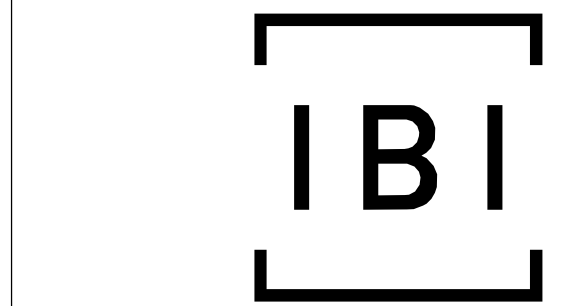


# MARITIME EXPANSION FIRE TRAINING CENTER

# SAN JACINTO COLLEGE

| SHEET INDEX |                                                   |
|-------------|---------------------------------------------------|
| SHEET #     | SHEET NAME                                        |
| -           | COVER SHEET                                       |
| G1.00       | GENERAL CODE INFORMATION                          |
| G1.01       | HARRIS COUNTY FIRE CODE REVIEW SHEET              |
| G1.02       | LIFE SAFETY PLAN                                  |
| -           | SURVEY                                            |
| C1.00       | GENERAL NOTES                                     |
| C1.01       | DEMOLITION SITE PLAN                              |
| C1.02       | COMPOSITE SITE PLAN                               |
| C1.03       | RENOVATION SITE PLAN                              |
| C1.04       | SITE DETAILS                                      |
| ---         | COVER SHEET                                       |
| ---         | HARRIS COUNTY REVIEW SHEET                        |
| C2.00       | TOPOGRAPHIC SURVEY                                |
| C2.04       | EXISTING STORM SEWER AND SWQ PLAN                 |
| C3.10       | SWPP DETAILS                                      |
| C4.00       | DIMENSIONS CONTROL & SWPPP                        |
| C5.00       | DRAINAGE PLAN, DRAINAGE AREA MAP & UTILITY PLAN   |
| C6.00       | GRADING & PAVING PLAN                             |
| C7.10       | PAVING DETAILS                                    |
| C8.00       | CIVIL DETAILS                                     |
| C9.00       | FIRE APPARATUS ACCESS LANE PLAN                   |
| L1.0        | LANDSCAPE PLAN AND DETAILS                        |
| S0.00       | GENERAL NOTES                                     |
| S1.00       | FIRE TRAINING CENTER FOUNDATION PLAN              |
| S2.00       | TYPICAL FOUNDATION DETAILS                        |
| A2.01       | 1ST FLOOR, MEZZANINE FLOOR PLANS & SCHEDULES      |
| A4.01       | ROOF PLAN                                         |
| A5.01       | ENLARGED PLANS, SECTIONS, AND DETAILS             |
| A6.00       | WALL SECTIONS AND PARTITIONS                      |
| A7.01       | EXTERIOR ELEVATIONS                               |
| A9.01       | FRAME & DOOR ELEVATIONS, FRAME DETAILS            |
| A10.01      | REFLECTED CEILING PLAN                            |
| A11.01      | INTERIOR FLOOR PLAN                               |
| M2.01       | 1ST DECK MECHANICAL PLAN AREA "A1"                |
| E1.01       | 1ST DECK COMPOSITE ELECTRICAL PLAN                |
| E2.01       | 1ST DECK ELECTRICAL POWER PLAN AREA "A1"          |
| E2.02       | 1ST DECK ELECTRICAL LIGHTING PLAN AREA "A1"       |
| E4.00       | ELECTRICAL SINGLE LINE DIAGRAM AND PANEL SCHEDULE |
| E5.00       | SPECIFICATIONS, LEGEND, AND DETAILS               |
| E5.01       | ELECTRICAL LIGHTING DETAILS                       |
| P1.01       | 1ST DECK COMPOSITE PLUMBING PLAN                  |
| P3.00       | PLUMBING DETAILS AND SCHEDULES                    |



**TEXAS-IBI GROUP, INC.**  
 455 East Medical Center Boulevard - Suite 500  
 P.O. Box 891209, Houston, Tx 77539 USA  
 tel 281.286.6605, fax 281.286.9606  
 ibigrouptexas.com

## CONSULTANTS

CSF Consulting, L.P  
 CIVIL ENGINEERS

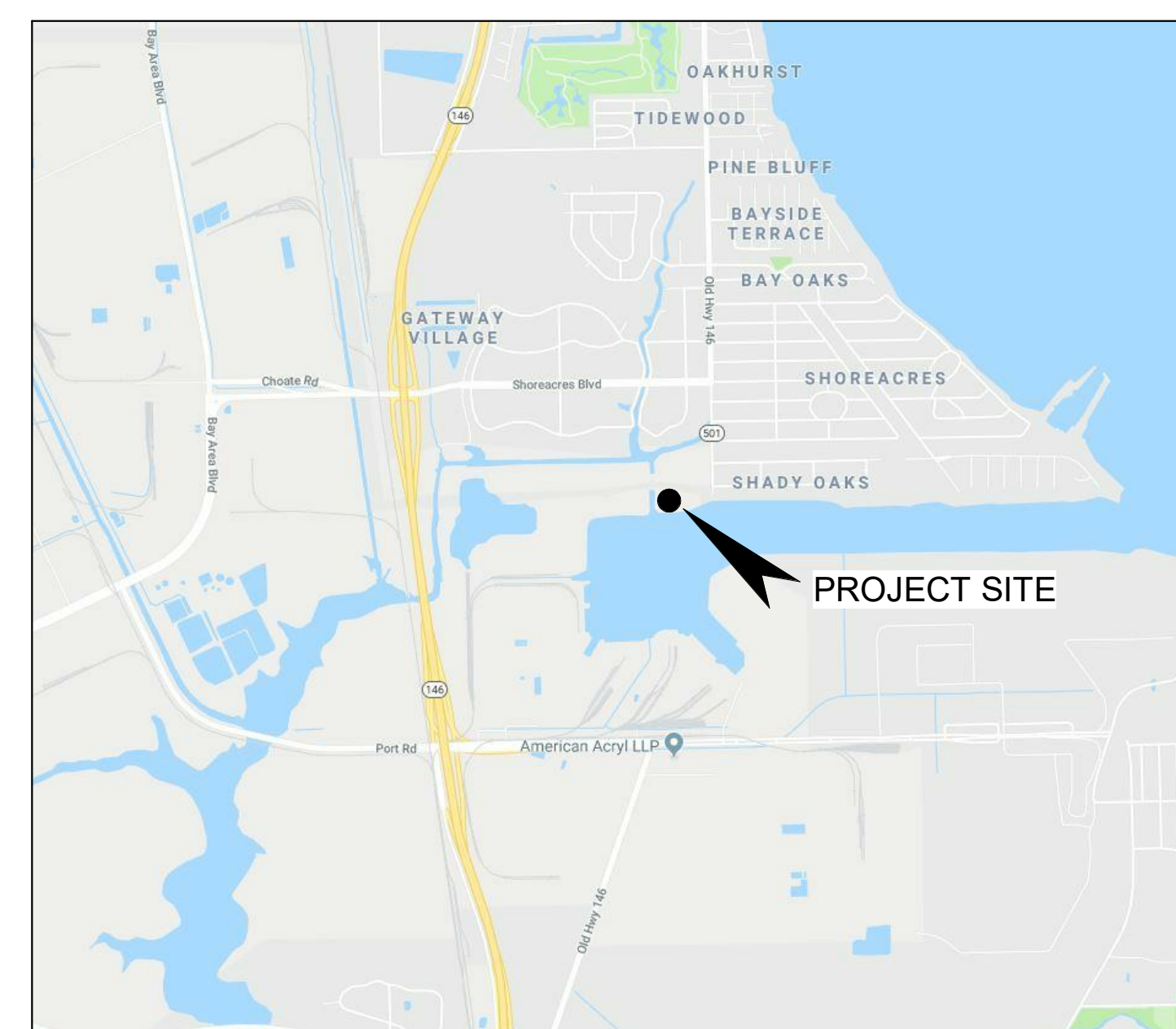
CSF Consulting, L.P  
 STRUCTURAL ENGINEERS

L | T | Y Engineers, PLLC  
 M.E.P. ENGINEERS

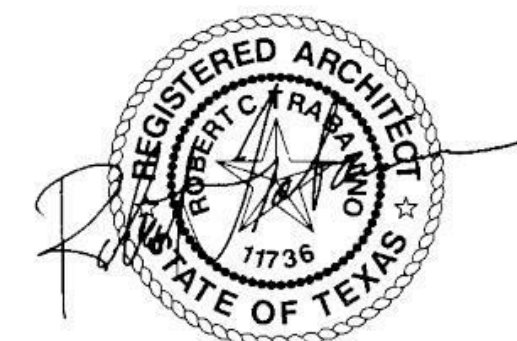
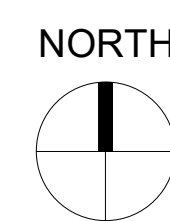
## BOARD OF TRUSTEES

Marie Flickinger  
 John Moon Jr.  
 Keith Sinor  
 Erica Davis Rouse  
 Dan Mims  
 Larry Wilson  
 Dr. Ruede Wheeler  
 Ben Meador

Chair  
 Vice Chair  
 Secretary  
 Assistant Secretary  
 Board Member  
 Board Member  
 Emeritus Trustee



SITE LOCATION MAP



11/12/2019

PROJECT NO. 201936  
 DATE: 11/12/2019

| DATE  | ISSUE            |
|-------|------------------|
| ISSUE | FOR CONSTRUCTION |

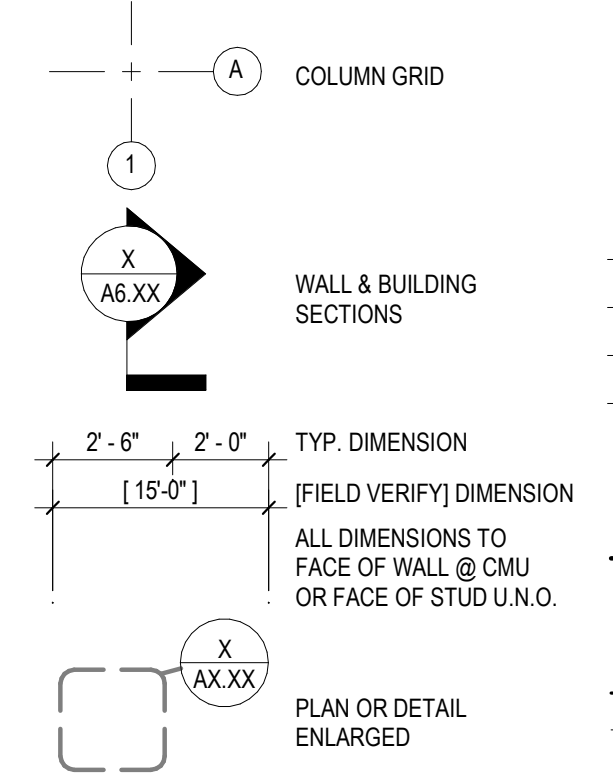
SET NO.

MARITIME EXPANSION FIRE TRAINING CENTER

|                        |                  |
|------------------------|------------------|
| ACCOUSTICAL TILE       | GYPSUM SHEATHING |
| BATT INSULATION        | PLASTER          |
| BRICK                  | PLYWOOD          |
| CAST-IN-PLACE CONCRETE | RIGID INSULATION |
| CONCRETE MASONRY UNIT  | STEEL            |
| EARTH FILL             | STONE            |
| FINISHED WOOD          | WOOD BLOCKING    |
| GYPSUM BOARD           | WOOD SHIM        |

### 18 DRAWING LEGEND

3/4" = 1'-0"



### 15 DRAWING CONVENTIONS

1/4" = 1'-0"

#### 221. ASSEMBLY AREAS

| NUMBER OF SEATS | MIN. NUMBER OF REQ'D WHEELCHAIR SPACES                                |
|-----------------|-----------------------------------------------------------------------|
| 4-25            | 1                                                                     |
| 26-50           | 2                                                                     |
| 51-150          | 4                                                                     |
| 151-300         | 5                                                                     |
| 301-500         | 6                                                                     |
| 501-5000        | 6, PLUS 1 FOR EACH 150, OR FRACTION THEREOF, BETWEEN 501 THROUGH 5000 |
| 5001 AND OVER   | 36, PLUS 1 FOR EACH 200, OR FRACTION THEREOF, OVER 5000               |

TABLE 221.2.1 NUMBER OF WHEELCHAIR SPACES IN ASSEMBLY AREAS

### 14 221 ASSEMBLY AREA

1/4" = 1'-0"

#### 219. ASSISTED LISTENING SYSTEMS

| CAPACITY OF SEATING IN ASSEMBLY AREA | MIN. NUMBER OF REQ'D RECEIVERS          | MIN. NUMBER OF REQ'D RECEIVERS REQ'D TO BE HEARING-AID COMPATIBLE |
|--------------------------------------|-----------------------------------------|-------------------------------------------------------------------|
| 50 OR LESS                           | 2                                       | 2                                                                 |
| 51-200                               | 2, PLUS 1 PER 25 SEATS OVER 50 SEATS    | 2                                                                 |
| 201-500                              | 2, PLUS 1 PER 25 SEATS OVER 50 SEATS    | 1 PER 4 RECEIVERS                                                 |
| 501-1000                             | 20, PLUS 1 PER 33 SEATS OVER 500 SEATS  | 1 PER 4 RECEIVERS                                                 |
| 1001-2000                            | 35, PLUS 1 PER 50 SEATS OVER 1000 SEATS | 1 PER 4 RECEIVERS                                                 |
| 2001 AND OVER                        | 55 PLUS 1 PER 100 SEATS OVER 2000 SEATS | 1 PER 4 RECEIVERS                                                 |

TABLE 219.3 RECEIVERS FOR ASSISTIVE LISTENING SYSTEMS

### 13 219 ASSISTIVE LISTENING SYSTEMS

1/4" = 1'-0"

|                                                                                                  | ACCESSIBLE MOUNTING HEIGHTS BY AGE GROUP        |                                                  |                                                  |                                      |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------|
|                                                                                                  | ADULT                                           | AGE: 9-12                                        | AGE: 5-8                                         | AGE: 2-3                             |
| <b>REACH RANGES</b><br>HIGH (MAX)<br>LOW (MIN)                                                   | 48"<br>15"                                      | 44"<br>18"                                       | 40"<br>18"                                       | 36"<br>20"                           |
| <b>RAMP AND STAIRS</b><br>TOP OF HANDRAIL GRIPPING SURFACE                                       | 34" - 38"                                       | SECOND SET 28" MAX                               | SECOND SET 28" MAX                               | SECOND SET 28" MAX                   |
| <b>ELEVATORS</b><br>EMERGENCY CONTROL BUTTONS<br>CONTROL PANEL                                   | 35" TO C.L.<br>48" MAX                          | 28" MAX                                          | 28" MAX                                          | 28" MAX                              |
| <b>DRINKING FOUNTAINS &amp; WATER COOLERS</b><br>HEIGHT TO SPOUT WHEELCHAIR STANDING             | 36"<br>38" - 43"                                | 30" MAX                                          | 30" MAX                                          | 30" MAX                              |
| <b>WATER CLOSETS</b><br>CENTERLINE - WALL HUNG<br>TOP OF SEAT<br>GRAB BARS<br>DISPENSER HEIGHT   | 16" - 18"<br>17" - 19"<br>33" - 36"<br>15" MIN. | 15" - 18"<br>15" - 17"<br>25" - 29"<br>17" - 19" | 12" - 15"<br>12" - 15"<br>20" - 25"<br>14" - 17" | 12"<br>11" - 12"<br>18" - 20"<br>14" |
| <b>URINALS</b><br>CENTERLINE - WALL HUNG<br>TOP OF RIM<br>FLUSH CONTROLS                         | 15" MIN.<br>17" MAX<br>46" MAX                  | 17" MAX<br>44" MAX                               |                                                  |                                      |
| <b>LAVATORIES AND SINKS</b><br>RIM OR COUNTER SURFACE<br>KNEE CLEARANCE                          | 34" MAX<br>PER 308.2                            | 31" MAX<br>24" MIN.                              | 31" MAX<br>24" MIN.                              |                                      |
| <b>SHOWER STALLS</b><br>TOP OF SEAT<br>GRAB BARS<br>HAND SHOWER HEAD MOUNTING                    | 17" - 19"<br>33" - 36"<br>59" MIN. HOSE         | 25" - 27"<br>20" - 25"                           | 20" - 25"<br>18" - 20"                           |                                      |
| <b>FIXED OR BUILT-IN SEATING &amp; TABLES</b><br>HIGHEST OPERABLE PART                           | 28" - 34"                                       | 26" - 30"                                        | 26" - 30"                                        |                                      |
| <b>DRESSING AND FITTING ROOMS</b><br>HANDICAP BENCH MOUNT<br>TOP OF RIM<br>FLUSH CONTROLS        | 17" - 19"<br>20" - 24"<br>42" MIN.              |                                                  |                                                  |                                      |
| <b>FOOD SERVICE LINES</b><br>TOP OF TRY SLIDE<br>EMERGENCY EYEWASH<br>TOP OF COUNTER<br>ACTUATOR |                                                 |                                                  |                                                  |                                      |

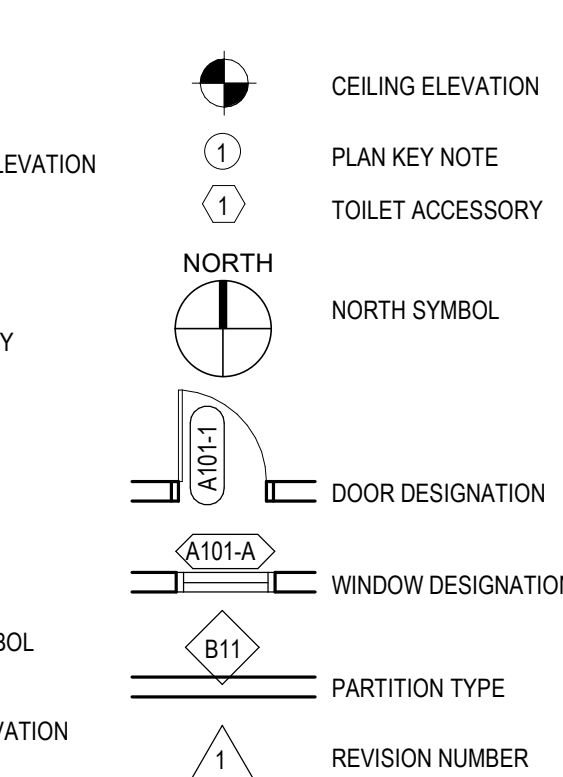
HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.  
GRAB BARS, HANDRAILS AND SHOWER SEATS TO BE CAPABLE OF SUPPORTING A STEADY FORCE OF 250 POUNDS IN ANY DIRECTION.

### 6 ACCESS. MNT. HEIGHTS BY AGE GROUP

1/4" = 1'-0"

### 17 ABBREVIATIONS

1/4" = 1'-0"



### 15 DRAWING CONVENTIONS

1/4" = 1'-0"

#### 404. DOORS, DOORWAYS, AND GATES

FIG. 404.2.3 CLEAR WIDTH OF DOORWAYS

404.2.3 (a) HINGED DOOR  
 404.2.3 (b) SLIDING DOOR  
 404.2.3 (c) FOLDING DOOR

### 14 221 ASSEMBLY AREA

1/4" = 1'-0"

#### 219. ASSISTED LISTENING SYSTEMS

| CAPACITY OF SEATING IN ASSEMBLY AREA | MIN. NUMBER OF REQ'D RECEIVERS          | MIN. NUMBER OF REQ'D RECEIVERS REQ'D TO BE HEARING-AID COMPATIBLE |
|--------------------------------------|-----------------------------------------|-------------------------------------------------------------------|
| 50 OR LESS                           | 2                                       | 2                                                                 |
| 51-200                               | 2, PLUS 1 PER 25 SEATS OVER 50 SEATS    | 2                                                                 |
| 201-500                              | 2, PLUS 1 PER 25 SEATS OVER 50 SEATS    | 1 PER 4 RECEIVERS                                                 |
| 501-1000                             | 20, PLUS 1 PER 33 SEATS OVER 500 SEATS  | 1 PER 4 RECEIVERS                                                 |
| 1001-2000                            | 35, PLUS 1 PER 50 SEATS OVER 1000 SEATS | 1 PER 4 RECEIVERS                                                 |
| 2001 AND OVER                        | 55 PLUS 1 PER 100 SEATS OVER 2000 SEATS | 1 PER 4 RECEIVERS                                                 |

TABLE 219.3 RECEIVERS FOR ASSISTIVE LISTENING SYSTEMS

### 13 219 ASSISTIVE LISTENING SYSTEMS

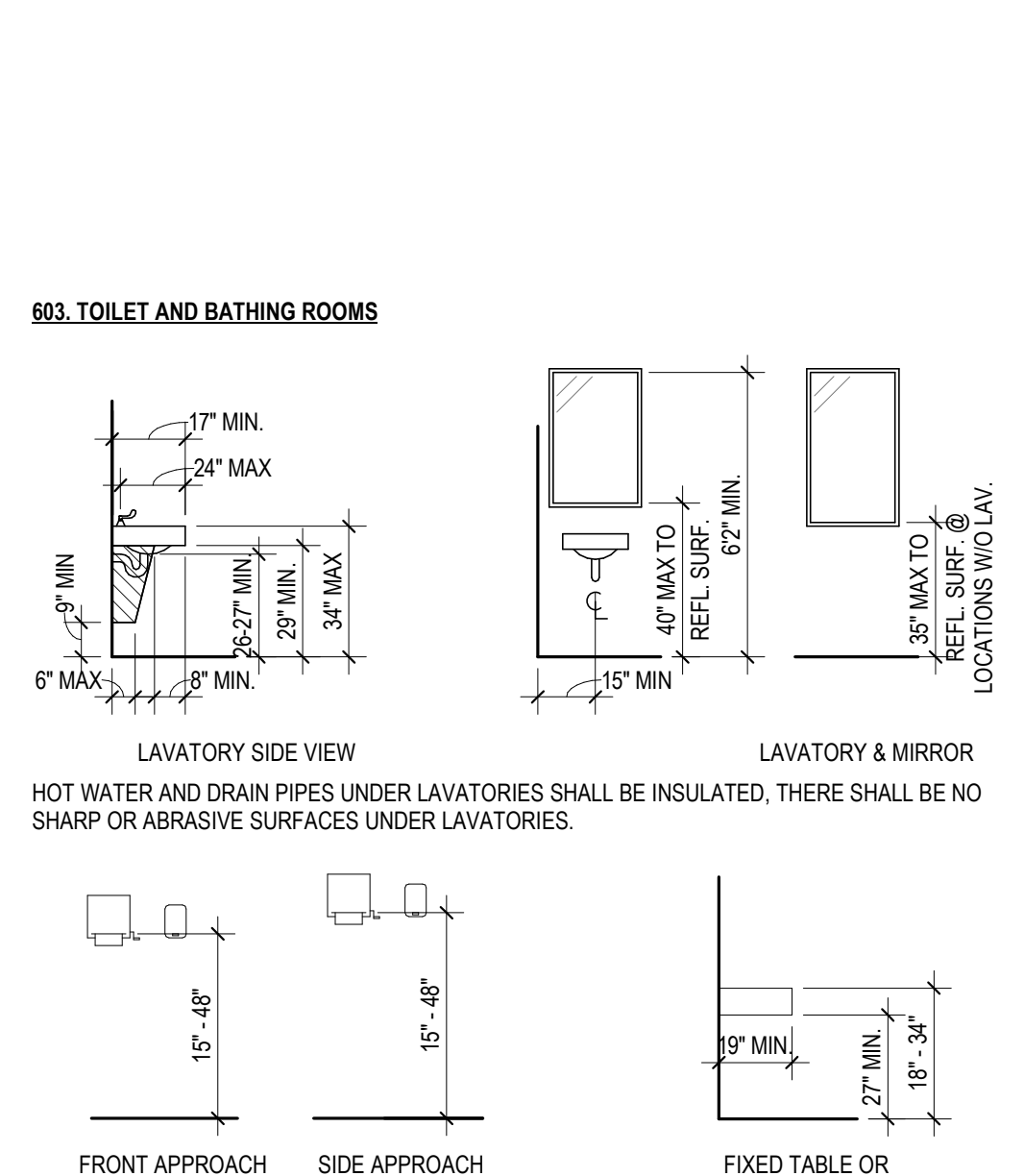
1/4" = 1'-0"

|                                                                                                  | ACCESSIBLE MOUNTING HEIGHTS BY AGE GROUP        |                                                  |                                                  |                                      |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------|--------------------------------------------------|--------------------------------------------------|--------------------------------------|
|                                                                                                  | ADULT                                           | AGE: 9-12                                        | AGE: 5-8                                         | AGE: 2-3                             |
| <b>REACH RANGES</b><br>HIGH (MAX)<br>LOW (MIN)                                                   | 48"<br>15"                                      | 44"<br>18"                                       | 40"<br>18"                                       | 36"<br>20"                           |
| <b>RAMP AND STAIRS</b><br>TOP OF HANDRAIL GRIPPING SURFACE                                       | 34" - 38"                                       | SECOND SET 28" MAX                               | SECOND SET 28" MAX                               | SECOND SET 28" MAX                   |
| <b>ELEVATORS</b><br>EMERGENCY CONTROL BUTTONS<br>CONTROL PANEL                                   | 35" TO C.L.<br>48" MAX                          | 28" MAX                                          | 28" MAX                                          | 28" MAX                              |
| <b>DRINKING FOUNTAINS &amp; WATER COOLERS</b><br>HEIGHT TO SPOUT WHEELCHAIR STANDING             | 36"<br>38" - 43"                                | 30" MAX                                          | 30" MAX                                          | 30" MAX                              |
| <b>WATER CLOSETS</b><br>CENTERLINE - WALL HUNG<br>TOP OF SEAT<br>GRAB BARS<br>DISPENSER HEIGHT   | 16" - 18"<br>17" - 19"<br>33" - 36"<br>15" MIN. | 15" - 18"<br>15" - 17"<br>25" - 29"<br>17" - 19" | 12" - 15"<br>12" - 15"<br>20" - 25"<br>14" - 17" | 12"<br>11" - 12"<br>18" - 20"<br>14" |
| <b>URINALS</b><br>CENTERLINE - WALL HUNG<br>TOP OF RIM<br>FLUSH CONTROLS                         | 15" MIN.<br>17" MAX<br>46" MAX                  | 17" MAX<br>44" MAX                               |                                                  |                                      |
| <b>LAVATORIES AND SINKS</b><br>RIM OR COUNTER SURFACE<br>KNEE CLEARANCE                          | 34" MAX<br>PER 308.2                            | 31" MAX<br>24" MIN.                              | 31" MAX<br>24" MIN.                              |                                      |
| <b>SHOWER STALLS</b><br>TOP OF SEAT<br>GRAB BARS<br>HAND SHOWER HEAD MOUNTING                    | 17" - 19"<br>33" - 36"<br>59" MIN. HOSE         | 25" - 27"<br>20" - 25"                           | 20" - 25"<br>18" - 20"                           |                                      |
| <b>FIXED OR BUILT-IN SEATING &amp; TABLES</b><br>HIGHEST OPERABLE PART                           | 28" - 34"                                       | 26" - 30"                                        | 26" - 30"                                        |                                      |
| <b>DRESSING AND FITTING ROOMS</b><br>HANDICAP BENCH MOUNT<br>TOP OF RIM<br>FLUSH CONTROLS        | 17" - 19"<br>20" - 24"<br>42" MIN.              |                                                  |                                                  |                                      |
| <b>FOOD SERVICE LINES</b><br>TOP OF TRY SLIDE<br>EMERGENCY EYEWASH<br>TOP OF COUNTER<br>ACTUATOR |                                                 |                                                  |                                                  |                                      |

HOT WATER AND DRAIN PIPES UNDER LAVATORIES SHALL BE INSULATED. THERE SHALL BE NO SHARP OR ABRASIVE SURFACES UNDER LAVATORIES.  
GRAB BARS, HANDRAILS AND SHOWER SEATS TO BE CAPABLE OF SUPPORTING A STEADY FORCE OF 250 POUNDS IN ANY DIRECTION.

### 5 404 DOORS, DOORWAYS, AND GATES

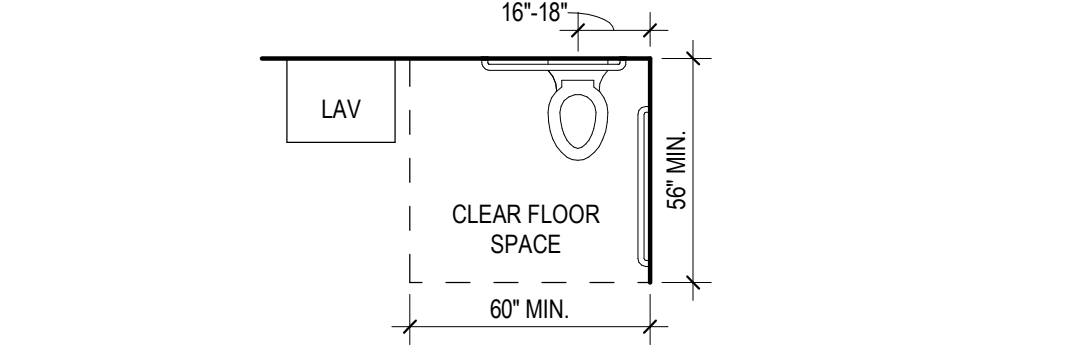
1/4" = 1'-0"



#### 604. WATER CLOSETS AND TOILET COMPARTMENTS

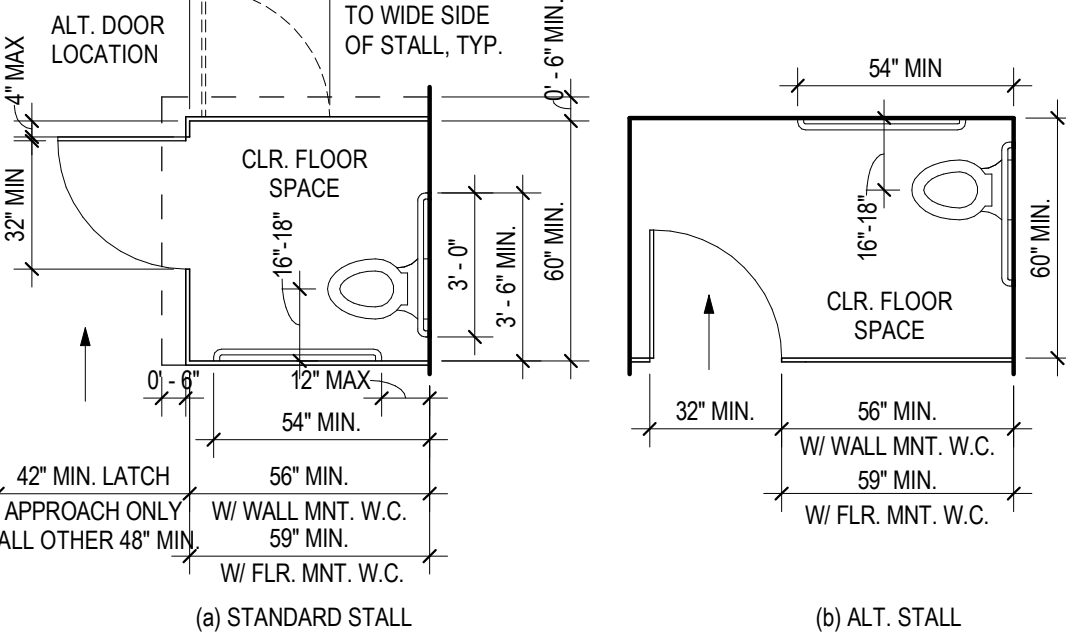
FIG. 604.3.1 SIZE OF CLEARANCES AT WATER CLOSETS

FIG. 604.3.1 WHEELCHAIR ACCESSIBLE TOILET COMPARTMENT DOORS



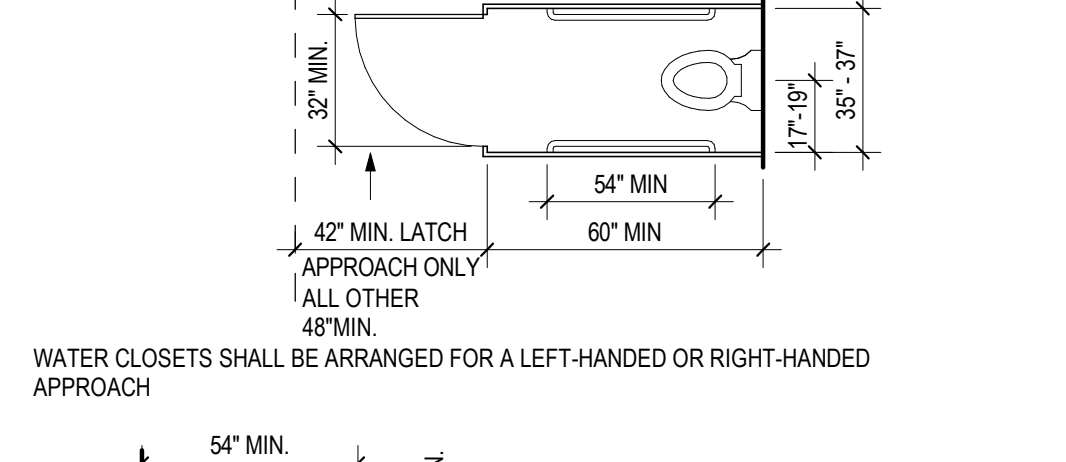
#### 605. URINALS

URINAL ADULT



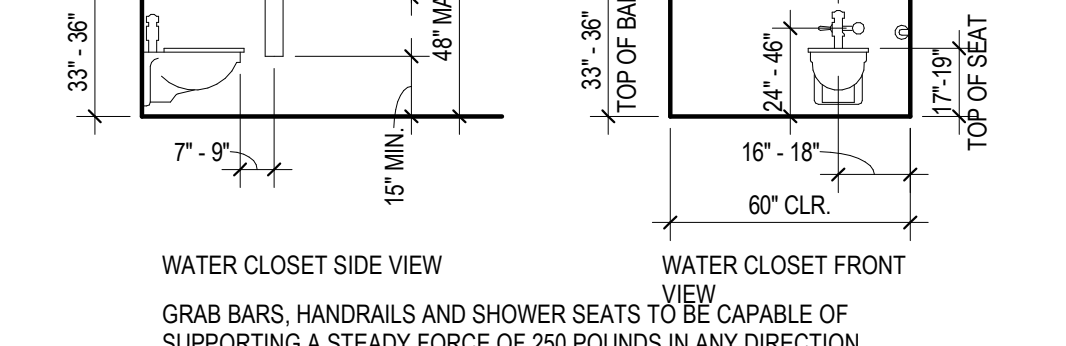
#### 605. URINALS

URINAL ADULT



#### 603, 604, 605 - TOILET COMPARTMENTS

307.3(b) EXAMPLE OF PROTECTION AROUND WALL MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS



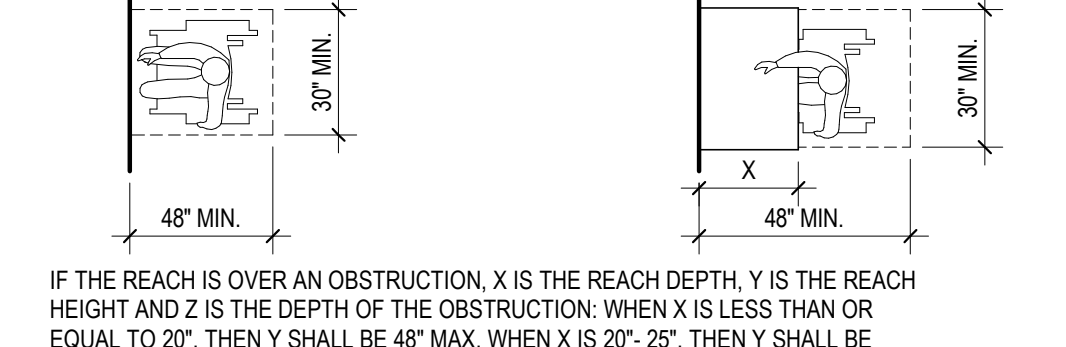
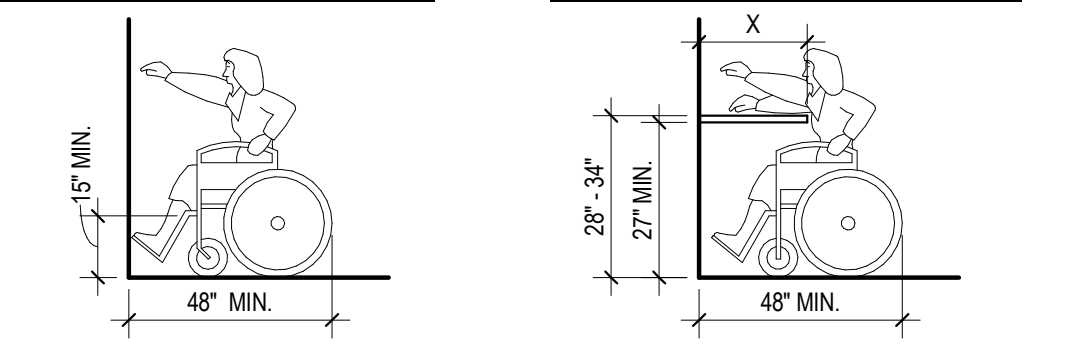
#### 603, 604, 605 - TOILET COMPARTMENTS

307.3(b) EXAMPLE OF PROTECTION AROUND WALL MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS



#### 603, 604, 605 - TOILET COMPARTMENTS

307.3(b) EXAMPLE OF PROTECTION AROUND WALL MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS



#### 603, 604, 605 - TOILET COMPARTMENTS

307.3(b) EXAMPLE OF PROTECTION AROUND WALL MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS

#### 603, 604, 605 - TOILET COMPARTMENTS

307.3(b) EXAMPLE OF PROTECTION AROUND WALL MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS

#### 603, 604, 605 - TOILET COMPARTMENTS

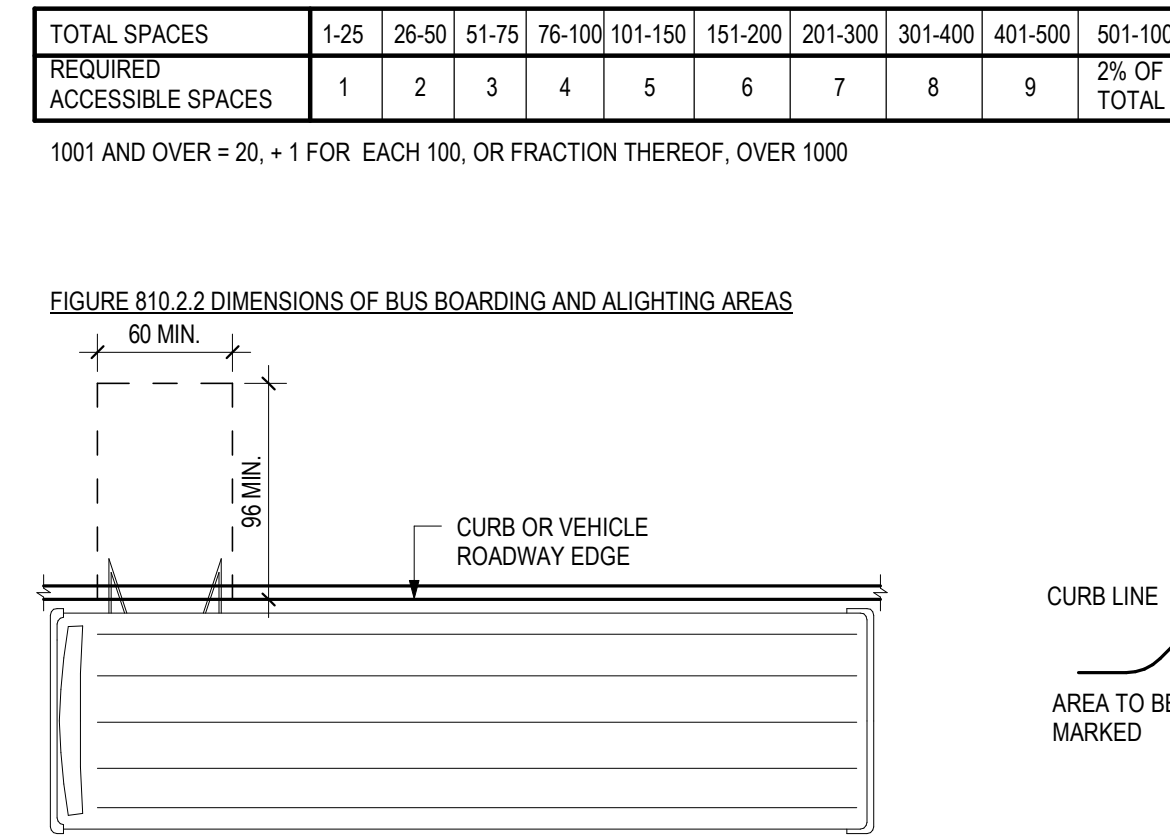
307.3(b) EXAMPLE OF PROTECTION AROUND WALL MOUNTED OBJECTS AND MEASUREMENTS OF CLEAR WIDTHS

#### 503. PARKING AND PASSENGER LOADING ZONES

TABLE 208.2 PARKING SPACES

| TOTAL SPACES               | 1-25 | 26-50 | 51-75 | 76-100 | 101-150 | 151-200 | 201-300 | 301-400 | 401-500 | 501-1000    |
|----------------------------|------|-------|-------|--------|---------|---------|---------|---------|---------|-------------|
| REQUIRED ACCESSIBLE SPACES | 1    | 2     | 3     | 4      | 5       | 6       | 7       | 8       | 9       | 2% OF TOTAL |

1001 AND OVER = 20, + 1 FOR EACH 100, OR FRACTION THEREOF, OVER 1000

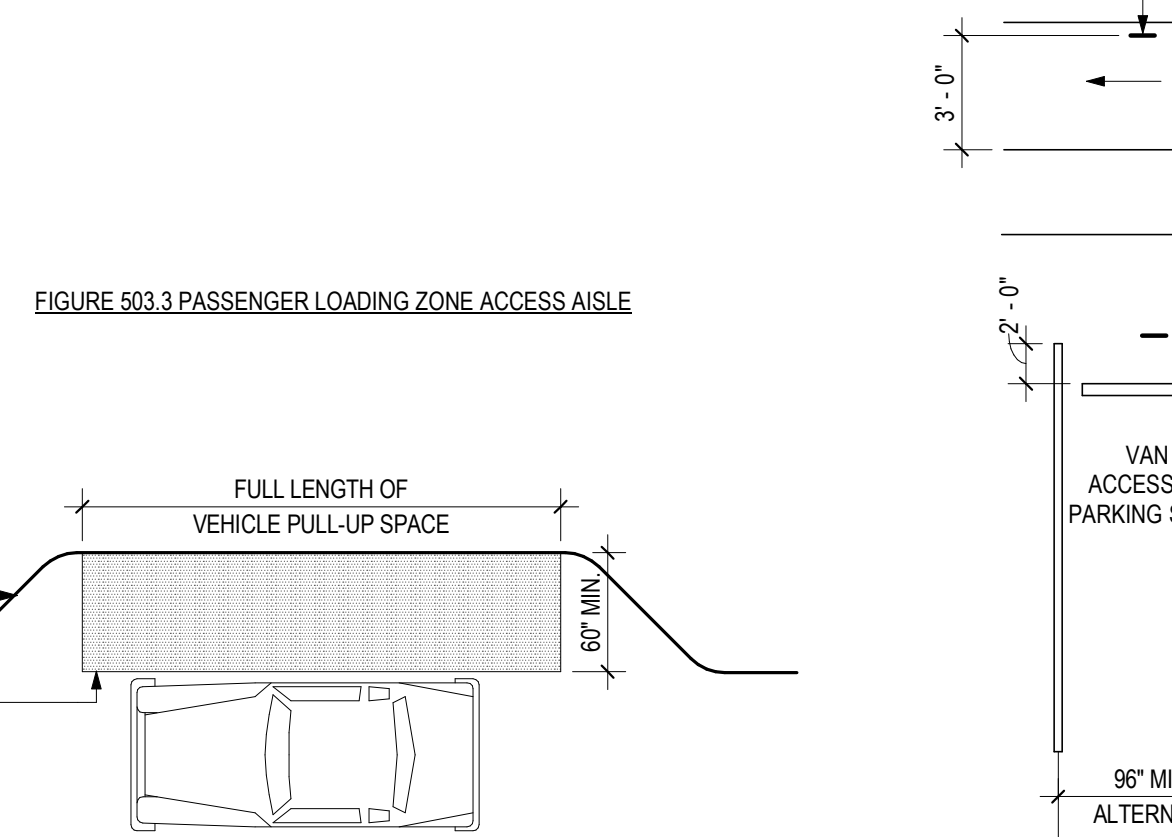


### 16 503 PARKING AND PASSENGER LOADING ZONES

1/4" = 1'-0"

#### 607.2 VEHICLE PARKING SPACES

VAN ACCESSIBLE SIGNAGE  
 ACCESSIBLE SIGNAGE  
 ACCESSIBLE ROUTE - PARKED VEHICLE OVERHANGS MAY NOT REDUCE THIS 36" MIN. DIMENSION



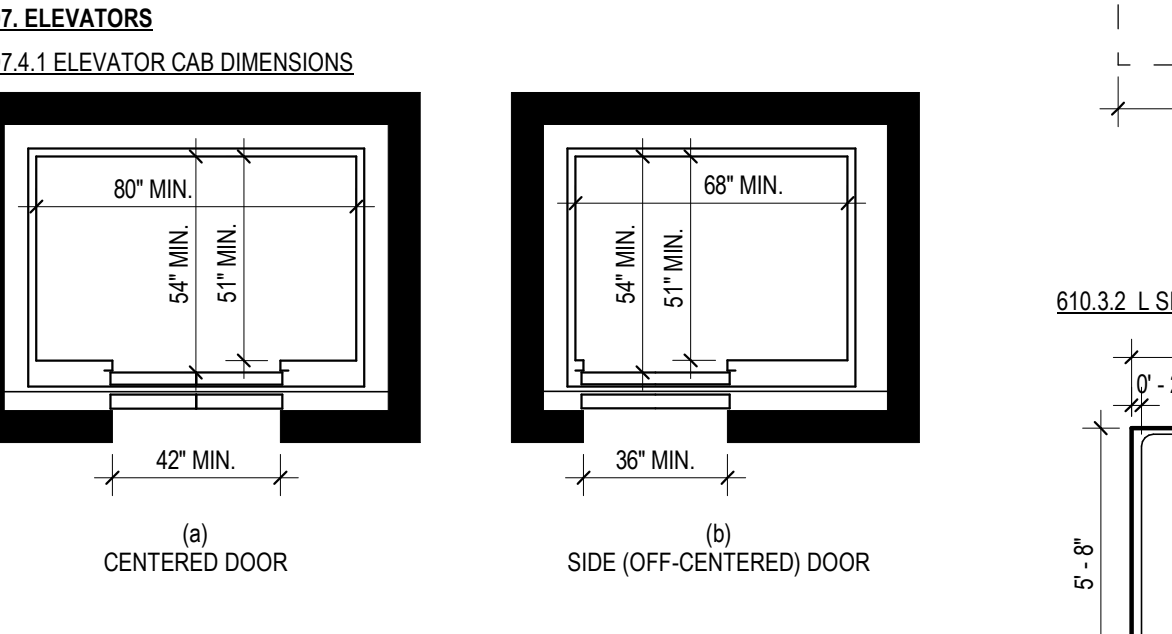
### 11 407 ELEVATOR CAB

1/4" = 1'-0"



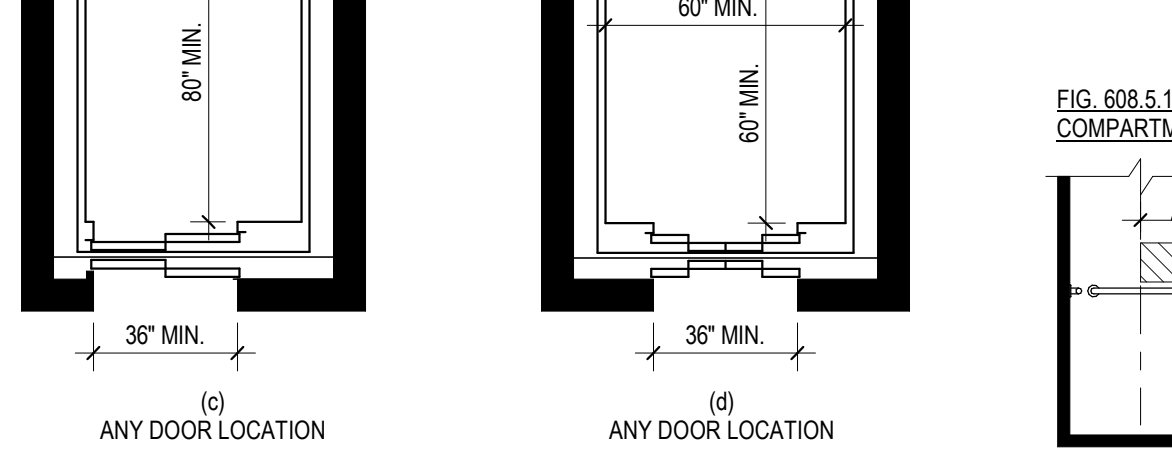
#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS



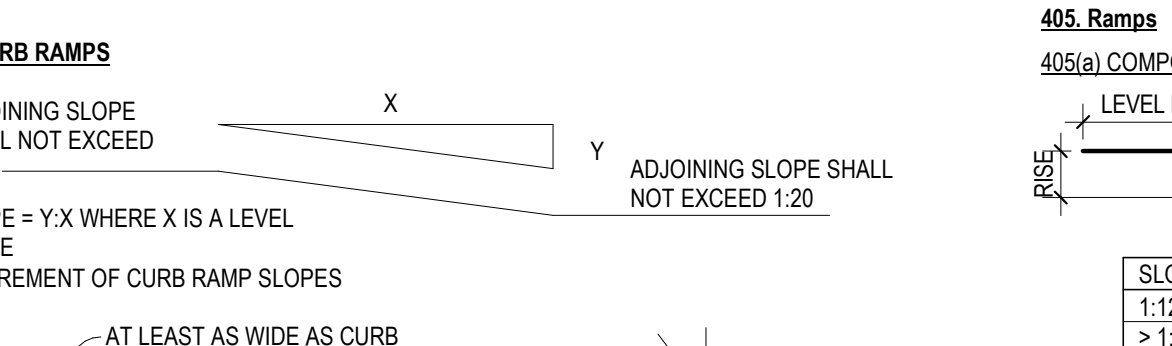
#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS



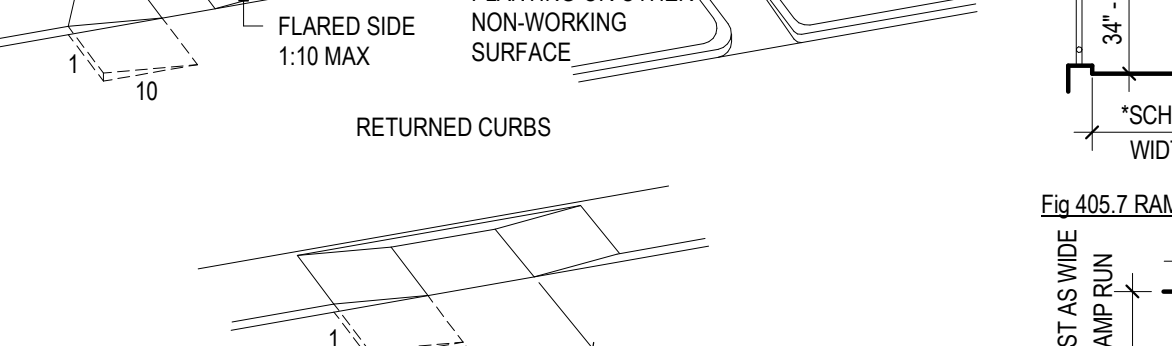
#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS



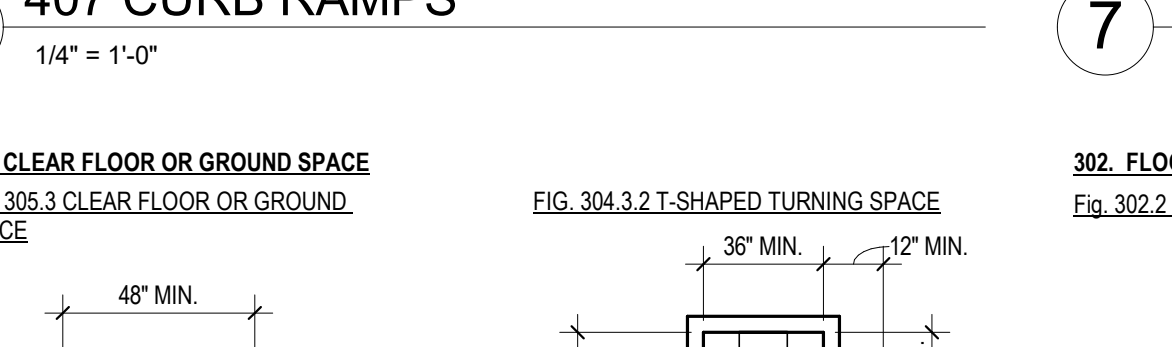
#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS



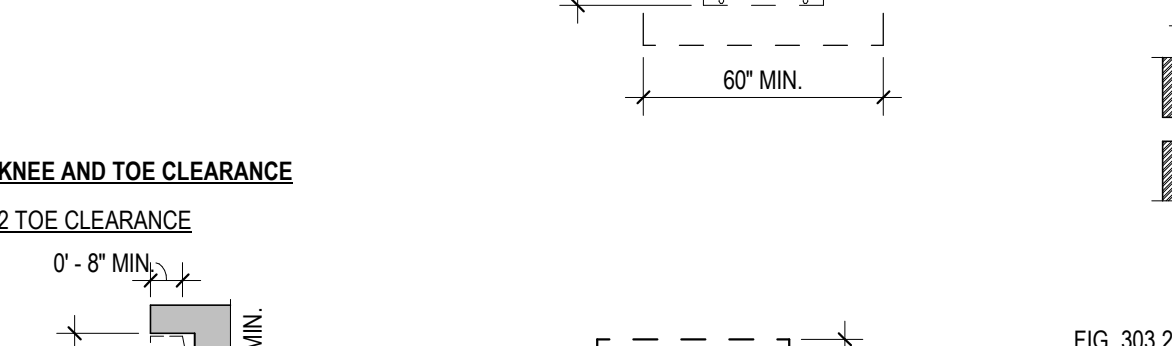
#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS



#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS



#### 407. ELEVATORS

407.4.1 ELEVATOR CAB DIMENSIONS

#### 407. ELEVATORS

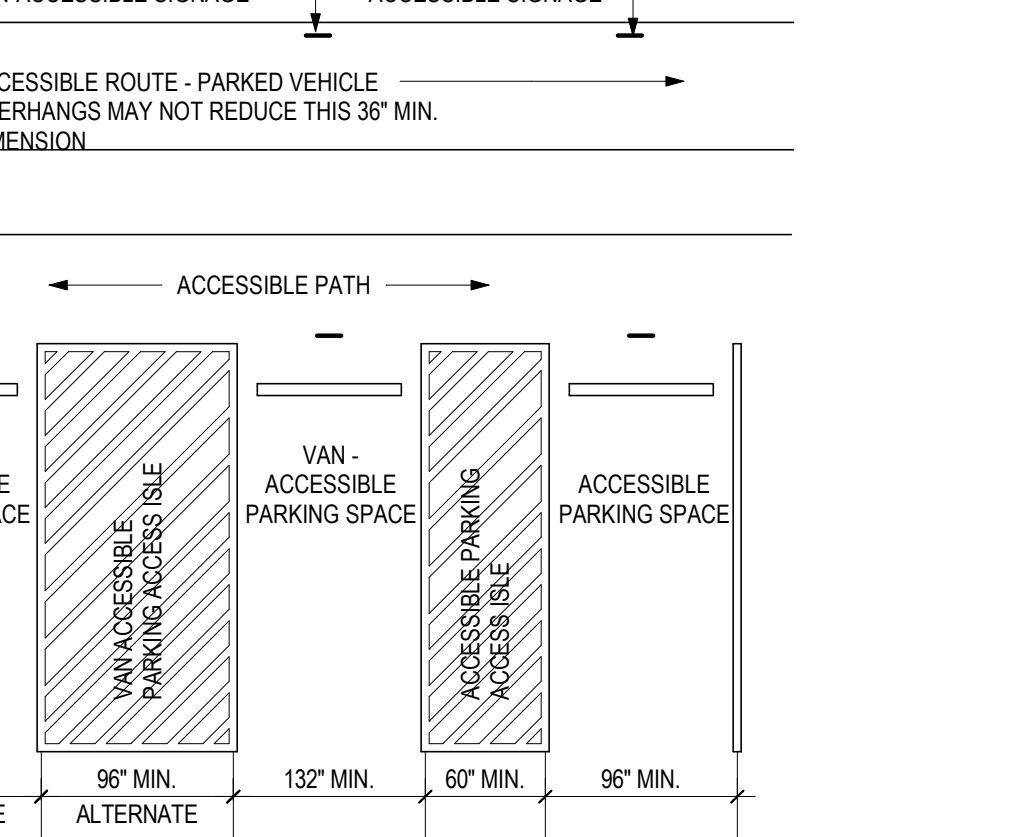
407.4.1 ELEVATOR CAB DIMENSIONS

#### 608. SHOWER COMPARTMENTS

FIG. 310(a) 36x36 SHOWER SIZE & CLEARANCES

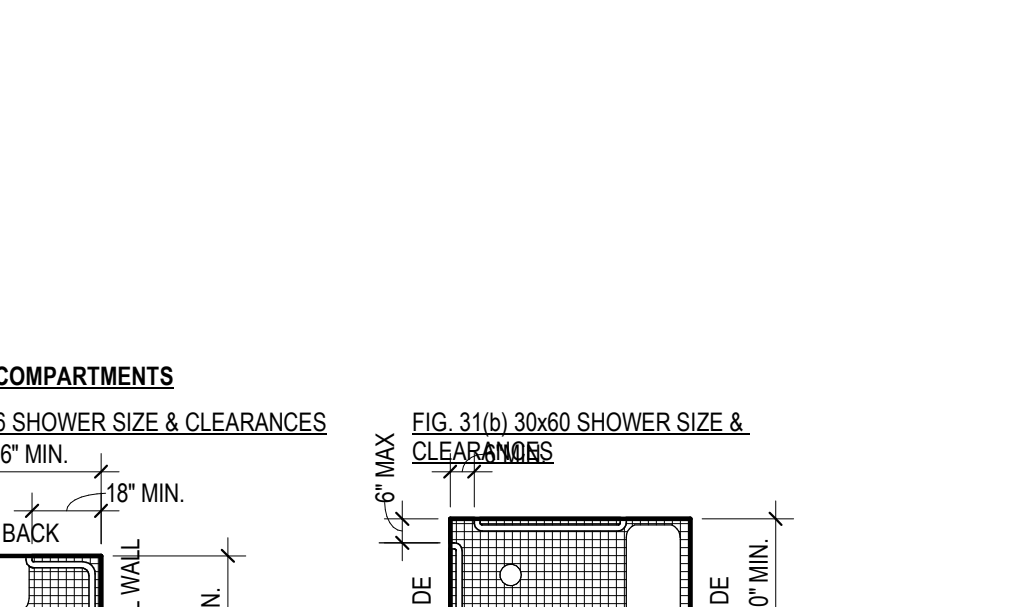
FIG. 310(b) 30x60 SHOWER SIZE & CLEARANCES

NOTE: FLOOR SURFACE IN STALL SHALL NOT SLOPE IN EXCESS OF 1:50 IN ANY DIRECTION



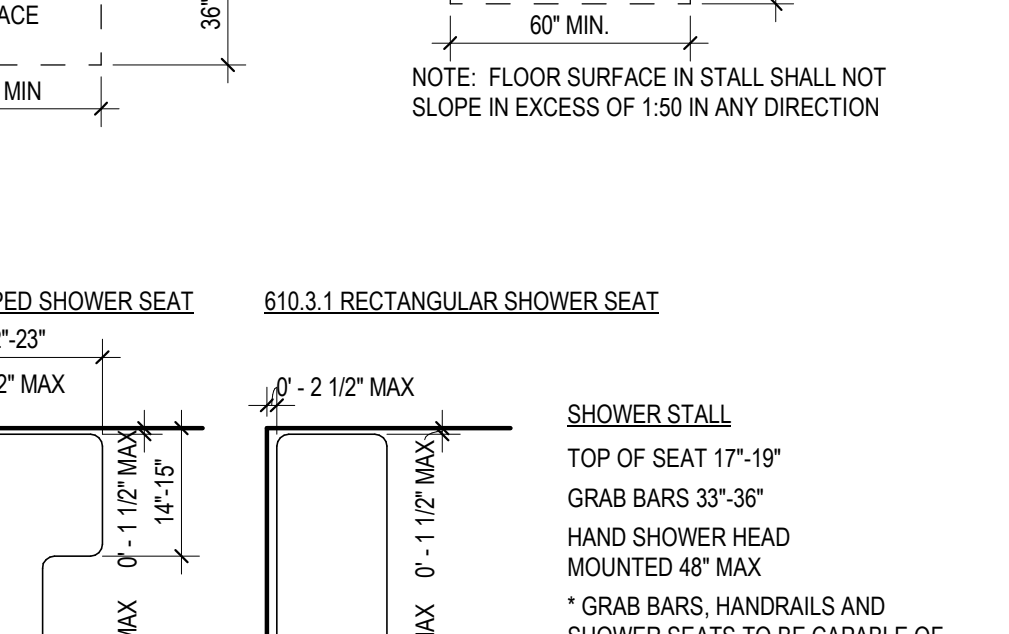
### 10 608 SHOWER STALLS ADULT

1/4" = 1'-0"



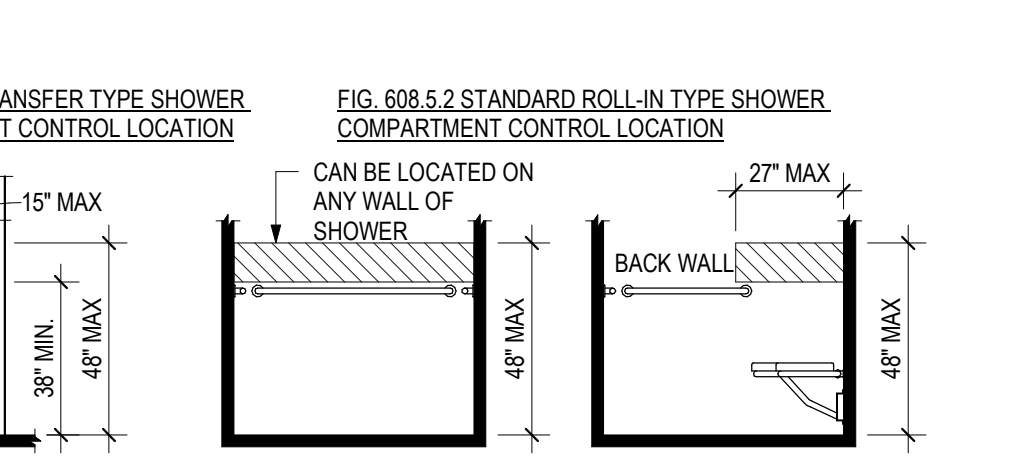
#### 405. RAMPS

405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS



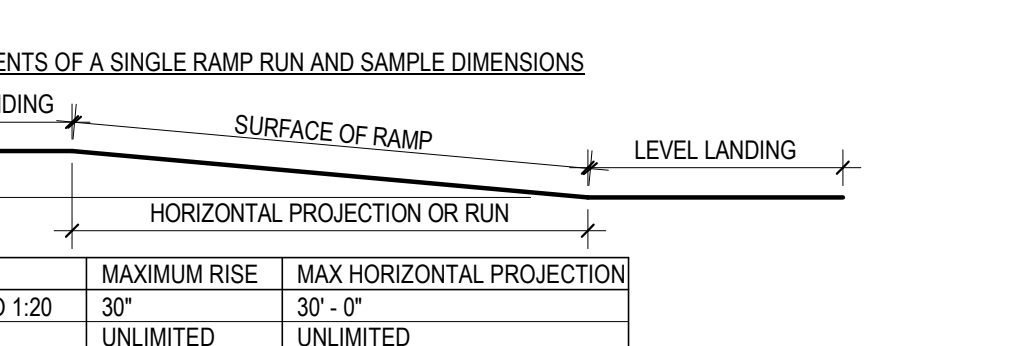
#### 405. RAMPS

405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS



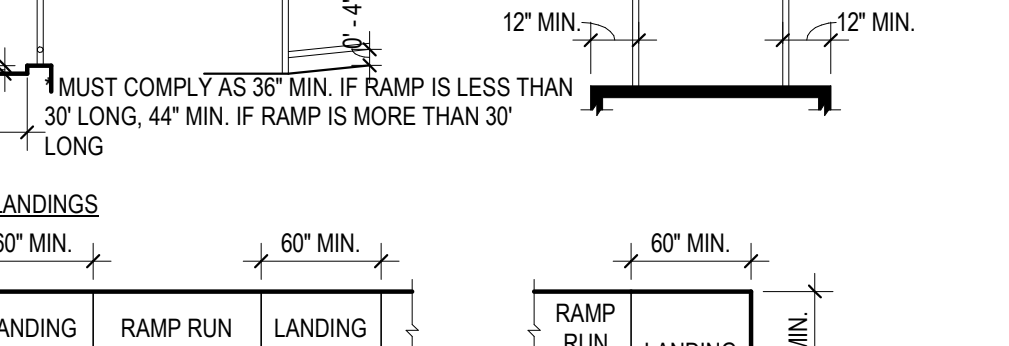
#### 405. RAMPS

405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS



#### 405. RAMPS

405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS



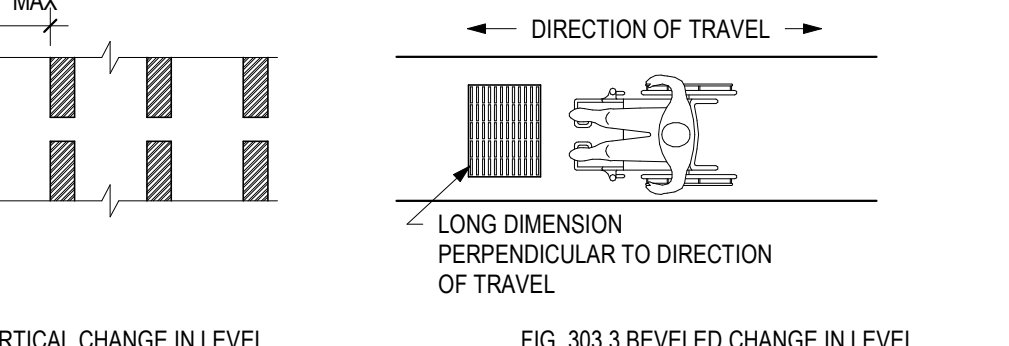
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405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS



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405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS



#### 405. RAMPS

405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS

#### 405. RAMPS

405(a) COMPONENTS OF A SINGLE RAMP RUN AND SAMPLE DIMENSIONS

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**IBI**

**TEXAS-IBI GROUP, INC.**  
465 E MEDICAL CENTER BLVD, STE 600  
P.O. BOX 891209  
HOUSTON, TEXAS 77289  
281.286.6605

REGISTERED ARCHITECT  
STATE OF TEXAS  
11/2/2019

|             |                  |
|-------------|------------------|
| PROJECT NO. | 201936           |
| DATE:       | 11/12/2019       |
| DRAWN       | CKA              |
| CHECKED     | RCA              |
| DATE        | ISSUE            |
| 11/12/2019  | FOR CONSTRUCTION |

**G1.00**

GENERAL/CODE INFORMATION



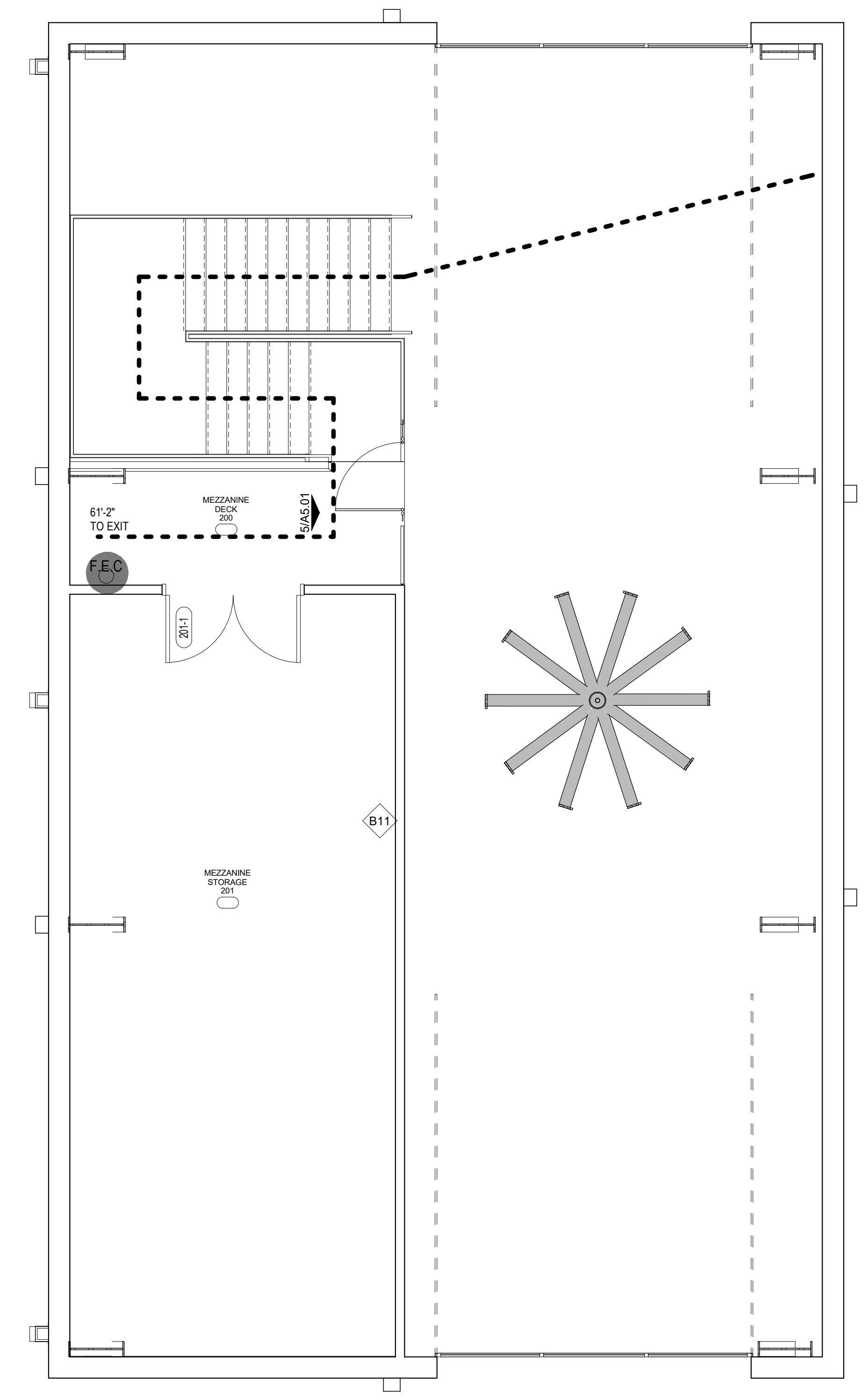
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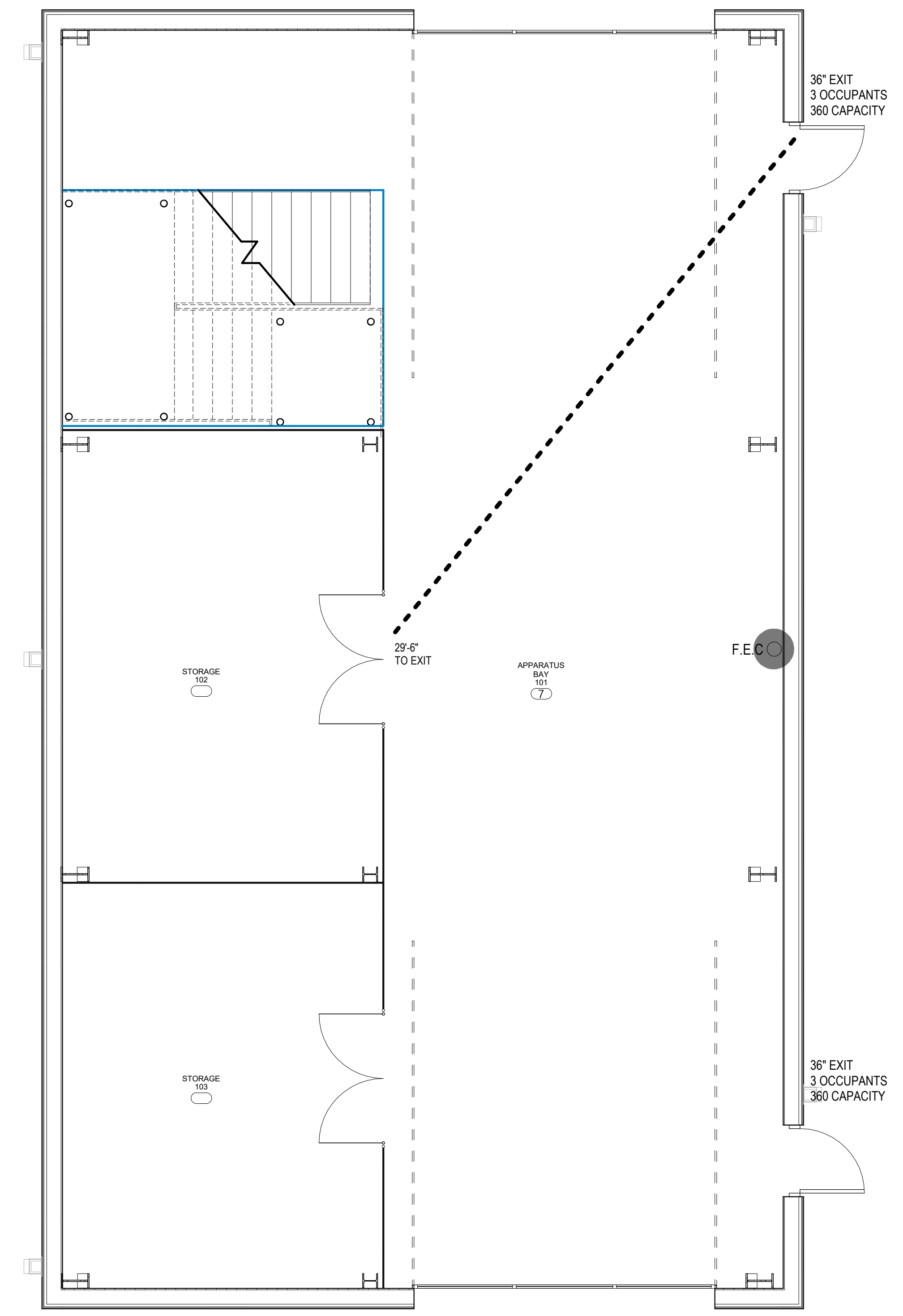
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**LIFE SAFETY LEGEND**

- ROOM OCCUPANCY LOAD
- 0' EXIT  
000 OCCUPANTS  
000 CAPACITY
- 0'-0" TO STAIRS
- F.E.C.
- DENOTES EXIT, EXIT SIZE, # OF OCCUPANTS, & EXIT CAPACITY
- TRAVEL DISTANCE TO EXIT
- FIRE EXTINGUISHER & CABINET



2 MEZZANINE-LIFE SAFETY  
 1/4" = 1'-0"

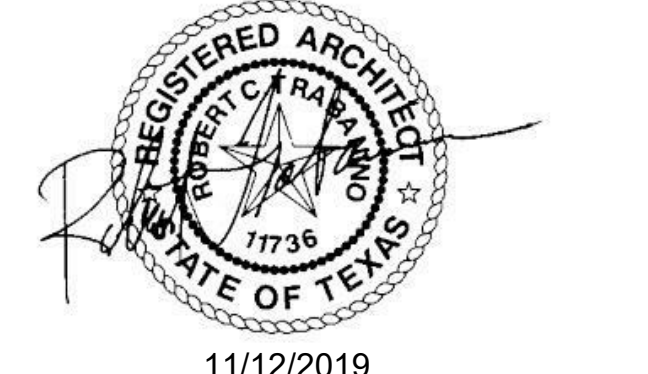


1 1ST FLOOR - LIFE SAFETY  
 1/4" = 1'-0"

**MARITIME EXPANSION  
 FIRE TRAINING CENTER**

3700 Old Hwy 146 La Porte, TX 77571

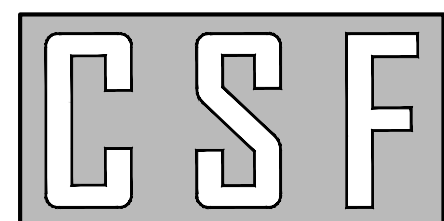
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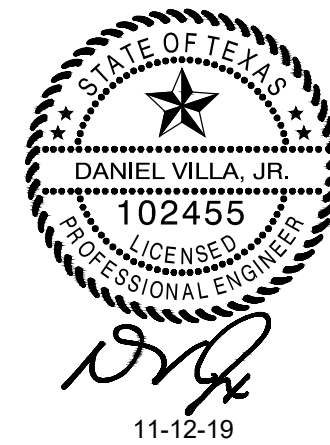
**G1.02**  
 LIFE SAFETY  
 PLAN





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ENGINEERING & SURVEYING  
11301 FALLBROOK DR., SUITE 320  
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832678-2110 FAX: 832678-2115  
TBP# FIRM NO. F-4385  
CSF PROJ. 4007

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**GENERAL CONSTRUCTION NOTES FOR SITE WORK:**

- EXISTING UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY BASED ON THE BEST AVAILABLE INFORMATION. CONTRACTOR TO FIELD VERIFY LOCATION OF ANY EXISTING UTILITIES AND OTHER FACILITIES BEFORE COMMENCING WORK. CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO LOCATE AND PRESERVE AND AND ALL EXISTING FACILITIES.
- CONTRACTOR SHALL NOTIFY UTILITY COORDINATION COMMITTEE BY TELEPHONE AT 713-223-4567 OR 1-800-869-8344, AT LEAST TWO FULL WORKING DAYS BEFORE STARTING WORK IN ANY STREET RIGHT-OF-WAY OR PUBLIC EASEMENTS.
- CONTRACTOR SHALL VERIFY THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES PRIOR TO COMMENCING CONSTRUCTION AND SHALL REPORT DISCREPANCIES TO THE ENGINEER IMMEDIATELY.
- CONTRACTOR SHALL PROTECT ALL EXISTING FACILITIES, PROPERTY, AND UNDERGROUND UTILITIES, AND SHALL REPAIR ANY DAMAGE TO THE SATISFACTION OF THE INJURED PARTY AT NO ADDITIONAL COST TO THE OWNER.
- ANY DAMAGE TO THE SURROUNDING IMPROVEMENTS PUBLIC OR PRIVATE BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY BUILDING PERMITS AND FOR NOTIFICATION OF ALL AUTHORIZED INSPECTORS, SUPERINTENDENTS OR PERSONS IN CHARGE OF PRIVATE OR PUBLIC UTILITIES AFFECTED BY HIS OPERATIONS PRIOR TO COMMENCEMENT OF WORK.
- WATER METERS, UTILITY LINES AND APPURTENANCES, DRIVEWAYS, AND ALL OTHER ITEMS TO BE LOCATED WITHIN THE STREET RIGHT-OF-WAY OR A PUBLIC EASEMENT, ARE TO BE CONSTRUCTED IN STRICT ACCORDANCE WITH CURRENT GOVERNING CITY, COUNTY AND STATE STANDARDS.
- CONTRACTOR SHALL PROVIDE TEMPORARY DRAINAGE FACILITIES TO DIRECT SURFACE DRAINAGE AWAY FROM TRENCHES AND TOWARDS OFF SITE DRAINAGE FACILITIES. PREVENT WATER FROM PONDING ON SITE AND DO NOT BLOCK DRAINAGE FROM OR DIRECT EXCESS DRAINAGE ON TO ADJACENT PROPERTY.
- CONTRACTOR TO BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ALL BARRICADES, WARNING SIGNS, FLASHING LIGHTS AND TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH PART VI OF THE "TEXAS MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", (TEXAS M.U.T.C.D. MOST RECENT EDITION AS REVISED) DURING CONSTRUCTION.
- OFF DUTY UNIFORMED POLICE OFFICER(S) IS (ARE) REQUIRED TO DIRECT TRAFFIC WHERE TRAFFIC LANES ARE BLOCKED.
- ALL OPEN EXCAVATIONS IN VEHICULAR TRAFFIC AREAS SHALL BE COVERED WITH ANCHORED STEEL PLATES CAPABLE OF SUPPORTING HS 20 LOADING AT END OF EACH DAYS WORK OR WHEN NOT IN USE.
- CONTRACTOR SHALL COMPLY WITH O.S.H.A. REGULATIONS AND STATE OF TEXAS LAW CONCERNING EXCAVATION, TRENCHING AND SHORING AS SPECIFIED IN CITY OF HOUSTON ORDINANCE NO. 87-1457. EXCAVATIONS OVER 5 FEET DEEP TO BE SHEETED AND PROTECTED AS REQUIRED BY STATE LAW AND O.S.H.A. FAILURE TO COMPLY WITH THE REQUIREMENTS HEREIN WILL CONSTITUTE AGREEMENT BY THE CONTRACTOR TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO COMPLY. ASSUME TYPE "C" SOIL.
- CONTRACTOR TO TAKE NECESSARY PRECAUTIONS TO PROTECT ROOT SYSTEMS OF SHRUBS, PLANTS AND TREES ALONG THE AREA OF EXCAVATION.
- CONTRACTOR SHALL CONTACT THE DISTRICT OPERATOR, MR. DON WHITE OF ADVANTAGE WATER MANAGEMENT AT (281) 807-9500 AT LEAST 48 HOURS TO BEGINNING CONSTRUCTION

**UTILITY CONSTRUCTION NOTES FOR SITE WORK:**

- REFER TO CIVIL, PLUMBING, AND ELECTRICAL DRAWING FOR ALL UTILITY SERVICES TO AND ON THE SITE.
- CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL & PLUMBING DRAWINGS TO VERIFY LOCATION AND SIZE OF ALL ROOF DRAINS, DOWN SPOUTS AND UTILITY CONNECTIONS. LIMITS OF PROPOSED SITE PLUMBING FACILITIES SHALL BE 5-FEET FROM EDGE OF BUILDING, UNLESS OTHERWISE NOTED.
- MAINTAIN 12-INCH MINIMUM (6" ABSOLUTE MINIMUM) VERTICAL CLEARANCE AT PIPE CROSSINGS UNLESS OTHERWISE NOTED ON THE DRAWING SHEETS.
- WHERE A SANITARY SEWER CROSSES A WATERLINE, CENTER ONE JOINT (MINIMUM 18-FT LENGTH) OF SANITARY SEWER PIPE AND WATER LINE AT THE CROSSING. WATER LINE SHOULD CROSS OVER SANITARY LINE WITH 2' MINIMUM CLEARANCE.
- THE LENGTHS OF PROPOSED UNDERGROUND UTILITY LINES SHOWN ARE APPROXIMATE ONLY. LENGTHS OF LINES MAY VARY DUE TO FIELD CONDITIONS ENCOUNTERED AT THE TIME OF CONSTRUCTION. CONTRACTOR SHALL PROVIDE ALL LABOR AND MATERIALS NECESSARY FOR UTILITY LINES TO SERVE THEIR INTENDED PURPOSE AND SHALL BE RESPONSIBLE FOR THE REROUTING OF LINES OCCASIONED BY CONFLICTS WITH OTHER UTILITIES AND SITE FEATURES.
- CONTRACTOR SHALL CONSTRUCT ALL GRAVITY SEWER LINES COMMENCING AT THE LOWEST GRADE ELEVATION AND PROCEED IN THE UPSTREAM DIRECTION. CONTRACTOR SHALL VERIFY CLEARANCES WITH ALL UNDERGROUND CONSTRUCTIONS BEFORE LAYING PIPE.
- TOP OF PROPOSED MANHOLES, INLETS, VALVE BOXES, ETC. SHALL BE SET TO MATCH FINISHED GRADE OR PROPOSED TOP OF PAVEMENT. TOP OF EXISTING MANHOLES, VALVE BOXES, ETC., SHALL BE ADJUSTED AS REQUIRED TO MATCH FINISHED GRADE OR PROPOSED TOP OF PAVEMENT. OUTSIDE OF PAVED AREAS SET MANHOLE RIMS AND TOP OF GRATE AT ELEVATIONS SHOWN ON THE PLANS.
- ALL TRENCHES, INLETS, MANHOLES, CLEANOUTS, ETC., UNDER, OR WITHIN FIVE FEET OF PAVEMENT SHALL BE BACKFILLED WITH SELECT MATERIAL PLACED ON LOOSE LIFTS NOT EXCEEDING 8-INCHES IN DEPTH AND COMPACTED TO 95% STANDARD PROCTOR BACKFILL. SEWER TRENCHES WITH COMPACTED CEMENT STABILIZED SAND TO A POINT ONE FOOT BELOW BOTTOM OF PAVEMENT IN LIEU OF SELECTED MATERIAL.
- ALL TRENCHES NOT UNDER, OR WITHIN FIVE FEET OF PAVEMENT SHALL BE BACKFILLED WITH SELECT MATERIAL PLACED IN LOOSE LIFTS NOT EXCEEDING 12-INCHES IN DEPTH AND COMPACTED TO THE DENSITY OF NATURAL SURROUNDING SOIL, BUT NOT LESS THAN 90% STANDARD PROCTOR DENSITY (ASTM D698).

**HARRIS COUNTY STANDARD PERMIT NOTES**

A. CONTRACTOR TO OBTAIN ALL PERMITS REQUIRED BY REGULATION OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT PRIOR TO STARTING CONSTRUCTION.

B. OWNER TO OBTAIN ALL PERMITS REQUIRED BY HARRIS COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITY AND/OR CULVERTS WITHIN HARRIS COUNTY ROAD RIGHT OF WAY.

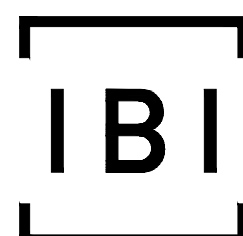
48 HOUR NOTICE. CONTRACTOR SHALL NOTIFY HARRIS COUNTY PRIOR TO COMMENCING CONSTRUCTION AND/OR BACKFILLING ANY UTILITIES. CONTRACTOR(S) TO CONTACT PUBLIC REVIEW DEPARTMENT @ (713-274-9931) OR PUBLIC.REVIEW@HCPID.ORG

**HARRIS COUNTY CONSTRUCTION NOTES**

- WATER LINES, WASTEWATER COLLECTION SYSTEMS, AND STORM DRAINAGE SYSTEMS SHALL BE DESIGNED AND CONSTRUCTED IN ACCORDANCE WITH THE **CITY OF HOUSTON'S, DEPARTMENT OF PUBLIC WORKS AND ENGINEERING "DESIGN MANUAL, STANDARD CONSTRUCTION SPECIFICATIONS, AND DETAILS FOR WASTEWATER COLLECTION SYSTEMS, WATER LINES, STORM DRAINAGE AND STREET PAVING"**, DATED (NOVEMBER 1, 2008.)
- REINFORCED CONCRETE (C76 CLASS III) STORM SEWERS SHALL BE INSTALLED, BEDDED AND BACKFILLED IN ACCORDANCE WITH THE CITY OF HOUSTON'S DRAWINGS 02317-02, 02317-03, 02317-05, 02317-06 AND 02317-07 AS APPLICABLE.
- ALL STORM SEWERS CONSTRUCTED IN SIDE LOT EASEMENTS SHALL BE R.C.P., MINIMUM TWENTY (20) FOOT WIDE EASEMENTS SHALL BE PROVIDED.
- AN ALTERNATIVE TO CEMENT STABILIZED SAND MAY BE USED AS BACKFILL FOR PIPES FIFTY-FOUR (54) INCH AND LARGER, FROM 1-FOOT ABOVE THE TOP OF THE PIPE TO THE BOTTOM OF THE SUBGRADE. CONTRACTOR MAY BACKFILL WITH SUITABLE MATERIAL, PROVIDED THE BACKFILL MATERIAL IS PLACED IN EIGHT (8) INCH LIFTS AND MECHANICALLY COMPACTED TO NINETY-FIVE (95%) STANDARD PROCTOR DENSITY. TESTS SHALL BE TAKEN AT ONE HUNDRED (100) FOOT INTERVALS ON EACH LIFT. BEDDING AND BACKFILL TO ONE (1) FOOT ABOVE THE TOP OF THE PIPE SHALL BE CEMENT-STABILIZED SAND.
- ALL PROPOSED PIPE STUB-OUTS FROM MANHOLES OR INLETS ARE TO BE PLUGGED WITH EIGHT (8) INCH BRICK WALLS UNLESS OTHERWISE NOTED.
- THE CONTRACTOR(S) SHALL NOTIFY HARRIS COUNTY PUBLIC INFRASTRUCTURE DEPARTMENT – ARCHITECTURE AND ENGINEERING DIVISION – PERMIT OFFICE TWENTY-FOUR (24) HOURS IN ADVANCE OF COMMENCING UTILITY AND/OR PAVING CONSTRUCTION AT (713) 316-3561 AND WRITTEN NOTIFICATION FORTY-EIGHT (48) HOURS IN ADVANCE OF COMMENCING CONSTRUCTION AT 10555 NORTHWEST FREEWAY, SUITE 146, HOUSTON, TX 77092.
- PAVING SHALL BE IN ACCORDANCE WITH THE "REGULATIONS OF HARRIS COUNTY, TEXAS FOR THE APPROVAL AND ACCEPTANCE OF INFRASTRUCTURE" AND/OR AMENDMENTS OF THE SAME.
- GUIDELINES SET FORTH IN THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" SHALL BE OBSERVED.
- OWNER OR OWNER'S AGENT** TO OBTAIN ALL PERMITS REQUIRED BY THE "REGULATIONS OF HARRIS COUNTY, TEXAS FOR FLOOD PLAIN MANAGEMENT" PRIOR TO STARTING CONSTRUCTION.
- OWNER OR OWNER'S AGENT** TO OBTAIN ALL NOTIFICATIONS REQUIRED BY HARRIS COUNTY, TEXAS PRIOR TO STARTING CONSTRUCTION OF UTILITIES AND/OR CULVERTS WITHIN HARRIS COUNTY AND HARRIS COUNTY FLOOD CONTROL DISTRICT RIGHTS-OF-WAY.

**MARITIME EXPANSION FIRE  
TRAINING CENTER**

**SAN JACINTO COLLEGE  
3700 Old Hwy 146 La Porte, TX 77571**



**TEXAS-IBI GROUP, INC.**  
455 E MEDICAL CENTER BLVD, STE 500  
P.O. BOX 891209  
HOUSTON, TEXAS 77289  
281.286.6605

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|-------------|------------------|
| PROJECT NO. | 201936           |
| DATE:       | 11/12/2019       |
| DRAWN       | SJM              |
| CHECKED     | DV               |
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**C1.00**

GENERAL  
NOTES

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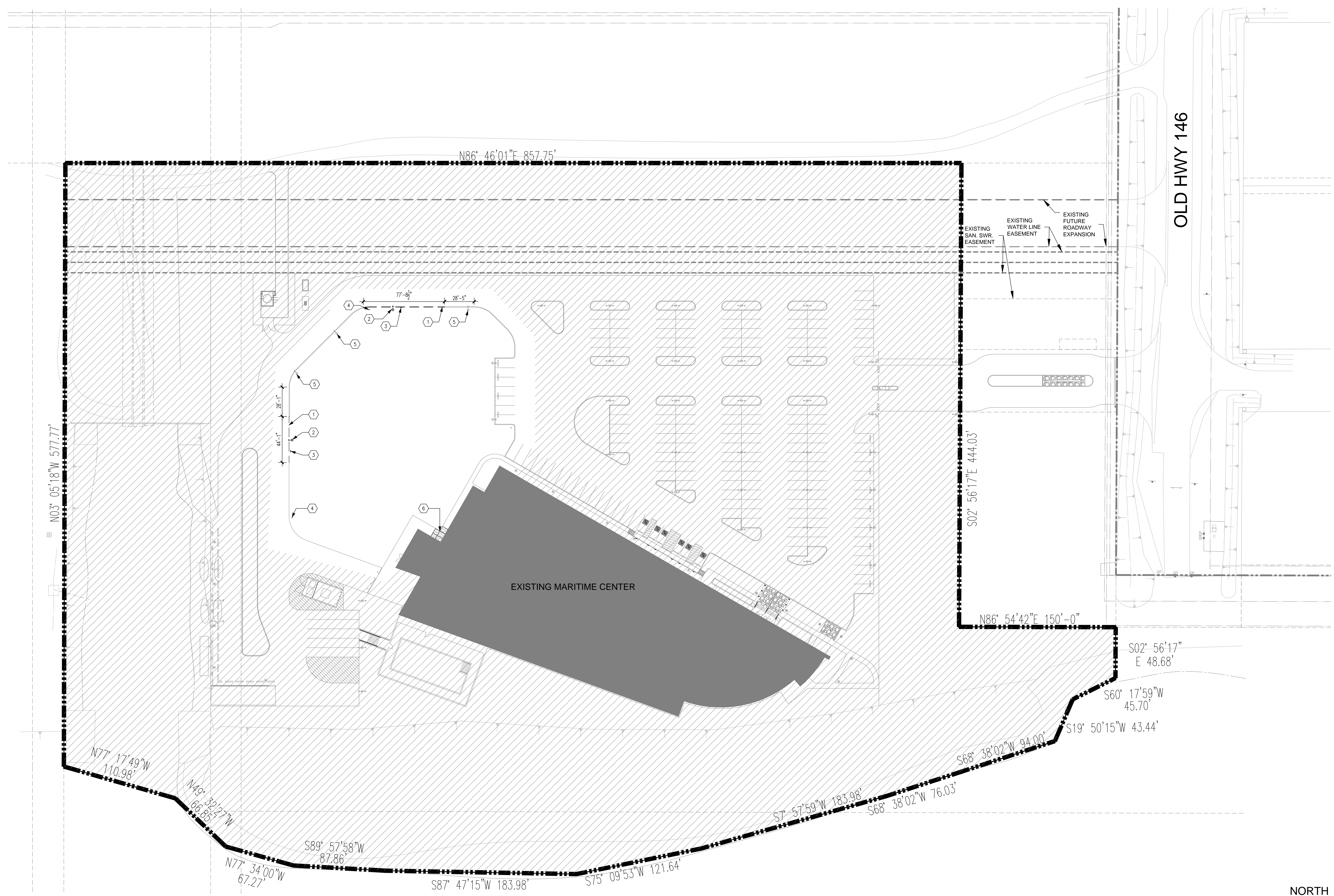
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**DEMOLITION SITE KEYED NOTES**

- ① EXISTING CONC. CURB TO BE DEMOLISHED AND REMOVED
- ② EXISTING LIGHT POLE AND BASE TO BE REMOVED. LIGHT POLE TO BE STORED FOR REINSTALLATION.
- ③ EXISTING SIGN, AND BASE TO BE REMOVED. SIGN TO BE STORED FOR REINSTALLATION.
- ④ EXISTING FIRE HYDRANT TO REMAIN
- ⑤ EXISTING LIGHT POLE TO REMAIN
- ⑥ EXISTING CONCRETE WALK TO BE REMOVED IN ITS ENTIRETY AND PREP FOR NEW CONSTRUCTION.

**SITE LEGEND**

▨ NOT IN SCOPE OF WORK



**MARITIME EXPANSION FIRE TRAINING CENTER**

SAN JACINTO COLLEGE  
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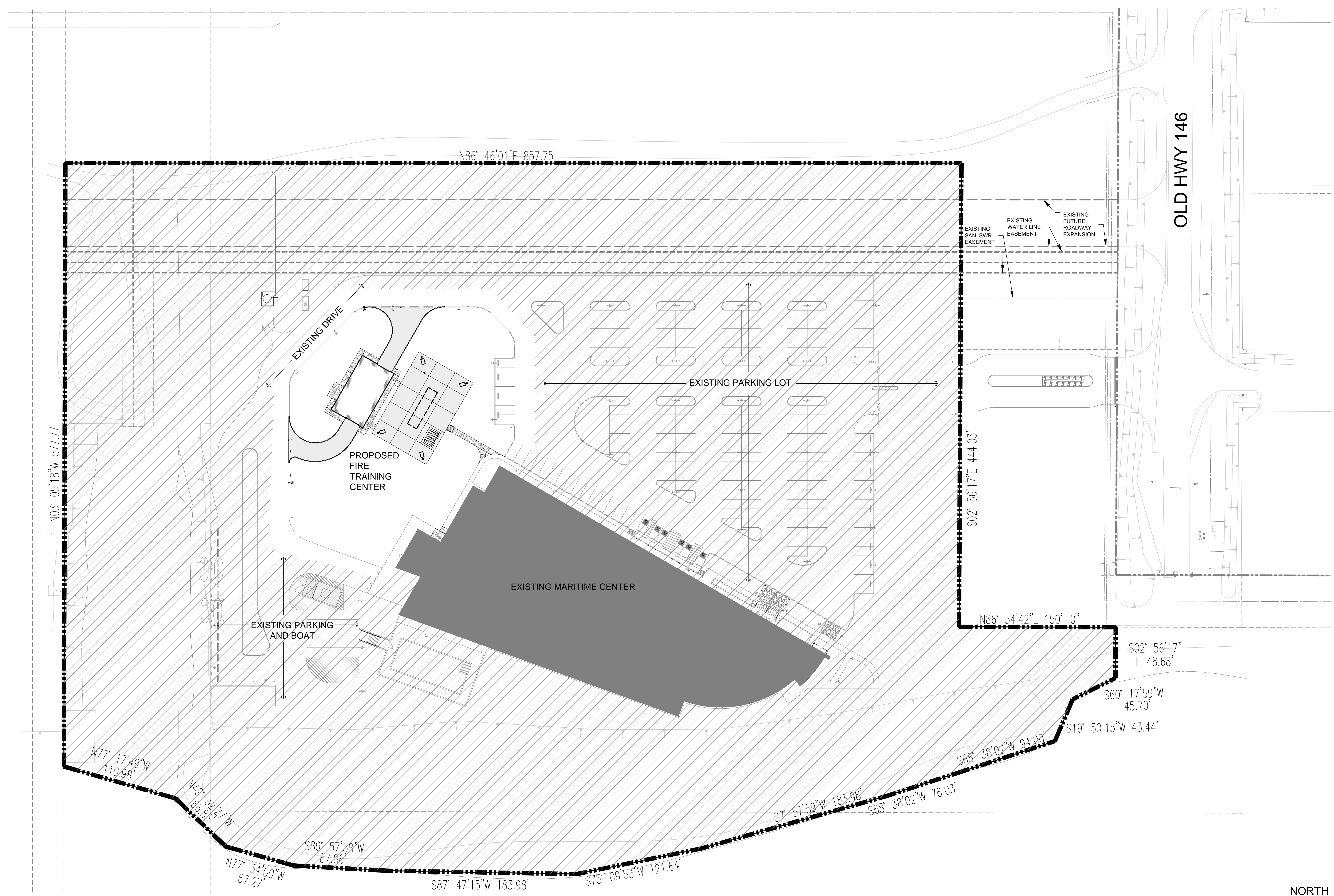
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**C1.01**  
 DEMOLITION SITE PLAN

① COMPOSITE SITE PLAN  
 1"=40'-0"

NORTH

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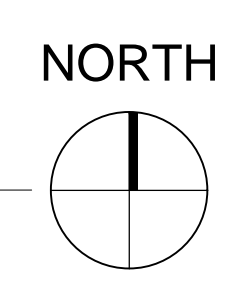
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**C1.02**  
 COMPOSITE SITE PLAN

1 COMPOSITE SITE PLAN  
 1"=40'-0"





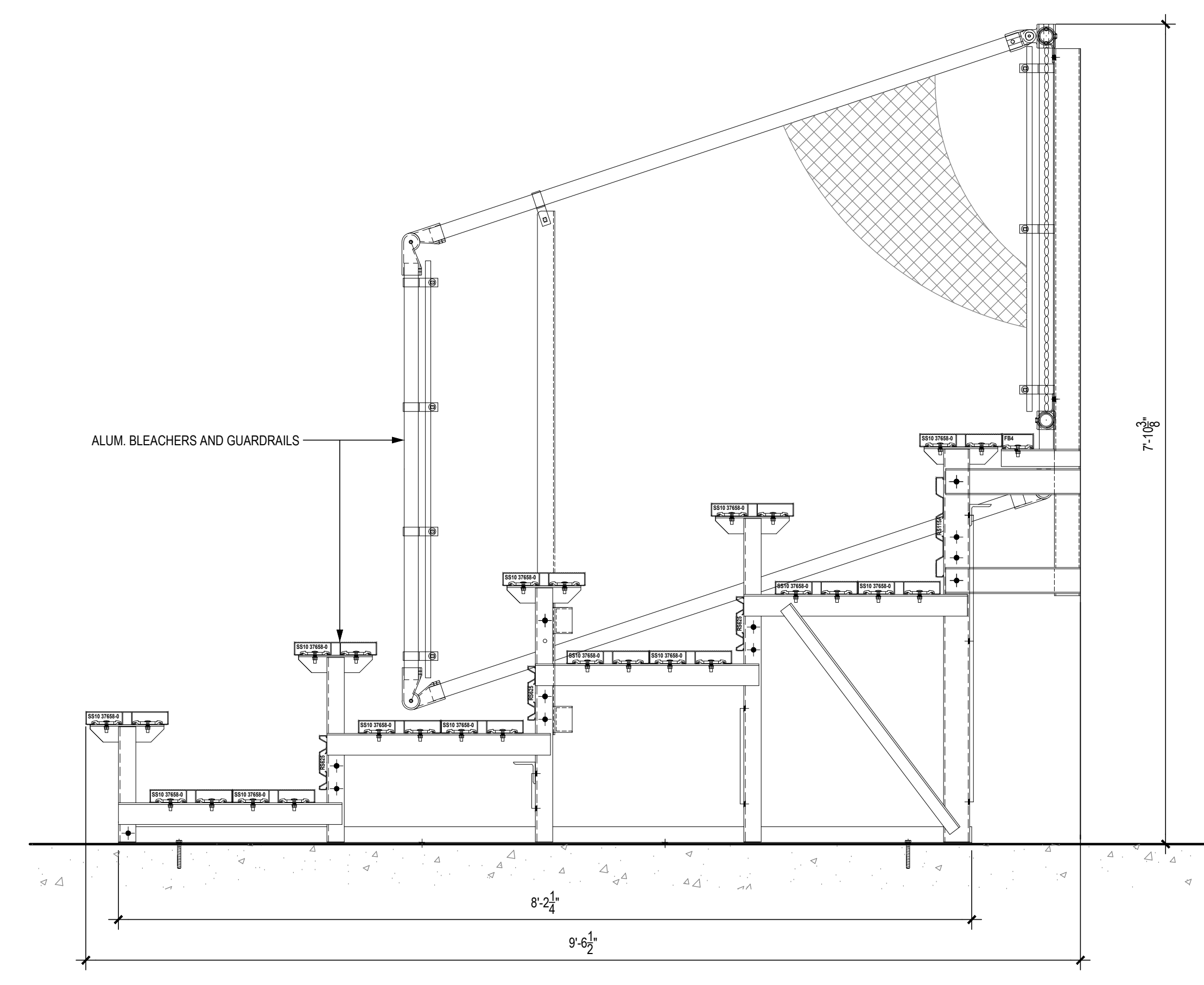


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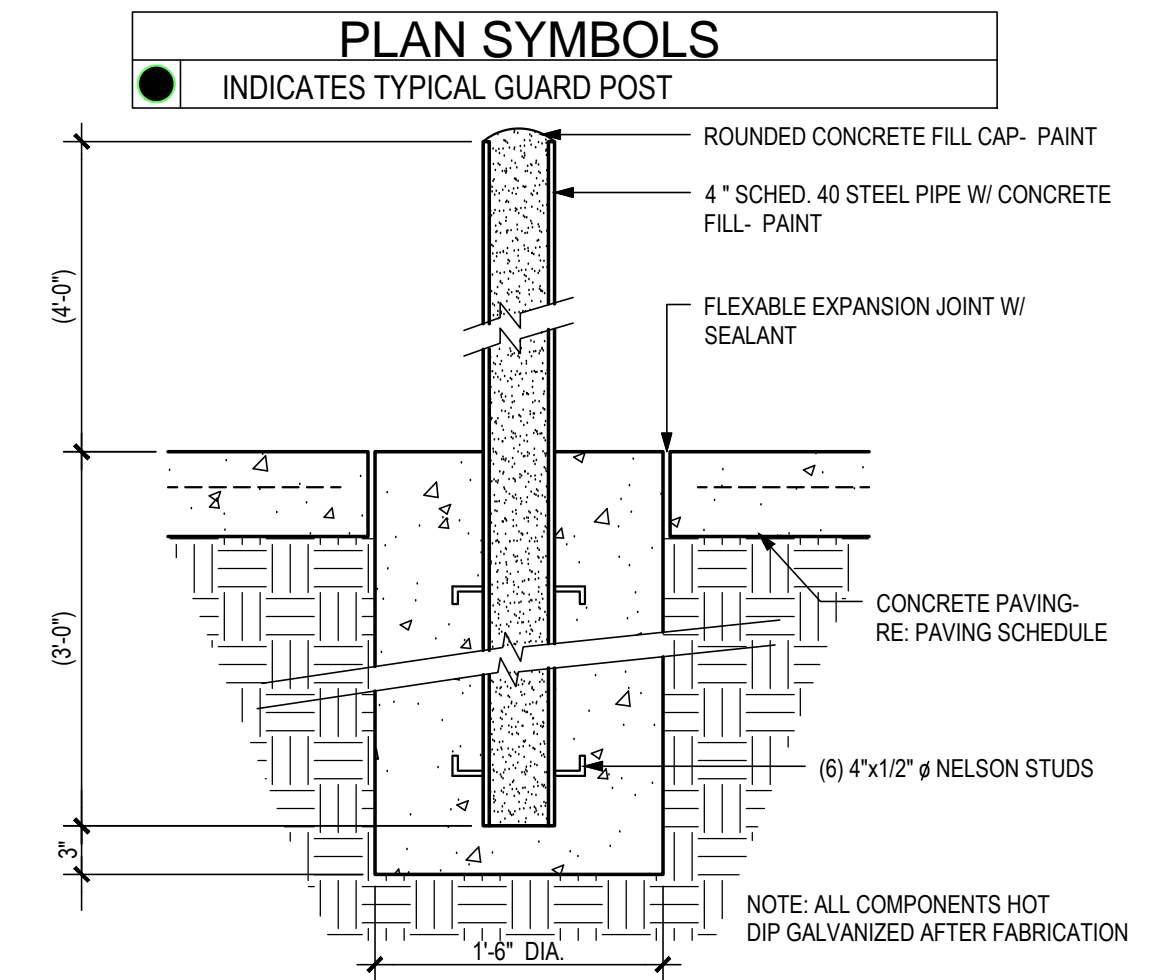
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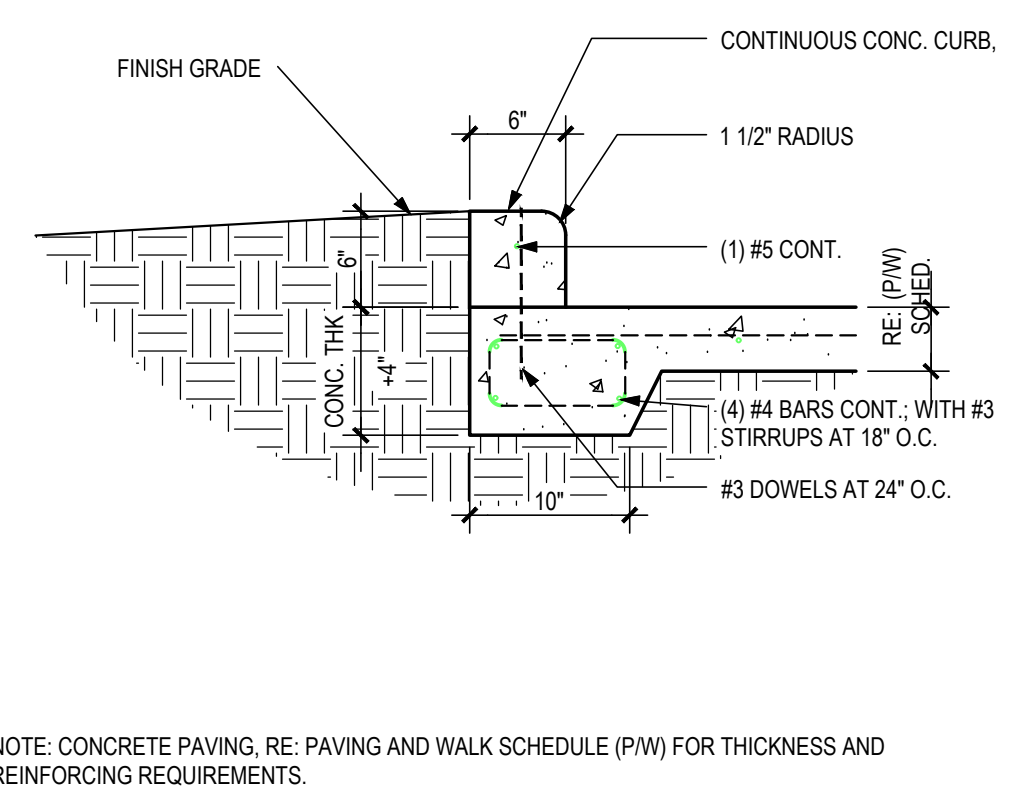
**MARITIME EXPANSION FIRE TRAINING CENTER**  
 SAN JACINTO COLLEGE  
 3700 Old Hwy 146 La Porte, TX 77571



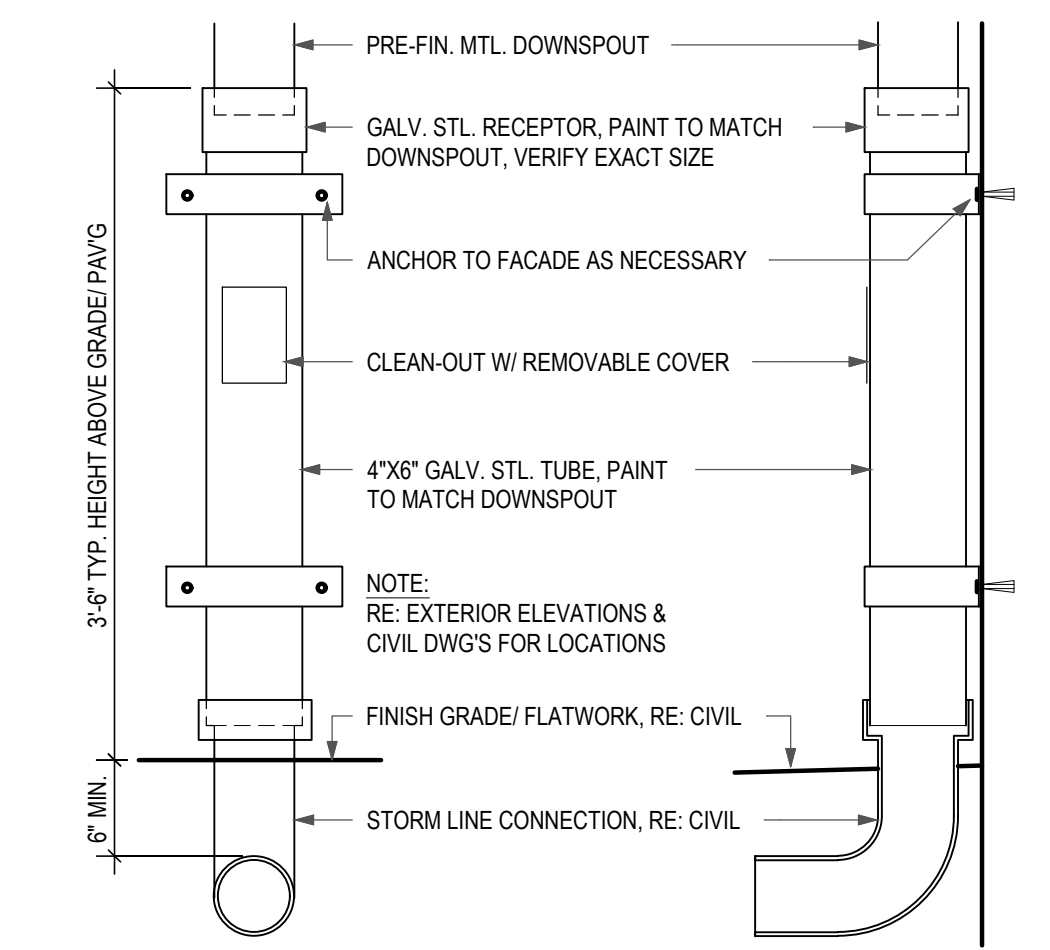
12 BLEACHER SECTION  
 1" = 1'-0"



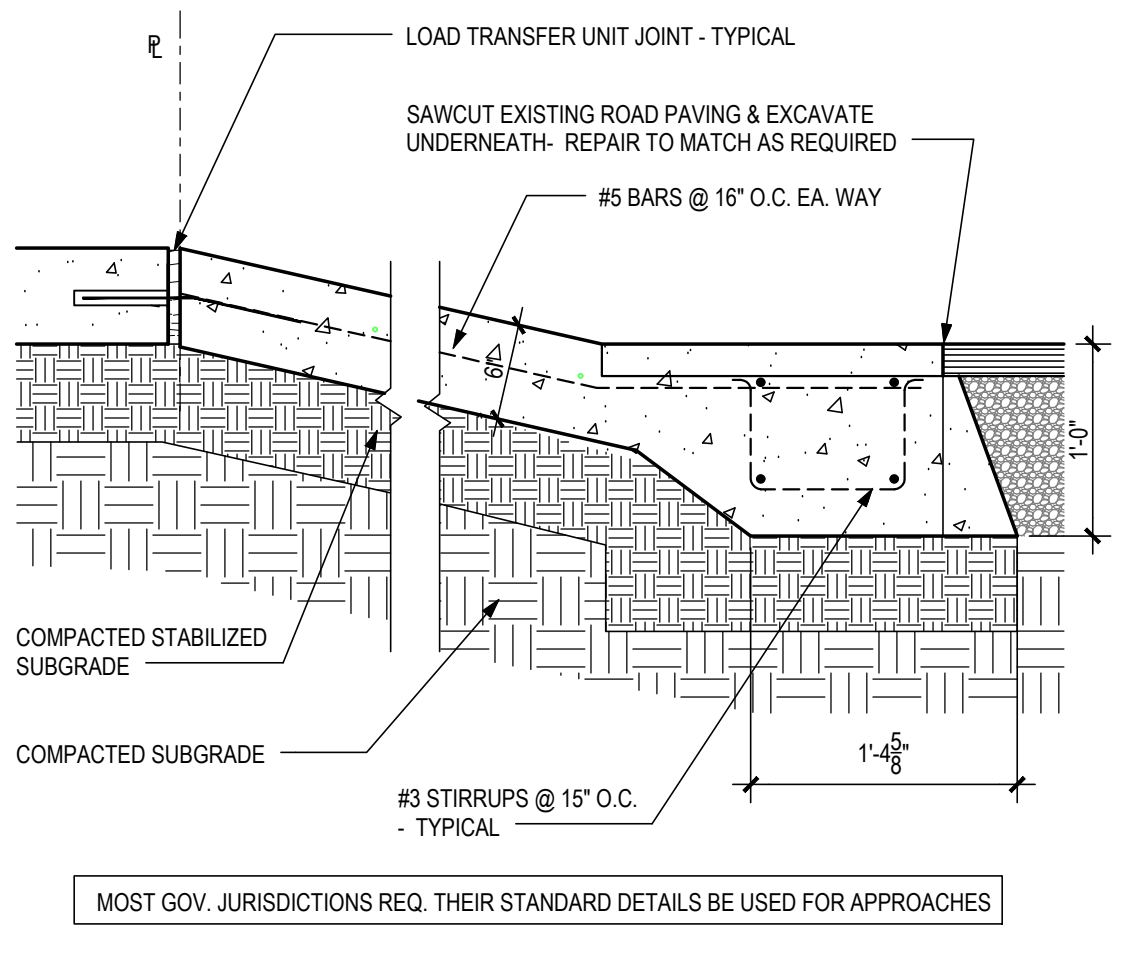
6 FIXED BOLLARD  
 1" = 1'-0"



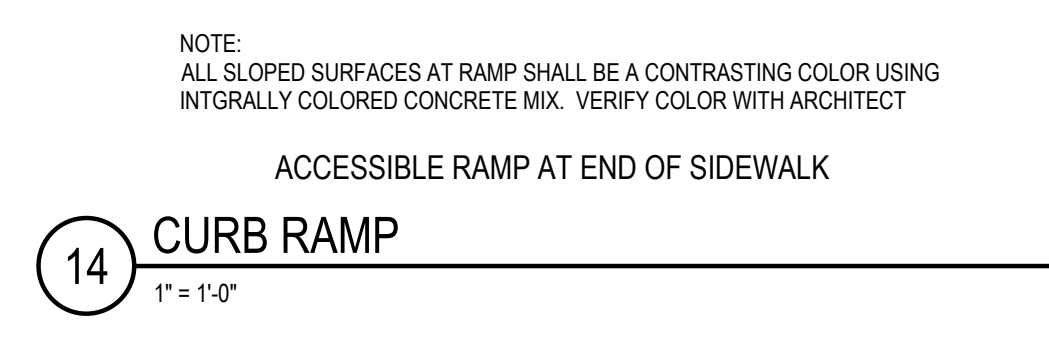
5 CURB PAVING  
 1" = 1'-0"



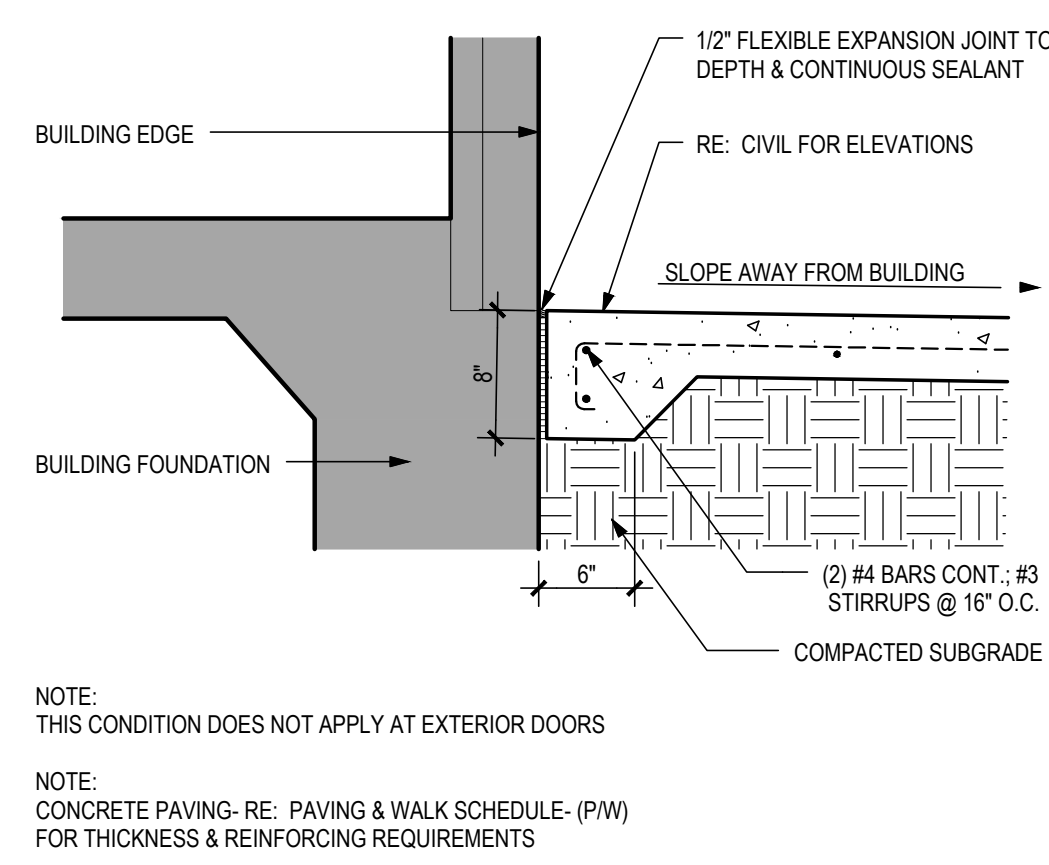
10 DOWNSPOUT BOOT  
 1" = 1'-0"



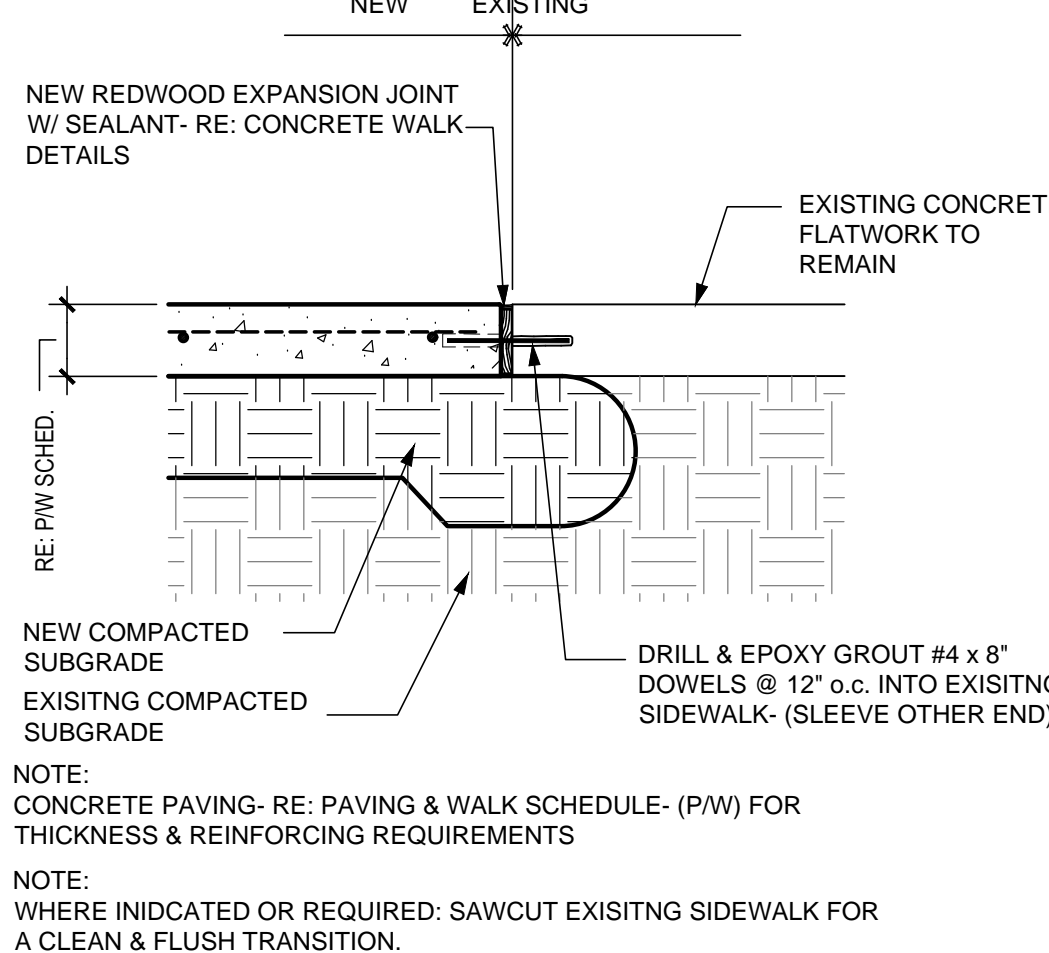
4 APPROACH APRON  
 1" = 1'-0"



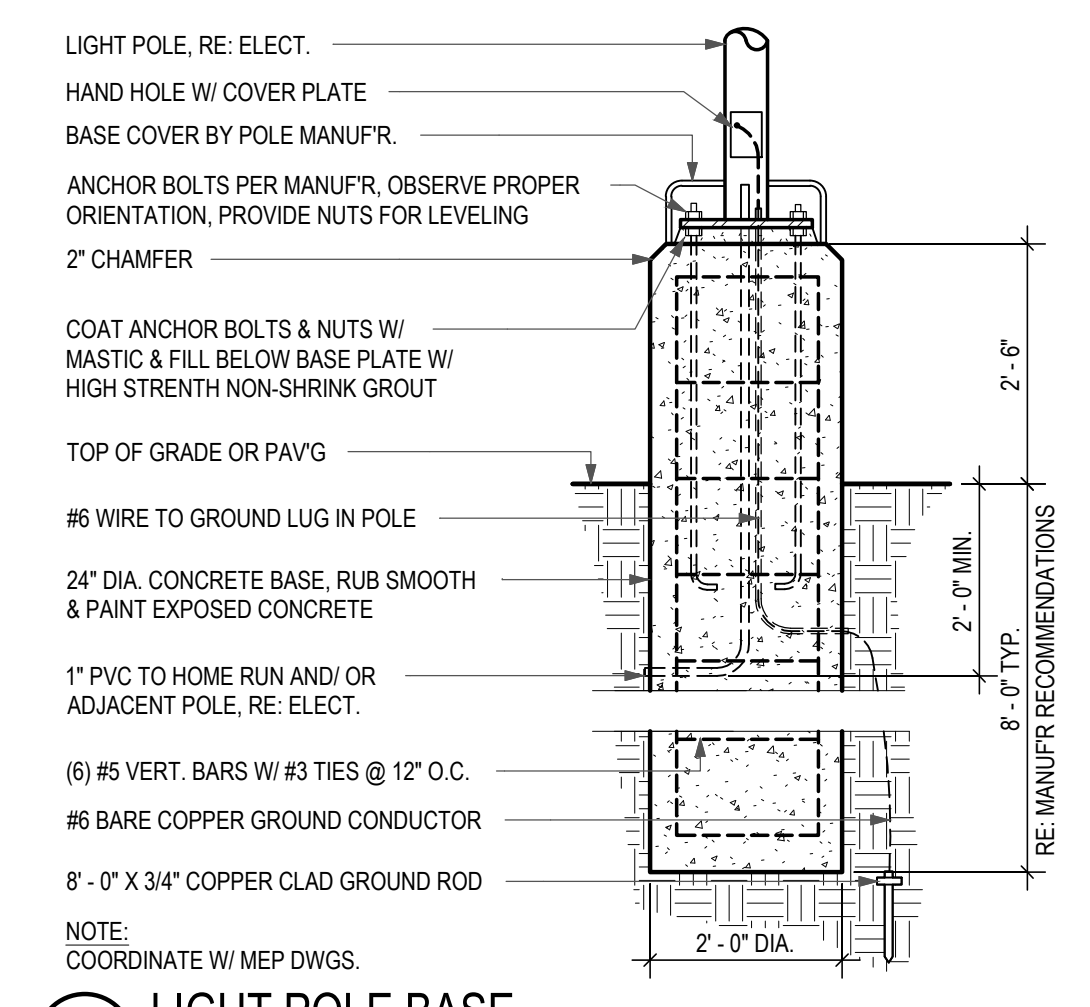
14 CURB RAMP  
 1" = 1'-0"



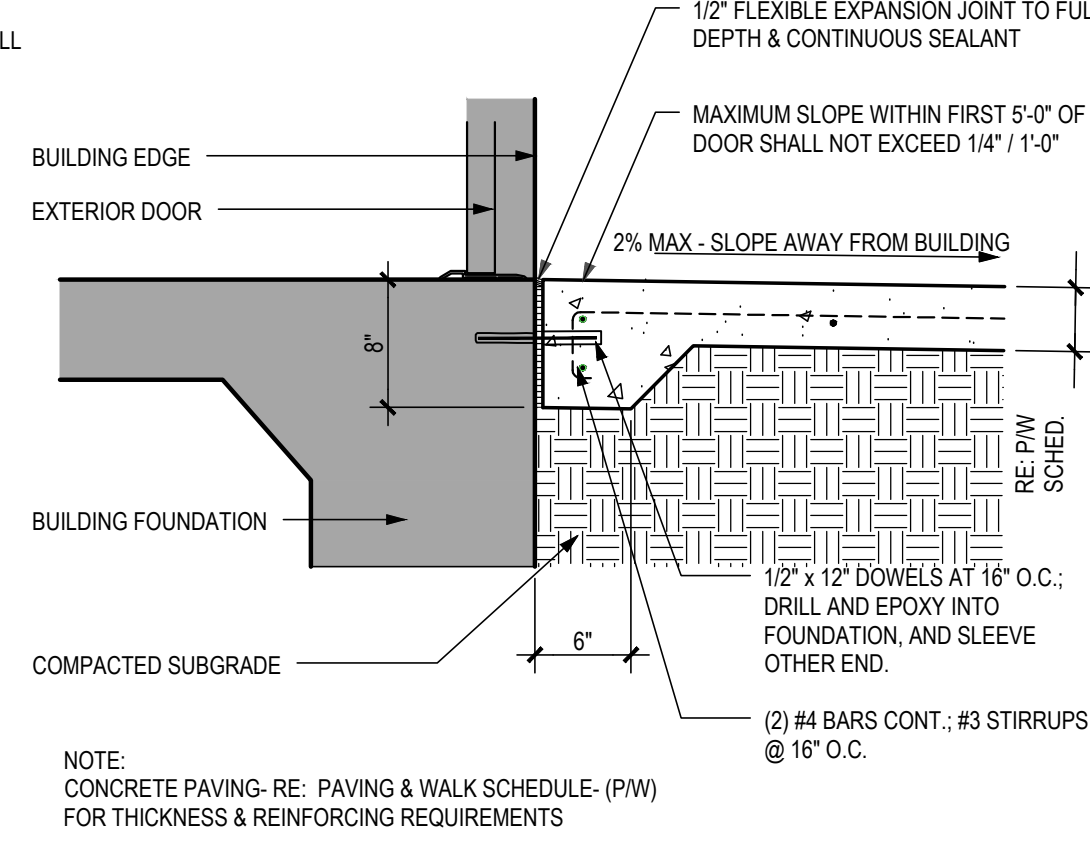
9 FLATWORK AT BUILDING  
 1" = 1'-0"



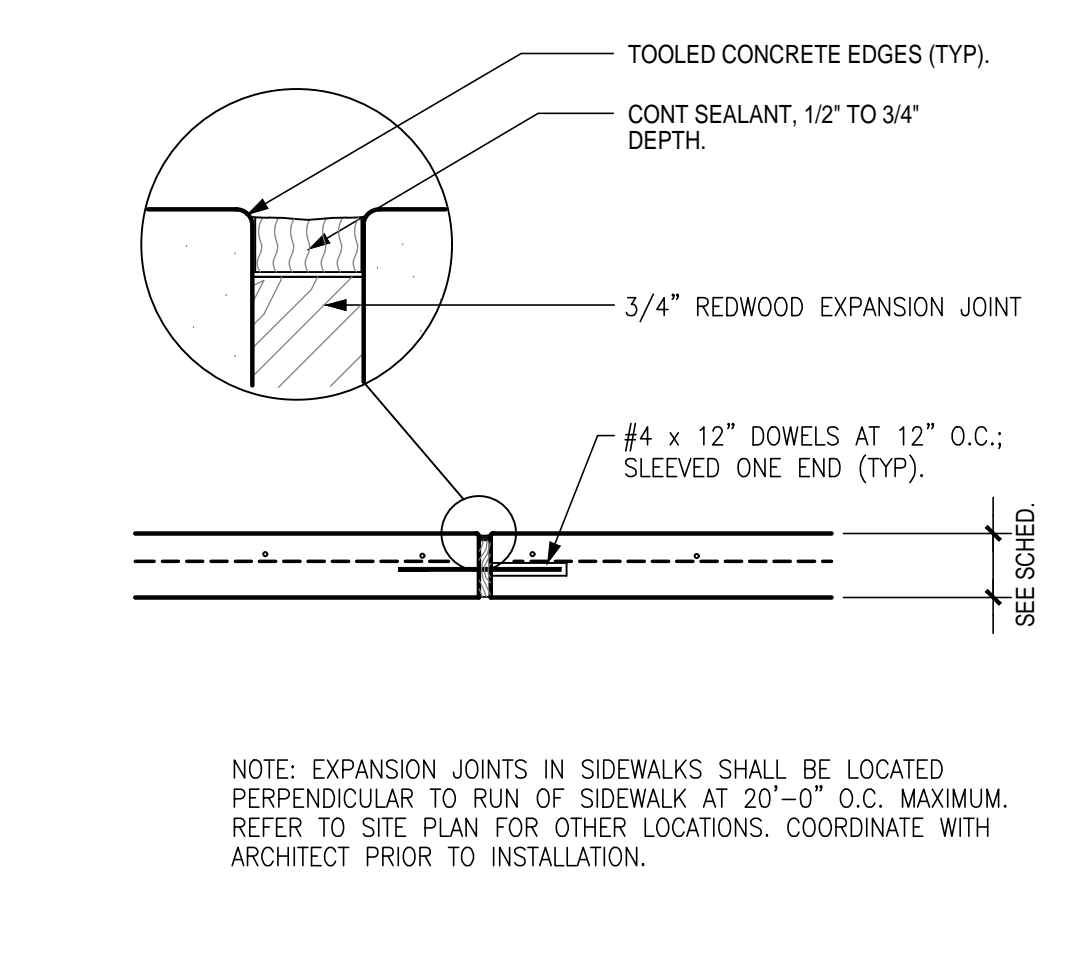
3 EXISTING TO NEW WALK  
 1" = 1'-0"



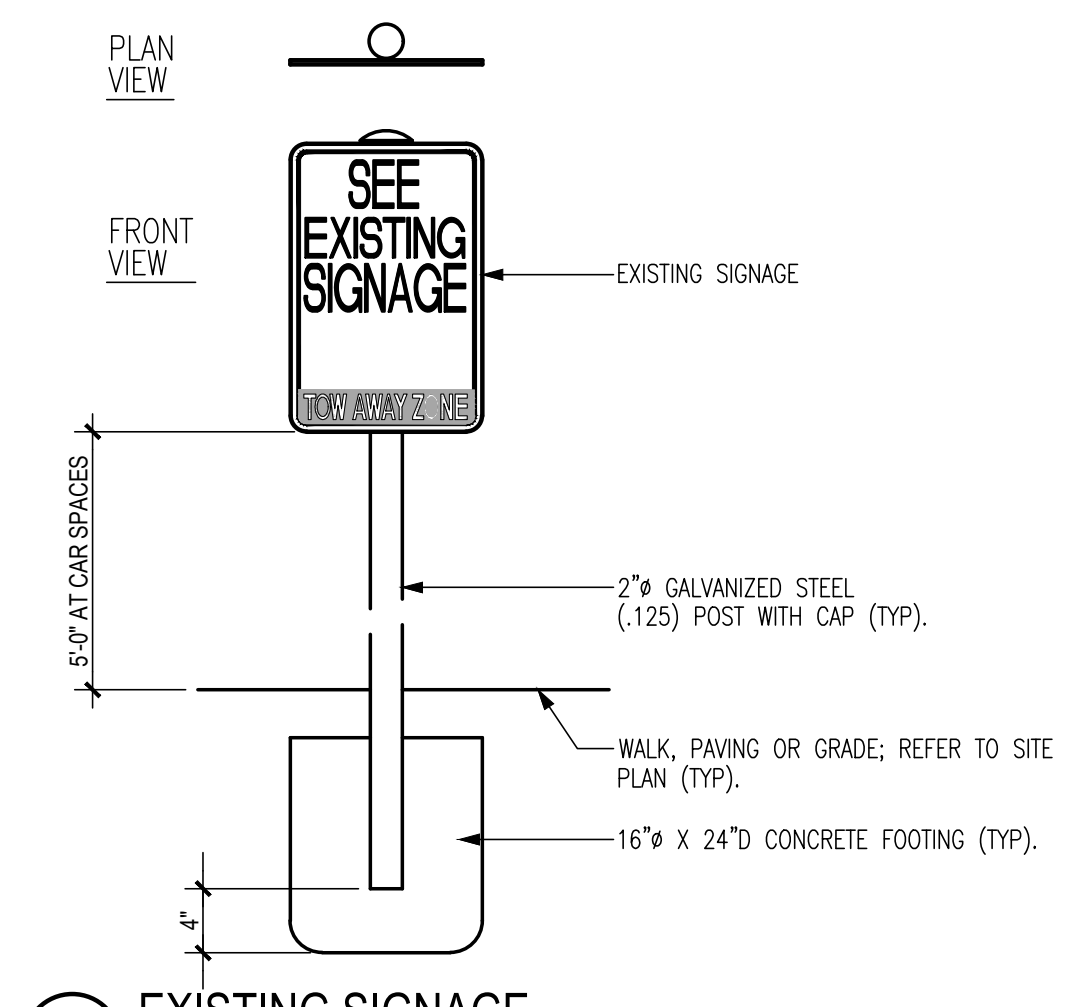
13 LIGHT POLE BASE  
 1" = 1'-0"



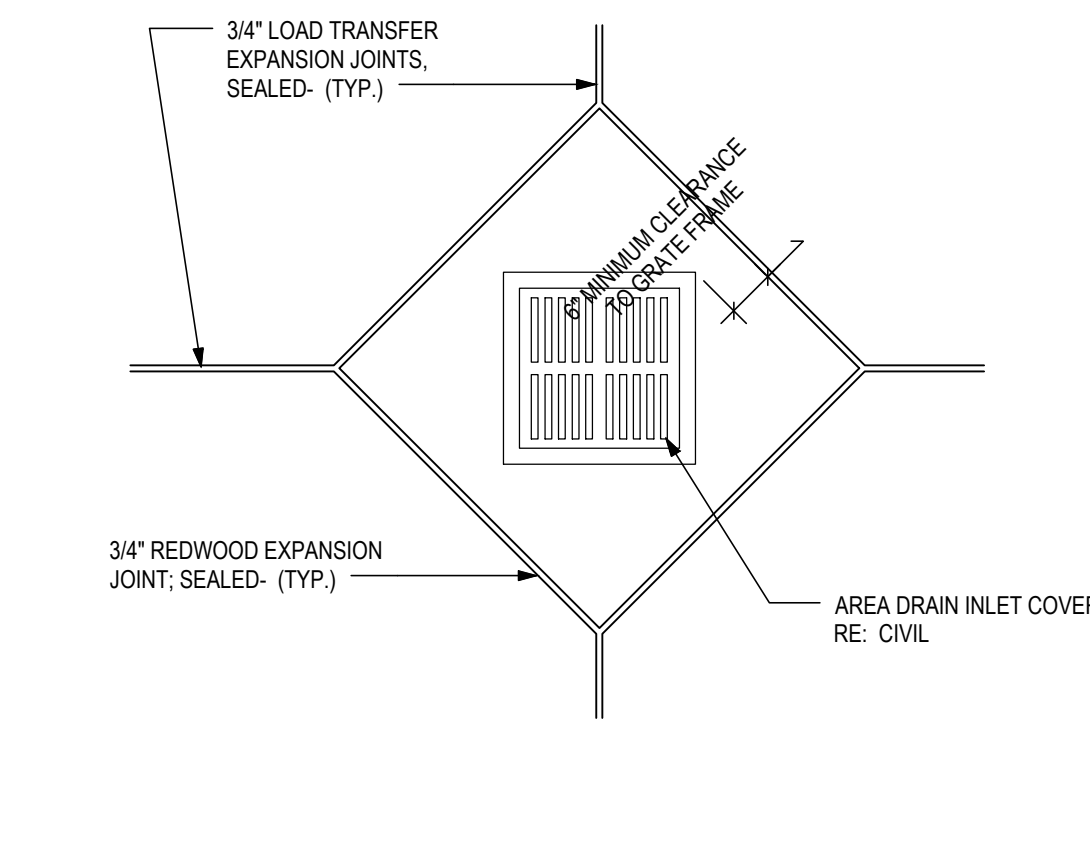
8 FLATWORK AT DOOR  
 1" = 1'-0"



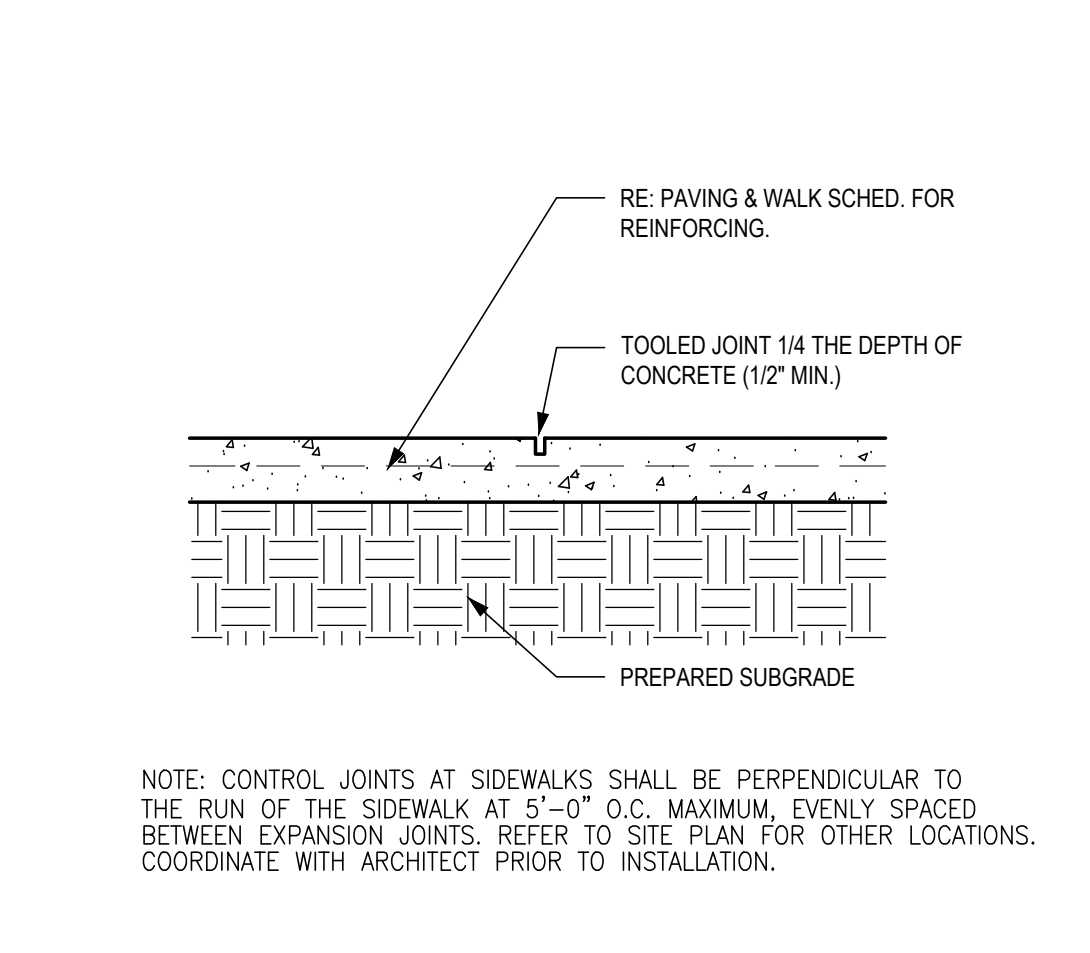
2 CONCRETE WALK EXPANSION JT.  
 1" = 1'-0"



13 EXISTING SIGNAGE  
 1" = 1'-0"



7 AREA DRAIN PLAN  
 1" = 1'-0"



1 CONCRETE WALK CONTROL JT.  
 1" = 1'-0"



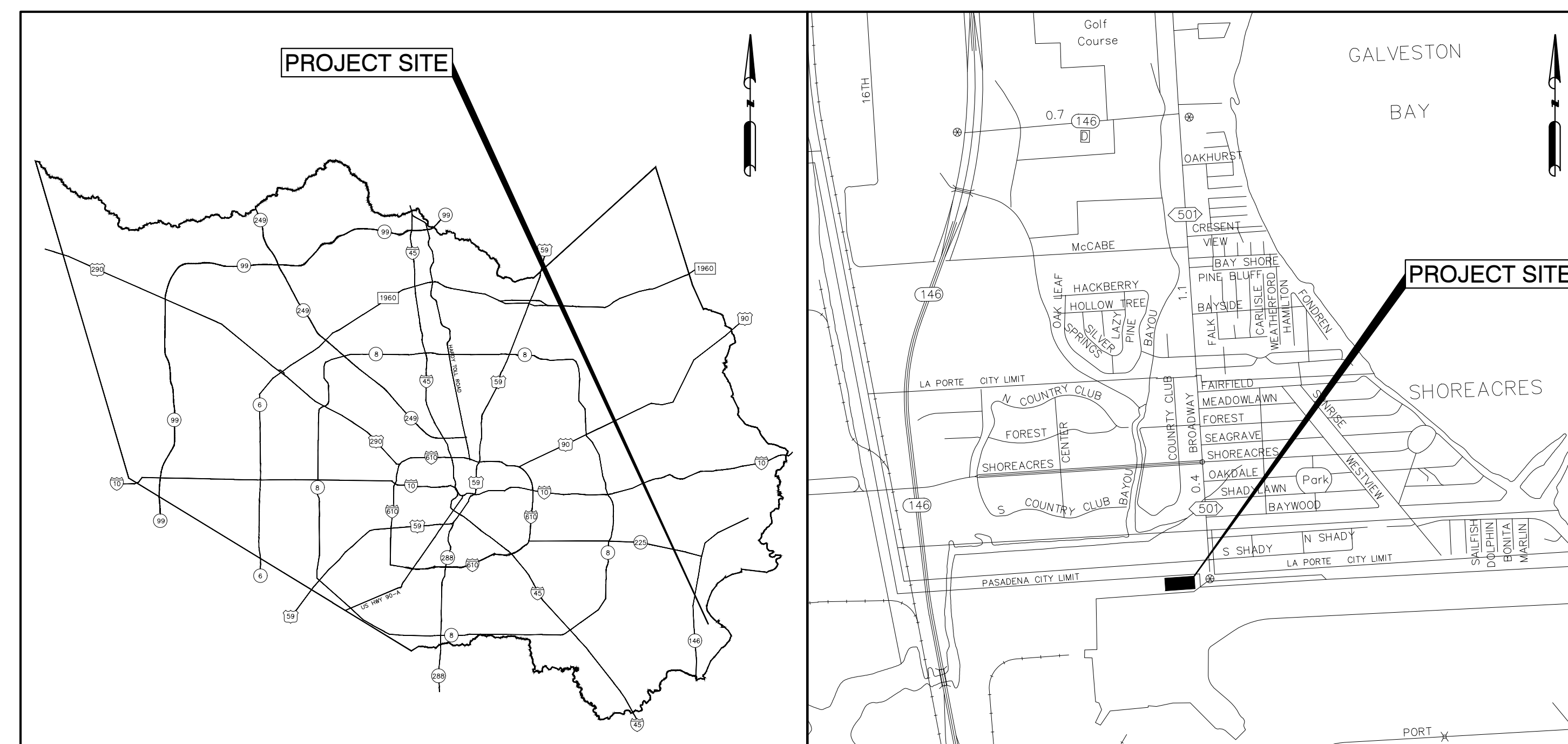
|             |                  |
|-------------|------------------|
| PROJECT NO. | 201936           |
| DATE:       | 11/12/2019       |
| DRAWN       | CKA              |
| CHECKED     | RCA              |
| DATE        | ISSUE            |
| 11/12/2019  | FOR CONSTRUCTION |

**C1.04**  
 SITE DETAILS

# MARITIME EXPANSION FIRE TRAINING CENTER

3700 OLD HWY. 146, LA PORTE, TEXAS 77571

## CONSTRUCTION PLANS FOR PROPOSED DRAINAGE, UTILITIES, GRADING & PAVING



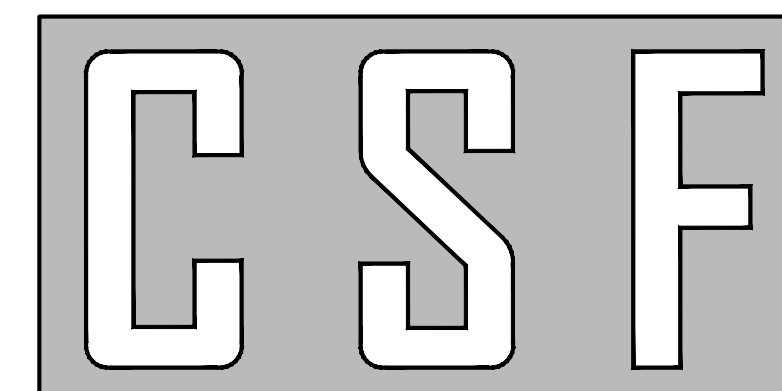
LOCATION MAP

VICINITY MAP

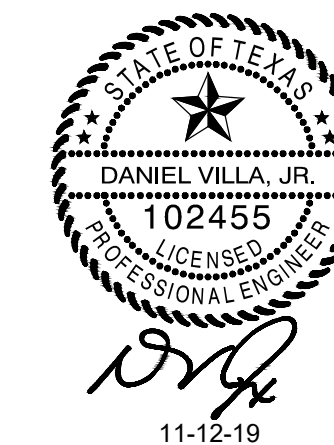
ZIP: 77571, KEY MAP PG. 580U

### SHEET INDEX

| NO. | DESCRIPTION                                           |
|-----|-------------------------------------------------------|
| 1   | COVER SHEET                                           |
| 2   | HARRIS COUNTY CIVIL REVIEW SHEET                      |
| 3   | GENERAL NOTES                                         |
| 4   | C2.00 TOPOGRAPHIC SURVEY                              |
| 5   | C2.04 EXISTING STORM SEWER AND SWQ PLAN               |
| 6   | C3.10 SWPPP DETAILS                                   |
| 7   | C4.00 DIMENSION CONTROL PLAN & SWPPP                  |
| 8   | C5.00 DRAINAGE PLAN, DRAINAGE AREA MAP & UTILITY PLAN |
| 9   | C6.00 GRADING & PAVING PLAN                           |
| 10  | C7.10 PAVING DETAILS                                  |
| 11  | C8.00 CIVIL DETAILS                                   |
| 12  | C9.00 EXISTING FIRE APPARATUS ACCESS LANE PLAN        |



CIVIL • STRUCTURAL • FORENSIC  
ENGINEERING & SURVEYING  
11301 FALLBROOK DR., SUITE 320  
HOUSTON, TX. 77065  
832/678-2110 FAX-832/678-2115  
TBPE FIRM NO. F-4395  
CSF PROJ: 4007



### 48 HOUR NOTICE:

CONTRACTOR SHALL NOTIFY HARRIS COUNTY PRIOR TO COMMENCING CONSTRUCTION AND/OR BACKFILLING ANY UTILITIES. CONTRACTOR(S) TO CONTACT PUBLIC REVIEW DEPARTMENT @ (713-274-3931) OR (PUBLIC.REVIEW@HCPID.ORG).

### HC ROW NOTIFICATION:

A NOTIFICATION ISSUED BY HC INFRASTRUCTURE DEPARTMENT-PERMITS OFFICE- IS REQUIRED FOR PROPOSED WORK WITHIN HARRIS COUNTY RIGHT-OF-WAY. THE PROJECT MUST BE APPROVED PRIOR TO OBTAIN THE REQUIRED NOTIFICATION. A NOTIFICATION MUST BE OBTAINED SEPARATELY FROM SITE DEVELOPMENT PERMIT PACKAGE. FOR ADDITIONAL INFORMATION PLEASE VISIT: [HTTP://HCPID.ORG/PERMITS/PR\\_NOTIFICATION\\_OF\\_CONSTRUCTION.HTML](http://HCPID.ORG/PERMITS/PR_NOTIFICATION_OF_CONSTRUCTION.HTML) OR CONTACT PUBLIC REVIEW INSPECTIONS DEPARTMENT @ (713)274-3931

1. PAVING

(FOR H.C. PUBLIC R.O.W. ONLY)

Table with columns: THICKNESS OF PAVING (IN.), STABILIZED GRADE (IN.), DESIGN STRENGTH OF CONCRETE, STEEL SPACING (IN.), STEEL TRANS. (IN.), STEEL SIZE (#4 MIN.)

DRIVEWAYS (in H.C. ROW only)

Table with columns: I. NUMBER OF DRIVEWAY APPROACHES PROPOSED INCLUDE WIDENING OR REPAVING EXISTING DRIVEWAYS AS WELL AS NEW DRIVEWAYS. Includes rows for DRIVE, MATERIAL, CULVERT? CULVERT LENGTH, NEAREST V. STREET, X-STREET.

FIRE APPARATUS ACCESS ROAD

9.00 EXISTING, APPROVED H.C. PROJ. NO. 2032751. REQUIRED AND SHOWN ON SHEET(S) H.C. PROJ. NO. 2032751. NOT REQUIRED DUE TO.

CURBING

I. ISLANDS AND MEDIANS REQUIRE STANDARD 6" CURBING. II. STANDARD 6" CURBING PROPOSED. 4" x 12" CURBING PROPOSED EXCEPT AT MEDIANS AND ISLANDS.

TRAFFIC CONSIDERATIONS

I. MEDIAN CUTS: NO MEDIAN CUT OR RELOCATION IS PROPOSED. MEDIAN MODIFICATIONS ARE SHOWN ON SHEET. II. LEFT / RIGHT TURN LANE: NO LEFT / RIGHT TURN LANE IS PROPOSED. LEFT / RIGHT TURN LANE IS SHOWN ON SHEET. III. TRAFFIC CONTROL PLAN: NO WORK IN THE RIGHT OF WAY IS PROPOSED THAT WOULD INTERFERE WITH TRAFFIC FLOW. TRAFFIC CONTROL SHOWN ON SHEET. IV. TRAFFIC SIGNAL: NO TRAFFIC SIGNAL IS EXISTING / PROPOSED. EXISTING TRAFFIC SIGNAL DEVICES (T.C. BOXES AND LOOPS) SHOWN ON SHEET. PROPOSED TRAFFIC SIGNAL (BY OTHERS). V. TRAFFIC IMPACT ANALYSIS: NO TRAFFIC IMPACT ANALYSIS IS REQUIRED. TRAFFIC IMPACT ANALYSIS HAS BEEN APPROVED ON DATE: PLAN TITLE: HCPID PROJECT NO.:

2. RESIDENTIAL / SUBDIVISION DRAINAGE

PROPOSED DRAINAGE SYSTEM TYPE: STORM SEWER, ROADSIDE DITCH, LOW IMPACT DEVELOPMENT (LID). II. DESIGN METHOD USED: CITY OF HOUSTON YEAR FREQUENCY, OTHER. III. DRAINAGE SYSTEM FALLS DIRECTLY TO EXISTING: DETENTION POND (APPROVED H.C. PRJ NO.), HCFCD DRAINAGE DITCH (UNIT NO.), H.C. ROADSIDE DITCH (RD. NAME), H.C. STORM SEWER (APPROVED H.C. PRJ NO.). IV. H.C. OUTFALL CALCULATIONS: ROADSIDE DITCH OUTFALL, STORM SEWER OUTFALL. V. DETENTION PROVIDED BY: DETENTION BASIN IS PART THIS PLAN SET. SERVICE AREA MAP SHOWN SHEET. REGIONAL DETENTION BASIN SYSTEM (APPROVED H.C. PRJ NO.). VI. PROPOSED STORM SEWER IS SUBMERGED (AGREEMENT MUST BE PROVIDED BY APPLICANT). OUTFALL IS. VII. OFFSITE SHEET FLOW MAPPING, TOTAL DISCHARGE CALCULATIONS, AND DESIGN ACCOMMODATIONS ARE SHOWN ON SHEET(S) OR, AS PRESENTED IN THE APPROVED DRAINAGE STUDY ENTIRE. VIII. TOTAL ACREAGE =. TOTAL DISCHARGE =. NOTE: ALL OFFSITE SHEET FLOW FROM ADJACENT PROPERTIES MUST BE IDENTIFIED AND PROPERLY ACCOUNTED FOR IN THE PROPOSED SIGNING ENGINEER'S SIGNATURE. ENGINEER HEREBY CERTIFIES THAT THESE AREAS HAVE BEEN ADDED.

ON-SITE SHEET FLOW: (100 YEAR)

OFFSITE SHEET FLOW MAPPING, TOTAL DISCHARGE CALCULATIONS, AND DESIGN ACCOMMODATIONS ARE SHOWN ON SHEET(S) OR, AS PRESENTED IN THE APPROVED DRAINAGE STUDY ENTIRE. TOTAL ACREAGE =. TOTAL DISCHARGE =. NOTE: ALL OFFSITE SHEET FLOW FROM ADJACENT PROPERTIES MUST BE IDENTIFIED AND PROPERLY ACCOUNTED FOR IN THE PROPOSED SIGNING ENGINEER'S SIGNATURE. ENGINEER HEREBY CERTIFIES THAT THESE AREAS HAVE BEEN ADDED.

3. COMMERCIAL / OTHER SITE DRAINAGE

I. PROPOSED DRAINAGE AREA: NEW DEVELOPMENT AREA, RE-DEVELOPMENT AREA (NET NEW DEVELOPED AREA): 0.27 AC, LOW IMPACT DEVELOPMENT (LID). II. DETENTION VOLUME: APPROVED H.C. PROJ. NO. 2032751 (NO DETENTION REQ'D). NEW AREA x \* = ACRE FEET. DETENTION REQUIRED. PROPOSED DETENTION VOLUME = 0 ACRE FEET. PROPOSED DETENTION VOLUME CALCULATIONS ARE SHOWN ON SHEET. DETENTION VOLUME PROVIDED BY EXISTING DETENTION POND. APPROVED H.C. PROJECT NO.: DETENTION POND SERVICE AREA MAP IS PROVIDED ON SHEET. III. OUTFALL: OUTFALL TO H.C. ROADSIDE DITCH, EXISTING H.C. STORM SEWER, OTHER EXISTING ON SITE PRIVATE STORM SEWER SYSTEM. IV. PUMPED DETENTION FACILITIES: CAPACITY ALLOCATED TO TRACT FROM D. A. MAP, PREPARED BY, APPROVED H.C. PROJECT NO., ACTUAL OUTFALL RATE (CFS), CALCULATIONS PROVIDED ON SHEET. V. FLOW RESTRICTOR SIZE: OUTFALL PIPE SIZE, RESTRICTOR PIPE SIZE. NOTE: ALL ROADSIDE DITCH OUTFALLS REQUIRE EROSION CONTROL MEASURES. RIPRAP IS NOT ALLOWED AS AN EROSION CONTROL MEASURE IN HARRIS COUNTY ROW. ALL PUMPED DETENTION OUTFALLS TO ROADSIDE DITCHES REQUIRE MANHOLE W/ LEADS.

4. WATER AND WASTEWATER

I. COMMERCIAL PROJECTS: DOES PROPERTY HAVE EXISTING AND/OR PROPOSED UTILITIES? YES NO. IF YES, CHECK THE BOX THAT APPLIES TO THIS PROJECT: PUBLIC WATER & SANITARY, PRIVATE WATER WELL & SEPTIC SYSTEM, PUBLIC WATER & PRIVATE SEPTIC SYSTEM, PRIVATE WATER WELL & PUBLIC SANITARY. NOTE: PUBLIC UTILITIES REQUIRE A LETTER FROM THE DISTRICT/MUNICIPALITY AUTHORIZING SERVICE & CONNECTION. THIS IS REQUIRED FOR PLAN APPROVAL. UTILITY DISTRICT/MUNICIPALITY NAME: CITY OF LA PORTE. H.C. SEPTIC PERMIT/REQUEST NO. NOTE: ALL EXISTING AND PROPOSED UTILITIES MUST BE ACCURATELY SHOWN & LABELED ON THE SITE PLANS. II. SUBDIVISION PROJECTS: UTILITY DISTRICT/MUNICIPALITY NAME, PRIVATE WATER & SEPTIC SYSTEMS, PRIVATE WATER & INDIVIDUAL SEPTIC, INDIVIDUAL WATER WELL & OSSF. NOTE: A COPY OF TCEQ APPROVAL FOR PRIVATE WATER & WASTE WATER SYSTEMS IS REQUIRED FOR PLAN APPROVAL. NOTE: DEDICATED UNDERGROUND FIRE LINES MUST BE SUBMITTED TO THE HARRIS COUNTY FIRE PROTECTION GROUP FOR REVIEW AND PERMITTING BY THE UNDERGROUND FIRE LINE CONTRACTOR. CIVIL REVIEW DOES NOT REVIEW OR APPROVE UNDERGROUND FIRE LINES FOR THE FIRE PROTECTION SYSTEMS. WASTEWATER TREATMENT PLANTS: PERMIT REVIEW: IS THE PROPOSED PROJECT A NEW WWTP SITE OR A REVISION/EXPANSION OF AN EXISTING WWTP SITE? YES NO. IF YES, IS A HARRIS COUNTY DOMESTIC WASTEWATER TREATMENT PLANT EXPRES REVIEW SHEET ATTACHED TO THIS SET OF DRAWINGS ACCORDING TO INSTRUCTIONS? YES NO. REFER TO: WWW.HARRISCOUNTYTX.NET/PERMITS/WASTEWATER/REGULATIONS-STANDARD DETAILS DOMESTIC WWTP ERS FORM.

10. PERMITS REQUIRED

DOES THE PROPERTY HAVE ANY VIOLATIONS? IF SO PLEASE PROVIDE ALL VIOLATION NUMBERS.

- STORM WATER QUALITY
SEPTIC (EXISTING) SEPTIC (PROPOSED)
CIVIL SITE WORK (PHASE II PERMIT CLASS I (non-floodplain))
CIVIL SITE WORK (PHASE II PERMIT CLASS II (floodplain))
DRIVEWAY WITH CULVERT CURB AND GUTTER
BUILDING PERMITS (NO. OF BUILDINGS = ) CRITICAL FACILITY
SUBDIVISION INFRASTRUCTURE PHASE II (NO. OF LOTS = )
NOTICE OF DETENTION AFFIDAVIT REQUIRED
MUD MAINTENANCE AGREEMENT REQUIRED

WORK IN HARRIS COUNTY R.O.W.

- UTILITY
LEFT TURN LANE
RIGHT TURN LANE

NOTES: A PERMIT IS REQUIRED FOR EACH SCOPE OF WORK ON SITE. A NOTIFICATION IS REQUIRED FOR EACH SCOPE OF WORK IN HC OR HCFCD ROW. REFER TO WWW.ENG.HCTX.NET/PERMITS FOR EACH SCOPE OF WORK IN HC OR IN HCFCD ROW.

BENCHMARK REQUIREMENTS FOR PROPOSED BRIDGES AND OR NEW RESIDENTIAL SUBDIVISIONS

When the County Engineer has determined that a new benchmark will be required to be established for the proposed project, the developer shall be required to install a benchmark per section 8.0, part 2 of the Harris County Infrastructure Regulations. Is a new Benchmark required for this project? (to be determined by Harris County) [ ] yes [ ] no. If a new Benchmark is required, the proposed benchmark information is shown on sheets.

5. DESCRIPTION OF PROPERTY

I. LEGAL DESCRIPTION: A. ACREAGE: 13.060. B. SUBDIVISION: SURVEY & ABSTRACT: WILLIAM P. HARRIS LEAGUE, ABSTRACT 30. C. ADJACENT ROADS: OLD STATE HWY 146. II. PLATTING: A. SUBDIVISION PLAT: PROPOSED PLAT / REPLAT, RECORDED PLAT / REPLAT. B. STREETS PROPOSED: PUBLIC, PRIVATE, PUBLIC & PRIVATE, NONE. PLAT NAME: SAN JACINTO COLLEGE MARITIME CAMPUS BAYPORT. III. JURISDICTIONS: CITY OF, ETJ, CITY OF HOUSTON, ETJ, CITY OF PASADENA, NO ETJ. IV. HCAD ACCOUNT NOS. (ALL): KEY MAP PAGE 580U. 100-574-000-0098. V. UNOBSTRUCTED VISIBILITY EASEMENT (U.V.E.): REQUIRED AND SHOWN ON SHEET(S), NOT REQUIRED. NOTE: ALL APPROVED, FINAL PLATS AND ASSOCIATED CPC101 FORMS MUST BE INCLUDED WITH PLAN SUBMITTAL. CONFORMING SUBDIVISION, NON-CONFORMING SUBDIVISION, PARTIALLY NON-CONFORMING SUBDIVISION.

6. STORMWATER QUALITY

I. SWPPP: CONSTRUCTION MEASURES. (Complete for ALL projects): DISTURBS >1AC. SITE PLAN & DETAILS ON SHEET(S), DISTURBS <1AC. N/A. II. APPLICABILITY FOR PERMANENT FEATURES. (must be completed on all projects): EXEMPT NEW DEVELOPMENT: PROJECT IS ON A PARCEL (A COMMON PLAN OF DEVELOPMENT) LESS THAN 5 ACRES. (must be verified with plat). EXEMPT REDEVELOPMENT: PROJECT DOES NOT MEET THE DEFINITION OF SIGNIFICANT REDEVELOPMENT (Part A, Sec. 2.39 of Regulations of Harris County, Texas for Stormwater Quality Management). EXEMPT GRANDFATHERED: PROJECT'S DRAINAGE TIES DIRECTLY INTO AN EXISTING DRAINAGE SYSTEM PRIOR TO OCTOBER 1, 2001. (FOR VERIFICATION: PROVIDE ORIGINAL DRAINAGE AREA MAP INCLUDING CALCULATIONS). GENERAL: PROJECT'S SWQ REQUIREMENTS FALL WITHIN THE JURISDICTION OF: STORMWATER QUALITY PERMIT REQUIREMENT IS COVERED BY AN EXISTING SWQP WITHIN PROJECT TITLE: MARITIME TECHNOLOGY AND TRAINING CENTER. HARRIS COUNTY PROJECT NO. 2032751 & SWQ PERMIT NO. STORMWATER QUALITY MANAGEMENT PLAN: SITE PLAN ON SHEET(S) C2.04 (PREVIOUSLY APPROVED, H.C. PROJ. NO. 2032751). III. PERMANENT SWQ FEATURES. (COMPLETE IF NOT EXEMPT): VEGETATIVE CONTROLS USED: (FILTER STRIP, GRASSY SWALE, URBAN FORESTRY) DETAILS AND CALCULATIONS APPEAR ON SHEET(S). POND STRUCTURE USED (WET, DRY, WETLANDS) DETAILS AND CALCULATIONS APPEAR ON SHEET(S). STORM TROOPER SWST-25C (C2.04). HYDRODYNAMIC TYPE SEPARATOR MODEL: (PREVIOUSLY APPROVED, H.C. PROJ. NO. 2032751). OTHER(S):

7. FLOOD PLAIN STATUS

I. GENERAL INFORMATION: FIRM PANEL(S) FOR PROPERTY: 48201C1085M. FIRM PANEL(S) DATE: 1-6-2017. STATUS OF PROPERTY ON MAP: ENTIRELY LOCATED IN UNSHADED ZONE "X" AND IN SHADED ZONE "X", LOCATED PARTIALLY OR ENTIRELY IN ANY "A" ZONE OR SHADED ZONE "X", DELINEATE FLOODPLAIN BOUNDARY ON CONSTRUCTION DRAWINGS (DRAINAGE LAYOUT PG. NO. C5.00) (1% BASE FLOOD LEVEL 15.0) (0.2% BASE FLOOD LEVEL 19.5). SITE REMOVED FROM FLOODPLAIN BY LOMR, LOMR-F, LOMA CASE NO. REVISED FLOODPLAIN IS SHOWN ON SHEET. ELEVATION INFORMATION: BENCHMARK USED: HARRIS COUNTY FLOODPLAIN REFERENCE MARK, HARRIS-GALVESTON COASTAL SUBSIDENCE DISTRICT BENCHMARK (FOR COASTAL AREAS). DESCRIPTION OF BENCHMARK INCLUDING ELEVATION, DATUM AND YEAR OF ADJUSTMENT (2001 ADJ.). FLOODPLAIN RM NO.: 010320. METAL ROD, STAMPED "HGCSO 50 1986", EL=8.81 NAVD88, 2001 ADJ. II. FLOOD PLAIN DETERMINATION BASED ON GROUND ELEVATION: PROPERTY LIES ENTIRELY ABOVE THE BASE FLOOD LEVEL AND IN SHADED ZONE "X", PROPERTY LIES PARTIALLY OR ENTIRELY BELOW THE BASE FLOOD LEVEL. III. FLOODPLAIN STORAGE SUMMARY (APPLIES ONLY TO PORTION OF LAND LOCATED WITHIN FLOODPLAIN AS DELINEATED BY FIRM PANEL): A. TOTAL VOLUME OF MATERIAL PROPOSED TO BE MOVED OR PLACED WITHIN THE FIRM DELINEATED FLOODPLAIN (FILL, BASE, CONCRETE, ASPHALT, ETC.): BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) CUBIC YARDS. B. TOTAL VOLUME OF MATERIAL PROPOSED TO BE REMOVED FROM THE FIRM DELINEATED FLOODPLAIN: BELOW 0.2% BASE FLOOD ELEVATION (2001 ADJ.) CUBIC YARDS. C. FILL AREA & VOLUME CALCULATIONS ARE SHOWN ON SHEET. IV. LOMR REQUIRED, CLOMR REQUIRED, VERIFIED BY:

8. CURB RAMPS

A. ARE CURB RAMPS THAT CONNECT TO PUBLIC STREETS PROPOSED IN THIS SET OF PLANS? [ ] YES [X] NO

9. LANDSCAPING

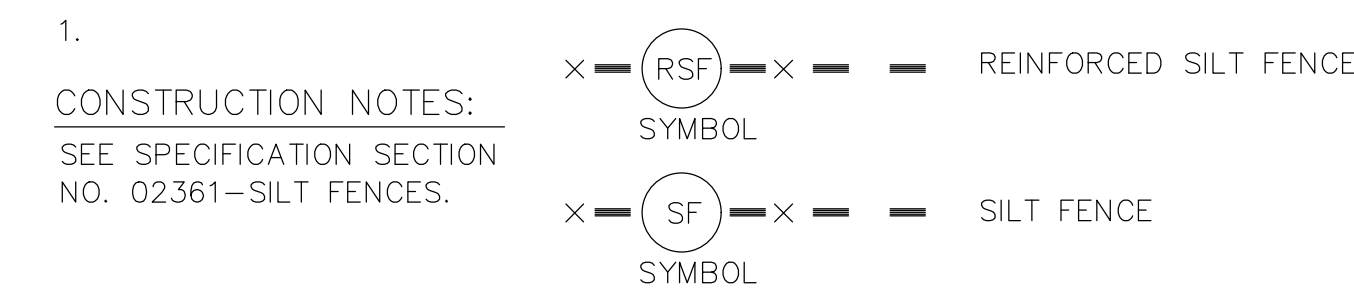
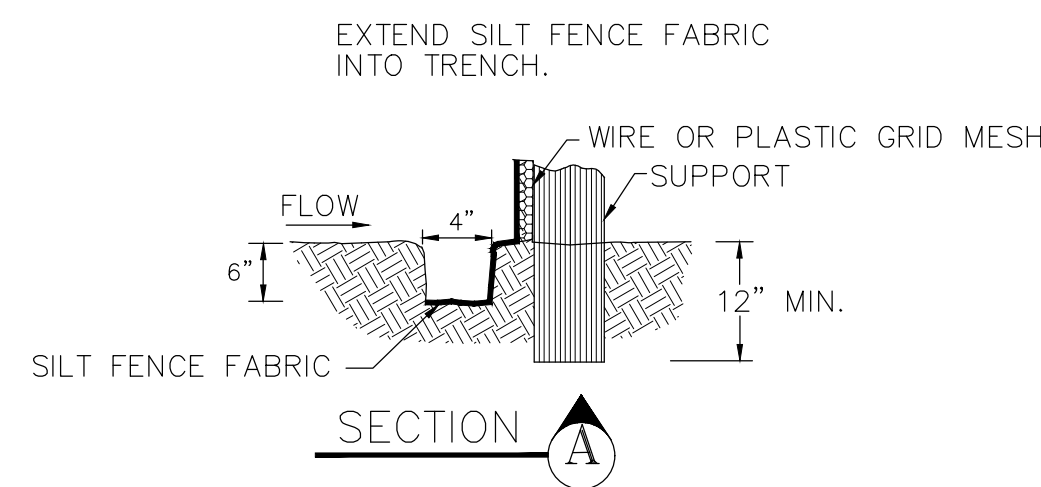
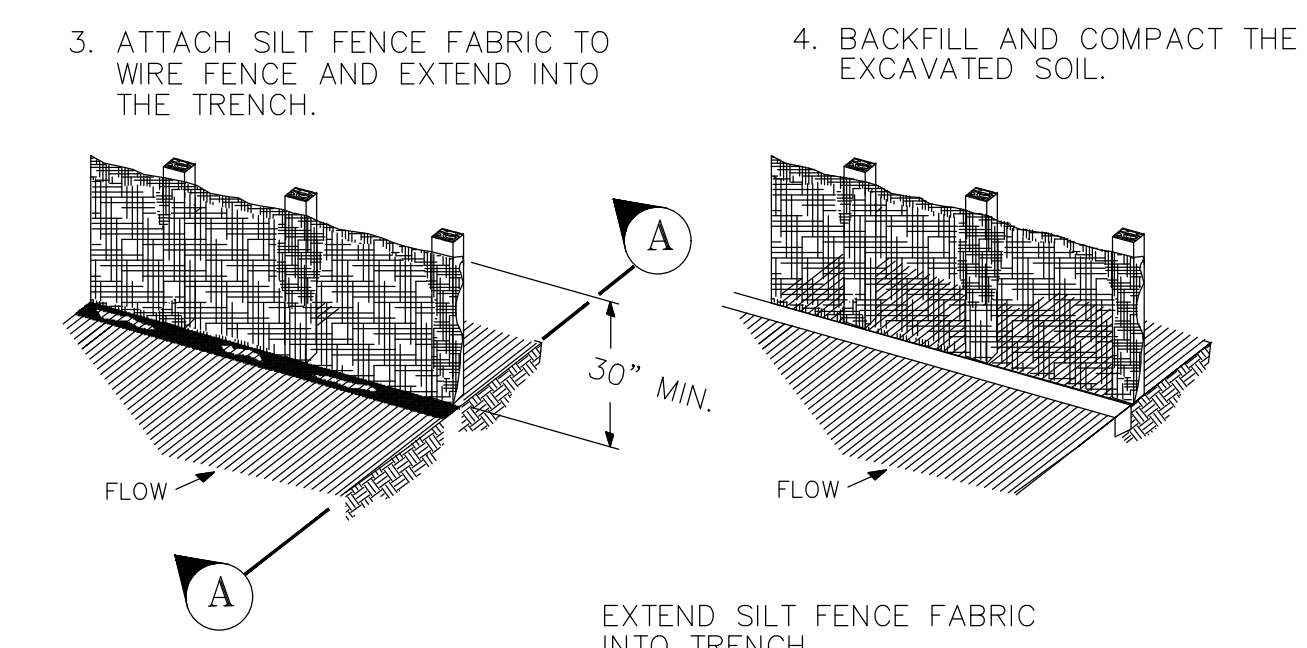
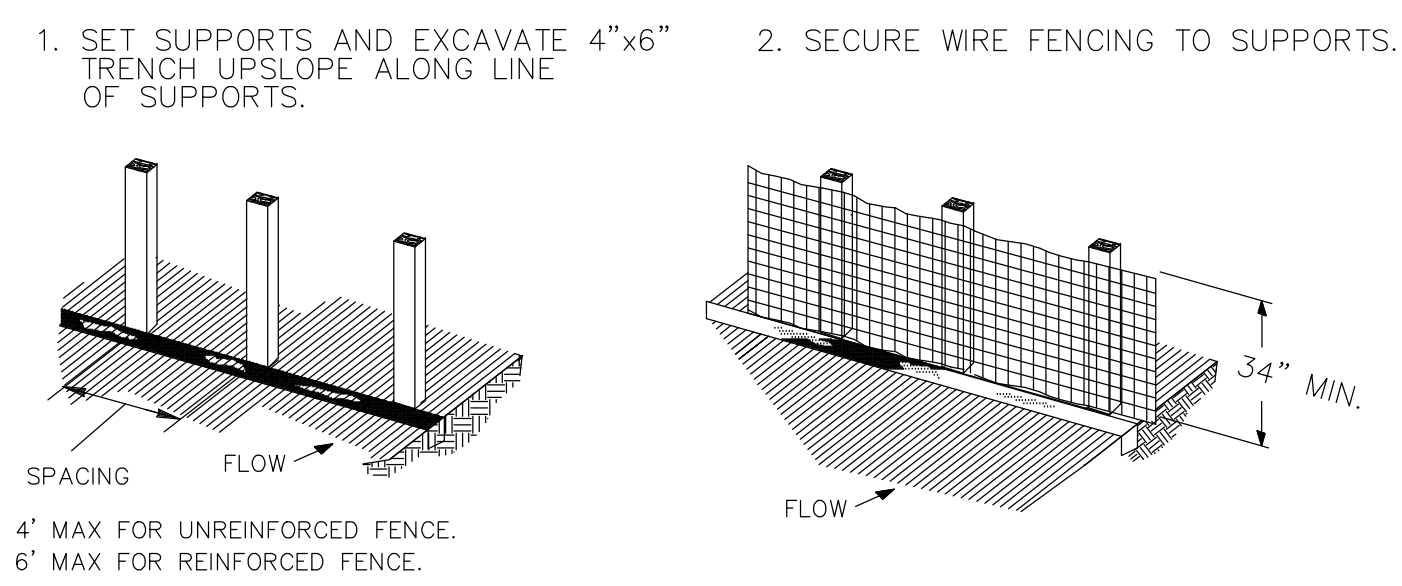
REQUIRED AND SHOWN ON SHEET(S), NOT REQUIRED.

FOR PROJECTS LOCATED IN ANY FLOODPLAIN: Development constructed or placed in accordance with these plans will comply with all provisions of the Regulations of Harris County, Texas for Floodplain Management. No net fill is allowed in the flood plain and no fill is allowed in the floodway. FOUNDATION NOTES: (Applies to only buildings or building additions requiring a class II permit) All water heaters, furnaces, air conditioning units, electrical distribution panels, and any other mechanical or electrical equipment must be elevated in accordance with Section 4.05 of Harris County Floodplain regulations. Any electrical circuit serving a light switch or outlet located below the base (100-year) flood elevation shall be dropped from above and be on a separate breaker. All materials used below the (100-year) base flood elevation are on approved FEMA Technical Bulletin 2-08 as Class 5 water-resistant, and approved in accordance with FEMA Technical Bulletin 1-08 for foundation openings. Critical facilities located in the 0.2% or 500yr floodplain or 1% or 100yr floodplain shall have the lowest floor elevated to 3 feet or more above the 0.2% flood elevation, or 24 inches above the crown of the adjacent road, which ever results in a higher elevation. Floodproofing and sealing measures must be taken to ensure that toxic substances will not be displaced by or released into floodwaters. Access routes elevated to or above the level of the base flood shall be provided to all critical facilities to the extent possible. A completed as-built certificate must be submitted after the structure is complete and before it is occupied. The County Engineer's Office will post a final inspection notice on the structure once all requirements have been met. No fill may be used to elevate structures in the 1% or 100yr flood plain. Structures may be constructed on an open foundation, such as piers, or on continuous foundation walls with properly sized and located openings. All foundations are required to be designed by a registered professional engineer. All structures shall be designed to withstand a three second gust basic wind speed of 120mph. Completed "Elevation Certificates to be submitted: one at permitting, a second after the slab is poured or sub-floor is installed and before the framing starts, and a third is required once construction is finished. \*(PER CURRENT FIRM PANEL) to the Harris County Engineering Department, 10555 Northwest Freeway, Suite 120, Houston, TX 77092. HARRIS COUNTY ENGINEERING DEPARTMENT - PERMIT OFFICE NOTE: THE PERMIT MANAGER SIGNATURE REPRESENTS THE FOLLOWING: THE COMPLETION OF REVIEW OF THESE PLANS, INTERPOSE NO OBJECTION TO THE PROPOSED DESIGN ON PRIVATE PROPERTY, APPROVAL OF WORK IN HARRIS COUNTY MAINTAINED RIGHT OF WAY, APPROVAL OF WORK IN PROPOSED HARRIS COUNTY RIGHT OF WAY THAT IS TO BE ACCEPTED BY THE COUNTY. HCD SIGNATURE BLOCK: ANY VIOLATIONS WILL BE FORWARDED TO THE HARRIS COUNTY DISTRICT ATTORNEY'S OFFICE FOR PROSECUTION. THE COMPLETED PROJECT CONSISTS OF DRAWING SHEETS C1.00 THRU C9.00. SIGNATURE: CSF CONSULTING LP, TBPE FIRM NO. F-4395, DATE: 11-12-19. REVISIONS: NOTE: REVISION BLOCK IS TO BE USED ONLY FOR CHANGES MADE AFTER PLANS HAVE BEEN APPROVED BY HARRIS COUNTY. DATE, SHEET NO., DESCRIPTION, P.E. INITIAL, H.C. APPROVED DATE.

HARRIS COUNTY ENGINEERING DEPARTMENT REVIEW SHEET

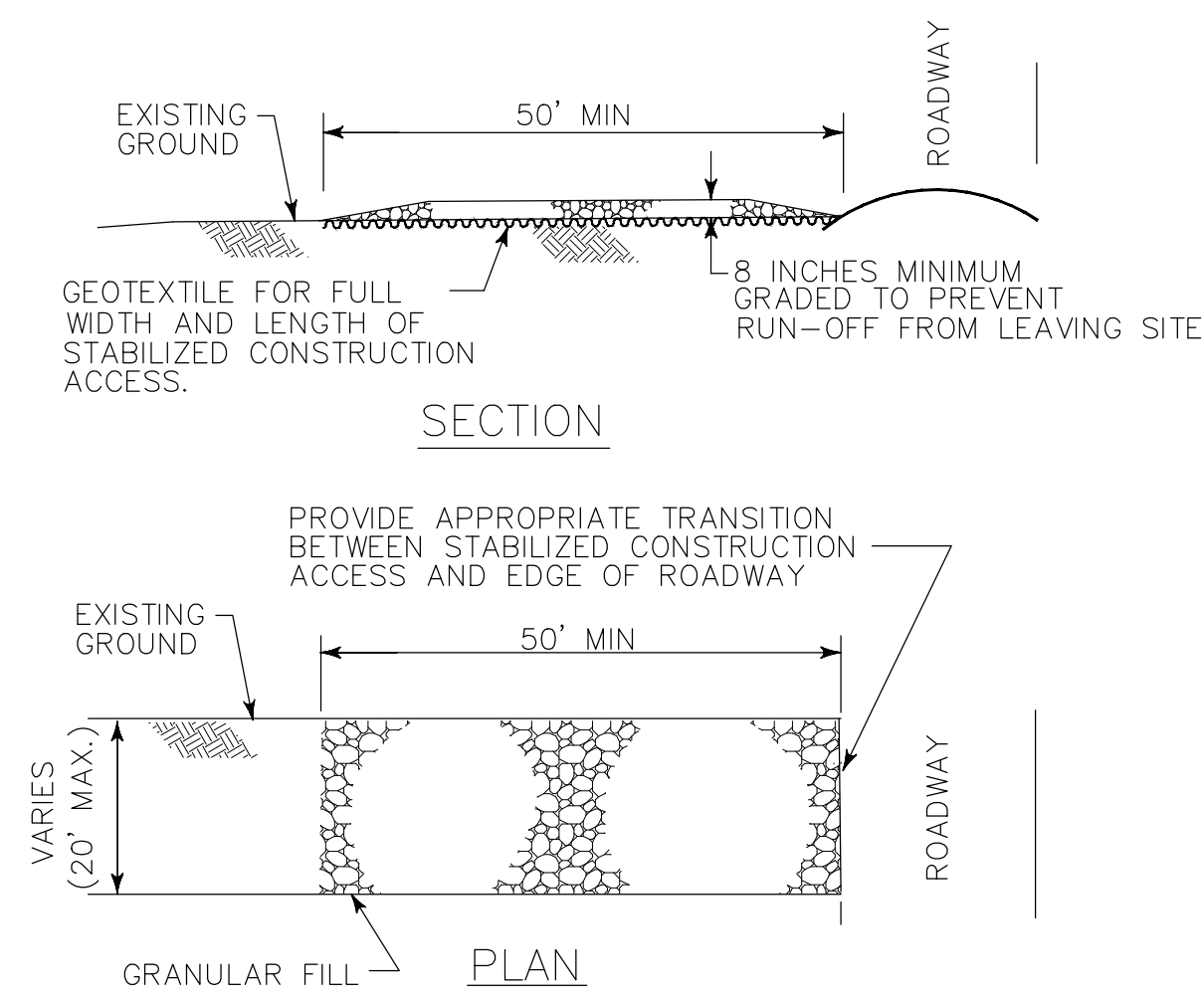






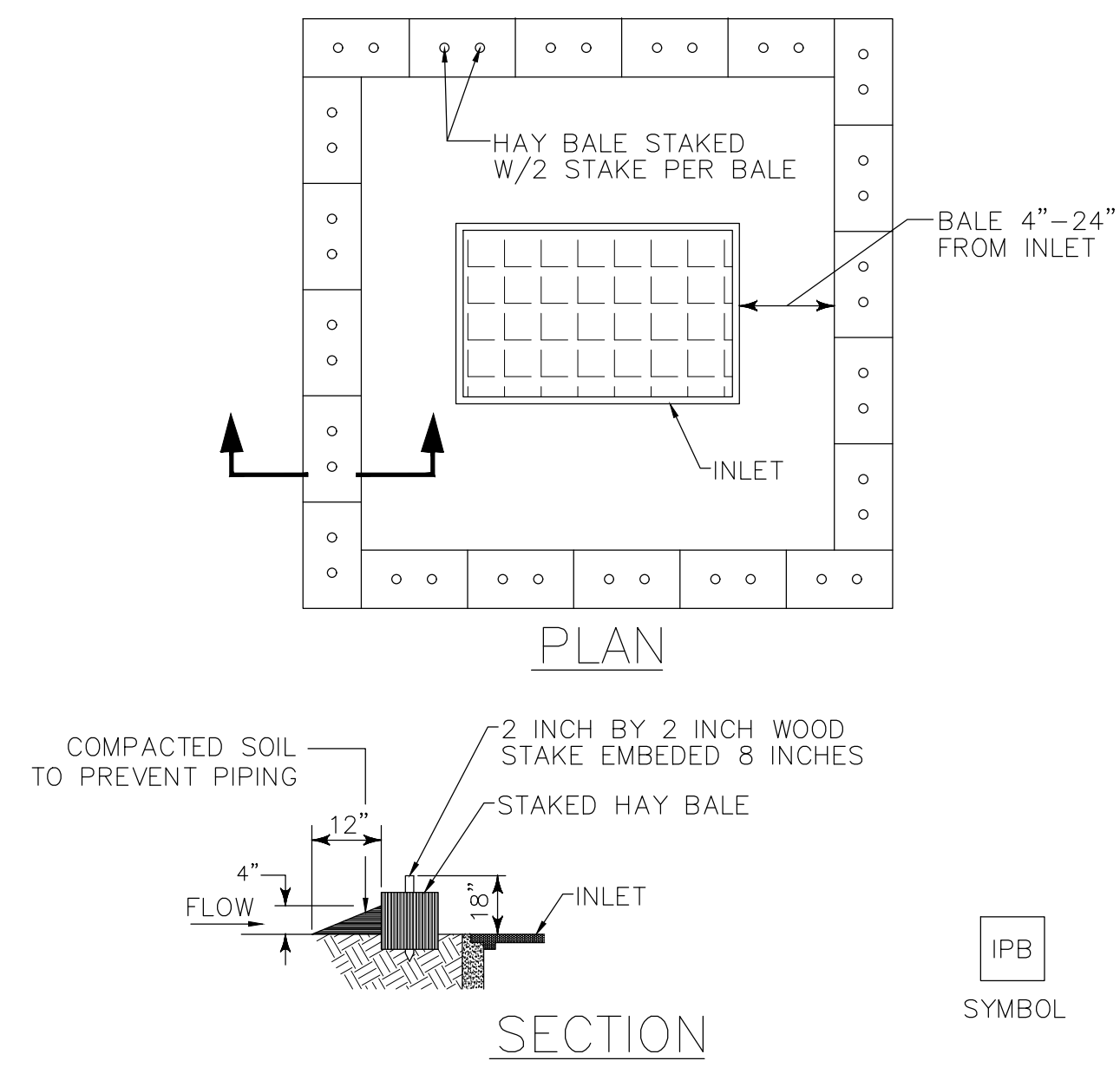
CONSTRUCTION NOTES:  
SEE SPECIFICATION SECTION NO. 02361-SILT FENCES.

**SILT FENCE**  
N.T.S.

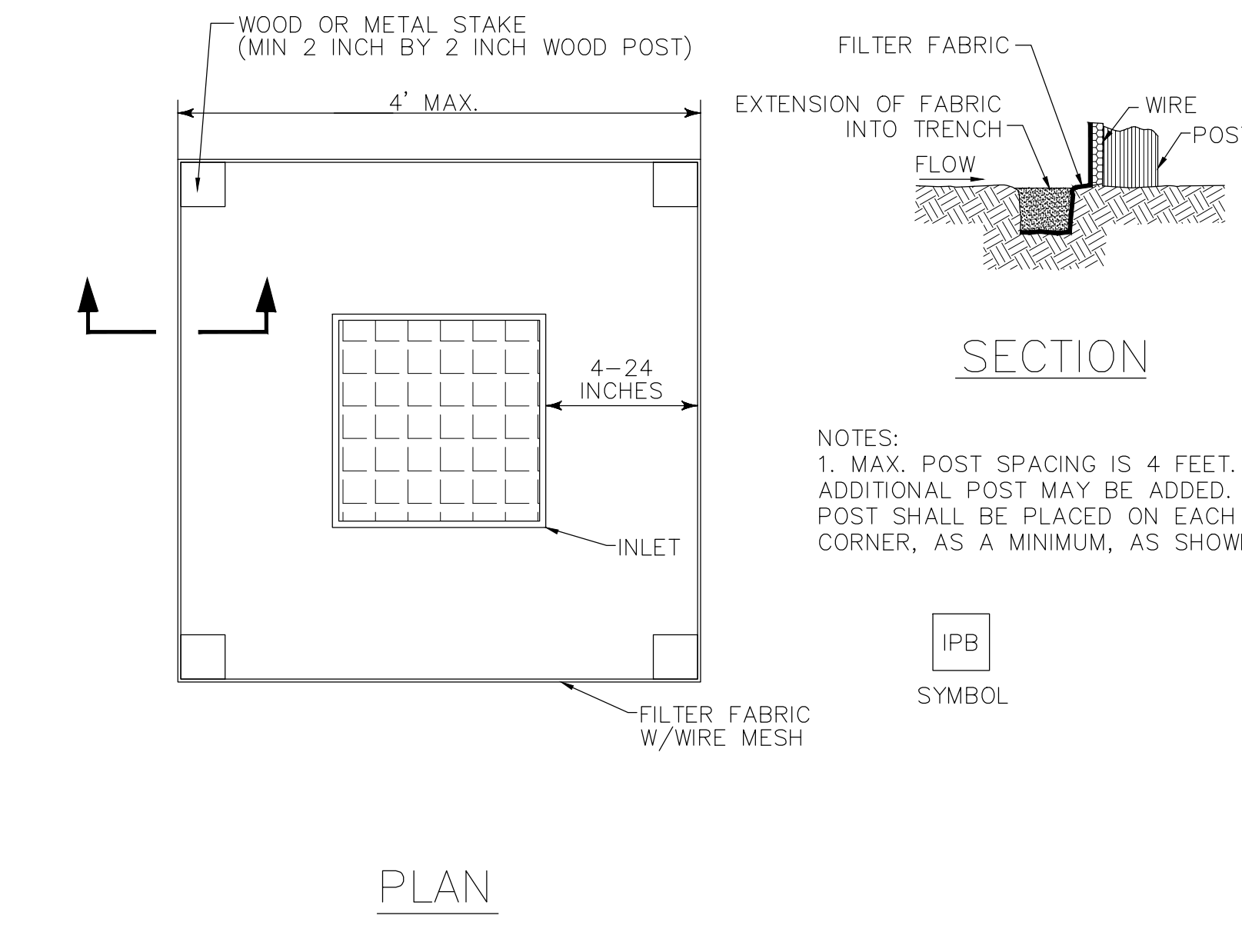


CONSTRUCTION NOTES:  
1. SEE SPECIFICATION SECTION NO. 02365  
-STABILIZED CONSTRUCTION ACCESS.

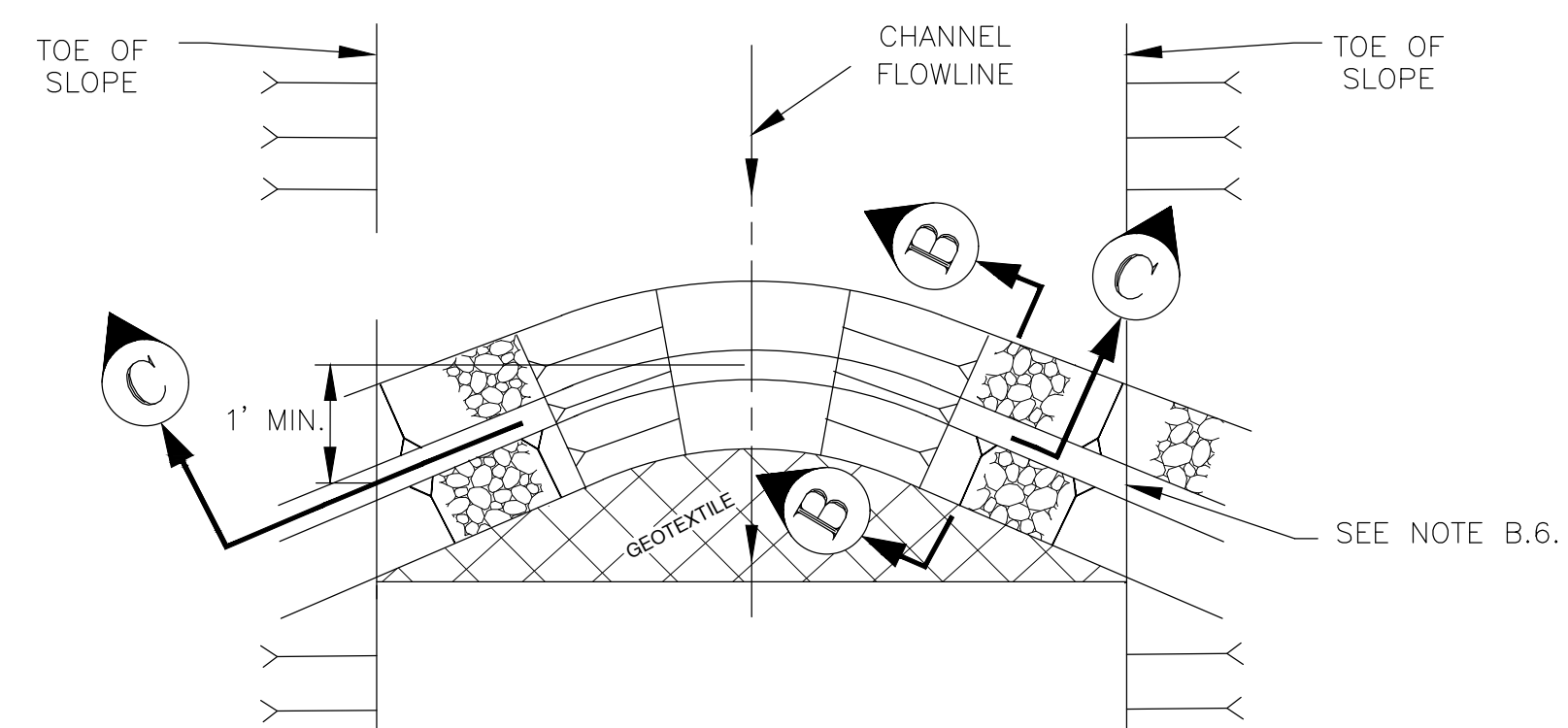
**STABILIZED CONSTRUCTION ACCESS**  
N.T.S.



**HAY BALE INLET SEDIMENT FILTER**  
N.T.S.



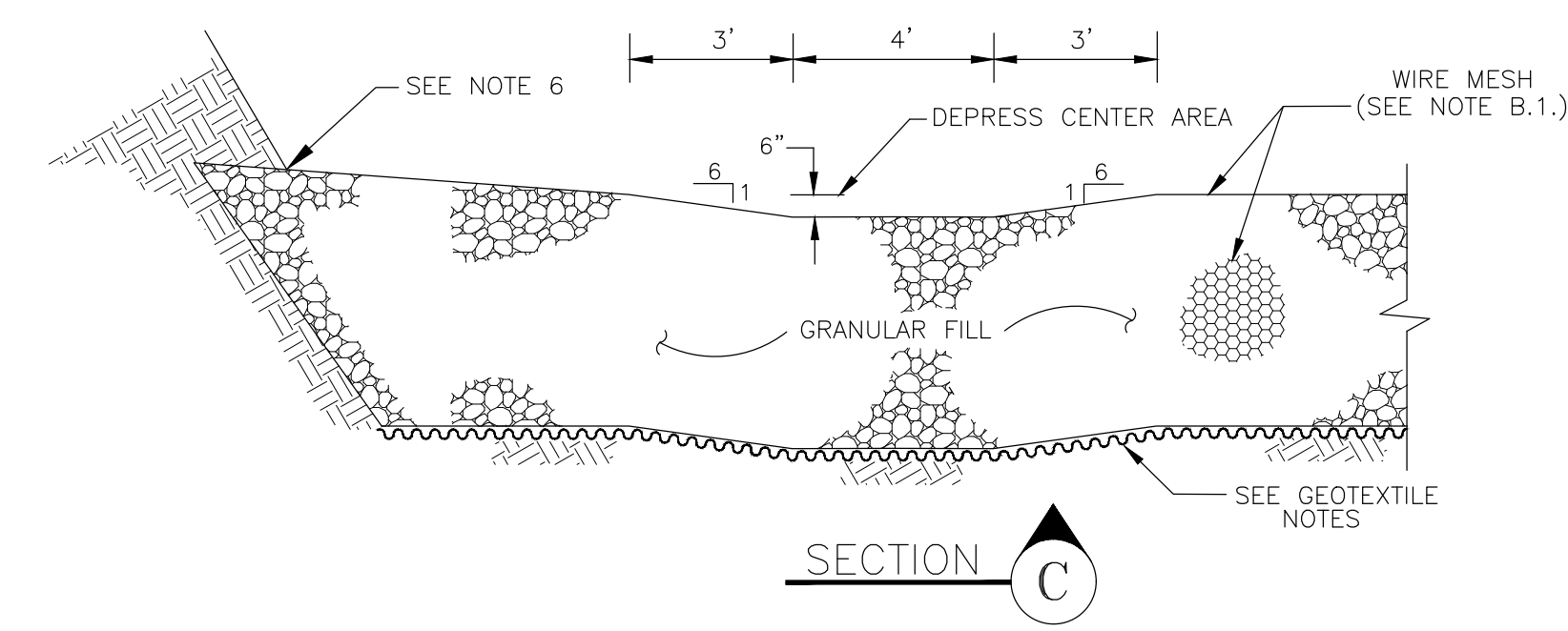
**SILT FENCE INLET SEDIMENT FILTER**  
N.T.S.



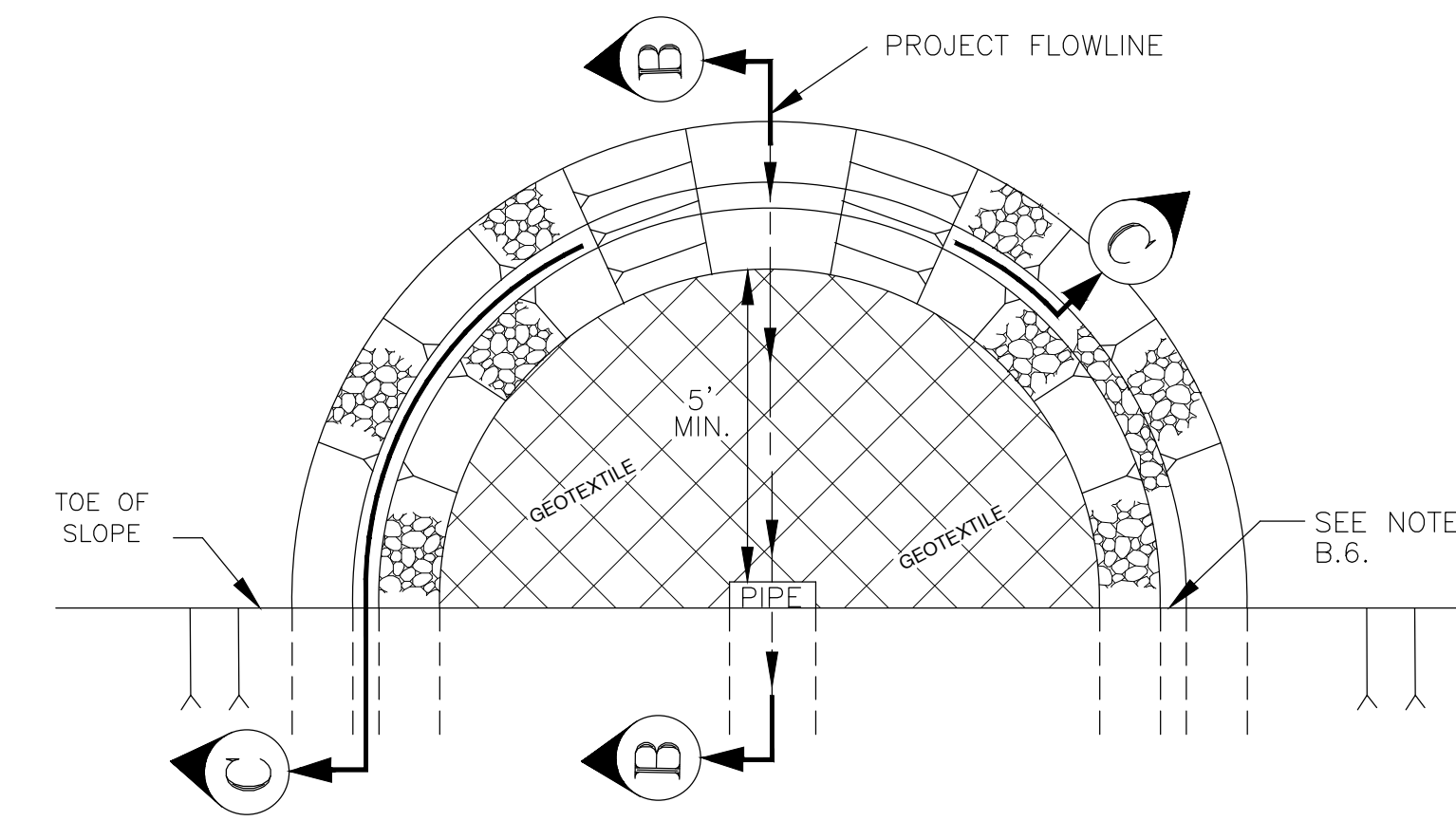
**IN-CHANNEL FILTER DAM PLAN**

FILTER DAM NOTES:

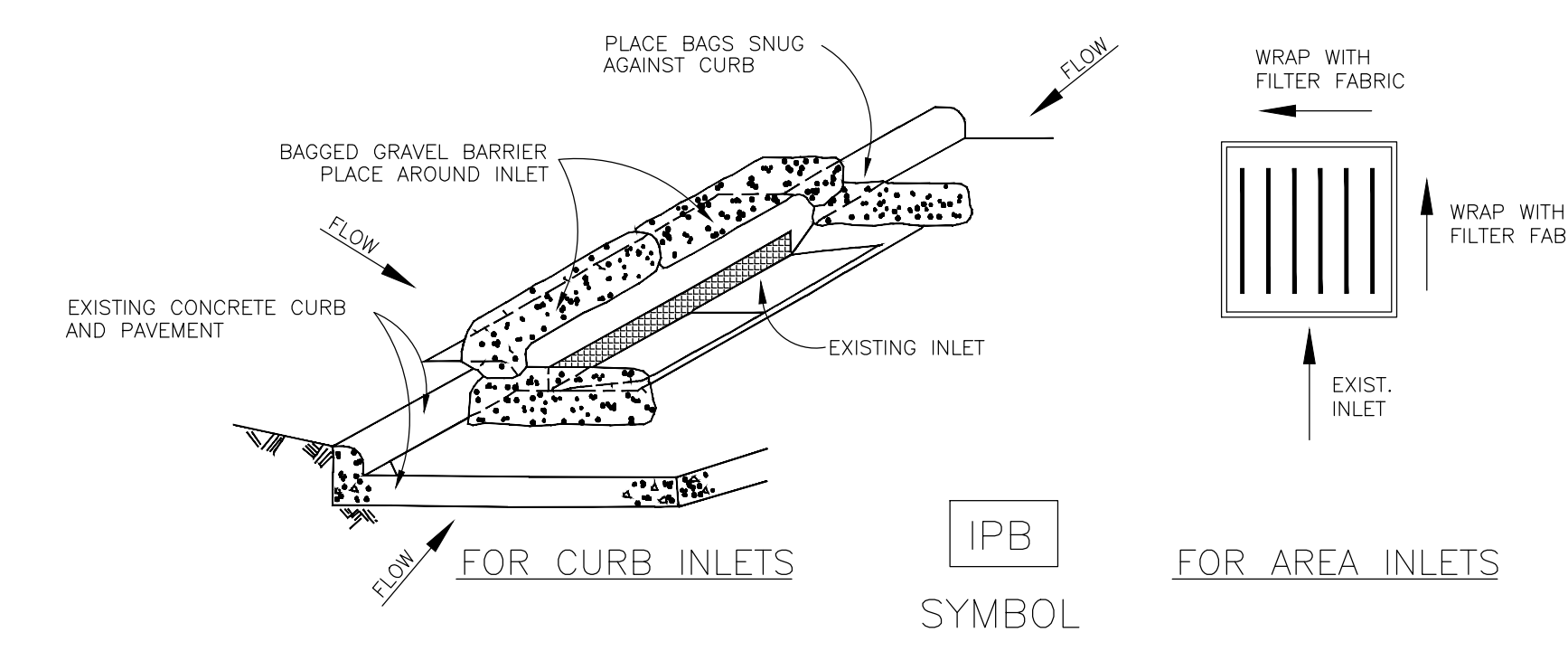
- A. TYPES OF FILTER DAMS
  1. TYPE 1 (NON-REINFORCED)
    - a. HEIGHT - 18-24 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - b. TOP WIDTH - 2 FEET (MINIMUM).
    - c. SLOPES - 2:1 (MAXIMUM).
  2. TYPE 2 (REINFORCED)
    - a. HEIGHT - 18-36 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - b. TOP WIDTH - 2 FEET (MINIMUM).
    - c. SLOPES - 2:1 (MAXIMUM).
  3. TYPE 3 (REINFORCED)
    - a. HEIGHT - 36-48 INCHES. MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - b. TOP WIDTH - 2 FEET (MINIMUM).
    - c. SLOPES - 3:1 (MAXIMUM).
  4. TYPE 4 (GABION)
    - a. HEIGHT - 30 INCHES (MINIMUM). MEASURE VERTICALLY FROM EXISTING GROUND TO TOP OF FILTER DAM.
    - b. TOP WIDTH - 2 FEET (MINIMUM).
    - c. SLOPES - 3:1 (MAXIMUM).
  5. TYPE 5. AS SHOWN ON THE PLANS.
- B. CONSTRUCT FILTER DAMS ACCORDING TO THE FOLLOWING CRITERIA UNLESS SHOWN OTHERWISE ON THE PLANS.
  1. TYPE 2 AND 3 FILTER DAMS. SECURE WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1 INCH DIAMETER HEXAGONAL OPENINGS.
  2. GRANULAR FILL:
    - a. PLACE ON MESH TO HEIGHT AND SLOPES SHOWN ON PLANS OR AS SPECIFIED BY THE ENGINEER.
    - b. 3-5 INCHES FOR ROCK FILTER DAM TYPES 1,2, AND 4 AND 4-8 INCHES FOR ROCK FILTER DAM TYPE 3. REFER TO GRANULAR FILL IN SPECIFICATION SECTION NO. 02378-RIPRAP AND GRANULAR FILL.
  3. WIRE MESH: FOLD AT UPSTREAM SIDE OVER GRANULAR FILL AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS.
  4. IN STREAMS: SECURE OR STAKE MESH TO STREAM BED PRIOR TO AGGREGATE PLACEMENT.
  5. SEE SPECIFICATION SECTION NO. 02364-FILTER DAMS.
  6. EMBED ONE FOOT MINIMUM INTO SLOPE AND RAISE ONE FOOT HIGHER THAN CENTER OF DEPRESSED AREA AT SLOPE.



**FILTER DAM**



**FILTER DAM AT DETENTION BASIN OUTFALL PIPE PLAN**



- GENERAL NOTES:
1. BAGS OR WATTLES CAN BE USED FOR THIS APPLICATION.
  2. PROVIDE WOVEN OR UNWOVEN GEOTEXTILE FILTER FABRIC FOR BAGS.
  3. PROVIDE COARSE GRAVEL AND AGGREGATE MIX FOR FILL MATERIAL FOR BAGS. USE ONLY PARTICLES CONSISTING OF CLEAN, HARD, DURABLE MATERIALS FREE FROM ADHERENT COATINGS, SALT, ALKALI, DIRT, CLAY, LOAM, SHALE, SOFT OR FLAKY MATERIALS, OR ORGANIC AND INJURIOUS MATTER.
  4. REMOVE SEDIMENT DEPOSIT WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-THIRD THE HEIGHT OF THE BARRIER.

**INLET PROTECTION BARRIERS FOR STAGE II INLETS BAGGED GRAVEL BARRIER**

|             |            |
|-------------|------------|
| PROJECT NO. | 201936     |
| DATE:       | 11/12/2019 |
| DRAWN       | SJM        |
| CHECKED     | DV         |

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| DATE       | ISSUE            |
| 11/12/2019 | FOR CONSTRUCTION |





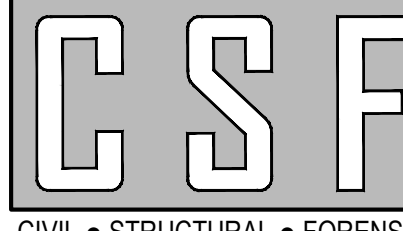
**FLOODPLAIN INFORMATION**

THIS TRACT LIES IN FLOOD ZONE(S); FLOODWAY ZONE AE, ZONE AE, ZONE VE, AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) NO. 48201C1085M DATED JANUARY 06, 2017 (FLOODPLAIN INFORMATION OBTAINED FROM TOPOGRAPHIC SURVEY PERFORMED BY OTHERS)

**BENCHMARK INFORMATION**

TBM "B" - "X" CUT IN CONCRETE FOUND ON TOP OF WEST END OF 1 FOOT WIDE CONCRETE HEADWALL 7 FEET EAST OF THE NORTHWEST PROPERTY CORNER. ELEVATION = 9.69 FEET.

CONSULTANTS  
CIVIL & STRUCTURAL

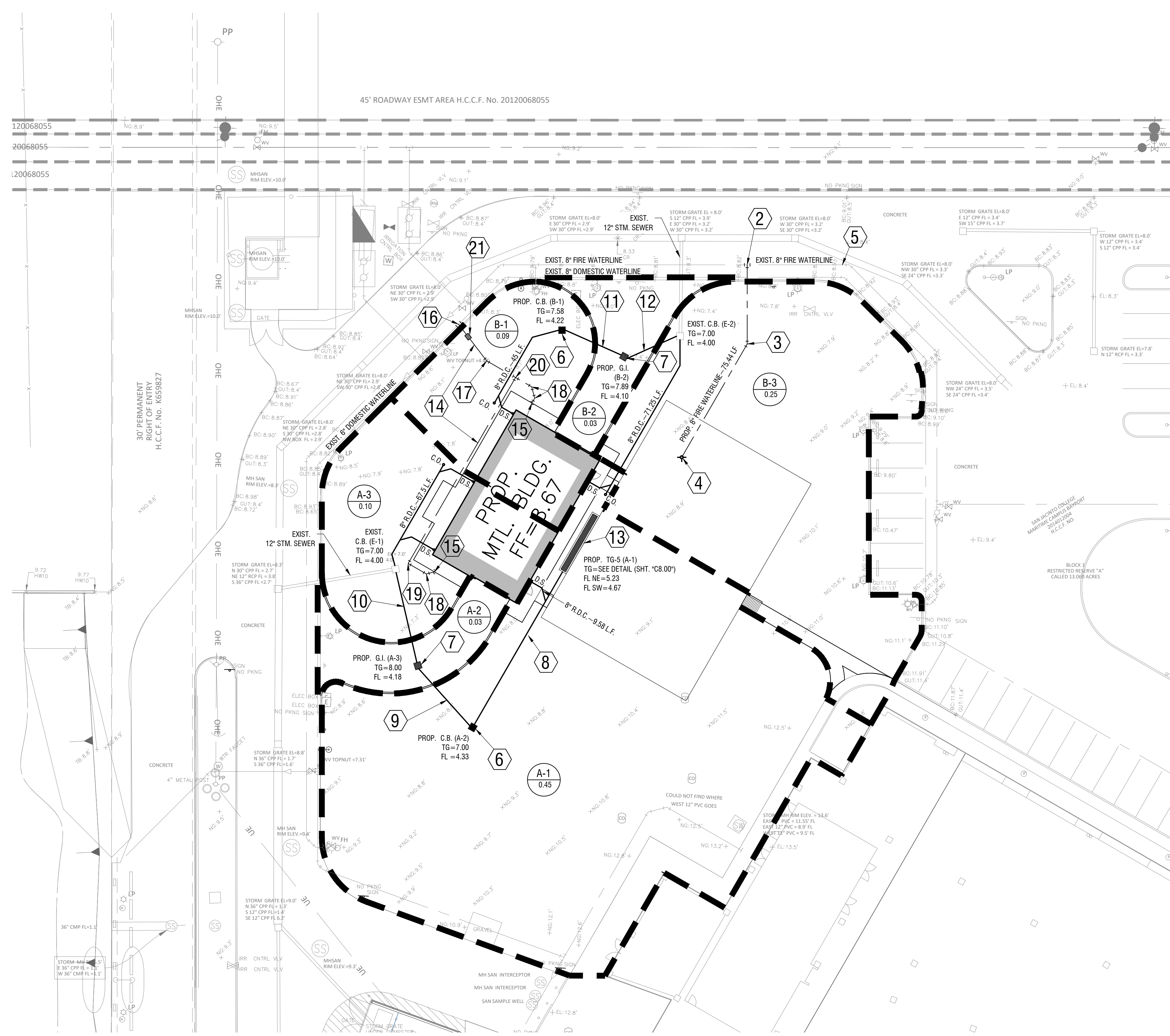


CIVIL • STRUCTURAL • FORENSIC  
ENGINEERING & SURVEYING  
11301 FALLBROOK DR., SUITE 320  
HOUSTON, TX. 77065  
832678-2110 FAX-832678-2115  
TBP# FIRM NO. F-4395  
CSF PROJ. 4007

MEP  
L.T.Y. Engineers, PLLC  
738 Highway 6 South Suite 615  
Houston, Texas 77079  
Tel: 281.945.8888  
Fax: 281.945.8889



**MARITIME EXPANSION FIRE TRAINING CENTER**  
SAN JACINTO COLLEGE  
3700 Old Hwy 146 La Porte, TX 77571



**DRAINAGE, DRAINAGE AREA MAP & UTILITY PLAN**  
SCALE: 1"=20'

**FIRE WATER**

- FIRE PROTECTION LINES SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH GOVERNING AGENCY PLUMBING CODE AND THE NATIONAL FIRE PROTECTION ASSOCIATION RULES AND REGULATIONS 13 & 14.
- PIPE SHALL BE IN COMPLIANCE WITH AWWA C-900 PVC PRESSURE PIPE CLASS 150 AND DR18. PIPE SHALL BEAR THE NSF SEAL OF APPROVAL.
- PIPE FITTINGS SHALL BE MECHANICAL JOINT, COMPACT FITTING, PER AWWA C-153, PRESSURE RATED AT 350 PSI, FITTINGS SHALL BE CEMENT INSIDE AND ASPHALT COATED OUTSIDE.
- ALL CONCRETE THRUST BLOCKS AND ANCHORAGE TO BE IN ACCORDANCE WITH NFPA NO. 24, 1995 EDITION. CONCRETE THRUST BLOCKS ARE SATISFACTORY WHERE SOILS SUITABLE, OTHERWISE PIPE CLAMPS AND TIE RODS, LOCKED MECHANICAL OR PUSH-ON JOINT, MECHANICAL OR UTILIZING SET SCREW, RETAINER GLANDS, OR OTHER APPROVED METHODS SHALL BE USED. THE TYPE OF PIPE AND SOIL CONDITIONS DETERMINE THE METHOD.
- FIRE LINE SHALL HAVE A MINIMUM COVER OF 36"
- A LICENSED SPRINKLER CONTRACTOR SHALL INSTALL THE EXTERIOR FIRE LINE. THE SYSTEM SHALL BE HYDROSTATICALLY TESTED AT 200 PSI FOR 3 HOURS PRIOR TO ACCEPTANCE. TEST SHALL BE WITNESSED BY OWNER'S REPRESENTATIVE AND LOCAL AUTHORITY HAVING JURISDICTION.
- 5'-0" REQUIREMENT-WATER LINE MAY NOT RUN MORE THAN 5 FT. FROM EXTERIOR WALL TO LOCATION OF RISER SPIGOT. 1 FITTING ONLY IS PERMITTED BELOW SLAB. PVC MUST STOP 5' FROM BUILDING SLAB.
- TAMPER SWITCHES-ABOVE GROUND VALVES (PIV'S) MUST HAVE A TAMPER SWITCH. VAULT VALVES-VALVES IN VAULT BELOW GROUND MAY BE SUPERVISED BY CHAIN & LOCK SUCH AS THE 2ND VALVE OF THE BFP.

**WATER**

- ALL WATER MAINS SHALL BE CONSTRUCTED AND TESTED IN ACCORDANCE WITH GOVERNING AGENCY STANDARDS AND REQUIREMENTS.
- WATER LINE CONSTRUCTION SHALL COMPLY WITH THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY RULES AND REGULATIONS FOR PUBLIC WATER SYSTEMS.
- DOMESTIC WATER SERVICE LINES SHALL HAVE A MINIMUM COVER OF 24 INCHES.
- CONCRETE THRUST BLOCKS SHALL BE PROVIDED FOR ALL TEES, BENDS AND VALVES.
- PIPE MATERIAL SHALL BE PVC PIPE CONFORMING TO AWWA C-900, SDR-18 CLASS 150 FOR 4-INCH AND LARGER PIPE.
- ALL WATER LINES, AFTER INSTALLATION, SHALL BE THOROUGHLY DISINFECTED ACCORDING TO AWWA SPECIFICATIONS C-651 AND THEN FLUSHED BEFORE BEING PLACED INTO SERVICE. TEST WATER TO MEET THE REQUIREMENTS OF THE TEXAS DEPT. OF HEALTH.

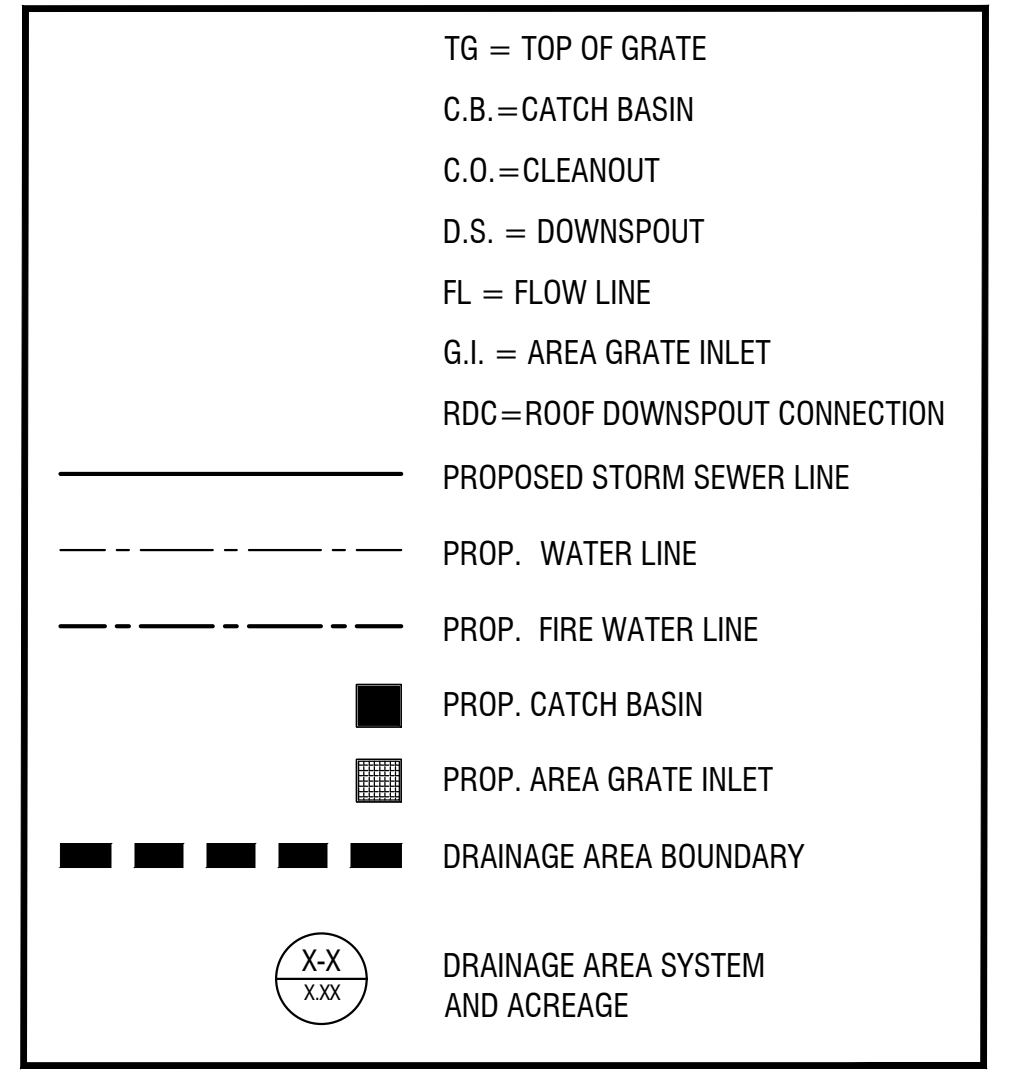
**STORM SEWER**

- CONTRACTOR SHALL MAINTAIN A MINIMUM OF 12" VERTICAL CLEARANCE BETWEEN STORM SEWER AND OTHER EXISTING OR NEW UTILITIES PIPING.
- 6-INCH TO 12-INCH STORM SEWER SHALL BE PVC SDR-35 PER ASTM 3034. PVC JOINTS SHALL BE PUSH ON, FLEXIBLE ELASTOMERIC GASKET CONFORMING TO ASTM D-3212.
- STORM SEWER PIPES 18-INCH AND LARGER SHALL BE HDPE POLYETHYLENE PIPE WITH A SMOOTH INTERIOR WALL. PIPE(S) SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS UNLESS NOTED OTHERWISE.
- PIPE CROSSINGS OR PIPES INSTALLED IN STREET R.O.W. SHALL BE REINFORCED CONCRETE PIPE PER ASTM C-76, CLASS III. ALL SIZES OF CONCRETE PIPE SHALL BE INSTALLED WITH APPROVED RUBBER GASKET JOINTS PER ASTM.
- BACKFILL OF SEWER TRENCH TO BE COMPACTED TO 95% STANDARD PROCTER DENSITY AT OPTIMUM MOISTURE IN 6" LIFTS. INSTALL PIPE FROM LOW END IN AN UPSTREAM DIRECTION.
- ALL GRATE INLETS SHALL HAVE TRAFFIC DUTY CAST-IRON GRATES TO MEET HS-20 LOADING.
- STORM SEWER BEDDING AND BACKFILL, ADJOINING INLETS AND MANHOLES SHALL BE CEMENT STABILIZED SAND IN ACCORDANCE WITH THE DETAILS.
- INLETS IN THE PAVED AREAS ARE TO BE PLACED ALIGNED WITH THE CENTERLINE OF DRIVING AISLES OR AS SHOWN ON CONSTRUCTION DOCUMENTS.
- CONTRACTOR TO FIELD VERIFY LOCATION & ELEVATION OF EXISTING UTILITY LINES PRIOR TO CONSTRUCTION.
- FIELD ADJUST ROOF DRAIN LINE CONNECTIONS AS NEEDED TO ENSURE POSITIVE DRAINAGE. MAINTAIN 18" COVER IN ALL YARD AREAS WITH ROOF DRAIN LINE CONNECTIONS.

**KEYED SCHEDULE**

- 1 PROP. 8" FIRE WATER LINE--69.1 L.F.
- 2 8"x8" TEE
- 3 8" x 30" BEND
- 4 PROPOSED FIRE HYDRANT (REF. SHT. "C8.00")
- 5 EXIST. 8-INCH PRIVATE FIRE WATERLINE
- 6 PROP. STM. SEW. CATCH BASIN (REF. SHT. "C8.00")
- 7 PROP. STM. SEW. GRATE INLET (REF. SHT. "C8.00")
- 8 PROP. 12" STM. SWR.-- 63.25 LF. @ 0.54%
- 9 PROP. 12" STM. SWR.-- 27.31 LF. @ 0.55%
- 10 PROP. 12" STM. SWR.-- 33.07 LF. @ 0.54%
- 11 PROP. 12" STM. SWR.-- 21.82 LF. @ 0.55%
- 12 PROP. 12" STM. SWR.-- 19.43 LF. @ 0.51%
- 13 PROP. STM. SEW. TRENCH DRAIN (REF. SHT. "C8.00")
- 14 PROP. 1-INCH WATER LINE--130 L.F. (REF. "P1.01" PLUMBING PLAN)
- 15 REF. MEP FOR CONTINUATION
- 16 TIE-INTO EXISTING 6-INCH WATER LINE
- 17 1" X 22.5" BEND
- 18 1" X 45" BEND
- 19 1" X 90" BEND
- 20 1" X 1" TEE
- 21 1" RPZ BACKFLOW PREVENTOR

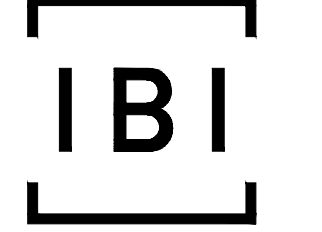
**LEGEND**



**STORM SEWER CALCULATIONS**

Q=CIA  
Where:  
C = Runoff Coefficient  
I = Intensity (in/hr)  
A = Area (acres)  
 $T_c = 10A^{.775} + 15$   
2 YEAR STORM FREQUENCY:  
I = 75.01  
C = 0.80  
n = 0.011

| MH From           | MH To       | Sub-Area (acres) | Sub-Runoff Coefficient | Total Area (acres) | CA   | Intensity (in/hr) | Sum of Flows (cfs) | Time of Conc. (min) | Reach Length (feet) | Diameter Pipe Used (inch) | Flowline Elevation Upstream (ft) | Flowline Elevation Downstream (ft) | Slope (%) | Manning's 'n' | Capacity (cfs) | Design Velocity (ft/s) | Actual Velocity (ft/s) |
|-------------------|-------------|------------------|------------------------|--------------------|------|-------------------|--------------------|---------------------|---------------------|---------------------------|----------------------------------|------------------------------------|-----------|---------------|----------------|------------------------|------------------------|
| <b>SYSTEM "A"</b> |             |                  |                        |                    |      |                   |                    |                     |                     |                           |                                  |                                    |           |               |                |                        |                        |
| A1                | A2          | 0.45             | 0.80                   | 0.45               | 0.36 | 3.50              | 1.27               | 23.70               | 63.25               | 12.00                     | 4.87                             | 4.33                               | 0.54      | 0.01          | 3.10           | 3.94                   | 1.62                   |
| A2                | A3          |                  | 0.80                   | 0.45               | 0.36 | 4.29              | 1.56               | 15.00               | 27.31               | 12.00                     | 4.33                             | 4.18                               | 0.55      | 0.01          | 3.13           | 3.98                   | 1.98                   |
| A3                | E-1 (EXIST) | 0.03             | 0.80                   | 0.59               | 0.47 | 3.75              | 1.77               | 20.51               | 33.07               | 12.00                     | 4.18                             | 4.00                               | 0.54      | 0.01          | 3.11           | 3.97                   | 2.25                   |
| <b>SYSTEM "B"</b> |             |                  |                        |                    |      |                   |                    |                     |                     |                           |                                  |                                    |           |               |                |                        |                        |
| B1                | B2          | 0.09             | 0.80                   | 0.09               | 0.07 | 3.66              | 0.26               | 21.54               | 21.82               | 12.00                     | 4.22                             | 4.10                               | 0.55      | 0.01          | 3.13           | 3.99                   | 0.33                   |
| B2                | E-2 (EXIST) | 0.04             | 0.80                   | 0.38               | 0.30 | 3.74              | 1.13               | 20.60               | 19.43               | 12.00                     | 4.10                             | 4.00                               | 0.51      | 0.01          | 3.03           | 3.86                   | 1.44                   |



**TEXAS-IBI GROUP, INC.**  
455 E MEDICAL CENTER BLVD, STE 500  
P.O. BOX 891209  
HOUSTON, TEXAS 77289  
281.286.6605

|             |                  |
|-------------|------------------|
| PROJECT NO. | 201936           |
| DATE:       | 11/12/2019       |
| DRAWN       | SJM              |
| CHECKED     | DV               |
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| 11/12/2019  | FOR CONSTRUCTION |

**C5.00**

DRAINAGE, DRAINAGE AREA MAP & UTILITY PLAN




**FLOODPLAIN INFORMATION**

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**BENCHMARK INFORMATION**

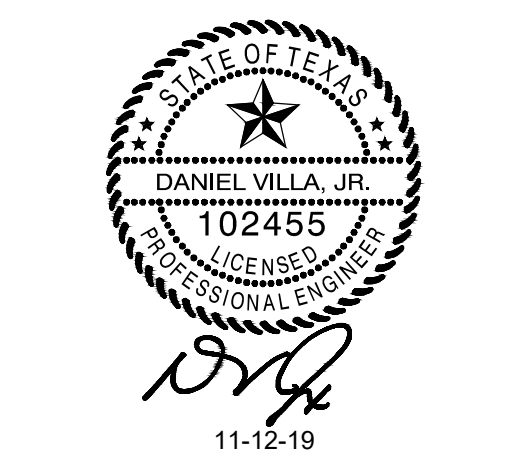
TBM "B" - "X" CUT IN CONCRETE FOUND ON TOP OF WEST END OF 1 FOOT WIDE CONCRETE HEADWALL 7 FEET EAST OF THE NORTHWEST PROPERTY CORNER. ELEVATION = 9.69 FEET.

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CIVIL & STRUCTURAL



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11301 FALLBROOK DR., SUITE 320  
HOUSTON, TX, 77065  
832678-2110 FAX: 832678-2115  
TYPE FIRM NO. F-4395  
CSF PROJ. 4007

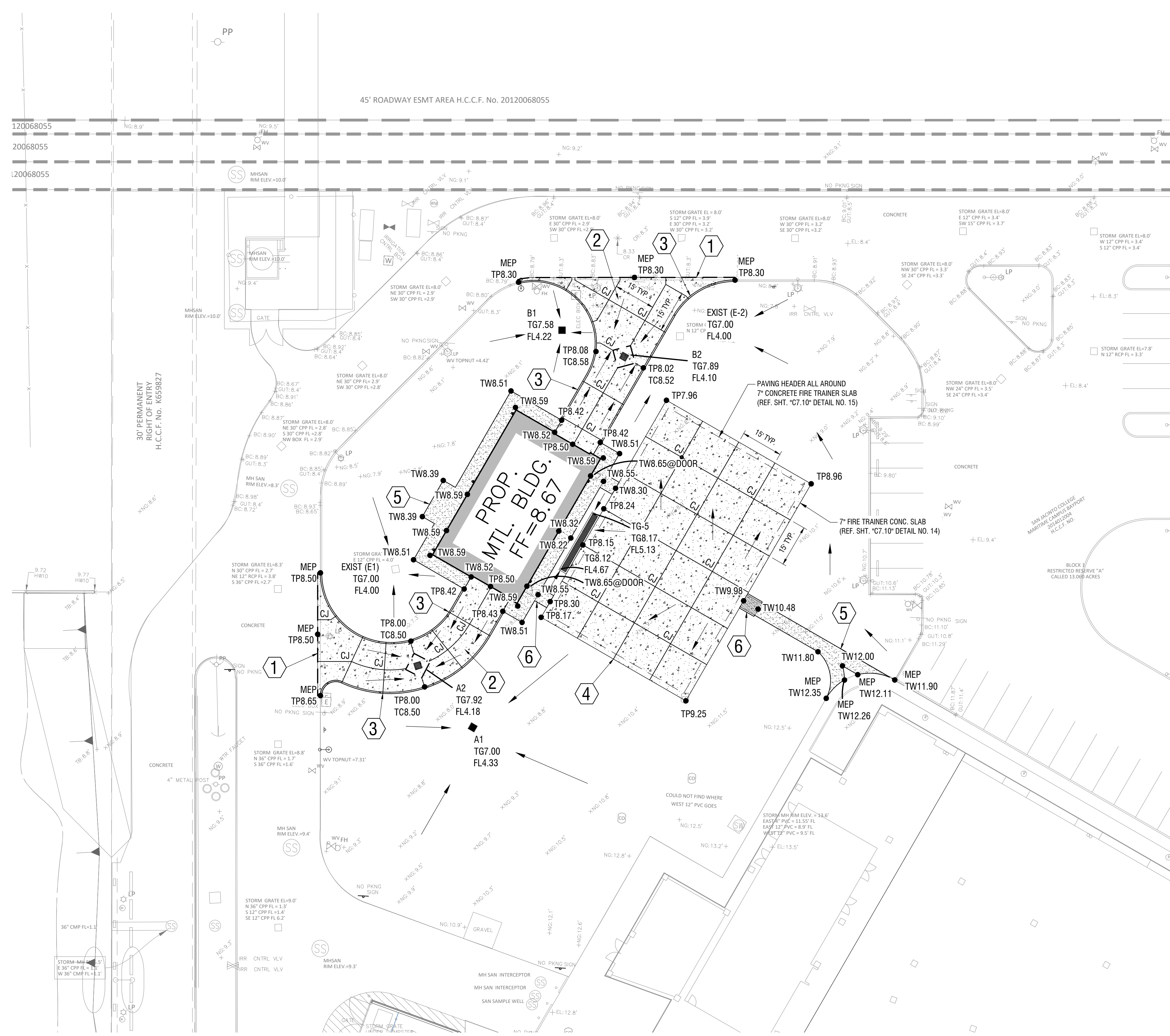
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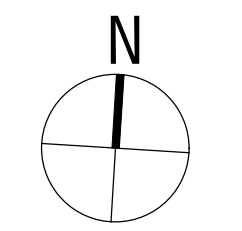


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455 E MEDICAL CENTER BLVD, STE 500  
P.O. BOX 891209  
HOUSTON, TEXAS 77289  
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**PAVING CONSTRUCTION JOINTS**

- CONTRACTOR TO PLAN EXACT LOCATION INCLUDING TIMING OF CONSTRUCTION JOINT(S) PRIOR TO START OF CONSTRUCTION.
- CONSTRUCTION JOINTS (NOT SHOWN IN PLAN) SHALL BE REQUIRED AND PLACED IN A STRATEGIC LOCATION AT THE END OF THE DAYS WORK AND WHERE CONCRETE PLACEMENT IS STOPPED OR INTERRUPTED FOR A PERIOD SUCH THAT THE PREVIOUSLY PLACED CONCRETE HAS SET AND HARDENED.
- PLACEMENT OF REINFORCEMENT THROUGH A CONSTRUCTION JOINT MAY BE NECESSARY TO ACHIEVE BOND AND PROPER LOAD TRANSFER AND RECOMMENDED WHERE PAVEMENT WILL CARRY HIGHER TRAFFIC LEVELS AND WHERE HEAVY TRUCK TRAFFIC IS EXPECTED. IF THE DESIGN THICKNESS IS LESS THAN 8-INCHES, DOWELS ARE NOT NEEDED. IF THE DESIGN THICKNESS IS 8-INCHES OR GREATER, LARGELY DICTATED BY TRUCK TRAFFIC, THEN DOWELS ARE OFTEN REQUIRED TO REDUCE SLAB PUMPING AND FALTING. (ACI 325.12R-01, SEC. 4.1.1.2 DOWELED JOINTS). SIZE OF DOWELS SHOULD FOLLOW RECOMMENDATIONS ACCORDING TO PAVEMENT THICKNESS AS OUTLINED IN SECTION. 4.1.1.2.
- CONSTRUCTION JOINTS SHALL BE KEYPED ON THE TWO EDGES OF THE SLAB TO PROVIDE TRANSFER OF LOADS OR TO HELP PREVENT CURLING OR WARPING OF THE TWO ADJACENT EDGES. GALVANIZED METAL KEYS ARE SOMETIMES USED, HOWEVER, A BEVELED 1 INCH BY 2 INCH STRIP, NAILED TO BULKHEADS OR FORM BOARDS, CAN BE USED IN SLABS THAT ARE AT LEAST 5 INCHES THICK TO FORM A KEY WHICH WILL RESIST VERTICAL LOADS AND MOVEMENTS. METAL DOWELS SHOULD BE USED IN SLABS OR PAVEMENTS THAT WILL CARRY HEAVY LOADS AND/OR HIGH/HEAVY TRAFFIC. DOWELS MUST BE CAREFULLY LINED UP AND PARALLEL OR THEY MAY INDUCE RESTRAINT AND CAUSE RANDOM CRACKING AT THE END OF THE DOWEL.
- REFERENCE ACI 325.12R-02 SEC. 4.2.2 TRANSVERSE CONSTRUCTION JOINTS (GUIDE FOR DESIGN OF JOINTED CONCRETE PAVEMENTS FOR STREETS AND LOCAL ROADS)
- REFERENCE ACI 330R-7 SEC. 2.7.2 CONSTRUCTION JOINTS (GUIDE FOR DESIGN AND CONSTRUCTION OF CONCRETE PARKING LOTS).
- PROVIDE EXPANSION JOINTS / ISOLATION JOINTS WHERE APPLICABLE BETWEEN SLABS, COLUMNS, WALLS, FOOTINGS AND AROUND FIXED OBJECTS/STRUCTURES SUCH AS BUILDING(S), INLETS, LIGHT POLES AND AT JUNCTIONS OF DRIVEWAYS WITH WALKS, CURBS OR OTHER OBSTRUCTIONS. DETAILS AROUND INLET STRUCTURES WILL AS REMAIN AS SHOWN. (REFERENCE ACI 325.12R-02, APPENDIX C - JOINTING DETAILS FOR PAVEMENTS AND APPURTENANCES).
- PROVIDE CONTRACTION JOINTS AND JOINT FILLING MATERIALS AS SHOWN ON PLANS AND/OR OUTLINED IN SPECIFICATIONS.
- ALL JOINT RECOMMENDATIONS, SPECIFICATIONS AND METHODS FOR PROPER JOINTING SHALL COMPLY WITH LATEST REVISION OF "GUIDE FOR DESIGN AND CONSTRUCTION OF CONCRETE PARKING LOTS" ACI 330R-01, AND "GUIDE FOR DESIGN OF JOINTED CONCRETE PAVEMENTS FOR STREETS AND LOCAL ROADS" ACI 325.12R-02.



**GRADING & PAVING PLAN**  
SCALE: 1"=20'

**KEYED SCHEDULE**

- EXIST/NEW CONCRETE JOINT (REF. SHT. "C7.10" DETAIL NO. 1)
- 7" CONCRETE PAVING (REF. SHT. "C7.10" DETAIL NO. 14)
- 6" CONCRETE CURB (REF. SHT. "C7.10" DETAIL NO. 5)
- 7" CONCRETE FIRE TRAINER SLAB (REF. SHT. "C7.10" DETAIL NO. 14 & 15)
- 4" CONCRETE WALKWAY (REF. SHT. "C7.10" DETAIL NO. 9)
- PROPOSED RAMP (REF. SHT. "C7.10" DETAIL NO. 16)

**LEGEND**

- FL = FLOW LINE
- TC = TOP OF CURB
- TG = TOP OF GRATE
- TJ = TOP OF JUNCTION BOX
- TP = TOP OF PAVEMENT
- TW = TOP OF WALK
- MEP = MATCH EXIST (VERIFY ELEV.)
- DIRECTION OF FLOW (SLOPE)
- 4" CONC. WALK PAVEMENT (REF. SHT. "C7.10" DETAIL NO. 9, & JOINT DETAIL NO. S. 6, 7 & 8) (REF. ARCH. FOR JOINT LAYOUT)
- 7" CONC. PAVEMENT (REF. SHT. "C7.10" DETAIL NO. 14)
- EXPANSION JOINT (EJ) (REF. SHT. "C7.10" DETAIL NO. 2)
- CONTROL JOINT (CJ) (REF. SHT. "C7.10" DETAIL NO. 4)

**GRADING**

- CONTRACTOR SHALL CUT AND FILL SITE AS REQUIRED TO OBTAIN FINISHED ELEVATIONS SHOWN ON PLANS. COMPACT SELECTED BACKFILL TO 95% STANDARD PROCTOR DENSITY AS PER ASTM D-698.
- YARD AREAS, SIDEWALKS AND PAVEMENT SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDING(S). FINISHED SURFACES IN ACCESSIBLE AREAS SHALL CONFORM TO THE REQUIREMENTS AMERICAN WITH DISABILITIES ACT AND TEXAS ACCESSIBILITY STANDARDS. ACCESSIBLE ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ARCHITECTURAL DRAWINGS. ALL PAVING, SIDEWALKS AND RAMPS IN ACCESSIBLE AREAS SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICANS WITH DISABILITIES ACT, TEXAS ACCESSIBILITY STANDARDS AND THE FOLLOWING:
  - PARKING AND LOADING AREAS - MAXIMUM SLOPE OF 1:50 IN ALL DIRECTIONS IN ACCESSIBLE PARKING SPACES AND AISLES.
  - ACCESSIBLE ROUTES - MAXIMUM SLOPE OF 1:20 IN THE DIRECTION OF TRAVEL AND MAXIMUM CROSS SLOPE OF 1:50
  - BUILDING ENTRANCES AND EXITS - AT ALL LOCATIONS 5% (MINIMUM) ACCESSIBLE. CONCRETE WALK WITH THE MAXIMUM SLOPE OF 1:50 IN ALL DIRECTIONS.
- CONTRACTOR SHALL GRADE THE SITE TO MATCH EXISTING GROUND AT THE LIMITS OF THE PROJECT SITE. ALL DRAINAGE ENTERING THE PROJECT AREA SHALL BE INTERCEPTED IN THE FINAL GRADE. TRANSITIONS TO EXISTING GROUND THAT ARE DIFFERENT FROM THE PLANS SHALL BE COORDINATED PRIOR TO FINAL GRADING.
- ALL AREAS WITHIN THE PROJECT SITE SHALL BE GRADED TO DRAIN TO ON-SITE STORM SEWERS.
- CONTRACTOR SHALL VERIFY ALL ELEVATIONS, DIMENSIONS AND CONDITIONS IN THE FIELD BEFORE COMMENCING ANY WORK. CONTRACTOR SHALL REPORT ANY CONFLICTS OR VARIATIONS AND RESOLVE ALL CHANGES WITH THE OWNER AND/OR ENGINEER PRIOR TO COMMENCING WORK.
- EXCAVATIONS MATERIAL SHALL BE DISPOSED OF PROPERLY.
- TOP OF WALK ELEVATIONS AT ALL DOORS (REF. PLAN)

**GEOTECHNICAL**

RECOMMENDATIONS FOR:

- CONSTRUCTION GUIDELINES
- PAVING & SUBGRADE MATERIALS
- PROCEDURES & SITE PREPARATION
- MAINTENANCE

TO BE IN CONFORMANCE WITH GEOTECHNICAL ENGINEERING STUDY PREPARED BY:  
HTS, INC. CONSULTANTS  
416 PICKERING STREET  
HOUSTON, TEXAS 77091-3312  
HTS PROJECT NO. 13-S-342  
DATED: AUGUST 28, 2013

PREPARED FOR:  
SAN JACINTO COLLEGE DISTRICT  
4624 FAIRMONT PARKWAY, SUITE 207  
PASADENA, TEXAS 77504-3398

PROJECT:  
PROPOSED SAN JACINTO COLLEGE MARITIME FACILITY, PHASE II  
HARRIS COUNTY, TEXAS

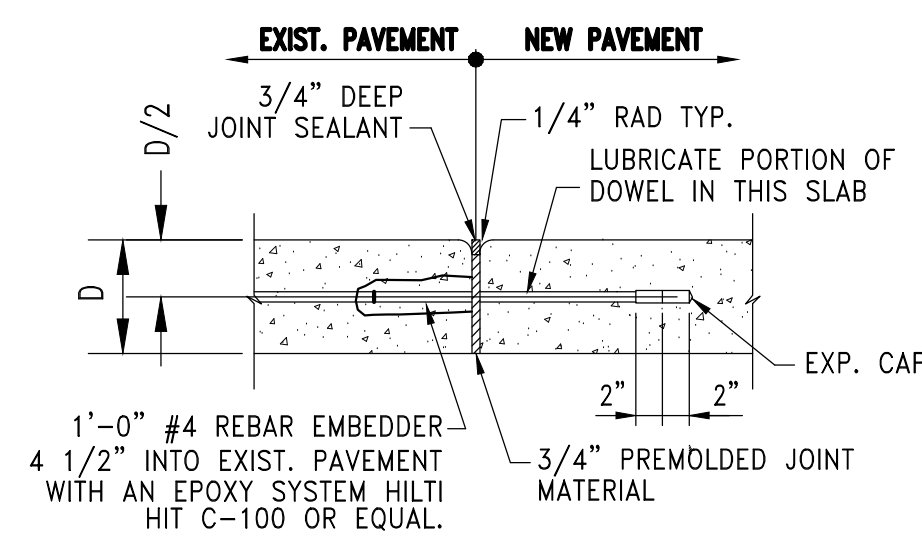


Know what's below.  
Call before you dig.

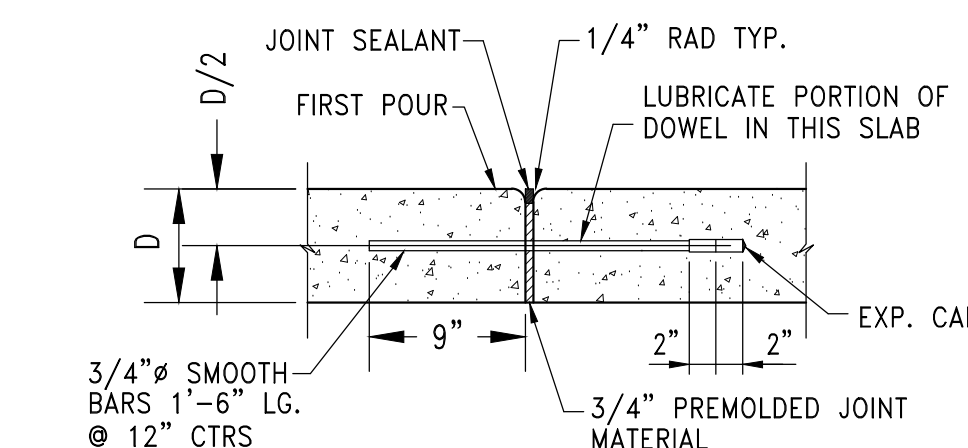
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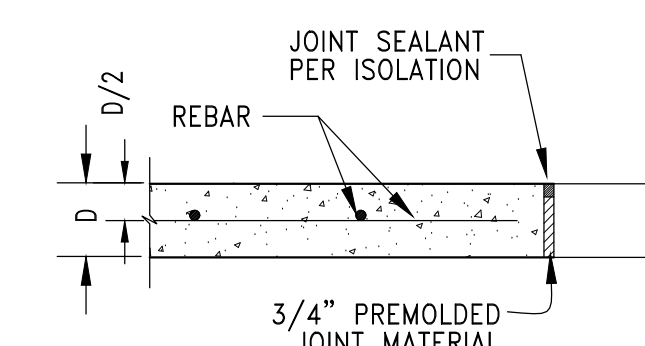
**C6.00**  
GRADING & PAVING PLAN



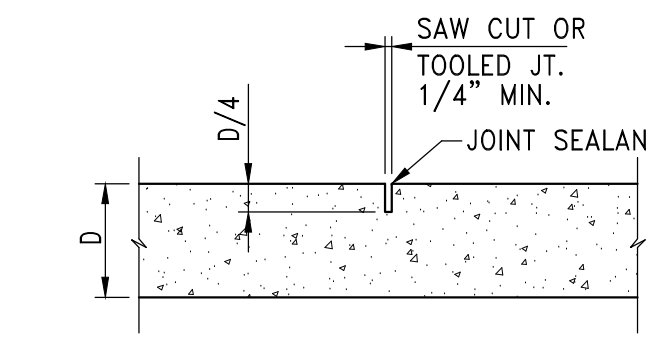
**1** EXIST / NEW EXPANSION JT.



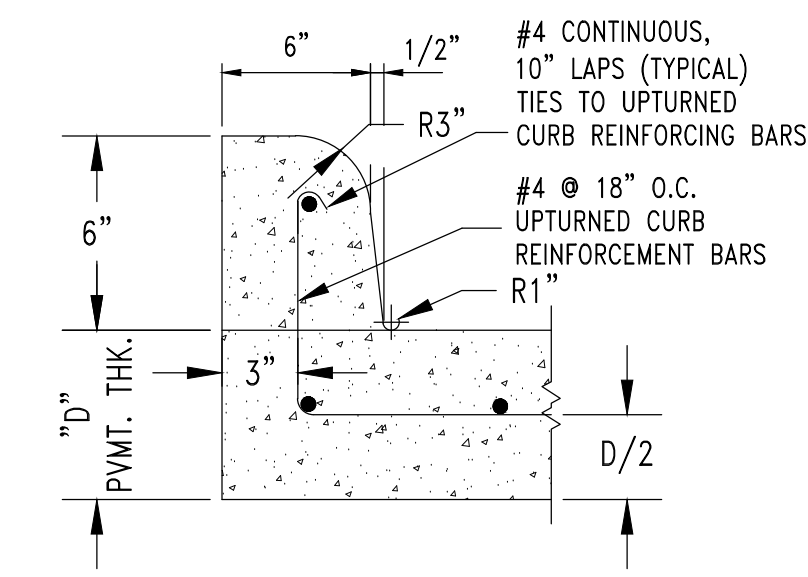
**2** EXPANSION JOINT (EJ)  
FOR DRIVE/PARKING PAVEMENT ONLY



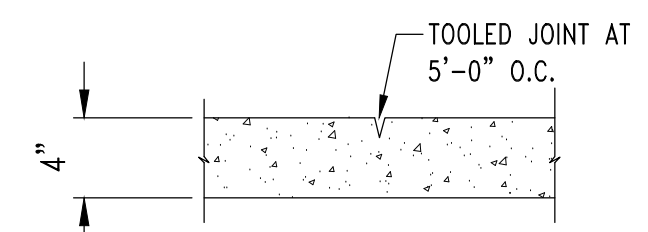
**3** ISOLATION JOINT



**4** CONTROL JOINT (CJ)  
FOR DRIVE/PARKING PAVEMENT ONLY

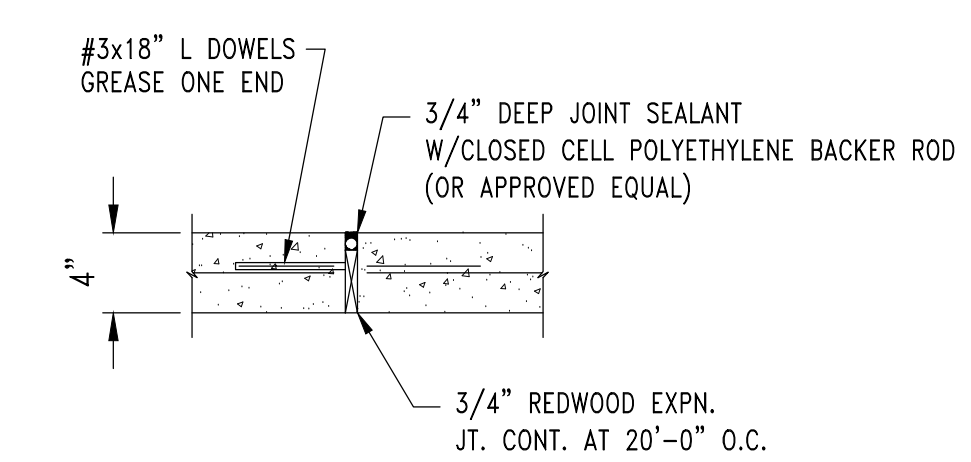


**5** CONC. CURB & PAVING DETAIL

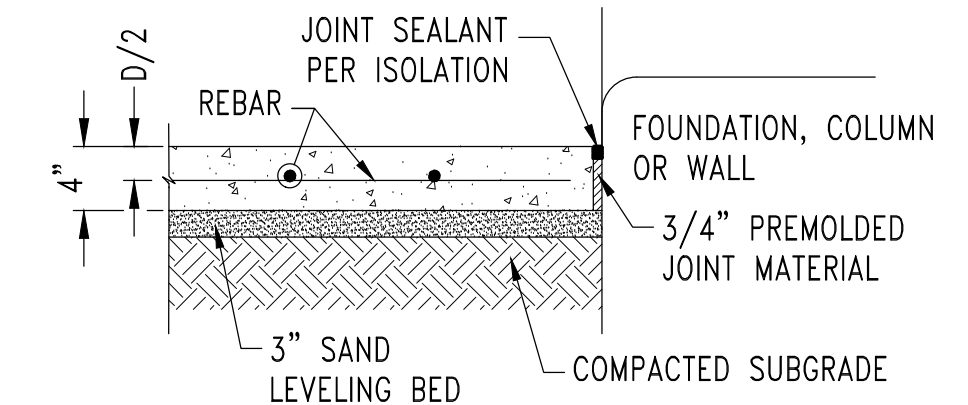


**6** WALK JOINT

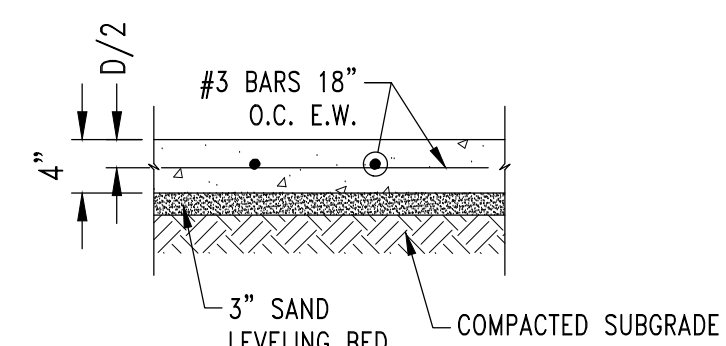
NOTE:  
SEALANT DEPTH-TO-WIDTH RATIO AT CENTER OF JOINT TO BE 1:2  
SEALANT SHALL BE A MOISTURE-CURED, SINGLE OR MULTI-COMPONENT, POLYURETHANE-BASE, NON-SAG, ELASTOMERIC SEALANT. APPLICATION AND EXPANSION/CONTRACTION CAPABILITIES SHALL DETERMINE COMPONENT SPECIFIED.



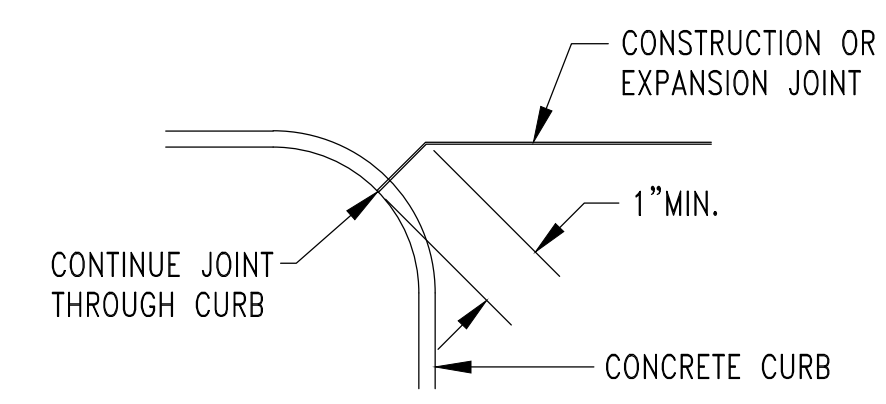
**7** WALK EXPANSION JOINT



**8** WALK ISOLATION JOINT

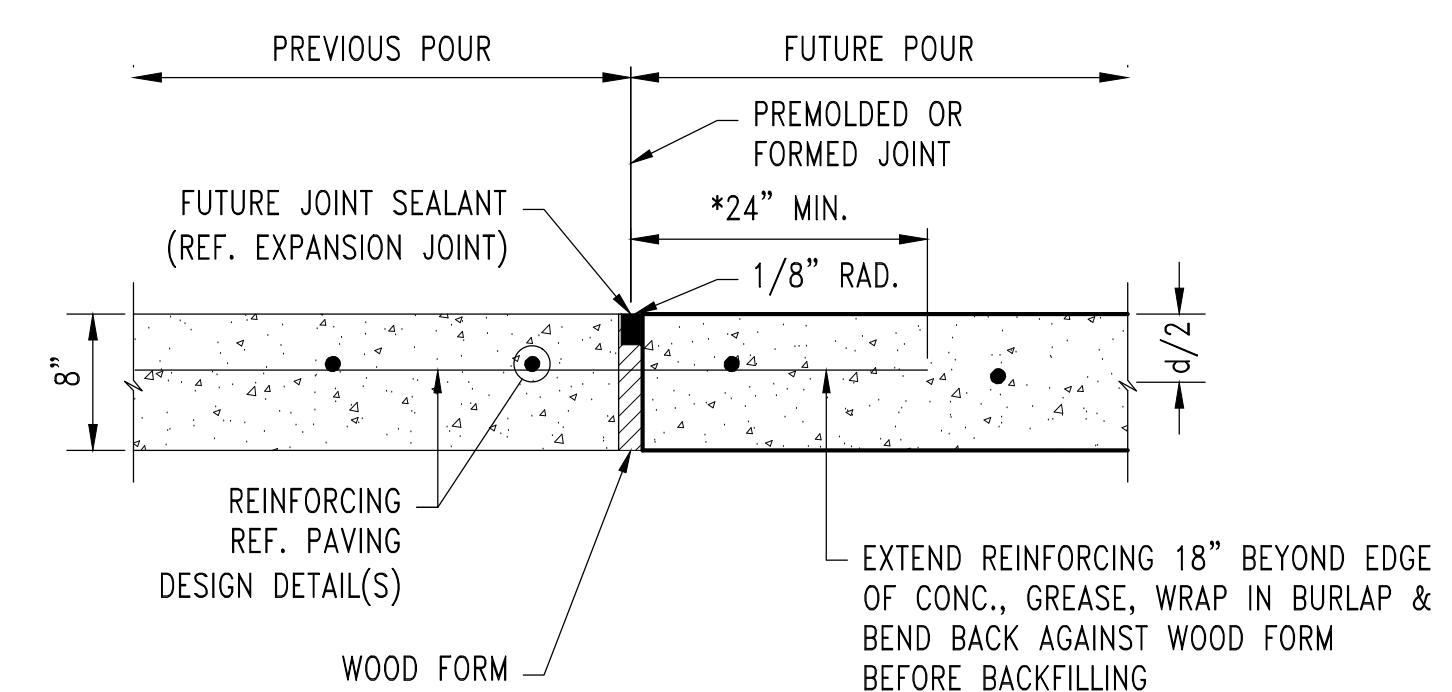


**9** 4" CONCRETE SIDEWALK



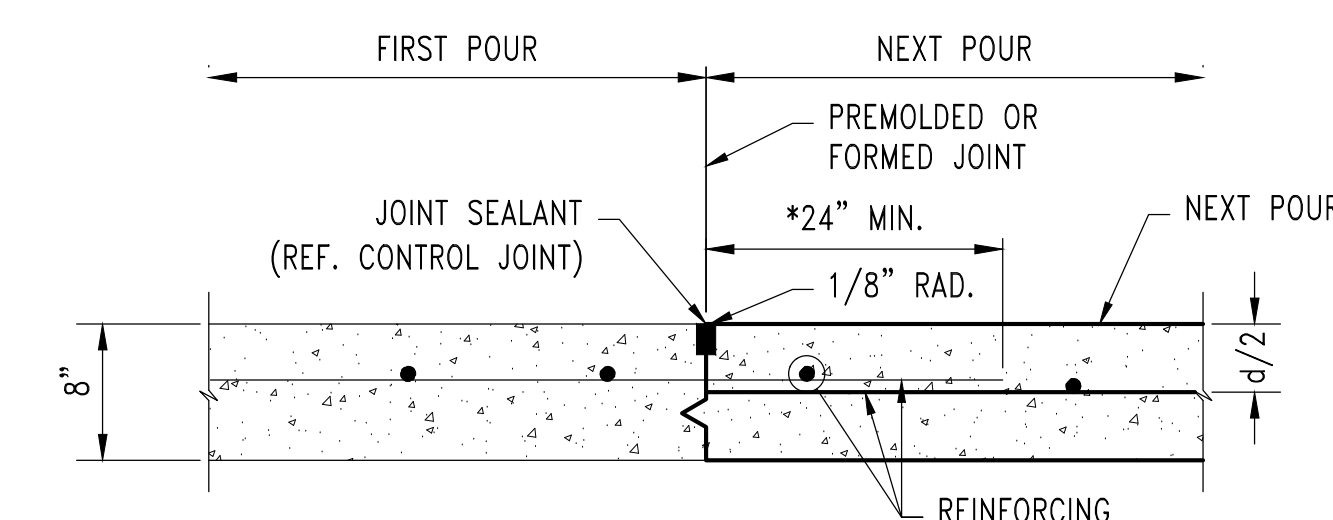
**10** JOINT @ CURB RADIUS DETAIL

NOTE:  
ALL EXPANSION AND CONSTRUCTION JOINTS SHOULD MEET THE CURB AT A RIGHT ANGLE AND CONTINUE THROUGH THE CURB.



**11** CONSTRUCTION JOINT - FUTURE

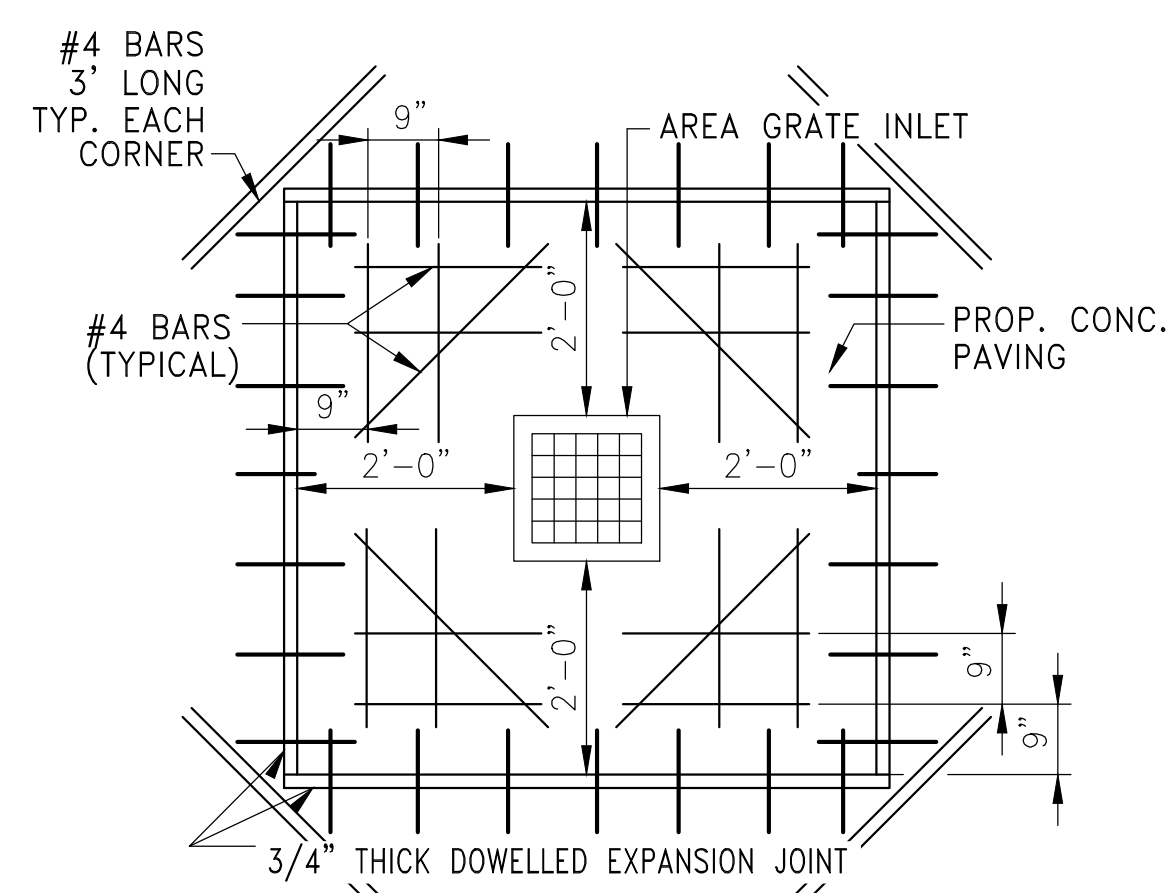
\* TIE BAR DIMENSIONS ARE 24" AS A MINIMUM OR AS SPECIFIED IN TABLE 4.1  
"TIE BAR DIMENSIONS AND SPACINGS" PER ACI 325.12R-18 FOR STREET & LOCAL ROADS AND AS SPECIFIED IN TABLE 2.7 PER ACI 330R-10 FOR CONCRETE PARKING LOTS



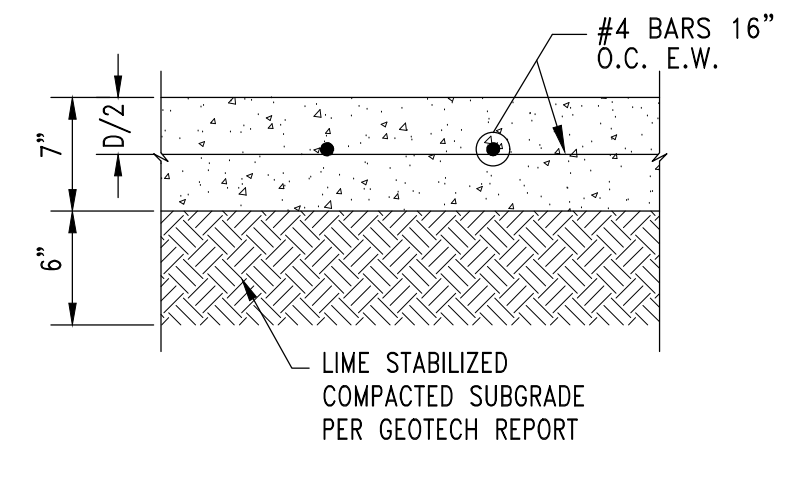
**12** CONSTRUCTION JOINT

NOTE:  
CONSTRUCTION JOINT TO BE USED WHEN POURING OPERATION IS DELAYED, STOPPED OR INTERRUPTED. REFERENCE PAVING CONSTRUCTION NOTES AS SHOWN ON PAVING PLAN(S)

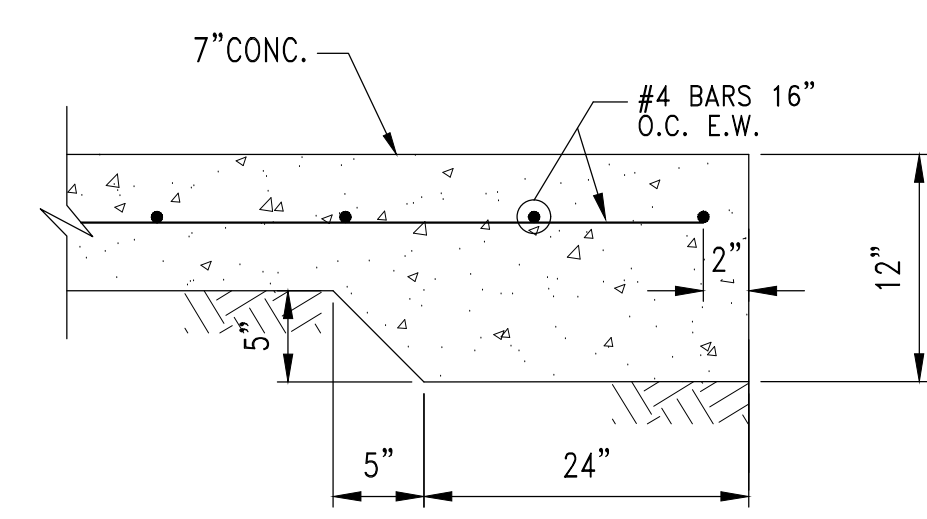
\* TIE BAR DIMENSIONS ARE 24" AS A MINIMUM OR AS SPECIFIED IN TABLE 4.1 "TIE BAR DIMENSIONS AND SPACINGS" PER ACI 325.12R-18 FOR STREET & LOCAL ROADS AND AS SPECIFIED IN TABLE 2.7 PER ACI 330R-10 FOR CONCRETE PARKING LOTS



**13** AREA GRATE INLET BLOCKOUT

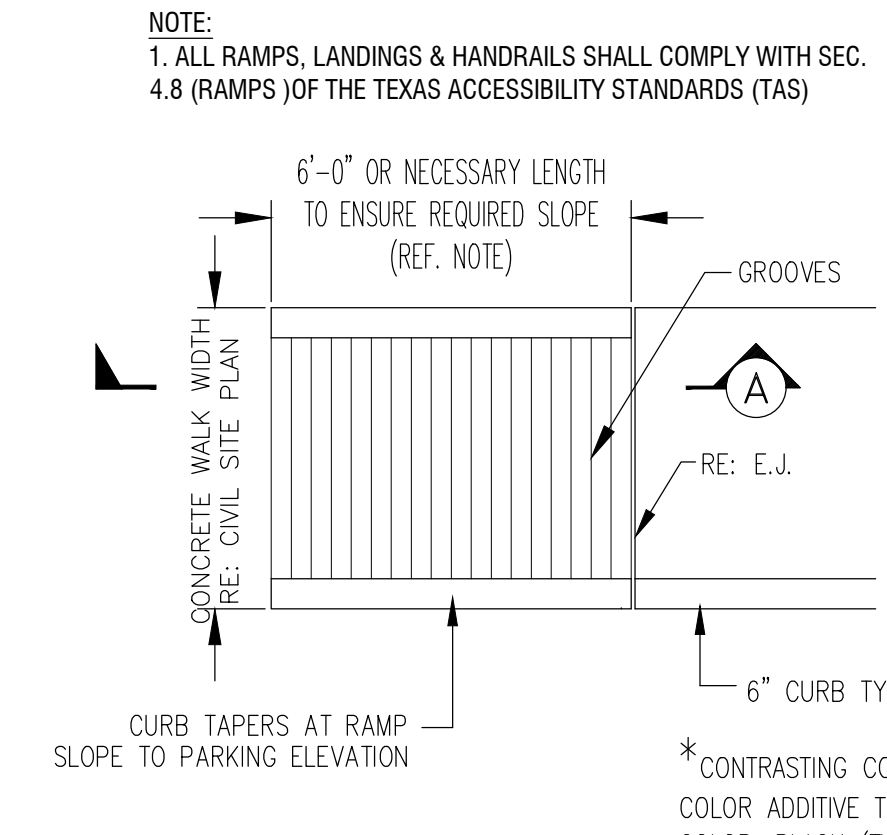


**14** 7" CONCRETE DESIGN



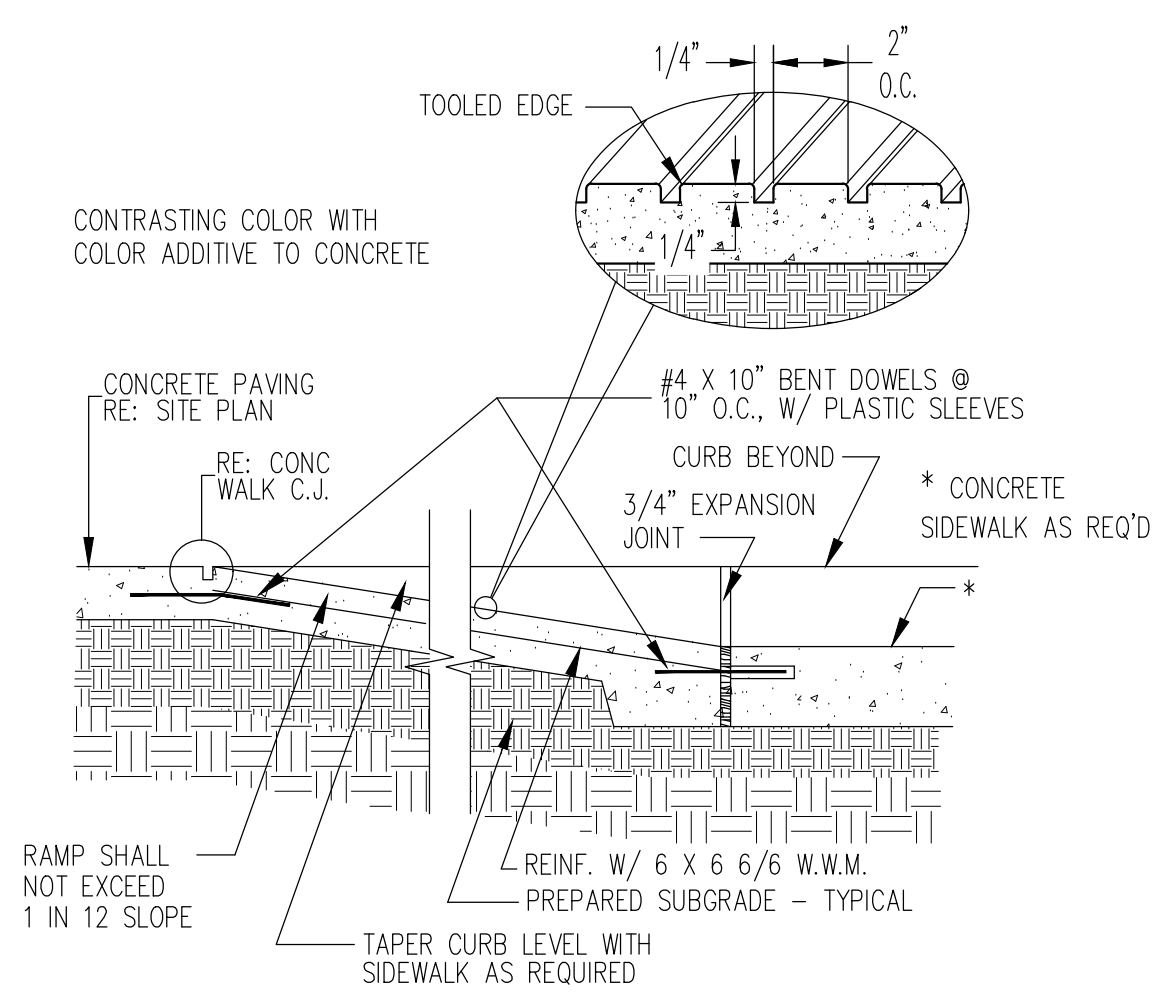
**15** 7" CONCRETE PAVING HEADER

NOTE:  
CONCRETE HEADER SHALL BE INSTALLED ALONG PERIMETER OF FIRE TRAINER SLAB



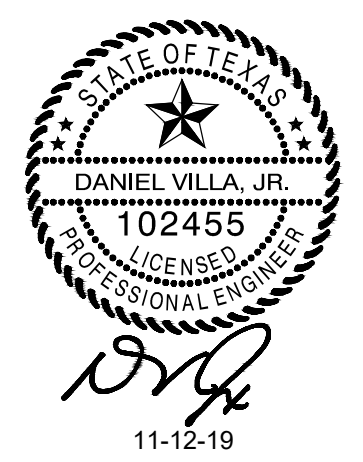
**16** ADA-ACCESSIBLE RAMP

\* CONTRASTING COLOR WITH COLOR ADDITIVE TO CONCRETE; COLOR: BLACK (TYP.)

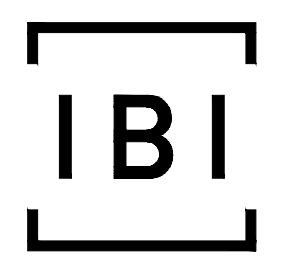


**17** SECTION A-A (ACCESSIBLE RAMP)

RAMP SHALL NOT EXCEED 1 IN 12 SLOPE  
TAPER CURB LEVEL WITH SIDEWALK AS REQUIRED



**MARITIME EXPANSION FIRE TRAINING CENTER**  
SAN JACINTO COLLEGE  
3700 Old Hwy 146 La Porte, TX 77571



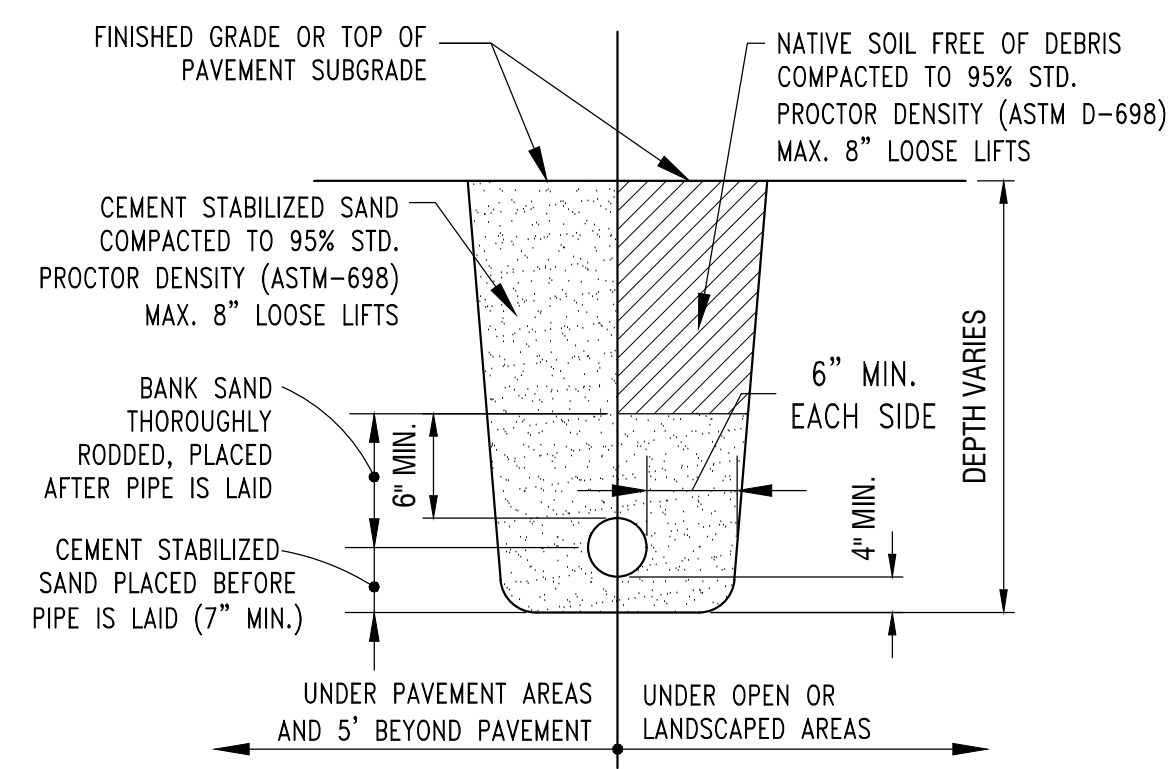
**TEXAS-IBI GROUP, INC.**  
455 E MEDICAL CENTER BLVD, STE 500  
P.O. BOX 891209  
HOUSTON, TEXAS 77289  
281.286.6605

PROJECT NO. 201936  
DATE: 11/12/2019  
DRAWN: SJM  
CHECKED: DV

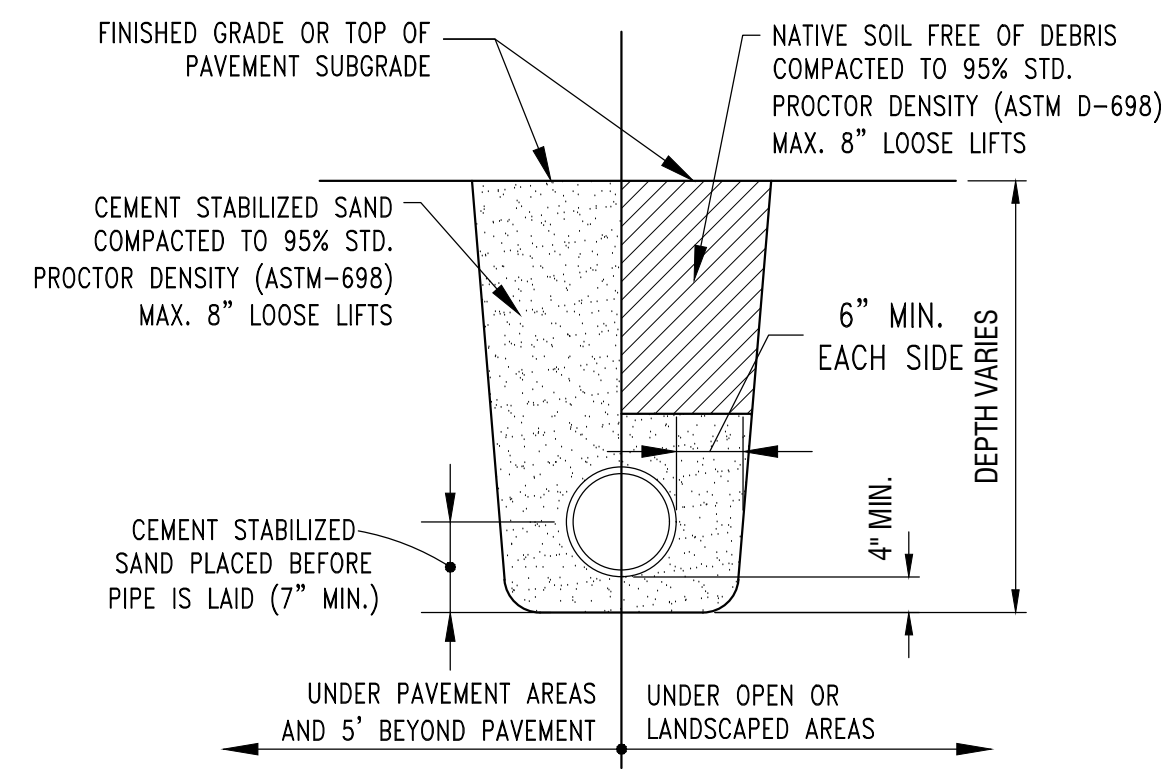
DATE: 11/12/2019  
ISSUE: FOR CONSTRUCTION

**C7.10**

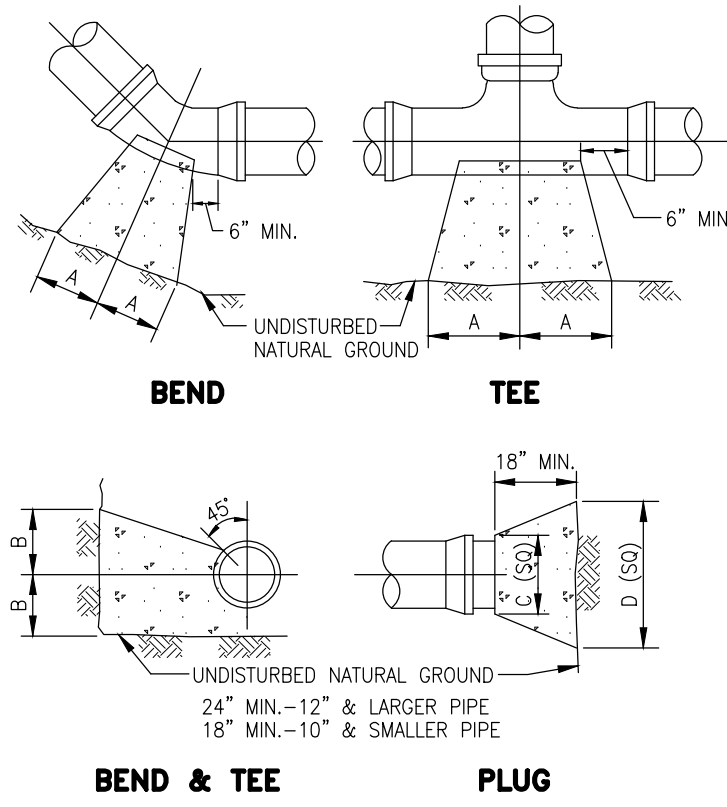
PAVING DETAILS



1 WATERLINE BEDDING & BACKFILL  
SCALE NTS



2 STORM SEWER BEDDING & BACKFILL  
SCALE NTS

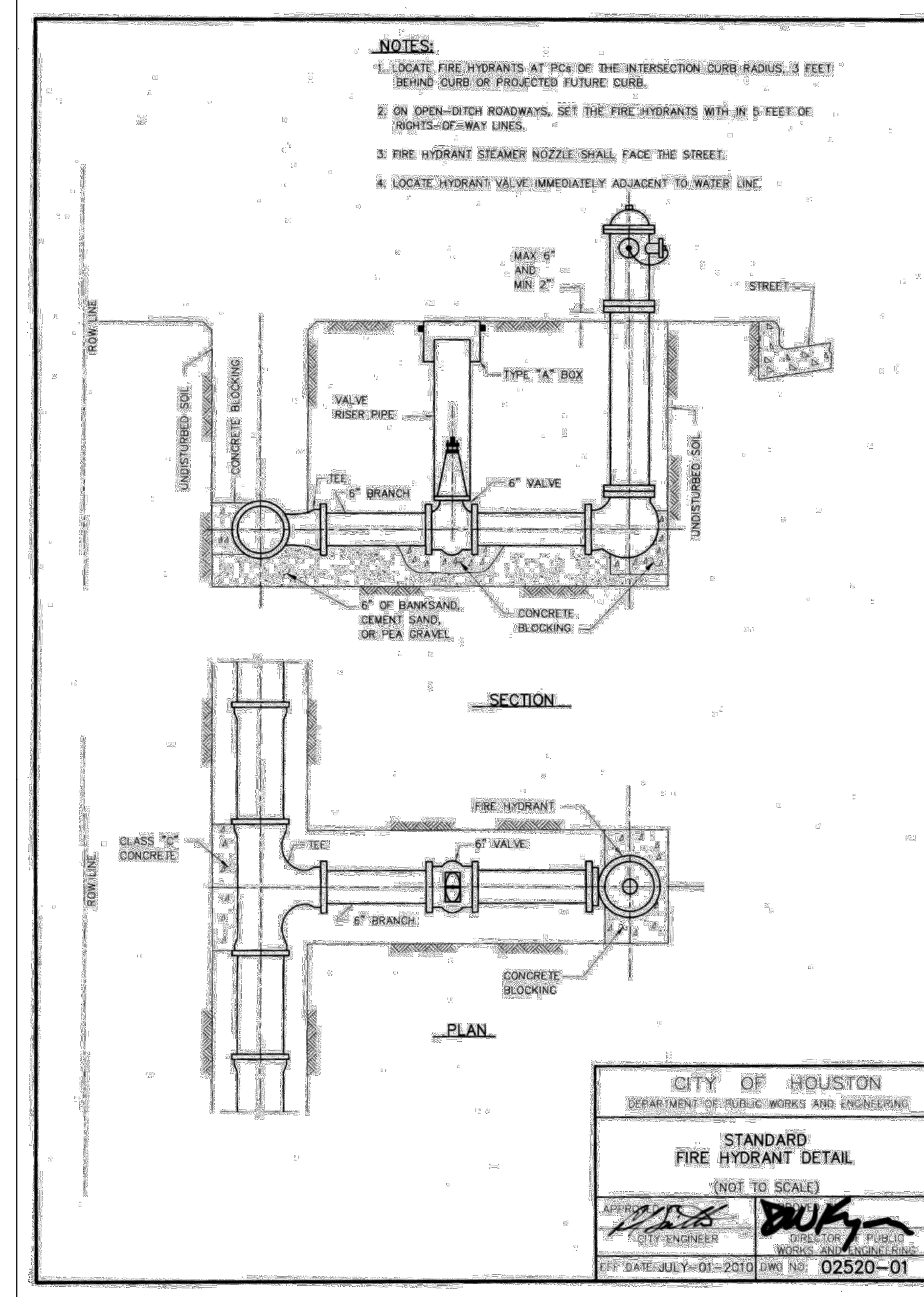


3 THRUST BLOCK DETAIL  
SCALE NTS

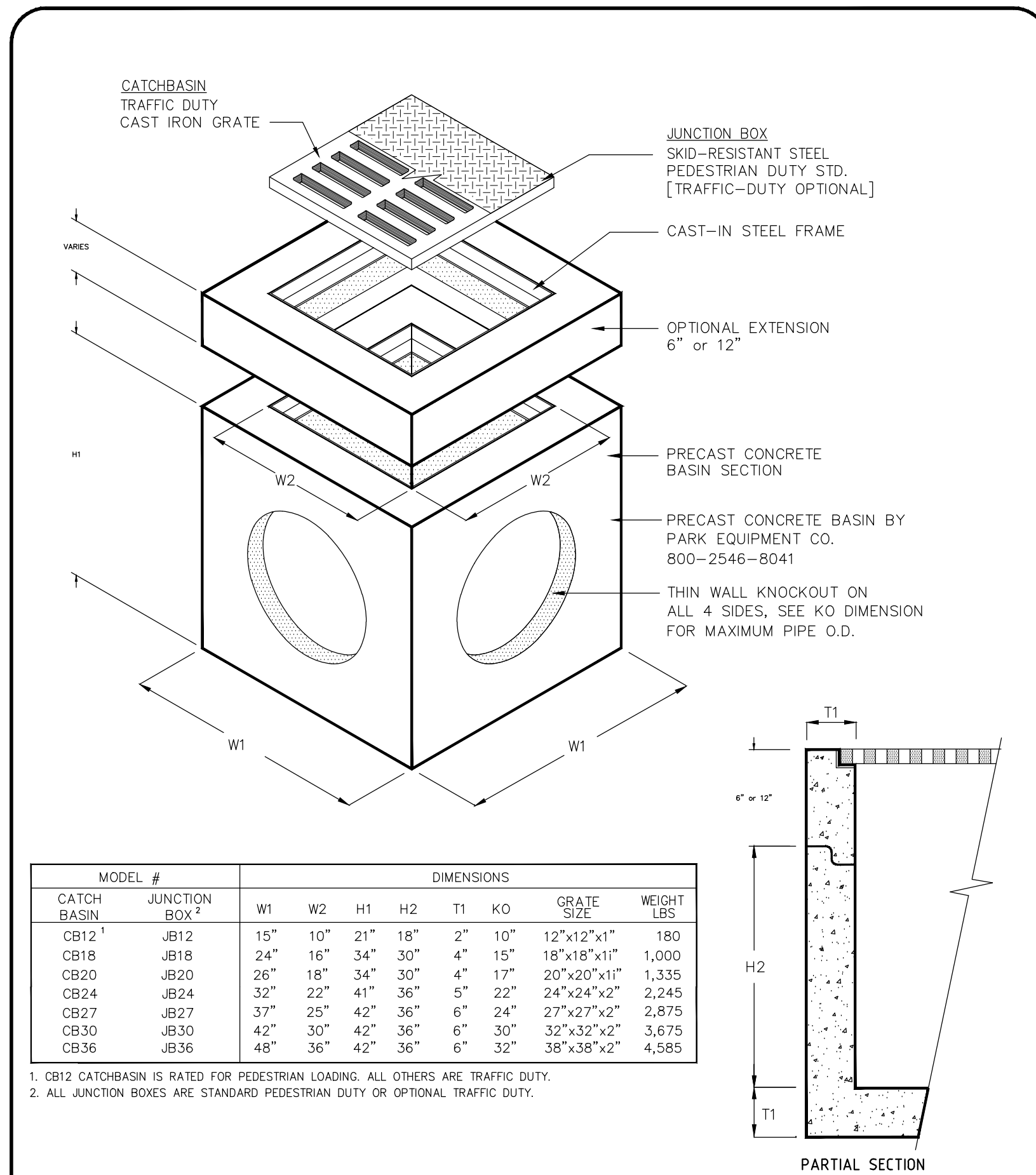
|        | 90° BEND |     | 45° BEND |     | 22.5° BEND |     | TEES |     | PLUGS |     |
|--------|----------|-----|----------|-----|------------|-----|------|-----|-------|-----|
| SIZE   | A        | B   | A        | B   | A          | B   | A    | B   | A     | B   |
| 2 1/2" | 12"      | 7"  | 6"       | 7"  | 6"         | 6"  | 7"   | 8"  | 8"    | 14" |
| 6"     | 16"      | 10" | 9"       | 10" | 6"         | 12" | 10"  | 12" | 10"   | 21" |
| 8"     | 22"      | 13" | 12"      | 13" | 8"         | 10" | 13"  | 16" | 12"   | 29" |
| 10"    | 26"      | 17" | 14"      | 17" | 10"        | 13" | 16"  | 20" | 14"   | 36" |
| 12"    | 29"      | 21" | 16"      | 21" | 11"        | 16" | 18"  | 24" | 16"   | 41" |
| 14"    | 35"      | 24" | 19"      | 24" | 12"        | 20" | 22"  | 27" | 18"   | 48" |
| 16"    | 38"      | 27" | 21"      | 27" | 12"        | 24" | 24"  | 30" | 20"   | 54" |

NOTE:  
THRUST BLOCKS AT TRENCH FACE MUST HAVE A MINIMUM BEARING SURFACE OF 10 SQ. FEET AND SHALL BE NO SMALLER THAN 1.5 TIMES PIPE DIAMETER. ALL CONCRETE SHALL BE 5 SACK MIN., 3000 P.S.I.

4 BENDS, TEES & PLUGS  
SCALE NTS

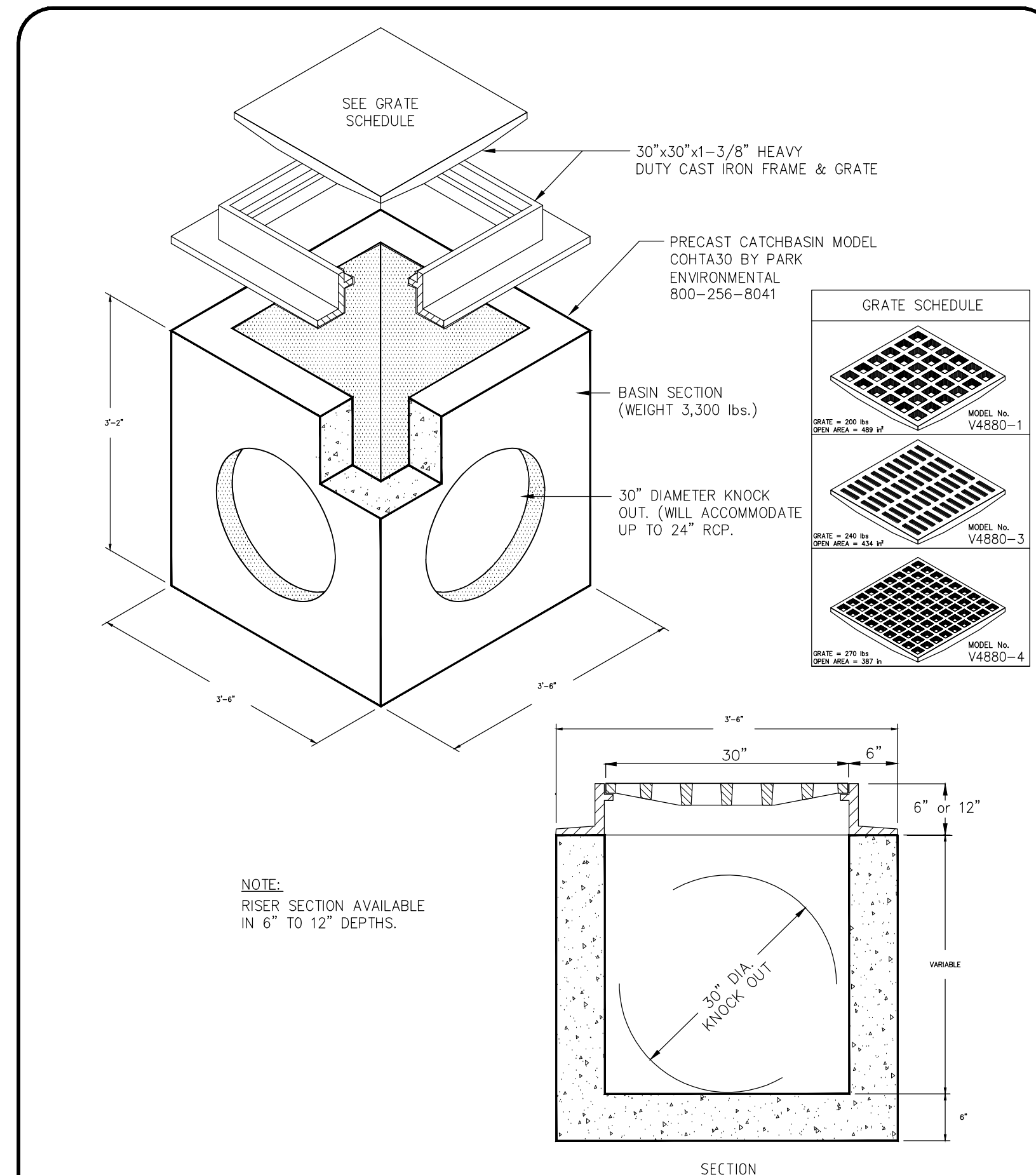


7 STANDARD FIRE HYDRANT DETAIL  
SCALE NTS



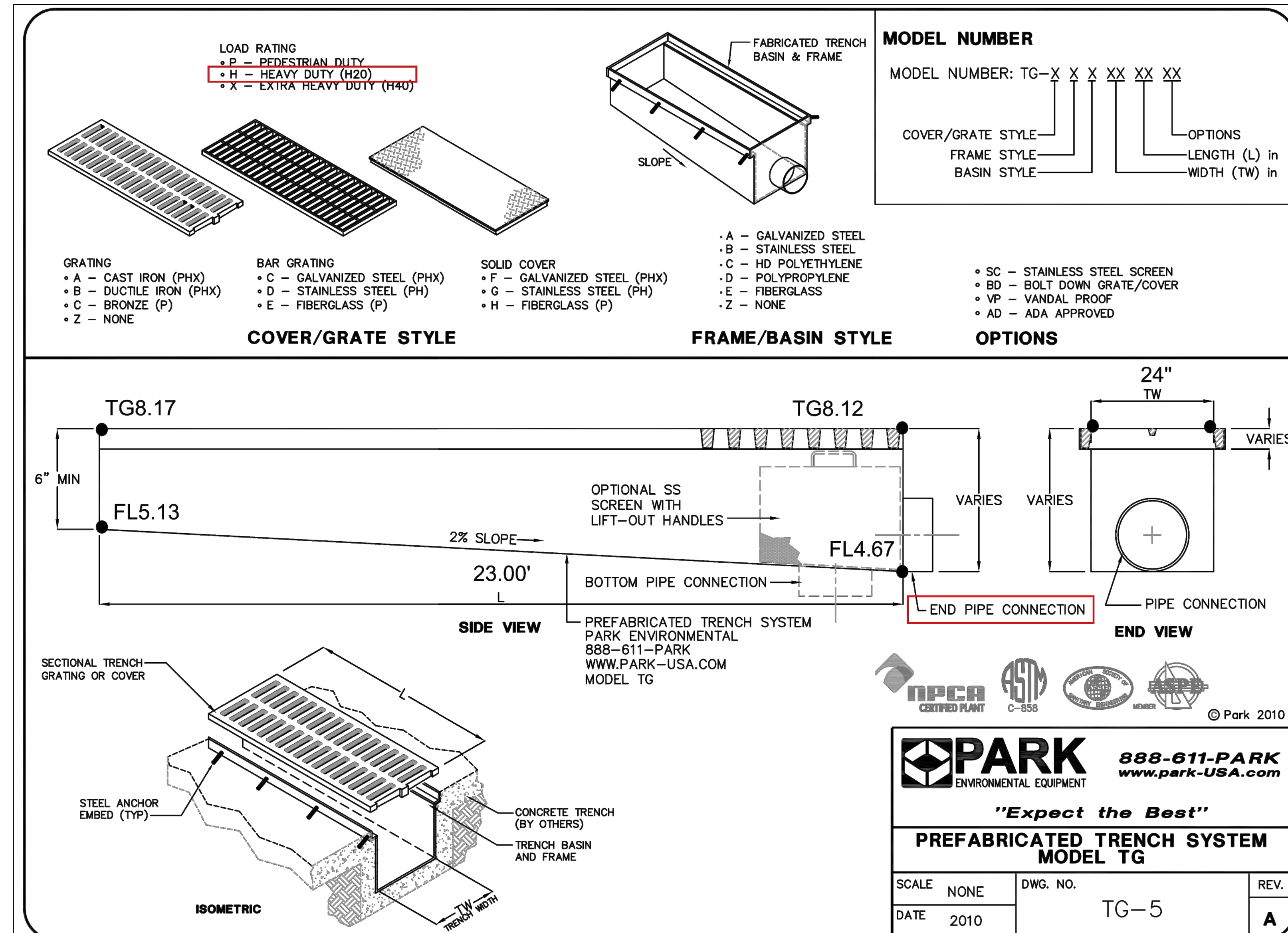
| MODEL # | DIMENSIONS |     |     |     |    |     | GRATE      | WEIGHT LBS. |
|---------|------------|-----|-----|-----|----|-----|------------|-------------|
| CB12    | 15"        | 10" | 21" | 18" | 2" | 10" | 12"x12"x1" | 180         |
| CB18    | 24"        | 16" | 34" | 30" | 4" | 15" | 18"x18"x1" | 1,000       |
| CB20    | 26"        | 18" | 34" | 30" | 4" | 17" | 20"x20"x1" | 1,335       |
| CB24    | 32"        | 22" | 41" | 36" | 5" | 22" | 24"x24"x2" | 2,245       |
| CB27    | 37"        | 25" | 42" | 36" | 6" | 24" | 27"x27"x2" | 2,875       |
| CB30    | 42"        | 30" | 42" | 36" | 6" | 30" | 32"x32"x2" | 3,675       |
| CB36    | 48"        | 36" | 42" | 36" | 6" | 32" | 38"x38"x2" | 4,585       |

5 CATCH BASIN/JUNCTION BOX  
SCALE NTS



| MODEL # | DIMENSIONS |     |     |     |    |     | GRATE      | WEIGHT LBS. |
|---------|------------|-----|-----|-----|----|-----|------------|-------------|
| CB12    | 15"        | 10" | 21" | 18" | 2" | 10" | 12"x12"x1" | 180         |
| CB18    | 24"        | 16" | 34" | 30" | 4" | 15" | 18"x18"x1" | 1,000       |
| CB20    | 26"        | 18" | 34" | 30" | 4" | 17" | 20"x20"x1" | 1,335       |
| CB24    | 32"        | 22" | 41" | 36" | 5" | 22" | 24"x24"x2" | 2,245       |
| CB27    | 37"        | 25" | 42" | 36" | 6" | 24" | 27"x27"x2" | 2,875       |
| CB30    | 42"        | 30" | 42" | 36" | 6" | 30" | 32"x32"x2" | 3,675       |
| CB36    | 48"        | 36" | 42" | 36" | 6" | 32" | 38"x38"x2" | 4,585       |

6 STORM SEWER TYPE 'A' INLET  
SCALE NTS



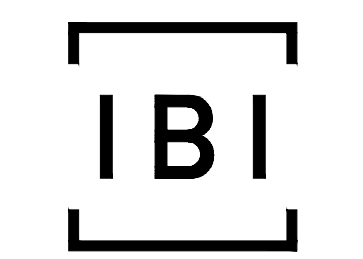
8 STORM SEWER TRENCH DRAIN  
SCALE NTS

CONSULTANTS  
CIVIL & STRUCTURAL  
**CSF**  
CIVIL • STRUCTURAL • FORENSIC  
ENGINEERING & SURVEYING  
11301 FALLBROOK DR., SUITE 320  
HOUSTON, TX 77065  
832678-2110 FAX: 832678-2115  
TBP# FIRM NO. F-4385  
CSF PROJ. 4007

MEP  
L.T.Y. Engineers, PLLC  
738 Highway 6 South Suite 615  
Houston, Texas 77079  
Tel: 281.945.8888  
Fax: 281.945.8889



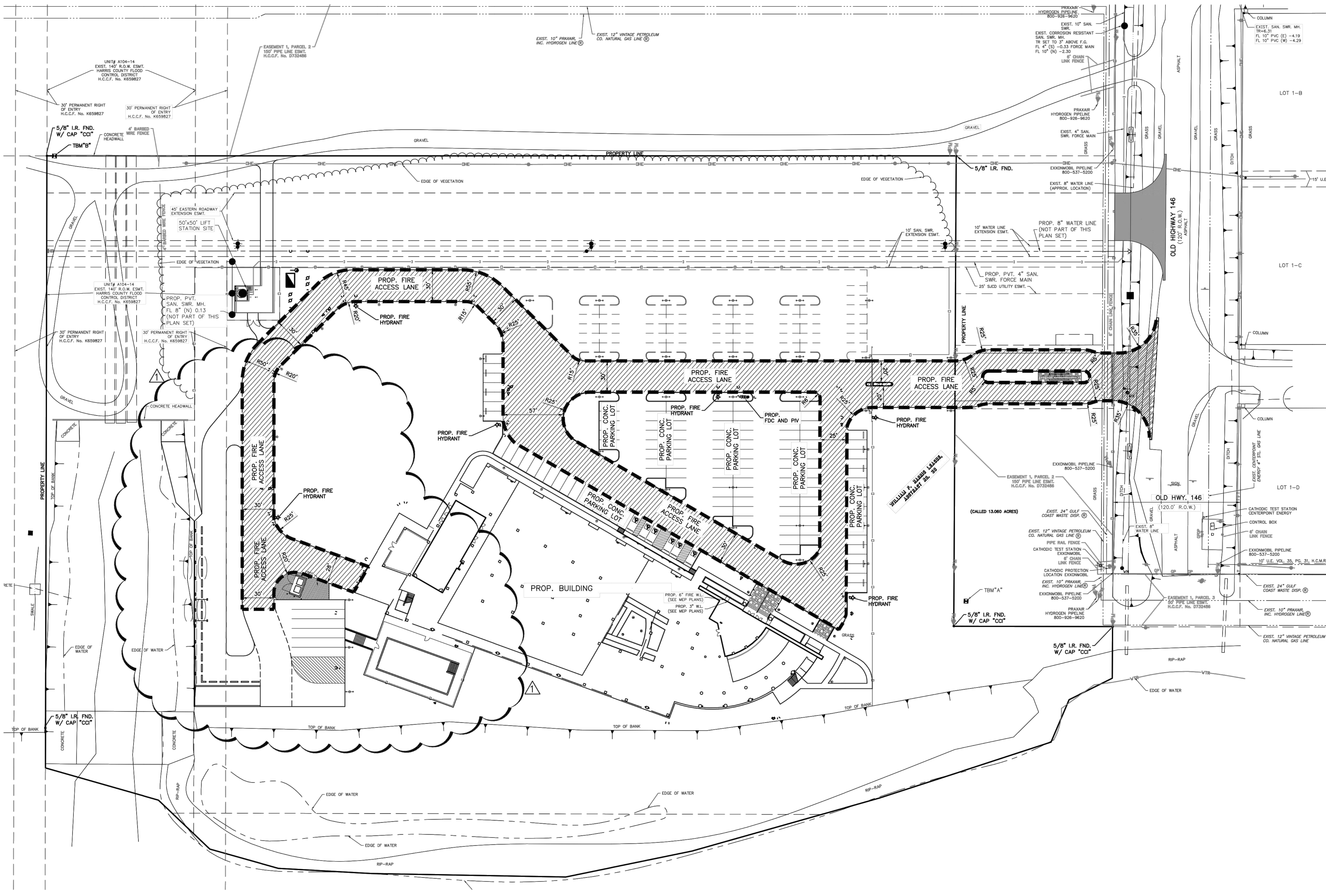
MARITIME EXPANSION FIRE  
TRAINING CENTER  
SAN JACINTO COLLEGE  
3700 Old Hwy 146 La Porte, TX 77571



TEXAS-IBI GROUP, INC.  
455 E MEDICAL CENTER BLVD, STE 500  
P.O. BOX 891209  
HOUSTON, TEXAS 77289  
281.286.6605

PROJECT NO. 201936  
DATE: 11/12/2019  
DRAWN: SJM  
CHECKED: DV  
DATE: 11/12/2019  
ISSUE: FOR CONSTRUCTION

C8.00  
CIVIL  
DETAILS



**BENCHMARK:**  
 RM 010320 - NGS DISK ON METAL ROD STAMPED "40320 50 1886 AT CURVE WHERE WIRKMAR TURNS INTO BAYWOOD, NORTHEAST OF CURVE, 31.6' NORTHWEST OF WOOD FENCE, 63.5' NORTHEAST OF FIRE HYDRANT IN KEY MAP 5809 IN THE CLEAR CREEK WATERSHED NEAR STREAM AT04-10-02. ELEV. 48.87' (DAVID REL. 2001; ADJ.)

**TEMPORARY BENCHMARKS:**  
 TBM"A" - BRASS DISK ON CONCRETE STAMPED "MON. 12 1989" FOUND AT THE END OF (OLD) SH-146, 2,200 FEET WEST FROM CENTERLINE OF SH-146 (SPUR 501). ELEVATION = 10.28'  
 TBM"B" - "X" CUT IN CONCRETE FOUND ON TOP OF WEST END OF 1 FOOT WIDE CONCRETE HEADWALL LOCATED 2100 FEET WEST FROM CENTERLINE OF (OLD) SH-146 (SPUR 501), ALONG GRAVEL ROAD NORTH OF 13 ACRE TRACT TO CHANNEL ON NORTH HEADWALL. ELEVATION = 9.89'

**FLOODPLAIN:**  
 ACCORDING TO F.I.R.M. MAP NO. 48201C1085L (COMMUNITY-PANEL NO'S 482271085L, 48501085L & 4803071085L), MAP REVISED DATE: JUNE 18, 2007, THE SUBJECT PROPERTY LIES WITHIN THE AREAS DESIGNATED AS ZONE AE - BASE FLOOD ELEVATIONS DETERMINED AND ZONE AE (FLOODWAY), THE FLOODWAY IS THE CHANNEL OF A STREAM PLUS ANY ADJACENT FLOODPLAIN AREAS THAT MUST BE KEPT FREE OF ENCROACHMENT SO THAT THE 1% ANNUAL CHANCE FLOOD CAN BE CARRIED WITHOUT SUBSTANTIAL INCREASES IN FLOOD HEIGHTS.

**CONSULTANTS**  
**CIVIL**  
 Brooks and Sparks, Inc.  
 21020 Park Row Dr.  
 Katy, TX 77449  
 Tel: 281-578-9595  
 Fax: 281-578-9686

**STRUCTURAL**  
 WALTER P MOORE  
 1301 McKinney, Suite 1100  
 Houston, TX 77010  
 Tel: 713-630-7300  
 Fax: 713-630-7396

**MEP**  
 Kaimans Marshall Engineering, Inc.  
 10930 W. Sam Houston Pkwy N.  
 Suite 900  
 Houston, TX 77064  
 Tel: 281-664-1900  
 Fax: 281-664-1912

**POOL**  
 Water Technology Inc.  
 3010 LBJ Freeway  
 Office 1205  
 Dallas, TX 75234  
 Tel: 972-919-6122  
 Fax: 817-751-0553

**Maritime Technology and Training Center**  
 San Jacinto College  
 3700 Old Hwy 146 Pasadena, TX 77571

**CONSULTANTS**  
**CIVIL & STRUCTURAL**

**CSF**  
 CIVIL • STRUCTURAL • FORENSIC  
 ENGINEERING & SURVEYING  
 11301 FALLBROOK DR., SUITE 320  
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 832678-2110 FAX: 832678-2115  
 TYPE FIRM NO. F-4398  
 CSF PROJ. 4007

**MEP**  
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 738 Highway 6 South Suite 615  
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 Fax: 281.945.8889

**MARITIME EXPANSION FIRE TRAINING CENTER**  
 SAN JACINTO COLLEGE  
 3700 Old Hwy 146 La Porte, TX 77571

**IBI GROUP**  
**BAY-IBI GROUP ARCHITECTS**  
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 281.286.6605  
 BROOKS & SPARKS, INC.

**IBI**  
**TEXAS-IBI GROUP, INC.**  
 455 E MEDICAL CENTER BLVD, STE 500  
 P.O. BOX 891209  
 HOUSTON, TEXAS 77289  
 281.286.6605

**DAVID C. BARGER**  
 39331  
 6/10/2014

**REVISIONS**  
 6/10/2014

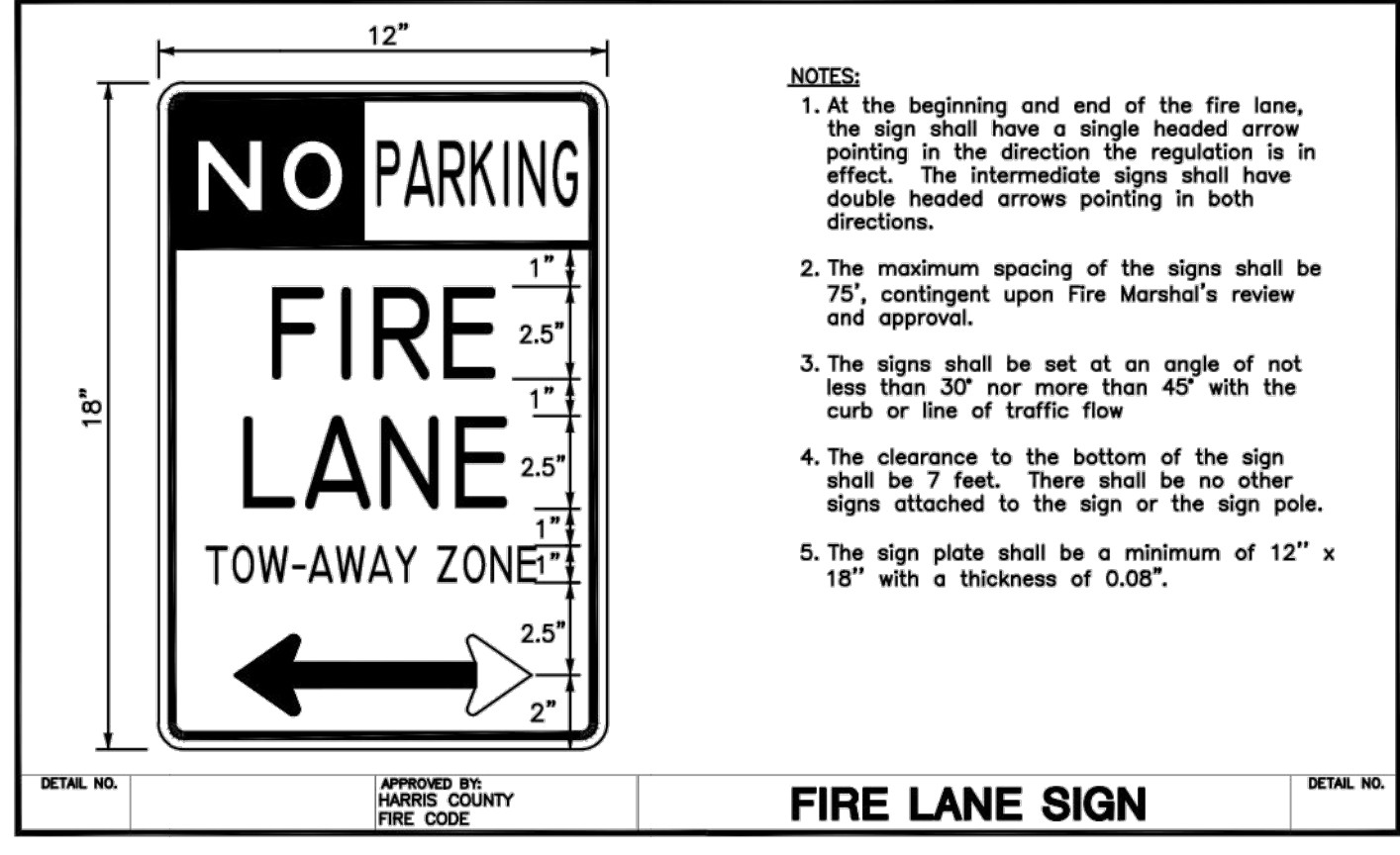
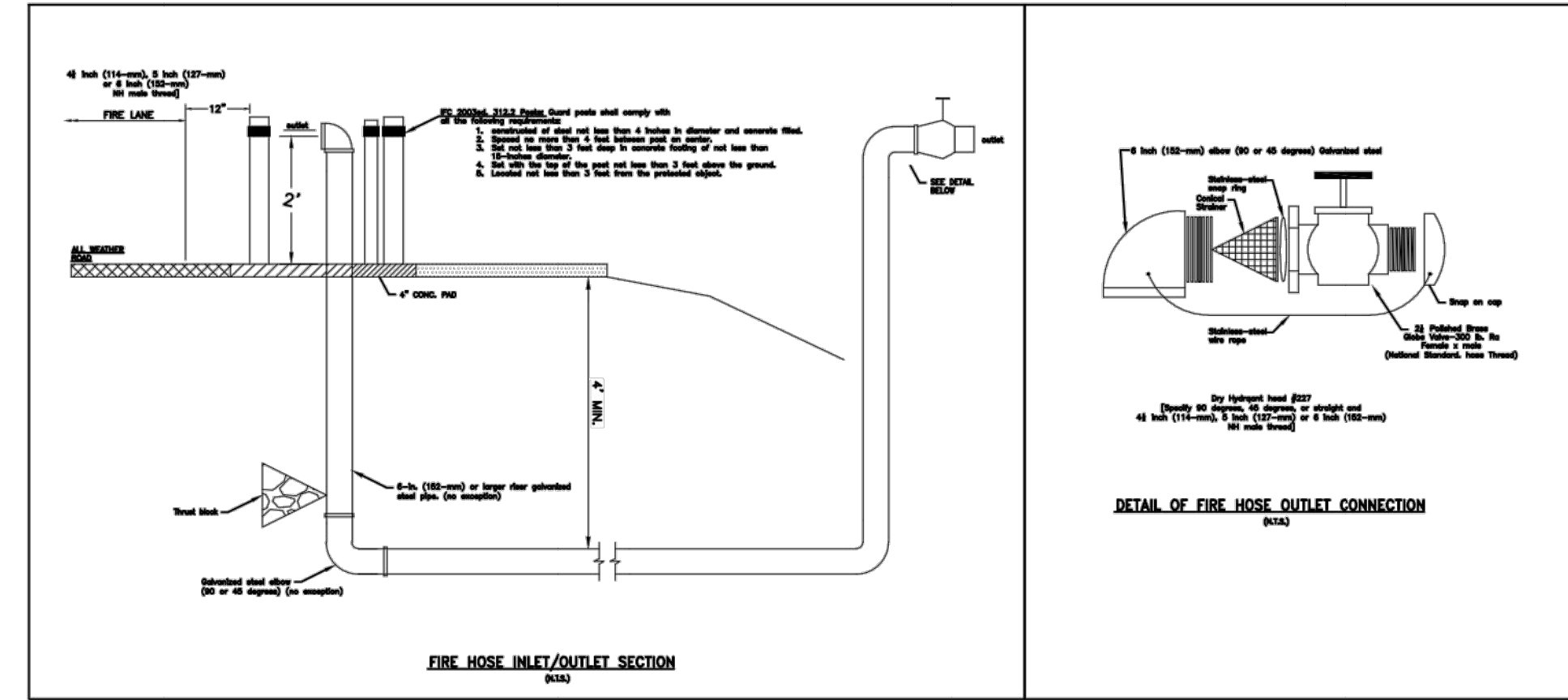
**PROJECT NO:** 201936  
**DATE:** APRIL 10, 2014  
**DRAWN:** SJM  
**CHECKED:** DV

**DATE:** 06-27-2014  
**ISSUE:** FOR CONSTRUCTION

**C2.02**  
 CIVIL SITE AND FIRE ACCESS PLAN

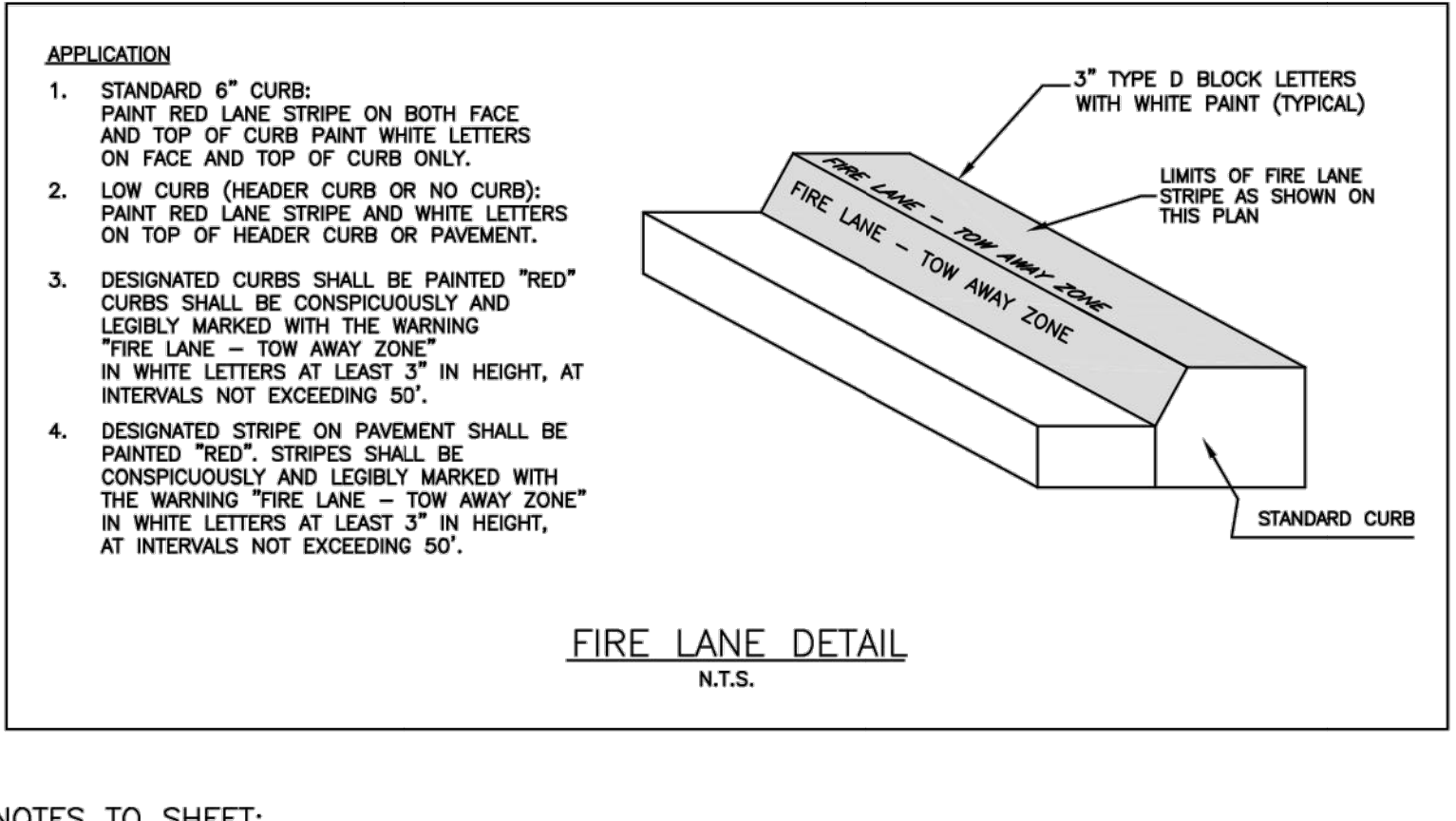
**PROJECT NO:** 201936  
**DATE:** 11/12/2019  
**DRAWN:** SJM  
**CHECKED:** DV

**C9.00**  
 EXISTING FIRE APPARATUS ACCESS LANE PLAN



**LEGEND**

| SYMBOL | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | ACCESS ROAD/FIRE LANE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|        | FIRE HYDRANT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|        | HOSE CONNECTION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|        | HOSE LAY                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|        | CURBS LOCATED ON EITHER SIDE OF A FIRE LANE SHALL BE PAINTED RED OR A RED STRIPE SHALL BE PLACED ALONG THE PAVEMENT WHERE THERE IS NO CURB. WHERE A FIRE LANE PASSES BETWEEN HEAD IN PARKING SPACES, THE RED STRIPE SHOULD BE PLACED ALONG THE REAR OF THESE SPACES CLEARLY DEFINING THE FIRE LANE. PAINTED CURBS AND FIRE LANE STRIPES SHALL ALSO BE CONSPICUOUSLY AND LEGIBLY MARKED WITH THE WARNING "FIRE LANE-TOW AWAY ZONE" IN WHITE LETTERS AT LEAST THREE (3) INCHES IN HEIGHT, AT INTERVALS NOT EXCEEDING (50) FEET. WHERE FIRE LANES ARE CLEARLY DEFINED BY CURB/PAVEMENT STRIPING, FIRE LANE SIGNS ARE REQUIRED. FIRE LANE SIGNS SHOULD BE PLACED EVERY (100) FEET, ALTERNATING PLACEMENT OF SIGNS ON EACH SIDE OF FIRE ACCESS LANE. |
|        | ANY COLOR OTHER THAN RED MAY BE USED IN "NO PARKING" AREAS THAT ARE NOT APPROVED FIRE LANES. RED COLORED CURBS/PAVEMENT STRIPING OR WHELED STOPS SHALL BE USED ONLY TO DESIGNATE APPROVED FIRE LANES. THE PLANS WILL BE APPROVED WITH THE CIVIL SITE-PLAN REVIEW BUT MAY BE REVISED AT FIRE CODE REVIEW, BY THE BUILDING OFFICIAL.                                                                                                                                                                                                                                                                                                                                                                                                              |



**NOTES:**

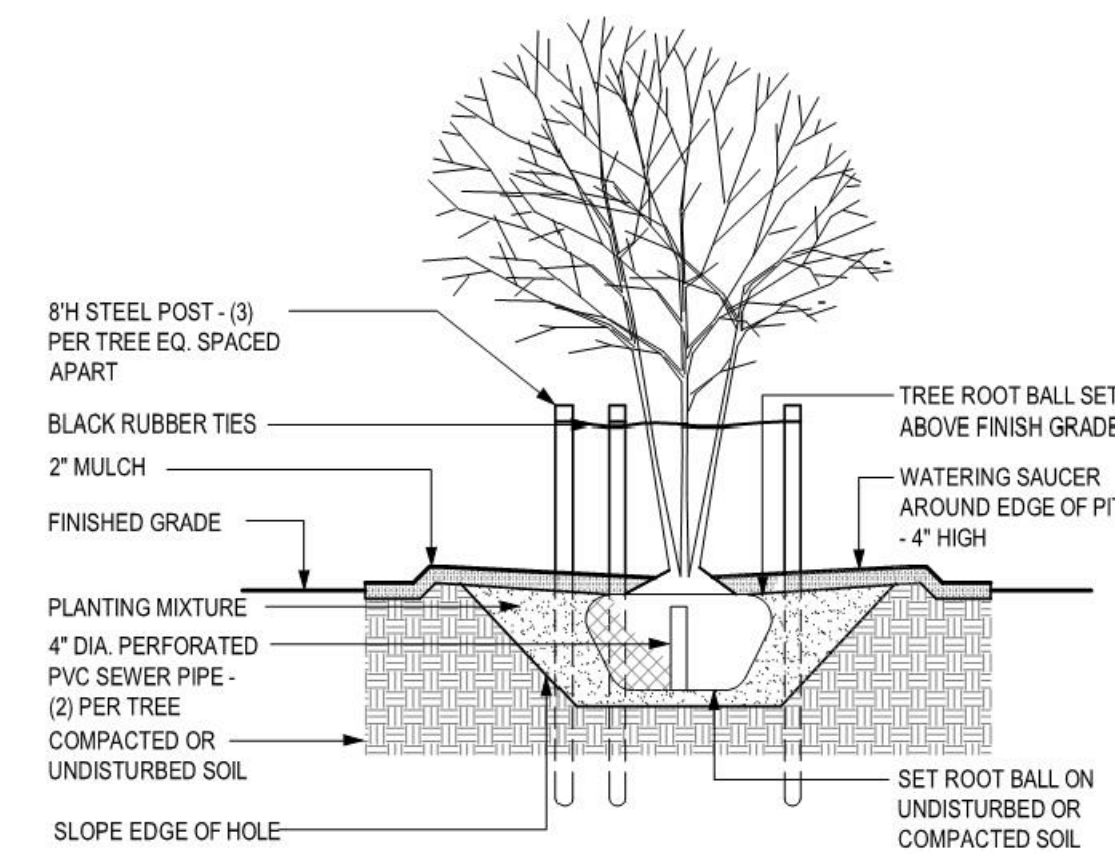
- At the beginning and end of the fire lane, the sign shall have a single headed arrow pointing in the direction the regulation is in effect. The intermediate signs shall have double headed arrows pointing in both directions.
- The maximum spacing of the signs shall be 75' contingent upon Fire Marshal's review and approval.
- The signs shall be set at an angle of not less than 30° nor more than 45° with the curb or line of traffic flow.
- The clearance to the bottom of the sign shall be 7 feet. There shall be no other signs attached to the sign or the sign pole.
- The sign plate shall be a minimum of 12" x 18" with a thickness of 0.08".

**NOTES TO SHEET:**

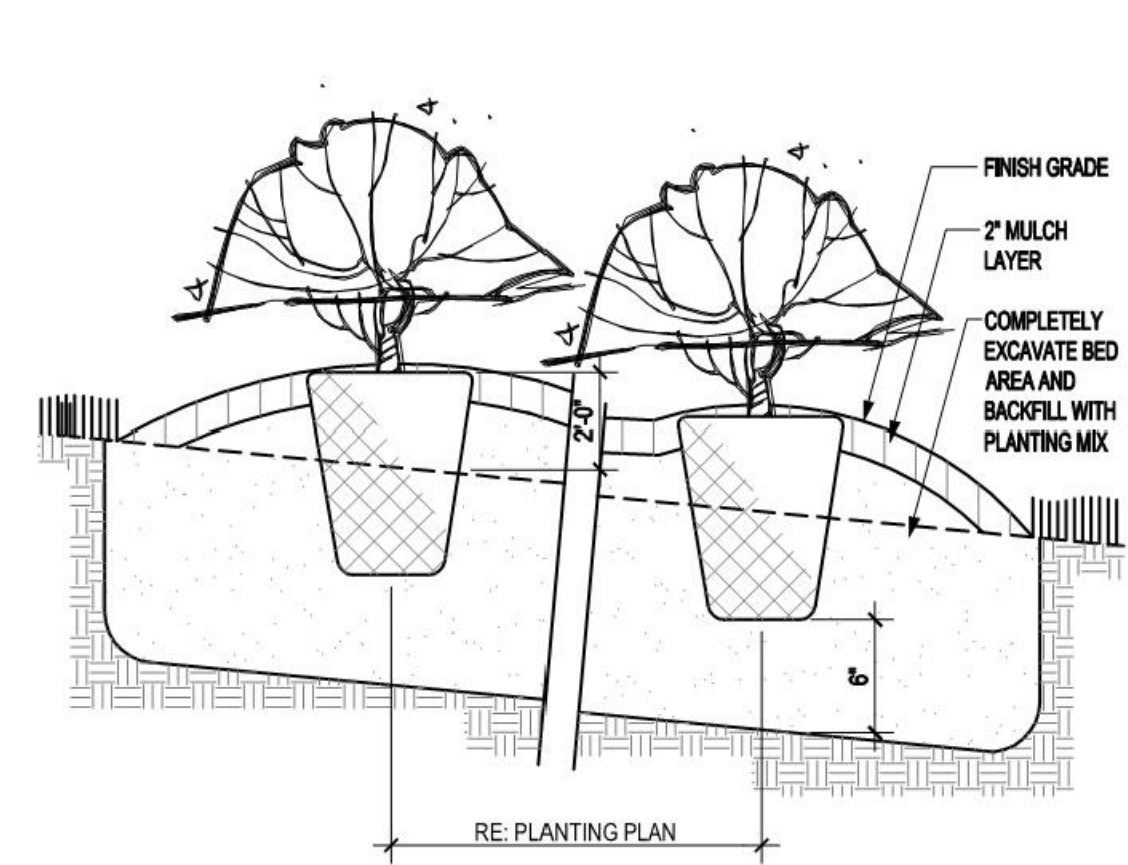
- CONTRACTOR SHALL PROVIDE POLE MOUNTED FIRE LANE SIGNS EVERY 100' ALONG ALL NOTED FIRE ACCESS LANE(S) APPROXIMATELY QUANTITY (288) LOCATIONS. REFER TO ARCHITECTURAL DOCUMENTS FOR SIGNAGE REQUIREMENTS, EXACT LOCATION AND QUANTITY OF SIGNS TO BE DETERMINED BY FIRE MARSHAL IN FIELD.

**PREVIOUSLY APPROVED FULL SITE PLAN BY OTHERS FOR REFERENCE ONLY. H.C. PROJECT NO. 2032751**

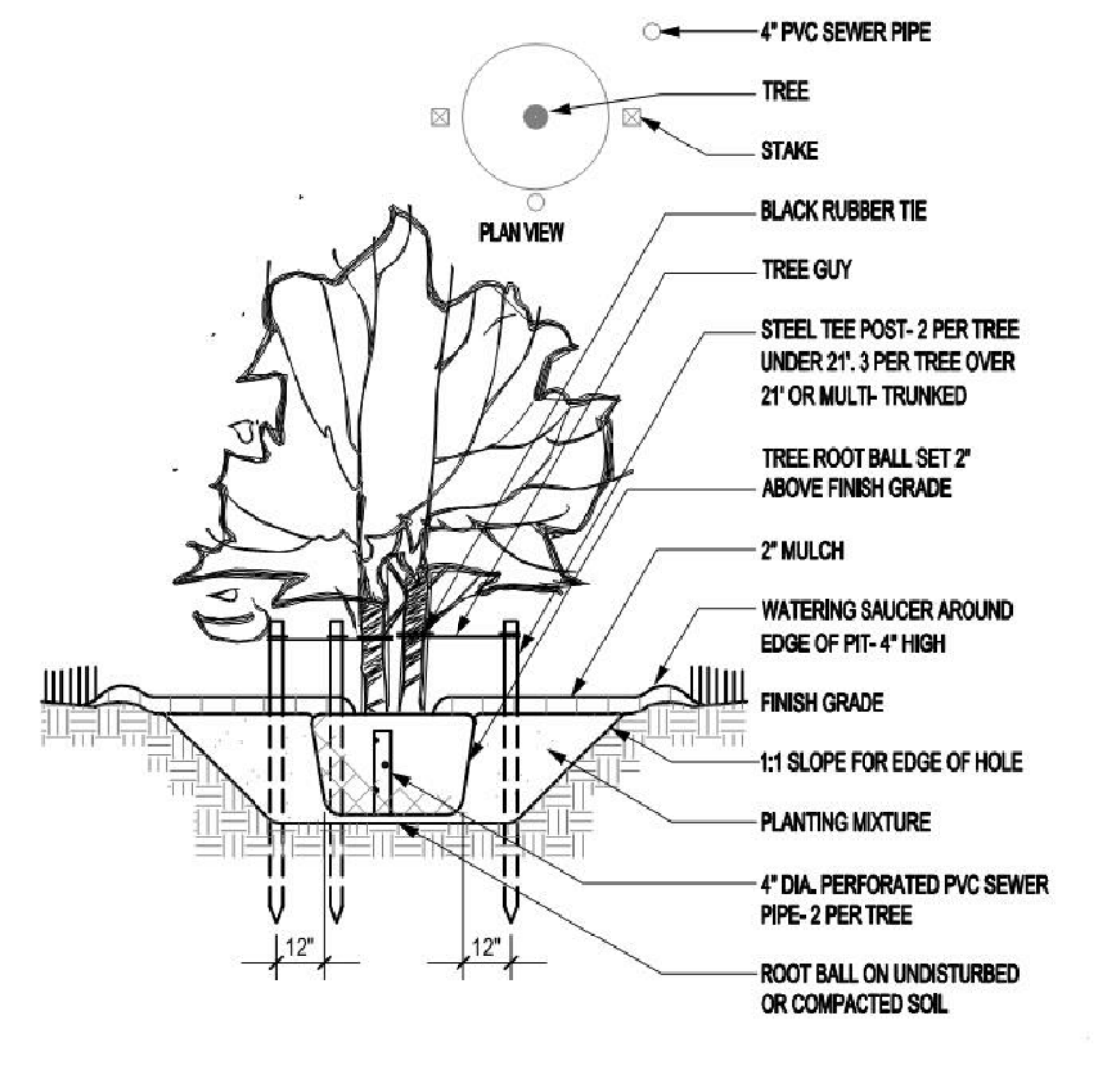
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 Includes Xref(s): X-SITE-Option C.dwg; X-TEXT.dwg; X-TB.dwg; X-TOP.dwg; X-UT.dwg; X-SITE-Alt.dwg



2 MULTI-TRUNK TREE PLANTING DETAILS  
NOT TO SCALE



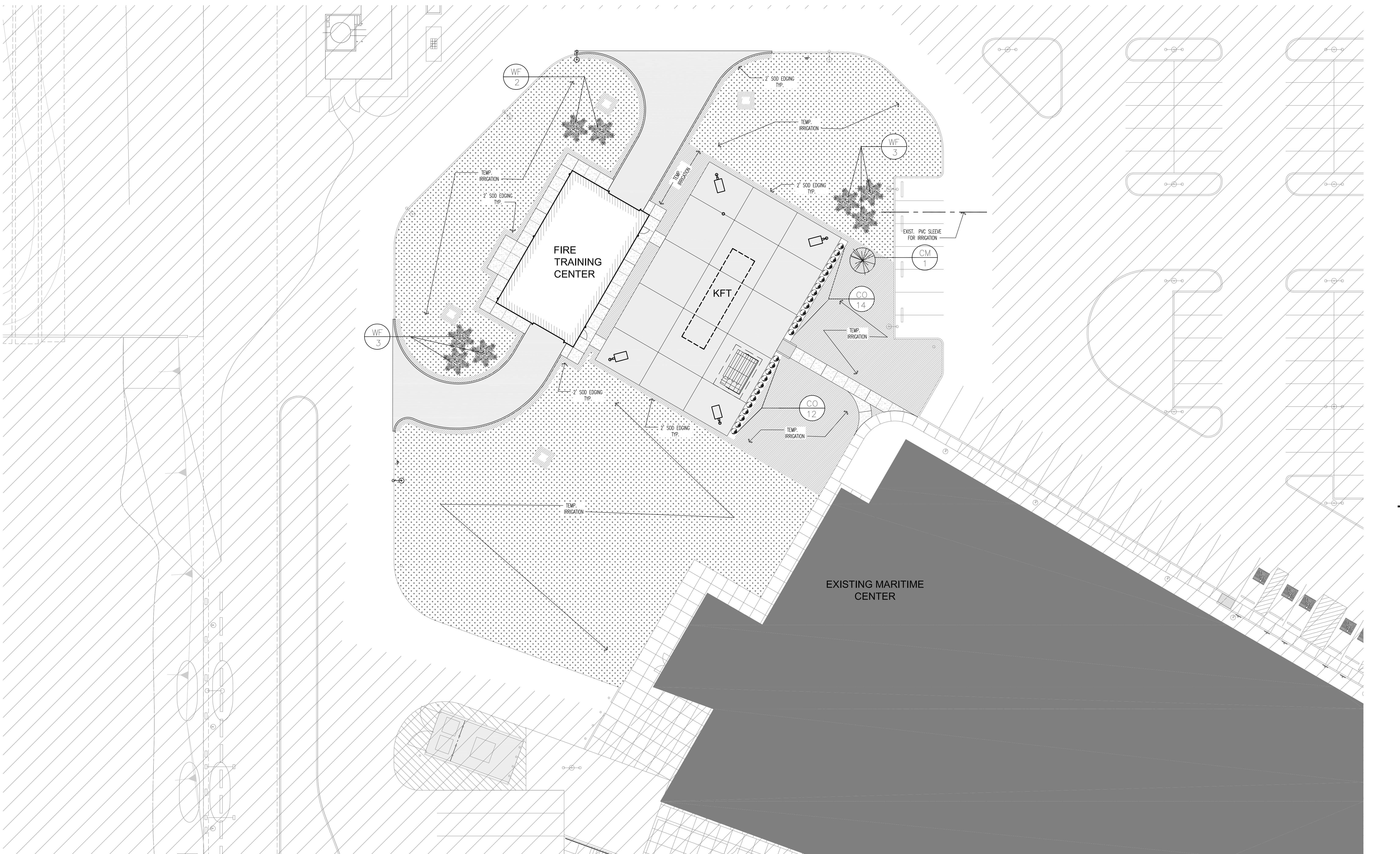
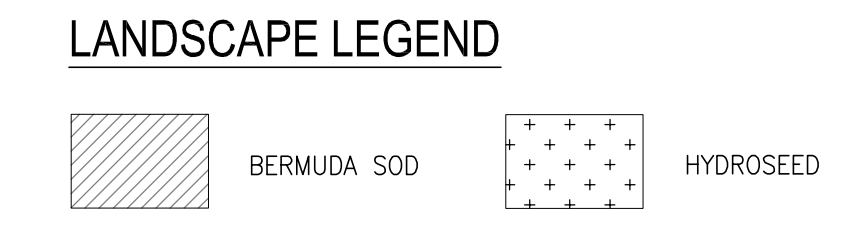
3 SHRUB/GROUND COVER  
NOT TO SCALE



4 TREE PLANTING  
NOT TO SCALE

## LANDSCAPE SCHEDULE

| TREES              |      |                                |                                     |                                                           |         |
|--------------------|------|--------------------------------|-------------------------------------|-----------------------------------------------------------|---------|
| QUANTITY           | ITEM | COMMON NAME                    | BOTANICAL NAME                      | SIZE                                                      |         |
| 8                  | WF   | WASHINGTONIA FILBUSTA FAN PALM | WASHINGTONIA 'FILBUSTA' HYBRID      | 14' CLEAR TRUNK. CLEAN TRUNK SMOOTH                       |         |
| 1                  | CM   | GRAPE MYRTLE                   | LAGERSTROEMIA INDICA 'TUSCARORA'    | 30 GAL. 2" CAL. MULTI-TRUNK, 8'-10" HT. 4'-5" MIN. SPREAD |         |
| SHRUBS AND GRASSES |      |                                |                                     |                                                           |         |
| QUANTITY           | ITEM | COMMON NAME                    | BOTANICAL NAME                      | SIZE                                                      | SPACING |
| 26                 | CO   | CHINESE FRINGE FLOWER          | LOROPETALUM CHINENSE 'PLUM DELIGHT' | 5 GAL.                                                    | 3' O.C. |



1 LANDSCAPE PLAN  
1/16" = 1'-0"

**CONSULTANTS**  
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 CSF Consulting LP  
 11301 Fallbrook Suite 320  
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**CIVIL**  
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**MARITIME EXPANSION FIRE TRAINING CENTER**  
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 3700 Old Hwy 146 La Porte, TX 77571

**IBI**  
**TEXAS-IBI GROUP, INC.**  
 455 E MEDICAL CENTER BLVD, STE 500  
 P.O. BOX 891209  
 HOUSTON, TEXAS 77289  
 281.286.6605  
 REGISTERED ARCHITECT  
 STATE OF TEXAS  
 11/12/2019

|             |                  |
|-------------|------------------|
| PROJECT NO. | 201936           |
| DATE:       | 11/12/2019       |
| DRAWN       | CKA              |
| CHECKED     | RCA              |
| DATE        | ISSUE            |
| 11/12/2019  | FOR CONSTRUCTION |

**L1.0**  
 LANDSCAPE PLAN  
 AND DETAILS

1. DESIGN

- 1. THE DESIGN OF THE BUILDINGS AND/OR STRUCTURES SHOWN WITHIN THESE CONTRACT DOCUMENTS IS IN ACCORDANCE WITH THE FOLLOWING CODES AND STANDARDS:
A. 2018 INTERNATIONAL BUILDING CODE HARRIS COUNTY ONLY CH. 2-10 WITH HARRIS COUNTY AMENDMENTS
B. ASCE 7-10
C. DESIGN OF STAIRS AND HANDRAILS SHALL MEET LOADING REQUIREMENTS OF SECTION 1607.8 OF BUILDING CODE.
FABRICATOR SHALL SUBMIT SIGNED AND SEALED CALCULATIONS TO ENGINEER FOR REVIEW.
2. THE DESIGN LOADS PERTINENT TO THE STRUCTURAL DESIGN OF THE BUILDINGS AND/OR STRUCTURES ARE AS FOLLOWS:
A. FLOOR LIVE LOAD:
i. STORAGE AREAS 125 PSF
B. FLOOR DEAD LOADS:
i. METAL DECK & CONCRETE 41 PSF
ii. STEEL FRAMING 8 PSF
iii. MEP 4 PSF
iv. COLLATERAL 3 PSF
TOTAL 56 PSF
C. ROOF LIVE LOAD: 20 PSF
D. ROOF DEAD LOADS:
i. INSULATION 3 PSF
ii. ROOFING 1 PSF
iii. DECK 2 PSF
iv. FRAMING 5 PSF
v. MEP 4 PSF
vi. COLLATERAL 4 PSF
TOTAL 19 PSF
E. ROOF SNOW LOAD: 0 PSF
i. GROUND SNOW LOAD, Pg 0 PSF
ii. FLAT ROOF SNOW LOAD, Pf 0 PSF
iii. SNOW EXPOSURE FACTOR, Ce 1.0
iv. SNOW LOAD IMPORTANCE FACTOR, I 1.0
v. THERMAL FACTOR, Ct 1.0

- 3. ESTABLISH AND VERIFY ALL OPENINGS, INSERTS OR EQUIPMENT FOR ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING WITH APPROPRIATE TRADE. IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO COORDINATE WITH THE SUBCONTRACTORS AND EQUIPMENT SUPPLIERS. EQUIPMENT BEING SUPPORTED BY OR SUSPENDED FROM THE STRUCTURE SHALL BE COORDINATED WITH THE MANUFACTURER OF ANY PRE-ENGINEERED FRAMING OR COMPONENTS. ALL OPENINGS SHALL BE PROPERLY REINFORCED AS APPROVED BY THE ENGINEER. DO NOT PENETRATE ANY STRUCTURAL ELEMENTS (BEAMS, COLUMNS, WALLS, STEEL DECK, SLABS, ETC.) WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER THROUGH THE ARCHITECT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES AND SHALL CHECK ALL DIMENSIONS. ANY DISCREPANCIES SHALL BE CALLED TO THE ATTENTION OF THE ARCHITECT AND BE RESOLVED BEFORE PROCEEDING WITH ANY WORK.
5. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING, AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES IN ACCORDANCE WITH ALL NATIONAL, STATE, AND LOCAL SAFETY ORDINANCES.
6. THE STRUCTURAL INTEGRITY OF ANY BUILDING RELIES ON THE FULL INTERACTION OF ALL ITS COMPONENT PARTS, WITH NO PROVISIONS MADE FOR CONDITIONS AND/OR SEQUENCES OF CONSTRUCTION AND THE STRUCTURAL DESIGN IS BASED ON THIS PREMISE. THEREFORE THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING OF SUPERSTRUCTURE DURING CONSTRUCTION.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR RIGID BRACING OF ALL WALLS, FORMWORK, SHORING AND FALSE WORK DURING CONSTRUCTION.
8. CONTRACTOR SHALL VERIFY ALL DROPS, OFFSETS, BLOCKOUTS, FINISHES, AND DIMENSIONS WITH ARCHITECTURAL PLANS PRIOR TO PROJECT LAYOUT.
9. THE USE OF REPRODUCTIONS OF THESE CONTRACT DRAWINGS BY ANY CONTRACTOR, ERECTOR, FABRICATOR OR MATERIAL SUPPLIER IN LIEU OF PREPARATION OF SHOP DRAWINGS SIGNIFIES HIS ACCEPTANCE OF ALL INFORMATION SHOWN HEREON AS CORRECT, AND OBLIGATES HIMSELF TO ANY JOB EXPENSE, REAL OR IMPLIED, DUE TO ANY ERRORS THAT MAY OCCUR.
10. CONTRACTOR IS RESPONSIBLE FOR ALL METHODS AND PROCEDURES DURING CONSTRUCTION. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO MAINTAIN INTEGRITY OF STRUCTURE DURING CONSTRUCTION.
11. ALL MATERIALS AND WORKMANSHIP SHALL COMPLY WITH THE DRAWINGS, SPECIFICATIONS AND REFERENCED CODE.
12. STRUCTURAL MEMBERS HAVE BEEN LOCATED AND DESIGNED TO ACCOMMODATE THE MECHANICAL EQUIPMENT AND OPENINGS SPECIFIED BY THE MECHANICAL CONSULTANT. ANY SUBSTITUTIONS RESULTING IN REVISIONS TO THE STRUCTURE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE STRUCTURAL ENGINEER.
13. THE GENERAL CONTRACTOR AND SUBCONTRACTORS SHALL DETERMINE THE SCOPE OF THE STRUCTURAL WORK FROM THE CONTRACT DOCUMENTS TAKEN AS A WHOLE INCLUDING ARCHITECTURAL AND MECHANICAL DRAWINGS. THE STRUCTURAL DRAWINGS SHALL NOT BE CONSIDERED SEPARATELY FOR THE PURPOSES OF BIDDING STRUCTURAL WORK. CONTRACTOR SHALL REVIEW THE ENTIRE DRAWING PACKAGE IN ORDER TO DETERMINE THE SCOPE OF STRUCTURAL WORK INCLUDING NECESSARY COORDINATION SHOWN IN OTHER CONSULTANT DRAWINGS.
14. NOTED SCALES ARE FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL NOT SCALE THE DRAWINGS FOR THE PURPOSE OF DETERMINING DIMENSIONAL INFORMATION.
15. PRINCIPAL OPENINGS ARE INDICATED ON THE STRUCTURAL DRAWINGS. OTHER OPENINGS (SLEEVES, BLOCKOUTS ETC.) ARE SHOWN IN THE ARCHITECTURAL AND MECHANICAL DRAWINGS. CONTRACTOR SHALL SUBMIT TO ARCHITECT AND ENGINEER A PLAN WITH ALL PROPOSED OPENINGS COORDINATED WITH ALL THE TRADES. ADDITIONAL REINFORCEMENT AND/OR STRUCTURAL MEMBERS MAY BE REQUIRED UPON REVIEW.
16. CONSTRUCTION MATERIALS SHALL BE SPREAD OUT IF PLACED ON THE STRUCTURE SO AS NOT TO EXCEED THE DESIGN LIVE LOAD PER SQUARE FOOT.
17. WHERE ANY DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, STRUCTURAL NOTES AND SPECIFICATIONS, THE GREATER REQUIREMENTS SHALL GOVERN.
18. APPROVED EQUAL OPTIONS ARE FOR THE CONTRACTOR'S CONVENIENCE AND ARE SUBJECT TO APPROVAL BY THE ENGINEER. IF AN OPTION IS CHOSEN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CHANGES AND COSTS NECESSARY AND FOR COORDINATION OF ALL DETAILS AS REQUIRED TO INCORPORATE THE OPTION INTO THE WORK.

2. SLAB ON GRADE

- 1. ALL PIPE SLEEVES SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE OR PVC.
2. CONTRACTOR SHALL VERIFY ALL SLOPES AND DEPRESSIONS WITH ARCHITECTURAL DRAWINGS PRIOR TO PLACING CONCRETE AND NOTIFY A/E OF ANY DISCREPANCIES.
3. NO CONDUIT OR PIPING LARGER THAN 1"Ø SHALL BE RUN IN STRUCTURAL CONCRETE MEMBERS WITHOUT AUTHORIZATION BY STRUCTURAL ENGINEER.
4. ALL UNDERGROUND UTILITIES SHALL BE COMPLETED IN ADVANCE OF FOUNDATION CONSTRUCTION.
5. SLABS ON GRADE SHALL HAVE CONTROL OR CONSTRUCTION JOINTS ON COLUMN CENTERLINES IN EACH DIRECTION. ADDITIONAL CONTROL OR CONSTRUCTION JOINTS SHALL BE ADDED SO THAT THE JOINTS ARE AT MOST 25 FEET ON CENTER. THE AREA BOUNDED BY THE JOINTS INCLUDES NO MORE THAN 900 SQUARE FEET AND THE LENGTH IS NOT MORE THAN 1.5 TIMES THE WIDTH.
6. WHERE THE SLAB IS TO RECEIVE SENSITIVE FLOOR MATERIALS SUCH AS TILE, THE JOINTS SHALL BE ALIGNED WITH THE JOINTS IN THE FINISHED FLOORING MATERIAL.
7. THE CONTRACTOR SHALL EXAMINE THE ARCHITECTURAL PLANS FOR AREAS WHERE THE SLAB ON GRADE IS STAINED, POLISHED, STAMPED OR TO RECEIVE A PATTERN OF CONTROL JOINTS.

4. REINFORCING STEEL

- 1. REINFORCING BARS SHALL BE GRADE 60 AND CONFORM TO THE REQUIREMENTS OF ASTM A 615. #3 REINFORCING BARS MAY BE GRADE 40 AS PER SUPPLEMENTAL REQUIREMENTS.
2. COMPLETE REINFORCEMENT DRAWINGS SHALL BE PREPARED BY FABRICATOR AND SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW.
3. WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 185 AND SHALL BE PROVIDED IN FLAT SHEETS ONLY.
4. WELDED WIRE FABRIC SHALL BE LAPPED AT LEAST 2 MESHES, BUT NOT LESS THAN 12 INCHES.
5. ALL REINFORCING STEEL SHALL BE DETAILED AND PLACED IN CONFORMANCE WITH THE LATEST EDITION OF ACI 318 AND THE CRSI "MANUAL OF STANDARD PRACTICE FOR REINFORCED CONCRETE CONSTRUCTION", AND AS MODIFIED BY THE DRAWINGS. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.
6. WELDING OF REINFORCING BARS SHALL NOT BE PERMITTED WITHOUT PRIOR APPROVAL FROM THE ENGINEER OF RECORD. IF WELDING IS PERMITTED, IT SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.4.
7. REINFORCING BARS, WELDED WIRE FABRIC AND ACCESSORIES SHALL BE STORED ABOVE THE GROUND SURFACE UPON PLATFORMS, SKIDS, OR OTHER SUPPORTS.
8. ALL REINFORCING SHALL BE SUPPORTED ON PLASTIC CHAIRS AT 48" O.C.
9. UNLESS NOTED OTHERWISE, LAP SPLICES IN CONCRETE SHALL BE CLASS "B" TENSION LAP SPLICES (2'-0" MINIMUM) PER SCHEDULE. STAGGER ALTERNATE SPLICES A MINIMUM OF ONE LAP LENGTH. LAP WELDED WIRE FABRIC SO THAT THE OVERLAP BETWEEN OUTER MOST CROSS WIRES OF EACH SHEET IS NOT LESS THAN THE CROSS WIRE SPACING PLUS 2 INCHES. ALL SPLICE LOCATIONS SUBJECT TO APPROVAL AND SHALL BE MADE ONLY WHERE INDICATED ON THE DRAWINGS. EXTEND ALL HORIZONTAL REINFORCING CONTINUOUS AROUND CORNERS AND INTERSECTIONS OR PROVIDE BENT CORNER BARS TO MATCH AND LAP WITH HORIZONTAL BARS AT CORNERS AND INTERSECTIONS OF FOOTINGS AND WALLS.
10. ALL REINFORCING STEEL BARS CROSSING A CONSTRUCTION JOINT SHALL CONFORM TO ONE OF THE FOLLOWING:
A. SPLICE CONNECTION SHALL DEVELOP FULL TENSILE CAPACITY OF BAR OR,
B. INSERTS SHALL BE "ZAP SCREW LOCK" TYPE II.
11. WELDED SPLICES SHALL NOT BE TACK WELDED AND SHALL BE FULL PENETRATION WELDS THAT CONFORM TO AWS D1.4.
12. REINFORCING BAR SPACING GIVEN ARE MAXIMUM ON CENTERS. DOWEL ALL VERTICAL REINFORCING TO FOUNDATION. SKEW HOOKS AS REQUIRED FOR CONCRETE COVER. SECURELY TIE ALL BARS IN POSITION BEFORE PLACING CONCRETE. CONCRETE COLUMN DOWEL EMBEDMENT SHALL BE A STANDARD COMPRESSION DOWEL EMBEDMENT LENGTH PER THE LATEST EDITION OF ACI 318.
13. SPLICED BARS SHALL BE PLACED AT THE SAME EFFECTIVE DEPTH UNLESS NOTED OTHER WISE. REINFORCING BARS NOTED "CONTINUOUS" OR WITH LENGTH NOT SHOWN SHALL BE FULLY CONTINUOUS AND SPLICED ONLY AS SHOWN, OR WHERE APPROVED BY THE ENGINEER.
14. REINFORCING BARS HOOKS SHALL BE STANDARD ACI HOOKS UNLESS NOTED OTHERWISE.

5. DRILLED PIERS

- 1. PIERS SHOULD BE DRILLED AND CONCRETE PLACED IN A CONTINUOUS MANNER.
2. DRILLED FOOTING EXCAVATION SHOULD BE FILLED WITH CONCRETE IMMEDIATELY AFTER THE COMPLETION OF THE DRILLING AND INSPECTING OPERATIONS.
3. CONCRETE SHOULD BE PLACED IN ONE CONTINUOUS PLACEMENT.
4. NOT MORE THAN 1 INCH OF WATER SHOULD BE ALLOWED OVER THE BOTTOM OF THE DRILLED FOOTING EXCAVATION AT THE TIME OF CONCRETE PLACEMENT.
5. DRILLED PIERS WITH LESS THAN 2 PIER DIAMETERS CLEAR BETWEEN SHAFTS SHALL BE EXCAVATED AND CONCRETE PLACED A MINIMUM OF TWENTY FOUR HOURS APART.
6. IF SHAFTS CANNOT BE FORMED WITHOUT CAVING OF THE SOIL, THE STRUCTURAL ENGINEER SHALL BE NOTIFIED BEFORE ANY CORRECTIVE ACTION IS TAKEN.
7. JOINTS BETWEEN PIERS AND PIER CAPS, SHALL BE PREPARED BY ROUGHENING THE SURFACE OF THE CONCRETE IN AN APPROVED MANNER SO THAT THE AGGREGATE SHALL BE EXPOSED UNIFORMLY LEAVING NO LOOSE DEBRIS.
8. HOLES FOR FOUNDATION HOLES SHALL BE DRILLED STRAIGHT AND TO SUCH A DEPTH AS SHOWN ON THE DRAWINGS OR TO A DEPTH SUITABLE TO THE ENGINEER.
9. THE MAXIMUM ACCEPTABLE TOLERANCE FROM PLUMB IN ANY HOLE, MEASURED IN THE CENTER OF THE HOLE SHALL NOT EXCEED 1/8" PER FOOT OF DEPTH.
10. CASINGS MAY BE REQUIRED WHERE, IN THE OPINION OF THE ENGINEER, CAVING MAY BE A CONCERN.
11. NO SHAFT EXCAVATION SHALL BE FILLED WITH CONCRETE UNTIL IT HAS BEEN CLEANED OF ANY LOOSE DIRT OR RUBBLE, AND UNTIL THE EXCAVATION HAS BEEN INSPECTED AND APPROVED BY THE ENGINEER OR TESTING LAB.
12. IF WATER IS ENCOUNTERED, CASING MAY BE REQUIRED. REFER TO GEOTECH REPORT.
13. ALL ASPECTS OF PIER CONSTRUCTION SHALL COMPLY WITH ACI 318, ACI 336.1-94 AND ACI 336.3R-93.

6. NON-SHRINK GROUT

- 1. COLUMN BASE PLATES: NON-SHRINK GROUT SHALL CONSIST OF PORTLAND CEMENT, SAND AND WATER AND WILL BE PROPORTIONED TO ACHIEVE A DESIGNED STRENGTH OF 5,000 PSI AT 28 DAYS.
2. DRY-PACK GROUT UNDER COLUMN BASE PLATES AND AT POCKETS FOR ANCHOR BOLTS AFTER ERECTION OF THE MINIMUM AMOUNT OF FRAMING NECESSARY TO MAINTAIN A PLUMB POSITION.

7. JOINTS AND WATERSTOPS

- 1. ALL KEYWAYS SHALL BE 2X4 CONT. U.N.O. ON SECTIONS.
2. ALL JOINTS SHOWING WATERSTOPS SHALL USE "SYNKO-FLEX" OR APPROVED EQUAL.

8. REINFORCED CONCRETE

- 1. CONCRETE WORK SHALL CONFORM TO ALL REQUIREMENTS OF ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" AND ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE".
2. ALL CONCRETE SHALL HAVE THE FOLLOWING 28-DAY COMPRESSIVE STRENGTH, F'c:
LOCATION MIN. STRENGTH MAX. W/C RATIO MAX. AGGREGATE SIZE AIR ENTRAINMENT
DRILLED PIERS 3,000 PSI. 0.58 1 1/2" 0% ± 1%
GRADE BEAMS 3,000 PSI. 0.55 1 1/2" 0% ± 1%
AND PLINTHS
SLAB ON GRADE 3,000 PSI.(NOTE 1) 0.50 1" 0% ± 1%
NOTES:
A MAY BE INCREASED TO ACCOMMODATE W/C RATION SPECIFIED.
B ALL CONCRETE SHALL BE NORMAL WEIGHT 145 PCF
C CONCRETE MATERIAL SHALL BE AS FOLLOWS:
1. PORTLAND CEMENT TYPE I, IA OR III, IIIA AND CONFORMING TO THE REQUIREMENTS OF ASTM C 150; NO LARGER THAN 1 INCH NOMINAL WIDTH AND CONFORMING TO THE REQUIREMENTS OF ASTM C 33;
2. NORMAL WEIGHT AGGREGATE NO LARGER THAN 1 INCH NOMINAL WIDTH AND CONFORMING TO THE REQUIREMENTS OF ASTM C 330;
3. LIGHT WEIGHT AGGREGATE CONFORMING TO THE REQUIREMENTS OF ASTM C 618 AND SHALL NOT EXCEED 20% OF THE TOTAL AMOUNT OF FLY ASH AND CEMENT COMB'D.
4. FINE AGGREGATE
5. FLY ASH
3. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 5" FOR NON-PUMPED CONCRETE AND 8" FOR PUMPED CONCRETE, MEASURED WITHOUT WATER REDUCERS.
4. WATER SHALL NOT BE ADDED AT THE JOBSITE UNLESS IT IS NOTED AS ACCEPTABLE ON THE TICKET PROVIDED BY THE REMIX SUPPLIER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE MIX SUPPLIED IS WORKABLE IN THE FIELD WITHOUT ADDING WATER AT THE SITE. WATER REDUCING ADMIXTURES MAY BE USED IF APPROVED BY THE ENGINEER.
5. CONCRETE SHALL BE PLACED IN SO THAT SEGREGATION OF THE MIX IS PREVENTED. FINISHING OPERATIONS SHALL NOT BEGIN UNTIL ALL SURFACE WATER IS NOT PRESENT. FREE CEMENT MAY NOT BE SPRINKLED ON THE SURFACE.
6. CONCRETE MIX DESIGNS SHALL BE COMPLETED BY A QUALIFIED LAB AND REGISTERED ENGINEER. THE MIX DESIGN SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR REVIEW AND APPROVAL AT LEAST 7 DAYS PRIOR TO THE DELIVERY OF THE MIX TO THE JOB SITE.
7. READY-MIX CONCRETE SHALL BE MIXED AND DELIVERED IN ACCORDANCE WITH THE REQUIREMENTS SET FORTH IN ASTM C 94.
8. 1 COMPOSITE CONCRETE SAMPLE SHALL BE TESTED FOR EVERY 75 CY OF CONCRETE PLACED BUT NOT LESS THAN 1 SAMPLE FOR EVERY 5,000 S.F. OF SLAB OR WALL AREA AND NOT LESS THAN 1 SAMPLE FOR EACH TYPE OF CONCRETE PLACED THAT DAY. A COMPOSITE SHALL INCLUDE AT LEAST 4 CYLINDERS. ONE SHALL BE TESTED AT 3, 7 AND 28 DAYS AND ONE SHALL BE HELD AND RETESTED AS NEEDED.
9. PROVIDE SLEEVES FOR UTILITY OPENINGS IN CONCRETE BEFORE PLACING CONCRETE. DO NOT CUT ANY CONFLICTING REINFORCING.
10. CONCRETE WHICH HAS CONTAINED WATER FOR MORE THAN 90 MINUTES (60 MINUTES IF AIR TEMPERATURE EXCEEDS 85°) SHALL NOT BE USED. RETEMPERING OF CONCRETE AFTER INITIAL SET HAS OCCURRED IS NOT PERMITTED.
11. FINISHING SHALL COMPLY WITH ACI 302.1 AND ACI 304.
12. COVER AND PROTECTION OF CONCRETE SHALL COMPLY WITH ACI 318.
A. PIERS 3"
B. GRADE BEAMS, PIER CAPS, AND ELEVATOR PITS 3" BOTTOM
3" SIDES IF CAST AGAINST EARTH
2" SIDES IF CAST AGAINST FORMS
3/4" TOP
C. SLAB ON GRADE 1 1/2"

- 13. CURE EXPOSED CONCRETE FOR A MINIMUM OF 7 DAYS IN ACCORDANCE WITH ACI 301 PROCEDURES IN ORDER TO PREVENT CRACKING. CURE WITH CURING AND SEALING COMPOUND, MOIST CURING, MOISTURE-RETAINING COVER CURING, OR COMBINATIONS THEREOF. IF CURING COMPOUND IS USED, APPLY AT A RATE SPECIFIED BY THE MANUFACTURER. CURING COMPOUND MAY BE USED INSTEAD OF WET CURING, IF APPROVED BY E.O.R.
14. CONCRETE SHALL BE PROTECTED DURING CURING FROM RAIN.
15. WATER TO CEMENT RATIO SHALL NOT EXCEED VALUES SHOWN ABOVE.
16. REPAIR HONEYCOMBS, SPALLS, RUNS AND OTHER DAMAGED AREAS AS DIRECTED BY E.O.R.
17. VERIFY ALL FINISHES WITH ARCHITECT.
18. ADD MIXTURES MAY NOT CONTAIN CHLORIDE SALTS.
19. CONTROL JOINTS SHALL BE CUT WITHIN 8 HOURS OF FINISHING CONCRETE.
20. WATER FOR CONCRETE SHALL BE DRINKABLE.
21. HOT OR COLD WEATHER CONCRETE AS DEFINED BY ACI, SHALL BE PLACED IN ACCORDANCE WITH ACI 305 R AND ACI 306 R.
22. BEFORE PLACING CONCRETE, CONTRACTOR SHALL NOTIFY ALL SUBCONTRACTORS TO BE SURE SLEEVES, CONDUIT, CHASED, EMBEDDED ITEMS, BLOCKOUTS, ETC. ARE PROPERLY INSTALLED. CONTRACTOR SHALL NOTIFY ENGINEER OR OWNER'S REPRESENTATIVE AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE TO ALLOW TIME FOR INSPECTION OF CONCRETE.
23. HORIZONTAL JOINTS SHALL NOT BE ALLOWED UNLESS NOTED IN THE DRAWINGS. VERTICAL JOINTS IN FLEXURAL MEMBERS SHALL OCCUR AT THE POINT OF A SPAN IF APPROVED BY ENGINEER.
24. CONSTRUCTION JOINTS BETWEEN PIERS AND PIER CAPS, FOOTINGS AND PLINTHS, AND COLUMNS OR WALLS SHALL BE PREPARED BY ROUGHENING THE CONTACT SURFACE TO A MAXIMUM OF 1/4 OF AN INCH OVER THE FULL CONTACT AREA. AFTER ROUGHENING, THE SURFACES SHALL BE CLEANED ON ANY DELETERIOUS MATERIAL WHICH WOULD PREVENT BONDING.

9. FINISHES FOR CAST-IN-PLACE CONCRETE

- 1. REPAIR CONCRETE EXHIBITING HONEYCOMBS, ROCK POCKETS, SPALLS OR OTHERWISE DAMAGED SURFACES WITH DRY PACK OR CEMENT GROUT AND FINISHED FLUSH WITH ADJOINING SURFACE.
2. ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" UNLESS NOTED OTHERWISE.
3. UNDERSIDES OF BALCONIES SHALL INCLUDE A 1" DEEP DRIP EDGE UNLESS OTHERWISE ON DRAWING.
4. ALL CONCRETE SHALL BE FINISHED AS FOLLOWS:
A. SLABS ON GRADE SMOOTH TROWEL FINISH
B. EXPOSED VERTICAL SURFACES RUBBED FINISH
C. EQUIPMENT PADS SMOOTH TROWEL FINISH
D. PARKING AREAS MEDIUM BROOM FINISH
E. SIDEWALKS LIGHT BROOM FINISH
F. TOPS OF ELEVATED DECKS RUBBED
G. SLABS TO RECEIVE TILE TROWEL AND FINE BROOM
5. FLOORS SHALL HAVE A FLATNESS MEASUREMENT AS FOLLOWS:
FACE FLOOR FLATNESS Ff = 25 MIN LOCAL = 13
FACE FLOOR FLATNESS FL = 17 MIN LOCAL = 10

10. EMBEDDED ANCHORS

- 1. EPOXY USED IN CONCRETE OR CONCRETE MASONRY SHALL BE ONE OF THE FOLLOWING.
A. SIMPSON "SET" EPOXY INSTALLED PER ICC REPORT #ESR-1772.
B. HILTI "HIT RE 500" ADHESIVE INSTALLED PER ICC REPORT #ESR-1682.
2. EXPANSION ANCHORS INSET IN CONCRETE OR IN CONCRETE MASONRY SHALL BE KWIK BOLT TZ BY HILTI INSTALLED IN ACCORDANCE WITH ICC REPORT #ESR-1917.
3. CONTRACTOR MAY SUBSTITUTE EXPANSION BOLTS OR EPOXY OF EQUAL VALUE IN THE SPECIFIED MATERIAL WITH A CURRENT ICC REPORT WHEN APPROVED IN WRITING BY THE ENGINEER.
4. USE OF EXPANSION ANCHORS OR EPOXY TYPE ADHESIVE SHALL BE ONLY WHERE SPECIFICALLY DETAILED OR NOTED, OR WHEN DIRECTED IN WRITING BY THE ENGINEER.

11. SPECIAL INSPECTIONS -

- 1. THE OWNER SHALL EMPLOY ONE OR MORE SPECIAL INSPECTOR(S) TO PROVIDE INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF CONSTRUCTION LISTED IN THIS SECTION. THE SPECIAL INSPECTOR SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE TO THE INSPECTIONS BEING PERFORMED TO THE SATISFACTION OF THE ENGINEER OF RECORD AND THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL HAVE EXPERIENCE WITH AT LEAST FIVE OTHER PROJECTS SIMILAR IN NATURE.
2. THE PURPOSE OF THE INSPECTIONS SHALL BE TO ENFORCE COMPLIANCE WITH THE CONSTRUCTION DRAWINGS, SPECIFICATIONS, GEOTECHNICAL REPORT AND THE 2012 INTERNATIONAL BUILDING CODE, SECTION 1704.
3. SPECIAL INSPECTORS SHALL KEEP RECORD OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL AND TO THE ENGINEER OF RECORD. REPORTS SHALL INDICATE THAT THE WORK INSPECTED WAS PERFORMED IN CONFORMANCE TO THE APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. ANY CORRECTIONS THAT WERE NOT COMPLETED BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE ENGINEER OF RECORD. IF DISCREPANCIES ARE NOT CORRECTED BY CONTRACTOR, SPECIAL INSPECTOR SHALL ISSUE A NOTIFICATION OF NON-COMPLIANCE (NOC) TO ENGINEER.
4. THE SPECIAL INSPECTOR SHALL VERIFY THAT THE FABRICATOR MAINTAINS DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP. IF FABRICATOR IS ENROLLED IN A NATIONALLY ACCEPTED INSPECTIONS PROGRAM (SATISFACTORY TO THE ENGINEER AND BUILDING OFFICIAL), THIS IS NOT REQUIRED. ATTENTION OF THE CONTRACTOR FOR CORRECTION. ANY CORRECTIONS THAT WERE NOT COMPLETED BY THE CONTRACTOR SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND THE ENGINEER OF RECORD.
5. EACH SPECIAL INSPECTOR IS RESPONSIBLE TO REVIEW THE PLANS THOROUGHLY AND SUFFICIENTLY AHEAD OF CONSTRUCTION TO ESTABLISH IF HE CAN INSPECT THOSE ITEMS ENTRUSTED TO HIM. ALL AMBIGUITIES OR COMMISSIONS IN THE APPROVED PLANS THAT CREATE ANY FORM OF DOUBT FOR THE SPECIAL INSPECTOR SHALL BE RESOLVED THROUGH THE PROPER CHANNELS PRIOR TO CONSTRUCTION.
6. THE STRUCTURAL ENGINEER SHALL INSPECT THE CONCRETE FRAME INCLUDING BEARING WALLS, SHEAR WALLS, CONNECTION OF STRUCTURAL SLABS TO SHEAR WALLS, ELEVATED SLABS, BEAMS, COLUMNS, MAT FOUNDATIONS AND PIER CAPS.
7. THE GEOTECHNICAL AND STRUCTURAL ENGINEER SHOULD EXAMINE FOOTING EXCAVATION, PIER AND PIER CAP INSTALLATION, AND FILL PLACEMENT TO DETERMINE THAT THE PROPER DESIGN REQUIREMENTS HAVE BEEN REACHED. THE INSPECTION SHOULD BE PERFORMED PRIOR TO THE PLACEMENT OF THE SLAB REINFORCEMENT IN THE EXCAVATION.
8. THE FOLLOWING ITEMS REQUIRE INSPECTION BY THE SPECIAL INSPECTOR:

Table with columns: STRUCTURAL /REINFORCING STEEL, REFERENCED STANDARD, FREQUENCY, ITEMS TO BE INSPECTED. Rows include HIGH STRENGTH BOLTING, WELDING OF REINFORCING STEEL, CONCRETE CONSTRUCTION, SOILS(SLAB-ON-GRADE), SUB-GRADE PREPARATION, PROOFROLLING OBSERVATIONS, MOISTURE CONDITIONING & RECOMPACTION, DURING FILL PLACEMENT, EVALUATION OF INPLACE DENSITY FILL, PIERS, and REINFORCING STEEL.

12. ADD'L WIND LOADS AND COMPONENTS / CLADDING PRESSURES

Table with columns: INTERNAL PRESSURE COEFFICIENT, GOPI, MAIN WIND FORCE RESISTING SYSTEM (MWFRS), COMPONENTS AND CLADDING, ROOF UPLIFT, CORNERS AND OVERHANGS, WALLS (EFFECTIVE WIND AREA 20 SQUARE FEET), ROOF UPLIFT (EFFECTIVE WIND AREA 100 SQUARE FEET).

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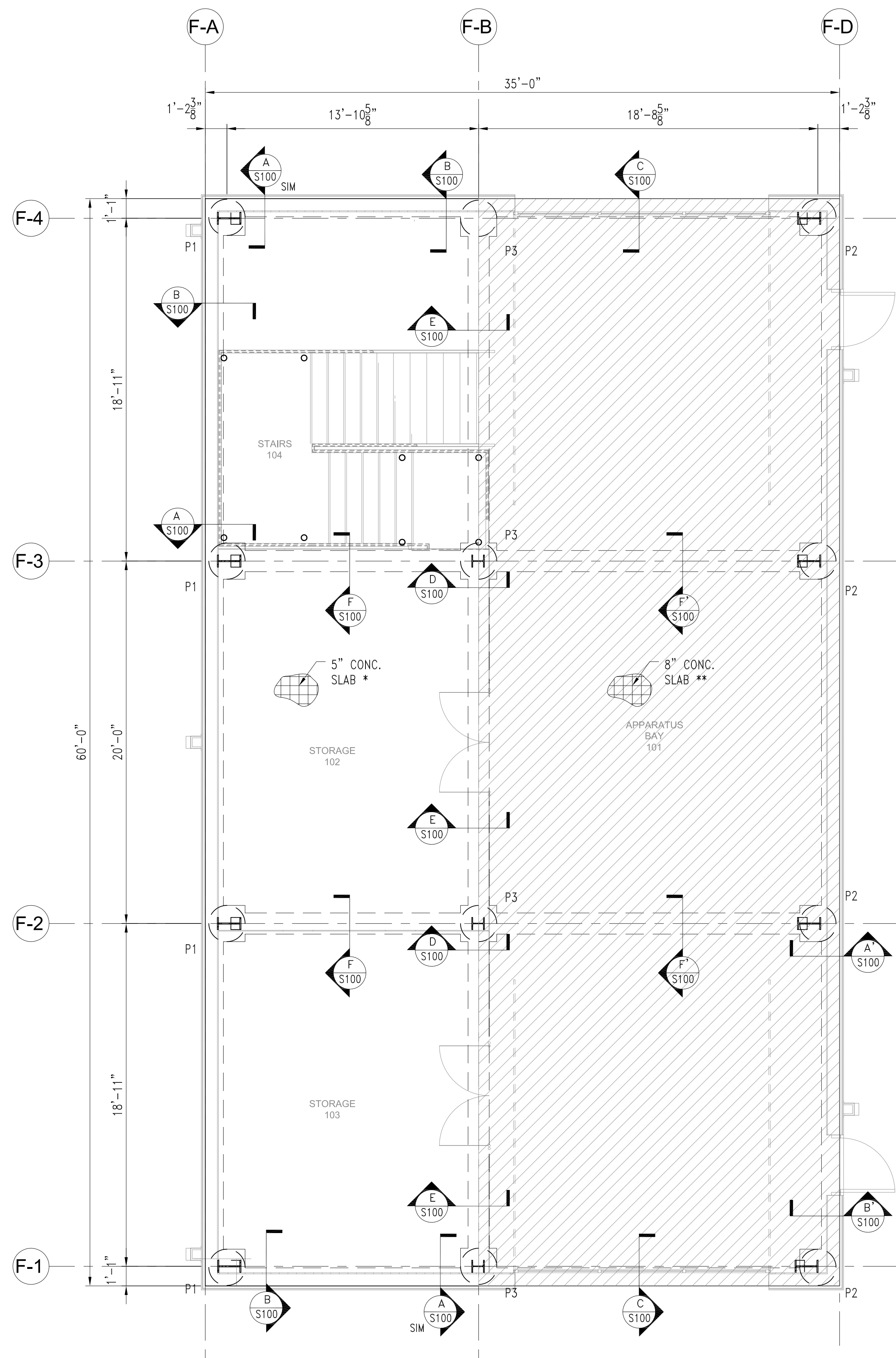


TBE Firm No. F-436
CSF PROJECT # 4007

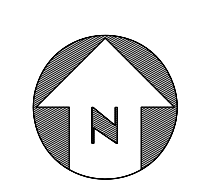
Table with columns: PROJECT NO., DATE, DRAWN, CHECKED, DATE, ISSUE. Values include 201936, 11/12/2019, DJM, CAG, 10/21/2019, 10/30/2019, 11/12/2019, 100% REVIEW SET, BID, CONSTRUCTION.

\$0.00

GENERAL NOTES



**FOUNDATION DESIGN DATA:**  
 a. SOILS REPORT PROVIDED BY: HTS, INC., CONSULTANTS  
 REPORT NUMBER: 13-S-342  
 REPORT DATE: AUGUST, 2013  
 b. DRILLED PIER ALLOWABLE BEARING CAPACITIES  
 REF. GEOTECH REPORT

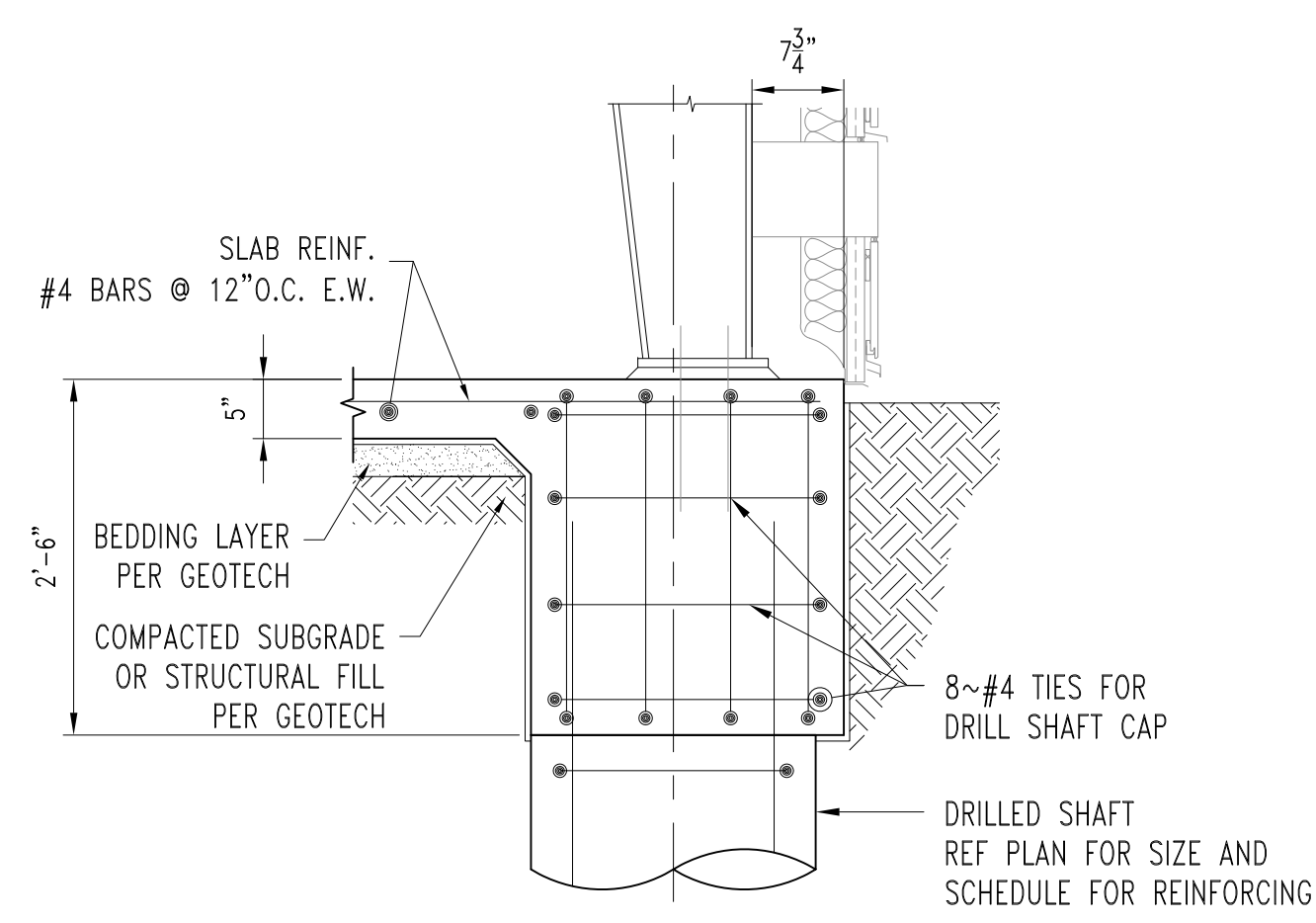


**1 FIRE TRAINING CENTER FOUNDATION PLAN**  
 SCALE: 1/4"=1'-0"

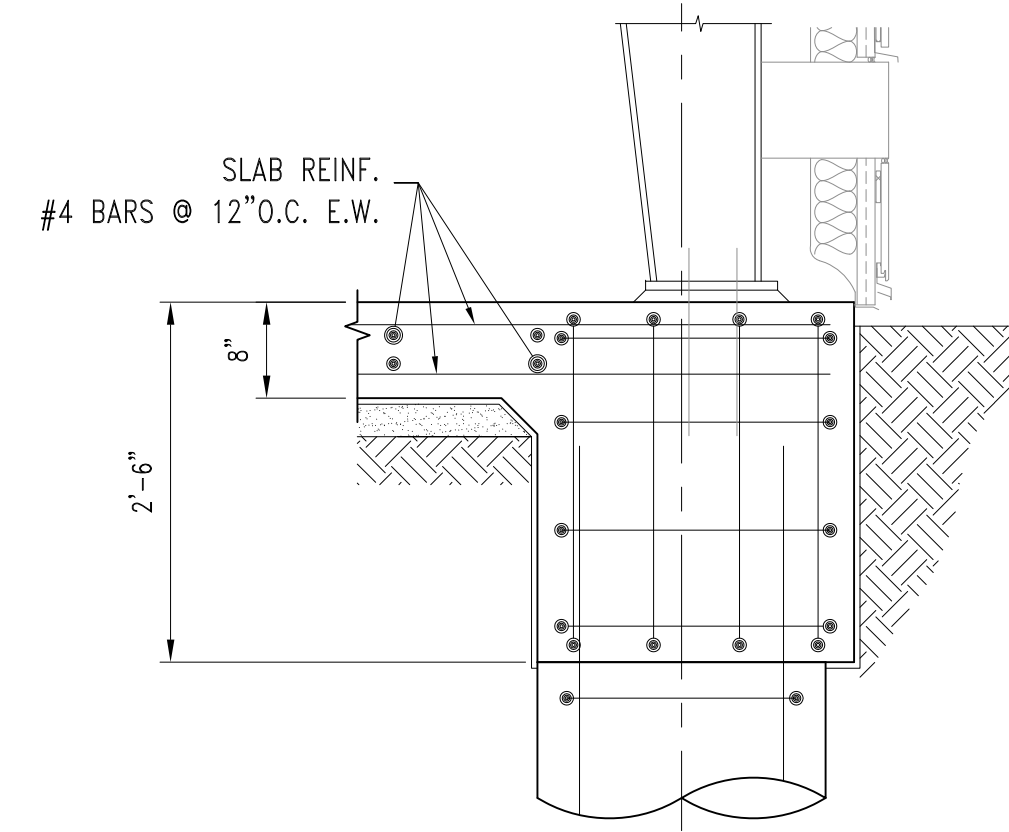
- NOTE:**
- \* 5" THK SLAB - CONCRETE SLAB REINFORCED WITH #4 BARS @ 12" O.C. E.W. WITH 10 MIL STEGO VAPOR BARRIER
  - \*\* 8" THK SLAB - CONCRETE SLAB REINFORCED WITH #4 BARS @ 12" O.C. E.W., TOP & BOTTOM (DOUBLE MATTE), WITH 10 MIL STEGO VAPOR BARRIER

- NOTE:**
- 1) SEE METAL BUILDING SUPPLIER DWGS FOR ANCHOR BOLT LOCATION & SIZE AND BASEPLATE ELEVATIONS.
  - 2) METAL BUILDING COMPONENTS ARE CONTRACTOR PROVIDED PEMB COMPONENTS.
  - 3) ALL FOUNDATIONS TO BE VERIFIED AFTER BUILDING MANUFACTURER PROVIDES COLUMN LOADS.
  - 4) VERIFY ALL RAISES, INSERTS, DROPS AND BLOCK-OUTS AND ENSURE ALL DIMENSIONS AGREE WITH ARCHITECTURAL PLANS AND SPECIFICATIONS.
  - 5) CASING OF DRILLED PIERS OR SLURRY DISPLACEMENT SHAFT INSTALLATION MAY BE REQUIRED FOR THE INSTALLATION OF DRILLED PIERS.

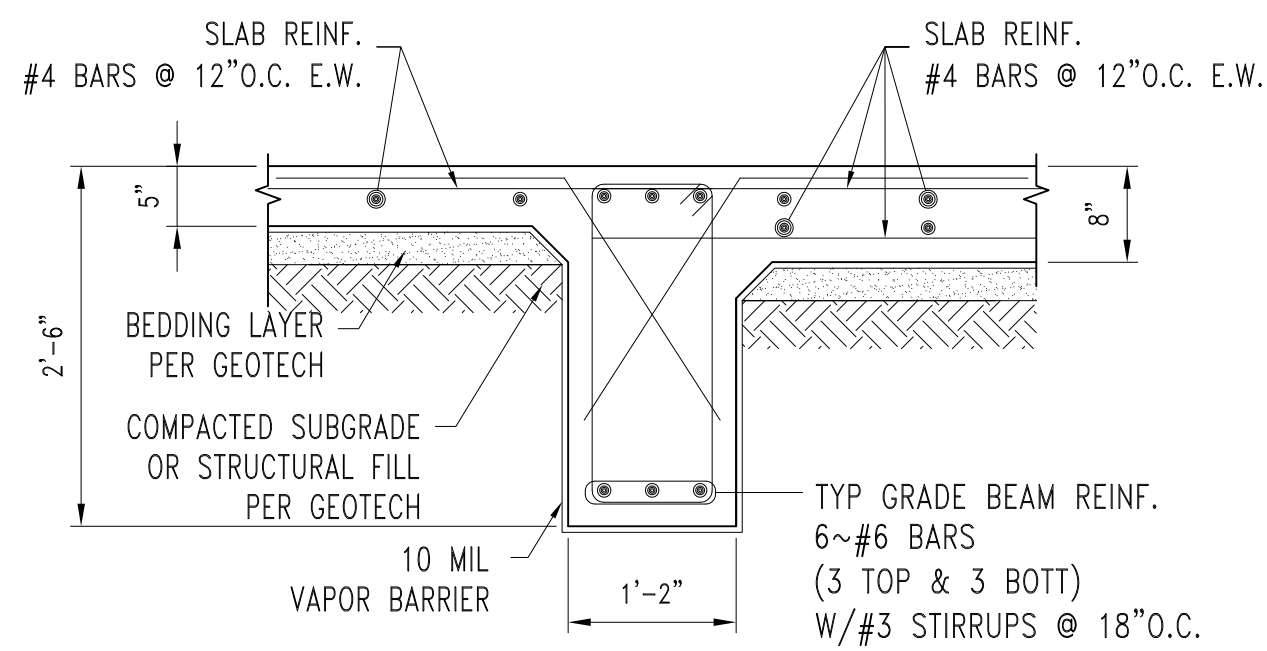
**LEGEND**  
 PX - SHAFT TYPE



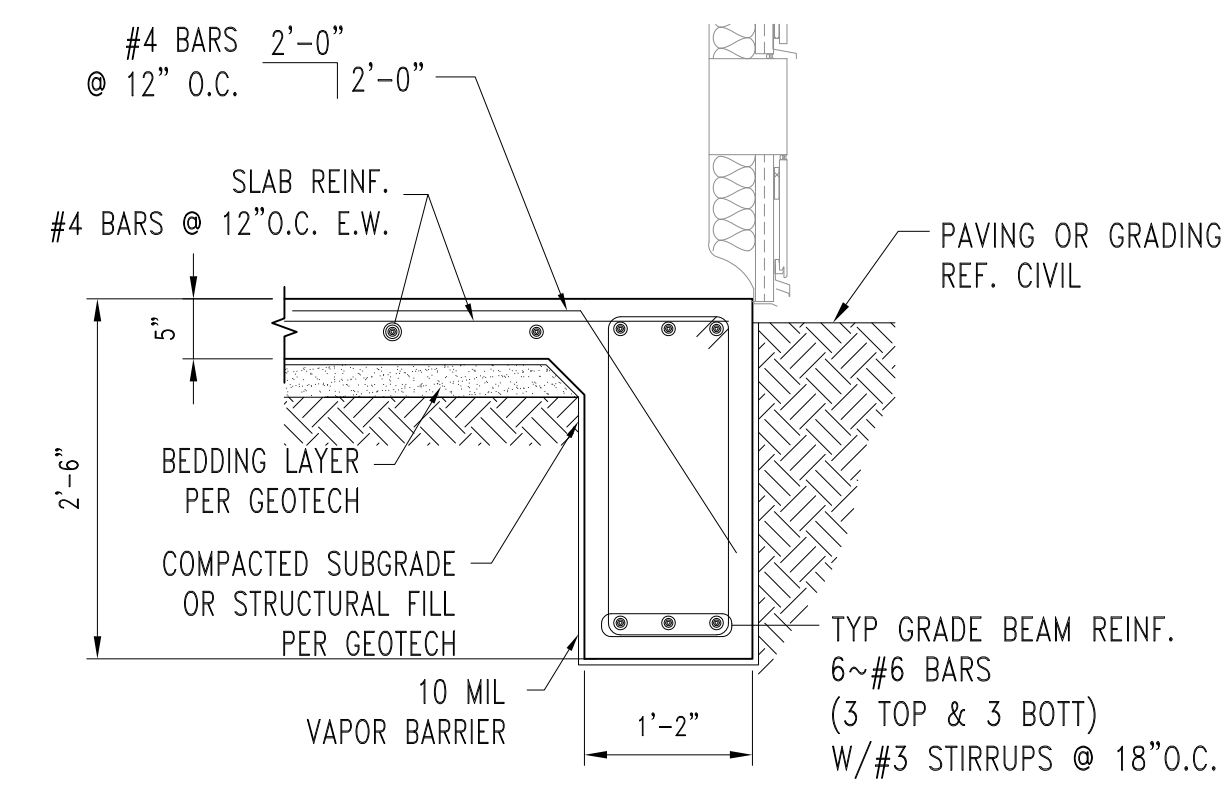
**A SECTION - COLUMN FOUNDATION**  
 SCALE: 3/4" = 1'-0"



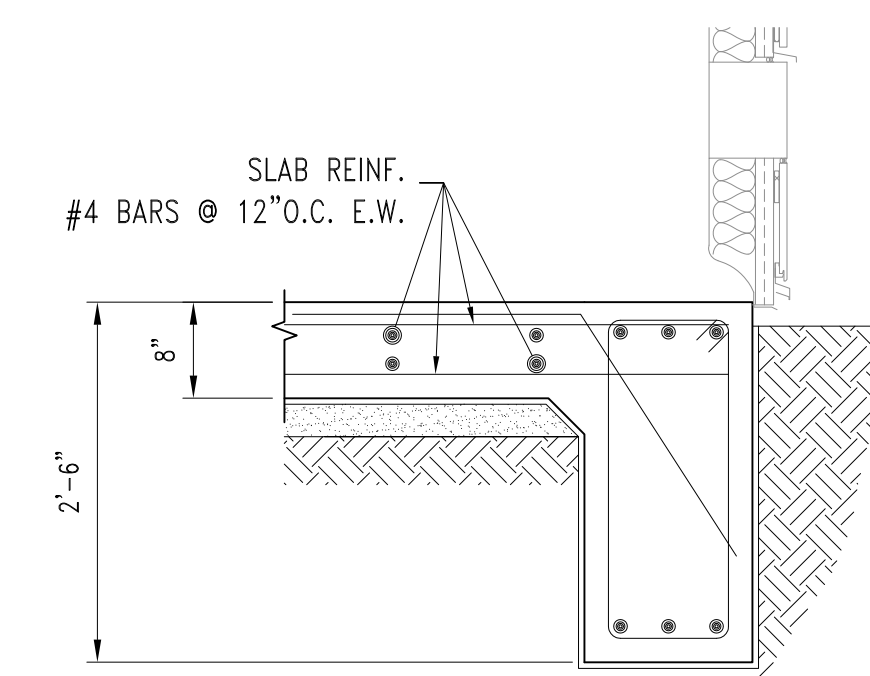
**A' SECTION - COLUMN FOUNDATION**  
 SCALE: 3/4" = 1'-0"



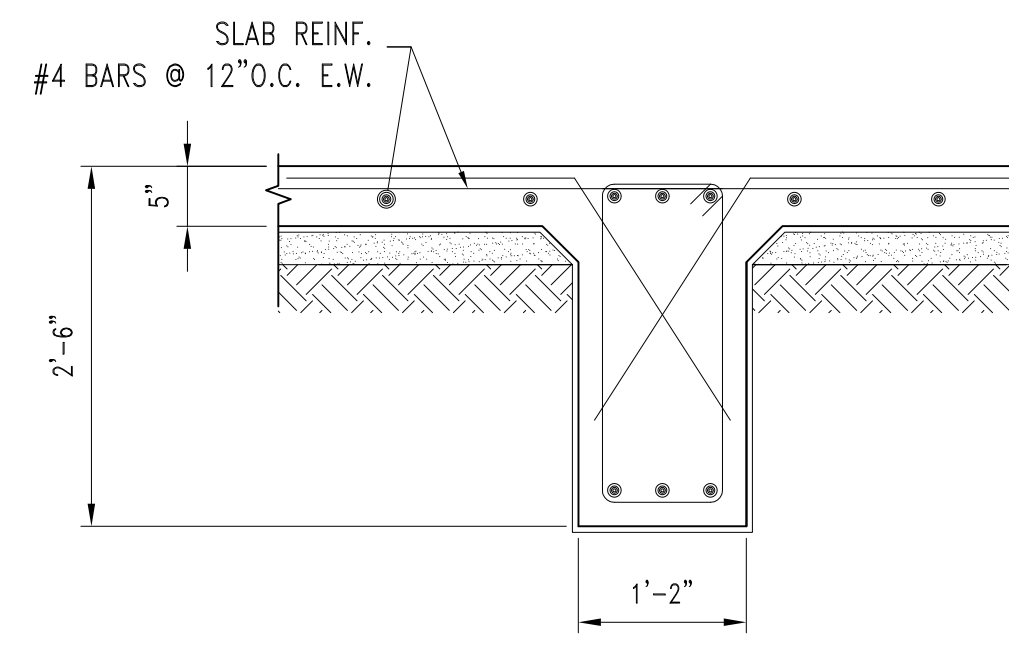
**E SECTION - INTERNAL GRADE BEAM**  
 SCALE: 3/4" = 1'-0"



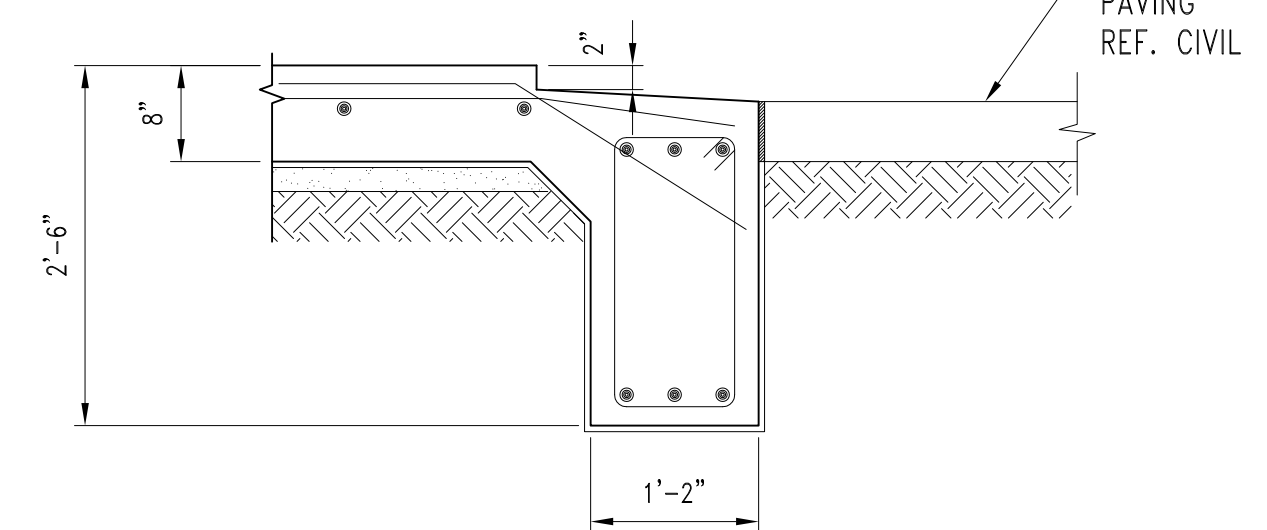
**B SECTION - EXTERIOR GRADE BEAM**  
 SCALE: 3/4" = 1'-0"



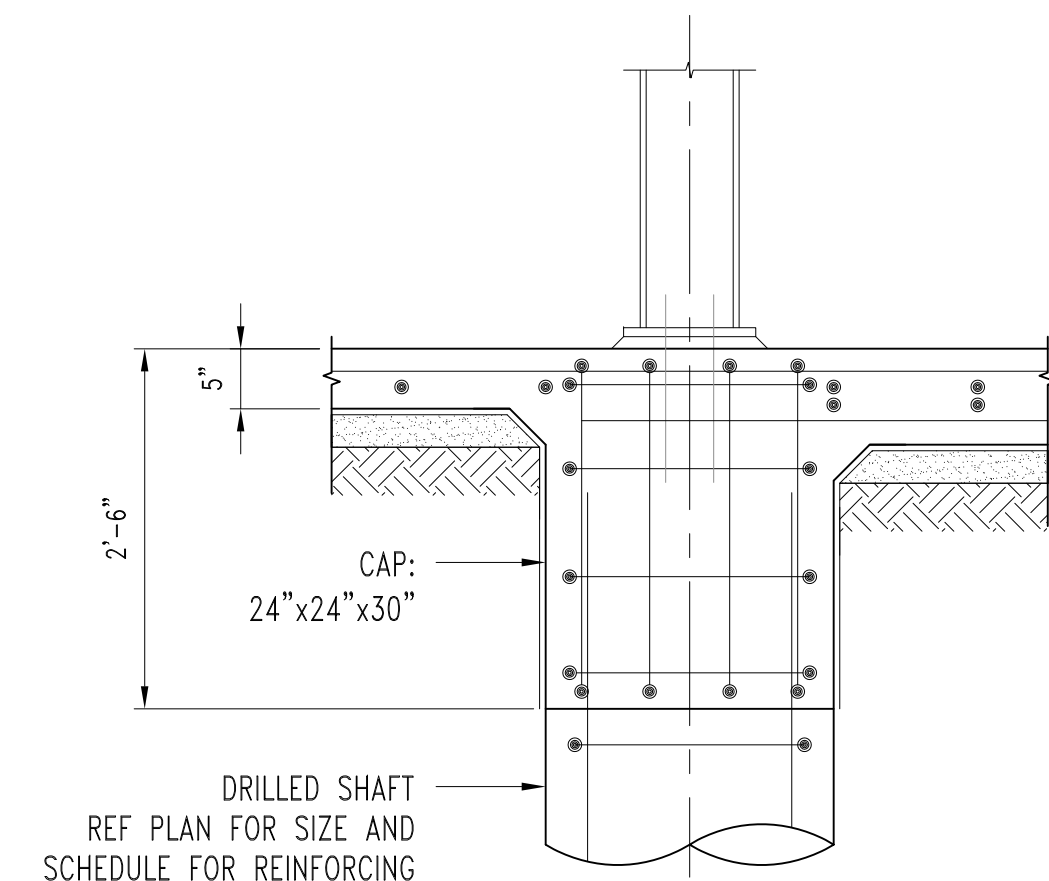
**B' SECTION - EXTERIOR GRADE BEAM**  
 SCALE: 3/4" = 1'-0"



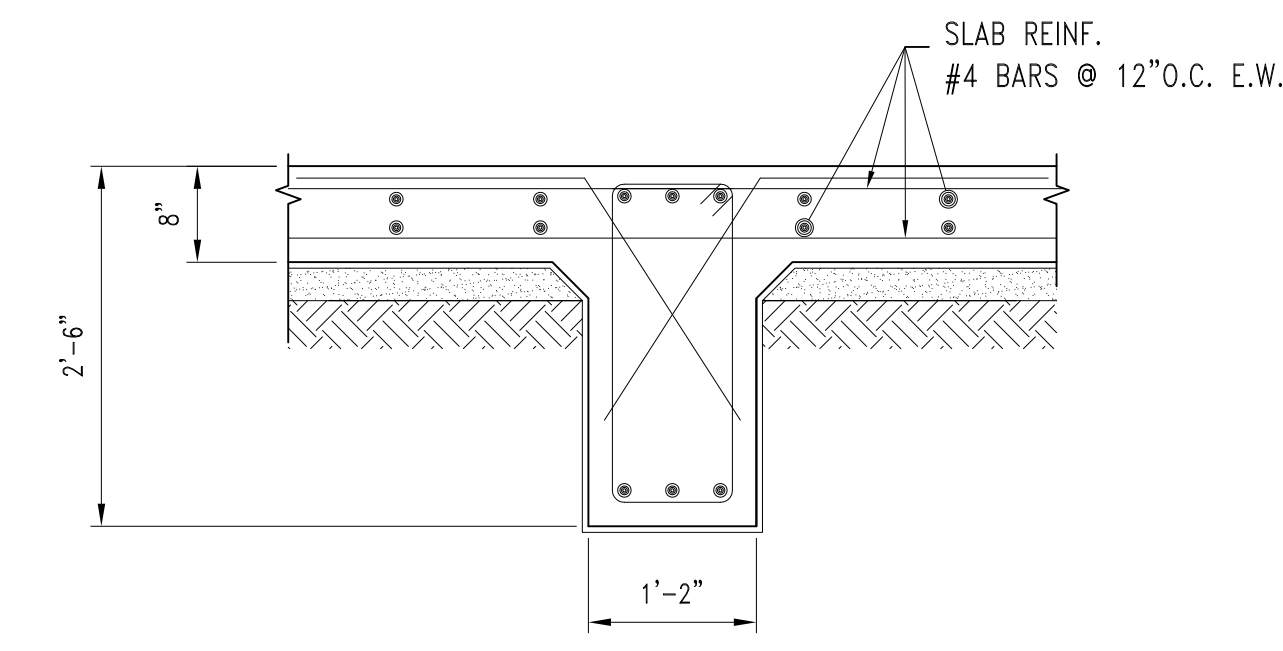
**F SECTION - INTERNAL GRADE BEAM**  
 SCALE: 3/4" = 1'-0"



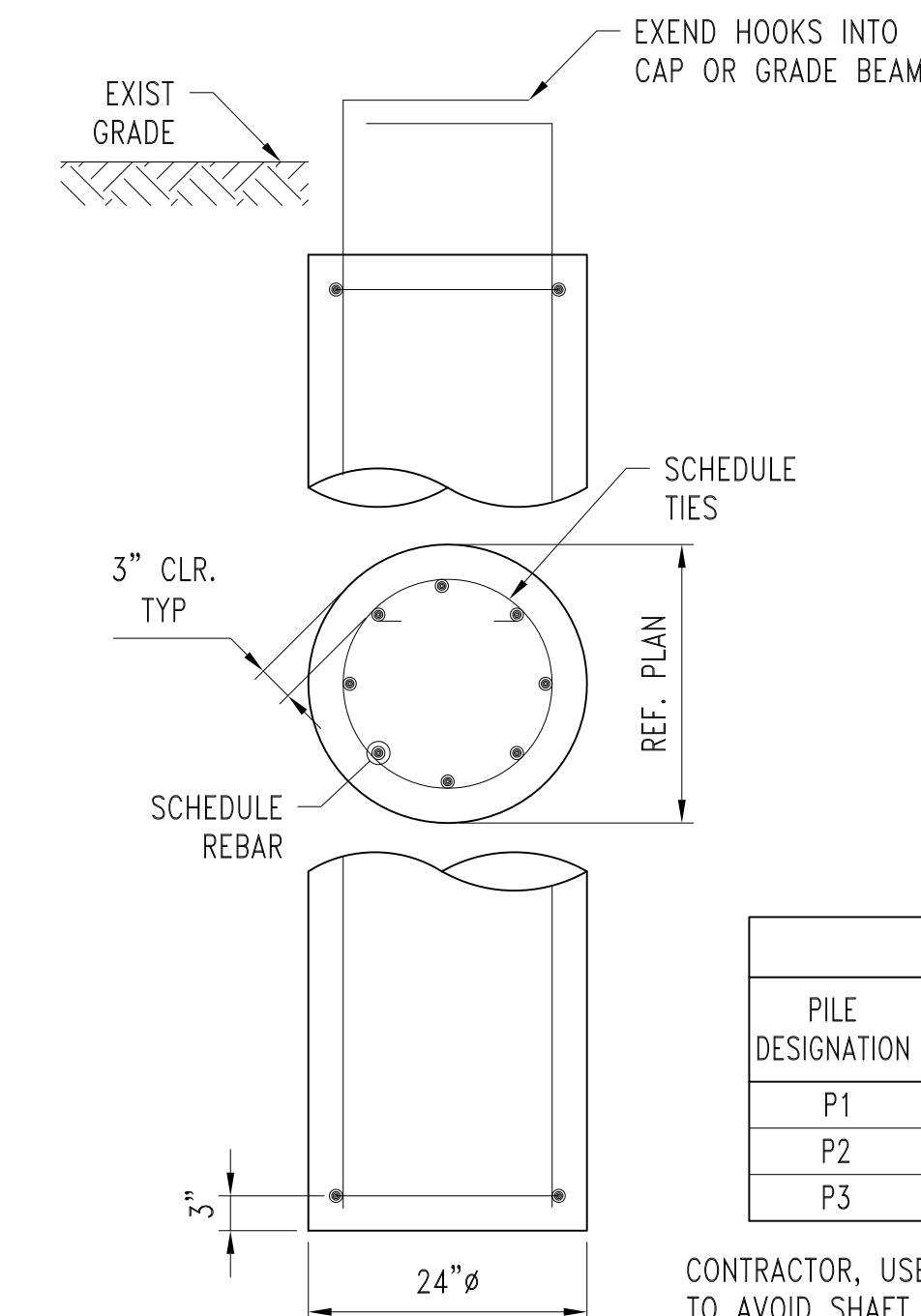
**C SECTION - EXTERIOR GRADE BEAM @ OVERHEAD DOOR**  
 SCALE: 3/4" = 1'-0"



**D SECTION - INTERIOR COLUMN FOUNDATION**  
 SCALE: 3/4" = 1'-0"



**F' SECTION - INTERNAL GRADE BEAM**  
 SCALE: 3/4" = 1'-0"



| PILE DESIGNATION | DIAMETER (in) | DESIGN DEPTH (ft) | VERTICAL STEEL |     | TIES          |
|------------------|---------------|-------------------|----------------|-----|---------------|
|                  |               |                   | SIZE           | NO. |               |
| P1               | 24            | 25                | #6             | 7   | #3 @ 12" O.C. |
| P2               | 24            | 20                | #6             | 7   | #3 @ 12" O.C. |
| P3               | 24            | 30                | #6             | 7   | #3 @ 12" O.C. |

CONTRACTOR, USE SLURRY OR ENCASING FOR DRILLED PIERS, WHERE REQ'D, TO AVOID SHAFT COLLAPSE AND OR SLOUGHING.

**2 TYPICAL DETAIL - DRILLED SHAFT / BELL**  
 SCALE: NOT TO SCALE

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**MARITIME EXPANSION FIRE TRAINING CENTER**

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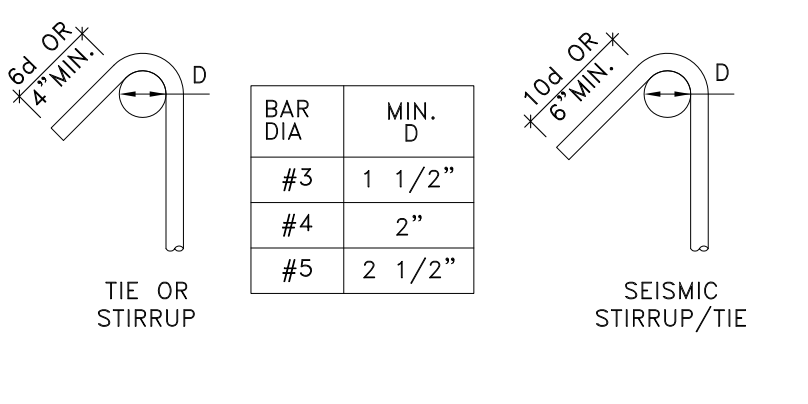
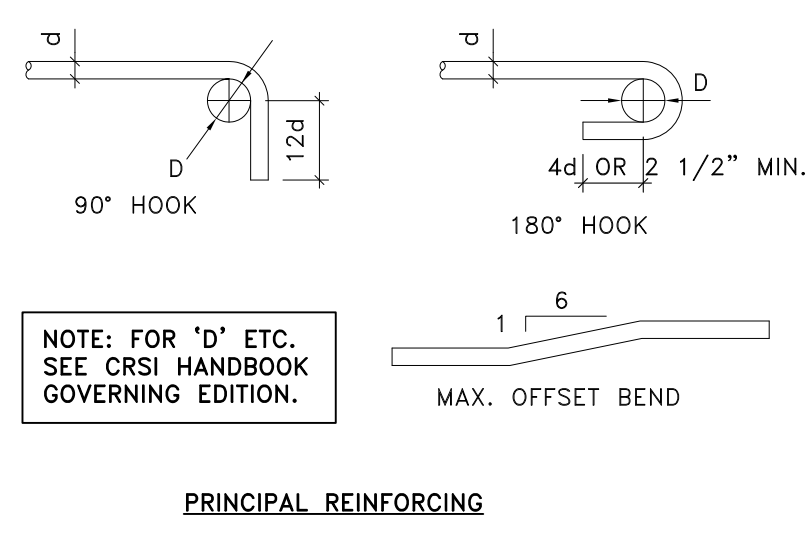


|             |                 |
|-------------|-----------------|
| PROJECT NO. | 201936          |
| DATE:       | 11/12/2019      |
| DRAWN       | DJM             |
| CHECKED     | CAG             |
| DATE        | ISSUE           |
| 10/21/2019  | 100% REVIEW SET |
| 10/30/2019  | BID             |
| 11/12/2019  | CONSTRUCTION    |

**S1.00**

**FIRE TRAINING CENTER FOUNDATION PLAN**

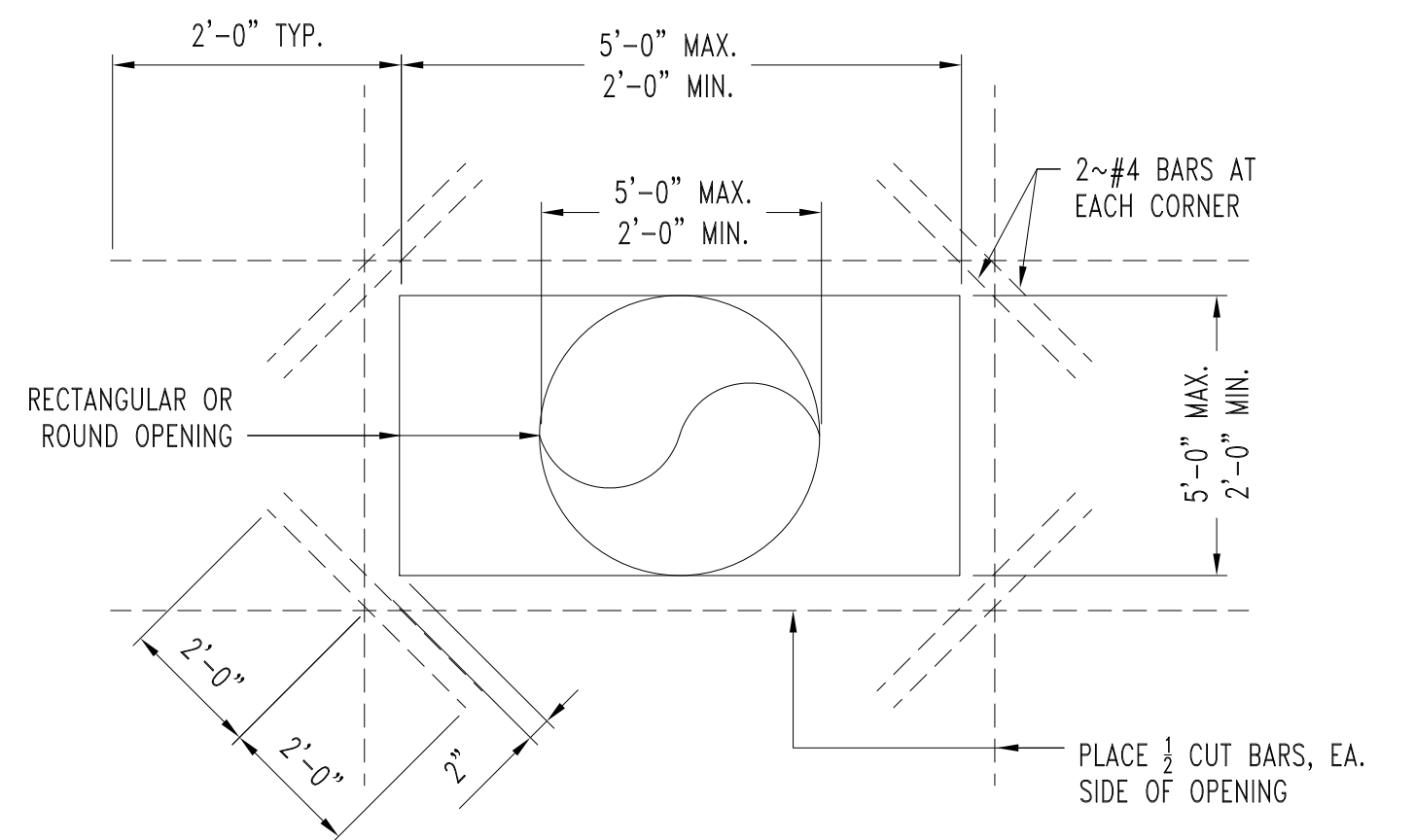




NOTE:  
1. ALL BENDS SHALL BE MADE COLD.  
2. #14 AND #18 BARS SHALL BE BEND-TESTED AND APPROVED PRIOR TO BENDING.

### 1 TYPICAL BAR BENDS

SCALE: N.T.S.



### 2 TYPICAL WALL OR BEAM CORNER BAR PLACING DETAIL

SCALE: N.T.S.

### 7 SLAB ON GRADE CORNER REINFORCING DETAIL

SCALE: N.T.S.

### 6 OPENING - SLAB ON GRADE GREATER THAN 2'-0" Ø

SCALE: N.T.S.

**'ld'** TENSION DEVELOPMENT LENGTH FOR BEAM, SLAB & WALL REBARS  
(GRADE 60 UNCOATED BARS-NORMAL WEIGHT CONCRETE)

| BAR SIZE | f'c=3000 psi |         | f'c=4000 psi |         | f'c=5000 psi |         | f'c=6000 psi |         | f'c=8000 psi |         |
|----------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|--------------|---------|
|          | ld TOP       | ld BOT. | ld TOP       | ld BOT. | ld TOP       | ld BOT. | ld TOP       | ld BOT. | ld TOP       | ld BOT. |
| #3       | 1'-9"        | 1'-4"   | 1'-6"        | 1'-2"   | 1'-5"        | 1'-1"   | 1'-3"        | 1'-0"   | 1'-1"        | 1'-0"   |
| #4       | 2'-4"        | 1'-10"  | 2'-1"        | 1'-7"   | 1'-10"       | 1'-5"   | 1'-8"        | 1'-3"   | 1'-5"        | 1'-1"   |
| #5       | 3'-0"        | 2'-3"   | 2'-7"        | 2'-0"   | 2'-7"        | 1'-9"   | 2'-1"        | 1'-7"   | 1'-10"       | 1'-5"   |
| #6       | 3'-7"        | 2'-9"   | 3'-1"        | 2'-4"   | 2'-9"        | 2'-1"   | 2'-6"        | 1'-11"  | 2'-2"        | 1'-8"   |
| #7       | 5'-2"        | 4'-0"   | 4'-6"        | 3'-6"   | 4'-0"        | 3'-1"   | 3'-8"        | 2'-10"  | 3'-2"        | 2'-5"   |
| #8       | 5'-11"       | 4'-7"   | 5'-2"        | 3'-11"  | 4'-7"        | 3'-6"   | 4'-2"        | 3'-3"   | 3'-8"        | 2'-10"  |
| #9       | 6'-8"        | 5'-2"   | 5'-9"        | 4'-5"   | 5'-2"        | 4'-0"   | 4'-9"        | 3'-8"   | 4'-1"        | 3'-2"   |
| #10      | 7'-6"        | 5'-10"  | 6'-6"        | 5'-0"   | 5'-10"       | 4'-6"   | 5'-4"        | 4'-1"   | 4'-7"        | 3'-7"   |
| #11      | 8'-4"        | 6'-5"   | 7'-3"        | 5'-7"   | 6'-6"        | 5'-0"   | 5'-11"       | 4'-7"   | 5'-1"        | 3'-11"  |

NOTES:  
1. 'TOP' BARS ARE HORIZONTAL REBARS WITH MORE THAN 12 IN. OF FRESH CONCRETE CAST BELOW THE BARS AT THE DEVELOPMENT LENGTH.  
2. 'ld' FOR #3 & #4 BARS IN SLAB OR WALL ARE CONSERVATIVE & MAY BE REDUCED TO 0.75 TIMES (FOR #3 BARS) AND 0.94 TIMES (FOR #4 BARS) FROM THE TABULATED VALUES.  
3. FOR LIGHTWEIGHT CONCRETE MULTIPLY THE TABULATED VALUES BY 1.3.

**'ldh'** TENSION DEVELOPMENT (EMBEDMENT) LENGTH FOR STANDARD END HOOKS  
(GRADE 60 BARS - NORMAL WEIGHT CONCRETE - GENERAL USE)

| BAR SIZE | f'c=3000 psi |        | f'c=4000 psi |        | f'c=5000 psi |     | f'c=6000 psi |     |
|----------|--------------|--------|--------------|--------|--------------|-----|--------------|-----|
|          | ldh          | ldh    | ldh          | ldh    | ldh          | ldh | ldh          | ldh |
| #3       | 9"           | 7"     | 7"           | 6"     |              |     |              |     |
| #4       | 11"          | 10"    | 9"           | 8"     |              |     |              |     |
| #5       | 1'-2"        | 1'-0"  | 11"          | 10"    |              |     |              |     |
| #6       | 1'-5"        | 1'-3"  | 1'-1"        | 1'-0"  |              |     |              |     |
| #7       | 1'-7"        | 1'-5"  | 1'-3"        | 1'-2"  |              |     |              |     |
| #8       | 1'-10"       | 1'-7"  | 1'-5"        | 1'-4"  |              |     |              |     |
| #9       | 2'-1"        | 1'-10" | 1'-7"        | 1'-6"  |              |     |              |     |
| #10      | 2'-4"        | 2'-0"  | 1'-10"       | 1'-8"  |              |     |              |     |
| #11      | 2'-6"        | 2'-2"  | 2'-0"        | 1'-10" |              |     |              |     |

### 11 BAR SPLICES AND DEVELOPMENT LENGTHS

SCALE: N.T.S.

**TENSION LAP SPLICES - CLASS B FOR TOP & BOTTOM BARS**  
(GRADE 60 UNCOATED BARS - NORMAL WEIGHT CONCRETE)

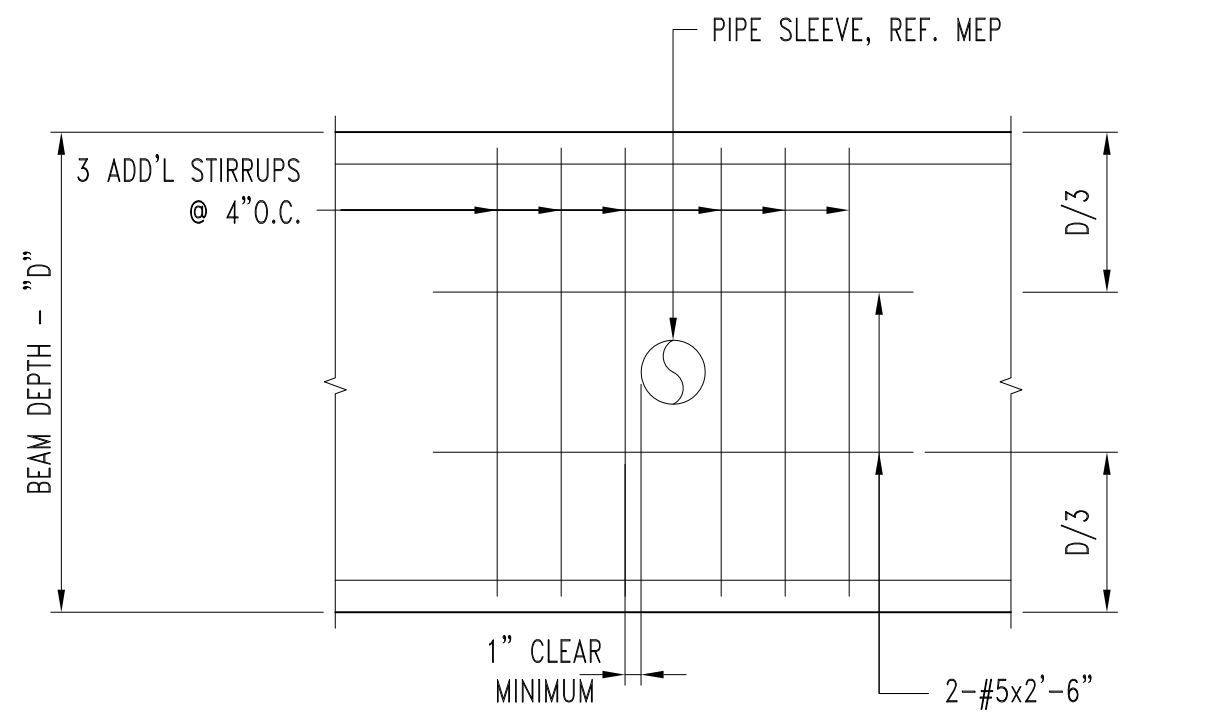
| BAR SIZE | f'c=3000 psi |        | f'c=4000 psi |       | f'c=5000 psi |        | f'c=6000 psi |        | f'c=8000 psi |        |
|----------|--------------|--------|--------------|-------|--------------|--------|--------------|--------|--------------|--------|
|          | TOP          | BOT.   | TOP          | BOT.  | TOP          | BOT.   | TOP          | BOT.   | TOP          | BOT.   |
| #3       | 2'-4"        | 1'-9"  | 2'-0"        | 1'-6" | 1'-10"       | 1'-5"  | 1'-8"        | 1'-4"  | 1'-5"        | 1'-4"  |
| #4       | 3'-1"        | 2'-4"  | 2'-8"        | 2'-1" | 2'-5"        | 1'-10" | 2'-2"        | 1'-8"  | 1'-11"       | 1'-5"  |
| #5       | 3'-10"       | 3'-0"  | 3'-4"        | 2'-7" | 3'-0"        | 2'-4"  | 2'-9"        | 2'-1"  | 2'-4"        | 1'-10" |
| #6       | 4'-8"        | 3'-7"  | 4'-0"        | 3'-1" | 3'-7"        | 2'-9"  | 3'-3"        | 2'-6"  | 2'-10"       | 2'-2"  |
| #7       | 6'-9"        | 5'-2"  | 5'-10"       | 4'-6" | 5'-3"        | 4'-0"  | 4'-9"        | 3'-8"  | 4'-2"        | 3'-2"  |
| #8       | 7'-9"        | 5'-11" | 6'-8"        | 5'-2" | 6'-0"        | 4'-7"  | 5'-5"        | 4'-2"  | 4'-9"        | 3'-8"  |
| #9       | 8'-8"        | 6'-8"  | 7'-6"        | 5'-9" | 6'-9"        | 5'-2"  | 6'-2"        | 4'-9"  | 5'-4"        | 4'-1"  |
| #10      | 9'-10"       | 7'-6"  | 8'-6"        | 6'-6" | 7'-7"        | 5'-10" | 6'-11"       | 5'-4"  | 6'-0"        | 4'-7"  |
| #11      | 10'-11"      | 8'-4"  | 9'-5"        | 7'-3" | 8'-5"        | 6'-6"  | 7'-8"        | 5'-11" | 6'-8"        | 5'-1"  |

NOTE: FOR CLASS 'A' SPLICE (PERMITTED ONLY WHEN NOT MORE THAN HALF THE BARS SPLICED & SPLICES STAGGERED BY THE DISTANCE OF SPLICE LENGTH), USE SAME AS 'ld' = TENSION DEVELOPMENT LENGTH TABLE.

**'lc'** COMPRESSION DEVELOPMENT LENGTH  
(GRADE 60 UNCOATED BARS-NORMAL WEIGHT CONCRETE - GENERAL USE)

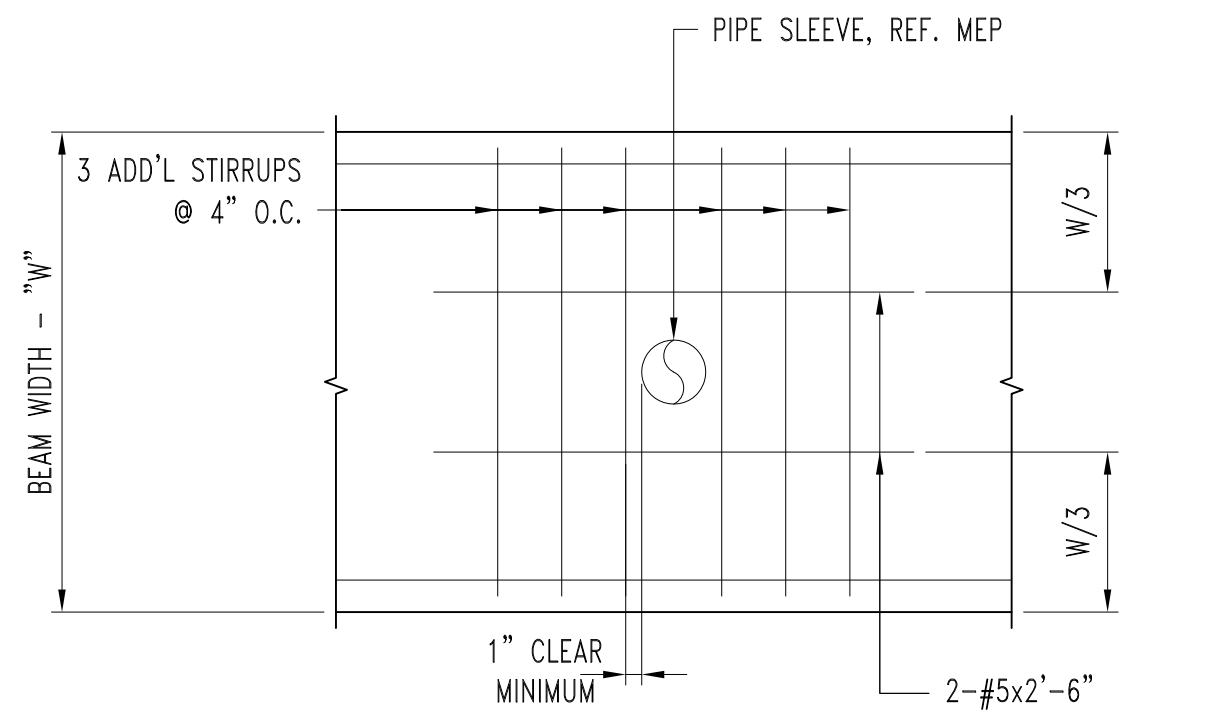
| BAR SIZE | f'c=3000 psi |        | f'c=4000 psi |        | f'c=5000 psi |     | f'c=6000 psi |     | f'c=8000 psi |     |
|----------|--------------|--------|--------------|--------|--------------|-----|--------------|-----|--------------|-----|
|          | ldc          | ldc    | ldc          | ldc    | ldc          | ldc | ldc          | ldc | ldc          | ldc |
| #4       | 11"          | 10"    | 9"           | 9"     | 9"           |     |              |     |              |     |
| #5       | 1'-2"        | 1'-0"  | 11"          | 11"    | 11"          |     |              |     |              |     |
| #6       | 1'-5"        | 1'-2"  | 1'-2"        | 1'-2"  | 1'-2"        |     |              |     |              |     |
| #7       | 1'-7"        | 1'-5"  | 1'-4"        | 1'-4"  | 1'-4"        |     |              |     |              |     |
| #8       | 1'-10"       | 1'-7"  | 1'-6"        | 1'-6"  | 1'-6"        |     |              |     |              |     |
| #9       | 2'-1"        | 1'-10" | 1'-8"        | 1'-8"  | 1'-8"        |     |              |     |              |     |
| #10      | 2'-4"        | 2'-0"  | 1'-11"       | 1'-11" | 1'-11"       |     |              |     |              |     |
| #11      | 2'-7"        | 2'-3"  | 2'-2"        | 2'-2"  | 2'-2"        |     |              |     |              |     |
| #14      | 3'-1"        | 2'-8"  | 2'-7"        | 2'-7"  | 2'-7"        |     |              |     |              |     |
| #18      | 4'-2"        | 3'-7"  | 3'-5"        | 3'-5"  | 3'-5"        |     |              |     |              |     |

NOTE: LAP SPLICE LENGTH FOR COMPRESSION BARS = 30 BAR DIAMETERS.



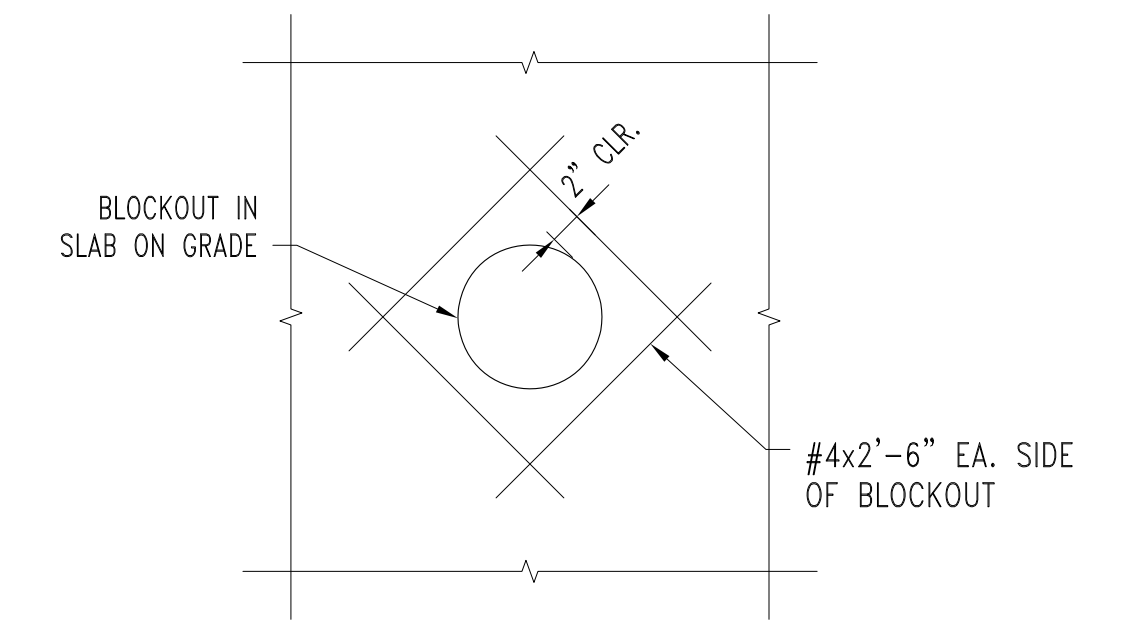
### 3 TYPICAL HORIZONTAL GRADE BEAM PENETRATION DETAIL

SCALE: N.T.S.



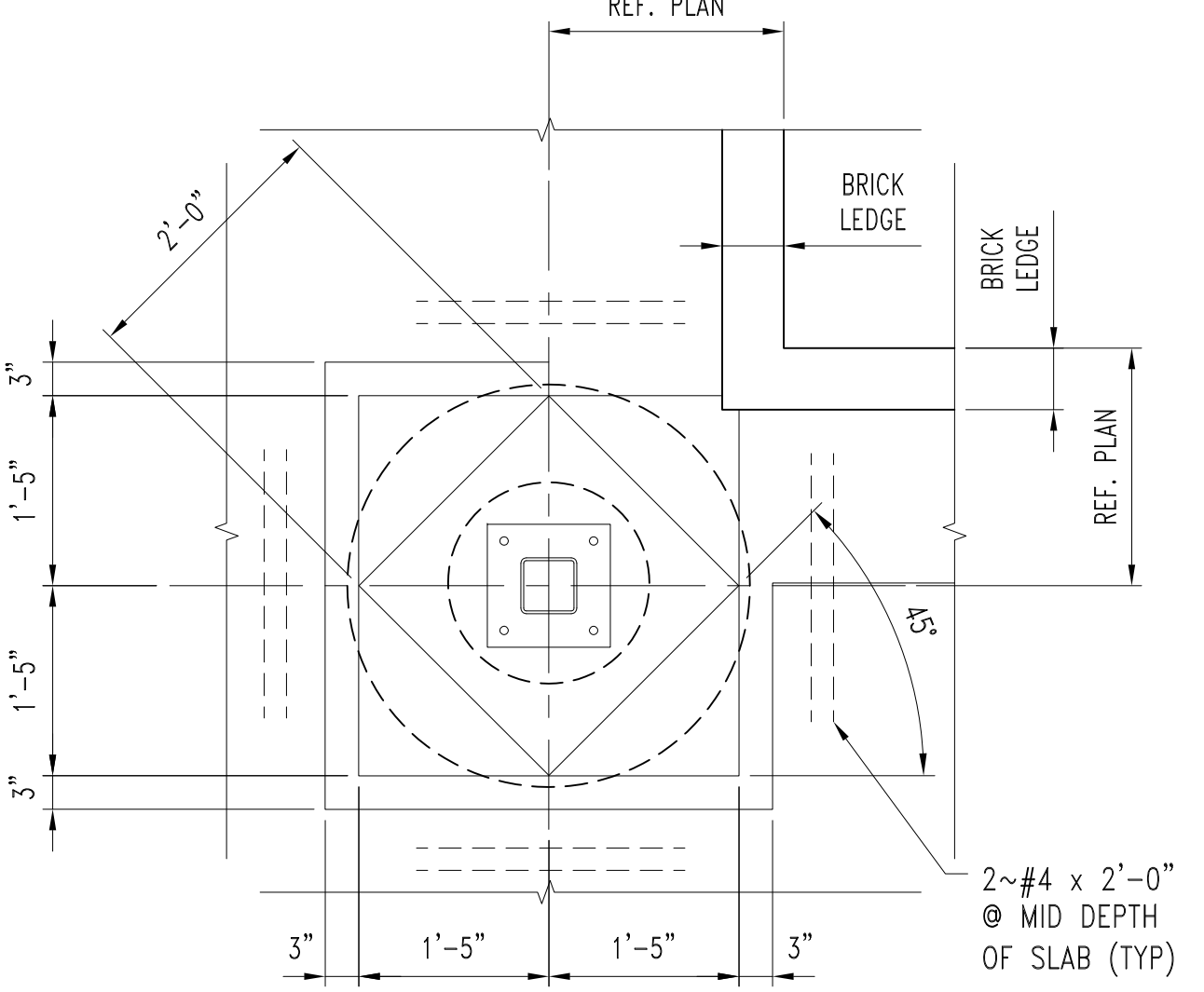
### 4 TYPICAL VERTICAL GRADE BEAM PENETRATION DETAIL

SCALE: N.T.S.



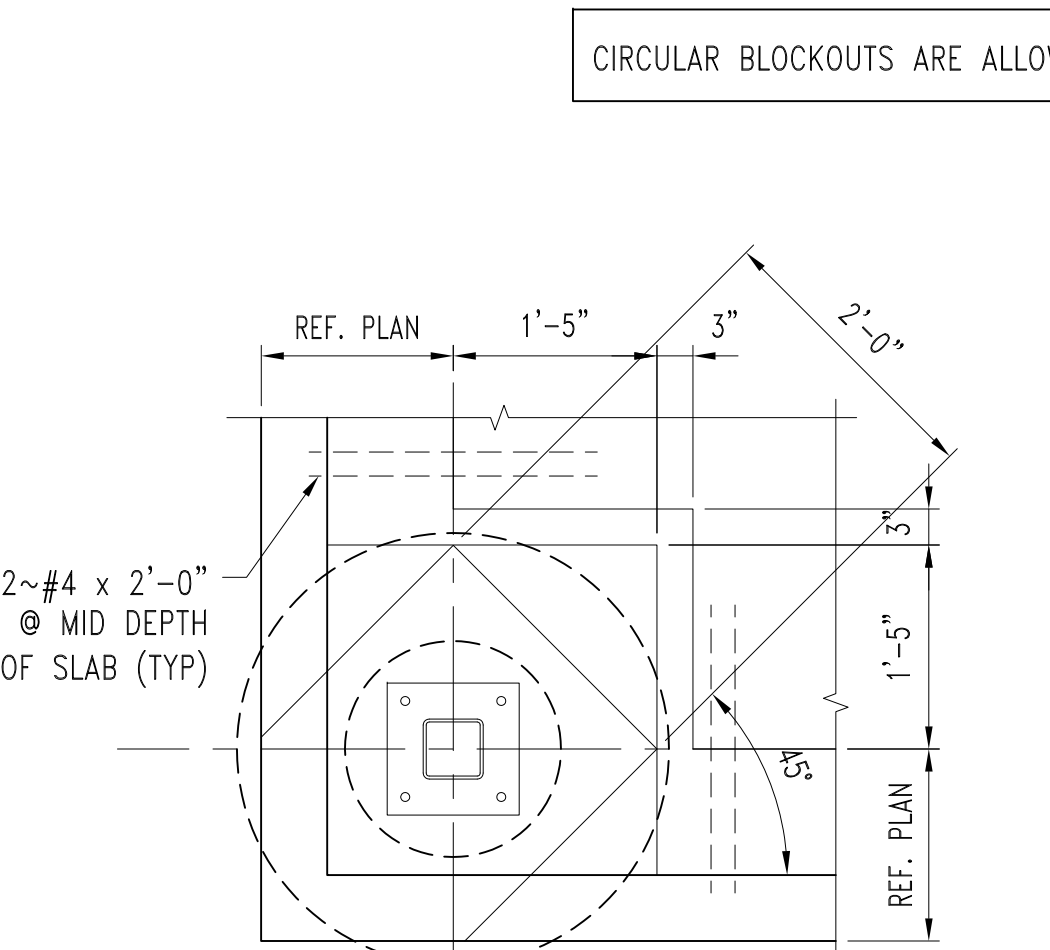
### 5 OPENING - SLAB ON GRADE LESS THAN 2'-0" Ø BLOCKOUT REINF.

SCALE: N.T.S.



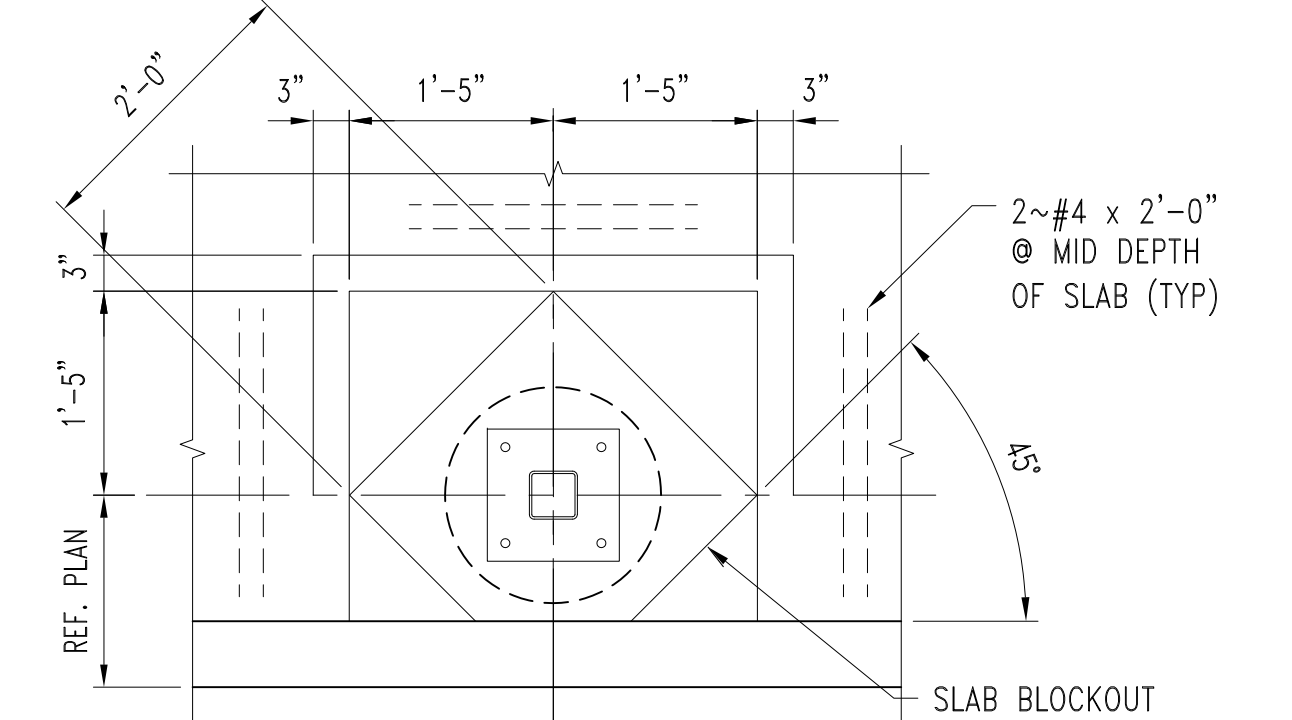
### 8 TYPICAL EXTERIOR TOP OF SHAFT DETAIL

SCALE: N.T.S.



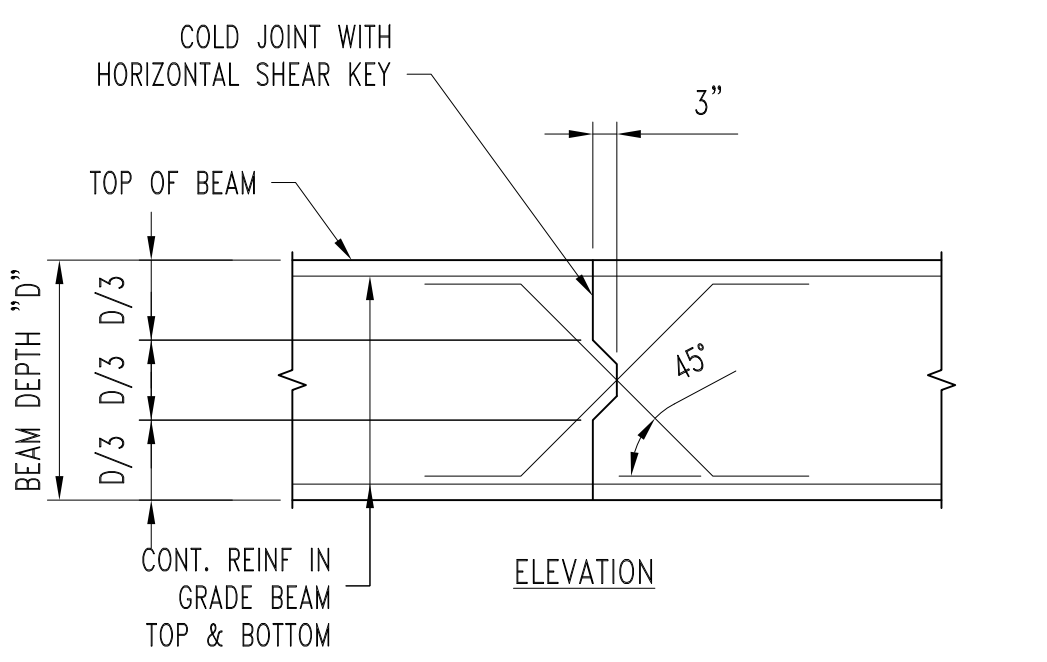
### 9 TYPICAL EXTERIOR TOP OF SHAFT DETAIL

SCALE: N.T.S.



### 10 TYPICAL EXTERIOR TOP OF SHAFT DETAIL

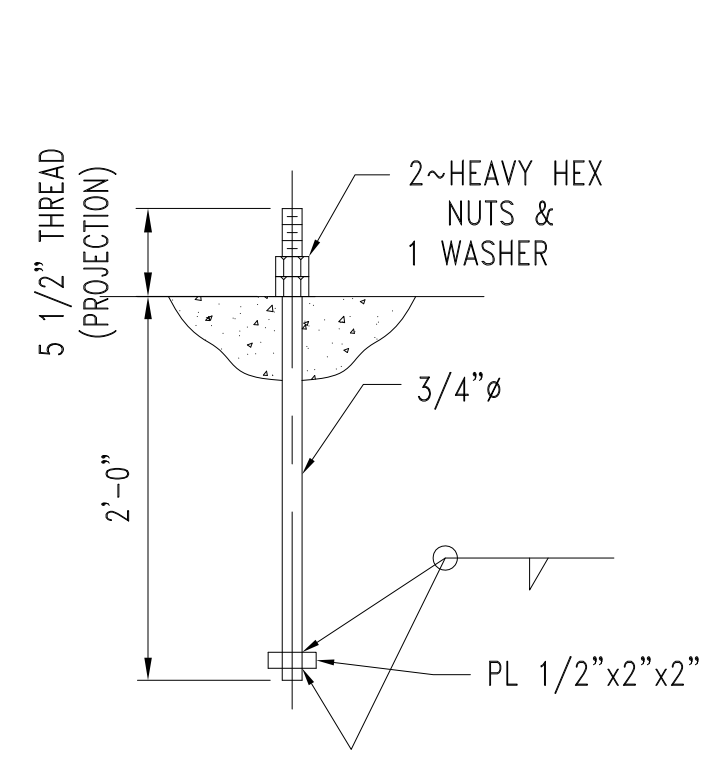
SCALE: N.T.S.



### 12 TYPICAL BEAM CONSTRUCTION JOINT DETAIL

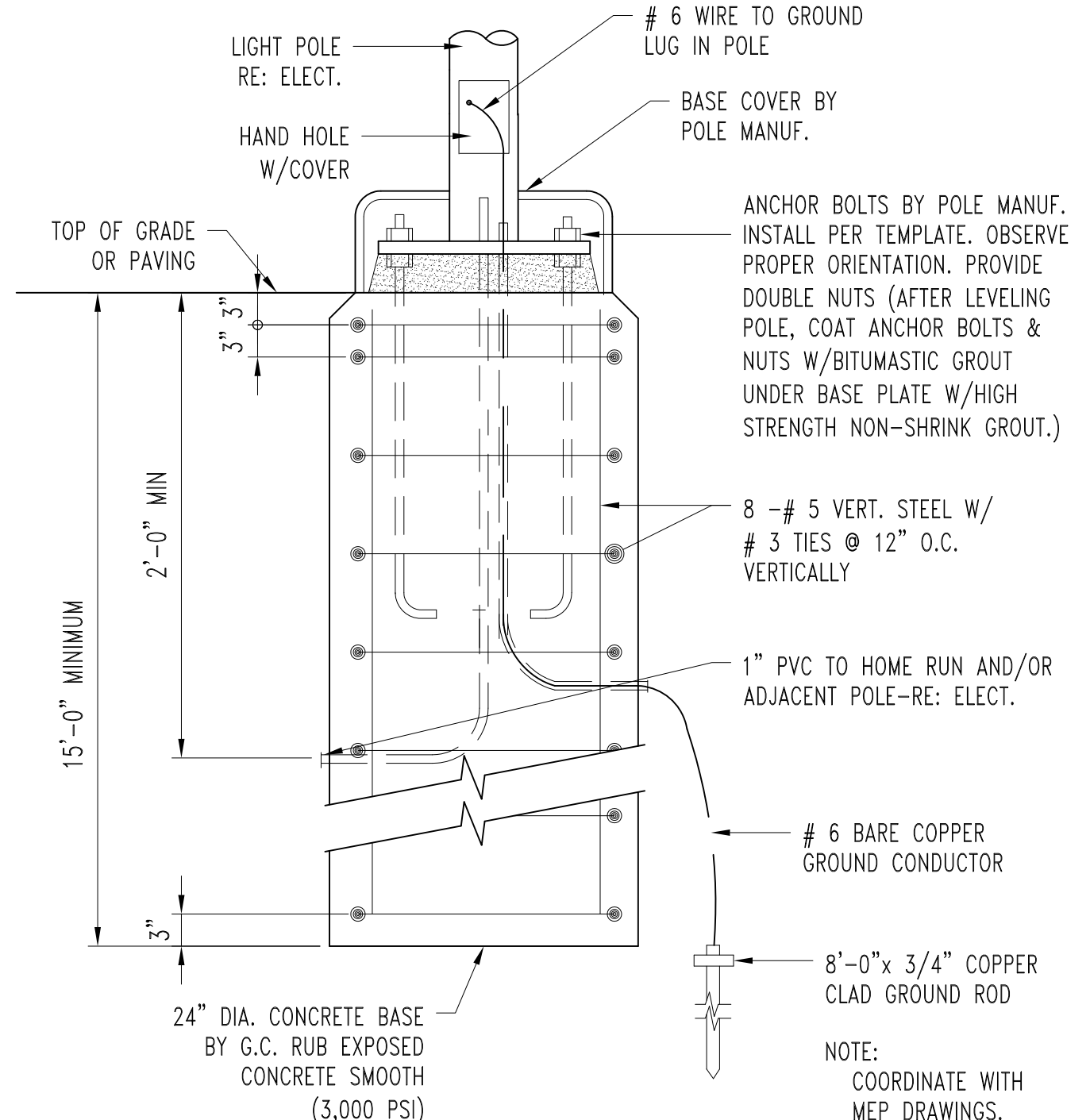
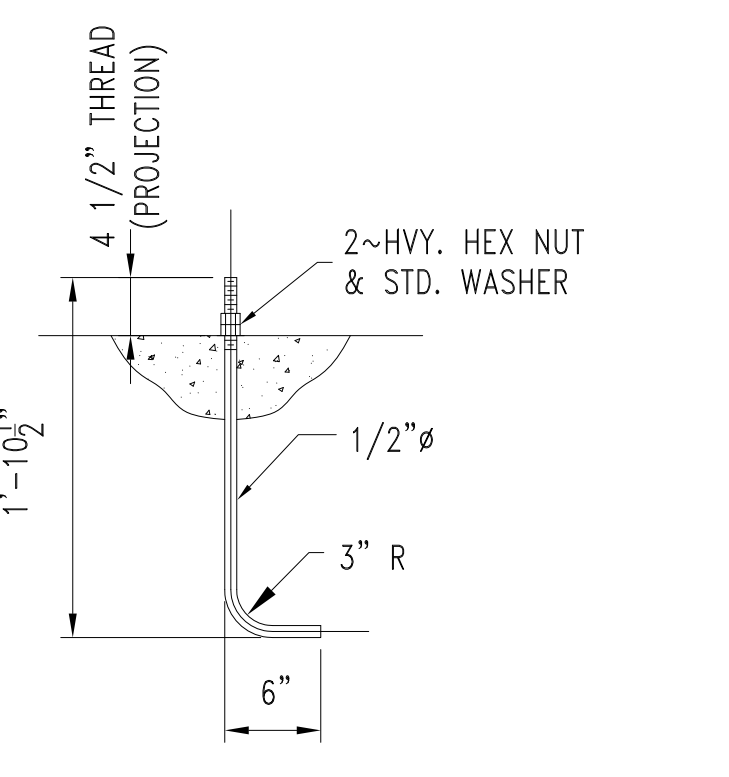
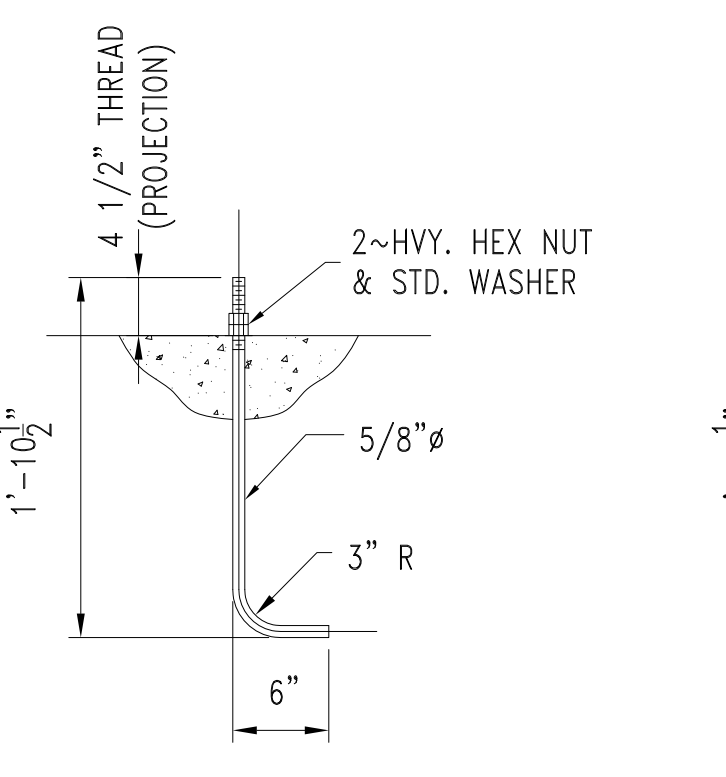
SCALE: NOT TO SCALE

NOTE: DIAGONAL BARS MAY BE REQ'D DUE TO JOINT LOCATION, SIZE & LENGTH OF BARS TO BE DETERMINED BY THE STRUCTURAL ENGINEER. DIAGONAL BARS NOT REQUIRED IF JOINT IS AT CL OF SPAN OF UNIFORMLY LOADED BEAM.



### 13 TYPICAL DETAIL - ANCHOR BOLTS (BUILDING COLUMNS AND SUPPORTS ONLY)

SCALE: N.T.S.



### 14 TYPICAL DETAIL LIGHTPOLE FOUNDATION

SCALE: NOT TO SCALE

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PROFESSIONAL ENGINEER  
CARLOS A. GUTIERREZ  
68320  
11/2/2019

TBE Firm No. F-436  
CSF PROJECT # 4007

PROJECT NO. 201936  
DATE: 11/12/2019  
DRAWN: DJM  
CHECKED: CAG

DATE: 10/21/2019  
10/30/2019  
11/12/2019

ISSUE: 100% REVIEW SET  
BID  
CONSTRUCTION

**S2.00**

TYPICAL FOUNDATION DETAILS

| DOOR SCHEDULE AREA 'M' |                     |       |            |       |             |         |          |                                      |        |
|------------------------|---------------------|-------|------------|-------|-------------|---------|----------|--------------------------------------|--------|
| DOOR #                 | SIZE WxH            | DOOR  |            |       | FRAME       |         |          | COMMENTS                             | DOOR # |
|                        |                     | ELEV. | MATERIAL   | GLASS | WIDTH/DEPTH | ELEV.   | MATERIAL |                                      |        |
| 101-1                  | 14'-0" x 16'-0"     | V     | ALUM.      | G4    | -           | -       | GLAV.    | OVERHEAD GARAGE DOOR W/ GLASS        | 101-1  |
| 101-2                  | 3'-0" x 7'-0"       | K     | FIBERGLASS | -     | 0' - 2"     | 0' - 6" | 1-E      | FIBERGLASS<br>TDI WINDSTORM REQUIRED | 101-2  |
| 101-3                  | 3'-0" x 7'-0"       | K     | FIBERGLASS | -     | 0' - 2"     | 0' - 6" | 1-E      | FIBERGLASS<br>TDI WINDSTORM REQUIRED | 101-3  |
| 101-4                  | 14'-0" x 16'-0"     | V     | ALUM.      | G4    | -           | -       | GLAV.    | OVERHEAD GARAGE DOOR W/ GLASS        | 101-4  |
| 102-1                  | 3'-0" x 7'-0" (PFR) | LL    | C.L. FENCE | -     | -           | -       | GALV.    | -                                    | 102-1  |
| 103-1                  | 3'-0" x 7'-0" (PFR) | LL    | C.L. FENCE | -     | -           | -       | GALV.    | -                                    | 103-1  |
| 200-1                  | 3'-0" x 3'-2"       | Q     | C.L. FENCE | -     | -           | -       | GLAV.    | -                                    | 200-1  |
| 201-1                  | 3'-0" x 7'-0" (PR)  | BB    | H.M.       | -     | 0' - 2"     | 0' - 6" | 1        | H.M.                                 | 201-1  |

| ROOM FINISH SCHEDULE |                   |              |      |       |      |       |      |              |         |
|----------------------|-------------------|--------------|------|-------|------|-------|------|--------------|---------|
| ROOM NO.             | ROOM NAME         | FLOOR        | BASE | Wall  |      |       |      | CEILING      | REMARKS |
|                      |                   |              |      | NORTH | EAST | SOUTH | WEST |              |         |
| 101                  | APPARATUS BAY     | SEALED CONC. | -    | -     | -    | -     | -    | EXPOSED DECK |         |
| 102                  | STORAGE           | SEALED CONC. | -    | -     | -    | -     | -    | EXPOSED DECK |         |
| 103                  | STORAGE           | SEALED CONC. | -    | -     | -    | -     | -    | EXPOSED DECK |         |
| 104                  | STAIRS            | PT           | -    | -     | -    | -     | -    | EXPOSED DECK |         |
| 200                  | MEZZANINE DECK    | SEALED CONC. | RB   | -     | -    | PT    | -    | EXPOSED DECK |         |
| 201                  | MEZZANINE STORAGE | SEALED CONC. | RB   | PT    | PT   | PT    | PT   | EXPOSED DECK |         |

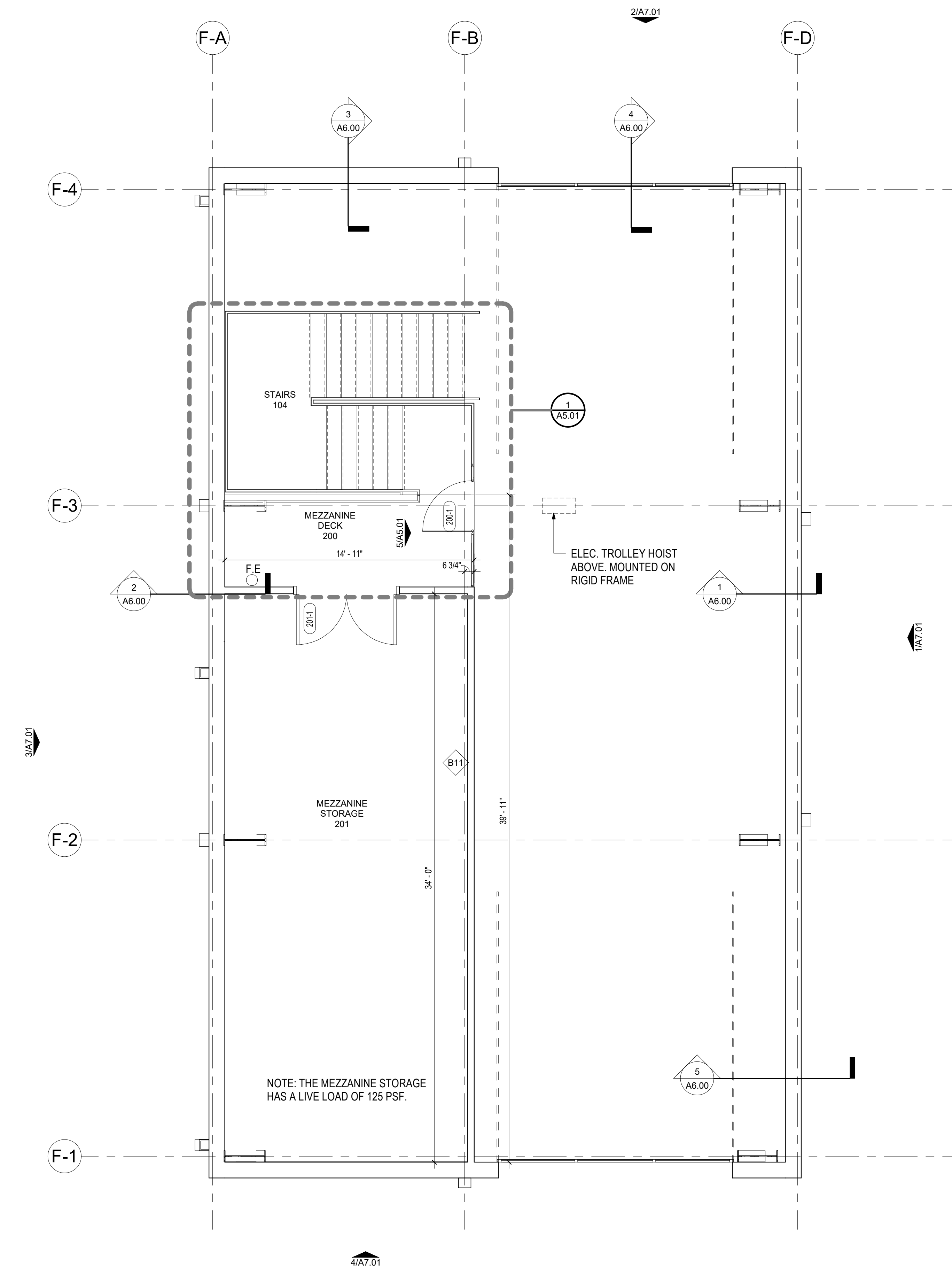
**GENERAL PLAN NOTES:**

- REFER TO SHEET A6.00 FOR PARTITION TYPES.
- ALL DIMENSIONS ARE TO FACE OF STUD AT INTERIOR PARTITIONS UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE TO FINISH FACE OF EXTERIOR WALLS, FOUNDATION, MASONRY, OR TO CENTER LINE OF COLUMN, UNLESS NOTED OTHERWISE.
- ALL SPACES WITH FLOOR DRAINS SHALL HAVE FINISHED FLOOR SLOPED TO DRAIN, VERIFY WITH ARCHITECT IN FIELD.
- ALL FLOOR MATERIAL CHANGES SHALL OCCUR AT CENTERLINE OF DOOR, UNLESS NOTED OTHERWISE.
- ALL SPACES WITH FLOOR DRAINS SHALL HAVE FINISHED FLOOR SLOPED TO DRAIN, VERIFY WITH ARCHITECT IN FIELD.
- ALL EQUIPMENT PADS SHALL BE AS PER STRUCTURAL DRAWINGS. COORDINATE WITH MECH. FOR SIZES, THICKNESS AND LOCATIONS. CHAMFER EDGES.
- EVERY EXTERIOR DOOR TO RECEIVE THRESHOLD THRESHOLD TO BE OF SUFFICIENT WIDTH TO COVER SIDEWALK TO FOUNDATION EXPANSION JOINT TO MAINTAIN 1/2" RISE MAX. AND STAY ADA COMPLIANT.
- WALL FINISH GOES TO DECK IN ROOMS WITHOUT CEILINGS OR WHERE CEILINGS DO NOT TOUCH WALLS.
- ALL EXTERIOR WALLS EXTEND TO BOTTOM OF ROOF DECK.
- F.E. DENOTES FIRE EXTINGUISHER.
- ALL INTERIOR STUD PARTITIONS ARE TYPE B11, UNLESS OTHERWISE NOTED.
- DASHED EQUIPMENT/FURNITURE NOT IN CONTRACT (I.C.)
- SEE SHEET G1.01 FOR ACCESSIBLE MOUNTING HEIGHTS.
- REFER TO FINISH LEGEND FOR COLOR SELECTIONS.
- PROPOSED RIGID FRAMES, GIRTS, PURLINS, AND ANY SUPPLEMENTAL STRUCTURE IS TO BE HOT DIPPED GALVANIZED UNLESS NOTED OTHERWISE.

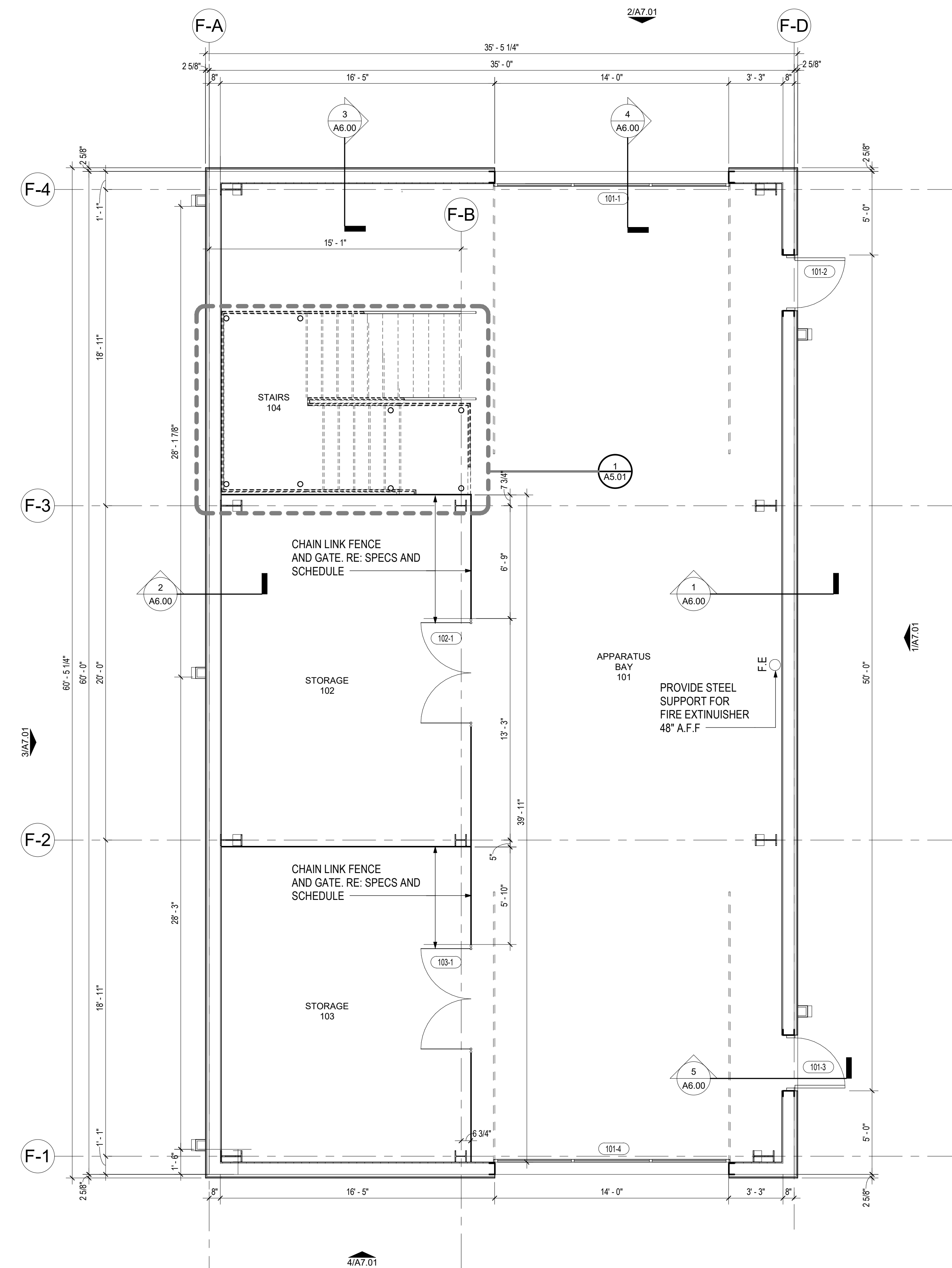
CONSULTANTS  
**STRUCTURAL**  
 CSF Consulting LP  
 11301 Fallbrook Suite 320  
 Houston, Texas 77065  
 Tel: 832.678.2110  
 Fax: 832.678.2115

MEP  
 L.T.Y. Engineers, PLLC  
 738 Highway 6 South Suite 615  
 Houston, Texas 77079  
 Tel: 281.945.8888  
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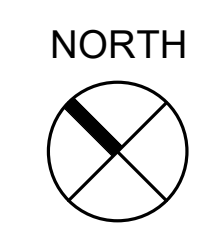
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 Houston, Texas 77065  
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2 MEZZANINE-PLAN  
 1/4" = 1'-0"



1 1ST FLOOR- PLAN  
 1/4" = 1'-0"



**MARITIME EXPANSION  
 FIRE TRAINING CENTER**

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**IBI**  
**TEXAS-IBI GROUP, INC.**  
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 P.O. BOX 891209  
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 281.286.6605



11/12/2019

PROJECT NO. 201936  
 DATE: 11/12/2019  
 DRAWN: CKA  
 CHECKED: RCA

DATE: 11/12/2019  
 ISSUE: FOR CONSTRUCTION

**A2.01**

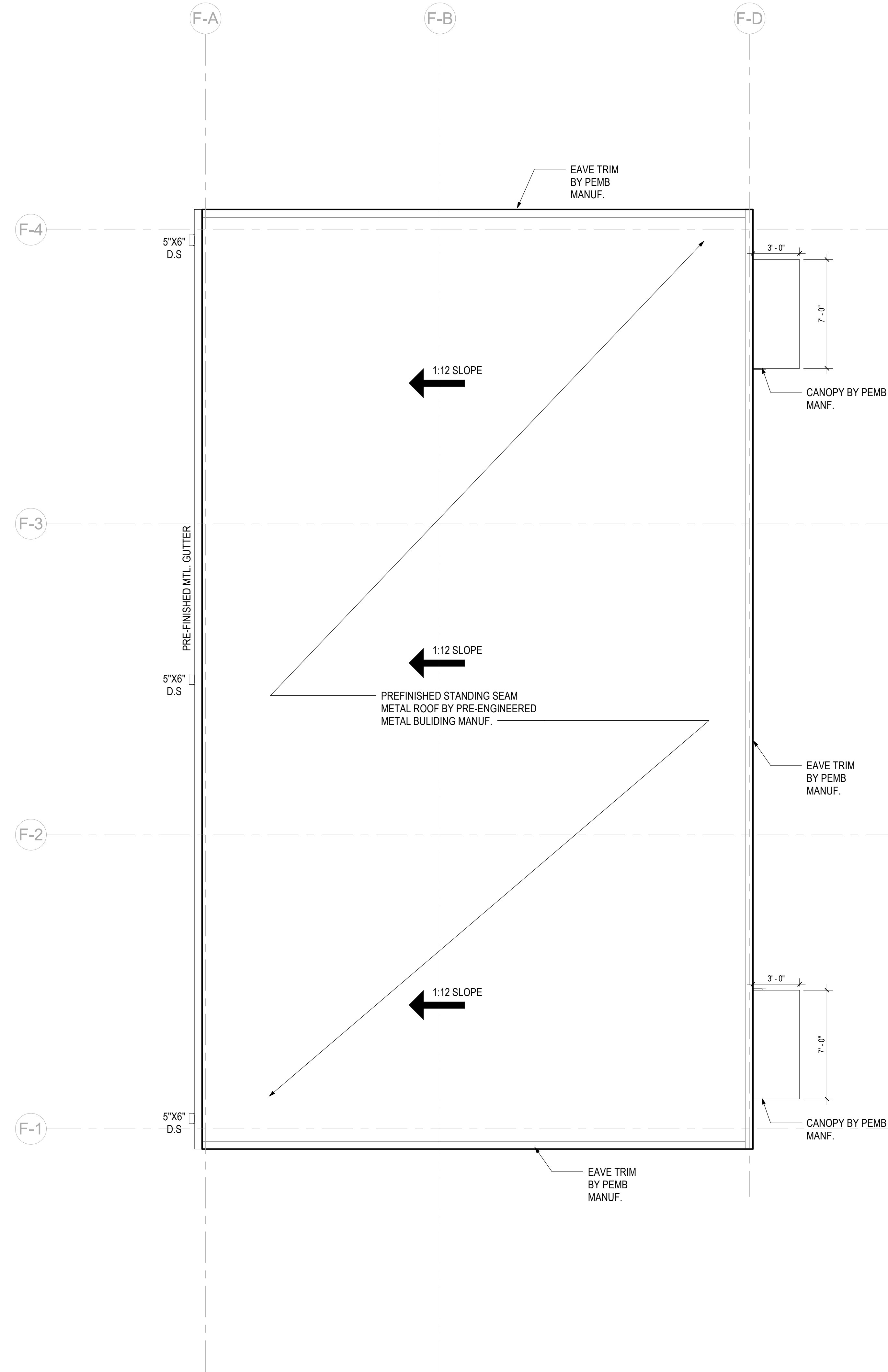
1ST FLOOR,  
 MEZZANINE  
 FLOOR PLANS &  
 SCHEDULES

**ROOF PLAN GENERAL NOTES:**

1. REFER TO MEP FOR ADDITIONAL ROOF OPENINGS.

**ROOF LEGEND**

- ROOF SLOPE (DOWN)
- D.S. DOWNSPOUT



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**MARITIME EXPANSION  
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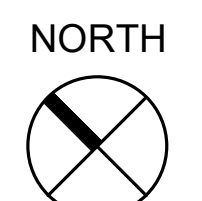
3700 Old Hwy 146 La Porte, TX 77571

**[BI]**  
**TEXAS-IBI GROUP, INC.**  
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| DRAWN       | CKA              |
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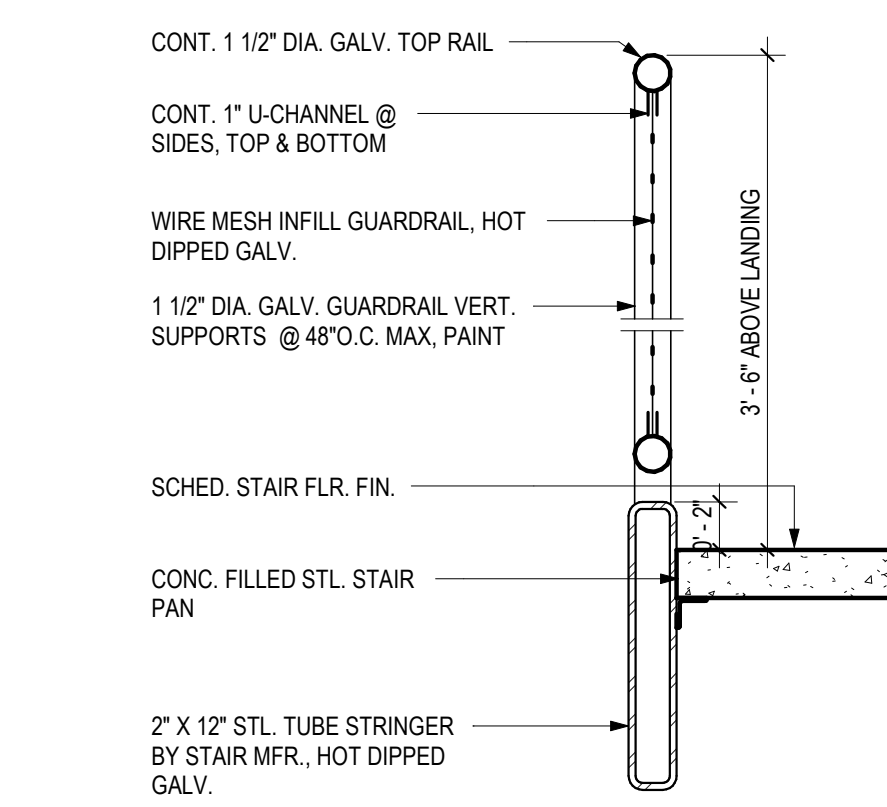
**A4.01**  
 ROOF PLAN



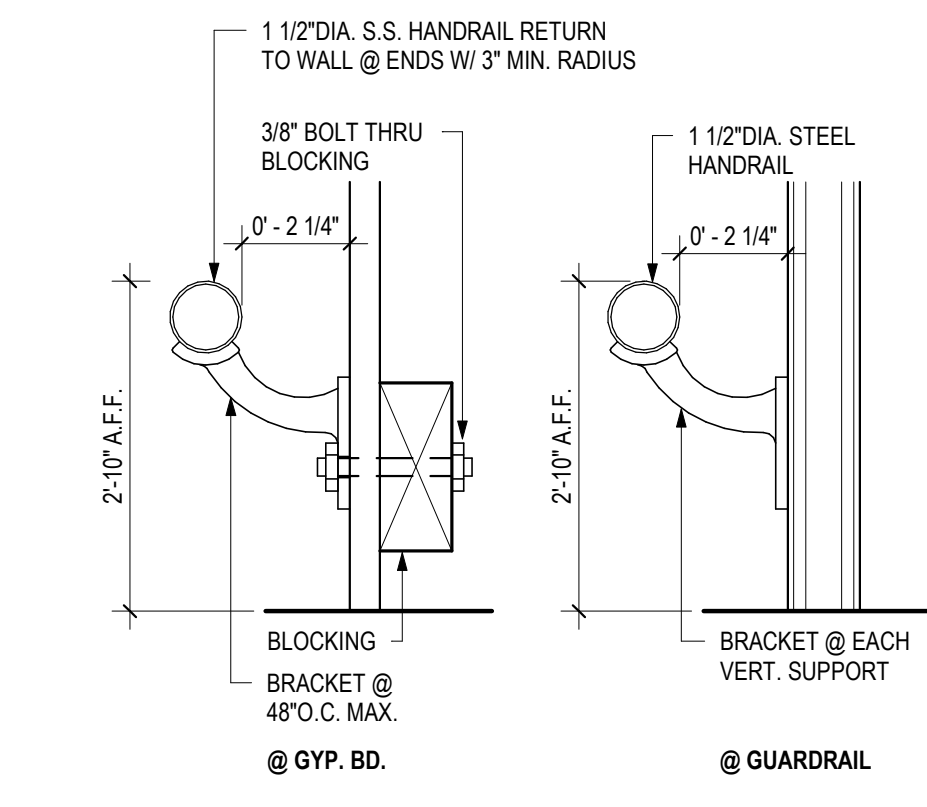
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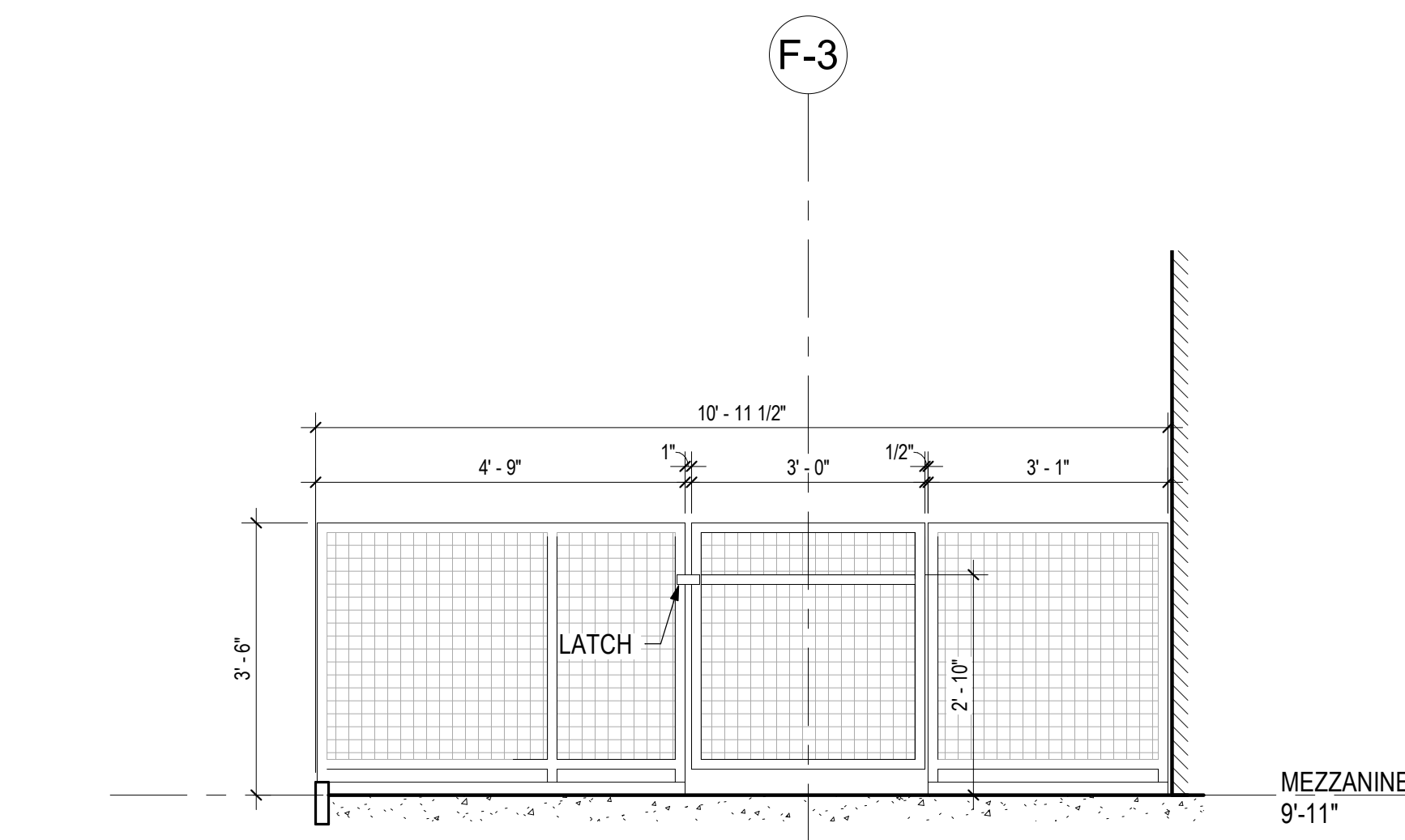
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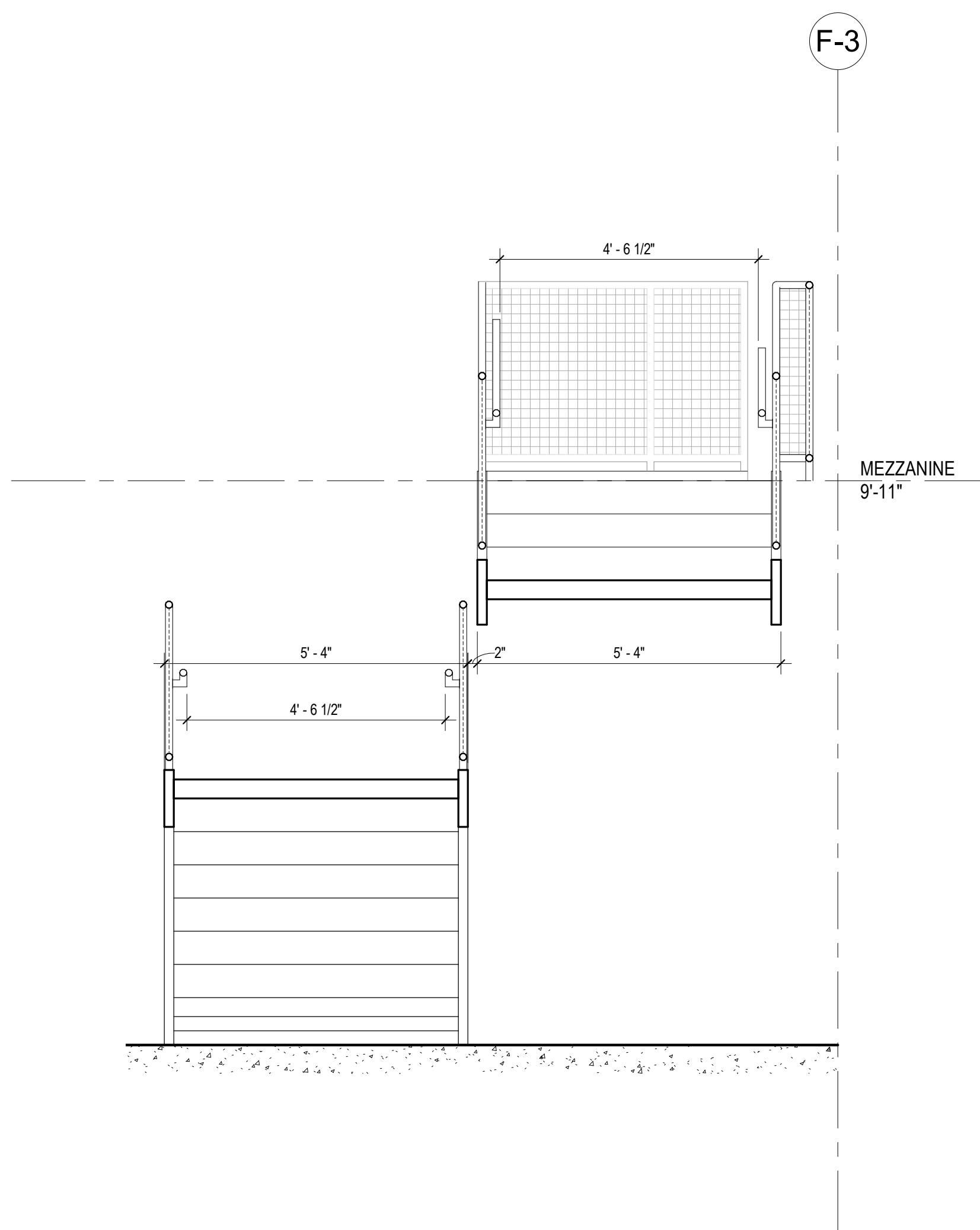
7 STAIR - LNDG @ GALV - TUBE  
 1 1/2" = 1'-0"



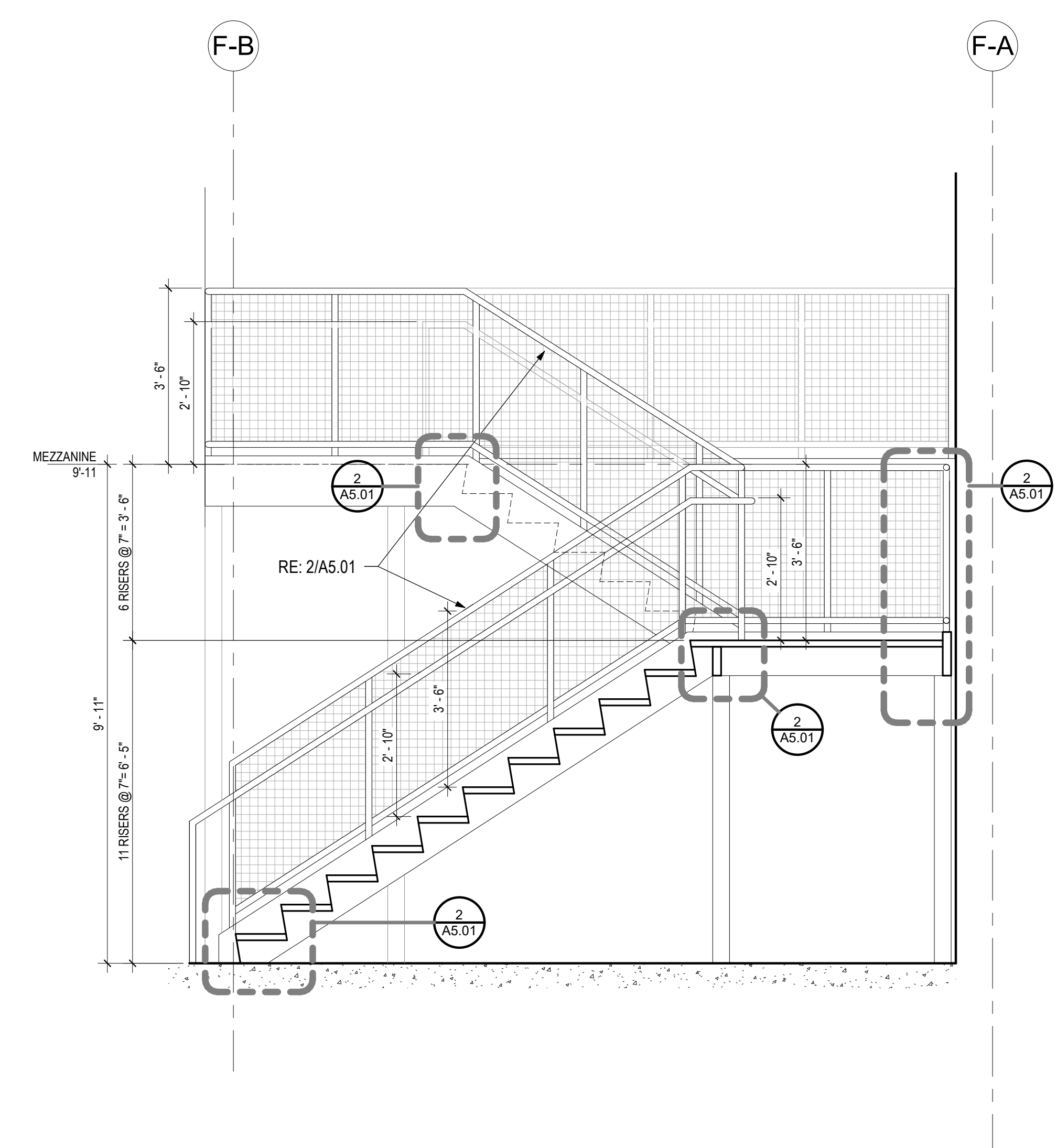
6 RAIL - HANDRAIL DETAILS  
 3" = 1'-0"



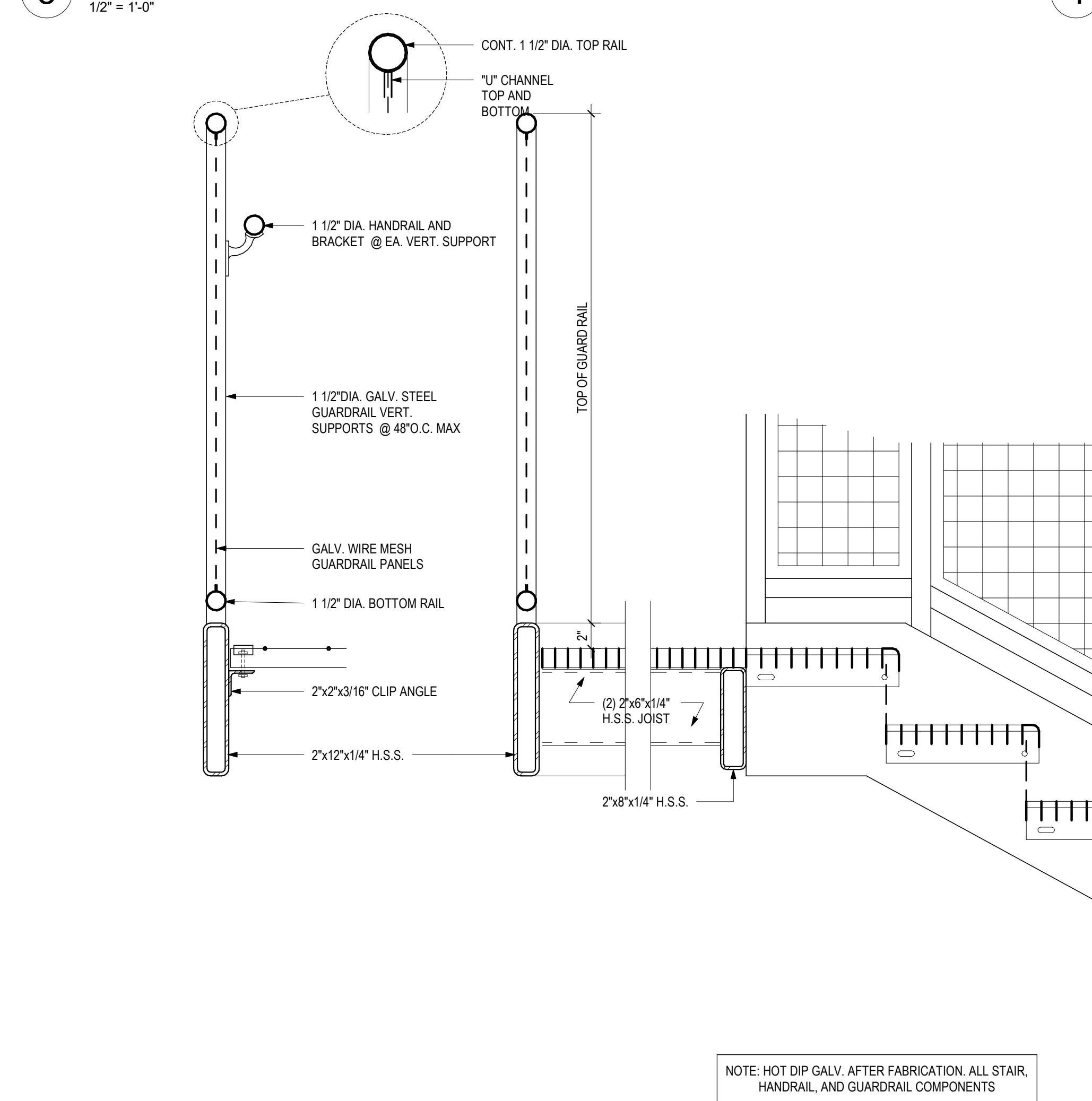
5 GUARDRAIL GATE ELEVATION  
 1/2" = 1'-0"



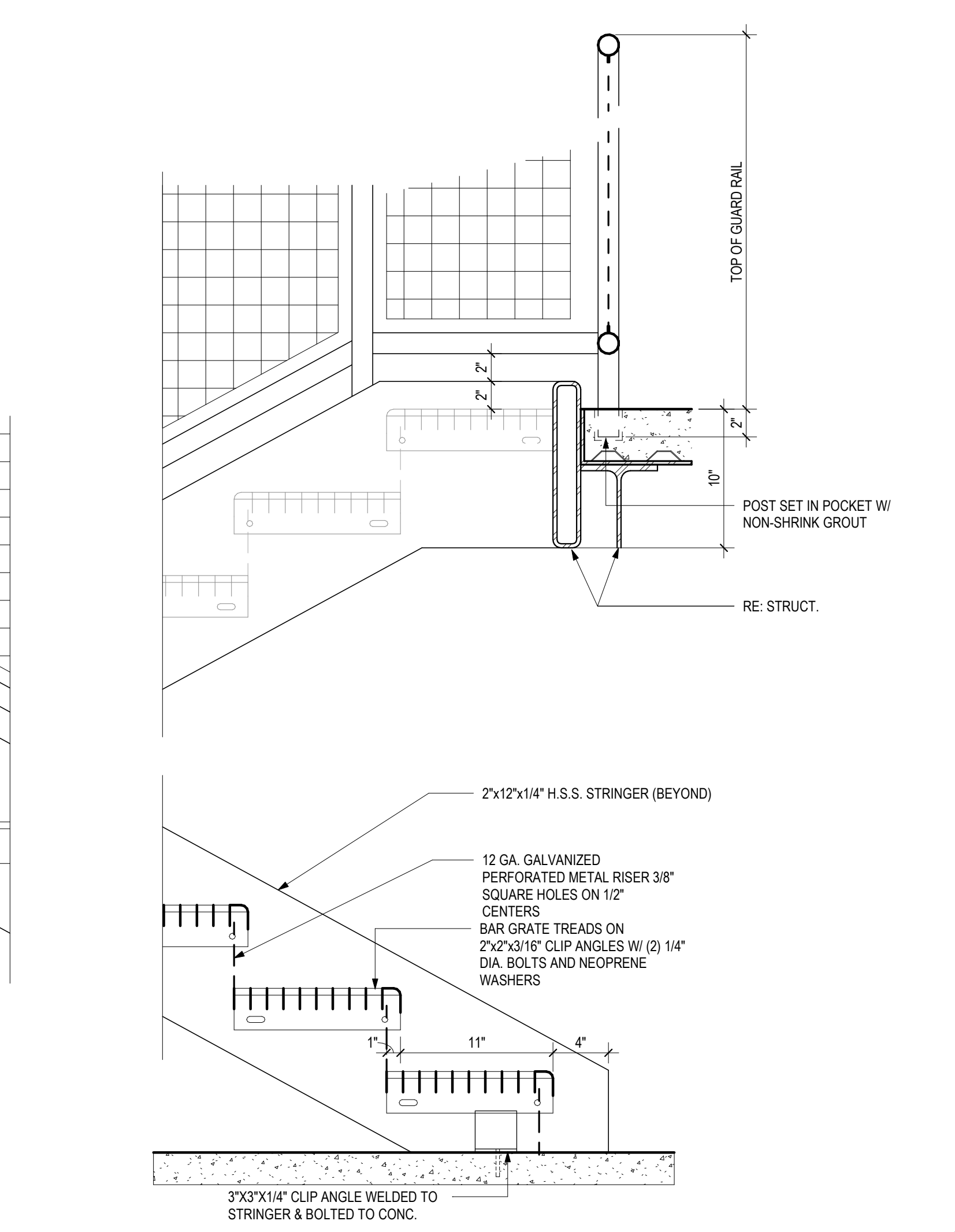
4 STAIR CROSS SECTION  
 1/2" = 1'-0"



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



2 DETAILS @ MEZZANINE STAIR  
 1 1/2" = 1'-0"



1 ENLARGED STAIR PLAN-MEZZANINE PLAN  
 1/2" = 1'-0"

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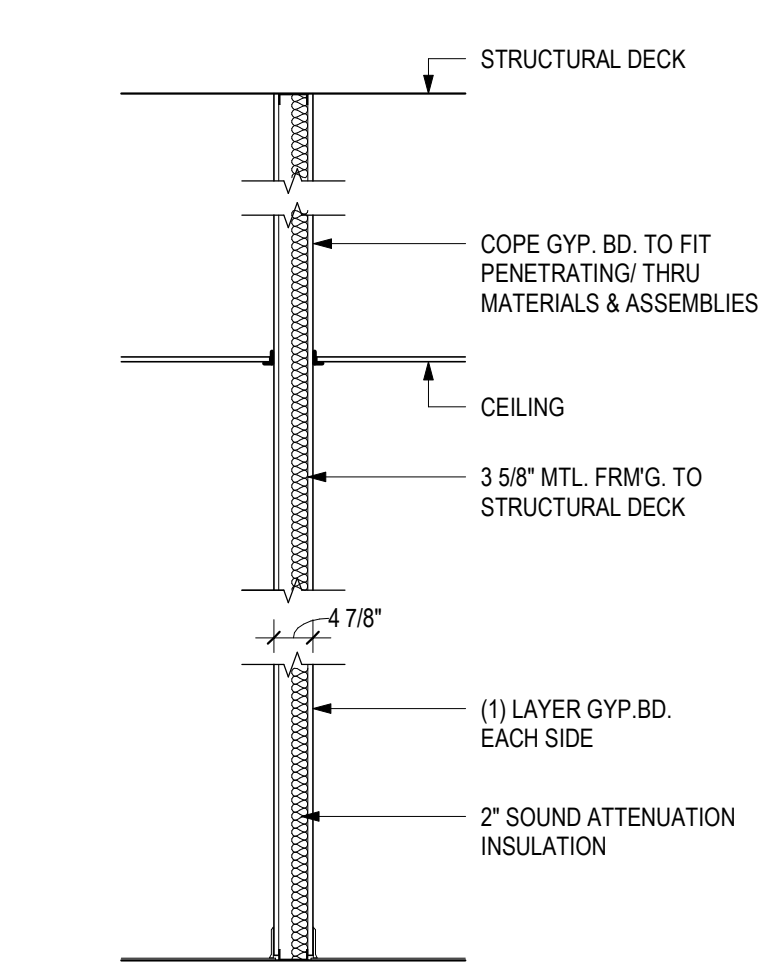
**A5.01**

ENLARGED  
 PLANS,  
 SECTIONS, AND  
 DETAILS

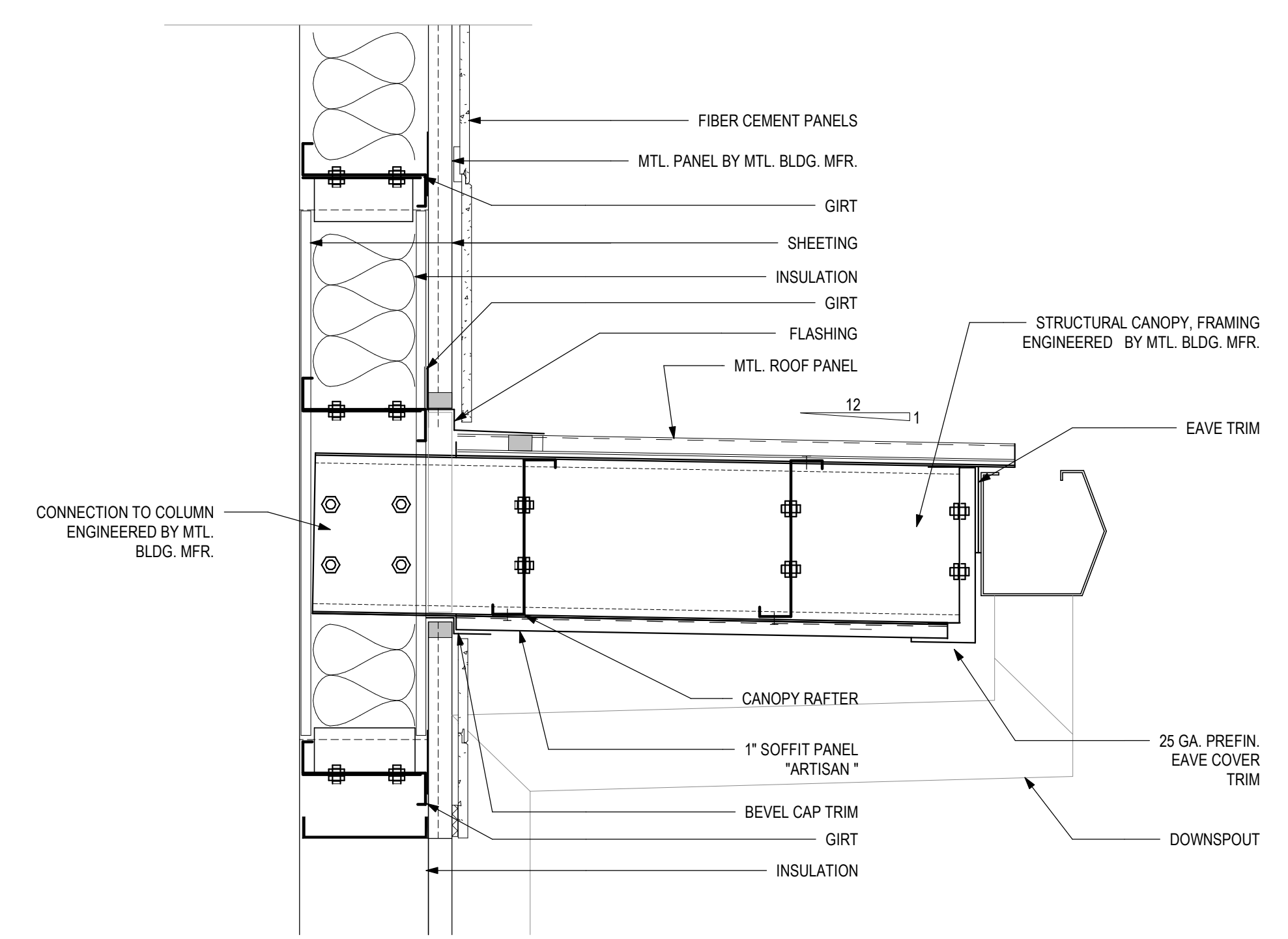
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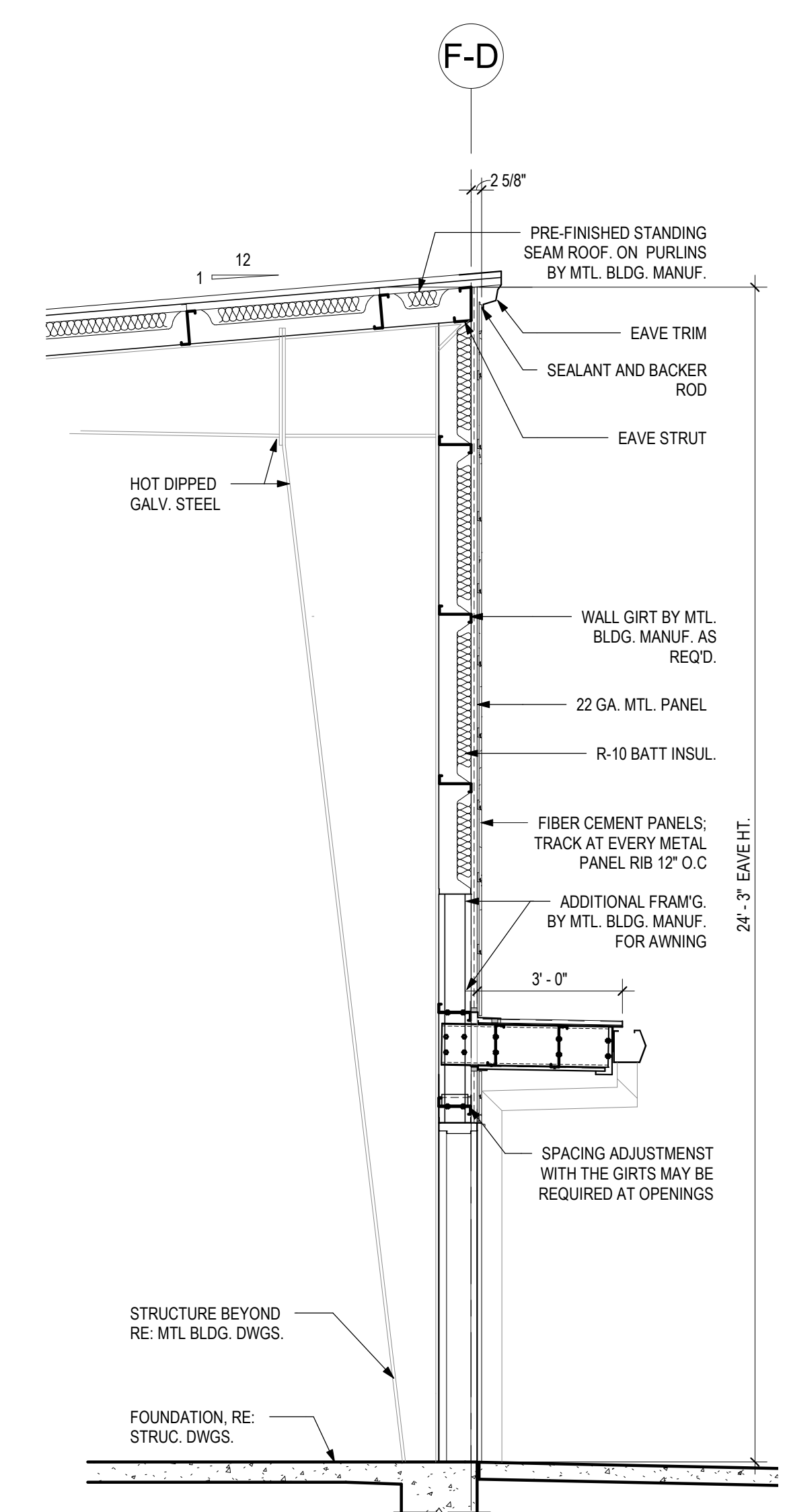
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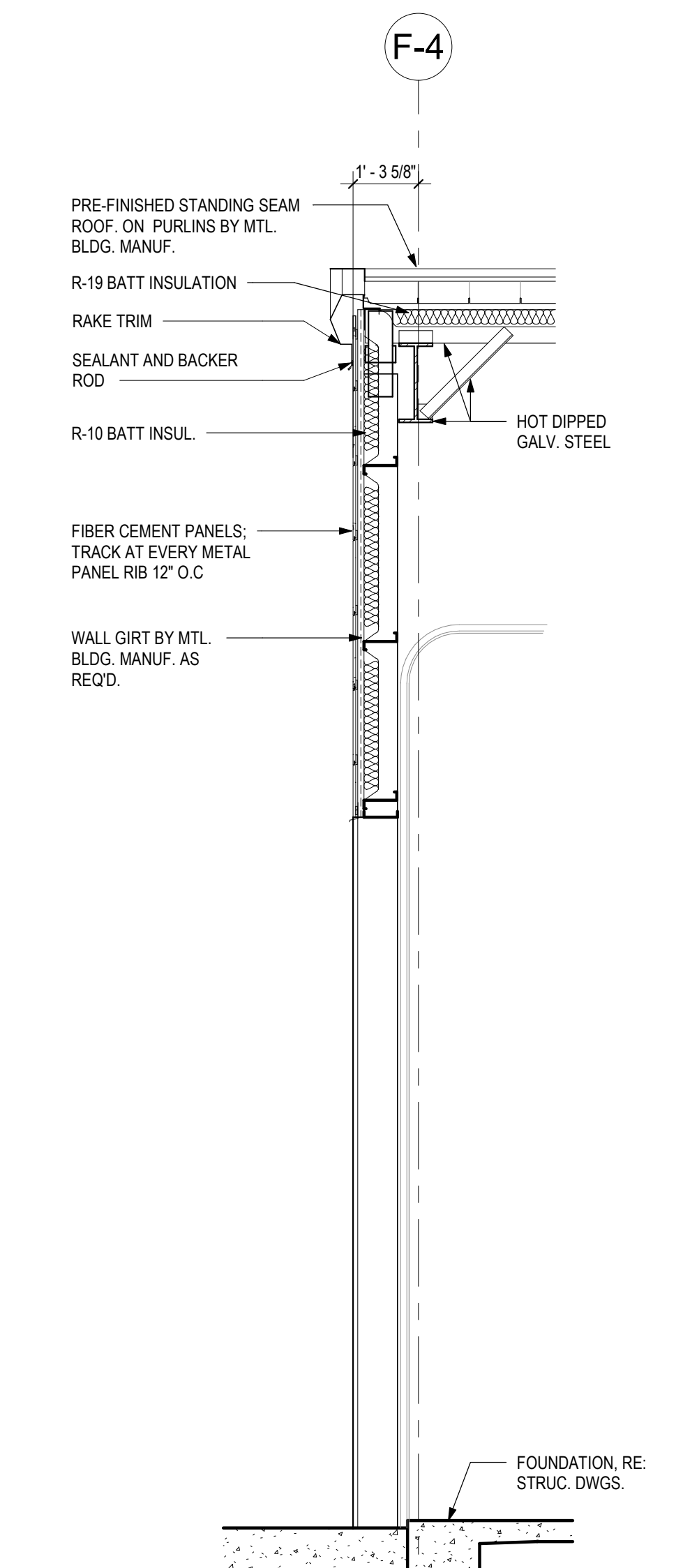
**6 PARTITION B11**  
 1/2" = 1'-0"



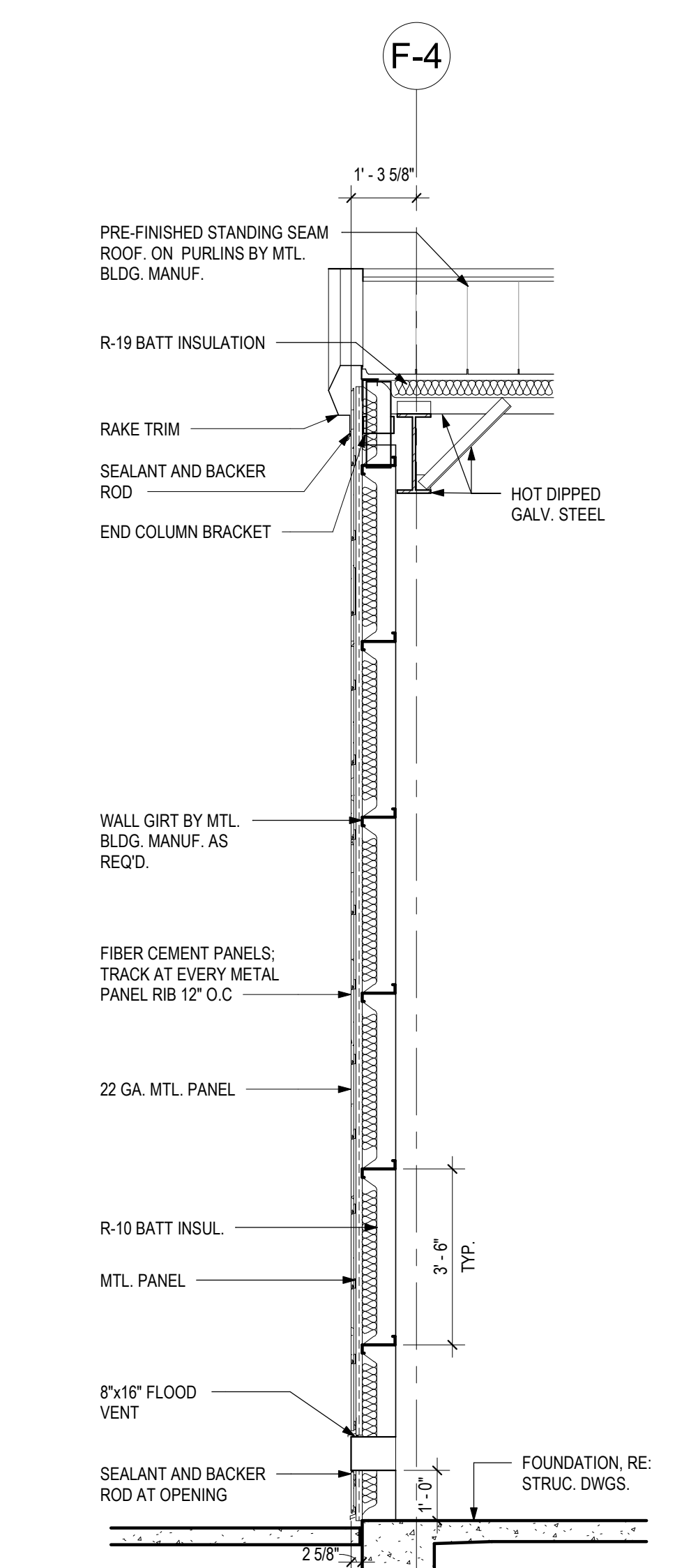
**7 PREFIN. CANOPY**  
 1 1/2" = 1'-0"



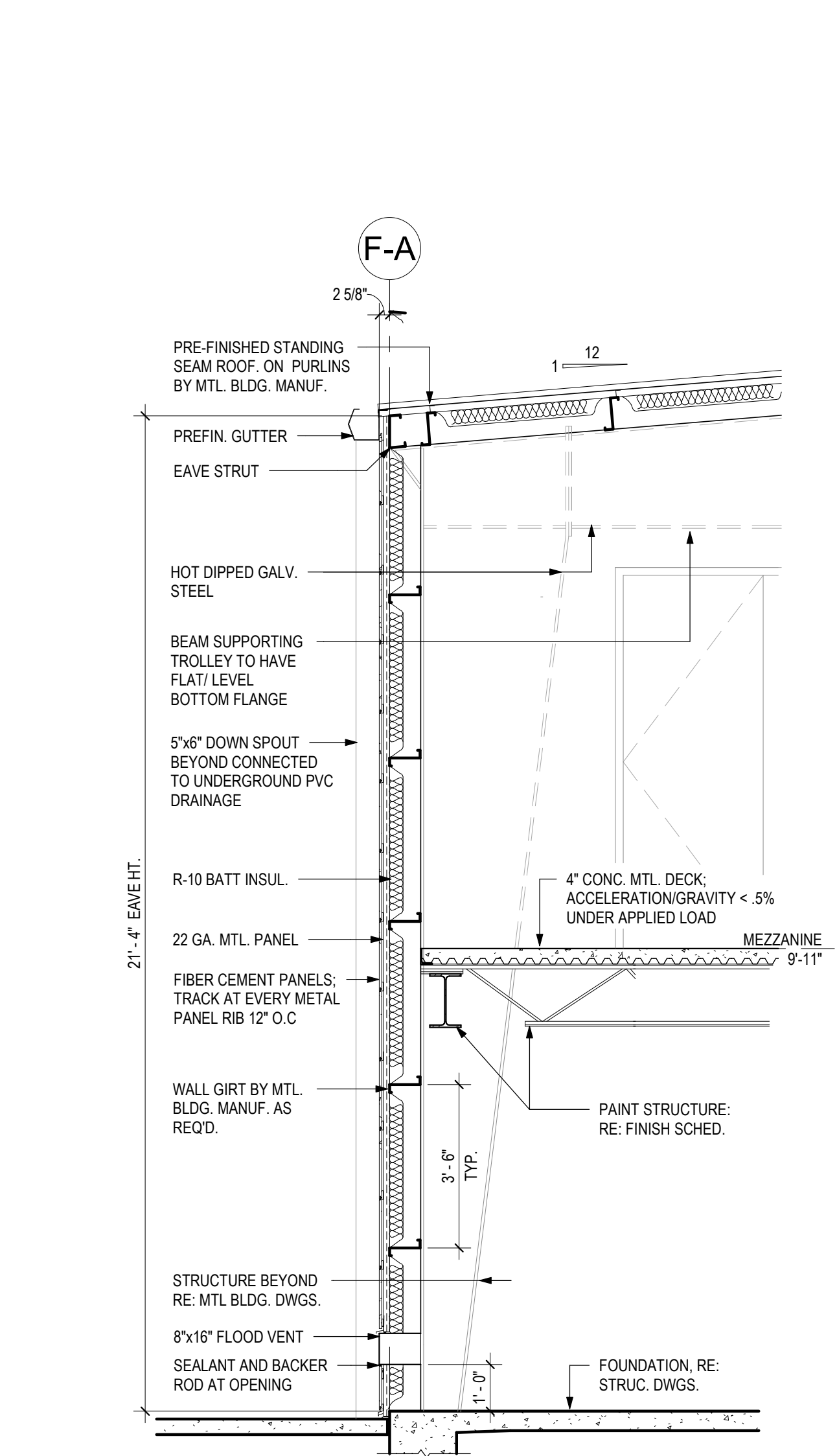
**5 DOOR @ E. SIDEWALL**  
 3/8" = 1'-0"



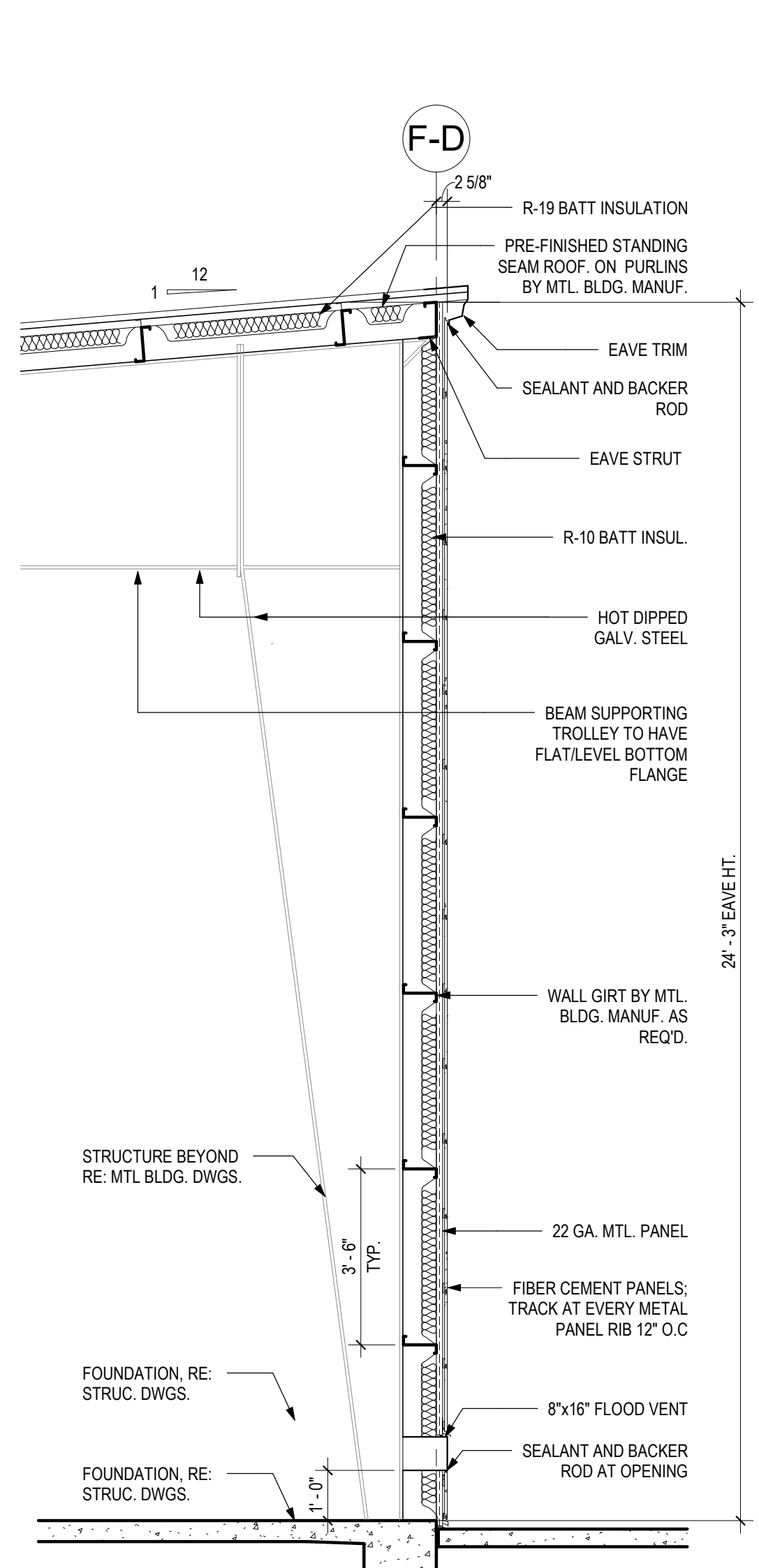
**4 GARAGE DOOR AT END WALL**  
 3/8" = 1'-0"



**3 TYP. ENDWALL FIBER CEMENT PANELS**  
 3/8" = 1'-0"



**2 W. SIDEWALL FIBER CEMENT PANELS**  
 3/8" = 1'-0"

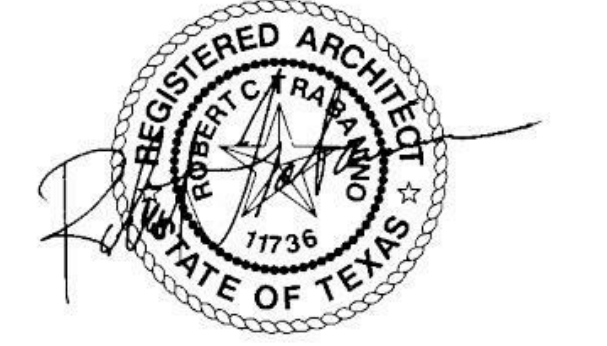


**1 E. SIDEWALL FIBER CEMENT PANELS**  
 3/8" = 1'-0"

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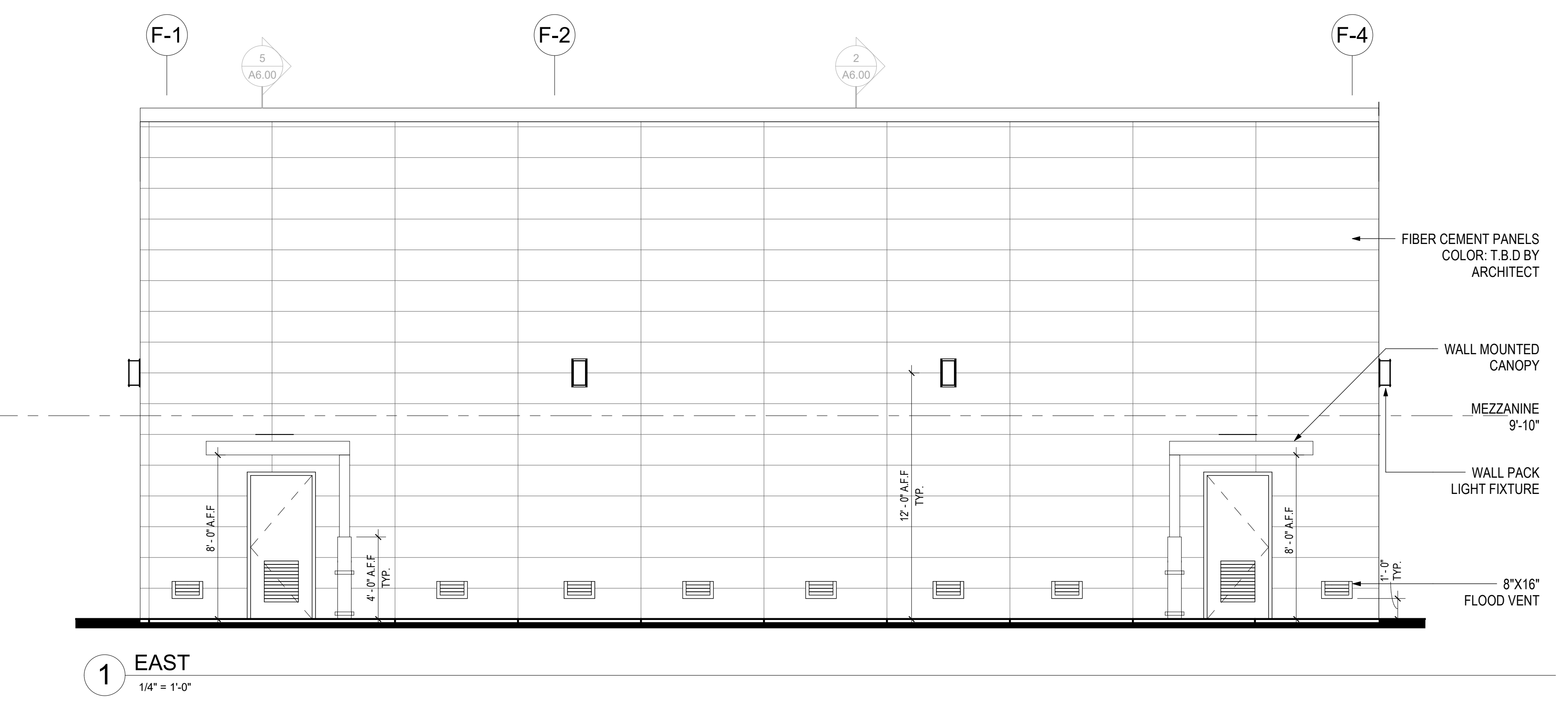
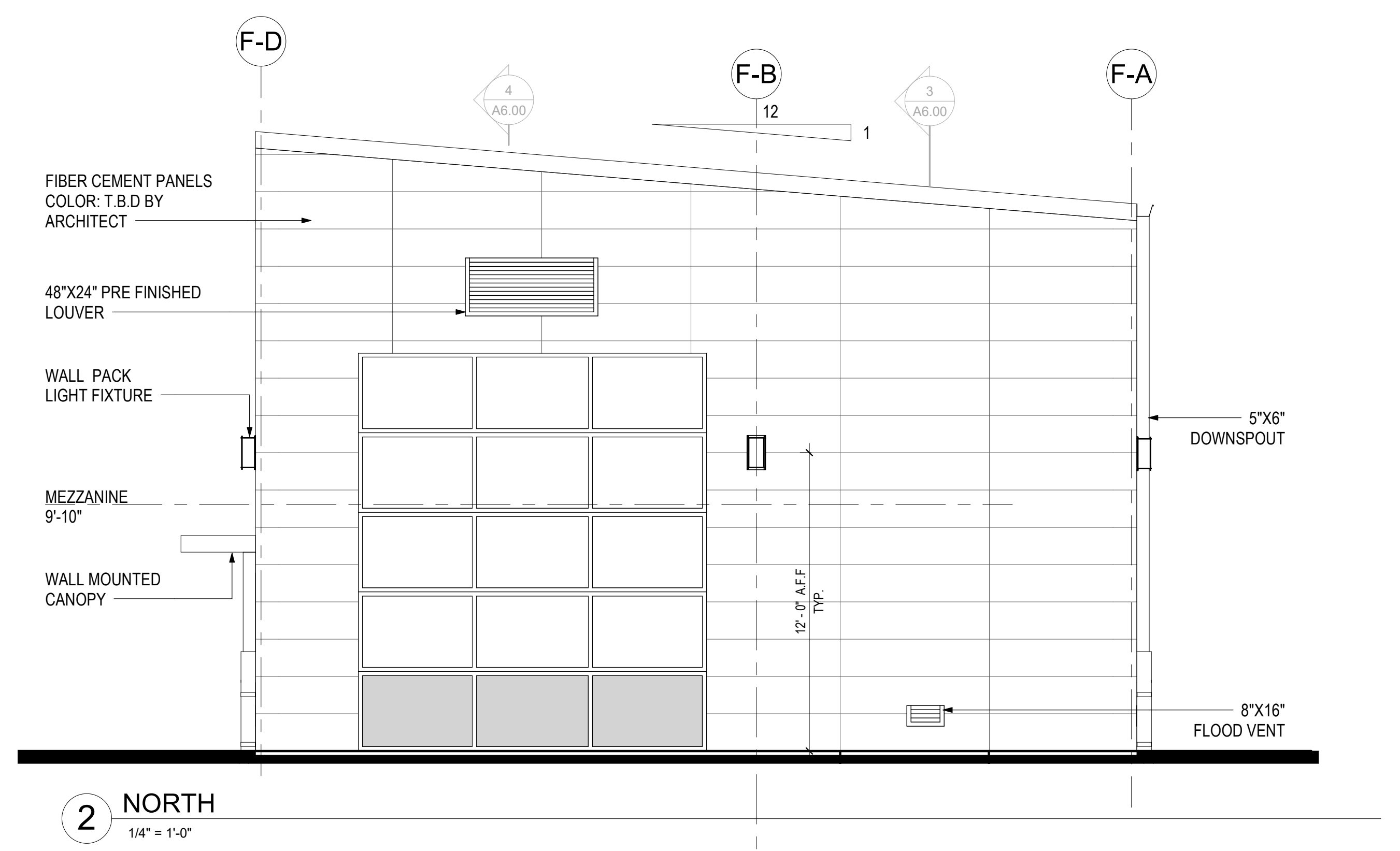
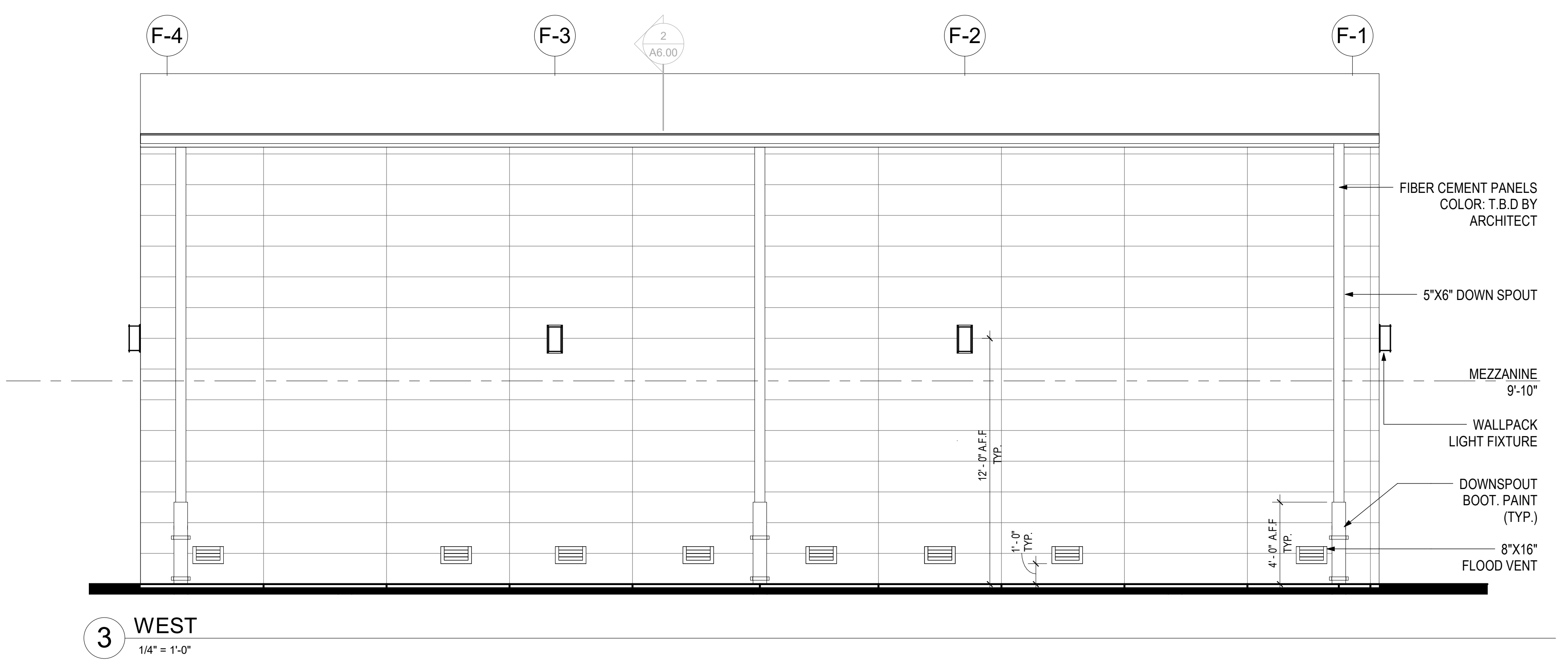
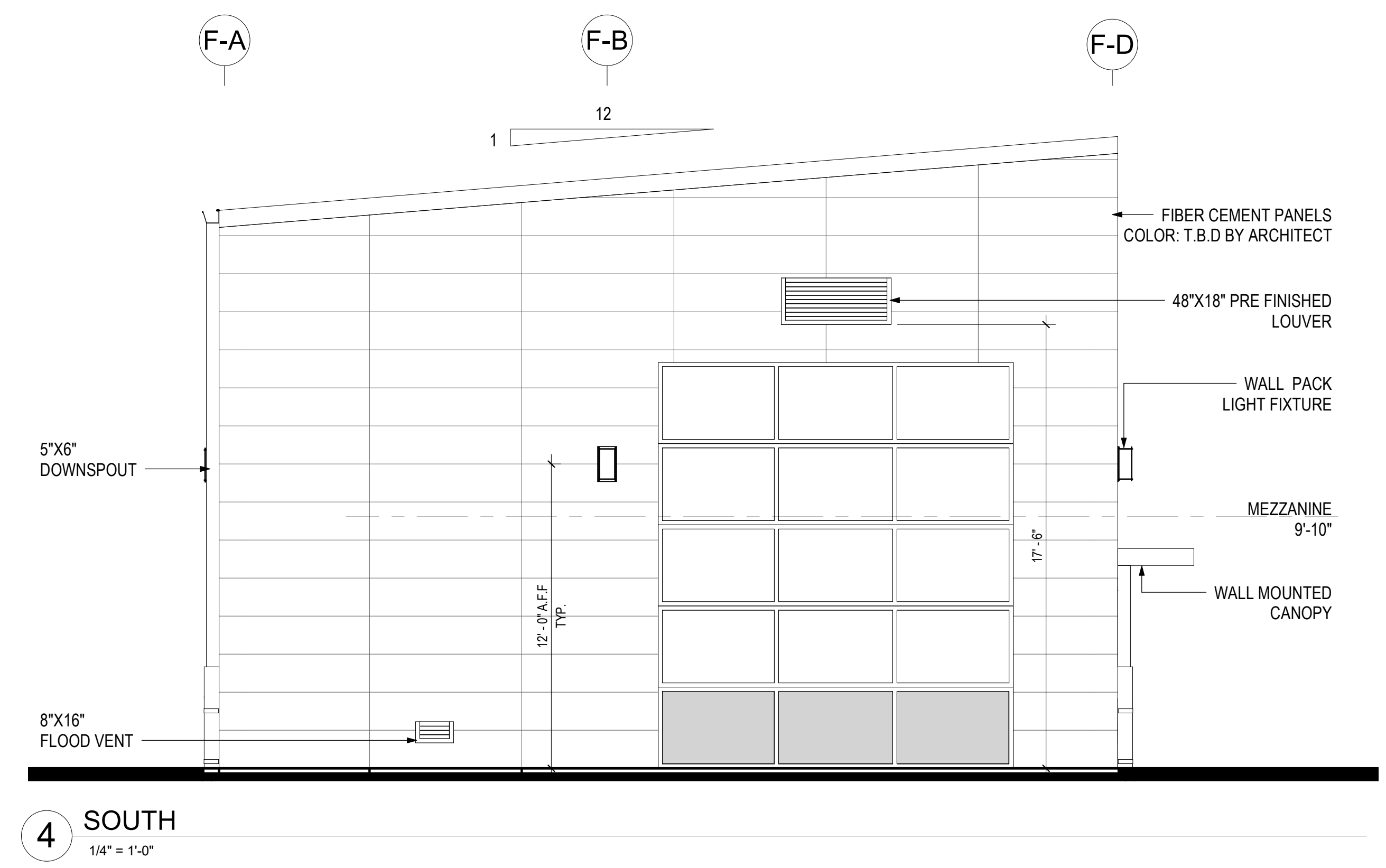
|             |                  |
|-------------|------------------|
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**A6.00**  
 WALL SECTIONS  
 AND PARTITIONS

CONSULTANTS  
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CIVIL  
 CSF Consulting LP  
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 Tel: 832.678.2110  
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**MARITIME EXPANSION  
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**A7.01**  
 EXTERIOR  
 ELEVATIONS

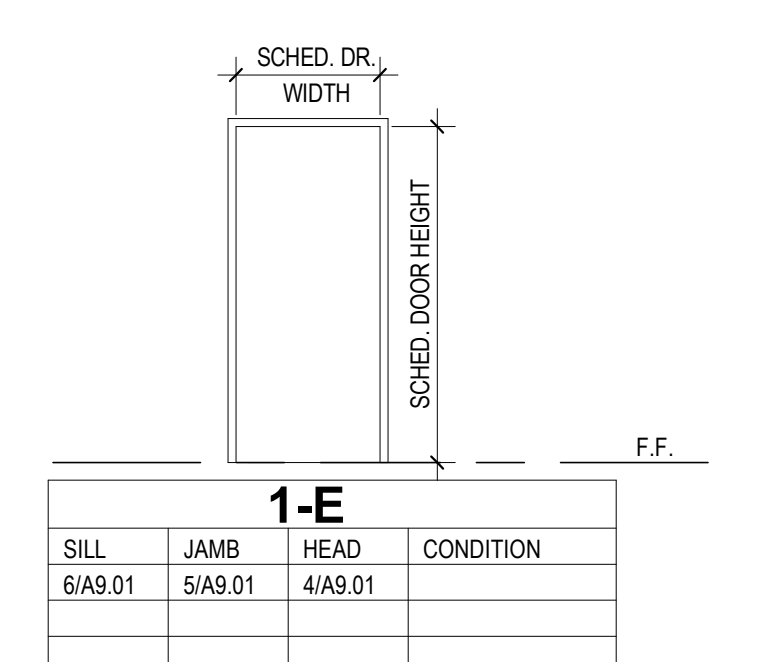
CONSULTANTS  
**STRUCTURAL**  
 CSF Consulting LP  
 11301 Fallbrook Suite 320  
 Houston, Texas 77065  
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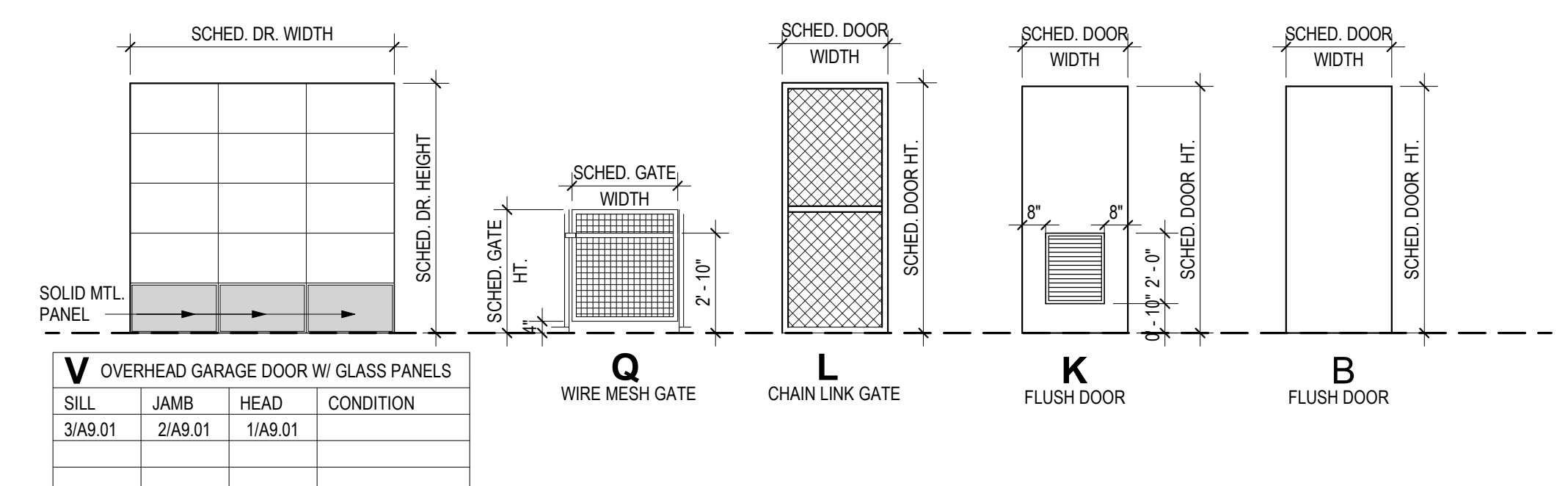
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**MARITIME EXPANSION  
 FIRE TRAINING CENTER**

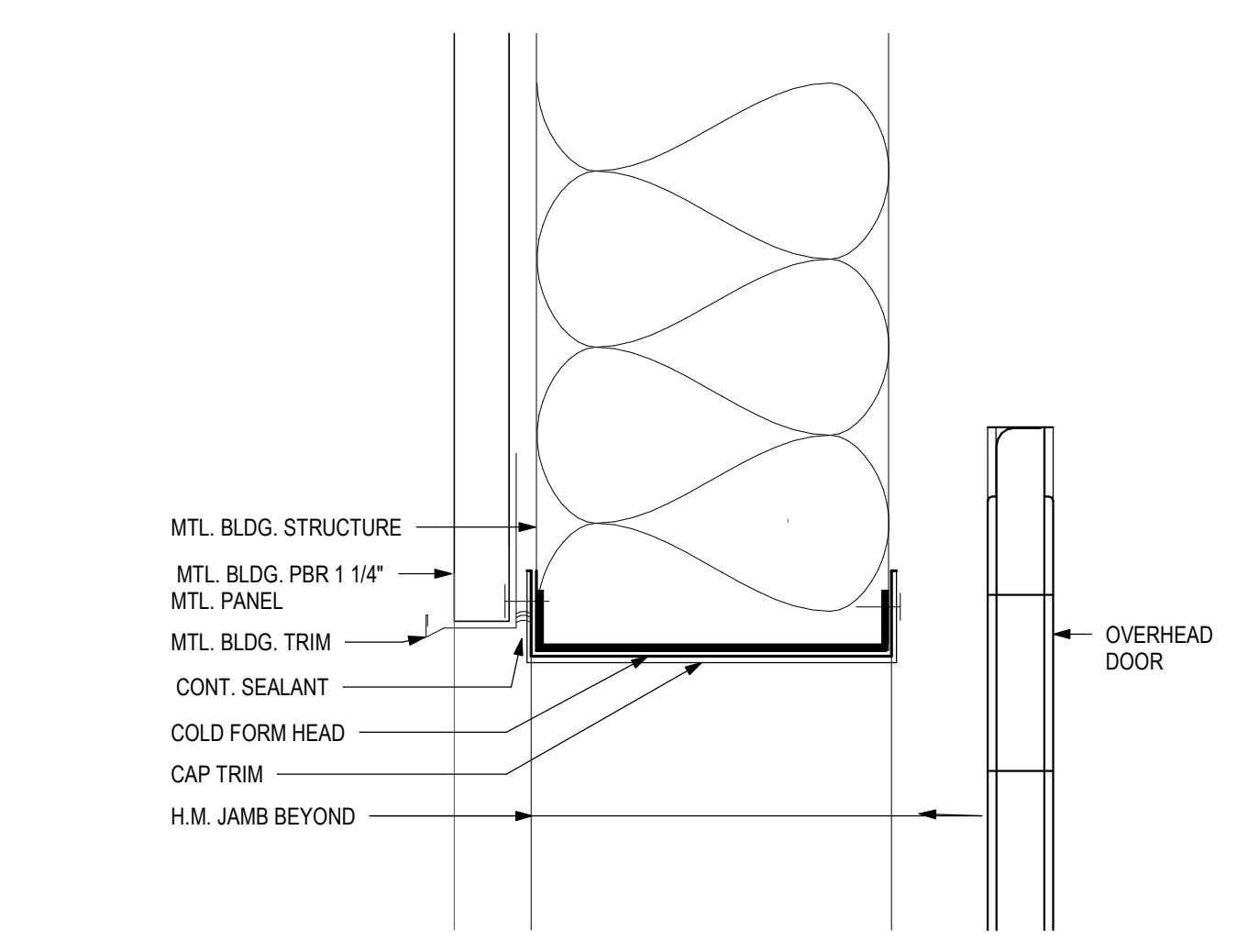
3700 Old Hwy 146 La Porte, TX 77571



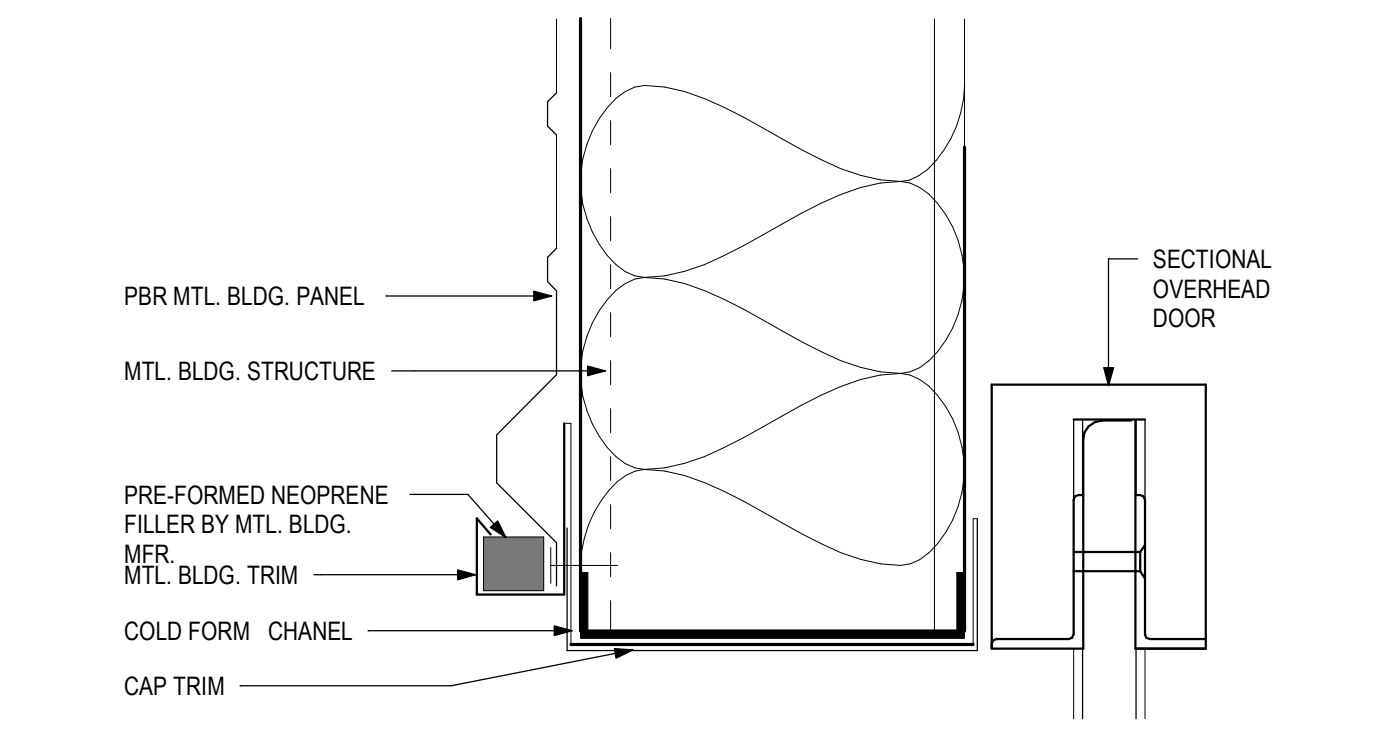
**1-E**  
 DOOR FRAME ELEVATIONS  
 1/4" = 1'-0"



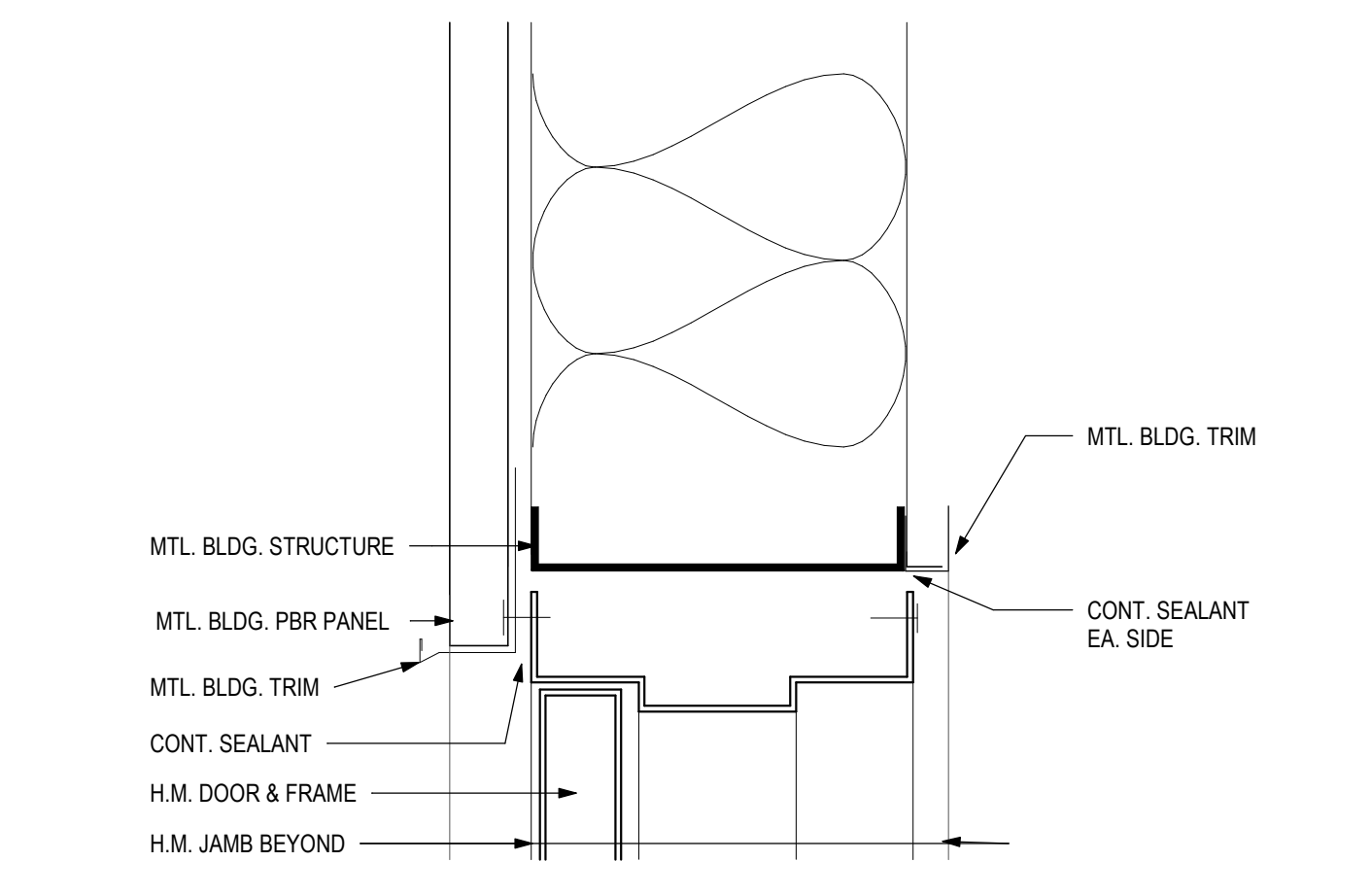
**V**  
 OVERHEAD GARAGE DOOR W/ GLASS PANELS  
 1/4" = 1'-0"



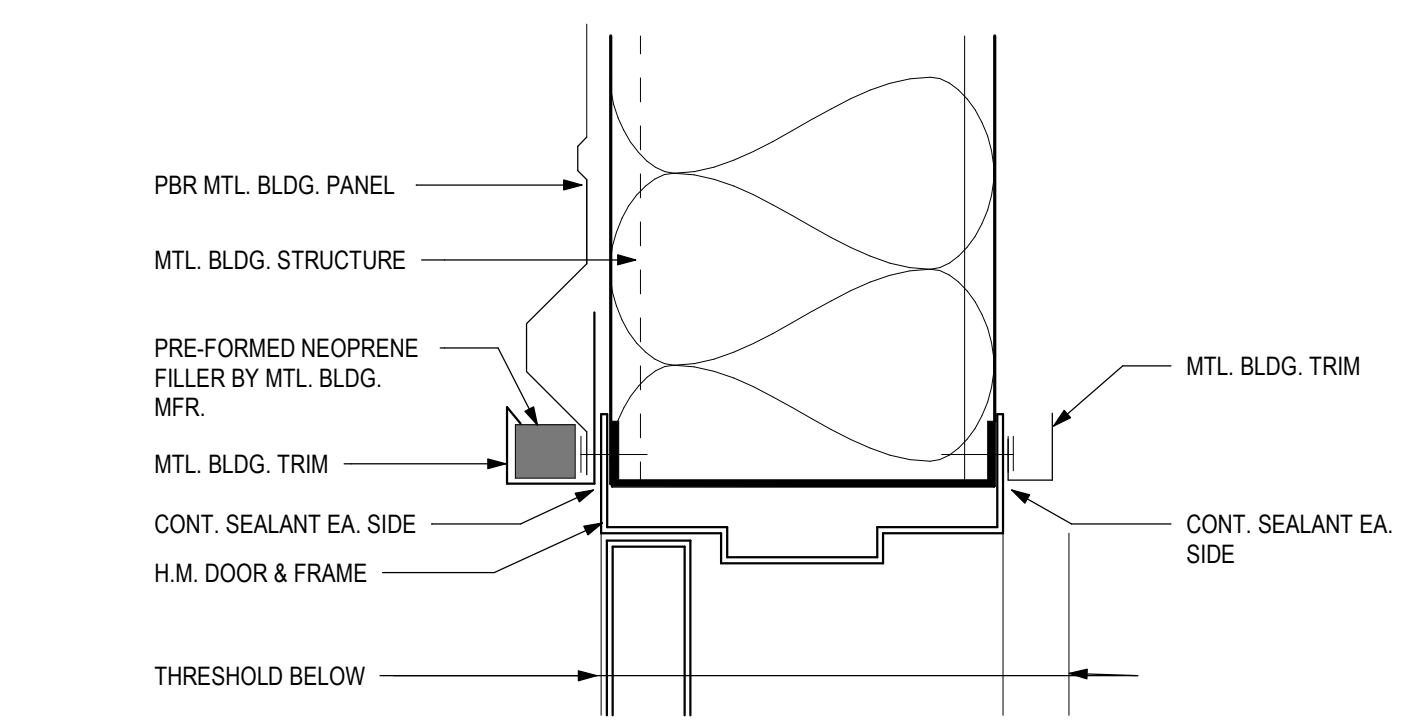
**4** EXT OVERHEAD DOOR HEAD  
 3" = 1'-0"



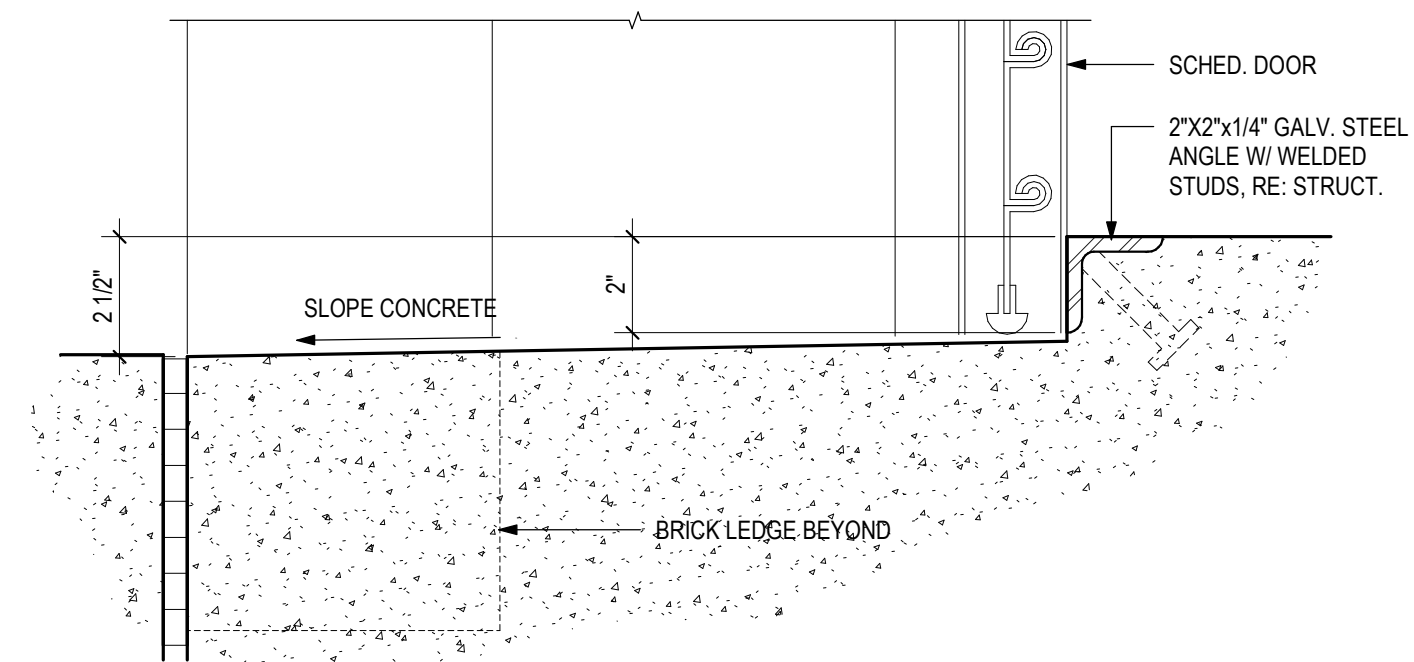
**5** EXT. OVERHEAD DOOR JAMB  
 3" = 1'-0"



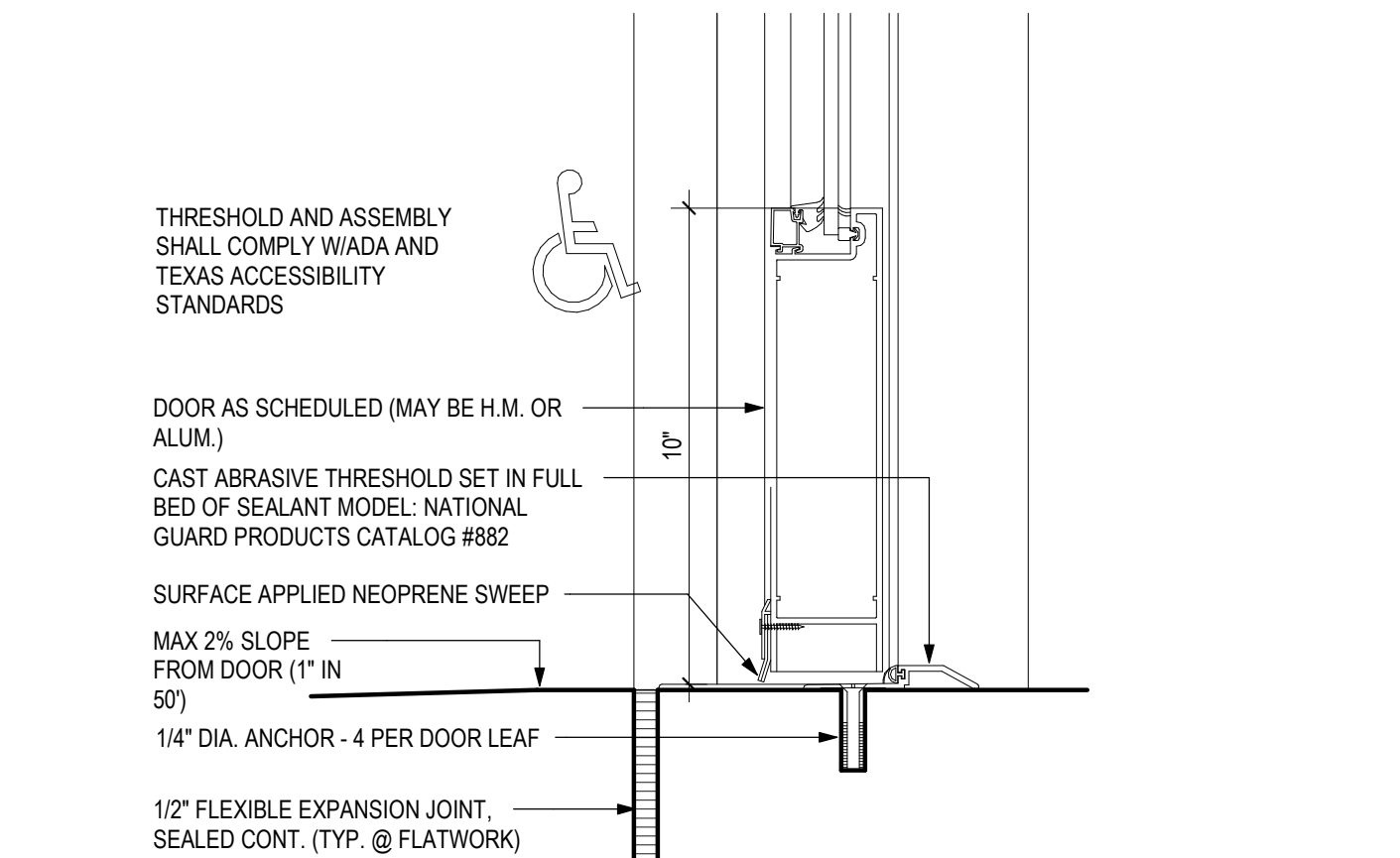
**1** H.M. EXT. HEAD DETAIL  
 3" = 1'-0"



**2** H.M. EXT. JAMB  
 3" = 1'-0"



**6** EXT. OVERHEAD DOOR SILL  
 3" = 1'-0"



**3** EXT. DOOR THRESHOLD  
 3" = 1'-0"



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**A9.01**  
 FRAME & DOOR  
 ELEVATIONS,  
 FRAME DETAILS





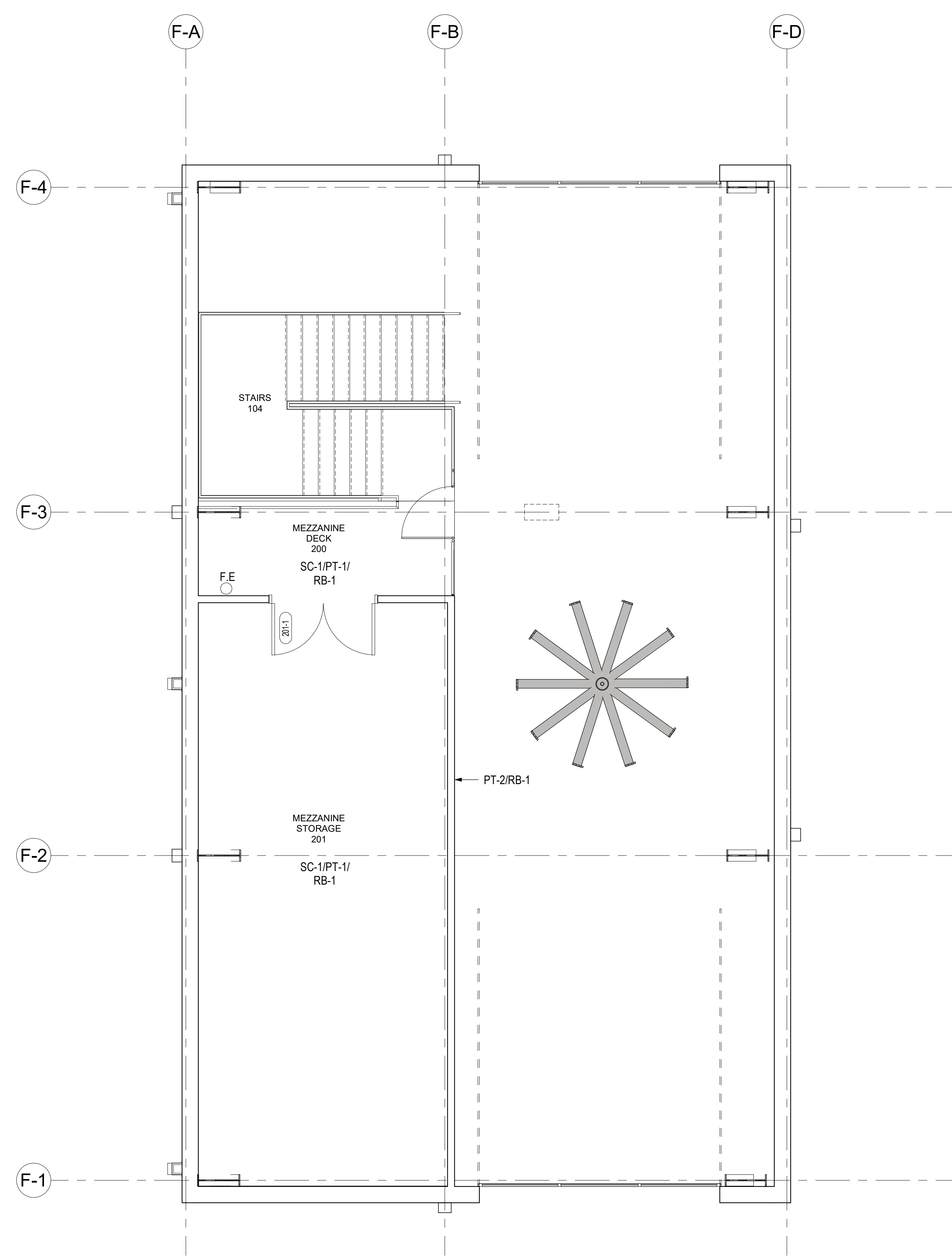
CONSULTANTS  
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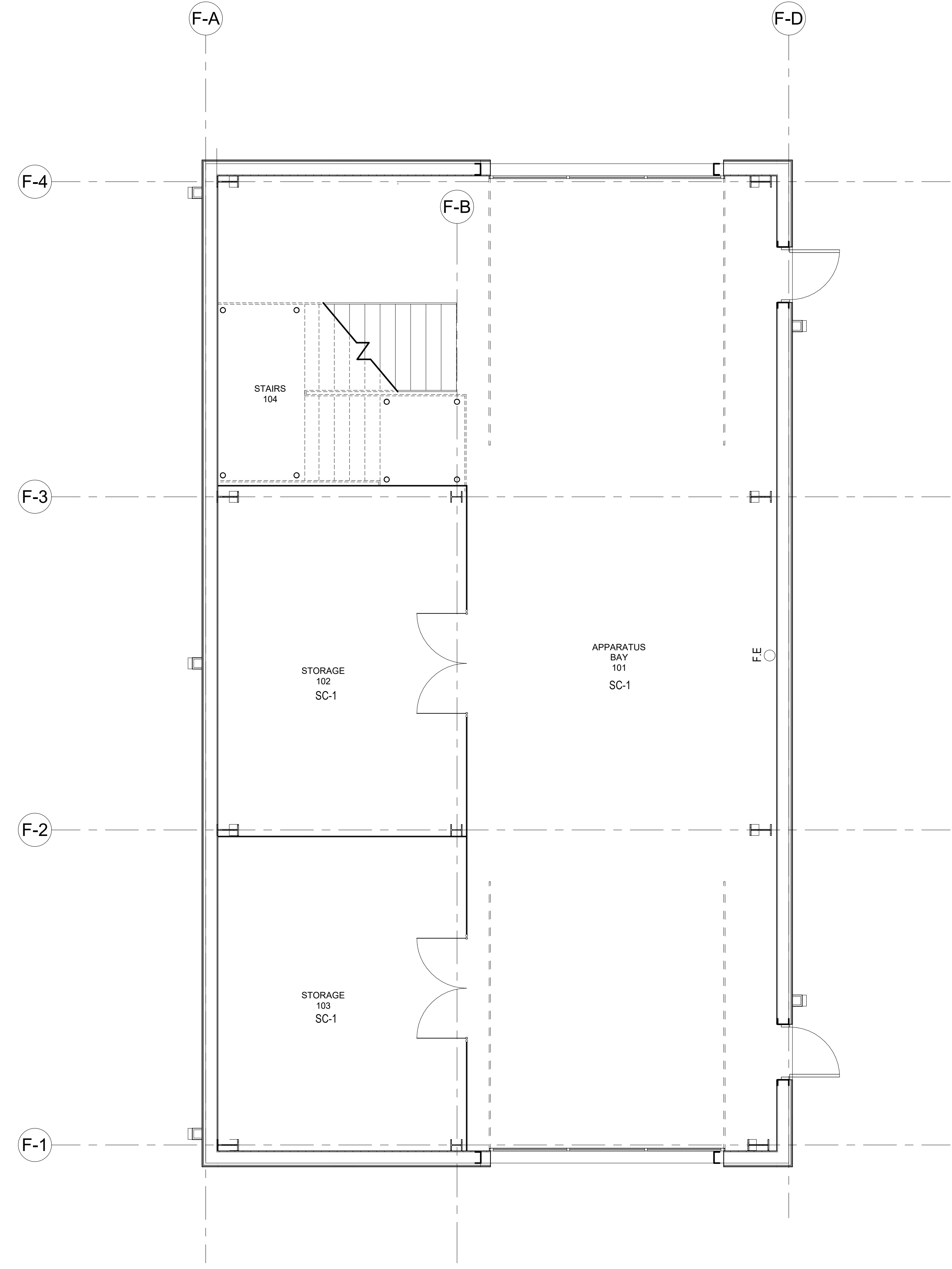
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| INTERIOR FINISH LEGEND |                                                                           |
|------------------------|---------------------------------------------------------------------------|
| <b>PT-1</b>            | <b>PANT</b><br>MFR: SHERWIN WILLIAMS<br>COLOR: SW 7517 CHINA DOLL (BEIGE) |
| <b>RB-1</b>            | <b>RUBBER BASE</b><br>MFR: ROPPE<br>COLOR: 123 CHARCOAL                   |
| <b>SC-1</b>            | <b>SEALED CONCRETE</b><br>MFR: REFER TO SPECS.                            |

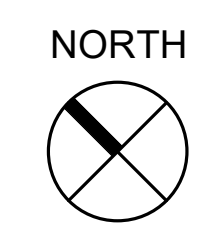
NOTE: ALL OPTIONS, SIZES, AND PATTERNS ARE SUBJECT TO CHANGE UPON OWNER APPROVAL.



2 MEZZANINE PLAN INTERIOR PLAN  
 1/4" = 1'-0"



1 1ST FLOOR-INTERIOR PLAN  
 1/4" = 1'-0"



**MARITIME EXPANSION  
 FIRE TRAINING CENTER**

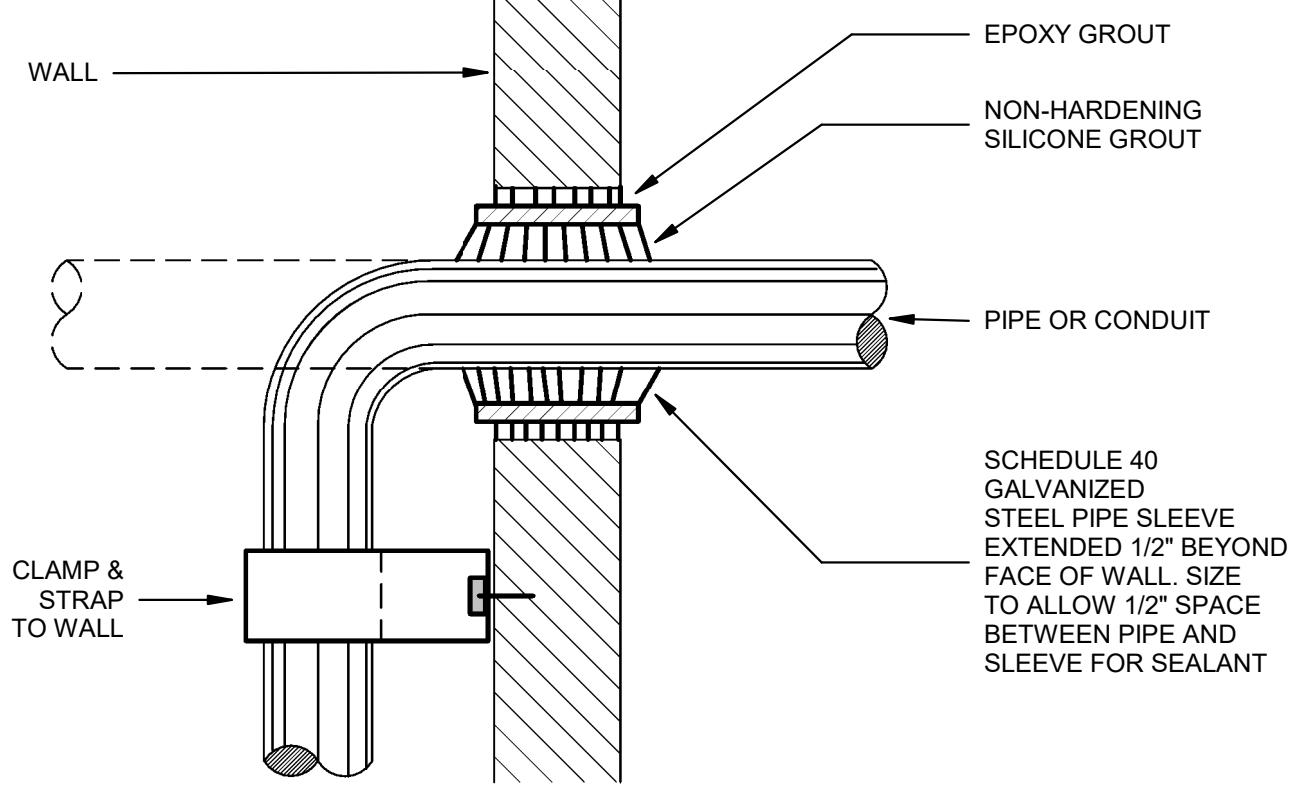
3700 Old Hwy 146 La Porte, TX 77571

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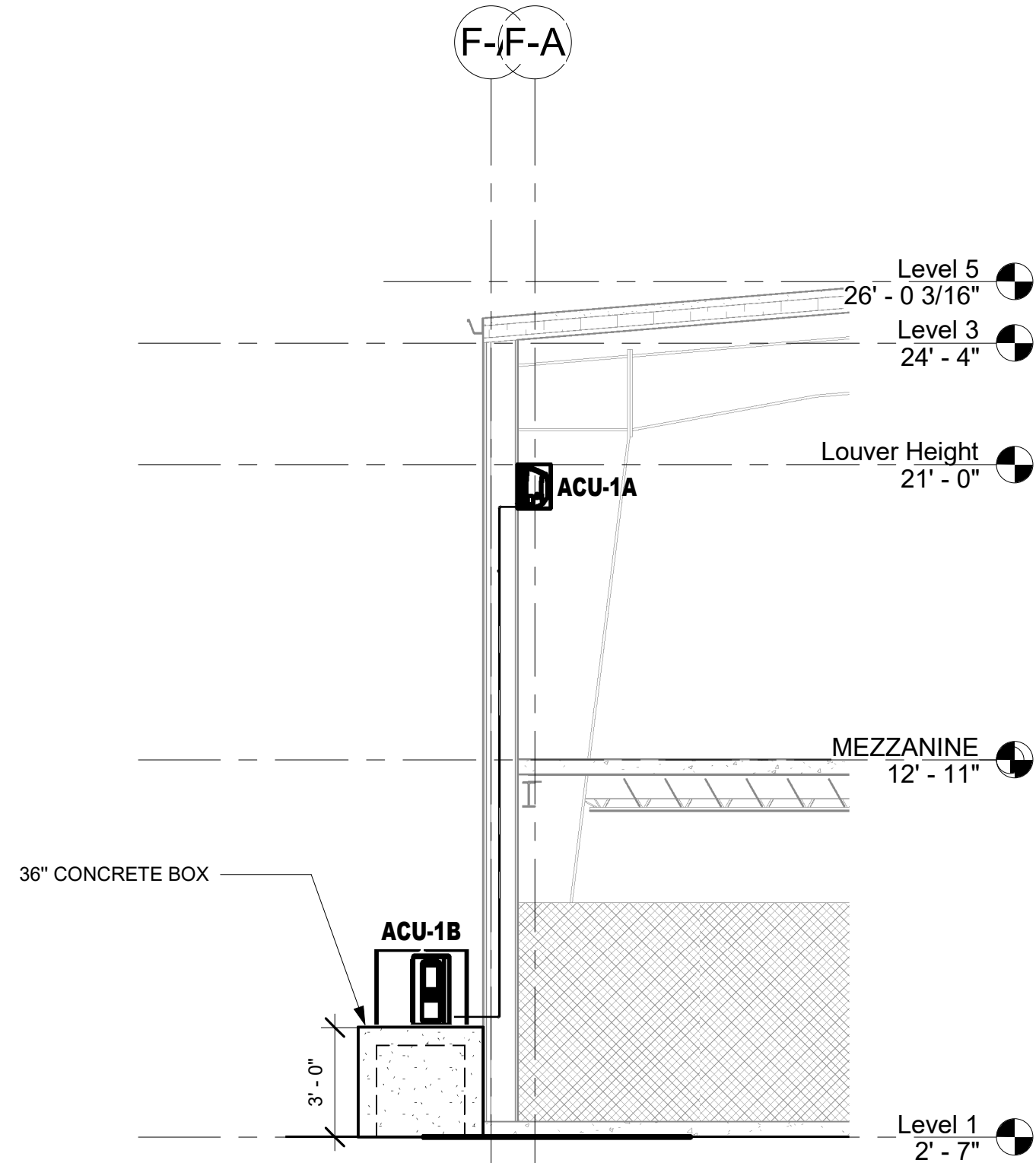


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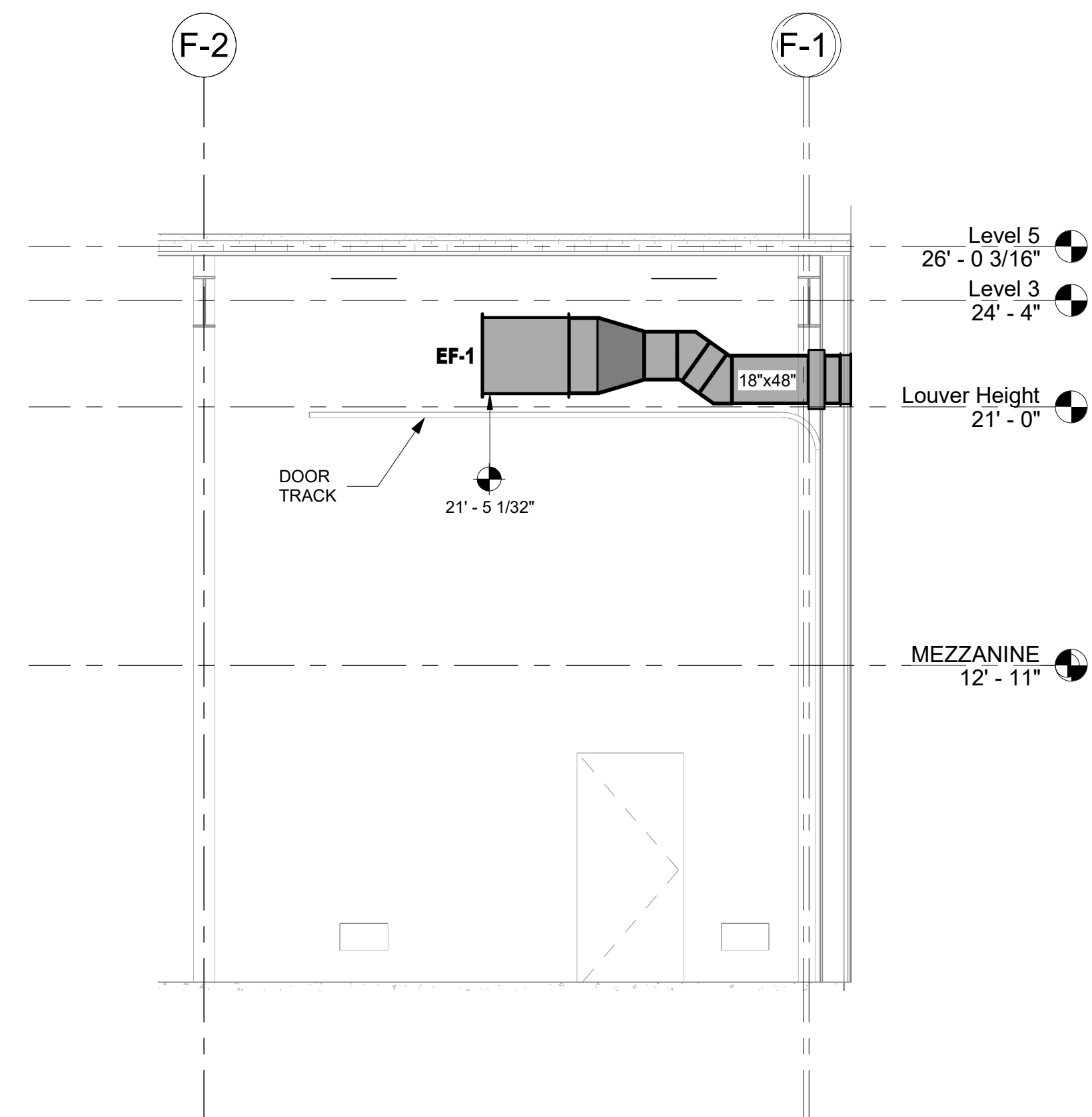
**A11.01**  
 INTERIOR  
 FLOOR PLAN



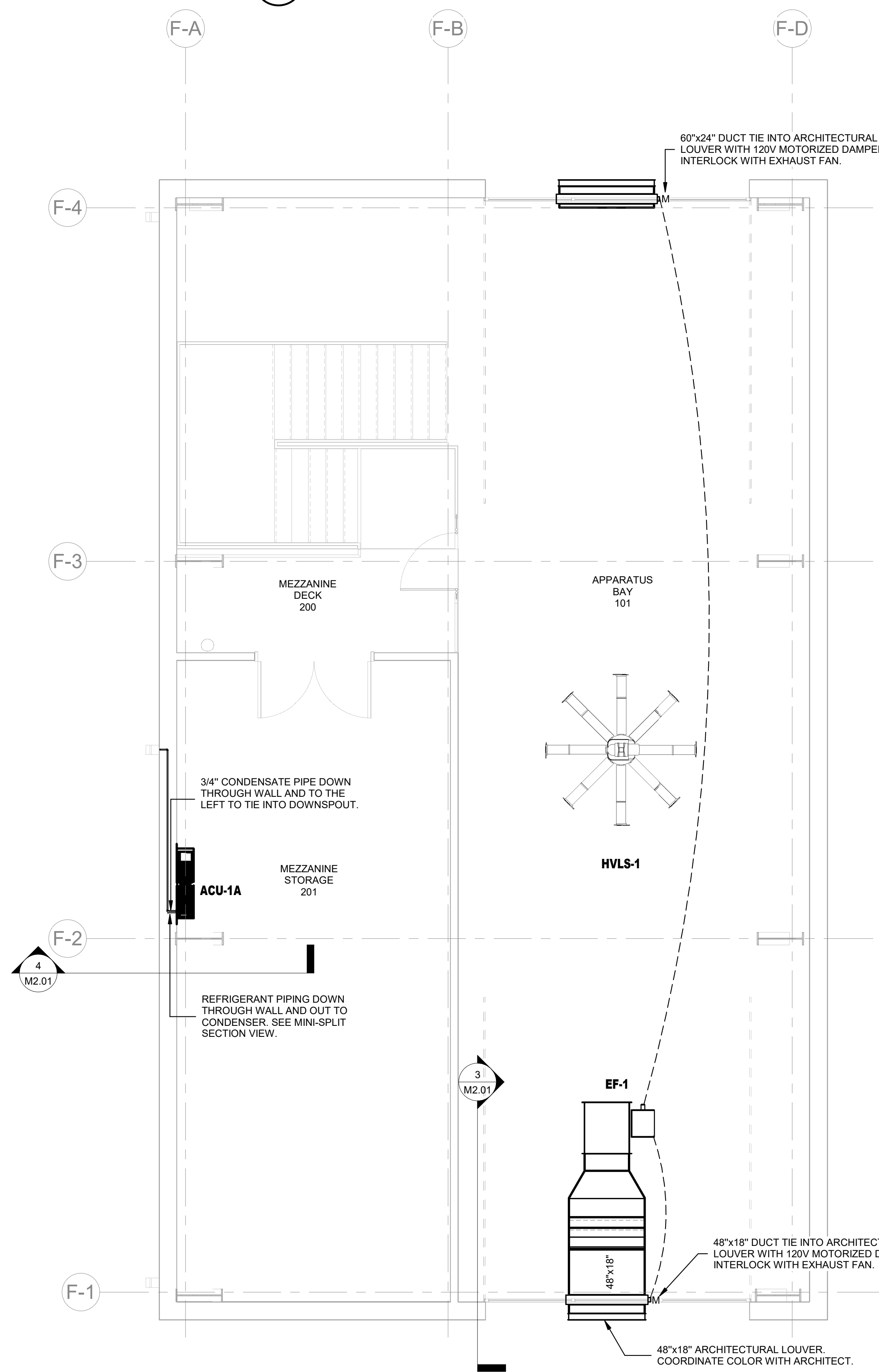
**5 WALL PENETRATION DETAIL**  
NO SCALE



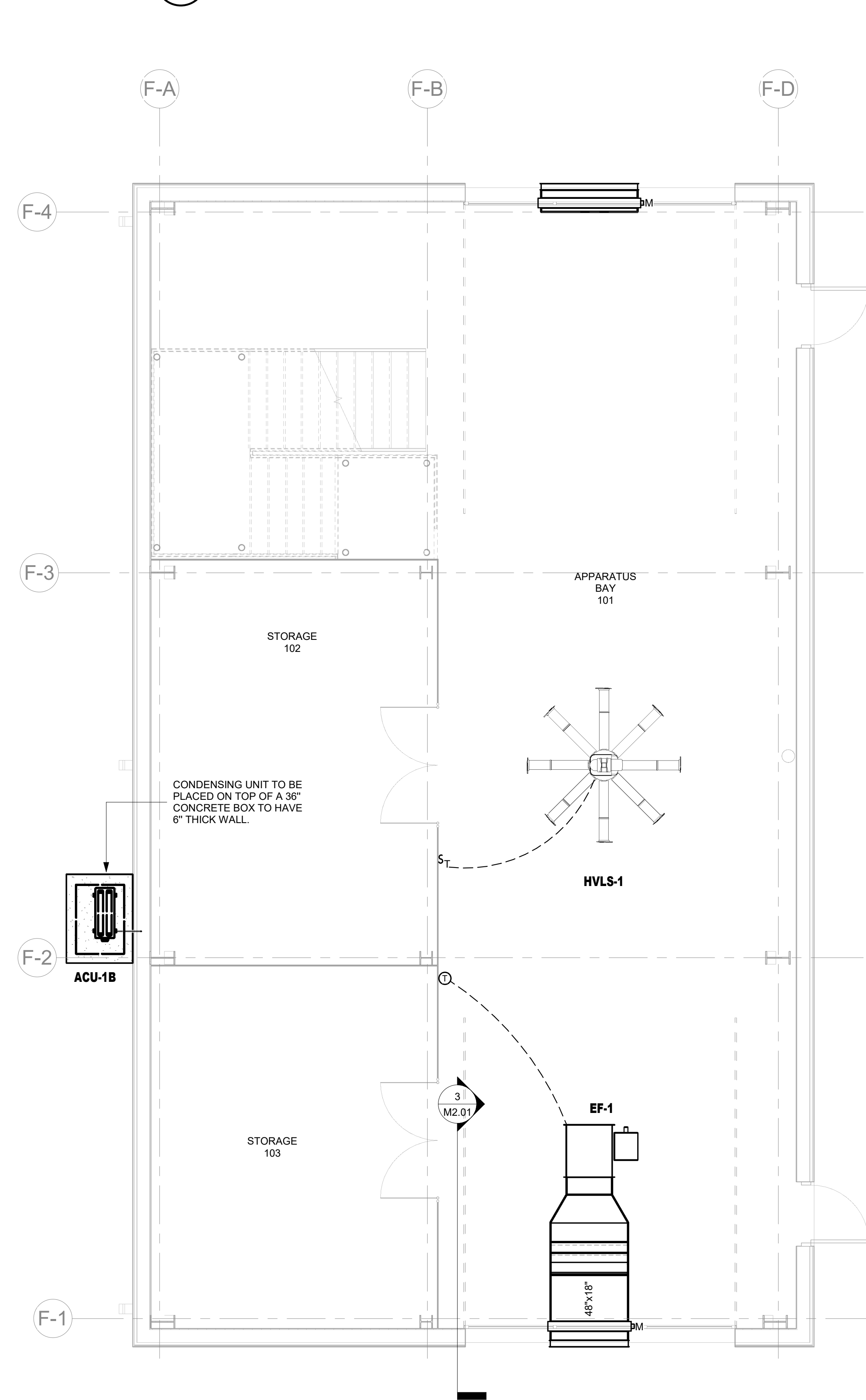
**4 MINI-SPLIT SYSTEM SECTION VIEW**  
NO SCALE



**3 EXHAUST FAN AND LOUVER SECTION VIEW**  
NO SCALE



**2 MEZZANINE - MECHANICAL PLAN**  
SCALE = 1/4" = 1'-0"



**1 1ST FLOOR - MECHANICAL PLAN**  
SCALE = 1/4" = 1'-0"

| FAN SCHEDULE    |               |
|-----------------|---------------|
| MARK            | EF-1          |
| SERVES          | APPARATUS BAY |
| TYPE            | INLINE        |
| DRIVE           | BELT          |
| CFM             | 3000          |
| STATIC PRESSURE | 0.25"         |
| SIZE            | 195           |
| DESIGN H.P.     | 0.341 HP      |
| VOLTAGE         | 120V          |
| COOL MODEL #    | 195 SQIB      |
| SONES           | 7.2           |
| NOTES           | 4.5           |

**NOTES:**

1. DISCONNECT SWITCH, BACKDRAFT DAMPER, CEILING GRILLE.
2. COMBINATION MOTOR STARTER/DISCONNECT SWITCH, AND INLINE BACKDRAFT DAMPER.
3. INTERLOCK FAN WITH WALL-MOUNTED SWITCH AND CARBON MONOXIDE SENSOR.
4. DISCONNECT SWITCH, BACKDRAFT DAMPER, AND SPEED CONTROLLER.
5. INTERLOCK WITH SPACE TEMPERATURE SENSOR TO ENERGIZE FAN WHEN SPACE REACHES 80°F (ADJUSTABLE).

**STORAGE A/C UNITS (ACU)**

ACU-1A (INDOOR UNIT): HITACHI DHX24NW21S, 22.0 MBH COOLING CAPACITY, 20.0 SEER, WIRELESS REMOTE CONTROLLER.

ACU-1B (OUTDOOR UNIT): HITACHI SHX24NWB21S, 22.0 MBH COOLING CAPACITY, E-COATED COIL.

POWER SUPPLY: 208V / 1PH / 60 HZ, 20MCA / 30MOCP.

ACCESSORIES: LOW AMBIENT KIT & CRANKCASE HEATER, WALL-MOUNTED BRACKET.

REFRIGERANT PIPING SIZE SHALL BE AS REQUIRED BY THE MANUFACTURER.

**HIGH VOLUME LOW SPEED (HVL) FAN**

HIGH VOLUME LOW SPEED FAN, GEARLESS DIRECT DIRECT MOTOR, 10.0 AMPS @ 208V/3 PH/60 HZ, 197 RPM, 8 FOOT DIAMETER, 1.0HP, 24V WALL REMOTE CONTROLLER, 222 LBS FAN WEIGHT, BIGASSFANS POWERFOIL X3.0 MODEL. INSTALL AND ATTACH TO STRUCTURE PER MANUFACTURERS SPECIFICATIONS. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.

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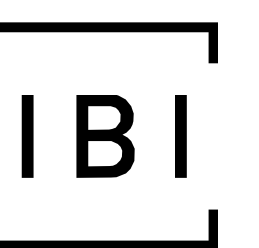
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**FIRE TRAINING CENTER  
AT MARITIME CAMPUS**

3700 Old Hwy 146 La Porte, TX 77571



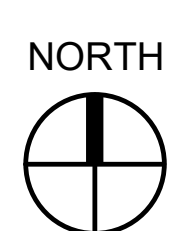
**TEXAS-IBI GROUP, INC.**  
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281.286.6605

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ARCHITECT: MARK R. FRENCH, AIA  
1026

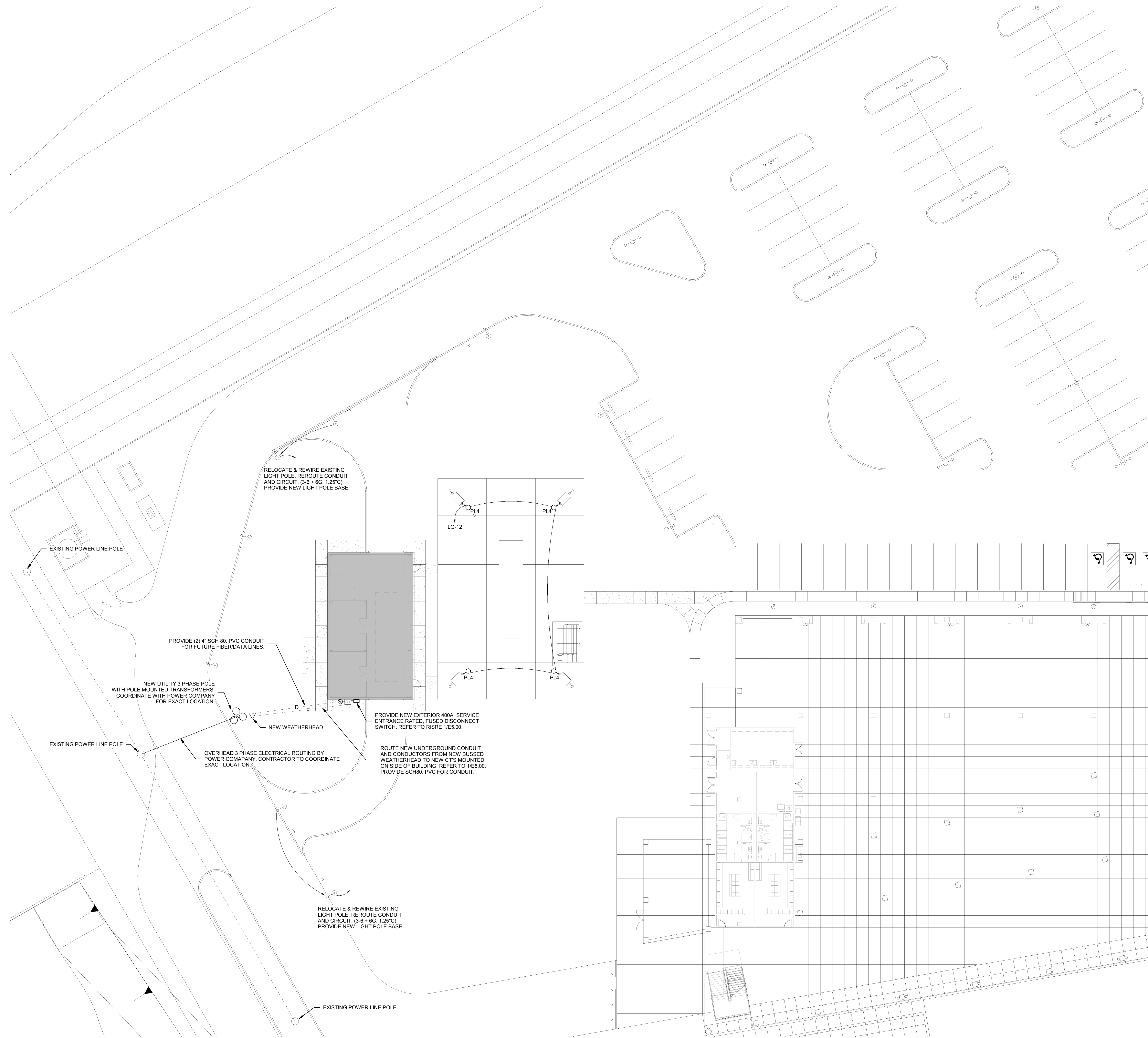
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| PROJECT NO. | 201936        |
| DATE:       | 11/12/2019    |
| DRAWN       | CKT           |
| CHECKED     | CKT           |
| DATE        | ISSUE         |
| 11/12/2019  | ISSUE FOR BID |

**M2.01**

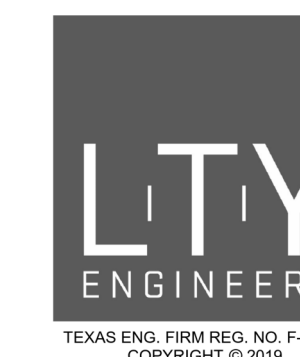
1ST DECK  
MECHANICAL  
PLAN AREA "A1"



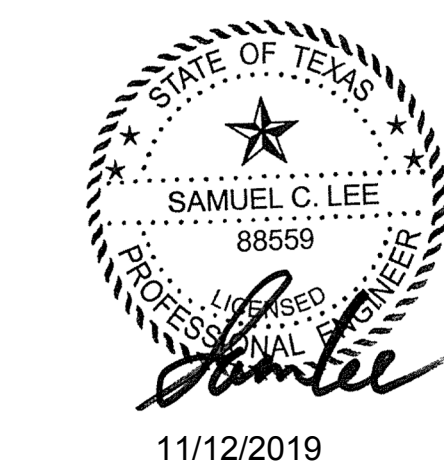
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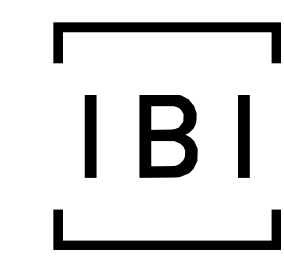
**1 COMPOSITE ELECTRICAL PLAN**  
SCALE = 1/16" = 1'-0"



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**FIRE TRAINING CENTER  
AT MARITIME CAMPUS**  
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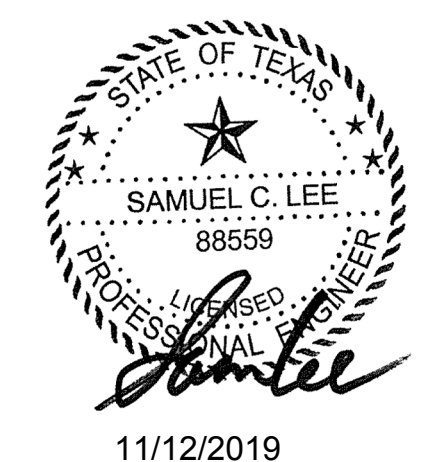
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| PROJECT NO. | 201936        |
| DATE:       | 11/12/2019    |
| DRAWN       | CSH           |
| CHECKED     | SCL           |
| DATE        | ISSUE         |
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**E1.01**  
 1ST DECK  
 COMPOSITE  
 ELECTRICAL  
 PLAN

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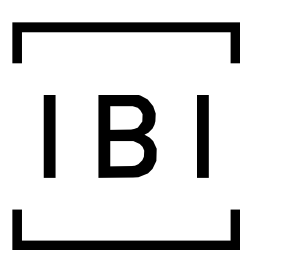
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11/12/2019

# FIRE TRAINING CENTER AT MARITIME CAMPUS

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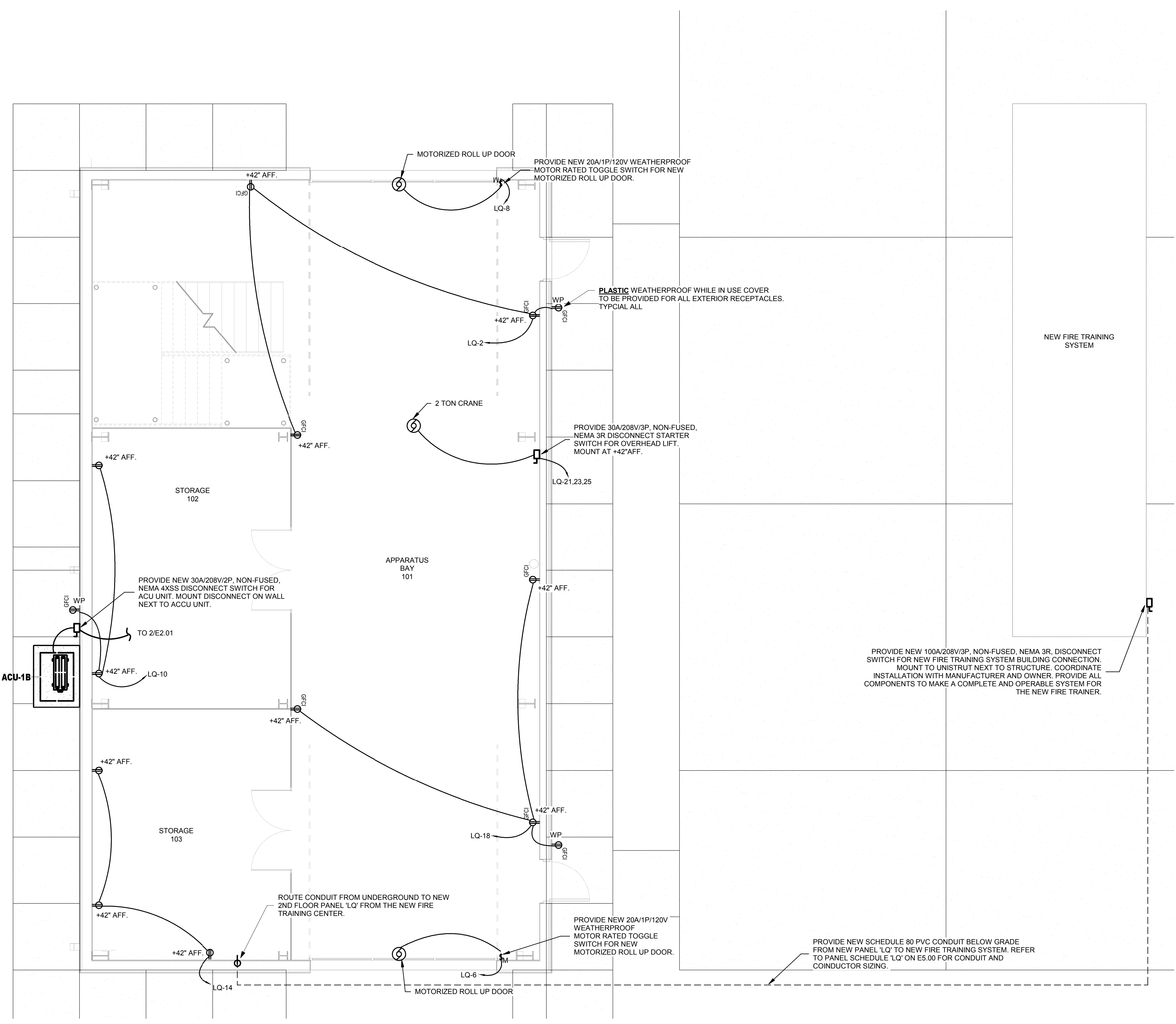
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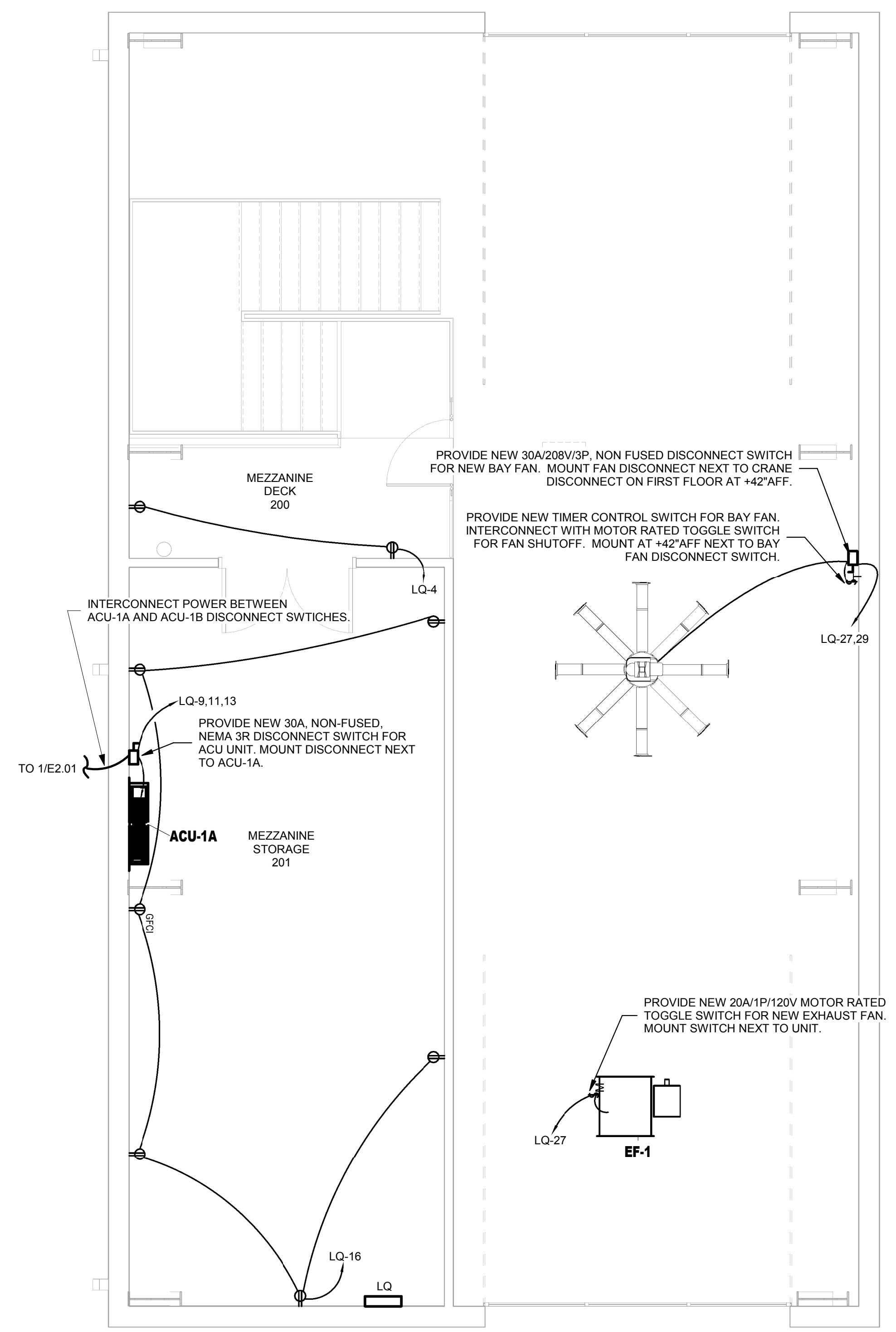
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| PROJECT NO. | 201936        |
| DATE:       | 11/12/2019    |
| DRAWN       | CSH           |
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| DATE        | ISSUE         |
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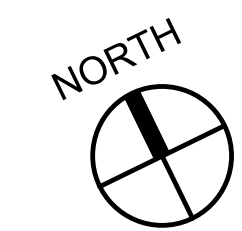
1ST DECK  
 ELECTRICAL  
 POWER PLAN  
 AREA "A1"



**1 1ST FLOOR - ELECTRICAL POWER PLAN**  
 SCALE= 1/4" = 1'-0"



**2 MEZZANINE - ELECTRICAL POWER PLAN**  
 SCALE= 1/4" = 1'-0"

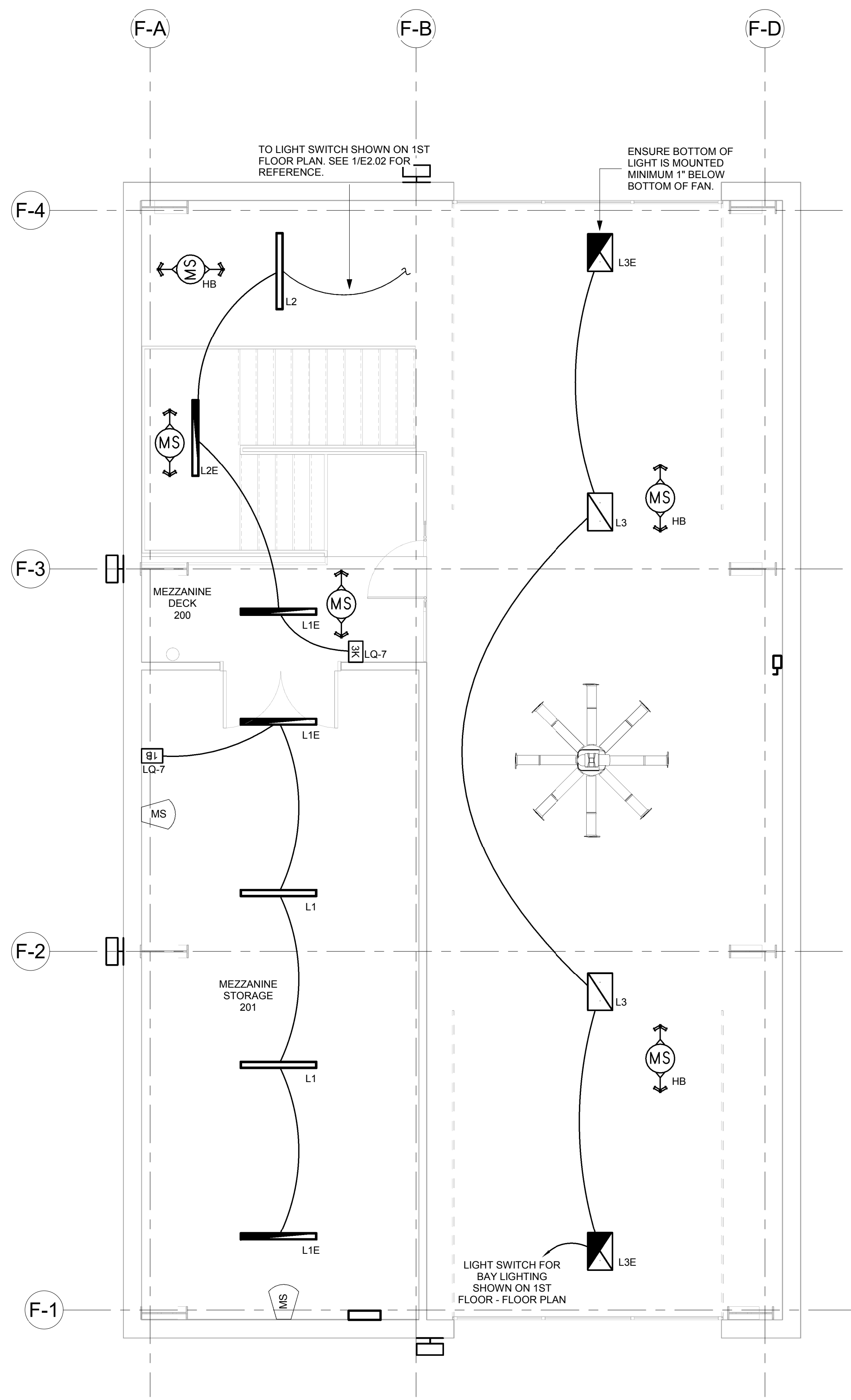


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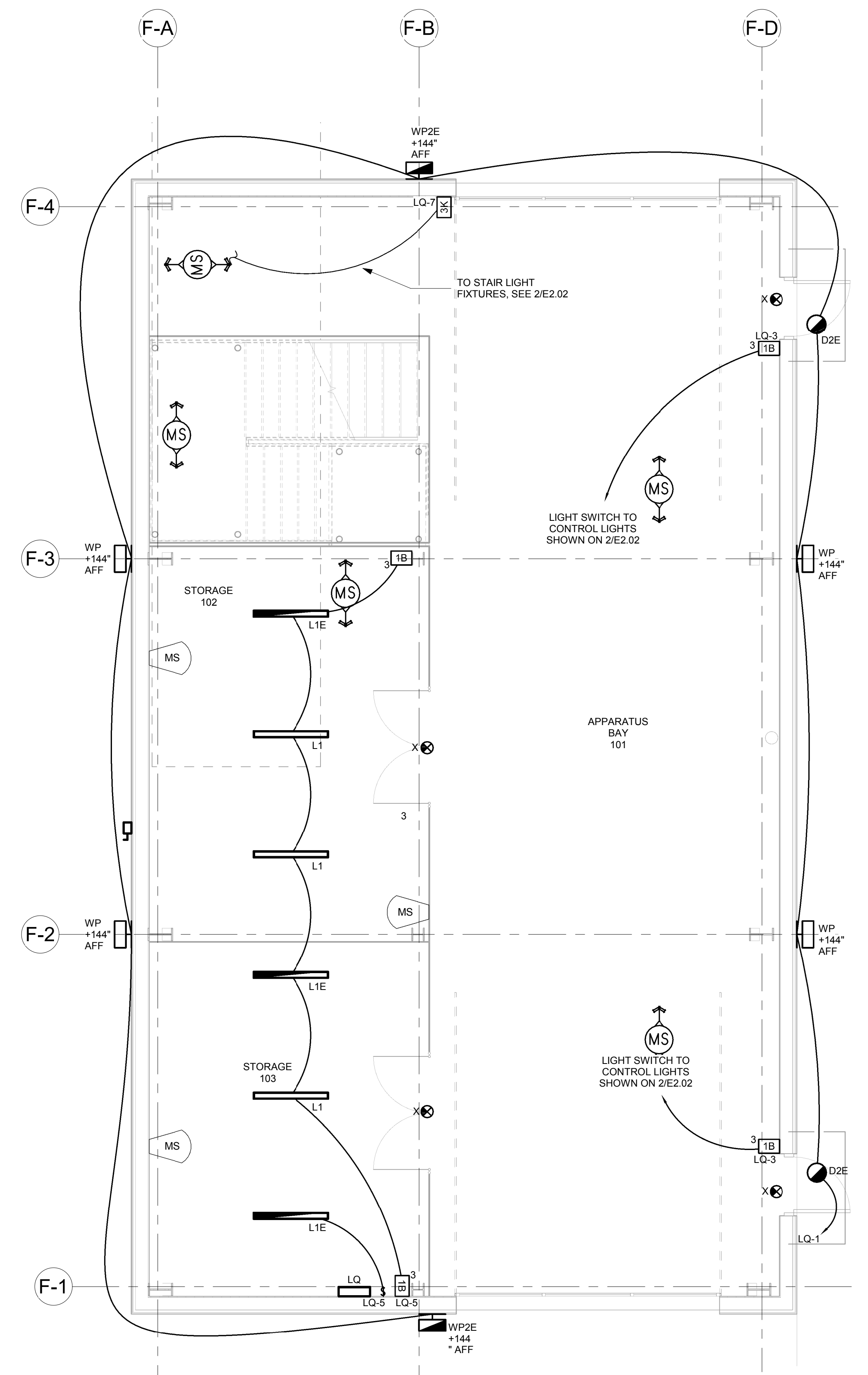


**FIRE TRAINING CENTER  
 AT MARITIME CAMPUS**

3700 Old Hwy 146 La Porte, TX 77571



**2 MEZZANINE - ELECTRICAL LIGHTING PLAN**  
 SCALE= 1/4" = 1'-0"



**1 1ST FLOOR - ELECTRICAL LIGHTING PLAN**  
 SCALE= 1/4" = 1'-0"

| LIGHTING FIXTURE SCHEDULE |               |                                                         |           |         |         |           |                                                                                                                                  |
|---------------------------|---------------|---------------------------------------------------------|-----------|---------|---------|-----------|----------------------------------------------------------------------------------------------------------------------------------|
| FIXTURE TYPE              | MANUFACTURER  | SERIES NO.                                              | LAMP TYPE | WATTAGE | VOLTAGE | MOUNTING  | DESCRIPTION                                                                                                                      |
| D2X                       | METALUX       | LD68-20-D010-EM14-EU68-1020-80-40-618-M-1-MW-L-5KRT6P66 | LED       | 15.5    | 120-277 | RECESSED  | RECESSED LED DOWNLIGHT LUMINAIRE, 2000 LUMENS, WET RATED                                                                         |
| L1, L1X                   | METALUX       | 4LBLEDD-LD4-6-SYMF-UNV-L840-CD1-U                       | LED       | 44W     | 120-277 | SUSPENDED | 4FT LED LOW BAY LUMINAIRE, 6000 LUMENS, SYMMETRIC WHITE LENS, TO BE PROVIDED WITH Y-TOGGLE, CONTRACTOR TO SPECIFY LENGTH         |
| L2, L2X                   | METALUX       | 4LBLEDD-LD4-11-SYMF-UNV-L840-CD1-U                      | LED       | 86W     | 120-277 | SUSPENDED | 4FT LED LOW BAY LUMINAIRE, 11,000 LUMENS, SYMMETRIC WHITE LENS, TO BE PROVIDED WITH Y-TOGGLE, CONTRACTOR TO SPECIFY LENGTH       |
| L3, L3X                   | METALUX       | DHB-305E-MFL-UNV-L840-CD-U                              | LED       | 187W    | 120-277 | SUSPENDED | 2X2 HIGH BAY FIXTURE, 31543 LUMENS                                                                                               |
| PL4, PL4X                 | MCGRAW EDISON | GLNA-AF-04-LED-VOLT-T4FT-XX                             | LED       | 225W    | 120-277 | POLE      | (1) AREA SITE LUMINAIRE, 24,000 LUMENS, TYPE IV FORWARD THROW DISTRIBUTION, TO BE PROVIDED WITH KW POLE RSP20-4.0-11-BRZ-DM10-BC |
| WP2, WP2X                 | MCGRAW EDISON | GW-AC-02-LED-E1-T4FT-XX                                 | LED       | 113W    | 120-277 | WALL      | LED WALLPACK, 12,784 LUMENS, ARCHITECT TO DETERMINE FINISH                                                                       |
| WP, WPX                   | LUMARK        | XTOR4B-W                                                | LED       | 58W     | 120-277 | WALL      | LOW PROFILE LED WALLPACK, 6000 LUMENS, ARCHITECT TO DETERMINE FINISH                                                             |
| X                         | SURE-LITES    | LPX7SD                                                  | LED       | N/A     | 120-277 | UNIVERSAL | LED POLYCARBONATE EXIT SIGN, RED OR GREEN LETTERS, SINGLE OR DOUBLE FACE, BATTERY BACK UP, SELF DIAGNOSTICS                      |

**LIGHTING NOTES**

- ALL EXIT SIGNS TO BE CIRCUITED TO CIRCUIT LQ-20.
- CIRCUIT SHOWN BY SWITCH IS THE LIGHTING CIRCUIT FOR THAT SPACE. CONTRACTOR TO GROUP ALL SPACES THAT HAVE THE SAME LIGHTING CIRCUIT AND HOME RUN TO ELECTRICAL PANEL.
- FOR "X" TYPE FIXTURES (L1X, L2X, WPX) SHALL HAVE 90-MINUTE BATTERY AND TEST SWITCH.

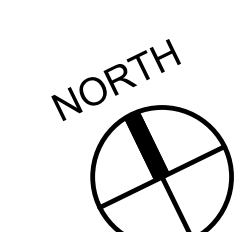
**LIGHTING LEGEND AND SYMBOLS**

- § 20A, 125V LIGHT SWITCH
- [D] DIGITAL DIMMER LIGHT WITH 0-10V UP/DOWN & ON/OFF BUTTON
- [1B] LOW VOLTAGE SINGLE-BUTTON LIGHT SWITCH
- [2B] LOW VOLTAGE TWO-BUTTON LIGHT SWITCH
- [3B] LOW VOLTAGE THREE-BUTTON LIGHT SWITCH
- [K] LOW VOLTAGE DIGITAL KEY OPERATED LIGHT SWITCH
- [K3] LOW VOLTAGE DIGITAL KEY OPERATED 3-WAY LIGHT SWITCH
- [K4] LOW VOLTAGE DIGITAL KEY OPERATED 4-WAY LIGHT SWITCH
- [MS] DUAL TECHNOLOGY WALL SWITCH SENSOR
- [A] TYPE 'A' LIGHT FIXTURE
- [AE] TYPE 'AE' LIGHT FIXTURE WITH EMERGENCY BATTERY BACKUP
- [MS HB] HIGH BAY 360° CEILING MOUNTED DUAL TECH OCCUPANCY SENSOR MANUFACTURED BY GREENGATE
- [MS US] 360° CEILING MOUNTED DUAL TECH OCCUPANCY SENSOR MANUFACTURED BY GREENGATE
- [MS US] 360° CEILING MOUNTED US OCCUPANCY SENSOR MANUFACTURED BY GREENGATE
- [MS] WALL/CORNER MOUNTED WIDE ANGLE 120°SP PIR OCCUPANCY SENSOR MOUNTED AT 1'-10" AFF FOR ROOM WITH CEILING HIGHER THAN 10', MANUFACTURED BY GREENGATE
- [MS] 180° CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR FOR SMALL ROOMS MANUFACTURED BY GREENGATE

- DIGITAL LIGHTING CONTROL SYSTEM REQUIREMENTS**
- PROVIDE COMPLETE DIGITAL LIGHTING CONTROL SYSTEM WITH ROOM / SPACE LIGHTING CONTROLLERS, LIGHT SWITCHES, OCCUPANCY SENSORS AND GENERATOR TRANSFER DEVICES. ETC. CONTRACTOR MUST PROVIDE ADEQUATE SENSORS AND CONTROL DEVICES TO COVERAGE ALL THE INTERIOR SPACES. DIGITAL ROOM / SPACE LIGHTING CONTROLLERS ARE NOT SHOWN ON THE PLANS. CONTRACTOR SHALL PROVIDE ALL REQUIRED ROOM LIGHTING CONTROLLERS FOR EACH ROOM AND SPACE WITH OCCUPANCY SENSORS.
  - INSTALL ROOM / SPACE LIGHTING CONTROLLER WALL MOUNTED ABOVE CEILING AND LIGHT SWITCH. FOR AREAS WITH SHEET ROCK CEILING, PROVIDE ACCESS PANEL AND INSTALL ROOM / SPACE LIGHTING CONTROLLER ABOVE ACCESS CONTROL PANEL FOR AREAS WITH CEILING HIGHER THAN 12 FT. PROVIDE WHITE FINISH STEEL HEAVY DUTY WALL MOUNTED ENCLOSURE WITH HINGED DOOR AND DOOR HANDLE. INSTALL ROOM CONTROLLER IN WALL MOUNT ENCLOSURES AT +12FT AFF AT LIGHT SWITCH LOCATION.
  - MOUNTING HEIGHT FOR LIGHT SWITCHES SHALL BE AT +46" AFF. ELECTRICAL ROOM SHALL BE CONTROLLED BY TOGGLE SWITCH ONLY. NO DIGITAL ROOM CONTROLLER NEEDED FOR ELECTRICAL ROOM.
  - ALL ROOM / SPACE WITH LIGHTING CONTROLLER AND OCCUPANCY SENSOR SHALL BE PROGRAMMED TO HAVE 50% LIGHT TO BE AUTOMATICALLY ON AND ANOTHER 50% LIGHT TO BE MANUAL ON. EXCEPT FOR CORRIDOR AND RESTROOM WHICH SHALL HAVE 100% LIGHT TO BE AUTOMATICALLY ON. FOR ADJUSTABLE SENSORS, SET TIME DELAY TO 30 MINUTES AND SENSITIVITY TO 100%.
  - ALL CEILING MOUNT SENSORS SHOULD BE LOCATED A MINIMUM OF SIX FEET FROM HVAC SUPPLY/RETURN VENTS.
  - PROVIDE DIMMABLE ROOM CONTROLLER AND 0-10V DIMMING CABLES FOR EACH LIGHT FIXTURE CONTROLLED BY DIMMER SWITCH.

**NOTES:**

- MOUNTING HEIGHT FOR LIGHT SWITCHES SHALL BE AT +46" AFF.



**IBI**

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 ARCHITECT: MARK R. FRENCH, AIA  
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| PROJECT NO. | 201936        |
| DATE:       | 11/12/2019    |
| DRAWN:      | HP            |
| CHECKED:    | SCL           |
| DATE        | ISSUE         |
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**E2.02**

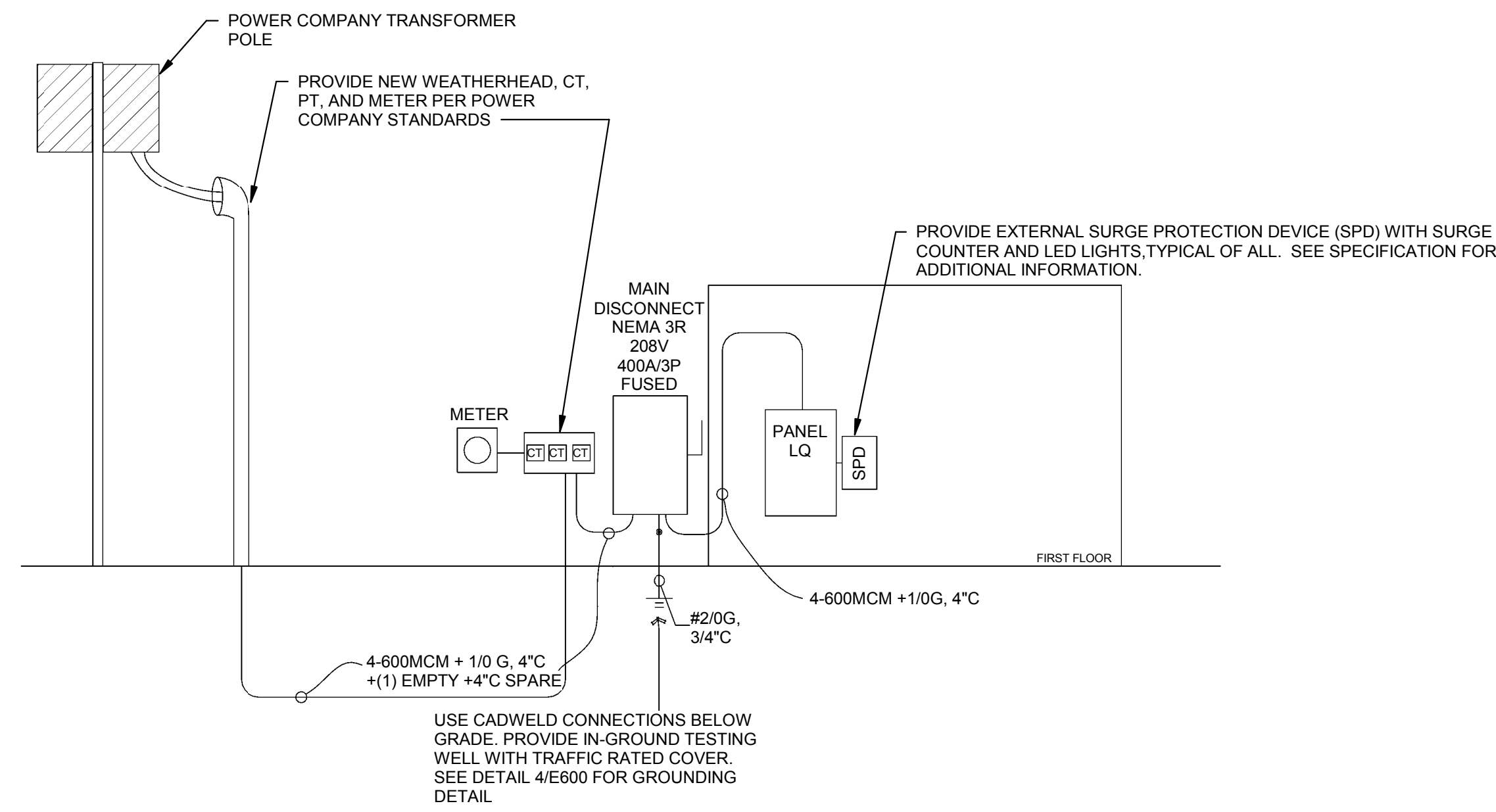
1ST DECK  
 ELECTRICAL  
 LIGHTING PLAN  
 AREA "A1"

### ELECTRICAL SCHEMATIC NOTES

- SEE PANEL SCHEDULES FOR FEEDER SIZES NOT SHOWN ON THIS DRAWING.
- ALL UNDERGROUND CONDUITS OUTSIDE THE BLDG SLAB SHALL BE ENCASED IN 3" RED CONCRETE.
- ALL DISCONNECT SWITCHES IN MECHANICAL ROOM SHALL BE NEMA 3R RATED.
- SEE SHORT CIRCUIT ANALYSIS FOR EQUIPMENT SHORT CIRCUIT FULLY RATING.
- ALL FEEDERS & BRANCH CIRCUITS SHALL HAVE GREEN GROUND WIRE SIZED PER NEC.
- CONTRACTOR SHALL SUBMIT ONE-LINE DIAGRAM AND PANEL SCHEDULES TO SWITCHGEAR MANUFACTURER TO PROVIDE PHASE SHIFT STUDIES FOR HARMONIC MITIGATION TRANSFORMERS PRIOR TO ORDERING THE HARMONIC MITIGATION TRANSFORMERS.
- COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT ELECTRICAL REQUIREMENT OF HVAC EQUIPMENT PRIOR TO ORDERING CIRCUIT BREAKERS, DISCONNECT SWITCHES, AND STARTERS.

### ELECTRICAL LOAD ANALYSIS

| LOAD DESCRIPTION    | SERVICE VOLTAGE IS 208Y/120 VOLTS, 3 PHASE, 4 WIRE |                    |
|---------------------|----------------------------------------------------|--------------------|
| LIGHTS              |                                                    | 25.21 AMPS         |
| HVAC                |                                                    | 22.78 AMPS         |
| RECEPTACLES         |                                                    | 12.17 AMPS         |
| GENERAL ELECTRIC    |                                                    | 94.39 AMPS         |
| <b>SUBTOTAL</b>     |                                                    | <b>154.34 AMPS</b> |
| 25% x LIGHTS        |                                                    | 6.25 AMPS          |
| 25% x LARGEST MOTOR |                                                    | 7.5 AMPS           |
| <b>TOTAL LOAD</b>   |                                                    | <b>168.09 AMPS</b> |
| SERVICE CAPACITY    |                                                    | 400 AMPS           |
| SPARE CAPACITY      |                                                    | 231.91 AMPS        |



### 1 SINGLE LINE DIAGRAM

NO SCALE

### Branch Panel: LQ

Location:  
Supply From:  
Mounting: SURFACE  
Enclosure: Type 1

Volts: 120/208 Wye  
Phases: 3  
Wires: 4

A.I.C. Rating:  
Maine Type: MLO  
Mains Rating: 400 A  
MCB Rating:

#### Notes:

| CKT                | Circuit Description     | Trip  | Wire                | Poles | A        |          |          | B       |   |         | C       |   |    | Poles              | Wire  | Trip            | Circuit Description         | CKT |  |
|--------------------|-------------------------|-------|---------------------|-------|----------|----------|----------|---------|---|---------|---------|---|----|--------------------|-------|-----------------|-----------------------------|-----|--|
|                    |                         |       |                     |       | 1        | 2        | 3        | 1       | 2 | 3       | 1       | 2 | 3  |                    |       |                 |                             |     |  |
| 1                  | WALL PACK/ CANOPY...    | 20 A  | 3 #8                | 1     | 488 VA   | 720 VA   |          |         |   |         |         |   |    | 1                  | 3 #12 | 20 A            | BAY 101 NORTH (3) RECEPTS.  | 2   |  |
| 3                  | BAY LIGHTING            | 20 A  | 3 #12               | 1     |          |          | 748 VA   | 360 VA  |   |         |         |   |    | 1                  | 3 #12 | 20 A            | MEZZ. DECK 200 (2) RECEPTS. | 4   |  |
| 5                  | STORAGE 103 - LIGHTING  | 20 A  | 3 #12               | 1     |          |          |          |         |   | 264 VA  | 1000 VA |   |    | 1                  | 3 #10 | 20 A            | MOTORIZED ROLL-UP DOOR...   | 6   |  |
| 7                  | STORAGE 201 - LIGHTING  | 20 A  | 3 #12               | 1     | 392 VA   | 1000 VA  |          |         |   |         |         |   |    | 1                  | 3 #10 | 20 A            | MOTORIZED ROLL-UP DOOR...   | 8   |  |
| 9                  |                         |       |                     |       |          |          | 2400 VA  | 540 VA  |   |         |         |   |    | 1                  | 3 #12 | 20 A            | STORAGE 102 (2) RECEPTS.    | 10  |  |
| 11                 | ACU-1A/1B               | 30 A  | 3 #10 + 12G, 3/4" C | 3     |          |          | 2400 VA  | 540 VA  |   | 2400 VA | 900 VA  |   |    | 1                  | 3 #8  | 20 A            | TRAINING PAD - LIGHTING     | 12  |  |
| 13                 |                         |       |                     |       |          |          |          |         |   |         |         |   |    | 1                  | 3 #12 | 20 A            | STORAGE 103 (3) RECEPTS.    | 14  |  |
| 15                 |                         |       |                     |       |          |          | 4900 VA  | 1080 VA |   | 4900 VA | 720 VA  |   |    | 1                  | 3 #12 | 20 A            | MEZZ. STORAGE (6) RECEPTS.  | 16  |  |
| 17                 | FIRE TRAINING SIMULATOR | 100 A | 3 #2 + 6G, 1-1/2" C | 3     |          |          |          |         |   |         |         |   |    | 1                  | 3 #12 | 20 A            | BAY 101 SOUTH (3) RECEPTS.  | 18  |  |
| 19                 |                         |       |                     |       | 4900 VA  | 5 VA     |          |         |   |         |         |   |    | 1                  | 3 #12 | 20 A            | EXIT SIGNS                  | 20  |  |
| 21                 |                         |       |                     |       |          |          | 2160 VA  | 0 VA    |   |         |         |   |    | 1                  |       | 20 A            | SPARE                       | 22  |  |
| 23                 | 2 TON CRANE             | 30 A  | 3 #10 + 12G, 3/4" C | 3     |          |          |          |         |   | 2160 VA | 0 VA    |   |    | 1                  | 20 A  | SPARE           | 24                          |     |  |
| 25                 |                         |       |                     |       |          |          |          |         |   |         |         |   |    | 1                  | 20 A  | SPARE           | 26                          |     |  |
| 27                 | EF-1                    | 20 A  | 3 #10               | 1     | 2160 VA  | 0 VA     | 1000 VA  | 0 VA    |   |         |         |   |    | 1                  | 20 A  | SPARE           | 28                          |     |  |
| 29                 | SPARE                   | 20 A  |                     | 1     |          |          |          |         |   | 0 VA    | 0 VA    |   |    | 1                  | 20 A  | SPARE           | 30                          |     |  |
| 31                 | SPARE                   | 20 A  |                     | 1     | 0 VA     | 0 VA     |          |         |   |         |         |   |    | 1                  | 20 A  | SPARE           | 32                          |     |  |
| 33                 | SPARE                   | 20 A  |                     | 1     |          |          | 0 VA     | 0 VA    |   |         |         |   | -- | --                 | --    | SPACE           | 34                          |     |  |
| 35                 | SPARE                   | 20 A  |                     | 1     |          |          |          |         |   | 0 VA    | 0 VA    |   | -- | --                 | --    | SPACE           | 36                          |     |  |
| 37                 | SPARE                   | 20 A  |                     | 1     | 0 VA     | 0 VA     |          |         |   |         |         |   | 3  | 4 #6 + 8G, 1.25" C | 30 A  | SURGE PROTECTOR | 38                          |     |  |
| 39                 | SPARE                   | 20 A  |                     | 1     |          |          | 0 VA     | 0 VA    |   |         |         |   |    |                    |       |                 | 40                          |     |  |
| 41                 | SPARE                   | 20 A  |                     | 1     |          |          |          |         |   | 0 VA    | 0 VA    |   |    |                    |       |                 | 42                          |     |  |
| <b>Total Load:</b> |                         |       |                     |       | 12581 VA | 13188 VA | 12302 VA |         |   |         |         |   |    |                    |       |                 |                             |     |  |
| <b>Total Amps:</b> |                         |       |                     |       | 105 A    | 110 A    | 103 A    |         |   |         |         |   |    |                    |       |                 |                             |     |  |

#### Legend:

| Load Classification      | Connected Load | Demand Factor | Estimated Demand | Panel Totals                            |
|--------------------------|----------------|---------------|------------------|-----------------------------------------|
| Other                    | 3656 VA        | 100.00%       | 3656 VA          |                                         |
| Power                    | 28380 VA       | 100.00%       | 28380 VA         | <b>Total Conn. Load:</b> 38070 VA       |
| Lighting                 | 753 VA         | 100.00%       | 753 VA           | <b>Total Est. Demand:</b> 38394 VA      |
| Receptacle               | 3960 VA        | 100.00%       | 3960 VA          | <b>Total Conn. Current:</b> 108 A       |
| Lighting - Dwelling Unit | 30 VA          | 100.00%       | 30 VA            | <b>Total Est. Demand Current:</b> 107 A |

#### Notes:

- PROVIDE 3-POLE CONTACTOR, TIME CLOCK AND PHOTOCELL TO CONTROL CIRCUIT LQ-1 & LQ-12. TIME CLOCK TURNS LIGHTS ON. PHOTOCELL TURNS LIGHTS OFF.
- PROVIDE 30A/3P CB W/ 4-6 + 6G, 1.25" C TO SERVE EXTERNAL SURGE PROTECTION DEVICE.

### GENERAL ELECTRICAL NOTES

- REFER TO THE WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- INSTALL SYSTEMS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
- ELECTRICAL SERVICE ENTRANCE SHALL BE CONSTRUCTED TO THE REQUIREMENTS OF THE LIGHTING AND POWER COMPANY.
- ALL UNDERGROUND CONDUIT SHALL BE RED CONCRETE ENCASED. BESIDES THE FEEDERS FROM CENTERPOINT TO MSB. ONLY CONDUITS TO CHILLERS AND EMERGENCY GENERATOR ARE ALLOWED INSTALLED UNDERGROUND. DO NOT RUN BRANCH CIRCUITS BELOW SLAB EXCEPT CIRCUITS FOR FLOOR OUTLETS.
- PROVIDE LIGHT FIXTURE FIRE PROTECTION AND CONDUIT FIRE SEALING TO MAINTAIN FIRE RATING OF WALLS AND CEILINGS PER ARCHITECT'S SCHEDULE. REF. SPECIFICATIONS AND ARCH. DRAWINGS FOR ADDITIONAL INFORMATION.
- ELECTRICAL RECEPTACLES, TELEPHONES, ETC., ARE SHOWN FOR GENERAL LOCATION. HEIGHTS ARE NOTED SO THE ESTIMATOR WILL KNOW WHETHER THEY ARE ABOVE OR BELOW COUNTERTOPS. PRIOR TO INSTALLATION, REVIEW THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF CONFLICT, THE ARCHITECT'S LOCATION WILL GENERALLY PREVAIL, BUT SHOULD BE CLARIFIED BY RFI. PROVIDE DEVICES SHOWN ON THE ELECTRICAL DRAWING EVEN IF NOT SHOWN ON ARCHITECTURAL DRAWINGS.
- COORDINATE POWER AND DATA WITH THE FURNITURE SUPPLIER PRIOR TO ROUGH-IN. AT CASEWORK WITH KNEE SPACE. MOUNT RECEPTACLES AND DATA OUTLETS IN KNEE SPACE. COORDINATE WITH ARCHITECT AND FURNITURE SUPPLIER TO ENSURE THAT PROTECTIVE GRADIENTS ARE PROVIDED IN THE COUNTER.
- ALL RECEPTACLES SHALL HAVE THE GROUND PIN UP OR NEUTRAL UP IF HORIZONTALLY MOUNTED.
- DO NOT INSTALL ELECTRICAL PANELS, SWITCHBOARDS AND TRANSFORMERS BELOW DUCT WORK AND WATER PIPING. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT ELECTRICAL REQUIREMENT OF HVAC EQUIPMENT PRIOR TO ORDERING CIRCUIT BREAKERS AND WIRE.
- COORDINATE ELECTRICAL EQUIPMENT WITH PIPING AND DUCTWORK. PROVIDE ADEQUATE WORKING CLEARANCE PER NEC PRIOR TO ROUGH-IN.
- ELECTRICAL DEVICES IN FIRE RATED WALLS SHALL BE A MINIMUM OF 24" AWAY FROM DEVICES ON THE OPPOSITE SIDE OF THE WALL TO MAINTAIN FIRE RATING.
- MINIMUM SIZE CONDUIT FOR POWER SHALL BE 3/4". MINIMUM SIZE CONDUIT FOR DATA SHALL BE 1". DO NOT COMBINE CONDUIT FOR DATA.
- MAX. LENGTH FOR FLEX CONDUIT SHALL BE 6 FT. ALL FLEX CONDUIT SHALL BE UL LISTED AND NEC APPROVED FOR GROUNDING. FLEX METAL CONDUIT IN WET AND DAMP LOCATION SHALL HAVE LIQUID TIGHT CONSTRUCTION. FOR EXAMPLE, FLEX CONDUIT SERVING MOTORS, TRANSFORMERS & HVAC/PLUMBING EQUIPMENT IN MECHANICAL AND ELECTRICAL ROOM SHALL BE LIQUID TIGHT TYPE. FLEX CONDUIT SERVING KITCHEN EQUIPMENT AND OUTDOOR EQUIPMENT SHALL BE LIQUID TIGHT TYPE.
- LIGHT FIXTURE WHIPS MAY BE MIN. 1/2" FLEX CONDUIT WITH MIN. #12 WIRE. LIGHT FIXTURE WHIPS SHALL BE NO MORE THAN 6 FT LONG. INSTALL ANTI-SHORT BUSHINGS IN EACH END OF FLEX CONDUIT. DO NOT LOOP FLEXIBLE CONDUIT BETWEEN LIGHT FIXTURES. NOTE: PISD DOES NOT ALLOW MC CABLE.
- ALL WIRING SHALL BE 90°C RATED STRANDED COPPER INSTALLED IN CONDUIT. MINIMUM CIRCUIT SIZE SHALL BE #12.
- PROVIDE SEPARATE NEUTRAL FOR EACH SINGLE POLE 120V OR 277V CIRCUIT.
- PROVIDE GREEN GROUND WIRE WITH ALL CIRCUITS. BOND GREEN GROUND WIRE TO EACH END OF CONDUIT.
- GROUND TRANSFORMER SECONDARIES TO BUILDING STEEL AND GROUND ROD. PROVIDE CONDUIT TO PROTECT GROUNDING CONDUCTOR AND BOND EACH END OF CONDUIT TO GROUNDING SYSTEM. MIN. SIZE OF CONDUIT FOR GROUND WIRE SHALL BE 3/4".
- PROVIDE J-BOXES, CONDUIT & SLEEVES THRU FIRE WALLS AND FLOORS FOR DATA, TEL., SECURITY, TV, FIRE ALARM & SOUND SYSTEMS WIRINGS, ETC. SEE SPECIFICATIONS.
- ALL CONDUIT AND SUPPORTS TO BE PERPENDICULAR OR PARALLEL TO THE BUILDING STRUCTURE, NO ODD ANGLES UNLESS OTHERWISE APPROVED BY OWNER.
- WHERE PORTIONS OF INTERIOR RACEWAY SYSTEM ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, PROVIDE AIR SEALING PER NEC TO PREVENT CIRCULATION OF AIR FROM WARMER TO A COOLER SECTION.
- PROVIDE SEALING FITTINGS FOR CONDUIT SERVING NATURAL GAS SOLENOID VALVES, PURGE FANS AND FUME HOODS IN SCIENCE LABS AND PREP. ROOM PER NEC ARTICLE 500.
- COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT ELECTRICAL REQUIREMENT OF CHILLERS, PUMPS, AH(S) AND OTHER HVAC EQUIPMENT PRIOR TO ORDERING CIRCUIT BREAKERS, DISCONNECT SWITCHES, AND STARTERS.

### GENERAL GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL NOTE

- ALL 125-VOLT, SINGLE-PHASE, 15- AND 20-AMPERE RECEPTACLES INSTALLED IN THE LOCATIONS SPECIFIED IN (1) THROUGH (5) SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL:
- BATHROOMS
  - KITCHENS
  - ROOFTOPS
  - OUTDOORS
  - WITHIN 6 FEET OF SINKS
  - INDOOR WET LOCATIONS
  - LOCKER ROOMS WITH ASSOCIATED SHOWERING FACILITIES
  - GARAGES, SERVICE BAYS, AND SIMILAR AREAS WHERE ELECTRIC DIAGNOSTIC EQUIPMENT, ELECTRICAL HAND TOOLS, OR PORTABLE LIGHTING EQUIPMENT ARE TO BE USED.
- ARTICLE 210.8(B) 2014 N.E.C.

THIS NOTE SHALL APPLY FOR ALL THE ELECTRICAL FLOOR PLANS. CONTRACTOR SHALL INCLUDE ALL CODE REQUIRED GROUND-FAULT CIRCUIT PROTECTION FOR PERSONNEL PER THIS NOTE.

### SHORT CIRCUIT ANALYSIS

| LOCATION                 | SHORT CIRCUIT AVAILABLE | EQUIPMENT AIC FULLY RATING |
|--------------------------|-------------------------|----------------------------|
| OUTDOOR 400A/3P FUSED SW | 100,000A                | 100,000A                   |
| PANEL LQ                 | 18,000A                 | 18,000A                    |

SPD SPD SHALL HAVE SAME AIC RATING AS SWITCHGEAR TO BE PROTECTED.

MAIN CIRCUIT BREAKER FOR EACH 120V PANELS SHALL BE 22,000 AIC RATED

NOTE: A "PERMANENTLY AFFIXED LABEL" SHALL BE ATTACHED TO ALL NEW ELECTRICAL EQUIPMENT WITH THE "AVAILABLE FAULT CURRENT" AT THE TIME OF INSTALLATION AND CALCULATION. THE LABEL SHALL BE 2" X 3" IN SIZE AND SHALL BE BLUE LETTERING ON A CONTRASTING BACKGROUND. THIS LABEL SHALL ALSO INCLUDE THE DATE OF THE CALCULATION.

SHORT CIRCUIT RATING IS CALCULATED BY ENGINEER WITH POINT-TO-POINT METHOD. CONTRACTOR SHALL PROVIDE ELECTRICAL EQUIPMENT AIC RATING PER THIS TABLE.

### ELECTRICAL PANELS LOCATION DESIGNATIONS NOTE:

ELECTRICAL PANELS SHALL HAVE LOCATION DESIGNATIONS BASED ON SCHOOL ROOM NUMBER, NOT PLAN ROOM NUMBERS, TYPICAL FOR ALL.

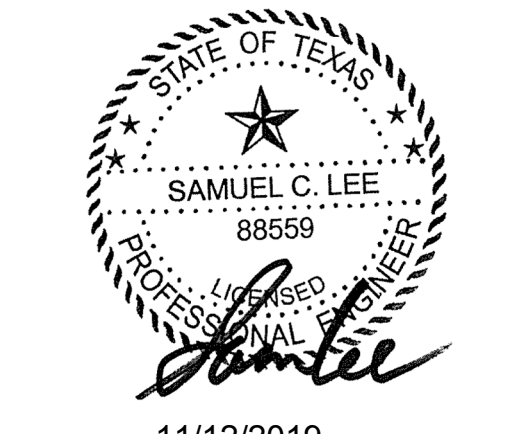
NOTE:  
ALL LIGHTING RELAY AND POWER & LIGHTING PANEL SCHEDULES ON-SITE MUST HAVE GRAPHIC ROOM NUMBER LABEL FOR EACH CIRCUIT ON THE PANEL DIRECTORY INSTEAD OF PLAN ROOM NUMBER SHOWN ON THIS PLAN.  
ALSO, WIRING LABELS AND AS BUILT DRAWINGS MUST HAVE BOTH GRAPHIC AND ARCHITECTURAL ROOM NUMBERS.  
COORDINATE WITH OWNER AND ARCHITECT FOR REQUIREMENT. THIS REQUIREMENT ALSO APPLY FOR LOW VOLTAGE DATA, FIRE ALARM, INTERCOM SOUND, SECURITY, CARD ACCESS AND CCTV SYSTEMS, ETC.

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11/12/2019

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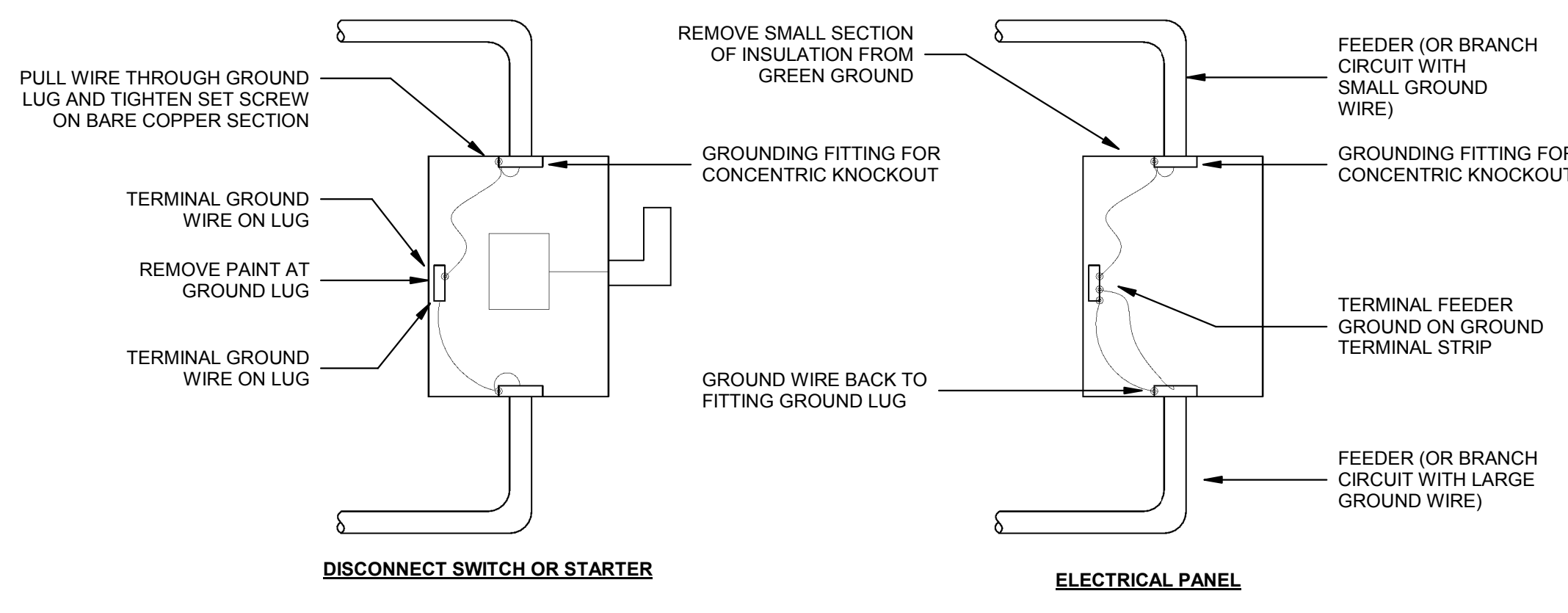
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ISSUE: ISSUE FOR BID

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ELECTRICAL  
SINGLE LINE  
DIAGRAM AND  
PANEL  
SCHEDULES

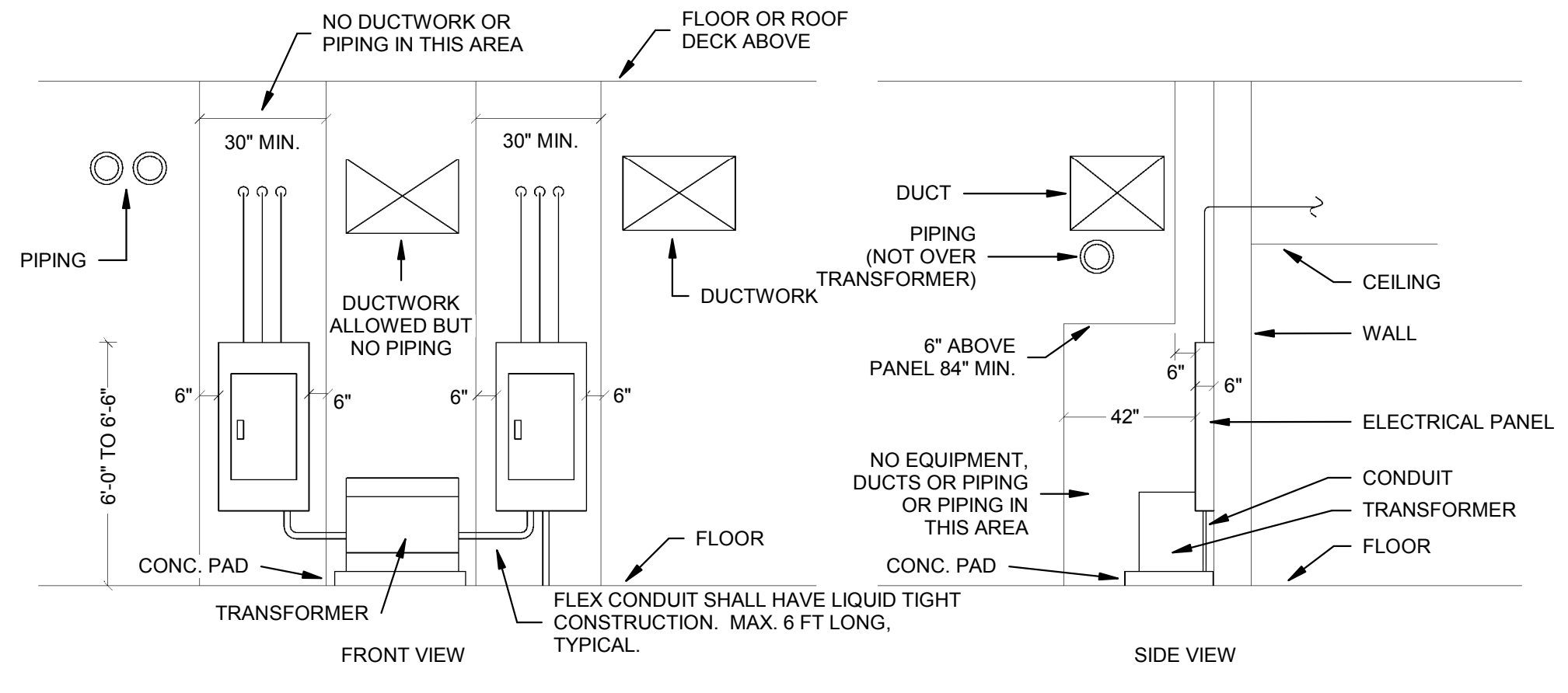


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NOTE:  
1. PROVIDE AND INSTALL GROUNDING BUSHING FOR DISCONNECT SWITCHES, PANELS AND TRANSFORMERS.

**1 GROUNDING BUSHING WIRING DETAIL**  
SCALE= 1" = 1'-0"



COORDINATE WITH OTHER TRADES TO ENSURE NO PIPING AND DUCTWORK ABOVE ELECTRICAL EQUIPMENT AS SHOWN.

**2 MECHANICAL - ELECTRICAL COORDINATION**  
SCALE= 1/8" = 1'-0"

- GENERAL ELECTRICAL NOTES**
- REFER TO THE WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - INSTALL SYSTEMS IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE 2008 & NFPA 70E.
  - ALL CONDUIT AND SUPPORTS TO BE PERPENDICULAR OR PARALLEL TO THE BUILDING STRUCTURE. NO ODD ANGLES UNLESS OTHERWISE APPROVED BY OWNER.
  - ALL UNDERGROUND CONDUIT SHALL BE RED CONCRETE ENCASED, BESIDES THE FEEDERS FROM CENTERPOINT TO MBS. ONLY CONDUITS TO CHILLERS AND EMERGENCY GENERATOR ARE ALLOWED TO BE INSTALLED UNDERGROUND.
  - ELECTRICAL RECEPTACLES, ETC., ARE SHOWN FOR GENERAL LOCATION. HEIGHTS ARE NOTED SO THE ESTIMATOR WILL KNOW WHETHER THEY ARE ABOVE OR BELOW COUNTERS. PRIOR TO INSTALLATION, REVIEW THE ARCHITECTURAL DRAWING AND SPECIFICATIONS. IN THE EVENT OF CONFLICT, THE ARCHITECTURAL LOCATION WILL GENERALLY PREVAIL BUT SHOULD BE CLARIFIED BY RFI. PROVIDE DEVICES SHOWN ON THE ELECTRICAL DRAWING EVEN IF NOT SHOWN ON ARCHITECTURAL DRAWINGS.
  - MINIMUM SIZE CONDUIT FOR POWER SHALL BE 3/4" MIN. SIZE FLEX CONDUIT MAY BE 1/2". MINIMUM SIZE CONDUIT FOR DATA SHALL BE 1/2". DO NOT COMBINE CONDUIT FOR DATA.
  - PROVIDE LIGHT FIXTURE FIRE PROTECTION AND CONDUIT FIRE SEALING TO MAINTAIN FIRE RATING OF WALLS AND CEILINGS PER ARCHITECT'S SCHEDULE. REF. SPECIFICATIONS AND ARCH. DRAWINGS FOR ADDITIONAL INFORMATION.
  - COORDINATE POWER AND DATA WITH THE FURNITURE SUPPLIER PRIOR TO ROUGH-IN.
  - AT CASEWORK WITH KNEE SPACE, MOUNT RECEPTACLES AND DATA OUTLETS IN KNEE SPACE. COORDINATE WITH ARCHITECT AND FURNITURE SUPPLIER TO ENSURE THAT PROTECTIVE GROMMETS ARE PROVIDED IN COUNTER.
  - PROVIDE GREEN GROUND WIRE WITH ALL CIRCUITS. BOND GREEN GROUND WIRE TO EACH END OF CONDUIT.
  - GROUND TRANSFORMER SECONDARIES TO BUILDING STEEL AND GROUND ROD. PROVIDE CONDUIT TO PROTECT GROUNDING CONDUCTOR AND BOND EACH END OF CONDUIT TO GROUNDING SYSTEM. MIN. SIZE OF CONDUIT FOR GROUNDWIRE SHALL BE 3/4". BOND WATER AND GAS PIPING TO BUILDING STEEL WITH SAME GROUNDING WIRE SIZE AS 2FWR.
  - WHERE PORTIONS OF INTERIOR RACEWAY SYSTEM ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, PROVIDE AIR SEALING PER NEC TO PREVENT CIRCULATION OF AIR FROM WARMER TO A COOLER SECTION.
  - ALL RECEPTACLES SHALL HAVE THE GROUND PIN UP OR NEUTRAL UP IF HORIZONTALLY MOUNTED.
  - DO NOT INSTALL ELECTRICAL PANELS, SWITCHBOARDS AND TRANSFORMERS BELOW DUCT WORK AND WATER PIPING. COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT ELECTRICAL REQUIREMENT OF HVAC EQUIPMENT PRIOR TO ORDERING CIRCUIT BREAKERS AND WIRE.
  - COORDINATE ELECTRICAL EQUIPMENT WITH PIPING AND DUCKWORK. PROVIDE ADEQUATE WORKING CLEARANCE PER NEC PRIOR TO ROUGH-IN.
  - ELECTRICAL DEVICES IN FIRE RATED WALLS SHALL BE A MINIMUM OF 24" AWAY FROM DEVICES ON THE OPPOSITE SIDE OF THE WALL TO MAINTAIN FIRE RATING.
  - MAX. LENGTH FOR FLEX CONDUIT SHALL BE 6 FT. ALL FLEX CONDUIT SHALL BE UL LISTED AND NEC APPROVED FOR GROUNDING. FLEX METAL CONDUIT IN WET AND DAMP LOCATION SHALL HAVE LIQUID TIGHT CONSTRUCTION. FOR EXAMPLE, FLEX CONDUIT SERVING MOTORS, TRANSFORMERS & HVAC/PLUMBING EQUIPMENT IN MECHANICAL AND ELECTRICAL ROOM SHALL BE LIQUID TIGHT TYPE. FLEX CONDUIT SERVING KITCHEN EQUIPMENT AND OUTDOOR EQUIPMENT SHALL BE LIQUID TIGHT TYPE.
  - LIGHT FIXTURE WHIPS MAY BE MIN. 1/2" FLEX CONDUIT WITH MIN. #12 WIRE. LIGHT FIXTURE WHIPS SHALL BE NO MORE THAN 6 FT LONG. INSTALL ANT-SHORT BUSHINGS IN EACH END OF FLEX CONDUIT. DO NOT LOOP FLEXIBLE CONDUIT BETWEEN LIGHT FIXTURES. NOTE: PISD DOES NOT ALLOW MC CABLE.
  - ALL WIRING SHALL BE 90°C RATED STRANDED COPPER INSTALLED IN CONDUIT. MINIMUM CIRCUIT SIZE SHALL BE #12.
  - PROVIDE SEPARATE NEUTRAL FOR EACH SINGLE POLE 120V OR 277V CIRCUIT.
  - PROVIDE J-BOXES CONDUIT & SLEEVES THROUGH FIRE WALLS AND FLOORS FOR DATA, TEL. SECURITY, TV, FIRE ALARM & SOUND SYSTEMS WIRING, ECT. SEE SPECIFICATIONS.
  - WHERE PORTIONS OF INTERIOR RACEWAY SYSTEM ARE EXPOSED TO WIDELY DIFFERENT TEMPERATURES, PROVIDE AIR SEALING PER NEC TO PREVENT CIRCULATION OF AIR FROM WARMER TO A COOLER SECTION.
  - COORDINATE WITH MECHANICAL CONTRACTOR FOR EXACT ELECTRICAL REQUIREMENT OF CHILLERS, PUMPS, AHU(S) AND OTHER HVAC EQUIPMENT PRIOR TO ORDERING CIRCUIT BREAKERS, DISCONNECT SWITCHES, AND STARTERS.

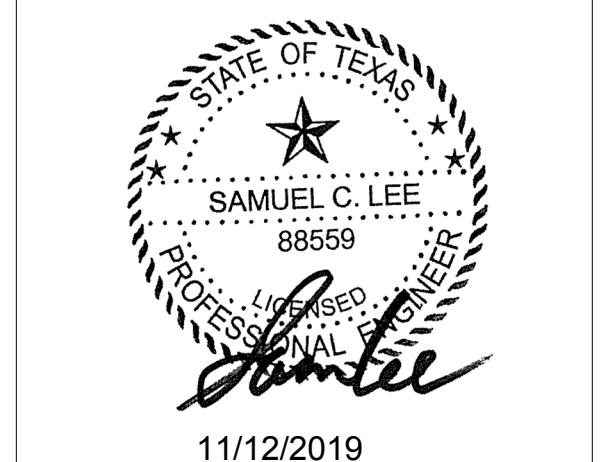
| ELECTRICAL LEGEND AND SYMBOLS                                                                            |                                                                                                           |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                                                                                                          | 20A, 125V DUPLEX GROUND FAULT INTERRUPTER RECEPTACLE                                                      |
|                                                                                                          | 20A, 125V WEATHERPROOF DUPLEX RECEPTACLE WITH GROUND FAULT INTERRUPTER                                    |
|                                                                                                          | NEMA NUMBERED POWER OUTLET                                                                                |
| OR                                                                                                       | PROVIDE MATCHING NEMA RECEPTACLE, PLUG AND CORD                                                           |
| OR                                                                                                       | OUTLET MUST MATCH CIRCUIT AND EQUIPMENT SIZE                                                              |
|                                                                                                          | 20A, 125V, QUAD COMPUTER RECEPTACLE                                                                       |
|                                                                                                          | 20A, 125V, DUPLEX RECEPTACLE                                                                              |
| NOTE: RECEPTACLES AND TOGGLE SWITCHES CONNECTED TO EMERGENCY CIRCUIT SHALL BE RED COLOR, TYPICAL OF ALL. |                                                                                                           |
|                                                                                                          | JUNCTION BOX                                                                                              |
|                                                                                                          | NON-FUSED DISCONNECT SWITCH (VOLTAGE & AMP RATING SHALL NOT BE LESS THAN UPSTREAM CIRCUIT BREAKER RATING) |
|                                                                                                          | FUSED DISCONNECT SWITCH                                                                                   |
|                                                                                                          | MOTOR                                                                                                     |
|                                                                                                          | HOMERUN TO CIRCUIT NOTED                                                                                  |
|                                                                                                          | ELECTRICAL FEEDER                                                                                         |
|                                                                                                          | TELEPHONE CONDUIT                                                                                         |
|                                                                                                          | EXISTING                                                                                                  |
|                                                                                                          | NEW                                                                                                       |

- NOTES:
- J-BOXES AND CONDUITS FOR DATA, SECURITY AND OTHER LOW VOLTAGE AND TECHNOLOGY SYSTEM SHALL BE PROVIDED BY ELECTRICAL CONTRACTOR. REF. FOR TECHNOLOGY DRAWINGS FOR DATA, SECURITY AND OTHER LOW VOLTAGE AND TECHNOLOGY SYMBOLS AND DETAILS.
  - REF. SPECIFICATION FOR MOUNTING HEIGHT OF OTHER DEVICES.
  - SEE FLOOR PLANS FOR MOUNTING HEIGHT OF DEVICES NOTED AT COUNTER AND OTHER SPECIAL LOCATION.
  - ALL RECEPTACLES ON EMERGENCY CIRCUIT SHALL BE RED COLOR.

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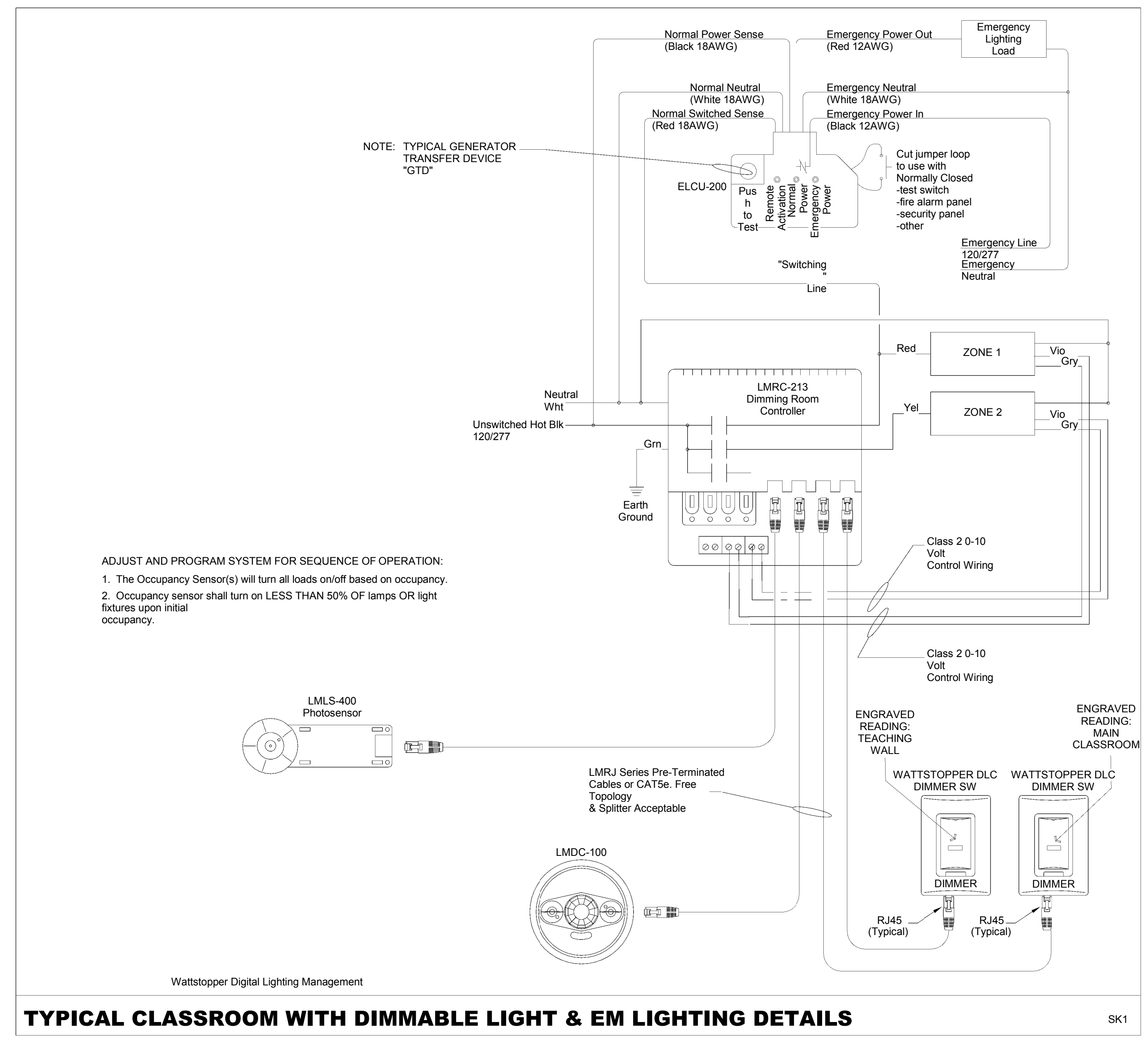
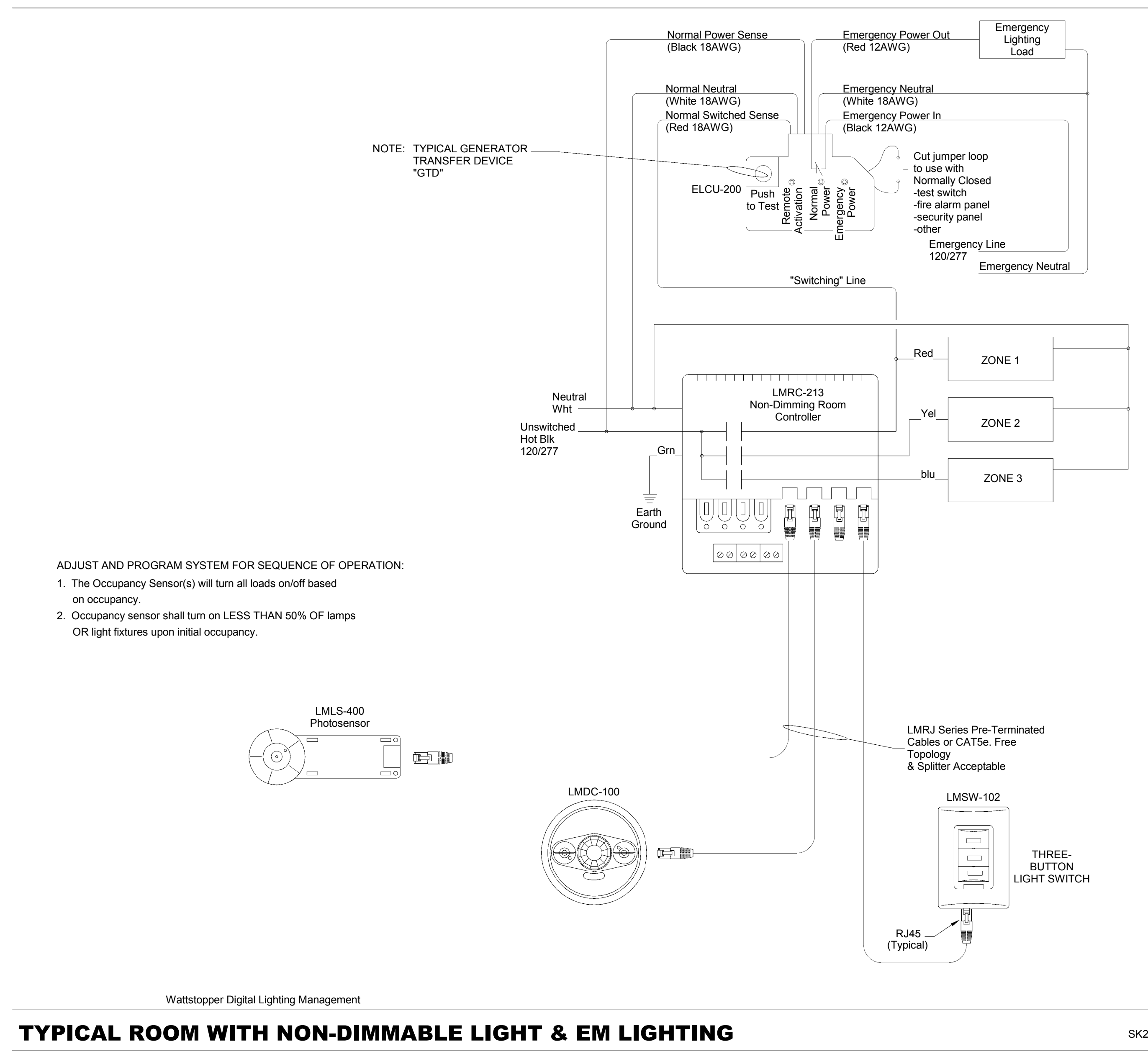
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SPECIFICATIONS,  
LEGEND, AND  
DETAILS



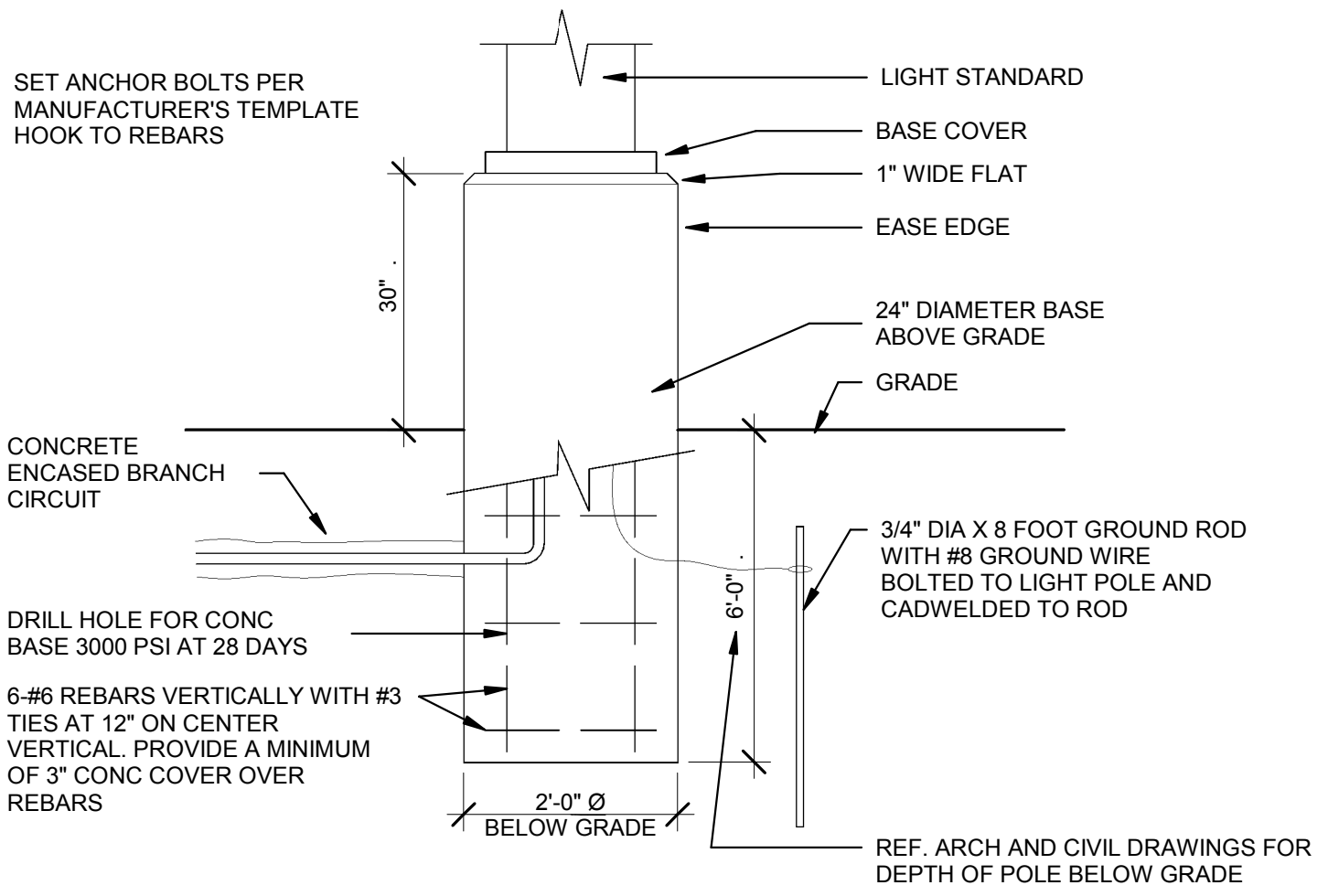
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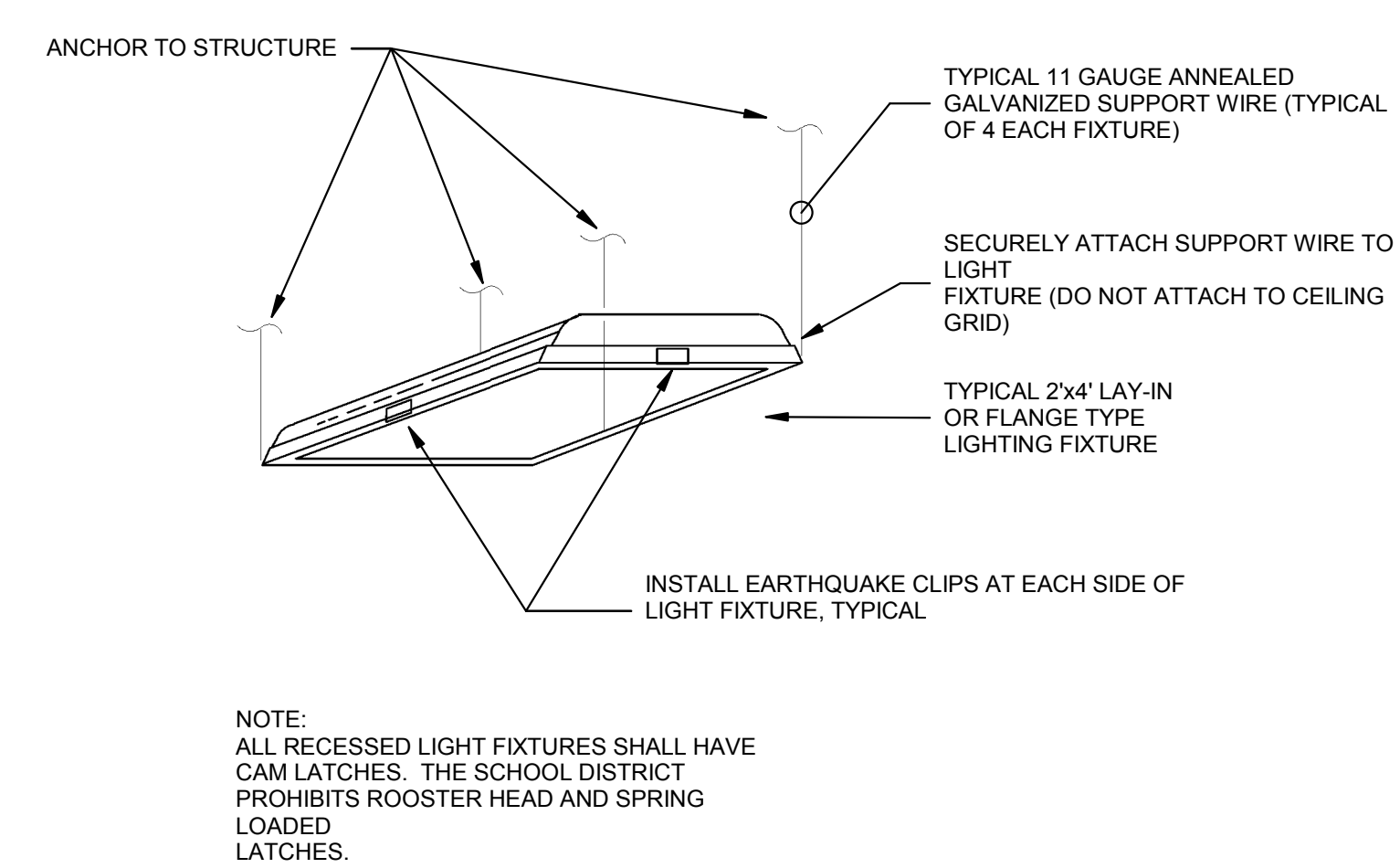
1. THIS DETAIL IS FOR WATTSTOPPER STANDALONE DIGITAL LIGHTING CONTROL. GREENGATE LIGHTING CONTROL IS ALSO ACCEPTABLE.

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**1 LIGHTING OCCUPANCY SENSORS WIRING SCHEMATIC**  
 SCALE = 1/8" = 1'-0"



**2 LIGHT POLE BASE DETAIL**  
 SCALE = 1/8" = 1'-0"

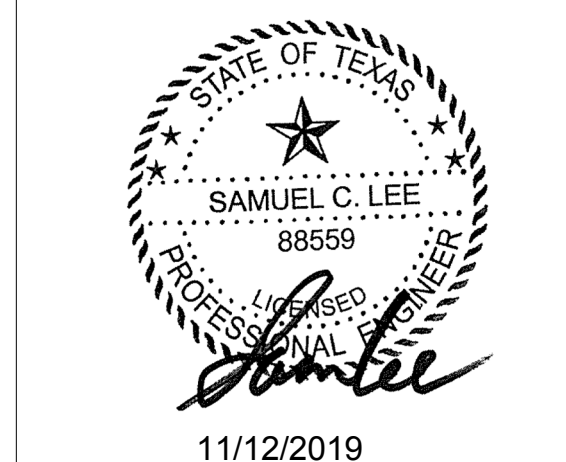


**3 FIXTURE SUPPORT DETAIL**  
 SCALE = 3/4" = 1'-0"

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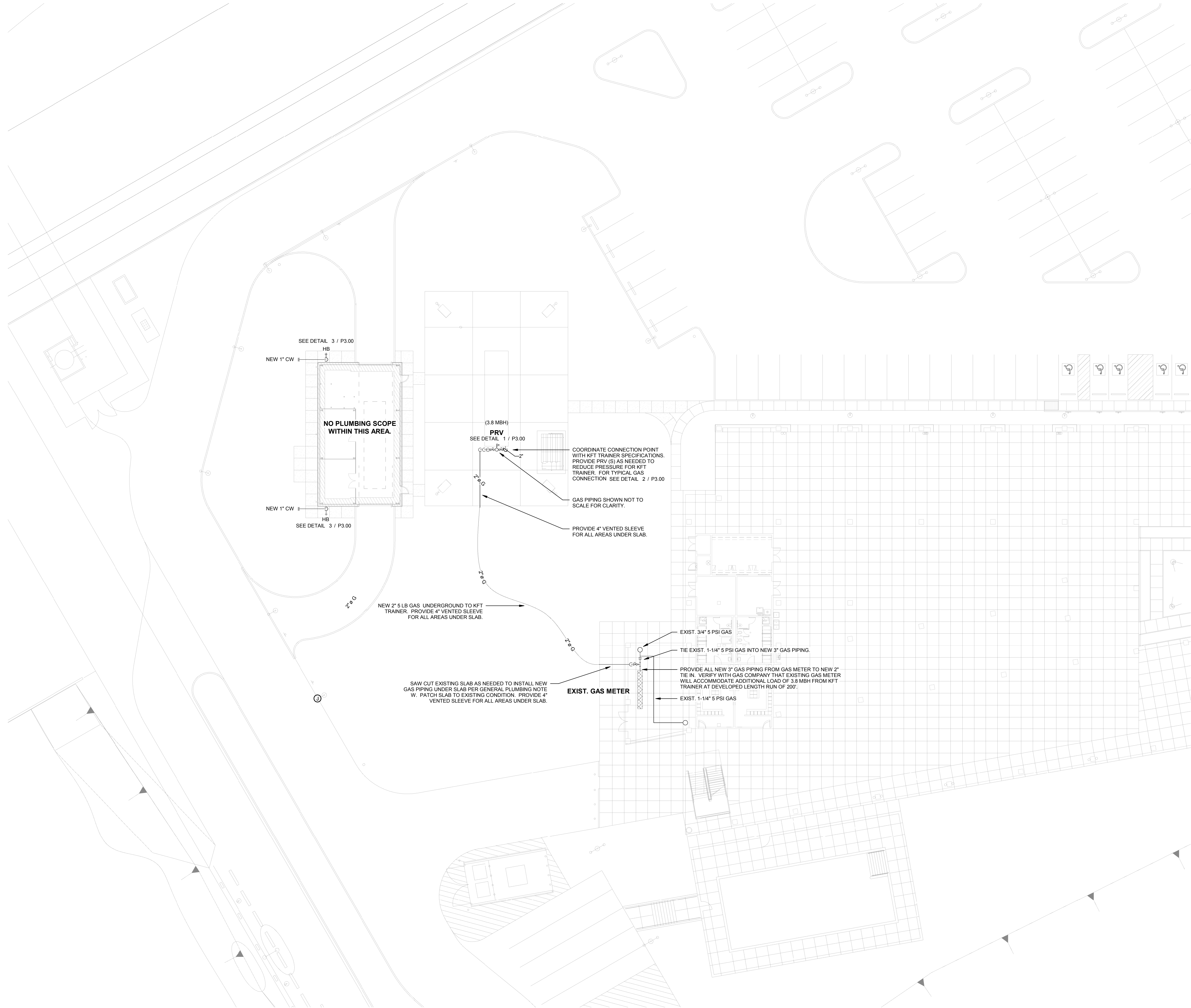
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 ELECTRICAL LIGHTING DETAILS



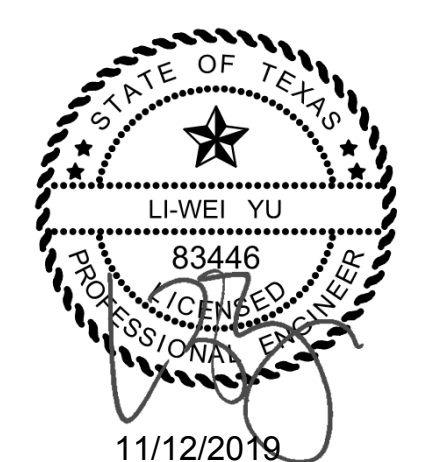
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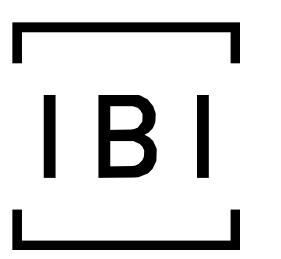


**1** COMPOSITE PLUMBING PLAN  
SCALE= 1/16" = 1'-0"

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**P1.01**  
 1ST DECK  
 COMPOSITE  
 PLUMBING PLAN



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## GENERAL PLUMBING NOTES

- A. SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK SEE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL WORK DESCRIPTION. SEE THIS SHEET (P3.00) FOR PLUMBING SYMBOLS LEGEND.
- B. COORDINATE PLUMBING SYSTEMS INSTALLATION WITH ARCHITECTURAL, STRUCTURAL, COORDINATE PLUMBING SYSTEMS INSTALLATION WITH ARCHITECTURAL, STRUCTURAL, HVAC SYSTEMS, ELECTRICAL SYSTEMS, CONDUITS, ETC. OFFSET PIPING AS REQUIRED TO PROVIDE A FUNCTIONING SYSTEM WITH ADEQUATE SPACE FOR SERVICING AND REPAIRS.
- C. MAKE CONNECTIONS OF NEW PIPE SYSTEMS IN TO EXISTING PIPE SYSTEMS WITH MAKE CONNECTIONS OF NEW PIPE SYSTEMS IN TO EXISTING PIPE SYSTEMS WITH THREADED OR SWEAT JOINTS. PROVIDE ELECTROLYSIS ISOLATING UNIONS AT CONNECTION OF DISSIMILAR MATERIALS. REFERENCE THE SPECIFICATIONS.
- D. EXISTING SERVICES ARE SHOWN FOR REFERENCE ONLY. PLUMBING CONTRACTOR EXISTING SERVICES ARE SHOWN FOR REFERENCE ONLY. PLUMBING CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS, INCLUDING LOCATIONS OF SERVICES, SIZES OF PIPES, FLOWLINE ELEVATIONS, ETC.
- E. DO NOT INSTALL PLUMBING PIPING OVER ANY ELECTRICAL EQUIPMENT. DO NOT INSTALL PLUMBING PIPING OVER ANY ELECTRICAL EQUIPMENT. REFERENCE ELECTRICAL DRAWINGS FOR LOCATIONS OF ELECTRICAL EQUIPMENT AND COORDINATE WITH ELECTRICAL SUBCONTRACTORS ACCORDINGLY. SEE DETAIL 4/P3.00. THIS INCLUDES FIRE SPRINKLER PIPING.
- F. ALL PIPES THROUGH WALLS OR FLOORS SHALL BE SLEEVED AND SEALED PER ALL PIPES THROUGH WALLS OR FLOORS SHALL BE SLEEVED AND SEALED PER DETAIL 5/P3.00. FIRE CAULK WHERE REQUIRED. THIS INCLUDES ALL WALLS, INTERIOR AND EXTERIOR. THIS INCLUDES FIRE SPRINKLER PIPING.
- G. ALL CLEANOUTS SHALL BE CONNECTED TO SANITARY LINES USING WYES AND/OR ALL CLEANOUTS SHALL BE CONNECTED TO SANITARY LINES USING WYES AND/OR LONG RADIUS ELLS. SANITARY TEES AND DOUBLE COMBINATION FITTINGS ARE NOT ACCEPTABLE. 2" MINIMUM SIZE.
- H. ALL WASTE AND VENT PIPING BELOW SLAB SHALL BE 2" MINIMUM. ALL WASTE AND VENT PIPING BELOW SLAB SHALL BE 2" MINIMUM.
- I. LOCATE PLUMBING VENTS THROUGH ROOF NOT NEARER THAN SIX (6) FEET AWAY LOCATE PLUMBING VENTS THROUGH ROOF NOT NEARER THAN SIX (6) FEET AWAY FROM EDGE OF BUILDING AND TEN (10) FEET AWAY FROM ANY FRESH AIR INTAKES. OFFSET VENT PIPING, AS REQUIRED, IN CEILING SPACE BETWEEN CEILING AND ROOF TO MEET THESE REQUIREMENTS.
- J. ALL DOMESTIC WATER PIPING (CW, HW AND HWR) SHALL BE INSULATED PER THE ALL DOMESTIC WATER PIPING (CW, HW AND HWR) SHALL BE INSULATED PER THE WRITTEN SPECIFICATIONS.
- K. TOP OF FLOOR DRAINS IN MECHANICAL, AHU AND BOILER ROOMS SHALL BE SET TOP OF FLOOR DRAINS IN MECHANICAL, AHU AND BOILER ROOMS SHALL BE SET 1-1/2" BELOW FINISHED FLOOR SURFACE. CONCRETE FLOOR SHALL BE SLOPED TO DRAIN. REFERENCE ARCHITECTURAL DRAWINGS.
- L. PROVIDE AN ISOLATING VALVE AT EACH WATER TAP OFF HOT AND COLD WATER PROVIDE AN ISOLATING VALVE AT EACH WATER TAP OFF HOT AND COLD WATER MAINS TO ALLOW FOR SERVICING. VALVE SHALL BE BALL VALVE IF PIPE SIZE IS 2" OR LESS AND GATE VALVE OR BUTTERFLY VALVE IF LARGER THAN 2". SEE WRITTEN SPECIFICATIONS. VALVES SHALL BE EASILY ACCESSIBLE. PROVIDE 18" X 18", FIRE-RATED, STAINLESS STEEL ACCESS PANELS WITH HINGED, CYLINDER LOCK DOORS WHERE VALVES ARE INSTALLED ABOVE INACCESSIBLE CEILINGS OR IN WALL CHASES (MIFAB MODEL MPFR-SS-C). BALL VALVES AND BUTTERFLY VALVES INSTALLED ABOVE CEILINGS SHALL BE INSTALLED SUCH THAT HANDLE IS ON BOTTOM OF PIPE. ISOLATING WATER VALVES ABOVE CEILINGS SHALL BE INSTALLED NO MORE THAN 24" ABOVE CEILING. VALVES ABOVE INACCESSIBLE CEILINGS SHALL BE INSTALLED WITHIN REASONABLE REACH OF CEILING MOUNTED ACCESS PANEL.
- M. WATER HAMMER ARRESTERS SHALL BE INSTALLED PER THE RISER DIAGRAMS. SEE WATER HAMMER ARRESTERS SHALL BE INSTALLED PER THE RISER DIAGRAMS. SEE SPECIFICATIONS.
- N. MECHANICALLY CLEAN ALL WASTE LINES WITH ROTARY MACHINE TO PROVE FREE MECHANICALLY CLEAN ALL WASTE LINES WITH ROTARY MACHINE TO PROVE FREE FLOWING. SEE SPECIFICATIONS.
- O. PROVIDE VENTED SLEEVE (2 PIPE SIZES LARGER THAN GAS PIPE UNLESS NOTED PROVIDE VENTED SLEEVE (2 PIPE SIZES LARGER THAN GAS PIPE UNLESS NOTED OTHERWISE) FOR ALL GAS PIPING IN GROUND BELOW PAVING OR SIDEWALKS AND INSIDE BUILDING IN WALLS AND IN UNVENTILATED CEILING SPACES. SEE SPECIFICATIONS.
- P. GAS PIPING SHALL BE 1/2" MINIMUM. TAP GAS PIPING ON TOP OR SIDES ONLY. DO NOT INSTALL VALVES IN CEILING PLENUM OR IN ANY INACCESSIBLE LOCATION. ALL GAS VALVES SHALL BE EASILY ACCESSIBLE.
- Q. CENTER WALL HYDRANTS IN BRICK PATTERN OF EXTERIOR WALLS. REFERENCE THE CENTER WALL HYDRANTS IN BRICK PATTERN OF EXTERIOR WALLS. REFERENCE THE ARCHITECTURAL DRAWINGS AND SPECIFICATIONS.
- R. ALL REFRIGERATORS WITH ICE MAKERS, COMMERCIAL TYPE COFFEE MAKERS, ICE ALL REFRIGERATORS WITH ICE MAKERS, COMMERCIAL TYPE COFFEE MAKERS, ICE MAKERS, COFFEE VENDING MACHINES AND OTHER ITEMS PROVIDED BY OTHERS THAT REQUIRE A WATER CONNECTION SHALL HAVE A CW VALVE BOX, "VBOX", INSTALLED TO ALLOW EASY ACCESS AND REMOVAL OF MACHINE. ALSO, INSTALL IN-LINE FILTER IN WATER CONNECTION.
- S. PER THE DRAWINGS, ALL DRAINS (FLOOR DRAINS, FLOOR SINKS, HUB DRAINS, PER THE DRAWINGS, ALL DRAINS (FLOOR DRAINS, FLOOR SINKS, HUB DRAINS, KITCHEN DRAINS, SHOWER DRAINS, ETC.) SHALL BE VENTED AND TRAP PRIMED - NO EXCEPTIONS. TRAP PRIMING SHALL BE ACCOMPLISHED USING WATER CLOSET FLUSH VALVE TRAP PRIMING DEVICES OR PROSET SYSTEMS TRAP GUARD SEWER GAS EMISSION PROTECTION, AS SHOWN ON DRAWINGS. REFERENCE PLUMBING FLOOR PLANS AND RISER DIAGRAMS.
- T. FOR ALL PLUMBING FIXTURES, IF COPPER PIPING IS STUBBED THROUGH WALL FOR FOR ALL PLUMBING FIXTURES, IF COPPER PIPING IS STUBBED THROUGH WALL FOR DRAIN CONNECTION, INSTALL MARVEL FITTING AT DRAIN CONNECTION FOR EASE OF SERVICING AND REPAIRS. COPPER DRAIN PIPING WILL ONLY BE ALLOWED FOR DIRECT/STRAIGHT STUB-OUT OF FIXTURE DRAIN PIPING THROUGH WALL.
- U. DO NOT INSTALL ANY PIPING BENEATH HVAC EQUIPMENT. THIS INCLUDES FIRE DO NOT INSTALL ANY PIPING BENEATH HVAC EQUIPMENT. THIS INCLUDES FIRE SPRINKLER PIPING.
- V. ALL ABANDONED FIXTURES, DRAINS AND PIPING (INCLUDING PIPING ABANDONED IN ALL ABANDONED FIXTURES, DRAINS AND PIPING (INCLUDING PIPING ABANDONED IN THE PAST) SHALL BE COMPLETELY REMOVED FROM BUILDING. DRAIN PIPING BELOW BUILDING SLAB SHALL BE CAPPED BELOW EXISTING BUILDING SLAB AND ALL ABANDONED PIPING ABOVE BUILDING SLAB REMOVED. EXISTING VENT PIPING SHALL BE COMPLETELY REMOVED INCLUDING VENTS THROUGH ROOF AND ROOF PATCHED. EXISTING WATER AND GAS PIPING SHALL BE CAPPED AT EXISTING TAPS OF SERVICE MAINS OUTSIDE BUILDING AND ALL ABANDONED PIPING REMOVED. PATCH FLOORS, WALLS AND ROOF AS REQUIRED. ONLY ACTIVE PIPING SHALL REMAIN IN BUILDING. ALL ABANDONED FIXTURES AND EQUIPMENT SHALL BE FIRST OFFERED TO THE OWNER BEFORE REMOVAL FROM SITE.
- W. TO INSTALL NEW PLUMBING SYSTEMS BELOW EXISTING CONCRETE SLABS, FIRST TO INSTALL NEW PLUMBING SYSTEMS BELOW EXISTING CONCRETE SLABS, FIRST PLUMBING CONTRACTOR SHALL LAY OUT CUT. THEN, DEMOLITION CONTRACTOR SHALL SAW CUT SLAB TO CONTROL CRACKING AND REMOVE ALL CONCRETE. PLUMBING CONTRACTOR SHALL THEN EXCAVATE FILL TO PROPER SLOPE, INSTALL NEW PIPING SYSTEMS AS REQUIRED, THEN BACKFILL AND COMPACT TO PROPER DENSITY. THE CONCRETE CONTRACTOR SHALL THEN INSTALL NEW SIX (6) MIL POLYETHYLENE VAPOR BARRIER AND SEAL, INSTALL NEW REINFORCING STEEL AND WELD ON TO EXISTING, THEN RE-POUR CONCRETE TO NEW LEVEL. DO NOT CUT THROUGH GRADE BEAMS WITHOUT APPROVAL FROM THE STRUCTURAL ENGINEER. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

## PLUMBING DRAINS, CLEANOUTS AND HYDRANTS

| MARK | MIN. CONNECTION SIZES (IN.) |      |     |    | DESCRIPTION/SPECIFICATION FOR FIXTURE OR EQUIPMENT                                                                                           |
|------|-----------------------------|------|-----|----|----------------------------------------------------------------------------------------------------------------------------------------------|
|      | SAN                         | VENT | CW  | HW |                                                                                                                                              |
| HB   | -                           | -    | 3/4 | -  | HOSEBIBB - 3/4" HOSE THREAD, INTEGRAL VACUUM BREAKER SPOUT, ROUGH CHROME FINISH WITH REMOVABLE KEYPED HANDLE, WALL FLANGE CHICAGO MODEL 952. |

## PLUMBING FIXTURE NOTES

1. ALL FIXTURES SHALL MEET WATER CONSERVATION PERFORMANCE STANDARDS MANDATED BY SENATE BILL 597. ALL FIXTURES SHALL HAVE FLOW RESTRICTION DEVICES (DRINKING FOUNTAINS SHALL BE SELF-CLOSING) TO COMPLY WITH THESE REQUIREMENTS.
2. ALL FIXTURES SHALL HAVE CONTROLS REQUIRING OPERATING FORCE NO GREATER THAN FIVE (5) POUNDS.
3. FOR LAVATORIES AND SINKS, ALL FAUCETS SHALL BE NO-LEAD SOLID BRASS, MEETING ALL REQUIREMENTS OF ANSINFS 61, SECTION 9 AND CERTIFIED BY U.L. AS SUCH. ALSO, INSTALL SYMONS 4-108 MIXING VALVE ON HOT WATER SUPPLY SIDE OF ALL FAUCETS UNLESS HIGH TEMPERATURE LIMIT IS PROVIDED WITH FAUCET. ALL METERING FAUCETS SHALL HAVE A MINIMUM TEN (10) SECONDS OF WATER FLOW AND, INSTALL TRIEBRO HAND LAY GUARD VANDAL PROOF INSULATION KITS OVER P. TRAP, SUPPLIES, STOPS AND ALL SHARP EDGES FOR ALL SINKS AND LAVATORIES WHERE CASEWORK KNEESPACE SCREEN IS NOT INSTALLED.
4. ALL PLUMBING FIXTURES REFERENCED AS "ADA" OR "HANDICAP" SHALL MEET ALL REQUIREMENTS OF THE ADA AND THE TEXAS ACCESSIBILITY STANDARDS. IT SHALL BE THE PLUMBING CONTRACTORS RESPONSIBILITY TO MEET THESE REQUIREMENTS.
5. IN MANY CASES, FIXTURES WITH THE SAME PLUMBING DESIGNATION HAVE DIFFERENT INSTALLATION HEIGHTS - REFERENCE ARCHITECTURAL DRAWINGS FOR ALL INSTALLATION HEIGHTS AND HANDICAP FIXTURE DESIGNATIONS. FIXTURES DESIGNATED AS ADULT HANDICAP SHALL MEET ALL REQUIREMENTS OF THE ADA. FIXTURES DESIGNATED AS CHILD HANDICAP SHALL MEET ALL REQUIREMENTS OF THE TEXAS ACCESSIBILITY STANDARDS FOR THE SPECIFIED CHILD AGE GROUP (SPECIFIED BY ARCHITECT).
6. FOR ALL PLUMBING FIXTURES, WHERE COPPER PIPING IS STUBBED THROUGH WALL FOR DRAIN CONNECTION, INSTALL MARVEL FITTING FOR EASE OF SERVICE AND REPAIRS.

## PLUMBING PIPING MATERIALS

**DOMESTIC WATER**  
EXTERIOR: TYPE K COPPER WITH SWEAT FITTINGS AND LEAD-FREE SOLDER. BEYOND 5 FEET FROM BUILDING, SEE CIVIL DRAWINGS AND SPECIFICATIONS.

**NATURAL GAS**  
INTERIOR: SCHEDULE 40 BLACK STEEL WITH WELDED OR SCREWED JOINTS. PIPING IN INACCESSIBLE LOCATIONS AND PIPING 2.5" AND LARGER MUST HAVE WELDED JOINTS.

EXTERIOR ABOVE GRADE: SCHEDULE 40 BLACK STEEL WITH SCREWED JOINTS. PIPING LARGER THAN 2" SHALL HAVE WELDED JOINTS. ALL PIPING PAINTED WITH INDUSTRIAL GRADE PAINT.

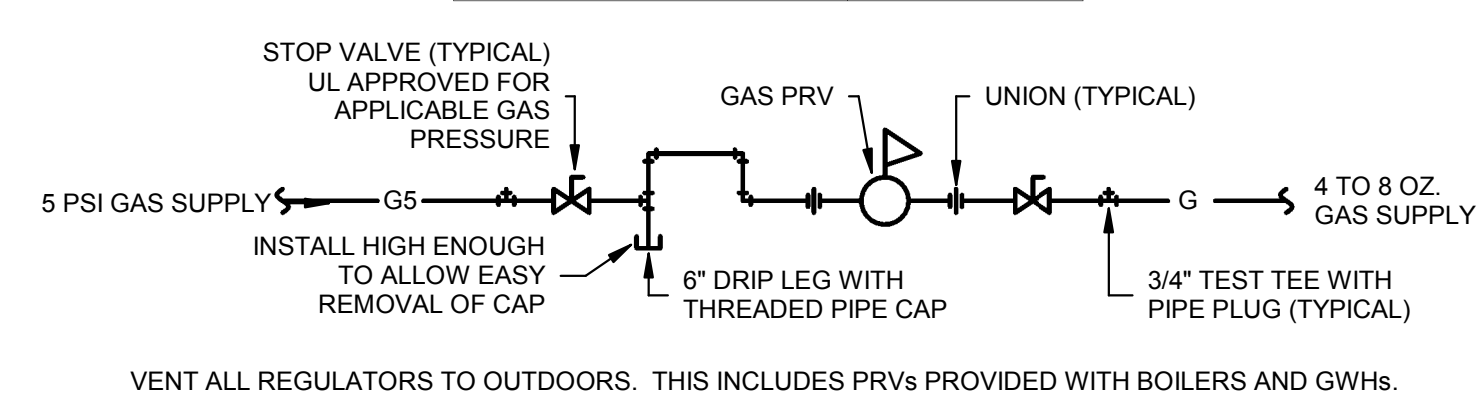
EXTERIOR BELOW GRADE: U.L. LISTED POLYETHYLENE GAS PIPING WITH SOCKET WELD JOINTS.

SLEEVE: INSTALL FOR GAS PIPING IN UNVENTILATED OR INACCESSIBLE SPACES, INCLUDING INSIDE WALLS AND ABOVE INACCESSIBLE CEILINGS. INSTALL UNDER PAVING OR CONCRETE. SLEEVE SHALL BE SCHEDULE 10 (OR HEAVIER) BLACK STEEL WITH WELDED OR SCREWED JOINTS. SLEEVES SHALL BE VENTED AS SHOWN ON DRAWINGS. SLEEVES OUTSIDE BUILDING SHALL BE SCHEDULE 40 GALVANIZED STEEL.

SEE WRITTEN SPECIFICATIONS FOR ADDITIONAL INFORMATION.

### GAS PRV SCHEDULE

| MARK                    | PRV         |
|-------------------------|-------------|
| LOCATION                | KFT TRAINER |
| SERVES                  | KFT TRAINER |
| GAS LOAD                | 3.8 MBH     |
| DISTANCE FROM METER     | 200 FT      |
| DISTANCE TO LAST OUTLET | 10 FT       |
| INLET (SIZE/PRESSURE)   | 2" / 5 PSIG |
| OUTLET (SIZE/PRESSURE)  | COORDINATE  |



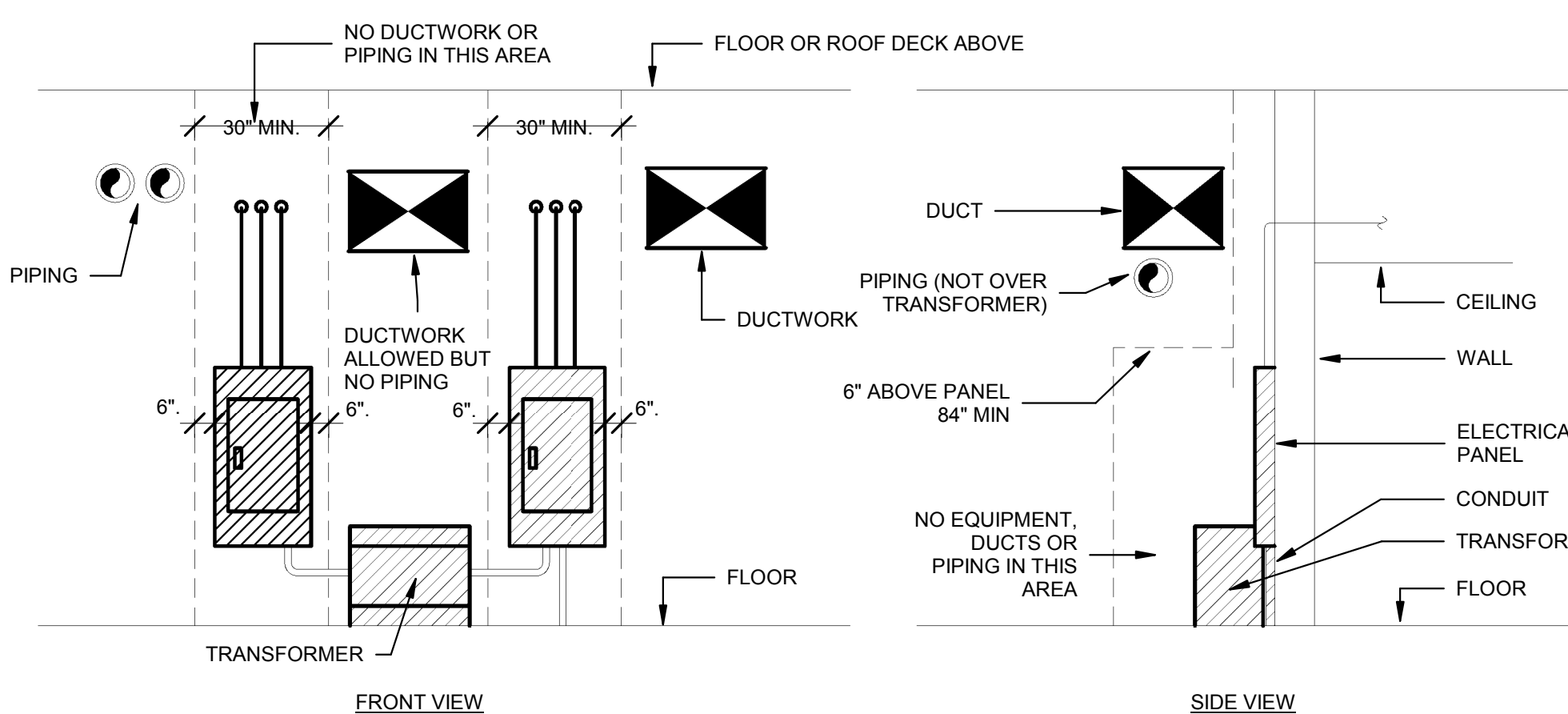
VENT ALL REGULATORS TO OUTDOORS. THIS INCLUDES PRVs PROVIDED WITH BOILERS AND GWHs.

## 1 GAS PRESSURE REGULATOR DETAIL

NO SCALE

NOTE:

COORDINATE FINAL PRESSURE AND PRESSURE REGULATORS AS NEEDED WITH KFT TRAINER.



NOTES:

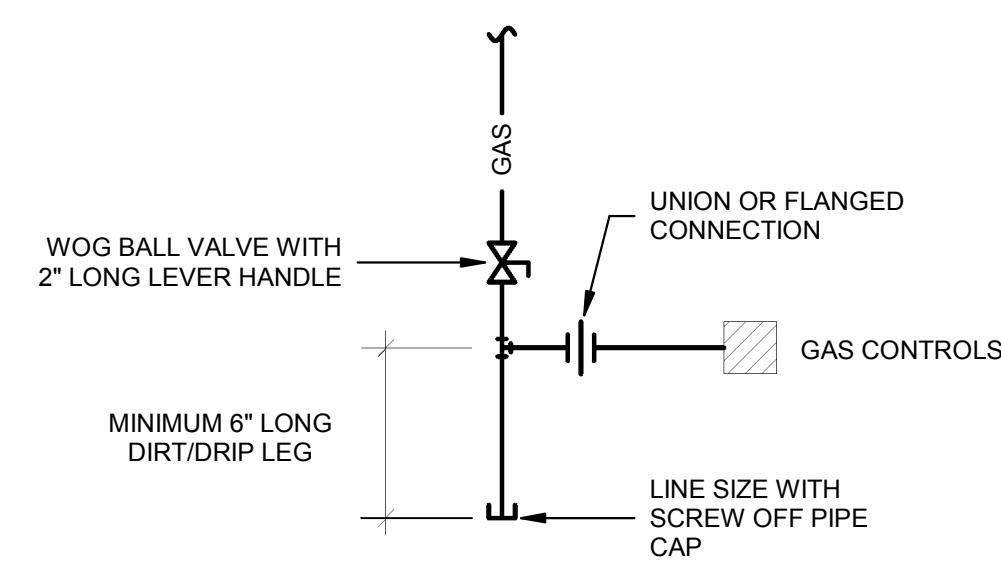
1. DO NOT INSTALL ANY PIPING BENEATH CVT BOXES.
2. DO NOT INSTALL ANY PIPE OVER TOP OF ANY ELECTRICAL EQUIPMENT. THIS INCLUDES FIRE SPRINKLER PIPING. NO EXCEPTIONS.
3. DO NOT INSTALL ANY PIPE OVER TOP OF ANY IDF/MDF/SERVER/NETWORK EQUIPMENT. THIS INCLUDES EQUIPMENT PROVIDED BY OWNER. THIS INCLUDES FIRE SPRINKLER PIPING. NO EXCEPTIONS.

## 4 MECHANICAL - ELECTRICAL COORDINATION DETAIL

NO SCALE

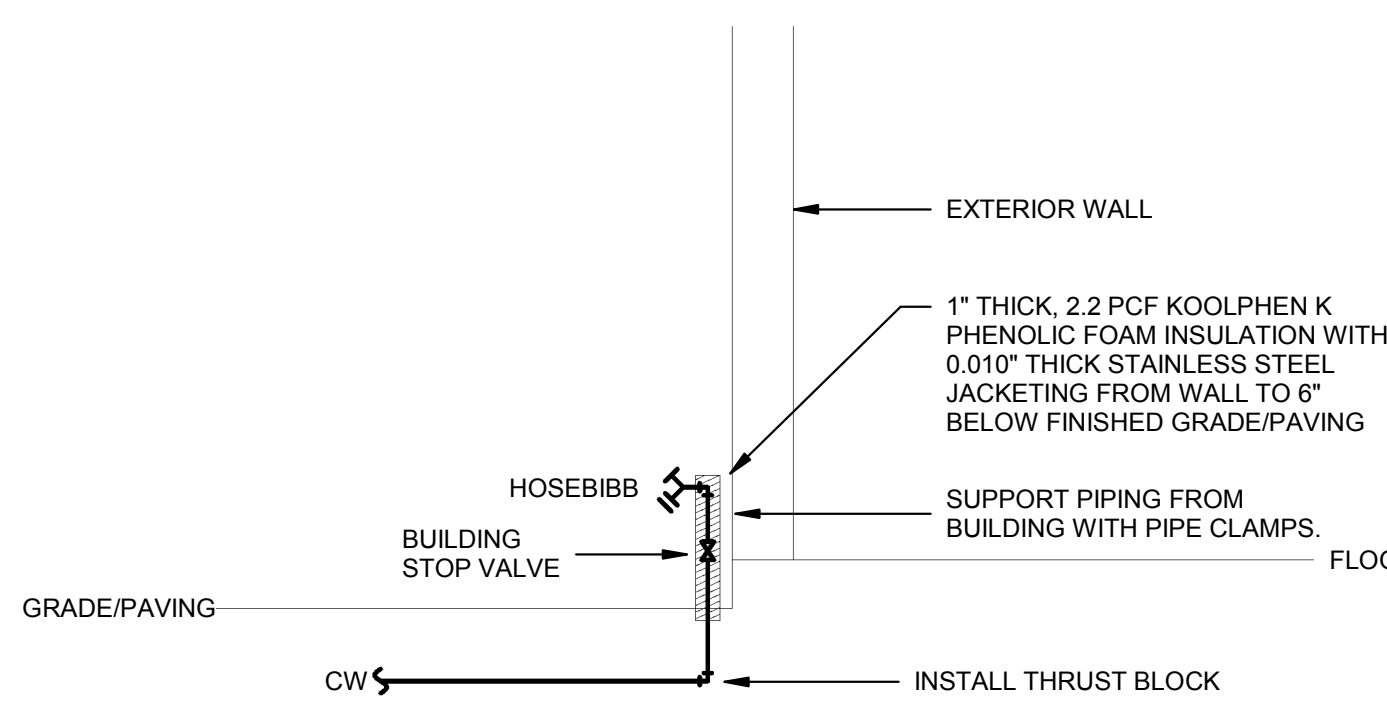
## 2 TYPICAL GAS CONNECTION

NO SCALE



## 3 EXTERIOR HOSEBIBB DETAIL

NO SCALE

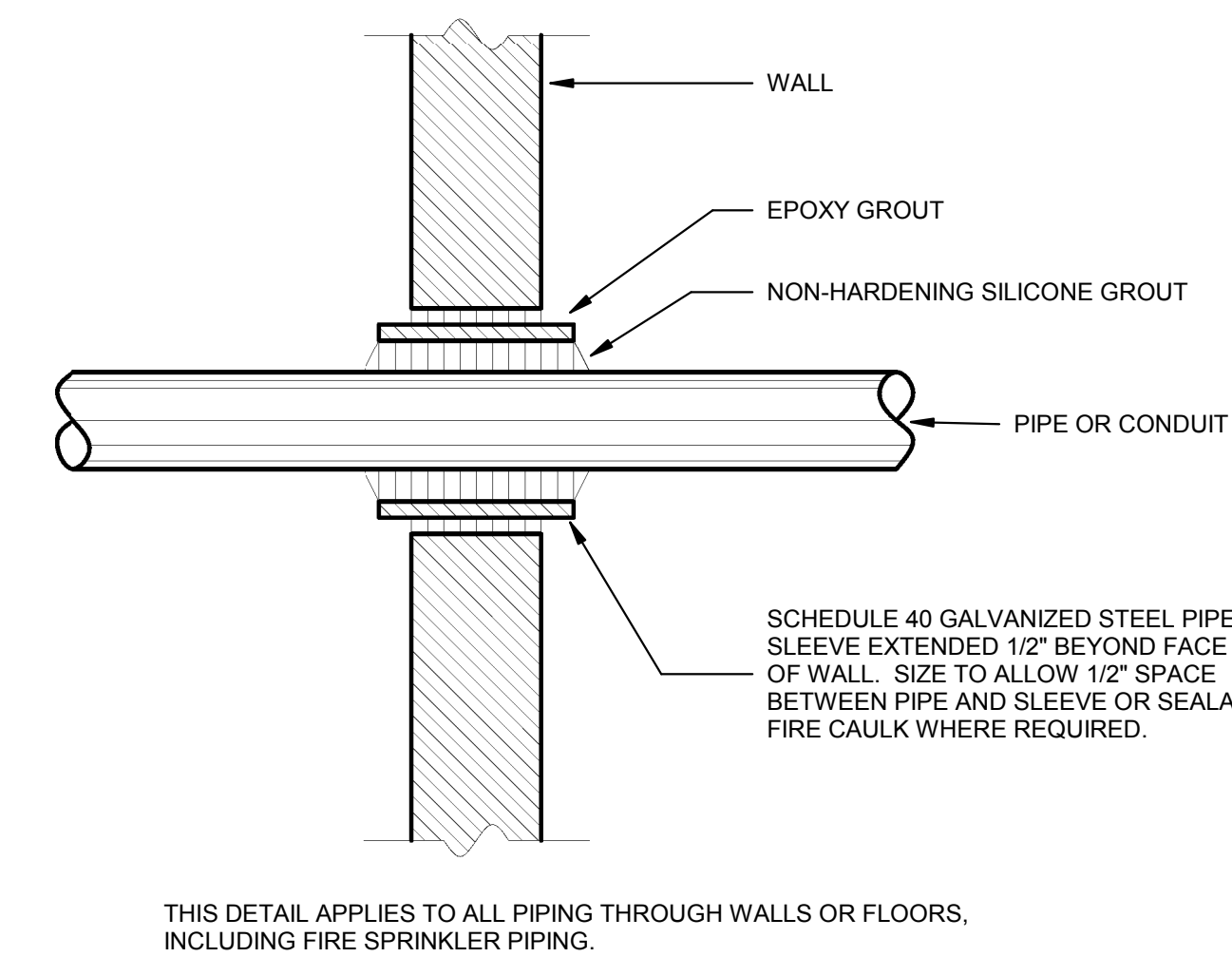


## 3 EXTERIOR HOSEBIB DETAIL

NO SCALE

## 5 WALL PENETRATION DETAIL

NO SCALE

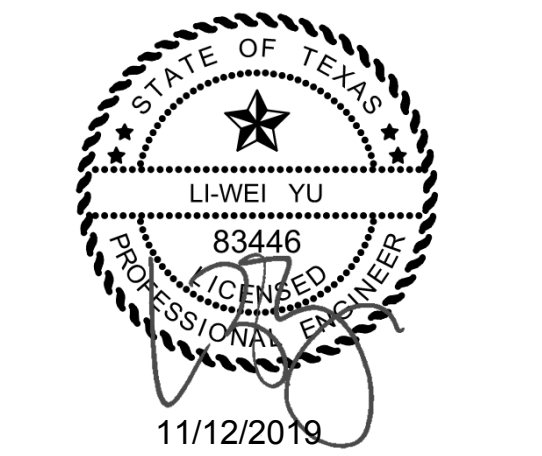


THIS DETAIL APPLIES TO ALL PIPING THROUGH WALLS OR FLOORS, INCLUDING FIRE SPRINKLER PIPING.

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1028

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PLUMBING  
DETAILS AND  
SCHEDULES

