT GROUTING PROCEDURES AS OUTLINED IN TMS 402-2016 SHALL BE STRICTLY ADHERED TO.
16. WHERE THE FOLLOWING CONDITIONS ARE MET, PLACE GROUT IN LIFTS NOT EXCEEDING 12 FT 8 IN.
 - a.) THE MASONRY HAS CURED FOR AT LEAST 4 HOURS.
 - b.) THE GROUT SLUMP IS MAINTAINED BETWEEN 10 INCHES TO 11 INCHES
 - c.) NO INTERMEDIATE REINFORCED BOND BEAMS ARE PLACED BETWEEN THE TOP AND BOTTOM OF THE POUR HEIGHT.
17. WHEN THE CONDITIONS OF 16a OR 16b ARE NOT MET, PLACE GROUT IN LIFTS NOT EXCEEDING 5 FEET 4 INCHES.
18. CONSOLIDATE GROUT POURS EXCEEDING 12 INCHES IN HEIGHT BY MECHANICAL VIBRATION, AND RECONSOLIDATE BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED.
19. PROVIDE CLEANOUTS IN THE BOTTOM COURSE OF MASONRY FOR EACH GROUT POUR WHEN THE GROUT POUR HEIGHT EXCEEDS 5 FEET 4 INCHES. CONSTRUCT CLEANOUTS SO THAT THE SPACE TO BE GROUTED CAN BE CLEANED AND INSPECTED. CONSTRUCT CLEANOUTS WITH AN OPENING OF SUFFICIENT SIZE TO PERMIT REMOVAL OF DEBRIS. THE MINIMUM OPENING SHALL BE 3 INCHES. AFTER CLEANING, CLOSE CLEANOUTS WITH CLOSURES BRACED TO RESIST GROUT PRESSURE.
20. THE MASONRY CONTRACTOR SHALL CLEAN EXPOSED MASONRY SURFACES OF ALL STAINS, EFFLORESCENCE, MORTAR OR GROUT DROPPINGS, AND DEBRIS.
21. COVER TOP OF UNFINISHED MASONRY WORK TO PROTECT IT FROM THE WEATHER.
22. COLD WEATHER CONSTRUCTION PRACTICES SHALL BE FOLLOWED WHEN AMBIENT AIR TEMPERATURE FALLS BELOW 40 DEGREES F. OR THE TEMPERATURE OF MASONRY UNITS IS BELOW 40 DEGREES F. COLD WEATHER PRACTICE SHALL BE IN CONFORMANCE WITH THE SPECIFICATION FOR MASONRY STRUCTURES TMS 602-2016.
23. HOT WEATHER CONSTRUCTION PRACTICES SHALL BE FOLLOWED WHEN AMBIENT AIR TEMPERATURE EXCEEDS 100 DEGREES F. OR 90 DEGREES F. WITH A WIND VELOCITY GREATER THAN 8 MPH. HOT WEATHER PRACTICE SHALL BE IN CONFORMANCE WITH THE SPECIFICATION FOR MASONRY STRUCTURES TMS 602-2016.



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**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:

BID SET

GENERAL NOTES

DATE: 10/31/2024

NCA JOB NO.: 23100 23218.20

DRAWING NO.:

S0.0

STRUCTURAL - CONCRETE CONSTRUCTION SECTION

CONCRETE CONSTRUCTION, INCLUDING COMPOSITE DECK - VERIFY THE FOLLOWING ARE IN COMPLIANCE
IBC Table 1705.3 (ACI 318 References Noted In IBC Table)

TASK	INSPECTION TYPE	DESCRIPTION
1. Inspect reinforcement, including prestressing tendons, and verify placement.	OBSERVE	Verify prior to placing concrete that reinforcing is of specified type, grade and size; that it is free of oil, dirt and unacceptable rust; that it is located and spaced properly; that hooks, bends, ties, stirrups and supplemental reinforcement are placed correctly; that lap lengths, stagger and offsets are provided; and that all mechanical connections are installed per the manufacturer's instructions and/or evaluation report.
2. Reinforcing bar welding	OBSERVE	✓ Verify weldability of reinforcing bars other than ASTM A 706 ✓ Inspect single-pass fillet welds, maximum 5/16" in accordance with AWS D1.4
3. Determination of carbon equivalent for reinforcing steel other than ASTM A706	CONTINUOUS	Visually inspect all welds in accordance with AWS D1.4
4. Cast in place anchors and post installed drilled anchors (downward inclined)	OBSERVE	Verify prior to placing concrete that cast in place anchors and post installed drilled anchors have proper embedment, spacing and edge distance.
5. Post-installed adhesive anchors in horizontal or upward inclined orientations	CONTINUOUS AND DOCUMENT	✓ Inspect as required per approved ICC-ES report ✓ Verify that installer is certified for installation of horizontal and overhead installation applications ✓ Inspect proof loading as required by the contract documents
6. Verify use of required mix design	OBSERVE	Verify that all mixes used comply with the approved construction documents
7. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete	CONTINUOUS	At the time fresh concrete is sampled to fabricate specimens for strength test verify these tests are performed by qualified technicians.
8. Inspect concrete and/or shotcrete placement for proper application techniques	CONTINUOUS	Verify proper application techniques are used during concrete conveyance and depositing avoids segregation or contamination. Verify that concrete is properly consolidated.
9. Verify maintenance of specified curing temperature and technique	OBSERVE	Inspect curing, cold weather protection, and hot weather protection procedures.
10. Pre-stressed concrete	CONTINUOUS	Verify application of prestressing forces and grouting of bonded prestressing tendons.
11. Inspect erection of precast concrete members	OBSERVE	
12. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	OBSERVE	
13. Inspect formwork for shape, location and dimensions of the concrete member being formed.	OBSERVE	

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

DOCUMENT: Document in a report that work has been performed as required. This is in addition to all other required reports.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

GEOTECHNICAL - SOILS INSPECTION SECTION

SOILS INSPECTION - VERIFY THE FOLLOWING ARE IN COMPLIANCE

IBC 1705.6

TASK	INSPECTION TYPE	DESCRIPTION
1. Materials below shallow foundations are adequate to achieve the design bearing capacity.	OBSERVE	
2. Excavations are extended to proper depth and have reached proper material	OBSERVE	
3. Perform classification and testing of compacted fill materials	OBSERVE	
4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill	CONTINUOUS	
5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly.	OBSERVE	During fill placement, the special inspector shall verify that proper materials and procedures are used in accordance with the provisions of the approved geotechnical report

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

STRUCTURAL - MASONRY CONSTRUCTION SECTION (ALL RISK CATEGORIES)

MASONRY CONSTRUCTION AT START OF CONSTRUCTION - VERIFY THE FOLLOWING ARE IN COMPLIANCE
IBC 1705.4 (TMS 602-16 Tables 3 & 4)

TASK	INSPECTION TYPE	DESCRIPTION
1. Compliance with approved submittals prior to start	OBSERVE	
2. Proportions of site-mixed mortar.	OBSERVE	
3. Grade and type of reinforcement, anchor bolts, and prestressing tendons and anchorages	OBSERVE	
4. Prestressing technique	OBSERVE	
5. Properties of thin bed mortar for AAC masonry	OBSERVE	

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

MASONRY CONSTRUCTION PRIOR TO GROUTING - VERIFY THE FOLLOWING ARE IN COMPLIANCE

IBC 1705.4 (TMS 602-16 Tables 3 & 4)

TASK	INSPECTION TYPE	DESCRIPTION
6. Grout space	OBSERVE CONTINUOUS	[NOTE: DOR must either delete 'OBSERVE' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/ III]
7. Proportions of site-prepared grout and prestressing grout for bonded tendons	OBSERVE	
8. Proportions of site-mixed grout and prestressing grout for bonded tendons	OBSERVE	
9. Placement of masonry units and mortar joints	OBSERVE	
10. Welding of reinforcement	CONTINUOUS	

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

MASONRY CONSTRUCTION DURING CONSTRUCTION - VERIFY THE FOLLOWING ARE IN COMPLIANCE

IBC 1705.4 (TMS 602-16 Tables 3 & 4)

TASK	INSPECTION TYPE	DESCRIPTION
11. Size and location of structural elements is in compliance	OBSERVE	
12. Preparation, construction, and protection of masonry during cold weather (temperature below 40°F (4.4°C) or hot weather (temp above 90°F (32.2°C))	OBSERVE	
13. Application and measurement of prestressing force	CONTINUOUS	
14. Placement of grout and prestressing grout for bonded tendons	CONTINUOUS	
15. Placement of AAC masonry units and construction of thin bed mortar joints	CONTINUOUS	Continuous for first 5000 square feet only (465 square meters).
16. Observe preparation of grout specimens, mortar specimens, and/or prisms	OBSERVE	
17. Type, size and placement of reinforcement, connectors, anchor bolts and prestressing tendons and anchorages, including details of anchorage of masonry to structural members, frames, or other construction	OBSERVE CONTINUOUS	[NOTE: DOR must either delete 'OBSERVE' for Risk Category IV/V, or delete 'CONTINUOUS' for Risk Categories I/II/ III]

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

CONTINUOUS: Constant monitoring of identified tasks by a special inspector over the duration of performance of said tasks.

STRUCTURAL - WOOD CONSTRUCTION - SPECIALTY ITEMS SECTION

WOOD CONSTRUCTION - VERIFY THE FOLLOWING ARE IN COMPLIANCE

IBC 1705.5

TASK	INSPECTION TYPE	DESCRIPTION
1. High-load diaphragms where applicable	OBSERVE	Verify thickness and grade of sheathing, size of framing members at panel edges, nail diameters and length, and the number of fastener lines and that fastener spacing is per approved contract documents.
2. Metal-plate connected wood trusses spanning 60 feet or greater	OBSERVE	Verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.

[NOTE: below section not required for projects where sheathing nailing/fasteners (both shearwall and roof) are consistently greater than 4" on center, or if the design wind speed (ASD) is less than 110 mph (49 m/s) AND the seismic design category is A or B]

STRUCTURAL - WOOD CONSTRUCTION - SEISMIC & WIND SECTION

WOOD CONSTRUCTION SEISMIC & WIND - VERIFY THE FOLLOWING ARE IN COMPLIANCE

2018 IBC 1705.11 & 1705.12.2

TASK	INSPECTION TYPE	DESCRIPTION
1. Nailing, bolting, anchoring and other fastening of elements of the main wind/seismic force-resisting system	OBSERVE (CONTINUOUS FOR GULLING)	Includes connectors for: shearwall sheathing, roof/floor sheathing, drag struts/collectors (double top plates), braces, hold downs, roof connections to exterior walls.

OBSERVE: Observe these items on a random sampling basis daily to insure that applicable requirements are met. Operations need not be delayed pending these inspections at contractor's risk.



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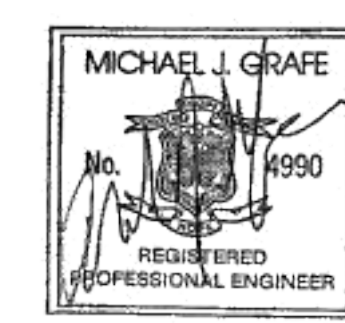
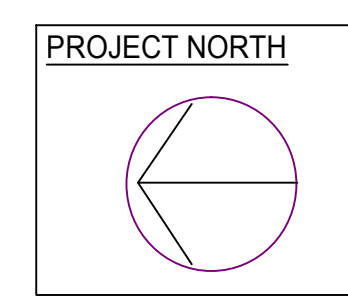
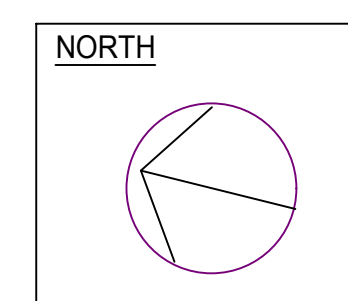
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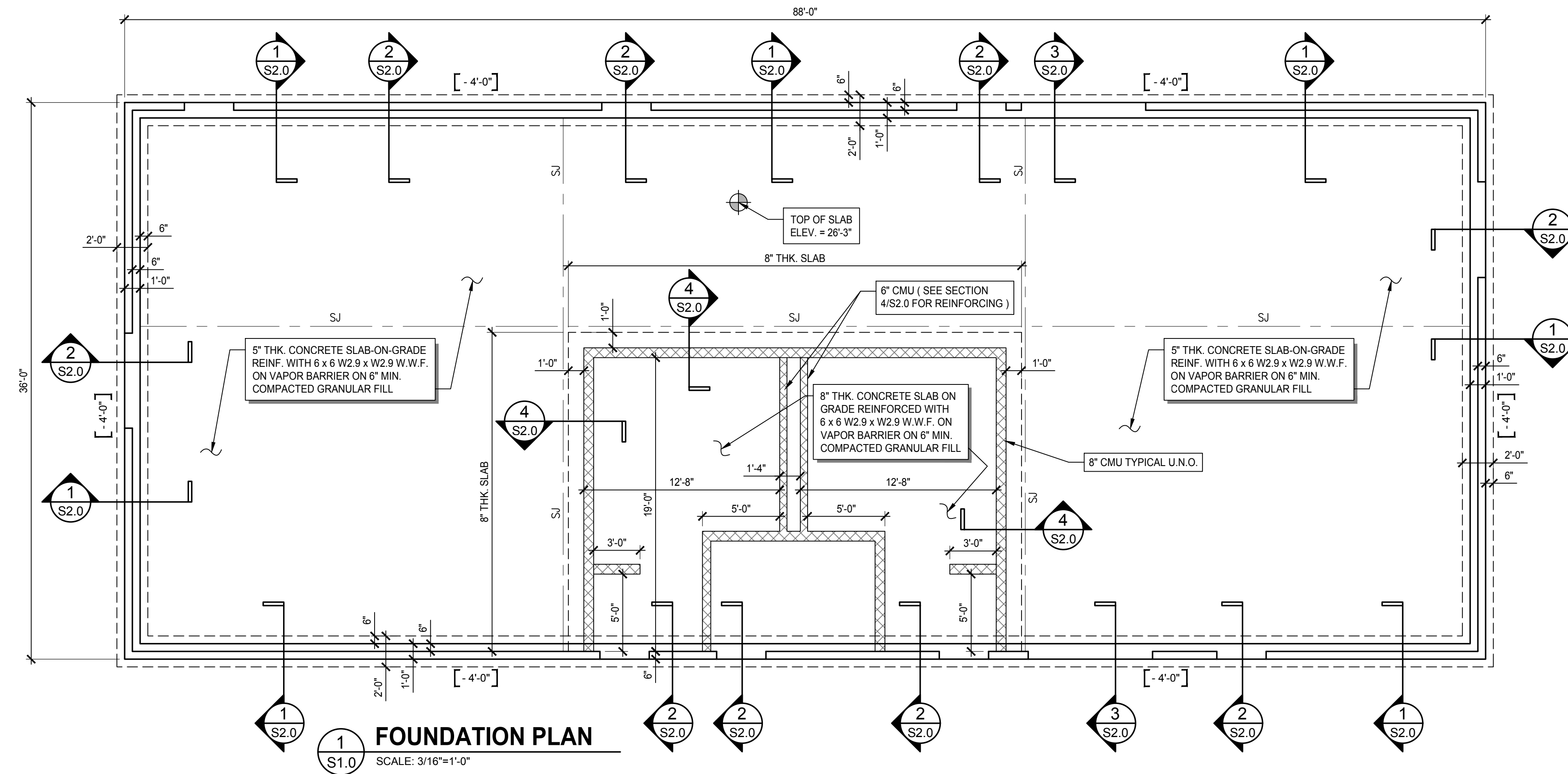
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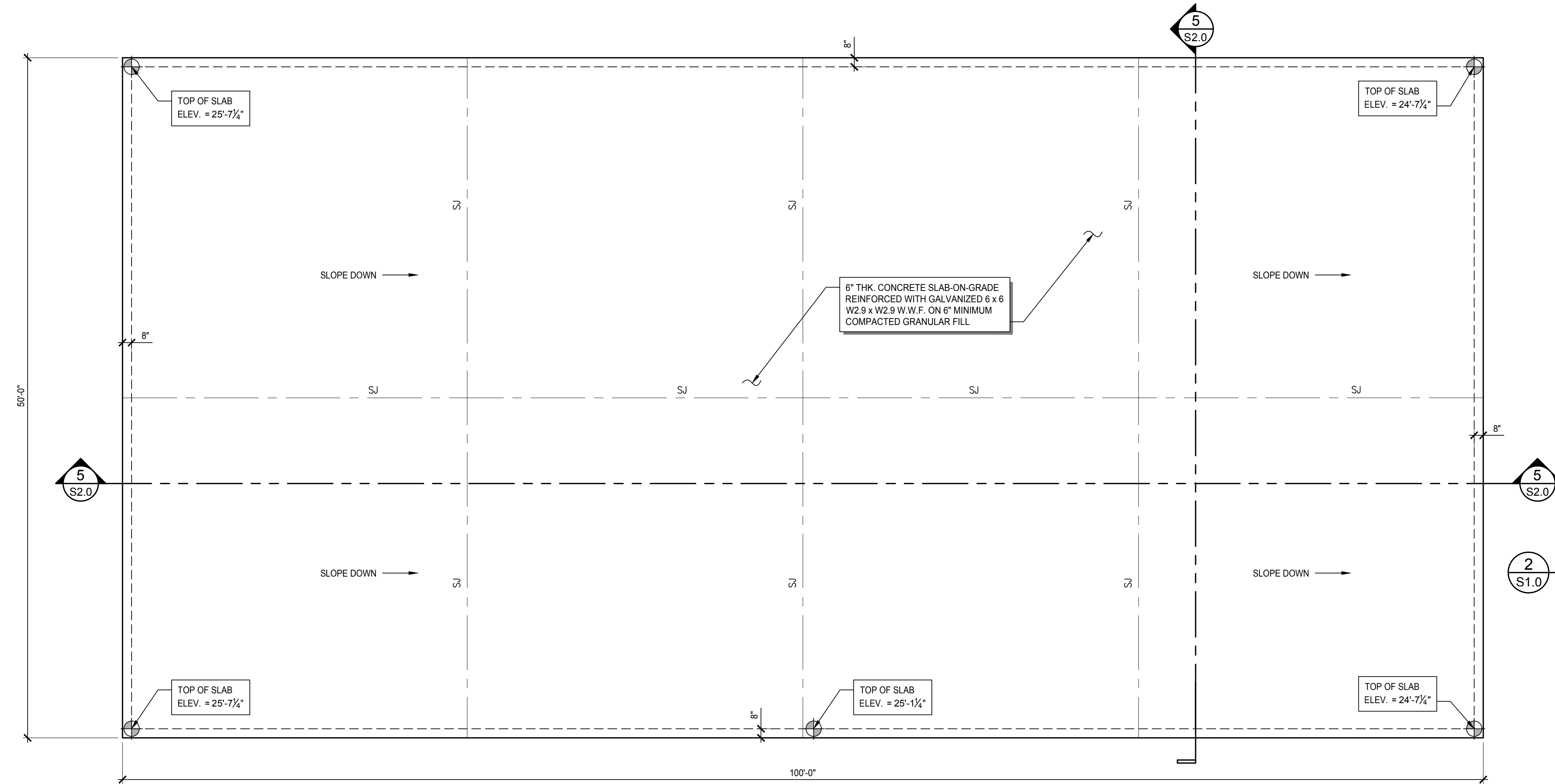


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FOUNDATION PLAN
SCALE: 3/16"=1'-0"

- NOTES:
1. TOP OF SLAB-ON-GRADE ELEV. = 26'-3"
 2. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
 3. SEE ARCH. DWGS FOR DIMENSIONS OF ALL OPENINGS AND INTERIOR WALL DIMENSIONS.
 4. [XX.XX] INDICATES TOP OF WALL ELEVATION.
 5. [XX.XX] INDICATES BOTTOM OF FOOTING ELEVATION.
 6. (S.J.) INDICATES SHRINKAGE CONTROL JOINT (SEE TYPICAL SLAB-ON-GRADE DETAIL)



TENT PAD FOUNDATION PLAN
SCALE: 3/16"=1'-0"

- NOTES:
1. TOP OF SLAB-ON-GRADE VARIES, SEE PLAN.
 2. ALL DIMENSIONS SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS.
 3. [XX.XX] INDICATES BOTTOM OF FOOTING ELEVATION.
 4. (S.J.) INDICATES SHRINKAGE CONTROL JOINT (SEE TYPICAL SLAB-ON-GRADE DETAIL)



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**CRESCENT PARK
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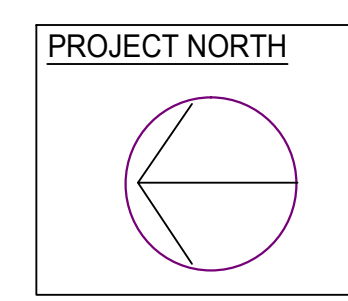
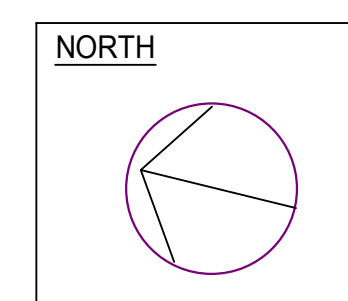
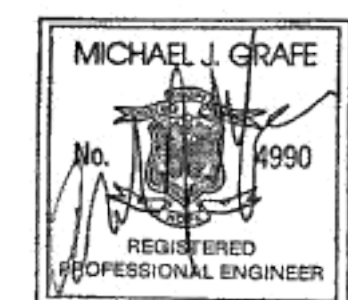
**BUILDING &
TENT PAD
FOUNDATION
PLANS**

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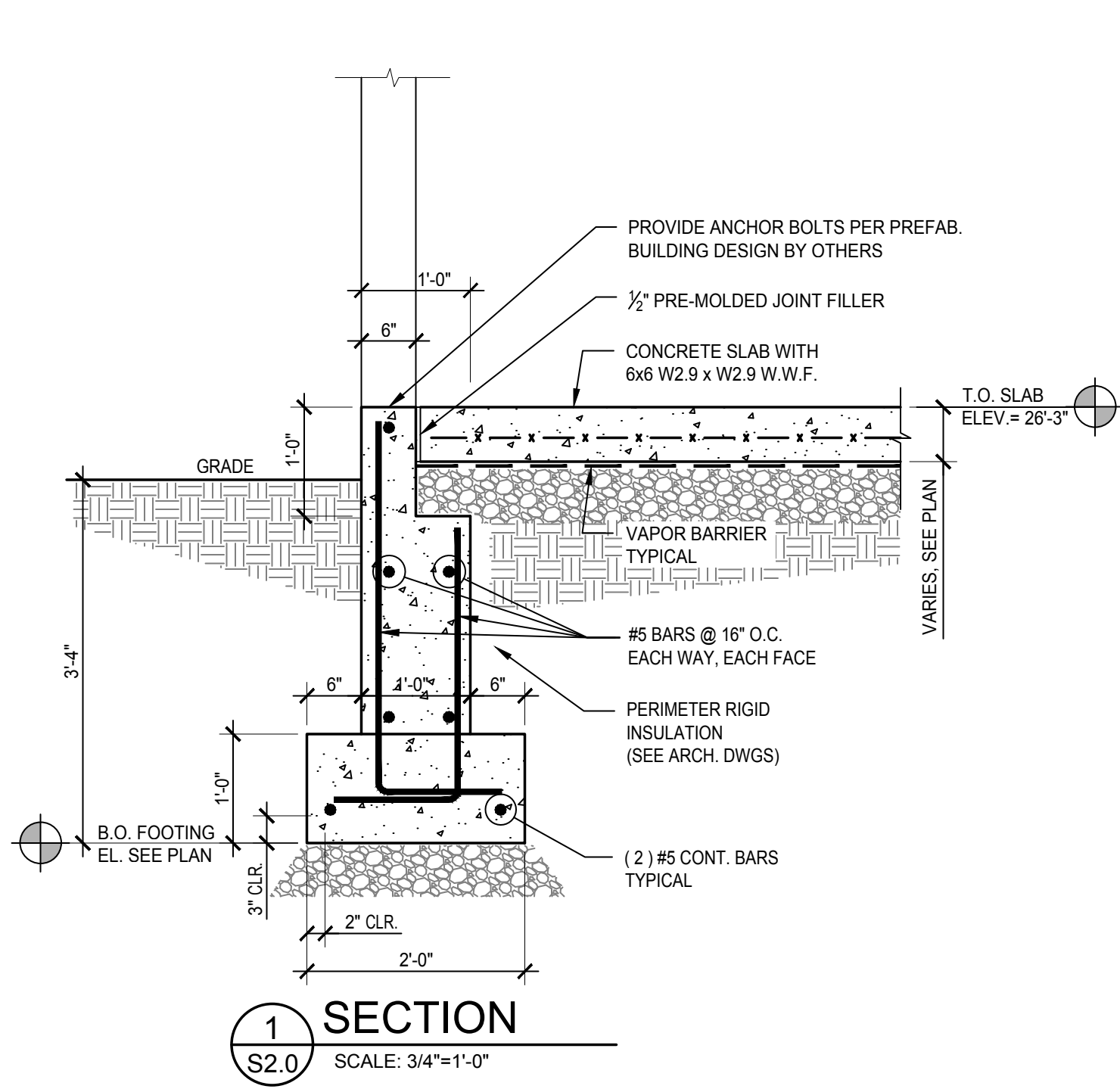
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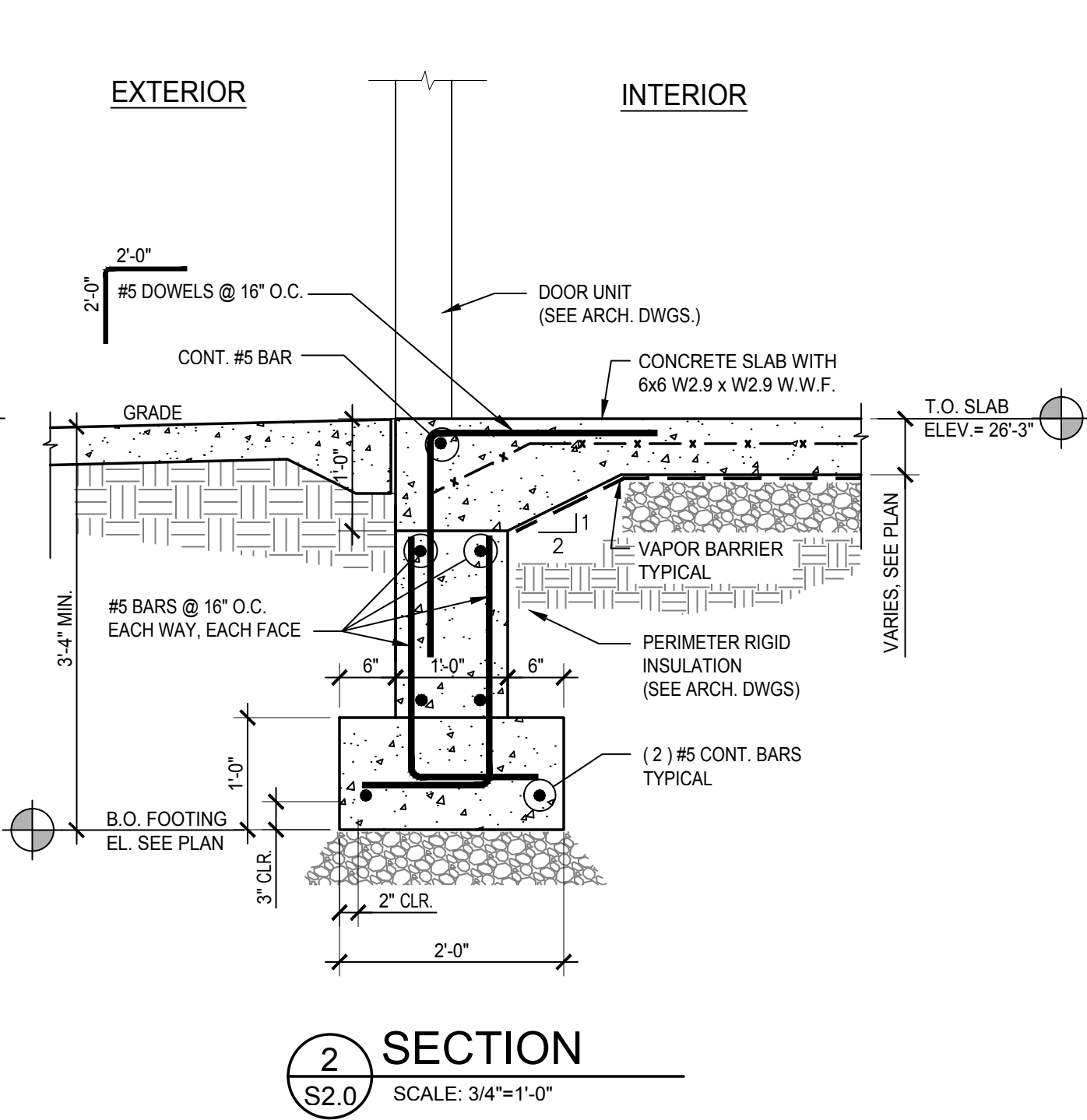
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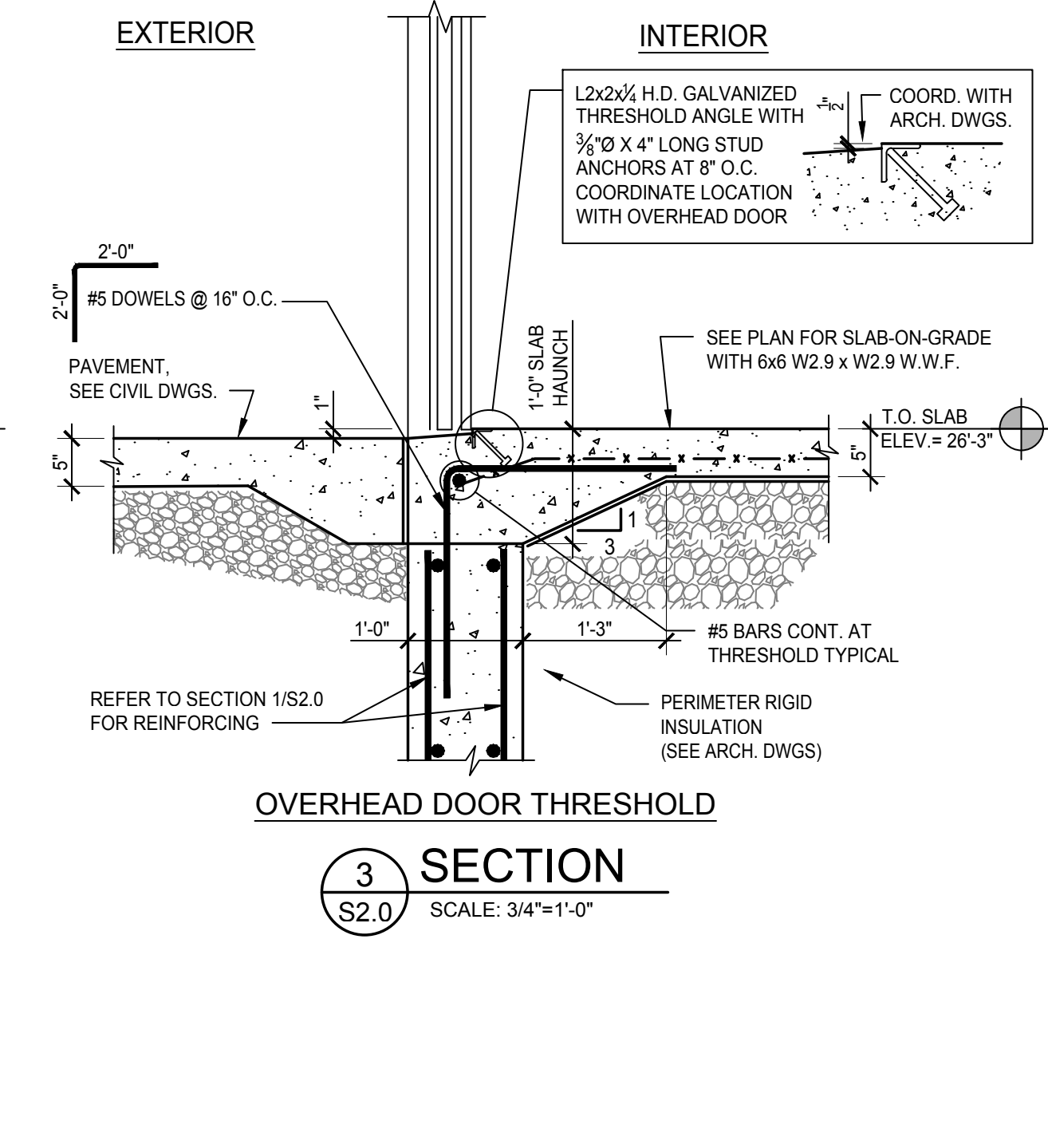
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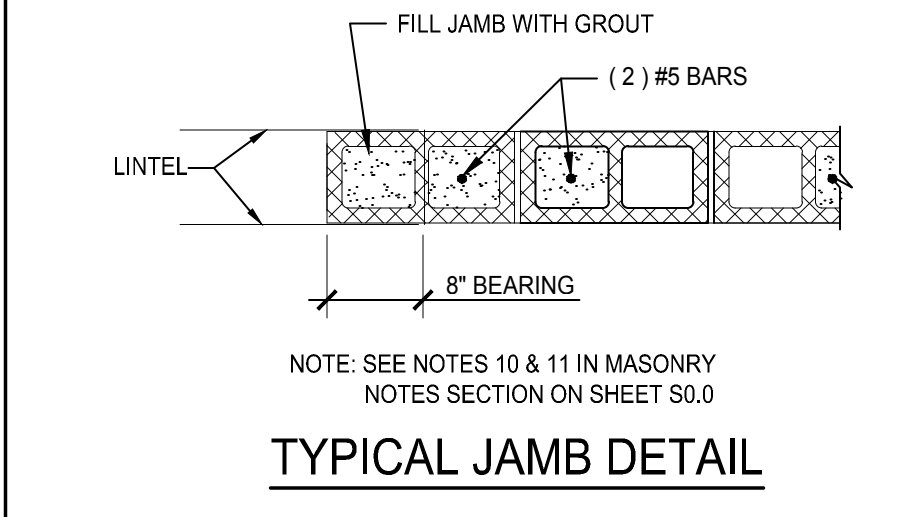
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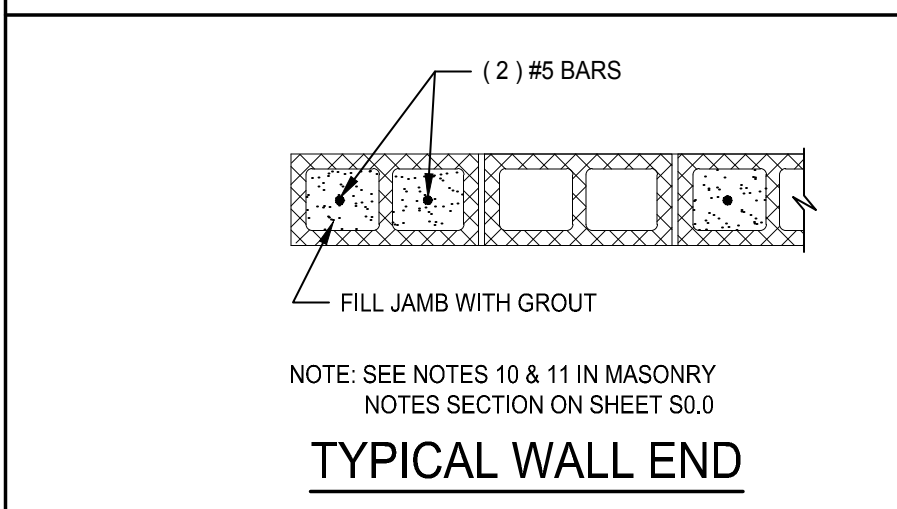
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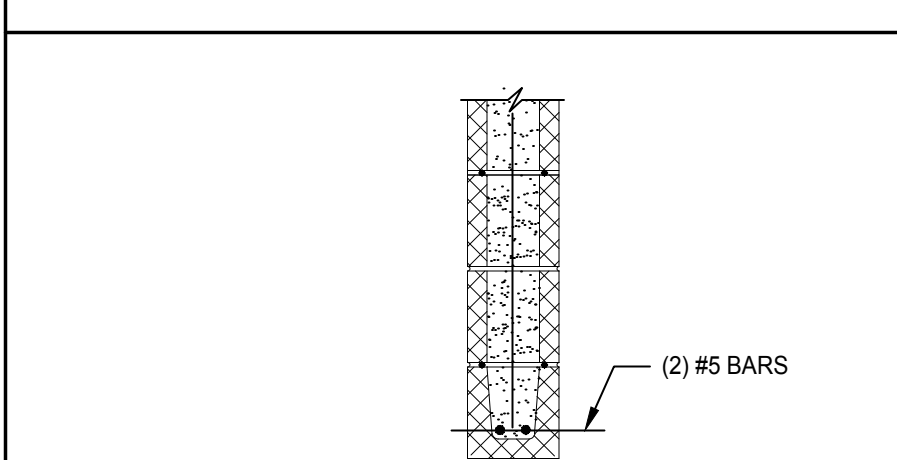
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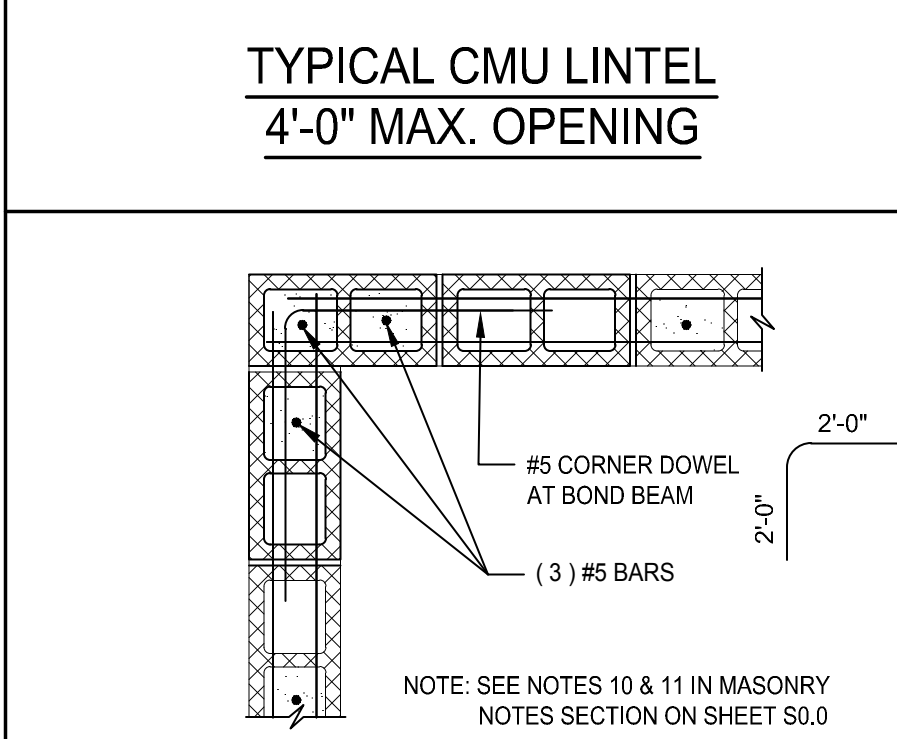
TYPICAL JAMB DETAIL



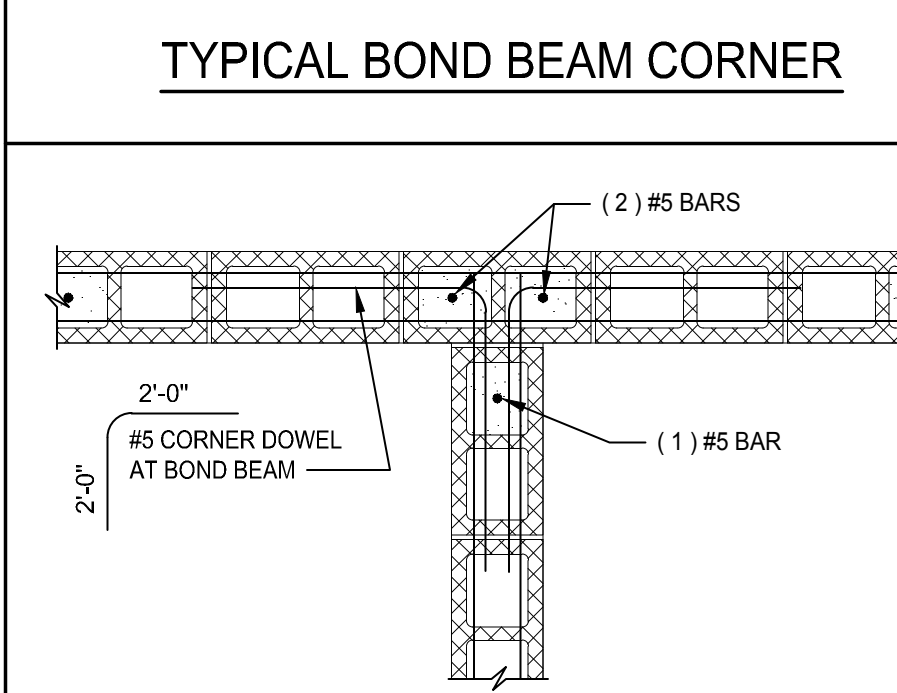
TYPICAL WALL END



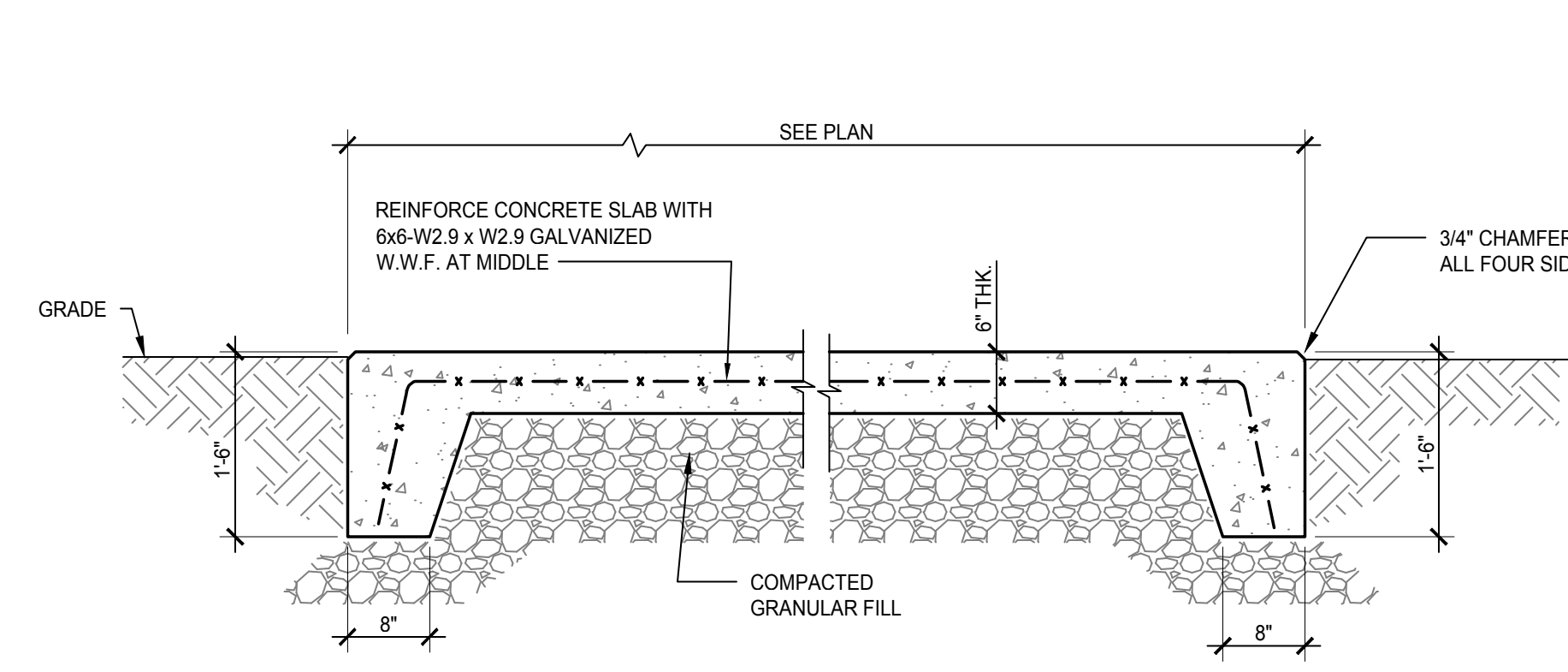
TYPICAL CMU LINTEL
4'-0" MAX. OPENING



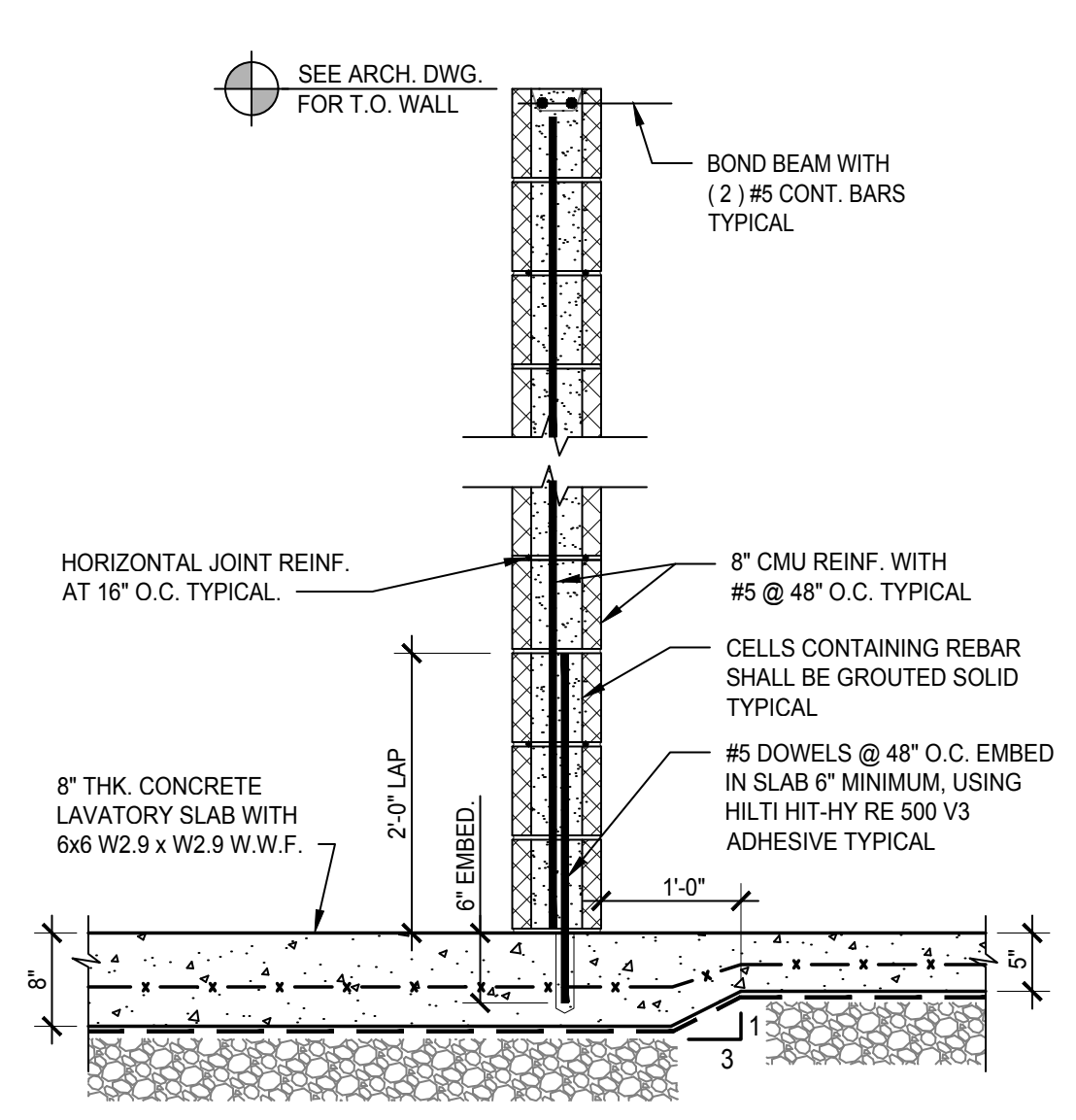
TYPICAL BOND BEAM CORNER



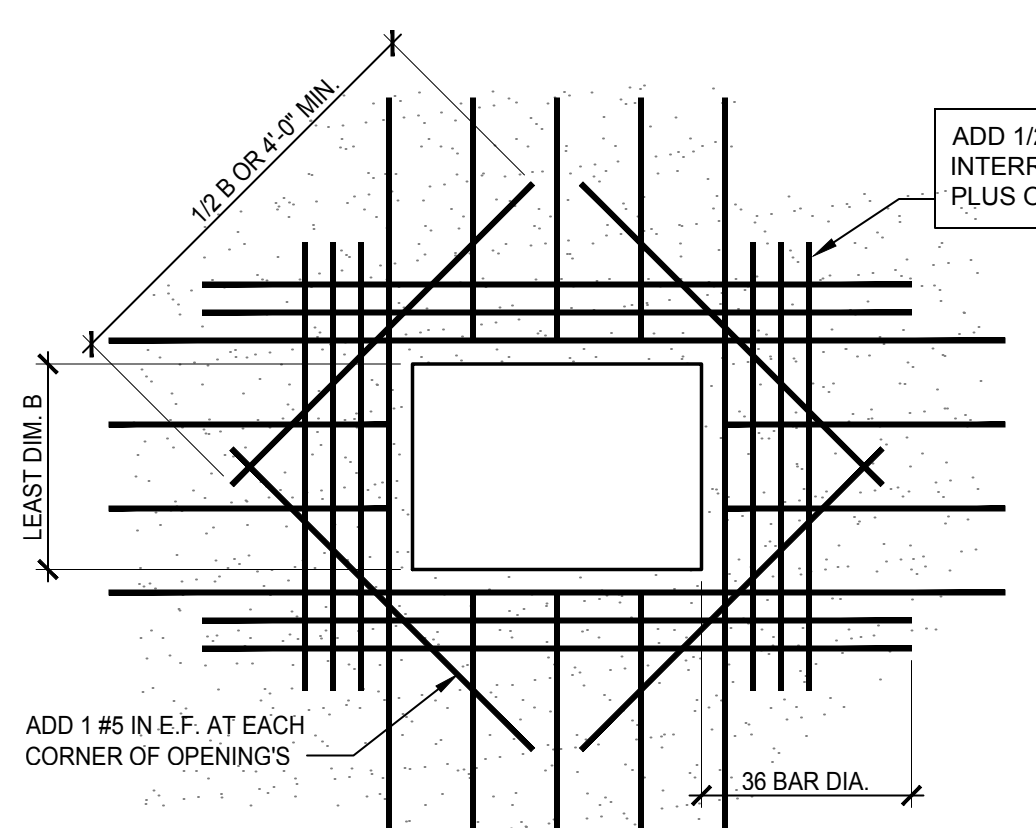
TYPICAL BOND BEAM INTERSECTION



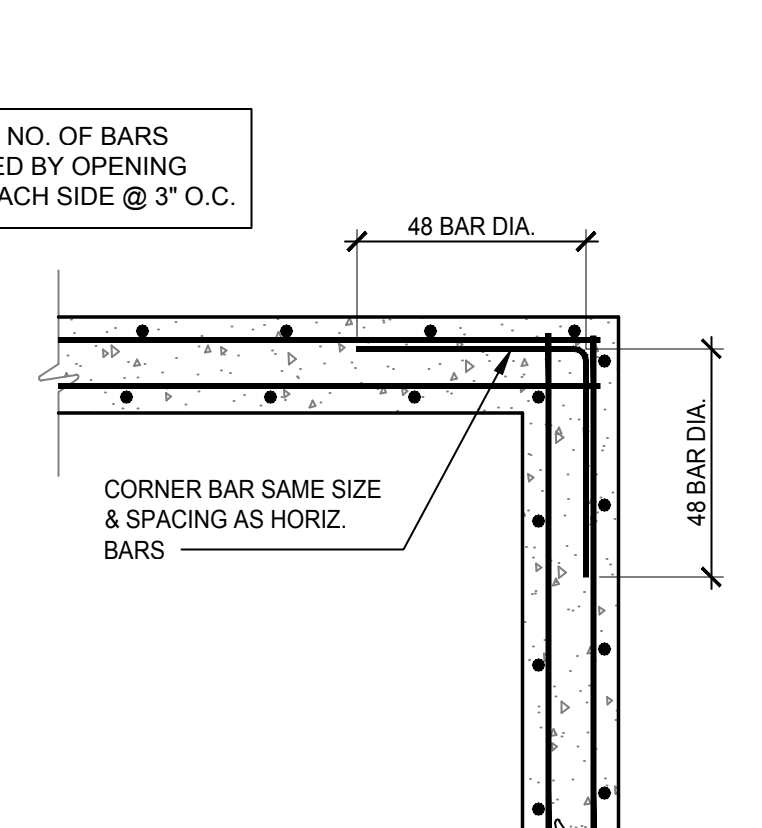
5 SECTION
S2.0 SCALE: 3/4"=1'-0"



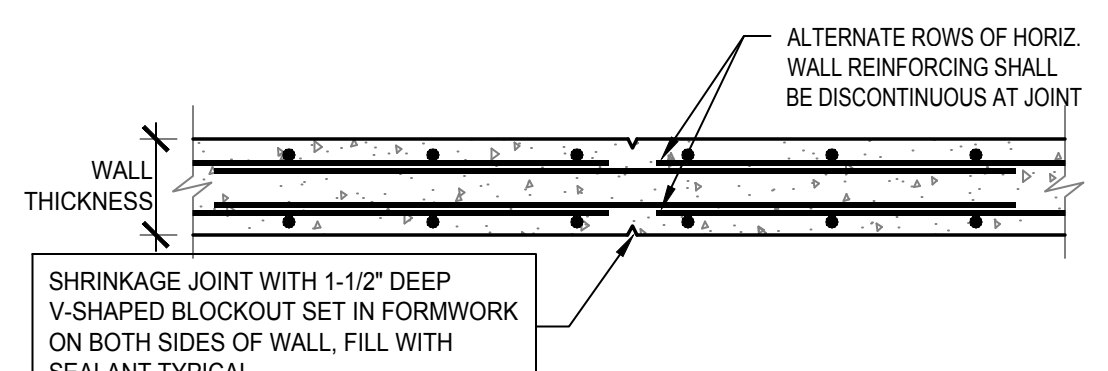
4 SECTION
S2.0 SCALE: 3/4"=1'-0"



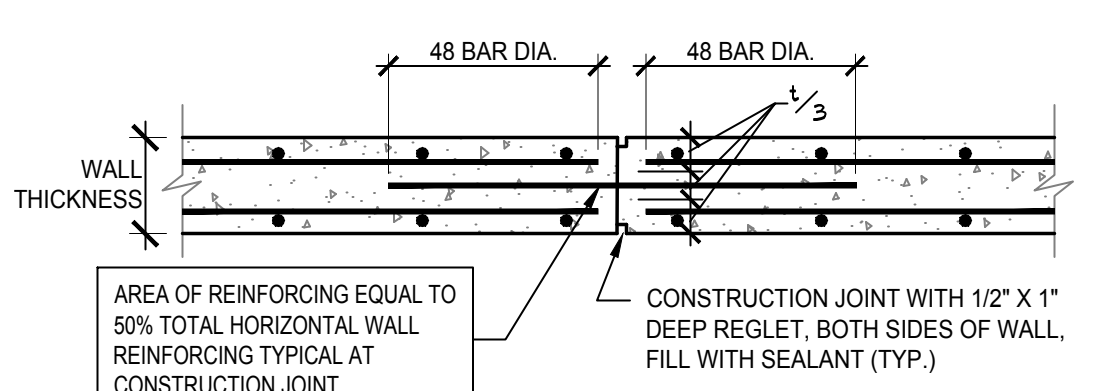
TYP. WALL OPENING DETAIL



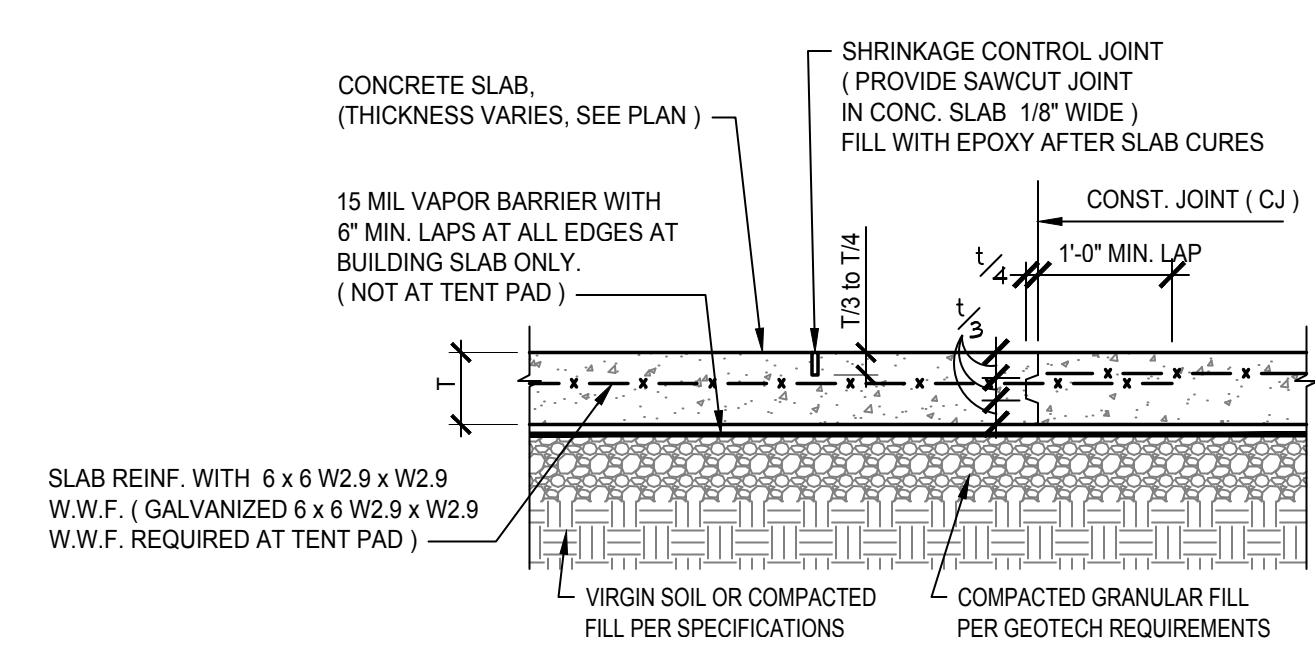
TYP. WALL CORNER



TYPICAL WALL SHRINKAGE JOINT
NOTE: MAXIMUM SPACING OF SHRINKAGE CONTROL JOINTS NOT TO EXCEED 40 FEET.



TYPICAL WALL CONSTRUCTION JOINT
NOTE: MAXIMUM SPACING OF CONSTRUCTION JOINTS NOT TO EXCEED 120 FEET.



- NOTES:**
- SAWCUT SHRINKAGE CONTROL JOINTS SHALL BE PROVIDED WITHIN 12 HRS. OF SLAB PLACEMENT, AS SOON AS CONCRETE IS CAPABLE OF SUPPORTING SAW-CUTTING EQUIPMENT.
 - LOCATE SHRINKAGE CONTROL JOINTS AS INDICATED ON SLAB PLAN, OR AT MAXIMUM SPACING OF 20 FT. O.C. IF NOT INDICATED ON PLANS. RESULTING SHAPE SHALL NOT BE GREATER THAN 400 S.F. NOR EXCEED A 1.5:1 LENGTH TO WIDTH RATIO.
 - OPTIONALLY, THE CONTRACTOR MAY SUBSTITUTE PRE-FABRICATED PLASTIC STRIPS INSTEAD OF SAW-CUTTING. SUBMIT CATALOG CUTS FOR APPROVAL PRIOR TO USING.
 - INSTALLATION OF ALL NON-STRUCTURAL CONCRETE SLABS-ON-GRADE SHALL CONFORM TO ALL REQUIREMENTS OF THE LATEST ADDITIONS OF BOTH, ACI-360 AND ACI-302

TYP. SLAB-ON-GRADE DETAIL

NCA
NORTHEAST
COLLABORATIVE
ARCHITECTS

650 Ten Rod Road
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v. 401.846.9583

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Plumbing Engineers:
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Structural Engineers:
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Landscape Architects:
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**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:

BID SET

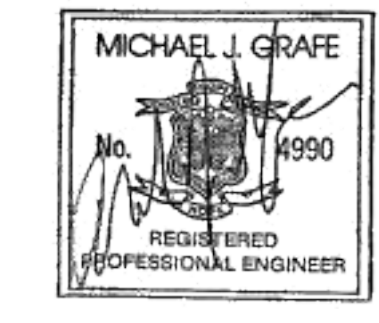
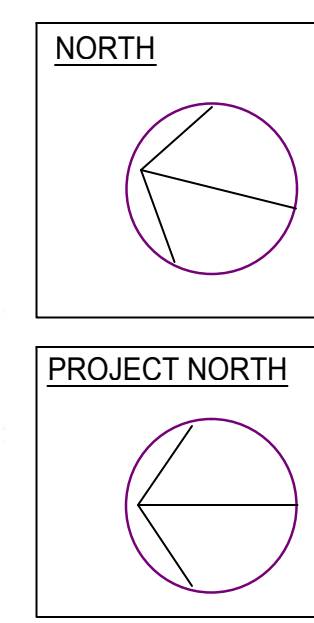
**FOUNDATION
SECTIONS
AND DETAILS**

DATE: 10/31/2024

NCA JOB NO.: 23100 223218.20

DRAWING NO.:

S2.0



GENERAL NOTES

- SEE PROJECT MANUAL, STRUCTURAL, MEP & FP DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.
 - ALL CONTRACTORS SHALL CONFIRM CLEARANCES NEEDED TO INSTALL THEIR WORK PRIOR TO PROCEEDING. CONTACT ARCHITECT FOR DISCREPANCY RESOLUTION.
- CONSTRUCTION NOTES**
- ALL FIRST FLOOR INTERIOR PARTITIONS SHALL BE TYPE "1" UON.
 - PROVIDE BLOCKING FOR ALL WALL MOUNTED MILLWORK.
 - ALL CMU STUDS AND GYP BD SHALL BE 1" CLEAR OF STRUCTURE OR STRUCTURAL ITEMS U.O.N.
 - ALL RATED CONSTRUCTION SHALL HAVE SIGNS MOUNTED ON PARTITION 6" ABOVE CEILINGS, SPACED NO FARTHER THAN 30' APART, AS PER IBC 703.6.
 - SEE FLOOR PLANS FOR WALL TYPES AND ADDITIONAL INFORMATION.
 - PROVIDE MINIMUM 1'-6" CLEAR BETWEEN LATCH SIDE AND FULL SIDE OF DOORS AND ANY WALL OR FIXED ELEMENT. PROVIDE MINIMUM 1'-0" CLEAR BETWEEN PUSH SIDE AND LATCH SIDE OF DOORS WITH CLOSERS OR ANY WALL OR FIXED ELEMENT. VERIFY WITH ARCHITECT ANY DOOR THAT DOES NOT COMPLY.
 - ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF MASONRY UNLESS OTHERWISE NOTED.
 - THE HINGE SIDE OF ALL DOOR OPENINGS SHALL BE LOCATED 4" FROM THE WALL, UNLESS OTHERWISE NOTED.

LEGEND

- ALL DOOR OPENINGS SHALL BE 6" GYP/4" MASONRY OFF ADJACENT WALL UON, TYPICAL.



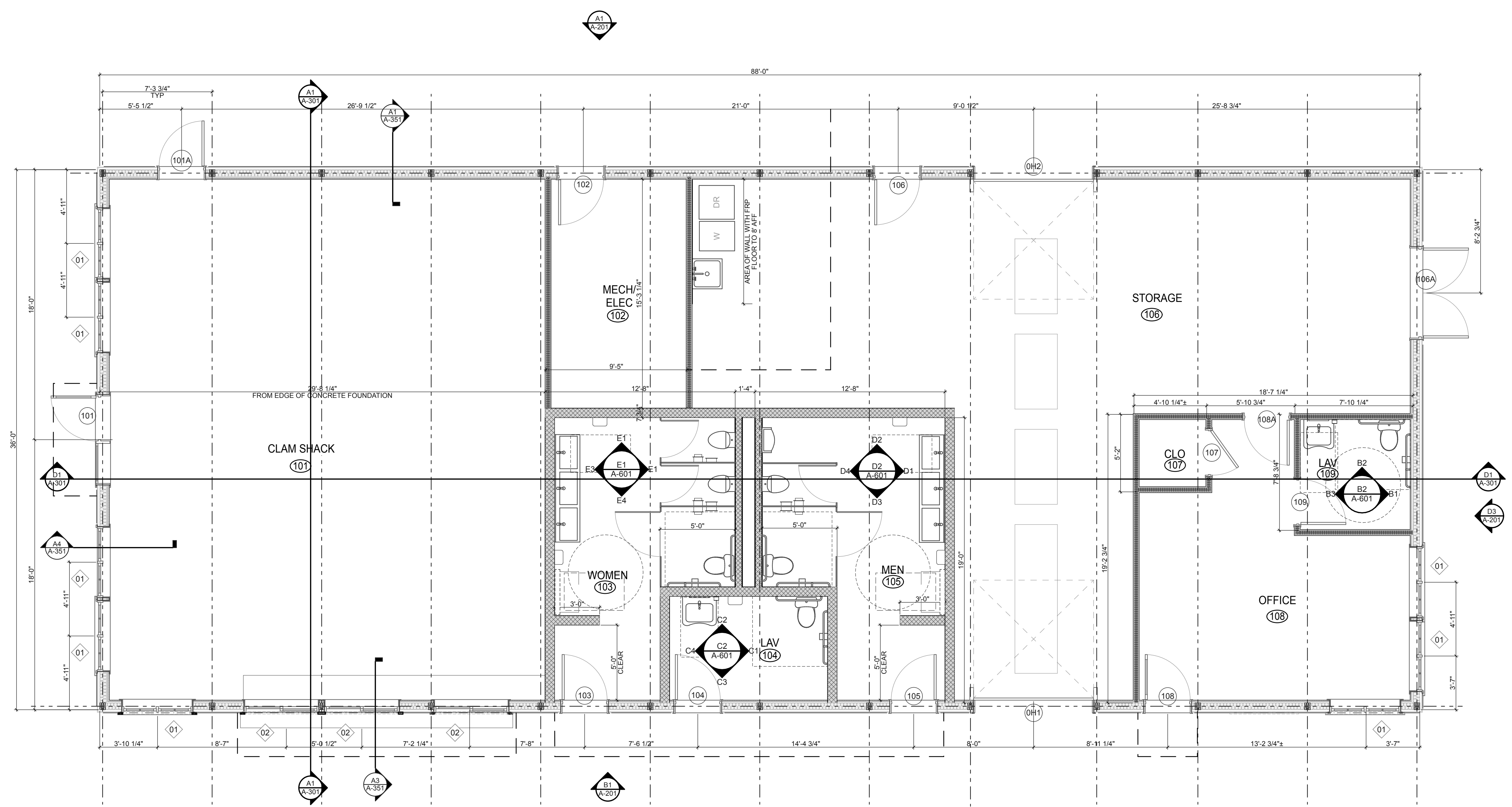
650 Ten Rod Road
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Landscape Architects
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Smithfield, Rhode Island
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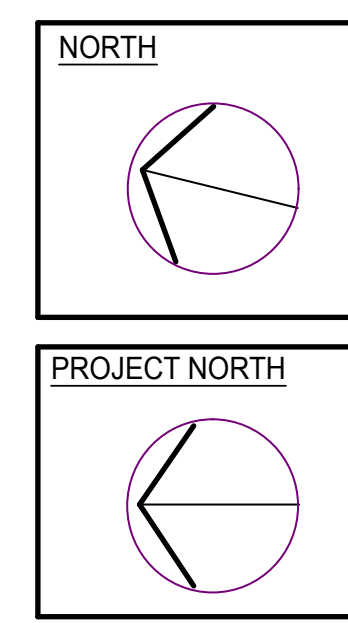
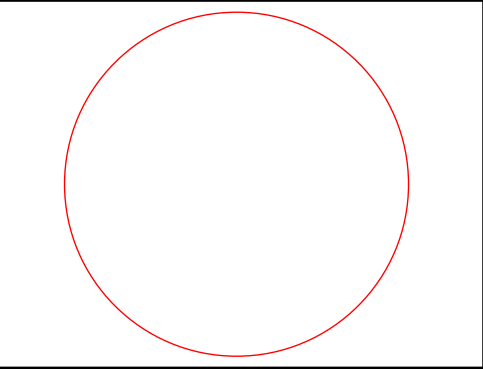


B1 1st FLOOR CONSTRUCTION PLAN
A-111 SCALE: 1/4" = 1'-0"



**CRESCENT PARK
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REVISIONS:



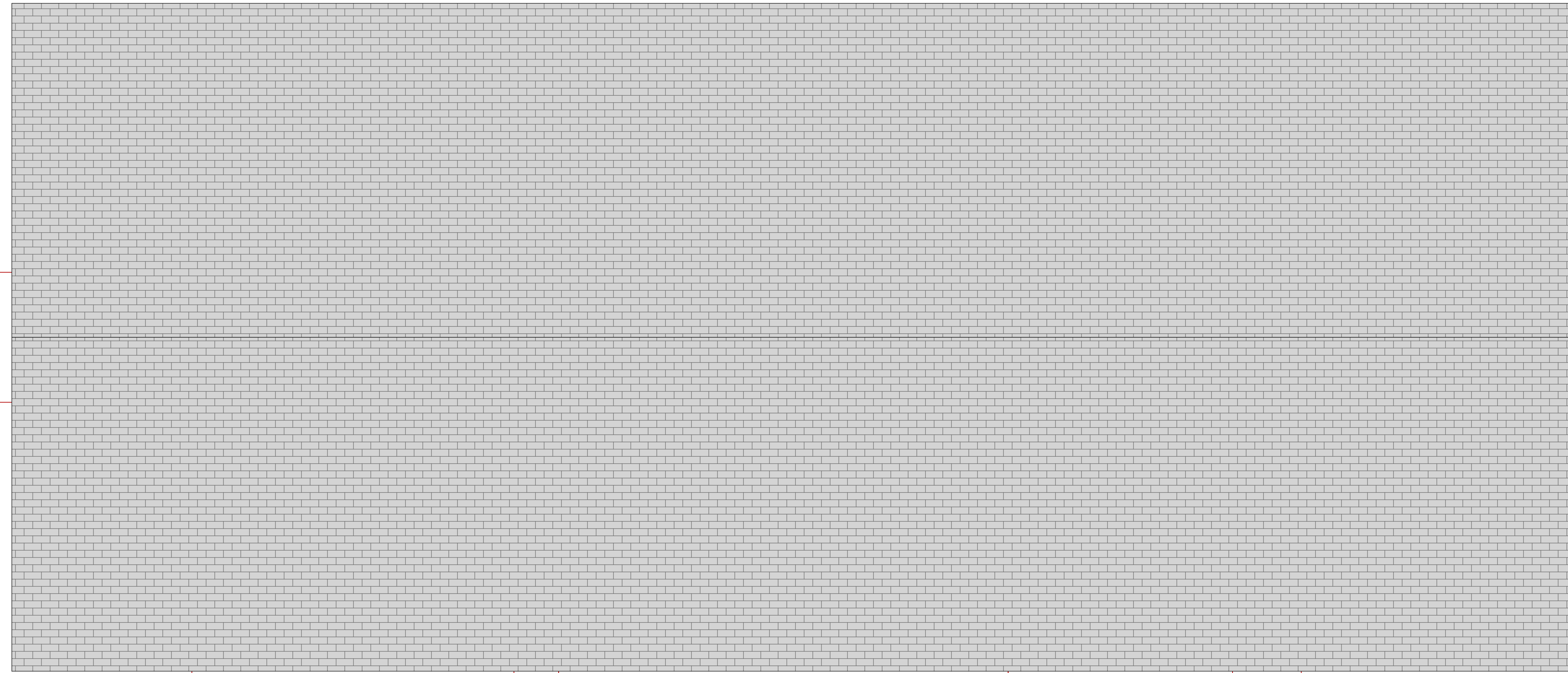
CONSTRUCTION PLAN

DATE: 10/31/24

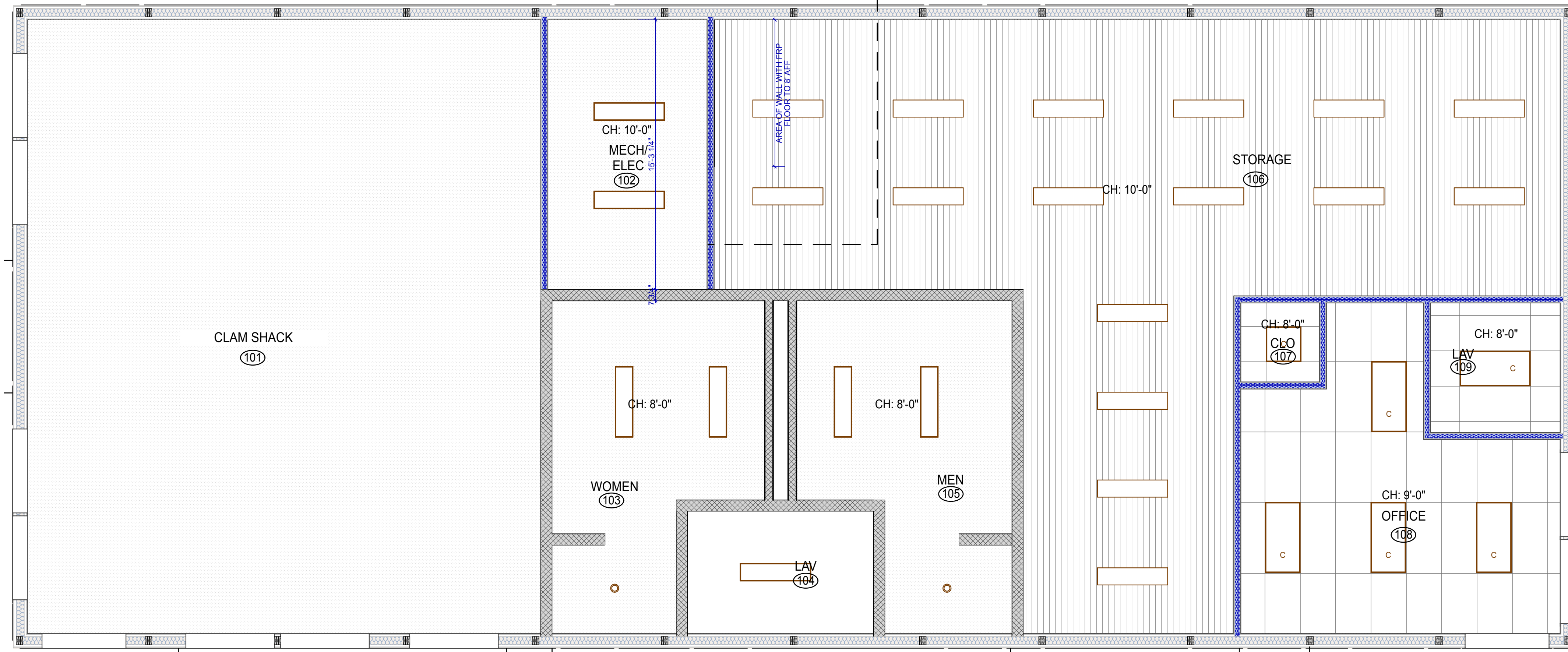
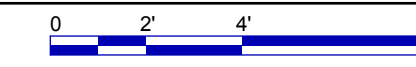
NCA JOB NO.: 23100

DRAWING NO.:

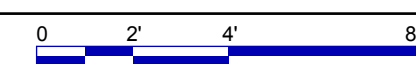
A-111



C1
A-120 ROOF PLAN
SCALE: 1/4" = 1'-0"



A1
A-120 REFLECTED CEILING PLAN
SCALE: 1/4" = 1'-0"



ROOF GENERAL NOTES

- SEE PROJECT MANUAL AND MEP DRAWINGS FOR ADDITIONAL INFORMATION AND COORDINATION.
- ALL CONTRACTORS SHALL CONFIRM CLEARANCES NEEDED TO INSTALL THEIR WORK PRIOR TO PROCEEDING. CONTACT ARCHITECT FOR DISCREPANCY RESOLUTION.
- SEE MECHANICAL PLANS FOR ALL ROOF MOUNTED HVAC AND PLUMBING VENT LOCATIONS.
- ALL ROOF PENETRATIONS AND CURBS SHALL BE FLASHED AS PER MANUFACTURERS RECOMMENDATIONS.



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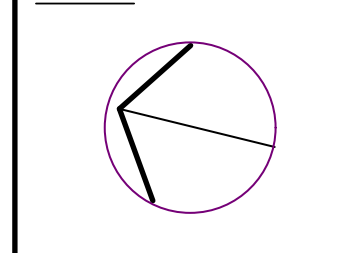
REFLECTED CEILING PLAN LEGEND

SYMBOL	NAME
	ACOUSTICAL CEILING PANEL
	GYPSUM BOARD CEILING
	RECESSED FLUORESCENT LIGHTS
	RECESSED DOWN LIGHT
	BLINDS
	PENDANT FIXTURE
	WALL MOUNTED FIXTURE
	CEILING EXPANSION JOINT
	EXIT SIGN INDICATES DIRECTIONAL
	CEILING HEIGHT AFF CEILING TYPE

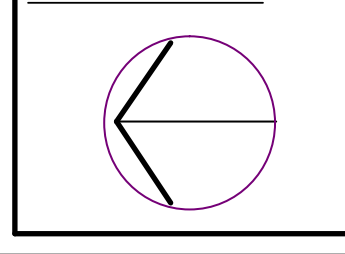
REFLECTED CEILING NOTES

- ALL LIGHT FIXTURES & CEILING GRIDS SHALL BE CENTERED IN ROOMS UON.
- ALL ACP SHALL BE ACP-1 UON.
- CENTER ALL CEILING MOUNTED OBJECTS IN CEILING TILE/PATTERN UON.
- HANGERS SHALL BE SECURELY ATTACHED TO STRUCTURE ABOVE, THROUGH GYP BD FIRE PROOFING. WIRE HANGERS SHALL NOT BE LESS THAN 12 GA. AND SHALL BE SADDLE TIED TO MAIN RUNNERS.
- ALL EQUIPMENT ITEMS SHALL BE INDEPENDENTLY SUSPENDED AND NOT CONNECTED TO THE CEILING GRID.
- CEILING SUSPENSION SYSTEM SHALL NOT BE USED TO SUPPORT LIGHT FIXTURES, DUCTWORK, PIPING, ETC.
- ALL EXTERIOR WINDOWS IN OFFICE 108 SHALL RECEIVE HORIZONTAL SLAT BLINDS WITH VALANCE. UON.

NORTH

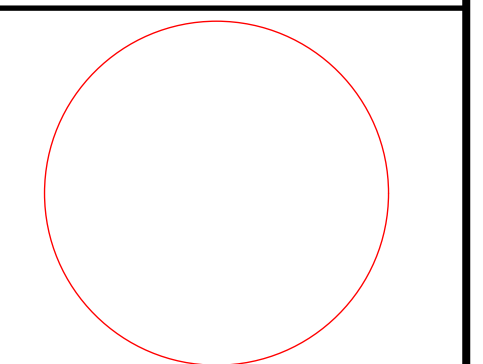


PROJECT NORTH



**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:



**ROOF PLAN &
REFLECTED
CEILING PLAN**

DATE: 10/31/24

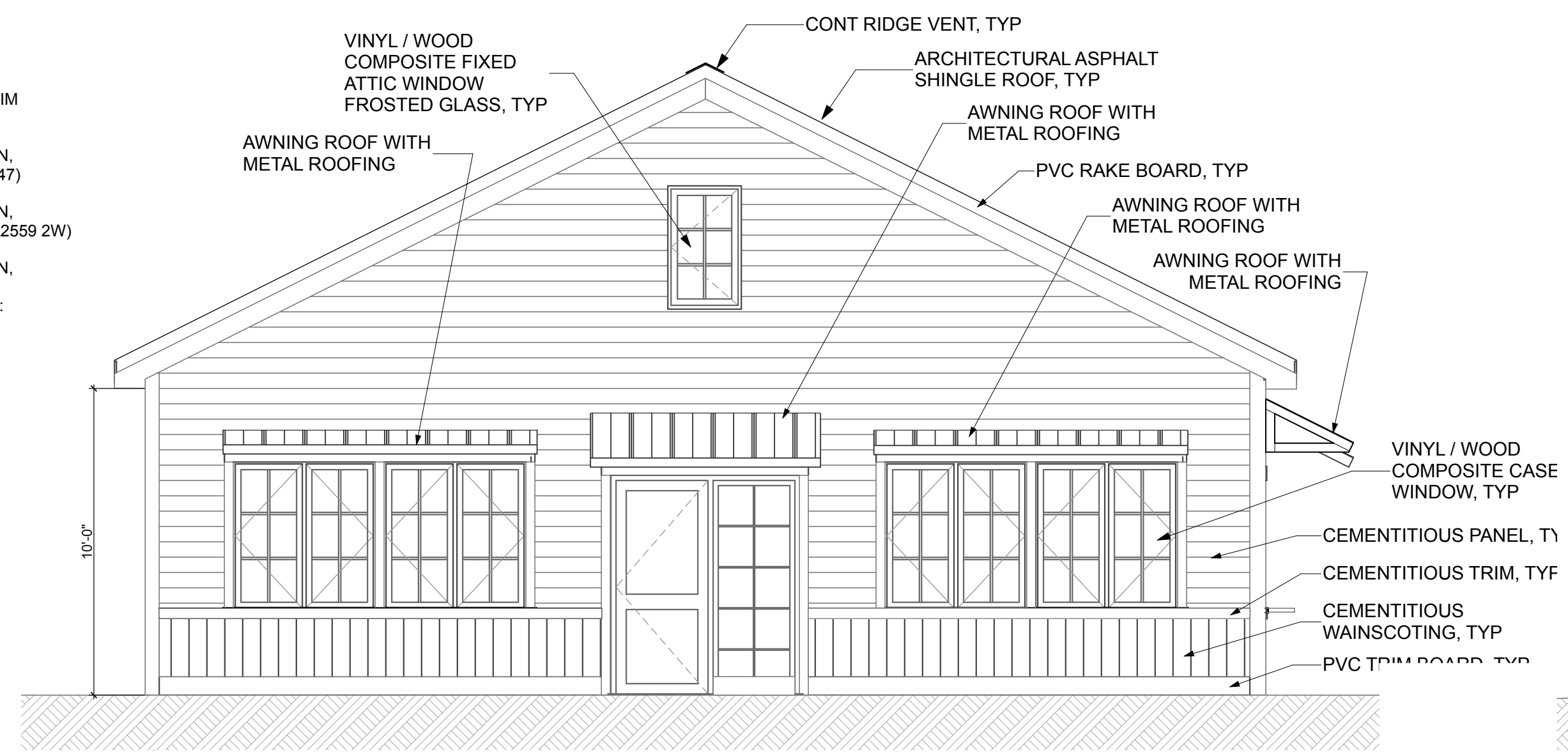
NCA JOB NO.: 23100

DRAWING NO.:

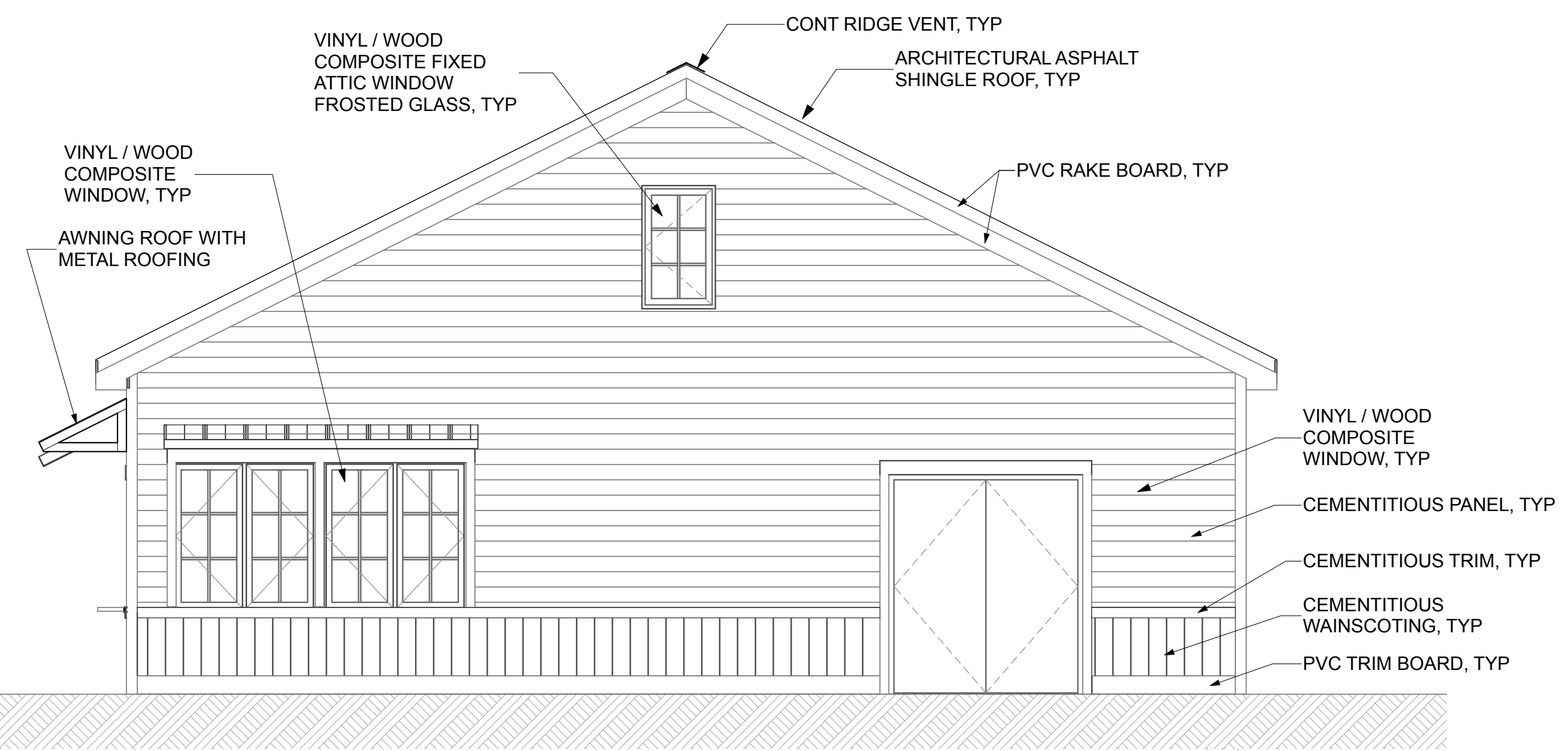
A-120

GENERAL NOTES:

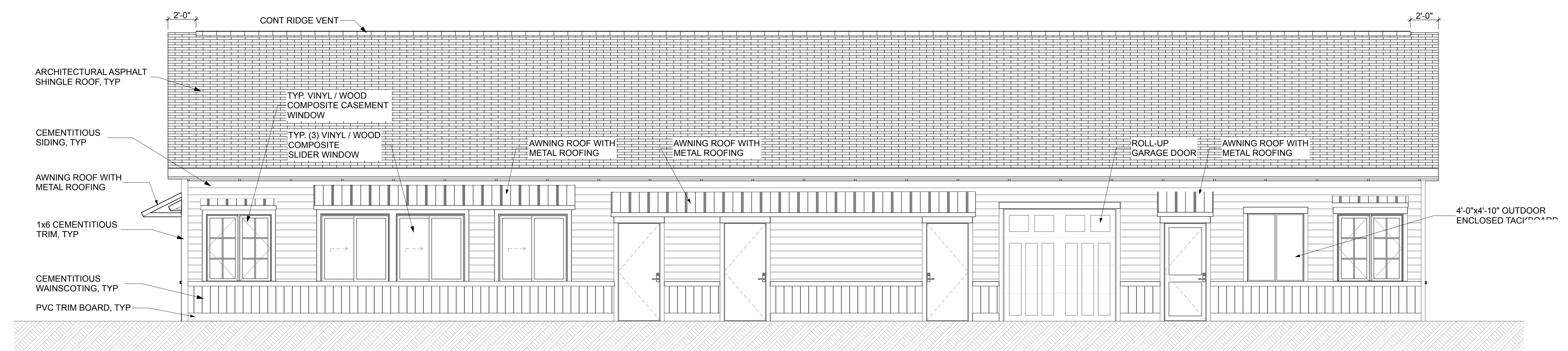
- TRIM FOR WINDOWS TYP
1"X 3 1/2" JAMBS
AND 1"X5 1/2" HEADER PVC TRIM
- WINDOWS BASIS OF DESIGN:
FIX ATTIC WINDOWS -
MARVIN, ELEVATE COLLECTION,
ELCA 2947E (GRID OF ELCA 2547)
PAIRED CASEMENT WINDOWS
MARVIN, ELEVATE COLLECTION,
ELCA2959E 2W (GRID OF ELCA2559 2W)
GLIDING SERVICE WINDOWS
MARVIN, ELEVATE COLLECTION,
ELGL6060E NO GRID
- GARAGE DOORS BASIS OF DESIGN:
GARAGE DOOR:
CLOPAY COACHMAN DOOR
10'X8'H (TOP12 DESIGN
CGU, CG, CD 13 PATTERN)
SPADE STRAP HINGES
BOTH SIDES TOP
MAIN RAIL AND BOTTOM RAIL,
(2) SPEAR LIFT HANDLES
PER DOOR,
STANDARD WHITE DOOR



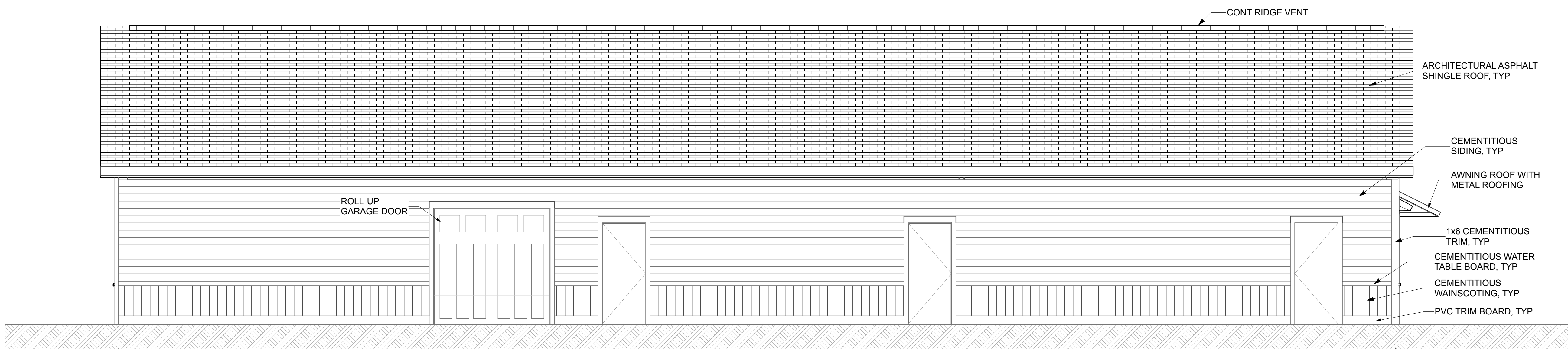
D1
A-201 EXTERIOR ELEVATION - NORTH
SCALE: 1/4" = 1'-0"
0 2 4 8



D3
A-201 EXTERIOR ELEVATION - SOUTH
SCALE: 1/4" = 1'-0"
0 2 4 8



B1
A-201 EXTERIOR ELEVATION - WEST
SCALE: 1/4" = 1'-0"
0 2 4 8



A1
A-201 EXTERIOR ELEVATION - EAST
SCALE: 1/4" = 1'-0"
0 2 4 8



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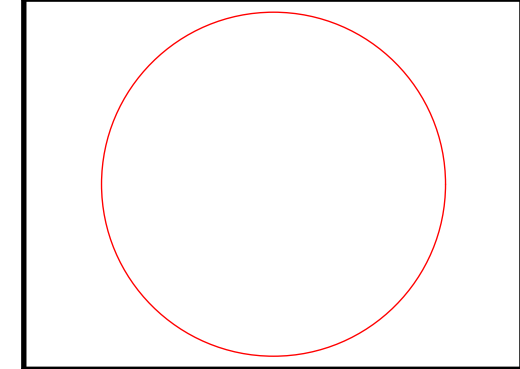
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Plumbing Engineers:
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**CRESCENT PARK
NEW BUILDING**
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684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:



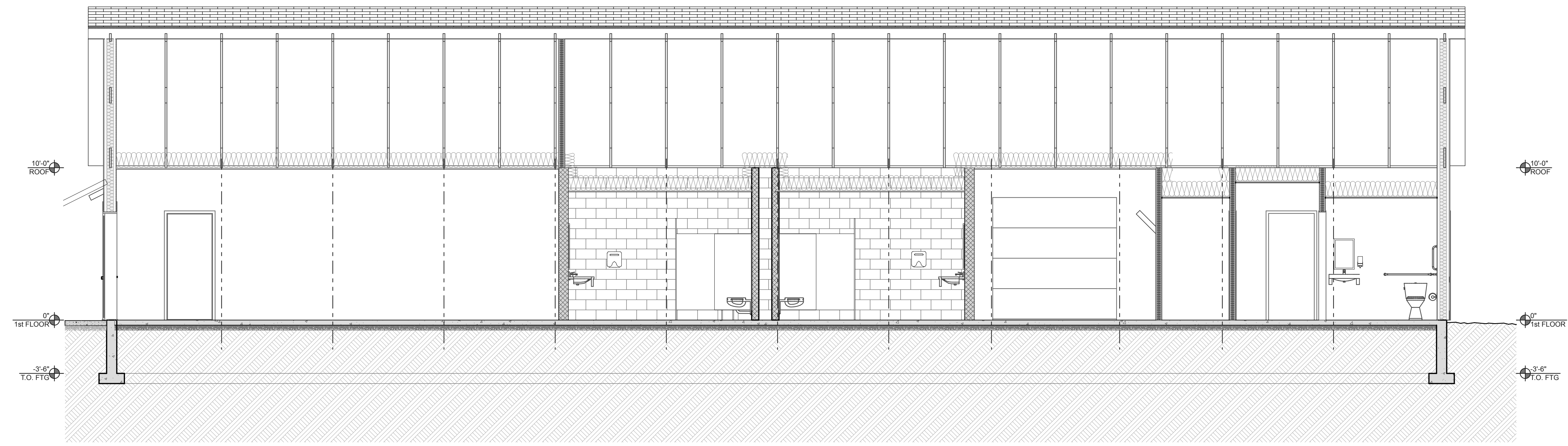
**EXTERIOR
ELEVATIONS**

DATE: 10/31/24

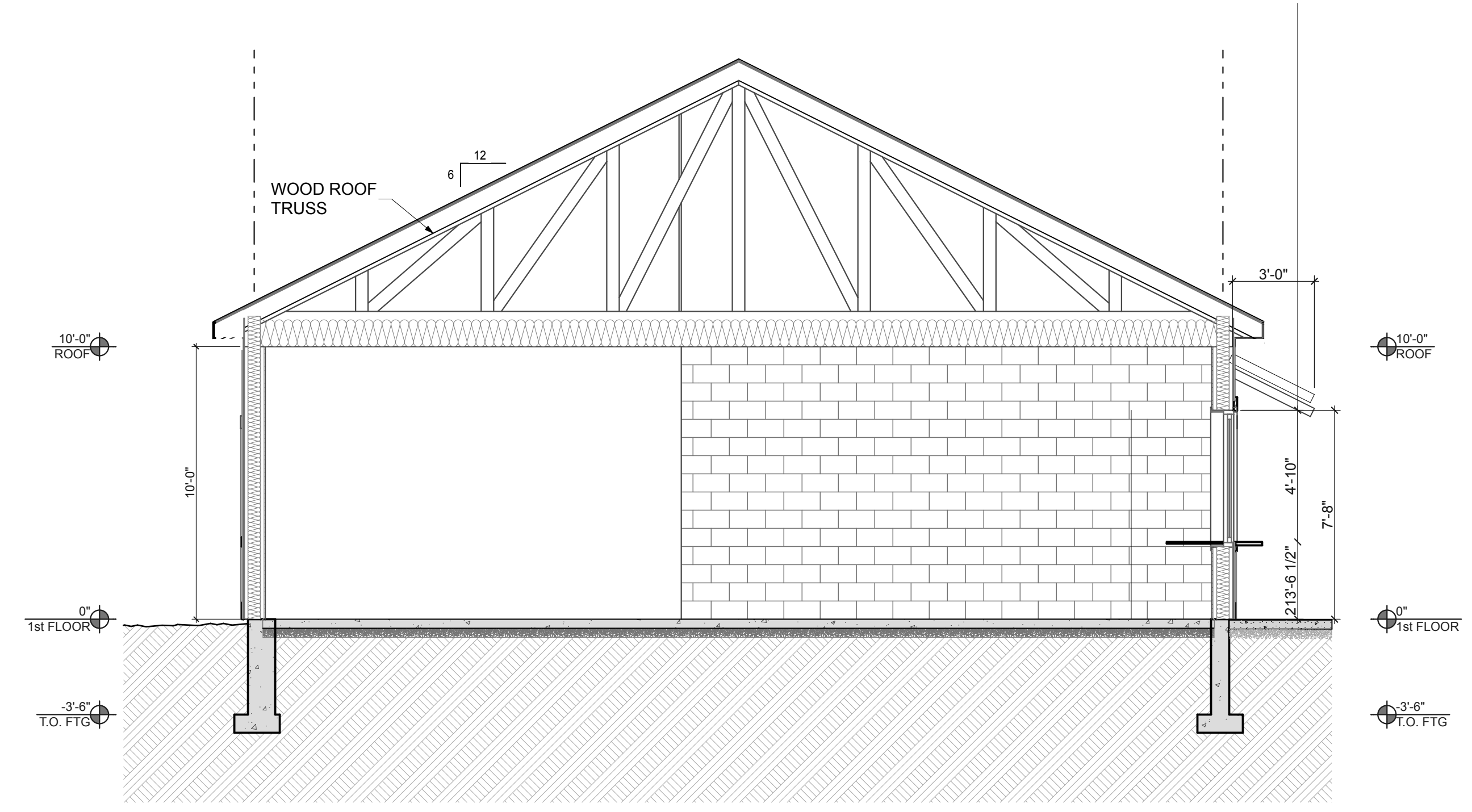
NCA JOB NO.: 23100

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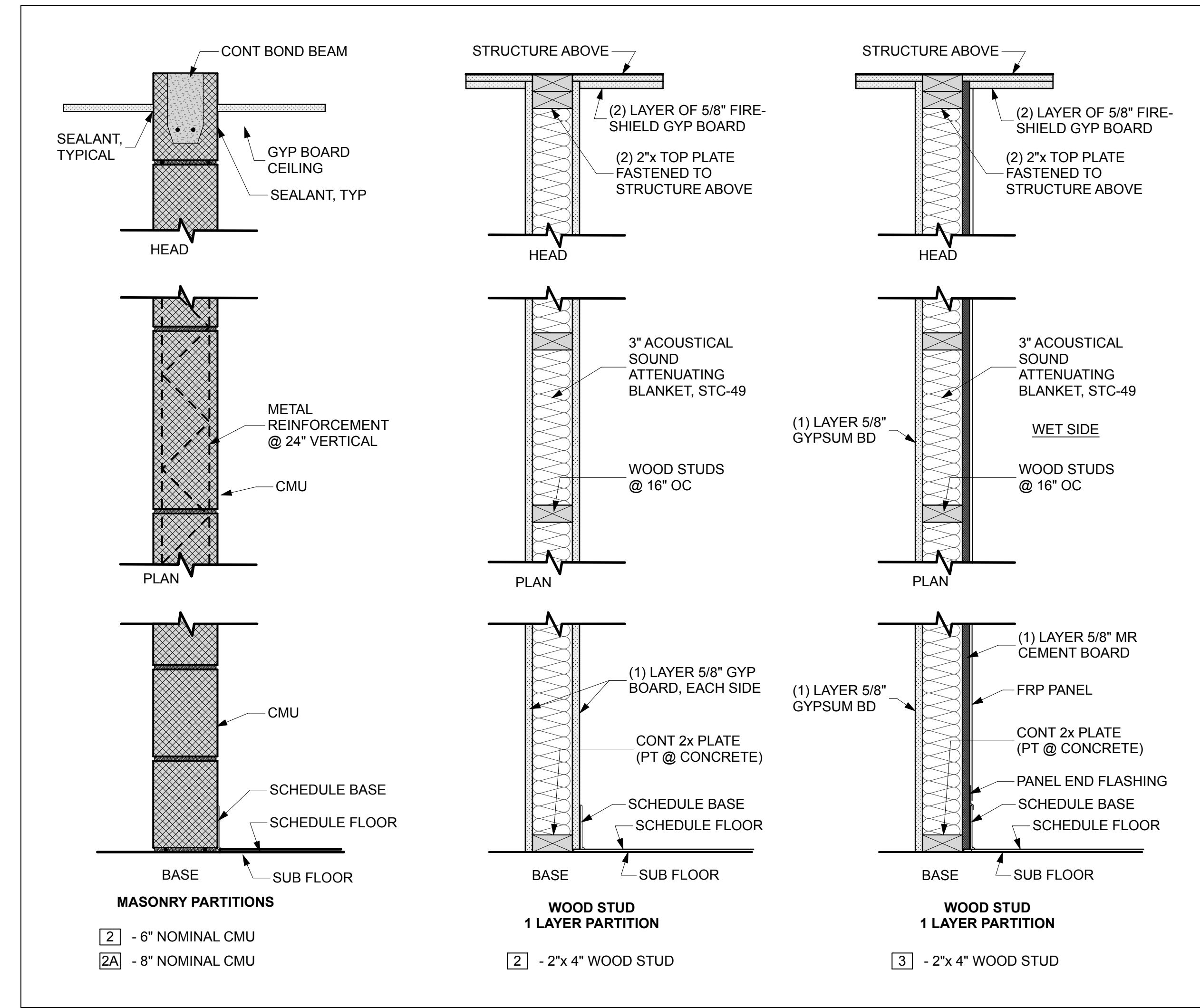
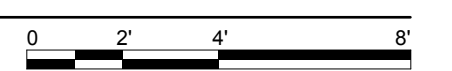
A-201



D1 N-S BUILDING SECTION
 A-301 SCALE: 1/4" = 1'-0"



A1 E-W BUILDING SECTION
 A-301 SCALE: 1/4" = 1'-0"

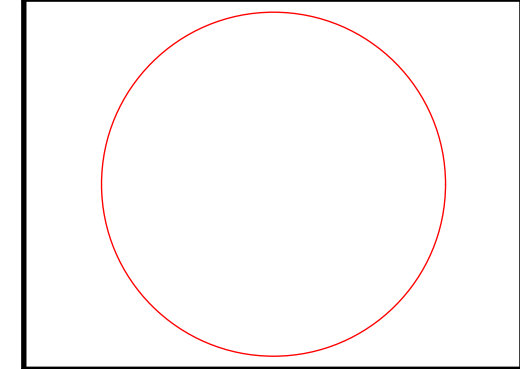


A4 TYP WALL TYPES
 A-301 SCALE: 1 1/2" = 1'-0"



CRESCENT PARK
NEW BUILDING
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:



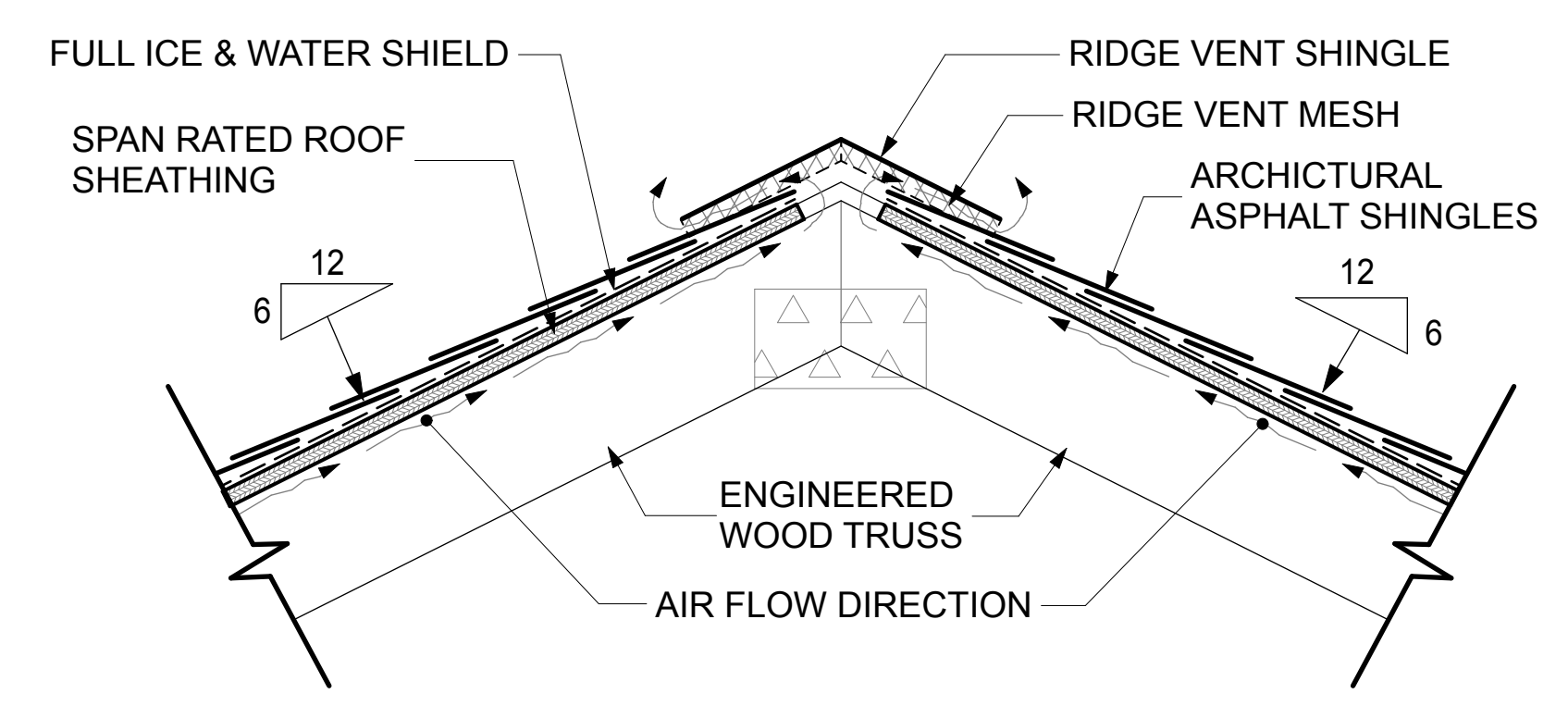
BUILDING SECTIONS AND TYP WALL TYPES

DATE: 10/31/24

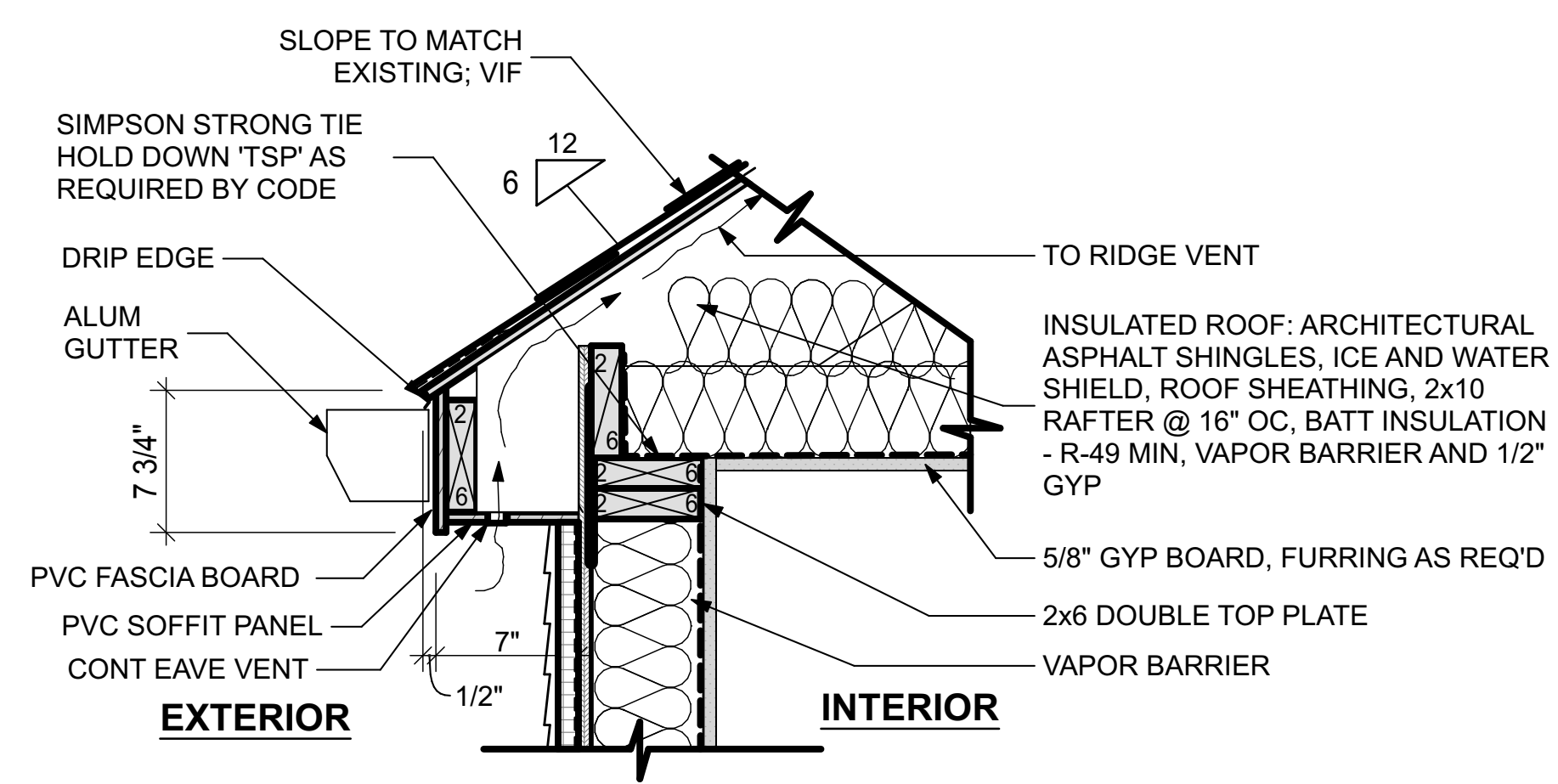
NCA JOB NO.: 23100

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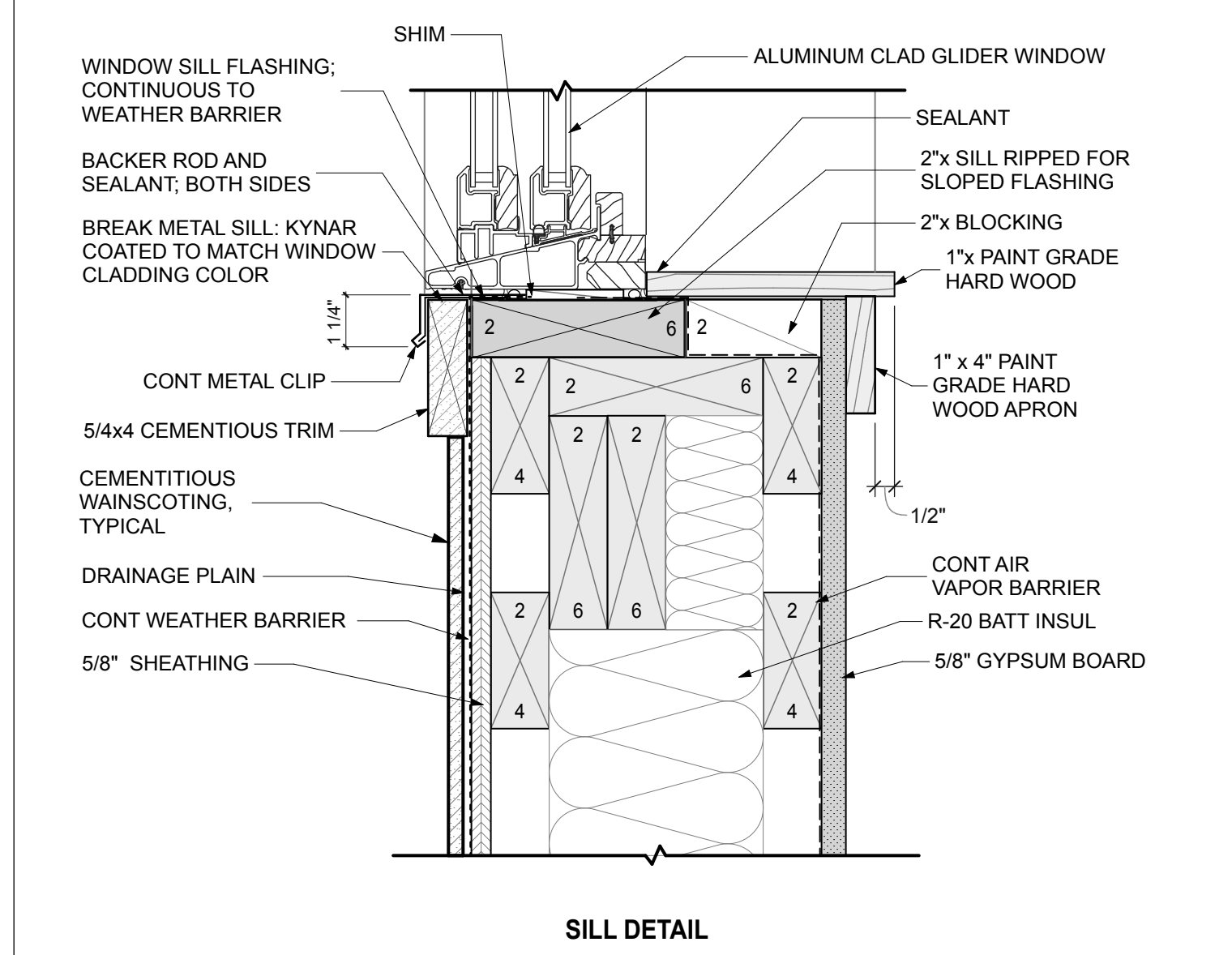
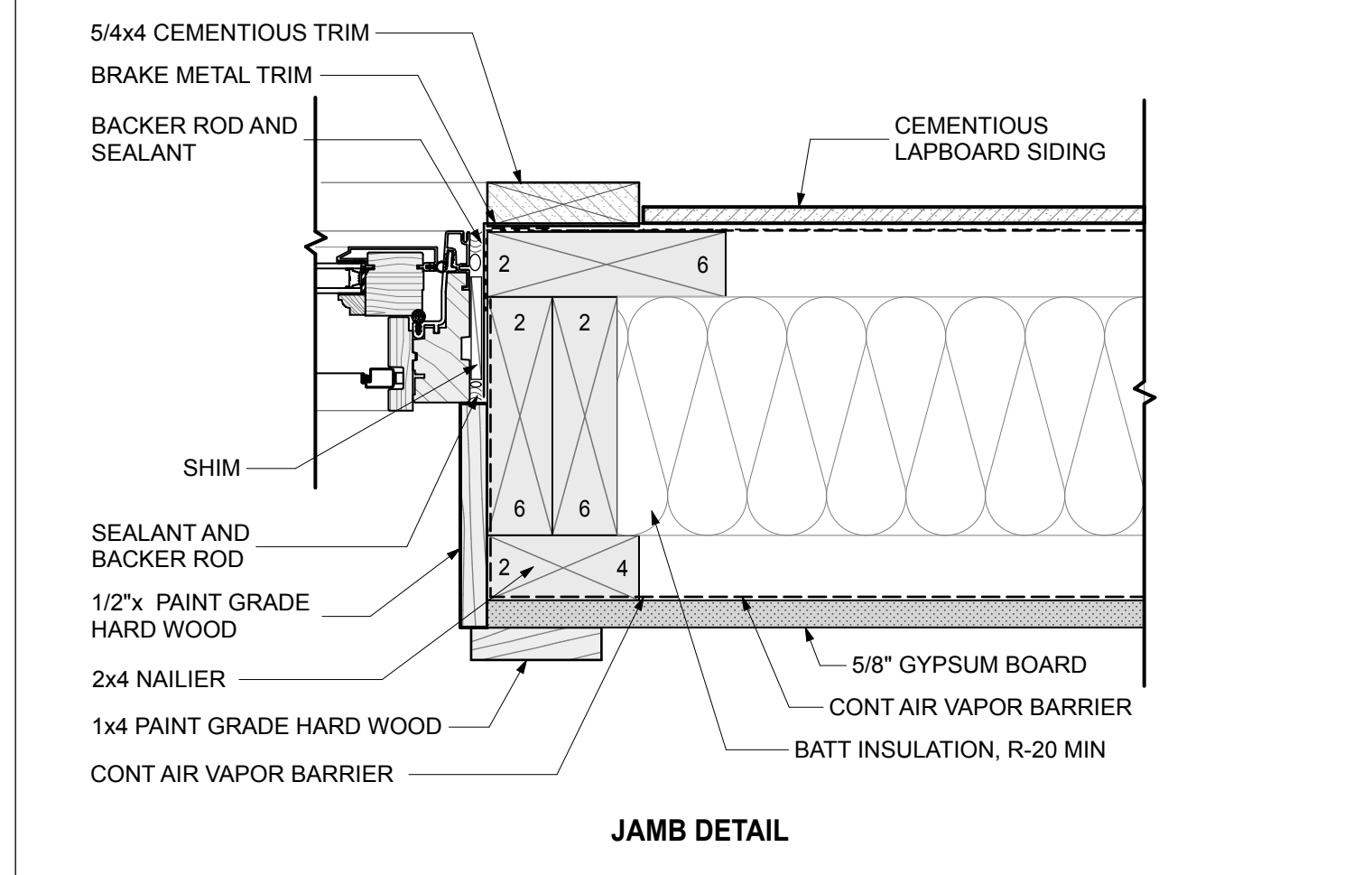
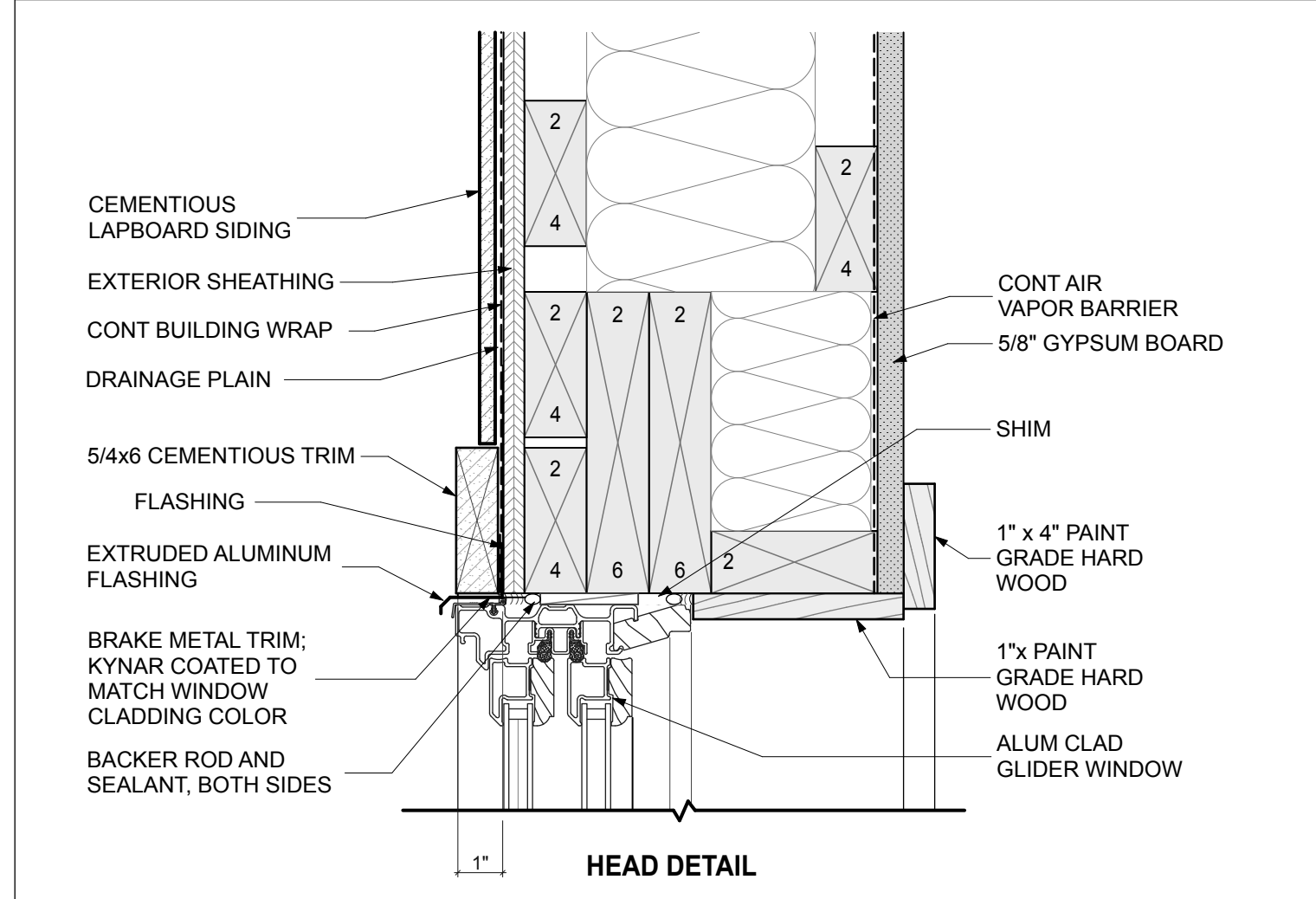
A-301



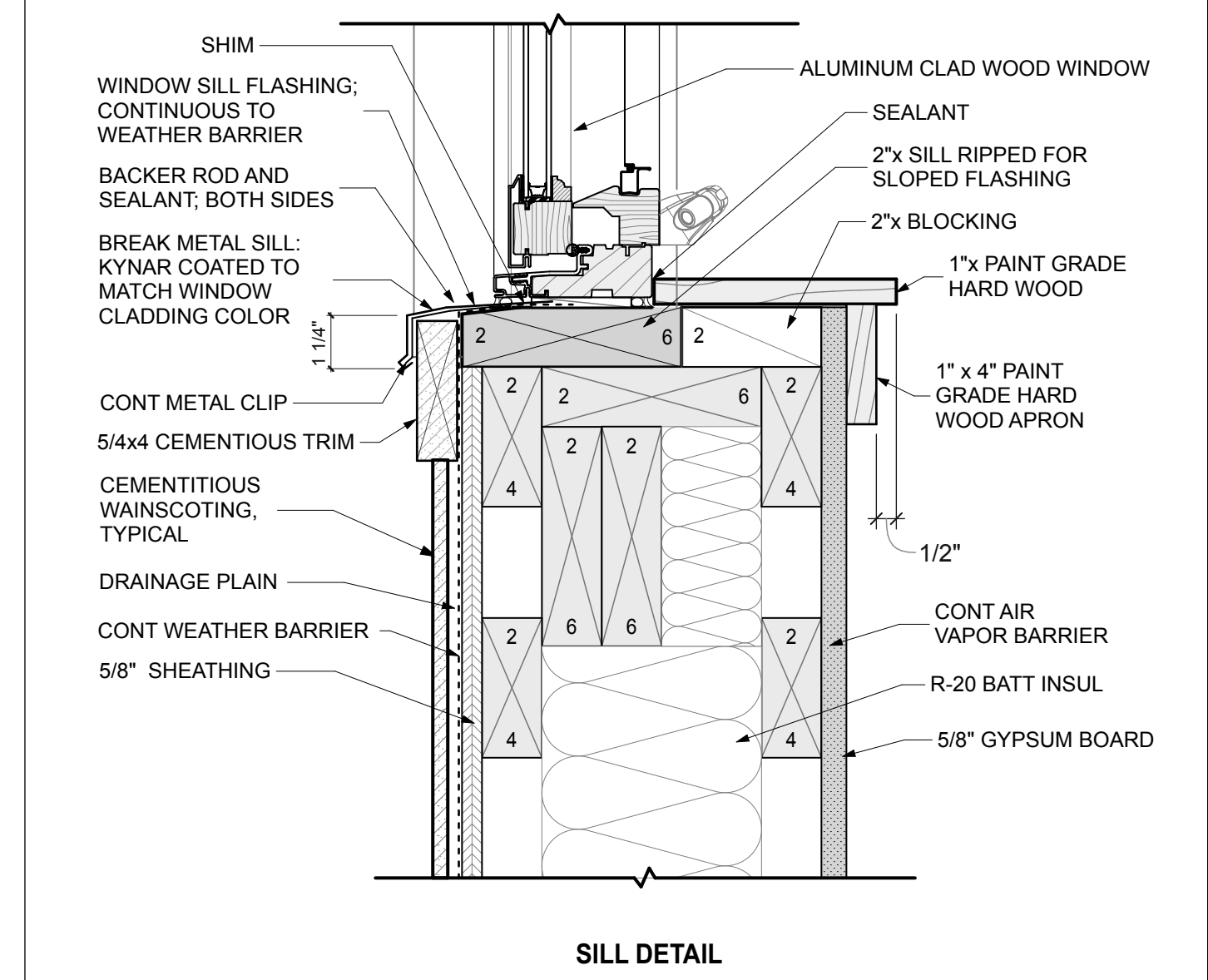
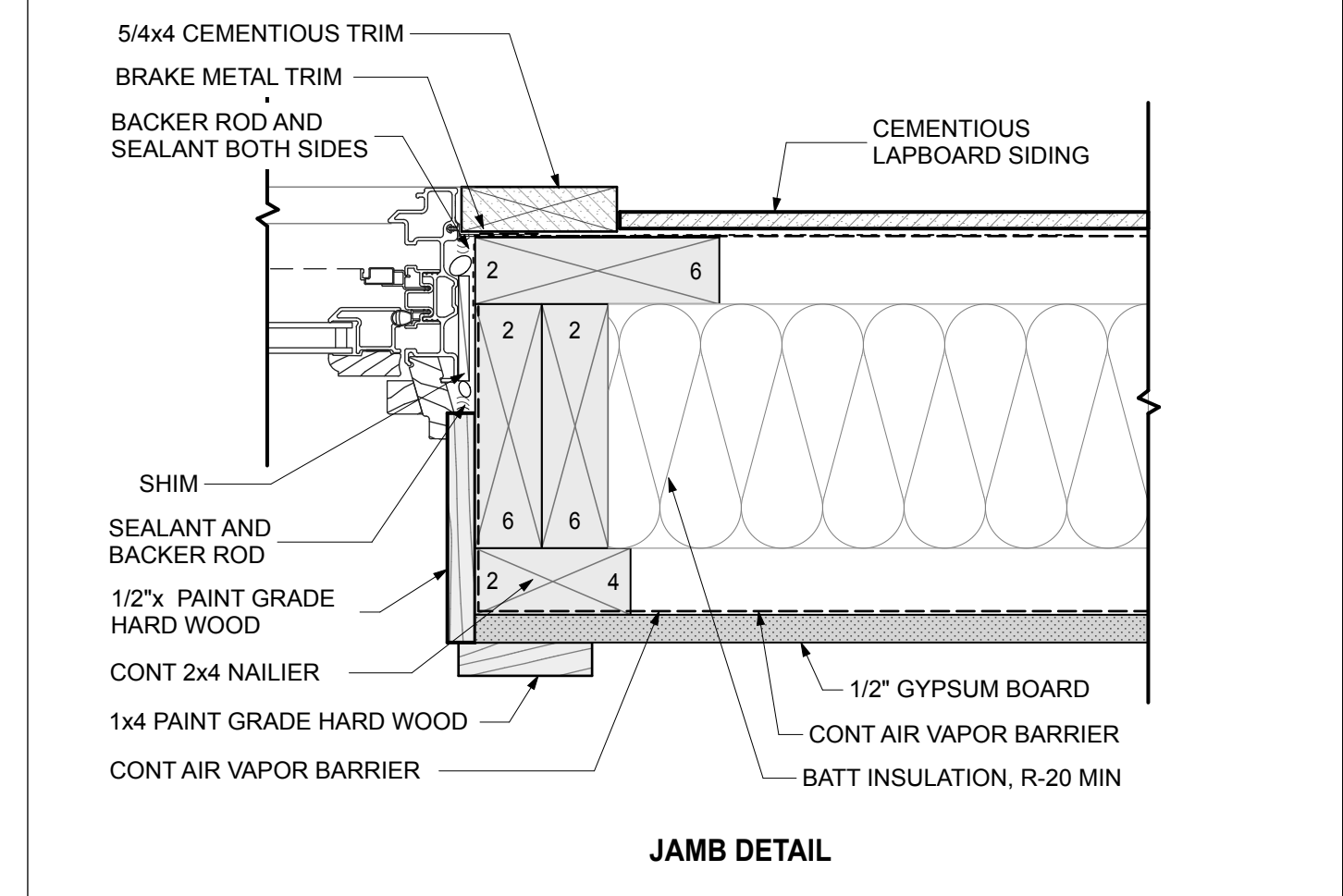
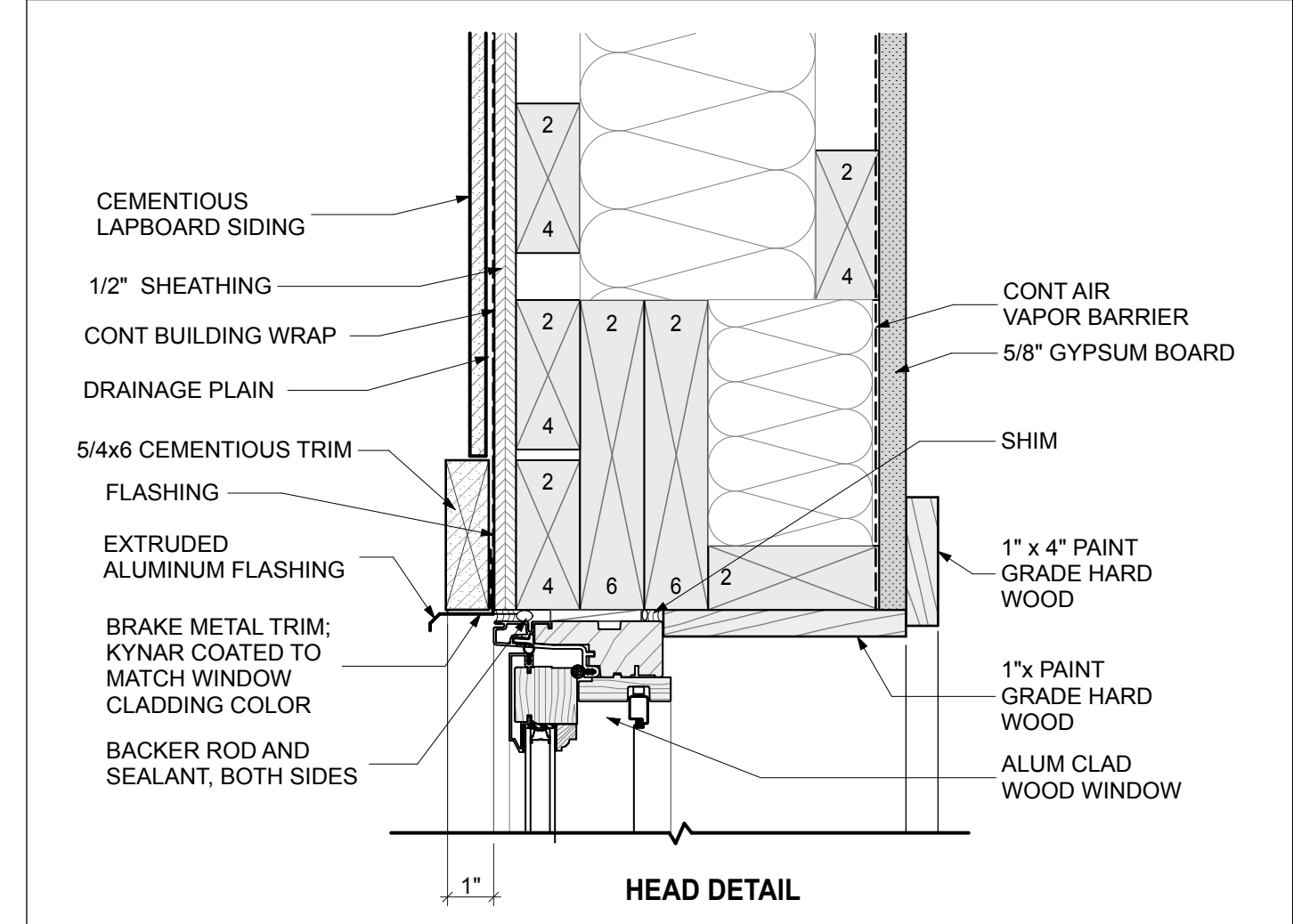
D1
A-401 TYP ROOF DETAIL @ RIDGE VENT
 SCALE: 1 1/2" = 1'-0"



B1
A-401 TYP ROOF DETAIL @ EAVE
 SCALE: 1 1/2" = 1'-0"



A3
A-401 TYP WINDOW DETAIL @ GLIDER
 SCALE: 3" = 1'-0"



A5
A-401 TYP WINDOW DETAIL @ CASEMENT
 SCALE: 3" = 1'-0"

CRESCENT PARK - NEW BUILDING
 CITY OF EAST PROVIDENCE
 700 & 753 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915

REVISIONS:

--	--

**SECTION
 DETAILS @
 WINDOWS**

DATE: 10/31/24

NCA JOB NO.: 23100

DRAWING NO.:

A-401

ACCESSORY SCHEDULE	
ACC #	DESCRIPTION
T-1 A-C	GRAB BARS
T-2	TOILET PAPER HOLDER
T-3	SOAP DISPENSER
T-4	SINK
T-5	MIRROR
T-6	ELECTRIC HAND DRYER
T-7	CHANGING TABLE
T-8	SANITARY NAPKIN DISPOSAL
T-9	COAT HOOK

NOTE: ANCHOR ALL TOILET ACCESSORIES INTO SOLID WOOD BLOCKING WHERE GYPSUM BOARD SURFACE OCCURS.



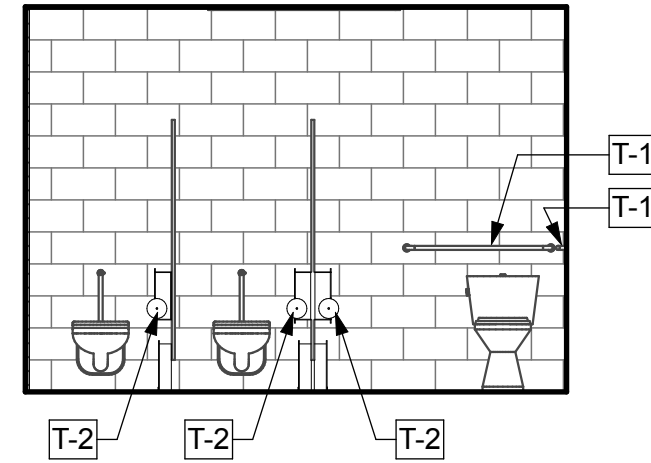
650 Ten Rod Road
North Kingstown, RI 02852
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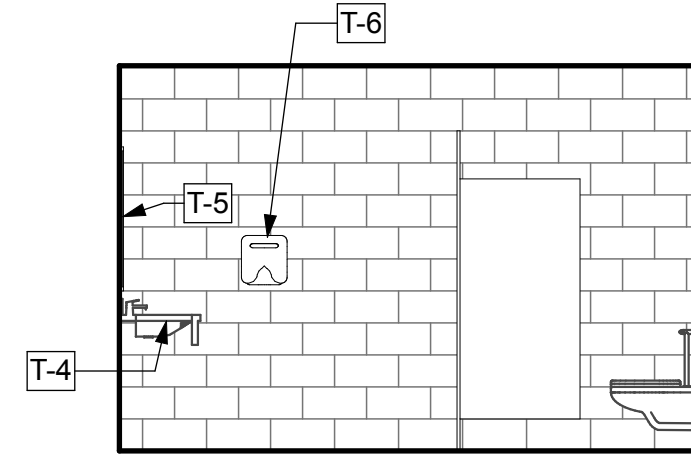
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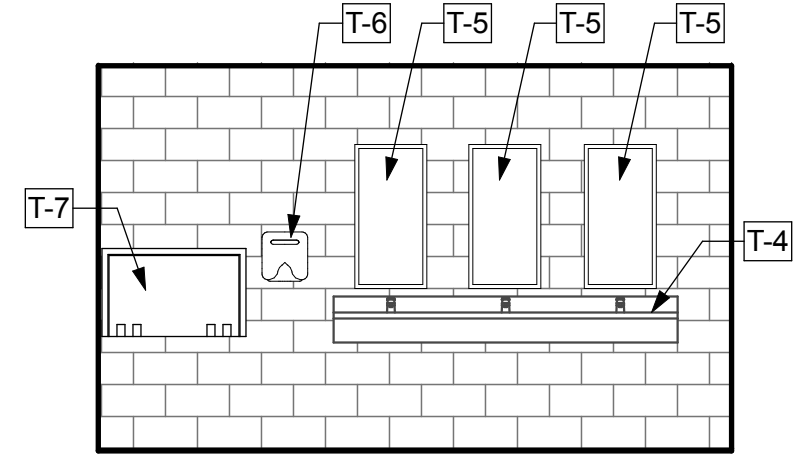
Landscape Architects:
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Smithfield, Rhode Island
Phone: (401) 231-0736



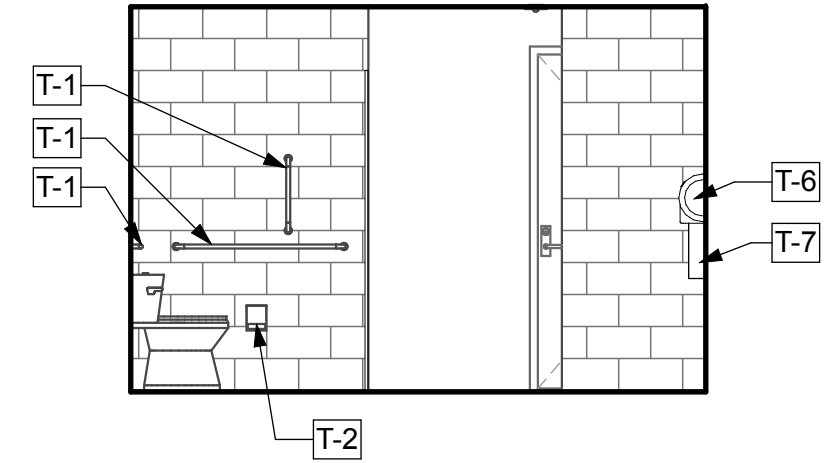
E1
A-601
WOMEN 103
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



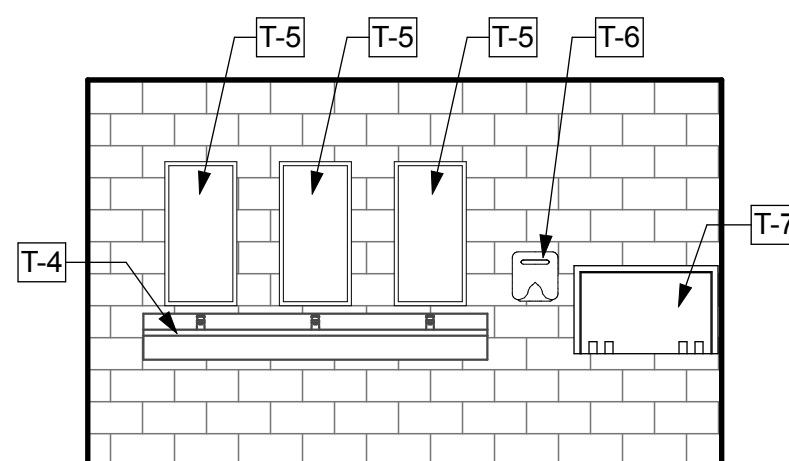
E1
A-601
WOMENS 103
EAST ELEVATION
SCALE: 1/4" = 1'-0"



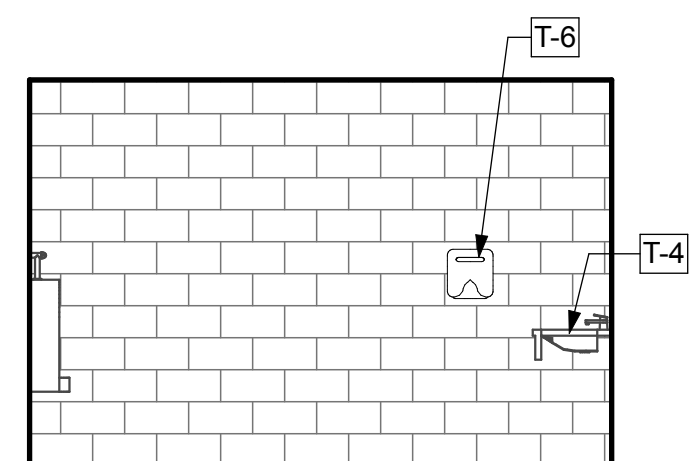
E3
A-601
WOMEN 103
NORTH ELEVATION
SCALE: 1/4" = 1'-0"



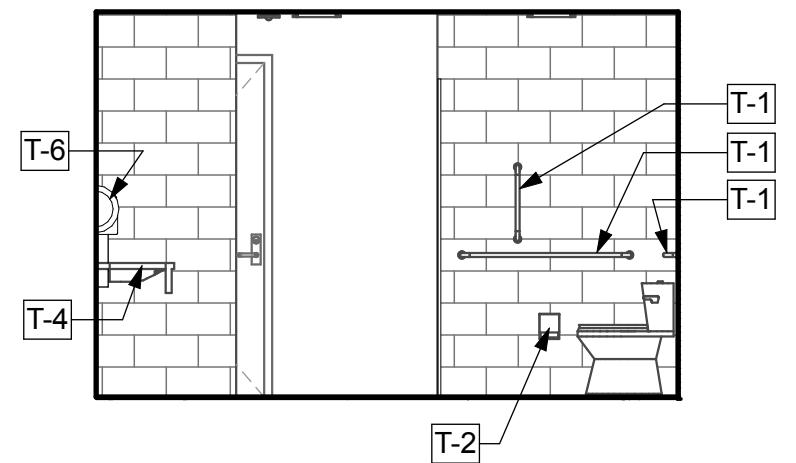
E4
A-601
WOMENS 103
WEST ELEVATION
SCALE: 1/4" = 1'-0"



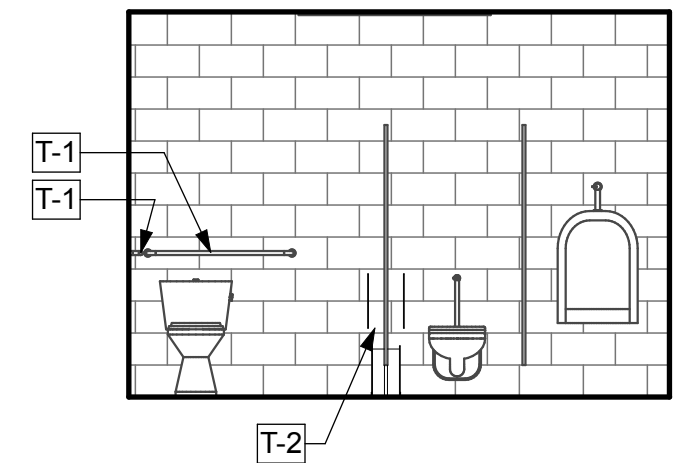
D1
A-601
MENS 105
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



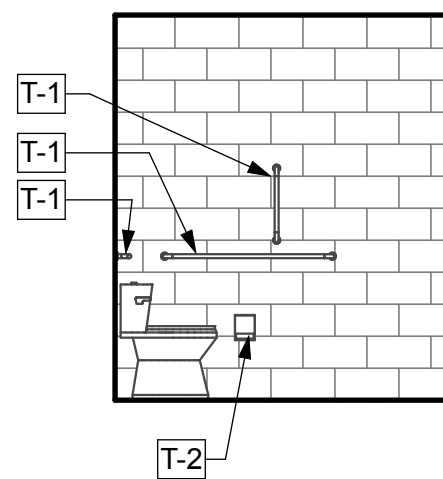
D2
A-601
MENS 105
EAST ELEVATION
SCALE: 1/4" = 1'-0"



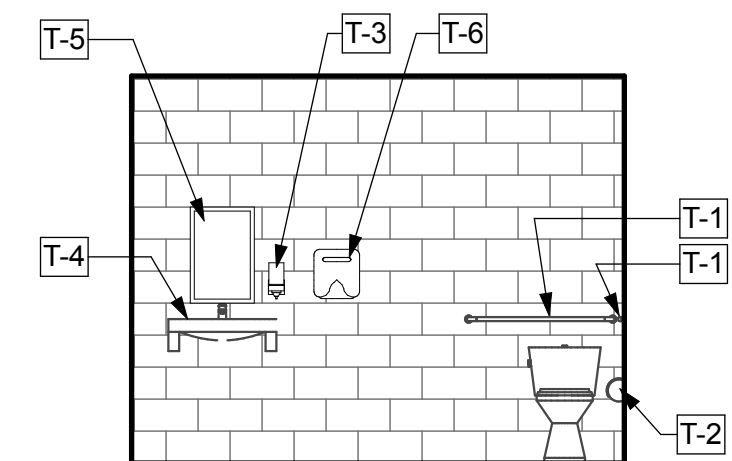
D3
A-601
MENS 105
WEST ELEVATION
SCALE: 1/4" = 1'-0"



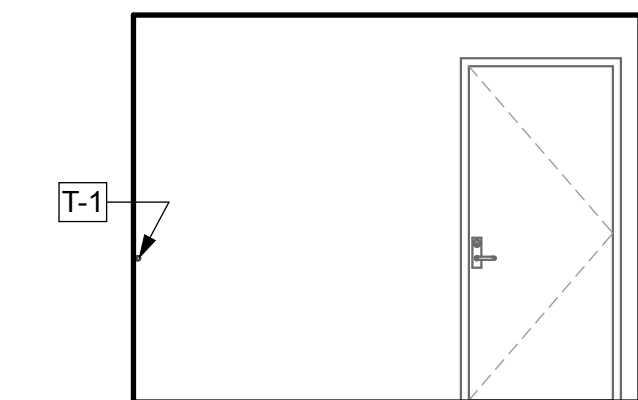
D4
A-601
MENS 105
NORTH ELEVATION
SCALE: 1/4" = 1'-0"



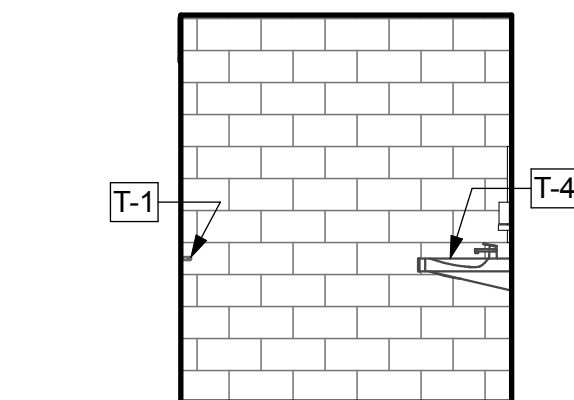
C1
A-601
LAV 104 -
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



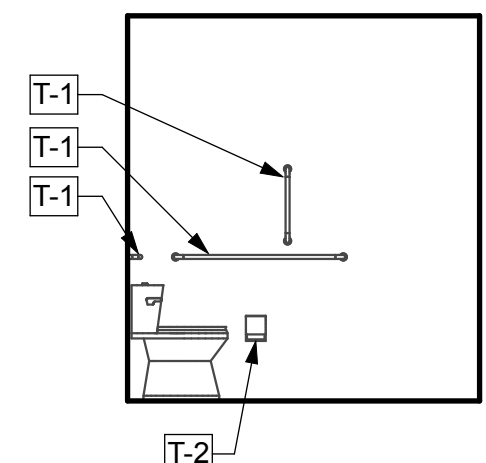
C2
A-601
LAV 104
EAST ELEVATION
SCALE: 1/4" = 1'-0"



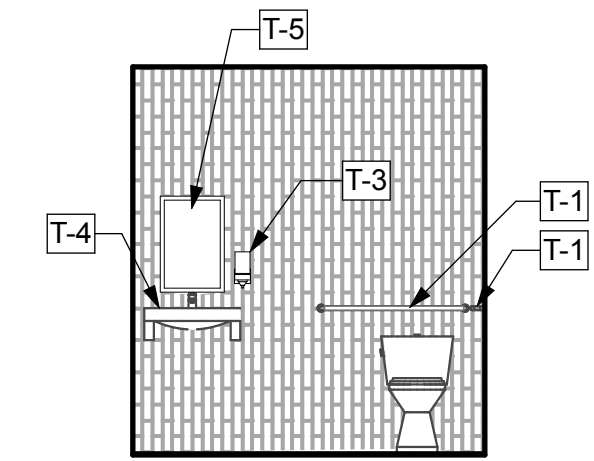
C3
A-601
LAV 104
WEST ELEVATION
SCALE: 1/4" = 1'-0"



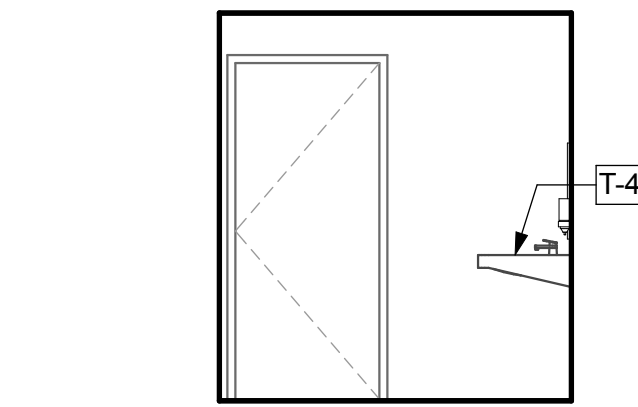
C4
A-601
LAV 104
NORTH ELEVATION
SCALE: 1/4" = 1'-0"



B1
A-601
LAV 109
SOUTH ELEVATION
SCALE: 1/4" = 1'-0"



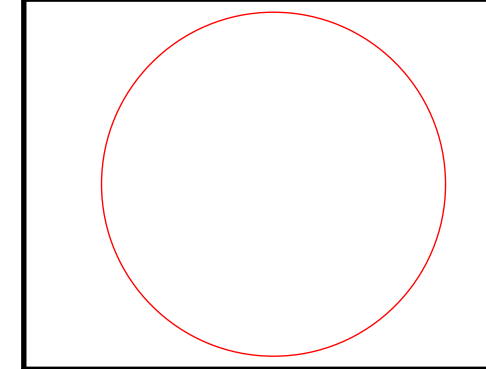
B2
A-601
LAV 109
EAST ELEVATION
SCALE: 1/4" = 1'-0"



B3
A-601
LAV 109
NORTH ELEVATION
SCALE: 1/4" = 1'-0"

**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:



**INTERIOR
ELEVATIONS**

DATE: 10/31/24

NCA JOB NO.: 23100

DRAWING NO.:

A-601

FINISH SCHEDULE															
ROOM NUMBER	ROOM NAME	FLOOR		BASE	WALLS								CEILING		NOTES
		SUBSTRATE	FINISH MATERIAL	FINISH MATERIAL	NORTH		EAST		SOUTH		WEST		SUBSTRATE	FINISH MATERIAL	
101	CLAM SHACK	CONC			GYP BD		GYP BD		GYP BD		GYP BD		GYP BD		
102	MECH / ELEC	CONC	EPOXY PAINT	VINYL	GYP BD	PAINT	GYP BD	PAINT	GYP BD	PAINT	GYP BD	PAINT	GYP BD	ACP	
103	WOMEN	CONC	RESINOUS FLOORING	RESINOUS COVE	8" CMU	PAINT	8" CMU	PAINT	8" CMU	PAINT	8" CMU	PAINT	GYP BD	FRP	ACP
104	LAV	CONC	RESINOUS FLOORING	RESINOUS COVE	8" CMU	PAINT	8" CMU	PAINT	8" CMU	PAINT	8" CMU	PAINT	GYP BD	FRP	ACP
105	MEN	CONC	RESINOUS FLOORING	RESINOUS COVE	8" CMU	PAINT	8" CMU	PAINT	8" CMU	PAINT	8" CMU	PAINT	GYP BD	FRP	ACP
106	STORAGE	CONC	EPOXY PAINT	VINYL	8" CMU / GYP BD	PAINT/FRP	GYP BD	PAINT	GYP BD	PAINT	8" CMU / GYP BD	PAINT	GYP BD	ACOUSTICAL STEEL PANEL	
107	CLOSET	CONC	RUBBER	VINYL	GYP BD	PAINT	GYP BD	PAINT	GYP BD	PAINT	GYP BD	PAINT	GYP BD	ACP	
108	OFFICE	CONC	RUBBER	VINYL	GYP BD	PAINT	GYP BD	PAINT	GYP BD	PAINT	GYP BD	PAINT	GYP BD	ACP	
109	LAV	CONC	TILE	TILE	GYP BD	TILE / PAINT	GYP BD	TILE / PAINT	GYP BD	TILE / PAINT	GYP BD	TILE / PAINT	GYP BD	ACP	

- GENERAL NOTES**
- ALL EXTERIOR WINDOWS TO RECEIVE 1" INSULATED UNITS U.O.N.
 - SEE BUILDING ELEVATIONS FOR WINDOW HINGE SIDE.
 - ALL STOREFRONT FRAMING MEMBERS TO BE 2 1/2" FACE WIDTH.
- LEGEND**
- 1 TEMPERED GLASS
 - 2 TEMPERED BOTH SIDES
 - S 1" INSULATED SPANDREL GLASS
 - M 2" INSULATED METAL PANEL, COLOR TO MATCH FRAME



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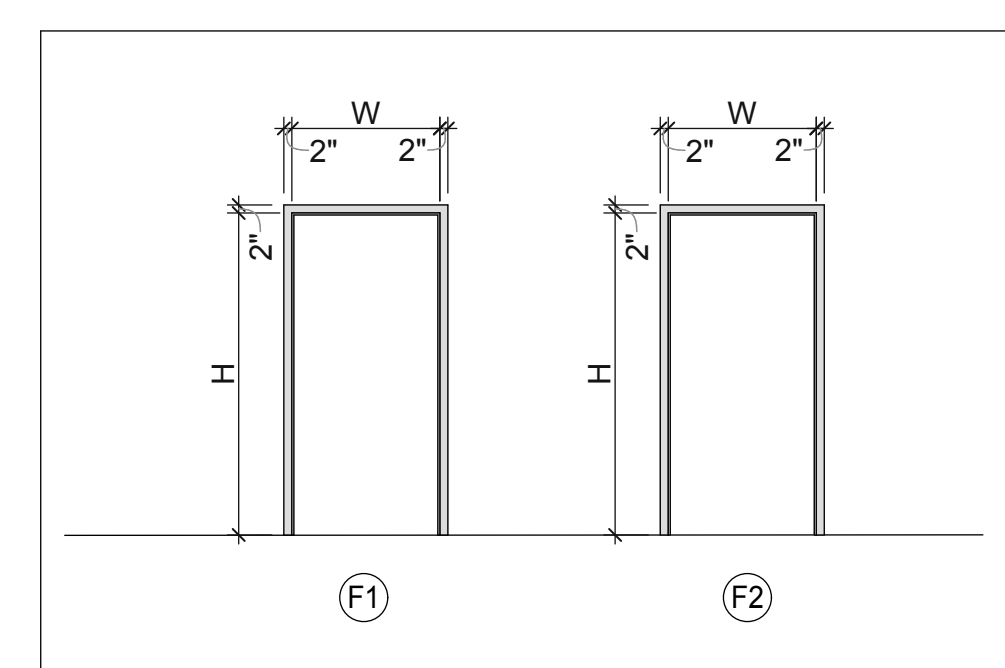
Landscape Architects
Diane C. Soule & Associates
422 Farmington Pike
Smithfield, Rhode Island
Phone: (401) 231-0736

E1 FINISH SCHEDULE
SCALE: 1:0.61

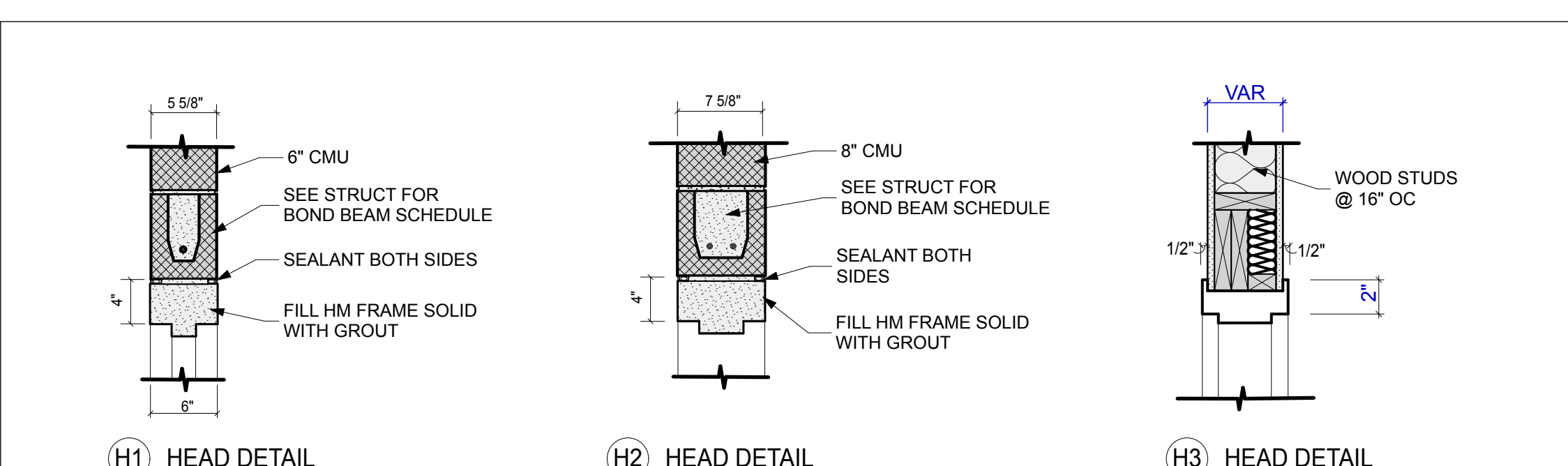
DOOR SCHEDULE															
DOOR NUMBER	DOUBLE LEAF	DOOR					FRAME				HARDWARE SET	ACCESSORIES	THRESHOLD	SIGNAGE	NOTES
		NOMINAL WIDTH	NOMINAL HEIGHT	LEAF THICKNESS	MATERIAL	ELEV	MATERIAL	ELEV	DETAIL						
101		3'	7'	1 3/4"	ALUM	G	ALUM	2	H3	J3	SEE SPECS	SEE SPECS	T1		
101A		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
102		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
103		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
104		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
105		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
106		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
106A	X	3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
107		3'	7'	1 3/4"	WD	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
108		3'	7'	1 3/4"	ALUM	G	ALUM	2	H3	J3	SEE SPECS	SEE SPECS	T1		
108A		3'	7'	1 3/4"	HM	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T1		
109		3'	7'	1 3/4"	WD	F	HM	1	H3	J3	SEE SPECS	SEE SPECS	T2		
OH1		8'-0"	8'-0"	1 3/4"	ALUM	OH					SEE SPECS				
OH2		8'-0"	8'-0"	1 3/4"	ALUM	OH					SEE SPECS				

C1 DOOR SCHEDULE
SCALE: 1:0.48

DOORS					
TYPE	---	Flush	Flush	Glass Framed	Style 1
ELEVATION					
W x H	---	36"x84"	72"x84"	36"x84"	96"x96"
NOTES	---				

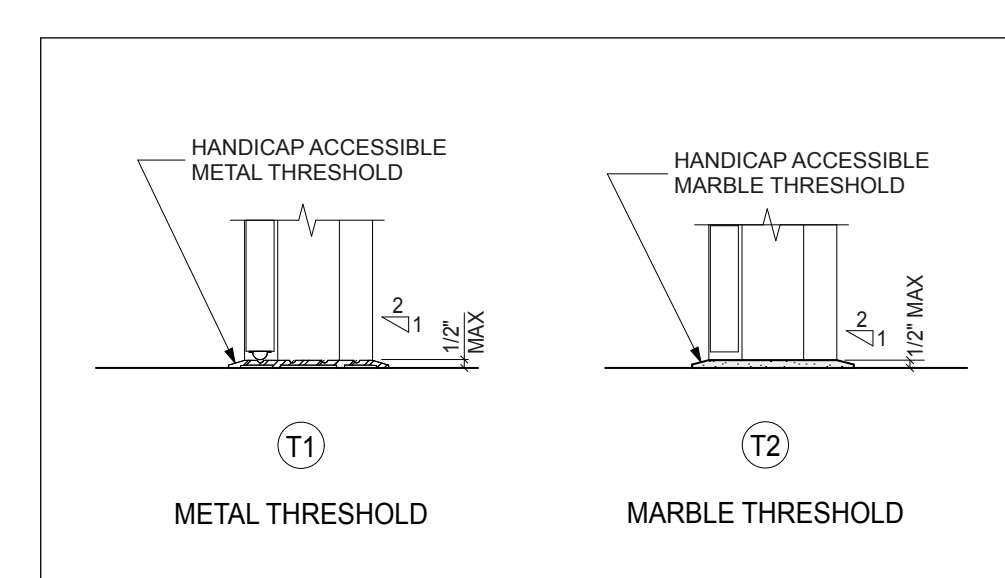


B3 TYP FRAME DETAILS
SCALE: 1/4" = 1'-0"

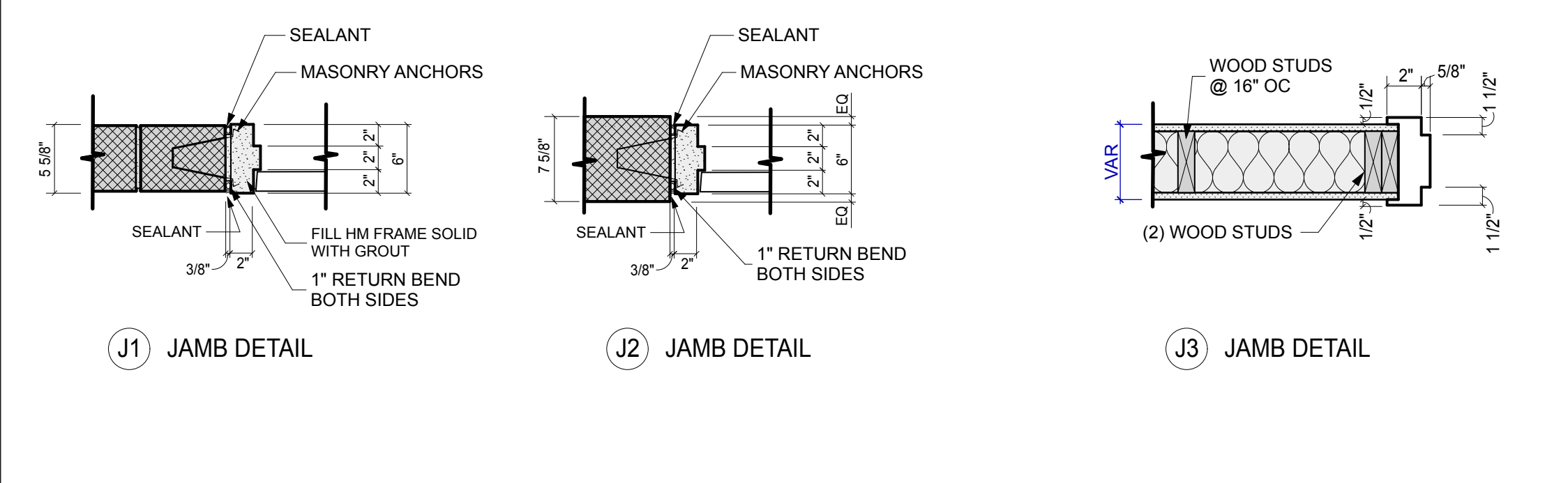


H1 HEAD DETAIL H2 HEAD DETAIL H3 HEAD DETAIL

B1 TYP DOOR ELEVATION
SCALE: 1" = 1'-0"



A3 TYP THRESHOLD DETAILS
SCALE: 1" = 1'-0"



J1 JAMB DETAIL J2 JAMB DETAIL J3 JAMB DETAIL

A4 TYP DOOR DETAILS
SCALE: 1" = 1'-0"

**CRESCENT PARK
NEW BUILDING**
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:

**SCHEDULES
and DETAILS**

DATE: 10/31/24
NCA JOB NO.: 23100
DRAWING NO.: **A-801**

SYMBOLS

GENERAL SYMBOLS:

- DASHED SYMBOL INDICATES EXISTING FIXTURE, DEVICE, OUTLET OR EQUIPMENT TO REMAIN.
- SOLID SYMBOL INDICATES NEW FIXTURE, DEVICE, OUTLET.
- DASHED SYMBOL WITH HATCH INDICATES FIXTURE, DEVICE, OUTLET OR EQUIPMENT TO BE DEMOLISHED.
- KEY NOTE REFERENCE
- DETAIL NUMBER DESIGNATION.
- SHEET DETAIL REFERENCED ON.
- 3/E39 DETAIL OR SECTION REFERENCES IN NOTES.
- +48" INDICATES MOUNTING HEIGHT ABOVE FINISHED FLOOR.

RACEWAY SYSTEMS

- HOMERUN TO PANELBOARD "A" - CIRCUITS 1, FEEDER OR CIRCUIT NUMBERS AS NOTED. UNLESS OTHERWISE INDICATED, 2#12 AWG (CU) & #12G. LARGE LINE THROUGH ARROW REPRESENTS GROUNDED CONDUCTOR (NEUTRAL), SMALL LINE THROUGH ARROW REPRESENTS PHASE CONDUCTOR, DOT REPRESENTS EQUIPMENT GROUNDING CONDUCTOR. IF TWO LARGE LINES ARE SHOWN, THERE ARE TWO (2) PHASE CONDUCTORS AND TWO NUMBERS WILL BE GIVEN (A-1,3).
- HOMERUN TO PANELBOARD "A" - CIRCUITS 1 & 3 & 5. FEEDER OR CIRCUIT NUMBERS AS NOTED. CONDUIT AND CONDUCTORS PROVIDED AS INDICATED (1/2" CONDUIT, 3 - #8AWG CURRENT CARRYING CONDUCTORS #10AWG EQUIPMENT GROUNDING CONDUCTOR)

OUTLETS AND RECEPTACLES

- SUBSCRIPT ADJACENT TO OUTLET INDICATES:
"GFCI" = GROUND FAULT CIRCUIT INTERRUPTER, PERSONAL PROTECTION.
"+XX" = DIMENSIONED HEIGHT.
- DUPLEX CONVENIENCE RECEPTACLE 20A, 125V. WALL MOUNTED DEVICE AT 18" AFF UON.
- QUAD CONVENIENCE RECEPTACLE 20A, 125V. WALL MOUNTED DEVICE AT 18" AFF UON.
- SPECIAL RECEPTACLE OUTLET WITH NEMA CONFIGURATION NUMBER AS NOTED, AT +18" AFF UON.
- SIMPLEX RECEPTACLE 20A, 125V. WALL MOUNTED DEVICE AT 18" AFF UON.
- DUPLEX FLOOR CONVENIENCE RECEPTACLE 20A, 125V.

LIGHTING

- MANUAL ON BUTTON. MOUNTED AT +48"UON. LOWERCASE LETTER INDICATES ZONE WHEN APPLIED. WHEN MULTIPLE LETTER SHOWN, MULTIPLE SWITCHES CONTAINED FOR EACH ZONE.
- \$VS WALL MOUNTED VACANCY SENSOR WITH MANUAL ON BUTTON. OS WOULD INDICATE OCCUPANCY SENSOR. MOUNTED AT 48". UON.
- \$D WALL MOUNTED DIMMER WITH MANUAL ON BUTTON. MOUNTED AT 48". UON.
- LIGHT FIXTURE. UPPER CASE LETTER INDICATES FIXTURE TYPE, LOWER CASE LETTER INDICATES LIGHTING ZONE (WHEN APPLIED), PANEL # INDICATES SOURCE
- CEILING MOUNTED LED EXIT SIGN WITH GREEN LETTERING AND NICKEL CADMIUM BATTERY BACK UP, SHADED SIDE INDICATE LIT SIDE, ARROW INDICATES DIRECTION WHEN PRESENT
- WALL MOUNTED LED EXIT SIGN, SAME ATTRIBUTES AS ABOVE CEILING MOUNTED EXIT SIGN.
- DUAL TECHNOLOGY (INFRARED AND ULTRASONIC) VACANCY/OCCUPANCY SENSOR CEILING MOUNTED
- PHOTOCELL

SINGLE LINE DIAGRAM:

- SPLICE/TERMINAL
- GROUNDING ELECTRODE
- GROUND BUS OR TERMINALS
- 42,000 SHORT CIRCUIT CURRENT, AMPS
- COLD WATER PIPE
- GROUND ROD

SYMBOLS (CONTINUED)

MISCELLANEOUS

- DISCONNECT SWITCH WHEN ON POWER PLANS, MOUNTED AT +48"UON.
- JUNCTION OR OUTLET BOX. CEILING OR WALL MOUNTED AS INDICATED. LOCATE ABOVE ACCESSIBLE CEILINGS UON.
- PANELBOARD.
- FUSED SAFETY DISCONNECT SWITCH
- NON-FUSED SAFETY DISCONNECT SWITCH
- MOTOR STARTER SWITCH.
- TRANSFORMER
- EQUIPMENT, TYPICALLY EQUIPMENT WITH A MOTOR.

DISCONNECT AND OVERCURRENT DEVICES

CIRCUIT BREAKER		SAFETY SWITCHES	
NUMBERS OF POLES	3	NUMBERS OF POLES	3
TRIP (AMPERES)	*	FUSE SIZE (AMPS)	*
FRAME (AMPERES)	100	RATING (AMPERES)	100
I.C. (1000 AMPS)	10	FUSE CLASS (UL)	RK5

- * "NA" INDICATES NON-AUTOMATIC C/B
- * "NF" INDICATES NON-FUSED SWITCH
- * "50" INDICATES TRIP OR FUSE SIZE
- * "***" INDICATES FUSE SIZE PER MANUFACTURER'S RECOMMENDATION

ABBREVIATIONS:

- A OR AMP - AMPERE
- ACT - ABOVE COUNTER TOP
- AF - AMP FUSE (FOR FUSED SWITCHES)
- AF - AMP FRAME (FOR CIRCUIT BREAKERS)
- AFCI - ARC-FLASH CIRCUIT INTERRUPTER
- AIC - AMPS INTERRUPTING CAPACITY
- AS - AMP SWITCH
- AT - AMP TRIP
- BCG - BARE COPPER GROUND
- C - CONDUIT
- CB, C/B - CIRCUIT BREAKER
- CT - CIRCUIT
- CONT - CONTINUED
- CWP - COLD WATER PIPE
- DIA - DIAMETER
- DISC - POWER DISCONNECT
- DIST - DISTRIBUTION
- EQUIP - EQUIPMENT
- FF - FINISHED FLOOR
- FT - FOOT, FEET
- G, GND - GROUND
- GFI, GFCI - GROUND FAULT CIRCUIT INTERRUPTER
- HP - HORSE POWER
- KAIC - THOUSAND AMPERE INTERRUPT CURRENT
- KCMIL - THOUSAND CIRCULAR MILS
- KVA - KILA-VOLT-AMP (POWER)
- KW - KILOWATT(S)
- MFR - MANUFACTURER
- NEC - NATIONAL ELECTRICAL CODE
- NTS - NOT TO SCALE
- PH, Ø - PHASE
- PVC - POLYVINYL CHLORIDE
- RMC - RIGID METAL CONDUIT
- REF - REFERENCE
- REQD - REQUIRED
- TVSS - TRANSIENT VOLTAGE SURGE SUPPRESSOR
- TYP - TYPICAL
- UON - UNLESS OTHERWISE NOTED
- 3W - THREE WIRE
- V - VOLT
- WH - WATER HEATER
- WP - WEATHERPROOF

GENERAL NOTES:

- THE FOLLOWING GENERAL NOTES APPLY TO ELECTRICAL DRAWINGS.
- INSTALLATION OF ELECTRICAL MATERIAL SHALL CONFORM WITH LOCAL REGULATIONS AND THE 2020 NATIONAL ELECTRICAL CODE (NEC) AND OTHER GOVERNING CODES AND ORDINANCES.
- ELECTRICAL EQUIPMENT SHALL BE NRTL LABELED.
- THE CONTRACTOR SHALL COORDINATE HIS WORK WITH OTHER TRADES AT THE SITE.
- CONDUIT SIZES ARE BASED ON COPPER CONDUCTORS WITH THHN/THWN-2 INSULATION UNLESS OTHERWISE NOTED. CONDUCTORS SHALL BE COPPER. CONDUCTOR INSULATION SHALL BE THHN/THWN-2 UNLESS OTHERWISE NOTED.
- MINIMUM CONDUIT SIZE SHALL BE 1/2", UNLESS OTHERWISE NOTED.
- CONDUIT OR MC CABLE IS PERMITTED INSIDE THE STRUCTURE UNLESS OTHERWISE NOTED. CONDUIT IS REQUIRED FOR THE EXTERIOR AND EXPOSED INTERIOR.
- CONDUIT RUNS SHOWN ARE DIAGRAMMATIC ONLY. INSTALL CONDUITS TO SUIT FIELD CONDITIONS.
- PROVIDE PROPERLY SIZED LUGS AT CIRCUIT BREAKER PANELS, FOR THE CONDUCTORS SHOWN TO CONNECT TO THESE LUGS.
- INSTALL EXTERIOR MOUNTED ELECTRICAL EQUIPMENT IN WEATHERPROOF, NEMA 3R ENCLOSURES.
- SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR, SIZED PER NEC TABLE 250.122, SHALL BE PROVIDED, INSTALLED IN THE SAME CONDUIT AS THE CIRCUIT CONDUCTORS, FOR FEEDER AND BRANCH CIRCUITS.
- THE CONTRACTOR SHALL SUPPLY POWER TO AND MAKE CONNECTION TO MOTORS AND EQUIPMENT REQUIRING ELECTRICAL, INCLUDING FRACTIONAL HORSEPOWER MOTORS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW THE MECHANICAL AND PLUMBING DRAWINGS FOR DUCTS, LINES AND EQUIPMENT.
- COMPLY WITH NFPA 70E.



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**CRESCENT PARK
NEW BUILDING
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT
AVENUE RIVERSIDE, RI 02915**

REVISIONS:



Michael O'Brien

ELECTRICAL GENERAL NOTES,
SYMBOLS, ABBREVIATIONS

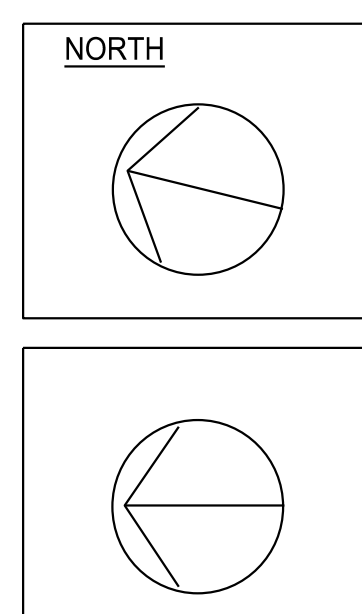
DATE: 31OCT24

NCA JOB NO.: 23100

DRAWING NO.:

E-001

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HP											
ROOM			VOLTS 208Y/120V 3P 4W			AIC 22,000					
MOUNTING FLUSH			BUS AMPS 100			MAIN BKR MLO					
FED FROM SERVICE DISCONNECTS			NEUTRAL 100%			LUGS STANDARD					
NOTE											
CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	20/1	RECEPT	0.36			2	20/1	RECEPT	0.72		
3	20/1	RECEPT		0.72		4	20/1	RECEPT		0.18	
5	20/1	RECEPT			0.9	6	20/1	RECEPTACLE - CEILING			0.36
7	20/1	RECEPT	0.72			8	20/1	RECEPTACLE - WASHER	1.8		
9	20/1	HAND DRYER		1		10	20/1	LIGHTING		0.255	
11	20/1	HAND DRYER			1	12	20/1	LIGHTING			0.409
13	20/1	HAND DRYER	1			14	15/2	ERV-1	0.832		
15	20/1	HAND DRYER		1		16				0.832	
17	20/1	HAND DRYER			1	18	30/2	DRYER RECEPTACLE			2.6
19	20/1	SPACE	0			20			2.6		
21	20/1	SPACE		0		22	50/2	CU-1		3.21	
23	20/1	SPACE			0	24					3.21
25	25/3	HW-H	1.33			26	20/1	SPACE	0		
27				1.33		28	20/1	SPACE		0	
29					1.33	30	20/1	SPACE			0
TOTAL CONNECTED KVA BY PHASE									9.37	8.53	10.8
CONN KVA		CALC KVA				CONN KVA		CALC KVA			
LIGHTING	0.665	0.831	(125%)	RECEPTACLES	3.96	3.96	(50%>10)	NONCONTINUOUS	9	9	(100%)
ELECTRIC DRYER	5.2	5.2	(100%)	HEATING	6.41	6.41	(100%)	COOLING	6.41	0	(0%)
LARGEST MOTOR	3.95	0.988	(25%)	TOTAL LOAD		29.9		BALANCED 3-PHASE LOAD		82.9	A
MOTORS	1.66	1.66	(100%)								

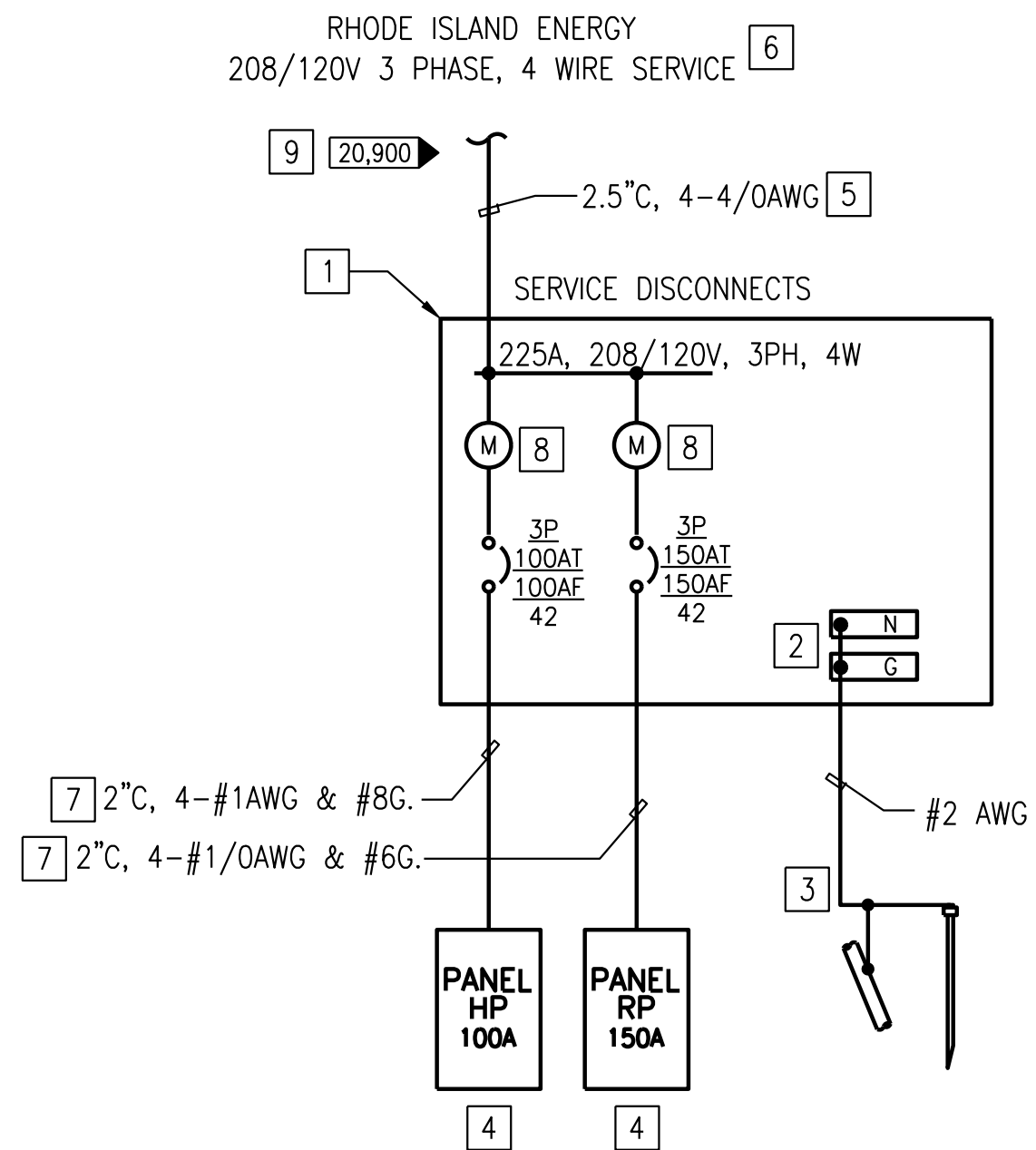
RP											
ROOM			VOLTS 208Y/120V 3P 4W			AIC 22,000					
MOUNTING FLUSH			BUS AMPS 150			MAIN BKR MLO					
FED FROM SERVICE DISCONNECTS			NEUTRAL 100%			LUGS STANDARD					
NOTE											
CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA			CKT #	CKT BKR	CIRCUIT DESCRIPTION	LOAD KVA		
			A	B	C				A	B	C
1	20/1	RECEPT	0.54			2	20/1	SPACE	0		
3	20/1	LIGHTING		0.102		4	20/1	SPACE		0	
5	20/1	SPACE			0	6	20/1	SPACE			0
7	20/1	SPACE	0			8	20/1	SPACE	0		
9	20/1	SPACE		0		10	20/1	SPACE		0	
11	20/1	SPACE			0	12	20/1	SPACE			0
13	20/1	SPACE	0			14	20/1	SPACE	0		
15	20/1	SPACE		0		16	20/1	SPACE		0	
17	20/1	SPACE			0	18	20/1	SPACE			0
19	20/1	SPACE	0			20	20/1	SPACE		0	
21	20/1	SPACE		0		22	20/1	SPACE			0
23	20/1	SPACE			0	24	20/1	SPACE			0
25	50/3	FUTURE CU	2.94			26	30/3	HW-R		1.5	
27				2.94		28					1.5
29					2.94	30					
TOTAL CONNECTED KVA BY PHASE									4.98	4.54	4.44
CONN KVA		CALC KVA				CONN KVA		CALC KVA			
LIGHTING	0.102	0.128	(125%)	NONCONTINUOUS	4.5	4.5	(100%)	HEATING	7.9	0	(0%)
LARGEST MOTOR	7.9	1.98	(25%)	COOLING	8.82	8.82	(100%)	TOTAL LOAD		16	
RECEPTACLES	0.54	0.54	(50%>10)	BALANCED 3-PHASE LOAD		44.3	A				

SERVICE DISCONNECTS											
ROOM			VOLTS 208Y/120V 3P 4W			AIC 42,000					
MOUNTING SURFACE			BUS AMPS 225			MAIN BKR MLO					
FED FROM UTILITY			NEUTRAL 100%			LUGS STANDARD					
NOTE											
CKT #	BREAKER TRIP/POLES	CIRCUIT DESCRIPTION	LOAD KVA			FEEDER RACEWAY AND CONDUCTORS					
			A	B	C						
1	100/3	PANEL HP	9.37	8.53	10.8	1-1/2" C, 3#1, #1N, #8G					
2	150/3	PANEL RP	4.98	4.54	4.44	1-1/2" C, 3#1/0, #1/0N, #6C					
TOTAL CONNECTED KVA BY PHASE			14.3	13.1	15.2						
CONN KVA		CALC KVA				CONN KVA		CALC KVA			
LIGHTING	0.767	0.958	(125%)	RECEPTACLES	4.5	4.5	(50%>10)	NONCONTINUOUS	13.5	13.5	(100%)
ELECTRIC DRYER	5.2	5.2	(100%)	HEATING	14.3	0	(0%)	COOLING	15.2	15.2	(100%)
LARGEST MOTOR	7.9	1.98	(25%)	TOTAL LOAD		44.8		BALANCED 3-PHASE LOAD		124	A
MOTORS	1.66	1.66	(100%)								

PANEL SCHEDULES

SCALE: NTS

2

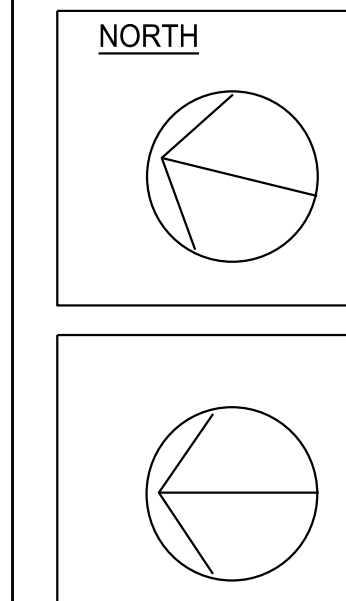


SINGLE LINE DIAGRAM

SCALE: NTS

1

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GENERAL SHEET NOTES

- COORDINATION IS REQUIRED WITH RHODE ISLAND ENERGY.

KEYNOTES

- PROVIDE METER ENCLOSURE WITH SERVICE DISCONNECTS PER RHODE ISLAND ENERGY REQUIREMENTS. EQUIPMENT MUST BE SERVICE ENTRANCE RATED. LABEL AS "SERVICE DISCONNECTING MEANS."
- PROVIDE #2 AWG CU OR LARGER MAIN BONDING OR OTHER PERMITTED MEANS TO COMPLY WITH NEC 250.28.
- PROVIDE CONNECTION TO ALL PRESENT GROUNDING ELECTRODES DESCRIBED IN CEC 250.52. CONNECTION TO GROUND ROD MAY BE #6 AWG CU PER CEC 250.66(A).
- PROVIDE PANEL AS SHOWN. REFER TO PANEL SCHEDULE ON THIS SHEET FOR CIRCUIT BREAKERS. PROVIDE PANEL WITH SURGE PROTECTIVE DEVICE. REFER TO E-101 FOR PANEL LOCATION.
- COORDINATE WITH RHODE ISLAND ENERGY TO DETERMINE POLE WHICH RISER FOR SERVICE IS TO BE MOUNTED ON. PROVIDE UNDERGROUND SERVICE ENTRANCE AND RISER PER NEC 230.50 AND RHODE ISLAND ENERGY ESB 750 IN PARTICULARLY FIGURE 4.5.4.2-1. PROVIDE CONDUIT AND CONDUCTORS AS INDICATED.
- COORDINATE NEW SERVICE WITH RHODE ISLAND ENERGY.
- PROVIDE CONDUIT AND CONDUCTORS AS INDICATED.
- COORDINATE METER INSTALLATION WITH RHODE ISLAND ENERGY.
- VALUE BASED ON ESB 750 MAXIMUM VALUE FOR THE SECONDARY OF A 3-25KVA TRANSFORMERS. OBTAIN ACTUAL VALUE FROM RHODE ISLAND ENERGY; NOTIFY ENGINEER IF VALUE FROM RHODE ISLAND ENERGY IS HIGHER.
- PROVIDE GFCI CIRCUIT BREAKER.



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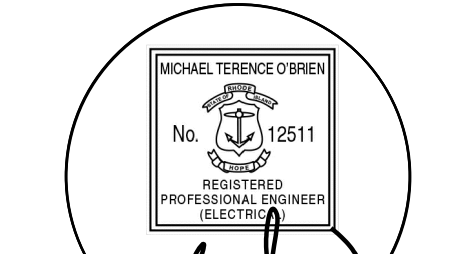
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CRESCENT PARK
NEW BUILDING
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT
AVENUE RIVERSIDE, RI 02915

REVISIONS:



Michael O'Brien

ELECTRICAL SINGLE-LINE
DIAGRAM

DATE: 31OCT24

NCA JOB NO.: 23100

DRAWING NO.:

E-002

GENERAL SHEET NOTES

1. MINIMUM CONDUIT SIZE IS 3/4" UON.
2. PROVIDE FINAL CONNECTIONS TO MOTORS WITH FLEXIBLE CONDUIT.
3. REFER TO MECHANICAL DRAWINGS FOR MORE PRECISE MECHANICAL EQUIPMENT LOCATIONS.



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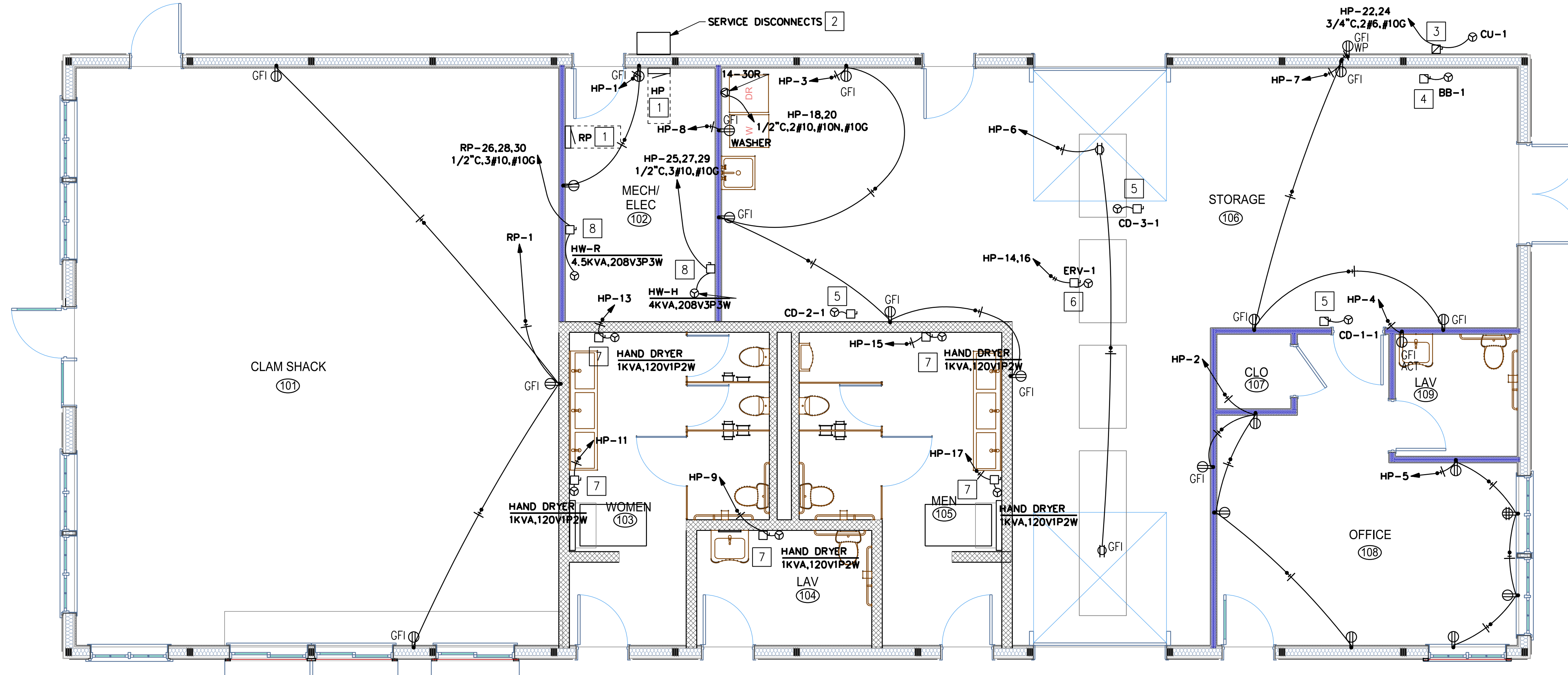
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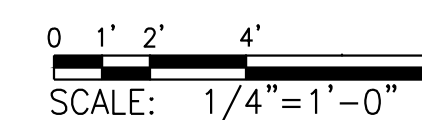
KEYNOTES

- 1 PROVIDE PANEL PER E-002. MAINTAIN CLEARANCE AS SHOWN.
- 2 PROVIDE METER ENCLOSURE AND SERVICE. COORDINATE NEW SERVICE WITH RHODE ISLAND ENERGY PER E-002. PROVIDE SERVICE DISCONNECTS WITH LOCKING CAPABILITY FOR THE OPEN AND CLOSED POSITION.
- 3 PROVIDE HEAVY DUTY, NEMA 3R, 2 POLE, 60A FUSED DISCONNECT SWITCH. FUSE MANUFACTURER'S INSTRUCTIONS.
- 4 PROVIDE 2 POLE, 30A DISCONNECT SWITCH FOR BRANCH BOX. PROVIDE WIRING TO CU-1 PER MANUFACTURERS INSTRUCTION IN 1/2" CONDUIT.
- 5 PROVIDE 3 POLE, 30A DISCONNECT SWITCH FOR FANCOIL. PROVIDE WIRING TO BB-1 PER MANUFACTURERS INSTRUCTIONS. MAINTAIN ACCESSIBILITY TO DISCONNECT SWITCH.
- 6 PROVIDE TWO POLE, 30A DISCONNECT SWITCH.
- 7 PROVIDE DISCONNECT SWITCH FOR HAND DRYER ABOVE CEILING. ENSURE DISCONNECT REMAINS ACCESSIBLE ABOVE CEILING THROUGH EITHER MOVABLE CEILING TILE OR ACCESS PANEL.
- 8 PROVIDE 3 POLE, 30A DISCONNECT SWITCH.



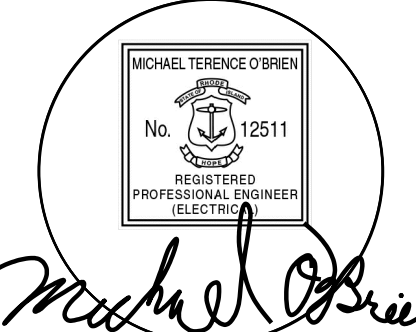
ELECTRICAL POWER FLOOR PLAN

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



**CRESCENT PARK
NEW BUILDING
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684 & 700 BULLOCKS POINT
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REVISIONS:



ELECTRICAL POWER PLAN - BUILDING 1

DATE: 31OCT24

NCA JOB NO.: 23100

DRAWING NO.:

E-101

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LUMINAIRE SCHEDULE					
CALLOUT	SYMBOL	DESCRIPTION	MODEL	INPUT WATTS	QUANTITY
A		2x2 LED, 2000 Nominal Lumens, 80 CRI, 3500K CCT	Lithonia Lighting, EPANL 2x2 2000LM 80CRI 35K	18.77	7
AE		2x2 LED, 2000 Nominal Lumens, 80 CRI, 3500K CCT WITH EMERGENCY BATTERY	Lithonia Lighting, EPANL 2x2 2000LM 80CRI 35K EM10	18.77	2
B2		2' LINEAR, 3500K LED VANDAL RESISTANT SURFACE FIXTURE	PACO LIGHTING, PUCSA-2F-20-35	18	4
B2E		2' LINEAR, 3500K LED VANDAL RESISTANT, 3500K LED SURFACE FIXTURE WITH EMERGENCY BATTERY	PACO LIGHTING, PUCSA-2F-20-35-EM	18	4
O		EXTERIOR WALL MOUNTED 3000K, 80CRI LED FIXTURE WET RATED WITH MOTION SENSOR AND PHOTO SENSOR FOR AUTOMATIC OFF FROM DAWN TO DUSK	Lithonia Lighting, WGE2 LED P1 30K 80CRI VF PIR1FC3V	9.81	8
S		LED linear 48", 4000 lumens, Standard efficiency, Round diffuse, General, MVOLT, 3500K, 80CRI	Lithonia Lighting, CLX L48 4000LM SEF RDL MVOLT 35K 80CRI	25.5429	10
SE		LED linear 48", 4000 lumens, Standard efficiency, Round diffuse, General, MVOLT, 3500K, 80CRI WITH EMERGENCY BATTERY	Lithonia Lighting, CLX L48 4000LM SEF RDL MVOLT 35K 80CRI E10WCLP	25.5429	6
V2		LINEAR WALL SCONCE SYMMETRIC 24" 3500K	VISA LIGHTING, CV1800 L35K(L)	6.4	10

GENERAL SHEET NOTES

- REFER TO LUMINAIRE SCHEDULE ON THIS SHEET FOR FIXTURE CALL OUTS.
- PROVIDE 2#12 & 12G FOR CIRCUIT WIRING UNLESS OTHERWISE NOTED.
- PROVIDE IN 3/4" C OR MC CABLE ONLY IF NOT EXPOSED.
- COORDINATE EXIT SIGNS WITH EMERGENCY EGRESS PLAN AND AHJ.



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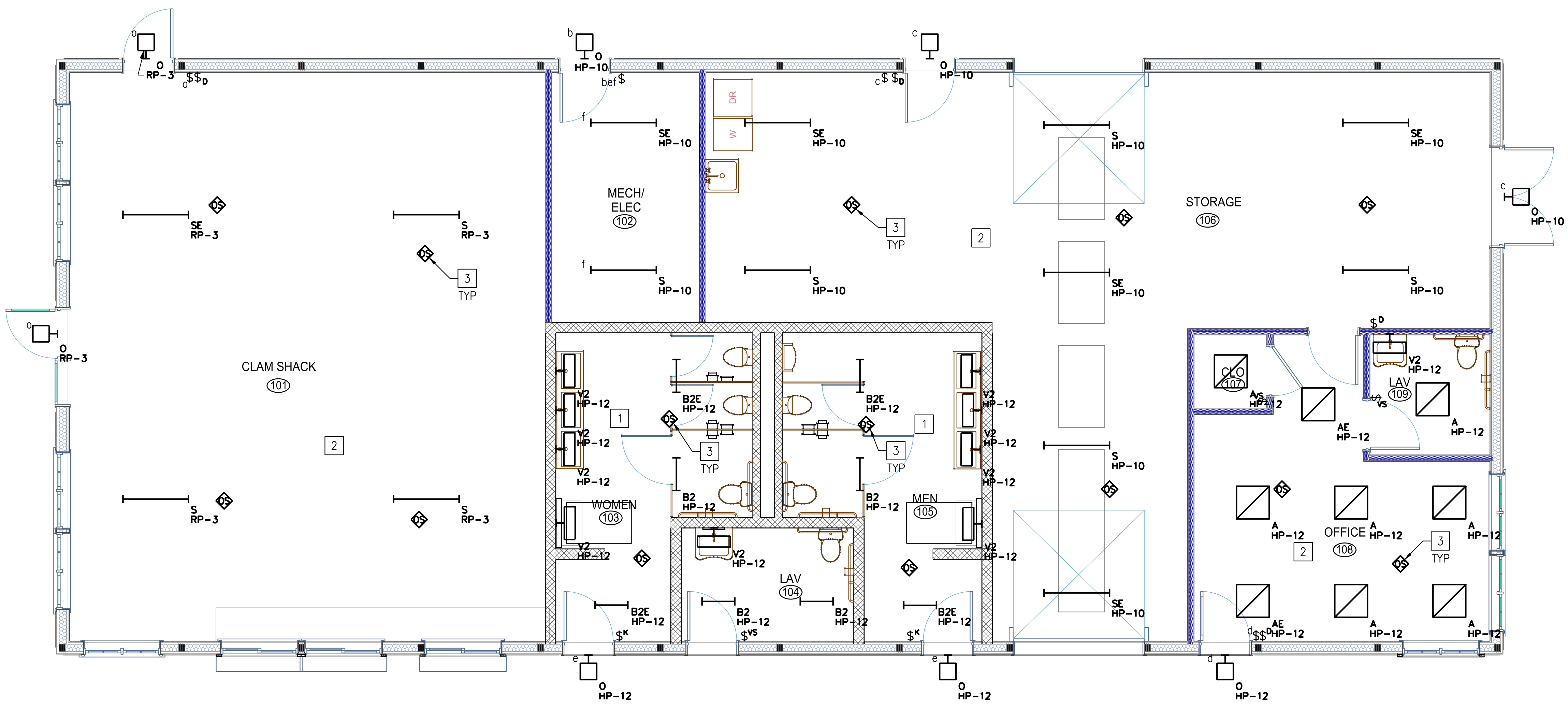
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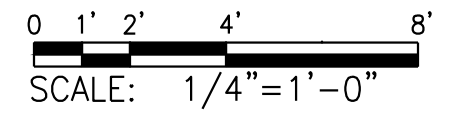
Landscape Architects:
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Phone: (401) 231-0736

KEYNOTES

- PROVIDE TYPE 1 LIGHTING CONTROL IN ROOM PER DETAIL 1 ON E-301. ALTERNATIVELY NLIGHT WIRELESS CONTROLS MAY BE PROVIDED WHICH PERFORM SAME FUNCTION AS DESCRIBED IN DETAIL 1 ON E-301.
- PROVIDE TYPE 2 LIGHTING CONTROL IN ROOM PER DETAIL 2 ON E-301. ALTERNATIVELY NLIGHT WIRELESS CONTROLS MAY BE PROVIDED WHICH PERFORM SAME FUNCTION AS DESCRIBED IN DETAIL 2 ON E-301.
- PROVIDE LOCATION AND QUANTITY OF OCCUPANCY SENSORS PER MANUFACTURER'S RECOMMENDATIONS FOR FULL ROOM COVERAGE. OCCUPANCY SENSORS MAY BE OMITTED IF MOTION SENSOR IS INTEGRATED INTO THE LIGHT FIXTURES LOCATED IN THE ROOM AND NLIGHT WIRELESS CONTROLS ARE SELECTED.
- PROVIDE FIXTURE WITH NLIGHT MOTION SENSOR OPTION IF ALTERNATIVE WIRELESS CONTROLS ARE SELECTED PER KEYNOTE 2.
- PROVIDE FIXTURE WITH OPTION NLTAIR2 PIR INSTEAD OF PIRFC3V IF ALTERNATIVE WIRELESS CONTROLS ARE SELECTED FOR EXTERIOR LIGHTING.

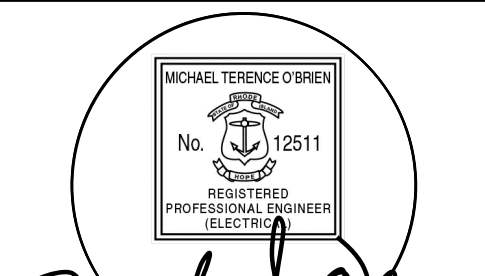


LIGHTING PLAN
SCALE: 1/4" = 1'-0"



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REVISIONS:



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LIGHTING PLAN - BUILDING 1

DATE: 31OCT24

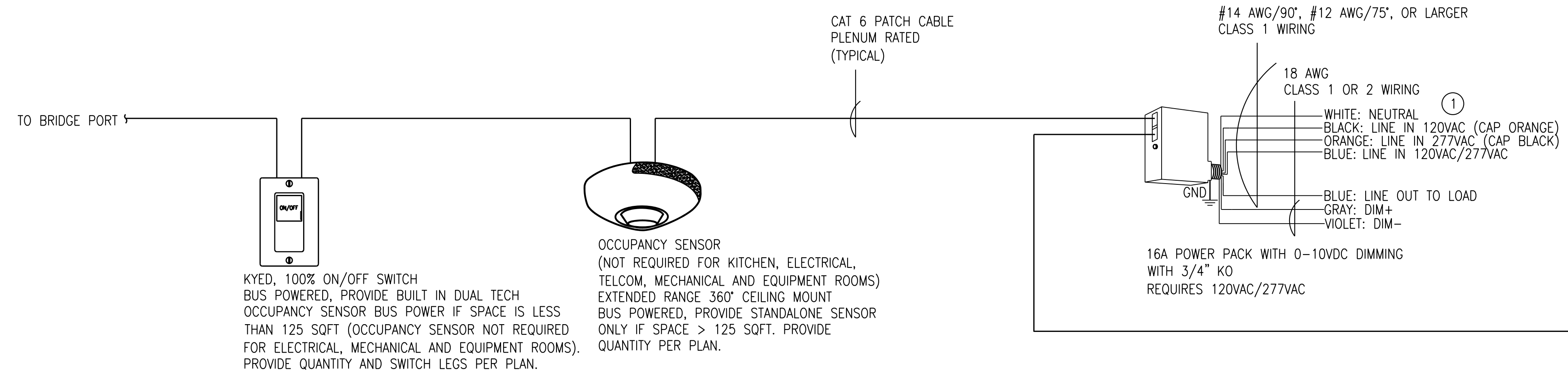
NCA JOB NO.: 23100

DRAWING NO.: E-201

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COMPLIANT SEQUENCE OF OPERATION:

- OCCUPANCY SENSOR PROVIDES 100% FULL BRIGHTNESS AND AUTOMATIC OFF OF LUMINAIRES BASED ON ROOM OCCUPANCY. (USE DEFAULT TIME DELAY FOR OCCUPANCY SENSOR)
- SWITCH PROVIDES MANUAL OVERRIDE FOR LUMINAIRES – FULL ON/OFF (IF DIMMER SWITCH IS INDICATED, PROVIDE MANUAL DIMMING CAPABILITIES).



GENERAL NOTES

- PROVIDE UL 924 EMERGENCY OPERATION POWERPACK FOR EMERGENCY LUMINAIRES. NOT SHOWN FOR CLARITY.
- PROVIDE QUANTITY OF DEVICES PER PLAN.
- ROUTE COMMUNICATION CABLING IN WALLS THROUGH CONDUIT.
- PROVIDE COMMUNICATION CABLING ABOVE CEILING IN CONDUIT OR J HOOKS AS PERMITTED BY CCRI.

DETAIL NOTES

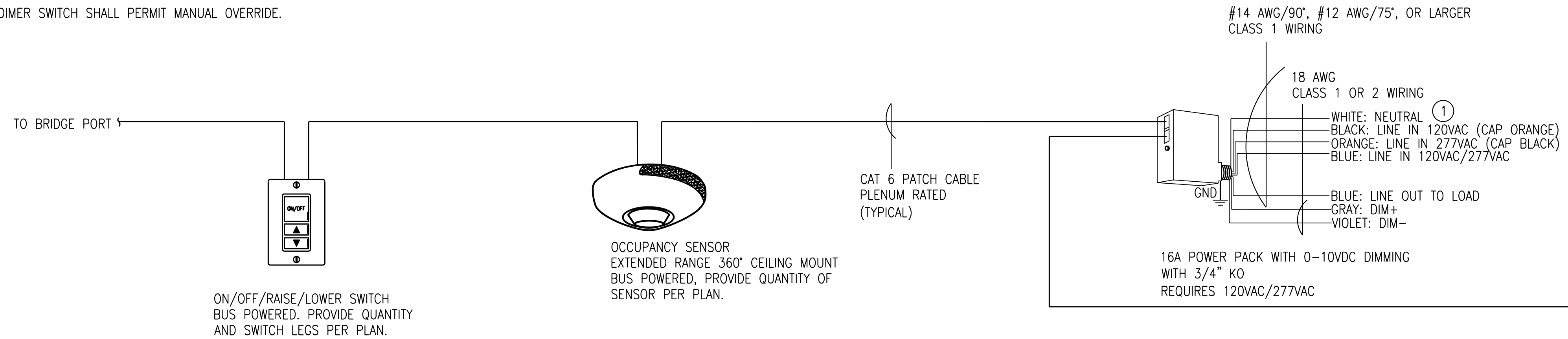
- PROVIDE ADEQUATELY SIZED POWER SUPPLY PER SWITCH LEG, CIRCUIT POWER SUPPLY TO CIRCUIT INDICATED ON PLAN.

TYPE I: TYPICAL NON-DAYLIT RESTROOM

SCALE	1
NONE	

SEQUENCE OF OPERATION:

- LUMINAIRES SHALL AUTOMATICALLY GO TO 100% FULL BRIGHT WHEN SENSED BY ANY OCCUPANCY SENSOR IN THE ENCLOSED SPACE.
- TIME OUT: AFTER 10 MINUTES OF VACANCY, LUMINAIRES SHALL GO TO 50% DIMMED LEVEL.
- AFTER-15 MINUTE TIME OUT: AUTOMATIC SHUT-OFF
- DIMER SWITCH SHALL PERMIT MANUAL OVERRIDE.



GENERAL NOTES

- PROVIDE UL 924 EMERGENCY OPERATION POWERPACK FOR EMERGENCY LUMINAIRES. NOT SHOWN FOR CLARITY.
- PROVIDE QUANTITY OF DEVICES PER PLAN.
- ROUTE COMMUNICATION CABLING IN WALLS THROUGH CONDUIT.
- PROVIDE COMMUNICATION CABLING ABOVE CEILING IN CONDUIT OR J HOOKS AS PERMITTED BY CCRI.

DETAIL NOTES

- PROVIDE ADEQUATELY SIZED POWER SUPPLY PER SWITCH LEG, CIRCUIT POWER SUPPLY TO CIRCUIT INDICATED ON PLAN.

TYPE II: TYPICAL OPEN NON-DAYLIT SPACE

SCALE	2
NONE	



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REVISIONS:

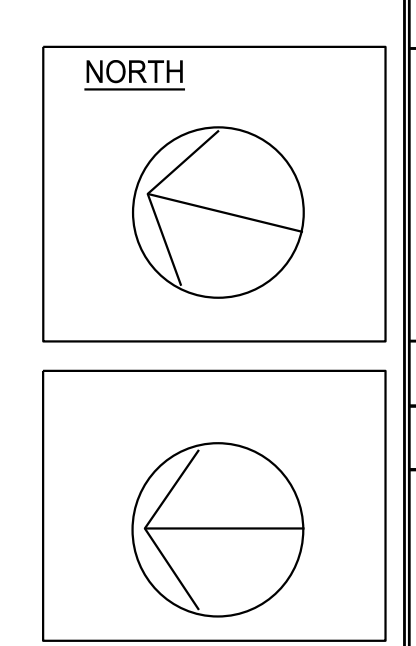


ELECTRICAL DETAILS

DATE: 31OCT24

NCA JOB NO.: 23100

DRAWING NO.: E-301



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GENERAL NOTES

- A. PRIOR TO COMMENCING WORK CONTRACTOR SHALL VERIFY EXACT LOCATION OF DOMESTIC WATER, VENT AND DEPTH OF EXISTING SEWER LINES IN THE FIELD.
- a. ALL PIPING SHALL BE IDENTIFIED ON REDLINE DRAWINGS TO BE PROVIDED BY CONTRACTOR TO ENGINEER, OWNER AND ARCHITECT, INCLUDING SIZE, INVERT ELEVATIONS, DIRECTION OF FLOW
- B. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- C. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
- D. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- E. ALL PIPING ON THIS PLAN SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
- F. REPAIR PAINT/FLOOR AFTER INSTALLATION AND INSPECTION OF UTILITIES INSTALLED. PAINT FLOOR TO MATCH PREVIOUS OR MATCH AND COMPLY WITH ARCHITECTURAL DRAWINGS.
- G. CONTRACTOR TO RECONNECT EXISTING ELECTRICAL GROUNDING/BONDING TO COLD WATER PIPING SYSTEM.
- H. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
- I. PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO AND WITHIN 50 FEET OF ISOLATED EQUIPMENT (EXCEPT AT BASE ELBOW SUPPORTS AND ANCHOR POINTS) THROUGHOUT MECHANICAL EQUIPMENT ROOMS. DO THE SAME FOR SUPPORTS OF STEAM MAINS WITHIN 50 FEET OF BOILER OR PRESSURE REDUCING VALVES.
- J. PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS OF STEAM MAINS WITHIN 50 FEET OF BOILERS AND PRESSURE REDUCING VALVES.
- K. THE LOCATION OF EXISTING UNDERGROUND/UNDERSLAB UTILITIES IS SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PAY FOR AND REPAIR ALL DAMAGES CAUSED BY FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES UNLESS OTHERWISE INDICATED.
- L. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
- M. MAINTAIN A MINIMUM OF 6"-8" CLEARANCE TO UNDERSIDE OF PIPES, DUCTS, CONDUITS, SUSPENDED EQUIPMENT, ETC., THROUGHOUT ACCESS ROUTES IN MECHANICAL ROOMS.
- N. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
- O. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP- AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY. PROVIDE ACCESS PANELS WHERE REQUIRED.
- P. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.
- Q. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
- R. REINFORCEMENT, DETAILING, AND PLACEMENT OF CONCRETE SHALL CONFORM TO ASTM 315 AND ACI 318. CONCRETE SHALL CONFORM TO ASTM C94. CONCRETE WORK SHALL CONFORM TO ACI 318, PART ENTITLED "CONSTRUCTION REQUIREMENTS." COMPRESSIVE STRENGTH IN 28 DAYS SHALL BE 3,000 PSI. TOTAL AIR CONTENT OF EXTERIOR CONCRETE SHALL BE BETWEEN 5 AND 7 PERCENT BY VOLUME. SLUMP SHALL BE BETWEEN 3 AND 4 INCHES. CONCRETE SHALL BE CURED FOR 7 DAYS AFTER PLACEMENT.
- S. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CONTRACT DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- T. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 16 OF THE SPECIFICATION.
- U. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE 6 INCHES. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 6 INCHES ON EACH SIDE. CONCRETE HOUSEKEEPING PADS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE SIZE AND LOCATION OF CONCRETE HOUSEKEEPING PADS WITH GENERAL CONTRACTOR.
- V. ALL MECHANICAL ROOM DOORS SHALL BE A MINIMUM OF 4'-0" WIDE.
- W. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.
- X. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
- Y. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
- Z. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- AA. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO GENERAL CONTRACTOR FOR INSTALLATION.
- AB. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
- AC. ALL DUCTWORK, PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS.
- AD. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.
- AE. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM METAL DECK.
- AF. ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
- AG. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
- AH. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.
- AI. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT AND ROOFTOP UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO NEAREST DRAIN. SEE DETAILS SHOWN ON THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR DEPTH OF AIR CONDITIONING CONDENSATE TRAP.
- AJ. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.

HVAC/ SHEETMETAL NOTES

- A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE HVAC SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- B. CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED ON THE CONTRACT DOCUMENT DRAWINGS FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS. CONTRACTOR IS REQUIRED TO INSTALL ACCESSORIES INCLUDED BUT NOT LIMITED TO ACCESS PANELS, DAMPERS (INCLUDING FIRE, SMOKE AND COMBO), TEST PORTS AS REQUIRED BY CODE. FIRE AND SMOKE DAMPERS SHALL BE INSTALLED AT A MINIMUM OF ALL FIRE WALL PENETRATIONS UNLESS EXEMPT BY CODE. FIRE AND DUCT SMOKES SHALL BE INSTALLED WITH IN 5' OF THE DAMPER WHEN REQUIRED, UNLESS OTHERWISE REQUIRED.
- C. INSULATE THE FOLLOWING:
- ALL SUPPLY AIR, OUTDOOR AIR,
 - EXHAUST AND RELIEF AIR BETWEEN THE MOTOR-OPERATED DAMPER AND PENETRATION OF THE BUILDING EXTERIOR.
 - ALL DUCTWORK LOCATED IN UNCONDITIONED SPACES OR OUTSIDE BUILDING ENVELOPE
 - ALL DUCTWORK LOCATED IN ATTICS, WHETHER VENTILATED OR UNVENTILATED.
 - ALL DUCTWORK BURIED EITHER OUTSIDE THE BUILDING OR BELOW FLOORS
 - ALL SURFACES SHOULD BE RESISTANT TO MOLD GROWTH AND RESIST EROSION, ACCORDING TO THE REQUIREMENTS OF ASHRAE STANDARD 62.1.
- D. IN CORRIDORS WHERE CEILING SPEAKERS AND AIR DIFFUSERS ARE INDICATED BETWEEN THE SAME LIGHT FIXTURES, INSTALL BOTH DEVICES AT THE QUARTER POINTS BETWEEN THE SAME FIXTURE.
- E. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS AND HUMIDISTATS 4'-0" (CENTERLINE) ABOVE FINISHED FLOOR. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE ABOVE LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.
- F. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
- G. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
- H. PROVIDE ALL 90 DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. ELBOWS IN DISHWASHER, KITCHEN, AND LAUNDRY EXHAUST SHALL BE UNVANED SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1 1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.
- I. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
- J. FIELD ERRECTED AND FACTORY ASSEMBLED AIR HANDLING UNIT COILS SHALL BE ARRANGED FOR REMOVAL FROM THE UPSTREAM SIDE WITHOUT DISMANTLING SUPPORTS. PROVIDE GALVANIZED STRUCTURAL STEEL SUPPORTS FOR ALL COILS (EXCEPT LOWEST COIL) IN BANKS OVER TWO COILS HIGH TO PERMIT INDEPENDENT REMOVAL OF ANY COIL.
- K. ALL AIR HANDLING UNITS SHALL OPERATE WITHOUT MOISTURE CARRYOVER.
- L. LOCATE ALL MECHANICAL EQUIPMENT (SINGLE DUCT, DUAL DUCT, VARIABLE VOLUME, CONSTANT VOLUME AND FAN POWERED BOXES, FAN COIL UNITS, CABINET HEATERS, UNIT HEATERS, UNIT VENTILATORS, COILS, STEAM HUMIDIFIERS, ETC.) FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS AND VALVING.
- M. FINNED TUBE RADIATION ENCLOSURES SHALL BE WALL TO WALL UNLESS OTHERWISE INDICATED.
- N. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
- O. UNLESS OTHERWISE NOTED, ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF REQUIRED.
- P. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 5 FEET (8 FT MAXIMUM LENGTH OF FLEXIBLE DUCT TO SUIT PROJECT, 5 FEET MAXIMUM RECOMMENDED LENGTH, 8 FEET MAXIMUM LENGTH).
- Q. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- R. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, HUMIDIFIERS, COILS, AND OTHER ITEMS LOCATED IN THE DUCTWORK WHICH REQUIRE SERVICE AND/OR INSPECTION.
- S. PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL FANS, VALVES, AND MECHANICAL EQUIPMENTS. ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS. GROUNDING STRAPS SHALL BE BOLTED OR SOLDERED TO BOTH THE EQUIPMENT AND THE DUCT.
- T. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
- U. TERMINATE GAS VENTS FOR UNIT HEATERS, WATER HEATERS, HIGH PRESSURE PARTS WASHER, HIGH PRESSURE CLEANER, AND OTHER GAS APPLIANCES A MINIMUM OF 3' ABOVE ROOF WITH RAIN CAP (EDIT APPLIANCES AND HEIGHT ABOVE ROOF TO MEET CODE AND TO SUIT PROJECT REQUIREMENTS).
- V. SEE SPECIFICATIONS FOR DUCTWORK GAUGES, BRACING, HANGERS, AND OTHER REQUIREMENTS.
- W. EXTERIOR LOUVERS ARE INDICATED FOR INFORMATION ONLY. DETAILED DESCRIPTIONS ARE PROVIDED IN THE ARCHITECTURAL SPECIFICATIONS.
- X. EXTERIOR LOUVERS ARE INDICATED FOR INFORMATION ONLY. LOUVER SIZES, LOCATIONS, AND DETAILS SHALL BE COORDINATED WITH GENERAL CONTRACTOR.
- Y. EXTERIOR LOUVERS ARE INDICATED FOR INFORMATION ONLY. LOUVER SIZES, LOCATIONS, MOUNTING, AND DETAILS SHALL BE COORDINATED WITH OTHER TRADES INVOLVED.

Mechanical Sheet List			
Sheet Number	Sheet Name	Sheet Issue Date	Discipline
M001	MECHANICAL GENERAL (INDEX, SYMBOLS, LEGEND, NOTES, ABBREVIATION, LOCATION MAP)	31OCT24	MECHANICAL
M101	MECHANICAL PLANS (FLOOR, CEILING, LIGHTING)	31OCT24	MECHANICAL
M501	VRF CONTROLS	31OCT24	MECHANICAL
M502	VRF CONTROLS POINTS	31OCT24	MECHANICAL
M503	VRF CONTROLS	31OCT24	MECHANICAL
M601	MECHANICAL DETAILS	31OCT24	MECHANICAL



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MECHANICAL GENERAL (INDEX, SYMBOLS, LEGEND, NOTES, ABBREVIATION, LOCATION MAP)

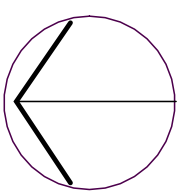
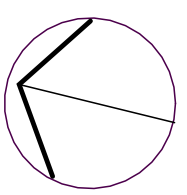
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NCA JOB NO.: 23100

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M001

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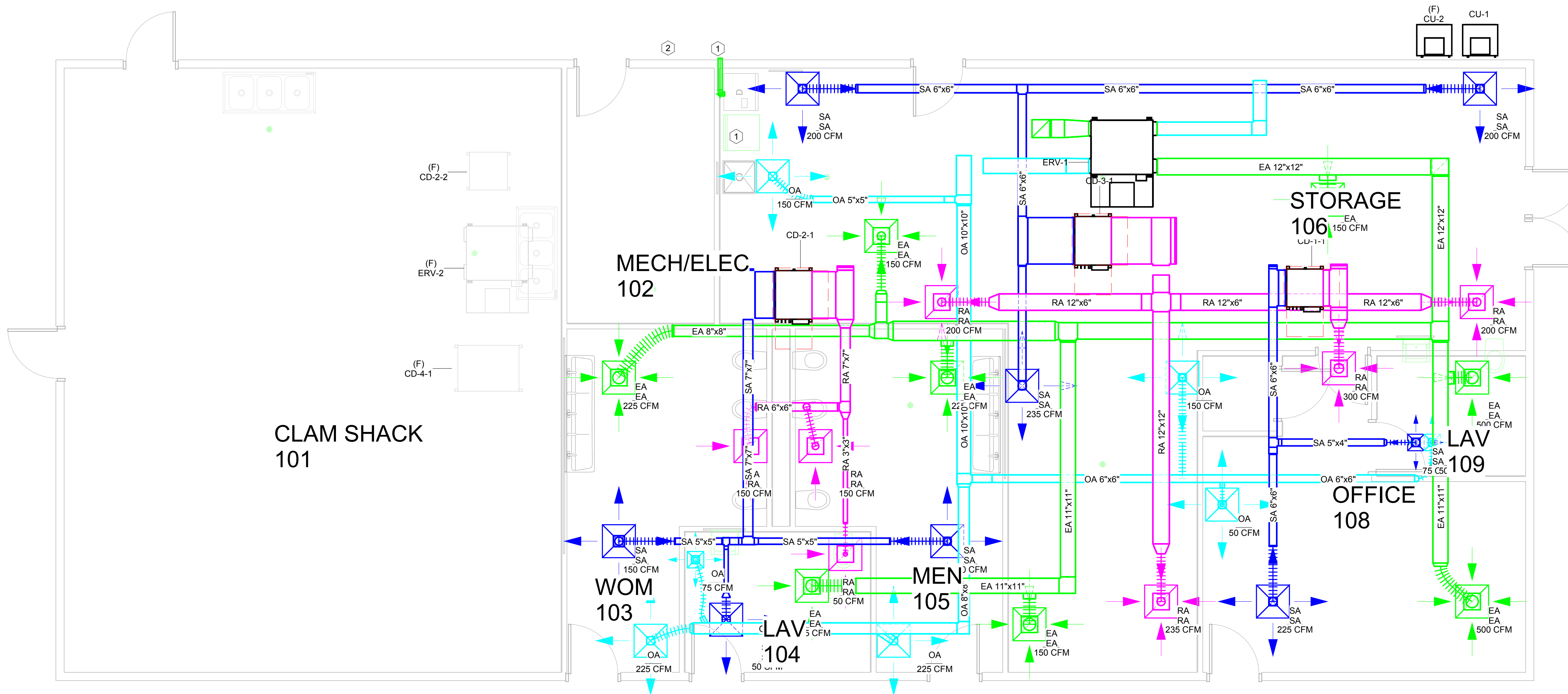
MECHANICAL PLANS (FLOOR,
CEILING, LIGHTING)

DATE: 31OCT24 10/31/24

NCA JOB NO.: 23100

DRAWING NO.:

M101



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

VRF (CD- #)

TYPE MARK	MARK	OUTDOOR (CU#)	MANUFACTURER	MODEL	CFM-RANGE	COOLING (BTU/HR)	HEATING (BTU/HR)	VOLT (V)	FREQUENCY (HZ)	PHASE	MCA (A)	MOP (A)	FLA (A)
CD-1	1	CU-1	TRANE/ MITSU	NTXDKS09A112A*		8100	10900	208/230	60	1	1		
CD-2	1	CU-1	TRANE/ MITSU	NTXDKS12A112A*		11500	13600	208/230	60	1	1		
CD-3	1	CU-1	TRANE/ MITSU	NTXDKS18A112A*		17200	21600	208/230	60	1	1		
(F) CD-4	1	(F) CU-2	TRANE/ MITSU	TPEFY012MA144A		12000	13500	208/230	60	1	2.13	15	
(F) CD-5	1	(F) CU-2	TRANE/ MITSU	TPEFY048MA144A		48000	54000	208/230	60	1	4.38	15	
ERV-1	1		TRANE/ MITSU	TLGHF0940RVX02A				208/230V	60	1	10.1	15	
(F) ERV-1	2		TRANE/ MITSU	TLGHF0940RVX02A				208/230V	60	1	10.1	15	

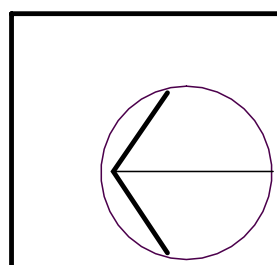
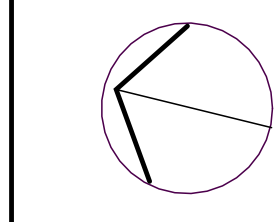
OUTDOOR CONDENSING UNITS (CU- #)

TYPE MARK	MARK	MANUFACTURER	MODEL	CFM-RANGE	COOLING (BTU/HR)	HEATING (BTU/HR)	VOLT (V)	FREQUENCY (HZ)	PHASE	MCA (A)	MOP (A)	FLA (A)
CU-1		TRANE/ MITSU	NTXMSH42A152BA		42000	48000	208/230	60	1			
(F) CU-2		TRANE/ MITSU	TURYP0723AN40A(N/B)		72000	80000	208/230	60	1			

MECHANICAL	
#	NOTE
1	DRYER VENT
2	MECHANICAL LOUVER

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EXTERNAL CONTROL DEVICE:

IN THIS SPECIFICATION THE TERM 'EXTERNAL CONTROL DEVICE' IS USED TO DENOTE ONE OR MORE USER INTERFACE CONTROL DEVICES THAT MAY BE PRESENT IN THE SYSTEM. THE CONTROL DEVICES THAT MAY BE PRESENT ARE A LOCAL CONTROL DEVICE, VRF SYSTEM CONTROL DEVICE, OR A BUILDING AUTOMATION SYSTEM. WHEN MORE THAN ONE EXTERNAL CONTROL DEVICE IS PRESENT IN THE CONTROL SYSTEM, THE LAST COMMAND OR CONFIGURATION VALUE RECEIVED BY THE INDOOR UNIT GOVERNS INDOOR UNIT OPERATION.

THERE MAY BE OTHER MEANS TO PROVIDE COMMANDS AND CONFIGURATION PARAMETERS TO THE VRF SYSTEM, SUCH AS HARDWIRED CONTROL INPUTS. HOWEVER, THESE ARE NOT CONSIDERED THE TYPICAL SYSTEM CONTROL USE CASE AND THE SPECIFICATION DOES NOT ADDRESS THEM AS WRITTEN.

ZONE TEMPERATURE SETPOINT CONTROL:

DUAL SETPOINT. TWO ZONE AIR TEMPERATURE SETPOINTS ARE PRESENT. WHEN THE TERMINAL UNIT IS IN A COOLING MODE, IT WILL CONTROL THE ZONE AIR TEMPERATURE VALUE TO THE COOLING TEMPERATURE SETPOINT VALUE. WHEN THE TERMINAL UNIT IS IN A HEATING MODE, IT WILL CONTROL THE ZONE AIR TEMPERATURE VALUE TO THE HEATING TEMPERATURE SETPOINT VALUE.

ON/OFF MODE:

THE TERMINAL UNIT HAS TWO MODES THAT DRIVE THE OVERALL OPERATION OF THE UNIT, ON AND OFF MODE.

ON. THE INTERNAL ALGORITHM WILL CONTROL THE UNIT TO MAINTAIN THE DESIRED ZONE AIR TEMPERATURE.

OFF. THE INTERNAL ALGORITHM WILL NOT CONTROL THE UNIT TO MAINTAIN THE DESIRE ZONE AIR TEMPERATURE. THE ALGORITHM WILL CONTROL COMPONENTS INTERNAL TO THE UNIT TO MINIMIZE ENERGY CONSUMPTION AND ISOLATE IT FROM VRF SYSTEM REFRIGERANT CIRCUIT. THE ZONE AIR TEMPERATURE SENSOR IN USE WILL BE MONITORED TO ALLOW THE ZONE AIR TEMPERATURE VALUE TO BE DISPLAYED AT AN EXTERNAL CONTROL DEVICE(S).

OPERATION MODE:

OPERATION MODE IS THE PRIMARY CONTROL PARAMETER OF THE INDOOR UNIT WHEN IT IS IN THE ON STATE. THE OPERATION MODE COMMAND PROVIDED TO THE INDOOR UNIT FROM AN ETERNAL CONTROL DEVICE WILL DETERMINE THE BASE HVAC CONTROL FUNCTION THE INDOOR UNIT IS PROVIDING. AVAILABLE MODES OF OPERATION ARE COOL, DRY, FAN, HEAT, SETBACK, AND AUTO.

COOL. WHEN THE TERMINAL UNIT OPERATION MODE IS THE COOL STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE COOLING TEMPERATURE SETPOINT VALUE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE DECREASES THE DIFFERENCE VALUE BECOMES LESS. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL.

DRY. WHEN THE TERMINAL UNIT OPERATION MODE IS THE DRY STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE GOAL IN DRY MODE IS TO REMOVE WATER VAPOR FROM THE AIR, NOT CONTROL THE ZONE AIR TEMPERATURE VALUE TO A ZONE TEMPERATURE SETPOINT. WHEN THE TERMINAL UNIT IS COMMANDED TO THE DRY STATE, AN ALGORITHM INTERNAL TO THE TERMINAL UNIT DRIVES THE LEV TO AN OPEN POSITION. IT IS ASSUMED THAT THE POSITION OF THE VALVE ALLOWS A SUFFICIENT AMOUNT OF REFRIGERANT TO ENTER THE COIL. TO CAUSE THE SURFACE TEMPERATURE OF THE COIL FINS TO FALL BELOW THE DEW POINT TEMPERATURE. THE RESULT IS CONDENSATION THAT REMOVES WATER VAPOR FROM THE AIR PASSING THROUGH THE COIL.

WHEN THE ZONE AIR TEMPERATURE VALUE IS GREATER THAN OR EQUAL TO THE COOLING TEMPERATURE SETPOINT, DRY STATE IS BENEFICIAL FROM BOTH A HUMIDITY AND ZONE TEMPERATURE PERSPECTIVE BECAUSE WATER VAPOR IS BEING REMOVED FROM THE AIR IN THE ZONE AND THE DIFFERENCE VALUE BETWEEN THE ZONE AIR TEMPERATURE VALUE AND THE COOLING TEMPERATURE SETPOINT VALUE IS REDUCED.

CONTINUED DEHUMIDIFICATION WILL CAUSE THE ZONE AIR TEMPERATURE VALUE TO BECOME LESS THAN THE COOLING TEMPERATURE SETPOINT, WHICH IS UNDESIRABLE. TO COMBAT THE EFFECT, THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE ZONE AIR TEMPERATURE VALUE AND COOLING TEMPERATURE SETPOINT. BASED ON THE DIFFERENCE VALUE, THE ALGORITHM USES A SLIDING TIME SCALE METHOD TO MODULATE THE LEV BETWEEN THE OPEN POSITION AND THE FULLY CLOSED POSITION FOR A VARIABLE LENGTH OF TIME. IT IS ASSUMED THAT WHEN THE LEV IS IN THE FULLY CLOSED POSITION LATENT HEAT WITHIN THE ZONE WILL CAUSE THE ZONE AIR TEMPERATURE VALUE TO INCREASE. THE METHOD ALLOWS SOME DEHUMIDIFICATION TO TAKE PLACE WITHOUT SIGNIFICANTLY LOWERING THE AIR TEMPERATURE IN THE ZONE BELOW THE COOLING TEMPERATURE SETPOINT.

FAN. WHEN THE TERMINAL UNIT OPERATION MODE IS THE FAN STATE, THE LEV IS CLOSED AND THE TERMINAL UNIT DOES NOT ATTEMPT REGULATE THE AIR TEMPERATURE IN THE ZONE. THE TEMPERATURE OF THE AIR IN THE ZONE MAY CHANGE DUE TO LATENT HEAT WITHIN THE ZONE. WITH THE USE OF AN EXTERNAL USER INTERFACE, THE SPEED OF THE FAN MAY BE MODULATED BETWEEN THE DISCRETE STATES SUPPORTED BY THE TERMINAL UNIT.

HEAT. WHEN THE TERMINAL UNIT OPERATION MODE IS THE HEAT STATE, HOT GAS REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE HEATING TEMPERATURE SETPOINT VALUE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE INCREASES THE DIFFERENCE VALUE BECOMES LESS. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL.

SETBACK. SOME TERMINAL UNITS MAY NOT SUPPORT THE SETBACK STATE. WHEN THE TERMINAL UNIT OPERATION MODE TRANSITIONS TO SETBACK STATE, THE LEV IS DRIVEN CLOSED AND THE ZONE AIR TEMPERATURE IS ALLOWED TO DRIFT. THE AMOUNT OF DRIFT IS BOUNDED BY THE SETBACK COOLING TEMPERATURE SETPOINT AND THE SETBACK HEATING TEMPERATURE SETPOINT.

WHEN THE ZONE AIR TEMPERATURE VALUE IS GREATER THAN THE SETBACK COOLING TEMPERATURE SETPOINT THE TERMINAL UNIT WILL EXECUTE THE SETBACK COOL ALGORITHM. THE ALGORITHM MODULATES THE LEV TO MAINTAIN THE ZONE TEMPERATURE TO THE SETBACK COOLING TEMPERATURE SETPOINT.

WHEN THE ZONE AIR TEMPERATURE VALUE IS LESS THAN THE SETBACK HEATING TEMPERATURE SETPOINT THE TERMINAL UNIT WILL EXECUTE THE SETBACK HEAT ALGORITHM. THE ALGORITHM MODULATES THE LEV TO MAINTAIN THE ZONE TEMPERATURE TO THE SETBACK HEATING TEMPERATURE SETPOINT.

AUTO. SOME MANUFACTURERS' TERMINAL UNITS MAY NOT SUPPORT THE AUTO STATE OF OPERATION MODE.

AUTO MODE IS BENEFICIAL IN A HEAT RECOVERY SYSTEM BECAUSE IT ALLOWS THE TERMINAL UNIT TO AUTOMATICALLY SWITCH BETWEEN COOLING AND HEATING STATES BASED ON THE CURRENT ZONE AIR TEMPERATURE AND THE ZONE TEMPERATURE SETPOINT IN USE. WHEN THE TERMINAL UNIT OPERATION MODE IS THE AUTO STATE, TWO SUB-STATES ARE AVAILABLE, AUTO (COOL) AND AUTO (HEAT).

DEPENDING ON THE SETPOINT CONTROL CONFIGURATION OF THE TERMINAL UNIT, ONE OF THREE SETPOINTS IS USED FOR CONTROL. WHEN THE UNIT IS CONFIGURED FOR SINGLE SETPOINT CONTROL, THE AUTO ZONE TEMPERATURE SETPOINT IS USED. WHEN THE UNIT IS CONFIGURED FOR DUAL SETPOINT CONTROL, THE COOLING TEMPERATURE SETPOINT IS USED WHEN THE UNIT IS IN THE AUTO (COOL) STATE AND HEATING TEMPERATURE SETPOINT IS USED WHEN THE UNIT IS IN THE AUTO (HEAT) STATE.

WHEN THE TERMINAL UNIT OPERATION MODE IS THE AUTO (COOL) STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT.

THE ALGORITHM SUBTRACTS THE ZONE AIR TEMPERATURE VALUE FROM THE ZONE TEMPERATURE SETPOINT VALUE, THE RESULT IS THE TEMPERATURE DIFFERENCE VALUE. WHEN THE RESULT IS A LARGE POSITIVE VALUE, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE DECREASES THE DIFFERENCE VALUE BECOMES SMALLER. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO A MORE CLOSED POSITION TO REDUCE THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL. WHEN THE DIFFERENCE VALUE IS NEGATIVE, THE LEV IS DRIVEN CLOSED TO PREVENT REFRIGERANT FROM ENTERING THE EVAPORATOR.

WHEN THE TERMINAL UNIT OPERATION MODE IS THE AUTO (HEAT) STATE, HOT GAS REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT.

THE ALGORITHM SUBTRACTS THE ZONE TEMPERATURE SETPOINT VALUE FROM THE ZONE AIR TEMPERATURE VALUE, THE RESULT IS THE TEMPERATURE DIFFERENCE VALUE. WHEN THE RESULT IS A LARGE POSITIVE VALUE, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE INCREASES THE DIFFERENCE VALUE BECOMES SMALLER. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO A MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL. WHEN THE DIFFERENCE VALUE IS NEGATIVE, THE LEV IS DRIVEN CLOSED TO PREVENT REFRIGERANT FROM ENTERING THE EVAPORATOR.

AUTO MODE SYSTEM CHANGEOVER. THE STATE OF THE TERMINAL UNIT IS AUTO (COOL). WHEN THE ABSOLUTE VALUE OF THE DIFFERENCE VALUE IS GREATER THAN THE FACTORY DEFINED CHANGEOVER DELTA VALUE, THE TERMINAL UNIT WILL TRANSITION TO THE AUTO (HEAT) STATE.

THE STATE OF THE TERMINAL UNIT IS AUTO (HEAT). WHEN THE DIFFERENCE VALUE IS GREATER THAN THE FACTORY DEFINED CHANGEOVER DELTA SETPOINT, THE TERMINAL UNIT WILL TRANSITION TO THE AUTO (COOL) STATE.

FAN CONTROL. WHEN THE INDOOR UNIT IS IN THE OFF STATE, THE FAN IS CONTROLLED TO THE MINIMUM SPEED REQUIRED TO MEASURE ZONE AIR TEMPERATURE AT THE RETURN AIR TEMPERATURE SENSOR. THIS ALLOWS ZONE AIR TEMPERATURE TO BE ACCURATELY MEASURED WHILE THE INDOOR UNIT IS IN THE OFF STATE.

UPON TRANSITION FROM THE OFF STATE TO THE ON STATE, THE RPM OF THE FAN IS GOVERNED TO MATCH A MANUFACTURE SPECIFIED, RPM VALUE ASSIGNED TO THE EACH DISCRETE FAN SPEED STATE AVAILABLE IN THE UNIT. THE NUMBER OF DISTINCT FAN SPEED STATES AND THE FAN RPM VALUE FOR EACH STATE VARIES BY MANUFACTURE AND MODEL OF INDOOR UNIT. THE FAN SPEED STATE IS CONTROLLED BY ONE OF TWO METHODS, AUTOMATIC FAN SPEED CONTROL OR MANUAL FAN SPEED CONTROL. THE CHOICE OF CONTROL METHOD IS MADE BY A USER OF THE SYSTEM.

UPON INDOOR UNIT TRANSITION FROM THE ON STATE TO THE OFF STATE, THE FAN TRANSITIONS TO THE STATE DESCRIBED WHEN THE INDOOR UNIT IS IN THE OFF STATE.

MANUAL FAN SPEED CONTROL. A USER OF THE SYSTEM SELECTS A DESIRED FAN SPEED STATE. THE FAN SPEED RPM WILL CHANGE TO MATCH THE MANUFACTURE SPECIFIED RPM VALUE AND MAINTAIN THE RMP VALUE UNTIL A DIFFERENT FAN SPEED STATE IS SELECTED OR A CHANGE IS MADE TO ANOTHER CONTROL PARAMETER OF THE INDOOR UNIT THAT CAUSES THE FAN TO CHANGE TO A DIFFERENT STATE.

AUTOMATIC FAN SPEED CONTROL. WHEN A USER OF THE SYSTEM SELECTS THE FAN SPEED STATE AUTO, AN ALGORITHM INTERNAL TO THE INDOOR UNIT CONTROLS THE SELECTION OF THE FAN SPEED STATE. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE ZONE TEMPERATURE SETPOINT VALUE IN USE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE FAN STATE SELECTED WILL HAVE A HIGHEST FAN SPEED RPM VALUE. AS THE DIFFERENCE VALUE IS REDUCED, THE ALGORITHM WILL CHANGE THE FAN SPEED IN USE TO A STATE WITH A SMALLER RPM VALUE.

CONDENSATE OVERFLOW MONITORING:

THE UNIT SHALL BE EQUIPPED WITH A CONDENSATE DRAIN PAN LEVEL SENSOR TO PROTECT AGAINST DRAIN PAN OVERFLOW. IF THE SENSOR DETECTS A HIGH CONDENSATE LEVEL IN THE DRAIN PAN, THE CONTROL SHALL SHUT DOWN THE INDOOR UNIT BEFORE AN OVERFLOW CAN OCCUR AND A CONDENSATE ALARM DIAGNOSTIC SHALL ANNUNCIATE AT THE BAS.

LOCAL OPERATOR TOUCH SENSITIVE DISPLAY

- A. PROVIDE A COLOR TOUCH SENSITIVE DISPLAY THAT ALLOWS THE BUILDING OCCUPANTS TO ACCOMPLISH THE FOLLOWING TASKS:
 - A. CONTROL THE SET POINTS FOR MULTIPLE PIECES OF EQUIPMENT WITH A SINGLE TOUCH. SET POINT ADJUSTMENT BY THE OCCUPANT SHALL BE BOUND BY EDITABLE LIMITS.
 - B. OCCUPANT OVERRIDE OF THE SYSTEM/EQUIPMENT OPERATING MODE SHALL BE POSSIBLE WITH A SINGLE TOUCH ON THE LOCAL OPERATOR DISPLAY. WITH THE ABILITY TO SET UP POINT OVERRIDES TO EXPIRE AT DESIGNATED TIMES
 - C. THE LOCAL OPERATOR DISPLAY SHALL PROVIDE OCCUPANT ACCESS TO SYSTEM TIME OF DAY SCHEDULING. OCCUPANTS SHALL HAVE THE ABILITY TO SCHEDULE EVENTS MORE THAN ONE YEAR IN ADVANCE. EXCEPTION SCHEDULES AND HOLIDAYS SHALL BE SHOWN CLEARLY ON THE CALENDAR, VISIBLE TO THE OCCUPANT ON THE TOUCHSCREEN DISPLAY.
 - D. THE LOCAL OPERATOR DISPLAY SHALL OFFER PIN CONTROL, WHICH SHALL LIMIT SYSTEM CONTROL ACCESS TO ONLY THOSE WITH PROPER LOGIN CREDENTIALS.
 - E. THE LOCAL OPERATOR DISPLAY SHALL DISPLAY THE ALERTS THAT REQUIRE SERVICE OF THE CONNECTED EQUIPMENT.
- B. TO ENSURE INTEROPERABILITY WITH THE BUILDING AUTOMATION SYSTEM (BAS), THE LOCAL OPERATOR DISPLAY SHALL BE PROVIDED BY THE BAS SOLUTION PROVIDER ASSOCIATED WITH THIS PROJECT.
 - A. LOCAL OPERATOR DISPLAY SHALL BE A MINIMUM OF 10 INCHES IN SIZE AND BE PROVIDED WITH MOUNTING HARDWARE TO ALLOW IT TO BE INSTALLED ON AN OFFICE WALL OR CONTROL PANEL DOOR.
 - B. LOCAL OPERATOR TOUCH SENSITIVE DISPLAY OPERATING CONDITIONS:
 - TEMPERATURE: -40°F TO 158°F (-40°C TO 70°C)
 - HUMIDITY: BETWEEN 5% TO 100% (CONDENSING)



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CITY OF EAST PROVIDENCE
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RIVERSIDE, RI 02915

REVISIONS:



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VRF CONTROLS

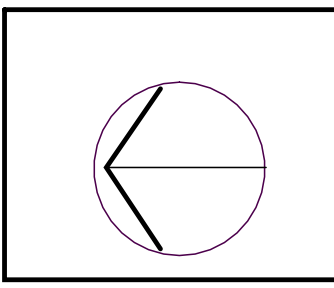
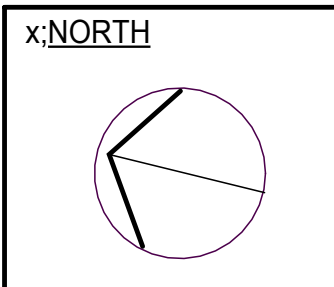
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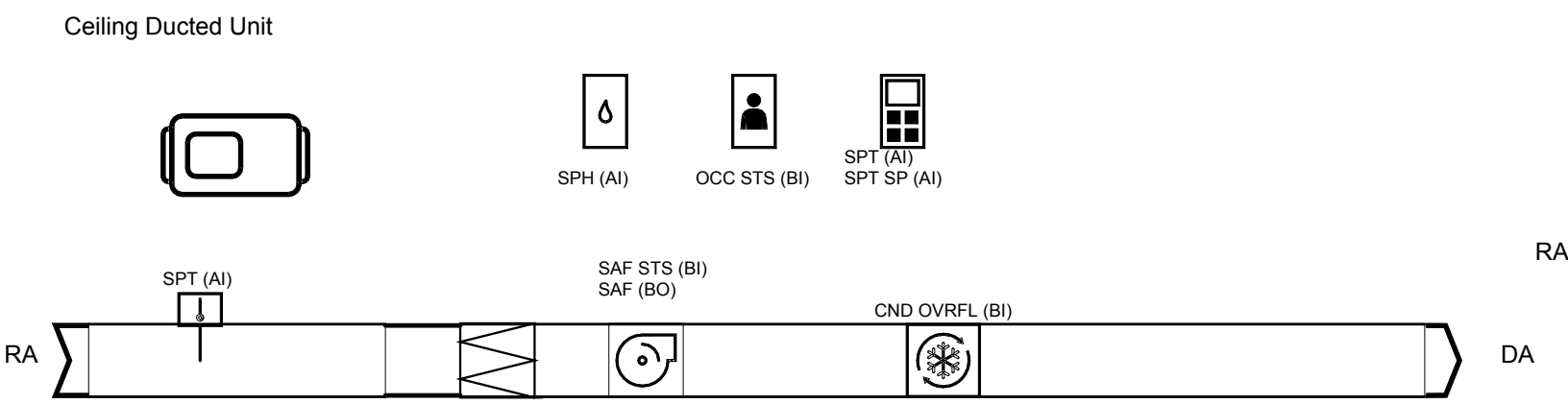
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Flow Diagram: VRF INDOOR UNIT CD



Points List: VRF INDOOR UNIT CD [QTY: 3]

System Point Description	POINTS	ALARMS
	GRAPHIC	
	ANALOG HARDWARE INPUT (AI)	
	BINARY HARDWARE INPUT (BI)	
	ANALOG HARDWARE OUTPUT (AO)	
	BINARY HARDWARE OUTPUT (BO)	
	SOFTWARE POINT (SFT)	
	HARDWARE INTERLOCK (HDW)	
	WIRELESS (WLS)	
	NETWORK (NET)	
	HIGH ANALOG LIMIT	
	LOW ANALOG LIMIT	
	BINARY	
	LATCH DIAGNOSTIC	
	SENSOR FAIL	
	COMMUNICATION FAIL	
CONDENSATE OVERFLOW DETECTION LOCAL CND OVRFL	X	
FAN SPEED STATUS SAF STS	X	
SPACE HUMIDITY SENSOR LOCAL SPH	X X	
SPACE OCCUPANCY STATUS OCC STS	X	
SPACE TEMPERATURE LOCAL SPT	X X	
SPACE TEMPERATURE SETPOINT LOCAL SPT SP	X X	
SPACE TEMPERATURE (TH1) SPT	X	
SUPPLY FAN SPEED SAF	X	
ALARM CODE ALM	X	
ALARM MESSAGE ALM MSG	X	
BAS COMMUNICATION STATE BAS COM	X	X
EXPANSION VALVE STATE XV RATE	X	
FILTER TIMER HOURS FIL HRS	X	
GAS PIPE TEMPERATURE (TH3) VAPT	X	
GAS PIPE TEMPERATURE (TH4) VAPT	X	
INDOOR LEV RATE LEV RATE	X	
LIQUID PIPE TEMPERATURE (TH2) LIQT	X	
OCCUPIED COOLING SETPOINT OCC CLG SP	X	
OCCUPIED HEATING SETPOINT OCC HTG SP	X	
SUBCOOL (SC) SC	X	
SUPERHEAT (SH) SH	X	
UNOCCUPIED COOLING SETPOINT UNOCC CLG SP	X	
UNOCCUPIED HEATING SETPOINT UNOCC HTG SP	X	

Points List: VRF OUTDOOR UNIT

System Point Description	POINTS	ALARMS
	GRAPHIC	
	ANALOG HARDWARE INPUT (AI)	
	BINARY HARDWARE INPUT (BI)	
	ANALOG HARDWARE OUTPUT (AO)	
	BINARY HARDWARE OUTPUT (BO)	
	SOFTWARE POINT (SFT)	
	HARDWARE INTERLOCK (HDW)	
	WIRELESS (WLS)	
	NETWORK (NET)	
	HIGH ANALOG LIMIT	
	LOW ANALOG LIMIT	
	BINARY	
	LATCH DIAGNOSTIC	
	SENSOR FAIL	
	COMMUNICATION FAIL	
COMPRESSOR DISCHARGE TEMPERATURE CMP DT	X	
COMPRESSOR OUTPUT(S) CMP OUT	X	
DEMAND (EMERGENCY) STOP CMP ES	X	
HIGH SIDE SATURATION TEMPERATURE HSAT TEMP	X	
INVERTER HEAT SINK TEMPERATURE IVR TEMP	X	
LOW SIDE SATURATION TEMPERATURE LSAT TEMP	X	
OUTDOOR AIR TEMPERATURE OAT	X	
OUTDOOR UNIT FAN OUTPUT(S) OFN SPD	X	
POWER 3PH BUT ONLY MEASURING ONE LEG CURRENT (PH-A) CMP PHA	X	
POWER 3PH BUT ONLY MEASURING ONE LEG CURRENT (PH-C) CMP PHC	X	
REFRIGERANT HIGH SIDE PRESSURE HPRESS	X	
REFRIGERANT LOW SIDE PRESSURE LPRESS	X	
SUCTION LINE TEMPERATURE SUC TEMP	X	
ALARM CODE ALM	X	
ALARM MESSAGE ALM MSG	X	
COMPRESSOR OPERATION STATUS CMP STS	X	
LOW AMBIENT CAPACITY CONTROL LAMB CAP	X	
OPERATING SPEED OF THE MAIN ODU	X	
CMP FQ	X	
OPERATIONAL MODE STATUS MOD STS	X	
OUTDOOR UNIT FAN STATE OFN STS	X	
POWER LINE FREQUENCY PWR FQ	X	
REVERSING VALVE POSITION REV VLV POS	X	



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VRF CONTROLS POINTS

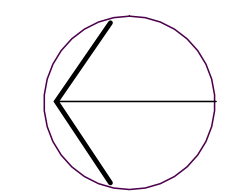
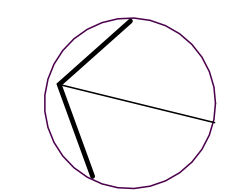
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EXTERNAL CONTROL DEVICE:

IN THIS SPECIFICATION THE TERM 'EXTERNAL CONTROL DEVICE' IS USED TO DENOTE ONE OR MORE USER INTERFACE CONTROL DEVICES THAT MAY BE PRESENT IN THE SYSTEM. THE CONTROL DEVICES THAT MAY BE PRESENT ARE A LOCAL CONTROL DEVICE, VRF SYSTEM CONTROL DEVICE, OR A BUILDING AUTOMATION SYSTEM. WHEN MORE THAN ONE EXTERNAL CONTROL DEVICE IS PRESENT IN THE CONTROL SYSTEM, THE LAST COMMAND OR CONFIGURATION VALUE RECEIVED BY THE INDOOR UNIT GOVERNS INDOOR UNIT OPERATION.

THERE MAY BE OTHER MEANS TO PROVIDE COMMANDS AND CONFIGURATION PARAMETERS TO THE VRF SYSTEM, SUCH AS HARDWIRED CONTROL INPUTS. HOWEVER, THESE ARE NOT CONSIDERED THE TYPICAL SYSTEM CONTROL USE CASE AND THE SPECIFICATION DOES NOT ADDRESS THEM AS WRITTEN.

ZONE TEMPERATURE SETPOINT CONTROL:

DUAL SETPOINT. TWO ZONE AIR TEMPERATURE SETPOINTS ARE PRESENT. WHEN THE TERMINAL UNIT IS IN A COOLING MODE, IT WILL CONTROL THE ZONE AIR TEMPERATURE VALUE TO THE COOLING TEMPERATURE SETPOINT VALUE. WHEN THE TERMINAL UNIT IS IN A HEATING MODE, IT WILL CONTROL THE ZONE AIR TEMPERATURE VALUE TO THE HEATING TEMPERATURE SETPOINT VALUE.

ON/OFF MODE:

THE TERMINAL UNIT HAS TWO MODES THAT DRIVE THE OVERALL OPERATION OF THE UNIT, ON AND OFF MODE.

ON. THE INTERNAL ALGORITHM WILL CONTROL THE UNIT TO MAINTAIN THE DESIRED ZONE AIR TEMPERATURE.

OFF. THE INTERNAL ALGORITHM WILL NOT CONTROL THE UNIT TO MAINTAIN THE DESIRE ZONE AIR TEMPERATURE. THE ALGORITHM WILL CONTROL COMPONENTS INTERNAL TO THE UNIT TO MINIMIZE ENERGY CONSUMPTION AND ISOLATE IT FROM VRF SYSTEM REFRIGERANT CIRCUIT. THE ZONE AIR TEMPERATURE SENSOR IN USE WILL BE MONITORED TO ALLOW THE ZONE AIR TEMPERATURE VALUE TO BE DISPLAYED AT AN EXTERNAL CONTROL DEVICE(S).

OPERATION MODE:

OPERATION MODE IS THE PRIMARY CONTROL PARAMETER OF THE INDOOR UNIT WHEN IT IS IN THE ON STATE. THE OPERATION MODE COMMAND PROVIDED TO THE INDOOR UNIT FROM AN ETERNAL CONTROL DEVICE WILL DETERMINE THE BASE HVAC CONTROL FUNCTION THE INDOOR UNIT IS PROVIDING. AVAILABLE MODES OF OPERATION ARE COOL, DRY, FAN, HEAT, SETBACK, AND AUTO.

COOL. WHEN THE TERMINAL UNIT OPERATION MODE IS THE COOL STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE COOLING TEMPERATURE SETPOINT VALUE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE DECREASES THE DIFFERENCE VALUE BECOMES LESS. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL.

DRY. WHEN THE TERMINAL UNIT OPERATION MODE IS THE DRY STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE GOAL IN DRY MODE IS TO REMOVE WATER VAPOR FROM THE AIR, NOT CONTROL THE ZONE AIR TEMPERATURE VALUE TO A ZONE TEMPERATURE SETPOINT. WHEN THE TERMINAL UNIT IS COMMANDED TO THE DRY STATE, AN ALGORITHM INTERNAL TO THE TERMINAL UNIT DRIVES THE LEV TO AN OPEN POSITION. IT IS ASSUMED THAT THE POSITION OF THE VALVE ALLOWS A SUFFICIENT AMOUNT OF REFRIGERANT TO ENTER THE COIL, TO CAUSE THE SURFACE TEMPERATURE OF THE COIL FINS TO FALL BELOW THE DEW POINT TEMPERATURE. THE RESULT IS CONDENSATION THAT REMOVES WATER VAPOR FROM THE AIR PASSING THROUGH THE COIL.

WHEN THE ZONE AIR TEMPERATURE VALUE IS GREATER THAN OR EQUAL TO THE COOLING TEMPERATURE SETPOINT, DRY STATE IS BENEFICIAL FROM BOTH A HUMIDITY AND ZONE TEMPERATURE PERSPECTIVE BECAUSE WATER VAPOR IS BEING REMOVED FROM THE AIR IN THE ZONE AND THE DIFFERENCE VALUE BETWEEN THE ZONE AIR TEMPERATURE VALUE AND THE COOLING TEMPERATURE SETPOINT VALUE IS REDUCED.

CONTINUED DEHUMIDIFICATION WILL CAUSE THE ZONE AIR TEMPERATURE VALUE TO BECOME LESS THAN THE COOLING TEMPERATURE SETPOINT, WHICH IS UNDESIRABLE. TO COMBAT THE EFFECT, THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE ZONE AIR TEMPERATURE VALUE AND COOLING TEMPERATURE SETPOINT. BASED ON THE DIFFERENCE VALUE, THE ALGORITHM USES A SLIDING TIME SCALE METHOD TO MODULATE THE LEV BETWEEN THE OPEN POSITION AND THE FULLY CLOSED POSITION FOR A VARIABLE LENGTH OF TIME. IT IS ASSUMED THAT WHEN THE LEV IS IN THE FULLY CLOSED POSITION LATENT HEAT WITHIN THE ZONE WILL CAUSE THE ZONE AIR TEMPERATURE VALUE TO INCREASE. THE METHOD ALLOWS SOME DEHUMIDIFICATION TO TAKE PLACE WITHOUT SIGNIFICANTLY LOWERING THE AIR TEMPERATURE IN THE ZONE BELOW THE COOLING TEMPERATURE SETPOINT.

FAN. WHEN THE TERMINAL UNIT OPERATION MODE IS THE FAN STATE, THE LEV IS CLOSED AND THE TERMINAL UNIT DOES NOT ATTEMPT REGULATE THE AIR TEMPERATURE IN THE ZONE. THE TEMPERATURE OF THE AIR IN THE ZONE MAY CHANGE DUE TO LATENT HEAT WITHIN THE ZONE. WITH THE USE OF AN EXTERNAL USER INTERFACE, THE SPEED OF THE FAN MAY BE MODULATED BETWEEN THE DISCRETE STATES SUPPORTED BY THE TERMINAL UNIT.

HEAT. WHEN THE TERMINAL UNIT OPERATION MODE IS THE HEAT STATE, HOT GAS REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE HEATING TEMPERATURE SETPOINT VALUE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE INCREASES THE DIFFERENCE VALUE BECOMES LESS. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL.

SETBACK. SOME TERMINAL UNITS MAY NOT SUPPORT THE SETBACK STATE. WHEN THE TERMINAL UNIT OPERATION MODE TRANSITIONS TO SETBACK STATE, THE LEV IS DRIVEN CLOSED AND THE ZONE AIR TEMPERATURE IS ALLOWED TO DRIFT. THE AMOUNT OF DRIFT IS BOUNDED BY THE SETBACK COOLING TEMPERATURE SETPOINT AND THE SETBACK HEATING TEMPERATURE SETPOINT.

WHEN THE ZONE AIR TEMPERATURE VALUE IS GREATER THAN THE SETBACK COOLING TEMPERATURE SETPOINT THE TERMINAL UNIT WILL EXECUTE THE SETBACK COOL ALGORITHM. THE ALGORITHM MODULATES THE LEV TO MAINTAIN THE ZONE TEMPERATURE TO THE SETBACK COOLING TEMPERATURE SETPOINT.

WHEN THE ZONE AIR TEMPERATURE VALUE IS LESS THAN THE SETBACK HEATING TEMPERATURE SETPOINT THE TERMINAL UNIT WILL EXECUTE THE SETBACK HEAT ALGORITHM. THE ALGORITHM MODULATES THE LEV TO MAINTAIN THE ZONE TEMPERATURE TO THE SETBACK HEATING TEMPERATURE SETPOINT.

AUTO. SOME MANUFACTURERS' TERMINAL UNITS MAY NOT SUPPORT THE AUTO STATE OF OPERATION MODE.

AUTO MODE IS BENEFICIAL IN A HEAT RECOVERY SYSTEM BECAUSE IT ALLOWS THE TERMINAL UNIT TO AUTOMATICALLY SWITCH BETWEEN COOLING AND HEATING STATES BASED ON THE CURRENT ZONE AIR TEMPERATURE AND THE ZONE TEMPERATURE SETPOINT IN USE. WHEN THE TERMINAL UNIT OPERATION MODE IS THE AUTO STATE, TWO SUB-STATES ARE AVAILABLE, AUTO (COOL) AND AUTO (HEAT).

DEPENDING ON THE SETPOINT CONTROL CONFIGURATION OF THE TERMINAL UNIT, ONE OF THREE SETPOINTS IS USED FOR CONTROL. WHEN THE UNIT IS CONFIGURED FOR SINGLE SETPOINT CONTROL, THE AUTO ZONE TEMPERATURE SETPOINT IS USED. WHEN THE UNIT IS CONFIGURED FOR DUAL SETPOINT CONTROL, THE COOLING TEMPERATURE SETPOINT IS USED WHEN THE UNIT IS IN THE AUTO (COOL) STATE AND HEATING TEMPERATURE SETPOINT IS USED WHEN THE UNIT IS IN THE AUTO (HEAT) STATE.

WHEN THE TERMINAL UNIT OPERATION MODE IS THE AUTO (COOL) STATE, LIQUID REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT.

THE ALGORITHM SUBTRACTS THE ZONE AIR TEMPERATURE VALUE FROM THE ZONE TEMPERATURE SETPOINT VALUE, THE RESULT IS THE TEMPERATURE DIFFERENCE VALUE. WHEN THE RESULT IS A LARGE POSITIVE VALUE, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE DECREASES THE DIFFERENCE VALUE BECOMES SMALLER. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO A MORE CLOSED POSITION TO REDUCE THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL. WHEN THE DIFFERENCE VALUE IS NEGATIVE, THE LEV IS DRIVEN CLOSED TO PREVENT REFRIGERANT FROM ENTERING THE EVAPORATOR.

WHEN THE TERMINAL UNIT OPERATION MODE IS THE AUTO (HEAT) STATE, HOT GAS REFRIGERANT IS PROVIDED TO THE TERMINAL UNIT. THE AMOUNT OF REFRIGERANT ENTERING THE EVAPORATOR COIL IS REGULATED BY THE LINEAR EXPANSION VALVE. THE POSITION OF LEV IS DETERMINED BY AN ALGORITHM INTERNAL TO THE TERMINAL UNIT.

THE ALGORITHM SUBTRACTS THE ZONE TEMPERATURE SETPOINT VALUE FROM THE ZONE AIR TEMPERATURE VALUE, THE RESULT IS THE TEMPERATURE DIFFERENCE VALUE. WHEN THE RESULT IS A LARGE POSITIVE VALUE, THE LEV IS DRIVEN OPEN TO ALLOW MORE REFRIGERANT INTO THE EVAPORATOR COIL. AS THE ZONE AIR TEMPERATURE INCREASES THE DIFFERENCE VALUE BECOMES SMALLER. THE ALGORITHM WILL RESPOND AND DRIVE THE LEV TO A MORE CLOSED POSITION REDUCING THE AMOUNT OF REFRIGERANT ENTERING INTO THE EVAPORATOR COIL. AS THE DIFFERENCE VALUE APPROACHES ZERO, THE SYSTEM STABILIZES AND THE AMOUNT OF LEV MODULATION IS MINIMAL. WHEN THE DIFFERENCE VALUE IS NEGATIVE, THE LEV IS DRIVEN CLOSED TO PREVENT REFRIGERANT FROM ENTERING THE EVAPORATOR.

AUTO MODE SYSTEM CHANGEOVER. THE STATE OF THE TERMINAL UNIT IS AUTO (COOL). WHEN THE ABSOLUTE VALUE OF THE DIFFERENCE VALUE IS GREATER THAN THE FACTORY DEFINED CHANGEOVER DELTA VALUE, THE TERMINAL UNIT WILL TRANSITION TO THE AUTO (HEAT) STATE.

THE STATE OF THE TERMINAL UNIT IS AUTO (HEAT). WHEN THE DIFFERENCE VALUE IS GREATER THAN THE FACTORY DEFINED CHANGEOVER DELTA SETPOINT, THE TERMINAL UNIT WILL TRANSITION TO THE AUTO (COOL) STATE.

FAN CONTROL. WHEN THE INDOOR UNIT IS IN THE OFF STATE, THE FAN IS CONTROLLED TO THE MINIMUM SPEED REQUIRED TO MEASURE ZONE AIR TEMPERATURE AT THE RETURN AIR TEMPERATURE SENSOR. THIS ALLOWS ZONE AIR TEMPERATURE TO BE ACCURATELY MEASURED WHILE THE INDOOR UNIT IS IN THE OFF STATE.

UPON TRANSITION FROM THE OFF STATE TO THE ON STATE, THE RPM OF THE FAN IS GOVERNED TO MATCH A MANUFACTURE SPECIFIED, RPM VALUE ASSIGNED TO THE EACH DISCRETE FAN SPEED STATE AVAILABLE IN THE UNIT. THE NUMBER OF DISTINCT FAN SPEED STATES AND THE FAN RPM VALUE FOR EACH STATE VARIES BY MANUFACTURE AND MODEL OF INDOOR UNIT. THE FAN SPEED STATE IS CONTROLLED BY ONE OF TWO METHODS, AUTOMATIC FAN SPEED CONTROL OR MANUAL FAN SPEED CONTROL. THE CHOICE OF CONTROL METHOD IS MADE BY A USER OF THE SYSTEM.

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AUTOMATIC FAN SPEED CONTROL. WHEN A USER OF THE SYSTEM SELECTS THE FAN SPEED STATE AUTO, AN ALGORITHM INTERNAL TO THE INDOOR UNIT CONTROLS THE SELECTION OF THE FAN SPEED STATE. THE ALGORITHM CALCULATES THE TEMPERATURE DIFFERENCE VALUE BETWEEN THE MEASURED ZONE AIR TEMPERATURE VALUE AND THE ZONE TEMPERATURE SETPOINT VALUE IN USE. WHEN A LARGE DIFFERENCE VALUE EXISTS, THE FAN STATE SELECTED WILL HAVE A HIGHEST FAN SPEED RPM VALUE. AS THE DIFFERENCE VALUE IS REDUCED, THE ALGORITHM WILL CHANGE THE FAN SPEED IN USE TO A STATE WITH A SMALLER RPM VALUE.

CONDENSATE OVERFLOW MONITORING:

THE UNIT SHALL BE EQUIPPED WITH A CONDENSATE DRAIN PAN LEVEL SENSOR TO PROTECT AGAINST DRAIN PAN OVERFLOW. IF THE SENSOR DETECTS A HIGH CONDENSATE LEVEL IN THE DRAIN PAN, THE CONTROL SHALL SHUT DOWN THE INDOOR UNIT BEFORE AN OVERFLOW CAN OCCUR AND A CONDENSATE ALARM DIAGNOSTIC SHALL ANNUNCIATE AT THE BAS.

LOCAL OPERATOR TOUCH SENSITIVE DISPLAY

- A. PROVIDE A COLOR TOUCH SENSITIVE DISPLAY THAT ALLOWS THE BUILDING OCCUPANTS TO ACCOMPLISH THE FOLLOWING TASKS:
 - A. CONTROL THE SET POINTS FOR MULTIPLE PIECES OF EQUIPMENT WITH A SINGLE TOUCH. SET POINT ADJUSTMENT BY THE OCCUPANT SHALL BE BOUND BY EDITABLE LIMITS.
 - B. OCCUPANT OVERRIDE OF THE SYSTEM/EQUIPMENT OPERATING MODE SHALL BE POSSIBLE WITH A SINGLE TOUCH ON THE LOCAL OPERATOR DISPLAY. WITH THE ABILITY TO SET UP POINT OVERRIDES TO EXPIRE AT DESIGNATED TIMES
 - C. THE LOCAL OPERATOR DISPLAY SHALL PROVIDE OCCUPANT ACCESS TO SYSTEM TIME OF DAY SCHEDULING. OCCUPANTS SHALL HAVE THE ABILITY TO SCHEDULE EVENTS MORE THAN ONE YEAR IN ADVANCE. EXCEPTION SCHEDULES AND HOLIDAYS SHALL BE SHOWN CLEARLY ON THE CALENDAR, VISIBLE TO THE OCCUPANT ON THE TOUCHSCREEN DISPLAY.
 - D. THE LOCAL OPERATOR DISPLAY SHALL OFFER PIN CONTROL, WHICH SHALL LIMIT SYSTEM CONTROL ACCESS TO ONLY THOSE WITH PROPER LOGIN CREDENTIALS.
 - E. THE LOCAL OPERATOR DISPLAY SHALL DISPLAY THE ALERTS THAT REQUIRE SERVICE OF THE CONNECTED EQUIPMENT.
- B. TO ENSURE INTEROPERABILITY WITH THE BUILDING AUTOMATION SYSTEM (BAS), THE LOCAL OPERATOR DISPLAY SHALL BE PROVIDED BY THE BAS SOLUTION PROVIDER ASSOCIATED WITH THIS PROJECT.
 - A. LOCAL OPERATOR DISPLAY SHALL BE A MINIMUM OF 10 INCHES IN SIZE AND BE PROVIDED WITH MOUNTING HARDWARE TO ALLOW IT TO BE INSTALLED ON AN OFFICE WALL OR CONTROL PANEL DOOR.
 - B. LOCAL OPERATOR TOUCH SENSITIVE DISPLAY OPERATING CONDITIONS:
 - TEMPERATURE: -40°F TO 158°F (-40°C TO 70°C)
 - HUMIDITY: BETWEEN 5% TO 100% (CONDENSING)



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Landscape Architects:
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AGE

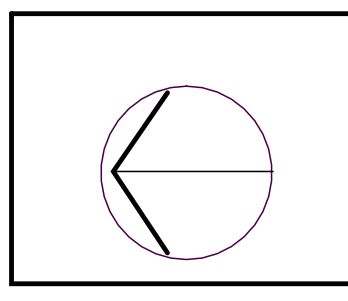
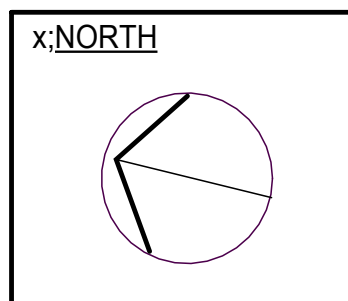
VRF CONTROLS

DATE: 310CT24 10/31/24

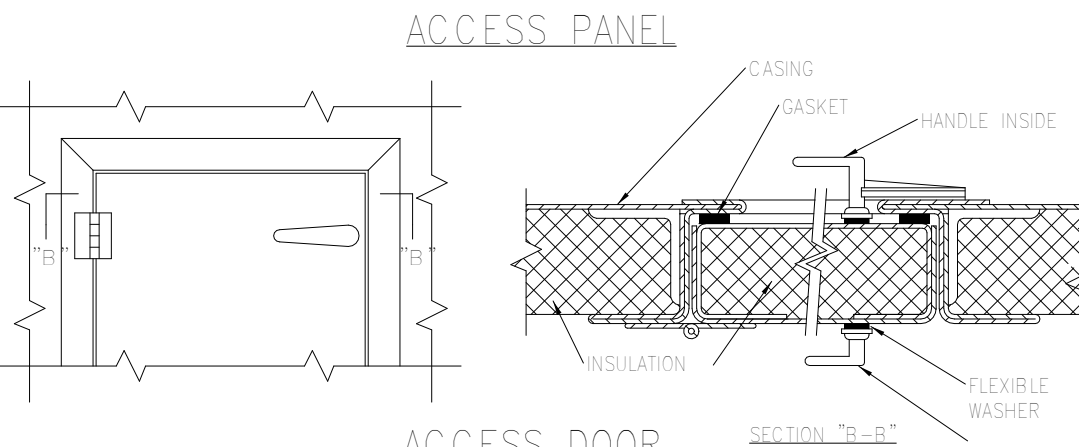
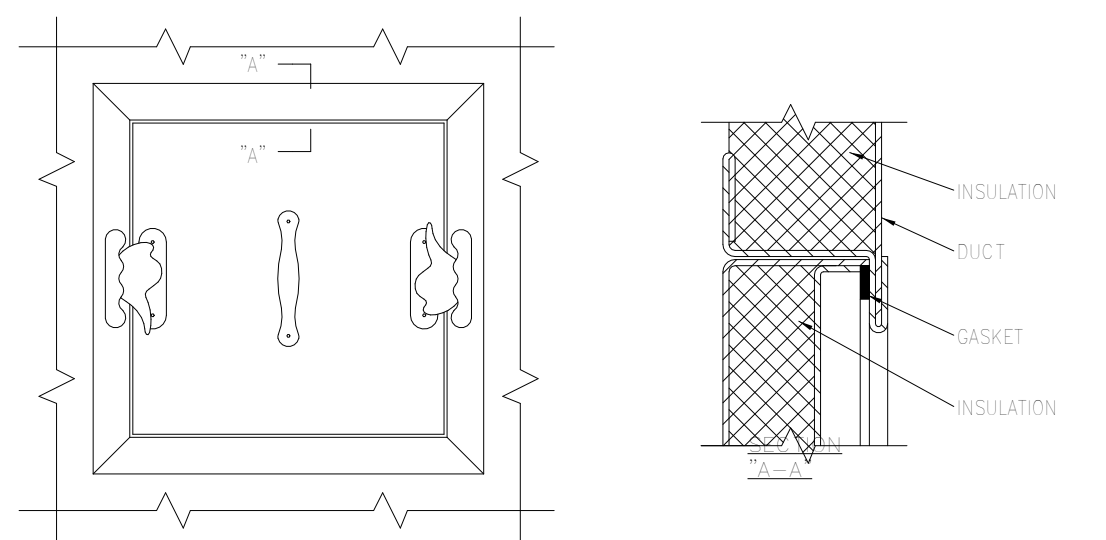
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DRAWING NO.:

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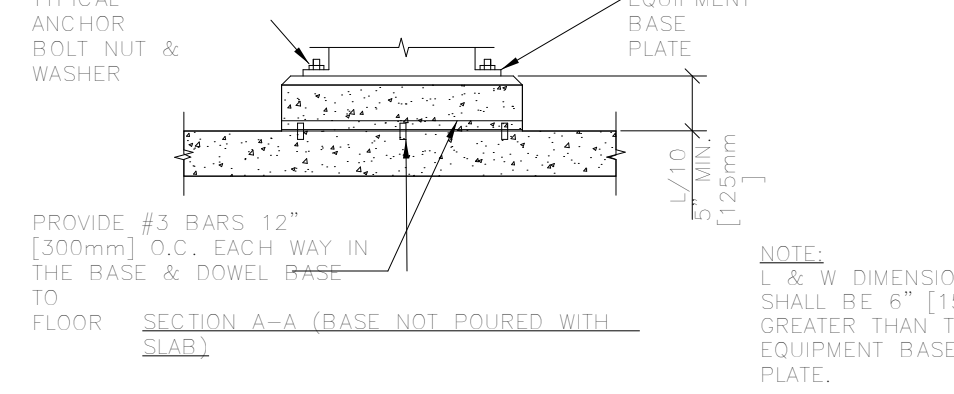
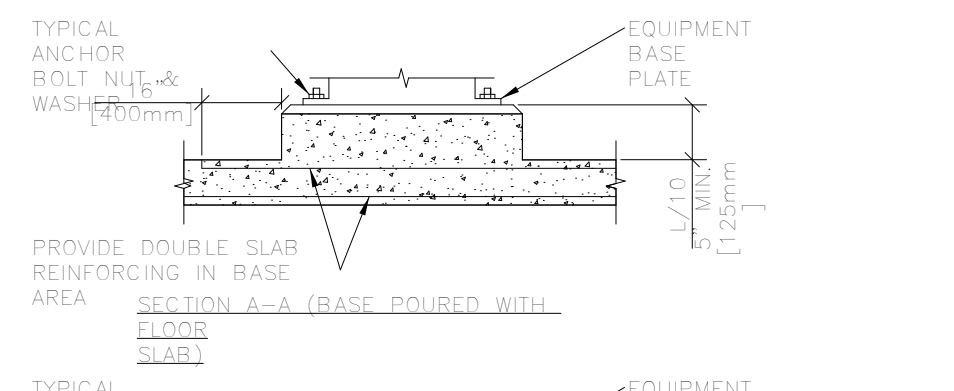
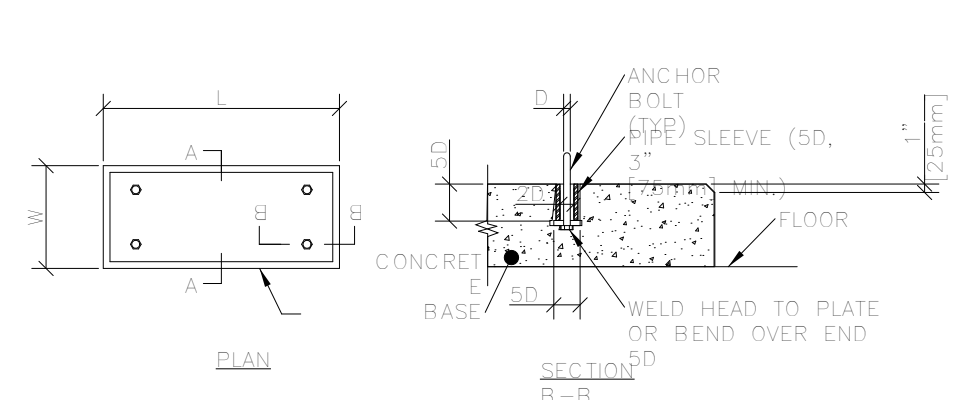


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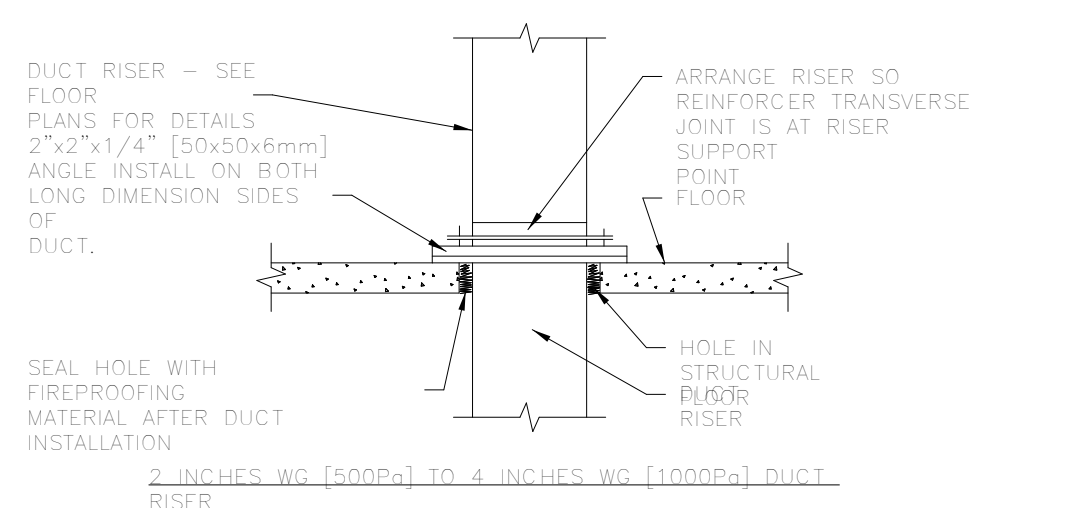
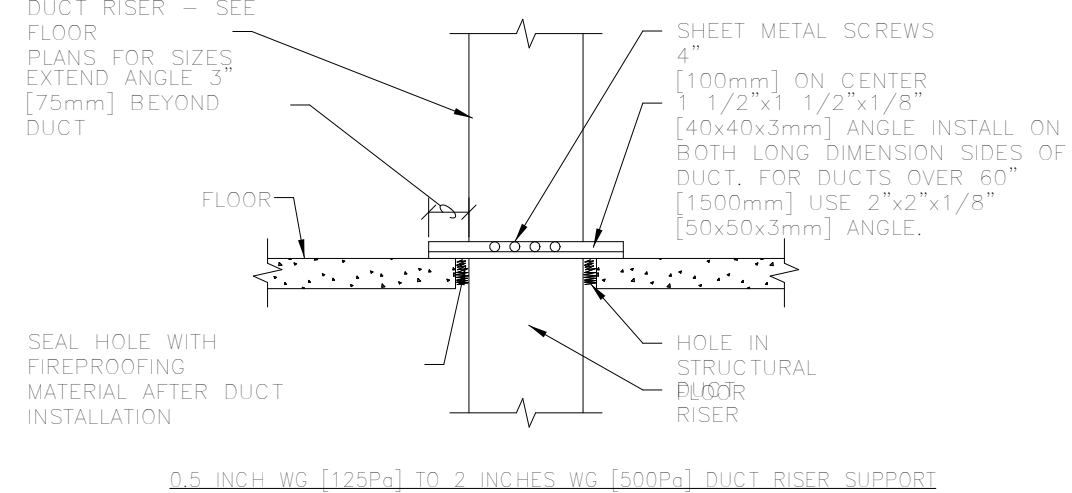
NOTES:
 1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
 2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
 3. SEE SMACNA 2005, FIGURE 9-15

1 ACCESS PANEL AND DOOR DETAIL
 3/8" = 1'-0"



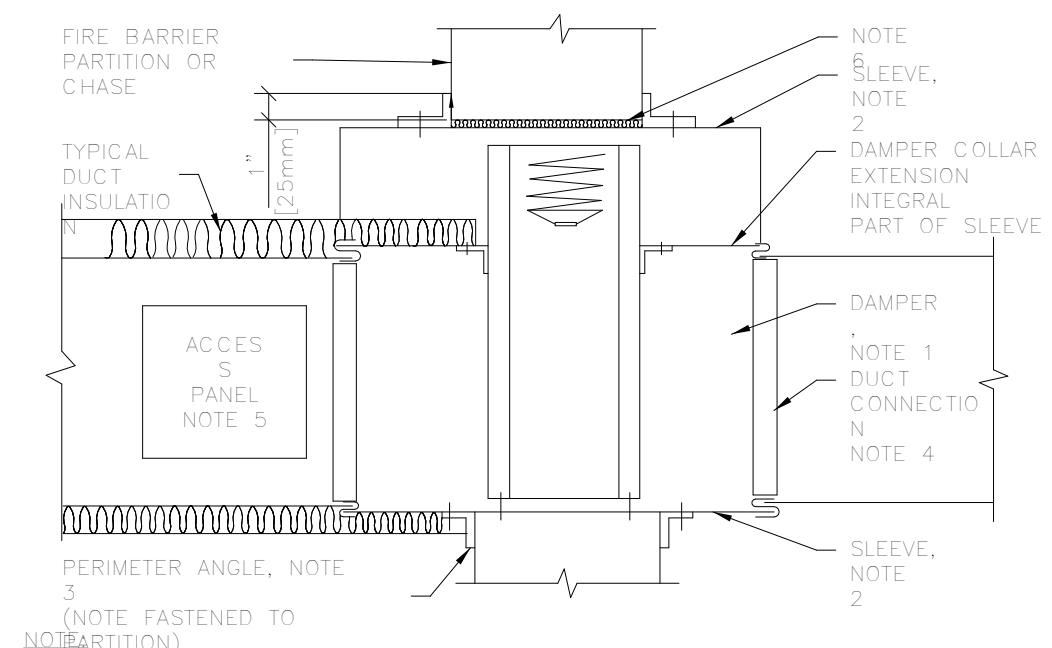
NOTE:
 L & W DIMENSIONS SHALL BE AT LEAST 150mm GREATER THAN THE EQUIPMENT BASE PLATE.

2 CONCRETE EQUIPMENT BASES
 3/8" = 1'-0"



NOTE:
 ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND FAN ROOM FLOORS SHALL BE PROVIDED WITH A 3" [75mm] HIGH RISER SUPPORT.

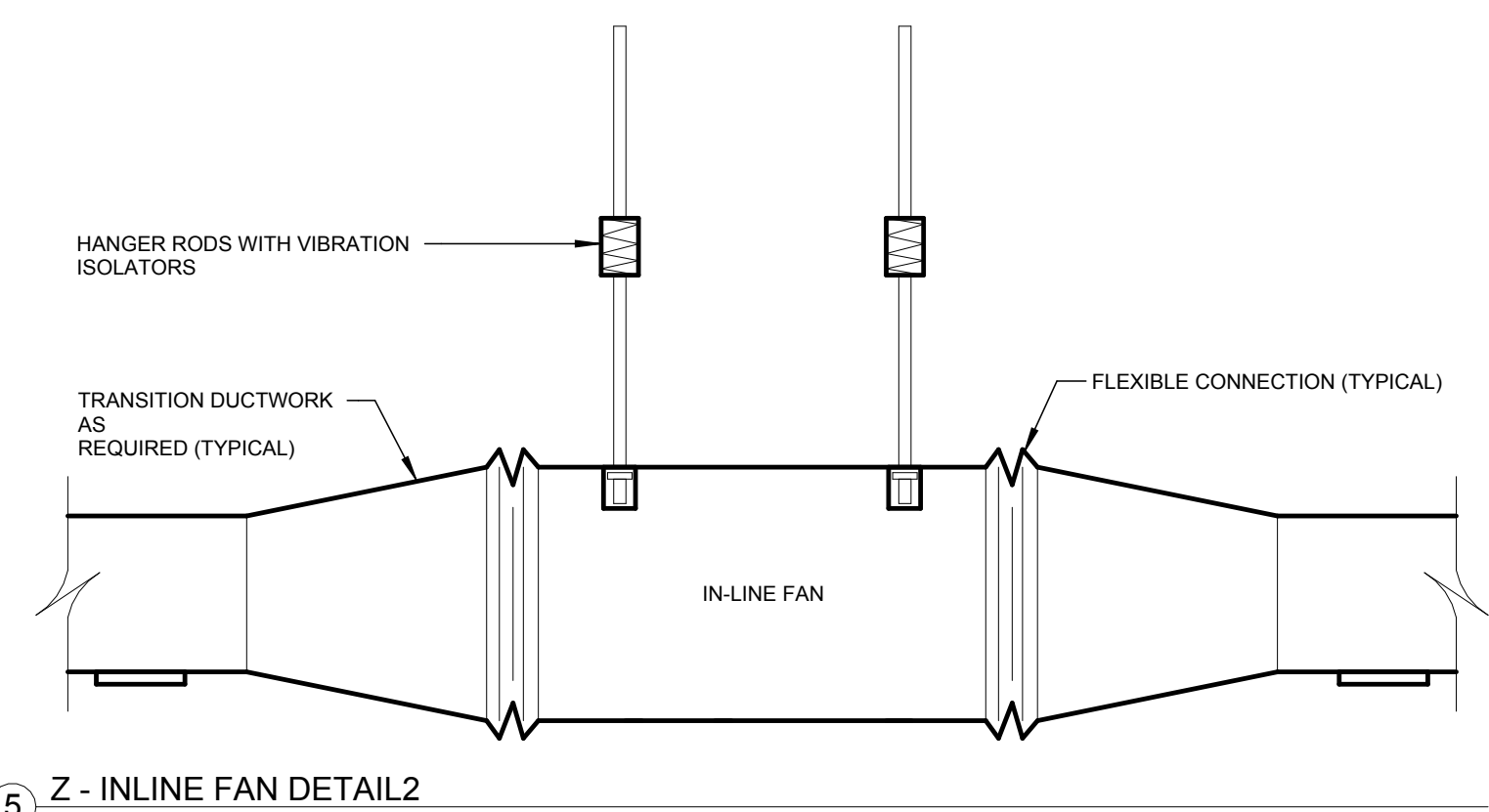
3 DUCT RISER SUPPORTS
 3/8" = 1'-0"



NOTE: SLEEVE, NOTE 2
 DAMPER COLLAR EXTENSION INTEGRAL PART OF SLEEVE
 DAMPER CONNECTION, NOTE 4
 SLEEVE, NOTE 2
 PERIMETER ANGLE, NOTE 3 (NOTE FASTENED TO PARTITION)

1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PARTITION.
 2. DAMPER SLEEVE: GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER.
 3. PERIMETER ANGLES: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [40x40mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
 4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA.
 5. ACCESS PANELS: SIZE AND LOCATION TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS.
 6. PROVIDE 1/4" TO 1/2" [6 TO 15mm] CLEARANCE ON HEIGHT AND WIDTH. FILL OPEN SPACE WITH ROCK WOOL FIRESTOP.
 7. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" [75mm] HIGH CONCRETE CURBS AROUND OPENING FOR DUCT.

4 SECTION THRU FIRE DAMPER INSTALLATION
 3/8" = 1'-0"



5 Z - INLINE FAN DETAIL2
 1/2" = 1'-0"



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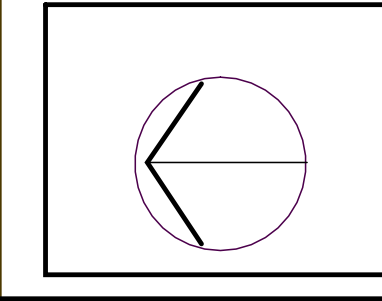
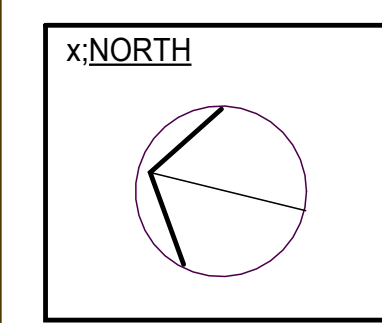


AGE
 MECHANICAL DETAILS

DATE: 31OCT24 10/31/24

NCA JOB NO.: 23100

DRAWING NO.: M601



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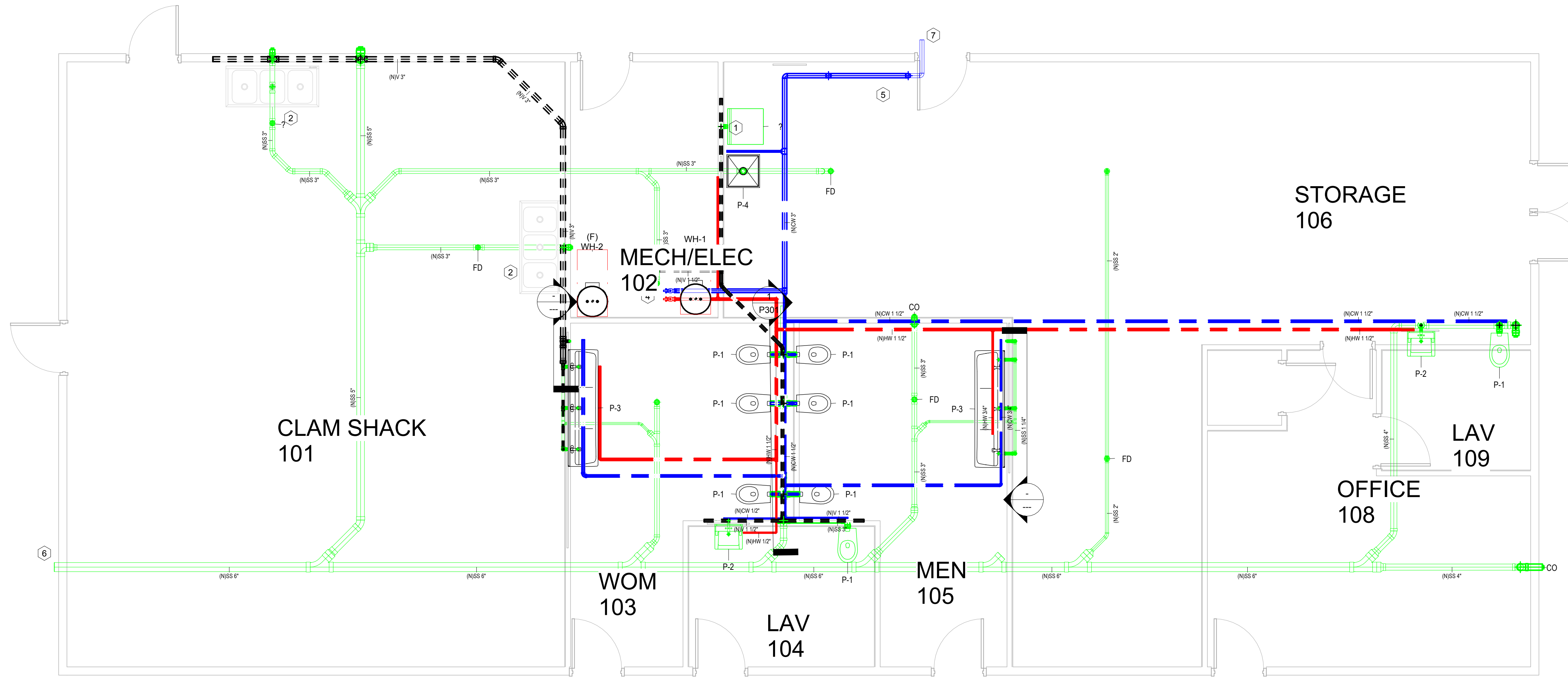
PLUMBING GENERAL (INDEX,
 SYMBOLS, LEGEND, NOTES,
 ABBREVIATION, LOCATION MAP)

DATE: AGE 10/31/24

NCA JOB NO.: 23100

DRAWING NO.:

P101



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

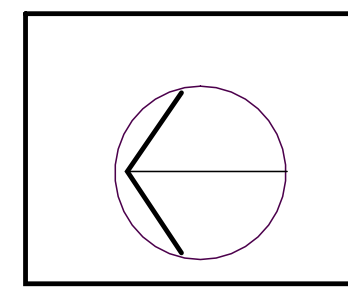
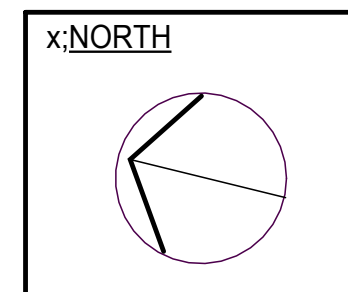
PIPING NOTES

- A. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE PIPING SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- B. ELEVATIONS AS SHOWN ON THE DRAWINGS ARE TO THE CENTERLINE OF ALL PRESSURE PIPING AND TO THE INVERT OF ALL GRAVITY PIPING.
- C. MAINTAIN A MINIMUM OF 3'-6" OF GROUND COVER OVER ALL UNDERGROUND HVAC PIPING BUT ENSURE FROST LINE IS CONSIDERED AND MET.
- D. UNLESS OTHERWISE NOTED, ALL CHILLED WATER AND HEATING WATER PIPING SHALL BE 3/4 INCH SIZE (EDIT SYSTEM TYPE OR PIPE SIZE TO SUIT PROJECT REQUIREMENTS).
- E. PROVIDE AN AIR VENT AT THE HIGH POINT OF EACH DROP ALL HYDRONIC PIPING SYSTEMS INCLUDING BUT NOT LIMITED TO IN THE HEATING WATER, CHILLED WATER, AND OTHER CLOSED WATER PIPING SYSTEMS (EDIT SYSTEM TYPES TO SUIT PROJECT REQUIREMENTS). ALL PIPING SHALL GRADE TO LOW POINTS. PROVIDE HOSE END DRAIN VALVES AT THE BOTTOM OF ALL RISERS AND LOW POINTS.
- F. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION IF REQUIRED.
- G. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE.
- H. ALL VALVES SHALL BE INSTALLED SO THAT VALVE REMAINS IN SERVICE WHEN EQUIPMENT OR PIPING ON EQUIPMENT SIDE OF VALVE IS REMOVED.
- I. ALL BALANCING VALVES AND BUTTERFLY VALVES SHALL BE PROVIDED WITH POSITION INDICATORS AND MAXIMUM ADJUSTABLE STOPS (MEMORY STOPS).
- J. PROVIDE CHAINWHEEL OPERATORS FOR ALL VALVES IN EQUIPMENT ROOMS MOUNTED GREATER THAN 7'-0" ABOVE FLOOR LEVEL; CHAIN SHALL EXTEND TO 7'-0" ABOVE FLOOR LEVEL.
- K. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS SHALL BE FULL SIZE OF PIPE BEFORE REDUCING SIZE TO MAKE CONNECTIONS TO EQUIPMENT AND CONTROLS.
- L. UNIONS AND/OR FLANGES SHALL BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERATION AND REPAIRS.
- M. PITCH STEAM PIPING DOWNWARD IN THE DIRECTION OF FLOW 1/4 INCH IN 10 FEET (1 INCH IN 40 FEET) MINIMUM. PITCH ALL STEAM RETURN LINES DOWNWARD IN THE DIRECTION OF CONDENSATE FLOW 1/2 INCH PER 10 FEET (1 INCH IN 20 FEET) MINIMUM. WHERE LENGTH OF BRANCH LINES ARE LESS THAN 8 FEET, PITCH BRANCH LINES TOWARD MAINS 1/2 INCH PER FOOT MINIMUM.
- N. PITCH UP ALL STEAM AND CONDENSATE RUNOUTS TO RISERS AND EQUIPMENT 1/2 INCH PER FOOT. WHERE THIS PITCH CANNOT BE OBTAINED, RUNOUTS OVER 8 FEET IN LENGTH SHALL BE ONE SIZE LARGER THAN NOTED.
- O. TAP ALL BRANCH LINES FROM TOP OF STEAM MAINS (45 DEGREES PREFERRED, 30 DEGREES ACCEPTABLE).
- P. PROVIDE AN END OF MAIN DRIP AT EACH RISE IN THE STEAM MAIN. PROVIDE CONDENSATE DRIPS AT THE BOTTOM OF ALL STEAM RISERS, DOWNFED RUNOUTS TO EQUIPMENT, RADIATORS, ETC., AT END OF MAINS AND LOW POINTS, AND AHEAD OF ALL PRESSURE REGULATORS, CONTROL VALVES, ISOLATION VALVES, AND EXPANSION JOINTS.
- Q. ON STRAIGHT STEAM PIPING RUNS WITH NO NATURAL DRAINAGE POINTS, INSTALL DRIP LEGS AT INTERVALS NOT EXCEEDING 200 FEET WHERE PIPE IS PITCHED DOWNWARD IN THE DIRECTION OF STEAM FLOW AND A MAXIMUM OF 100 FEET WHERE THE PIPE IS PITCHED UP SO THAT CONDENSATE FLOW IS OPPOSITE OF STEAM FLOW.
- R. STEAM TRAPS SHALL BE MINIMUM 3/4" SIZE.
- S. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING.
- T. ALL PIPING SHALL CLEAR DOORS AND WINDOWS.
- U. ALL VALVES SHALL BE ADJUSTED FOR SMOOTH AND EASY OPERATION.
- V. ALL PIPING WORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN PIPING AROUND OBSTRUCTIONS SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- W. PROVIDE FLEXIBLE CONNECTIONS IN ALL PIPING SYSTEMS CONNECTED TO PUMPS, CHILLERS, COOLING TOWERS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION EXCEPT WATER COILS. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON THE DRAWINGS.
- X. SLOPE REFRIGERANT PIPING ONE PERCENT IN THE DIRECTION OF OIL RETURN. LIQUID LINES MAY BE INSTALLED LEVEL.
- Y. INSTALL HORIZONTAL REFRIGERANT HOT GAS DISCHARGE PIPING WITH 1/2" PER 10 FEET DOWNWARD SLOPE AWAY FROM THE COMPRESSOR. Z. INSTALL HORIZONTAL REFRIGERANT SUCTION LINES WITH 1/2" PER 10 FEET DOWNWARD SLOPE TO THE COMPRESSOR, WITH NO LONG TRAPS OR DEAD ENDS WHICH MAY CAUSE OIL TO SEPARATE FROM THE SUCTION GAS AND RETURN TO THE COMPRESSOR IN DAMAGING SLUGS.
- Z. PROVIDE LINE SIZE LIQUID INDICATORS IN MAIN LIQUID LINE LEAVING CONDENSER OR RECEIVER. INSTALL MOISTURE-LIQUID INDICATORS IN LIQUID LINES BETWEEN FILTER DRYERS AND THERMOSTATIC EXPANSION VALVES AND IN LIQUID LINE TO RECEIVER.
- AA. PROVIDE LINE SIZE STRAINER UPSTREAM OF EACH AUTOMATIC VALVE. PROVIDE SHUTOFF VALVE ON EACH SIDE OF STRAINER.
- AB. PROVIDE PERMANENT FILTER DRYERS IN LOW TEMPERATURE SYSTEMS AND SYSTEMS USING HERMETIC COMPRESSORS.
- AC. PROVIDE REPLACEABLE CARTRIDGE FILTER DRYERS WITH THREE VALVE BYPASS ASSEMBLY FOR SOLENOID VALVES, ADJACENT TO RECEIVERS.
- AD. PROVIDE REFRIGERANT CHARGING VALVE CONNECTIONS IN LIQUID LINE BETWEEN RECEIVER SHUTOFF VALVE AND EXPANSION VALVE.

PLUMBING

#	NOTE
1	WASHING MACHINE AND DRYER HOOK-UP
2	POTENTIAL FUTURE LOCATION OF 3 BAY SINK
3	RUN 1 1/2" V UNDER SLAB
4	(F) DOMESTIC COLD WATER TIE-IN TO RESTURANT
5	INSTALL BACKFLOW PREVENTER
6	SEE CONTINUATION OF SANITARY TIE-IN ON CIVIL DRAWINGS
7	SEE CONTINUATION OF DOMESTIC WATER TIE-IN ON CIVIL DRAWINGS
8	INSTALL WATER HAMMER ARRESTOR
9	INSTALL HIGH POINT VENT

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Commercial Electric Water Heater

ElectriFLEX LD™ Lowboy Electric Models

Meet or exceed ASHRAE 90.1 (latest edition), C.E.C. Listed

Model Number	Rated Nominal Capacity		DOE Rated Storage Volume Gal.	First Hour Rating Gal.	Uniform Energy Factor	Element Wattage (Watts)		A Floor to Top of Heater in.	B Jacket Dia. in.	C Floor to Water Conn. in.	D C/L of Water Conn. in.	E Floor to T&P Conn. †† in.	G Water Conn. NPT in.	Approx. Shipping Weight lbs.
	U.S. Gal.	Imp. Gal.				Minimum	Maximum							
LE120L3-3**†	19	16	—	—	—	1500	6000	24 ³ / ₄	18	25 ³ / ₄	8	19 ¹ / ₄ / 24 ⁷ / ₈	3/4	58
LE230LN3-3	28	23	26	41	0.92	1500	6000	29 ⁹ / ₁₆	23	31 ⁵ / ₁₆	8	23 ⁹ / ₁₆ / 31 ⁵ / ₁₆	3/4	102
LE240LN3-3	37	31	34	45	0.92	1500	6000	32 ¹ / ₁₆	24 ¹ / ₂	34 ⁵ / ₁₆	8	23 ⁹ / ₁₆ / 34 ⁵ / ₁₆	3/4	126
LE250LN3-3	47	39	43	61	0.92	4000	6000	33 ⁵ / ₁₆	26	36 ¹ / ₁₆	8	24 ⁵ / ₁₆ / 36 ¹ / ₁₆	3/4	173

WH-1 NEW BUILDING

Wattage Limitations for Non-Simultaneous and Simultaneous Operation	Voltage						
	120V	208V	240V	277V	380V	415V	480V
1500W / 1500W	yes	yes	yes	yes	yes	yes	yes
2000W / 2000W	no	yes	yes	yes	yes	yes	yes
2500W / 2500W	no	yes	yes	yes	yes	yes	yes
3000W / 3000W	no	yes	yes	yes	yes	yes	yes
3500W / 3500W	no	yes	yes	no	yes	yes	no
4000W / 4000W	no	yes	yes	yes	yes	yes	yes
4500W / 4500W	no	yes	yes	yes	yes	yes	yes
5000W / 5000W	no	yes	yes	yes	yes	yes	yes
5500W / 5500W	no	yes	yes	no	yes	yes	no

Wattage	Recovery ▲ GPH Temperature Rise °F					Wattage	Recovery ▲ LPH Temperature Rise °C				
	60	80	90	100	120		34	45	50	56	67
1500W	10	8	7	6	5	1500W	38	30	26	23	19
2000W	14	10	9	8	7	2000W	53	38	34	30	26
2500W	17	13	11	10	9	2500W	64	49	42	38	34
3000W	21	15	14	12	10	3000W	79	57	53	45	38
3500W	24	18	16	14	12	3500W	91	68	61	53	45
4000W	28	21	18	16	14	4000W	106	79	68	61	53
4500W	31	23	21	18	15	4500W	117	87	79	68	57
5000W	34	26	23	21	17	5000W	129	98	87	79	64
5500W	38	29	25	23	19	5500W	144	110	95	87	72
6000W	41	31	28	25	21	6000W	155	117	106	95	79

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	U.S. Gal.	Imp. Gal.				Minimum	Maximum							
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LE240LN3-3	37	31	34	45	0.92	1500	6000	32 ¹ / ₁₆	24 ¹ / ₂	34 ⁵ / ₁₆	8	23 ⁹ / ₁₆ / 34 ⁵ / ₁₆	3/4	126
LE250LN3-3	47	39	43	61	0.92	4000	6000	33 ⁵ / ₁₆	26	36 ¹ / ₁₆	8	24 ⁵ / ₁₆ / 36 ¹ / ₁₆	3/4	173

Wattage Limitations for Non-Simultaneous and Simultaneous Operation	Voltage						
	120V	208V	240V	277V	380V	415V	480V
1500W / 1500W	yes	yes	yes	yes	yes	yes	yes
2000W / 2000W	no	yes	yes	yes	yes	yes	yes
2500W / 2500W	no	yes	yes	yes	yes	yes	yes
3000W / 3000W	no	yes	yes	yes	yes	yes	yes
3500W / 3500W	no	yes	yes	no	yes	yes	no
4000W / 4000W	no	yes	yes	yes	yes	yes	yes
4500W / 4500W	no	yes	yes	yes	yes	yes	yes
5000W / 5000W	no	yes	yes	yes	yes	yes	yes
5500W / 5500W	no	yes	yes	no	yes	yes	no

Wattage	Recovery ▲ GPH Temperature Rise °F					Wattage	Recovery ▲ LPH Temperature Rise °C				
	60	80	90	100	120		34	45	50	56	67
1500W	10	8	7	6	5	1500W	38	30	26	23	19
2000W	14	10	9	8	7	2000W	53	38	34	30	26
2500W	17	13	11	10	9	2500W	64	49	42	38	34
3000W	21	15	14	12	10	3000W	79	57	53	45	38
3500W	24	18	16	14	12	3500W	91	68	61	53	45
4000W	28	21	18	16	14	4000W	106	79	68	61	53
4500W	31	23	21	18	15	4500W	117	87	79	68	57
5000W	34	26	23	21	17	5000W	129	98	87	79	64
5500W	38	29	25	23	19	5500W	144	110	95	87	72
6000W	41	31	28	25	21	6000W	155	117	106	95	79

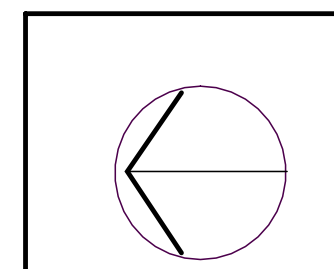
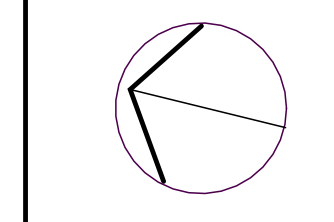
(F) WH-2 RESTAURANT



Photo is of LE120L3-3

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Plumbing Engineers:
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Phone: (401) 785-2890

Landscape Architects:
Diane C. Soule & Associates
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Smithfield, Rhode Island
Phone: (401) 231-0736

CRESCENT PARK
NEW BUILDING
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

REVISIONS:



AGE

PLUMBING SCHEDULE

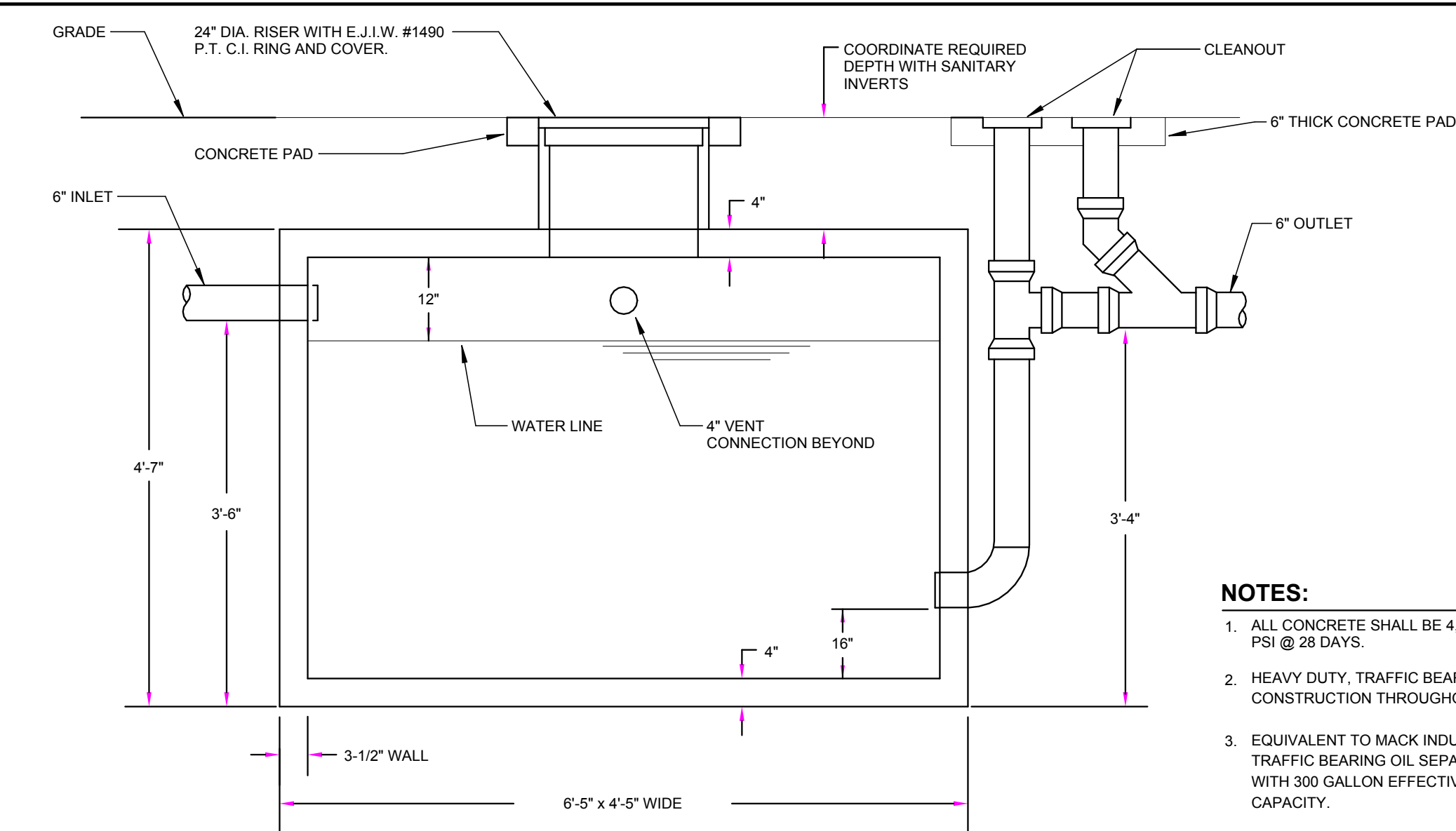
DATE: AGE 10/31/24

NCA JOB NO.: 23100

DRAWING NO.:

P501

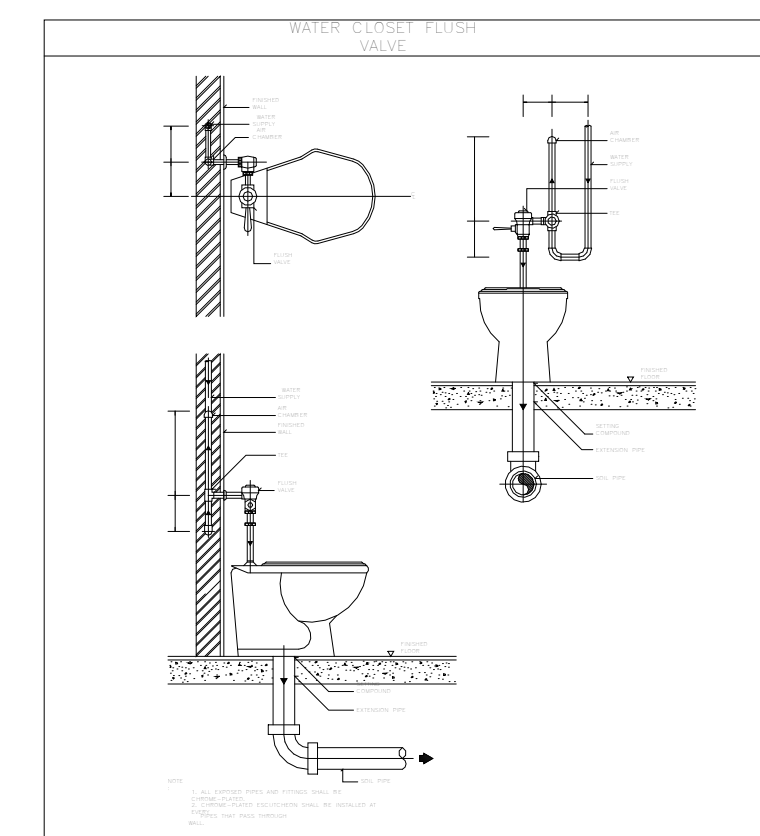
© 2023 NORTHEAST COLLABORATIVE ARCHITECTS



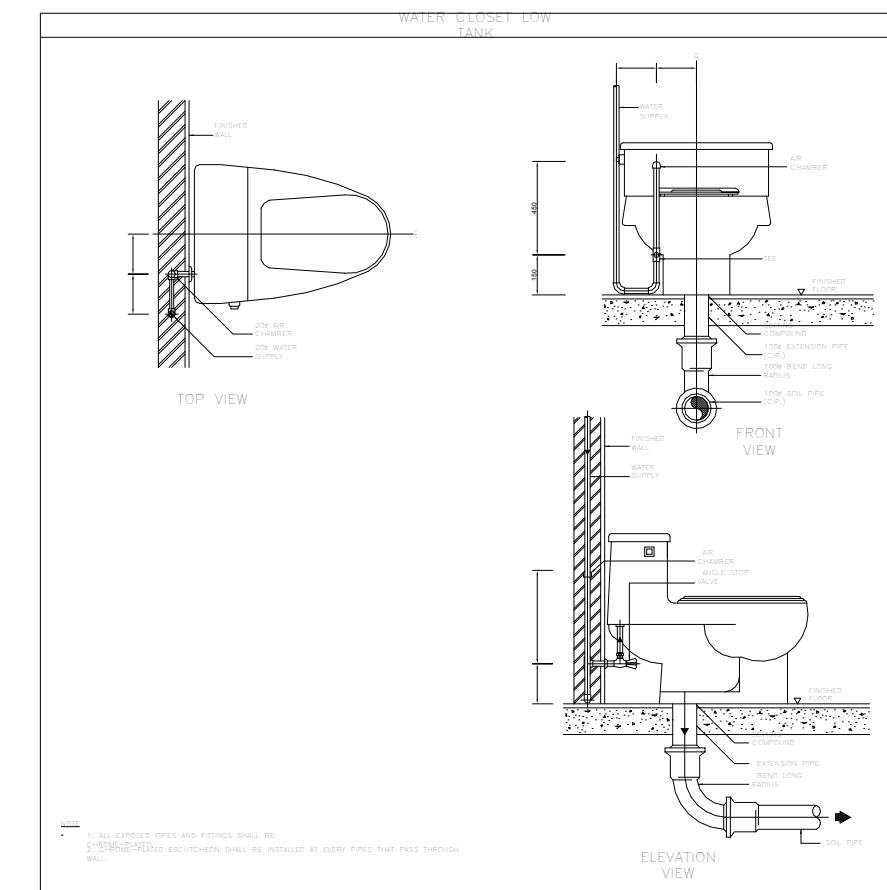
1 TYPICAL OIL INTERCEPTOR DETAIL1
12" = 1'-0"

OIL SEPARATOR CALCULATIONS	
AREA	AREA (FT ²)
VEHICLE STORAGE	900
TOTAL AREA SERVED BY SEPARATOR = 900 FT ²	
CAPACITY REQUIRED FOR FIRST 100 FT ²	6 FT ³
AREA REMAINING	900 FT ² - 100 FT ² = 800 FT ²
CAPACITY REQUIRED REMAINING AREA	1 FT ³ PER 100 FT ²
CAPACITY FOR REMAINING AREA	800 = 100 = 8 FT ³
TOTAL REQUIRED CAPACITY OF SEPARATOR	6 FT ³ + 8 FT ³ = 14 FT ³
EFFECTIVE LIQUID CAPACITY PROVIDED	300 GALLON
TOTAL CAPACITY PROVIDED	40.0 FT ³

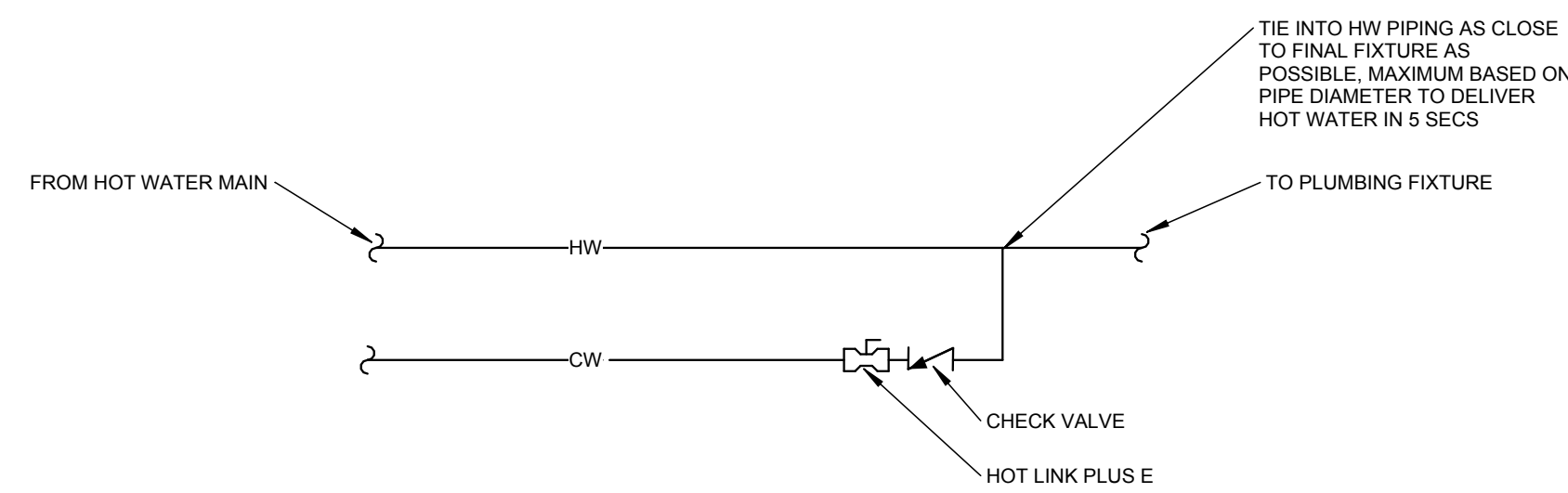
- NOTES:**
1. ALL CONCRETE SHALL BE 4,500 PSI @ 28 DAYS.
 2. HEAVY DUTY, TRAFFIC BEARING CONSTRUCTION THROUGHOUT.
 3. EQUIVALENT TO MACK INDUSTRIES TRAFFIC BEARING OIL SEPARATOR WITH 300 GALLON EFFECTIVE LIQUID CAPACITY.



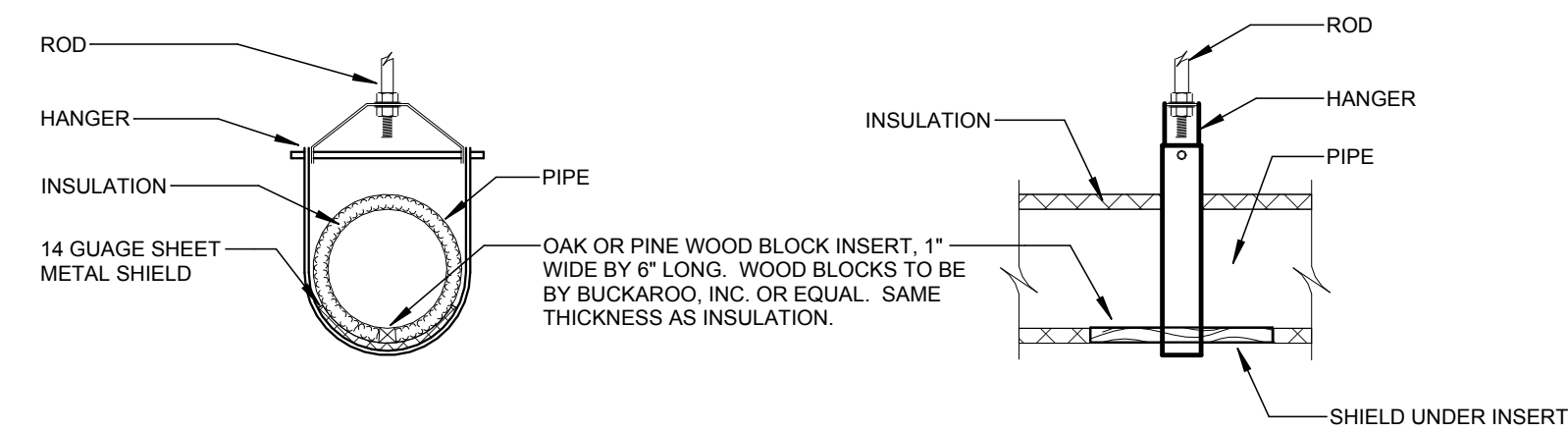
2 AGE WATER CLOSET FLUSH VALVE1
1 1/2" = 1'-0"



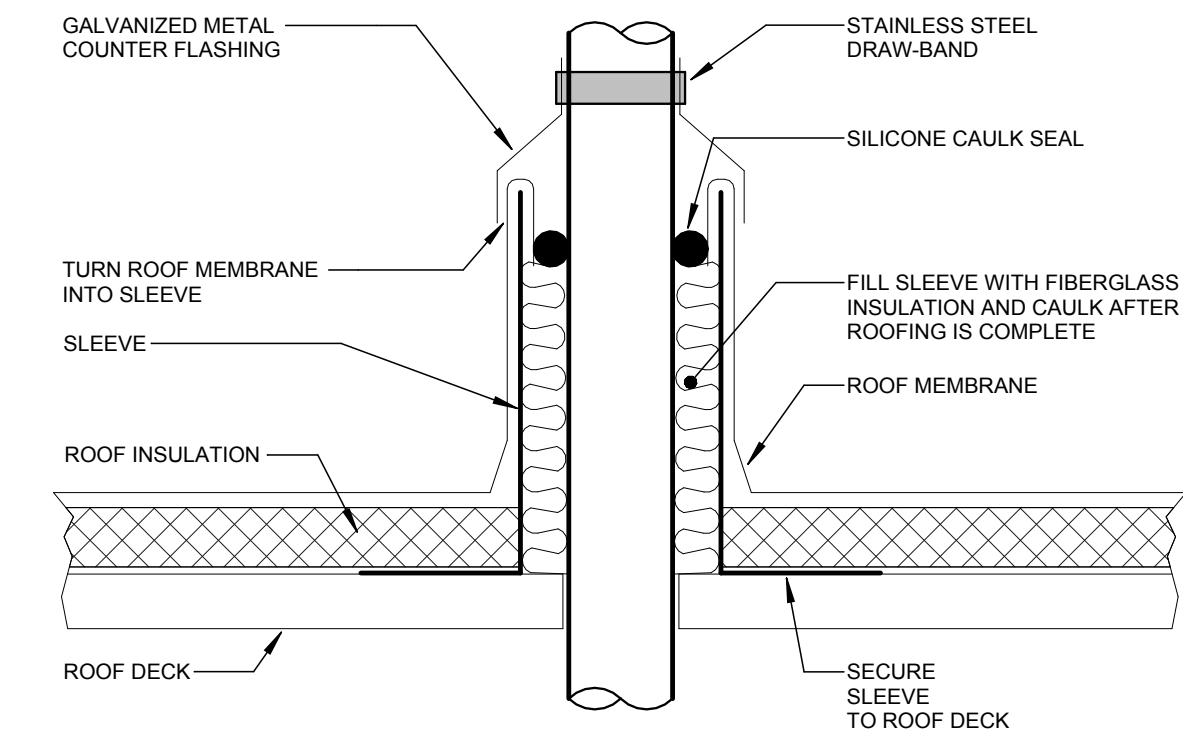
3 AGE WATER CLOSET LOW TANK1
1 1/2" = 1'-0"



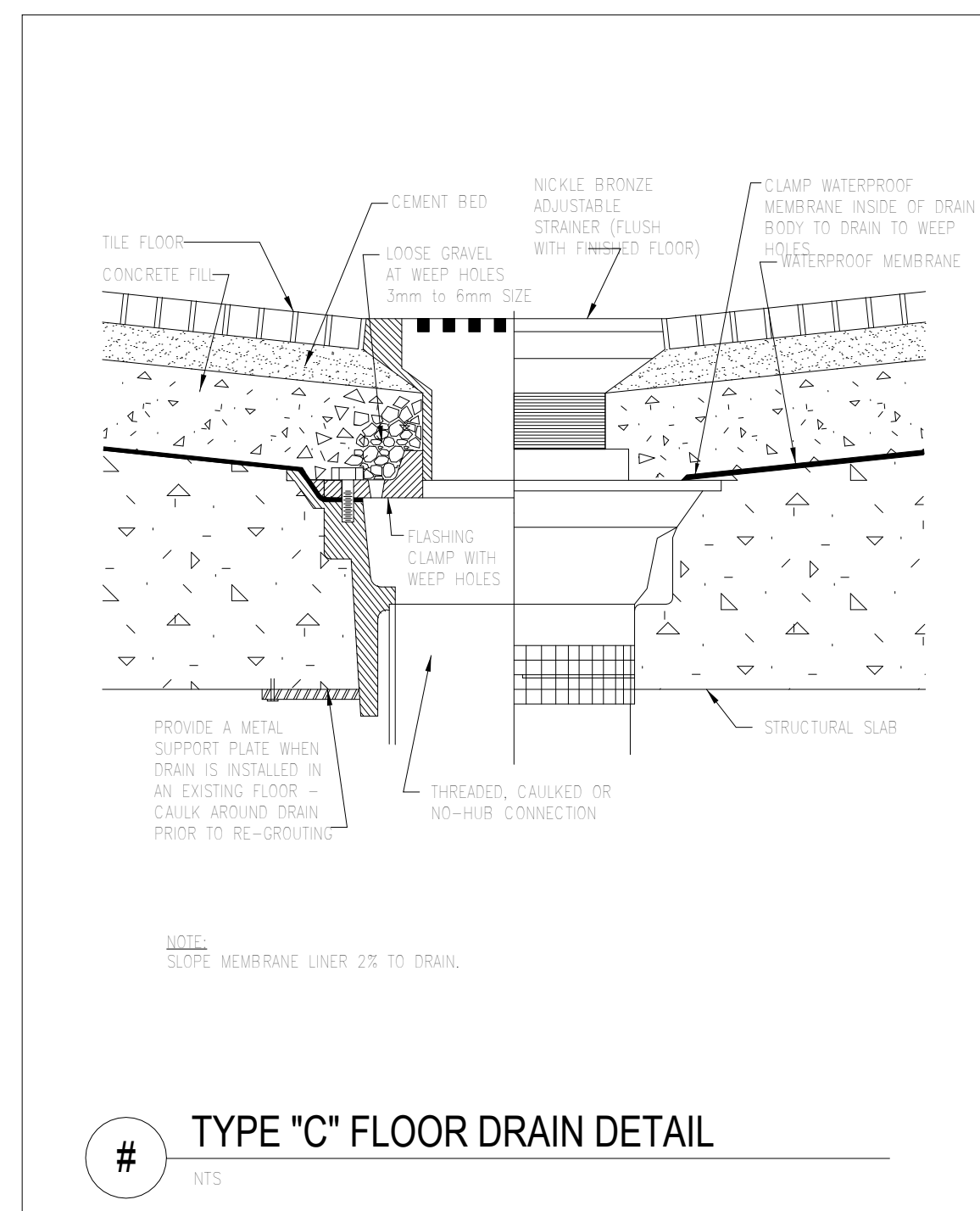
4 AGE HOT WATER END OF MAIN DETAIL
TACO HOT LINK1
12" = 1'-0"



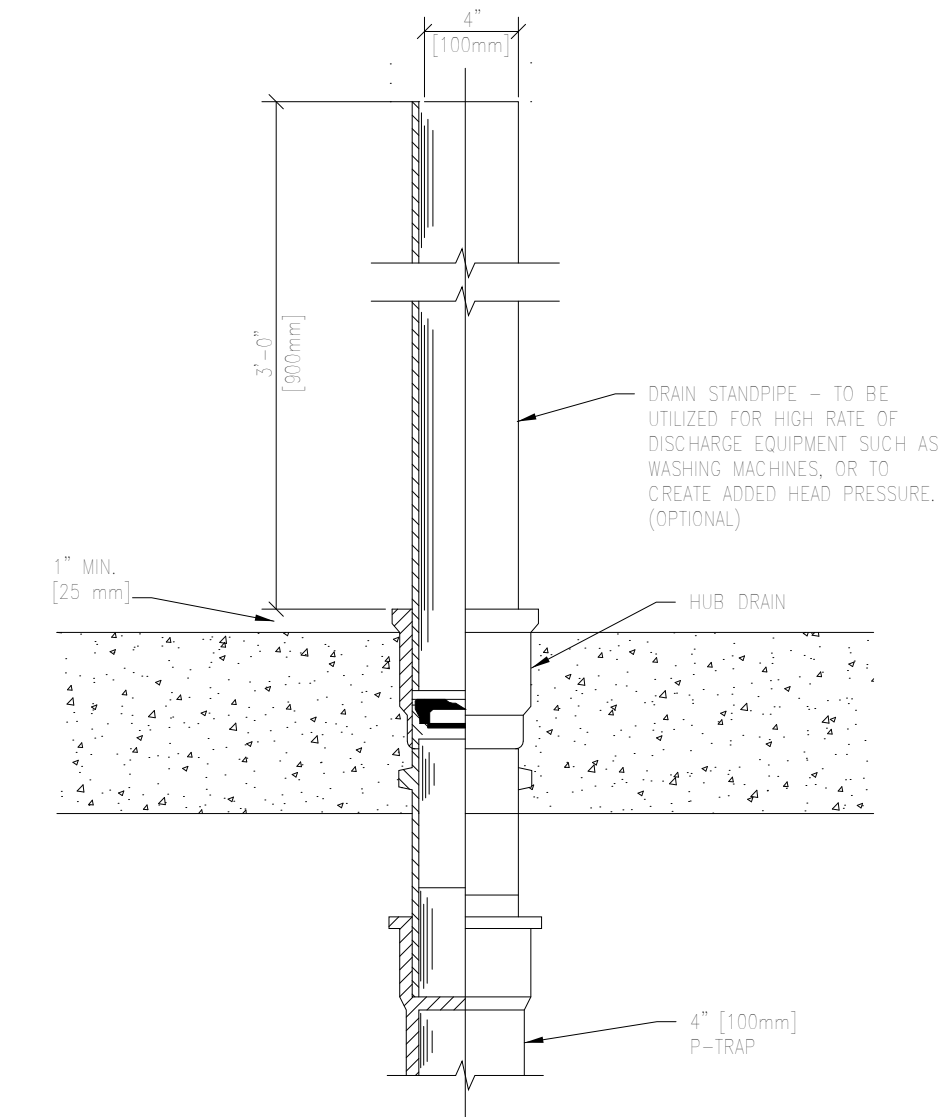
5 Z - HYDRONIC PIPE HANGER DETAIL3
12" = 1'-0"



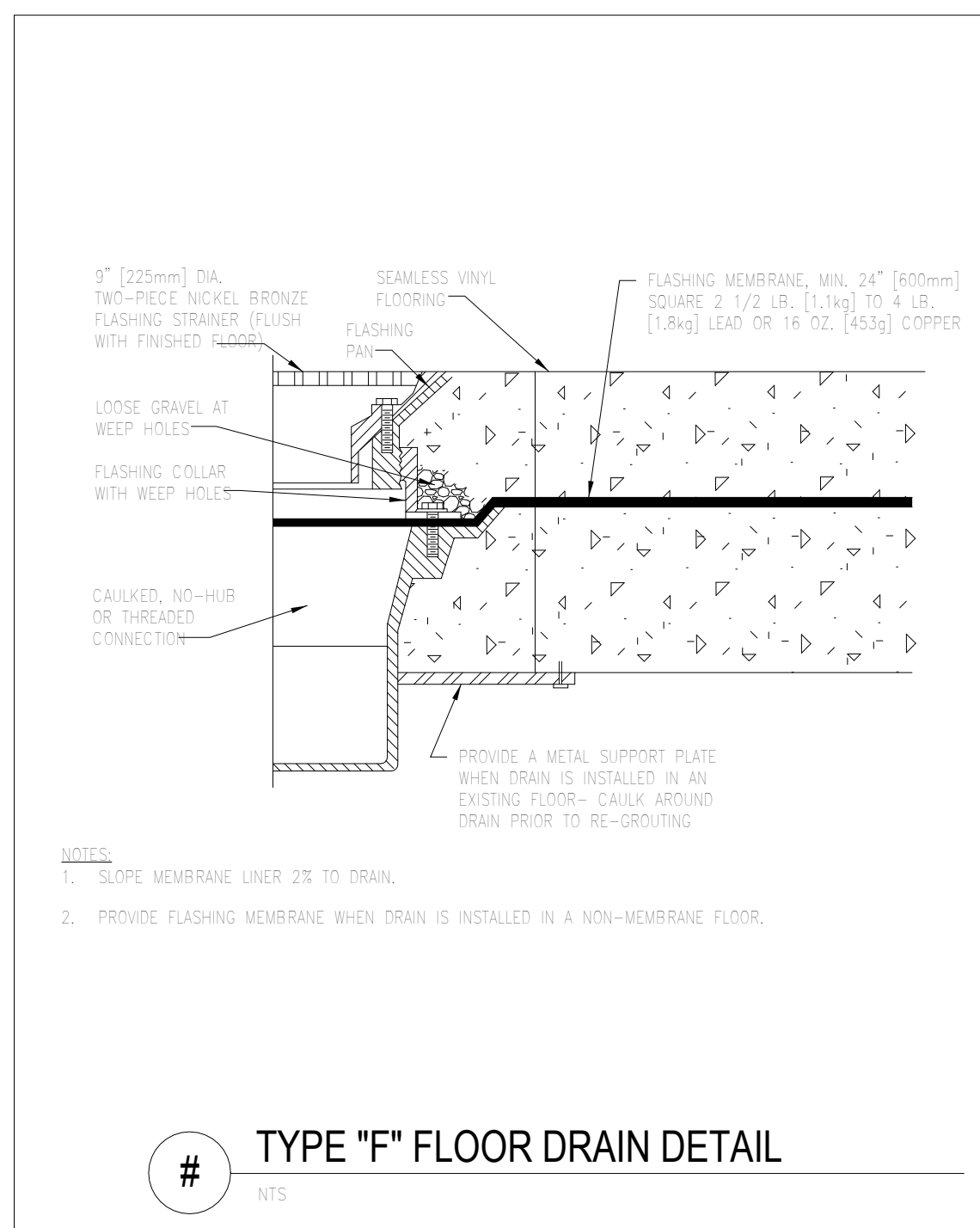
6 Z - SINGLE PIPE THRU ROOF DETAIL4
12" = 1'-0"



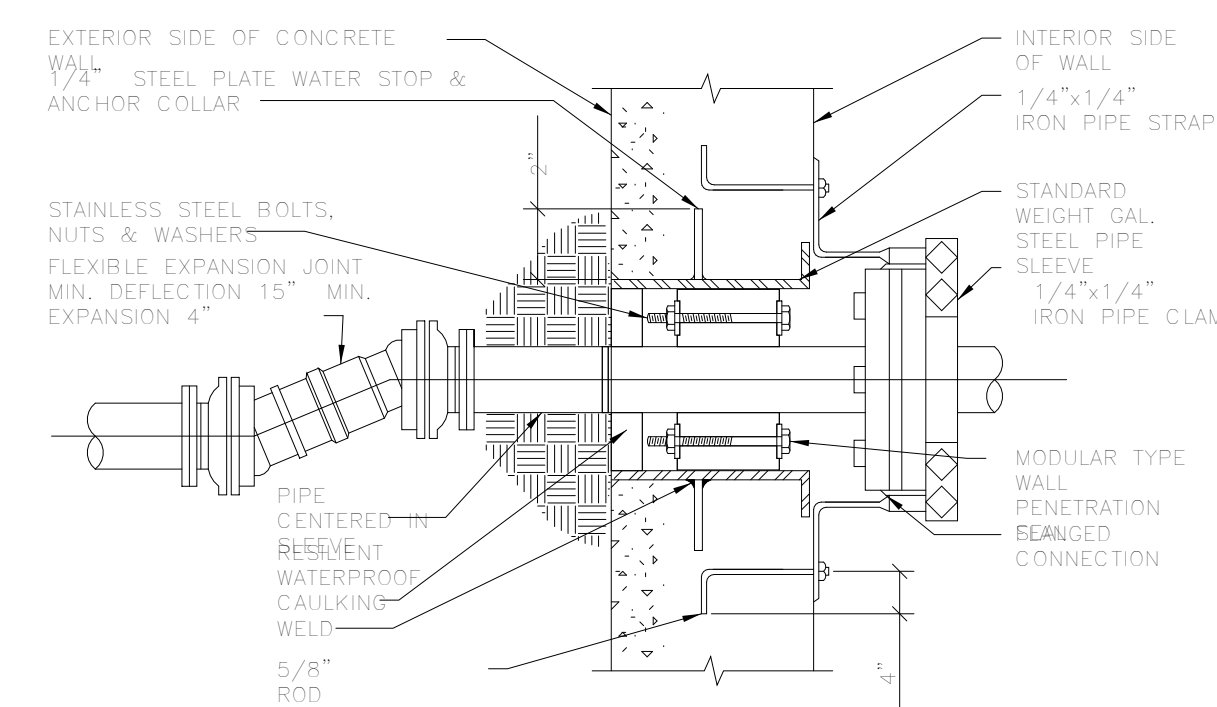
7 TYPE "C" FLOOR DRAIN DETAIL3
3/8" = 1'-0"



8 TYPE "W" HUB DRAIN WITH STANDPIPE3
3/8" = 1'-0"



9 TYPE "F" FLOOR DRAIN DETAIL3
3/8" = 1'-0"



10 AGE PIPE PENETRATION THROUGH WALLS BELOW GRADE1
3/8" = 1'-0"

REVISIONS:



AGE

PLUMBING DETAILS

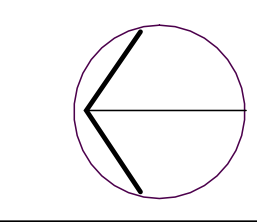
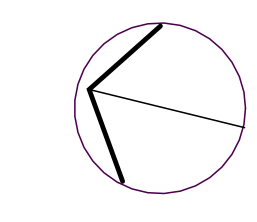
DATE: AGE 10/31/24

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SCOPE OF WORK

LOCATION: **684 BULLOCKS POINT AVENUE, RIVERSIDE, RI 02915**
 OCCUPANCY CLASSIFICATION: USE GROUP-B (BUSINESS)
 WORK SCOPE:

1. INSTALL NEW ADDRESSABLE TYPE FIRE ALARM SYSTEM FOR BUILDING #1 INCLUDING:
 - 1.1. ADDRESSABLE FIRE ALARM CONTROL PANEL
 - 1.2. INITIATING DEVICES
 - 1.3. NOTIFICATION DEVICES
 - 1.4. MONITORING POINTS
2. THE SEQUENCE OF OPERATION FOR THE FIRE ALARM IS TO BE GENERAL ALARM FOR BOTH BUILDINGS.
3. BUILDING SHALL BE PROVIDED WITH AN NFPA 13 COMPLIANT FIRE SPRINKLER SYSTEM. SPRINKLER PLANS SHALL BE PROVIDED SEPARATELY.

GENERAL FIRE ALARM

1. ALL WIRING METHODS SHALL BE AS APPROVED BY THE WIRING INSPECTOR AND THE EAST PROVIDENCE FIRE DEPARTMENT AND IN ACCORDANCE WITH ALL APPLICABLE CODES AND STANDARDS.
2. THE NEW FIRE ALARM SYSTEM SHALL BE COMPLETELY INSTALLED, OPERATED, TESTED AND APPROVED BY THE EAST PROVIDENCE FIRE DEPARTMENT AND EAST PROVIDENCE ELECTRICAL INSPECTORS.
3. ALL FIRE ALARM EQUIPMENT, INSTALLATION AND OPERATION SHALL BE IN CONFORMANCE WITH THE EAST PROVIDENCE FIRE DEPARTMENT INSTALLATION REQUIREMENTS AND SYSTEM INSTALLATION GUIDELINES. ALL EQUIPMENT AND DEVICES SHOWN ON THE DRAWINGS ARE DIAGRAMMATIC.
4. THESE DRAWINGS SHOW APPROXIMATE LOCATION OF DEVICES. CONTRACTOR IS RESPONSIBLE FOR FINAL LOCATIONS. CONTRACTOR SHALL MOUNT STROBES ON WALLS WITH ATTENTION GIVEN TO LOCATING THEM SUCH THAT THEY ARE IN AN UNOBSTRUCTED LINE OF SIGHT AND PROVIDE SUFFICIENT LIGHT INTENSITY COVERAGE BASED ON THE CANDELA RATING AND DISTANCE FROM ADJACENT AND OPPOSING WALLS. NO BUILDING ELEMENTS, FURNITURE, EQUIPMENT, ETC. SHOULD OBSTRUCT THE VIEW OF THE STROBE.
5. THE FIRE ALARM SYSTEM SHOP DRAWINGS SHALL BE REVIEWED AND APPROVED BY BOTH THE OWNER, THE

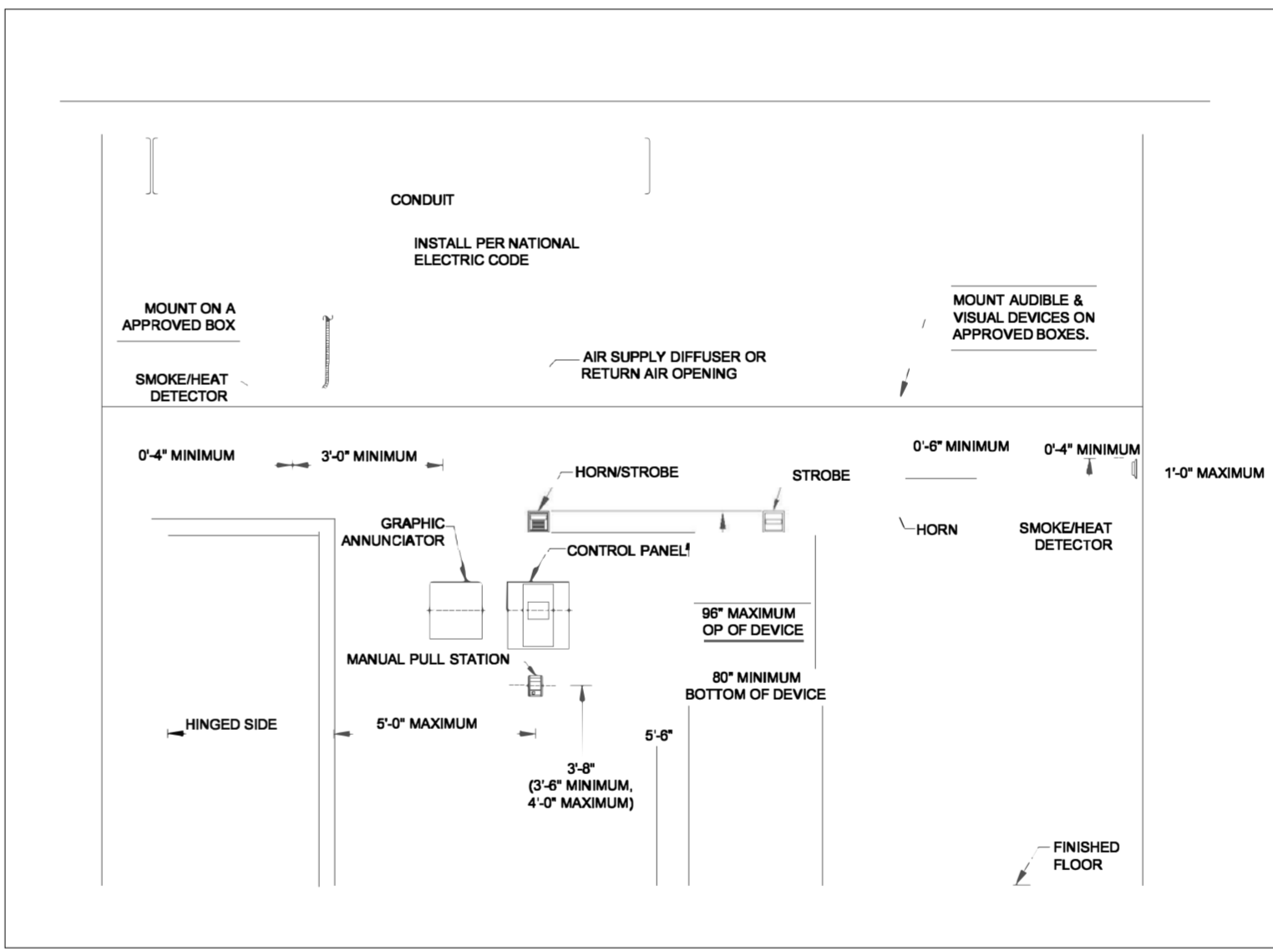
ENGINEER AND EAST PROVIDENCE FIRE DEPARTMENT. THE SHOP DRAWINGS AND EQUIPMENT SUBMITTALS MUST BE APPROVED BY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION OF EQUIPMENT. ALL EQUIPMENT USED SHALL BE OF A TYPE APPROVED BY THE EAST PROVIDENCE FIRE DEPARTMENT.

6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THAT ALL CONNECTING WIRING MAINTAIN ELECTRICAL INTEGRITY, WITH NO OPEN CIRCUITS, GROUNDS, LEAKAGE OR OTHER FAULTS.
7. BATTERY CALCULATIONS SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR TO CONFIRM THAT THE FIRE ALARM BATTERIES AND CHARGING SYSTEMS ARE OF SUFFICIENT CAPACITY FOR THE NEW DEVICE/APPLIANCE LAYOUT. NEW SUPERVISED BATTERIES AND/OR POWER BOOSTER PANEL SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR IF NECESSARY TO MEET APPLICABLE REQUIREMENTS. THE BATTERIES USED WITH THE FACP SHALL BE CAPABLE OF OPERATING THE PANEL FOR 60 HOURS UNDER MAXIMUM NORMAL LOAD FOLLOWED BY 15 MINUTES OF ALARM OPERATED AT MAXIMUM CONNECTED LOAD. THE CALCULATION USED TO DETERMINE BATTERY CAPACITY SHALL BE PRESENTED TO THE FIRE DEPARTMENT AT THE TIME OF INSPECTION AND SHALL BE REVIEWED BY THE ENGINEER BEFORE THE INSTALLATION.
8. INSTALLATION OF EQUIPMENT SHALL BE IN ACCORDANCE WITH ALL CURRENT APPLICABLE STANDARDS AND SPECIFICATIONS APPROVED BY THE AUTHORITY HAVING JURISDICTION.
9. ALL WIRING SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AS MODIFIED BY THE STATE OF MASSACHUSETTS, NFPA 70, AND NFPA 72 AND ALL OTHER APPLICABLE STATE AND LOCAL CODES AND STANDARDS.
10. THE CONTRACTOR MUST OBTAIN AN ELECTRICAL PERMIT FROM THE INSPECTIONAL SERVICES DEPARTMENT AND A PERMIT FROM THE EAST PROVIDENCE FIRE DEPARTMENT PRIOR TO COMMENCEMENT OF EQUIPMENT INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED FEES AND COSTS.
11. PROGRAMMING SEQUENCE AND DESCRIPTION OF ALARM SYSTEM PROGRAMMING MUST BE REVIEWED AND APPROVED BY THE FIRE DEPARTMENT, OWNER AND ENGINEER. DEVICE ADDRESSES AND DESCRIPTIONS MUST ALSO BE APPROVED BY THE FIRE DEPARTMENT AND THE OWNER.
12. THE CONTRACTOR SHALL CERTIFY THAT THE SYSTEM

HAS BEEN 100 PERCENT TESTED AND FUNCTIONS IN COMPLETE COMPLIANCE WITH THE SYSTEM SPECIFICATIONS AND MANUFACTURER'S RECOMMENDATIONS. THE CERTIFICATE SHALL BE SIGNED BY THE INSTALLER, ELECTRICAL CONTRACTOR AND THE OWNER. AFTER RECEIPT OF THE CERTIFICATION, THE ENGINEER WILL WITNESS A TEST AND CONDUCT AN INSPECTION OF THE SYSTEM.

13. STROBES AND COMBINATION HORN/STROBES ARE TO BE INSTALLED WITH THE BOTTOM OF THE STROBE LENS BETWEEN 80 INCHES TO 96 INCHES PER NFPA 72. CEILING MOUNTED STROBES SHALL BE PERMITTED IN ACCORDANCE WITH NFPA 72 IF APPROVED BY THE ENGINEER AND THE OWNER.
14. ONLY FIRE ALARM WIRING MAY BE RUN IN FIRE ALARM SYSTEM RACEWAYS. DO NOT MIX HIGH (120V AC) AND LOW (24V DC) VOLTAGE CIRCUITS IN THE SAME RACEWAY.
15. ALL CIRCUITS/CABLE SHIELDING SHALL BE CONTINUOUS AND ISOLATED FROM THE GROUND AND ALL OTHER POINTS EXCEPT TERMINAL LOCATIONS AT CONTROL PANELS AND DEVICES.
16. ALL ADDRESSABLE CIRCUITS AND NOTIFICATION CIRCUITS MUST NOT BE LOADED TO MORE THAN 80% OF THEIR CAPACITY.
17. ALL RACEWAYS MUST BE PROPERLY LABELED AND SUPPORTED THEIR ENTIRE LENGTH.
18. ALL PENETRATIONS OF FIRE RESISTANCE RATED WALLS, FLOORS AND SHAFTS/ASSEMBLIES MUST BE PROPERLY FIRESTOPPED IN AN APPROVED, COMPLYING MANNER. UL FIRESTOPPING DETAILS SHALL BE SUBMITTED WITH THE EQUIPMENT SUBMITTAL.
19. AREA SMOKE DETECTORS MUST NOT BE INSTALLED WITHIN DIRECT AIRFLOW OR CLOSER THAN 3 FEET TO ANY SUPPLY AIR DIFFUSER.
20. ALL 120V AC POWER CIRCUIT WIRING/CABLE SHALL BE INSTALLED IN STEEL CONDUIT THEIR ENTIRE LENGTH.

	FACP ANNUNCIATION					TRANSMISSION				AUXILIARY FUNCTIONS			
	A	B	C	D	E	F	G	H	I	J	K	L	
	FLAME/SMOKE/FR ALARMS	NA INDICATOR											
	ACTIVATE ALARM	ACTIVATE ALARM SIGNAL											
	ACTIVATE COMMON SUPERVISORY SIGNAL	INDICATOR											
	ACTIVATE COMMON TROUBLE SIGNAL	INDICATOR											
	ACTIVATE AREA B E R B S CNA												
	TRANSMIT ALARM TO FIRE DEPARTMENT VIA MASTER ON												
	TRANSMIT ALARM TO CENTRAL STATION VIA DIALER												
	TRANSMIT COMMON SUPERVISORY TO CENTRAL STATION												
	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION												
	ACTIVATE ALL HORNS/STROBES IN THE W/OLE BUI D G												
	ACTIVATE EXTERIOR BEACON LIGHTS												
	ACTIVATE EXTERIOR SPRINKLER F L												
FACP (FIRE ALARM SYSTEM CONTROL PANEL) INPUT/OUTPUT MATRIX 684 BULLOCKS POINT AVENUE RESTAURANT BUILDING ADDRESSABLE SYSTEM													
ALARM													
1	MANUAL PULL STATIONS	X	X			X	X			X	X		
2	AREA SMOKE DETECTOR	X	X			X	X			X	X		
3	HIGH PRESSURE SWITCH	X	X			X	X			X	X	X	
4	FLOW SWITCH	X	X			X	X			X	X	X	
FAULT													
5	SIGNALING LINE CIRCUIT/DEVICES FAULT				X	X				X			
6	LOW PRESSURE SWITCH				X	X				X			
7	NOTIFICATION APPLIANCE CIRCUIT/DEVICES FAULT				X	X				X			
8	FIRE ALARM PANEL FAULT				X	X				X			
SUPERVISORY													
9	TAMPER SWITCH			X				X					
10	SPARE												
11	SPARE												
12	SPARE												
13	SPARE												



2 FIRE SCALE: MOUNTING HEIGHTS



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 Phone: (401) 765-2690

Landscape Architects:
 Diane C. Soule & Associates
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 Smithfield, Rhode Island
 Phone: (401) 231-0736

Fire Protection:
 Engineering, Planning and
 Management, EPM
 650 Concord Street
 Framingham, Massachusetts
 Phone: (508) 875-2121

**CRESCENT PARK
 NEW BUILDING
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915**

STAMP:
 EDWARD ORAZINE
 No. 13968
 REGISTERED PROFESSIONAL ENGINEER
 FIRE PROTECTION
 Edward Orazine, P.E.

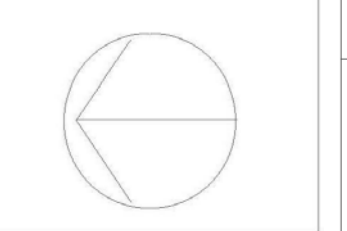


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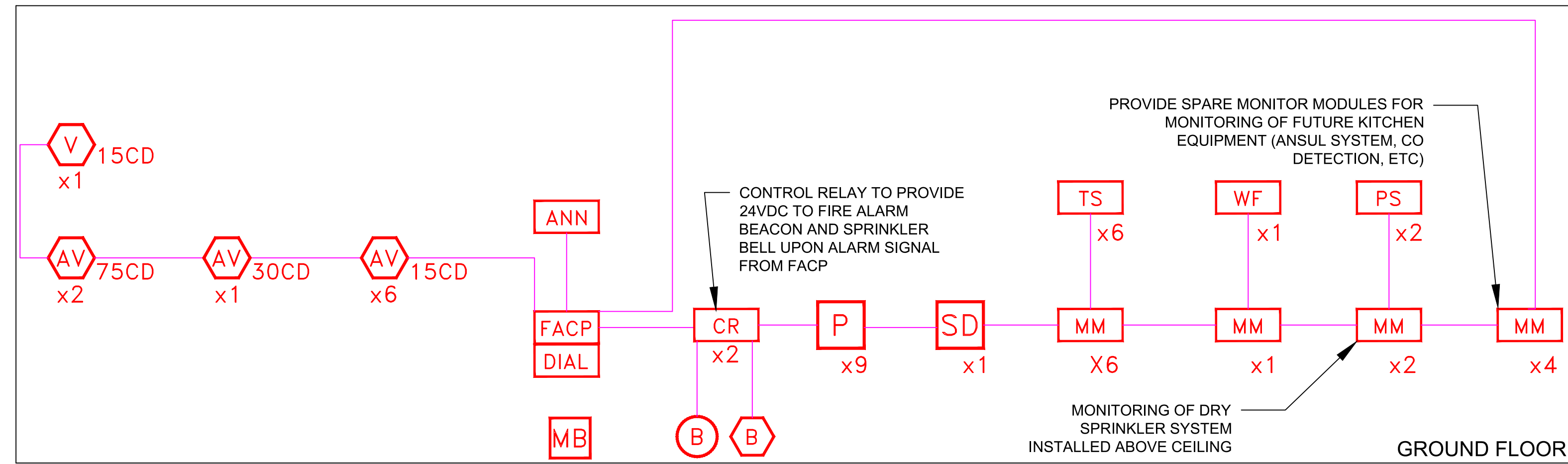
FIRE ALARM NOTES AND DETAILS

DATE: 09/27/24
 NCA JOB NO.: 23100
 DRAWING NO.: FA-01

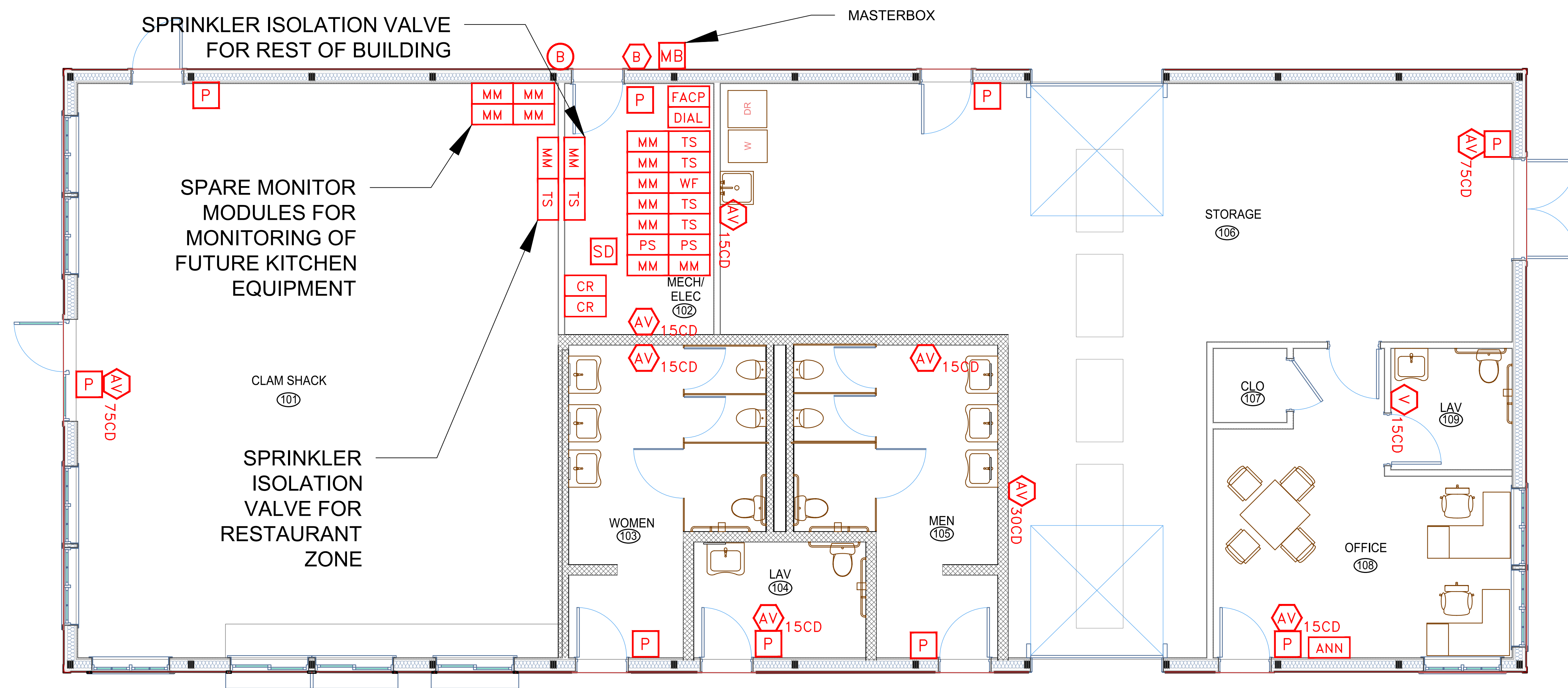
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LEGEND		
SYM	QTY	DESCRIPTION
V	1	STROBE, 24VDC, MULTI-CANDELLA
AV	9	HORN/STROBE, 24 VDC, MULTI-CANDELLA
SD	1	PHOTOELECTRIC SMOKE DETECTOR
P	9	MANUAL PULL STATION
FACP	1	FIRE ALARM CONTROL PANEL
DIAL	1	FIRE ALARM DIALER
ANN	1	FIRE ALARM ANNUNCIATOR
PS	2	SPRINKLER SYSTEM PRESSURE SWITCH
WF	1	SPRINKLER SYSTEM WATERFLOW SWITCH
TS	5	SPRINKLER SYSTEM TAMPER SWITCH
CR	2	CONTROL RELAY
MM	13	MONITOR MODULE
B	1	SPRINKLER SYSTEM BELL
Ⓟ	1	OUTDOOR BEACON
MB	1	MASTERBOX



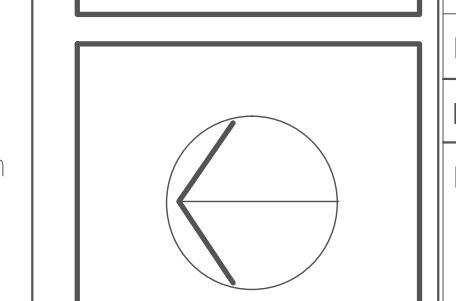
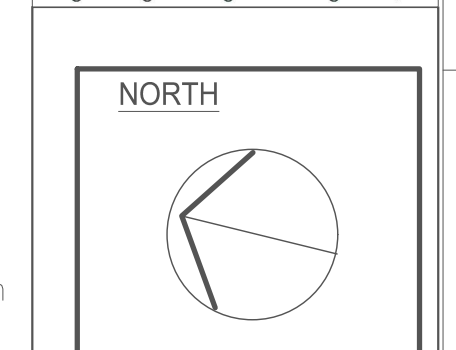
1 FIRE ALARM RISER DIAGRAM
SCALE:NTS



2 FIRE ALARM INSTALLATION PLAN
SCALE:1/4" = 1'

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STAMP:



FIRE ALARM
INSTALLATION
PLANS

DATE: 09/27/24

NCA JOB NO.: 23100

DRAWING NO.:

FA-02

SPRINKLER SCOPE OF WORK

LOCATION: 684 BULLOCKS POINT AVENUE, RIVERSIDE, RI 02915

- USE GROUP & OCCUPANCY: BUSINESS USE GROUP-B (RESTAURANT), USE GROUP S (STORAGE), USE GROUP-U (UTILITY)

WORK SCOPE: INSTALL NEW SPRINKLER SYSTEM AND ALL ASSOCIATED COMPONENTS

- SCOPE OF WORK SHALL INCLUDE THE FOLLOWING
 - INSTALLATION OF NEW FIRE SERVICE MAIN
 - NEW SPRINKLERS AS SHOWN ON THE DRAWINGS.
 - NEW FIRE SERVICE MAIN TO BUILDING
 - NEW PIPING, HANGARS, VALVES, AND FITTINGS AS REQUIRED.
 - INSTALL DRY SPRINKLER SYSTEM IN UNHEATED SPACE ABOVE DROP CEILING. DRY SPRINKLER VALVE SHALL BE LOCATED IN A CONDITIONED SPACE.
- AREA/DENSITY CRITERIA IS PROVIDED IN ACCORDANCE WITH NFPA 13 AND MANUFACTURER DATASHEETS.
- NFPA 13 DESIGN THROUGHOUT IS CLASSIFIED AS ORDINARY HAZARD GROUP I FOR THE RESTAURANT/KITCHEN, ORDINARY HAZARD GROUP II FOR THE STORAGE PORTION OF THE BUILDING AND LIGHT HAZARD IN THE OFFICE AND RESTROOMS. CONTRACTOR TO PERFORM FLOW TEST AND PROVIDE HYDRAULIC CALCULATIONS.

CODES & STANDARDS

ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OUTLINED IN THE RFP DOCUMENTS. THE FOLLOWING DOCUMENTS ESTABLISH MINIMUM REQUIREMENTS:

- MASSACHUSETTS STATE BUILDING CODE, 9th Edition, CHAPTER 34 FOR EXISTING BUILDINGS
- 527 CMR 1.00 MASSACHUSETTS COMPREHENSIVE FIRE SAFETY CODE
- ICC INTERNATIONAL BUILDING CODE, 2015 EDITION, AS AMENDED BY STATE OF MASSACHUSETTS
- NFPA 1, NATIONAL FIRE CODE, 2015 EDITION AS AMENDED BY STATE OF MASSACHUSETTS
- NFPA 13 INSTALLATION OF SPRINKLER SYSTEMS, 2013 EDITION

CONTRACTOR

- ADDITIONAL PIPE, FITTINGS, COMPONENTS, HANGERS, ETC., REQUIRED FOR PROPER INSTALLATION, CODE COMPLIANCE, COORDINATION WITH OTHER TRADES, TO MAINTAIN PROPER CLEARANCES, AS A RESULT OF POOR WORKMANSHIP OR AS A REQUIREMENT OF THE AUTHORITY HAVING JURISDICTION SHALL BE PROVIDED UNDER THIS CONTRACT AS NECESSARY TO ACHIEVE A COMPLETE AND WORKING SYSTEM.
- SPRINKLER CONTRACTOR SHALL OBTAIN ALL PERMITS REQUIRED FOR THE INSTALLATION AND TESTING OF FIRE SPRINKLER SYSTEM INCLUDED IN THIS WORK SCOPE, AND COMPLY WITH ALL PERMIT, LICENSE AND OTHER APPLICABLE REQUIREMENTS.
- EQUIPMENT SUBMITTALS SHALL INCLUDE ALL SYSTEM COMPONENTS USED IN THE SYSTEM TO THE WATER SOURCE, ESPECIALLY THOSE WITH SPECIFIC FRICTION LOSSES SUCH AS BACKFLOW PREVENTERS.
- THE INSTALLATION OF NEW SYSTEM PIPING AND COMPONENTS IS PROHIBITED PRIOR TO THE SATISFACTORY REVIEW OF THE INSTALLATION PACKAGE BY THE OWNER'S REPRESENTATIVE AND ENGINEER OF RECORD.
- FIRE SPRINKLER AND FIRE ALARM CONTRACTOR(S) SHALL INSTALL SYSTEM PIPING AND COMPONENTS IN A WORKMANSHIP-LIKE MANNER.
- CONTRACTOR SHALL KEEP WORK AREA, AND PREMISES, CLEAN AND FREE FROM DEBRIS AND HAZARDOUS CONDITIONS AT ALL TIMES. FAILURE TO COMPLY WILL BE AT THE EXPENSE OF THE SPRINKLER CONTRACTOR.
- MAINTAIN A MINIMUM OF 18" CLEARANCE BELOW SPRINKLER DEFLECTOR(S) AND ANY PERMANENT OR TEMPORARY OBSTRUCTION(S) PER NFPA 13 SECT. 8.6.6.1 UNLESS OTHERWISE REQUIRED BY SPRINKLER LISTING OR APPROVAL.
- DISTANCE OF SPRINKLER DEFLECTOR BELOW CEILING AND AWAY FROM WALLS SHALL BE IN ACCORDANCE WITH MANUFACTURER LISTING AND THE FOLLOWING REQUIREMENTS OF NFPA 13: 8.10.4 (RESIDENTIAL); 8.6.3 AND 8.6.4 (STANDARD SPRAY PENDENT AND UPRIGHT); AND 8.6.3 AND 8.6.4 (STANDARD SPRAY SIDEWALL).
- CONTRACTOR TO CONDUCT NEW FLOW TEST PRIOR TO SUBMITTING SHOP DRAWINGS.

GENERAL NOTES- SPRINKLER

- DO NOT SCALE PLANS FOR THE PURPOSE OF ESTABLISHING DIMENSIONS. DIMENSIONS ARE TO BE VERIFIED IN THE FIELD.
- NOT ALL PIPING AND APPURTENANCES ARE SHOWN ON THE PLANS. REFER TO PLANS, NOTES, SPECIFICATIONS AND DETAILS FOR ADDITIONAL INFORMATION.
- FIRE STOP ALL PENETRATIONS OF SMOKE/FIRE PARTITIONS. FIRE STOPPING SHALL BE OF A U.L. LISTED ASSEMBLY.
- SPRINKLER SYSTEM(S) SHALL BE DESIGNED FOR A MAXIMUM WORKING PRESSURE OF 12.1 bar (175 PSI) PER NFPA 13 SECT. 6.1.3.
- PROVIDE SYSTEM(S) WITH FLUSHING CONNECTIONS PER NFPA 13 SECT. 8.16.3.
- SPRINKLER SYSTEM(S) PIPING PRIOR TO CONNECTION TO THE EXITING SYSTEM SHALL BE HYDROSTATICALLY TESTED FOR TWO HOURS AT 13.8 bar (200 PSI) PER NFPA 13 SECT. 10.10.2.2 PORTIONS OF SYSTEMS (INCLUDING FIRE PUMP) NORMALLY SUBJECTED TO WORKING PRESSURE IN EXCESS OF 150 PSI SHALL BE TESTED AT A PRESSURE OF 3.5 bar (50 PSI) IN EXCESS OF NORMAL WORKING PRESSURE.
- ALL SPRINKLER PIPE AND FITTINGS SHALL BE SO INSTALLED THAT THE SYSTEM CAN BE DRAINED PER NFPA 13 SECT. 8.16.2.2.2.
- ALL VALVES SHALL HAVE A PERMANENTLY AFFIXED SIGN INDICATING ITS FUNCTION SECURED TO THE VALVE WITH SUITABLE CHAIN PER NFPA 13 SECT. 6.7.4.
- PROVIDE A PERMANENTLY ATTACHED HYDRAULIC NAMEPLATE STATING THE REQUIRED DESIGN CRITERIA FOR EACH DESIGNED SYSTEM PER NFPA 13.
- PIPE HANGER MATERIAL, SPACING AND METHOD OF ATTACHMENT SHALL BE PER NFPA 13 SECT. 9.1 AND MANUFACTURERS REQUIREMENTS.
- MAINTAIN A MINIMUM OF 18" CLEARANCE BELOW SPRINKLER DEFLECTOR(S) AND ANY PERMANENT OR TEMPORARY OBSTRUCTION(S) PER NFPA 13 SECT. 8.6.6.1 UNLESS OTHERWISE REQUIRED BY SPRINKLER LISTING OR APPROVAL.
- A SUPPLY OF SPARE SPRINKLERS SHALL BE MAINTAINED ON THE PREMISES PER NFPA 13 SECT. 6.2.9 SPRINKLERS SHALL CORRESPOND TO THE TYPES AND TEMPERATURE RATINGS OF THE SPRINKLERS ON THE PROPERTY PER NFPA 13 SECT. 6.2.9.2. SPRINKLERS SHALL BE KEPT IN A CABINET LOCATED WHERE THE TEMPERATURE TO WHICH THEY ARE SUBJECTED WILL AT NO TIME EXCEED 100 DEGREES FAHRENHEIT PER NFPA 13 SECT. 6.2.9.3. ONE SPECIAL WRENCH SHALL BE PROVIDED FOR EACH TYPE OF SPRINKLER INSTALLED AND KEPT IN THE CABINET PER NFPA 13 SECT. 6.2.9.6, WITH A MATERIAL LIST PER NFPA SECT. 6.2.9.7.

MATERIAL NOTES

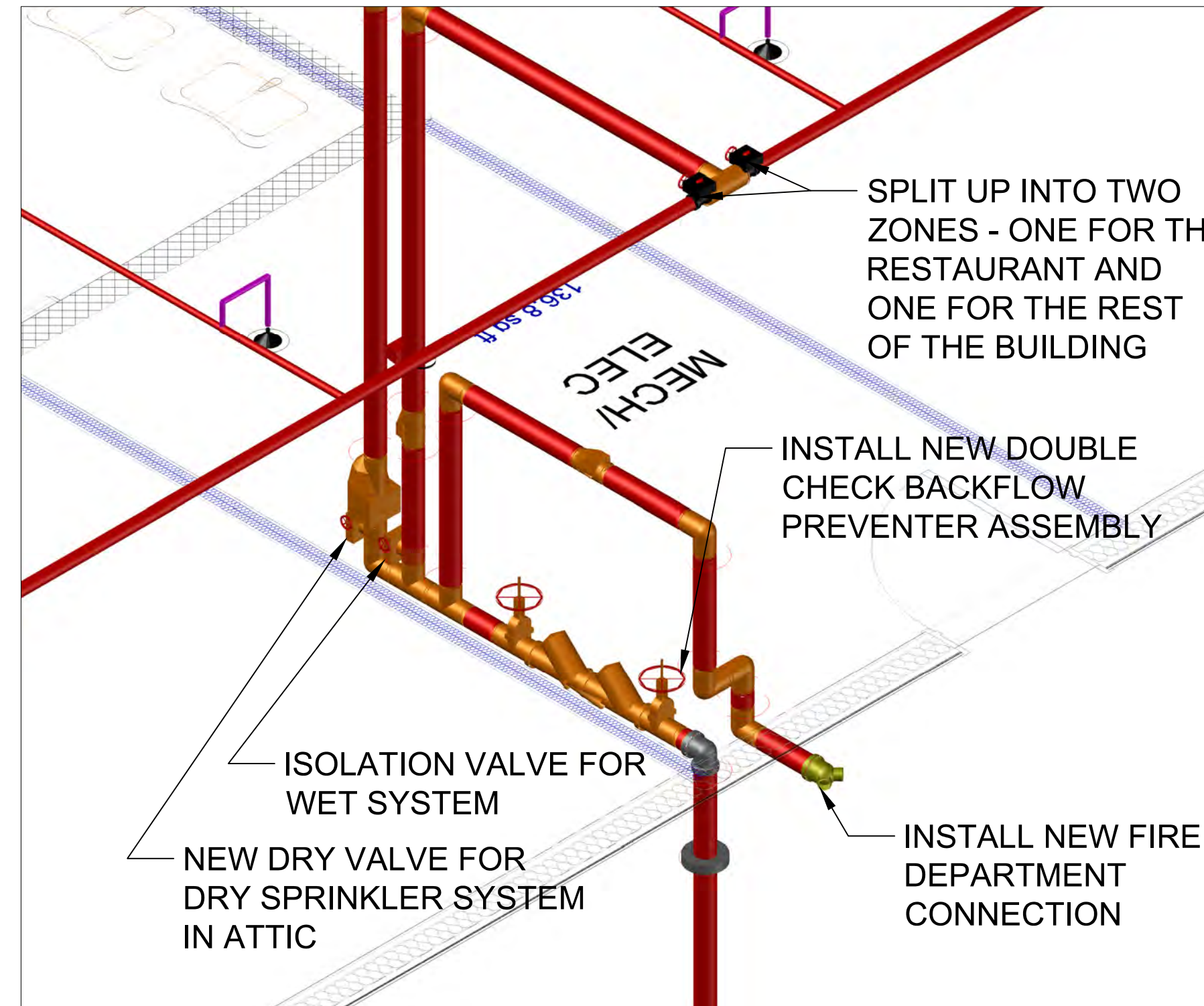
- ONLY UL LISTED AND FM-APPROVED DEVICES AND MATERIALS AS SPECIFIED IN NFPA 13 SHALL BE INSTALLED THROUGHOUT THE SYSTEM PER NFPA 13 SECT. 6.1.1.
- ONLY NEW SPRINKLERS SHALL BE USED.
- THE USE OF THREADABLE THINWALL PIPE, SUCH AS ALLIED "XL" OR "DYNA-THREAD", IS PROHIBITED.
- ALL STEEL SPRINKLER PIPE SHALL HAVE A MINIMUM CORROSION RESISTANCE RATIO (CRR) OF 1.0. ALL PIPING IS TO BE SCHEDULE 40 BLACK STEEL. ALL PIPE IN SIZES 2 1/2 INCHES THROUGH 8 INCHES SHALL BE SCH.10, ASTM A-135 OR ANSI/ASME A-53 BLACK STEEL.
- ALL THREADED PIPE AND FITTINGS SHALL HAVE THREADS CUT TO ANSI/ASME B1.20.1, PIPE THREAD, GENERAL PURPOSE PER NFPA 13 SECT. 6.5.1.1.
- ALL SCH. 40 GROOVED BLACK STEEL PIPE SHALL BE CUT-GROOVED.
- PIPE JOINED WITH GROOVED FITTINGS SHALL BE JOINED BY A LISTED COMBINATION OF FITTINGS, GASKETS, AND GROOVES. GROOVES, CUT OR ROLLED, SHALL BE DIMENSIONALLY COMPATIBLE WITH THE FITTINGS PER NFPA 13 SECT. 6.5.3.1.
- GROOVED FITTINGS SHALL BE MALLEABLE IRON ASTM A-14, DUCTILE IRON ASTM A-635, OR WELDED SEGMENT CARBON STEEL SCHEDULE 40 ASTM A-53/ FINISH TO BE FACTORY PAINTED.
- THREADED FITTINGS SHALL BE CAST IRON CLASS125 OR 250 ANSI B16.4 OR MALLEABLE IRON CLASS150 OR 300 ANSI B16.3, AND GALVANIZED WHERE NECESSARY OR REQUIRED.
- WELDED OUTLETS SHALL BE ANSI B16.11 FORGED STEEL PER NFPA (UL LISTED) FOR WORKING PRESSURE TO 300PSI.
- THE COMPONENTS OF HANGER ASSEMBLIES THAT DIRECTLY ATTACH TO THE PIPE OR TO THE BUILDING STRUCTURE SHALL BE LISTED PER NFPA 13 SECT. 9.1.1.5.1 OR FM-APPROVED.

INSTALLATION NOTES

- ALL SPRINKLERS SHALL BE INSTALLED ACCORDING TO THEIR LISTINGS SPACING AND OBSTRUCTION REQUIREMENTS AND THE SPACING AND OBSTRUCTION REQUIREMENTS OF NFPA 13.
- SPRINKLER DEFLECTORS SHALL BE INSTALLED PARALLEL TO ROOF/CEILING SLOPE PER NFPA 13 SECT. 8.5.4.2, UNLESS OTHERWISE NOTED.

HANGER NOTES

- THE COMPONENTS OF HANGER ASSEMBLIES THAT DIRECTLY ATTACH TO THE PIPE OR TO THE BUILDING STRUCTURE SHALL BE LISTED.
- HANGERS AND THEIR COMPONENTS SHALL BE FERROUS PER NFPA 13 SECT. 9.1.1.6.1, UNLESS THE COMPONENTS HAVE BEEN PROVEN BY FIRE TESTS TO BE ADEQUATE FOR THE HAZARD APPLICATION, AND THAT ARE LISTED FOR THAT SERVICE PER NFPA 13 SECT. 9.1.1.6.2.
- SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT NON-SYSTEM COMPONENTS EXCEPT WHERE SPECIFIC DESIGN CALCULATIONS ARE PROVIDED PER NFPA 13 SECT. 9.1.1.3.1.
- BRANCHLINE AND MAIN HANGER LOCATION AND MAXIMUM DISTANCES SHALL MEET NFPA 13 SECT. 9.2.2, TABLE 9.2.2.1, AND SECT. 9.2.4. ADDITIONALLY, THERE SHALL BE NOT LESS THAN ONE HANGER FOR EACH SECTION OF PIPE PER NFPA 13 SECT. 9.2.3.2.1, UNLESS SPRINKLERS ARE SPACED LESS THAN 6 FEET APART (NFPA 13 SECT. 9.2.3.2.2).
- THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER AND THE LAST HANGER ON THE LINE SHALL NOT BE GREATER THAN 36 INCHES FOR 1 INCH PIPE, AND 48 INCHES FOR 1 1/4 INCH PIPE, AND 60 INCHES FOR THE 1 1/2 INCH PIPE OR LARGER PER NFPA 13 SECT. 9.2.3.4.1.
- THE UNSUPPORTED LENGTH BETWEEN THE END SPRINKLER IN A PENDENT POSITION OR DROP NIPPLE AND THE LAST HANGER ON THE BRANCH LINE SHALL NOT BE GREATER THAN 12 INCHES FOR STEEL PIPE PER NFPA 13 SECT. 9.2.3.4.4.2. WHEN 12 INCHES IS EXCEEDED THE PIPE SHALL BE EXTENDED BEYOND THE END SPRINKLER AND SUPPORTED BY AN ADDITIONAL HANGER PER NFPA 13 SECT. 9.2.3.4.4.3.
- THE HANGER CLOSEST TO THE SPRINKLER SHALL BE OF A TYPE THAT PREVENT UPWARD MOVEMENT OF THE PIPE PER NFPA 13 SECT. 9.2.3.4.4.4.



② FIRE SERVICE MAIN CONNECTION DETAIL
SCALE: 1/2" = 1'-0"

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CRESCENT PARK
NEW BUILDING
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915

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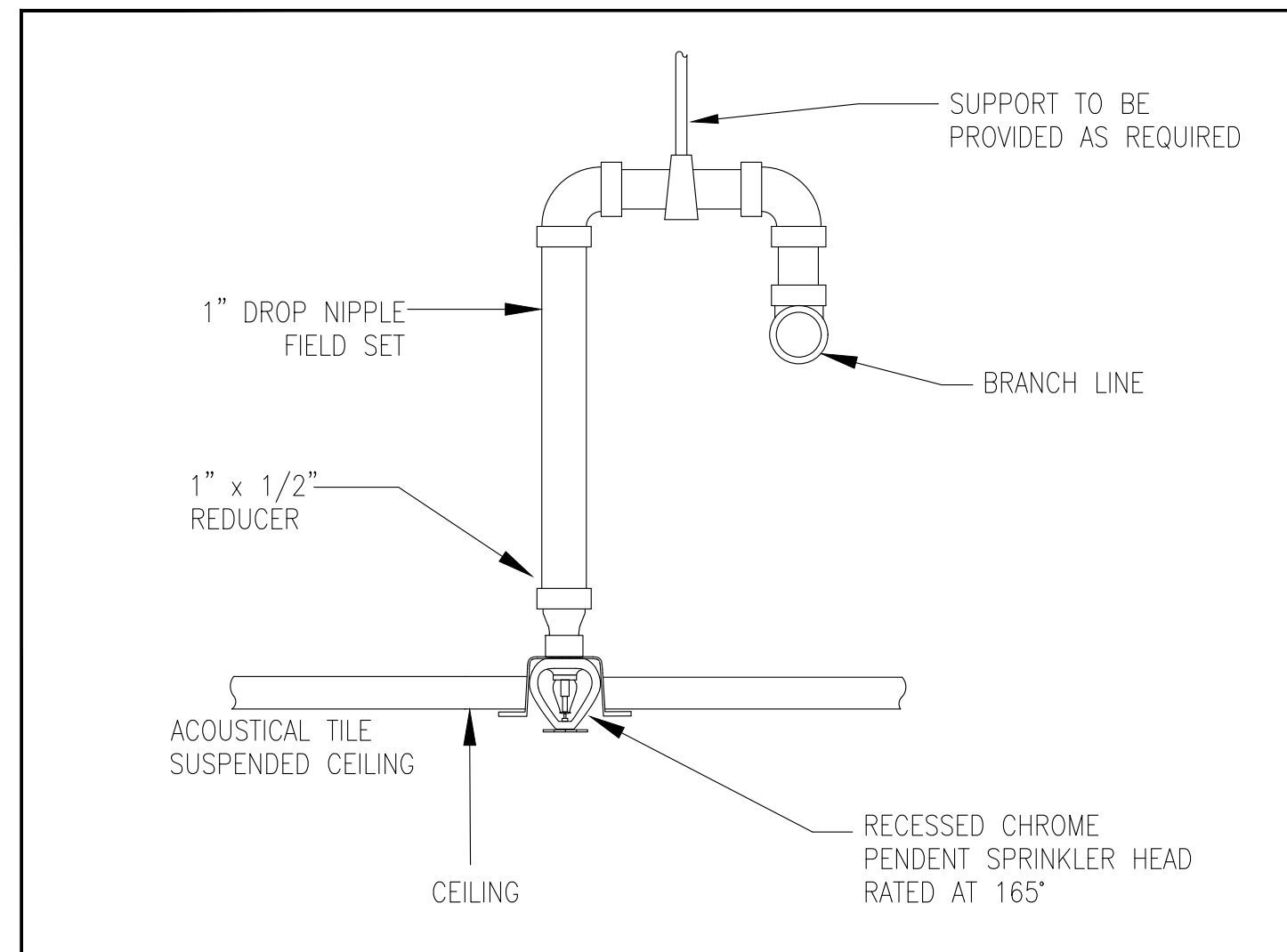
SPRINKLER NOTES AND DETAILS

DATE: 09/27/24

NCA JOB NO.: 23100

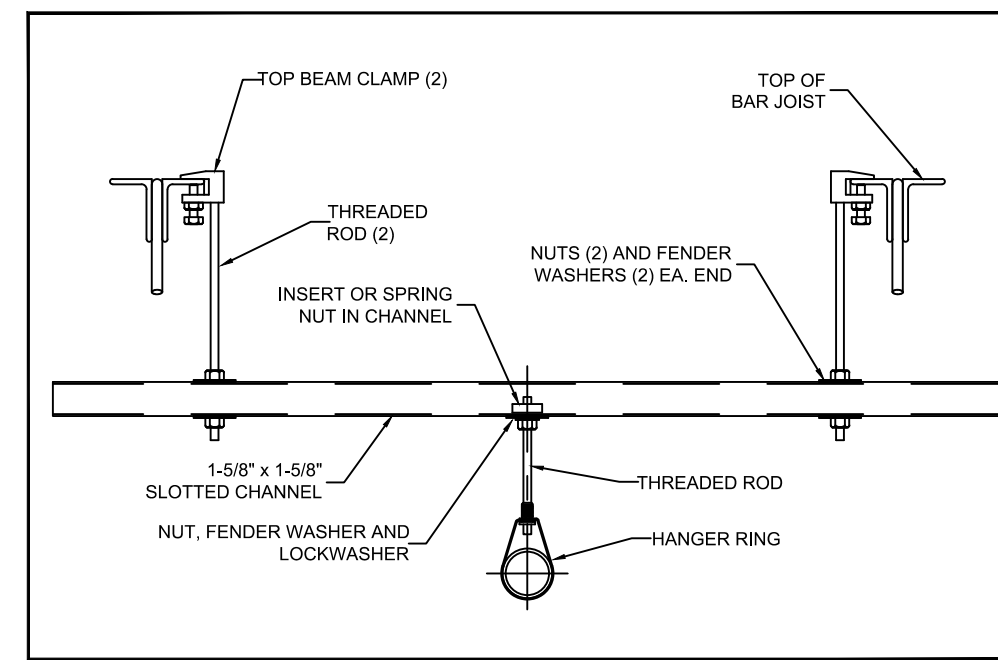
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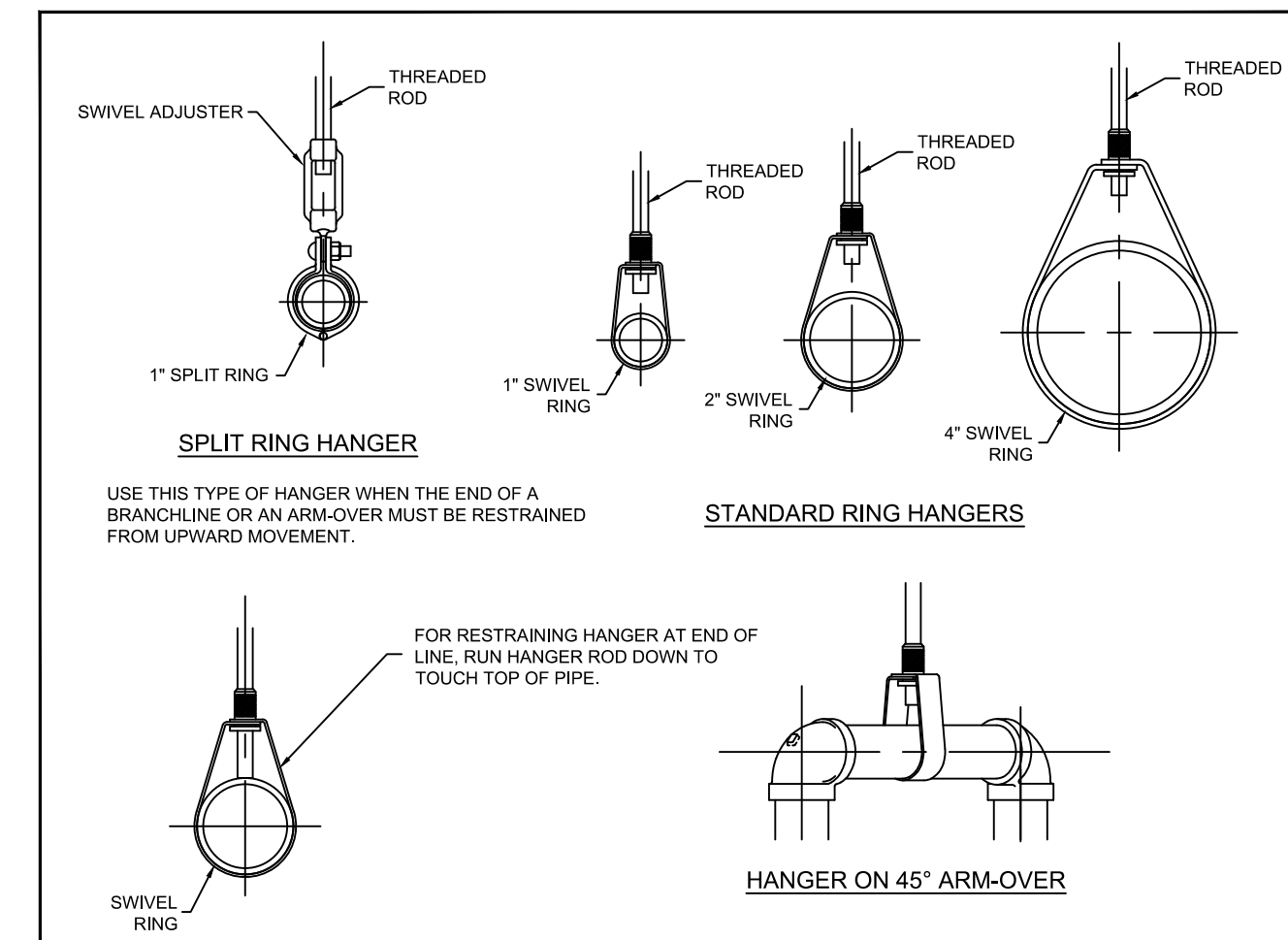
SPRINKLER ARM-OVER DETAIL

NOT TO SCALE



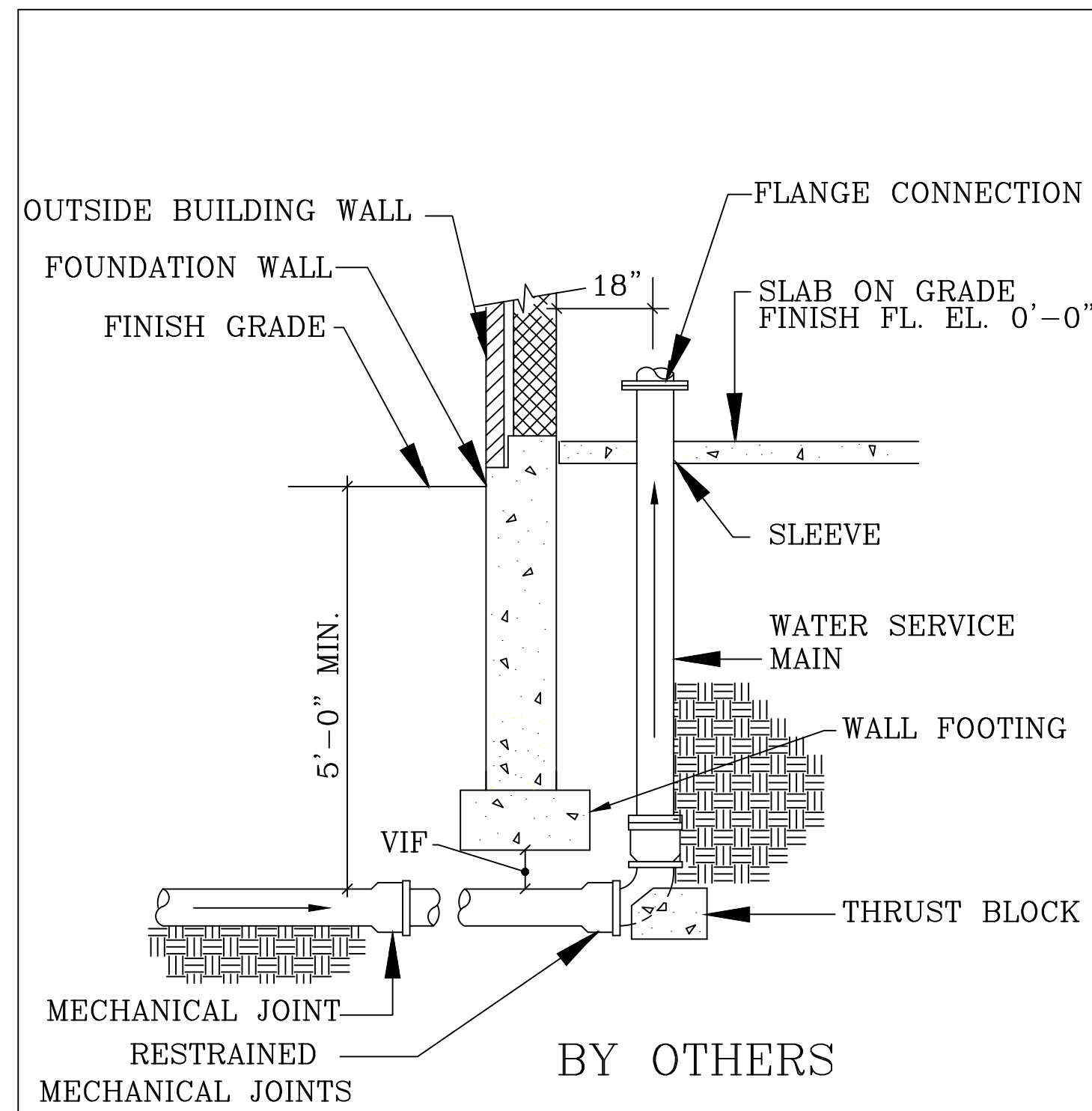
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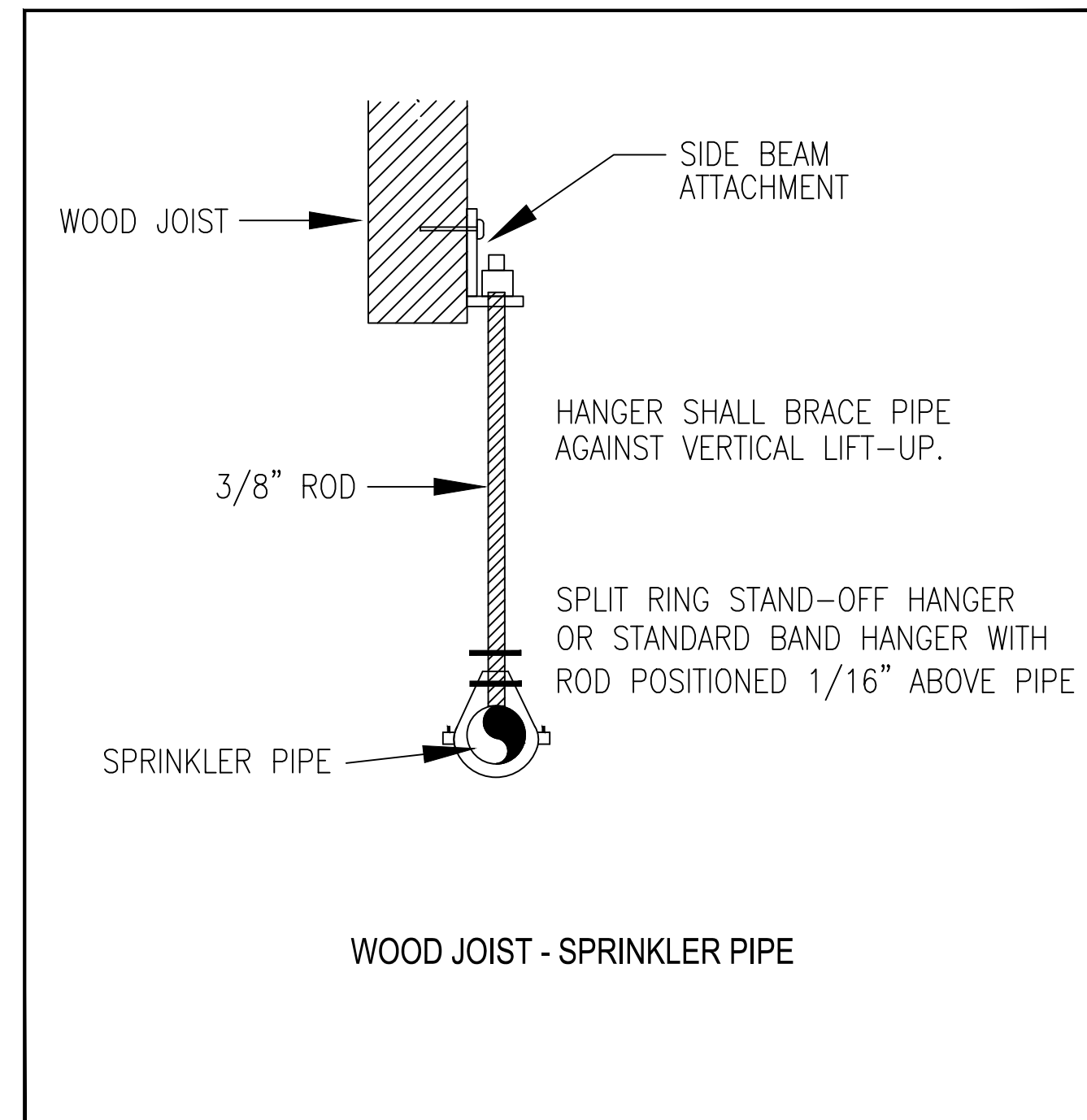


SMALL PIPE HANGERS

NOT TO SCALE



**FIRE PROTECTION SERVICE
ENTRANCE DIAGRAM
NTS**



HANGER DETAIL

NOT TO SCALE



**NORTHEAST
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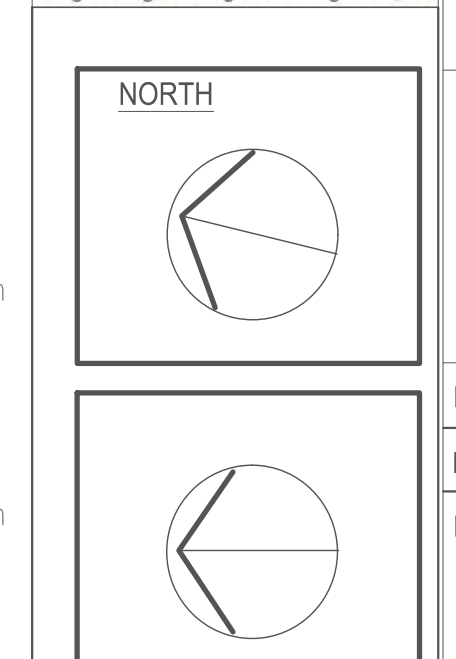
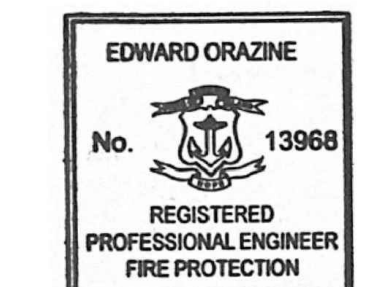
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**CRESCENT PARK
NEW BUILDING
CITY OF EAST PROVIDENCE
684 & 700 BULLOCKS POINT AVENUE
RIVERSIDE, RI 02915**

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**SPRINKLER
INSTALLATION
DETAILS**

DATE: 09/27/24

NCA JOB NO.: 23100

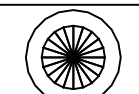
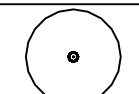
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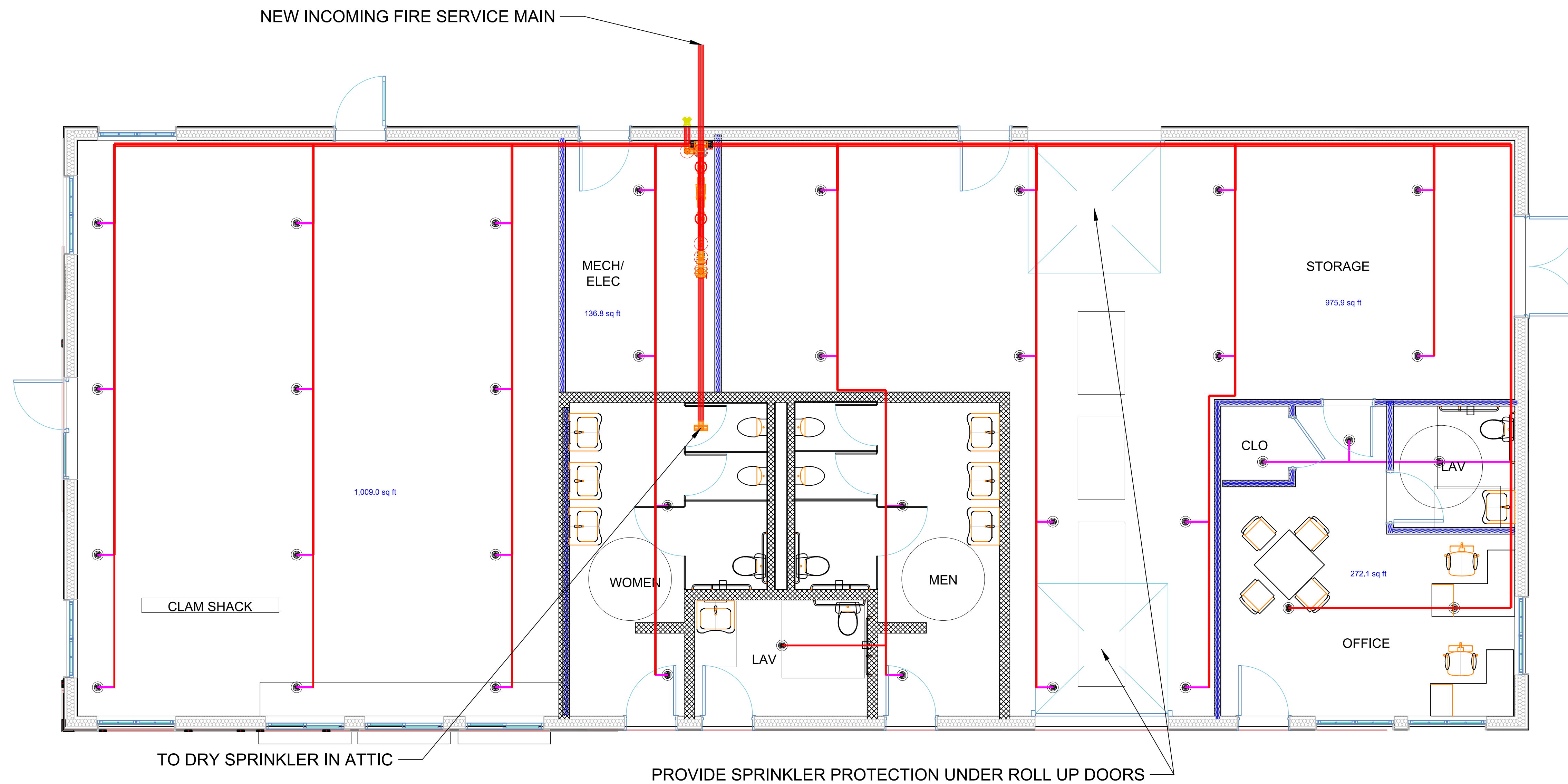
FP-02

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**CRESCENT PARK
 NEW BUILDING
 CITY OF EAST PROVIDENCE
 684 & 700 BULLOCKS POINT AVENUE
 RIVERSIDE, RI 02915**

Sprinkler Legend

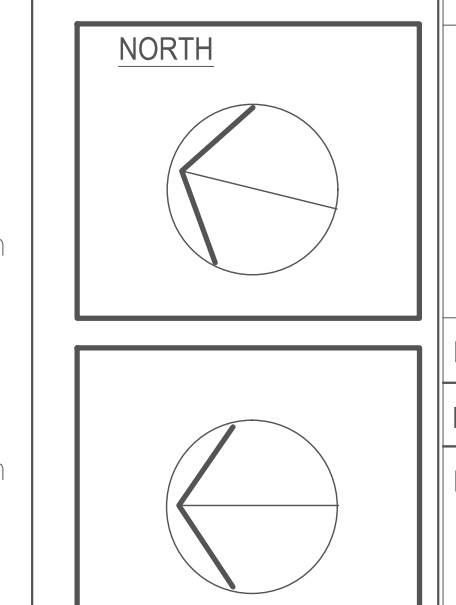
Symbol	Manufacturer	SIN	Model	Quantity	K-Factor	Type	Size	Response	Orifice	Finish	Temperature	Note
	Generic			36	5.6	Pendent	3/4	Standard		Brass	165°F	
	TYCO	TY3180	BB1	22	5.6	Attic	3/4	Standard		Brass	165°F	
				Total = 58								



1 GROUND FLOOR SPRINKLER INSTALLATION PLAN
 SCALE: 1/4" = 1'

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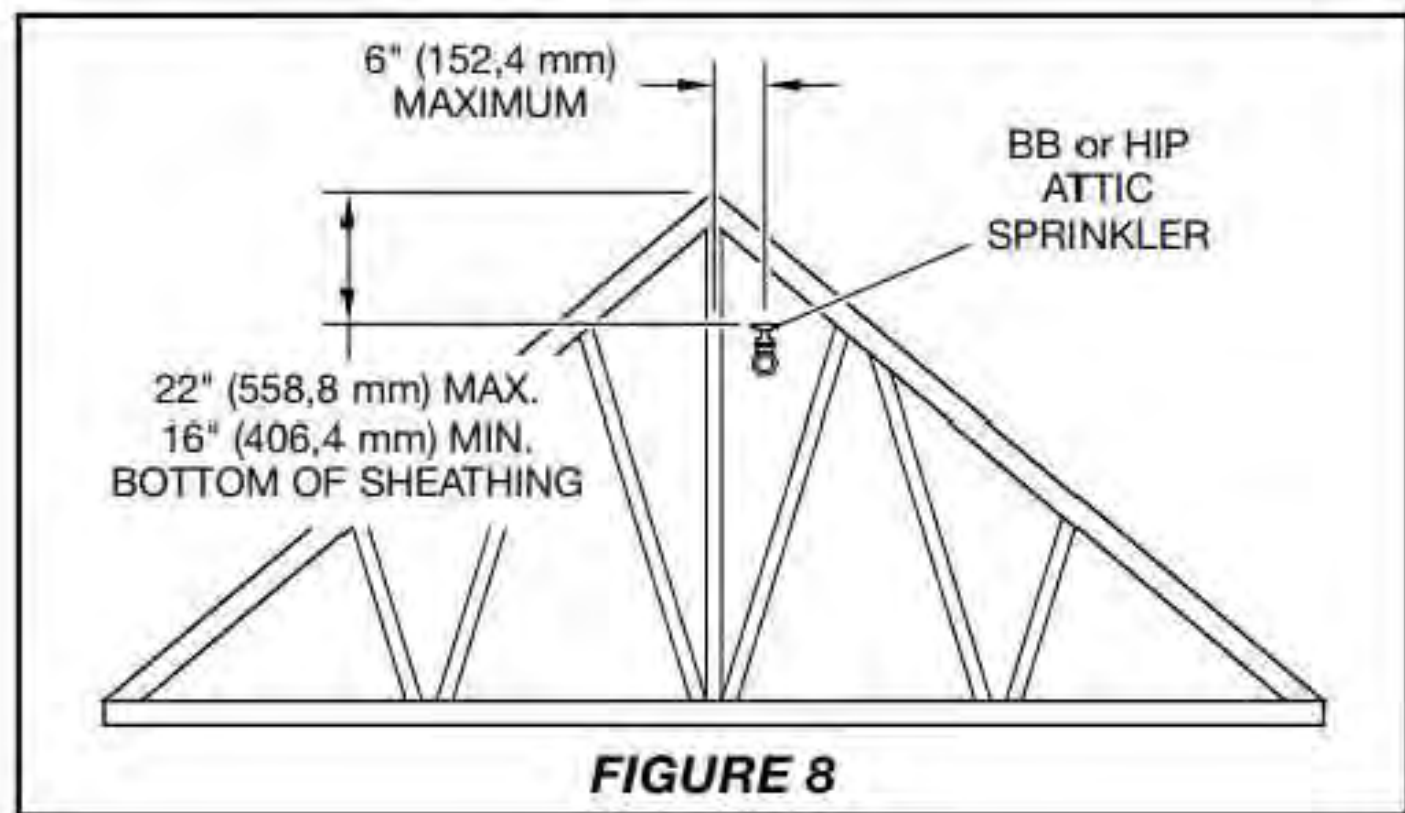
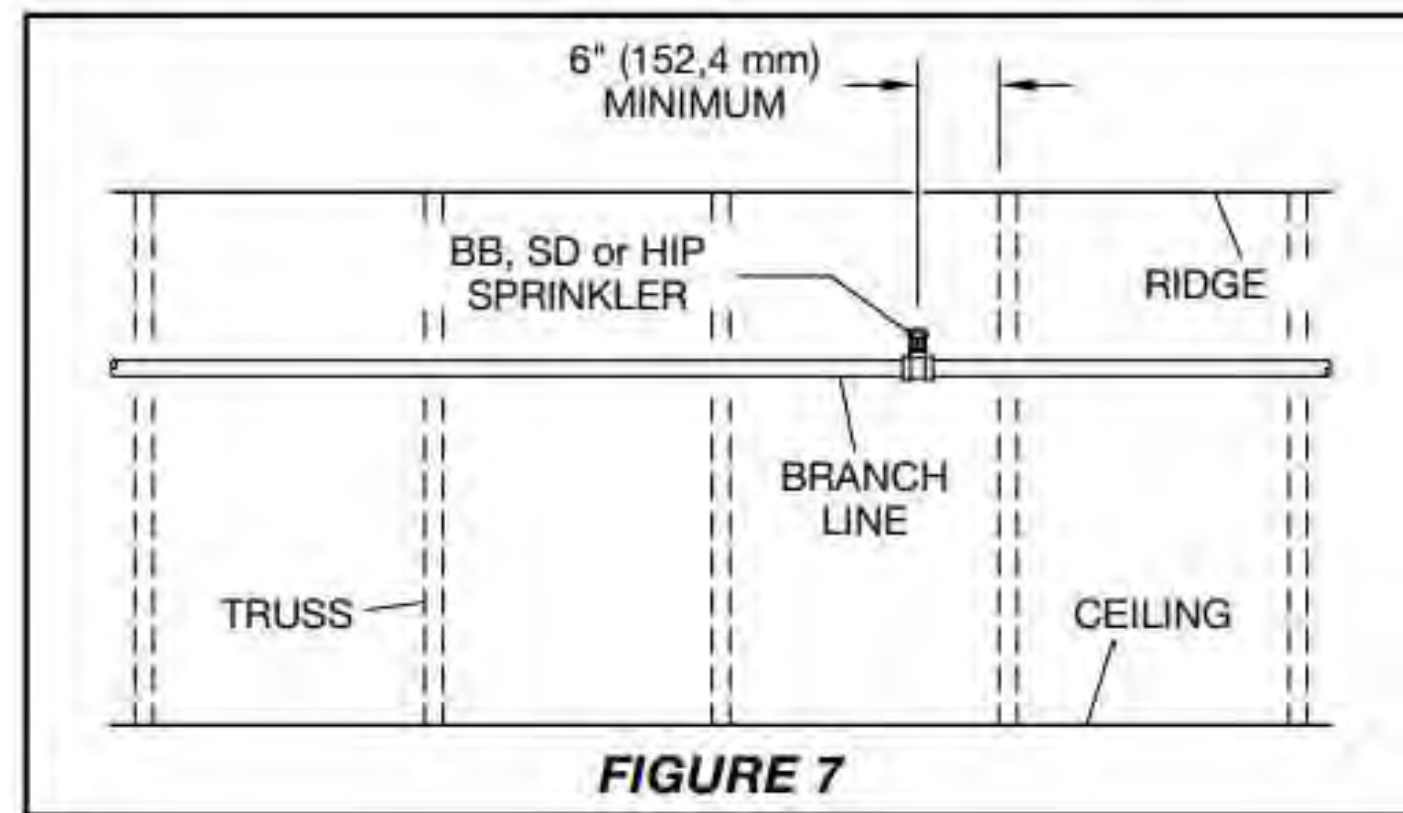
**GROUND FLOOR
 SPRINKLER
 INSTALLATION
 PLAN**

DATE: 09/27/24

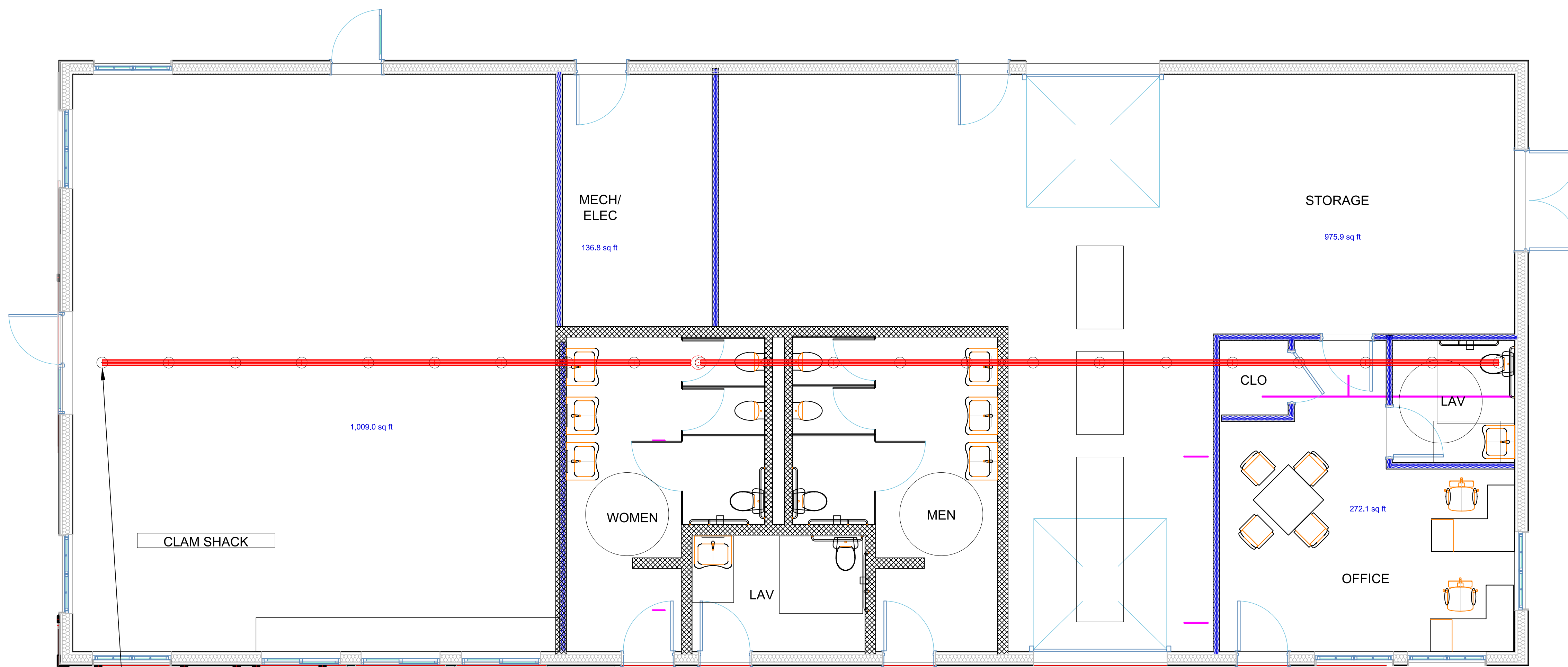
NCA JOB NO.: 23100

DRAWING NO.:

FP-03



1 ATTIC SPRINKLER DETAILS
SCALE: NTS

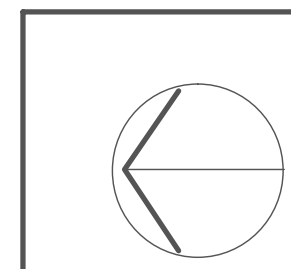
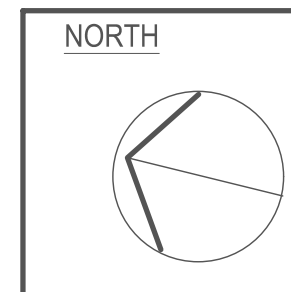
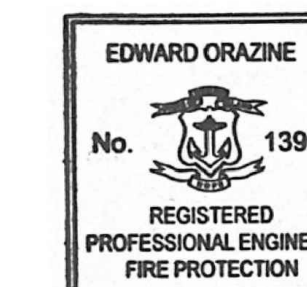


INSTALL TYCO BB1 ATTIC SPRINKLERS ALONG ATTIC RIDGE LINE BASED ON A ROOF PITCH OF 6:12. CONTRACTOR TO INSTALL ATTIC HEADS BASED ON TRUSS LAYOUT, WHILE MAINTAINING A MINIMUM SPACING OF 4' AND A MAXIMUM SPACING OF 6'. INSTALL ADDITIONAL SPRINKLER HEADS FOR OBSTRUCTIONS SUCH AS MECHANICAL EQUIPMENT OR DUCT WORK, WHERE/IF PRESENT.

2 ATTIC SPRINKLER PLAN
SCALE: 1/4" = 1'

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ATTIC
SPRINKLER
INSTALLATION
PLAN

DATE: 09/27/24

NCA JOB NO.: 23100

DRAWING NO.:
FP-04