EST. 1855
SPANISH FORK
PRIDE & PROGRESS

Wednesday, February 22, 2023
Development Review Committee

DEVELOPMENT REVIEW COMMITTEE AGENDA
PUBLIC NOTICE is hereby given that the Development Review Committee of Spanish Fork, Utah, will hold a regular meeting at the Spanish Fork City Council Chamber, 40 South Main Street, Spanish Fork, Utah, commencing at 10:00 a.m. This meeting is not available to attend virtually.

1. Approval of Minutes

A. February 15, 2023

2. Site Plan

A. 630 WEST CENTER STREET IMPROVEMENTS. The proposal involves street improvements in the vicinity of 630 West and Center Street.

B. 800 NORTH 400 EAST TRAFFIC SIGNAL. The proposal involves the construction of a traffic signal to be located at the intersection of 800 North and 400 East.

C. SPANISH FORK BUILDING AND GROUNDS SHOP. The proposal involves the construction of a maintenance building to be located at 433 South Main Street.

3. Discussion

A. PARKING.

B. ANNEXATION.

C. OTHER PROJECTS.

4. Adjourn

Draft Minutes
Spanish Fork City Development Review Committee
40 South Main Street
Spanish Fork, Utah
February 15, 2023

Staff Members Present: **Chris Thompson**, Public Works Director; **Seth Perrins**, City Manager; **Dave Anderson**, Community Development Director; **Brandon Snyder**, Senior Planner; **Kimberly Brenneman**, Development Coordination Manager; **Vaughn Pickell**, City Attorney; **Ana Burgi**, Assistant City Attorney; **John Little**, Chief Building Official; **Michael Clark**, Assistant City Engineer; **Marcie Clark,** Department Development Secretary; **Jered Johnson**, Engineering Division Manager; **Zach Hendrickson**, Outside Plant Manager; **Jake Theurer**, Power and Light Superintendent; **Tom Cooper**, Power and Light Senior Utility Planner; **Dale Robinson**, Parks and Recreation Director; **Bart Morrill**, Parks Maintenance Supervisor; **Jason Turner,** Fire Marshall; **Kasey Woodard**, Division Secretary.

Citizens Present: Travis Hales, Brad Mabey, Dave Hennefer, Corey Berg, Howard Nelson, Spencer Ward, Katie Zilka, Nate Reiner, Matt Brown.

Chris Thompson called the meeting to order at 10:00 a.m.

MINUTES

February 8, 2023

Seth Perrins **moved** to approve the minutes of February 8, 2023.

Dave Anderson **seconded** and the motion **passed** all in favor.

ZONE CHANGE

MUNOZ ZONE CHANGE

Brandon Snyder gave a brief description of the request. He indicated that there are two zoning districts over the parcels. The request is to replace the R-O Residential Office zoning with C-2 and to push the C-2 General Commercial zone to the northern property line.

Seth Perrins stated he prefers the C-2 zone.

There was a brief discussion regarding the potential uses of the area.

Dave Anderson **moved** to recommend the approval of the proposed Munoz Zone Change based on the following findings:

Finding:

1. That the proposal will establish zoning district lines that follow parcel lines.
2. That the expansion of the commercial area on Main Street is needed to facilitate further development.

Seth Perrins **seconded** and the motion **passed** all in favor.

PRELIMINARY PLAT

GLH INDUSTRIAL SUBDIVISION

Brandon Snyder stated the focus today is on the request for Preliminary Plat approval. He gave a brief presentation. He stated today the Committee is looking at an 8-lot industrial subdivision approval.

Michael Clark stated this is part of a larger effort for the area to be developed industrially. He mentioned the lift station and 1900 North and asked if there is a phasing plan in place? He stated with the approval he wants it to be known these issues still need to be addressed.

Chris Thompson gave a short explanation of the approval process and when bonds will be required.

Vaughn Pickell agreed with Chris Thompson and suggested a detailed traffic study.

Dave Anderson feels that approving this project helps the City move forward. He asked how the City can move forward in the direction to see the connection of 1900 North.

Michael Clark stated the lift station is used by surrounding developers as well.

Dave Anderson stated this is right in the middle of where the City has servicing issues.

Chris Thompson asked if there was a reason the developer prefers to keep the roads private as they would have to maintain the private roads instead of the City maintaining them.

Dave Anderson stated this is one way the property could be developed, but he stated that if a future user came that wanted a different configuration of the buildings, he stated the applicant would possibly wish to accommodate the user. So, he suggests the configuration be somewhat fluid.

Seth Perrins stated that he feels okay with the internal circulation of the design overall. He really likes that there is east-west access in addition to the design. He does not see either road having a heavy amount of traffic.

Dave Anderson feels this is ready to move forward to the Planning Commission.

Jason Turner stated there needs to be adequate access for response vehicles. He discussed the narrowness of county roads and that response vehicles do not have room to get around.

Dave Anderson **moved** to recommend the approval of the proposed GLH Industrial Subdivision Preliminary Plat based on the following finding and conditions:

Finding:

1. That the application conforms to the City's General Plan Designation and Zoning Map.

Conditions:

1. That the applicant meets the City's Zoning requirements and Construction Standards.
2. That the applicant addresses any red-lines.
3. That the applicant continues to work with City Staff to formulate a plan to construct the needed infrastructure in the area.
4. That there is an acknowledgement that there is inadequate infrastructure to serve the development today, work including additional studies, design, City approvals and everything associated with getting the deficiencies resolved will have to be addressed before the project can proceed.

Ana Burgi **seconded** and the motion **passed** all in favor.

FINAL PLAT

EXPRESSWAY LANE PLAZA CONDOMINIUMS

Brandon Snyder stated this is very straight forward. The applicant is looking to record a condominium plat that will allow for the individual units to be sold.

Jake Theurer asked when the applicant is planning to finish the electrical improvements as it has come to a stop.

Seth Perrins suggested pausing this approval.

Chris Thompson feels this should not return to the DRC unless the applicant can be present.

Seth Perrins **moved** to Continue the proposed Expressway Lane Plaza Condominiums

Jake Theurer **seconded** and the motion **passed** all in favor.

MINOR SUBDIVISION

NELSON MEADOWS SUBDIVISION PLAT A

Brandon Snyder stated this is the third time this has been brought before the DRC. He stated the applicant is wanting to subdivide into 3 lots, and he stated the shared driveway between lots 1 and 3 are an issue. He stated the DRC asked to see plans on how this design would function. He asked Bart Morrill if the park strip would be maintained by the applicant or by the city and it was stated it would be maintained by the City after improvements are completed by the applicant.

There was discussion regarding the delinquent taxes for the past 4 years that will need to be addressed before the plat is recorded, and it was stated there needs to be an approved landscaping plan provided by the applicant.

Chris Thompson asked if the "No Access" on the north side of lot 1 be also copied to the north side of lot 3 for clarity on the plat.

There was discussion about re-addressing the lots to be off 1700 East.

Dave Anderson wanted to discuss the allowance of Home Occupations within a residential zone and that the use of the property stays consistent with the city code. He stated the home occupational allowance does prohibit home businesses that disrupt the residential feel that could become a nuisance to surrounding neighbors.

There was discussion regarding the future home that is planned to be constructed on lot 3, and that any business being conducted from the property should be incidental and not the main use of the property.

Howard Nelson stated that he intends to sell the third lot once the house is built and anticipates the build being completed by the end of 2023.

Chris Thompson suggested the applicant build the house on lot 3 before the wall on Canyon Road is built.

Howard Nelson stated he is not in a position financially to start building the house on lot 3 until the existing house is sold.

Dave Anderson **moved** to approve the proposed Nelson Meadows Subdivision Plat A Minor Subdivision based on the following finding and conditions:

Finding:

1. That the application conforms to the City's General Plan Designation and Zoning Map

Conditions:

1. That the applicant meets the City's Zoning requirements and Construction Standards.
2. That the applicant addresses any red-lines.
3. That the use of the property conforms to the R-1-9 zoning standards.
4. That a Landscaping plan be provided by the applicant to show improvements to the space between the wall and Canyon Road.

Jered Johnson **seconded** and the motion **passed** all in favor.

CONCEPT REVIEW

HALES CONCEPT

Brandon Snyder stated this property is on 200 North 600 East. He stated the applicant is proposing to tear down the existing home in order to construct a 2-story townhome with 4 units in its place. He stated the applicant must be able to meet the requirements of the Infill Overlay zone. He stated there are no other 2-story structures in the area. The zoning is currently R-1-6, to be able to accommodate the proposal, the applicant would need to have the property rezoned to R-3 with the Infill Overlay. He recommended that the Planning Commission review the proposal and if it meets the intent of the Infill Overlay.

There was discussion regarding the neighborhood and that there are no other 2-story structures in the neighborhood, and this would be a prominent structure on the corner. There was further discussion regarding the porches and how far they stick out to the sidewalk. It was stated the aerial that was provided is slightly off and a more detailed plan needs to be provided.

Seth Perrins feels there are too many units for the lot. He stated that he does like the look of the designed townhomes but just feels this is too much real estate for one lot. It doesn't fit with the surrounding neighborhood properties.

Dave Anderson stated the elevations that face 600 east need to look their best. He suggested having the end unit face the east.

TEXT AMENDMENT

TITLE 15 DRC ORGANIZATION

Brandon Snyder provided the amendment drafted by Ana and the changes that have been made to the verbiage regarding administrative bodies and officers. "Public Safety Director" has been replaced with "Fire Marshal" and replacing the word "Absence" with "Place" so that other staff members can attend in their place.

There was discussion regarding the addition of a SFCN staff member to the DRC approving body.

Seth Perrins **moved** to recommend the approval of the proposed Text Amendments to the City Council as discussed.

Dave Anderson **seconded** and the motion **passed** all in favor.

Dave Anderson moved to adjourn the meeting at 11:26 a.m.

Adopted:

Kasey Woodard
Community Development Division
Secretary

630 WEST CENTER STREET IMPROVEMENTS

90% DESIGN

SPANISH FORK, UT
JANUARY, 2023

EST. 1855
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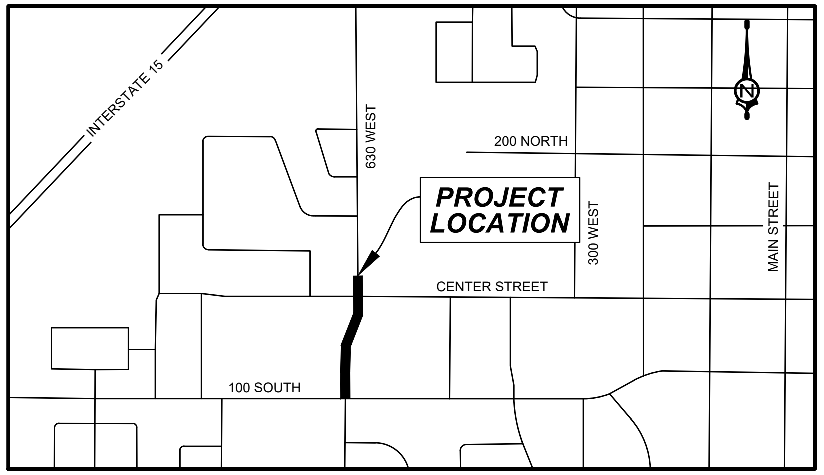
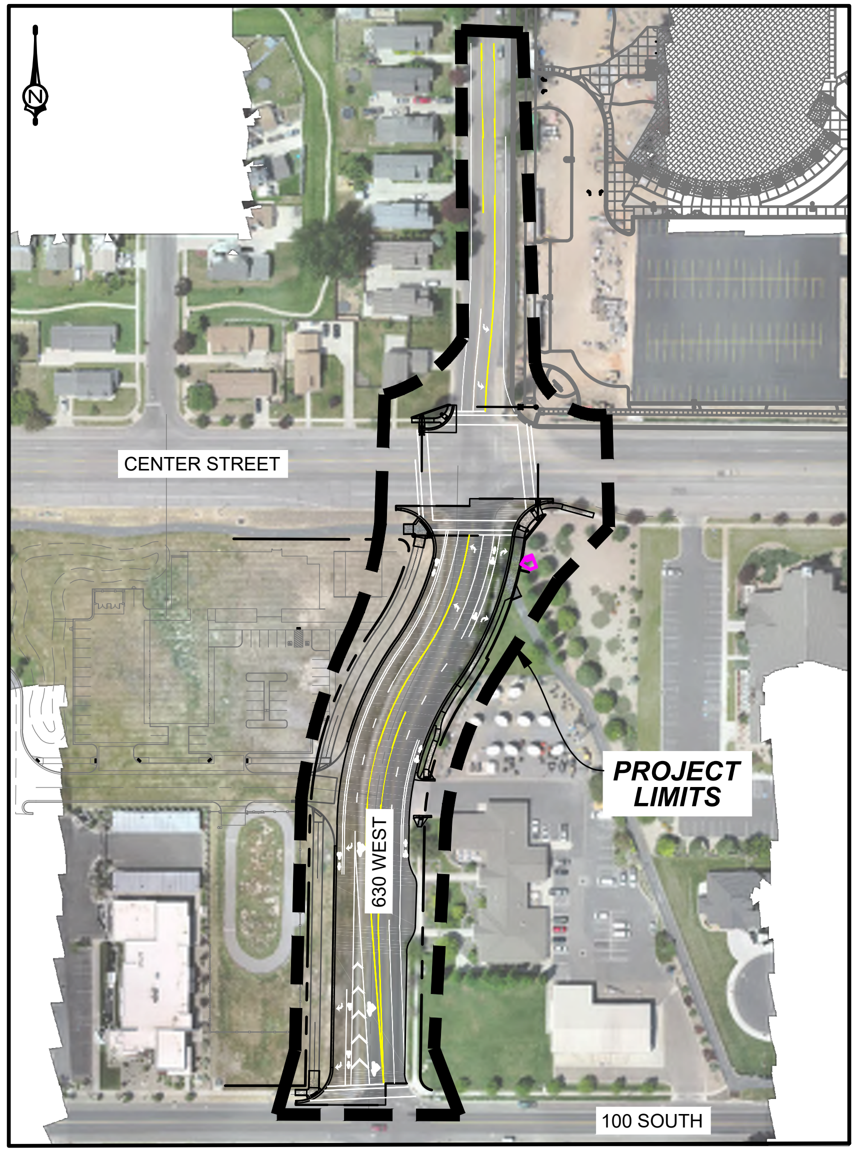
PRIDE & PROGRESS



VICINITY MAP
NTS.



PROJECT MAP
NTS.

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3	GN02	LEGEND & ABBREVIATIONS
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5	TS01	TYPICAL SECTIONS
6	DM01	DEMOLITION PLAN
7	DM02	DEMOLITION PLAN
8	DM03	DEMOLITION PLAN
9	PP01	630 WEST PLAN & PROFILE
10	PP02	630 WEST PLAN & PROFILE
11	UT01	UTILITY PLAN
12	UT02	UTILITY PLAN
13	UPP01	UTILITY PLAN & PROFILE
14	UPP02	UTILITY PLAN & PROFILE
15	SS01	SIGNAGE & STRIPING
16	SS02	SIGNAGE & STRIPING
17	SG01	SIGNAL PLAN
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19	SG03	SIGNAL SCHEDULE
20	SG04	SIGNAL SCHEDULE
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22	SG06	MAST ARM SIGN DETAIL
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30	DT06	DETAILS
31	DT07	IRRIGATION DIVERSION STRUCTURE DETAILS
32	DT08	IRRIGATION DIVERSION STRUCTURE DETAILS
33	DT09	IRRIGATION DIVERSION STRUCTURE DETAILS
34	DT10	IRRIGATION DIVERSION STRUCTURE DETAILS

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NO.	DESCRIPTION	BY	APR.	DATE

COVER SHEET

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
CV

1 OF 34

PLOT: 2023-01-23 04:49 PM
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GENERAL PROJECT NOTES

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH THE CURRENT SPANISH FORK CITY STANDARDS AND SPECIFICATIONS AND WITH ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL ORDINANCES AND LAWS.
2. THE CONTRACTOR SHALL OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE CONSTRUCTION.
3. THE TERM ENGINEER HEREIN REFERS TO THE CONSTRUCTION ENGINEER. COORDINATE ALL WORK WITH ENGINEER AND INSPECTORS. SPANISH FORK CITY ENGINEER IS CALLED OUT SEPARATELY IN THESE DOCUMENTS.
4. THE CONTRACTOR SHALL COORDINATE SITE CONSTRUCTION WITH ALL UTILITY CONSTRUCTION AND OTHERS WHICH MAY BE SPECIFIC TO THE PROJECT.
5. THE CONTRACTOR IS RESPONSIBLE FOR DUST ABATEMENT AND ANY LIABILITY ISSUES RELATED TO DUST WITHIN THE PROJECT LIMITS.
6. ALL WORK SHALL BE COMPLETED WITHIN THE PUBLIC RIGHT-OF-WAY AND WITHIN TEMPORARY CONSTRUCTION EASEMENTS. THE CONTRACTOR SHALL TAKE EVERY PRECAUTION TO ELIMINATE ANY ADVERSE EFFECTS ON ADJACENT PROPERTIES AND/OR RESTORE IT TO ITS ORIGINAL CONDITION.
7. THE OFFICE OF THE SPANISH FORK CITY ENGINEER, PUBLIC WORKS DIRECTOR, AND CONSTRUCTION ENGINEER SHALL BE GIVEN AT LEAST ONE (1) WEEK'S NOTICE PRIOR TO BEGINNING ANY CONSTRUCTION. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED PLANS AND SPECIFICATIONS.
8. DEVIATION FROM THESE PLANS AND SPECIFICATIONS WITHOUT THE PRIOR WRITTEN CONSENT OF THE ENGINEER MAY CAUSE THE WORK TO BE DEEMED UNACCEPTABLE.
9. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFICATIONS AND LIAISON WITH UTILITY COMPANIES IN THE PROCESS OF LOCATING, RELOCATION, AND TIE-IN TO PUBLIC UTILITIES. ALSO, THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING ALL INSPECTORS, INCLUDING THE ENGINEER PRIOR TO BEGINNING SITE CONSTRUCTION.
10. IN THE CASE OF UNFORESEEN CONSTRUCTION COMPLICATIONS OR DISCREPANCIES, THE CONTRACTOR IS TO NOTIFY THE ENGINEER IMMEDIATELY AND PROVIDE NECESSARY DOCUMENTATION FOR EVALUATION AND DIRECTION.
11. THE PLANS WERE PREPARED IN ACCORDANCE WITH ESTABLISHED PRACTICES OF CIVIL ENGINEERING DESIGN. THE ENGINEER NOR ITS PERSONNEL CAN OR DO WARRANT THESE PLANS AS CONSTRUCTED EXCEPT WHERE THE ENGINEER INSPECTS AND CONTROLS THE PHYSICAL CONSTRUCTION ON A CONTEMPORARY BASIS AT THE SITE.
12. COORDINATE ALL CONSTRUCTION WORK ON PRIVATE PROPERTY WITH LOCAL RESIDENCES OR BUSINESSES. ANY CLOSURE OF AN ACCESS TO A RESIDENCE OR A BUSINESS REQUIRES 48 HOUR NOTICE (MIN.), AND SHALL BE COORDINATED WITH THE PROPERTY OWNER, AND PERMISSION GRANTED FROM THE PROPERTY OWNER, BEFORE ANY WORK CAN COMMENCE AT THE ACCESS LOCATION.
13. FINAL QUANTITIES AND PROJECT LOCATIONS WILL BE DEPENDENT UPON BIDS AND THE PROJECT BUDGET.
14. A PRE-CONSTRUCTION MEETING WILL BE REQUIRED PRIOR TO CONSTRUCTION. COORDINATE WITH SPANISH FORK CITY FOR TIME AND LOCATION.

CONSTRUCTION SITE SAFETY

1. THE CONTRACTOR IS REQUIRED TO MEET ALL APPLICABLE REGULATIONS CONCERNING PROJECT SAFETY AND ASSUMES FULL RESPONSIBILITY FOR SAFETY ON THE PROJECT.
2. WORKERS AND THE PUBLIC SHALL BE PROTECTED BY THE CONTRACTOR FROM ANY AND ALL HAZARDS CONNECTED WITH THE CONSTRUCTION WORK.
3. OPEN TRENCHES, MATERIALS, OR EQUIPMENT WITHIN THE WORKING LIMITS ARE TO BE PROTECTED BY THE USE OF ADEQUATE BARRICADES.
4. ALL WORK SHALL BE IN CONFORMANCE WITH CURRENT OSHA REGULATIONS FOR PROJECTS OF THIS TYPE.
5. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR THE CONDITIONS OF THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS. ANY CONSTRUCTION OBSERVATION BY THE ENGINEER OF THE CONTRACTOR'S WORK IS NOT INTENDED TO INCLUDE THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES EITHER, ON, OR NEAR THE CONSTRUCTION SITE.

TRAFFIC CONTROL AND SIGNAGE

1. THE CONTRACTOR SHALL MAINTAIN INGRESS/EGRESS ACCESS TO INDIVIDUAL PROPERTY OWNERS AT ALL TIMES. THE CONTRACTOR SHALL COORDINATE DETOURS AND ANY TEMPORARY CLOSURES WITH EACH PROPERTY OWNER AND THE SPANISH FORK CITY ENGINEERING DEPARTMENT. THE CONTRACTOR SHALL KEEP DURATION OF ALL CLOSURES AND DETOURS TO A MINIMUM. SEE GENERAL CONDITIONS FOR ROAD CLOSURE INFORMATION. MAINTAIN ACCESS FOR EMERGENCY VEHICLES THROUGHOUT PROJECT CONSTRUCTION.
2. THE CONTRACTOR SHALL FOLLOW THE CURRENT EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION. ALL TRAFFIC CONTROL PLANS REQUIRE SPANISH FORK APPROVAL.

STORM WATER POLLUTION PREVENTION

1. PRIOR TO ANY LAND DISTURBANCE OR CITY EXCAVATION PERMIT, THE CONTRACTOR WILL PREPARE AND SUBMIT A SWPPP DOCUMENT AND OBTAIN AN NPDES PERMIT. THE CONTRACTOR WILL BE REQUIRED TO KEEP THE SWPPP ON SITE AT ALL TIMES AND ABIDE BY IT. THE SWPPP SHALL MEET ALL REQUIREMENTS OF THE STATE CONSTRUCTION GENERAL PERMIT.

PROTECTION OF EXISTING UTILITIES AND MONUMENTS

1. A MINIMUM 48 HOUR NOTICE IS REQUIRED TO ALL AFFECTED RESIDENTS FOR UTILITY OUTAGES.
2. UTILITIES INFORMATION SHOWN HEREON WERE OBTAINED FROM THE BEST AVAILABLE SOURCES AND MAY NOT BE EITHER ACCURATE OR COMPLETE. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVES. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. UNDERGROUND LOCATES MAY BE MADE USING THE BLUE STAKES NUMBER 1-800-662-4111 OR 811.
3. WHERE EXISTING UTILITY WIRES (TELEPHONE, ELECTRIC) ARE LOCATED ADJACENT TO OR ABOVE THE PROPOSED STORM DRAIN OR WATER PIPELINES, THE CONTRACTOR SHALL TEMPORARILY SUPPORT THE EXISTING WIRES AND INSTALL MAIN PIPING AT THE CONTRACTOR'S EXPENSE.
4. THE CONTRACTOR SHALL PROTECT ALL SURVEY MONUMENTS NOT CALLED OUT FOR RECONSTRUCTION. ANY MONUMENTS DISTURBED OR DESTROYED SHALL BE REPLACED BY THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.

STORM DRAIN CONSTRUCTION

1. THE CONTRACTOR SHALL PROVIDE ON-SITE STORM DRAINAGE FACILITIES ACCORDING TO THE STORM WATER DRAINAGE DESIGN MANUAL AND IN ACCORDANCE WITH THE ORDINANCES OF THE CITY.

WATER PIPELINE

1. CONTRACTOR SHALL CONTACT SPANISH FORK CITY AT LEAST 48 HOURS IN ADVANCE OF ALL WATER SHUTDOWNS. CONTRACTOR IS RESPONSIBLE FOR WATER SHUTDOWNS, NOTIFICATIONS AND DOOR HANGERS. CONTRACTOR SHALL NOTIFY WATER USERS AT LEAST 48 HOURS IN ADVANCE.
2. WATERLINE TRENCH REQUIREMENTS TO FOLLOW SPANISH FORK CITY STANDARD DRAWINGS UNDER SECTION 3. WARNING TAPE TO BE PLACED 12" BELOW GRADE. WARNING TAPE IS INCIDENTAL TO PIPE INSTALLATION.

REMOVALS

1. ANY EXISTING STRUCTURES OR SURFACE FEATURES DISTURBED BY CONSTRUCTION ARE TO BE RESTORED TO THEIR ORIGINAL LOCATION AND CONDITION. ALL STRUCTURES SUCH AS CURB AND GUTTER, CONCRETE AND BITUMINOUS SIDEWALKS, PAVING BRICKS, FENCING, RETAINING WALLS, ETC., CROSSED BY THE PROPOSED STORM DRAIN MAY NOT BE INDICATED.
2. EXCESS EXCAVATED MATERIALS INCLUDING PIPE, STUMPS, ROOTS, SOIL MATERIALS OR ANY OTHER ITEMS THE OWNER DOES NOT WISH TO SALVAGE SHALL BECOME THE CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY, INCIDENTAL TO THE CONTRACT. ASPHALT AND CONCRETE SHALL BE DISPOSED OF OFFSITE INCIDENTAL TO THE CONTRACT. THE CONTRACTOR IS REQUIRED TO USE A LICENSED SOLID WASTE COLLECTION AND DISPOSAL SERVICE FOR ALL WASTE GENERATED FROM THE CONSTRUCTION SITE.

PERMITS REQUIRED

1. EXCAVATION AND ROAD CLOSURE PERMITS
    - OBTAINED BY CONTRACTOR AT CITY
2. UTAH POLLUTANT DISCHARGE ELIMINATION SYSTEM (UPDES) STORM WATER PERMIT
3. UDOT ENCROACHMENT PERMIT FOR WORK WITHIN 100 SOUTH RIGHT-OF-WAY
4. WEST FIELD IRRIGATION COMPANY PERMIT REQUIRED FOR WORK ON THE IRRIGATION DIVERSION STRUCTURE AND ANY ASSOCIATED IRRIGATION PIPES/FACILITIES
    - APPLICATION SUBMITTED BY CIVIL SCIENCE

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REVISION

NO.	DESCRIPTION	BY	APPR	DATE

GENERAL NOTES

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ

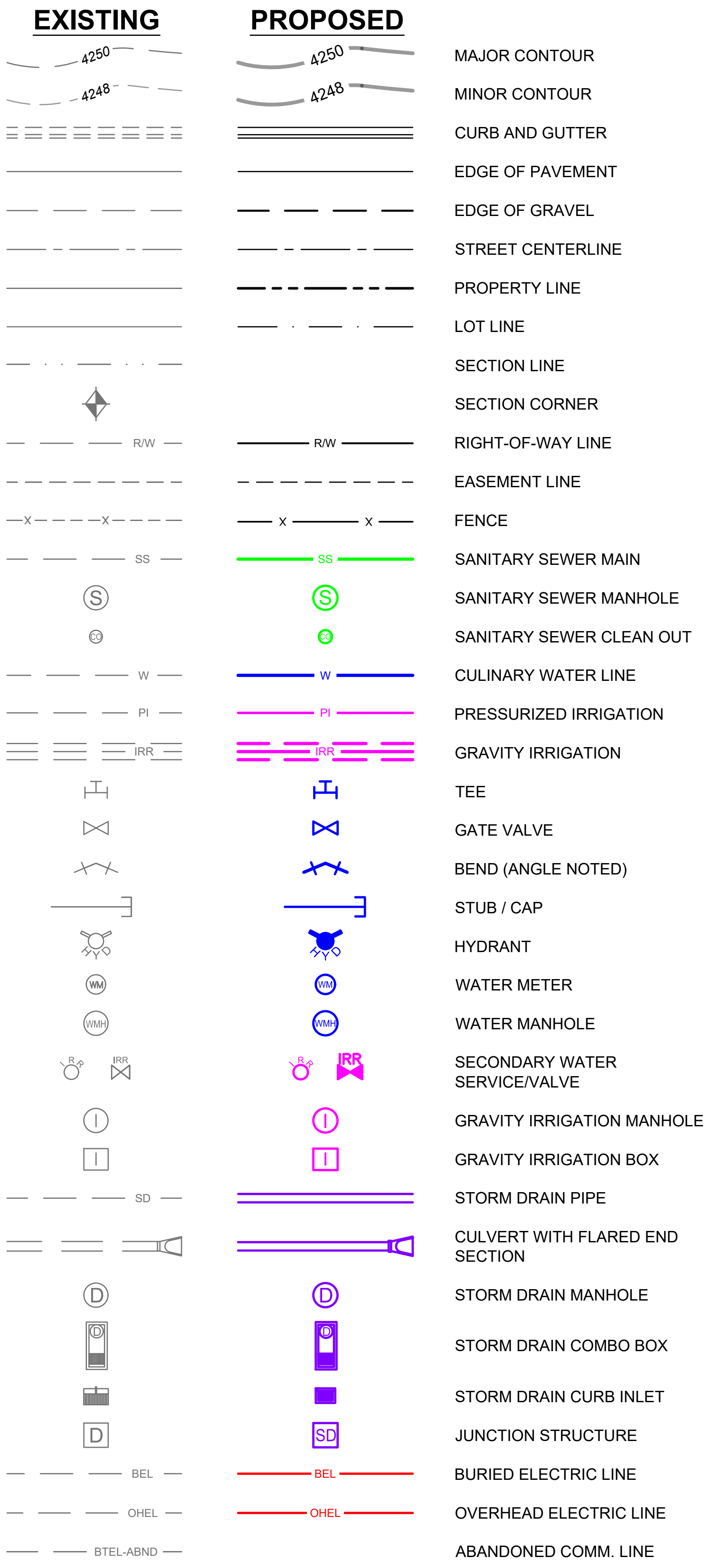
SHEET
GN01

ABBREVIATIONS

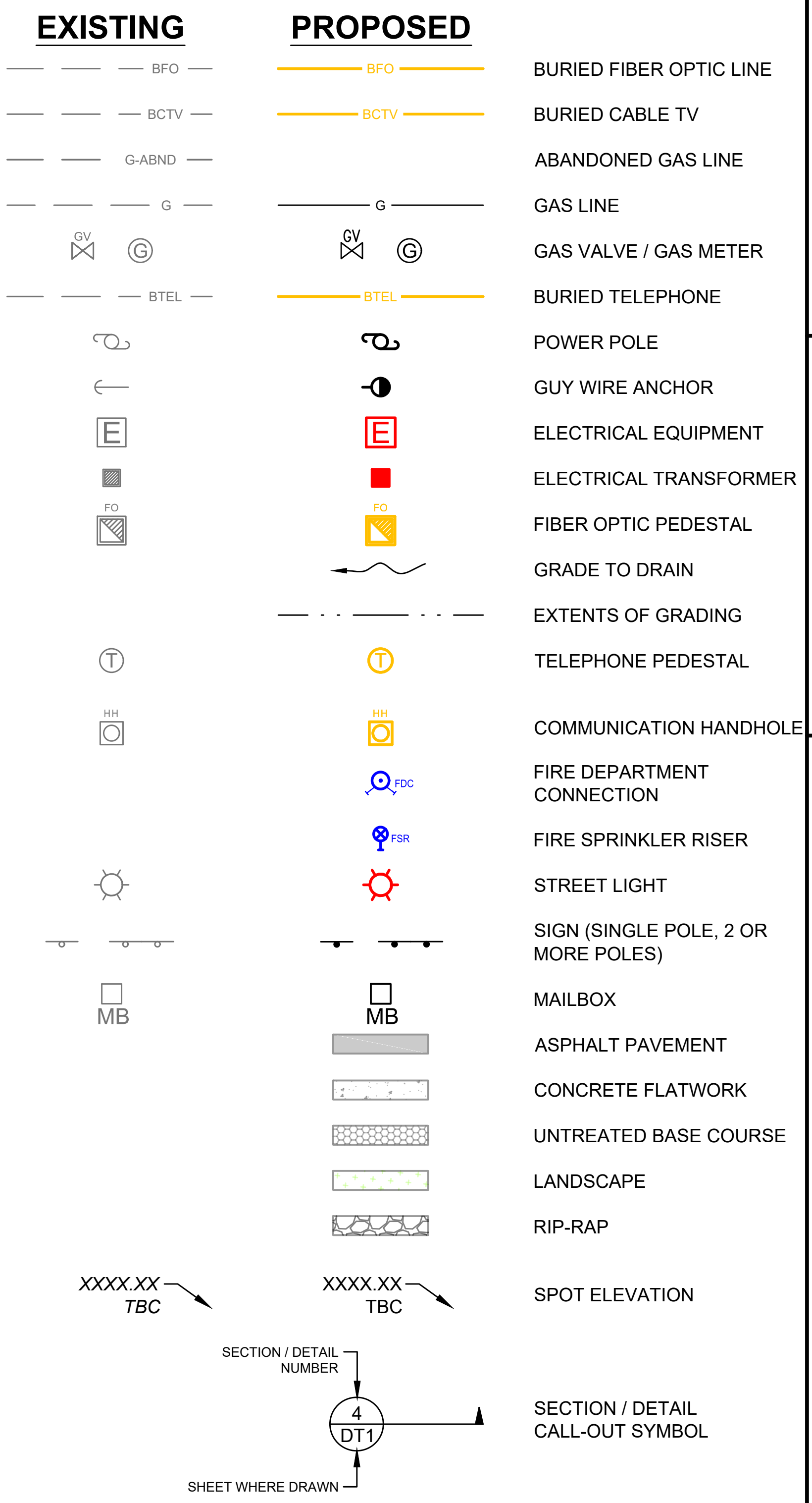
AC	ACRE
AGGR	AGGREGATE
ALGN	ALIGNMENT
ALT	ALTERNATE
APPR	APPROXIMATE
ASSY	ASSEMBLY
AVE	AVENUE
BFV	BUTTERFLY VALVE
BH	BORE HOLE
BITUM	BITUMINOUS
BK	BACK
BOA	BEGINNING OF ALIGNMENT
BSW	BACK OF SIDEWALK
BVC	BEGIN VERTICAL CURVE
BW	BOTTOM OF WALL
C&G	CURB AND GUTTER
CB	CATCH BASIN
C-C	CENTER TO CENTER
CF	CUBIC FEET
CFS	CUBIC FEET PER SECOND
CI	CAST IRON
CIP	CAST IRON PIPE
CL	CENTERLINE
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COMM	COMMUNICATION
CONC	CONCRETE
CONST	CONSTRUCTION
CU	COPPER
CY/CU YD	CUBIC YARD
DBL	DOUBLE
DI	DUCTILE IRON
DIA/D	DIAMETER
DIP	DUCTILE IRON PIPE
DR	DRIVE
DRWY	DRIVEWAY
DWG	DRAWING
E	EAST
EA	EACH
EG	EXISTING GRADE
EP/EOP	EDGE OF PAVEMENT
ELEC	ELECTRICAL
EL/ELEV	ELEVATION
ELOH	OVERHEAD ELECTRICAL
EOA	END OF ALIGNMENT
ESMT	EASEMENT
EVC	END VERTICAL CURVE
EX/EXIST	EXISTING
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY
FES	FLARED END SECTION
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIRM	FLOOD INSURANCE RATE MAP
FL	FLOWLINE
FM	FORCE MAIN
FO	FIBER OPTIC
FS	FINISHED SURFACE
FT	FOOT/FEET
GALV	GALVANIZED
GB	GRADE BREAK
GR	GRATE
GV	GATE VALVE
HDPE	HIGH-DENSITY POLYETHYLENE
HMA	HOT MIX ASPHALT
ALT.	HORIZONTAL
HP	HIGH POINT

HYD	HYDRANT
IN	INCH
ID	INSIDE DIAMETER
INV	INVERT
IRR	IRRIGATION
LEN	LENGTH
LF	LINEAR FEET
LP	LOW POINT
LT	LEFT
MAX	MAXIMUM
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MJ	MECHANICAL JOINT
N	NORTH
NO	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
OSHA	OCCUPATION SAFETY AND HEALTH ADMINISTRATION
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PI	POINT OF INTERSECTION
PL	PROPERTY LINE
POLY	POLYETHYLENE
HYD.	POTABLE
PP	POWER POLE
PRC	POINT OF REVERSE CURVATURE
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE
PVI	POINT OF VERTICAL INTERSECTION
PUE	PUBLIC UTILITY EASEMENT
RAD/R	RADIUS
RCP	REINFORCED CONCRETE PIPE
REQ'D	REQUIRED
ROW	RIGHT-OF-WAY
RR	RAILROAD
RT	RIGHT
S.	SOUTH
SAN	SANITARY
SCH.	SCHEDULE
SD	STORM DRAIN
SDR	STANDARD DIMENSION RATIO
SF/SQ FT	SQUARE FEET
SHT	SHEET
SIM.	SIMILAR
SS	SANITARY SEWER
ST	STREET
STA	STATION
STD	STANDARD
SW	SIDEWALK
SY/SQ YD	SQUARE YARD
TA	TOP OF ASPHALT
TBC	TOP BACK OF CURB
TBR	TO BE REMOVED
TC	TOP OF CONCRETE
TOP	TOP OF PIPE
TW	TOP OF WALL
TYP.	TYPICAL
VAR.	VARIES
VERT.	VERTICAL
WAT.	WATER
WL	WATER LINE

LEGEND



LEGEND (cont.)



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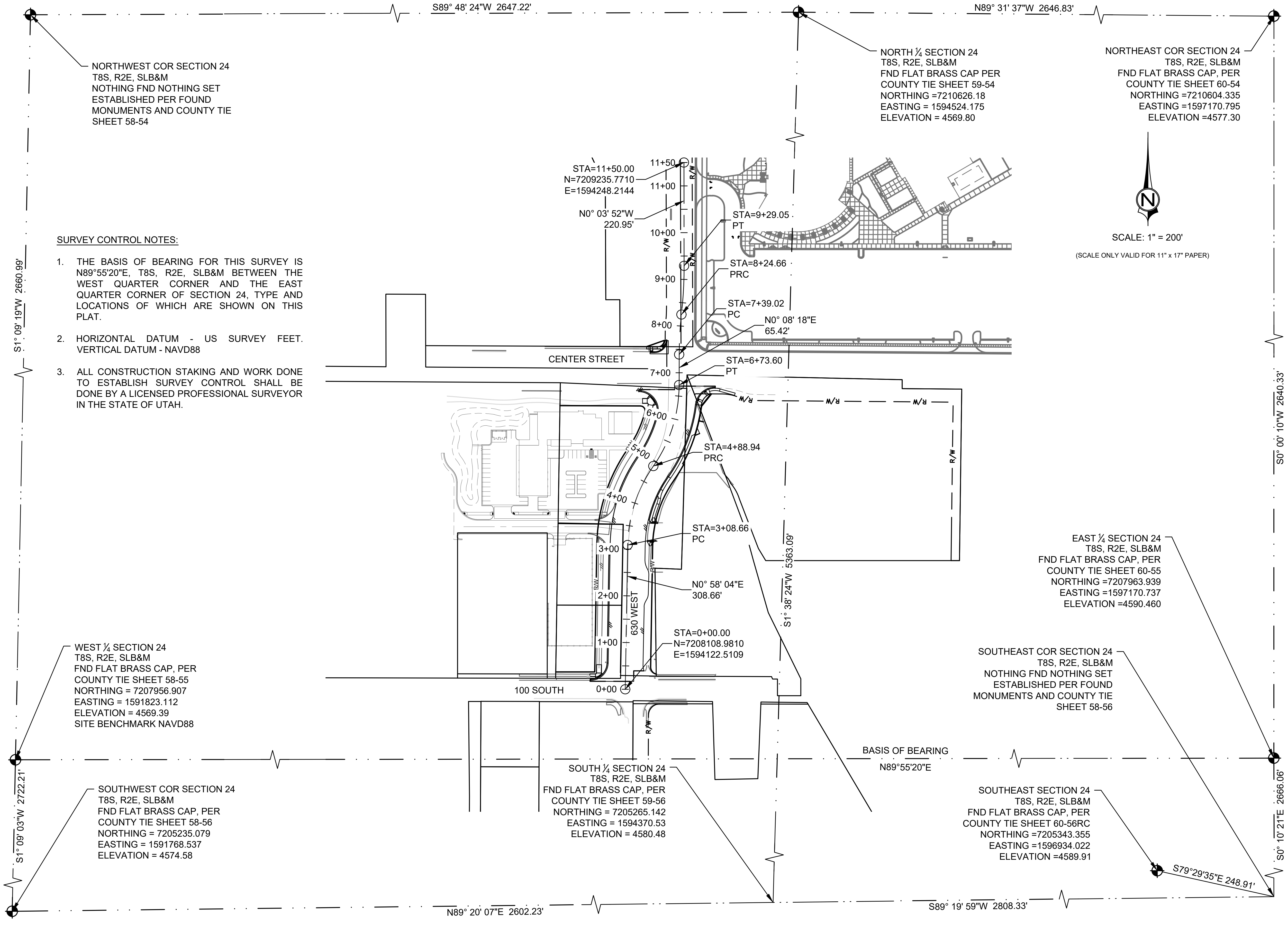
GN02

3 OF 34



SURVEY CONTROL NOTES:

1. THE BASIS OF BEARING FOR THIS SURVEY IS N89°55'20"E, T8S, R2E, SLB&M BETWEEN THE WEST QUARTER CORNER AND THE EAST QUARTER CORNER OF SECTION 24, TYPE AND LOCATIONS OF WHICH ARE SHOWN ON THIS PLAT.
2. HORIZONTAL DATUM - US SURVEY FEET. VERTICAL DATUM - NAVD88
3. ALL CONSTRUCTION STAKING AND WORK DONE TO ESTABLISH SURVEY CONTROL SHALL BE DONE BY A LICENSED PROFESSIONAL SURVEYOR IN THE STATE OF UTAH.

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PRELIMINARY PLANS
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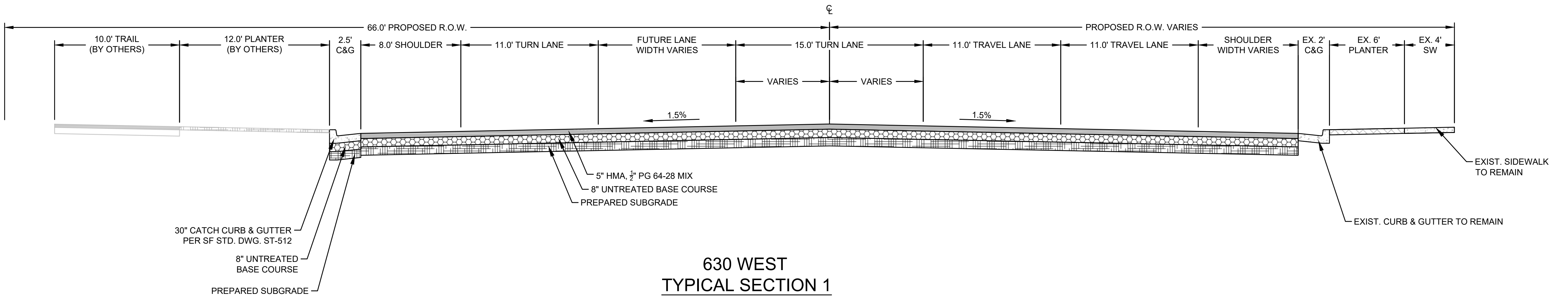
REVISION			
NO.	DESCRIPTION	BY APR.	DATE

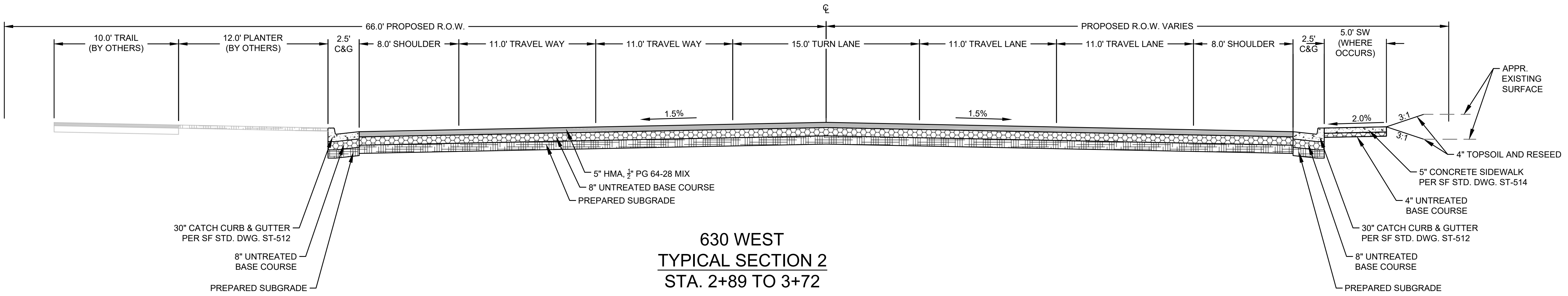
SURVEY CONTROL

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

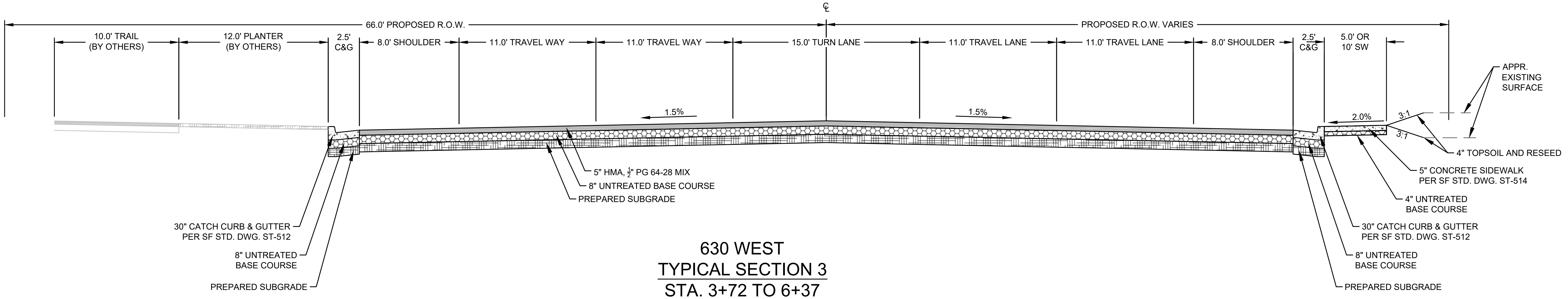
PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
SC01



630 WEST
TYPICAL SECTION 1
STA. 0+55 TO 2+89



630 WEST
TYPICAL SECTION 2
STA. 2+89 TO 3+72



630 WEST
TYPICAL SECTION 3
STA. 3+72 TO 6+37

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PRELIMINARY PLANS
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NO.	DESCRIPTION	BY	APR.	DATE

TYPICAL SECTIONS

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET TS01

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PLOT: 2023-01-23 04:50 PM
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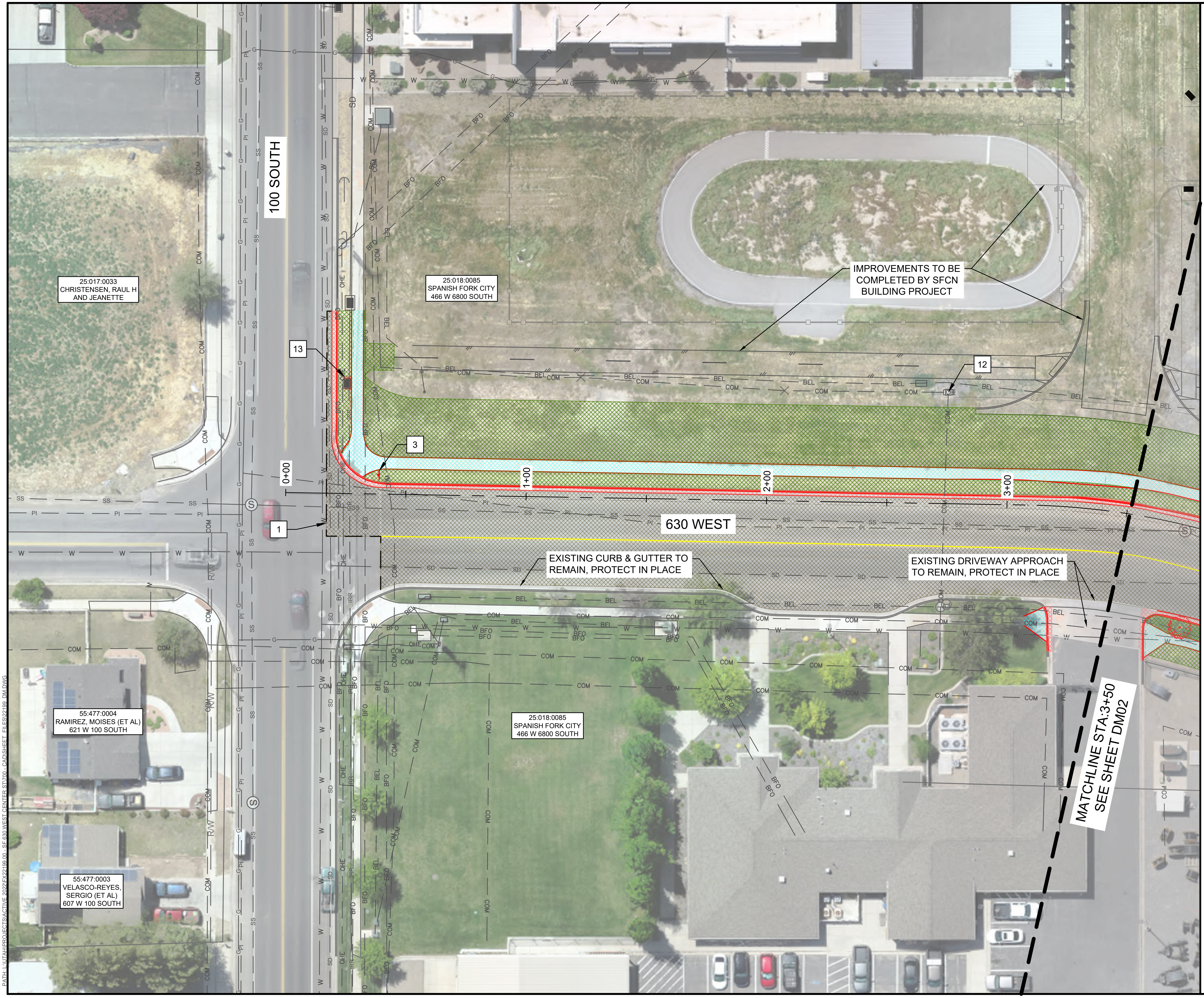

Know what's below.
Call before you dig.

0 10 20 40

SCALE: 1" = 40'

(SCALE ONLY VALID FOR 11" x 17" PAPER)

LEGEND

▨	REMOVE ASPHALT PAVEMENT
▨	REMOVE SIDEWALK
▨	REMOVE CONCRETE CURB AND GUTTER
▨	REMOVE LANDSCAPING/ VEGETATION

NOTES:

1. REMOVAL OF CONCRETE CURB AND GUTTER, CONCRETE SIDEWALK, AND CONCRETE DRIVEWAYS SHALL BE AT AN EXISTING JOINT OR A JOINT SAWED WITH A VERTICAL FACE AT LEAST 2 FEET FROM AN EXISTING JOINT.
2. ALL IMPROVEMENTS SHOWN IN COLOR ARE TO BE REMOVED, RELOCATED, OR REPLACED.

KEYNOTES

1	SAWCUT EXISTING ASPHALT (FULL DEPTH)
2	RELOCATE EXISTING SIGN
3	REMOVE EXISTING SIGN AND SALVAGE TO SPANISH FORK CITY
4	REMOVE EXISTING STORM DRAIN/ IRRIGATION PIPE
5	REMOVE EXISTING STORM DRAIN/IRRIGATION STRUCTURE
6	ADJUST EXISTING FIBER OPTIC VAULT TO GRADE (SEE UTILITY SHEETS)
7	RELOCATE COMMUNICATIONS EQUIPMENT (SEE UTILITY SHEETS)
8	RELOCATE ELECTRICAL EQUIPMENT (SEE UTILITY SHEETS)
9	REMOVE EXISTING STREETLIGHT AND SALVAGE TO CITY
10	REMOVE TREE
11	REMOVE FENCE
12	ADJUST EXISTING UTILITY TO FINISHED GRADE AND INSTALL CONC. COLLAR
13	REPLACE EXIST. STRUCTURE WITH NEW STRUCTURE (SEE UT SHEETS)
14	OBLITERATE EXISTING STRIPING WITH HIGH PRESSURE WATER SPRAY

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PRELIMINARY PLANS
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DEMOLITION PLAN

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
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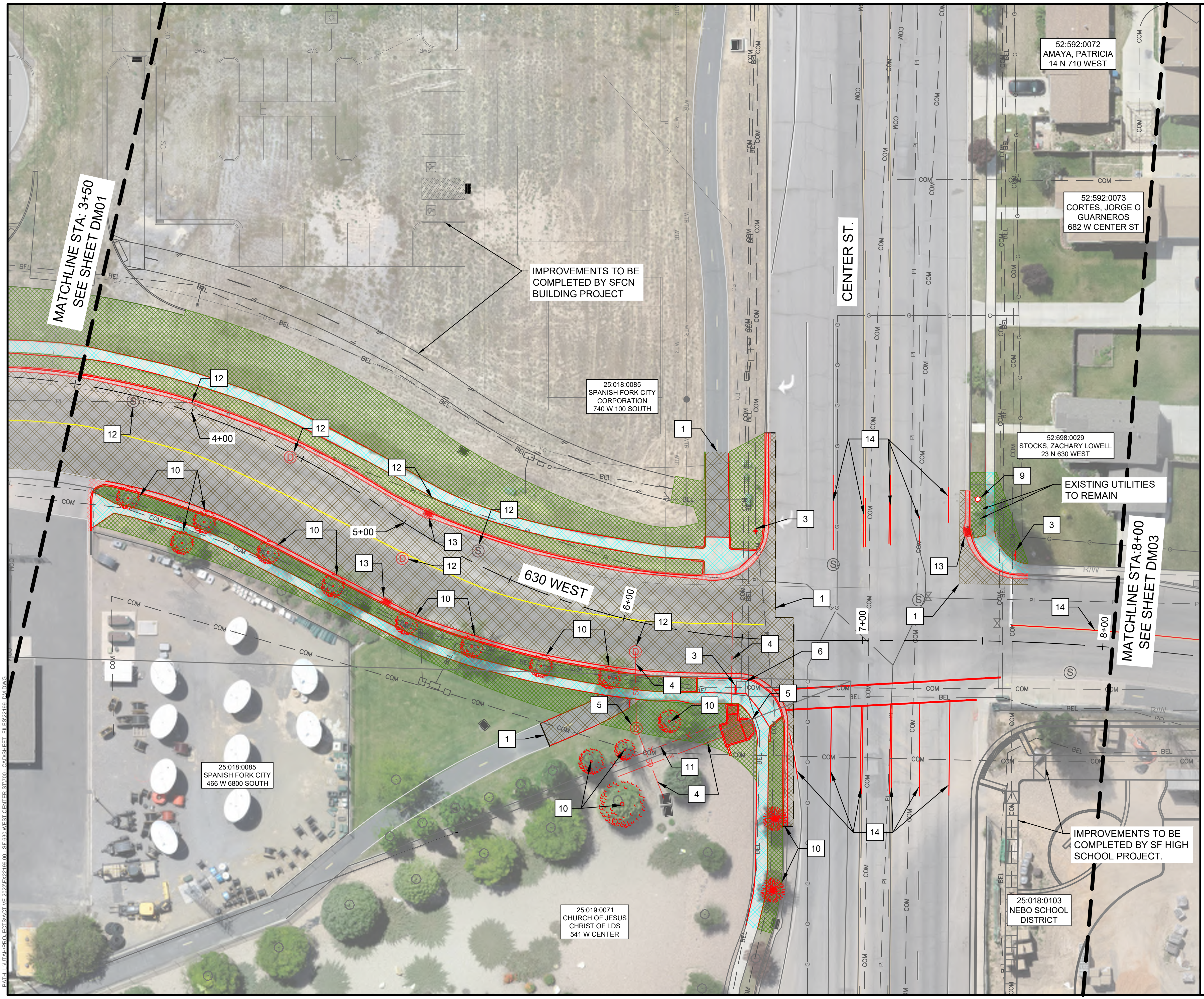

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Know what's below.
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0 10 20 40
SCALE: 1" = 40'
(SCALE ONLY VALID FOR 11" x 17" PAPER)

LEGEND

▨	REMOVE ASPHALT PAVEMENT
▨	REMOVE SIDEWALK
▨	REMOVE CONCRETE CURB AND GUTTER
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NOTES:
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DEMOLITION PLAN

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
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SHEET
DM02

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PLOT: 2023-01-23 04:51 PM
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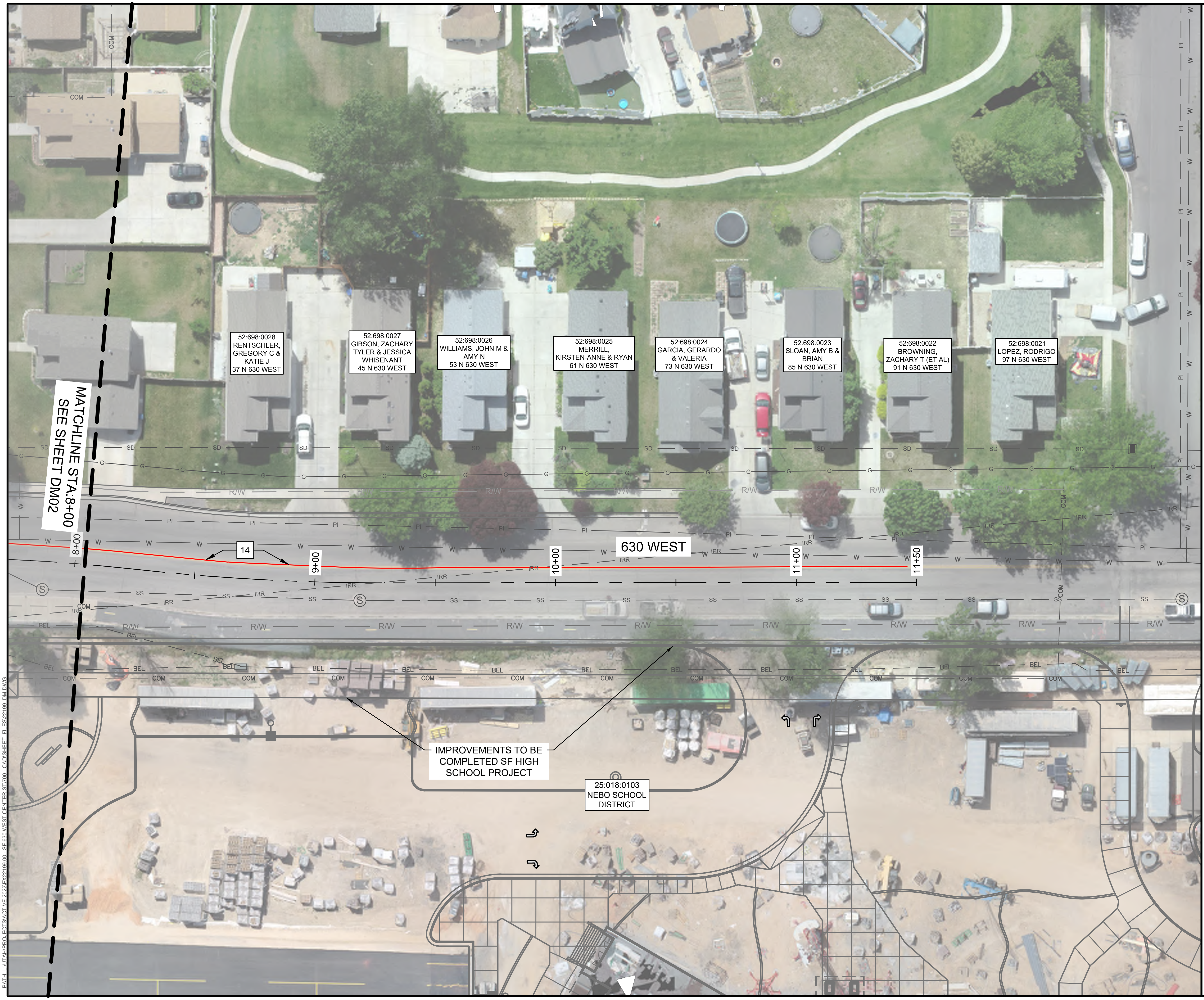

52:698:0028 RENTSCHLER, GREGORY C & KATIE J 37 N 630 WEST
52:698:0027 GIBSON, ZACHARY TYLER & JESSICA WHISENANT 45 N 630 WEST
52:698:0026 WILLIAMS, JOHN M & AMY N 53 N 630 WEST
52:698:0025 MERRILL, KIRSTEN-ANNE & RYAN 61 N 630 WEST
52:698:0024 GARCIA, GERARDO & VALERIA 73 N 630 WEST
52:698:0023 SLOAN, AMY B & BRIAN 85 N 630 WEST
52:698:0022 BROWNING, ZACHARY T (ET AL) 91 N 630 WEST
52:698:0021 LOPEZ, RODRIGO 97 N 630 WEST
MATCHLINE STA:8+00
SEE SHEET DM02
630 WEST
14
8+00
9+00
10+00
11+00
11+50
SD
G
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IMPROVEMENTS TO BE COMPLETED SF HIGH SCHOOL PROJECT
25:018:0103 NEBO SCHOOL DISTRICT

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DEMOLITION PLAN

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SPANISH FORK, UT

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SHEET
DM03

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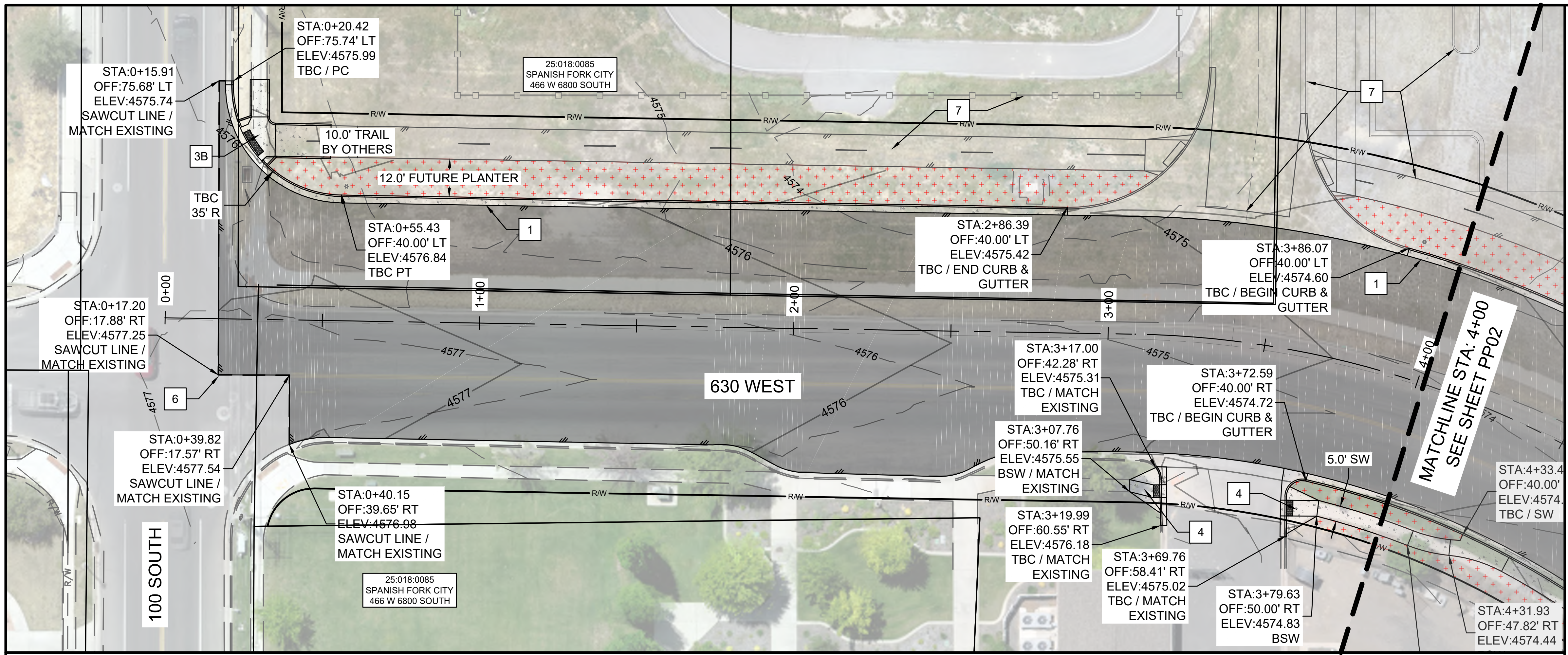

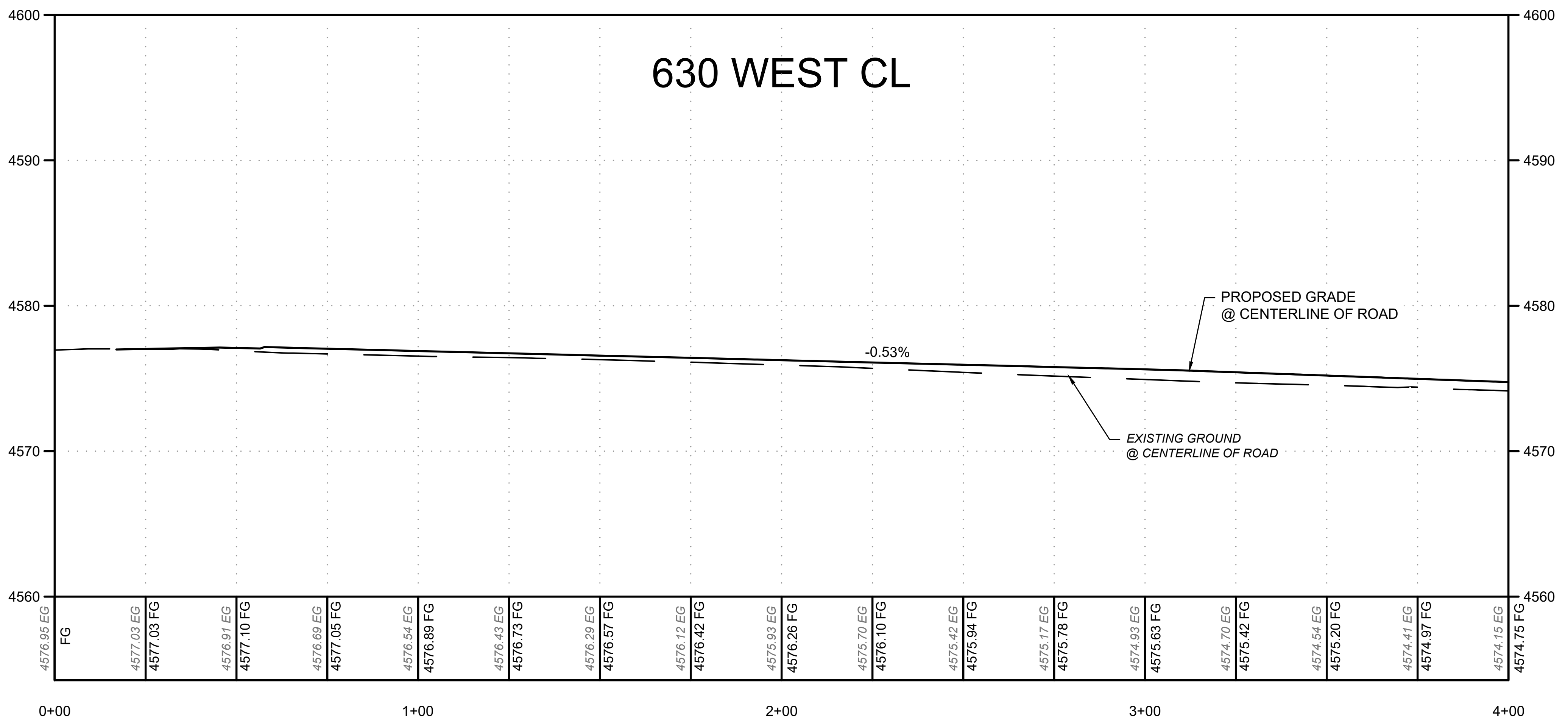

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LEGEND

▨	FULL DEPTH ASPHALT PAVEMENT SECTION (SEE SHEET TS01)
░	CONCRETE FLATWORK AND CURB & GUTTER
+	LANDSCAPE / VEGETATION RESTORATION

GENERAL NOTES:
REFER TO UT SHEETS FOR NEW UTILITIES AND TS SHEETS FOR TYPICAL SECTIONS

KEYNOTES:
ALL IMPROVEMENTS SHALL BE CONSTRUCTED PER SPANISH FORK CITY STANDARDS, UDOT STANDARDS, AND APWA STANDARD SPECIFICATIONS AND PLANS, LATEST EDITION, OR DETAILS AS NOTED BELOW.

1	30-INCH CURB AND GUTTER (SEE SF STD. DWG. ST-512)
2	CONCRETE SIDEWALK (SEE SF STD. DWG. ST-514)
3A	CONSTRUCT CORNER PEDESTRIAN RAMP (SEE SF STD. DWG. ST-518)
3B	CONSTRUCT CORNER PEDESTRIAN RAMP (SEE SF STD. DWG. ST-519)
3C	CONSTRUCT PEDESTRIAN RAMP (SEE SF STD. DWG. ST-520)
4	RECONSTRUCT PEDESTRIAN RAMP (SEE SF STD. DWG. ST-520)
5	CONSTRUCT TRAFFIC SIGNAL (SEE TS SHEETS)
6	SAWCUT FULL DEPTH
7	PROPOSED IMPROVEMENTS TO BE COMPLETED WITH SFCN BUILDING PROJECT
8	PROPOSED IMPROVEMENTS TO BE COMPLETED WITH SPANISH FORK HIGH SCHOOL PROJECT

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	REVISION		APR

630 WEST PLAN & PROFILE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
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PP01

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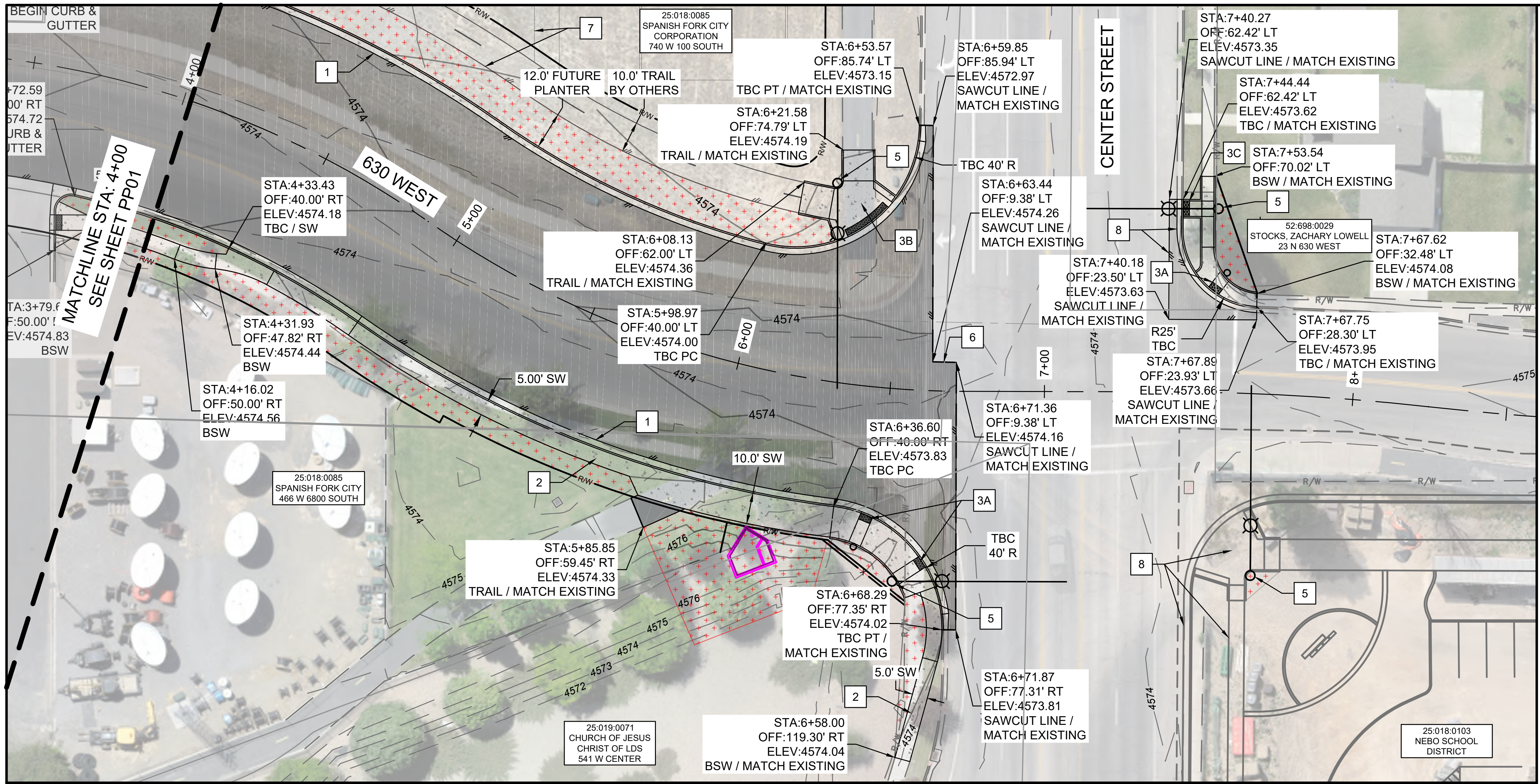

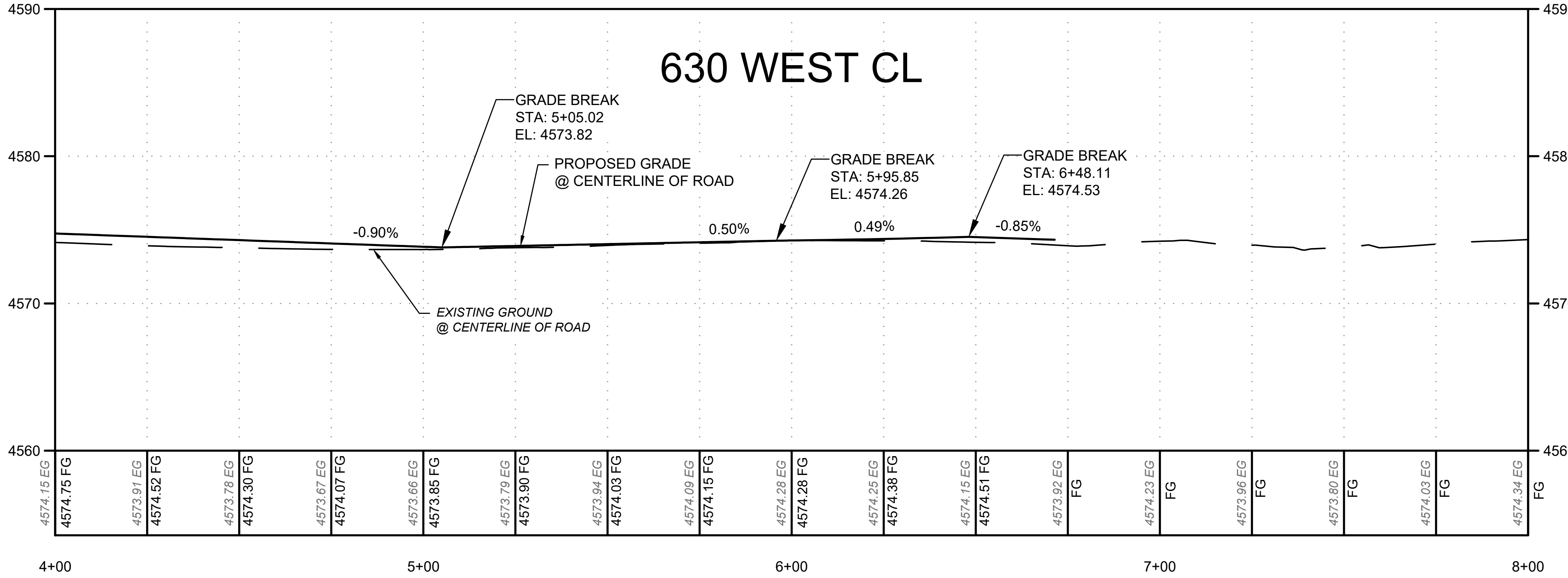

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LEGEND

▨	FULL DEPTH ASPHALT PAVEMENT SECTION (SEE SHEET TS01)
▨	CONCRETE FLATWORK AND CURB & GUTTER
▨	LANDSCAPE / VEGETATION RESTORATION

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5	CONSTRUCT TRAFFIC SIGNAL (SEE TS SHEETS)
6	SAWCUT FULL DEPTH
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PRELIMINARY PLANS
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630 WEST PLAN & PROFILE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
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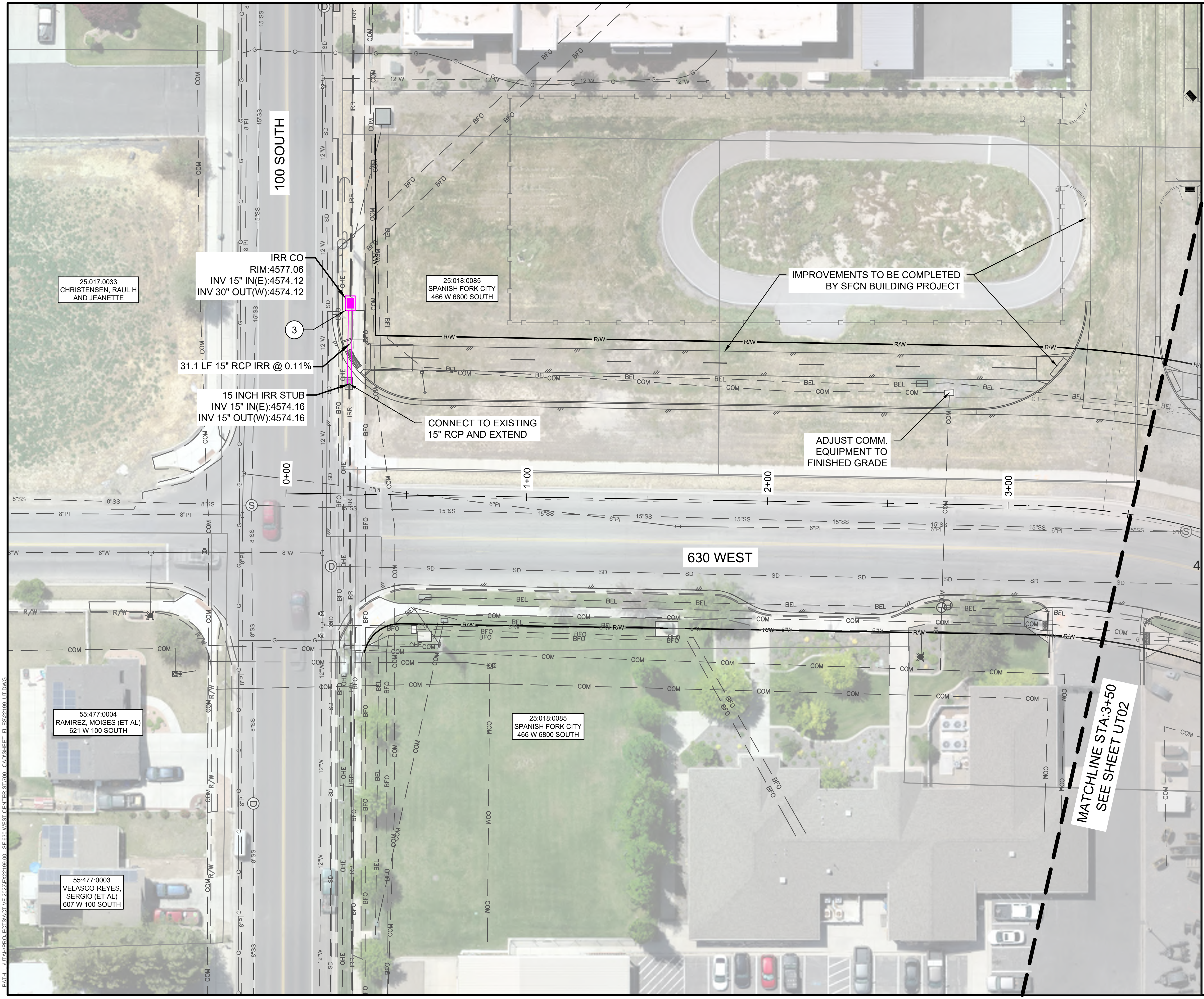

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NOTE:

1. ALL IMPROVEMENTS TO MEET SPANISH FORK OR APWA STANDARDS.
2. REFER TO SHEETS UPP01 AND UPP02 FOR PIPE PROFILES

KEYNOTES

① INSTALL 72-INCH PRECAST MANHOLE (SEE SF STD. DWG. SD-401)

② INSTALL 48-INCH PRECAST MANHOLE (SEE SF STD. DWG. SD-401)

③ INSTALL 5' x 3' CLEANOUT BOX (SEE SPANISH FORK STD. DWG SD-403)

④ INSTALL 60-INCH PRECAST MANHOLE (SEE SPANISH FORK STD. DWG SD-401)

⑤ CONSTRUCT STORMWATER INLET BOX (SEE SPANISH FORK STD. DWG. SD-404)

⑥ CONSTRUCT COMBINATION BOX (SEE APWA PLAN 316)

⑦ RECONSTRUCT IRRIGATION DIVERSION STRUCTURE (SEE DETAIL SHEETS)

⑧ RELOCATED COMM. EQUIPMENT, COORDINATE WITH PROVIDER

⑨ RELOCATED ELECTRICAL EQUIPMENT, COORDINATE WITH SF POWER & LIGHT

⑩ ADJUST VALVE BOX TO GRADE WITH COLLAR (SEE SF STD. DWG. W-209)

⑪ ADJUST MANHOLE FRAME TO GRADE SEWER MANHOLES ARE LINED AND WILL REQUIRE LINED GRADE RINGS (SEE APWA PLAN 360.1)

⑫ CONTRACTOR TO PERFORM UTILITY TEST HOLE PRIOR TO UTIL. WORK

⑬ PIPE TRENCH AND BACKFILL (SEE APWA PLAN 381 & 382)

⑭ ADJUST EXIST. FIBER OPTIC VAULT TO GRADE AND INSTALL TRAFFIC RATED LID PROTECT ALL COMMUNICATION LINES IN PLACE, THERE ARE PENALTIES FOR DAMAGING THE FIBER. ANY EXCAVATION AROUND THIS VAULT REQUIRES SFCN MONITORING DURING THE WORK. CONTACT ZACK HENDRICKSON AT 801-864-3233.

⑮ RECONNECT PI DRAIN LINE TO NEW MANHOLE

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UTILITY PLAN

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
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SHEET
UT01

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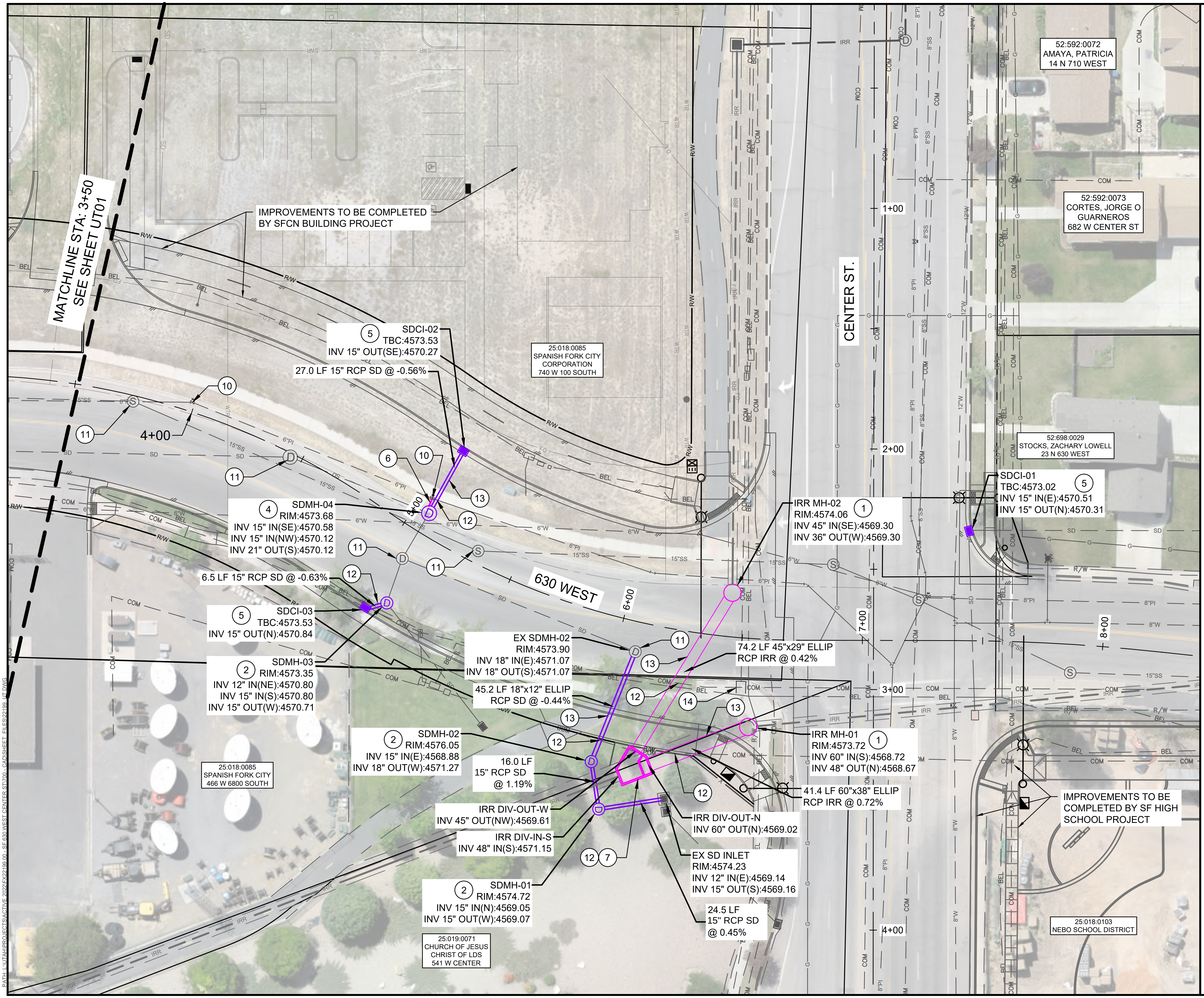

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④ INSTALL 60-INCH PRECAST MANHOLE (SEE SPANISH FORK STD. DWG SD-401)

⑤ CONSTRUCT STORMWATER INLET BOX (SEE SPANISH FORK STD. DWG. SD-404)

⑥ RECONNECT PI DRAIN LINE TO NEW MANHOLE

⑦ RECONSTRUCT IRRIGATION DIVERSION STRUCTURE (SEE DETAIL SHEETS)

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UTILITY PLAN

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SPANISH FORK, UT

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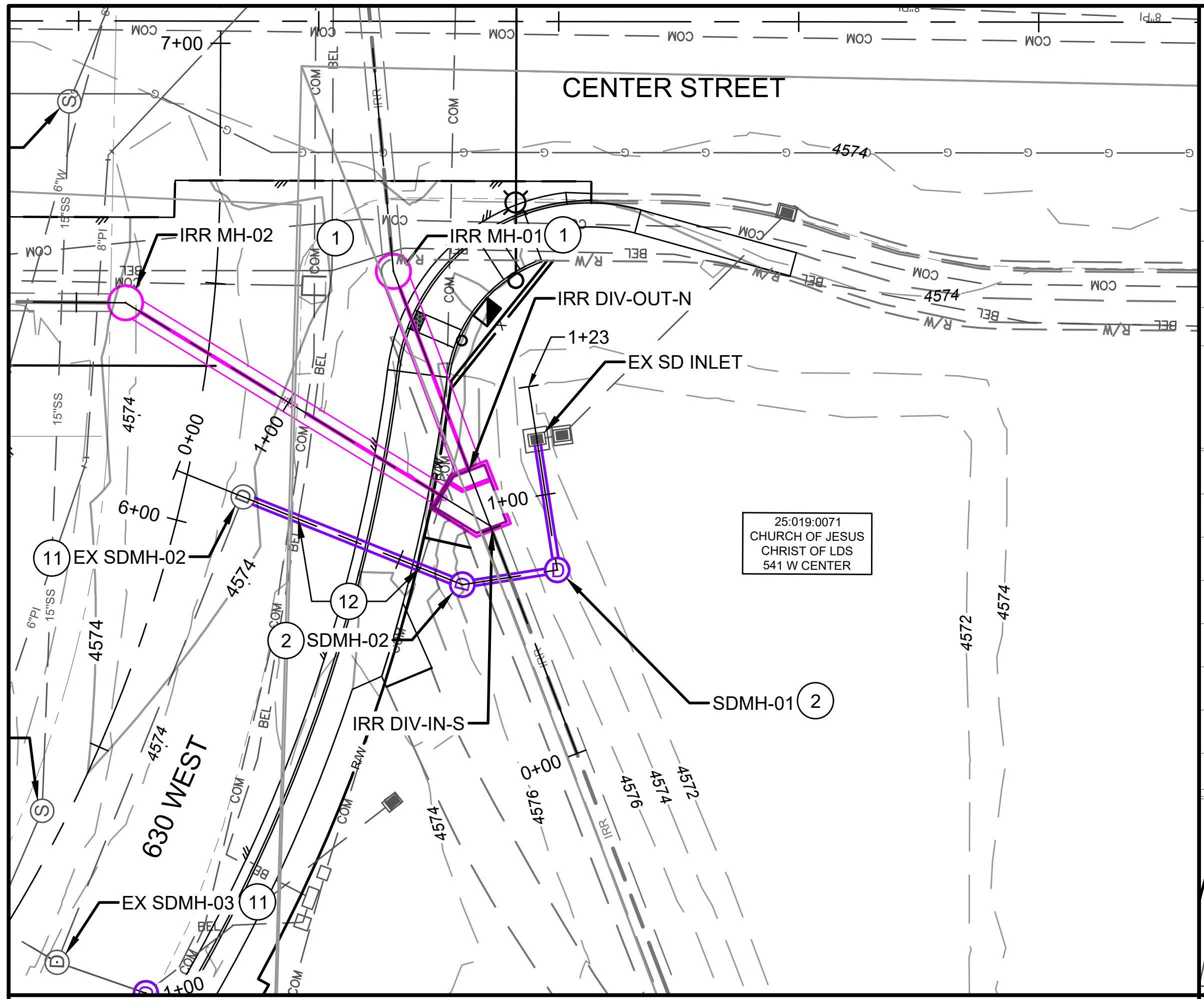

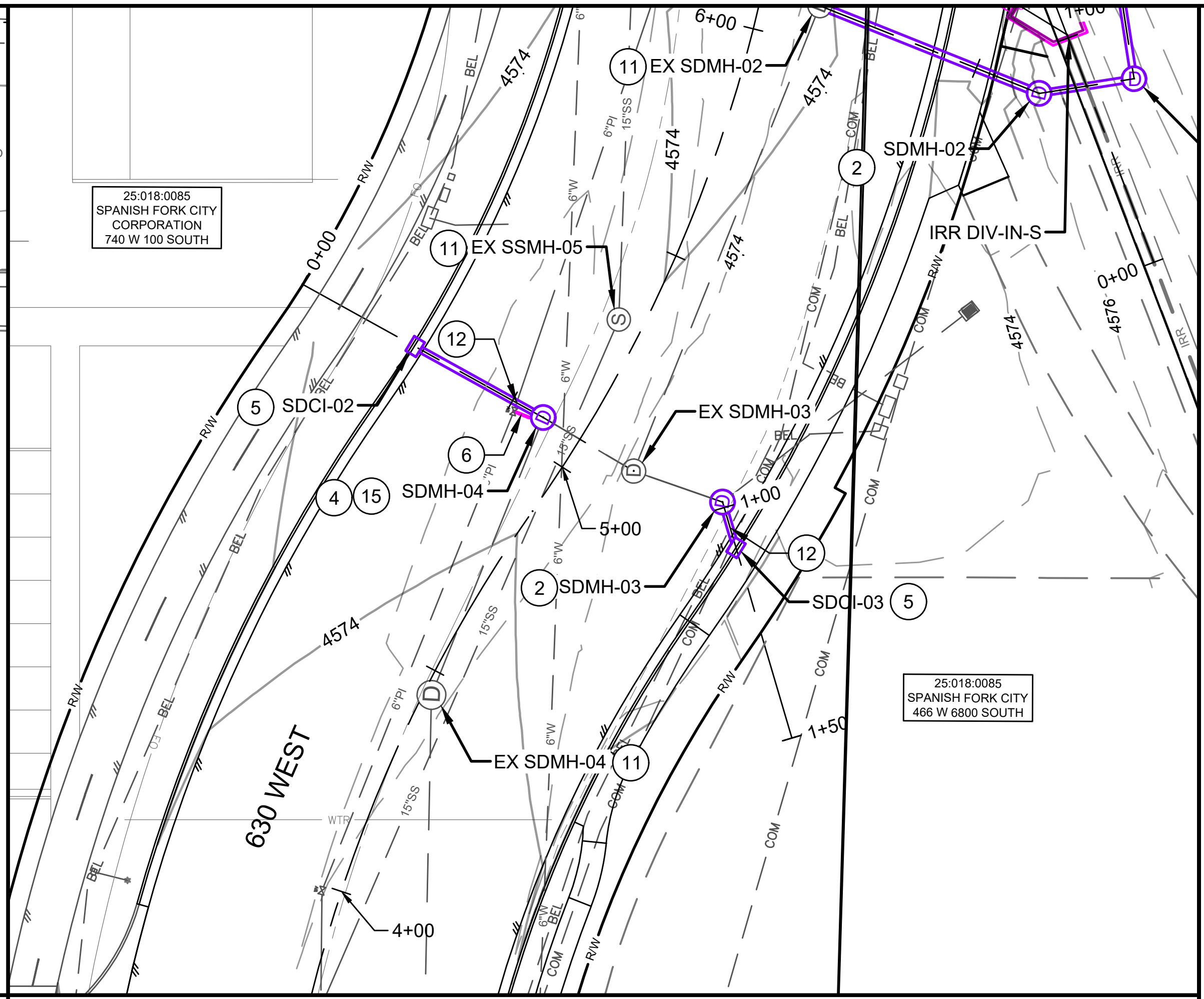

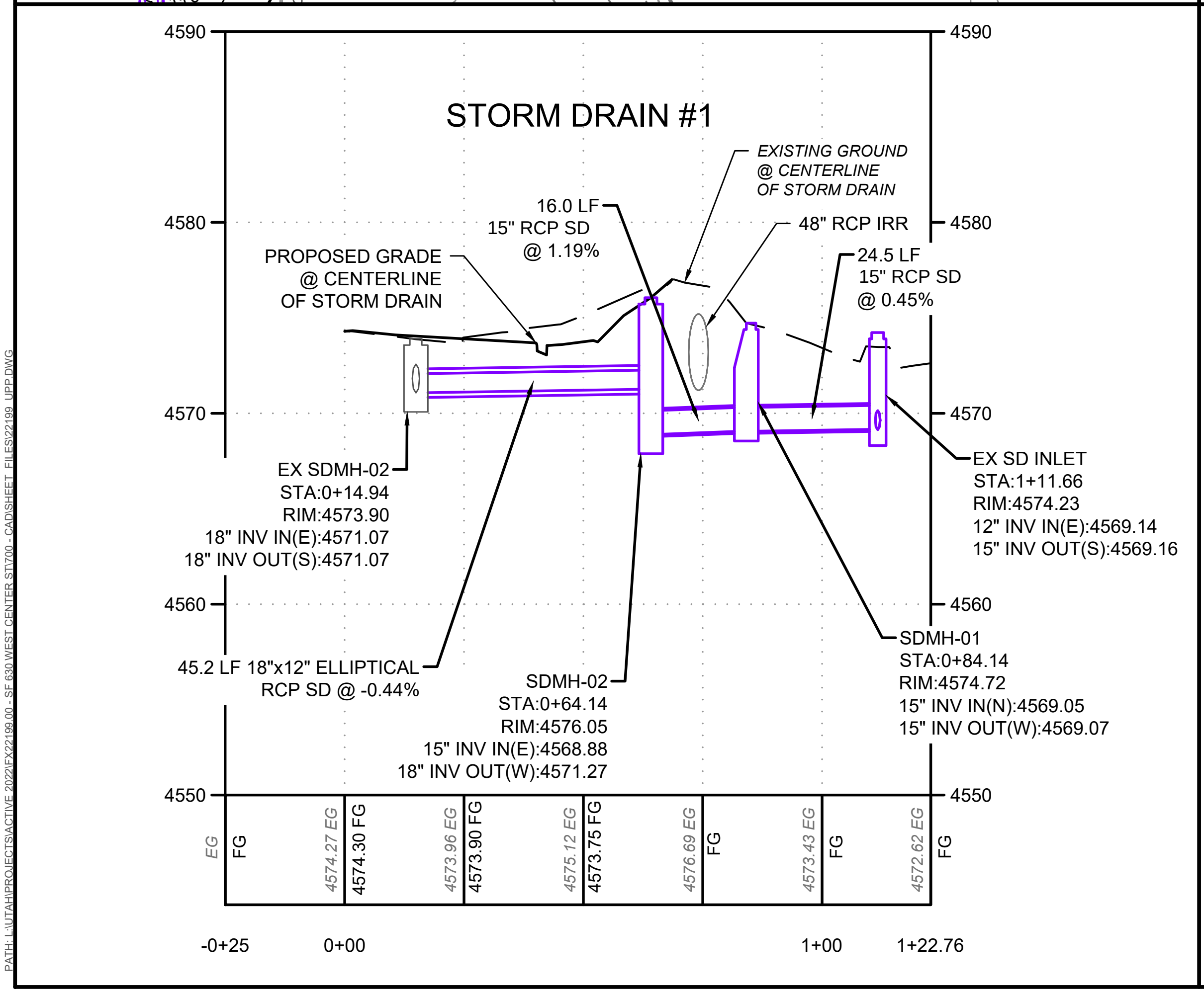

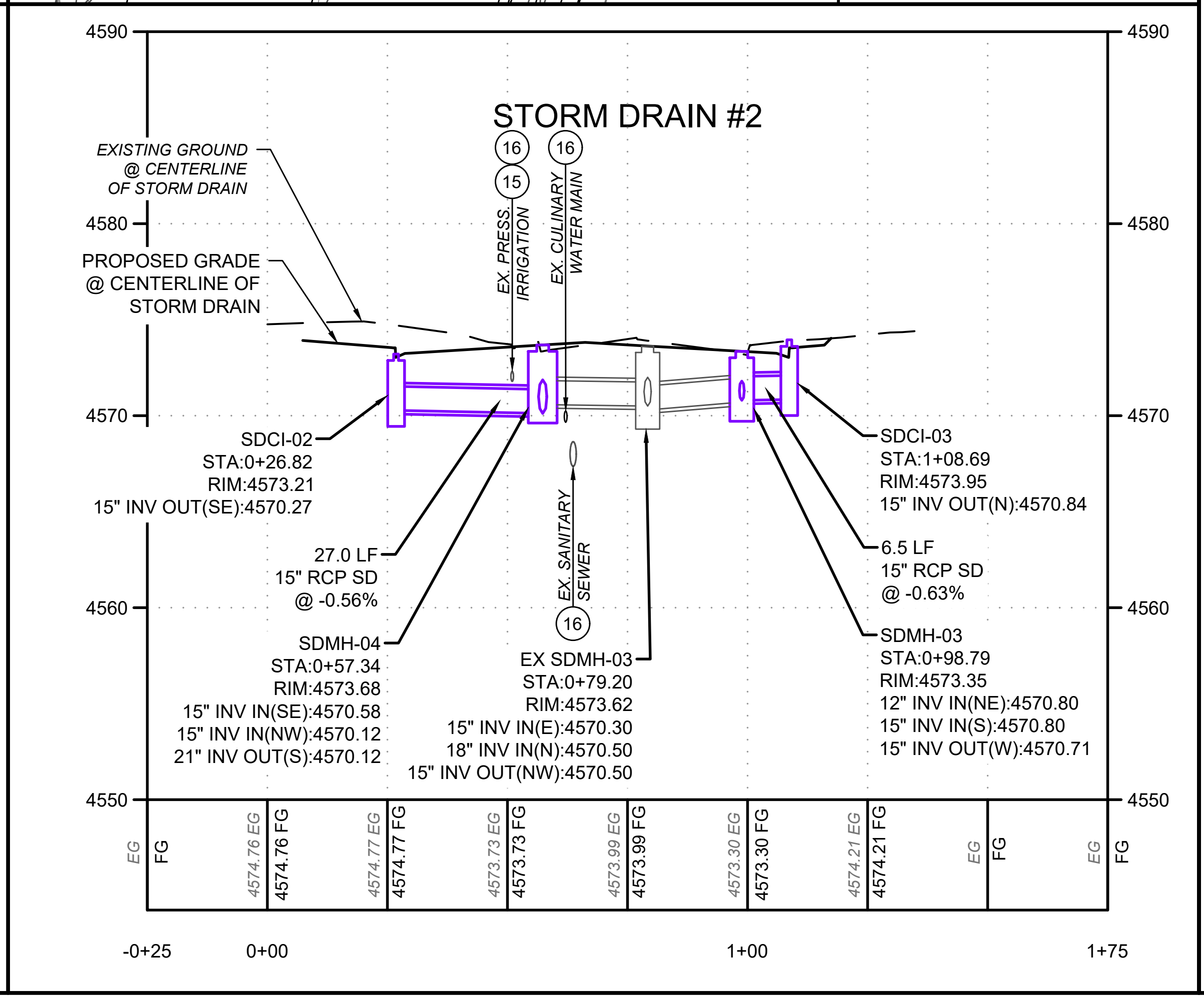

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⑧ RELOCATED COMM. EQUIPMENT, COORDINATE WITH PROVIDER

⑨ RELOCATED ELECTRICAL EQUIPMENT, COORDINATE WITH SF POWER & LIGHT

⑩ ADJUST VALVE BOX TO GRADE WITH COLLAR (SEE SF STD. DWG. W-209)

⑪ ADJUST MANHOLE FRAME TO GRADE SEWER MANHOLES ARE LINED AND WILL REQUIRE LINED GRADE RINGS (SEE APWA PLAN 360.1)

⑫ CONTRACTOR TO PERFORM UTILITY TEST HOLE PRIOR TO UTIL. WORK

⑬ PIPE TRENCH AND BACKFILL (SEE APWA PLAN 381 & 382)

⑭ ADJUST EXIST. FIBER OPTIC VAULT TO GRADE AND INSTALL TRAFFIC RATED LID PROTECT ALL COMMUNICATION LINES IN PLACE, THERE ARE PENALTIES FOR DAMAGING THE FIBER. ANY EXCAVATION AROUND THIS VAULT REQUIRES SFCN MONITORING DURING THE WORK. CONTACT ZACK HENDRICKSON AT 801-864-3233.

⑮ POTENTIAL UTILITY CONFLICT, COORD. WITH UTILITY OWNER FOR RELOCATION

⑯ APPROXIMATE UTILITY LOCATION, CONTRACTOR TO FIELD VERIFY

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

PRELIMINARY PLANS
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NO.	DESCRIPTION	BY	APR.	DATE

UTILITY PLAN & PROFILE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET UPP01

13 OF 34

PLOT: 2023-01-23 04:53 PM
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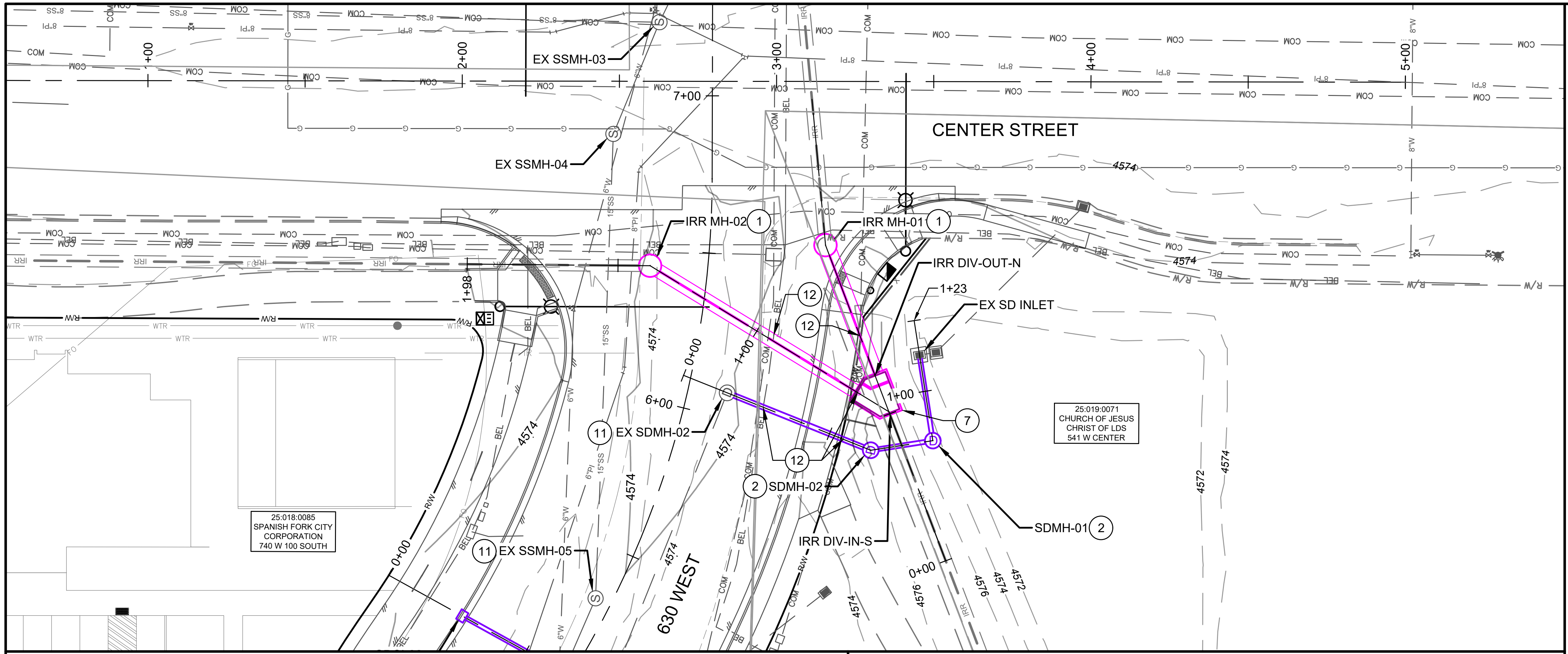
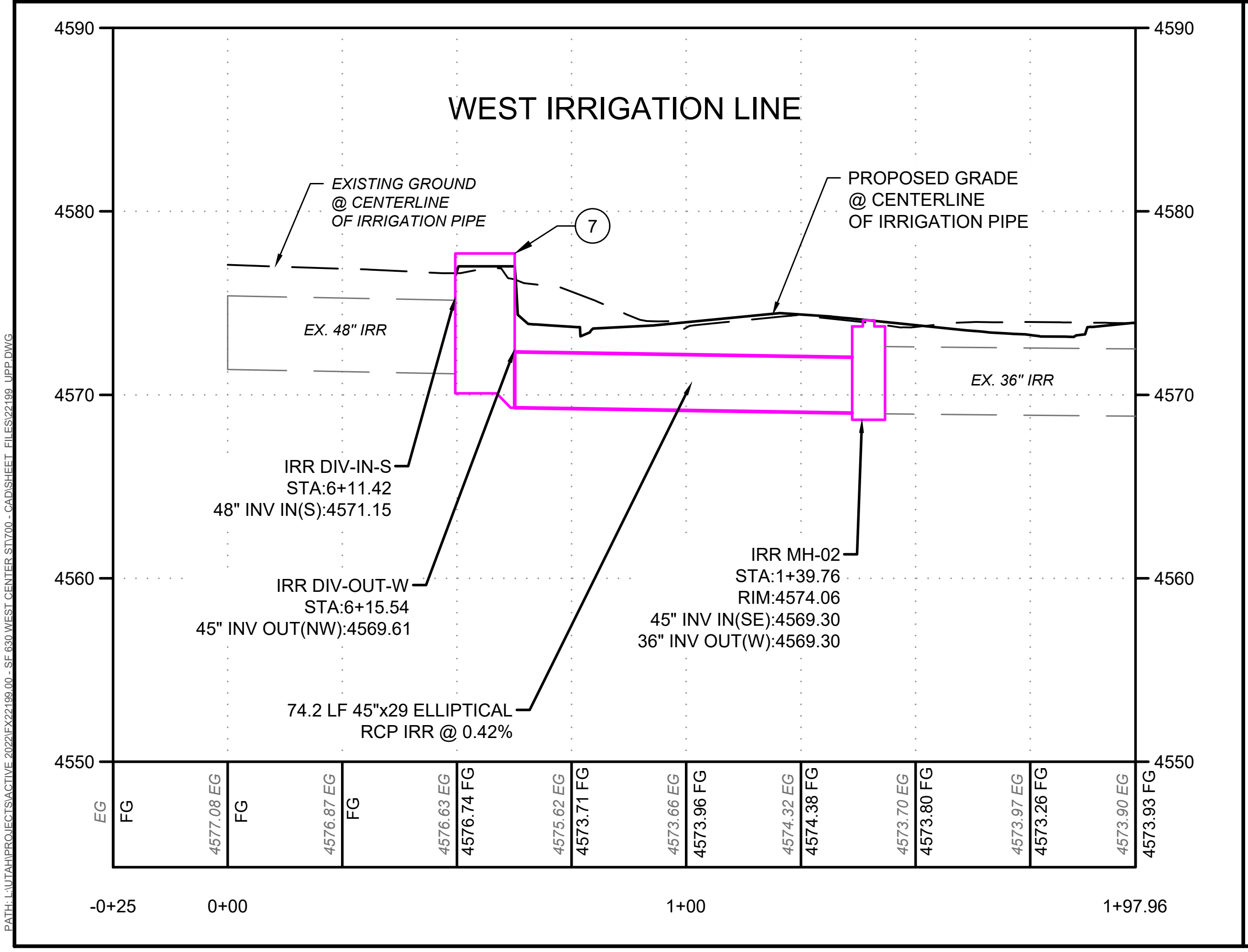
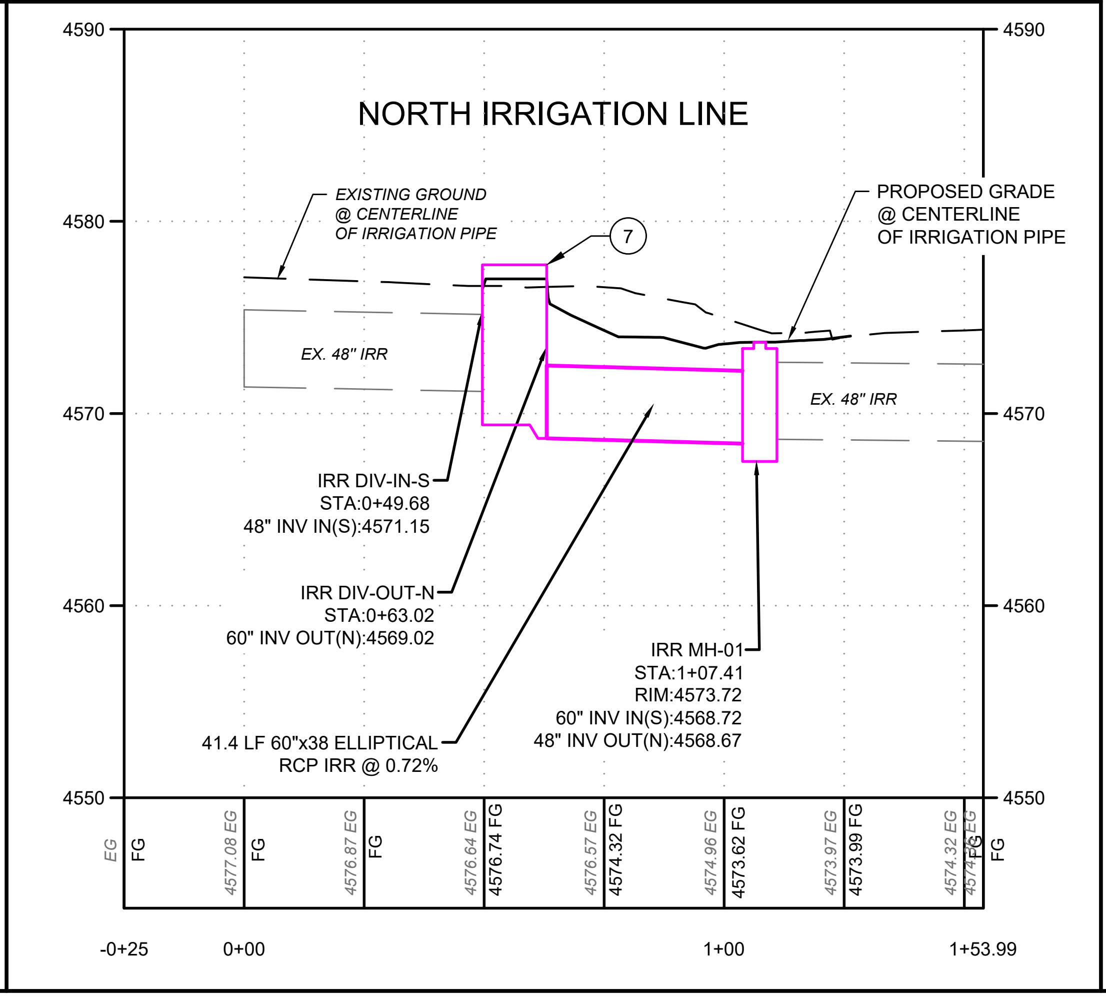




WEST IRRIGATION LINE



NORTH IRRIGATION LINE

0 10 20 40

SCALE: 1" = 40'

(SCALE ONLY VALID FOR 11" x 17" PAPER)

Know what's below. Call before you dig.

NOTE:
1. ALL IMPROVEMENTS TO MEET SPANISH FORK OR APWA STANDARDS.
2. REFER TO SHEETS UT01 AND UT02 FOR ADDITIONAL INFORMATION

KEYNOTES

1	INSTALL 72-INCH PRECAST MANHOLE (SEE SF STD. DWG. SD-401)
2	INSTALL 48-INCH PRECAST MANHOLE (SEE SF STD. DWG. SD-401)
3	INSTALL 5' X 3' CLEANOUT BOX (SEE SPANISH FORK STD. DWG SD-403)
4	INSTALL 60-INCH PRECAST MANHOLE (SEE SPANISH FORK STD. DWG SD-401)
5	CONSTRUCT STORMWATER INLET BOX (SEE SPANISH FORK STD. DWG. SD-404)
6	RECONNECT PI DRAIN LINE TO NEW MANHOLE
7	RECONSTRUCT IRRIGATION DIVERSION STRUCTURE (SEE DETAIL SHEETS)
8	RELOCATED COMM. EQUIPMENT, COORDINATE WITH PROVIDER
9	RELOCATED ELECTRICAL EQUIPMENT, COORDINATE WITH SF POWER & LIGHT
10	ADJUST VALVE BOX TO GRADE WITH COLLAR (SEE SF STD. DWG. W-209)
11	ADJUST MANHOLE FRAME TO GRADE SEWER MANHOLES ARE LINED AND WILL REQUIRE LINED GRADE RINGS (SEE APWA PLAN 360.1)
12	CONTRACTOR TO PERFORM UTILITY TEST HOLE PRIOR TO UTIL. WORK
13	PIPE TRENCH AND BACKFILL (SEE APWA PLAN 381 & 382)
14	ADJUST EXIST. FIBER OPTIC VAULT TO GRADE AND INSTALL TRAFFIC RATED LID PROTECT ALL COMMUNICATION LINES IN PLACE, THERE ARE PENALTIES FOR DAMAGING THE FIBER. ANY EXCAVATION AROUND THIS VAULT REQUIRES SFCN MONITORING DURING THE WORK. CONTACT ZACK HENDRICKSON AT 801-864-3233.
15	POTENTIAL UTILITY CONFLICT, COORD. WITH UTILITY OWNER FOR RELOCATION
16	APPROXIMATE UTILITY LOCATION, CONTRACTOR TO FIELD VERIFY

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UTILITY PLAN & PROFILE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
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SHEET UPP02

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PLOT: 2023-01-23 04:53 PM
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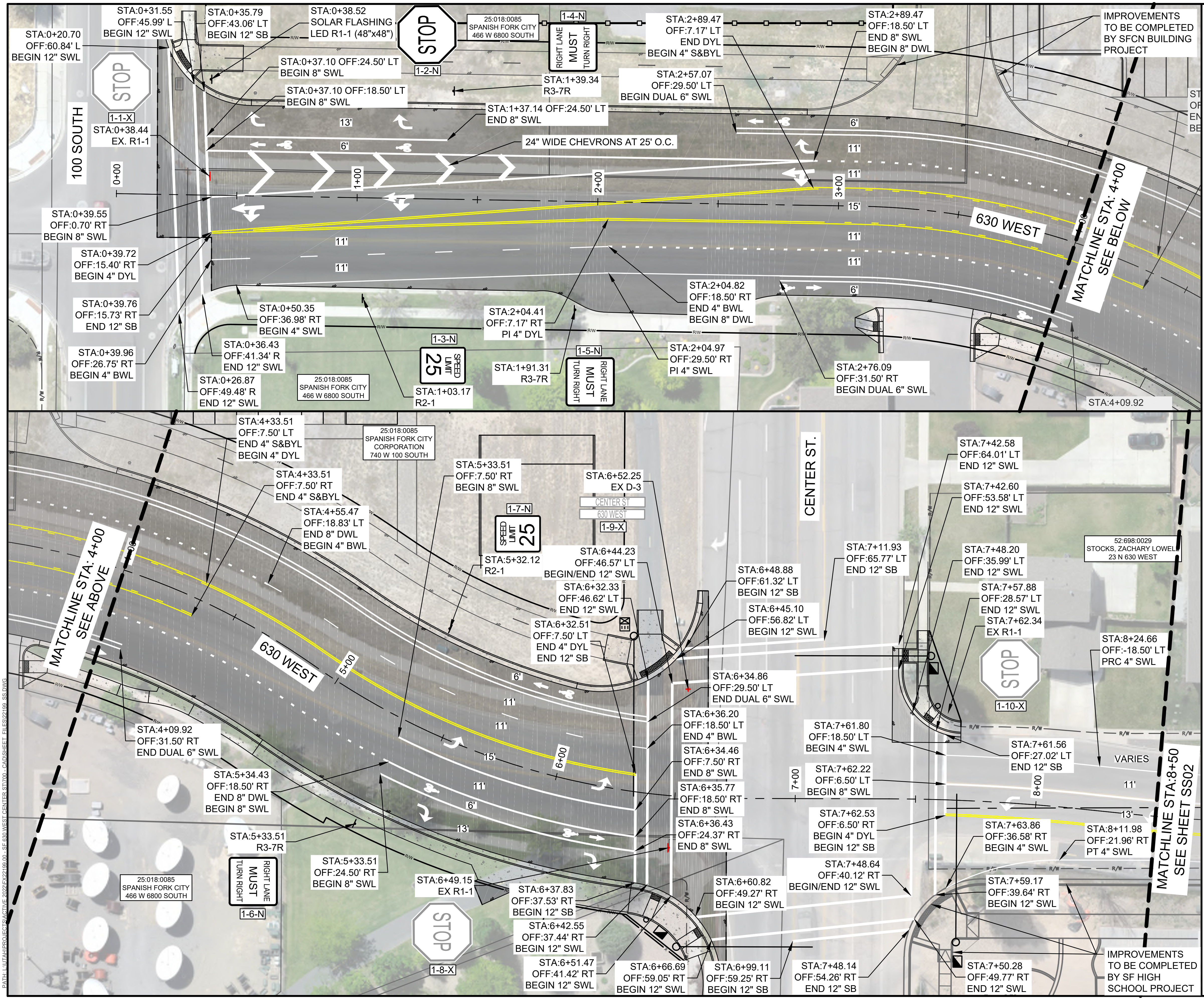
STA:0+31.55 OFF:45.99' L BEGIN 12" SWL
STA:0+35.79 OFF:43.06' LT BEGIN 12" SB
STA:0+38.52 SOLAR FLASHING LED R1-1 (48"x48")
STOP
25:018:0085 SPANISH FORK CITY 466 W 6800 SOUTH
1-4-N
RIGHT LANE MUST TURN RIGHT
1-2-N
STA:2+89.47 OFF:7.17' LT END DYL BEGIN 4" S&BYL
STA:2+89.47 OFF:18.50' LT END 8" SWL BEGIN 8" DWL
IMPROVEMENTS TO BE COMPLETED BY SFCN BUILDING PROJECT
STA:0+20.70 OFF:60.84' L BEGIN 12" SWL
STA:0+37.10 OFF:24.50' LT BEGIN 8" SWL
STA:1+39.34 R3-7R
STA:2+57.07 OFF:29.50' LT BEGIN DUAL 6" SWL
STOP
STA:0+37.10 OFF:18.50' LT BEGIN 8" SWL
STA:1+37.14 OFF:24.50' LT END 8" SWL
1-1-X
STA:0+38.44 EX. R1-1
100 SOUTH
13'
6'
24" WIDE CHEVRONS AT 25' O.C.
6'
11'
11'
15'
11'
11'
6'
0+00
1+00
2+00
3+00
630 WEST
MATCHLINE STA: 4+00 SEE BELOW
STA:0+39.55 OFF:0.70' RT BEGIN 8" SWL
11'
11'
STA:0+39.72 OFF:15.40' RT BEGIN 4" DYL
STA:0+39.76 OFF:15.73' RT END 12" SB
STA:0+39.96 OFF:26.75' RT BEGIN 4" BWL
STA:0+50.35 OFF:36.98' RT BEGIN 4" SWL
STA:0+36.43 OFF:41.34' R END 12" SWL
STA:0+26.87 OFF:49.48' R END 12" SWL
25:018:0085 SPANISH FORK CITY 466 W 6800 SOUTH
1-3-N
SPEED LIMIT 25
STA:1+03.17 R2-1
STA:2+04.41 OFF:7.17' RT PI 4" DYL
STA:1+91.31 R3-7R
1-5-N
RIGHT LANE MUST TURN RIGHT
STA:2+04.82 OFF:18.50' RT END 4" BWL BEGIN 8" DWL
STA:2+04.97 OFF:29.50' RT PI 4" SWL
STA:2+76.09 OFF:31.50' RT BEGIN DUAL 6" SWL
STA:4+09.92
R/W
STA:4+33.51 OFF:7.50' LT END 4" S&BYL BEGIN 4" DYL
25:018:0085 SPANISH FORK CITY CORPORATION 740 W 100 SOUTH
STA:4+33.51 OFF:7.50' RT END 4" S&BYL
STA:5+33.51 OFF:7.50' RT BEGIN 8" SWL
STA:6+52.25 EX D-3
CENTER ST
630 WEST
1-9-X
CENTER ST.
STA:7+42.58 OFF:64.01' LT END 12" SWL
STA:7+42.60 OFF:53.58' LT END 12" SWL
STA:4+55.47 OFF:18.83' LT END 8" DWL BEGIN 4" BWL
1-7-N
SPEED LIMIT 25
STA:5+32.12 R2-1
STA:6+44.23 OFF:46.57' LT BEGIN/END 12" SWL
STA:6+32.33 OFF:46.62' LT END 12" SWL
STA:7+11.93 OFF:65.77' LT END 12" SB
STA:6+48.88 OFF:61.32' LT BEGIN 12" SB
STA:6+45.10 OFF:56.82' LT BEGIN 12" SWL
52:698:0029 STOCKS, ZACHARY LOWELL 23 N 630 WEST
STA:7+48.20 OFF:35.99' LT END 12" SWL
STA:7+57.88 OFF:28.57' LT END 12" SWL
STA:7+62.34 EX R1-1
STA:8+24.66 OFF:-18.50' LT PRC 4" SWL
STOP
1-10-X
MATCHLINE STA: 4+00 SEE ABOVE
630 WEST
5+00
STA:6+32.51 OFF:7.50' LT END 4" DYL END 12" SB
6'
STA:6+34.86 OFF:29.50' LT END DUAL 6" SWL
11'
11'
STA:6+36.20 OFF:18.50' LT END 4" BWL
STA:7+61.80 OFF:18.50' LT BEGIN 4" SWL
STA:7+61.56 OFF:27.02' LT END 12" SB
VARIES
STA:4+09.92 OFF:31.50' RT END DUAL 6" SWL
15'
6+00
STA:6+34.46 OFF:7.50' RT END 8" SWL
7+00
STA:7+62.22 OFF:6.50' LT BEGIN 8" SWL
8+00
11'
STA:5+34.43 OFF:18.50' RT END 8" DWL BEGIN 8" SWL
11'
6'
STA:6+35.77 OFF:18.50' RT END 8" SWL
13'
13'
STA:7+62.53 OFF:6.50' RT BEGIN 4" DYL BEGIN 12" SB
STA:7+63.86 OFF:36.58' RT BEGIN 4" SWL
STA:8+11.98 OFF:21.96' RT PT 4" SWL
MATCHLINE STA:8+50 SEE SHEET SS02
STA:5+33.51 R3-7R
STA:6+36.43 OFF:24.37' RT END 8" SWL
25:018:0085 SPANISH FORK CITY 466 W 6800 SOUTH
RIGHT LANE MUST TURN RIGHT
1-6-N
STA:5+33.51 OFF:24.50' RT BEGIN 8" SWL
STA:6+49.15 EX R1-1
STA:6+37.83 OFF:37.53' RT BEGIN 12" SB
STA:6+60.82 OFF:49.27' RT BEGIN 12" SWL
STA:7+48.64 OFF:40.12' RT BEGIN/END 12" SWL
STA:7+59.17 OFF:39.64' RT BEGIN 12" SWL
STOP
1-8-X
STA:6+42.55 OFF:37.44' RT BEGIN 12" SWL
STA:6+51.47 OFF:41.42' RT BEGIN 12" SWL
STA:6+66.69 OFF:59.05' RT BEGIN 12" SWL
STA:6+99.11 OFF:59.25' RT BEGIN 12" SB
STA:7+48.14 OFF:54.26' RT END 12" SB
STA:7+50.28 OFF:49.77' RT END 12" SWL
IMPROVEMENTS TO BE COMPLETED BY SF HIGH SCHOOL PROJECT
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N

811 Know what's below. Call before you dig.

0 10 20 40

SCALE: 1" = 40'

(SCALE ONLY VALID FOR 11" x 17" PAPER)

NOTES:

1. REFER TO APWA, UDOT, AND UTAH MUTCD FOR SIGN PLACEMENT AND PAVEMENT MARKINGS.
2. ALL SIGNS AND BASES SHALL MEET SPANISH FORK & UDOT STANDARDS.
3. OBLITERATE PAVEMENT MARKINGS WITH HIGH PRESSURE WATER SPRAY.
4. SEE TRAFFIC SIGNAL PLANS (SG SHEETS) FOR SIGNAGE ON SIGNAL POLES AND MAST ARMS.

ABBREVIATIONS

SWL	SOLID WHITE LINE
DWL	DOTTED WHITE LINE
BWL	BROKEN WHITE LINE
BLB	BIKE LANE BUFFER
S&BYL	SOLID AND BROKEN YELLOW LINE
DYL	DOUBLE YELLOW LINE
SB	STOP BAR
SYL	SOLID YELLOW LINE
N	NEW SIGN
X	REMOVE & SALVAGE SIGN
R	RELOCATE SIGN
U	EXISTING SIGN TO REMAIN
SLP	INSTALL SLIP BASE PER SPANISH FORK & UDOT STANDARDS

3-1-R
SS SHEET NO.
ABBREVIATION
SIGN NO.

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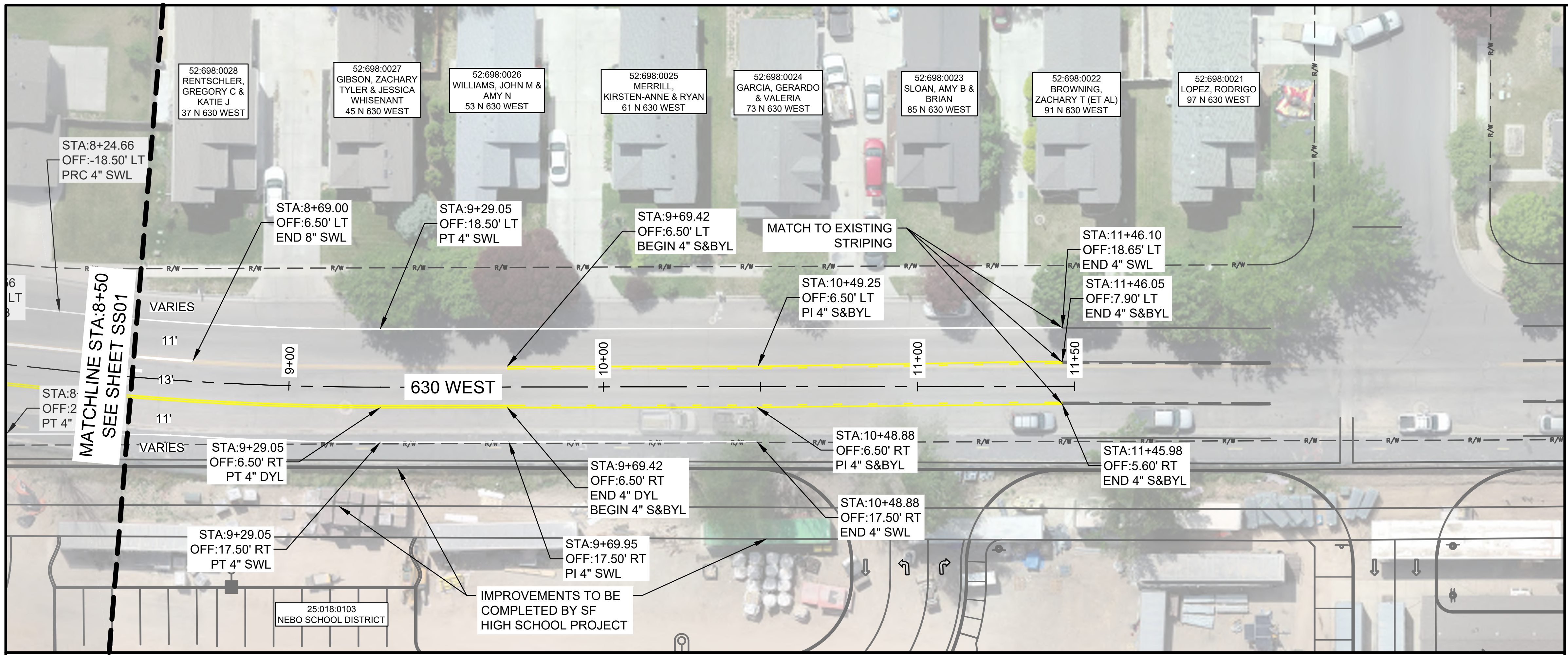
SIGNAGE & STRIPING

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
SS01



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ABBREVIATIONS

SWL	SOLID WHITE LINE
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3-1-R
SS SHEET NO.
ABBREVIATION
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SIGNAGE & STRIPING

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
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SHEET
SS02

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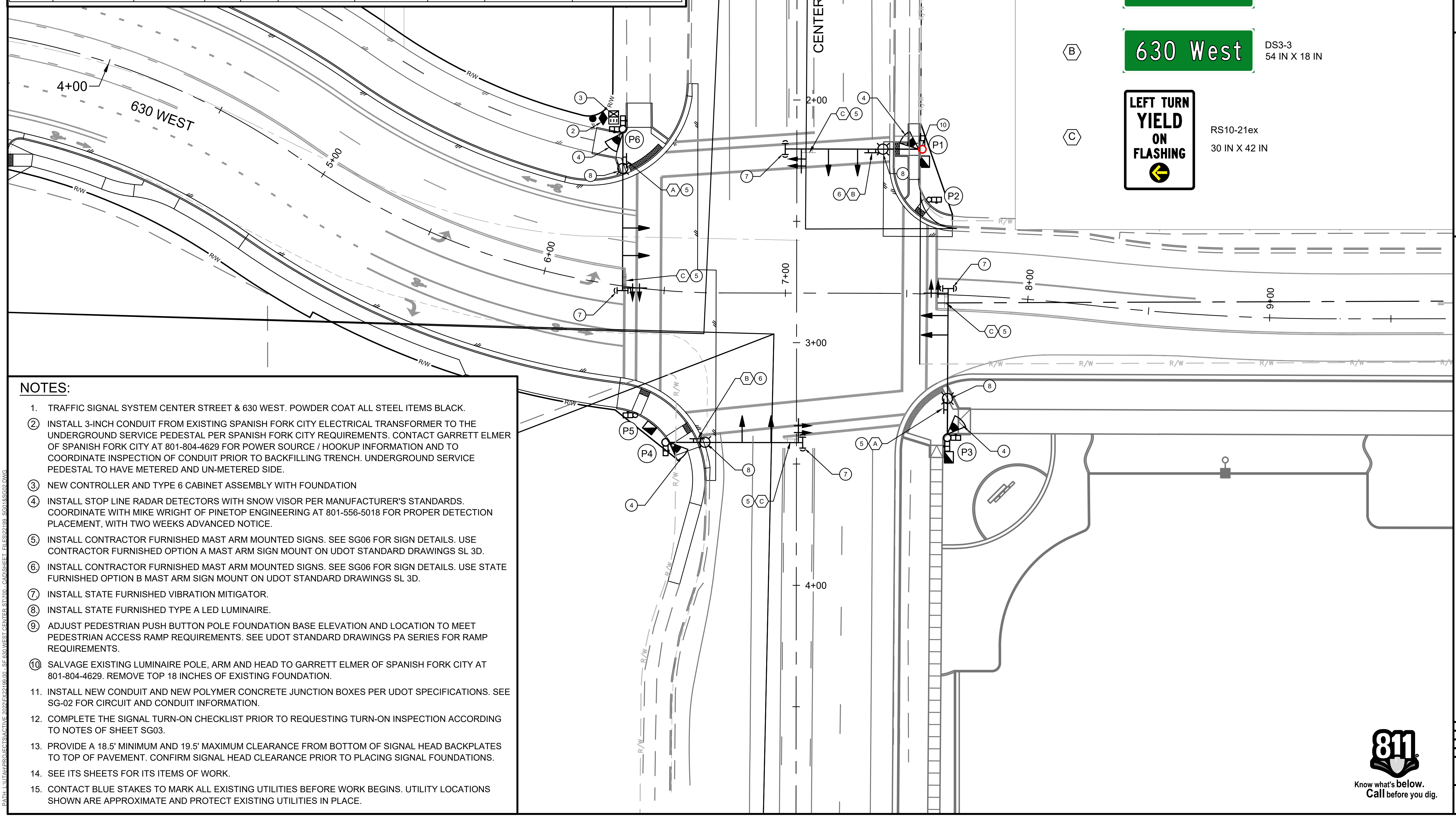
POLE SCHEDULE

POLE I.D.	ALIGNMENT	STATION	OFFSET		LUMINAIRE ARM LENGTH	LUMINAIRE HEIGHT	MAST ARM LENGTH	FOUNDATION BASE ELEVATION	REMARKS
			LT	RT					
☒	630 W								SIGNAL CABINET
P1	630 W	7+55.09	59.55		15	40	55		SIGNAL POLE
P2	630 W	7+58.23	38.89						11' PED POLE ⑨
P3	630 W	7+69.10		58.95	15	40	60		SIGNAL POLE
P4	630 W	6+54.65		62.34	15	40	55		SIGNAL POLE
P5	630 W	6+43.38		52.20					11' PED POLE ⑨
P6	630 W	6+21.69	63.86		15	40	65		SIGNAL POLE



NOTES:

1. TRAFFIC SIGNAL SYSTEM CENTER STREET & 630 WEST. POWDER COAT ALL STEEL ITEMS BLACK.
② INSTALL 3-INCH CONDUIT FROM EXISTING SPANISH FORK CITY ELECTRICAL TRANSFORMER TO THE UNDERGROUND SERVICE PEDESTAL PER SPANISH FORK CITY REQUIREMENTS. CONTACT GARRETT ELMER OF SPANISH FORK CITY AT 801-804-4629 FOR POWER SOURCE / HOOKUP INFORMATION AND TO COORDINATE INSPECTION OF CONDUIT PRIOR TO BACKFILLING TRENCH. UNDERGROUND SERVICE PEDESTAL TO HAVE METERED AND UN-METERED SIDE.
③ NEW CONTROLLER AND TYPE 6 CABINET ASSEMBLY WITH FOUNDATION
④ INSTALL STOP LINE RADAR DETECTORS WITH SNOW VISOR PER MANUFACTURER'S STANDARDS. COORDINATE WITH MIKE WRIGHT OF PINETOP ENGINEERING AT 801-556-5018 FOR PROPER DETECTION PLACEMENT, WITH TWO WEEKS ADVANCED NOTICE.
⑤ INSTALL CONTRACTOR FURNISHED MAST ARM MOUNTED SIGNS. SEE SG06 FOR SIGN DETAILS. USE CONTRACTOR FURNISHED OPTION A MAST ARM SIGN MOUNT ON UDOT STANDARD DRAWINGS SL 3D.
⑥ INSTALL CONTRACTOR FURNISHED MAST ARM MOUNTED SIGNS. SEE SG06 FOR SIGN DETAILS. USE STATE FURNISHED OPTION B MAST ARM SIGN MOUNT ON UDOT STANDARD DRAWINGS SL 3D.
⑦ INSTALL STATE FURNISHED VIBRATION MITIGATOR.
⑧ INSTALL STATE FURNISHED TYPE A LED LUMINAIRE.
⑨ ADJUST PEDESTRIAN PUSH BUTTON POLE FOUNDATION BASE ELEVATION AND LOCATION TO MEET PEDESTRIAN ACCESS RAMP REQUIREMENTS. SEE UDOT STANDARD DRAWINGS PA SERIES FOR RAMP REQUIREMENTS.
⑩ SALVAGE EXISTING LUMINAIRE POLE, ARM AND HEAD TO GARRETT ELMER OF SPANISH FORK CITY AT 801-804-4629. REMOVE TOP 18 INCHES OF EXISTING FOUNDATION.
11. INSTALL NEW CONDUIT AND NEW POLYMER CONCRETE JUNCTION BOXES PER UDOT SPECIFICATIONS. SEE SG-02 FOR CIRCUIT AND CONDUIT INFORMATION.
12. COMPLETE THE SIGNAL TURN-ON CHECKLIST PRIOR TO REQUESTING TURN-ON INSPECTION ACCORDING TO NOTES OF SHEET SG03.
13. PROVIDE A 18.5' MINIMUM AND 19.5' MAXIMUM CLEARANCE FROM BOTTOM OF SIGNAL HEAD BACKPLATES TO TOP OF PAVEMENT. CONFIRM SIGNAL HEAD CLEARANCE PRIOR TO PLACING SIGNAL FOUNDATIONS.
14. SEE ITS SHEETS FOR ITS ITEMS OF WORK.
15. CONTACT BLUE STAKES TO MARK ALL EXISTING UTILITIES BEFORE WORK BEGINS. UTILITY LOCATIONS SHOWN ARE APPROXIMATE AND PROTECT EXISTING UTILITIES IN PLACE.

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SIGNAL PLAN

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
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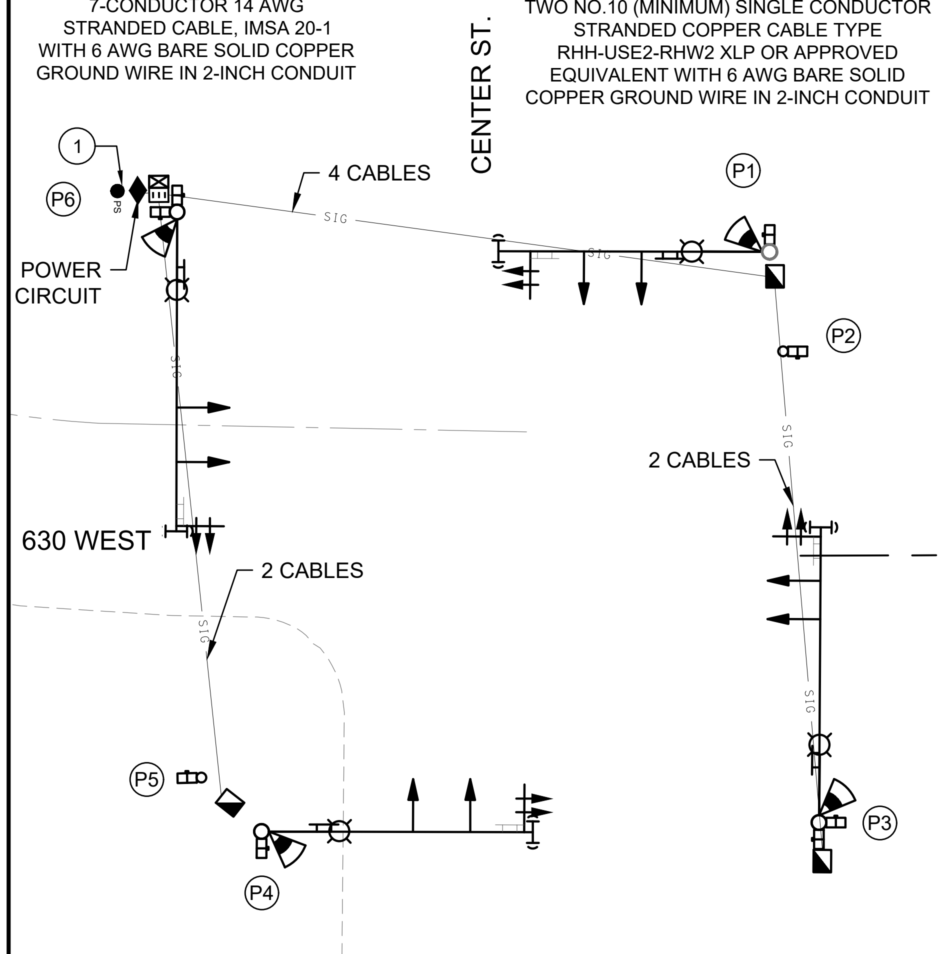
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
SG01

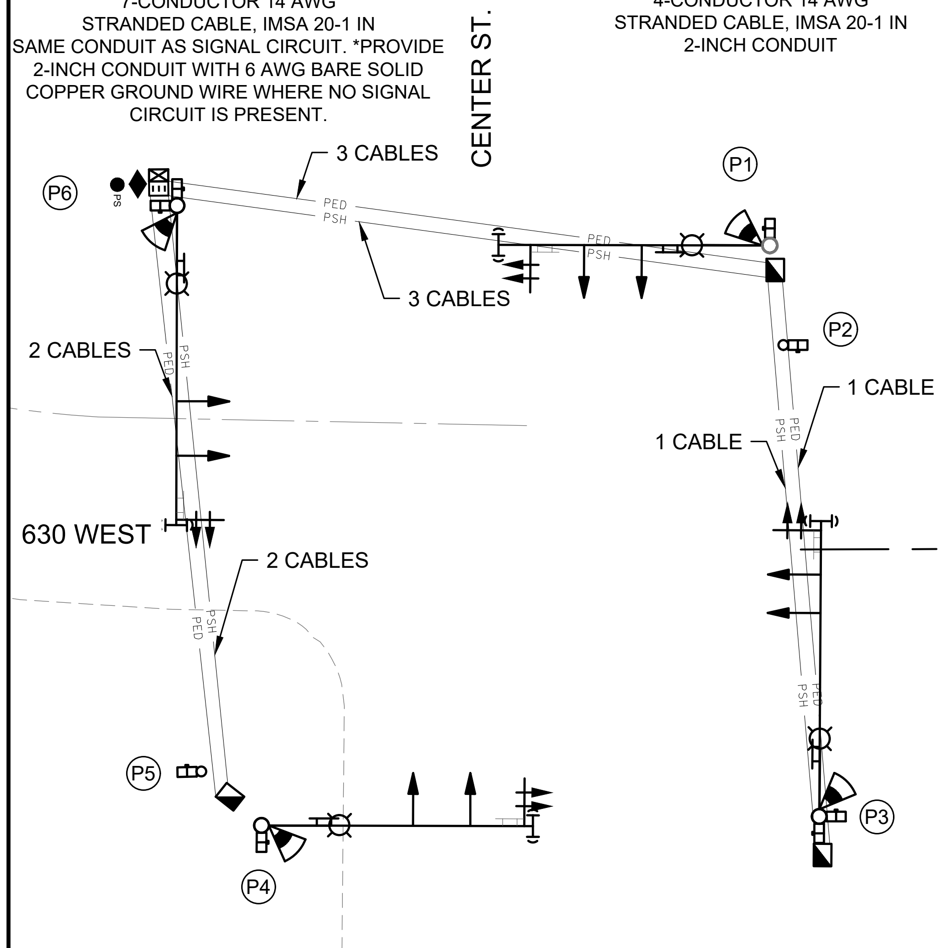
SIGNAL CIRCUIT
7-CONDUCTOR 14 AWG
STRANDED CABLE, IMSA 20-1
WITH 6 AWG BARE SOLID COPPER
GROUND WIRE IN 2-INCH CONDUIT

POWER CIRCUIT (USP TO SIGNAL CABINET)
TWO NO.10 (MINIMUM) SINGLE CONDUCTOR
STRANDED COPPER CABLE TYPE
RHH-USE2-RHW2 XLP OR APPROVED
EQUIVALENT WITH 6 AWG BARE SOLID
COPPER GROUND WIRE IN 2-INCH CONDUIT

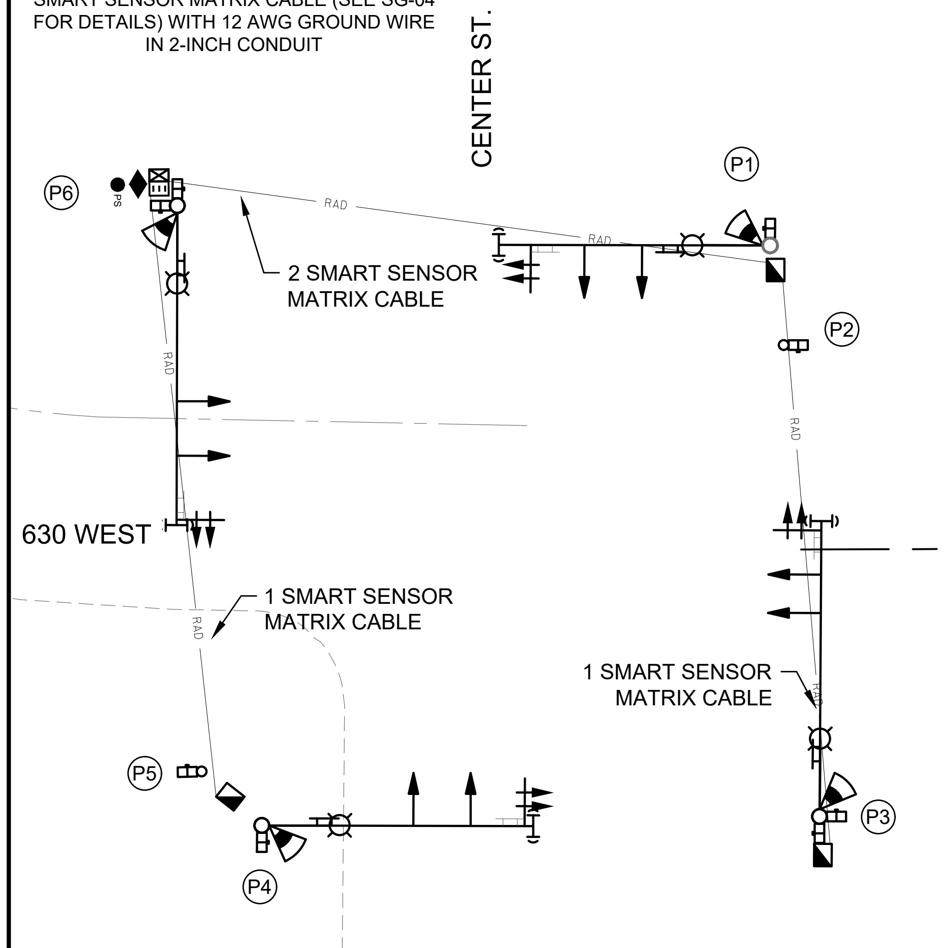


PEDESTRIAN SIGNAL CIRCUIT
7-CONDUCTOR 14 AWG
STRANDED CABLE, IMSA 20-1 IN
SAME CONDUIT AS SIGNAL CIRCUIT. *PROVIDE
2-INCH CONDUIT WITH 6 AWG BARE SOLID
COPPER GROUND WIRE WHERE NO SIGNAL
CIRCUIT IS PRESENT.

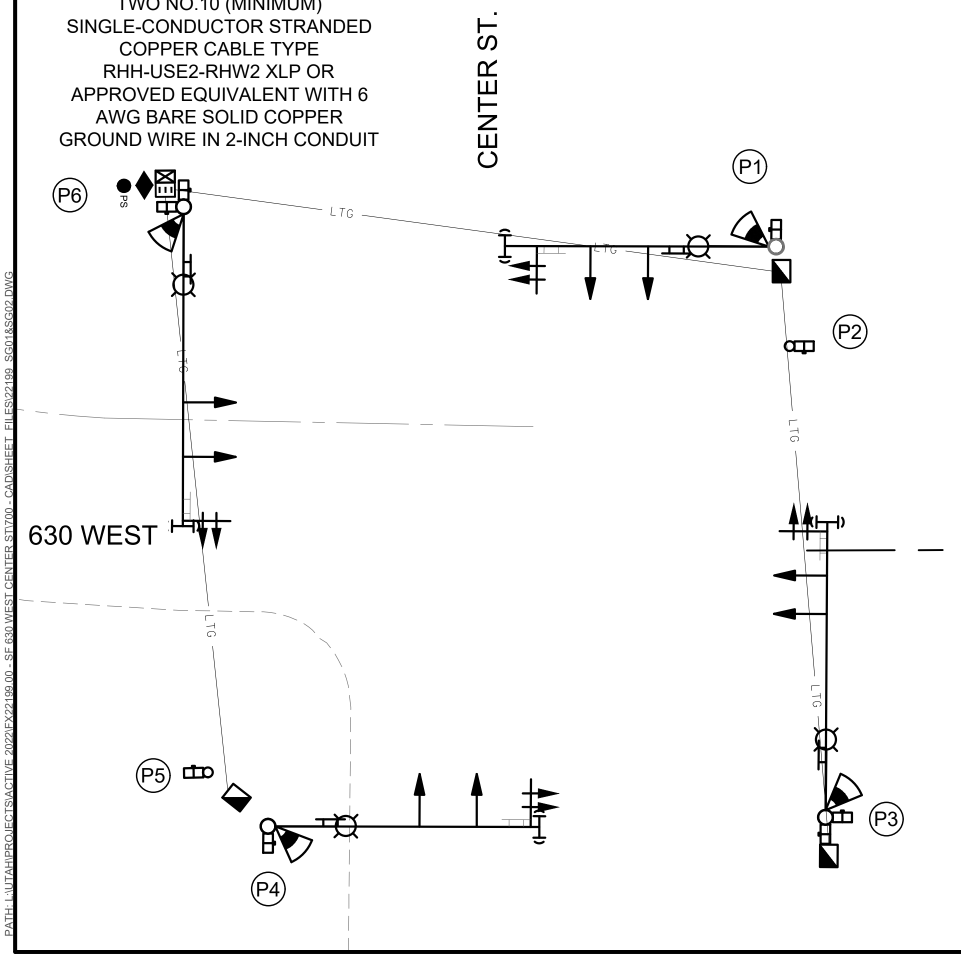
PUSH BUTTON CIRCUIT
4-CONDUCTOR 14 AWG
STRANDED CABLE, IMSA 20-1 IN
2-INCH CONDUIT



MATRIX DETECTION CIRCUIT
SMART SENSOR MATRIX CABLE (SEE SG-04
FOR DETAILS) WITH 12 AWG GROUND WIRE
IN 2-INCH CONDUIT

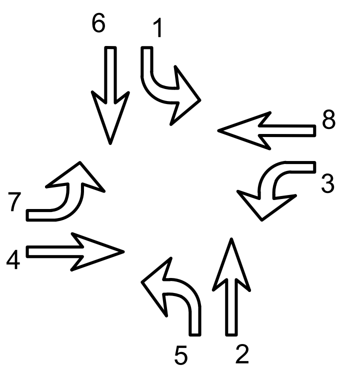

CENTER ST.
P6
PS
RAD
2 SMART SENSOR MATRIX CABLE
P1
P2
630 WEST
1 SMART SENSOR MATRIX CABLE
1 SMART SENSOR MATRIX CABLE
P5
P4
P3

LIGHTING CIRCUIT
TWO NO.10 (MINIMUM)
SINGLE-CONDUCTOR STRANDED
COPPER CABLE TYPE
RHH-USE2-RHW2 XLP OR
APPROVED EQUIVALENT WITH 6
AWG BARE SOLID COPPER
GROUND WIRE IN 2-INCH CONDUIT

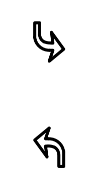
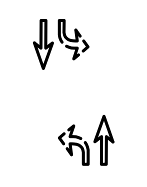
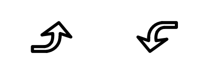
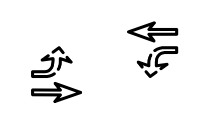


NOTES:

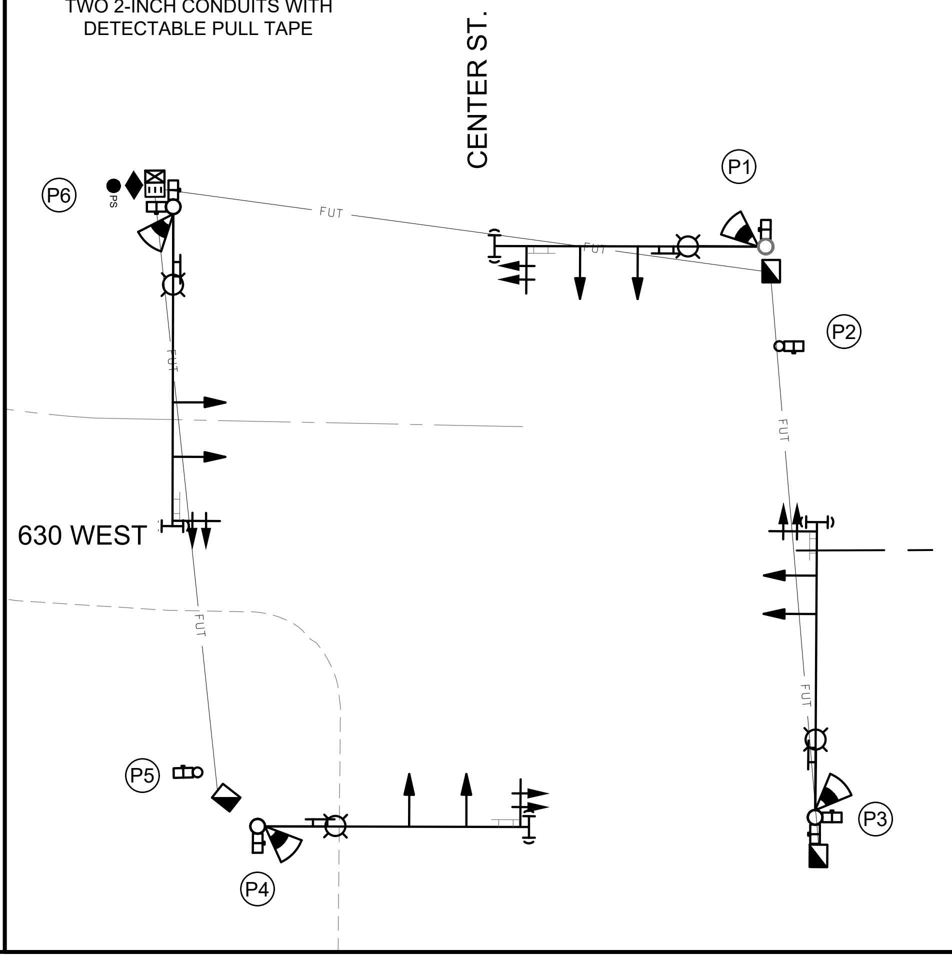
① SEE NOTE 2 ON SHEET SG01.



NEMA PHASE DETAIL

PHASING PLAN			
Ø A	Ø B	Ø C	Ø D
			

FUTURE USE CIRCUIT
TWO 2-INCH CONDUITS WITH
DETECTABLE PULL TAPE



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PRELIMINARY PLANS
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SIGNAL CIRCUIT

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
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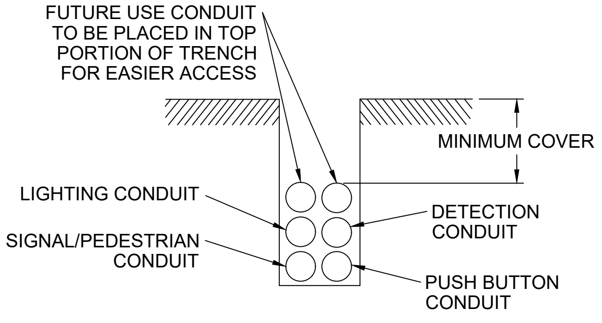
LEGEND

Existing	PROPOSED	
PWR	PWR	POWER SOURCE CIRCUIT CONDUIT
SIG	SIG	SIGNAL CIRCUIT CONDUIT
PSH	PSH	PEDESTRIAN SIGNAL CIRCUIT CONDUIT
PSH	PSH	PEDESTRIAN PUSH BUTTON CIRCUIT CONDUIT
RAD	RAD	RADAR DETECTION CIRCUIT CONDUIT
LTG	LTG	LIGHTING CIRCUIT CONDUIT
FUT	FUT	FUTURE USE CONDUIT
P1	P1	SIGNAL POLE IDENTIFICATION
		DUAL MAST ARM SIGNAL POLE
		MAST ARM SIGNAL POLE
		SIGNAL POLE LUMINAIRE EXTENSION WITH ARM
		SIGNAL POLE LUMINAIRE EXTENSION WITH VERTICAL ATTACHMENT
		MAST ARM MOUNTED SIGN
ps	PS	POWER SOURCE
	○	TRAFFIC SIGNAL POLE
		TYPE 0 - 1 SECTION SIGNAL HEAD ASSEMBLY
		TYPE I - 3 SECTION SIGNAL HEAD ASSEMBLY
		TYPE II - 3 SECTION SIGNAL HEAD ASSEMBLY
		TYPE III - 3 SECTION (ALL AROWS) SIGNAL HEAD ASSEMBLY
		TYPE IV - 4 SECTION SIGNAL HEAD ASSEMBLY
		TYPE V - 5 SECTION SIGNAL HEAD ASSEMBLY
		TYPE VI - 4 SECTION (ALL ARROWS) SIGNAL HEAD ASSEMBLY
		TYPE VII - 4 SECTION SIGNAL HEAD ASSEMBLY
		PEDESTRIAN HYBRID BEACON - 3 SECTION SIGNAL HEAD ASSEMBLY
		VIBRATION MITIGATOR
	☒	TRAFFIC SIGNAL CONTROLLER CABINET
	■	TYPE A JUNCTION BOX
		TYPE B JUNCTION BOX
		TYPE C JUNCTION BOX
III-pc	III-PC	TYPE III JUNCTION BOX (ATMS)
		SAME JUNCTION BOX USED FOR SIGNAL CIRCUIT
		PEDESTRIAN SIGNAL HEAD WITH PUSH BUTTON
		AUDIBLE PEDESTRIAN SIGNAL HEAD
	◆	UNDERGROUND SERVICE PEDESTAL (USP)
		PREEMPTION CONTROL SYSTEM DETECTOR
		REDLINE IP RADIO
		VIDEO DETECTION CAMERA
		CCTV CAMERA
		RADAR DETECTION, DILEMMA ZONE
		RADAR DETECTION, STOP BAR
		WIRELESS DETECTION PUCK
		WIRELESS DETECTION, ACCESS POINT
		WIRELESS DETECTION, REPEATER
		SENSOR LOOP
		RRFB (WITH INTEGRATED PEDESTRIAN CONFIRMATION PILOT LIGHT)

EXISTING EQUIPMENT

LOCATION	SALVAGE														REMOVE															RELOCATE							
	TRAFFIC SIGNAL CONTROLLER	TRAFFIC SIGNAL CABINET	UNDERGROUND SERVICE PEDESTAL	MAST ARM SIGNAL POLE	MAST ARM	SIGNAL HEAD	COUNTDOWN PEDESTRIAN SIGNAL HEAD	LED LUMINAIRE HEAD	RADAR DETECTION SENSOR	WIRELESS DETECTION ACCESS POINT/REPEATER	WIRELESS DETECTION PUCKS	TRAFFIC SIGNAL POLE	LUMINAIRE POLE	LUMINAIRE ARM	VIDEO DETECTION CAMERA	TRAFFIC SIGNAL CABINET FOUNDATION	UNDERGROUND SERVICE PEDESTAL FOUNDATION	MAST ARM SIGNAL POLE FOUNDATION	TRAFFIC SIGNAL POLE FOUNDATION	LUMINAIRE POLE FOUNDATION	MAST ARM SIGNAL POLE	MAST ARM	HIGHWAY LUMINAIRE POLE	SIGNAL HEAD	PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSH BUTTON	MAST ARM MOUNTED SIGN	JUNCTION BOX	WIRE/CABLE	TRAFFIC SIGNAL CONTROLLER CABINET	SIGNAL HEAD	COUNTDOWN PEDESTRIAN SIGNAL HEAD	LUMINAIRE EXTENSION & ARM	PREEMPTION DETECTION EQUIPMENT	MAST ARM MOUNTED SIGN	CCTV CAMARA, CABLING, AND EQUIPMENT (SEE ATMS SHEETS)	REDLINE RADIO EQUIPMENT
	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT	EA	EA	EA	EA	EA	EA	EA	EA
CENTER ST.& 630 WEST								1					1	1						1																	
TOTAL								1					1	1						1																	

* THESE ITEMS ARE PAID UNDER THE TRAFFIC SIGNAL SYSTEM LUMP ITEM, UNLESS NOTED OTHERWISE


FUTURE USE CONDUIT TO BE PLACED IN TOP PORTION OF TRENCH FOR EASIER ACCESS
MINIMUM COVER
LIGHTING CONDUIT
SIGNAL/PEDESTRIAN CONDUIT
DETECTION CONDUIT
PUSH BUTTON CONDUIT

NOTES:

1. REFER TO SL SERIES STANDARD DRAWINGS FOR MINIMUM CONDUIT DEPTH REQUIREMENTS.
2. MINIMUM OF 6 CONDUITS ARE REQUIRED FOR EACH ROAD CROSSING LOCATION.

TRENCHING AND BORING DETAIL

NOTES:

REGION/COMPANY	SIGNAL CREW CONTACT	PHONE
3	SKYLER NIELSEN	801-404-9251
PINETOP ENGINEERING	MIKE WRIGHT	801-556-5018

1. CONTACT PINETOP ENGINEERING TO SCHEDULE/ COORDINATE ON THE FOLLOWING ITEMS:

   SALVAGED ITEMS: PROVIDE 2 DAYS NOTICE. ENSURE ALL SALVAGED ITEMS HAVE ALL PARTS AND ASSOCIATED HARDWARE.

   SIGNAL INSPECTION: 8 DAYS PRIOR TO TURN-ON CONTACT PINETOP ENGINEERING TO REQUEST AN IN-PROGRESS SIGNAL INSPECTION.

   SIGNAL TURN-ON: PROVIDE 5 DAYS NOTICE. COMPLETE UDOT TRAFFIC SIGNAL TURN-ON CHECKLIST PRIOR TO CALLING PINETOP ENGINEERING.

2. CONTRACTOR IS RESPONSIBLE TO DISPOSE OF REMOVAL ITEMS AND ASSUME RESPONSIBILITY THEREAFTER. REUSE MATERIALS ONLY AS SPECIFIED OR AS APPROVED BY THE ENGINEER.
3. REFER TO UDOT STD DWG SL SERIES FOR DETAILS.

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

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SIGNAL SCHEDULE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
SG03

CONTRACTOR FURNISHED MATERIALS

	STRUCTURAL SUPPORT							POWER				CONDUIT							JUNCTION BOX			SIGN	
	MAST ARM SIGNAL POLE FOUNDATION - 3' x 12' (30' TO 65')	MAST ARM SIGNAL POLE FOUNDATION - 3' x 14' (70' TO 75')	MAST ARM SIGNAL POLE FOUNDATION - 4' x 14' (80' TO 85')	TRAFFIC SIGNAL/PED POLE FOUNDATION - 2' X 3'	HIGHWAY LUMINAIRE POLE FOUNDATION - 2.5' x 8'	CABINET FOUNDATION	UNDERGROUND SERVICE PEDESTAL FOUNDATION	UNDERGROUND SERVICE PEDESTAL	DUAL METER UNDERGROUND SERVICE PEDESTAL	POWER SOURCE (120 VOLT)	NO. 10 SINGLE CONDUCTOR CABLE	2" CONDUIT	2½" CONDUIT	3" CONDUIT	2" CONDUIT WITH DETECTABLE PULL TAPE (FUTURE USE)	TRENCHING PAVED SURFACE	TRENCHING UNPAVED SURFACE	DIRECTIONAL BORING	TYPE A	TYPE B	TYPE C	MAST ARM MOUNTED SIGN WITH MOUNTING BRACKETS	MAST ARM MOUNTED SIGN (SEE NOTE 7)
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EA	EA	EA	EA / SQ FT	EA / SQ FT
CENTER ST. & 630 WEST	4			2		1	1	1		1	40	1660		20	790		40	280		3	1	61 48.5	21 13.5
TOTAL	4			2		1	1	1		1	40	$	$	$	$	$	$	$		3	1	61 48.5	21 13.5
USE	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

$ THESE ITEMS ARE CALCULATED BY THE CONTRACTOR

* THESE ITEMS ARE COMBINED ON ESTIMATE AS TRAFFIC SIGNAL SYSTEM

CONTRACTOR FURNISHED MATERIALS

	SIGNAL AND PEDESTRIAN							LIGHTING			GROUNDING			DETECTION		
	4 CONDUCTOR NO. 14 CABLE (SIGNAL CIRCUIT)	7 CONDUCTOR NO. 14 CABLE (SIGNAL CIRCUIT)	7 CONDUCTOR NO. 14 CABLE (PED CIRCUIT)	4 CONDUCTOR NO. 14 CABLE (PUSH BUTTON CIR)	COUNTDOWN PEDESTRIAN SIGNAL HEAD	PUSH BUTTON AND SIGN ASSEMBLY	PUSH BUTTON FRAME STAND-OFF BRACKET	NO. 4 SINGLE CONDUCTOR CABLE	NO. 6 SINGLE CONDUCTOR CABLE	NO. 10 SINGLE CONDUCTOR CABLE	GROUND ROD	NO. 6 BARE COPPER GROUND WIRE	NO. 12 STRANDED GROUND WIRE (STOP BAR DETECTION)	SMART SENSOR ADVANCE CABLE (SEE NOTE 5)	SMART SENSOR MATRIX CABLE (SEE NOTE 5)	PREEMPTION CONTROL CABLE (SEE NOTE 6)
LOCATION	LIN FT	LIN FT	LIN FT	LIN FT	EA	EA	EA	LIN FT	LIN FT	LIN FT	EA	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
CENETR ST. & 630 WEST		1825	955	920	8	8				1375	5	890	980		580	
TOTAL	$	$	$	$	8	8		$	$	$	$	$	$	$	$	$
USE	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

$ THESE ITEMS ARE CALCULATED BY THE CONTRACTOR

* THESE ITEMS ARE COMBINED ON ESTIMATE AS TRAFFIC SIGNAL SYSTEM

NOTES:

1. SEE UDOT STD DWG SL SERIES AND SECTIONS 02892 AND 16530.
2. CONTACT SPANISH FORK POWER A MINIMUM OF THIRTY (30) DAYS BEFORE POWER SERVICE IS REQUIRED. SEE UDOT STD DWG SL 4C FOR UNDERGROUND SERVICE PEDESTAL DETAILS. CONTACT SPANISH FORK POWER (SEE SG01 FOR CONTACT INFORMATION) THREE (3) DAYS IN ADVANCE OF UNDERGROUND SERVICE PEDESTAL INSPECTION. MAKE ALL ARRANGEMENTS WITH LOGAN CITY POWER FOR INSTALLATION.
3. PLACE ALL CONDUIT IN SAME TRENCH. BORE SHOT UNDER ALL PAVEMENT.
4. CONSTRUCT SIGNAL IN A MANNER TO AVOID DAMAGE TO EXISTING UTILITIES. ASSUME RESPONSIBILITY FOR ANY UTILITY DAMAGED BY CONSTRUCTION OPERATIONS. THE PLANS SHOW BURIED UTILITY LOCATIONS IN THEIR APPROXIMATE LOCATION ONLY.
5. SMART SENSOR CABLE: COLOR-CODED, TWISTED PAIR, 6 - CONDUCTOR WIRE WITH 20 AWG FOR POWER AND 22 AWG FOR COMMUNICATION. WAVETRONIX PART # WX-SS-705 OR APPROVED EQUIVALENT.
6. SEE MANUFACTURER'S REQUIREMENTS FOR CABLE TYPE
7. STATE FURNISHED OPTION B MAST ARM SIGN MOUNT PER UDOT STANDARD DRAWING SL3D.

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PRELIMINARY PLANS
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REVISION				

SIGNAL SCHEDULE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
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CHECKED BY: JGJ
SHEET SG04

STATE FURNISHED MATERIALS

SIGNAL SCHEDULE

	TRAFFIC SIGNAL			POLE											MAST ARM													POLYMER SIGNAL HEAD (SEE NOTE 4)											LED MODULE (15 YR WARRANTY)						STREET SIGNAGE		
	CONTROLLER, MMU, CABINET ASSEMBLY	BATTERY BACKUP SYSTEM (IN CABINET)	POWDER COAT STEEL ITEMS	POLE BASE PLATE ADAPTER	5'6" TRAFFIC/PED SIGNAL POLE (SLIP BASE)	11' TRAFFIC/PED SIGNAL POLE (SLIP BASE)	15' TRAFFIC/PED SIGNAL POLE (SLIP BASE)	TYPE A MAST ARM SIGNAL POLE (30' TO 55')	TYPE B MAST ARM SIGNAL POLE (60' TO 75')	TYPE C MAST ARM SIGNAL POLE (80' TO 85')	TYPE DS DUAL STRAIGHT MAST ARM SIGNAL POLE (40' TO 55')	TYPE A / DUAL POLE CAP	TYPE B DUAL POLE CAP	TYPE C POLE CAP	30' MAST ARM	35' MAST ARM	40' MAST ARM	45' MAST ARM	50' MAST ARM	55' MAST ARM	60' MAST ARM	65' MAST ARM	70' MAST ARM	75' MAST ARM	80' MAST ARM	85' MAST ARM	VIBRATION MITIGATOR	1-SECTION	3-SECTION	4-SECTION	5-SECTION (INCLUDES TRI-STUD ARM)	HAWK	DUAL RED	MCCAIN TYPE-1 PROGRAMMABLE HEAD	MCCAIN TYPE-3 PROGRAMMABLE HEAD	GALAXY ASTRO BRACKET ASSEMBLY, 48" - 3 SECTION	GALAXY ASTRO BRACKET ASSEMBLY, 60" - 4 SECTION	16" ARM KIT FOR O.P.S HEADS - 1 PAIR (PROGRAMMABLE HEADS)	RED BALL	YELLOW BALL	GREEN BALL	RED ARROW	YELLOW ARROW	GREEN ARROW	GALAXY ASTRO BRACKET ARM CLAMP ONLY	96" ASTRO POLE	SIGN CLAMPS
LOCATION	EA	EA	LUMP	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CENTER ST. & 630 WEST	1		1			2		2	2											2	1	1					4		8	4						8	4		8	8	8	4	8	4	2	2	8
TOTAL	1		1			2		2	2											2	1	1					4		8	4						8	4		8	8	8	4	8	4	2	2	8

STATE FURNISHED MATERIALS

	DETECTION SCHEDULE												LIGHTING SCHEDULE															
	RADAR DETECTION												POLE/EXTENSION									ARM				STREET LIGHTING LED		
	ADVANCE SENSOR / EXTENDED RANGE	MATRIX STOP BAR SENSOR	SENSOR MOUNT	100' RADAR CABLE W/ CONNECTOR	120' CABLE W/ CONNECTOR	BURIED SERVICE SPLICING KIT	CLICK-656 / 6-PORT RADAR INTERFACE	CLICK-650 / 4-PORT RADAR INTERFACE	RADAR 2 SENSOR BACKPLATE	RADAR 4 SENSOR BACKPLATE	2 CHANNEL RACK CARD (CLICK-112)	4 CHANNEL RACK CARD (CLICK-114)	30' HIGHWAY LUMINAIRE POLE (SLIP BASE)	40' HIGHWAY LUMINAIRE POLE (SLIP BASE)	LUMINAIRE POLE CAP	25' LUMINAIRE EXTENSION (FOR TYPE A MAST ARM POLE)	30' LUMINAIRE EXTENSION (FOR TYPE A MAST ARM POLE)	40' LUMINAIRE EXTENSION (FOR TYPE A MAST ARM POLE)	40' LUMINAIRE EXTENSION (FOR TYPE B/C MAST ARM POLE)	VERTICAL LUMINAIRE EXTENSION	UNDER MAST ARM LIGHTING MOUNTING BRACKET KIT	10' LUMINAIRE ARM	15' LUMINAIRE ARM	10' DUAL LUMINAIRE ARM	15' DUAL LUMINAIRE ARM	LED LUMINAIRE A, TYPE II, MV, PC (250 WATT)	LED LUMINAIRE B, TYPE III, MV, PC (400 WATT)	UNDER MAST ARM LIGHTING LED LUMINAIRE
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
CENTER ST. & 630 WEST		4	4	4		3		1										2	2				4			4		
TOTAL		4	4	4		3		1										2	2				4			4		

NOTES:

1. NOTIFY PINETOP ENGINEERING 4-6 WEEKS PRIOR TO THE DATE STATE FURNISHED MATERIALS ARE NEEDED. SEE SG03 FOR CONTACT INFORMATION.
2. CONTACT PINETOP ENGINEERING AND SKYLER NIELSEN FOR PICK UP OF STATE FURNISHED CONTROLLER CABINET AND CONTROLLER EQUIPMENT. MINIMUM 10 DAYS PRIOR TO DESIRED PICK UP DATE. SEE SG03 FOR CONTACT INFORMATION.
3. PICK UP STATE FURNISHED ANCHOR BOLTS, SIGNAL POLE STEEL, AND OTHER ELECTRONICS HARDWARE AT STATE WAREHOUSE. PROVIDE LOADING EQUIPMENT AND PERSONNEL FOR PICK-UP. CONTACT GREG PALMER, (801) 965-4258, TO SCHEDULE PICK-UP. MINIMUM 48 HOURS ADVANCE NOTICE REQUIRED.
4. POLYMER SIGNAL HEAD ASSEMBLIES INCLUDE SIGNAL HEAD HOUSING, VISORS, AND LOUVERED BACK PLATE WITH RETROREFLECTIVE TAPE WHEN APPLICABLE.

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PRELIMINARY PLANS
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SIGNAL SCHEDULE

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
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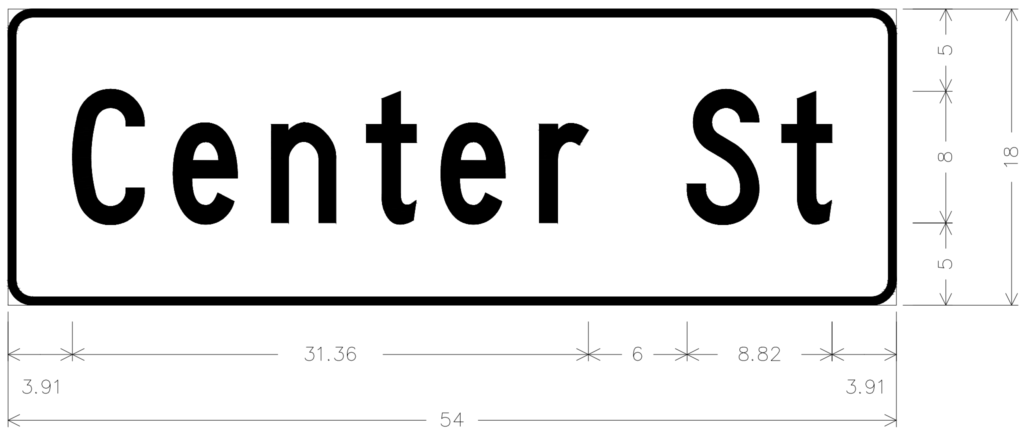
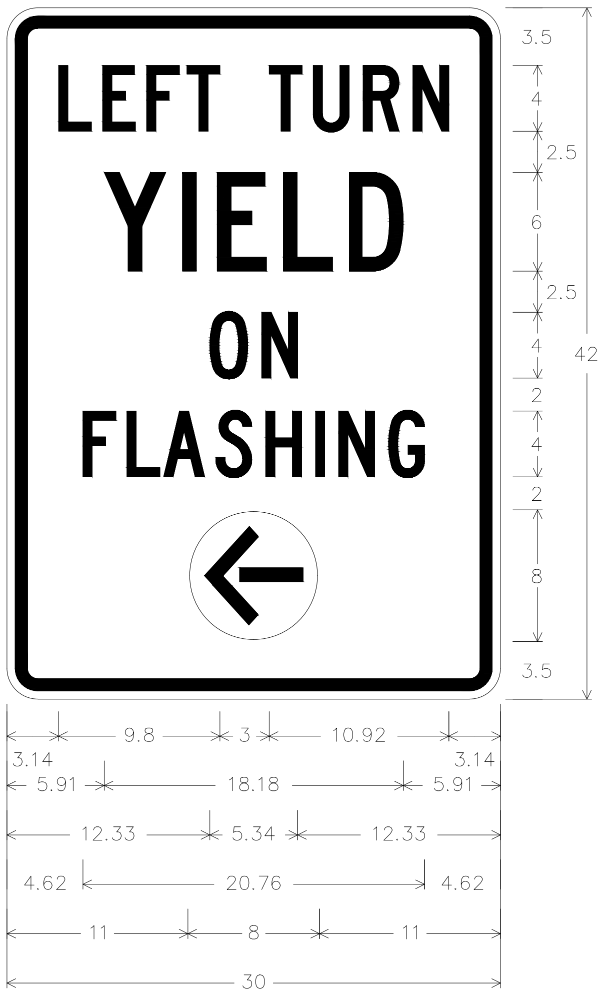


DS3-3 Single Street Name Sign Mast Arm;

1.50" Radius, 0.50" Border, White on, Green;

"Center St", C;

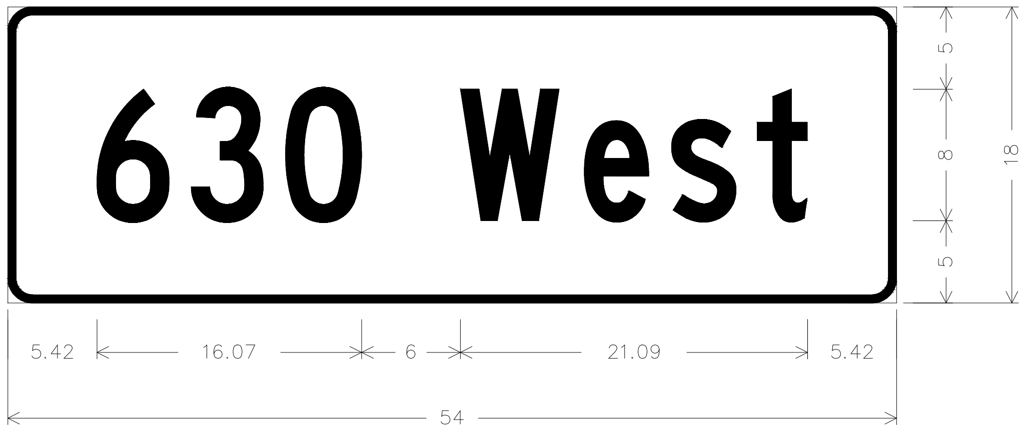


RS10-21ex LEFT TURN YIELD ON FLASHING Yellow Arrow Symbol Sign;

1.88" Radius, 0.75" Border, 0.50" Indent, Black on, White;

"LEFT TURN", C; "YIELD", C;

"ON", C; "FLASHING", C;



DS3-3 Single Street Name Sign Mast Arm;

1.50" Radius, 0.50" Border, White on, Green;

"630 West", C;

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MAST ARM SIGN DETAIL

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

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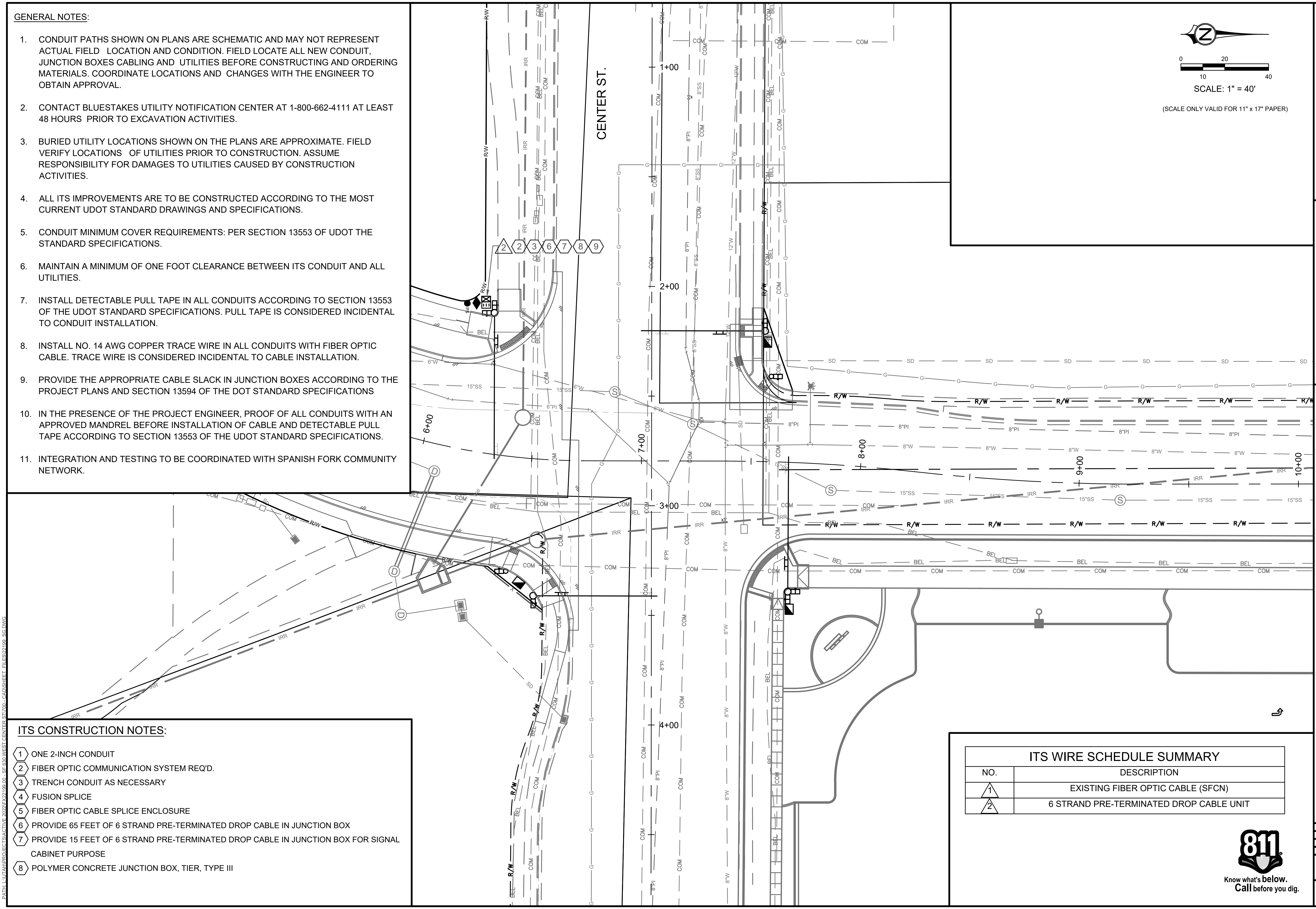
GENERAL NOTES:

1. CONDUIT PATHS SHOWN ON PLANS ARE SCHEMATIC AND MAY NOT REPRESENT ACTUAL FIELD LOCATION AND CONDITION. FIELD LOCATE ALL NEW CONDUIT, JUNCTION BOXES CABLING AND UTILITIES BEFORE CONSTRUCTING AND ORDERING MATERIALS. COORDINATE LOCATIONS AND CHANGES WITH THE ENGINEER TO OBTAIN APPROVAL.
2. CONTACT BLUESTAKES UTILITY NOTIFICATION CENTER AT 1-800-662-4111 AT LEAST 48 HOURS PRIOR TO EXCAVATION ACTIVITIES.
3. BURIED UTILITY LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. FIELD VERIFY LOCATIONS OF UTILITIES PRIOR TO CONSTRUCTION. ASSUME RESPONSIBILITY FOR DAMAGES TO UTILITIES CAUSED BY CONSTRUCTION ACTIVITIES.
4. ALL ITS IMPROVEMENTS ARE TO BE CONSTRUCTED ACCORDING TO THE MOST CURRENT UDOT STANDARD DRAWINGS AND SPECIFICATIONS.
5. CONDUIT MINIMUM COVER REQUIREMENTS: PER SECTION 13553 OF UDOT THE STANDARD SPECIFICATIONS.
6. MAINTAIN A MINIMUM OF ONE FOOT CLEARANCE BETWEEN ITS CONDUIT AND ALL UTILITIES.
7. INSTALL DETECTABLE PULL TAPE IN ALL CONDUITS ACCORDING TO SECTION 13553 OF THE UDOT STANDARD SPECIFICATIONS. PULL TAPE IS CONSIDERED INCIDENTAL TO CONDUIT INSTALLATION.
8. INSTALL NO. 14 AWG COPPER TRACE WIRE IN ALL CONDUITS WITH FIBER OPTIC CABLE. TRACE WIRE IS CONSIDERED INCIDENTAL TO CABLE INSTALLATION.
9. PROVIDE THE APPROPRIATE CABLE SLACK IN JUNCTION BOXES ACCORDING TO THE PROJECT PLANS AND SECTION 13594 OF THE DOT STANDARD SPECIFICATIONS
10. IN THE PRESENCE OF THE PROJECT ENGINEER, PROOF OF ALL CONDUITS WITH AN APPROVED MANDREL BEFORE INSTALLATION OF CABLE AND DETECTABLE PULL TAPE ACCORDING TO SECTION 13553 OF THE UDOT STANDARD SPECIFICATIONS.
11. INTEGRATION AND TESTING TO BE COORDINATED WITH SPANISH FORK COMMUNITY NETWORK.



ITS CONSTRUCTION NOTES:

1. ONE 2-INCH CONDUIT
2. FIBER OPTIC COMMUNICATION SYSTEM REQ'D.
3. TRENCH CONDUIT AS NECESSARY
4. FUSION SPLICE
5. FIBER OPTIC CABLE SPLICE ENCLOSURE
6. PROVIDE 65 FEET OF 6 STRAND PRE-TERMINATED DROP CABLE IN JUNCTION BOX
7. PROVIDE 15 FEET OF 6 STRAND PRE-TERMINATED DROP CABLE IN JUNCTION BOX FOR SIGNAL CABINET PURPOSE
8. POLYMER CONCRETE JUNCTION BOX, TIER, TYPE III

ITS WIRE SCHEDULE SUMMARY

NO.	DESCRIPTION
1	EXISTING FIBER OPTIC CABLE (SFCN)
2	6 STRAND PRE-TERMINATED DROP CABLE UNIT

811
Know what's below.
Call before you dig.

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ATMS PLAN

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ITS SCHEDULE SHEET

	COMMUNICATIONS										CCTV									SALVAGE		
	CAT5 ETHERNET PATCH CABLE, 4 FT	CISCO 8-PORT ETHERNET SWITCH	FIBER JUMPER, SMF, LC-ST, DUPLEX, 3 FT	6 STRAND PRE-TERMINATED DROP CABLE UNIT	FIBER OPTIC CABLE SPLICE ENCLOSURE	FUSION SPLICE	ONE 3-INCH CONDUIT	TRENCHING UPAVED SURFACE	REMOVE JUNCTION BOX	POLYMER CONCRETE JUNCTION BOX, TIER 22,TYPE III	RELOCATE CCTV CAMERA, CABLING, AND EQUIPMENT	PELCO PEDESTAL MOUNT / POSITIONER CCTV	24V TRANSFORMER PLUG W-2 BNC CONNECTORS	REMOTE DATA PORT ENCLOSURE	VIDEO ENCODER	PELCO POLE-MOUNT BRACKET	RJ59 COAX PATCH-CABLE, 6 FT	COAX SURGE SUPRESSOR	BULK COMPOSITE CABLE / 9-CONDUCTOR			
LOCATION	EA	EA	EA	EA	FT	FT	EA	EA	FT	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT			
CENTER ST. & 630 WEST	2	1	2	#	1	6	#	#		1												
TOTAL	2	1	2		1	6	#	#		1												
USE	*	*	*	*	**	**	**	**	**	**	**	***	*	*	*	***	*	*	***			

* STATE FURNISHED AND INSTALLED
** CONTRACTOR FURNISHED AND INSTALLED
*** STATE FURNISHED AND CONTRACTOR INSTALLED

NOTES:

1. NOTIFY PINETOP ENGINEERING 4-6 WEEKS PRIOR TO DATE MATERIALS ARE NEEDED.

2. CONTACT PINETOP ENGINEERING REGARDING STATE FURNISHED ATMS MATERIALS REQUISITION AFTER PRECONSTRUCTION MEETING TO ENSURE MATERIALS HAVE BEEN ORDERED.

REGION/COMPANY	CONTACT	PHONE
3	CATHERINE JONES	801-330-4447
PINETOP ENGINEERING	MIKE WRIGHT	801-556-5018

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ATMS PLAN

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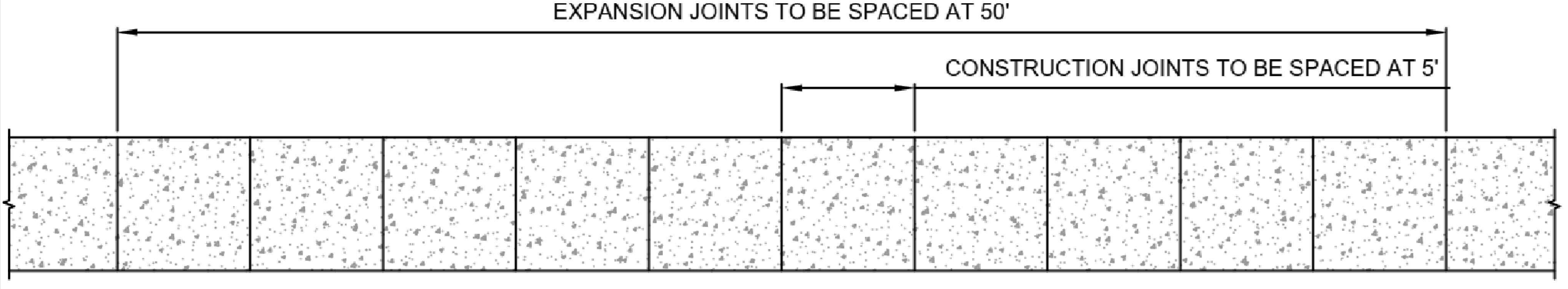
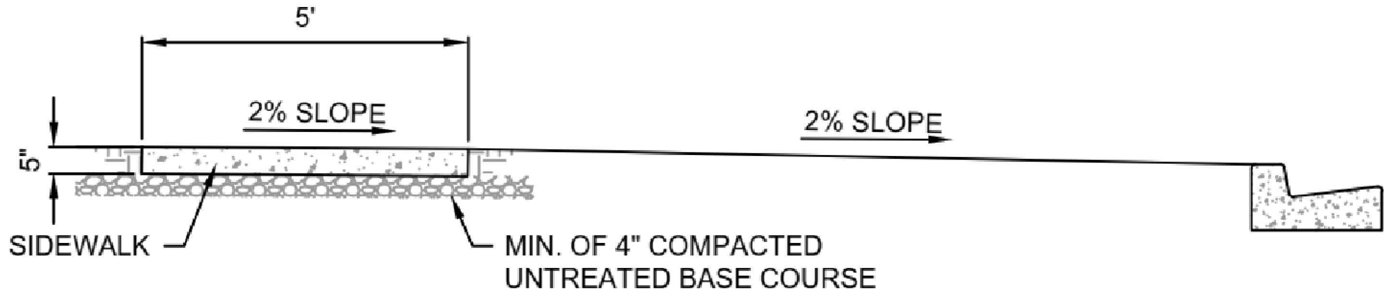
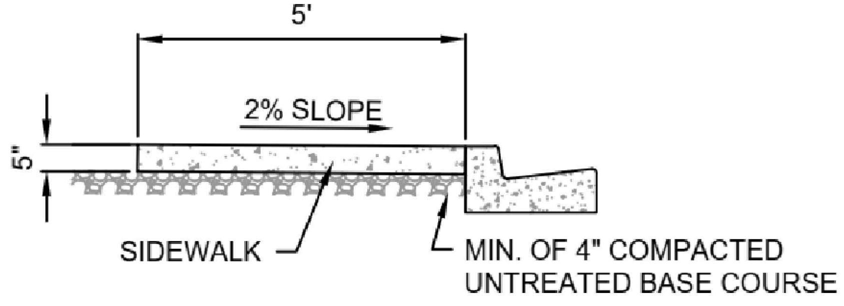
CHECKED BY: JGJ
SHEET ATMS02


EXPANSION JOINTS TO BE SPACED AT 50'
CONSTRUCTION JOINTS TO BE SPACED AT 5'

PLAN VIEW



SIDEWALK CROSS-SECTION WITH PLANTER
SEE APWA PLAN NUMBER 231 CONCRETE SIDEWALK



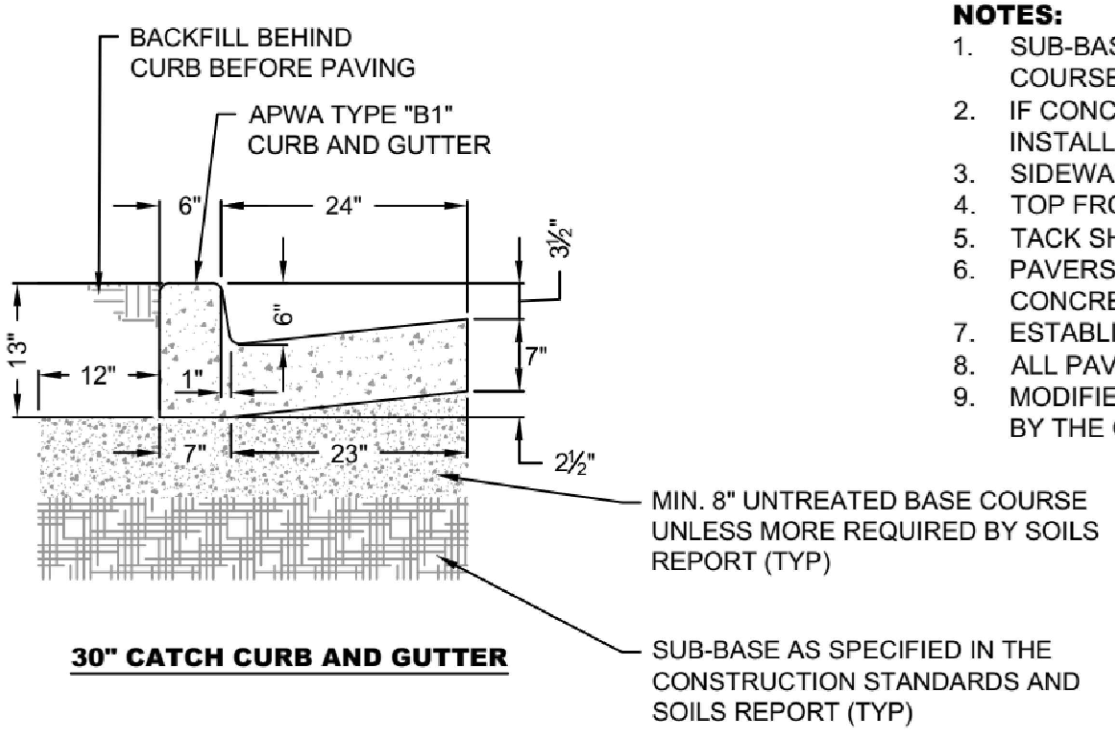
SIDEWALK CROSS-SECTION WITHOUT PLANTER
SEE APWA PLAN NUMBER 231 CONCRETE SIDEWALK

NOTES:

1. IF CONCRETE IS TO BE POURED NEXT TO A CURB #4 REBAR SHALL BE DOWELED 3" INTO CURB AND 4" INTO SIDEWALK. REBAR SHALL BE DOWELED A MINIMUM OF 2" FROM TOP OF SIDEWALK AND CURB 24" O.C.
2. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS EVERY 5".
3. SIDEWALK SHALL HAVE EXPANSION JOINTS EVERY 50'.
4. TOP FRONT OF SIDEWALK SHALL BE PLACED AT 2% GRADE ABOVE TOP BACK OF CURB.

① SPANISH FORK CITY SIDEWALK DETAIL

SEE SPANISH FORK STD. DWG. ST-514 FOR ADDITIONAL INFO



30" CATCH CURB AND GUTTER

NOTES:

1. SUB-BASE UNDER ALL CURBS AND GUTTERS SHALL MATCH WHAT IS IN THE ROAD WITH A MINIMUM OF 8" OF COMPACTED UNTREATED BASE COURSE.
2. IF CONCRETE IS TO BE POURED NEXT TO A CURB #4 REBAR SHALL BE DOWELED 3" INTO CURB AND 4" INTO SIDEWALK. REBAR SHALL BE INSTALLED A MINIMUM OF 2" FROM TOP OF SIDEWALK AND CURB 24" O.C.
3. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS EVERY 5'.
4. TOP FRONT OF SIDEWALK SHALL BE PLACED AT THE SAME GRADE AS TOP BACK OF CURB.
5. TACK SHALL BE APPLIED TO LIP OF CURB AND EXTEND 1' ONTO GRAVEL ROAD BASE.
6. PAVERS, FABRIC, SAND MATERIAL AND INSTALLATION SHALL MEET THE SPECIFICATIONS AND REQUIREMENTS OF APWA 32 14 13 (PRECAST CONCRETE UNIT PAVING) AND 32 14 16 (BRICK UNIT PAVING).
7. ESTABLISH PAVER PATTERN TO ASSURE ALL CUT EDGE PAVERS SHALL BE HALF PAVERS OR LARGER.
8. ALL PAVERS SHALL MATCH THE ORGINAL COLOR OF THE DARK RED CONCRETE PAVERS ON MAIN STREET
9. MODIFIED CURB & GUTTER IS ONLY TO BE USED IN THE RESIDENTIAL SUB LOCAL ROAD - 42' RIGHT OF WAY UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

② SPANISH FORK CITY 30" CATCH CURB AND GUTTER

SEE SPANISH FORK STD. DWG. ST-512 FOR ADDITIONAL INFO

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

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DETAILS

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
DT01

PLOT: 2023-01-23 04:56 PM
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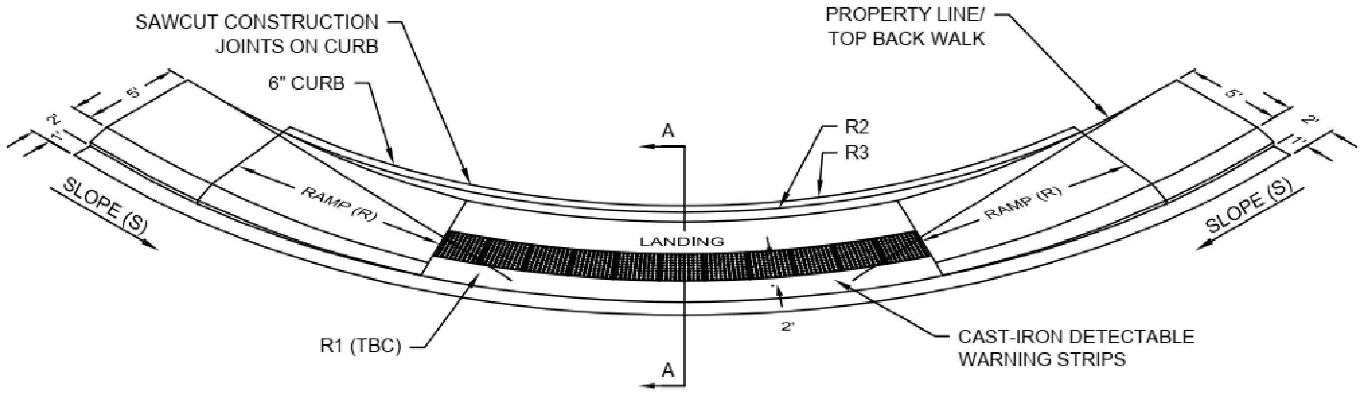
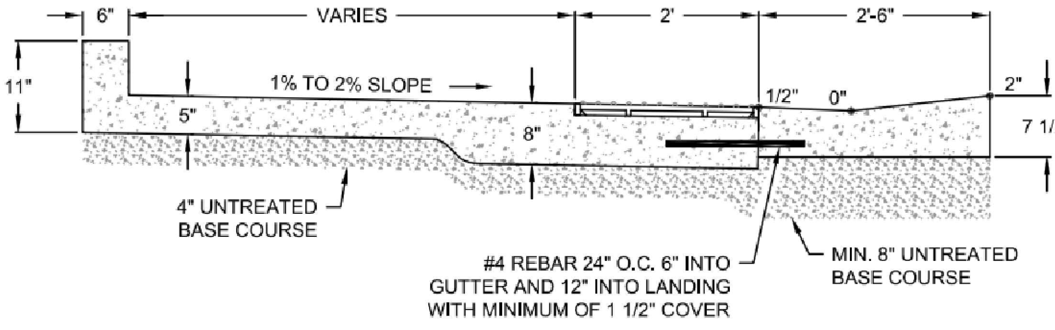

SAWCUT CONSTRUCTION JOINTS ON CURB
6" CURB
PROPERTY LINE/ TOP BACK WALK
A
R2
R3
5'
2'
5'
2'
RAMP (R)
RAMP (R)
LANDING
SLOPE (S)
SLOPE (S)
2'
R1 (TBC)
A
CAST-IRON DETECTABLE WARNING STRIPS

SLOPE OF CURB AND GUTTER TO LANDING (S)	RAMP LENGTH (R)	CURB WALL
-0.45% OR MORE	5'	NO
-O.45% TO -2.0%	10'	YES
-2% OR LESS	15'	YES

STREET TBC RADIUS (R1)	35'		30'		25'	
SIDEWALK WIDTH (W)	PROPERTY LINE RADIUS (R2)	TOP BACK CURB RADIUS (R3)	PROPERTY LINE RADIUS (R2)	TOP BACK CURB RADIUS (R3)	PROPERTY LINE RADIUS (R2)	TOP BACK CURB RADIUS (R3)
5'	30'6"	30'	25'6"	25'	20'5"	20'


6"
VARIES
2'
2'-6"
11"
1% TO 2% SLOPE
5"
1/2"
0"
2"
8"
7 1/2"
4" UNTREATED BASE COURSE
#4 REBAR 24" O.C. 6" INTO GUTTER AND 12" INTO LANDING WITH MINIMUM OF 1 1/2" COVER
MIN. 8" UNTREATED BASE COURSE

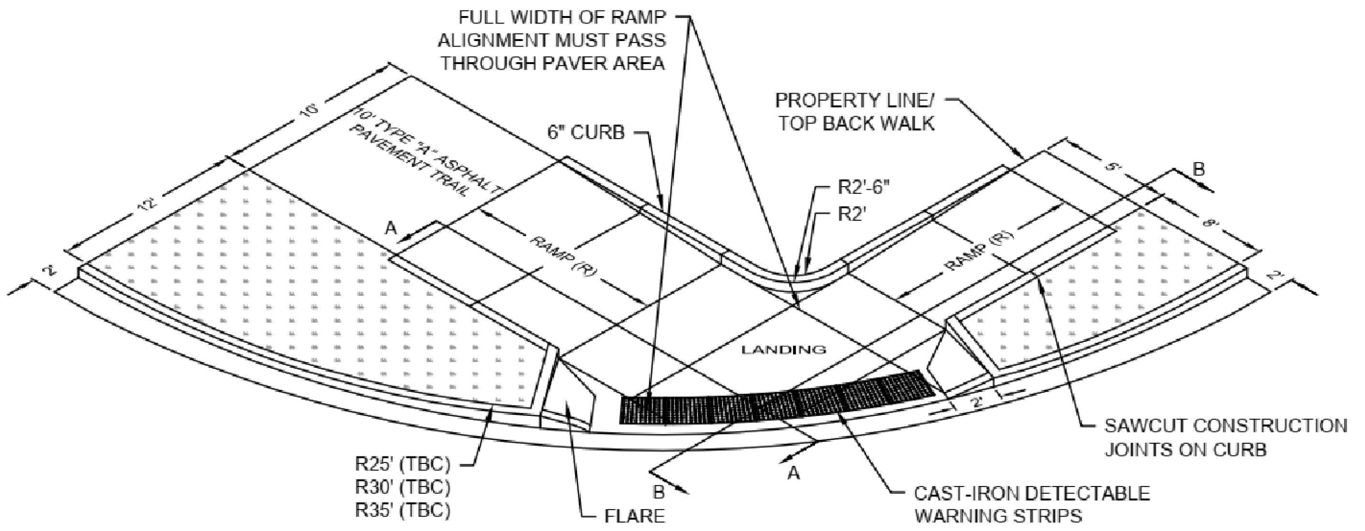
SECTION A-A

NOTES:

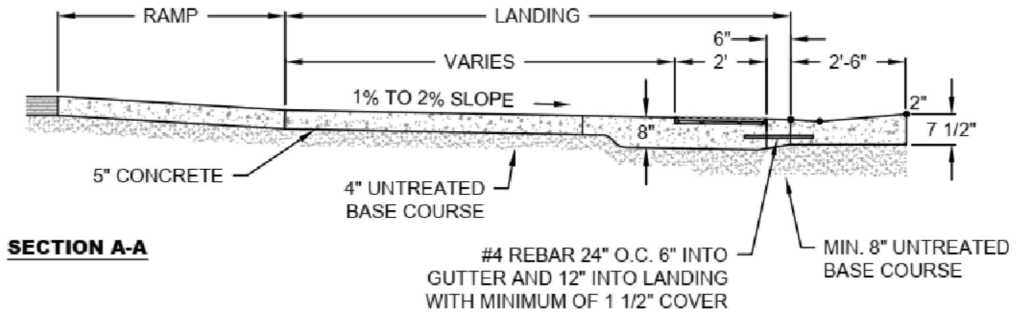
1. CONTRACTOR SHALL INSTALL PAVERS ACCORDING TO THE STANDARDS FOR CAST-IRON DETECTABLE WARNING PLATES AND MATCH PATTERN IN THIS DRAWING. RADIAL PLATES SHALL BE A EAST JORDAN IRON WORKS OR APPROVED EQUIVALENT AND SHALL BE ACCORDING TO THE CORRECT TBC RADIUS.
2. THE MAXIMUM SLOPE OF A STREET WITHIN 25' OF THE BEGINNING OF RADIUS IS 5.5%.
3. THE SLOPE OF THE FLOWLINE OF GUTTER THROUGH A PEDESTRIAN RAMP SHALL BE 2.0% OR LESS OR APPROVED BY CITY ENGINEER.
4. CURB AND GUTTER SLOPE (S) AND RAMP LENGTHS (R) SHALL BE CLEARLY LABELED AND DRAWN ON ALL PLANS, SEE TABLE FOR (R2) AND (R3).
5. RAMPS SHALL NOT EXCEED A 1:12 SLOPE.
6. STANDARD PEDESTRIAN RAMPS HAVE BEEN DESIGNED FOR NEW CONSTRUCTION. REPLACEMENT OF EXISTING PEDESTRIAN RAMPS SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER AND APPROVED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.

1 SPANISH FORK CITY CORNER PEDESTRIAN RAMP DETAIL

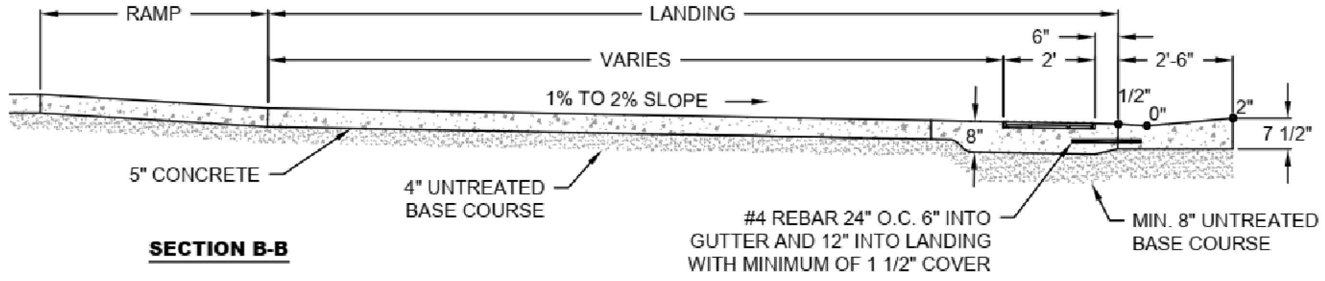
SEE SPANISH FORK STD. DWG. ST-518 FOR ADDITIONAL INFO


FULL WIDTH OF RAMP ALIGNMENT MUST PASS THROUGH PAVER AREA
10'
10' TYPE "A" ASPHALT PAVEMENT TRAIL
6" CURB
PROPERTY LINE/ TOP BACK WALK
R2'-6"
R2'
12'
2'
A
RAMP (R)
RAMP (R)
5'
B
8'
2'
LANDING
2'
R25' (TBC)
R30' (TBC)
R35' (TBC)
B
A
FLARE
SAWCUT CONSTRUCTION JOINTS ON CURB
CAST-IRON DETECTABLE WARNING STRIPS

SLOPE OF CURB AND GUTTER TO LANDING (S)	RAMP LENGTH (R)	CURB WALL
-0.45% OR MORE	5'	NO
-O.45% TO -2.0%	10'	YES
-2% OR LESS	15'	YES


RAMP
LANDING
6"
VARIES
2'
2'-6"
1% TO 2% SLOPE
2"
8"
7 1/2"
5" CONCRETE
4" UNTREATED BASE COURSE
#4 REBAR 24" O.C. 6" INTO GUTTER AND 12" INTO LANDING WITH MINIMUM OF 1 1/2" COVER
MIN. 8" UNTREATED BASE COURSE

SECTION A-A


RAMP
LANDING
6"
VARIES
2'
2'-6"
1% TO 2% SLOPE
1/2"
0"
2"
8"
7 1/2"
5" CONCRETE
4" UNTREATED BASE COURSE
#4 REBAR 24" O.C. 6" INTO GUTTER AND 12" INTO LANDING WITH MINIMUM OF 1 1/2" COVER
MIN. 8" UNTREATED BASE COURSE

SECTION B-B

NOTES:

1. CONTRACTOR SHALL INSTALL PAVERS ACCORDING TO THE STANDARDS FOR CAST-IRON DETECTABLE WARNING PLATES AND MATCH PATTERN IN THIS DRAWING. RADIAL PLATES SHALL BE A EAST JORDAN IRON WORKS OR APPROVED EQUIVALENT AND SHALL BE ACCORDING TO THE CORRECT TBC RADIUS.
2. THE MAXIMUM SLOPE OF A STREET WITHIN 25' OF THE BEGINNING OF RADIUS IS 5.5%.
3. THE SLOPE OF THE FLOWLINE OF GUTTER THROUGH A PEDESTRIAN RAMP SHALL BE 2.0% OR LESS OR APPROVED BY CITY ENGINEER.
4. CURB AND GUTTER SLOPE (S) AND RAMP LENGTHS (R) SHALL BE CLEARLY LABELED AND DRAWN ON ALL PLANS, SEE TABLE FOR (R2) AND (R3).
5. RAMPS SHALL NOT EXCEED A 1:12 SLOPE.
6. STANDARD PEDESTRIAN RAMPS HAVE BEEN DESIGNED FOR NEW CONSTRUCTION. REPLACEMENT OF EXISTING PEDESTRIAN RAMPS SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER AND APPROVED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.
7. POUR CONCRETE PEDESTRIAN RAMP BEFORE PAVING TRAIL.

2 SPANISH FORK CITY CORNER PEDESTRIAN RAMP W/ TRAILS DETAIL

SEE SPANISH FORK STD. DWG. ST-519 FOR ADDITIONAL INFO

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

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DETAILS

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
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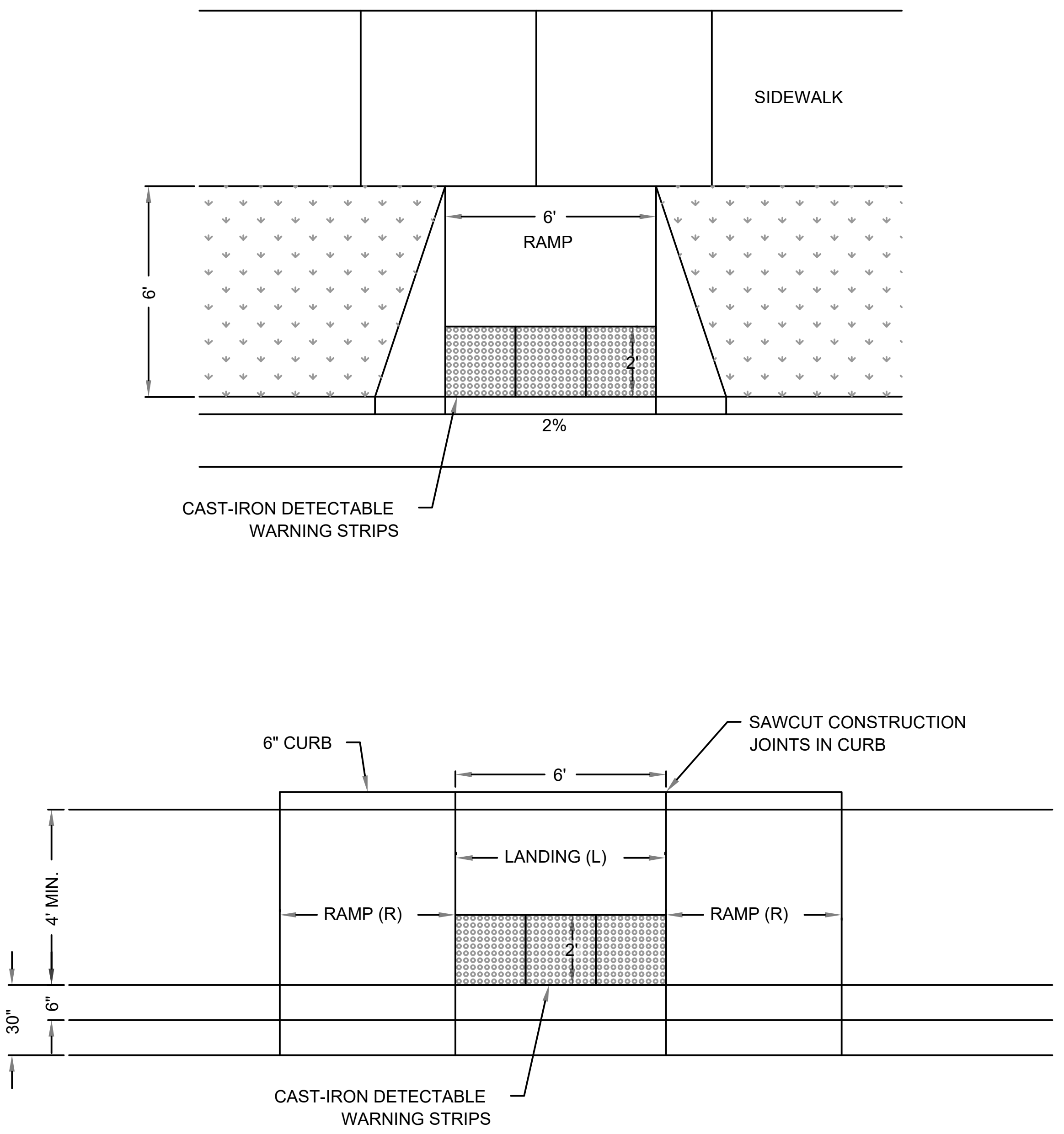
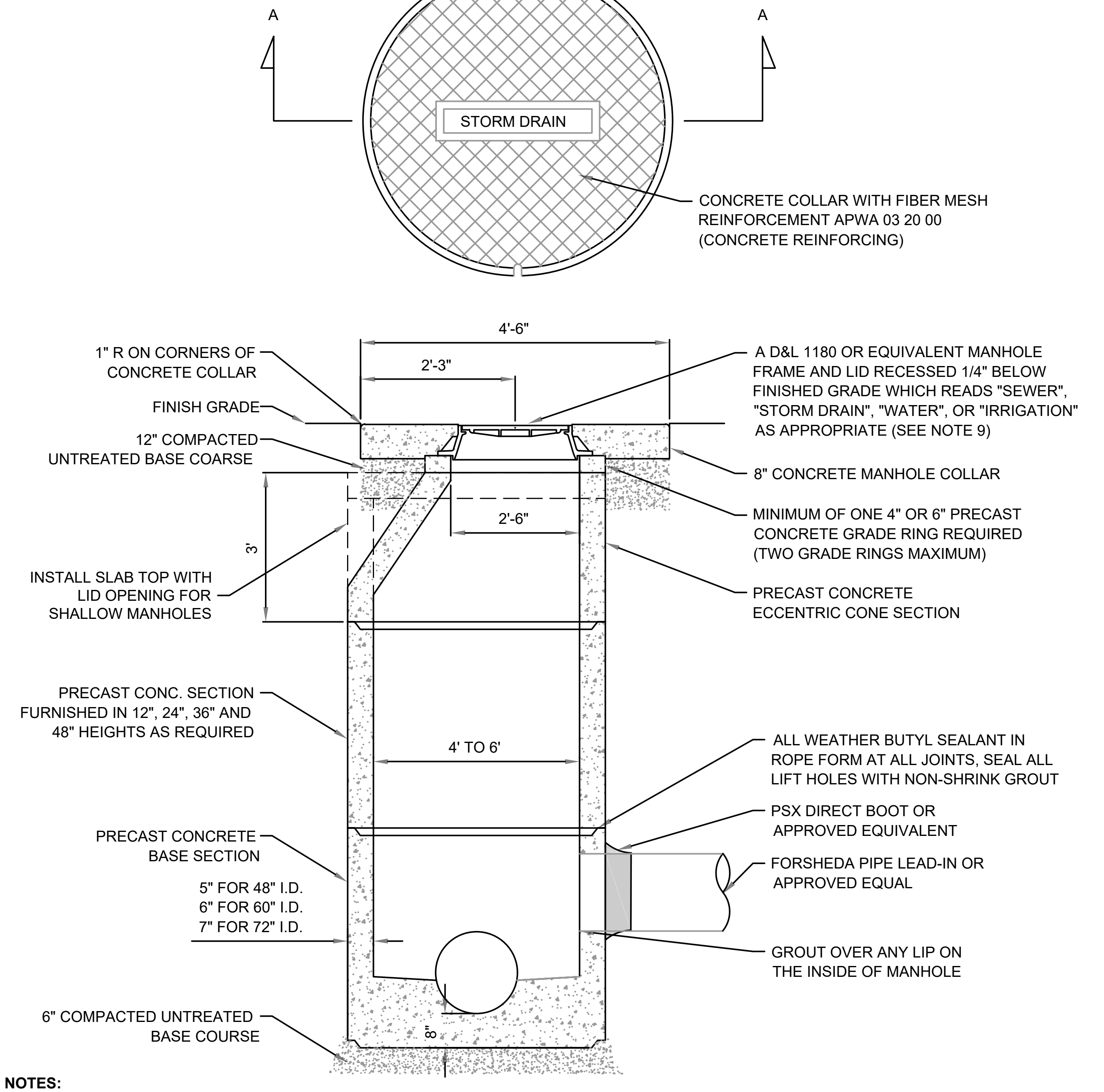

SIDEWALK
6'
RAMP
6'
2'
2%
CAST-IRON DETECTABLE WARNING STRIPS
6" CURB
SAWCUT CONSTRUCTION JOINTS IN CURB
6'
LANDING (L)
4' MIN.
RAMP (R)
RAMP (R)
2'
30"
6"
CAST-IRON DETECTABLE WARNING STRIPS

NOTES:

1. RAMPS SHALL HAVE A 1:12 MAXIMUM SLOPE, WITH A MAXIMUM 2% CROSS SLOPE. ALL OTHER SIDEWALK AND LANDING SHALL HAVE A 1:48 MAXIMUM SLOPE.
2. CONTRACTOR SHALL INSTALL PAVERS ACCORDING TO THE STANDARDS FOR CAST-IRON DETECTABLE WARNING PLATES AND MATCH PATTERN IN THIS DRAWING. RADIAL PLATES SHALL BE A EAST JORDAN IRON WORKS OR APPROVED EQUIVALENT AND SHALL BE ACCORDING TO THE CORRECT TBC RADIUS.
3. CONCRETE SHALL BE 7 INCHES THICK THROUGHOUT RAMP.
4. IF CONCRETE IS TO BE POURED NEXT TO A CURB, #4 REBAR SHALL BE DOWELED 6" INTO CURB AND 12" INTO SIDEWALK. REBAR SHALL BE INSTALLED A MINIMUM OF 1 1/2" FROM TOP OF THE SIDEWALK AND CURB 24" O.C.
5. MODIFICATIONS TO THIS STANDARD MUST BE APPROVED BY THE CITY.
6. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN, A HEIGHT OF NOMINAL 0.2 IN AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN.

① SPANISH FORK CITY MID BLOCK PEDESTRIAN RAMP DESIGN

SEE SPANISH FORK STD. DWG. ST-520 FOR ADDITIONAL INFO


A
A
STORM DRAIN
CONCRETE COLLAR WITH FIBER MESH REINFORCEMENT APWA 03 20 00 (CONCRETE REINFORCING)
4'-6"
2'-3"
1" R ON CORNERS OF CONCRETE COLLAR
FINISH GRADE
12" COMPACTED UNTREATED BASE COARSE
A D&L 1180 OR EQUIVALENT MANHOLE FRAME AND LID RECESSED 1/4" BELOW FINISHED GRADE WHICH READS "SEWER", "STORM DRAIN", "WATER", OR "IRRIGATION" AS APPROPRIATE (SEE NOTE 9)
8" CONCRETE MANHOLE COLLAR
MINIMUM OF ONE 4" OR 6" PRECAST CONCRETE GRADE RING REQUIRED (TWO GRADE RINGS MAXIMUM)
2'-6"
3'
INSTALL SLAB TOP WITH LID OPENING FOR SHALLOW MANHOLES
PRECAST CONCRETE ECCENTRIC CONE SECTION
PRECAST CONC. SECTION FURNISHED IN 12", 24", 36" AND 48" HEIGHTS AS REQUIRED
4' TO 6'
ALL WEATHER BUTYL SEALANT IN ROPE FORM AT ALL JOINTS, SEAL ALL LIFT HOLES WITH NON-SHRINK GROUT
PSX DIRECT BOOT OR APPROVED EQUIVALENT
PRECAST CONCRETE BASE SECTION
FORSHEDA PIPE LEAD-IN OR APPROVED EQUAL
5" FOR 48" I.D.
6" FOR 60" I.D.
7" FOR 72" I.D.
GROUT OVER ANY LIP ON THE INSIDE OF MANHOLE
6" COMPACTED UNTREATED BASE COURSE
8"

NOTES:

1. USE 4' I.D. MANHOLES FOR MAIN LINES LESS THEN 18" IN DIAMETER; 5' I.D. MANHOLES FOR MAIN LINES 18" TO 30" IN DIAMETER, AND 6' I.D. FOR MAIN LINES GREATER THAN 30" IN DIAMETER.
2. FLAT LIDS MAY BE USED IN LIEU OF ECCENTRIC CONES WHERE NECESSARY. FLAT LIDS SHALL BE OF ECCENTRIC DESIGN AND MEET H20 LIVE LOADING. NO FLAT RING AND COVERS WILL BE ALLOWED UNLESS APPROVED BY CITY ENGINEER OR HIS/HER DESIGNEE.
3. MANHOLE RIMS PLACED IN FIELDS SHALL HAVE SOLID LIDS AND BE BURIED 2 FEET DEEP.
4. MANHOLE RIMS OUT OF STREETS SHALL BE PLACED 4 INCHES ABOVE GRADE.
5. CONCRETE COLLAR AND RIM SHALL BE INSTALLED 1/4" BELOW PAVEMENT SURFACE AFTER THE 1 YEAR PRESERVATION COAT.
6. MANHOLE COLLARS AND RINGS SHALL BE PROTECTED BY A COVERING DURING A SEAL COAT.
7. STORM MANHOLES MAY HAVE FLAT BOTTOMS IN THE BASES.
8. CONCRETE COLLAR SHALL BE PLACED AFTER THE 1 YEAR PRESERVATION COAT WHEN APPLICABLE.
9. IN PAVED AREAS WITH A SLOPE GREATER THAN 5% USE AN EJIW 3624 TWIST BASE OR APPROVED EQUIVALENT.
10. ALL STORM DRAIN MANHOLES CONNECTED TO STORM DRAIN INLETS SHALL HAVE A FLAT BOTTOM WITH 18" MIN. FROM FLOW LINE TO BOTTOM OF BOX.
11. ALL STORM DRAIN MANHOLES NOT CONNECTED TO AN INLET BOX SHALL HAVE A TROUGH.

② SPANISH FORK CITY PRECAST MANHOLE

SEE SPANISH FORK STD. DWG. SD-401 FOR ADDITIONAL INFO

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

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630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
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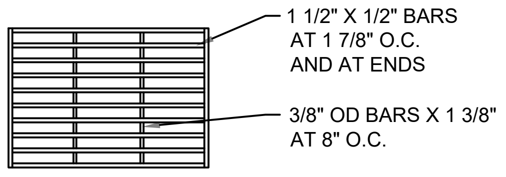
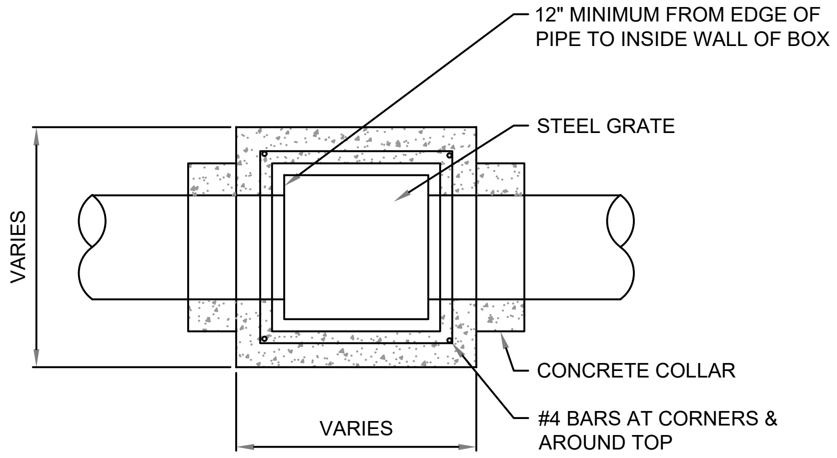
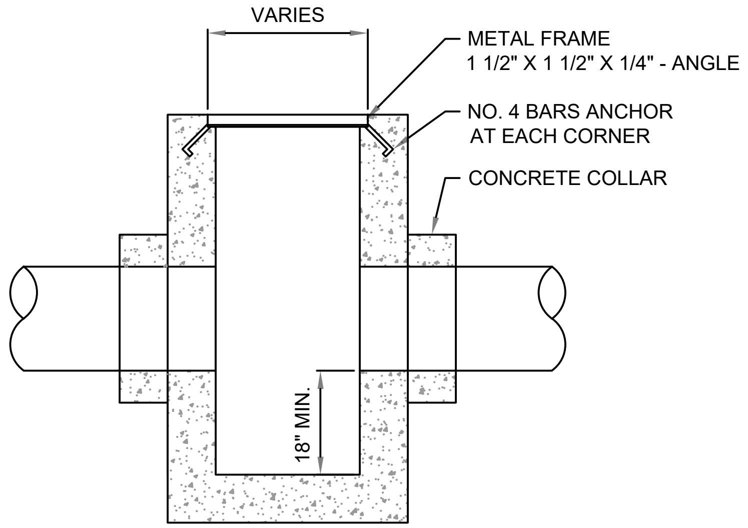


STEEL GRATE





STANDARD CLEANOUT BOX

NOTES:

1. GRATE SHALL BE BICYCLE SAFE AND TRAFFIC RATED.
2. BOX SHALL BE SIZED ACCORDING TO TABLE ON STANDARD #29.

① SPANISH FORK CITY CLEANOUT BOX

SEE SPANISH FORK STD. DWG. SD-403 FOR ADDITIONAL INFO

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3160 W. Clubhouse Drive, Ste. A
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SPANISH FORK, UT

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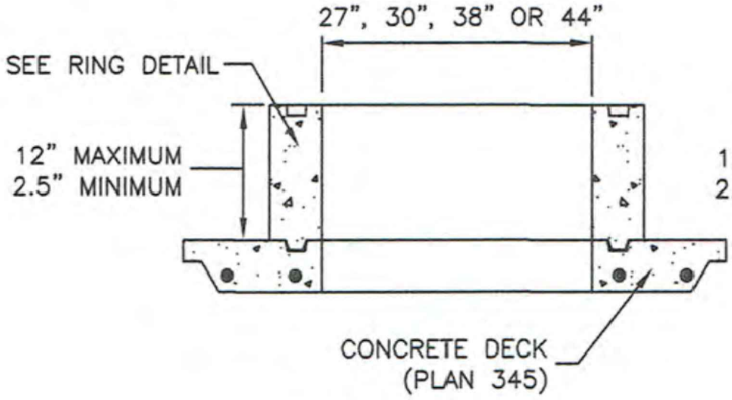
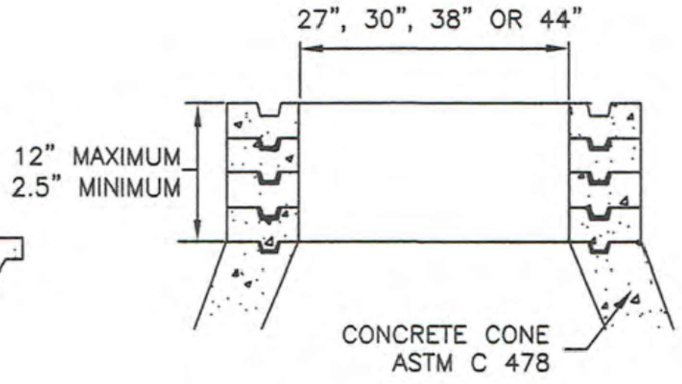


DECK SECTION



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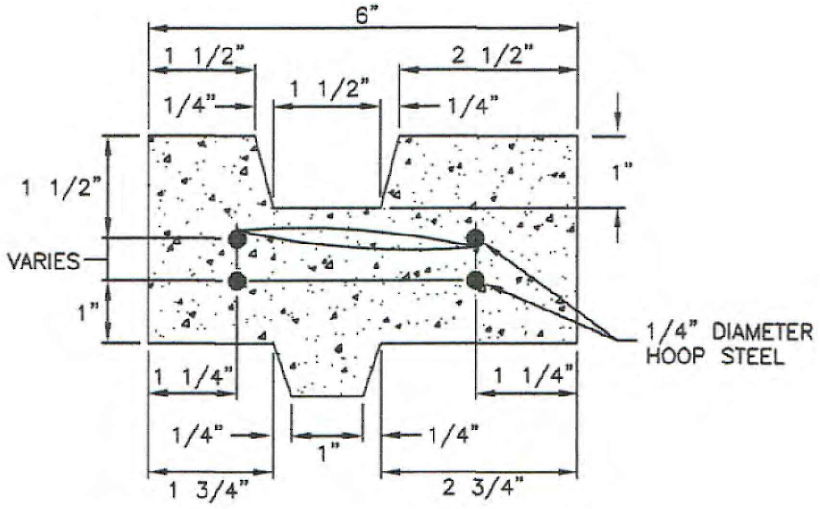
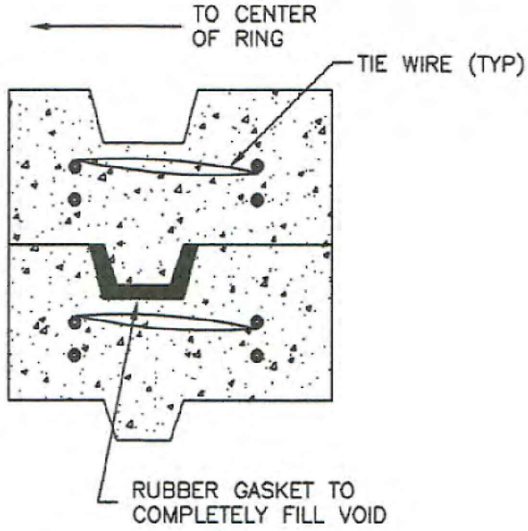


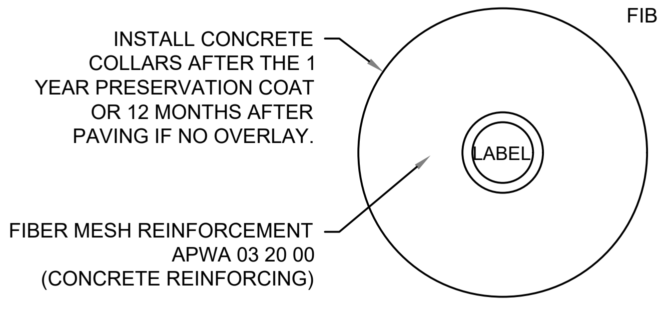
RING DETAIL



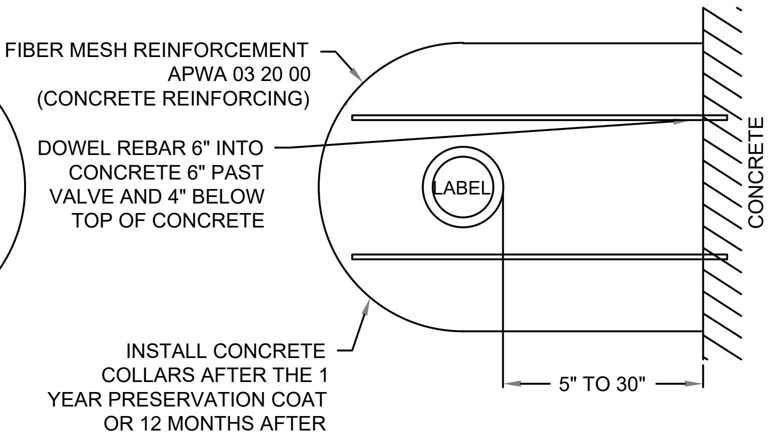
GASKET DETAIL

1 APWA RAISE FRAME TO GRADE

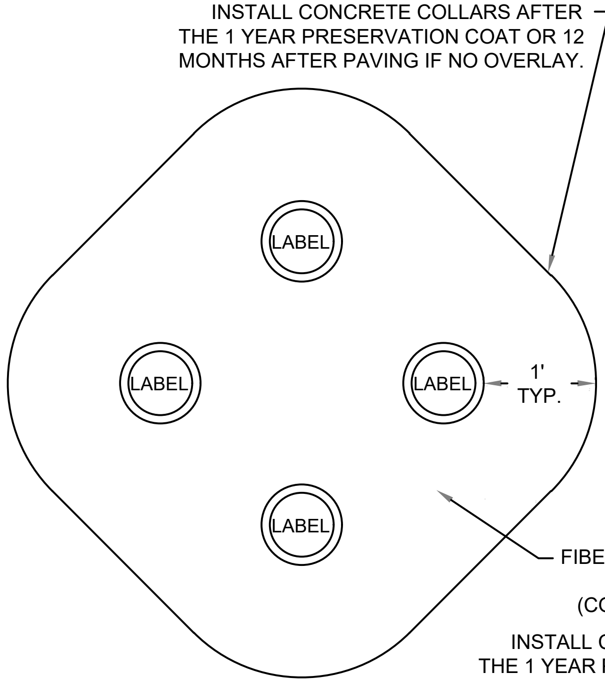
SEE APWA PLAN 360.1 FOR ADDITIONAL INFO



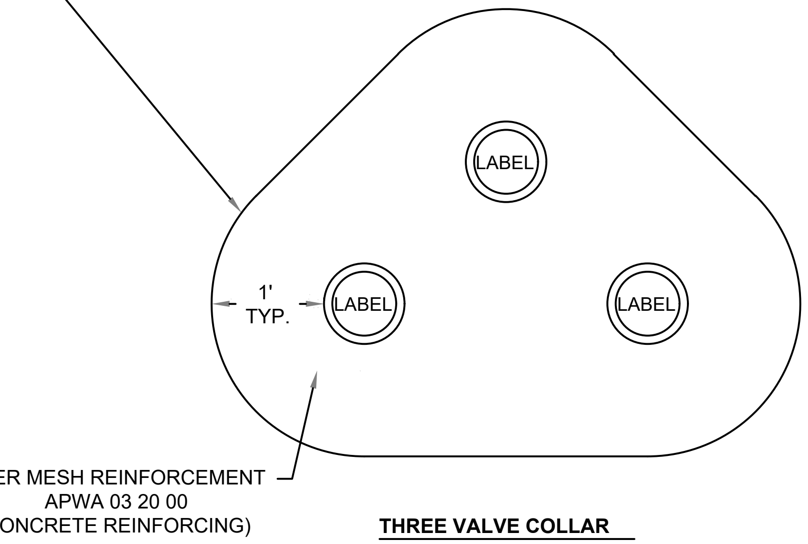
SINGLE VALVE COLLAR



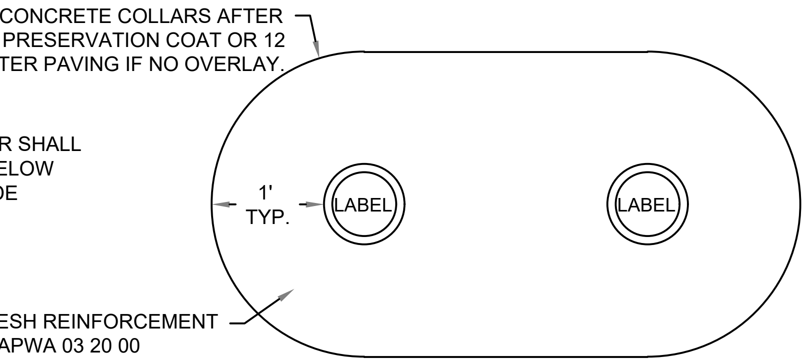
VALVE BOX WITHIN 30" OF CONCRETE


INSTALL CONCRETE COLLARS AFTER
THE 1 YEAR PRESERVATION COAT OR 12
MONTHS AFTER PAVING IF NO OVERLAY.
LABEL
LABEL
LABEL
1'
TYP.
LABEL

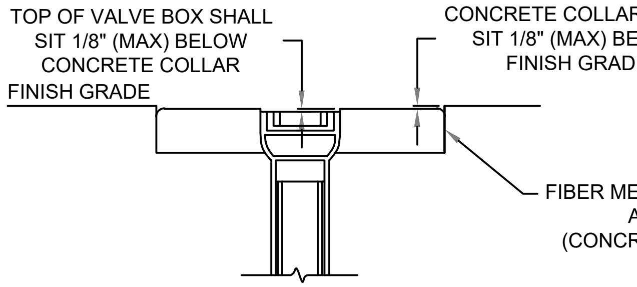
FOUR VALVE COLLAR



THREE VALVE COLLAR


INSTALL CONCRETE COLLARS AFTER
THE 1 YEAR PRESERVATION COAT OR 12
MONTHS AFTER PAVING IF NO OVERLAY.
1'
TYP.
LABEL
LABEL

TWO VALVE COLLAR



VALVE COLLAR CROSS-SECTION

NOTES:

1. VALVE RINGS AND CONCRETE COLLARS SHALL BE PROTECTED BY A COVERING DURING A SEAL COAT.
2. LABEL ON LID SHALL READ "WATER" FOR DRINKING WATER MAIN VALVES, "FIRE" FOR FIRE LINE VALVES, "IRRIGATION" FOR PRESSURIZED IRRIGATION MAIN VALVES AND "DRAIN" FOR PRESSURIZED IRRIGATION DRAIN VALVES.
3. VALVE BOXES SHALL BE 2 PIECE, CAST IRON, SCREW ADJUSTABLE SLEEVE, 5 1/4" SHAFT WITH A DROP LID.
4. VALVE BOXES ON MAINS TOO SHALLOW FOR 2 PIECE BOXES SHALL HAVE A 10" SLIPTOP, D&L M-8056 OR APPROVED EQUIVALENT. THIS SHALL BE USED FOR PRESSURIZED IRRIGATION MAINS WITH 2' TO 4' OF COVER. VALVE BOX RISERS SHALL BE USED TO BRING TO FINAL GRADE.
5. PRESSURE ZONE AND FIRE HYDRANT VALVES SHALL HAVE A TRIANGLE VALVE BOX LID.

2 SPANISH FORK CITY VALVE COLLARS

SEE SPANISH FORK STD. DWG. W-209 FOR ADDITIONAL INFO

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

PRELIMINARY PLANS
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630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

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DT05

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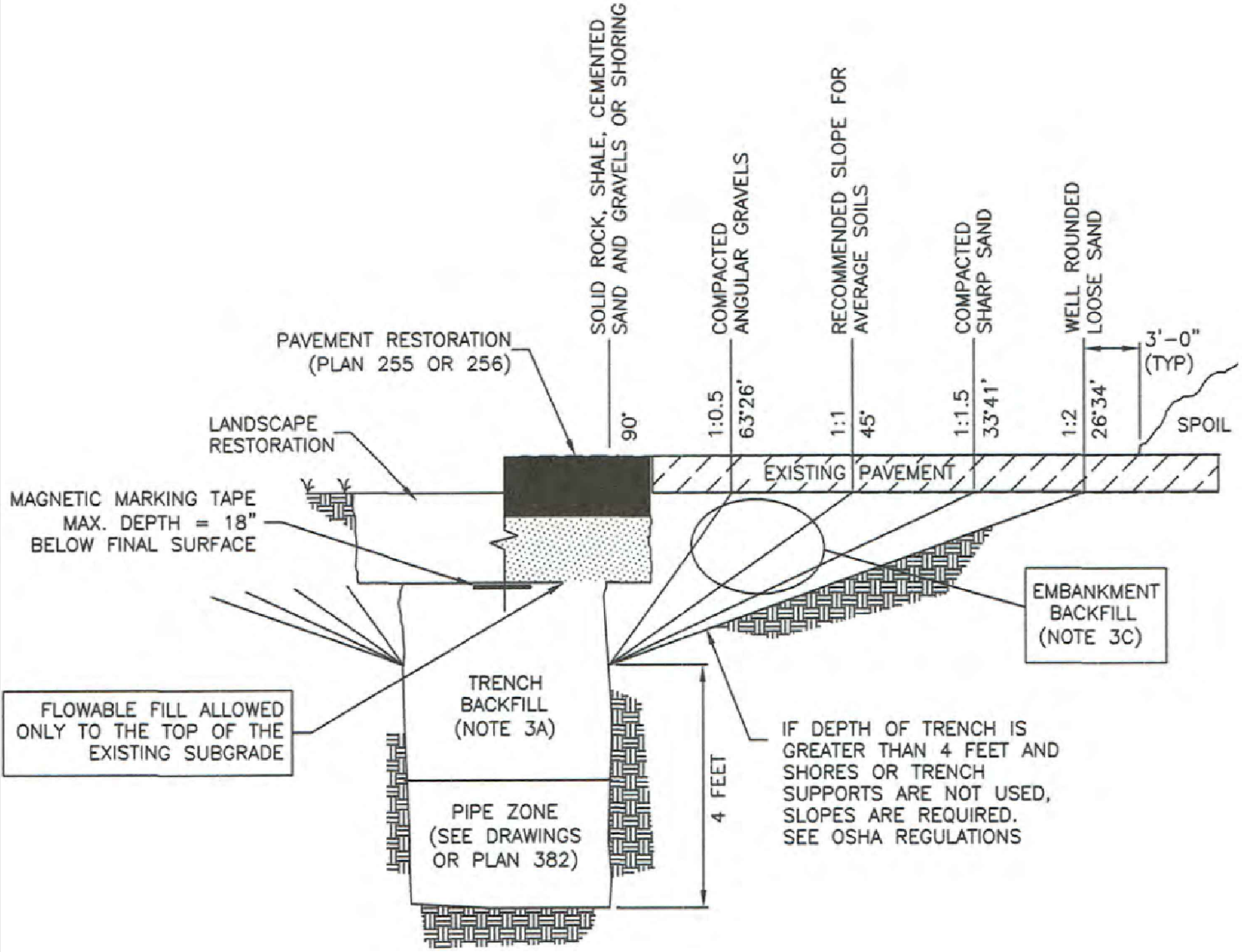
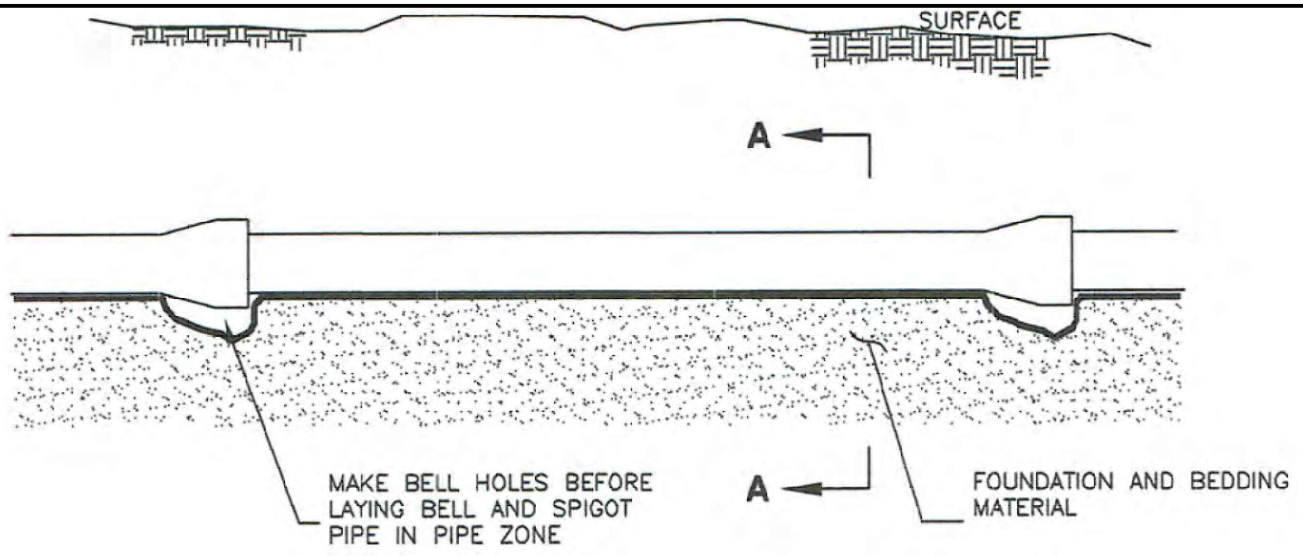
PATH: L:\UTAH\PROJECTS\ACTIVE 2022\FX22199.00 - SF 630 WEST CENTER ST\700 - CAD\SHEET_FILES\22199_DT.DWG

NARRATIVE: THIS PLAN SHOWS VARIOUS SLOPES RECOMMENDED FOR VARIOUS TYPES OF SLOPE STABILITY PROBLEMS. THE VERTICAL TEXT INDICATES VARIOUS MATERIALS THAT MAY BE ENCOUNTERED. THE SERVICES OF A PROFESSIONAL SOILS ENGINEER SHOULD BE USED TO VERIFY SLOPE STABILITY.

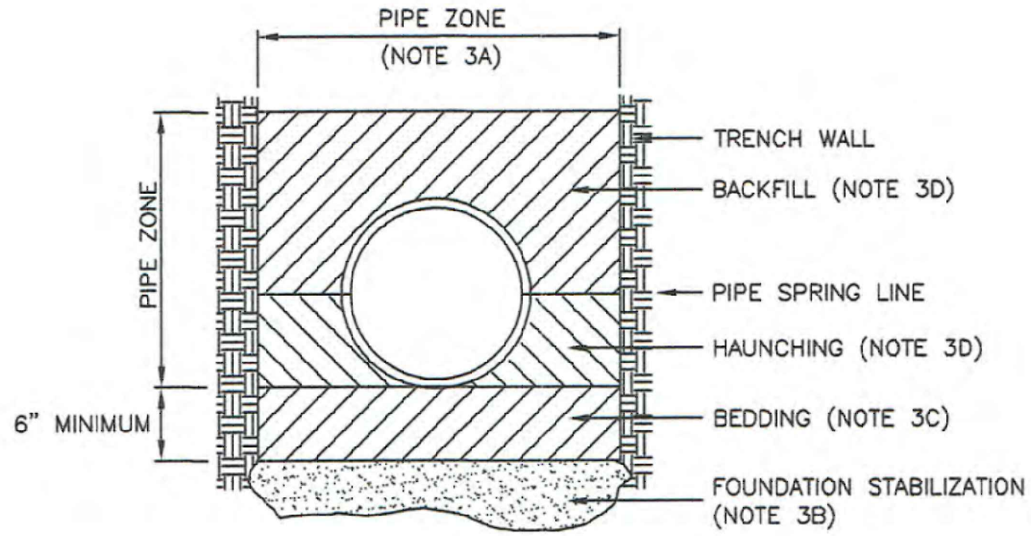

SOLID ROCK, SHALE, CEMENTED SAND AND GRAVELS OR SHORING
COMPACTED ANGULAR GRAVELS
RECOMMENDED SLOPE FOR AVERAGE SOILS
COMPACTED SHARP SAND
WELL ROUNDED LOOSE SAND
90°
1:0.5
63°26'
1:1
45°
1:1.5
33°41'
1:2
26°34'
3'-0" (TYP)
SPOIL
PAVEMENT RESTORATION (PLAN 255 OR 256)
LANDSCAPE RESTORATION
EXISTING PAVEMENT
MAGNETIC MARKING TAPE MAX. DEPTH = 18" BELOW FINAL SURFACE
EMBANKMENT BACKFILL (NOTE 3C)
FLOWABLE FILL ALLOWED ONLY TO THE TOP OF THE EXISTING SUBGRADE
TRENCH BACKFILL (NOTE 3A)
PIPE ZONE (SEE DRAWINGS OR PLAN 382)
4 FEET
IF DEPTH OF TRENCH IS GREATER THAN 4 FEET AND SHORES OR TRENCH SUPPORTS ARE NOT USED, SLOPES ARE REQUIRED. SEE OSHA REGULATIONS

1 APWA TRENCH BACKFILL

SEE APWA PLAN 381 FOR ADDITIONAL INFO


SURFACE
A
A
MAKE BELL HOLES BEFORE LAYING BELL AND SPIGOT PIPE IN PIPE ZONE
FOUNDATION AND BEDDING MATERIAL

ELEVATION VIEW



SECTION A-A

INSTALLATION

CONCRETE PIPE: FOLLOW ASTM C 1479
"STANDARD PRACTICE FOR INSTALLATION OF PRECAST CONCRETE SEWER, STORM DRAIN, AND CULVERT PIPE USING STANDARD INSTALLATIONS.

PLASTIC PIPE: FOLLOW ASTM D 2321
"STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS"

CORRUGATED METAL PIPE: FOLLOW ASTM A 798
"STANDARD PRACTICE FOR INSTALLING FACOTRY-MADE CORRUGATED STEEL PIPE FOR SEWERS AND OTHER APPLICATIONS.

VITRIFIED CLAY PIPE: FOLLOW ASTM C 12.
"STANDARD RECOMMENDED PRACTICE FOR INSTALLING VITRIFIED CLAY PIPE LINES.

2 APWA PIPE ZONE BACKFILL

SEE APWA PLAN 382 FOR ADDITIONAL INFO

CivilScience
3160 W. Clubhouse Drive, Ste. A
Lehi, UT 84043
801.768.7200

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

REVISION

NO.	DESCRIPTION	BY	APR.	DATE

DETAILS

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET DT06

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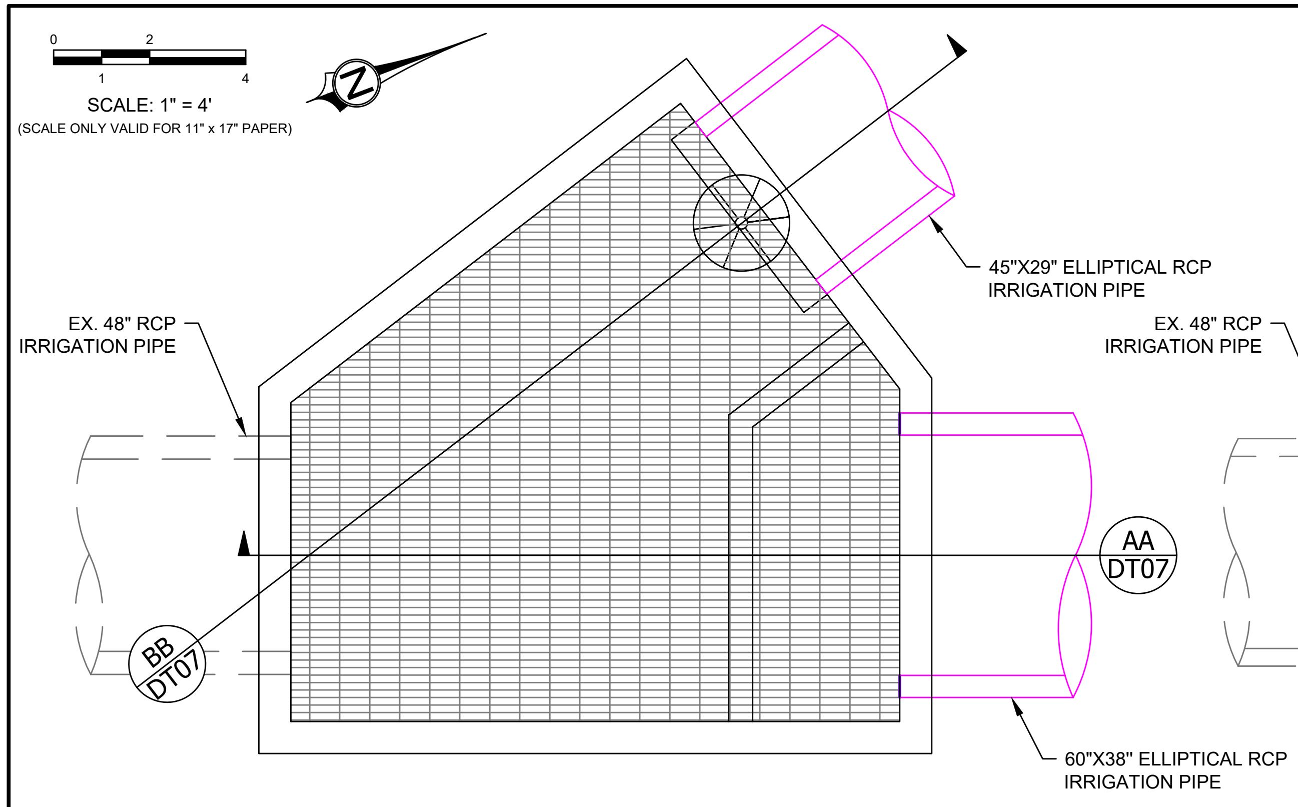
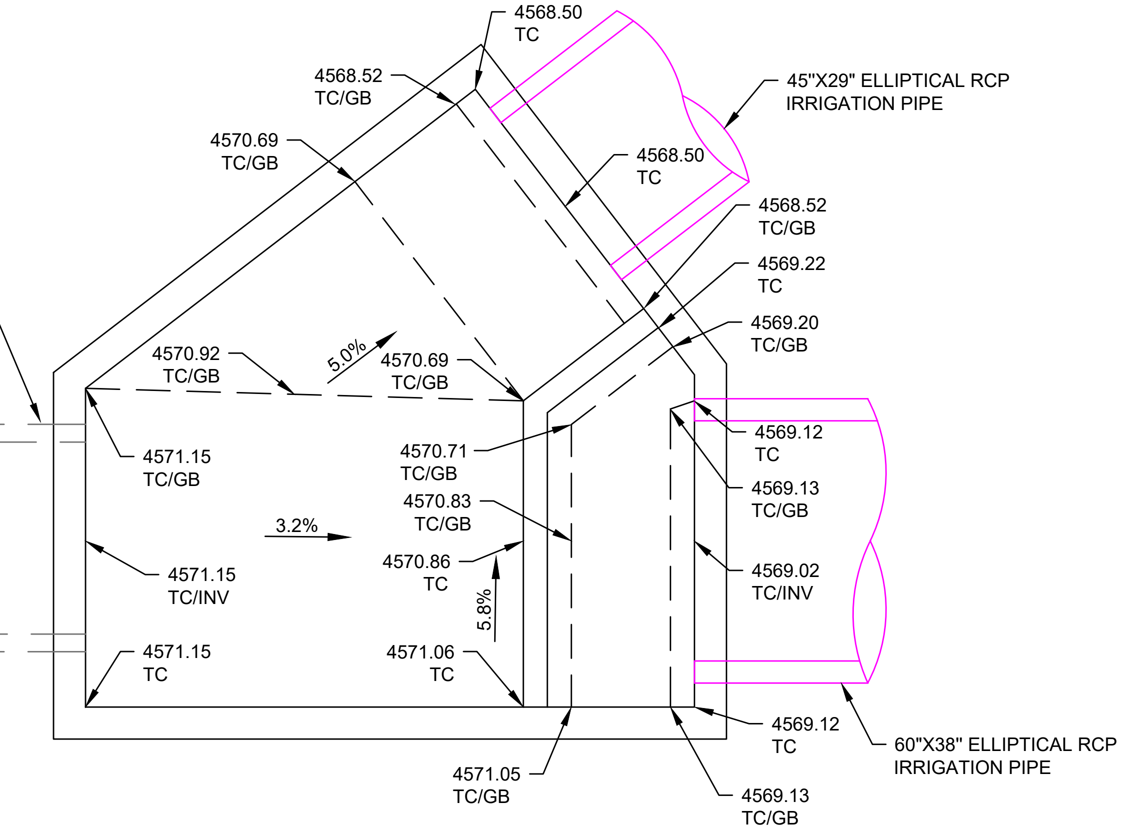
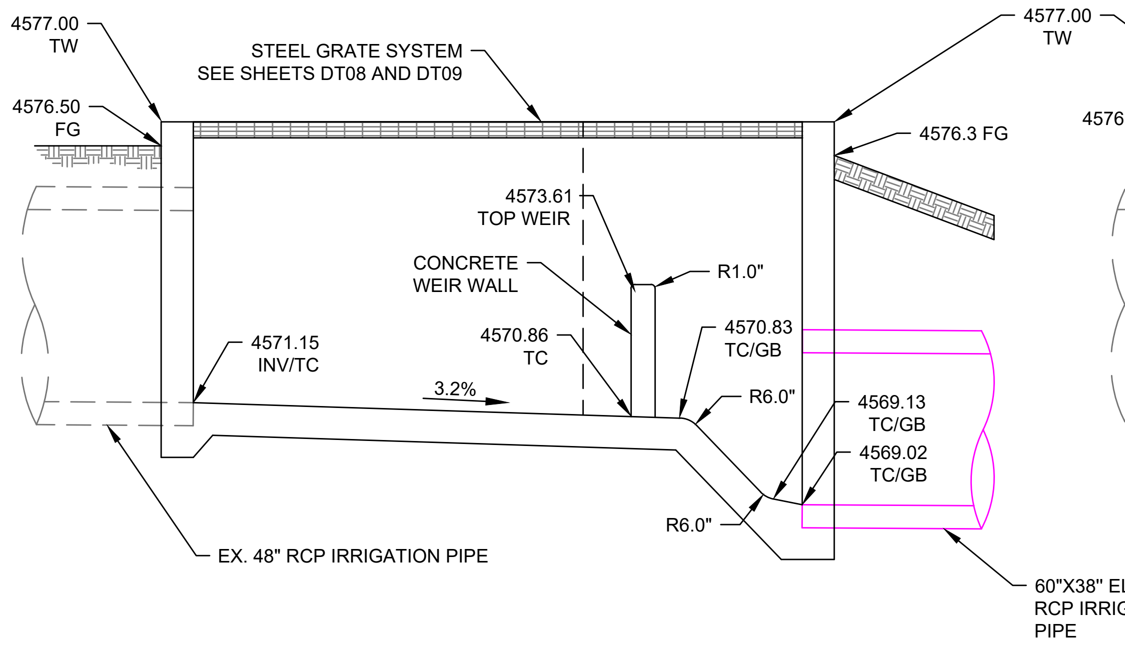


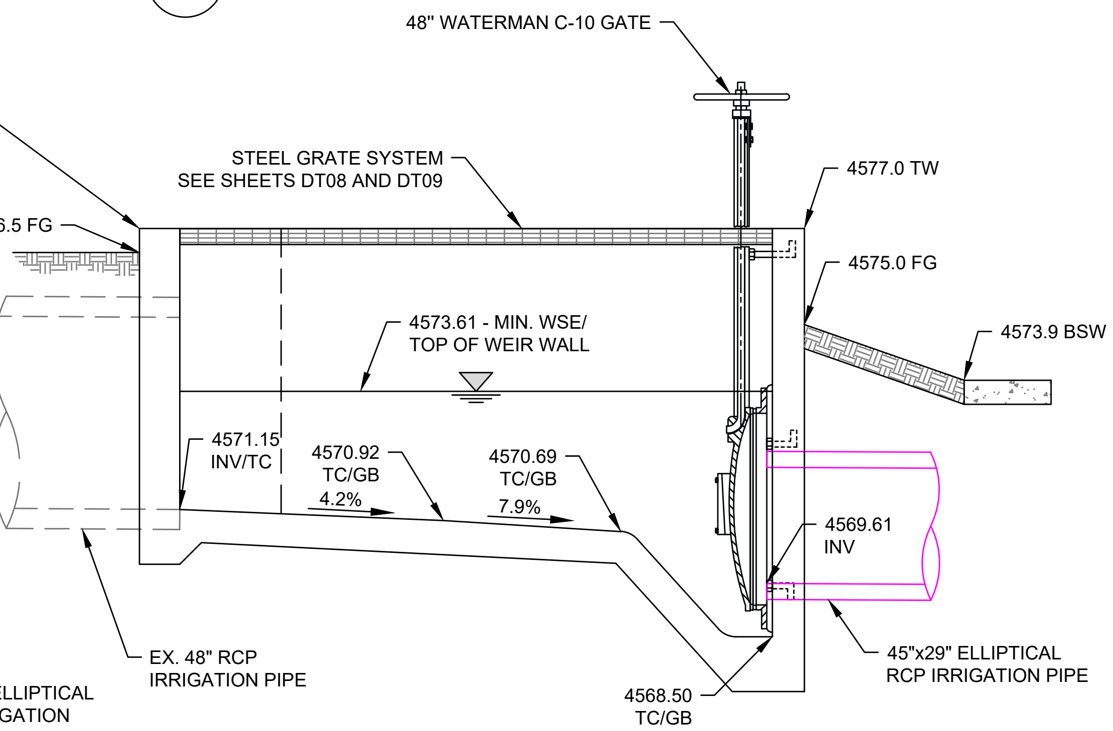
1 IRRIGATION STRUCTURE PLAN VIEW



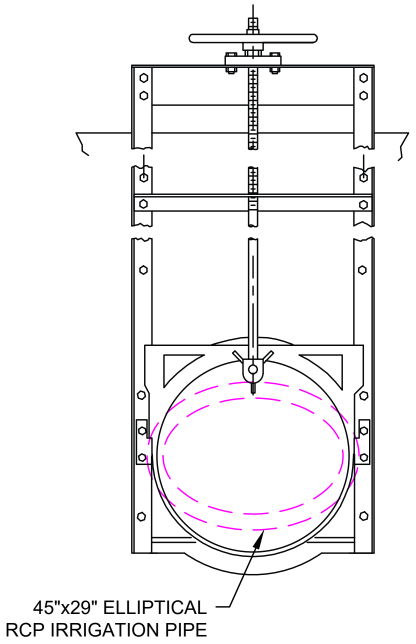
2 FLOOR SLAB GRADING PLAN



AA IRRIGATION STRUCTURE SECTION



BB IRRIGATION STRUCTURE SECTION



3 WATERMAN GATE FRONT VIEW

NOTES:

1. REFER TO SHEETS DT08 AND DT09 FOR ADDITIONAL INFORMATION.

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IRRIGATION DIVERSION STRUCTURE DETAILS

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SPANISH FORK, UT

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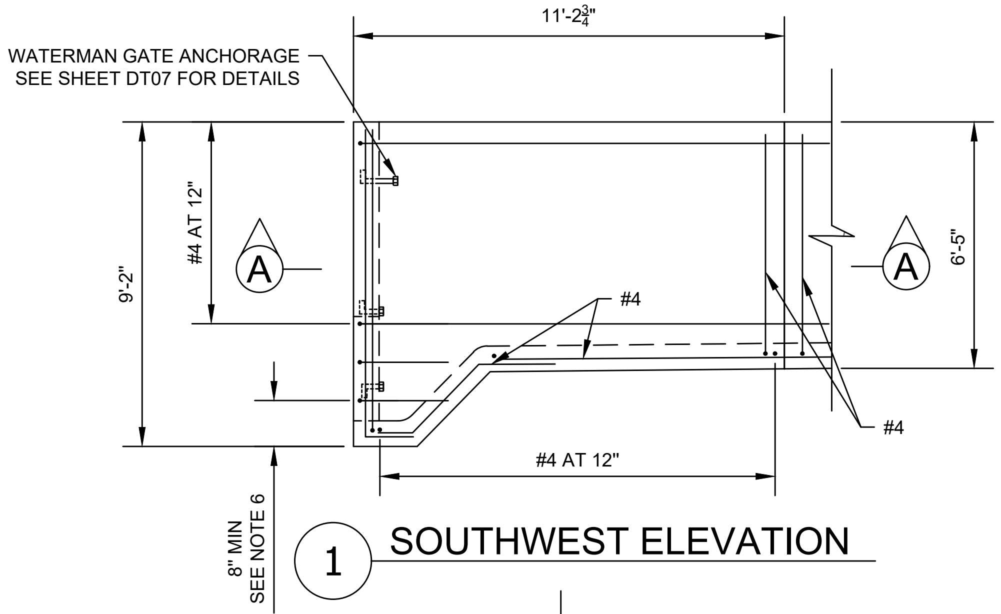
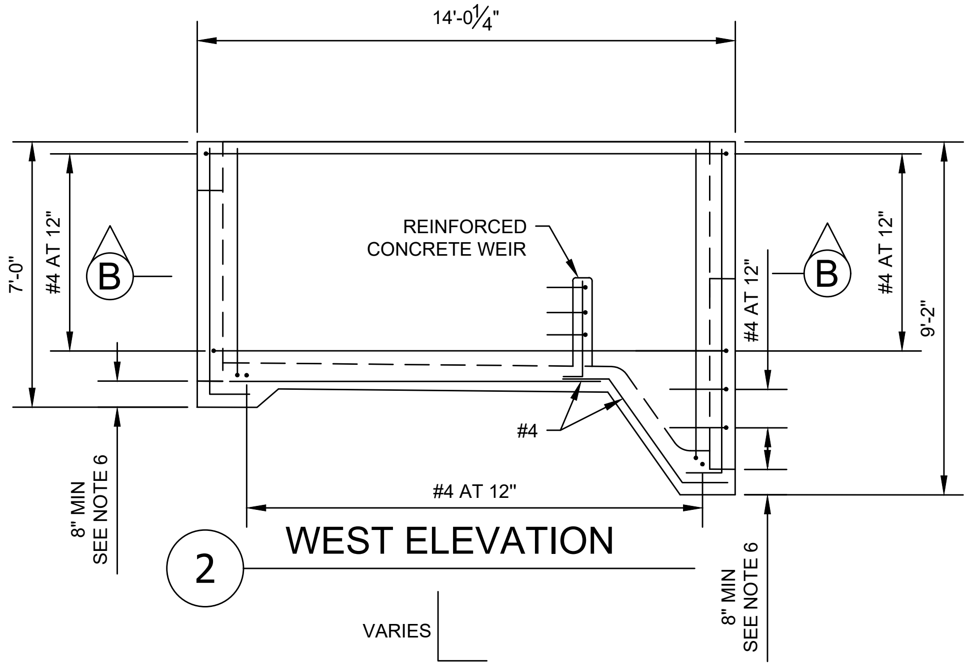
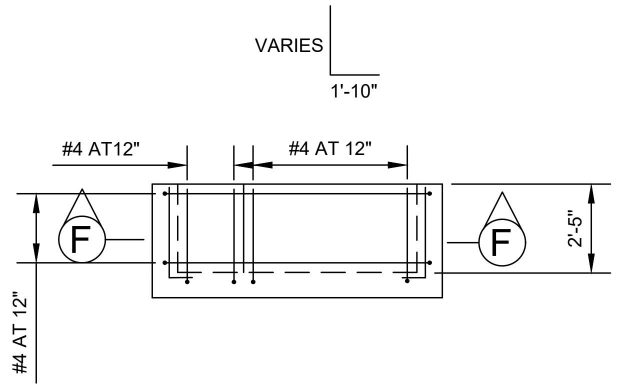


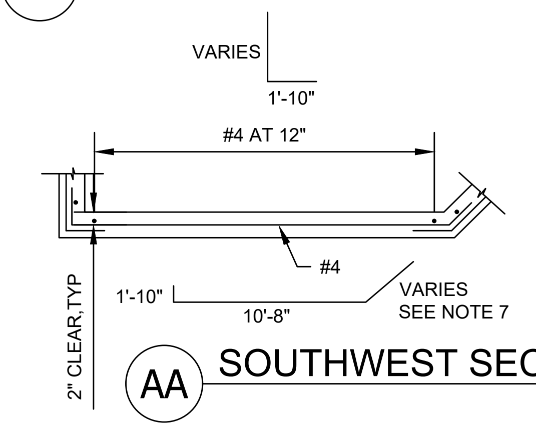
1 SOUTHWEST ELEVATION



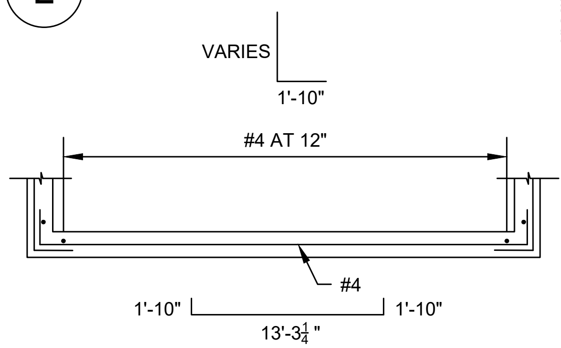
2 WEST ELEVATION



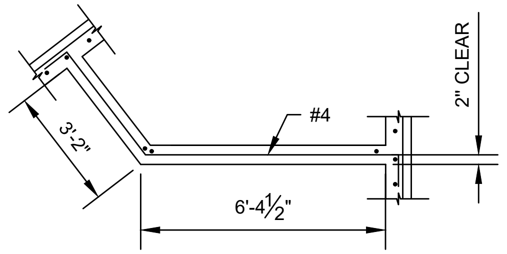
3 WEIR ELEVATION



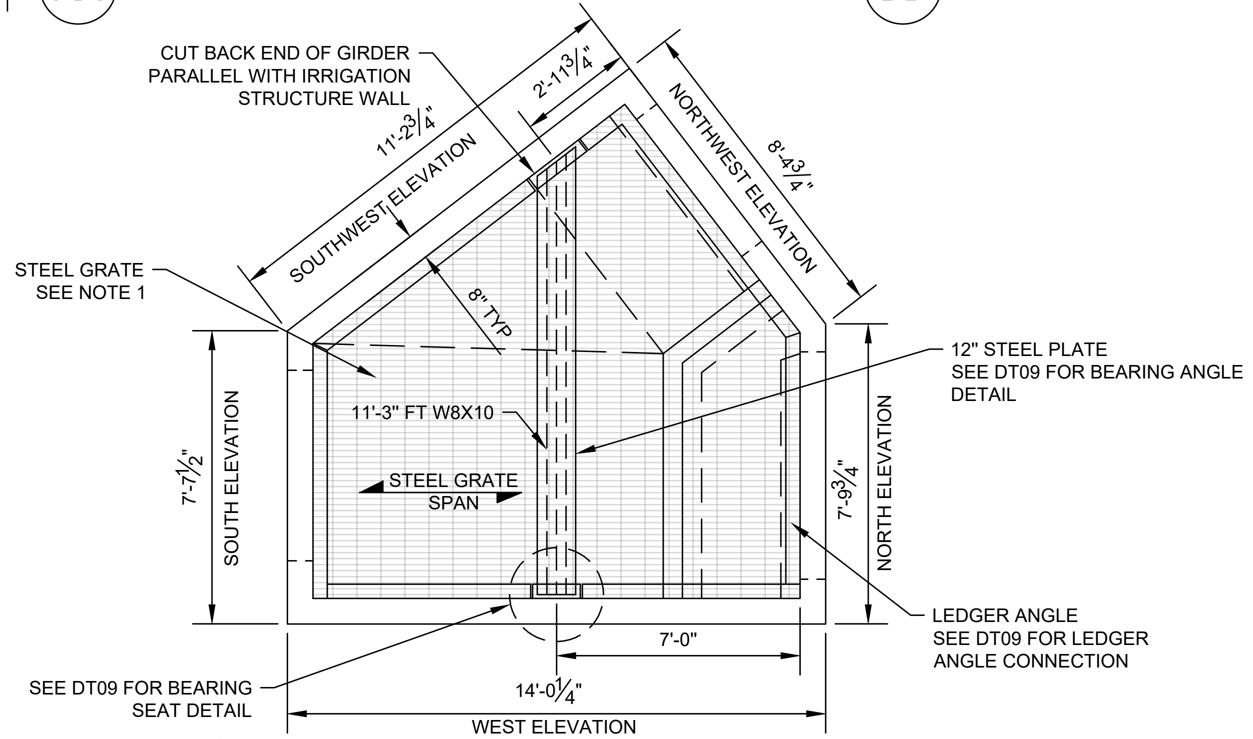
AA SOUTHWEST SECTION



BB WEST SECTION



FF WEIR SECTION



4 IRRIGATION STRUCTURE PLAN

NOTES:

1. USE $1\frac{1}{2}$" STEEL GRATE THAT IS CAPABLE OF RESISTING A UNIFORM LOAD OF 100 PSF. FOLLOW STEEL MANUFACTURING INSTALLATION INSTRUCTIONS AND STANDARDS. REFER TO DT09 FOR STEEL GRATE CONNECTION AND FASTENING DETAILS.
2. USE 4000 PSI CONCRETE WITH 5-7% AIR ENTRAINMENT.
3. PROVIDE 2" MINIMUM CONCRETE COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE.
4. CONTRACTOR IS PERMITTED TO USE ANGLE IRON $\geq \frac{3}{16}$" THICK.
5. USE $\frac{5}{8}$" DIA $4\frac{1}{2}$" TITEN HD OR APPROVED EQUAL.
6. PROVIDE A MINIMUM OF 8" THICK CONCRETE IN THE FLOOR SLAB BELOW THE OUTSIDE DIAMETER OF PIPE.
7. USE A MINIMUM DEVELOPMENT LENGTH OF 1'-10" FOR #4 REBAR.
8. SEE DT07 FOR IRRIGATION STRUCTURE INVERTS, ELEVATIONS, AND FLOOR SLAB GRADING.

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PRELIMINARY PLANS
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IRRIGATION DIVERSION STRUCTURE DETAILS

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
DESIGN BY: TPB
CHECKED BY: JGJ
SHEET
DT08

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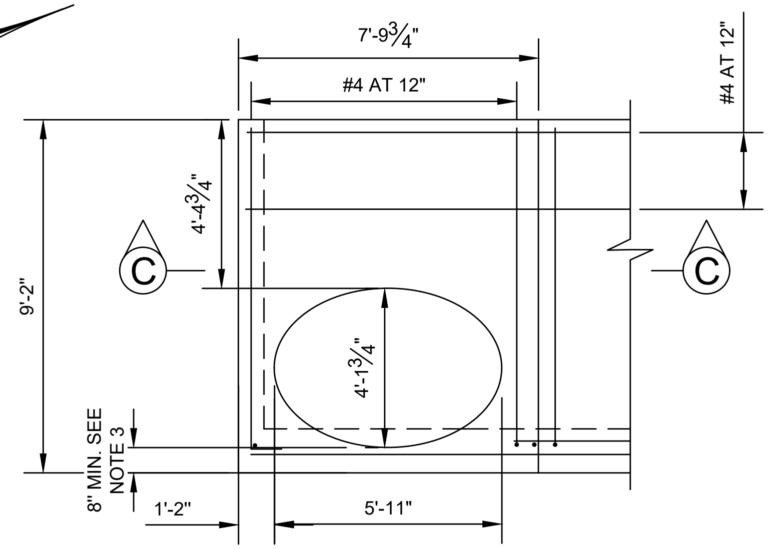
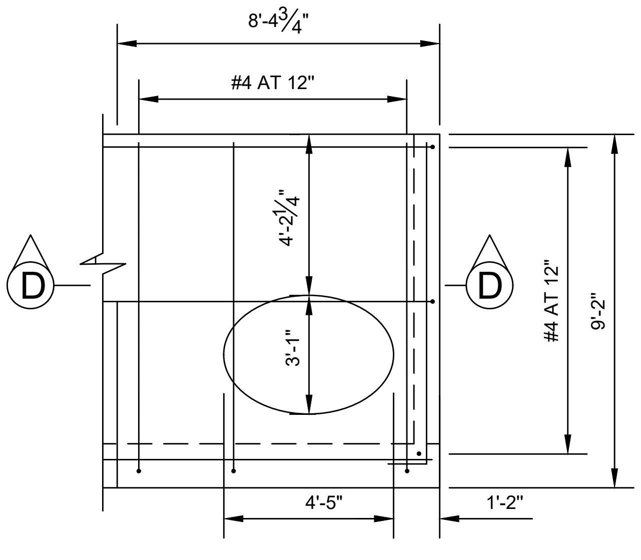
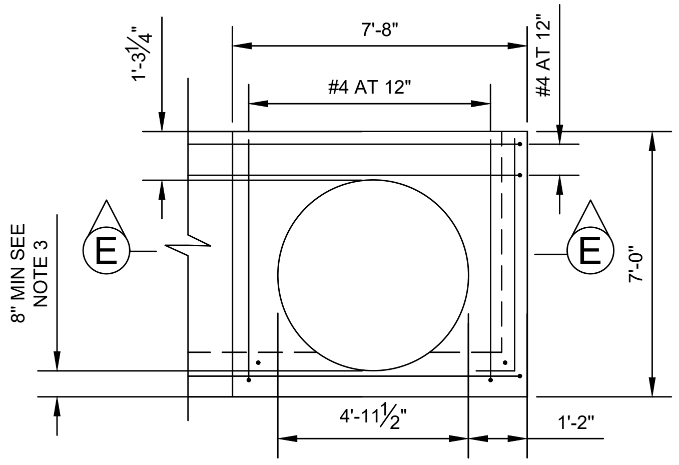


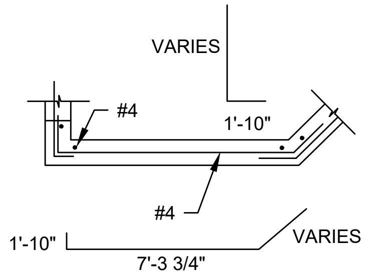
1 NORTH ELEVATION



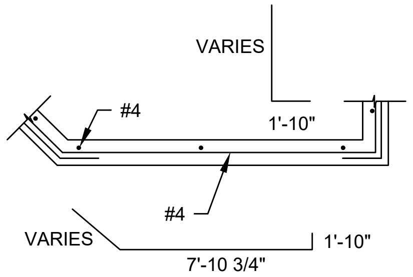
2 NORTHWEST ELEVATION



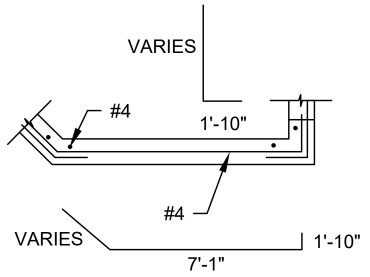
3 SOUTH ELEVATION



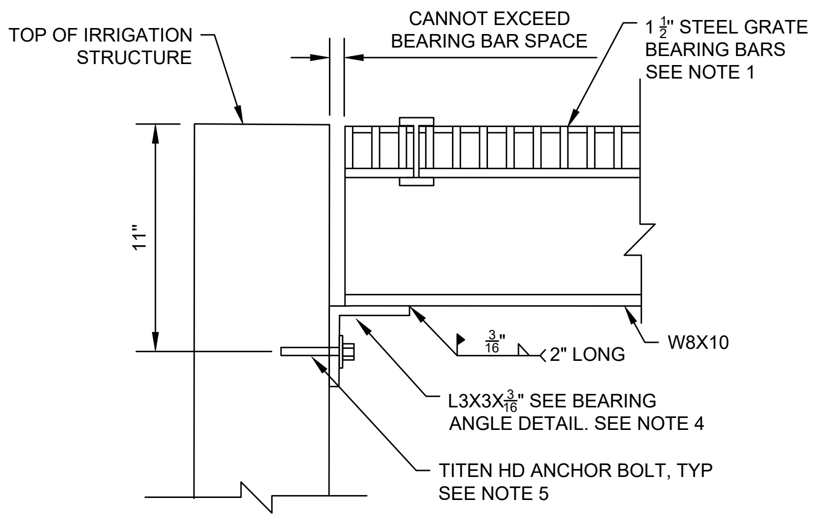
CC NORTH SECTION



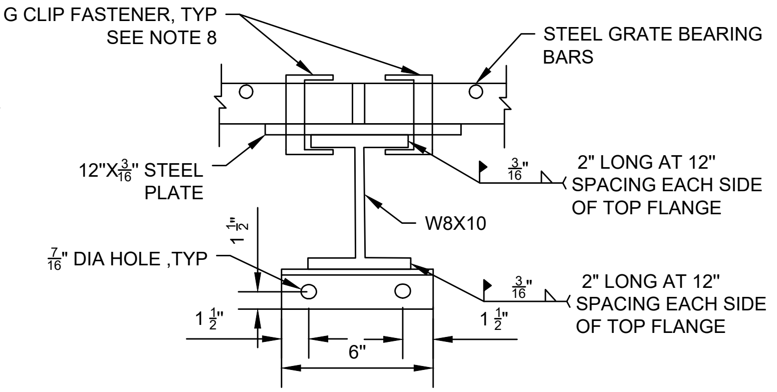
DD NORTHWEST SECTION



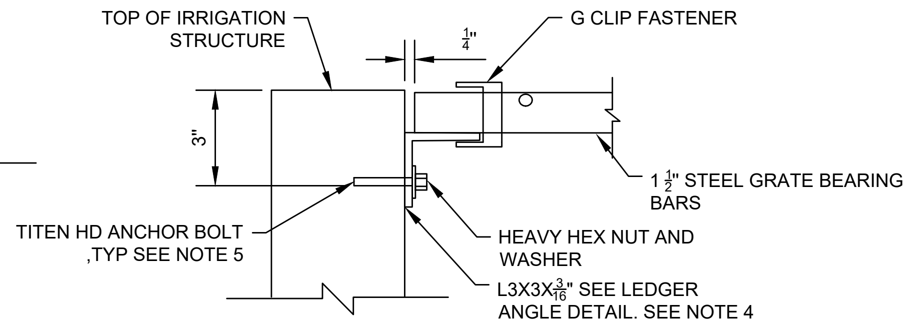
EE SOUTH SECTION


TOP OF IRRIGATION STRUCTURE
CANNOT EXCEED BEARING BAR SPACE
1 1/2" STEEL GRATE BEARING BARS SEE NOTE 1
11"
3/16" 2" LONG
W8X10
L3X3X3/16" SEE BEARING ANGLE DETAIL. SEE NOTE 4
TITEN HD ANCHOR BOLT, TYP SEE NOTE 5

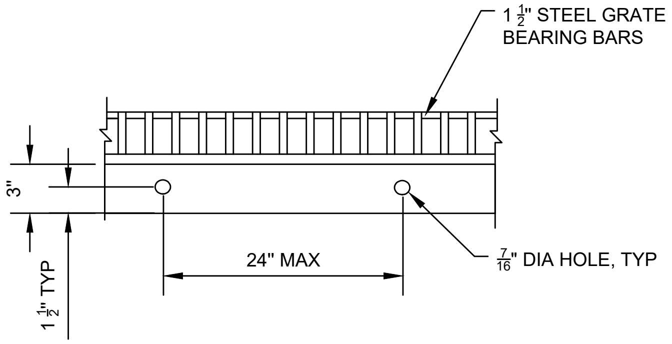
4 BEARING SEAT DETAIL


G CLIP FASTENER, TYP SEE NOTE 8
STEEL GRATE BEARING BARS
12"X3/16" STEEL PLATE
3/16" 2" LONG AT 12" SPACING EACH SIDE OF TOP FLANGE
W8X10
1 1/2"
7/16" DIA HOLE ,TYP
3/16" 2" LONG AT 12" SPACING EACH SIDE OF TOP FLANGE
1 1/2"
1 1/2"
6"

5 BEARING ANGLE DETAIL


TOP OF IRRIGATION STRUCTURE
1/4"
G CLIP FASTENER
3"
1 1/2" STEEL GRATE BEARING BARS
TITEN HD ANCHOR BOLT ,TYP SEE NOTE 5
HEAVY HEX NUT AND WASHER
L3X3X3/16" SEE LEDGER ANGLE DETAIL. SEE NOTE 4

6 LEDGER ANGLE CONNECTION



7 LEDGER ANGLE DETAIL

NOTES:

1. USE $1\frac{1}{2}$" STEEL GRATE THAT IS CAPABLE OF RESISTING A UNIFORM LOAD OF 100 PSF. FOLLOW STEEL MANUFACTURING INSTALLATION INSTRUCTIONS AND STANDARDS.
2. USE 4000 PSI CONCRETE WITH 5-7% AIR ENTRAINMENT.
3. PROVIDE 2" MINIMUM CONCRETE COVER TO REINFORCING STEEL UNLESS SHOWN OTHERWISE.
4. CONTRACTOR IS PERMITTED TO USE ANGLE IRON $\geq \frac{3}{16}$" THICK.
5. USE $\frac{5}{8}$" DIA $4\frac{1}{2}$" TITEN HD OR APPROVED EQUAL.
6. PROVIDE A MINIMUM OF 8" THICK CONCRETE IN THE FLOOR SLAB BELOW THE OUTSIDE DIAMETER OF PIPE.
7. USE A MINIMUM DEVELOPMENT LENGTH OF 1'-10" FOR #4 REBAR.
8. PROVIDE STEEL GRATE FASTENERS TO GIRDER AND ANGLE PER MANUFACTURER RECOMMENDATION.
9. SEE DT07 FOR IRRIGATION STRUCTURE INVERTS, ELEVATIONS AND FLOOR SLAB GRADING.

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IRRIGATION DIVERSION STRUCTURE DETAILS

630 WEST CENTER STREET IMPROVEMENTS
SPANISH FORK, UT

PROJ. #: FF 22199
DATE: JANUARY, 2023
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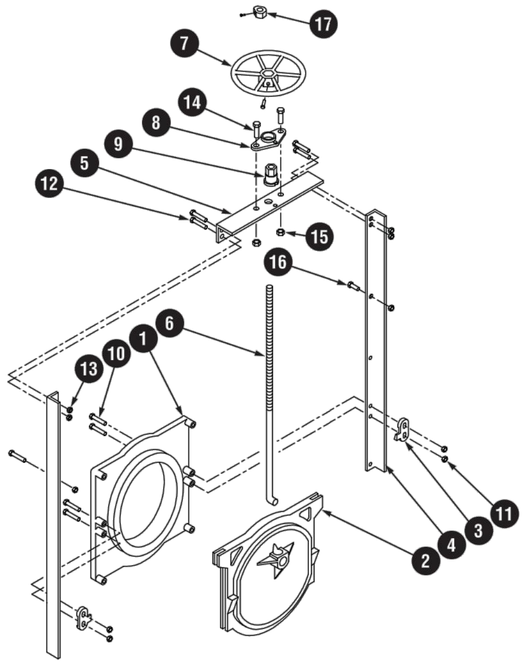
CHECKED BY: JGJ
SHEET
DT09

C-10 CANAL GATE

C-10 CANAL GATE PARTS

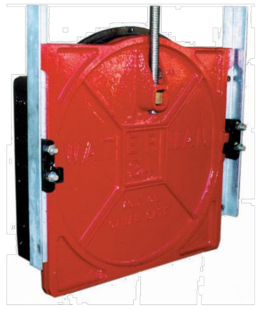
C-10 Canal Gate Parts

Number	Name	Quantity
1	Frame	1
2	Cover	1
3	Wedge (R&L)	2
4	Guide Rail (R&L)	2
5	Headrail	1
6	Stem	1
7	Handwheel	1
8	Thrust Collar	1
9	Lift Nut	1
10	Wedge Bolt	4
11	Wedge Nut	4
12	Frame Bolt	4
13	Frame Nut	4
14	Collar Bolt	2
15	Collar Nut	2
16	Stop Bolt & Nut	1
17	Limit Nut (optional)	1

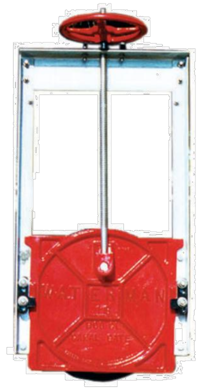


CL-10 CANAL GATE – IMPROVED CLOG RESISTANCE IN PARTIAL OPEN MODE

Waterman CL-10 Canal Gates are identical to our model C-10 Gates with the exception of the cast iron cover (slide) which is of a flat plate type construction with ribs reinforcing its face, to withstand the maximum heads as noted for our C-10 gates. This gate cover also features a square bottom design, which allows a more open "clog-free" flow at points of initial opening. The seat being only slightly raised above the cover plate surface helps prevent trash from collecting behind the cover which can cause difficulty in operation. Available with threaded thrust nut for true NRS application. All parts are interchangeable with our Standard C-10 gate. Available in a variety of sizes, consult factory.



Shown with optional threaded thrust nut for true non-rising stem operation



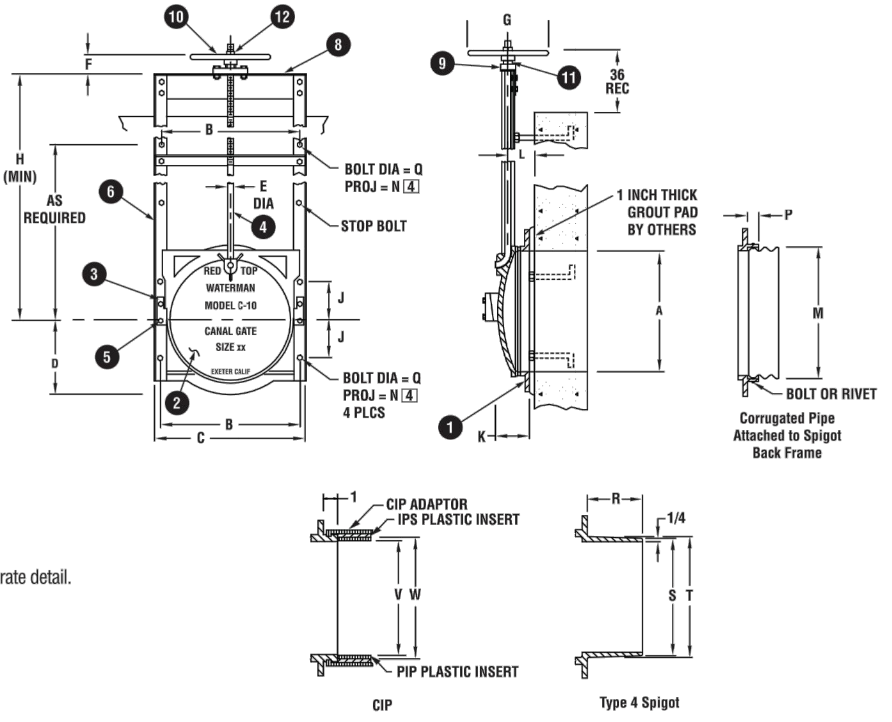
Flat plate type, square bottom

Waterman
WATERMAN VALVE LLC
25500 Road 204, Exeter, CA 93221 www.WatermanUSA.com 800.331.0808
McWANE

C-10 CANAL GATE

Materials of Construction

No.	Name	Material
1	Frame	Cast Iron ASTM A126 Class B
2	Cover	Cast Iron ASTM A126 Class B
3	Wedge (R&L)	Cast Iron ASTM A126 Class B
6	Guide Rail (R&L)	Structural Steel ASTM A-36
8	Headrail	Structural Steel ASTM A-36
4	Stem	Stainless Steel
9	Thrust Collar	Cast Iron ASTM A126 Class B
8	Lift Nut	Machined Brass
5	Wedge Bolt	
12	Limit Nut (optional)	Machined Brass



NOTES

1. TYPE 2 lubricated ball bearing lift standard on 48" and larger gates. Optional on 24" and up.
2. Applies to spigotback gate only. Optional spigot, shown in separate detail.
3. All dimensions are also applicable for model CL-10.
4. Add grout pad thickness to anchor bolt projection.
5. Type 3R4 2:1 lift used, mounted to headrail.

DIMENSIONS IN INCHES

A	B	C	D	E	F	G	H	J	K	L	M 2	N	P 2	Q	R	S	T	V	W
6	8	9 7/8	4	7/8	2 7/8	10	24	3	3.5	2 5/8	7	3.5	2.25	1/2				6.16	6.645
8	10	12	4 7/8	7/8	2 7/8	10	24	3	3.75	2.5	9	3.5	2.25	1/2	4	7 13/16	8	8.18	8.645
10	12	13 7/8	6	7/8	2 7/8	10	24	3.5	3.75	2.5	11	3.5	2.25	1/2	3 7/8	9 7/8	10	10.22	10.77
12	14	15 7/8	7	7/8	2 7/8	10	24	4	3.5	3	13	4	2.25	1/2	4	11 7/8	12	12.27	12.78
14	16	17 7/8	8	7/8	2 7/8	10	27	4.75	3.75	3.25	15	4	2.25	1/2					
15	17	18 7/8	8 7/8	7/8	2 7/8	10	30	5	4.5	3.5	16	4	2 1/8	1/2	4	14 7/8	15		
16	18.75	20 5/8	9 7/8	7/8	2 7/8	10	32	5.5	4.5	3.5	17	4.5	2.25	5/8					
18	21	22 7/8	10.5	1	3 1/8	12	34	6	4.5	4.25	19	4.5	2.25	5/8	4	17 13/16	18		
20	23.25	25 1/8	11.75	1	3 1/8	12	38	7	4.75	4	21	4.5	2.25	5/8					
21	24	25 7/8	12 5/16	1	3 1/8	12	40	7	4.75	4	22	4.5	2.25	5/8					
24	27.25	29 1/8	13 7/8	1	3 1/8	12	44	8	5.75	4 1/8	25	4.5	2.25	5/8					
30	33.75	36 1/8	17 3/8	1 1/8	4	15	54	10	6	4.5	31	6	2.25	3/4					
36	39.75	42 1/8	20.5	1 1/8	4	15	62	12	6.25	5 3/8	37	6	2 1/8	3/4					
42	45.75	48 3/8	23 5/8	1.5	5	18	84	14	7	6	43	6	2.5	3/4					
48	51.75	54 3/8	26.75	1.5	6	24 1	90	16	7 3/8	6 1/8	49 1/8	6	2.5	3/4					
54	58.5	61.5	30	2	6	30 1	100	18	7 7/8	6.5	55 1/8	7	3	1					
60	65	68	34	2	6	30 1	102	20	8 1/8	7 1/8	61 1/8	8	3.25	1					
72	77.5	80.25	41	2	13	5	121	25.5	10 5/8	8.75	73.25	8	3 3/8	1					

1 WATERMAN C-10 GATE

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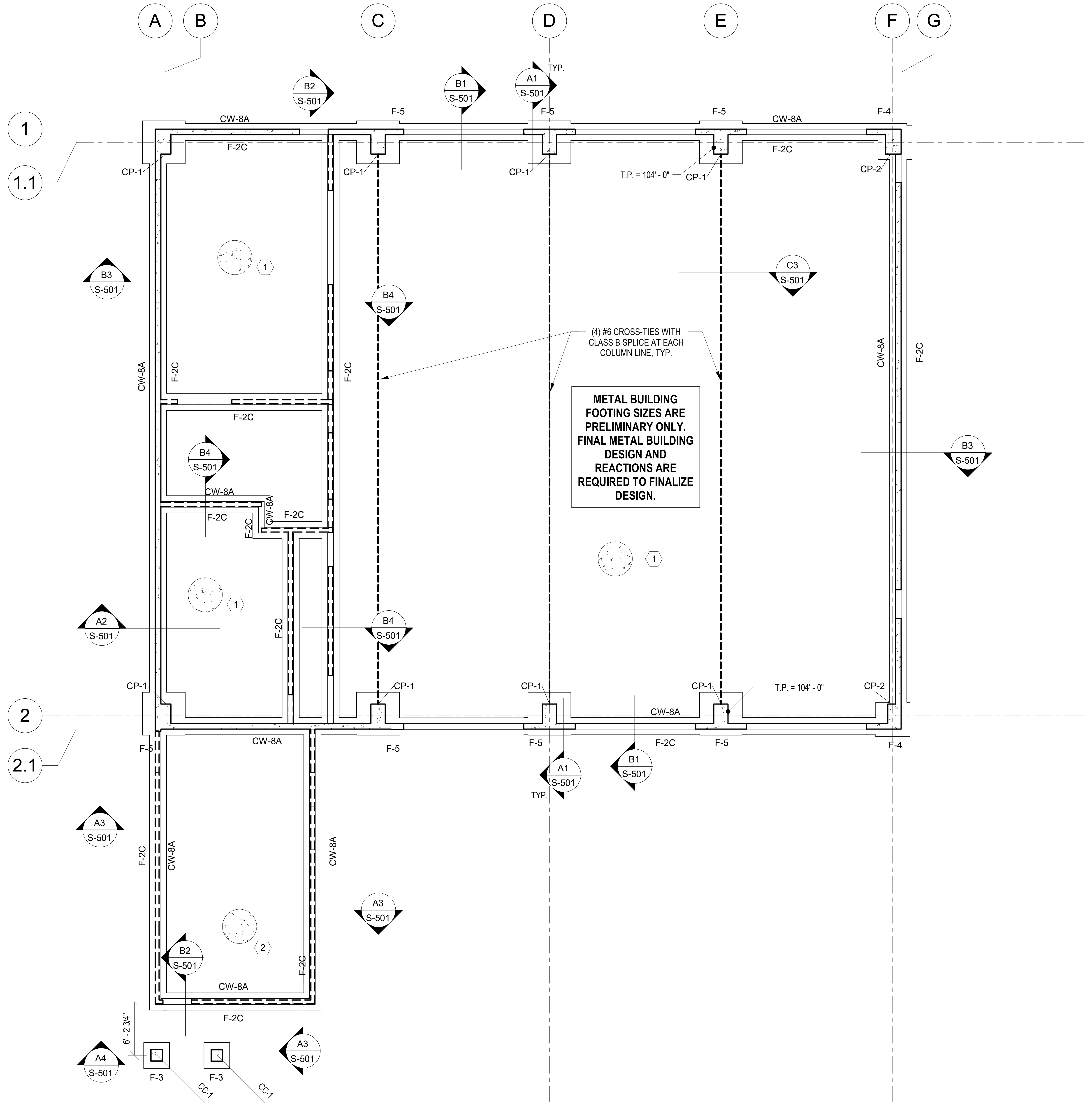
SHEET NOTES

⬡ INDICATES NOTES ARE KEYED ON PLAN.

1. 6" CONCRETE SLAB REINFORCE WITH #4 AT 18" O.C. EACH WAY, CENTER OF SLAB. PLACE SLAB ON 4" OF CRUSHED GRAVEL UNDERLAIN BY A MINIMUM OF 6" PROPERLY PLACED AND COMPACTED STRUCTURAL FILL EXTENDING TO SUITABLE NATIVE SOIL, SEE SOILS REPORT.
2. 4" CONCRETE SLAB REINFORCE WITH #4 AT 24" O.C. EACH WAY, CENTER OF SLAB. PLACE SLAB ON 4" OF CRUSHED GRAVEL UNDERLAIN BY A MINIMUM OF 6" PROPERLY PLACED AND COMPACTED STRUCTURAL FILL EXTENDING TO SUITABLE NATIVE SOIL, SEE SOILS REPORT.
3. SEE ARCHITECTURAL DRAWINGS FOR SLOPES AND RECESSES IN FLOOR SLABS.
4. DRILL AND EPOXY DOWELS TO MATCH HORIZONTAL REINFORCING IN NEW WALL AND FOOTING INTO EXISTING WALL AND FOOTING. SIX INCH MINIMUM EMBED.
5. FOR CONCRETE SLAB ON GRADE CONTROL JOINTS, SEE DETAILS D1,D2, & D3/S-101. NO CONTROL JOINTS SHALL OCCUR WITHIN 1'-0" PARALLEL TO CROSS TIES. CONTRACTOR SHALL PROVIDE PRELIMINARY LAYOUT OF CONTROL JOINTS FOR APPROVAL PRIOR TO CASTING OF SLAB ON GRADE.



(4) #6 CROSS-TIES WITH CLASS B SPLICE AT EACH COLUMN LINE, TYP.

METAL BUILDING FOOTING SIZES ARE PRELIMINARY ONLY. FINAL METAL BUILDING DESIGN AND REACTIONS ARE REQUIRED TO FINALIZE DESIGN.

1 / S-101 FOOTING AND FOUNDATION PLAN - METAL BUILDING

1/8" = 1'-0"

LEGEND

○	INDICATES CONCRETE SLAB ON GRADE, SHEET NOTES FOR THICKNESS AND REINFORCING
▨	INDICATES CHANGE IN ELEVATION OR RECESSED SLAB
F-?? ??'-??"	INDICATES CONCRETE FOOTING TYPE AND TOP OF FOOTING ELEVATION
═	INDICATES CONCRETE FOOTING & FOUNDATION WALL SEE SCHEDULES FOR SIZE AND REINFORCING
CW-?	INDICATES CONCRETE WALL SEE SCHEDULES FOR SIZE AND REIFORCING
□ CP-?	INDICATES CONCRETE PIER, SEE SCHEDULE FOR SIZE AND REINFORCING
F.S.E. =	INDICATES FLOOR SLAB ELEVATION
T.F. = ??'-??"	INDICATES TOP OF FOOTING ELEVATION
T.P. = ??'-??"	INDICATES TOP OF PIER ELEVATION
T.W. = ??'-??"	INDICATES TOP OF WALL ELEVATION
? SE?-??	INDICATES DETAIL SECTION VIEW.
? SE?-??	INDICATES DETAIL VIEW OR ENLARGED PLAN CALLOUT.

Date: 1/19/2023
Revision:

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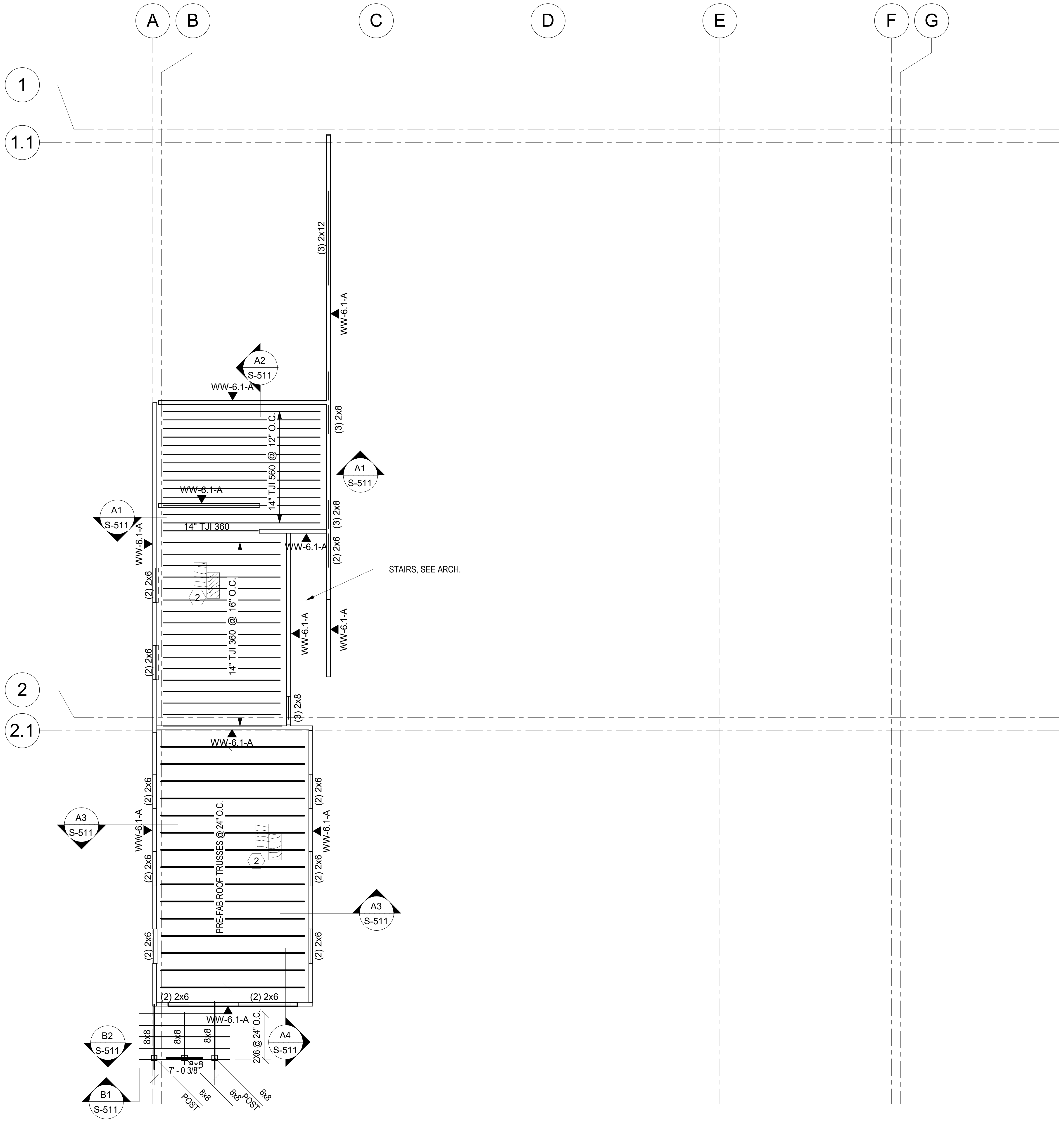
S-101

FOOTING AND FOUNDATION PLAN



1
S-201
MEZANINE FRAMING PLAN
1/8" = 1'-0"

SHEET NOTES

INDICATES NOTES ARE KEYED ON PLAN.

1. SEE ARCHITECTURAL DRAWINGS FOR SLOPES AND RECESSES IN FLOOR SLABS.

2. FLOOR SHEATHING, SEE SCHEDULE ON SHEET S-003

LEGEND

▨	INDICATES WOOD SHEATHING SPAN DIRECTION, SEE PLAN NOTES.
T.W. = ??' - ??"	INDICATES TOP OF WALL ELEVATION.
T.P. = ??' - ??"	INDICATES TOP OF PIER ELEVATION.
T.S. = ??' - ??"	INDICATES TOP OF STEEL ELEVATION.
WW-X.X-Y SW-X.X-Y	INDICATES WOOD WALL (WW) OR STEEL STUD WALL (SW) TYPE (X,X) AND SHEATHING (-Y) IF REQUIRED, SEE SCHEDULE
▼	INDICATES FACE OF WALL SHEATHING, SEE WALL TYPE AND SCHEDULES FOR NAILING
T - K	INDICATES NUMBER OF OF TRIMMER STUDS (T) AND KINGPOSTS (K)
1 Ref SE?-??	INDICATES FRAME ELEVATION VIEW.
? SE?-??	INDICATES DETAIL SECTION VIEW.
? SE?-??	INDICATES DETAIL VIEW OR ENLARGED PLAN CALLOUT.

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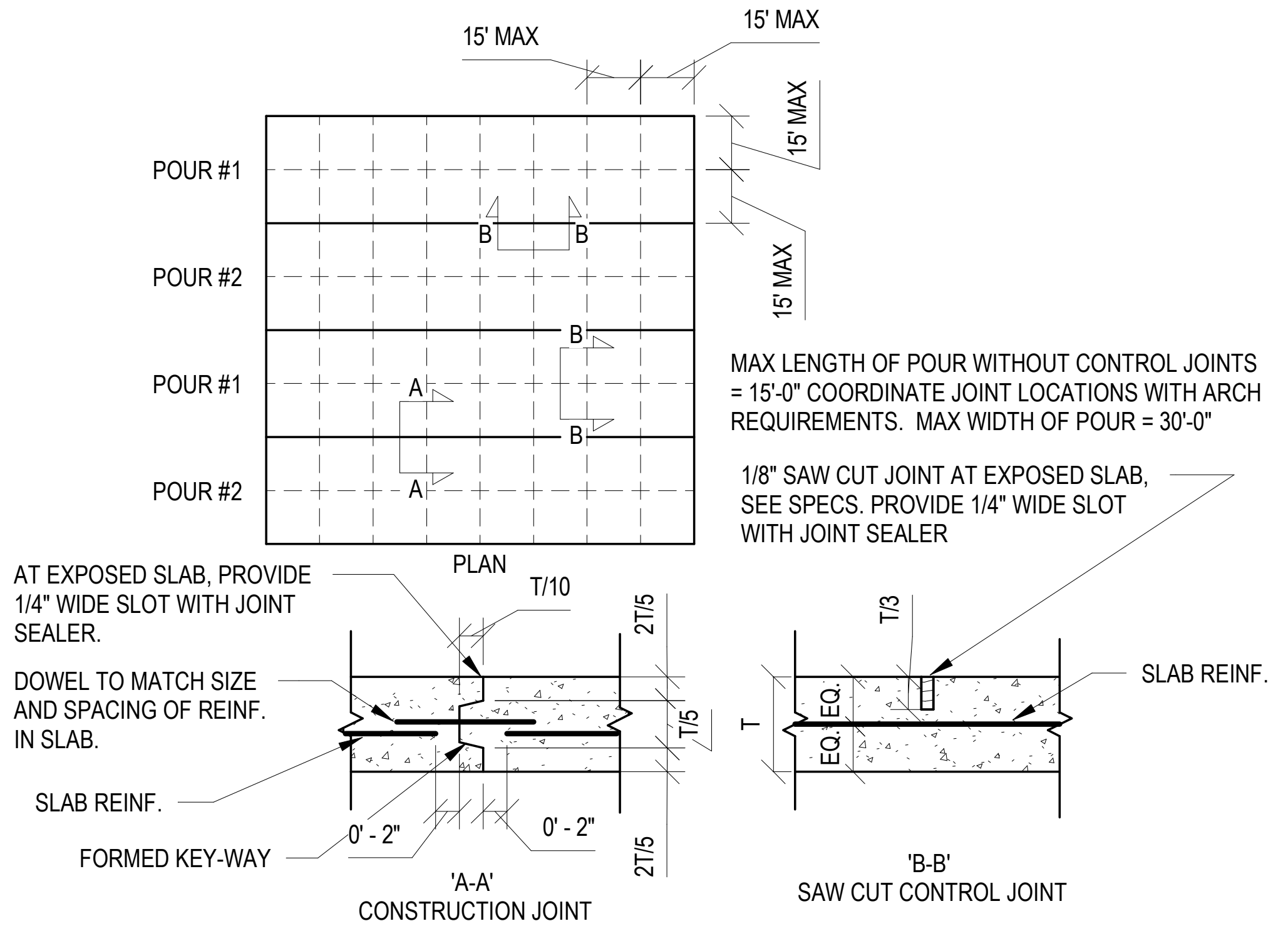
S-201

MEZZANINE FRAMING PLAN



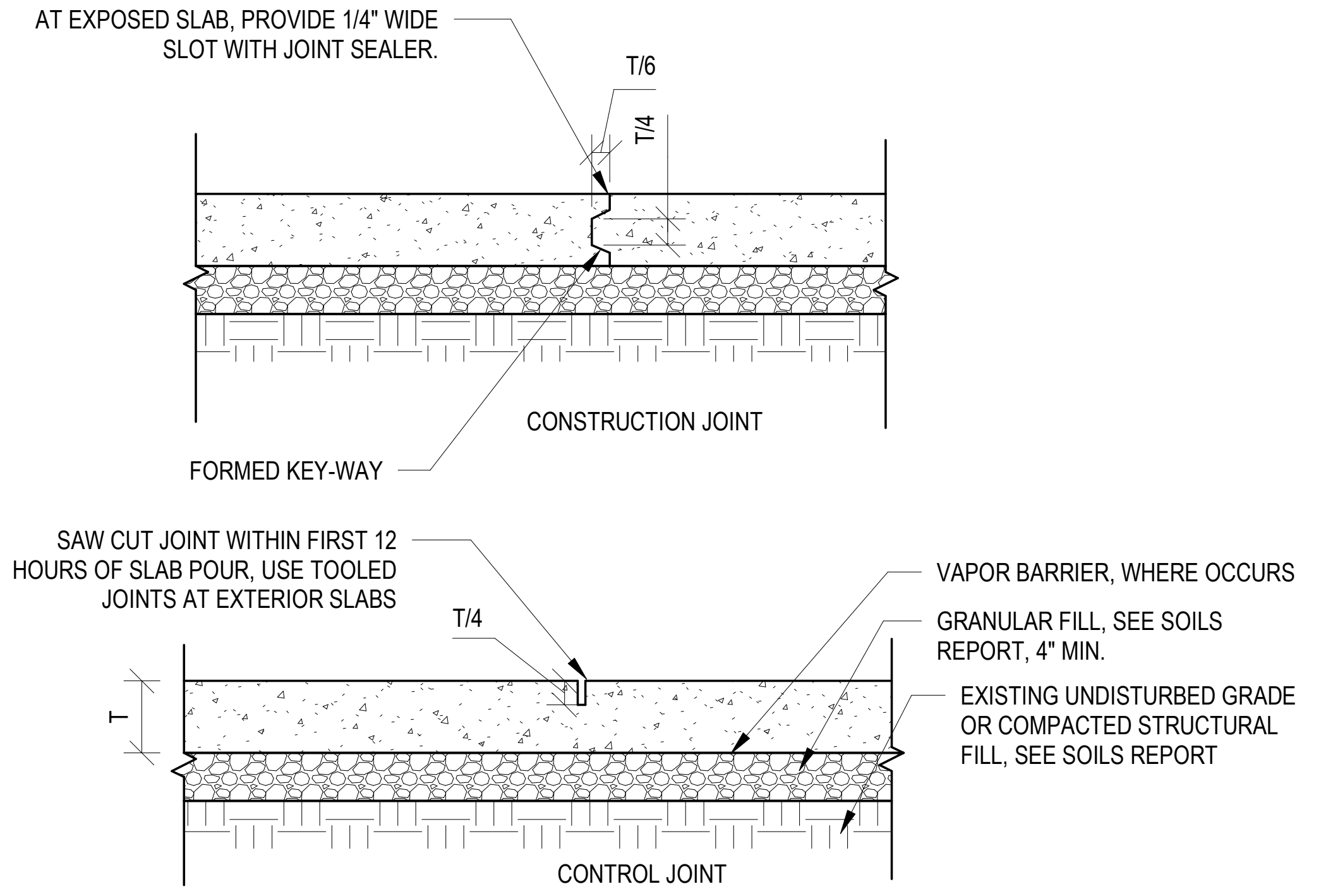
MAX LENGTH OF POUR WITHOUT CONTROL JOINTS = 15'-0" COORDINATE JOINT LOCATIONS WITH ARCH REQUIREMENTS. MAX WIDTH OF POUR = 30'-0"

1/8" SAW CUT JOINT AT EXPOSED SLAB, SEE SPECS. PROVIDE 1/4" WIDE SLOT WITH JOINT SEALER

D1
S-501

TYPICAL CONCRETE SLAB JOINT DETAIL

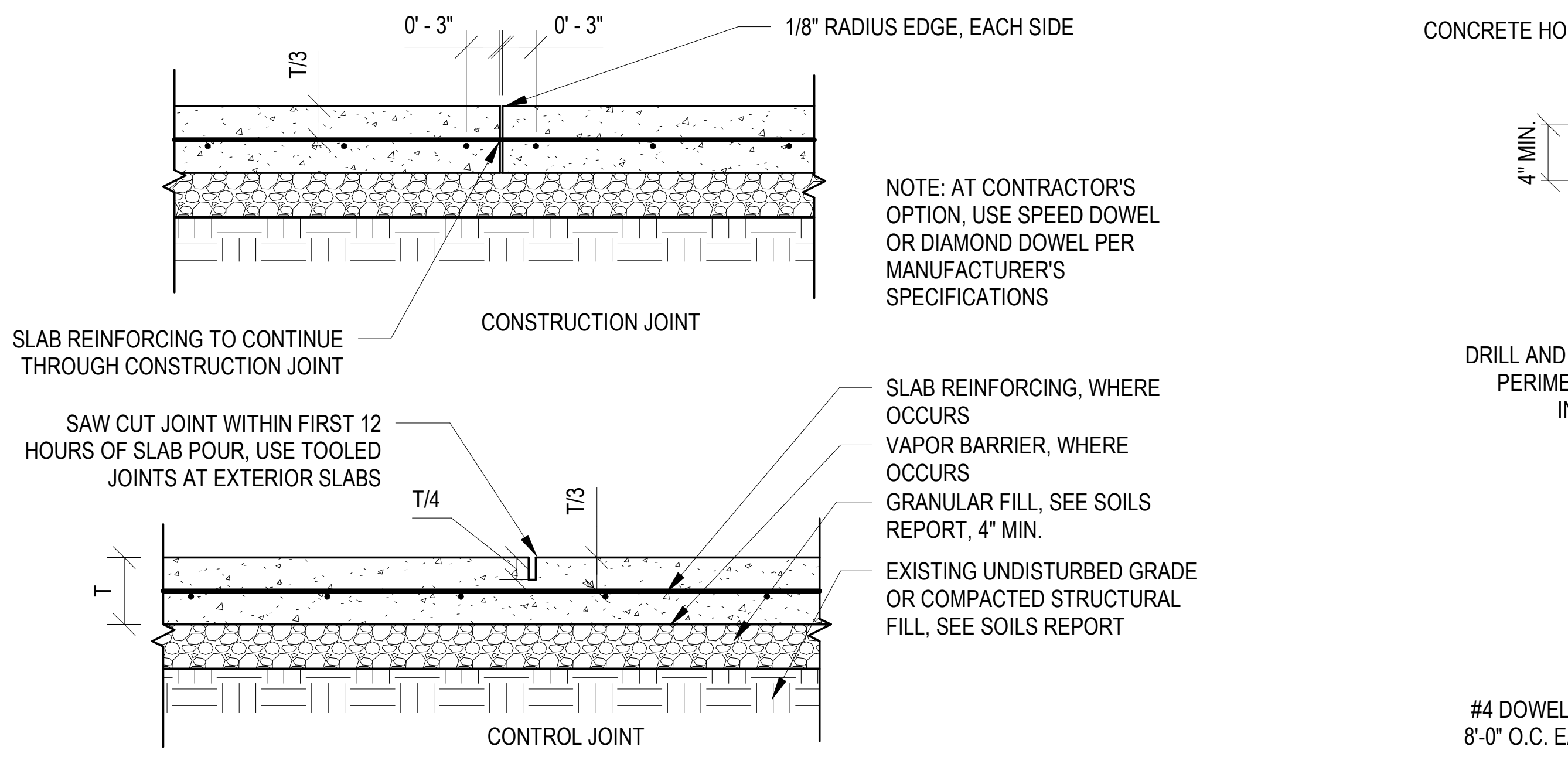
NO SCALE


AT EXPOSED SLAB, PROVIDE 1/4" WIDE SLOT WITH JOINT SEALER.
T/6
T/4
FORMED KEY-WAY
CONSTRUCTION JOINT
SAW CUT JOINT WITHIN FIRST 12 HOURS OF SLAB POUR, USE TOOLED JOINTS AT EXTERIOR SLABS
T/4
T
VAPOR BARRIER, WHERE OCCURS
GRANULAR FILL, SEE SOILS REPORT, 4" MIN.
EXISTING UNDISTURBED GRADE OR COMPACTED STRUCTURAL FILL, SEE SOILS REPORT
CONTROL JOINT

D2
S-501

TYPICAL UNREINFORCED SLAB ON GRADE JOINTS

NO SCALE

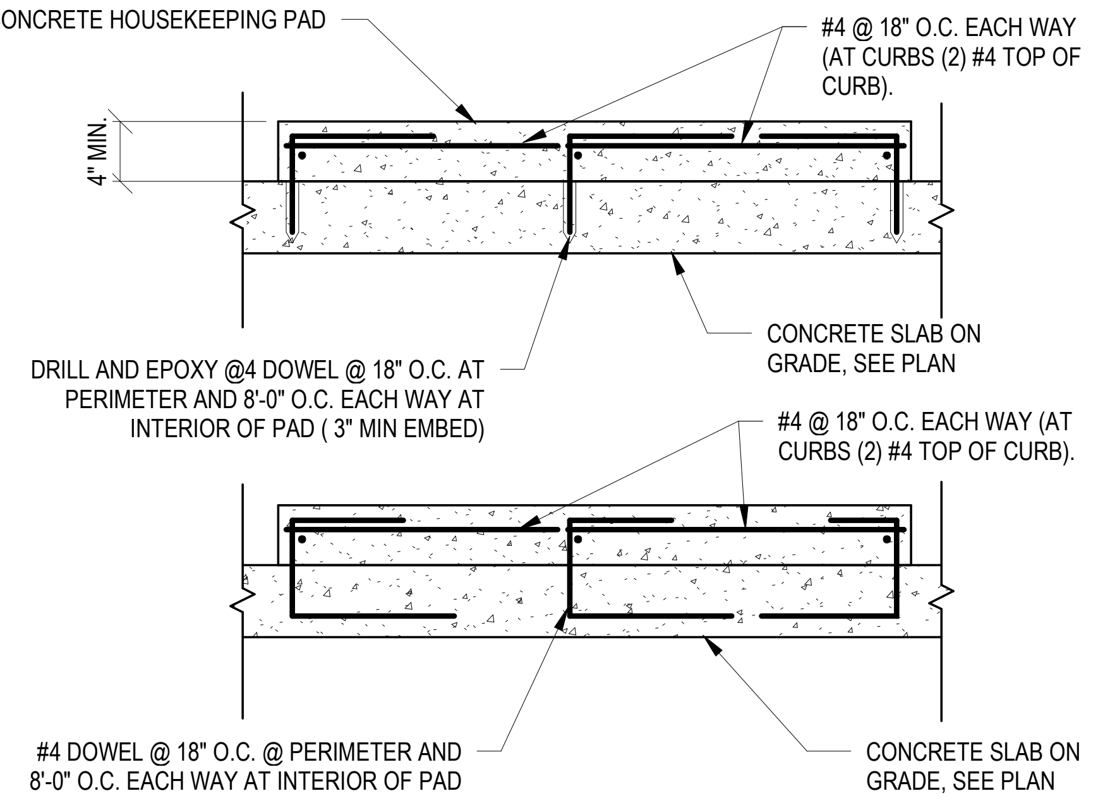

0' - 3"
0' - 3"
1/8" RADIUS EDGE, EACH SIDE
T/3
SLAB REINFORCING TO CONTINUE THROUGH CONSTRUCTION JOINT
CONSTRUCTION JOINT
SAW CUT JOINT WITHIN FIRST 12 HOURS OF SLAB POUR, USE TOOLED JOINTS AT EXTERIOR SLABS
T/4
T/3
T
SLAB REINFORCING, WHERE OCCURS
VAPOR BARRIER, WHERE OCCURS
GRANULAR FILL, SEE SOILS REPORT, 4" MIN.
EXISTING UNDISTURBED GRADE OR COMPACTED STRUCTURAL FILL, SEE SOILS REPORT
CONTROL JOINT

NOTE: AT CONTRACTOR'S OPTION, USE SPEED DOWEL OR DIAMOND DOWEL PER MANUFACTURER'S SPECIFICATIONS

D3
S-501

TYPICAL REINFORCED SLAB ON GRADE JOINTS

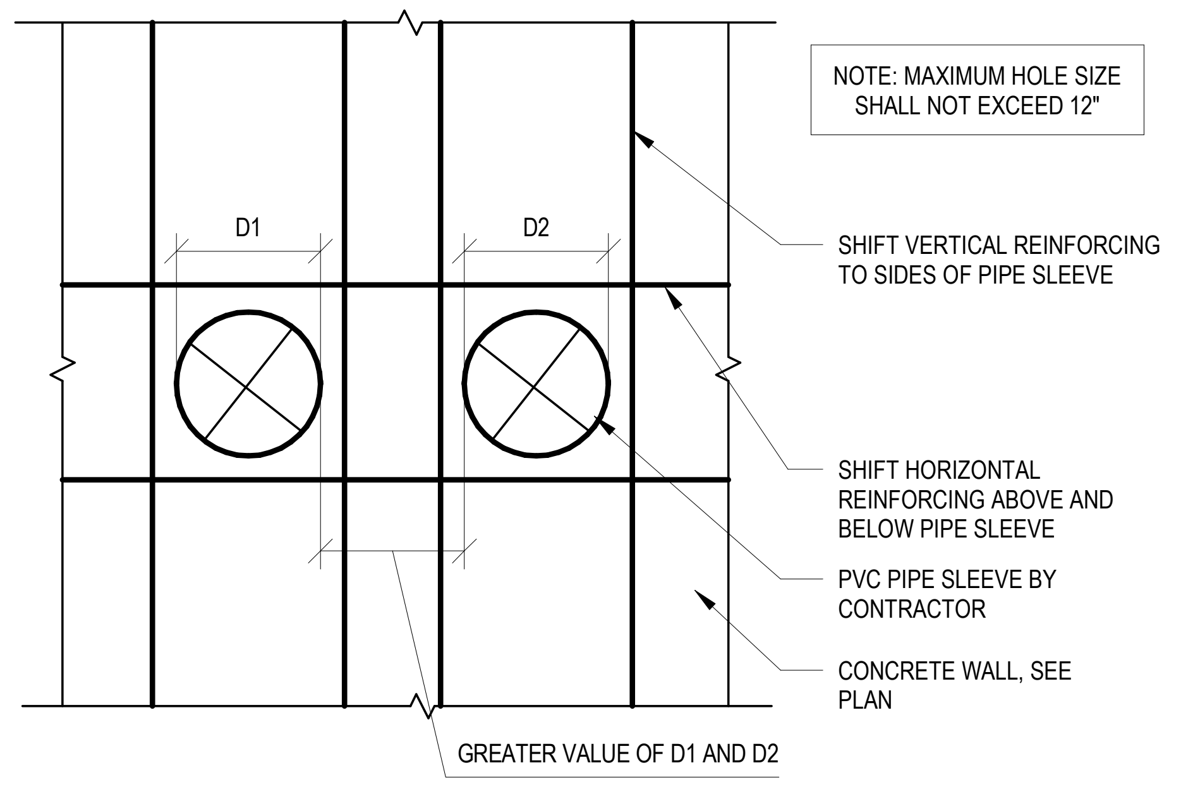
NO SCALE


CONCRETE HOUSEKEEPING PAD
#4 @ 18" O.C. EACH WAY (AT CURBS (2) #4 TOP OF CURB).
4" MIN.
DRILL AND EPOXY @4 DOWEL @ 18" O.C. AT PERIMETER AND 8'-0" O.C. EACH WAY AT INTERIOR OF PAD (3" MIN EMBED)
CONCRETE SLAB ON GRADE, SEE PLAN
#4 @ 18" O.C. EACH WAY (AT CURBS (2) #4 TOP OF CURB).
#4 DOWEL @ 18" O.C. @ PERIMETER AND 8'-0" O.C. EACH WAY AT INTERIOR OF PAD
CONCRETE SLAB ON GRADE, SEE PLAN

D4
S-501

TYPICAL HOUSEKEEPING PAD REINFORCING

NO SCALE

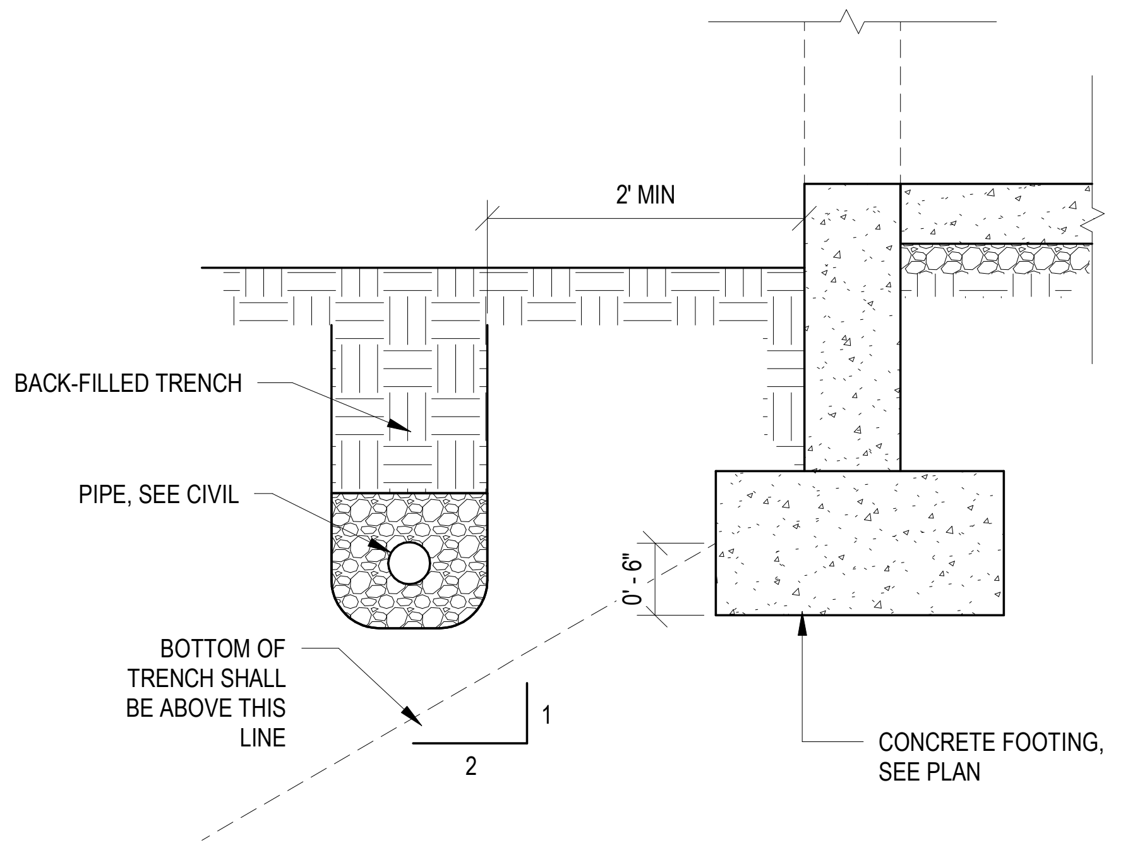

D1
D2
SHIFT VERTICAL REINFORCING TO SIDES OF PIPE SLEEVE
SHIFT HORIZONTAL REINFORCING ABOVE AND BELOW PIPE SLEEVE
PVC PIPE SLEEVE BY CONTRACTOR
CONCRETE WALL, SEE PLAN
GREATER VALUE OF D1 AND D2

NOTE: MAXIMUM HOLE SIZE SHALL NOT EXCEED 12"

C1
S-501

TYPICAL PIPE SLEEVE IN CONCRETE WALL

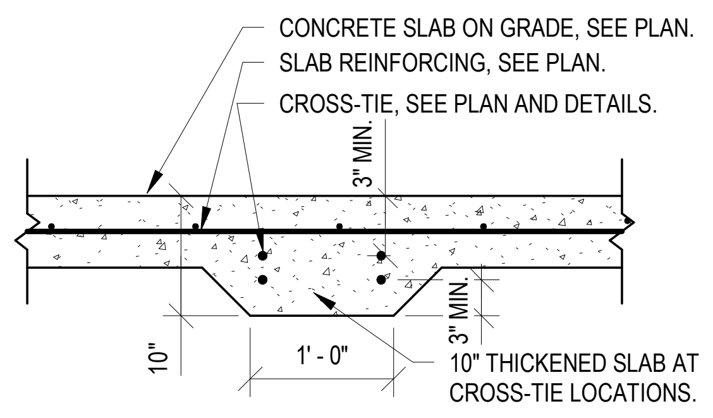
NO SCALE


2' MIN
BACK-FILLED TRENCH
PIPE, SEE CIVIL
BOTTOM OF TRENCH SHALL BE ABOVE THIS LINE
0' - 6"
1
2
CONCRETE FOOTING, SEE PLAN

C2
S-501

TYPICAL ADJACENT TRENCH LIMITS

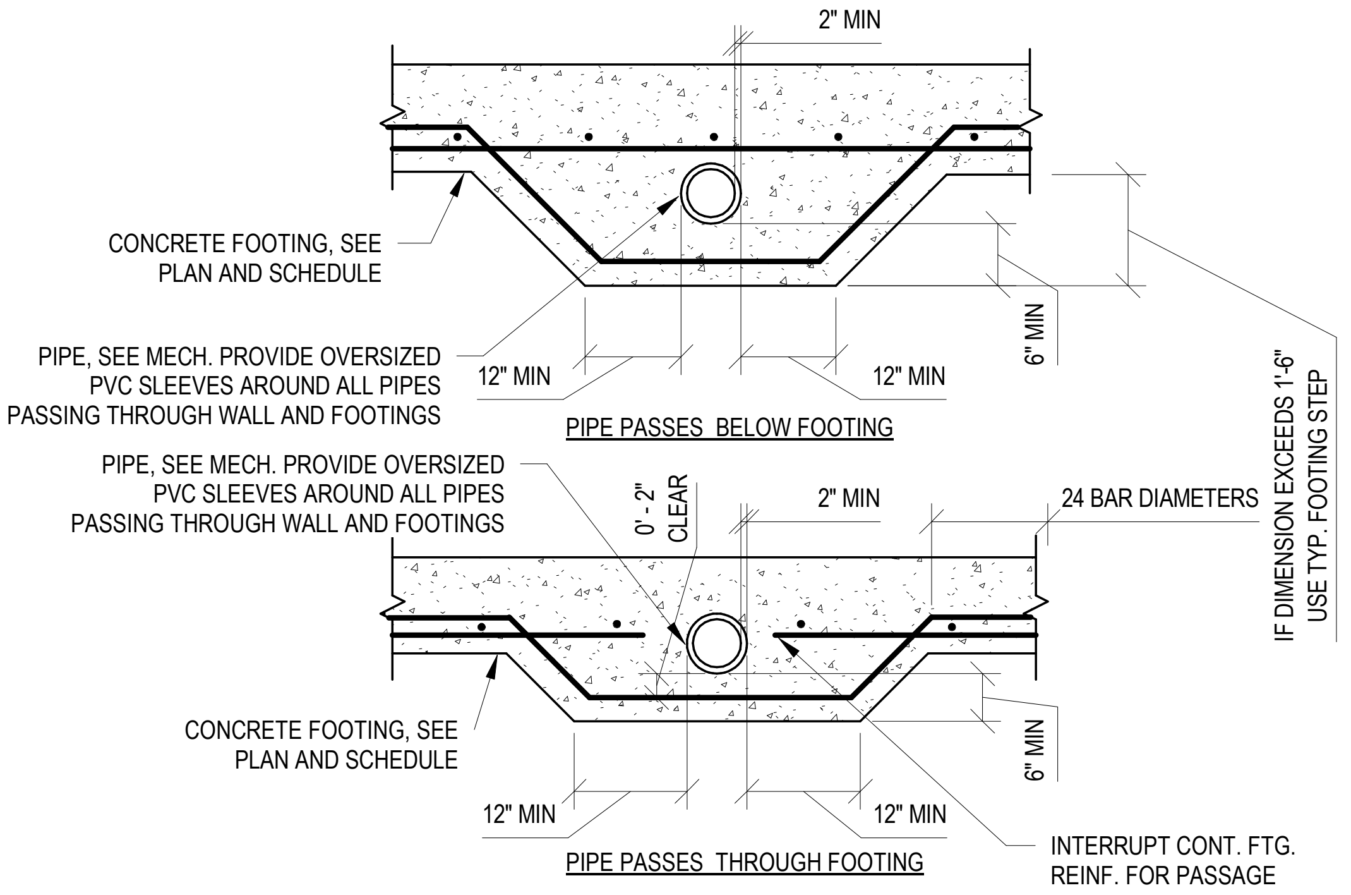
NO SCALE


CONCRETE SLAB ON GRADE, SEE PLAN.
SLAB REINFORCING, SEE PLAN.
CROSS-TIE, SEE PLAN AND DETAILS.
3" MIN.
3" MIN.
10"
1' - 0"
10" THICKENED SLAB AT CROSS-TIE LOCATIONS.

C3
S-501

TYPICAL CROSS-TIE IN SLAB DETAIL

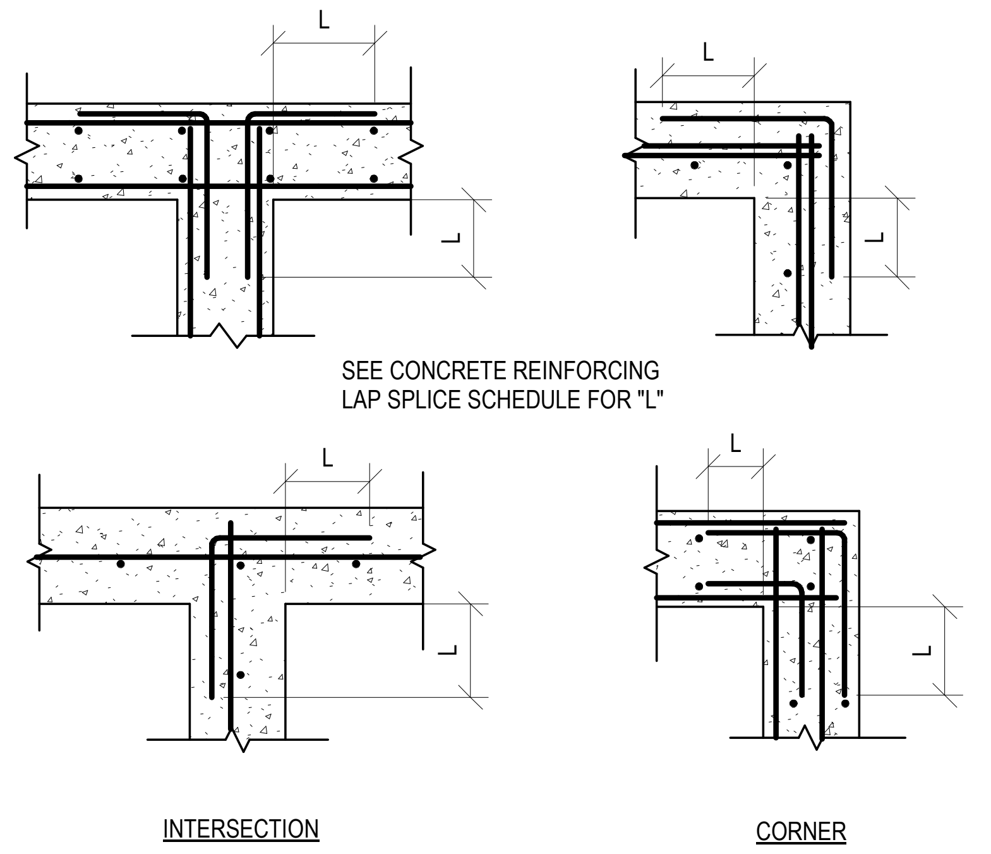
NO SCALE


2" MIN
CONCRETE FOOTING, SEE PLAN AND SCHEDULE
PIPE, SEE MECH. PROVIDE OVERSIZED PVC SLEEVES AROUND ALL PIPES PASSING THROUGH WALL AND FOOTINGS
12" MIN
12" MIN
6" MIN
PIPE PASSES BELOW FOOTING
IF DIMENSION EXCEEDS 1'-6" USE TYP. FOOTING STEP
PIPE, SEE MECH. PROVIDE OVERSIZED PVC SLEEVES AROUND ALL PIPES PASSING THROUGH WALL AND FOOTINGS
0' - 2" CLEAR
2" MIN
24 BAR DIAMETERS
CONCRETE FOOTING, SEE PLAN AND SCHEDULE
12" MIN
12" MIN
6" MIN
PIPE PASSES THROUGH FOOTING
INTERRUPT CONT. FTG. REINF. FOR PASSAGE OF PIPE

C4
S-501

TYPICAL FOOTING PENETRATION

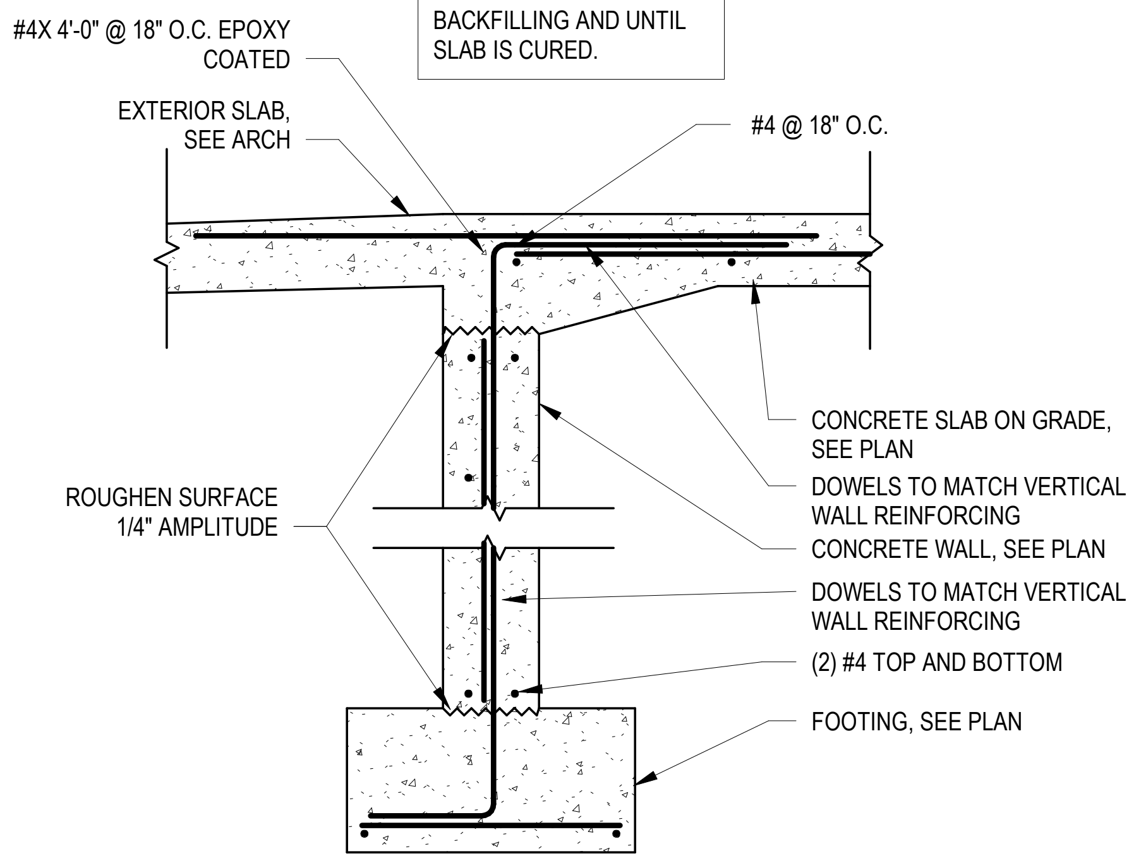
NO SCALE



C5
S-501

TYPICAL WALL INTERSECTION REINFORCING

NO SCALE

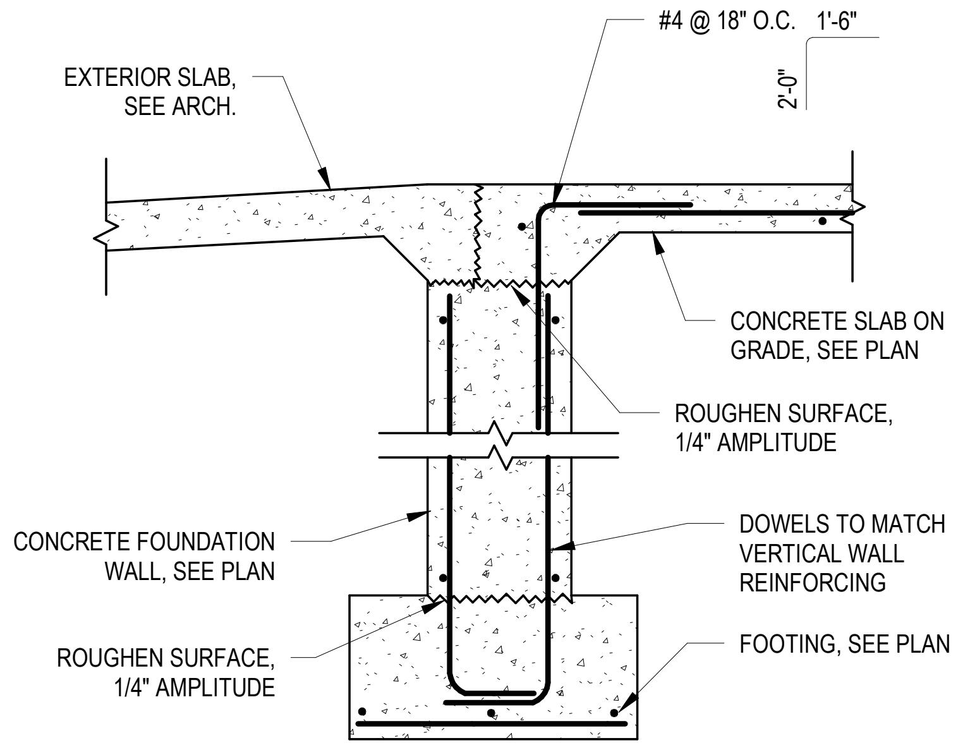

#4X 4'-0" @ 18" O.C. EPOXY COATED
EXTERIOR SLAB, SEE ARCH
#4 @ 18" O.C.
CONCRETE SLAB ON GRADE, SEE PLAN
DOWELS TO MATCH VERTICAL WALL REINFORCING
CONCRETE WALL, SEE PLAN
ROUGHEN SURFACE 1/4" AMPLITUDE
DOWELS TO MATCH VERTICAL WALL REINFORCING
(2) #4 TOP AND BOTTOM
FOOTING, SEE PLAN

CONTRACTOR NOTE:
BRACE WALL PRIOR TO BACKFILLING AND UNTIL SLAB IS CURED.

B1
S-501

TYP. FOUNDATION WALL AT GARAGE DETAIL

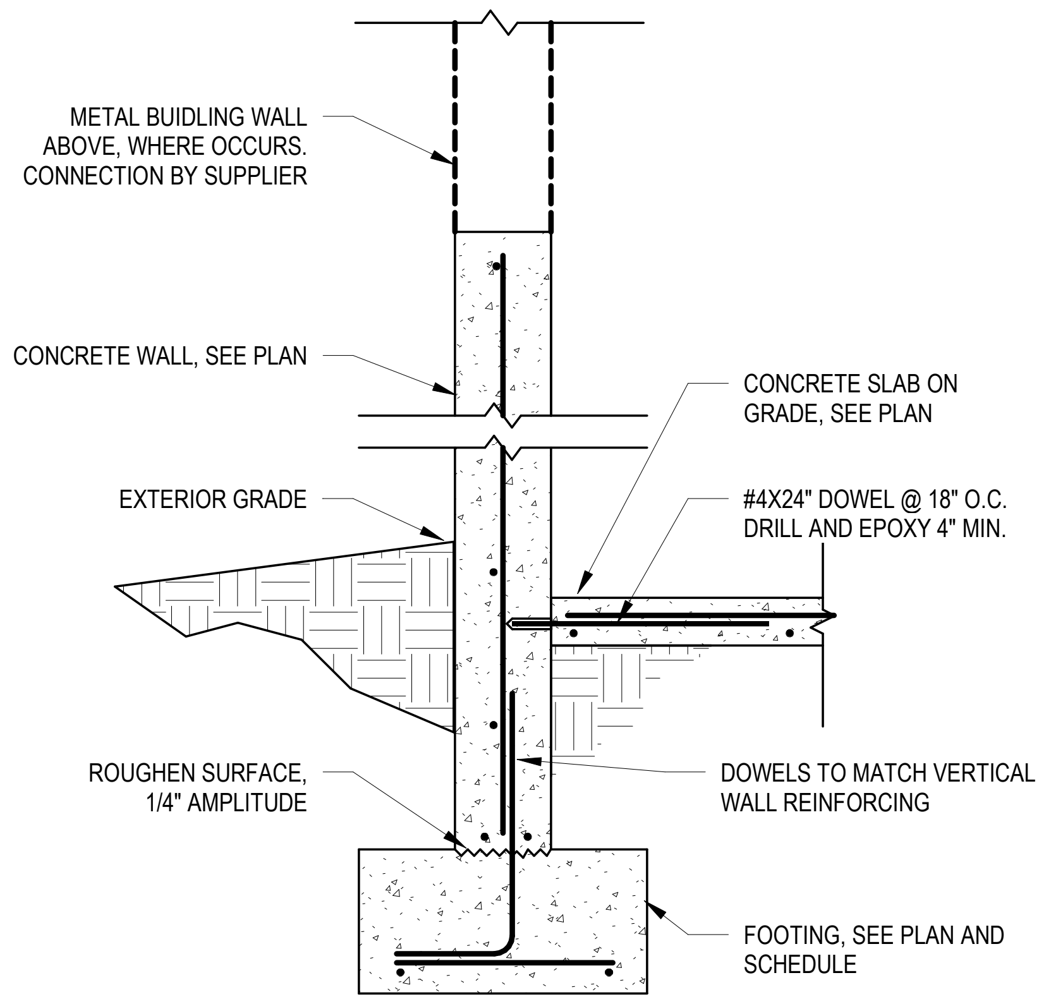
NO SCALE


EXTERIOR SLAB, SEE ARCH.
#4 @ 18" O.C.
1'-6"
2'-0"
CONCRETE SLAB ON GRADE, SEE PLAN
ROUGHEN SURFACE, 1/4" AMPLITUDE
CONCRETE FOUNDATION WALL, SEE PLAN
DOWELS TO MATCH VERTICAL WALL REINFORCING
FOOTING, SEE PLAN
ROUGHEN SURFACE, 1/4" AMPLITUDE

B2
S-501

TYPICAL CONCRETE SLAB AT DOORWAY

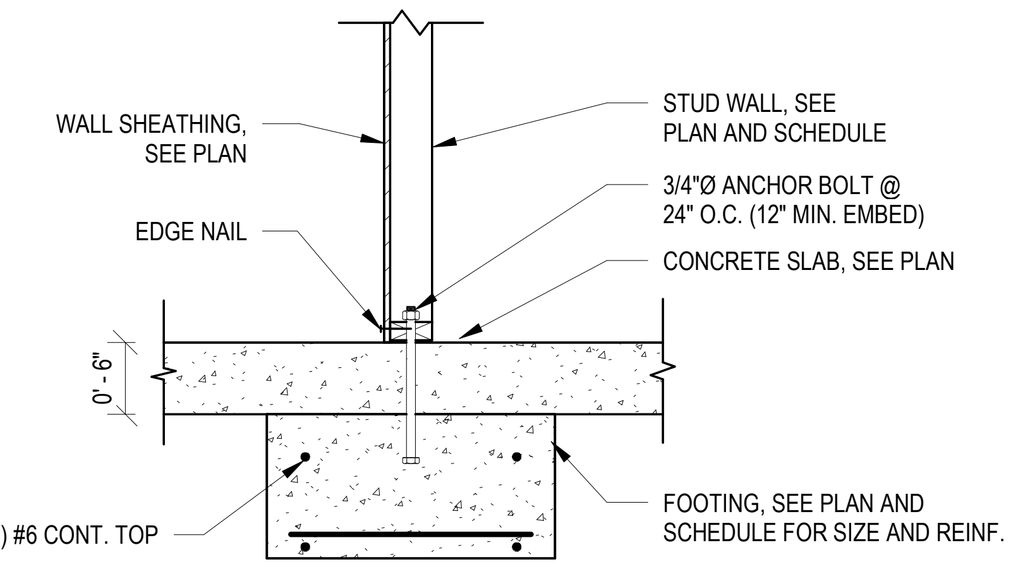
NO SCALE


METAL BUIDLING WALL ABOVE, WHERE OCCURS. CONNECTION BY SUPPLIER
CONCRETE WALL, SEE PLAN
CONCRETE SLAB ON GRADE, SEE PLAN
EXTERIOR GRADE
#4X24" DOWEL @ 18" O.C. DRILL AND EPOXY 4" MIN.
ROUGHEN SURFACE, 1/4" AMPLITUDE
DOWELS TO MATCH VERTICAL WALL REINFORCING
FOOTING, SEE PLAN AND SCHEDULE

B3
S-501

TYP. FOUNDATION WALL DETAIL

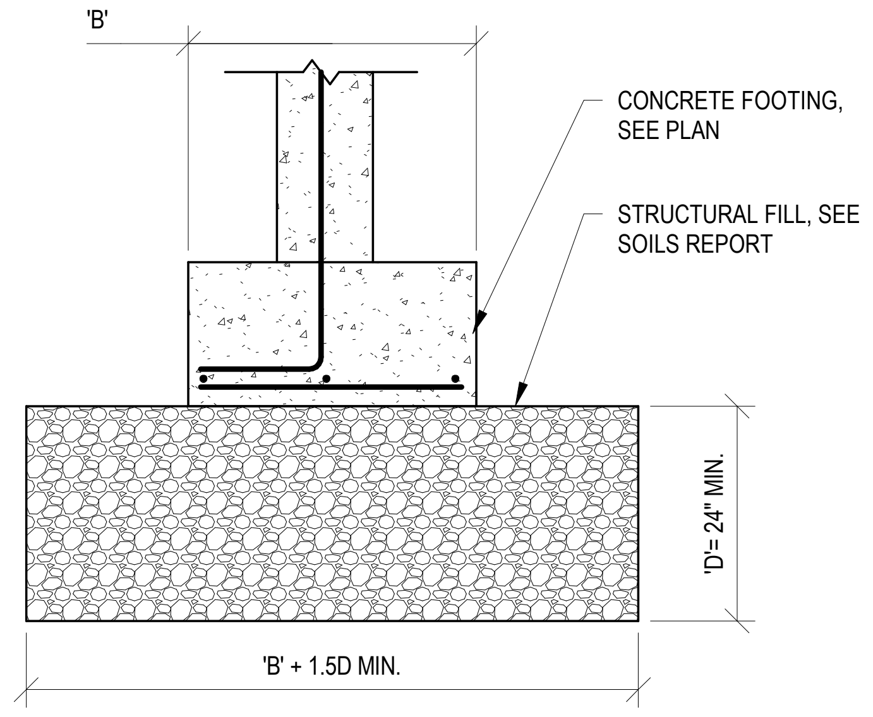
NO SCALE


WALL SHEATHING, SEE PLAN
EDGE NAIL
STUD WALL, SEE PLAN AND SCHEDULE
3/4"Ø ANCHOR BOLT @ 24" O.C. (12" MIN. EMBED)
CONCRETE SLAB, SEE PLAN
0' - 6"
(2) #6 CONT. TOP
FOOTING, SEE PLAN AND SCHEDULE FOR SIZE AND REINF.

B4
S-501

TYP. STUD WALL AT CONCRETE ANCHOR DETAIL

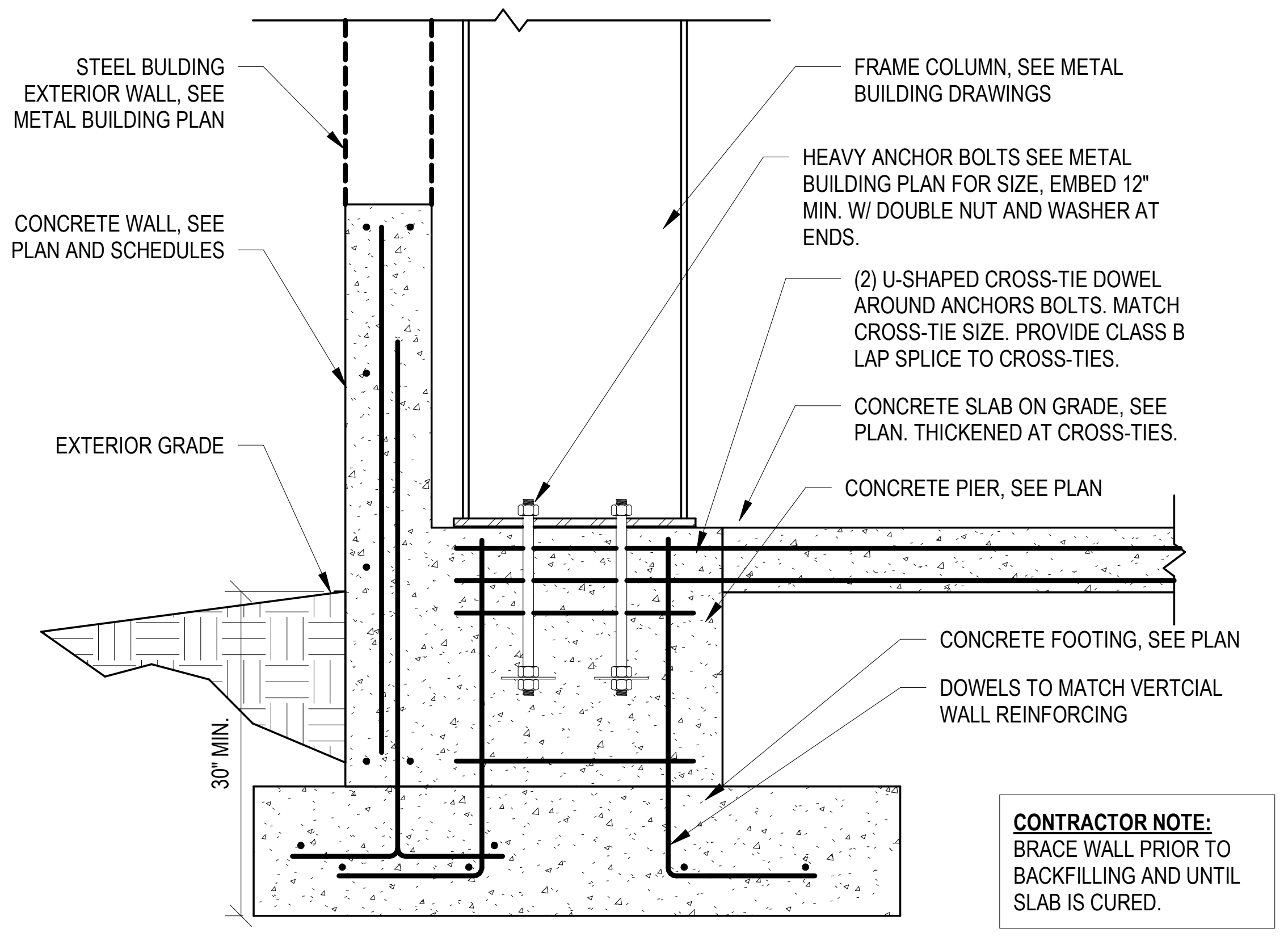
NO SCALE



B5
S-501

TYPICAL COMPACTED STRUCTURAL FILL

NO SCALE

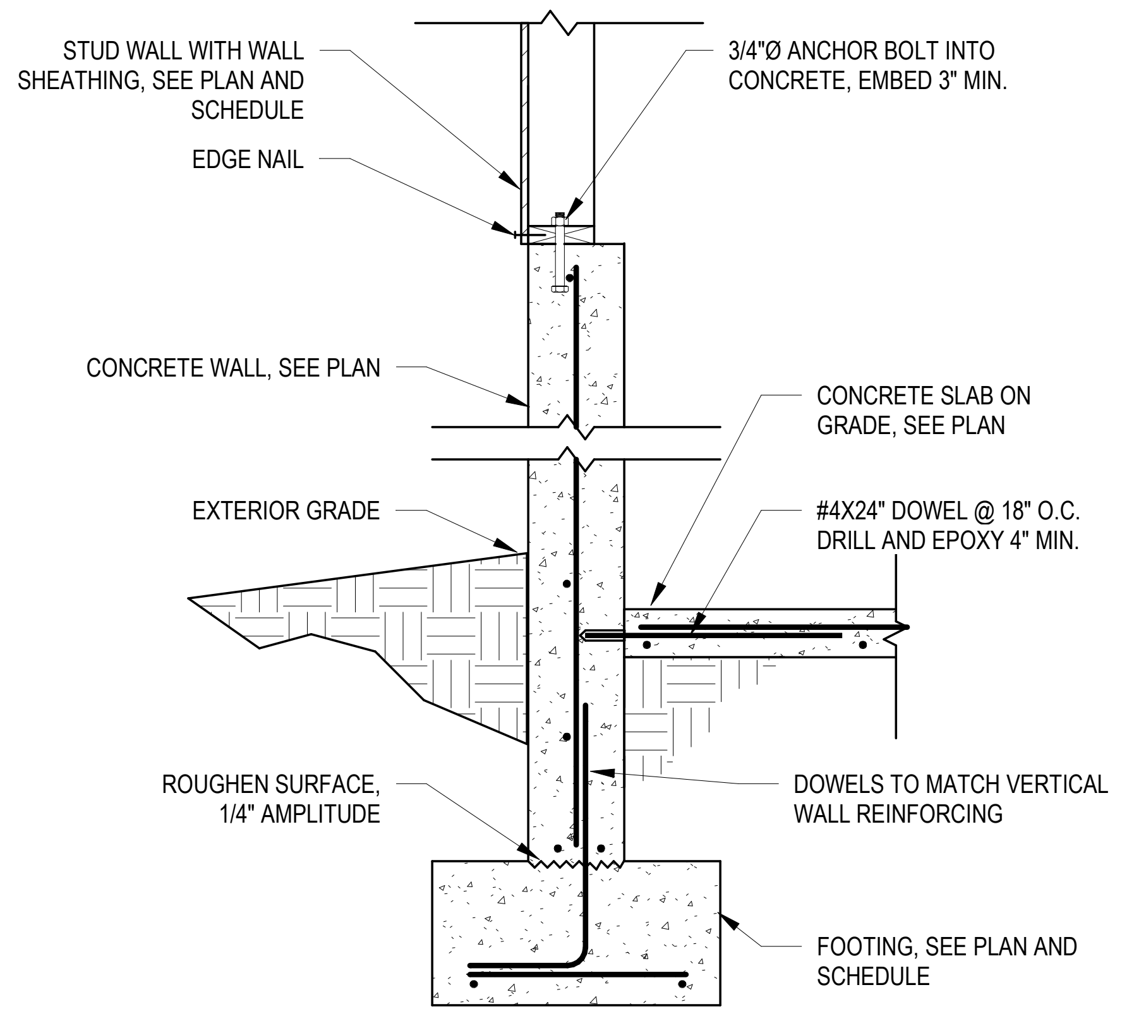

STEEL BULDING EXTERIOR WALL, SEE METAL BUILDING PLAN
CONCRETE WALL, SEE PLAN AND SCHEDULES
EXTERIOR GRADE
30" MIN.
FRAME COLUMN, SEE METAL BUILDING DRAWINGS
HEAVY ANCHOR BOLTS SEE METAL BUILDING PLAN FOR SIZE, EMBED 12" MIN. W/ DOUBLE NUT AND WASHER AT ENDS.
(2) U-SHAPED CROSS-TIE DOWEL AROUND ANCHORS BOLTS. MATCH CROSS-TIE SIZE. PROVIDE CLASS B LAP SPLICE TO CROSS-TIES.
CONCRETE SLAB ON GRADE, SEE PLAN. THICKENED AT CROSS-TIES.
CONCRETE PIER, SEE PLAN
CONCRETE FOOTING, SEE PLAN
DOWELS TO MATCH VERTCIAL WALL REINFORCING

CONTRACTOR NOTE:
BRACE WALL PRIOR TO BACKFILLING AND UNTIL SLAB IS CURED.

A1
S-501

TYP. PIER AND COLUMN DETAIL

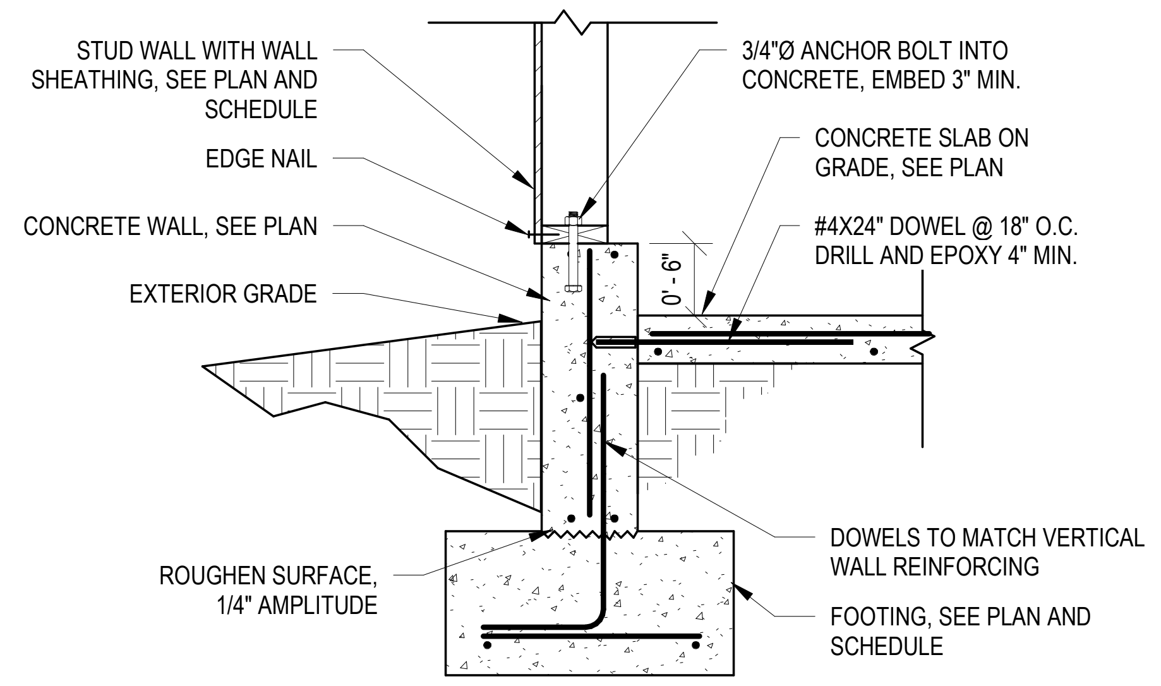
NO SCALE


STUD WALL WITH WALL SHEATHING, SEE PLAN AND SCHEDULE
EDGE NAIL
3/4"Ø ANCHOR BOLT INTO CONCRETE, EMBED 3" MIN.
CONCRETE WALL, SEE PLAN
CONCRETE SLAB ON GRADE, SEE PLAN
EXTERIOR GRADE
#4X24" DOWEL @ 18" O.C. DRILL AND EPOXY 4" MIN.
ROUGHEN SURFACE, 1/4" AMPLITUDE
DOWELS TO MATCH VERTICAL WALL REINFORCING
FOOTING, SEE PLAN AND SCHEDULE

A2
S-501

TYP. FOUNDATION WALL DETAIL AT WOOD STUD WALL

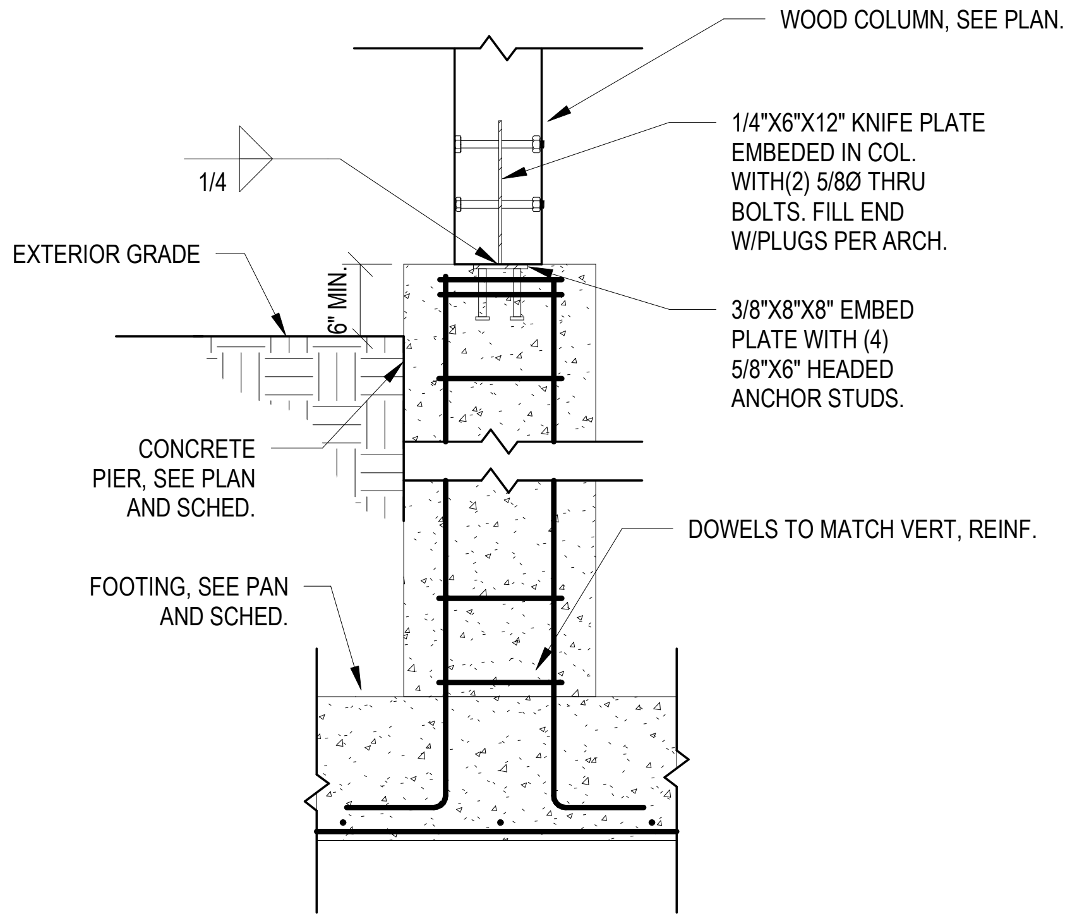
NO SCALE


STUD WALL WITH WALL SHEATHING, SEE PLAN AND SCHEDULE
EDGE NAIL
CONCRETE WALL, SEE PLAN
EXTERIOR GRADE
3/4"Ø ANCHOR BOLT INTO CONCRETE, EMBED 3" MIN.
CONCRETE SLAB ON GRADE, SEE PLAN
#4X24" DOWEL @ 18" O.C. DRILL AND EPOXY 4" MIN.
0' - 6"
ROUGHEN SURFACE, 1/4" AMPLITUDE
DOWELS TO MATCH VERTICAL WALL REINFORCING
FOOTING, SEE PLAN AND SCHEDULE

A3
S-501

TYP. FOUNDATION DETAIL WITH WALL ABOVE

NO SCALE


WOOD COLUMN, SEE PLAN.
1/4
1/4"X6"X12" KNIFE PLATE EMBEDED IN COL. WITH(2) 5/8Ø THRU BOLTS. FILL END W/PLUGS PER ARCH.
EXTERIOR GRADE
6" MIN.
3/8"X8"X8" EMBED PLATE WITH (4) 5/8"X6" HEADED ANCHOR STUDS.
CONCRETE PIER, SEE PLAN AND SCHED.
DOWELS TO MATCH VERT, REINF.
FOOTING, SEE PAN AND SCHED.

A4
S-501

Drafting 276

NO SCALE

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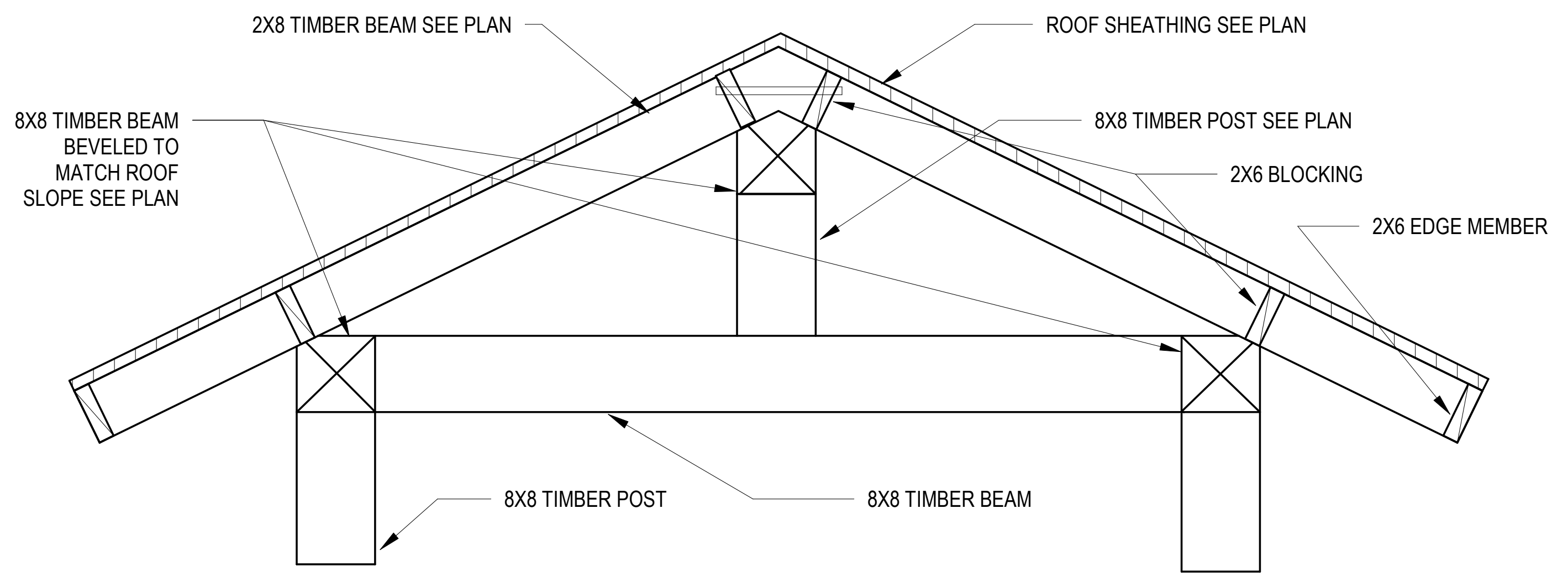
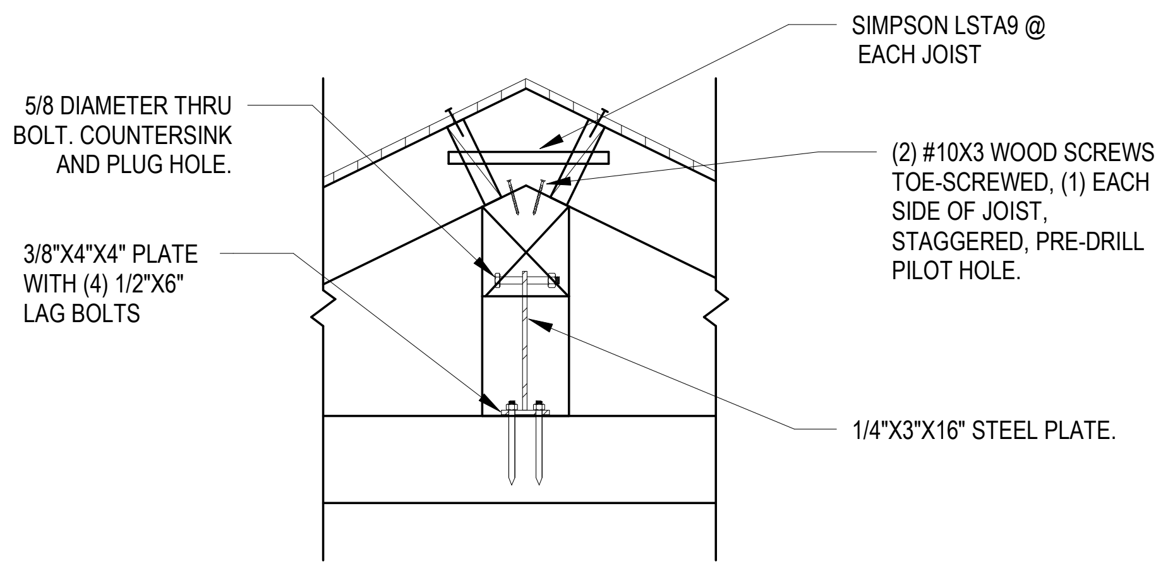
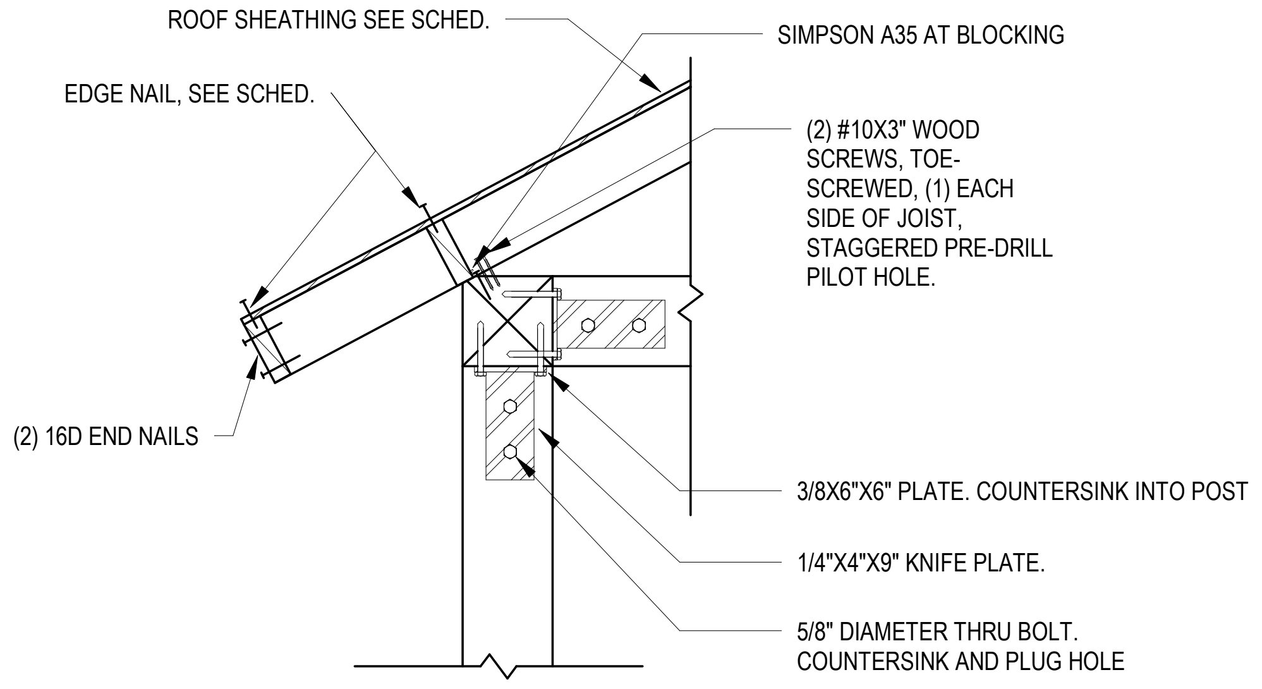
FOUNDATION DETAILS



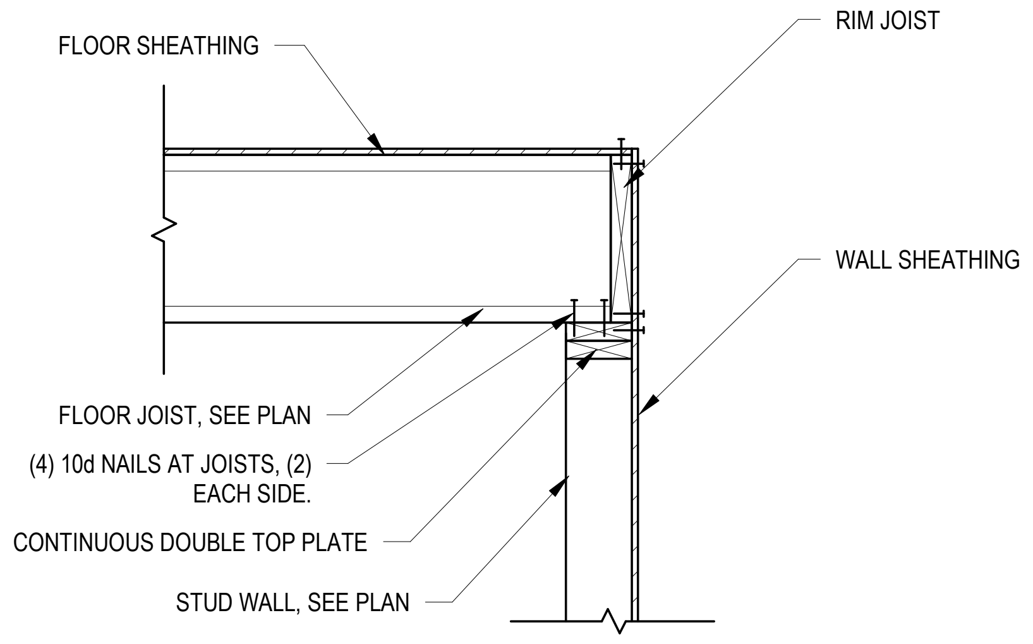
B1
S-511
NO SCALE


SIMPSON LSTA9 @ EACH JOIST
5/8 DIAMETER THRU BOLT. COUNTERSINK AND PLUG HOLE.
(2) #10X3 WOOD SCREWS TOE-SCREWED, (1) EACH SIDE OF JOIST, STAGGERED, PRE-DRILL PILOT HOLE.
3/8"X4"X4" PLATE WITH (4) 1/2"X6" LAG BOLTS
1/4"X3"X16" STEEL PLATE.

B2
S-511
NO SCALE


ROOF SHEATHING SEE SCHED.
SIMPSON A35 AT BLOCKING
EDGE NAIL, SEE SCHED.
(2) #10X3" WOOD SCREWS, TOE-SCREWED, (1) EACH SIDE OF JOIST, STAGGERED PRE-DRILL PILOT HOLE.
(2) 16D END NAILS
3/8X6"X6" PLATE. COUNTERSINK INTO POST
1/4"X4"X9" KNIFE PLATE.
5/8" DIAMETER THRU BOLT. COUNTERSINK AND PLUG HOLE

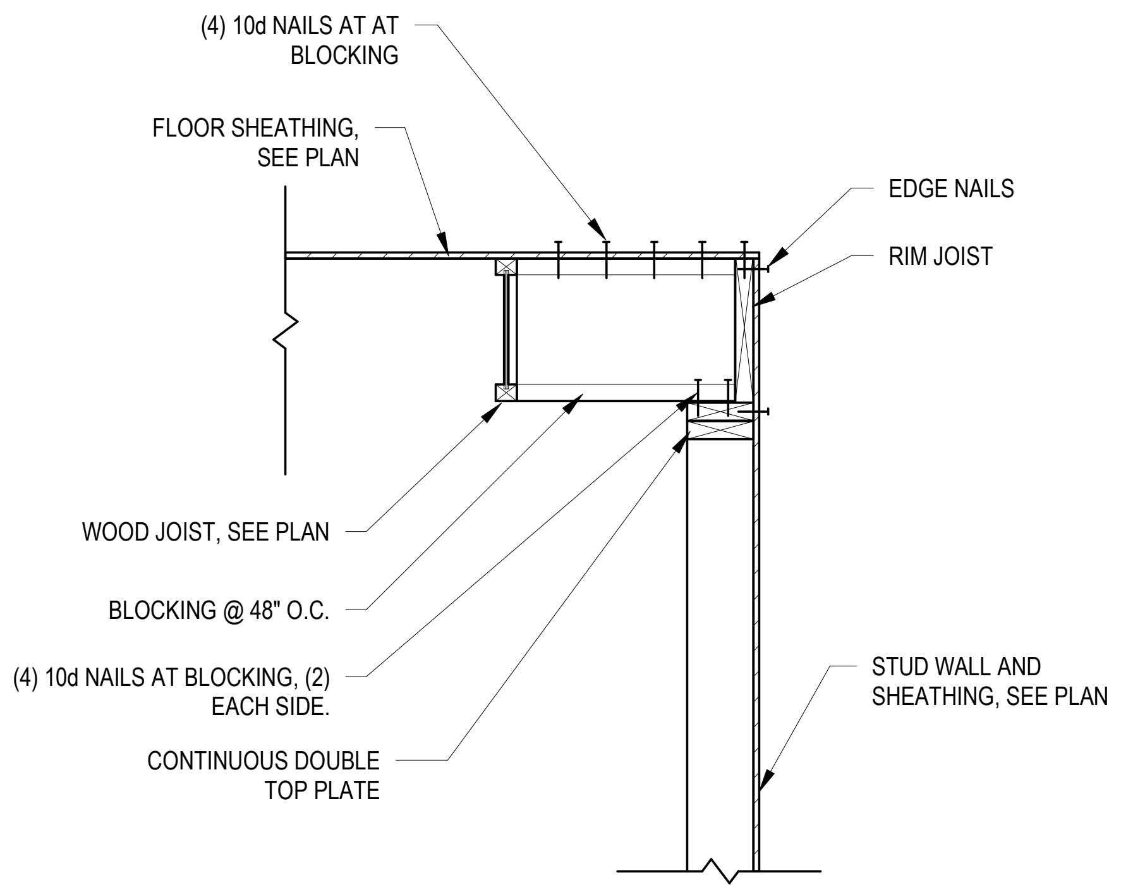
B3
S-511
NO SCALE



A1
S-511

TYP. FLOOR JOIST AT STUD WALL DETAIL

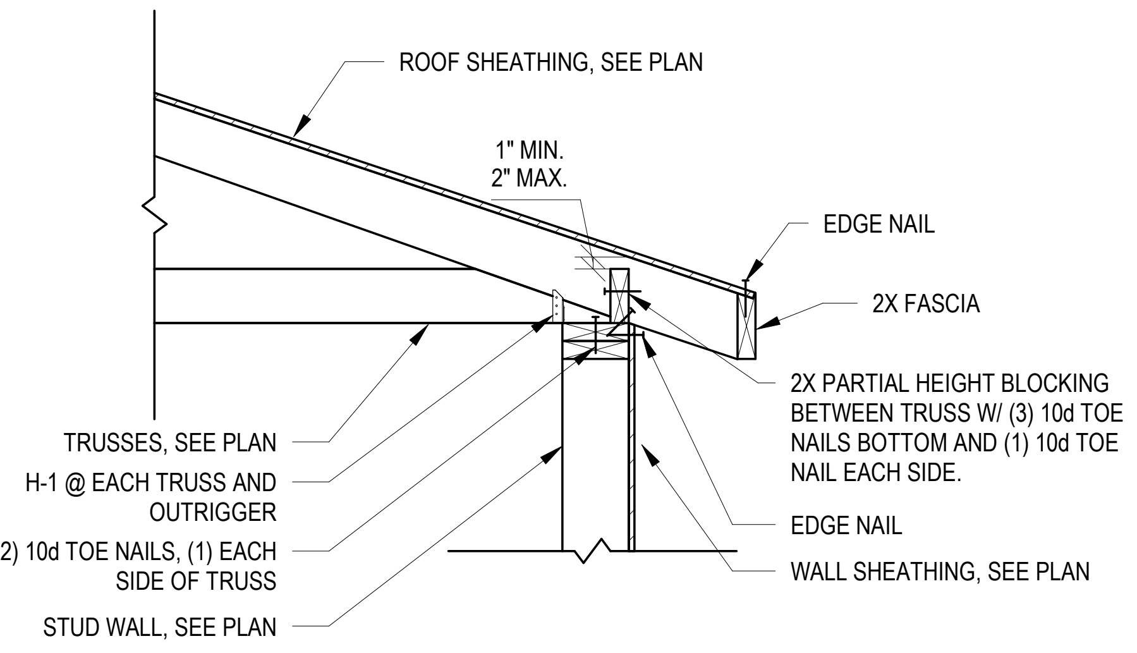
NO SCALE


(4) 10d NAILS AT AT BLOCKING
FLOOR SHEATHING, SEE PLAN
EDGE NAILS
RIM JOIST
WOOD JOIST, SEE PLAN
BLOCKING @ 48" O.C.
(4) 10d NAILS AT BLOCKING, (2) EACH SIDE.
CONTINUOUS DOUBLE TOP PLATE
STUD WALL AND SHEATHING, SEE PLAN

A2
S-511

TYPICAL FLOOR JOIST AT STUD WALL PARALLEL

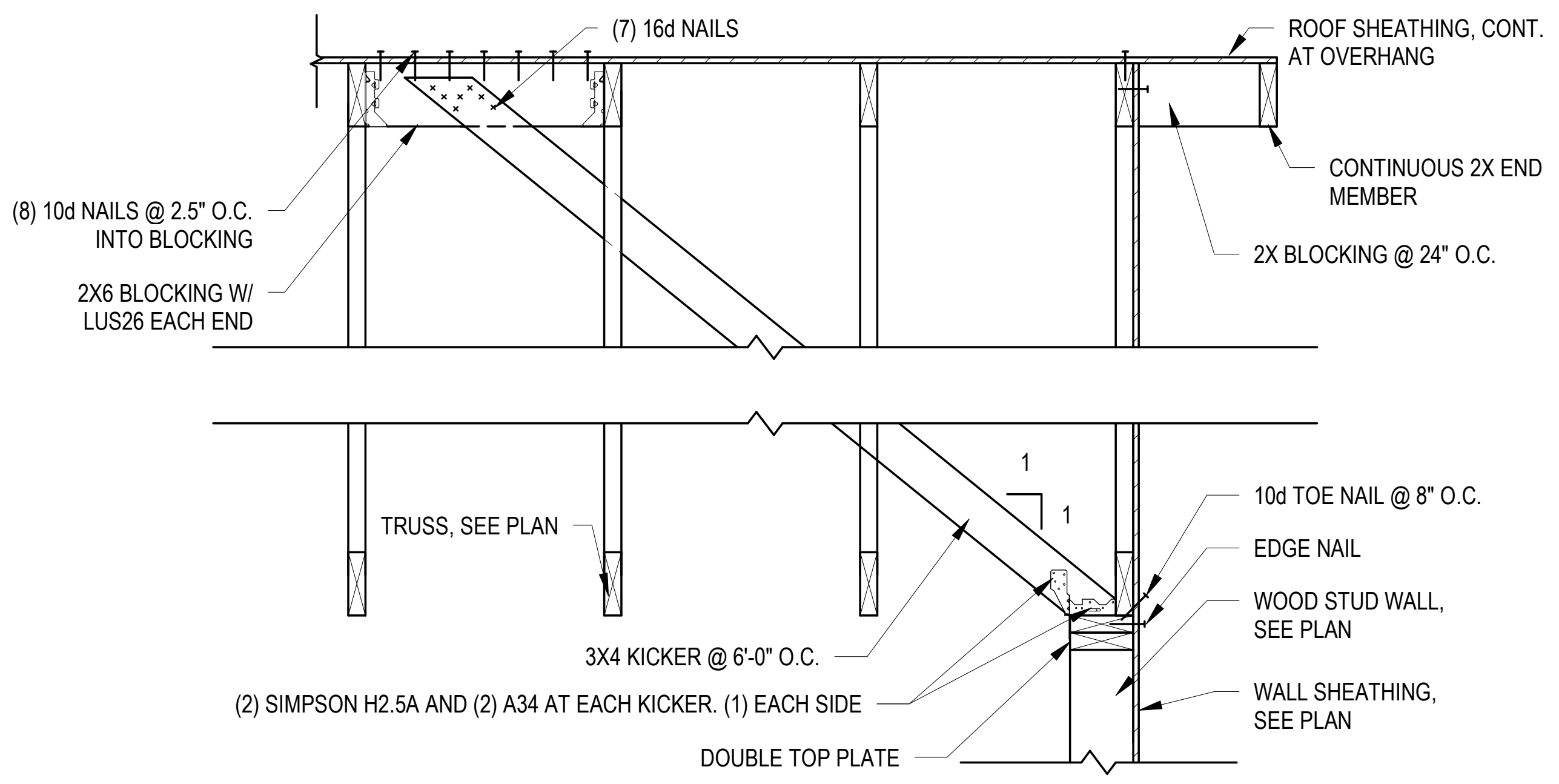
NO SCALE


ROOF SHEATHING, SEE PLAN
1" MIN.
2" MAX.
EDGE NAIL
2X FASCIA
2X PARTIAL HEIGHT BLOCKING BETWEEN TRUSS W/ (3) 10d TOE NAILS BOTTOM AND (1) 10d TOE NAIL EACH SIDE.
TRUSSES, SEE PLAN
H-1 @ EACH TRUSS AND OUTRIGGER
(2) 10d TOE NAILS, (1) EACH SIDE OF TRUSS
STUD WALL, SEE PLAN
EDGE NAIL
WALL SHEATHING, SEE PLAN

A3
S-511

TYPICAL TRUSS BEARING DETAIL

NO SCALE



A4
S-511

TRUSS GABLE END DETAIL

NO SCALE

Date: 1/19/2023
Revision:

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S-511

FRAMING DETAILS

COMMISSIONING NOTES:

MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE ALL DOCUMENTATION TO THE OWNER AS PER THE LISTED 2018 IECC CODE REFERENCES BELOW:

C408.2.1 A COMMISSIONING PLAN SHALL BE DEVELOPED BY A REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY AND SHALL INCLUDE THE FOLLOWING ITEMS:

1. A NARRATIVE DESCRIPTION OF THE ACTIVITIES THAT WILL BE ACCOMPLISHED DURING EACH PHASE OF COMMISSIONING, INCLUDING THE PERSONNEL INTENDED TO ACCOMPLISH EACH OF THE ACTIVITIES.
2. A LISTING OF THE SPECIFIC EQUIPMENT, APPLIANCES OR SYSTEMS TO BE TESTED AND A DESCRIPTION OF THE TESTS TO BE PERFORMED.
3. FUNCTIONS TO BE TESTED, INCLUDING, BUT NOT LIMITED TO CALIBRATIONS AND ECONOMIZER CONTROLS.
4. CONDITIONS UNDER WHICH THE TESTS WILL BE PERFORMED. AT A MINIMUM, TESTING SHALL AFFIRM WINTER AND SUMMER DESIGN CONDITIONS AND FULL OUTSIDE AIR CONDITIONS.
5. MEASURABLE CRITERIA FOR PERFORMANCE.

C408.2.4 PRELIMINARY COMMISSIONING REPORT. A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY THE REGISTERED DESIGN PROFESSIONAL OR APPROVED AGENCY AND PROVIDED TO THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL AND SERVICE HOT WATER FINDINGS IN SEPARATE SECTIONS TO ALLOW INDEPENDENT REVIEW. THE REPORT SHALL BE IDENTIFIED AS "PRELIMINARY COMMISSIONING REPORT," SHALL INCLUDE THE COMPLETED COMMISSIONING COMPLIANCE CHECKLIST, FIGURE C408.2.4, AND SHALL IDENTIFY:

1. ITEMIZATION OF DEFICIENCIES FOUND DURING TESTING REQUIRED BY THIS SECTION THAT HAVE NOT BEEN CORRECTED AT THE TIME OF REPORT PREPARATION.
2. DEFERRED TESTS THAT CANNOT BE PERFORMED AT THE TIME OF REPORT PREPARATION BECAUSE OF CLIMATIC CONDITIONS.
3. CLIMATIC CONDITIONS REQUIRED FOR PERFORMANCE OF THE DEFERRED TESTS.
4. RESULTS OF FUNCTIONAL PERFORMANCE TESTS.
5. FUNCTIONAL PERFORMANCE TEST PROCEDURES USED DURING THE COMMISSIONING PROCESS, INCLUDING MEASURABLE CRITERIA FOR TEST ACCEPTANCE.

C408.2.4.1 ACCEPTANCE OF REPORT. BUILDINGS, OR PORTIONS THEREOF, SHALL NOT BE CONSIDERED AS ACCEPTABLE FOR A FINAL INSPECTION PURSUANT TO SECTION C105.2.6 UNTIL THE CODE OFFICIAL HAS RECEIVED THE PRELIMINARY COMMISSIONING REPORT FROM THE BUILDING OWNER OR OWNER'S AUTHORIZED AGENT.

C408.2.4.2 THE CODE OFFICIAL SHALL BE PERMITTED TO REQUIRE THAT A COPY OF THE PRELIMINARY COMMISSIONING REPORT BE MADE AVAILABLE FOR REVIEW BY THE CODE OFFICIAL.

C408.2.5 DOCUMENTATION REQUIREMENTS. THE CONSTRUCTION DOCUMENTS SHALL SPECIFY THAT THE DOCUMENTS DESCRIBED IN THIS SECTION BE PROVIDED TO THE BUILDING OWNER WITHIN 90 DAYS OF THE RECEIPT OF THE CERTIFICATE OF OCCUPANCY.

DOCUMENTS SHALL INCLUDED BUT ARE NOT LIMITED TO: DRAWINGS, MANUALS, SYSTEM BALANCING REPORT, AND FINAL COMMISSIONING REPORT.

MECHANICAL SYMBOLS

NOTES:
1. ALL SYMBOLS MAY NOT BE USED.
2. DOTTED SYMBOLS INDICATE EXISTING EQUIPMENT, ETC

SYMBOL	EXPLANATION
ø	ROUND MEASUREMENT
⧄	RETURN AIR GRILLE/DUCT
⊠ ⊠	SUPPLY AIR DIFFUSER/DUCT
⊠	EXHAUST AIR INTAKE GRILLE
⊡	EXHAUST FAN
Ⓣ X–X	THERMOSTAT/SENSOR
X / #	MECHANICAL EQUIPMENT SYMBOL
◇#	KEYED NOTE REFERENCE
NECK / CFM / SIZE / CFM / TAG	NECK: NECK AND BRANCH DUCT SIZE CFM: CFM OF DIFFUSER OR GRILLE TAG: DIFFUSER OR GRILLE CALL–OUT
═════	SUPPLY AIR DUCTWORK
-------------	RETURN AIR DUCTWORK
-------------	EXHAUST AIR DUCTWORK
═════	OUTSIDE AIR DUCTWORK
R/D	RADIATION DAMPER
F/D	FIRE/SMOKE DAMPER
⌋	BALANCING DAMPER

DUCTWORK SEISMIC SUPPORT NOTES:

1. PER ASCE STANDARD 7–16 SEISMIC SUPPORTS ARE NOT REQUIRED FOR THE FOLLOWING CONDITIONS:
   - 1.1. HVAC DUCTS ARE SUSPENDED WITH HANGERS 12" OR LESS IN LENGTH.
   - 1.2. HVAC DUCTS HAVE A CROSS–SECTIONAL AREA OF LESS THAN 6 SQUARE FEET.
2. IF INSTANCES OCCUR WHERE HVAC DUCT IS SUSPENDED WITH HANGERS GREATER THAN 12" IN LENGTH AND HVAC DUCT HAS A CROSS–SECTIONAL AREA GREATER THAN 6 SQUARE FEET SYSTEM CONNECTORS AND COMPONENTS SHALL BE COMPATIBLE AND DESIGNED FOR THE APPLICATION THAT THEY ARE USED FOR. SHALL HAVE A MINIMUM OF TWO TRANSVERSE BRACES PER STRAIGHT DUCT RUN WITH A MAXIMUM DISTANCE OF 30' BETWEEN TRANSVERSE BRACES. SHALL HAVE A MINIMUM OF ONE LONGITUDINAL BRACE PER STRAIGHT DUCT RUN WITH A MAXIMUM DISTANCE OF 40' BETWEEN LONGITUDINAL BRACES. BRACING SHALL ONLY OCCUR AT OR NEAR AREAS WHERE SUFFICIENT DUCT STIFFNESS IS PRESENT (AT OR NEAR JOINT CONNECTIONS).
3. FOR SEISMIC BRACING OF MECHANICAL EQUIPMENT AN INDEPENDENT SEISMIC AND VIBRATION CONTROL SUBCONTRACTOR WITH EXPERIENCE, COMPUTING CAPABILITIES, AND MANUFACTURED PRODUCTS SHALL BE FURNISHED BY MECHANICAL CONTRACTOR. INDEPENDENT SEISMIC CONSULTANT SHALL PROVIDE REQUIRED COMPUTATIONS, SHOP DRAWINGS, AND MANUFACTURED PRODUCTS TO MEET THE MINIMUM REQUIREMENTS OF ASCE 7–16 AND INTERNATIONAL BUILDING CODES (LATEST ADOPTED EDITION) FOR THE RESPECTIVE SEISMIC DESIGN FOR SEISMIC ZONE WITH IMPORTANCE FACTOR 1.5. SEISMIC SUBCONTRACTOR SHALL EXERCISE THE QUALITY CONTROL FOR THIS WORK AND SHALL NOT BE LIMITED TO INSTRUCTIONS DIRECTED TO THE MECHANICAL CONTRACTOR. THE SEISMIC SUBCONTRACTOR SHALL CERTIFY IN WRITING THAT THEY HAVE INSPECTED THE INSTALLATION AND THAT ALL ISOLATION ANCHORS AND SEISMIC RESTRAINT MATERIALS ARE INSTALLED CORRECTLY AND FUNCTIONING PROPERLY. CERTIFICATION SHALL BE PROVIDED AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED.

PROJECT MECHANICAL NOTES:

1. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL A 7–DAY PROGRAMMABLE THERMOSTAT FOR EACH FURNACE AND FAN COIL (PROVIDE PAIRING KIT AS REQUIRED). VERIFY THERMOSTAT LOCATION WITH OWNER'S REPRESENTATIVE IN FIELD. INSTALL THERMOSTAT AT 48" A.F.F.. PROVIDE AND INSTALL A HEAVY DUTY VANDAL RESISTANT COVER IN ALL COMMON AREAS.
2. COORDINATE EXACT LOCATION OF ALL MECHANICAL UNITS WITH GENERAL CONTRACTOR. VERIFY IN FIELD.
3. PROVIDE AND INSTALL OUTSIDE AIR SYSTEM AS SPECIFIED ON THE PLANS. SEE TYPICAL OUTSIDE AIR DETAIL FOR FAN COILS AND FURNACES.

SUBMITTALS:

1. CONTRACTOR TO ALLOW 10 WORKING DAYS FOR SUBMITTAL TURNAROUND.
2. CONTRACTOR TO PROVIDE SUBMITTALS FOR ALL EQUIPMENT AND MATERIALS IN A SINGLE PACKAGE. PIECEMEAL SUBMITTALS WILL BE RETURNED WITH A NOTE TO REVISE AND RESUBMIT.
3. SUBMITTALS WILL BE CHECKED FOR COMPLIANCE WITH CAPACITY REQUIREMENTS AND ELECTRICAL REQUIREMENTS. CONTRACTOR TO VERIFY THAT WEIGHTS, DIMENSIONS, AND DUCT CONNECTIONS ON SUBMITTED EQUIPMENT IS CONSISTENT WITH SCHEDULED EQUIPMENT PRIOR TO SUBMITTAL. CHANGES IN SCOPE BROUGHT ABOUT BY SUBMITTED EQUIPMENT THAT DOES NOT COMPLY WITH THE WEIGHTS, DIMENSIONS, OR CONNECTION LOCATIONS ON SCHEDULED EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SITE CONDITIONS

SITE:

CITY:	SPANISH FORK, UTAH
ELEVATION:	4,577'
OUTDOOR CONDITIONS:	
WINTER:	HTG: 3° F
SUMMER:	CLG: 98° F
INDOOR CONDITIONS	
OFFICE AREA:	
WINTER:	HTG: 75° F
SUMMER:	CLG: 72° F
SHOP/WAREHOUSE AREA:	
WINTER:	HTG: 55° F
SUMMER:	CLG: N/A

IF TEMPERATURES SHOWN DO NOT MATCH CONDITIONS DESIRED FOR THIS PROJECT CONTACT THE ENGINEER OF RECORD.

DESIGN CONTACTS

MECHANICAL ENGINEER:	MARK MAKIN
MECHANICAL PROJECT MANAGER:	CHRIS FALSLEV
MECHANICAL DESIGNER:	TRE PRESSON

SHEET INDEX

SHEET NUMBER	SHEET TITLE
M0.1	MECHANICAL NOTES AND LEGENDS
M1.1	MECHANICAL FLOOR PLAN
M1.2	MECHANICAL MEZZ. PLAN
M5.1	MECHANICAL DETAILS
M5.2	MECHANICAL DETAILS
M6.1	MECHANICAL SCHEDULES
M7.1	MECHANICAL SPECIFICATIONS
M7.2	MECHANICAL SPECIFICATIONS
M7.3	MECHANICAL SPECIFICATIONS

PROJECT MECHANICAL NOTES:

4. PROVIDE AND INSTALL ALL NECESSARY COMPONENTS FOR FURNACE/CONDENSING UNIT SYSTEMS. (IE REFRIGERANT LINES, COMBUSTION AIR PIPING, EXHAUST PIPING, CONCENTRIC TERMINATION KIT). ALL PER MANUFACTURER'S RECOMMENDATIONS.
5. PROVIDE AND INSTALL ALL NECESSARY COMPONENTS FOR FAN COIL/HEAT PUMP UNIT SYSTEMS. (IE REFRIGERANT LINES, CONDENSATE PIPING, FILTER GRILLE(S), ACCESS PANELS (FIRE RATED AS REQUIRED), MOUNTING/SUPPORT HARDWARE, ETC.) ALL PER MANUFACTURER'S RECOMMENDATIONS.
6. PROVIDE AND INSTALL MANUAL CONTROL DAMPERS AT EACH BRANCH TAKE–OFF. EACH SUPPLY AIR GRILLE SHALL BE DOWNSTREAM FROM A CONTROL DAMPER FOR BALANCING AND ADJUSTMENT. SOME INSTALLATIONS MAY REQUIRE OPPOSED BLADE DAMPERS OR CONCEALED DAMPER REGULATORS THAT ARE REMOTELY ADJUSTED.
7. SIZING FOR EQUIPMENT COMBUSTION AIR AND VENT PIPING DETERMINED USING MANUFACTURER'S SPECIFICATIONS, ACTUAL LENGTH AND CONFIGURATION INFORMATION FROM FIELD.
8. PROVIDE AND INSTALL FIRE DAMPERS IN MECHANICAL DUCT WITH REQUIRED ACCESS DOORS AT ALL FIRE RATED ASSEMBLY PENETRATIONS. FIRE BARRIER IS AT GYP. BOARD. VERIFY AND COORDINATE ASSEMBLY AND BARRIER LOCATIONS WITH ARCHITECTURAL PLANS.
9. MECHANICAL CONTRACTOR TO PROVIDE DOCUMENTATION OF REQUIRED MANUFACTURER START–UP FOR EQUIPMENT INCLUDING MANUFACTURER, MODEL NUMBER, SERIAL NUMBER, COOLING CAPACITY, GAS HEATING INPUT, ALL ENTERING AND LEAVING TEMPERATURES, CONNECTED CIRCUIT VOLTAGE, AND VERIFICATION OF PROPER FUNCTION OF THERMOSTAT. CONTRACTOR SHALL PROVIDE MANUALS FOR EQUIPMENT AND NAME OF SERVICE AGENCY.
10. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL SINGLE THICKNESS TURNING VANES AT EACH 90 DEGREE SQUARE DUCT ELBOW.
11. USING CFM NOTED ON PLANS INSTALL GRILLES AND DIFFUSERS WITH MAXIMUM NOISE CRITERIA (NC) OF 25.
12. DUCTWORK SIZING, ROUTING, AND LOCATION TO BE FIELD VERIFIED AND APPROVED FOR ANY CHANGES TO THE DUCT SIZING AND/OR ROUTING PRIOR TO DUCT FABRICATION AND INSTALLATION. DUCTWORK FABRICATED PRIOR TO FIELD VERIFICATION AND APPROVALS THAT NEEDS TO BE ALTERED WILL BE ALTERED AS NEEDED BY THE CONTRACTOR WITH NO ADDITIONAL COST TO THE OWNER.
13. ALL FRESH/OUTSIDE AIR INTAKES SHALL BE 10 FEET MIN. FROM ALL EXHAUST AND PLUMBING VENTS.
14. ALL RETURN AIR AND SUPPLY AIR DUCTWORK IN UNCONDITIONED SPACES SHALL BE INSULATED PER APPLICABLE CODES.
15. ALL EQUIPMENT SHALL HAVE A FLEXIBLE CONNECTION FOR THE RETURN AIR AND SUPPLY AIR DUCTWORK.
16. BALANCE ALL SYSTEMS TO CFM NOTED AT EACH DIFFUSER AND GRILLE BY AN INDEPENDENT BALANCING CONTRACTOR.
17. ALL GAS FIRED EQUIPMENT WILL BE TESTED BY CERTIFIED GAS INSTALLERS AND HAVE GREEN STICKERS STATING COMPLIANCE WITH ALL REQUIRED LOCAL AND 2018 IFGC REQUIREMENTS.
18. HEATING LOADS COMPLETED USING CHVAC OR OTHER APPROVED CALCULATION METHODS.
19. REFRIGERANT PIPING INSULATION.
    - 19.1. INSULATE ALL REFRIGERANT SUCTION PIPING WITH 1/2" THICK FLEXIBLE FOAMED PLASTIC CLOSED CELL PIPE INSULATION.
    - 19.2. INSULATION SHALL HAVE A "K" FACTOR OF NOT MORE THAN .26 AT 70°F AND A WATER VAPOR TRANSMISSION RATE OF 0.1 PERM–INCH OR LESS IN CONFORMANCE WITH ASTM C–177 AND ASTM C–355 WATER METHOD.
    - 19.3. WHEN INSULATION IS EXPOSED TO SUNLIGHT WRAP WITH POLYTAPE WITH ONE THIRD OVERLAP.
    - 19.4. INSTALL INSULATION BY SLITTING TUBULAR SECTIONS AND APPLYING OVER PIPING.
    - 19.5. PAINT ALL INSULATION AND/OR TAPE EXPOSED TO THE EXTERIOR WITH ULTRAVIOLET RESISTING PAINT.
20. PROVIDE AND INSTALL B–VENT EXHAUST DUCT TO EXTERIOR FOR EACH GAS APPLIANCE. SIZING DETERMINED USING IFGC TABLE 504.2(1) AND 504.2(2) USING ACTUAL LENGTH AND CONFIGURATION INFORMATION FROM FIELD. COORDINATE IN FIELD WITH PLUMBING CONTRACTOR. PROVIDE CLAMPS TO SECURE B–VENT PIPE TO STRUCTURE.
21. COORDINATE ALL RETURN AIR AND SUPPLY AIR DUCTWORK AND DIFFUSERS IN FIELD WITH LIGHTING AND OTHER SYSTEMS.
22. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED.
23. MECHANICAL CONTRACTOR SHALL PROVIDER AND INSTALL LINE VOLTAGE THERMOSTAT. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL CIRCUIT CONDUIT AND MAKE CONNECTION. SET T–STAT AT 70°F. SEE EXHAUST FAN SCHEDULE FOR ADDITIONAL INFORMATION ON CONTROLS AND DIVISION OF LABOR WITH ELECTRICAL CONTRACTOR.

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Date: 01.11.2023
Revision:

PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION

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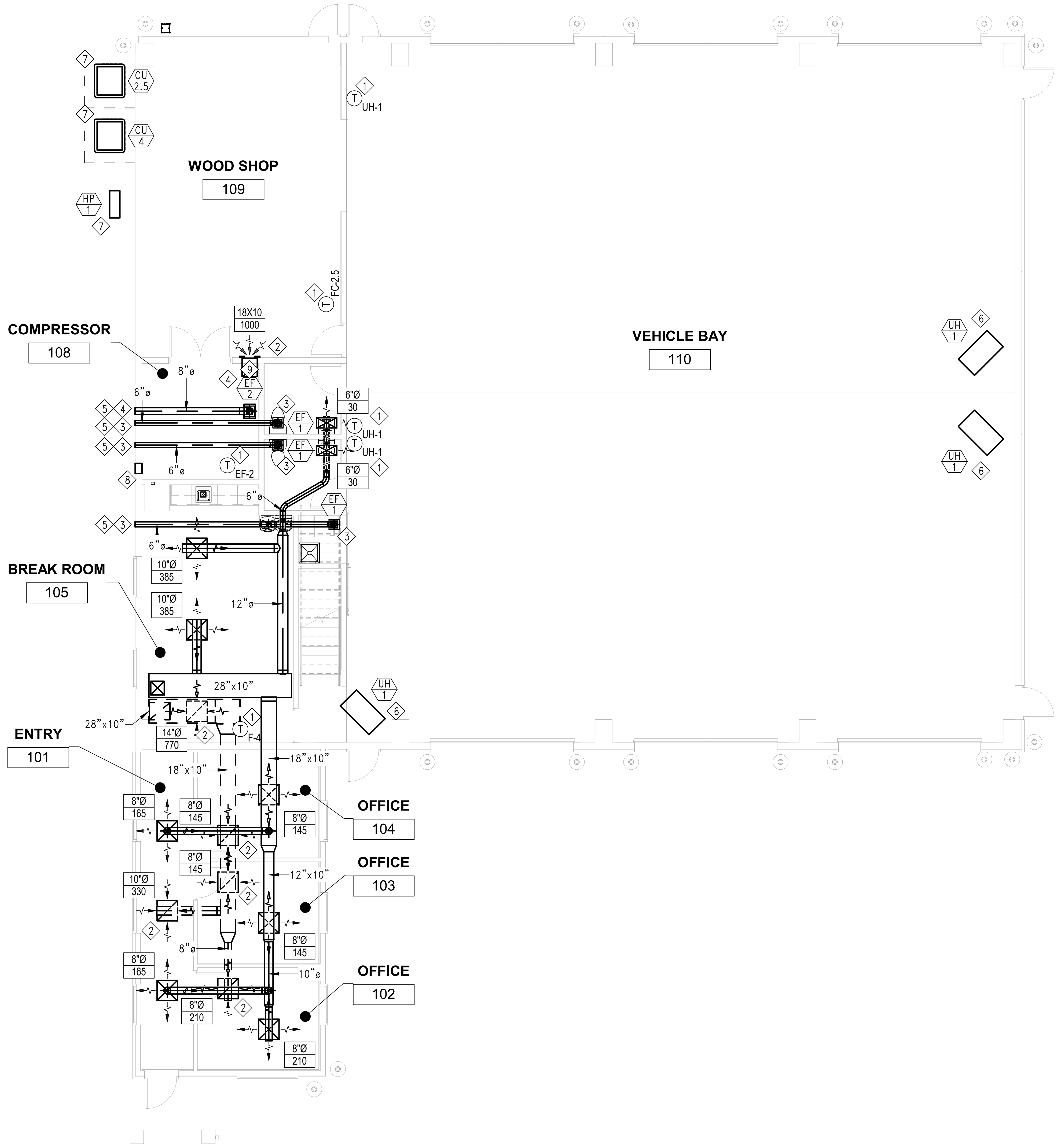
M0.1
MECHANICAL NOTES AND LEGENDS



MAIN FLOOR MECHANICAL PLAN - BUILDING #1

1/8" = 1'-0"

MECHANICAL KEYED NOTES:

1 PROVIDE AND INSTALL 7-DAY PROGRAMMABLE THERMOSTAT. FIELD VERIFY THERMOSTAT LOCATION WITH OWNER'S REPRESENTATIVE. INSTALL THERMOSTAT AT 48" A.F.F. WITH HEAVY DUTY LOCKABLE COVER.

2 PROVIDE AND INSTALL RETURN AIR GRILLE CAPABLE OF CFM NOTED WITH AN NC OF NO GREATER THAN 25.

3 PROVIDE AND INSTALL 6" ROUND EXHAUST DUCT TO OWNER'S REPRESENTATIVE APPROVED EXHAUST VENT TERMINATION. VERIFY LOCATION IN FIELD. ACTUAL DUCT SIZE DETERMINED BY EXHAUST FAN OUTLET. EXHAUST TERMINATION SHALL 10' FROM FRESH AIR INTAKES.

4 PROVIDE AND INSTALL 8" ROUND EXHAUST DUCT TO OWNER'S REPRESENTATIVE APPROVED EXHAUST VENT TERMINATION. VERIFY LOCATION IN FIELD. ACTUAL DUCT SIZE DETERMINED BY EXHAUST FAN OUTLET. EXHAUST TERMINATION SHALL 10' FROM FRESH AIR INTAKES.

5 ALL EXHAUST AIR DUCTING SHALL TERMINATE WITH A BACKDRAFT DAMPER AND MANUFACTURER/OWNER'S REPRESENTATIVE RECOMMENDED TERMINATION GRILLE AT A MINIMUM OF 3 FEET FROM OPERABLE BUILDING OPENINGS AND 10' FROM MECHANICAL FRESH AIR INTAKES (IMC SECTION 501.3.1 #3).

6 PROPOSED LOCATION OF GAS UNIT HEATER TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS (MAXIMUM MOUTNING HEIGHT OF 14' A.F.F. FIELD VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE AND STRUCTURE.

7 PROPOSED LOCATION OF OUTDOOR CONDENSING UNITS/HEAT PUMPS INSTALLED ON COMMON MECHANICAL CURB SYSTEM(S). SEE SCHEDULES AND DETAILS FOR MORE INFORMATION.

8 PROVIDE AND INSTALL 12"x10" RELIEF AIR LOUVER WITH BAROMETRIC DAMPER (120 SQ IN. MINIMUM AT 50% OPEN) AT 24" ABOVE FINISHED FLOOR. COORDINATE FINAL LOCATIONS WITH STRUCTURE AND ARCHITECTURAL DRAWINGS.

9 PROVIDE AND INSTALL THROW AWAY PREFILTER FOR WOOD SHOP AREA TO MINIMIZE SAWDUST ENTERING THE FURNACE.

Date: 05.23.2022
Revision:

PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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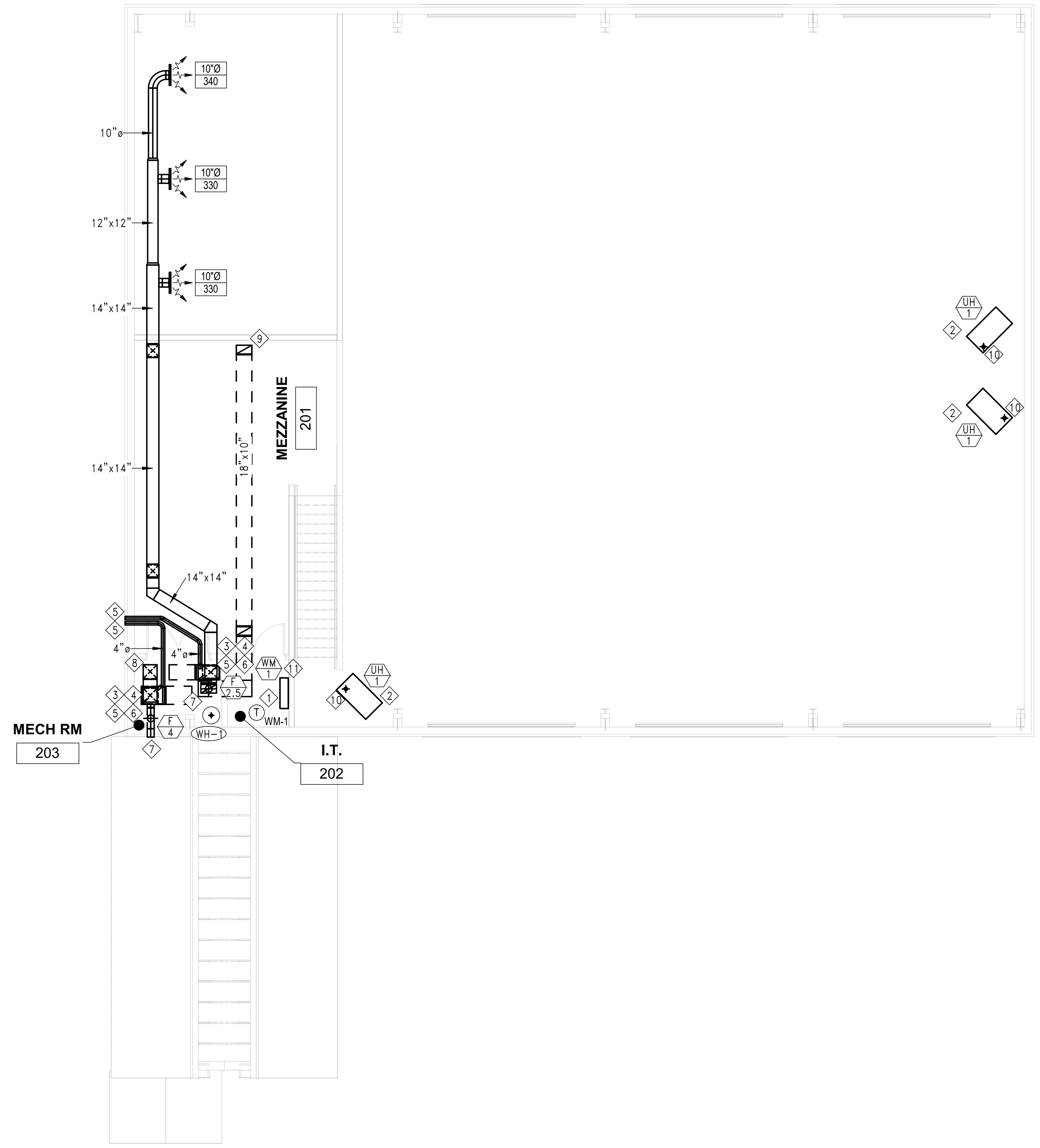
M1.1

MECHANICAL FLOOR PLAN



MEZZANINE MECHANICAL PLAN - BUILDING #1

1/8" = 1'-0"

MECHANICAL KEYED NOTES:

1 PROVIDE AND INSTALL 7-DAY PROGRAMMABLE THERMOSTAT. FIELD VERIFY THERMOSTAT LOCATION WITH OWNER'S REPRESENTATIVE. INSTALL THERMOSTAT AT 48" A.F.F. WITH HEAVY DUTY LOCKABLE COVER.

2 PROPOSED LOCATION OF GAS UNIT HEATER TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS (MAXIMUM MOUTNING HEIGHT OF 14' A.F.F. FIELD VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE AND STRUCTURE.

3 PROPOSED FURNACE LOCATION. SEE MECHANICAL PERFORMANCE NOTES, SCHEDULES AND DETAILS. MAKE ALL CONNECTIONS TO COMPLETE SYSTEM. COORDINATE FINAL LOCATION WITH OWNER'S REPRESENTATIVE.

4 PROVIDE AND INSTALL REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS.

5 ANTICIPATED ROUTING OF PVC EXHAUST AND COMBUSTION PIPING PER MANUFACTURER'S RECOMMENDATIONS (BY PLUMBING CONTRACTOR) SHOWN FOR REFERENCE. COORDINATE TERMINATION WITH PLUMBING CONTRACTOR TO MAINTAIN ALL REQUIRED CLEARANCES.

6 PROVIDE AND INSTALL CONDENSATE DRAIN PIPE FROM FURNACE COOLING COIL TO FLOOR DRAIN.

7 PROVIDE AND INSTALL 8" ROUND OUTSIDE AIR DUCT TO OWNER REPRESENTATIVE APPROVED TERMINATION. VERIFY EXACT LOCATION IN FIELD. MAINTAIN A MINIMUM OF 10' CLEARANCE FROM ALL EXHAUST AIR TERMINATIONS.

8 ANTICIPATED LOCATION OF 28"x10" SUPPLY AIR AND 28"x10" RETURN AIR RISER TO LEVEL BELOW.

9 ANTICIPATED LOCATION OF 18"x10" RETURN AIR RISER TO LEVEL BELOW.

10 PROPOSED LOCATION OF 3" B-VENT TO ROOF VENT TERMINATION TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. FIELD VERIFY FINAL LOCATION AND SIZING WITH OWNER'S REPRESENTATIVE AND STRUCTURE.

11 IT ROOM COOLING SIZING IS BASED OFF OF ONE (1) RACK OF EQUIPMENT PUTTING OFF 12,000 BTU/H OF HEAT. IF OTHER RACKS ARE REQUIRED, COOLING SYSTEM SHALL BE UPSIZED BY 12,000 BTU PER ADDITIONAL RACK.

Date: 05.23.2022
Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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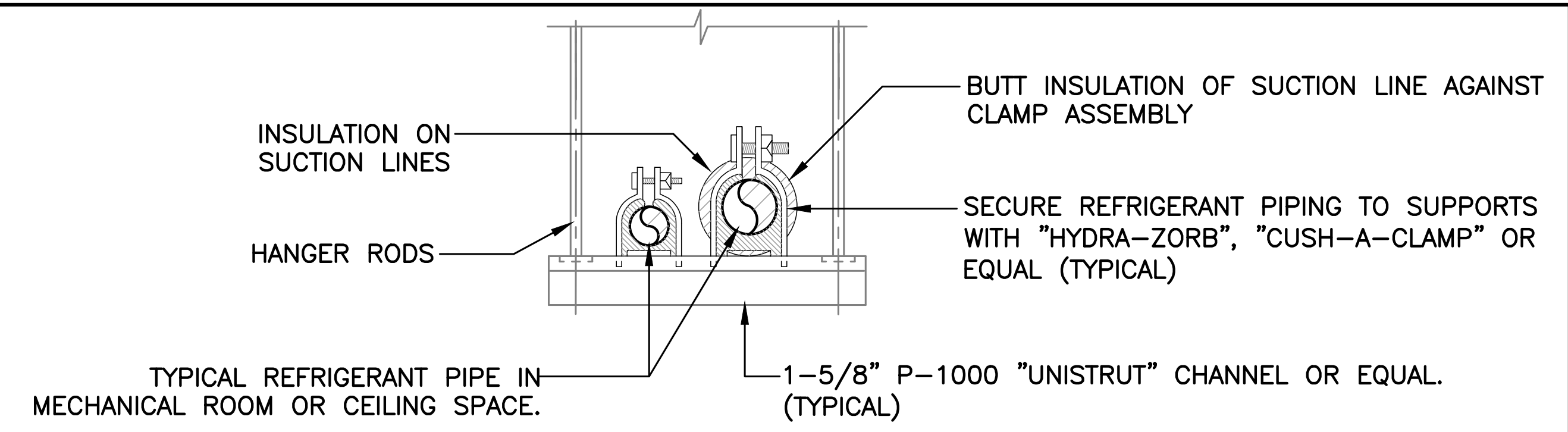
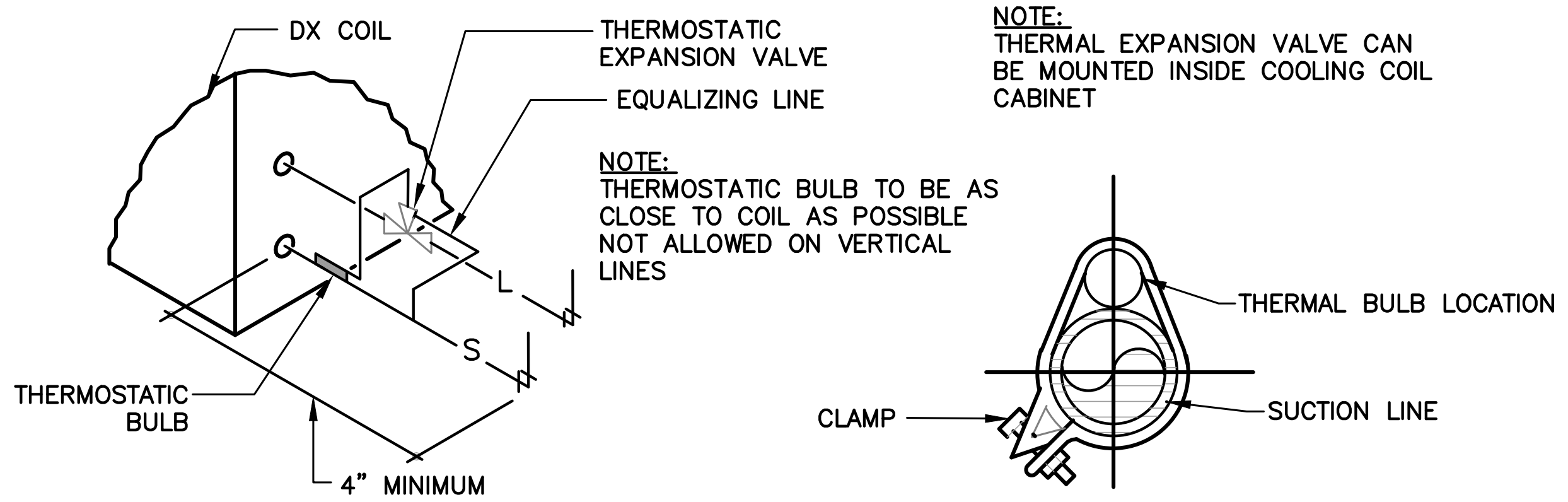
M1.2

MECHANICAL MEZZ PLAN


INSULATION ON SUCTION LINES
HANGER RODS
TYPICAL REFRIGERANT PIPE IN MECHANICAL ROOM OR CEILING SPACE.
BUTT INSULATION OF SUCTION LINE AGAINST CLAMP ASSEMBLY
SECURE REFRIGERANT PIPING TO SUPPORTS WITH "HYDRA–ZORB", "CUSH–A–CLAMP" OR EQUAL (TYPICAL)
1–5/8" P–1000 "UNISTRUT" CHANNEL OR EQUAL. (TYPICAL)

SUSPENDED REFRIGERANT PIPE SUPPORT DETAIL

SCALE: NONE

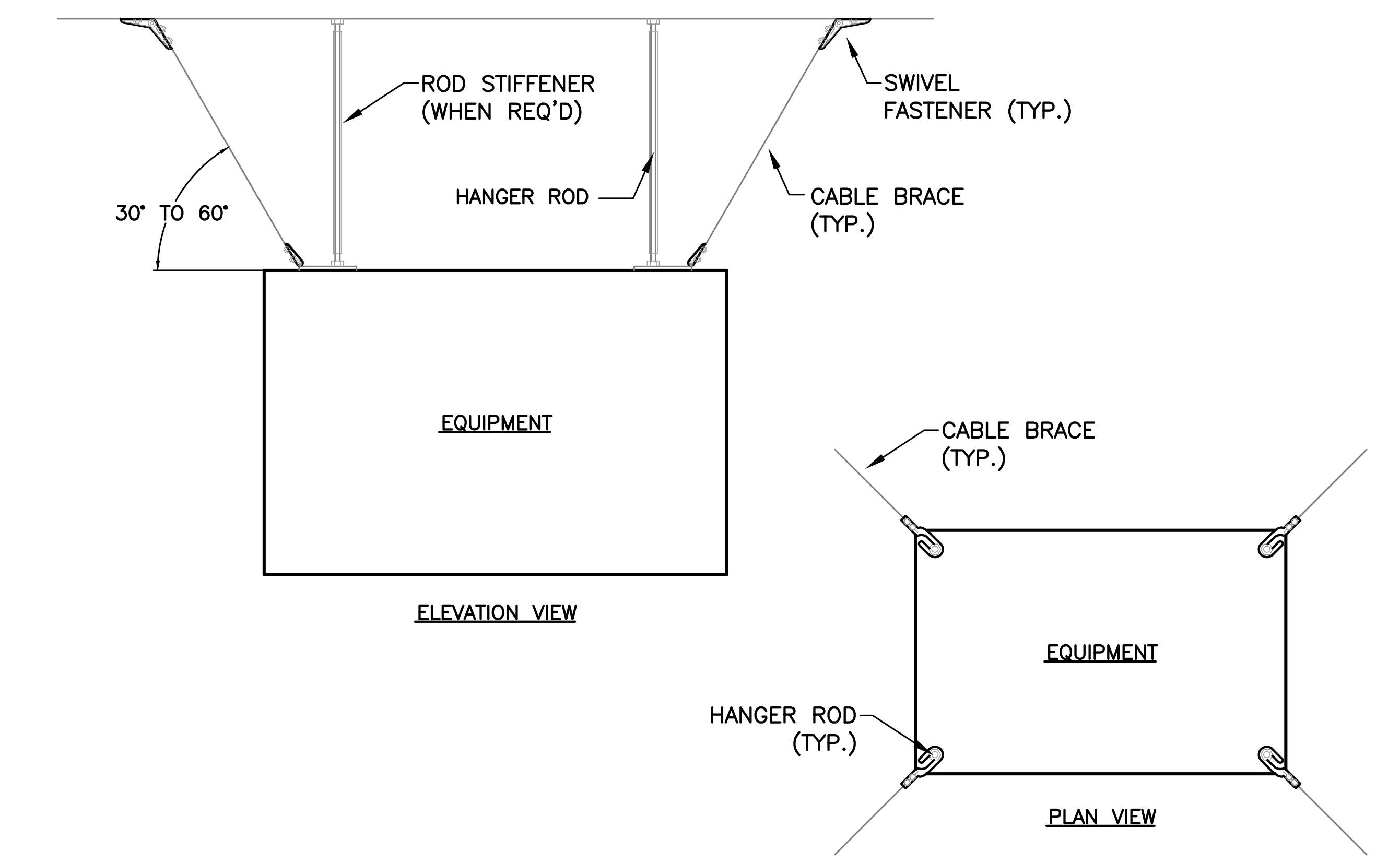


NOTE:
THERMAL EXPANSION VALVE CAN BE MOUNTED INSIDE COOLING COIL CABINET

NOTE:
THERMOSTATIC BULB TO BE AS CLOSE TO COIL AS POSSIBLE NOT ALLOWED ON VERTICAL LINES

TYPICAL REFRIGERANT COIL CONNECTION DETAIL

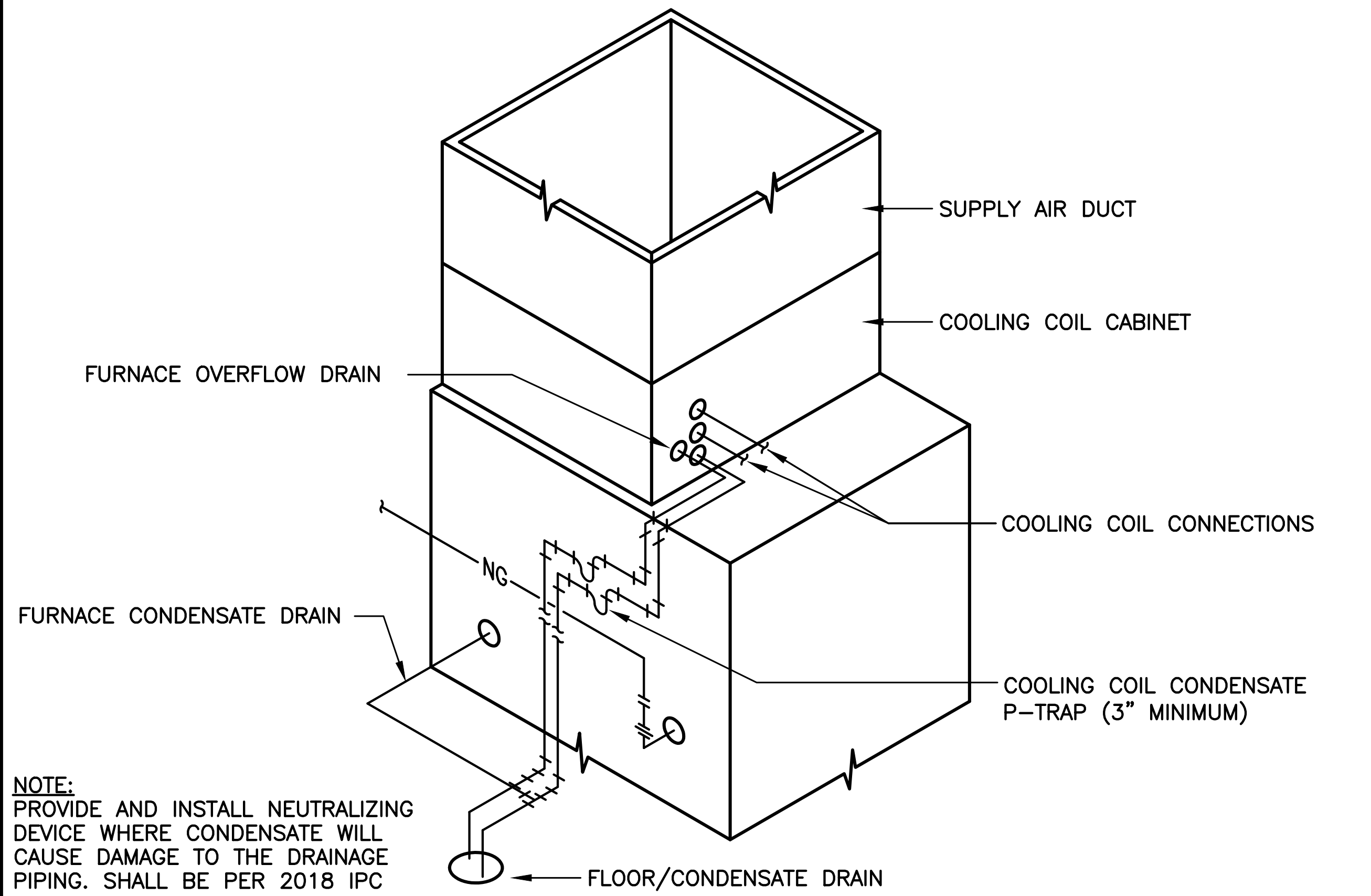
SCALE: NONE



NOTE: ALL SEISMIC BRACING OF SUSPENDED EQUIPMENT TO BE SIZED ACCORDING TO BRACING MANUFACTURER SPECIFICATIONS AND TO BE IN ACCORDANCE WITH ASCE 7–16 REQUIREMENTS.

SUSPENDED EQUIPMENT SEISMIC BRACING DETAIL

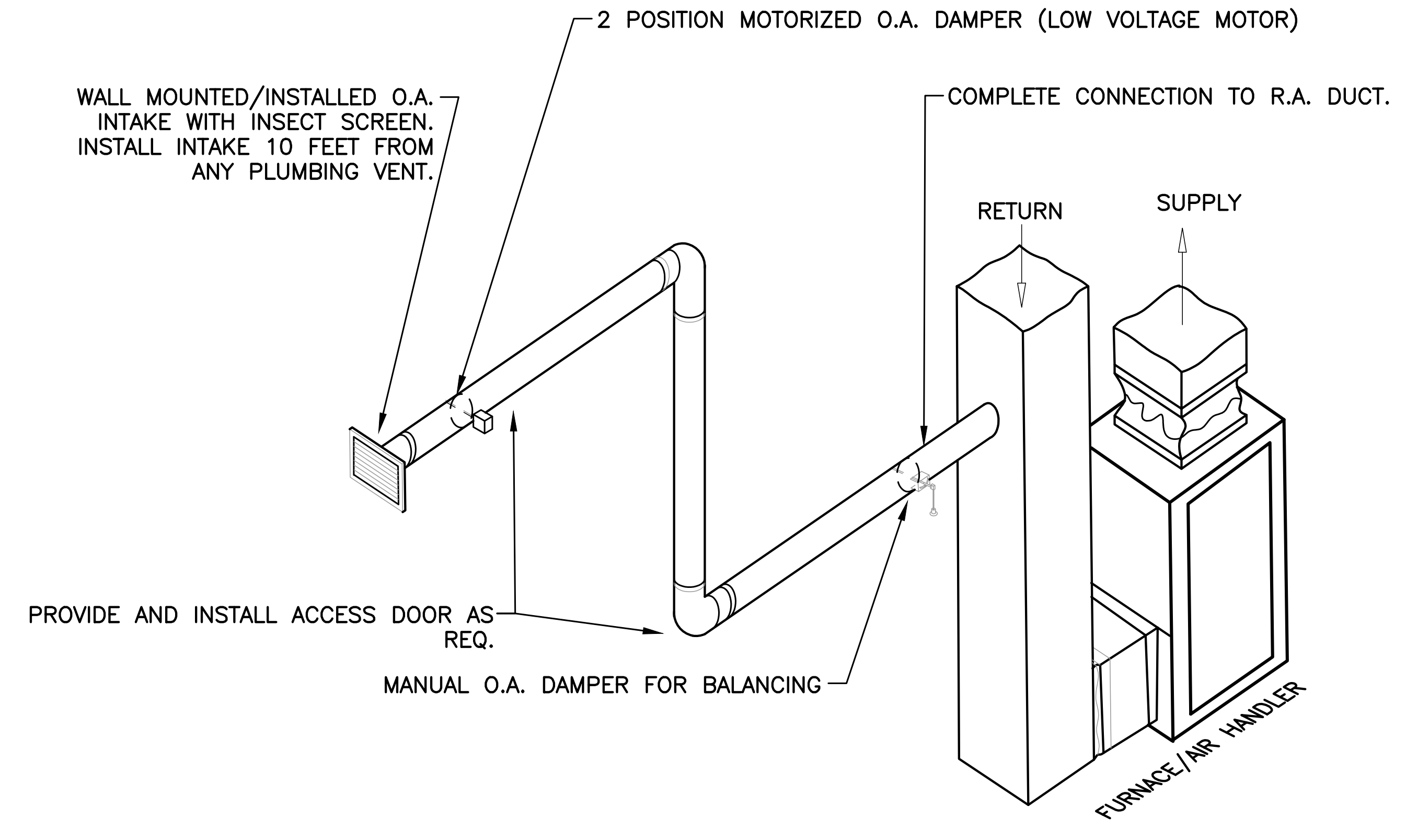
SCALE: NONE



NOTE:
PROVIDE AND INSTALL NEUTRALIZING DEVICE WHERE CONDENSATE WILL CAUSE DAMAGE TO THE DRAINAGE PIPING. SHALL BE PER 2018 IPC SECTION 803.

CONDENSATE DRAIN TRAP DETAIL

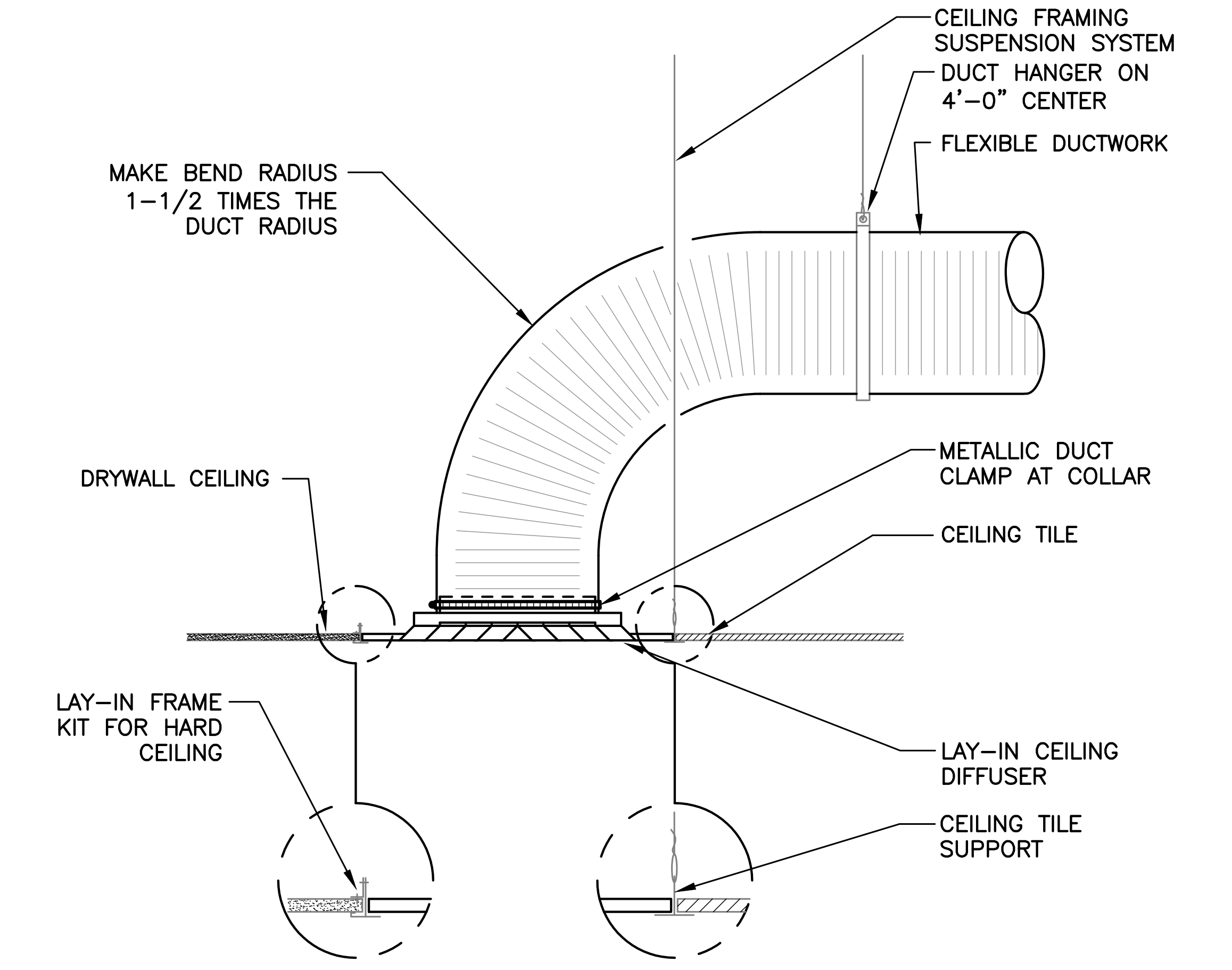
SCALE: NONE


2 POSITION MOTORIZED O.A. DAMPER (LOW VOLTAGE MOTOR)
WALL MOUNTED/INSTALLED O.A. INTAKE WITH INSECT SCREEN. INSTALL INTAKE 10 FEET FROM ANY PLUMBING VENT.
COMPLETE CONNECTION TO R.A. DUCT.
RETURN
SUPPLY
PROVIDE AND INSTALL ACCESS DOOR AS REQ.
MANUAL O.A. DAMPER FOR BALANCING
FURNACE/AIR HANDLER

NOTE:
SEE OUTSIDE AIR CONTROL SEQUENCES DETAIL FOR INFORMATION RELATING TO DESIRED CONTROLS.

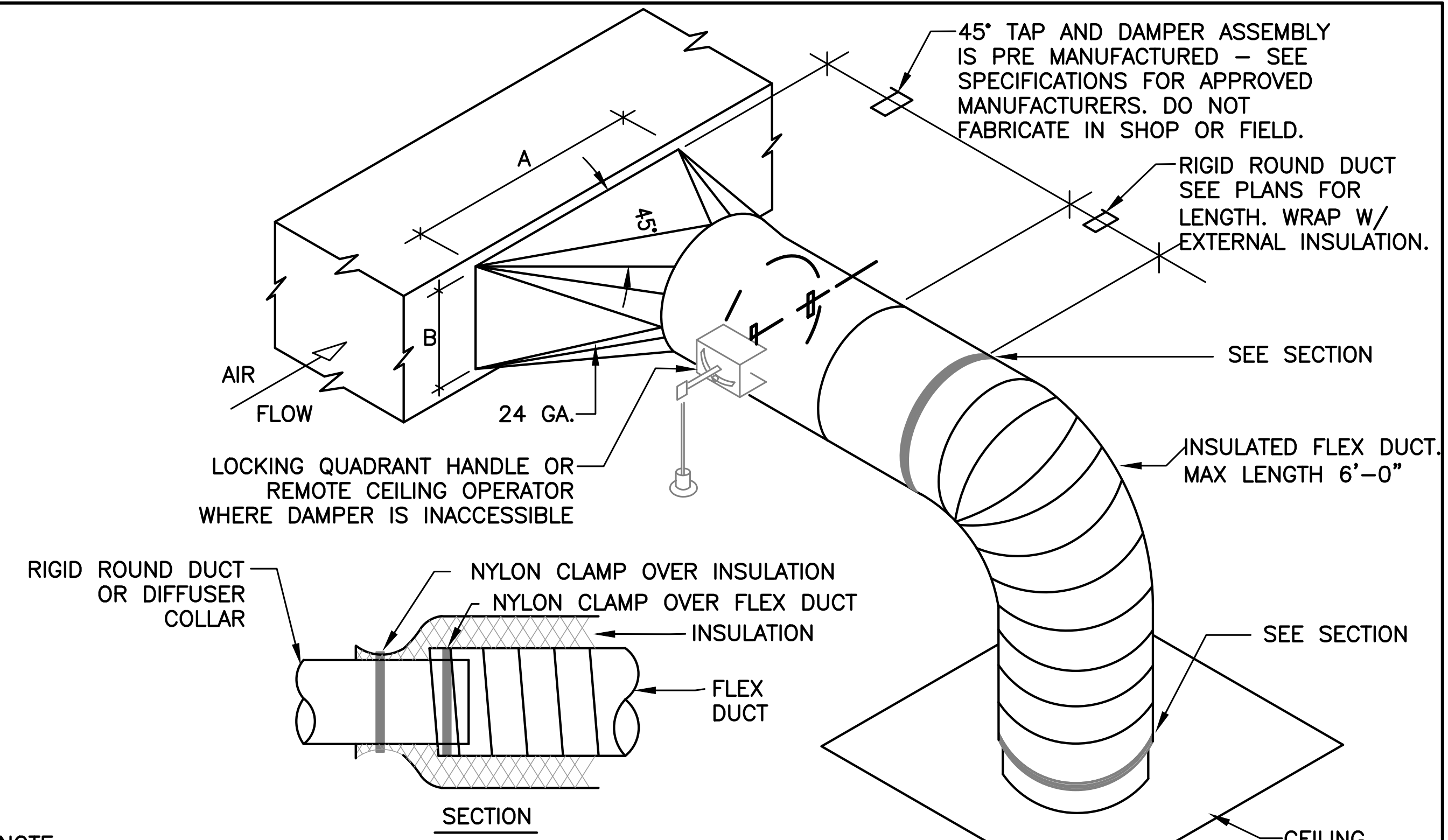
TYPICAL WALL MOUNTED O.A. INTAKE

SCALE: NONE


CEILING FRAMING SUSPENSION SYSTEM
DUCT HANGER ON 4'–0" CENTER
FLEXIBLE DUCTWORK
MAKE BEND RADIUS 1–1/2 TIMES THE DUCT RADIUS
DRYWALL CEILING
METALLIC DUCT CLAMP AT COLLAR
CEILING TILE
LAY–IN FRAME KIT FOR HARD CEILING
LAY–IN CEILING DIFFUSER
CEILING TILE SUPPORT

DIFFUSER/GRILLE INSTALLATION

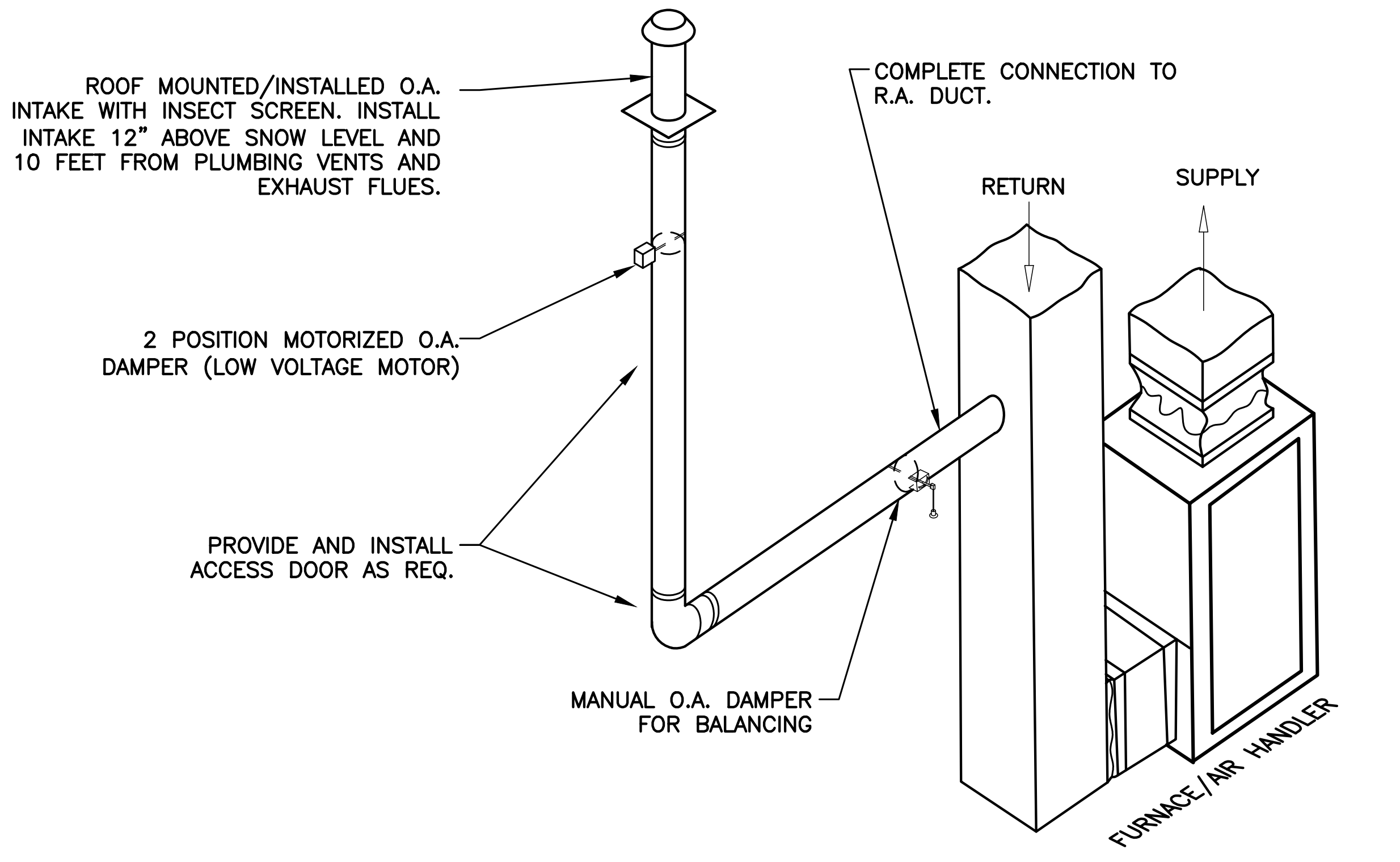
SCALE: NONE


45° TAP AND DAMPER ASSEMBLY IS PRE MANUFACTURED – SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS. DO NOT FABRICATE IN SHOP OR FIELD.
RIGID ROUND DUCT SEE PLANS FOR LENGTH. WRAP W/ EXTERNAL INSULATION.
A
45°
B
AIR
FLOW
24 GA.
SEE SECTION
LOCKING QUADRANT HANDLE OR REMOTE CEILING OPERATOR WHERE DAMPER IS INACCESSIBLE
INSULATED FLEX DUCT. MAX LENGTH 6'–0"
RIGID ROUND DUCT OR DIFFUSER COLLAR
NYLON CLAMP OVER INSULATION
NYLON CLAMP OVER FLEX DUCT
INSULATION
FLEX DUCT
SEE SECTION
SECTION
CEILING DIFFUSER

NOTE:
(1) TAKE–OFFS SHOULD NOT BE INSTALLED CLOSER THAN TWO WIDTHS TO ELBOWS OR INTERSECTIONS
(2) AREA OF A X B SHALL BE EQUAL TO 1.5 X AREA BRANCH DUCT
(3) SHALL BE FLEXMASTER USA STO–LDS, SHEET METAL CONNECTORS HET, OR AIR–RITE ST–1HD.

INSULATED ROUND TAKE-OFF

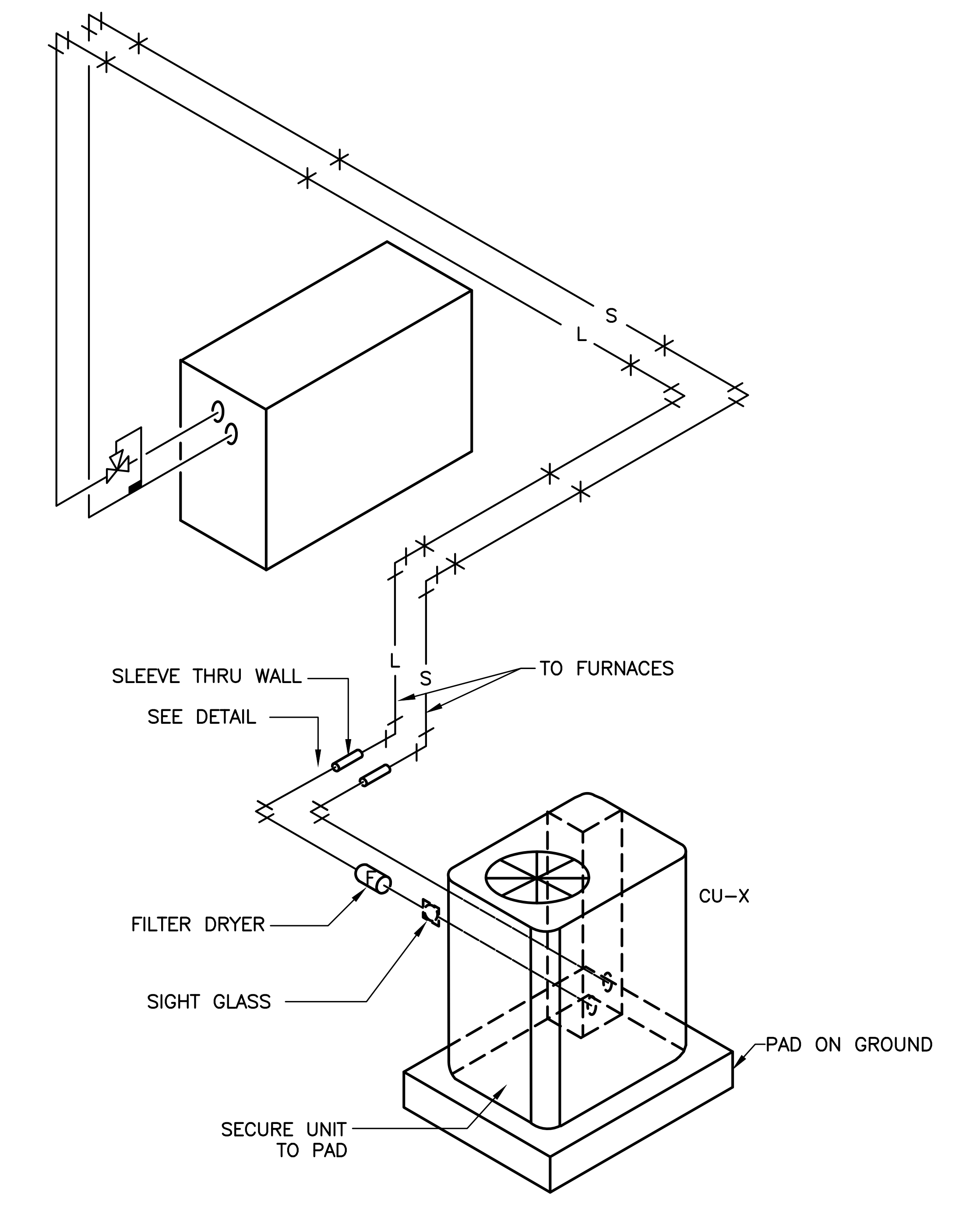
SCALE: NONE


ROOF MOUNTED/INSTALLED O.A. INTAKE WITH INSECT SCREEN. INSTALL INTAKE 12" ABOVE SNOW LEVEL AND 10 FEET FROM PLUMBING VENTS AND EXHAUST FLUES.
COMPLETE CONNECTION TO R.A. DUCT.
RETURN
SUPPLY
2 POSITION MOTORIZED O.A. DAMPER (LOW VOLTAGE MOTOR)
PROVIDE AND INSTALL ACCESS DOOR AS REQ.
MANUAL O.A. DAMPER FOR BALANCING
FURNACE/AIR HANDLER

NOTE:
SEE OUTSIDE AIR CONTROL SEQUENCES DETAIL FOR INFORMATION RELATING TO DESIRED CONTROLS.

TYPICAL ROOF MOUNTED O.A. INTAKE

SCALE: NONE



TYPICAL REFRIGERANT SCHEMATIC (CU ON GROUND)

SCALE: NONE

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PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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M5.1
MECHANICAL DETAILS

DIMENSION OF LONGEST SIDE, INCHES	SHEET METAL GAGE (ALL FOUR SIDES)	TRANSVERSE REINFORCING (1)					
		MINIMUM REINFORCING ANGLE SIZE AND MAXIMUM LONGITUDINAL SPACING BETWEEN TRANSVERSE JOINTS &/OR INTERMEDIATE REINFORCING	AT JOINTS				
			MIN. H. IN.	DRIVE SLIP PLAIN S SLIP	HEMMED S SLIP	ALTER'NT BAR SLIP	REINFORCED BAR SLIP
				RECOMMENDED GAUGE	RECOMMENDED GAUGE	RECOMMENDED GAUGE	RECOMMENDED GAUGE
UP THRU 12	26	NONE REQUIRED	1	26	26	24	24
13 – 18	24	NONE REQUIRED	1	24	24	24	24
19 – 30	24	1"X1"X1/8" @ 60 IN	1	24	24	24	24
31 – 36	22	1"X1"X1/8" @ 60 IN	1	–	–	22	22

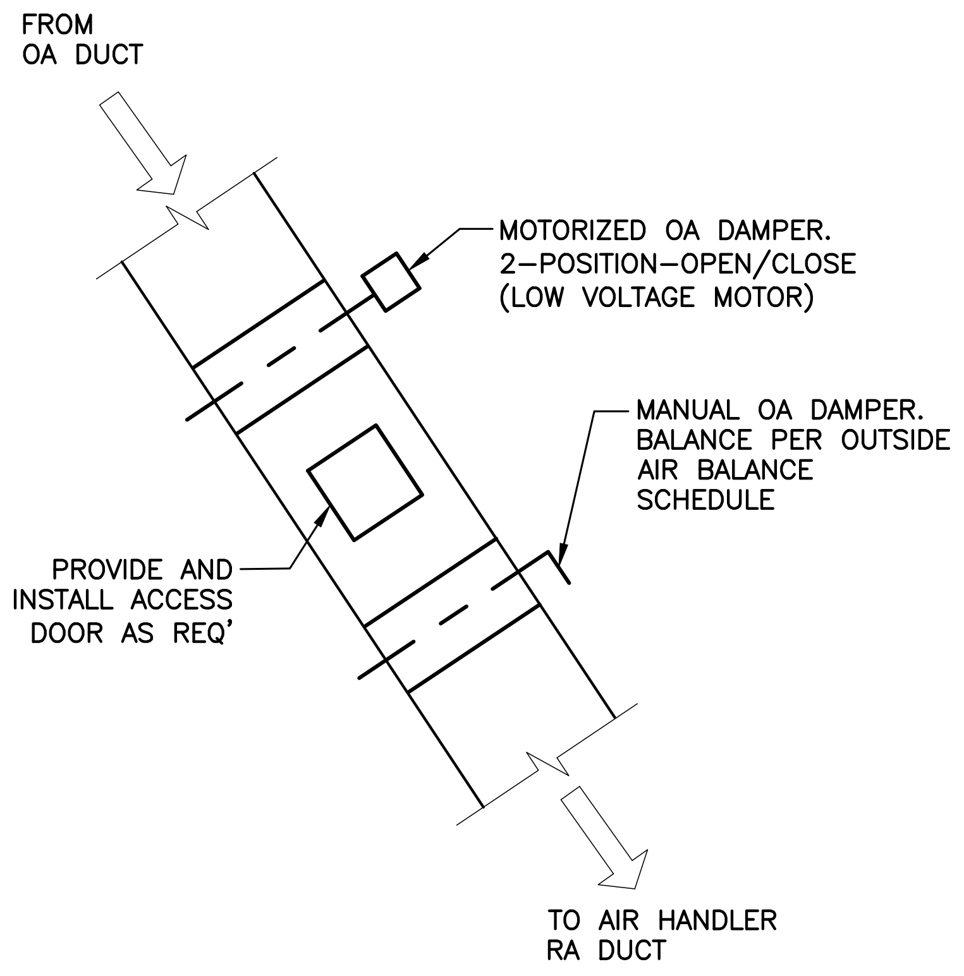
(1) TRANSVERSE REINFORCING SIZE IS DETERMINED BY DIMENSION OF SIDE TO WHICH ANGLE IS APPLIED.

(2) LONGITUDINAL JOINTS TO BE PITTSBURG OR SNAP LOCK TYPE.

(3) ALL DUCTING TO BE CONSTRUCTED TO SMACNA INSTALLATION STANDARDS AND SPECIFICATIONS.

DUCT CONSTRUCTION DETAIL

SCALE: NONE

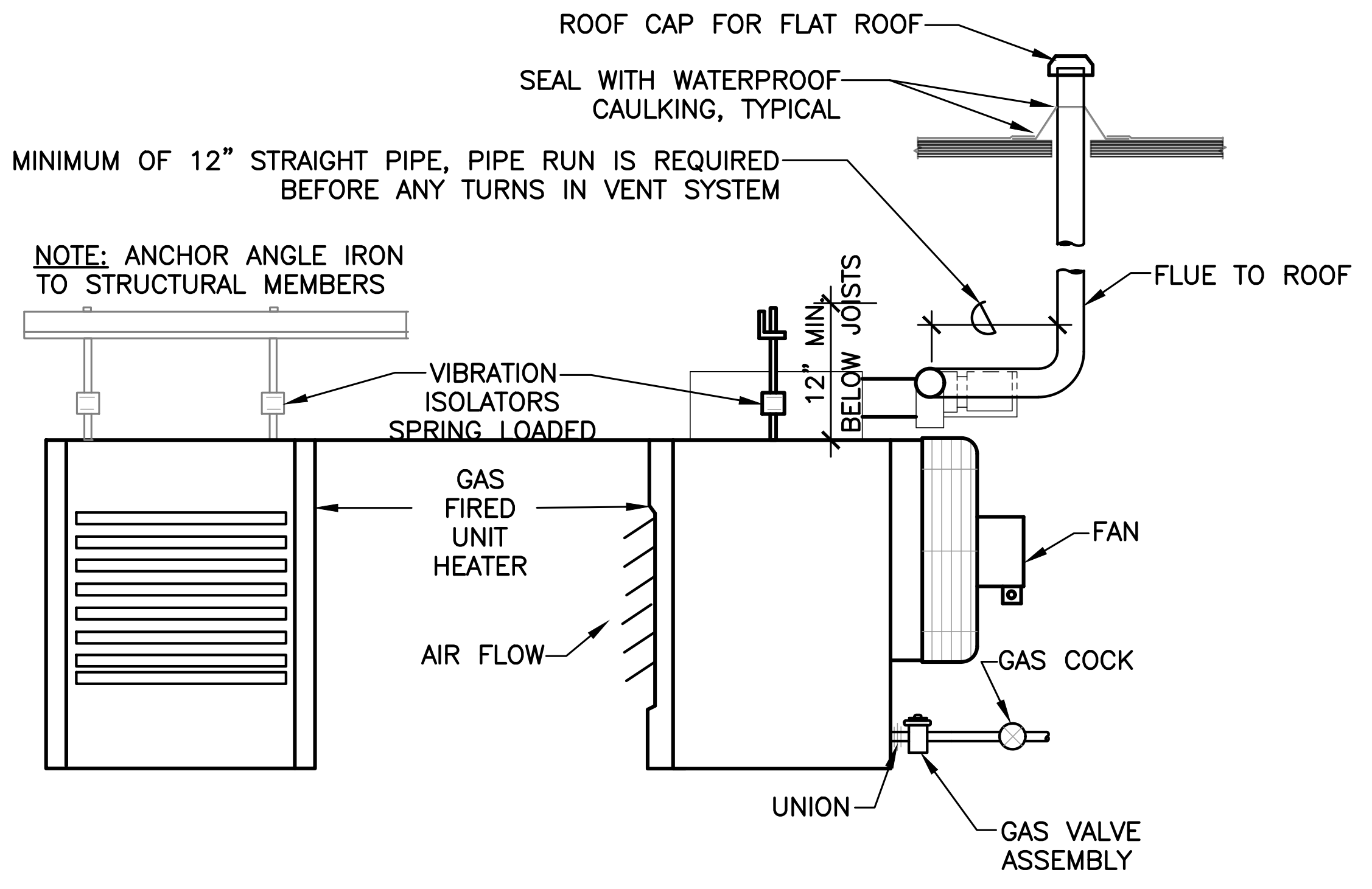

FROM OA DUCT
MOTORIZED OA DAMPER. 2–POSITION–OPEN/CLOSE (LOW VOLTAGE MOTOR)
MANUAL OA DAMPER. BALANCE PER OUTSIDE AIR BALANCE SCHEDULE
PROVIDE AND INSTALL ACCESS DOOR AS REQ'
TO AIR HANDLER RA DUCT

CONTROL SEQUENCES

1. FURNACE SUPPLY AIR FAN SHALL RUN CONTINUOUSLY IN OCCUPIED MODE.
2. MOTORIZED OUTSIDE AIR DAMPER SHALL OPEN DURING OCCUPIED MODE AND SHALL REMAIN CLOSED DURING UNOCCUPIED MODE.
3. DURING A CALL FOR HEAT, IN BOTH OCCUPIED AND UNOCCUPIED MODES, THE AIR HANDLER HEATING SYSTEM SHALL CYCLE ON AND OPERATE UNTIL THE PROGRAMMED SET–POINT IS REACHED.
4. DURING A CALL FOR COOLING, IN BOTH OCCUPIED AND UNOCCUPIED MODES, THE AIR HANDLER AND OUTDOOR UNITS SHALL CYCLE ON IN COOLING MODE AND OPERATE UNTIL THE PROGRAMMED SET–POINT IS REACHED.
5. UNLESS OTHERWISE SPECIFIED, EACH HVAC SYSTEM SHALL BE CONTROLLED BY A 7–DAY PROGRAMMABLE THERMOSTAT THAT HAS AUTOMATIC CHANGE OVER BETWEEN HEATING AND COOLING. THERMOSTAT SHALL HAVE OCCUPIED AND UNOCCUPIED MODES. THERMOSTAT SHALL MEET CURRENT REQUIREMENTS OF THE INTERNATIONAL ENERGY CONSERVATION CODE.
6. MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL LOW VOLTAGE WIRING, LOW VOLTAGE MOTORIZED ACTUATORS FOR DAMPER CONTROL, AND ANY OTHER NEEDED COMPONENTS FOR A FULLY OPERATIONAL SYSTEM.
7. THERMOSTAT DESIGN STANDARD SHALL BE PRO1 T855iSH.

TYPICAL OUTSIDE AIR DUCT DETAIL (COMMERCIAL)

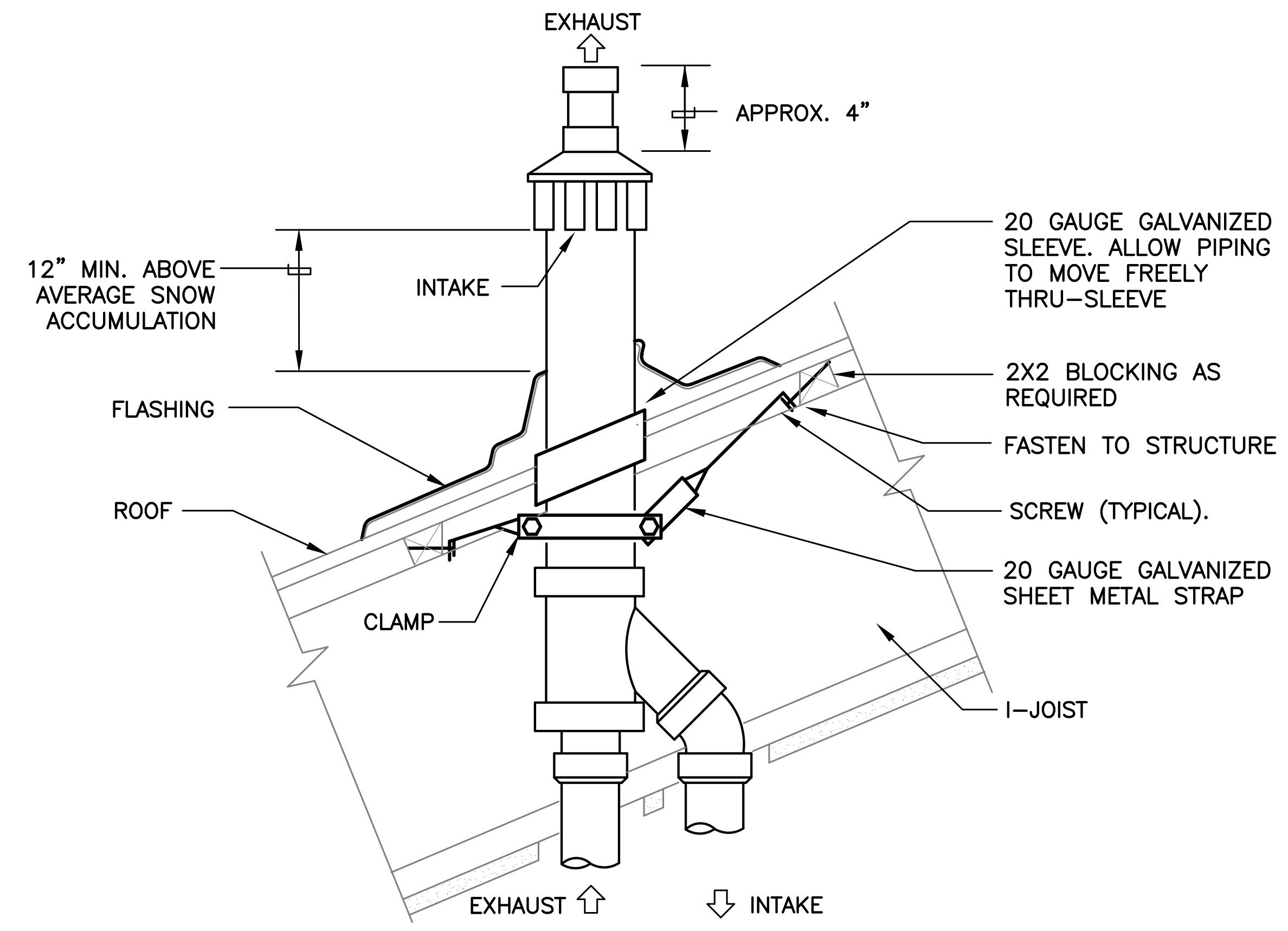
SCALE: NONE


ROOF CAP FOR FLAT ROOF
SEAL WITH WATERPROOF CAULKING, TYPICAL
MINIMUM OF 12" STRAIGHT PIPE, PIPE RUN IS REQUIRED BEFORE ANY TURNS IN VENT SYSTEM
NOTE: ANCHOR ANGLE IRON TO STRUCTURAL MEMBERS
FLUE TO ROOF
12" MIN. BELOW JOISTS
VIBRATION ISOLATORS SPRING LOADED
GAS FIRED UNIT HEATER
FAN
AIR FLOW
GAS COCK
UNION
GAS VALVE ASSEMBLY

NOTES:
1. VENT SHALL TERMINATE NOT LESS THAN 5 FEET (1524 MM) IN VERTICAL HEIGHT ABOVE THE HIGHEST CONNECTED APPLIANCE FLUE COLLAR
2. INSTALL VENTING PIPING & SUPPORTS AS DIRECTED BY MANUFACTURES INSTALLATION INSTRUCTIONS

UNIT HEATER DETAIL

SCALE: NONE

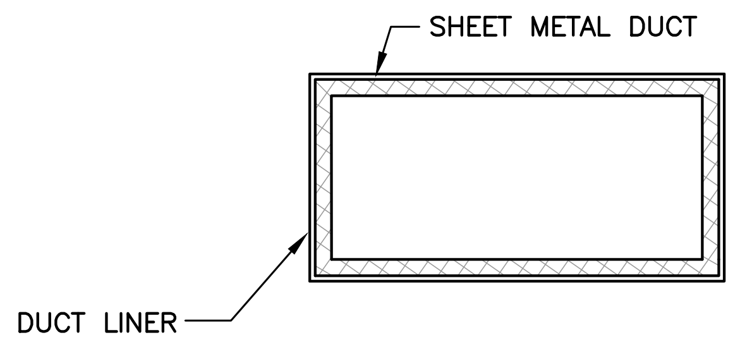

EXHAUST
APPROX. 4"
12" MIN. ABOVE AVERAGE SNOW ACCUMULATION
INTAKE
20 GAUGE GALVANIZED SLEEVE. ALLOW PIPING TO MOVE FREELY THRU–SLEEVE
FLASHING
2X2 BLOCKING AS REQUIRED
FASTEN TO STRUCTURE
ROOF
SCREW (TYPICAL).
20 GAUGE GALVANIZED SHEET METAL STRAP
CLAMP
I–JOIST
EXHAUST
INTAKE

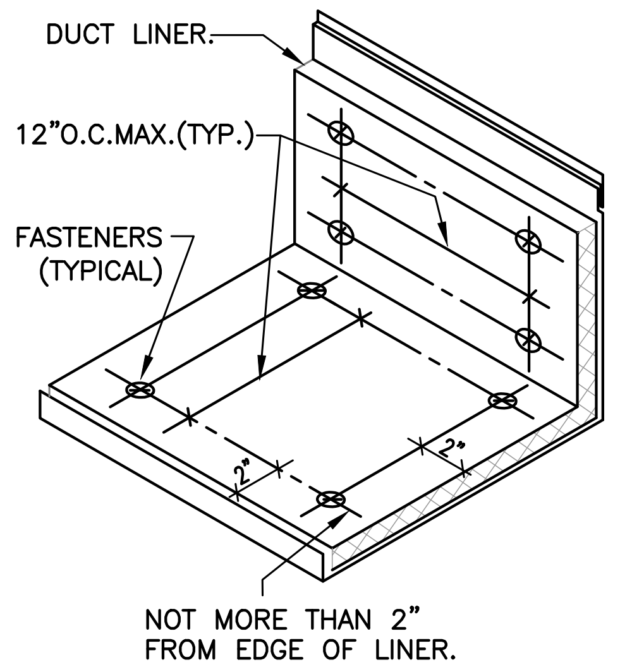
NOTE:
USE EXTENSION KIT NECESSARY TO ACHIEVE CLEARANCE ABOVE SNOW LEVEL.

TYPICAL SLOPED CONCENTRIC ROOF TERMINATION DETAIL

SCALE: NONE

NOTE:
ALL TRANSVERSE AND LONGITUDINAL EDGES OF LINER TO BE COATED WITH ADHESIVE.





MINIMUM DUCT INSULATION R–VALUES FOR UNCONDITIONED SPACES PER 2018 IECC C403.11.1
SUPPLY = R6
RETURN = R6

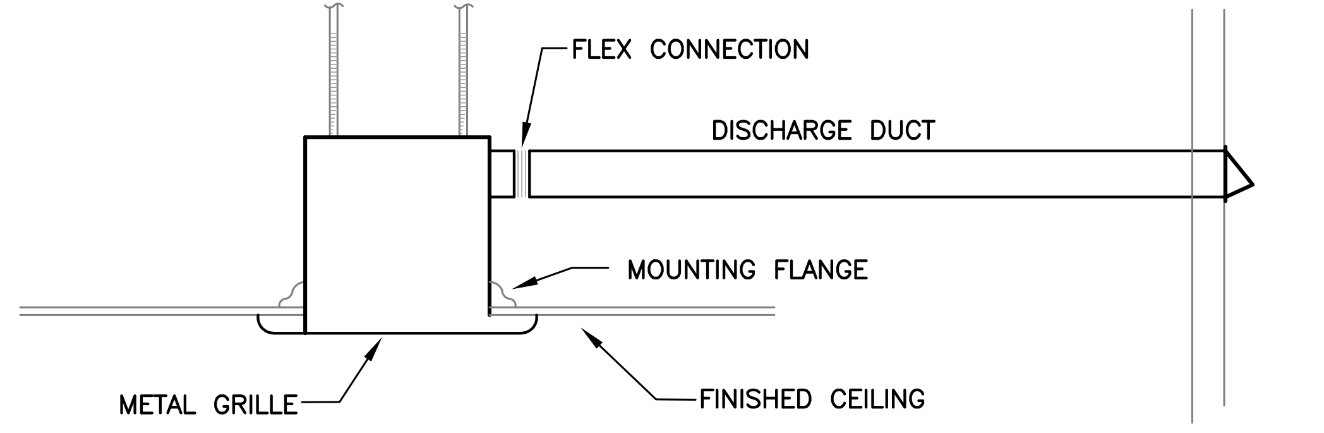
MINIMUM DUCT INSULATION R–VALUES WHEN LOCATED OUTSIDE THE BUILDING PER 2018 IECC C403.11.1
SUPPLY = R8 (ZONE 1–4) R12 (ZONE 5–8)
RETURN = R8 (ZONE 1–4) R12 (ZONE 5–8)

NOTE:
THERMAL AND SOUND INSULATION AND COVERINGS, LININGS AND ADHESIVES (WHEN USED) INSTALLED IN CONCEALED AND EXPOSED SPACES SHALL MEET THE REQUIREMENTS OF ASTM E 84. FLAME SPREAD INDEX THAT IS NOT MORE THAN 25 AND A SMOKE–DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.

DUCT LINER DETAIL

SCALE: NONE

NOTE:
ALL EXHAUST DUCT PENETRATIONS OF THERMAL ENVELOPE SHALL HAVE A BACK DRAFT DAMPER AT THE DUCT PENETRATION.



TYPICAL CEILING MOUNTED EXHAUST FAN

SCALE: NONE

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M5.2
MECHANICAL DETAILS

FURNACE 95% AFUE (1-STAGE, SPLIT SYSTEM)

FURNACE											CONDENSING UNIT									
MARK	NOMINAL COOLING SUPPLY CFM	ESP (IN)	COOLING EAT DB/WB (°F)	COOLING LAT DB/WB (°F)	MINIMUM COOLING AT SITE (BTU/hr)	MINIMUM HEATING AT SITE (BTU/hr)	HEATING EAT/LAT DB (°F)	ELECTRICAL VOLT/PH/HZ	ELECTRICAL UNIT MCA	ELECTRICAL UNIT MOCP	MARK	MINIMUM NOMINAL SIZE (TONS)	ELECTRICAL VOLT/PH/HZ	ELECTRICAL UNIT FLA	ELECTRICAL UNIT MOCP	SEER	REFRIGERANT	MAX OPERATING WEIGHT	REMARKS
F 2.5	1,000	0.5	80/62	55.6/53.5	30,000	20,000	65/95	120/1/60	9.8	15	CU 2.5	2.5	208/1/60	16.8	30	15	R410	165	◇1 ◇2 ◇3 ◇4 ◇5 ◇6
F 4	1,600	0.5	80/62	55.3/53.6	45,000	40,000	65/95	120/1/60	16.3	20	CU 4	4	208/1/60	26.1	40	15	R410	275	◇1 ◇2 ◇3 ◇4 ◇5 ◇6

◇1 SITE CONDITIONS ARE 98/62° DB/WB SUMMER, 3°F DB WINTER, AND AN ELEVATION OF 4,577 FEET ABOVE SEA LEVEL.

◇2 APPROVED MANUFACTURERS: AMERICAN STANDARD, CARRIER, LENNOX, TRANE, YORK. (SUBJECT TO DOCUMENT CONFORMANCE).

◇3 WITH CONCENTRIC VENT KIT AND TXV.

◇4 MATCH COOLING COIL WITH CONDENSING UNIT. SHALL BE COMPATIBLE WITH FURNACE. FURNACE SHALL BE DESIGNED FOR MULTI–POSITION INSTALLATION. COORDINATE COIL WITH FURNACE ORIENTATION.

◇5 SINGLE STAGE HEATING AND COOLING.

◇6 WITH LOW AMBIENT OPERATION KIT AND HARD–START ASSIST AT CONDENSING UNIT.

UNIT HEATER SCHEDULE

MARK	DESIGN GUIDE	GAS CAPACITIES INPUT BTUH	GAS CAPACITIES OUTPUT BTUH	ELECTRICAL VOLTS/PH/HZ	ELECTRICAL NOMINAL LOAD WATTS	ELECTRICAL FULL LOAD AMPS	MAX OPERATING WEIGHT LBS	REMARKS
UH 1	REZNOR UBX SERIES	75,000	61,500	120/1/60	447	7.1	110	1, 2, 3, 4, 5, 6

1. APPROVED MANUFACTURERS: REZNOR, MODINE, STERLING, YORK, TRANE (SUBJECT TO PROJECT DOCUMENT CONFORMANCE)
2. CEILING HUNG WITH ALL MOUNTING HARDWARE.
3. CONTRACTOR SHALL INSTALL EQUIPMENT PER MANUFACTURER'S SPECIFICATIONS FOR EXHAUST PIPING/VENTING, COMBUSTION INTAKE/PIPING, GAS PIPING/CONNECTION AND CLEARANCES TO COMBUSTIBLES.
4. WITH DOWNTURN/DISCHARGE NOZZLE/HOOD AS RECOMMENDED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
5. PROVIDE AND/OR INCLUDE ALTITUDE KIT/ADJUSTMENT AS REQUIRED PER MANUFACTURER'S INSTALLATION INSTRUCTIONS.
6. ELECTRICAL CONTRACTOR SHALL VERIFY CONNECTION REQUIREMENTS (i.e. VOLTAGE, PHASE, MCA, MOCP, ETC.) WITH MECHANICAL SUBMITTALS BEFORE ROUGH IN.

CEILING EXHAUST FAN SCHEDULE

MARK	NOMINAL CFM	TOTAL STATIC PRESSURE IN. W.C.	ELECTRICAL RATED LOAD WATTS	ELECTRICAL VOLTS	ELECTRICAL HERTZ	ELECTRICAL PHASE	SOUND RATING SONES	SELECTION BASED ON GREENHECK MODEL	REMARKS
EF 1	50	0.25	15.2	115	60	1	1.2	SP–B80	◇2 ◇4 ◇1 ◇3
EF 2	250	0.25	32.3	115	60	1	3.0	SP–A390 –VG	◇3 ◇5 ◇1 ◇4

◇1 APPROVED MANUFACTURERS: BROAN, FANTECH, ACME, CARNES, PENN, COOK, BREIDERT, COOLAIR, CAPTIVE AIRE, S&P, GREENHECK, TWIN CITY FAN, DELTA BREEZ, AIR KING. (SUBJECT TO PROJECT DOCUMENT CONFORMANCE)

◇2 CONTROL WITH LIGHTS BY ELECTRICAL CONTRACTOR.

◇3 EXHAUST FAN SHALL HAVE INTEGRAL BACKDRAFT DAMPER.

◇4 WITH METAL GRILLE KIT.

◇5 MECHANICAL CONTRACTOR SHALL PROVIDE LINE VOLTAGE THERMOSTAT. ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL CIRCUIT CONDUIT AND MAKE CONNECTION. SET T–STAT AT 70 deg F.

OUTSIDE AIR BALANCING SCHEDULE

MARK	ZONE / AREA	BALANCE TO CFM	MINIMUM DUCT SIZE	REMARKS VENTILATION RATES PER 2018 IMC 403.3 AND EQUATION 4–1. $(V_{bz} = R_p P_z + R_a A_z)$
F 2.5	WOODSHOP	175	8"ø	SEE OUTSIDE AIR DUCT DETAIL
F 4	OFFICE AREA	170	8"ø	SEE OUTSIDE AIR DUCT DETAIL

FAN COIL SCHEDULE - INDOOR UNIT

MARK	DESIGN GUIDE	NOMINAL COOLING SUPPLY CFM	ESP (IN)	DELIVERED MINIMUM COOLING AT SITE CONDITIONS (BTU/H)	DELIVERED MINIMUM HEATING AT SITE CONDITIONS (BTU/H)	ELECTRICAL VOLT/PH/HZ	ELECTRICAL UNIT MCA	ELECTRICAL UNIT MOCP	REMARKS
WM 1	MITSUBISHI PKA–A12 SERIES	400	0.6	12,000	10,600	208/1/60	11	28	◇2 ◇4 ◇6 ◇8 ◇1 ◇3 ◇5 ◇7

◇1 SITE CONDITIONS ARE 98/62° DB/WB SUMMER, 3°F DB WINTER, AND AN ELEVATION OF 4,577 FEET ABOVE SEA LEVEL.

◇2 APPROVED MANUFACTURERS: CARRIER, MIDEA, LENNOX, SAMSUNG, MITSUBISHI, LG, DAIKIN. (SUBJECT TO DOCUMENT CONFORMANCE).

◇3 MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL SYSTEMS FOR COLD WEATHER HEATING PER MANUFACTURER'S RECOMMENDATIONS.

◇4 SEE HEAT PUMP UNIT SCHEDULE FOR OUTDOOR UNIT INFORMATION.

◇5 ELECTRICAL CONTRACTOR SHALL PROVIDE CONNECTION BETWEEN INDOOR AND OUTDOOR UNIT (INDOOR UNIT POWERED BY OUTDOOR UNIT).

◇6 MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL ALL MANUFACTURER RECOMMENDED MOUNTING HARDWARE.

◇7 MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL CONDENSATE PIPING TO PLUMBING CONTRACTOR PROVIDED WALL BOX.

◇8 MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL PAC–US444CN–1 THERMOSTAT ADAPTER.

SINGLE ZONE HEAT PUMP UNIT SCHEDULE - OUTDOOR UNIT

MARK	TONNAGE	RATED COOLING CAPACITY (BTU/H)	HEATING CAPACITY @ 5°F (BTU/H)	ELECTRICAL VOLTAGE	ELECTRICAL MCA	ELECTRICAL MOCP	NOTES
HP 1	1	12,000	––	208/230V 1–PHASE 60 Hz	11	28	MAX OPERATING WEIGHT: 175 LBS. MINIMUM EFFICIENCY: 20.5 SEER/10.2 HSPF ◇1 ◇3 ◇2 ◇4

◇1 APPROVED MANUFACTURERS: LG, CARRIER, MIDEA, SAMSUNG, FUJITISU, MITSUBISHI, LENNOX. (SUBJECT TO PROJECT DOCUMENT CONFORMANCE).

◇2 INSTALL PER MANUFACTURER RECOMMENDATIONS.

◇3 PROVIDE SNOW STAND AND WIND BAFFLES, AND LOW AMBIENT KIT FOR OPERATION TO 0°F.

◇4 PROVIDE MULTI–HEAD BRANCH HEADER PER MANUFACTURERS RECOMMENDATIONS.

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M6.1
MECHANICAL SCHEDULES

SECTION 23 Mechanical — GENERAL PROVISIONS

Not all specification items are used in every project.

PART 1 — GENERAL

- **Scope:**

A. Provisions of this section apply to all work specified in all sections under Division 23.

B. In addition, work in Division 23 is governed by the provisions of the Bidding Requirements, Contract Forms, General Conditions and all sections under Division 1, General Requirements.

C. Contractor is responsible for results deviating from the plans.

- **Examination of Premises:** Visit the site, verify all measurements and job conditions, and pay all costs necessary to perform the work. Coordinate division of fee responsibilities with the General Contractor.

- **The Mechanical Contractor** shall be licensed and hold a current contracting license that has been valid for a minimum of two years as a Mechanical Contractor in the State where the project is located.

- **The Mechanical Contractor** shall have a minimum of five years experience installing commercial cooling and heating systems similar to those described in these specifications and provide a list of previous projects, including name of project and contact person names and phone numbers as a separate document in addition to the mechanical bid submitted if required by the General Contractor.

- **The Mechanical Contractor** shall be able to bond work he is bidding to perform and shall provide a written statement from the bonding agency proposed to be used for this project as a separate document in addition to the mechanical bid submitted if required by the General Contractor. The bonding agency shall be one having a Best's insurance rating of A or A+.

- **Regulations, Permits, Fees, Charges, Inspections:**

A. Regulations: Comply with all applicable codes, rules and regulations. All materials and work must comply with local construction, mechanical, plumbing, electrical and fire codes. As a minimum, comply with the following: IBC, IMC, IPC, NEC, NFPA codes and all City codes.

B. In addition to the requirements of all governing codes, ordinances and agencies, conform to the requirements of the following codes and standards.
  1. 2018 International Mechanical Code
  2. 2018 International Building Code
  3. 2018 International Energy Code
  4. 2018 International Plumbing Code
  5. 2018 International Energy Code
  6. 2018 International Fuel Gas Code
  7. ASHRAE 90.1 — 2016

  ***Current codes adopted by the respective jurisdiction will supercede this list of codes.

C. Fees and Permits: Pay all connection, installation, use, development, etc., fees and/or charges. Obtain and pay for all required permits and licenses. Coordinate division of fee responsibilities with the General Contractor.

D. Inspections: All work must be inspected and approved by local authorities. Prior to final approval, furnish the Architect with certificates of inspections and approvals by the local authorities in accordance with Division 1.

  1. Preheat and interpass temperature shall be determined by temperature indicating crayons, contact pyrometers or other equally suitable means.

D. Postweld Heat Treatment: Postweld heat treatment for pressure components shall be as specified in Table 131 of ANSI B31.1.

- **Drawings and Specifications:**

A. Refer to Division 1 for information on submittals and shop drawings.

B. If a conflict exists between the drawings and specifications, promptly notify the Architect and Engineer.

- **Record Drawings:** Provide record drawings for all work under sections in Division 22 and 23. See Division 1 for detailed requirements covering preparation of record drawings.

- **Work and Materials:** Unless otherwise specified, all materials must be new and of the quality specified. The workmanship shall be of a quality that is acceptable to the Architect and is equal to the standards of the trades. Contractor must staff the project with sufficient skilled workmen, including a fully qualified construction Superintendent, to complete the work in the time allotted. The Superintendent must be qualified to supervise all of the work in his work category.

- **Approvals of Materials and Equipment:** Refer to Division 1 for description of material and equipment for prior approvals and substitutions. Must be received by Engineer 10 days prior to due date/bid opening.

- **Maintenance Manual:**

A. Prior to completion of the project, compile a complete equipment and maintenance manual for all equipment supplied under sections of Division 23, as described in Division 1.

B. Manuals shall be bound in a three—ring binder. A preliminary submittal of the manual shall be made to the Architect 90 days after receiving approved submittals. Final submittal of the manual shall be made four weeks prior to substantial completion of the project.

- **Equipment Purchases:** Arrange for purchase and delivery of all materials and equipment within 15 days after approval of submittals. Coordinate with General Contractor.

- **Cooperative Work:**

A. Correct without charge any work requiring alteration due to lack of proper supervision or failure to make proper provision in time. Correct without charge any damage to adjacent work caused by the alteration. See Division 1 for additional requirements.

B. Cooperative Work Includes:

  1. General supervision and responsibility for proper location, rough—in and size of work related to Division 22 and 23 but provided under other divisions of these specifications.

  2. Installation of sleeves, inserts and anchors bolts for work under sections in Division 23.

  3. Electrical work as specified herein. Refer to Division 26 for requirements.

- **Construction Facilities:**

A. General: Under this division of the specifications execute all work in a manner to provide safe and lawful ingress and egress to the Owner's establishment and such facilities shall be kept clear of materials or equipment as directed by the Architect. Refer to Division 1 for additional requirements.

B. Furnish and maintain from the beginning to the completion of all work all lawful and necessary guards, railings, fences, canopies, lights, and warning signs. Take all necessary precautions required by city and state laws to avoid injury or damage to any and all persons and property.

- **Guarantee:** Guarantee all material, equipment, and workmanship for all sections under Division 23 in writing to be free from defects of material and workmanship for one year from date of final acceptance as outlined in Division 1. Replace without charge any material or equipment proving defective during this period. The guarantee shall include performance of the equipment under all conditions of load, installing any additional items of control and/or protective devices as required and the replacing of any refrigerant lost.

- **Mechanical Wiring:**

A. Provide all temperature control wiring, all interlock wiring, and equipment control wiring for the equipment that is to be provided under this Division unless specifically shown on electrical drawings.

B. All wiring shall be not less than No. 14 insulated, color coded wire in electrical metallic tubing. Installation shall comply with Division 26.

C. Before ordering motors, equipment, etc., verify the available voltage and phase with the electrical trades.ion 26.

- **Electrical Work:**

A. Electrical wiring, including power wiring and control wiring (except as otherwise specified under Automatic Temperature Controls), all raceways, wiring, outlet and junction boxes, and labor for installation of the wiring and equipment shall be included in Electrical Division 26 of the specifications.

B. All starters in motor control centers are to be furnished and installed under the Electrical Division of the specifications.

C. Under the Automatic Temperature Control section of these specifications, furnish and install all wiring, conduit, electric automatic temperature control devices, thermostats, relays, pneumatic electric switches, automatic control switches and pilot lights. See the Automatic Temperature Control Section, for additional detailed information.

D. All loose starters and control devices for equipment furnished under Division 23 (except as otherwise specified under Automatic Temperature Control Section) are to be furnished under that particular section of Division 23 and installed under the electrical division.

E. Contractor shall be responsible for the checking and testing of all controls and the interlocks for a complete and satisfactory operating system.

F. Before ordering any motors and equipment. Verify the available voltage and phase for all motors with the Electrical Contractor.

G. Submit a complete list of all motors prior to final closeout of job indicating the location, horsepower, voltage, phase specified in Table 132 of ANSI B.1.

H. All field wiring and equipment must conform to the applicable section of the Electrical specifications, Division 26.

- **Welding Codes and Standards:** All welding and other criteria covered by this specification shall be in accordance with the following code:

A. ASME Boiler and Pressure Vessel Code

B. Section IX ANSI Code for Power Piping: B31.1

- **Product Handling**

A. Protection: Take all precautions necessary to protect the materials of this section, before, during and after installation.

B. Replacements: In the event of damage immediately repair all damaged and defective work to the approval of the Engineer, at no additional cost to the Owner.

- **Job Conditions**

A. Examination of site: Examine the site and include in bid proposal all conditions under which work is to be performed.

- **Miscellaneous**

A. Permit and Fees: Apply and pay for all necessary permits, inspections, examinations and fees or charges required by Public Authorities having jurisdiction.

B. Locations and Accessibility: Contractor shall fully inform himself regarding peculiarities and limitations of space available for installation of work under this section. Valves, motors, controls and other devices requiring service. Maintenance and adjustments shall be placed in fully accessible positions and locations, provide access doors where required in ductwork and/or construction whether specifically detailed or not, and mender all such devices accessible.

C. Scaffolding: Furnish all scaffolding, rigging and hoisting as required for the proper execution of the work.

D. All HVAC equipment shall be labeled. Information on labels shall include: Identification number and name same as the drawings, flow and static pressure and the area to which the unit serves. Labels shall be black faced Formica with white engraved lettering at least $\frac{3}{16}$ inch high.

E. All gas fired equipment shall include a label indication that the appliance has been adjusted, modified or re—calibrated for the altitude wherein the project is to be located. The appliance shall also include a compliance statement indicating that the appliance has been adjusted, modified or re—calibrated for the proper operation at the altitude of the project and shall be listed capable for use with natural gas or propane gas if propane is listed on the drawings.

- **Submittals**

A. Shop Drawings: Within 15 days after award of contract, and before any of the materials of this section are fabricated and delivered to the jobsite, submit complete shop drawings and equipment submittals for the Engineer to review in accordance with these specifications. show all details of all ductwork and equipments pads.

B. Product Data:
  1. Submit six (6) copies of all manufacturer's product data simultaneously with all shop drawings submittals.

  2. Product data to include, all air conditioning equipment, hangers, fans and other standard items as required to complement shop drawings for a submittal indications products to be used on this work.

C. Record Drawings: Maintain throughout the progress of the work project record drawings and submit to the Owner.

D. Operating Manuals and Maintenance Manuals:

  1. Submit four (4) copies of all operating instructions and maintenance manuals.

  2. Fully instruct Owner's operating personnel and demonstrate performance, operation and maintenance of equipment. Amount of allocated for said instruction and demonstration of equipment and systems shall be part of these obligations. Submit to Engineer a letter signed by Owner's representative who will operate system stating that he has been fully instructed by contractor about operation and maintenance of equipment and system.

  3. Submit one (1) additional set of approved instructions and one (1) additional set of approved control diagrams.

E. Guarantees: In addition to equipment warranties, furnish a written guarantee against defects in materials and workmanship for one year. Guarantee shall include repair of damage to, or replacement of any part of equipment or premises caused by leaks or breaks in pipe or equipment provided under this section.

- **Equipment Identification**

A. Except for individual room heating units and items furnished under temperature control all items of mechanical equipment, including fans, pumps, boilers and electrical switches and starters for mechanical equipment and gauges shall be labeled.

B. Information on labels shall include the following:

  1. Identification number and name. Generally this number and name shall be the same as that shown on the drawings or in the specs.

  2. If the item is a fan or pump, the flow and head shall be indicated.

  3. If the item is part of a unit, the label shall have in addition to its item number, the number of the main item it is serving.

  4. Valves shall be tagged with the area served and their normal operating positions shall be indicated.

  5. Where the main unit is served by the valve is apparent, only the valve function needs to be included on the nameplate.

C. The types of Nameplates shall be as follows:
  1. The valve tags shall be $\frac{1}{2}$" embossed aluminum tapes with identification on one side for valves. Tags for magnetic starters shall be screwed to the metal starter cover. Gags sags shall be Addressograph No. B—5300.

  2. Equipment nameplates shall be black faced Formica with white engraved lettering at least $\frac{3}{16}$" high.

D. Valve tags shall be connected to valve stems by steel rings or chains. Screws shall be used for equipment labels prior to installation. The contractor shall submit to the Engineer a complete list of all valves and each item of equipment to be identified with the proper identification.

- **Fire Stopping**

A. Only tested fire stop systems shall be used.

B. Fire stop system installation must meet requirements of ASTM E—814, UL 1479 or UL 2079 tested assemblies that provide a fire rating equal to that of construction being penetrated.

C. Proposed fire stop materials and methods shall conform to applicable having codes having local jurisdiction.

D. Fire stop systems do not reestablish the structural integrity of the load bearing partitions/assemblies, or support live loads and traffic. Installer shall consult the Structural Engineer prior to penetrating any load bearing assembly.

E. For those fire stop applications that exist for which no UL tested system is available through a manufacturer, and engineering judgment derived from similar UL system design or other test will be submitted to local authorities having jurisdiction for their review and approval prior to installation. Engineer judgment drawings must follow requirements set forth by the International Fire stop Council.

F. The work of this section shall be accomplished by a single source contractor or by those contractors who, by their contract, are penetrating rated construction with their work. Regardless of responsibility the General Contractor shall be responsible to assure and verify that all products, systems, etc. used under this section are appropriate and meet the intent of this specification and is accomplished by factory trained workmen.

G. Acceptable manufacturers are subject to compliance with through penetration firestop systems (XHEZ) listed in volume 2 of the UL fire resistance directory. Provide products from the following manufacturers as identified: 1. Hilti Inc. 2. 3M Corporations. 3. Specified Technologies Inc. 4. Metacaulk, Rectorseal Corp. F. Tremco. 6. Cafco, Isolatek International. 7. Nelson Firestop Product.

H. Use only firestop products that have been UL 1479, ASTM E—814, or UL 2079 listed for specific fire—rated construction conditions conforming to construction assembly type, penetrating item type, annular space requirements and fire—rating involved for each separate instance.

I. Cast—in—place firestop devices for use with non—combustible and combustible plastic pipe (closed and open piping systems) penetrating concrete floors, the following products are acceptable:

  1. HILTI CP 680 cast—in—place firestop devise.

J. Add aerator adaptor when used in conjunction with aerator ("Sovent") system.

  1. HILTI CP 681 tub box kit for use with tub installations.

K. Sealants, caulking materials, or foams for use with non—combustible items including steal pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT). The following products are acceptable:
  1. HILTI FS—One Intumescent Firestop Sealant
  2. HILTI CP 604 Self—leveling Firestop Sealant
  3. HILTI CP 620 Fire Foam
  4. HILTI CP 606 Flexible Firestop Sealant
  5. HILTI CP 601S Elastomeric Firestop Sealant

L. Sealants or caulking materials for use with sheet metal ducts. The following products are acceptable:
  1. HILTI CP 601S Elastomeric Firestop Sealant
  2. HILTI CP 606 Flexible Firestop Sealant
  3. HILTI FS—One Intumescent Firestop Sealant

M. Intumescent sealants, caulking materials for use with combustible items (penetrants consumed by high heat and flame) including insulated metal pipe, PVC jacketed, flexible cable or cable bundles and plastic pipe. The following products are acceptable:
  1. HILTI FS—One Intumescent Firestop Sealant

N. Firestop collar or wrap devices attached to assembly around combustible plastic pipe (closed or open piping systems). The following products are acceptable.
  1. HILTI CP 642 Firestop Collar
  2. HILTI CP 643 Firestop Collar
  3. HILTI CP 645 Wrap Strips

O. Materials used for complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways. The following products are acceptable
  1. HILTI CP 637 Trowelable Firestop Compound
  2. HILTI FS 657 Fire Block
  3. HILTI CP 620 fire Foam

P. Non curing, re—penetrable materials used for large size/complex penetrations made to accommodate cable trays, multiple steel and copper pipes, electrical busways in raceways. The following products are acceptable:
  1. HILTI FS 657 Fire Block

PART 2 — PRODUCTS

- **Machinery Drives:**

A. Use V—belts designed for 150% of capacity for all belt drives. For multiple belt drives, use matched sets, so marked at the factory.

B. On drives with not more than two belts, provide adjustable pitch motor sheaves with the midpoint of the adjustment range equal to that required to achieve the specified fan capacity.

C. On motors with drives with more than two belts, furnish nonadjustable sheaves, providing the specified fan capacity.

- **Machinery Accessories:**

A. Lubricating Devices: Provide all oil level gauges, oil pressure gauges, grease cups, grease gun fittings, as required by the equipment. Extend all lubricating fittings to readily accessible locations.

B. Guards: Provide totally—enclosed OSHA type belt guards for all rotating equipment. Design guards to be readily removable for access to belt drives.

- **Equipment Design and Installation:**

A. Uniformity: Unless otherwise specified, provide all equipment of same type or classification by the same manufacturer.

B. Design: Design all equipment in accordance with ASME, AGA, UL and other applicable technical standards as follows:

C. Pressures vessels — ASME Code constructed and stamped

D. Electric appliances — UL labeled

E. Fire protection equipment — UL approved and labeled

F. Fans — AMCA rated and stamped

G. Cooling equipment — ARI certified

H. Fire dampers, smoke dampers, combination fire and smoke dampers — UL listed

I. Concrete Inserts:

  1. The work under this section includes furnishing and installing all concrete inserts required for all materials and equipment specified herein or in other sections of Division 23.

  2. Provide concrete inserts equal to Unistrut Series 3200 with standard, plain, oiled finish. Provide exposed Unistrut pipe supports with factory finished enamel paint.

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Date: 01.11.2023
Revision:

PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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M7.1
MECHANICAL SPECIFICATIONS

– Diffusers, Registers and Grilles

Air distribution equipment shall be of sizes, types, and capacities indicated.

A. Registers, grilles, and diffusers of the sizes shown on the drawings and described here in shall be furnished and installed. all grilles, diffusers and registers shall be complete with frames with rubber gaskets suitable for the area and wall construction where shown on the drawings.

B. Finish for all registers, diffusers, grilles, etc. shall be off–white unless otherwise selected by the Owner/Owner's Represntative. Approved manufacturers for all air distribution products shall be Price Industries, Nailor, Metal Air, Tuttle & Bayley, Carnes, Hart and Cooley, or Anemostat.

C. Supply air shall be introduced into conditioned space in such a manner that conditioned air and room air is rapidly and evenly mixed, resulting in equalization of temperature and draftless air distribution through zone of occupancy with temperature differentials up to 25 degrees F for both cooling and heating air. Quantities and throws shall be as indicated.

D. Velocity of moving air below 5 foot level, during cooling cycle, shall not exceed limits of either 50 fpm at 1.5 degrees F below average room temperature or 70 fpm at 1 degree F below average room temperature. Velocity of moving air at the 1 foot level, during heating cycle shall not be less than 10 fpm. Temperature difference at or below the 5 foot level shall not exceed the following: 2 degrees F below average room temperature at 30 fpm, 1.5 degrees F below average room temperature at 50 fpm, 1 degree F below average room temperature at 70 fpm. Sound pressure level in all octave bands for each diffuser shall not exceed NC35 noise criteria curve at task level when units operate at designed capacities.

E. Ceiling diffusers, grilles and registers shall be independently supported from the structure so that they are not depending on the ceiling for support.

F. Ceiling diffusers may be round necked or equivalent size square neck. Provide square to round neck adapter as necessary. Flex duct shall typically connect directly to the diffuser using a 1–1/2" radius flexible duct elbow. If space does not allow for a full 1–1/2" radius to be provided, then a lined sheet metal boot shall be provided. The flexible duct shall be connected to the side of the sheet metal boot. The flexible duct shall not be connected to the top of the sheet metal boot.

G. Ceiling supply air diffusers shall be louvered faced directional diffuser model SMD manufactured by Price Industries with border type 36 for lay in ceiling or border type 1 for surface mounting in other than lay in ceilings, baked enamel finish, blow and pattern shown on the drawings.

H. Supply, exhaust, transfer and return air grilles mounted on walls 6 feet above the floor shall be Price Industries model 635, with 45–degree deflection, 1/2" blade spacing, horizontal extruded aluminum blades, baked enamel finish.

I. Supply, exhaust, transfer and return air grilles mounted on walls lower than 6 feet above the floor shall be sight–proof, heavy duty gymnasium type equal to Price Industries model 91 (or equal) with horizontal 45–degree deflection blades, 3/8" blade spacing, baked enamel finish.

J. Drum louvers shall be Price Industries model HCD (or equall) with opposed blade damper.

K. Exposed duct round diffuser shall be Price Industries model RCD (or equal), 3–position adjustment, 4 cone style, baked enamel finish.

M. Linear slot supply diffusers shall be Price Industries model SDS75, extruded aluminum frame construction with 180° range of air pattern adjustments.

N. Make up air supply diffusers shall be Price Industries model PDC perforated face ceiling diffusers, fixed 1–way air pattern, hinged removable perforated face screen, baked enamel finish.

O. Ceiling filter return air grilles in lay in ceiling shall be Price Industries model 10FF, with hinged, perforated faceplate and 1" filter for lay in T–bar application, baked enamel finish. The contractor shall provide the 1" filter.

P. Ceiling filter return grilles and transfer air grilles shall be Price Industries model PDR or PDDR perforated diffuser with removable perforated faceplate in lay in T–bar application, bake enamel finish.

Q. Ceiling return, exhaust and transfer air grilles for surface mounting in other than lay in ceilings shall be Price industries model 10F, with perforated removable faceplate, baked enamel finish.

– Ducts and Sheet Metal Work

A. Provide ducts, plenums, access doors, fresh air intakes, and exhaust as indicated and required. All ductwork shall be constructed, erected and tested in accordance with the most restrictive of local regulations, procedures and detailed in the ASHRAE Handbook of Fundamentals or the applicable standards adopted by the Sheet Metal and Air Conditioning Contractors National Association (SMACNA). Provide prefabricated spiral lockseam ducts and fittings and rectangular ducts of galvanized steel. Aluminum flexible ductwork or gypsum board ductwork is not acceptable.

B. All connections to main ducts shall be made with low loss fittings.

C. Flat duct surfaces shall be crimped diagonally regardless of size. Longitudinal joints in all duct sizes may be flat lock joints. Transverse joints and intermediate bracing shall be constructed of galvanized sheet metal or galvanized structural angles in accordance with requirements of ASHRAE Guide and public authorities having jurisdiction.

D. Transverse joints on all ducts shall be sealed with mastic or tape.

E. Longitudinal joints on ducts with internal static pressures in excess of 0.75 inches of water pressure shall be sealed with mastic or tape.

F. Lock joints shall be hammered to make them airtight. Inside of duct shall present a smooth surface to flow air.

G. Changes in size of ducts shall increase gradually with a slope of not more than 12 inches in 5 feet where possible, but not more than 12 inches in 3 feet in any event.

H. Turns shall be made with throat radius of not less then the duct width.

I. Plenums shall be made of 18 gauge galvanized sheet steel reinforced horizontally on a maximum of 48" centers by 1–1/2"x1–1/4"x $\frac{1}{8}$" galvanized angles reinforced vertically by 1–1/2" standing seams.

– Refrigerant Lines

A. Refrigerant lines are to be sized as per manufacturer's requirements. Lines to be fully insulated with 1 inch foam flex or equal. Insulation exposed to the sun shall be painted with two coats of protective paint. The system is to be evacuated to 200 microns, hold vacuum 24 hours. Break with freon and leak test with halide detector. Each heat pump to be provided with a refrigerant line kit.

– Gas Fired Unit Heater

A. Furnish and install horizontal gas fired unit heaters of size and capacity shown on the drawings. These units shall be complete with die formed burners constructed of aluminized steel and include flared ports (burner air shutters) and stainless steel insert. Propeller fan, fan and motor guard housing, heavy gauge enclosure, discharge louvers, supporting lugs and clips, stainless steel heat exchanger, resilient mounting. The unit shall include and intermittent spark pilot and single stage 24 volt gas valve. The unit is to include all required limit and safety controls, including an energy cut off device. Units must be certified by the American Gas Association and bear the AGA label. With manufacturer listed in the equipment schedule.

– Aluminum Louvers

A. Louvers are to be furnished and all connections made by the Mechanical contractor. Louvers shall be fixed, drain–able type, 12–gauge extruded aluminum. Louvers shall be AMCA certified rated for no water carry–over at free area velocities less than 100 fpm. In no case shall free area be less than 50% of the face area. Frames shall be box channel flanged type as selected by Architect for mounting in a wall. A 1/4" galvanized mesh insect screen shall be provided behind louver. Aluminum louvers shall be anodized in color selected by Architect. Louvers to be Airolite (K6776), Venco, Ruskin, American Warming and Ventilating, Air Balance or Louvers and Dampers.

– Volume Dampers

A. Dampers used in low velocity branch ducts to control the volume of air flow shall be Young No. 817 volume damper or equal. All operating head shall be place on the side of the duct and shall locked in position by a set key where the damper is accessible. Where the damper is not accessible, Young No. 817A or 817B volume control damper or equal consisting of an end bearing or miter gear, coupling, 3/8–inch square shaft, and regulator for operating the unit from the ceiling shall be provided.

– Temperature Controls

A. Thermostats shall be provided with the air conditioning units. They shall be installed and wired by the HVAC contractor. T–stats for roof top units shall be programmable with night setback and override control.

– Insulation

A. Thermal/Acoustical duct insulation: Line the first 10' of supply air and return air ducts from the mechanical unit, unless otherwise specified with Knauf or equal. Duct Liner shall be mat–faced to provide a smooth air–steam surface, mold resistant, 1–1/2" thick insulation wrapped entirely around duct with joints lapped at least 2" and secured with 16 gauge galvanized wire on 12" centers. Insulation shall cover all surfaces including standing seams.

B. Rectangular supply ducts and return air ducts located on unconditioned spaces shall be lined with Knauf un–acoustic or equal. 1 inch of 1–1/2 lb. thermal resistive value of duct liner shall be a minimum of R–6. Rectangular supply ducts and return air ducts located outside the building envelope shall be lined with Knauf un–acoustic or equal. 2 inch, 1–1/2 lb. thermal resistive value of duct liner shall be a minimum of R–8. Density coated fiberglass duct liner complying with friction correction factor not greater than 1.1 at a velocity of 3000 fpm. Apply insulation to inside of ducts with an approved fire retardant adhesive to provide 100% coverage and a smooth surface. In ducts with one side more than 12" secure insulation with mechanical fasteners in addition to adhesive, spaced at 14" centers in both directions. Mechanical fasteners shall be flush with the liner surface and shall start within 2" of the leading edge of each section and within 3" of the leading edge of all cross joints of the liner shall be heavily coated with an approved fire resistant adhesive. The duct liner shall shall be cut to assure snug closing corner joints. The black surface of the liner shall face the air stream. Transverse joints shall be neatly butted and all damaged areas shall be heavily coated with a approved adhesive.

C. All duct insulation shall have an NRC rating of not less than 0.60 and a K factor of not more than 0.27. Duct dimensions shall be increased 2 inches on each side from those shown on drawings to accommodated insulation.

– Ceiling Mounted Fan

A. Ceiling type exhaust fans of the capacity shown on the drawings shall be furnished and installed. Fans shall be direct drive of RPM shown and shall be complete with fan housing, inlet grille, backdraft damper and motor. Noise level shall not exceed 3.8 sones. Air quantities shall be certified by AMCA. Fans shall be from manufacturer listed in the equipment schedule.

– Split System Indoor Furnace

A. Furnish and install a natural gas fired furnace of the size and capacity as listed on the drawings. Each furnace shall be up–flow, horizontal flow as indicated, completely factory assembled, certified by AGA. Complete with blower section, furnace section, filter section and steel casing. Unit shall come piped and wired. Cooling coil shall be provided as indicated.

B. Blower section shall consist of 22 GA. cold rolled steel cabinet with finish coat of baked–on enamel. Blower shall be class 1, full DWDI , and statically and dynamically balanced. Blower shall be driven by a motor with adjustable pitch V–belt or by multi–speed direct driven motor.

C. Cooling coil shall be provided with heavy gauge steel cabinet with baked–on enamel finish to match furnace. Coil shall have aluminum fins bonded to seamless copper tubing and shall be ARI rated. Drain pan with connections at either end shall be provided at each coil.

D. Filters shall be one–inch thick throw–away type as furnished by the furnace manufacturer.

E. Heat exchanger section shall be enclosed in a 22–gauge or heavier enameled steel casing lined with foil covered insulation. Exchanger shall be ceramic or glass coated, stainless steel or 18–gauge aluminized steel.

F. Unit shall be of manufacturer listed in equipment schedule.

– Split System Condensing Unit

A. Condensing unit shall be by the same manufacturer as the furnace and of size and capacity indicated. Units shall be completely assembled and tested complete with refrigerant charge and ready to operate. Unit shall be UL listed and carry a UL Label.

1. Cabinet shall be constructed of galvanized steel, bonderized and coated with a powder coat paint.
2. Coils shall be of nonferrous construction with aluminum plate fins mechanically bonded to seamless copper tubes with all joints brazed.
3. Compressors shall be hermetically sealed. Compressor will be mounted on rubber vibrations isolators.
4. Refrigerant circuit components shall include the following: Liquid tube shutoff valve with sweat connections, suction tub shutoff valves with sweat connections. System charged with Refrigerant R–410, Compressor oil, accumulator, and reversing valve. System shall have a low ambient kit installed.
5. Compressor fans shall be direct drive propeller type, discharging air upward. Fan motors shall be totally enclosed 1–phase type with class B insulation and permanently lubricated bearings. Shafts shall be corrosion resistant. Fan blades shall be statically and dynamically balanced. Condenser fan openings shall be equipped with steel wire safety guards.
6. Unit shall be of manufacturer listed in the equipment schedule.

– Duct Penetrations

A. All ducts penetrating through the fire rated walls and floors shall be properly safed with Dow Corning 3–6548 silicone RTV foam or equal. Install per manufacture's directions.

– Turning Vanes

A. Turning vanes shall be furnished and installed in all 90–degree turns in supply, return, mixed air and fresh air ducts, and elsewhere as shown on the drawings. Material of turning vanes shall match ductwork. Vanes are to be single blade, of size, gauge, and fabrication in accordance with SMACNA recommendations.

– Equal Materials and Substitutions

A. In addition to manufacturers specified, the following shall also be considered equal. Provided corresponding models meet specified requirements. Equivalent substituted equipment named herein shall be submitted to Architect for approval. Submit alternate selections for prior approval. Must be received by Engineer 10 days prior to due date/bid opening.

Insulation:	Certainteed, Manville, Fiberglas
Air Filters:	AAF, Farr or Engineer approved equivalent.
Split System:	From manufacturers listed in the schedule.
Diffusers and Grilles:	Titus, Nailor, Price, Krueger, Hart and Cooley, Carnes, or Engineer approved equivalent.
Ceiling Exhaust Fan:	Broan, Fantech, Acme, Carnes, Penn, Cook, Breidert, Coolair, Captive aire, S&P, Greenheck, Twin City Fan, Delta Breez, Air King. (subject to project document conformance)
Roof Top Unit:	From manufacturers listed in the schedule.

– High Wall Fan Coil Unit

A. Furnish and install indoor, wall–mounted, direct expansion, fan coil unit to be used without ductwork. Unit shall consist of tangential, direct–drive fan. Fan motor, cooling coil, piping connections, electrical controls, microprocessor control system, integral temperature sensing, and factory–supplied mounting bracket. Unit shall be capable of being used in a refrigerant circuit with a matching air–cooled outdoor condensing unit. Cabinet discharge and inlet grilles shall be attractively styled, high impact polystyrene. Cabinet shall be fully insulated for improved thermal and acoustic performance. Fan shall be tangential direct–drive blower type with air intake at the upper front face of the unit and discharge at the bottom front. Automatic, motor–driven vertical air sweep shall be provided standard. Air sweep operation shall be user selectable. Horizontal direction may be manually adjusted and vertical air sweep may be manually set. Coil shall be copper tube with aluminum fins and galvanized steel pan under the coil shall have a drain connection for hose attachment to remove condensate. Condensate pan shall have internal trap and auxiliary drip pan under coil header. The size oo9 and 012 units shall use capillary tubes in the outdoor unit for refrigerant control, and the size 018, 024 units shall use an accessory accurater piston refrigerant metering device in the indoor unit. Provide the following functions as a minimum: automatic restart, a timer function, temperature–sensing controls, evaporative coil, freeze protection, wireless infrared remote control, auto stop features, automatic air sweep control, dehumidification mode, fan–only operation, diagnostics, user–selectable fan speed control, and compressor restart time delay. Unit shall be rated per ARI standards 210/240 and shall be listed in the ARI directory matched system. Units shall be UL listed. Provide equipment from manufacturers listed in the equipment schedule.

– Outdoor Condensing Unit

A. Furnish and install an air–to–air cooling unit in combination with a fan coil unit in the locations and manner shown on the plan drawings. The unit shall be designed and tested for use with refrigerant R–410 and shall be equipped with refrigerant line fittings which permit sweat connections. The coil shall be constructed of aluminum plate fins mechanically bonded to copper tubing with all joints brazed. Outdoor units shall contain a rotary or scroll compressor with a crankcase heater (non–scroll compressor units), oil system, operating oil charge, internal motor protection and spring isolation. Outdoor fans shall be direct–drive propeller type, shall be totally enclosed and shall have permanently lubricated sleeve bearings. Controls and protective devices shall include time–delay restart, automatic restart on power failure, 3–pole contractors (3–phase units), safety lockout if any safety is open, high– and low– pressure switches, automatic condenser–fan motor protection start capacitor and relay (single–phase units without scrolling compressors), current and temperature overload protection, high pressure relief, and condenser fan failure protection. A 24–V transformer shall be factory installed and wired on outdoor condensing units for external control circuit which shall supply line voltage to fan coil. Unit performance shall be certified in accordance with ARI standards 210/240 and 270. Unit shall be constructed in accordance with ASHRAE 15 and NEC. Unit shall carry the UL listing label. Provide equipment from the manufacturers listed in the equipment schedule.

– Fire and Smoke Dampers

A. Fire/smoke dampers shall be Ruskin FSD–36 multiblade, Venco, Louvers and Dampers, Greenheck, C&S, Safe Air, NCA, or Air Balance, complete with blade lever arm 120 volt, electric damper motor, fusible and blade reset fusible link.

B. Fire/Smoke dampers shall be interlocked to the fire detection system by the electrical contractor. Damper motors shall be capable of closing the damper against system air pressure when the fan is operating. Each damper shall be complete with duct connections for round or rectangular ducts. Minimum 1–1/2 foot by 1–1/2 inch 14–gauge mounting angles shall be provided for all dampers.

C. Damper motors, where required, are to be supplied as an integral part of the assembly to meet UL rating requirements. Damper installation shall conform to manufacturer's instructions.

D. Access opening shall be provided at each damper for servicing the damper. The opening or openings shall be of sufficient size and locations so that the damper can be easily inspected and serviced. A sheet metal–hinged door and cover shall be provided and shall be insulated.

E. Fire damper and fire smoke combination damper manufacturer installation instructions to be submitted as a deferred submittal by the mechanical contractor.

– Motorized Volume Dampers

A. Motorized dampers used in low velocity branch ducts to control the volume or air flow shall be Carrier model Damprnd–B for round ducts and Damprec–B rectangle ducts or equal.

– High Efficiency Branch Take–Offs

A. Expanded throat high efficiency takeoffs shall be used for all branch takeoffs unless shown otherwise on the drawings. an opposed blade volume damper with locking quadrant shall be provided at each branch takeoff. Where dampers are not accessible for adjustment from above, concealed ceiling regulators with adjustable chrome–plated covers shall be provided. High efficiency take–offs shall be Hercules, Southwark or equal.

Date: 01.11.2023

Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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M7.2

MECHANICAL SPECIFICATIONS

PART 3 – EXECUTION

– Verification of Dimensions:

A. Scaled and figured dimensions are approximate only. Before proceeding with work, carefully check and verify dimensions at site, and be responsible for properly fitting equipment and materials together and to the structure in spaces provided.

B. Drawings are essentially diagrammatic and many offsets, bends, special fittings and exact locations are not indicated. Carefully study drawings and premises in order to determine best methods, exact locations, routes, building obstructions, and install apparatus and equipment in available locations. Install apparatus and equipment in manner and in locations to avoid obstructions, preserve headroom, and keep openings and passageways clear.

– Cutting and Patching:

Cut work and patch per Division 1 as necessary to properly install the new work. As the work progresses, coordinate necessary openings, holes, chases, etc., in their correct location. If the required openings, holes and chases are not in their correct locations, make the necessary corrections at no cost to the Owner. Avoid excessive cutting and do not cut structural members without the consent of the Architect. Patching by General Contractor at Mechanical, Plumbing or Fire Protection Contractor's expense. Include as a part of the work under this contract all structural framing required by penetrations through the roof and necessary steel to support ducts and pipes between structural steel unless shown on the structural drawings.

– Closing–in of Unfinished Work:

Cover no work until inspected, tested and approved. Where work is covered before inspection and test, uncover it, and when inspected, tested and approved, restore all work to original proper condition.

– Excavation and Backfill:

A. Perform all necessary excavation, shoring and backfilling required for the proper laying of all pipes and conduits inside the building and premises, and outside as may be necessary. Conform to Division 2 requirements. Remove all excess excavated materials from the site or dispose of on site as directed by General Contractor.

B. Excavate all trenches open cut, keep trench banks as nearly vertical as practicable, and sheet and brace trenches where required for stability and safety. Excavate trenches true to line and make bottoms not less than 18" wide but no wider than necessary to provide ample work room. Grade trench bottoms accurately to provide uniform bearing and support for each section of pipe on undisturbed soil along its entire length. Dig "bell" holes after the trench bottom has been graded. Machine grade only to the top line of the pipes, doing the balance by hand. Do not cut any trench near or under footings without first consulting the Architect. Comply with OSHA requirements.

C. Provide backfilling and compaction in accordance with requirement of Division 2 and under the direction of the Architect and the Owner's testing firm to the required density. Make the first 2 feet of fill in 6" layers, each thoroughly compacted as directed, and free from rocks, large clods of earth, leaves, branches, and debris. Compact the rest of the backfill to prevent settlement as directed, using in the backfill no rocks larger than 4" in diameter, and using no rocks at all in the top 12".

– Accessibility:

A. Install valves, dampers, thermometers, gauges, traps, cleanouts, control devices or other specialties requiring reading, adjustment, inspection, repairs, removal or replacement conveniently and accessibly throughout the finished building. Where any of these devices are shown on the contract drawings to be installed above any inaccessible ceiling, the Mechanical Contractor shall furnish access doors or panels as required.

B. All access doors or panels in walls and ceilings required for access to control devices, traps, valves and similar devices are to be furnished and installed as part of the work under this section. Provide type as specified under Division 8.

C. Provide ducts which pierce a fire separation with fire dampers of same fire rating as the separation.

D. Refer to drawings and "Finish Schedule" for type of wall and ceiling in each area and for rated construction.

E. Coordinate work of various sections to locate valves, traps, and dampers with others to avoid unnecessary duplication of access doors.

– Roof Flashings:

Flash and counterflash all piping, conduits and ductwork penetrating roofing membrane with flashing per roofing manufacturer's recommendations. Refer to architectural and mechanical drawings for detailing of duct and pipe penetrations through roof.

– Equipment Rough–in:

A. Rough in all equipment and fixtures as designated on the drawings and in the specifications. The drawings indicate only the approximate location of rough–ins. The exact rough–in locations must be determined from large–scale certified drawings. The Contractor shall obtain all certified rough–in information before progressing with any work for rough–in final connections.

B. Contractor shall provide all outlets and services of proper size at the required locations.

C. Minor changes in the contract drawings shall be anticipated and provided for under this division of the specifications.

D. Rough–in only (unless otherwise designated on the drawings) shall include the following:
  D.1. Mechanical: Provide all services as indicated and required, including all ductwork, piping and valves. Valve and cap all piping stub–outs. Cap all ductwork stub–outs in a manner suitable for future extension.

E. Mechanical equipment installed on the roof shall not be installed any closer than 10'–0" to the edge of the roof unless there is a 42" high parapet or equipment guardrail.

– Owner–Furnished and Other Equipment:

A. Rough–in only for all Owner–furnished equipment (see Division 1) and all equipment furnished under other sections of the specifications, except as otherwise specified and/or noted on the drawings.

– Equipment identification

A. All major equipment shall bear firmly attached metal nameplates which state name of manufacturer, model number and electrical data.

– Discrepancies

A. In the event of discrepancy, immediately notify the Owner.

B. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

– Initial Lubrication, Adjusting, and Filling Systems

A. Before operating any mechanical system, equipment bearings shall be lubricated and bolts, pulleys, and other moving parts checked for alignment and tolerances in accordance with manufacturer's operating instructions. Vibrations and noise shall be suppressed.

– Cleaning of Equipment, Materials and Premises

A. Be painted smooth and clean, ready for painters. Clean entire premises of unused materials, rubbish, debris, grease spots and dirt left by subcontractor.

– Equipment and Material

A. Install all equipment and material per manufacturer's recommendations.

– Accessibility

A. Install work readily accessible for normal operation, reading of instruments, adjustment, service inspection and repair, provide access panels where indicated and required. Access panels shall be the responsibility of respective subcontractors.

B. Provide all services designated, valve and cap all piping, cap all waste piping and ductwork and leave in a clean and orderly manner.

C. Rough–in requirements shall be as outlined in the preceding paragraph titled "Equipment Rough–In."

– Equipment Final Connections:

A. Provide all piping and duct final connections for all equipment under Division 22 and 23 as required herein specified and indicated on the drawings.

B. Air Conditioning, Heating, and Ventilating: Provide final connections complete with necessary valves, drains, unions, flanges and duct connections for equipment furnished and installed under other sections of the specifications, except as otherwise designated. Included under the HVAC sections of the specifications are the final connections to the following:

  B.1. Condensate and evaporative cooler drain piping from air conditioning equipment.

  B.2. Supply, return, relief, outside air and exhaust duct connections for all equipment including exhaust fans.

  B.3. Piping connections for all equipment.

  B.4. Duct connections for all kitchen hoods.

– **Machinery Drives:** After tests have been performed on the air conditioning and air handling systems, make without cost no more than two changes in the size of the nonadjustable sheaves to obtain the required air quantities.

– Machinery Accessories:

A. Application: Do not install any equipment in an application not recommended by the manufacturer.

B. Installation: Align, level and adjust all equipment for proper operation. Install so connecting and disconnecting of piping and accessories can readily be done and so all parts are readily accessible for inspection, service and repair. Install equipment in accordance with manufacturer's recommendations.

– Pipe and Equipment Supports:

A. Where supports, foundations, stands, suspended platforms for machinery, tanks, or other equipment are indicated or specified, perform the following:

  A.1. Locate support members to avoid equipment strains and interference with piping connections, tube pulling or other maintenance operations.

  A.2. Where saddles are required, use cast iron or welded steel saddles with curvature to fit the tank shell.

  A.3. Mount power–driven equipment on common base with driver.

B. Concrete Inserts: Furnish and install all concrete inserts required for all materials and equipment specified and/or shown on the drawings for Division 22.

C. Concrete Foundations: Work under this section includes coordination of construction of all concrete foundations indicated or required for equipment specified herein or in other sections under Division 22. Materials and workmanship shall be described under Division 3.

D. Grout under all equipment after leveling, filling completely the space between machinery bed plate and foundation surface as specified in Division 3. Finish exposed surface of grout for a neat appearance.

E. Floor Stands: Where equipment is mounted standard or on legs, construct of structural steel or steel pipe and fittings, cross–brace and fasten with flanges or plates bolted to floor.

F. Ceiling or Wall Supports: Use suspended platform, strap hangers, bracket or shelf, whichever is most suitable for equipment and location. Construct of structural steel members, steel plates, rods or pipe as required. Cross–brace and fasten to building structure or inserts in an approved manner.

G. Steel Work: Neatly fabricate and erect steel work with burrs and welding spatter ground off. Paint after fabrication with a rust–inhibitive primer.

H. Roof Mounted Equipment (Steel Supported): Provide curbs and flashings for metal support structures as shown in the latest SMACNA manual for roof supports.

– Cleanup:

A. In addition to cleanup specified under Division 1, thoroughly clean all parts of the equipment. Where exposed parts are to be painted, thoroughly clean off any splattered construction materials and remove all oil and grease spots. Wipe the surface carefully and scrape out all cracks and corners.

B. Thoroughly flush and clean out all water circulating systems. Remove, clean and replace all strainer elements.

C. During the progress of the work, keep the premises clean and free of debris.

– Painting:

A. Except as otherwise specified or indicated in the architectural drawings and/or specifications, paint all exposed unfinished metal with one coat of rust–inhibiting primer. (Galvanized ductwork and factory painted equipment shall be considered as having primed surface.)

B. Finished painting is specified under Division 9.

– **Objectionable Noise and Vibration:** Construct and brace the metal partitions, ducts and sheet metal housings to prevent vibration or rattling when systems are in operation. Install connections to equipment so noise and vibration will not reach the conditioned area through ducts, piping, conduit, sheet metal work, or the building structure. Provide power–driven equipment suspended from the structure with spring type isolation.

– Welding:

A. Procedures:

  A.1. All procedures and welders must be qualified in accordance with the requirements of Section IX, ASME Boiler and Pressure Vessel Code and ANSI code for power piping B31.1. Procedure qualification test records and acceptance shall be submitted with the welding procedure prior to the start of fabrication.

  A.2. Architect's inspector or authorized representative will review performance qualification records of individual welders.

B. Welding Processes: The following welding processes are permitted, provided that the procedure is qualified in accordance with Section IX, ASME Boiler and Pressure Vessel Code.

  B.1. Manual shielded metal–arc.

  B.2. Gas tungsten–arc.

  B.3. Other welding processes may be used providing they are qualified in accordance with Section IX, ASME Boiler and Pressure Vessel Code.

C. Restrictions: Weld bevel preparations shall be provided on all welding fittings and shall be machined or ground to remove all discoloration if flame or arc cut.

D. Welding Filler Material:

  D.1. A filler material control procedure shall be submitted to Owner for review and acceptance prior to performing any welding.

  D.2. All shielded metal–arc welding shall be performed using low–hydrogen type electrodes such as E 7018.

E. Preheat and Interpass Temperature:

F. Preheat for pressure components shall be as specified in Table 132 of ANSI B.1.

– System Balancing

A. Balancing work included:

  A.1. Complete testing and balancing of the HVAC system as herein specified.

B. Verification of Conditions: Prior to testing and balancing, inspect equipment and materials and arrange with contractor for satisfactory correction of all defects in workmanship and/or material that could affect the work specified herein.

C. Protection: As specified herein.

D. System Operation: contractor shall put all parts of systems in full operation and shall continue to operation of same during each working day of testing and balancing.

E. Test Data: Submit copy of test data to Owner on completion of work under this section.

F. Test and balance contractor shall certify in writing that system has been adjusted and balanced and design conditions have been attained in all areas of the building.

G. Instruments: Instruments used by contractor shall be accurately calibrated and maintained in good working order.

H. Air Distribution Testing and Balancing:

  H.1. Test and record motor full load amperes and RPM.

  H.2. Test and record system static pressures, suction and discharge.

  H.3. Adjust all supply and return air ducts to proper design CFM.

  H.4. In cooperation with the control manufacturer's representative, the setting adjustment of automatically operated controls to operate as specified indicated and/or noted.

I. Witness: Notify Owner in writing two weeks prior to testing and balancing of all major equipment in order to arrange that Owner's representative will witness the test.

– Operation

D. Place system in operation and regulate and adjust to Owner's satisfaction. System shall operate quietly and without vibration or noise.

E. Contractor shall make necessary field adjustments for even temperatures throughout the project.

– Certification

A. Upon completion, the contractor shall inspect work of this section and deliver to Owner a written certification that installed materials and workmanship conform to specifications.

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PIPING SEISMIC SUPPORT NOTES:

1. PER ASCE STANDARD 7–16 SEISMIC SUPPORTS ARE NOT REQUIRED FOR THE FOLLOWING CONDITION:
   - 1.1. PIPING IS SUPPORTED BY ROD HANGERS 12" OR LESS IN LENGTH FROM THE TOP OF THE PIPE TO THE SUPPORTING STRUCTURE.
   - 1.2. HIGH–DEFORMABILITY PIPING IS USED.
2. IF INSTANCES OCCUR WHERE PIPING IS SUSPENDED BY HANGERS GREATER THAN 12" IN LENGTH. SYSTEM CONNECTORS AND COMPONENTS SHALL BE COMPATIBLE AND DESIGNED FOR THE APPLICATION THAT THEY ARE USED FOR. SHALL HAVE A MINIMUM OF TWO TRANSVERSE BRACES PER STRAIGHT PIPING RUN. THE MAXIMUM DISTANCE BETWEEN TRANSVERSE BRACES WILL BE DETERMINED BY PIPE SIZE AND PIPING COMPOSITION. SHALL HAVE A MINIMUM OF ONE LONGITUDINAL BRACE PER STRAIGHT DUCT RUN. IF LENGTH OF PIPING EXCEEDS LONGITUDINAL BRACE SPACING, ADDITIONAL LONGITUDINAL BRACES WILL BE REQUIRED.
3. FOR SEISMIC BRACING OF PLUMBING EQUIPMENT AND PIPING AN INDEPENDENT SEISMIC AND VIBRATION CONTROL SUBCONTRACTOR WITH EXPERIENCE, COMPUTING CAPABILITIES, AND MANUFACTURED PRODUCTS SHALL BE FURNISHED BY PLUMBING CONTRACTOR. INDEPENDENT SEISMIC CONSULTANT SHALL PROVIDE REQUIRED COMPUTATIONS, SHOP DRAWINGS, AND MANUFACTURED PRODUCTS TO MEET THE MINIMUM REQUIREMENTS OF ASCE 7–16 AND INTERNATIONAL BUILDING CODES (LATEST ADOPTED EDITION) FOR THE RESPECTIVE SEISMIC DESIGN FOR SEISMIC ZONE WITH IMPORTANCE FACTOR 1.5. SEISMIC SUBCONTRACTOR SHALL EXERCISE THE QUALITY CONTROL FOR THIS WORK AND SHALL NOT BE LIMITED TO INSTRUCTIONS DIRECTED TO THE PLUMBING CONTRACTOR. THE SEISMIC SUBCONTRACTOR SHALL CERTIFY IN WRITING THAT THEY HAVE INSPECTED THE INSTALLATION AND THAT ALL ISOLATION ANCHORS AND SEISMIC RESTRAINT MATERIALS ARE INSTALLED CORRECTLY AND FUNCTIONING PROPERLY. CERTIFICATION SHALL BE PROVIDED AFTER ALL CORRECTIVE WORK HAS BEEN COMPLETED

SUBMITTAL NOTES:

1. CONTRACTOR TO ALLOW 10 WORKING DAYS FOR SUBMITTAL TURNAROUND.
2. CONTRACTOR TO PROVIDE SUBMITTALS FOR ALL EQUIPMENT AND MATERIALS IN A SINGLE PACKAGE. PIECEMEAL SUBMITTALS WILL BE RETURNED WITH A NOTE TO REVISE AND RESUBMIT.
3. SUBMITTALS WILL BE CHECKED FOR COMPLIANCE WITH CAPACITY REQUIREMENTS AND ELECTRICAL REQUIREMENTS. CONTRACTOR TO VERIFY THAT WEIGHTS, DIMENSIONS, AND DUCT CONNECTIONS ON SUBMITTED EQUIPMENT IS CONSISTENT WITH SCHEDULED EQUIPMENT PRIOR TO SUBMITTAL. CHANGES IN SCOPE BROUGHT ABOUT BY SUBMITTED EQUIPMENT THAT DOES NOT COMPLY WITH THE WEIGHTS, DIMENSIONS, OR CONNECTION LOCATIONS ON SCHEDULED EQUIPMENT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

PLUMBING SYMBOLS

NOTES:
1. ALL SYMBOLS MAY NOT BE USED.
2. DOTTED SYMBOLS INDICATE EXISTING EQUIPMENT, ETC

——SS——	SANITARY OR WASTE PIPING
— — — — — — — —	VENT PIPING
——CW- ——	COLD WATER PIPING
——HW- - ——	HOT WATER PIPING
——GAS- - - - ——	GAS PIPING
——SD——	STORM DRAIN PIPING
——RD——RD——	ROOF DRAIN PIPING
——ORD——ORD——	OVERFLOW ROOF DRAIN PIPING
——GR——	GREASE PIPING
——RW- - - ——	RECIRCULATION WATER PIPING
○	PIPE RISER OR FIXTURE CONNECTION
┼—	WALL HYDRANT/HOSE BIB
⊕ ●	FLOOR DRAIN
▣ ■	AREA DRAIN
◉◉	ROOF DRAIN
ø	ROUND MEASUREMENT.
P–#	PLUMBING FIXTURE SYMBOL
M #	MECHANICAL EQUIPMENT SYMBOL
◇#	KEYED NOTE REFERENCE
——PRV——	PRESSURE REDUCING VALVE STATION
——⋈ ▭——	GATE VALVE AND BACKFLOW PREVENTOR

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MECHANICAL PROJECT MANAGER:	CHRIS FALSLEV
MECHANICAL DESIGNER:	TRE PRESSON

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P7.2	PLUMBING SPECIFICATIONS

PROJECT PLUMBING NOTES:

1. SEE PIPING SCHEMATIC(S) FOR ADDITIONAL INFORMATION ON CULINARY WATER, GAS, WASTE, AND VENT PIPING DIAMETERS.
2. COORDINATE ALL WORK WITH OTHER TRADES AS REQUIRED. CONCEAL ALL PIPING IN FINISHED AREAS.
3. PROVIDE AND INSTALL ALL REQUIRED VALVES IN PIPING SYSTEM.
4. PROVIDE AND INSTALL NEW 2" WATER METER WITH 1–1/2"ø MAIN WATER SUPPLY LINE. PROVIDE AND INSTALL MAIN SHUT–OFF, PRV, ETC. (FIELD VERIFY LOCATION WITH SITE CONDITIONS AND OWNER'S REPRESENTATIVE.)
5. PROVIDE AND INSTALL 4"ø SEWER LINE. FIELD LOCATE. MAKE CONNECTION TO COMPLETE BUILDING SEWER SYSTEM. VERIFY ALL INVERT ELEVATIONS AND ALL REQUIREMENTS WITH OWNER'S REPRESENTATIVE AND CIVIL PLANS.
6. FIELD LOCATE NEW 2 POUND GAS METER(S). VERIFY LOCATION AND ALL REQUIREMENTS WITH GAS COMPANY.
7. WHERE REQUIRED PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL 2 POUND TO 4 OUNCE PRESSURE REGULATORS WITH LEAK–LIMITING DEVICE AND TEST TEE FITTING. IFGC 410.
8. INSULATE ALL HOT AND COLD WATER PIPING PER APPLICABLE CODES. ALL EXPOSED HOT AND COLD WATER PIPING SHALL BE INSULATED. INSULATE HOT WATER PIPING THAT IS PLACED IN UN–INSULATED INTERIOR WALLS. EXCEPTION: VERTICAL AND HORIZONTAL COLD WATER PIPING LOCATED INSIDE OF INTERIOR WALLS MAY HAVE THE INSULATION OMITTED.
9. MAKE PROVISIONS FOR A TRAP GUARD WHERE NOTED AND/OR CALLED FOR.
10. PIPING LOCATIONS ARE GRAPHICALLY SHOWN. PLUMBING CONTRACTOR SHALL DETERMINE ACTUAL PIPE ROUTING IN FIELD PER AVAILABLE SPACE AND BUILDING CONSTRUCTION.
11. NOT ALL CLEANOUTS ARE SHOWN. PROVIDE AND INSTALL ALL REQUIRED CLEANOUTS. CLEANOUTS FOR HORIZONTAL DRAINS SHALL BE INSTALLED NO MORE THAN 100' APART. CLEANOUTS SHALL BE INSTALLED AT EACH CHANGE OF DIRECTION GREATER THAN 45°. A CLEANOUT SHALL BE PROVIDED AT THE BASE OF EACH WASTE OR SOIL STACK. CLEANOUTS SHALL BE ACCESSIBLE AND THE SAME SIZE AS THE WASTE LINES ON WHICH THEY ARE INSTALLED.
12. COORDINATE WITH OTHER TRADES TO ENSURE AND ALL PLUMBING VENTS ARE A MINIMUM OF 10–FEET FROM ALL FRESH AIR INTAKES.
13. WATER PIPING MATERIAL SHALL MEET THE STANDARDS SET FORTH IN 2018 IPC TABLES 605.3, 605.4, AND 605.5.
14. SANITARY WASTE AND VENT PIPING MATERIAL SHALL MEET THE STANDARDS SET FORTH IN 2018 IPC TABLES 702.1, 702.2, 702.3, AND 702.4.
15. NATURAL GAS PIPING MATERIAL SHALL MEET THE STANDARDS SET FORTH IN 2018 IFGC SECTION 403.
16. PROVIDE AND INSTALL WATER HAMMER ARRESTORS WHERE QUICK–CLOSING VALVES ARE UTILIZED. THIS INCLUDES BUT IS NOT LIMITED TO: ICE MAKERS, DISHWASHERS, FLUSH VALVE TOILETS AND URINALS.
17. TRENCHES THAT ARE EXCAVATED BELOW THE INSTALLATION LEVEL OF PIPE (SUCH THAT THE TRENCH BOTTOM DOES NOT FORM THE BED FOR THE PIPE) SHALL BE BACKFILLED TO THE INSTALLATION LEVEL OF THE BOTTOM OF THE PIPE WITH SAND OR FINE GRAVEL PLACED IN LAYERS OF 6 INCHES MAXIMUM DEPTH. THE BACKFILL SHALL BE COMPACTED AFTER EACH PLACEMENT. 2018 IPC 306.2.1.
18. PROVIDE AND INSTALL MARKING/LOCATING TAPE FOR ALL BURIED GAS LINES.
19. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL WATER TEMPERING DEVICE (SHALL CONFORM TO ASSE 1070) FOR ALL HAND WASH AREAS IN PROJECT. HOT WATER TEMPERATURE SHALL HAVE A MAXIMUM TEMPERATURE OF 110° F. 2018 IPC 607.1.2.
20. PLUMBING CONTRACTOR TO PROVIDE AND INSTALL BACKFLOW PREVENTER AT ALL HOSE BIB LOCATIONS.
21. PAINT ALL EXTERIOR GAS PIPING WITH WEATHER RESISTANT PAINT.
22. CONTRACTOR SHALL VERIFY LOCATION, SIZE, AND DEPTH OF ALL UTILITIES PRIOR TO BEGINNING OF CONSTRUCTION.

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Date: 01.11.2023
Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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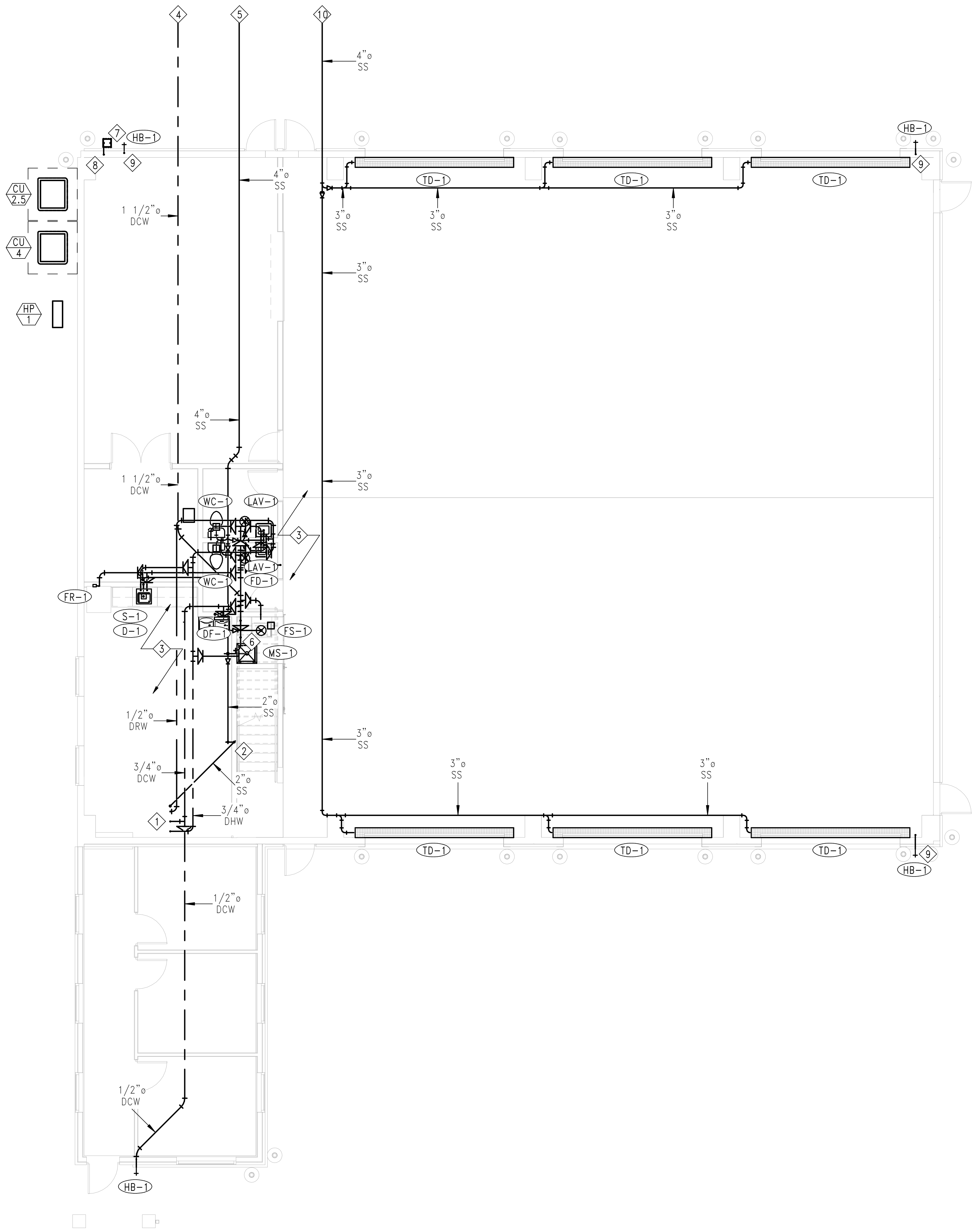
P0.1
PLUMBING NOTES AND LEGENDS



MAIN FLOOR PLUMBING PLAN - BUILDING #1

1/8" = 1'-0"

PLUMBING KEYED NOTES:

1 ANTICIPATED LOCATION OF 3/4" HOT WATER DROP, 3/4" COLD WATER RISER, AND 1/2" RETURN WATER RISER.

2 PROPOSED LOCATION OF 2" SANITARY SEWER DROP TO LEVEL BELOW. SEE PLUMBING SCHEMATICS FOR STACK SIZING AND VENT SIZING. FIELD VERIFY FINAL LOCATION WITH STRUCTURE.

3 SEE SHEET P4.1 FOR ENLARGED VIEW OF THIS AREA.

4 FIELD VERIFY EXACT LOCATION OF DOMESTIC WATER LINE. SEE WATER PIPING SCHEMATICS FOR METER AND PIPING SIZING. SEE CIVIL UTILITES PLAN FOR CONTINUATION.

5 FIELD VERIFY 4" SEWER LINE CONNECTION LOCATION AND INVERT DEPTH WITH CIVIL UTILITIES. FINAL ROUTING DETERMINED IN FIELD WITH STRUCTURE AND SITE CONDITIONS.

6 PROPOSED LOCATION FOR PRV STATION, BUILDING CHECK VALVE, AND MAIN BUILDING SHUT-OFF VALVE. INSTALL 1-1/2" WATER PIPING RISER TO CEILING SPACE FOR BUILDING DISTRIBUTION. SEE PLUMBING DETAILS.

7 PROPOSED LOCATION FOR GAS METER. COORDINATE LOCATION AND ALL REQUIREMENTS WITH GAS COMPANY.

8 PROPOSED LOCATION OF 3/4" NATURAL GAS RISER TO ABOVE FROM CEILING LEVEL.

9 ANTICIPATED LOCATION OF 1/2" CULINARY WATER DROP TO HOSE BIB BELOW.

10 PROPOSED LOCATION OF SAND-OIL SEPARATOR (500 GALLON MINIMUM). 4" MAIN DRAINAGE TO CONNECT TO MAIN SEWER LINE AFTER SAND-OIL SEPARATOR. SAND OIL SEPARATOR SHALL HAVE A SAMPLING MANHOLE (SAND-OIL SEPARATOR SAMPLING MANHOLE SHALL BE 4' DIAMETER PER APWA STANDARD PLAN 411) AND 3" VENT TO ROOF. COORDINATE FINAL SAND-OIL SEPARATOR LOCATION AND SIZING WITH OWNER'S REPRESENTATIVE. ALL COVERS SHALL BE TRAFFIC RATED.

Date: 01.11.2023

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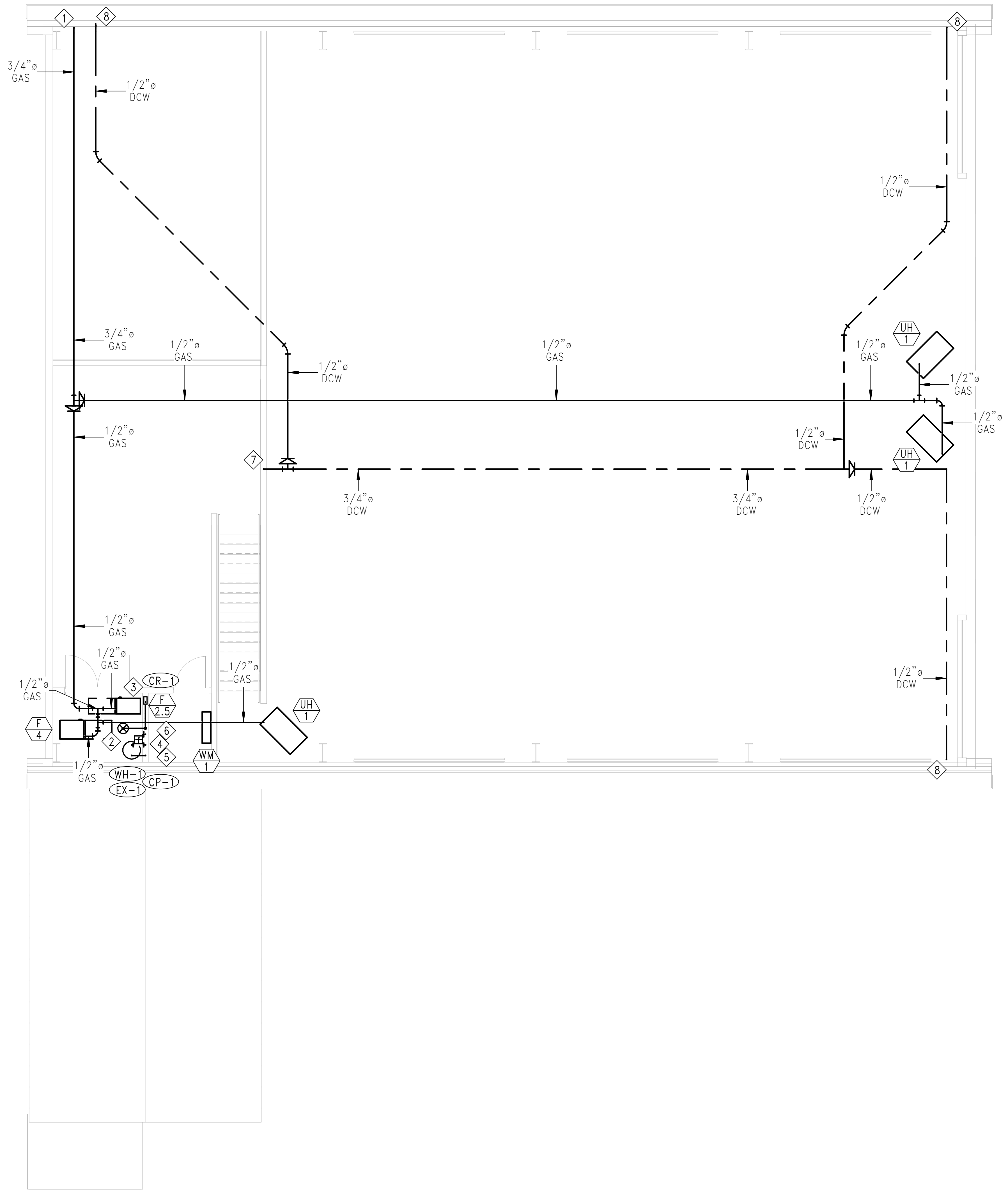
P1.1

PLUMBING FLOOR PLAN



MEZZANINE PLUMBING PLAN - BUILDING #1

1/8" = 1'-0"

PLUMBING KEYED NOTES:

1 PROPOSED LOCATION OF 3/4" NATURAL GAS RISER TO ABOVE FROM CEILING LEVEL.

2 PROPOSED LOCATION OF FLOOR DRAIN INSTALLED IN FLOOR SYSTEM (FLOOR SYSTEM SHALL SLOPE TO DRAIN). INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE FINAL LOCATION IN FIELD WITH OWNER'S REPRESENTATIVE.

3 PROVIDE AND INSTALL CONDENSATE WALL BOX FOR MECHANICAL CONTRACTOR TO INSTALL PIPING FROM WALL MOUNTED FAN COIL TO CR-1. COORDINATE WALL BOX LOCATION IN FIELD WITH STRUCTURE.

4 ANTICIPATED LOCATION OF 3/4" HOT WATER DROP, 3/4" COLD WATER RISER, AND 1/2" RETURN WATER RISER.

5 PROVIDE AND INSTALL CP-1 WITH 1/2" HOT WATER RETURN PIPING FROM THE FURTHEST FIXTURE GROUP(S) TO A COMMON 1/2" HOT WATER RETURN LOOP. INSTALL CP-1 PER MANUFACTURER'S RECOMMENDATIONS IN MECHANICAL ROOM. ROUTE PIPING WITHIN CONCEALED WALL/CEILING/DROP CAVITIES.

6 PROPOSED LOCATION OF 2" SANITARY SEWER DROP TO LEVEL BELOW. SEE PLUMBING SCHEMATICS FOR STACK SIZING AND VENT SIZING. FIELD VERIFY FINAL LOCATION WITH STRUCTURE.

7 ANTICIPATED LOCATION OF 3/4" CULINARY WATER RISER TO LEVEL ABOVE.

8 ANTICIPATED LOCATION OF 1/2" CULINARY WATER DROP TO HOSE BIB BELOW.

Date: 01.11.2023

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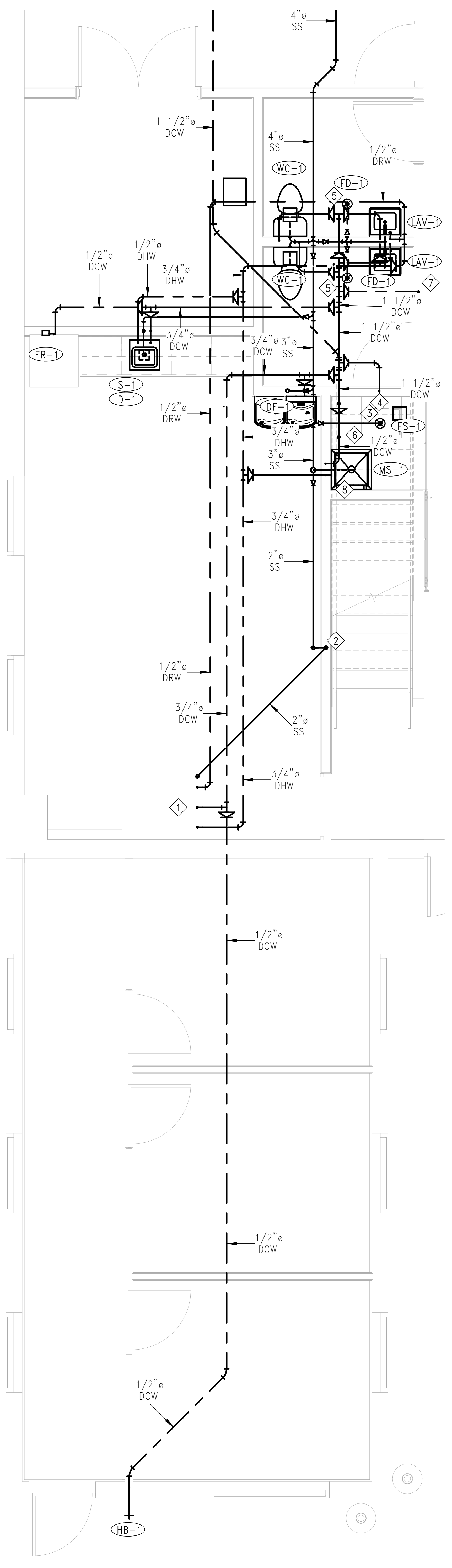
P1.2

PLUMBING MEZZ. PLAN



ENLARGED FRONT ENTRANCE

1/4" = 1'-0"

PLUMBING KEYED NOTES:

1. ANTICIPATED LOCATION OF 3/4" HOT WATER DROP, 3/4" COLD WATER RISER, AND 1/2" RETURN WATER RISER.
2. PROPOSED LOCATION OF 2" SANITARY SEWER DROP TO LEVEL BELOW. SEE PLUMBING SCHEMATICS FOR STACK SIZING AND VENT SIZING. FIELD VERIFY FINAL LOCATION WITH STRUCTURE.
3. FIELD VERIFY FLOOR SINK LOCATION WITH OWNER'S REPRESENTATIVE.
4. ANTICIPATED LOCATION OF 1/2" CULINARY WATER STUB FOR ICE MAKER. COORDINATE EXACT LOCATION WITH OWNER'S REPRESENTATIVE.
5. PROPOSED LOCATION OF FLOOR DRAIN INSTALLED IN FLOOR SYSTEM (FLOOR SYSTEM SHALL SLOPE TO DRAIN). INSTALL PER MANUFACTURER'S RECOMMENDATIONS AND COORDINATE FINAL LOCATION IN FIELD WITH OWNER'S REPRESENTATIVE.
6. PROPOSED LOCATION FOR PRV STATION, BUILDING CHECK VALVE, AND MAIN BUILDING SHUT-OFF VALVE. INSTALL 1-1/2" WATER PIPING RISER TO CEILING SPACE FOR BUILDING DISTRIBUTION. SEE PLUMBING DETAILS.
7. ANTICIPATED LOCATION OF 3/4" CULINARY WATER RISER TO LEVEL ABOVE.
8. PROVIDE AND INSTALL A SEPARATE 1/2" HOT WATER STUB OUT WITH CHECK VALVE AT MOP SINK FOR CHEMICAL DISPENSER.

Date: 01.11.2023

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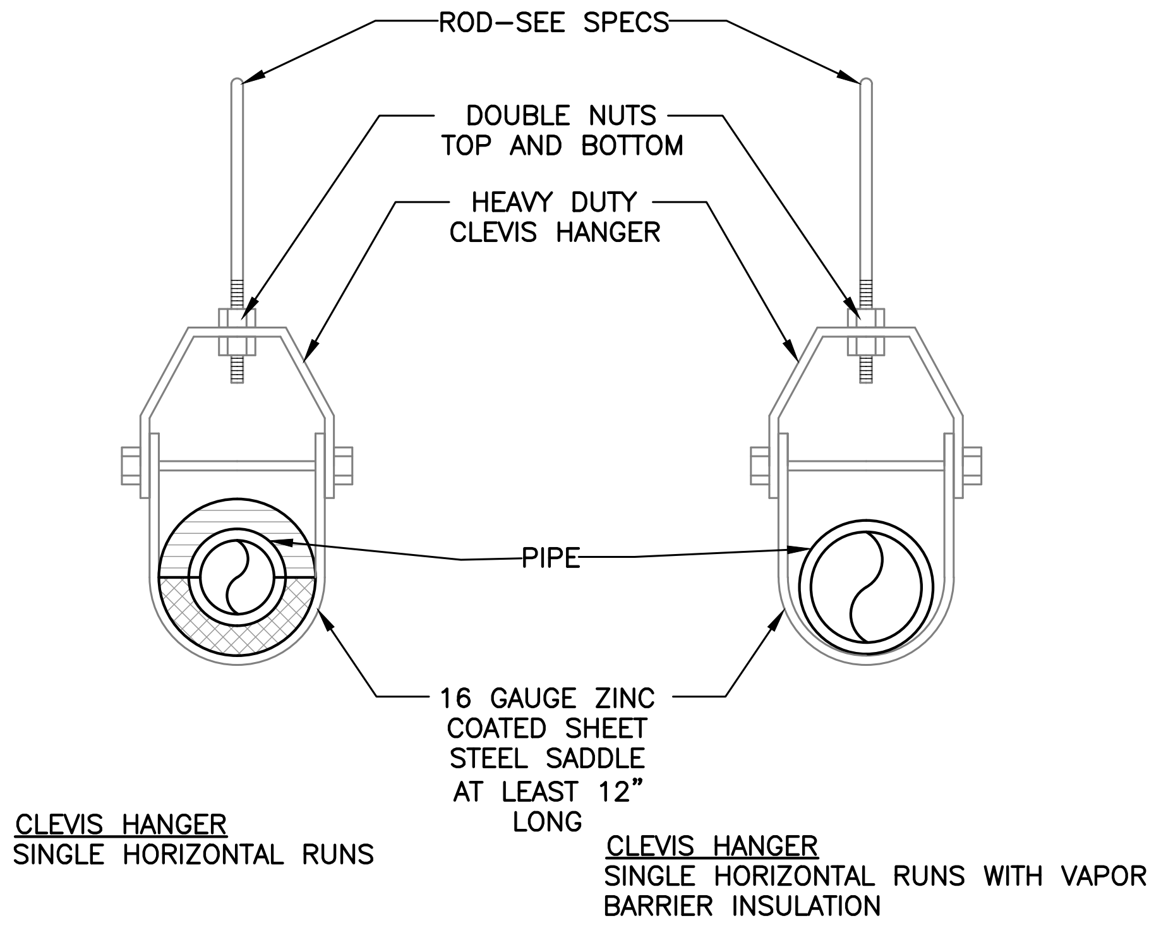
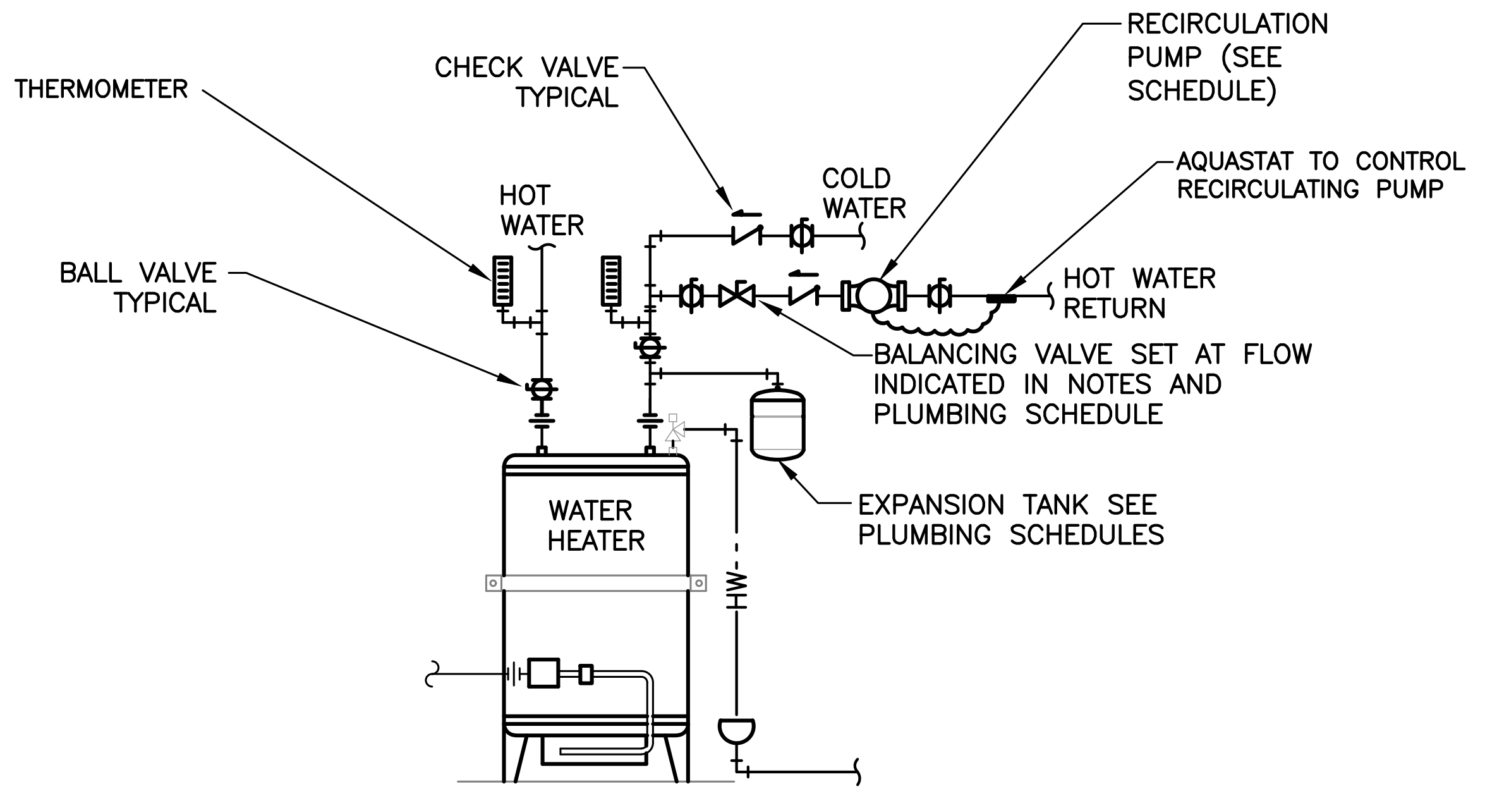

ROD–SEE SPECS
DOUBLE NUTS TOP AND BOTTOM
HEAVY DUTY CLEVIS HANGER
PIPE
16 GAUGE ZINC COATED SHEET STEEL SADDLE AT LEAST 12" LONG
CLEVIS HANGER
SINGLE HORIZONTAL RUNS
CLEVIS HANGER
SINGLE HORIZONTAL RUNS WITH VAPOR BARRIER INSULATION

NOTE:
INSTALL 20 MIL THICK PVC ISOLATION TAPE BETWEEN PIPE AND HANGER FOR DISSIMILAR MATERIAL. WRAP TAPE AROUND PIPE (DUCT TAPE OR ELECTRICAL TAPE IS NOT ACCEPTABLE)

PIPE WITH CLEVIS HANGERS DETAIL

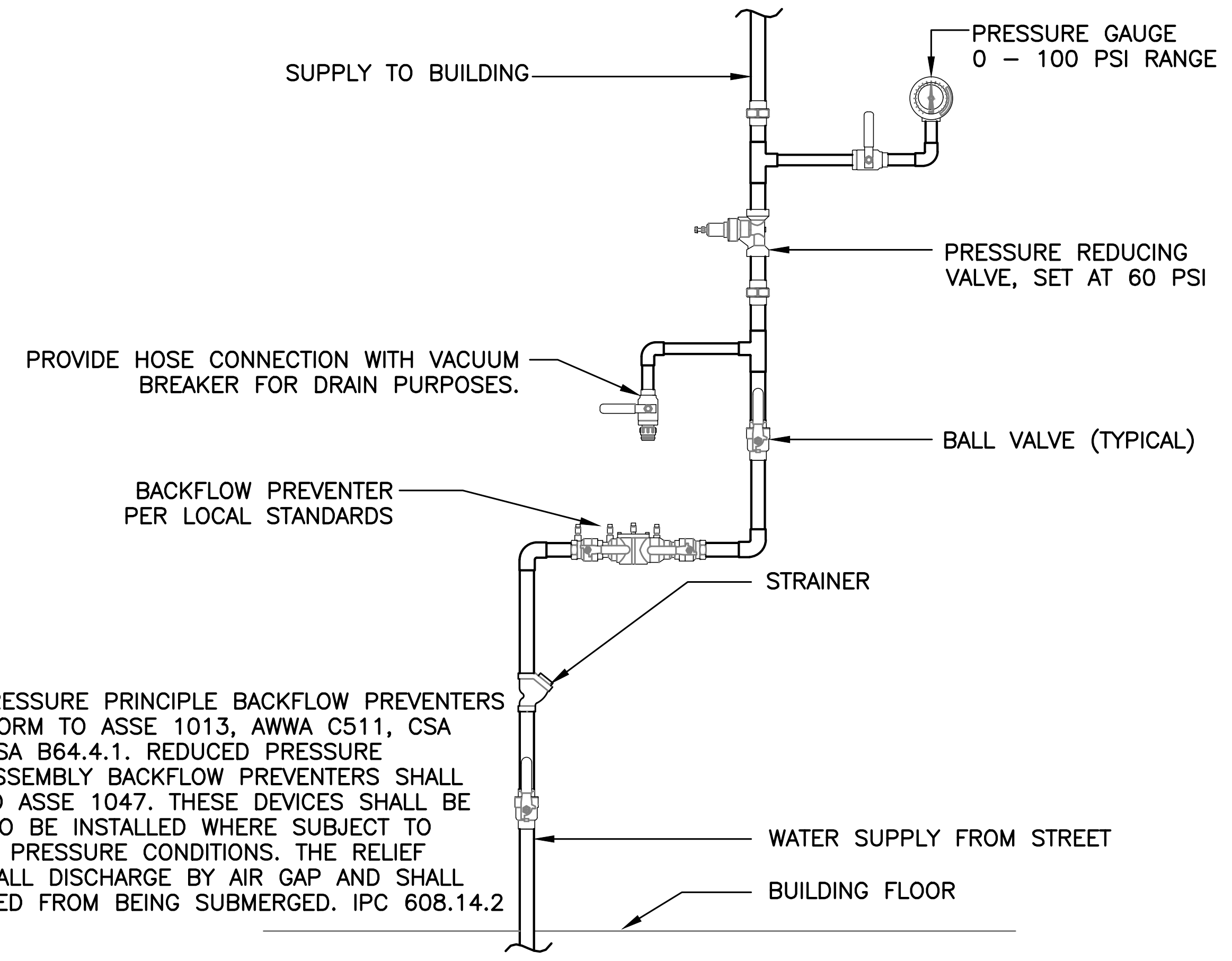
SCALE: NONE


THERMOMETER
CHECK VALVE TYPICAL
HOT WATER
COLD WATER
RECIRCULATION PUMP (SEE SCHEDULE)
AQUASTAT TO CONTROL RECIRCULATING PUMP
HOT WATER RETURN
BALL VALVE TYPICAL
BALANCING VALVE SET AT FLOW INDICATED IN NOTES AND PLUMBING SCHEDULE
WATER HEATER
EXPANSION TANK SEE PLUMBING SCHEDULES
HW

NOTES:
1. MAX ALLOWABLE VELOCITY RATES FOR HOT WATER RETURN LINE IS FROM 3 FPS TO 5 FPS
2. SEE WATER HEATER INSTALLATION DETAIL FOR ADDITIONAL INFORMATION.

RECIRCULATION PUMP WITH WATER HEATER DETAIL

SCALE: NONE


SUPPLY TO BUILDING
PRESSURE GAUGE 0 – 100 PSI RANGE
PRESSURE REDUCING VALVE, SET AT 60 PSI
PROVIDE HOSE CONNECTION WITH VACUUM BREAKER FOR DRAIN PURPOSES.
BALL VALVE (TYPICAL)
BACKFLOW PREVENTER PER LOCAL STANDARDS
STRAINER
WATER SUPPLY FROM STREET
BUILDING FLOOR

NOTE:
REDUCED PRESSURE PRINCIPLE BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1013, AWWA C511, CSA B64.4 OR CSA B64.4.1. REDUCED PRESSURE DETECTOR ASSEMBLY BACKFLOW PREVENTERS SHALL CONFORM TO ASSE 1047. THESE DEVICES SHALL BE PERMITTED TO BE INSTALLED WHERE SUBJECT TO CONTINUOUS PRESSURE CONDITIONS. THE RELIEF OPENING SHALL DISCHARGE BY AIR GAP AND SHALL BE PREVENTED FROM BEING SUBMERGED. IPC 608.14.2

WATER PRV STATION WITH BACKFLOW PREVENTER DETAIL

SCALE: NONE

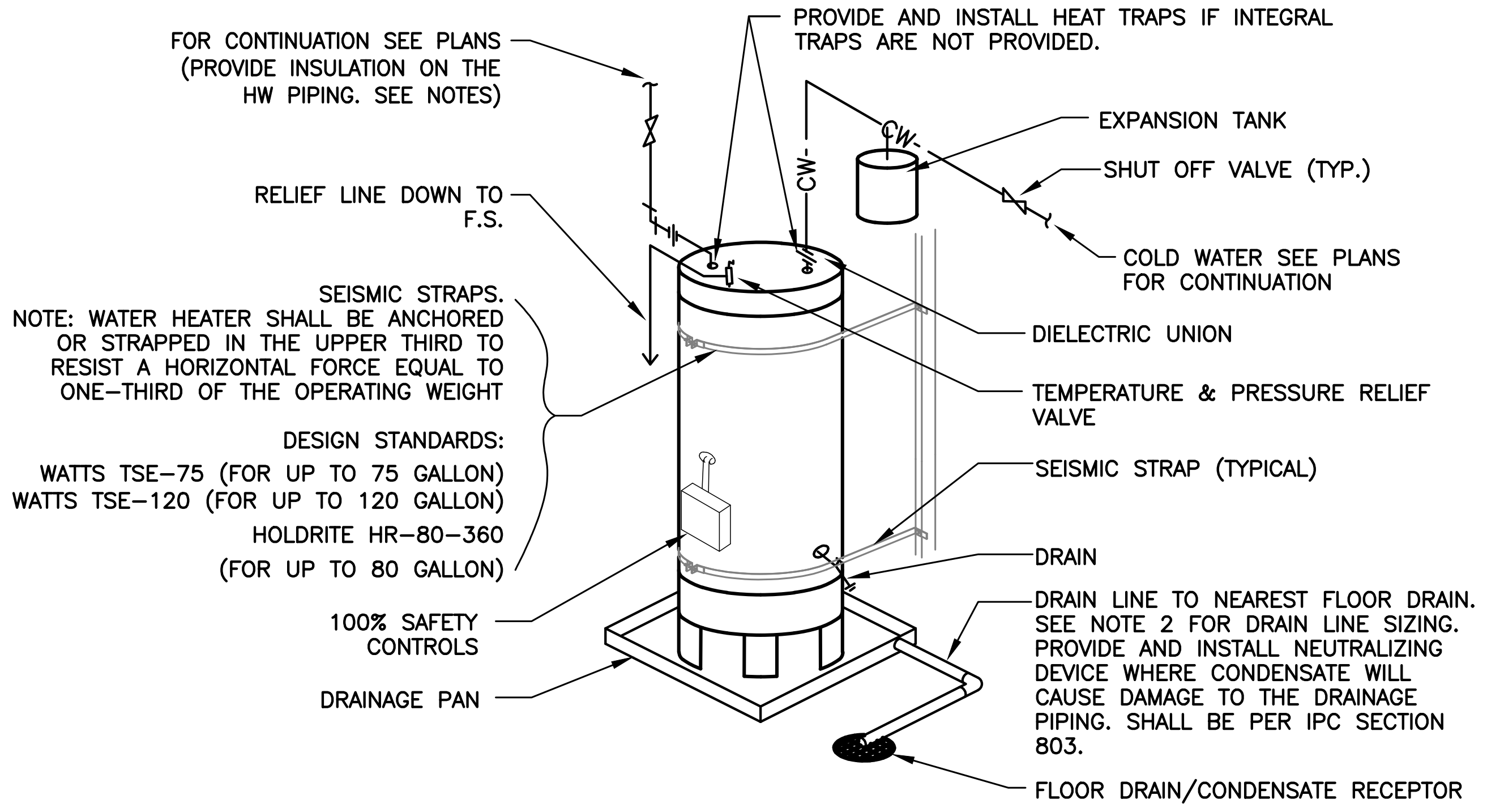

FOR CONTINUATION SEE PLANS (PROVIDE INSULATION ON THE HW PIPING. SEE NOTES)
PROVIDE AND INSTALL HEAT TRAPS IF INTEGRAL TRAPS ARE NOT PROVIDED.
EXPANSION TANK
SHUT OFF VALVE (TYP.)
CW
RELIEF LINE DOWN TO F.S.
COLD WATER SEE PLANS FOR CONTINUATION
SEISMIC STRAPS.
NOTE: WATER HEATER SHALL BE ANCHORED OR STRAPPED IN THE UPPER THIRD TO RESIST A HORIZONTAL FORCE EQUAL TO ONE–THIRD OF THE OPERATING WEIGHT
DESIGN STANDARDS:
WATTS TSE–75 (FOR UP TO 75 GALLON)
WATTS TSE–120 (FOR UP TO 120 GALLON)
HOLDRITE HR–80–360
(FOR UP TO 80 GALLON)
DIELECTRIC UNION
TEMPERATURE & PRESSURE RELIEF VALVE
SEISMIC STRAP (TYPICAL)
DRAIN
100% SAFETY CONTROLS
DRAINAGE PAN
DRAIN LINE TO NEAREST FLOOR DRAIN. SEE NOTE 2 FOR DRAIN LINE SIZING. PROVIDE AND INSTALL NEUTRALIZING DEVICE WHERE CONDENSATE WILL CAUSE DAMAGE TO THE DRAINAGE PIPING. SHALL BE PER IPC SECTION 803.
FLOOR DRAIN/CONDENSATE RECEPTOR

TABLE C403.11.3 PIPING INSULATION IECC 2018

FLUID OPERATING TEMPERATURE RANGE AND USAGE (F°)	INSULATION CONDUCTIVITY		NOMINAL PIPE SIZE OR TUBE SIZE (INCHES)				
	CONDUCTIVITY BTUxIN./(HxFT2xF°)	MEAN RATING TEMPERATURE, F°	<1	1 TO <1 ½	1 ½ TO < 4	4 TO < 8	> 8
>350	0.32 – 0.34	250	4.5	5.0	5.0	5.0	5.0
251 – 350	0.29 – 0.32	200	3.0	4.0	4.5	4.5	4.5
201 – 250	0.27 – 0.30	150	2.5	2.5	2.5	3.0	3.0
141 – 200	0.25 – 0.29	125	1.5	1.5	2.0	2.0	2.0
105 – 140	0.21 – 0.28	100	1.0	1.0	1.5	1.5	1.5
40–60	0.21 – 0.27	75	0.5	0.5	1.0	1.0	1.0
<40	0.20 – 0.26	50	0.5	1.0	1.0	1.0	1.5

NOTES:
1. PROVIDE AND INSTALL 2 SEISMIC STRAPS WITH TENSIONING BUCKLES ANCHORED TO STRUCTURE. INSTALL PER MANUFACTURERS REQUIREMENTS.
2. PROVIDE AND INSTALL PAN W/DRAIN WHERE REQUIRED, OR WHERE LEAK DAMAGE MAY OCCUR. DRAIN LINE SHALL BE 1 1/2" DIAMETER FOR PROJECTS LOCATED IN UTAH, 3/4" DIAMETER FOR OTHER PROJECT LOCATIONS.
3. PROVIDE HEAT TRAPS ON SUPPLY AND DISCHARGE PIPES.
4. THE FIRST 8 FEET OF PIPING IN NONCIRCULATING SYSTEMS SERVED BY EQUIPMENT WITHOUT INTEGRAL HEAT TRAPS SHALL BE INSULATED AS PER TABLE 403.11.3. IECC 2018.
5. FOR AUTOMATIC CIRCULATING HOT WATER SYSTEMS, PIPING SHALL BE INSULATED AS PER TABLE 403.11.3. IECC 2018.

ELECTRIC 40-GALLON WATER HEATER DETAIL

SCALE: NONE

MECHANICAL PIPING - MINIMUM INSULATION THICKNESS

SERVICE	TEMPERATURE RANGE (°F)	PIPE SIZE (IN.)					NOTES
		< 1	1 TO 1-1/2	2 TO 3-1/2	4 TO 7-1/2	8 & LARGER	
> 120 PSI STEAM	> 350	2.5	3	3	4	4	1, 2, 3, 5, 6
16 - 120 PSI STEAM	251 - 350	1.5	2.5	3	3	3	1, 2, 3, 5, 6
0 - 15 PSI STEAM	201 - 250	1.5	1.5	3	3	3	1, 2, 3, 5, 6
HOT WATER	141 - 200	1.5	1.5	2	2	2	1, 3, 5, 6
HOT WATER	105 - 140	1.5	1.5	2	2	2	1, 3, 5, 6
COOLING SYSTEMS	40 - 60	1.5	1.5	2	2	2	1, 3, 4, 5, 6
COOLING COIL CONDENSATE	32 - 65	.5	.5	.5	.5	.5	1, 5, 6

1. INSULATION CONDUCTIVITY NOT TO EXCEED 0.27 BTU PER INCH. WHERE INSULATION IS NOT EQUAL TO 0.27 BTU PER INCH THE INSULATION THICKNESS SHALL BE INCREASE AS DIRECTED IN THE INTERNATIONAL ENERGY CONSERVATION CODE.
2. STEAM SERVICE INCLUDES BOTH STEAM AND CONDENSATE RETURN PIPING.
3. INSULATION THICKNESS FOR RUN–OUT PIPING BETWEEN THE CONTROL VALVE AND HVAC EQUIPMENT MAY BE REDUCED TO 1".
4. COOLING SYSTEMS INCLUDE CHILLED WATER, CHILLED BRINE, REFRIGERANT SUCTION, REFRIGERANT HOT GAS, AND CONDENSER WATER AND HEAT RECOVERY PIPING FALLING WITHIN THE LISTED TEMPERATURE RANGE.
5. INSULATION THICKNESS FOR PIPING LOCATED OUTDOORS OR EXPOSED TO OUTSIDE AIR SHALL BE INCREASED BY 1".
6. WHERE SCHEDULED THICKNESS DIFFERS FROM SPECIFICATIONS THE THICKER DIMENSION SHALL BE USED.

PLUMBING PIPING - MINIMUM INSULATION THICKNESS

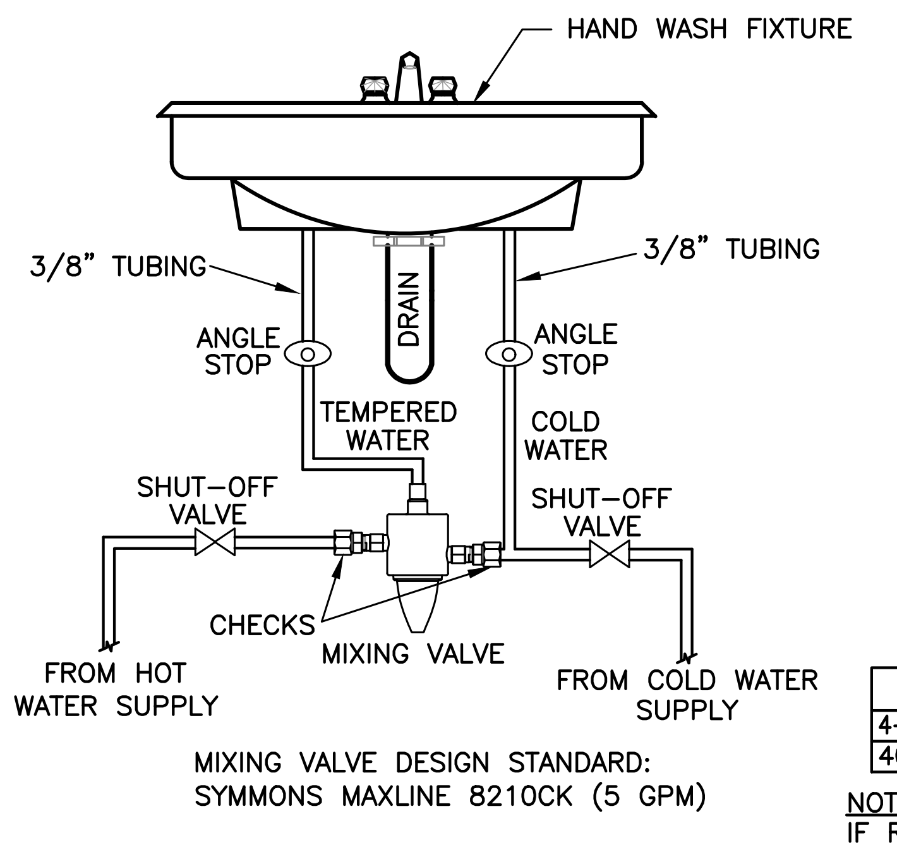
SERVICE	TEMPERATURE RANGE (°F)	PIPE SIZE (IN.)					NOTES
		< 1	1 TO 1-1/2	2 TO 3-1/2	4 TO 7-1/2	8 & LARGER	
DOMESTIC COLD WATER	45 - 90	1	1	1	1	1	1, 2, 3
DOMESTIC HOT WATER	90+	1	1	1.5	1.5	1.5	1, 2, 3, 4
SERVICE HOT WATER	90+	1	1	1.5	1.5	1.5	1, 2, 3, 4
ROOF DRAIN PIPING	32+	1	1	1	1	1	1, 2, 3, 5

1. INSULATION CONDUCTIVITY NOT TO EXCEED 0.27 BTU PER INCH. WHERE INSULATION IS NOT EQUAL TO 0.27 BTU PER INCH THE INSULATION THICKNESS SHALL BE INCREASE AS DIRECTED IN THE INTERNATIONAL ENERGY CONSERVATION CODE.
2. INSULATION THICKNESS FOR PIPING LOCATED OUTDOORS OR EXPOSED TO OUTSIDE AIR SHALL BE INCREASED BY 1".
3. WHERE SCHEDULED THICKNESS DIFFERS FROM SPECIFICATIONS THE THICKER DIMENSION SHALL BE USED.
4. SERVICE AND DOMESTIC HOT WATER INCLUDES RE–CIRCULATION LOOP PIPING.
5. ROOF DRAIN PIPING INCLUDES DRAIN BOWELS AND OVERFLOW DRAIN PIPING.

NOTE:
THERMAL AND SOUND INSULATION AND COVERINGS, LININGS AND ADHESIVES (WHEN USED) INSTALLED IN CONCEALED AND EXPOSED SPACES SHALL MEET THE REQUIREMENTS OF ASTM E 84. FLAME SPREAD INDEX THAT IS NOT MORE THAN 25 AND A SMOKE–DEVLOPED INDEX OF NOT MORE THAN 50 WHEN TEXTED IN ACCORDANCE WITH ASTM E 84.

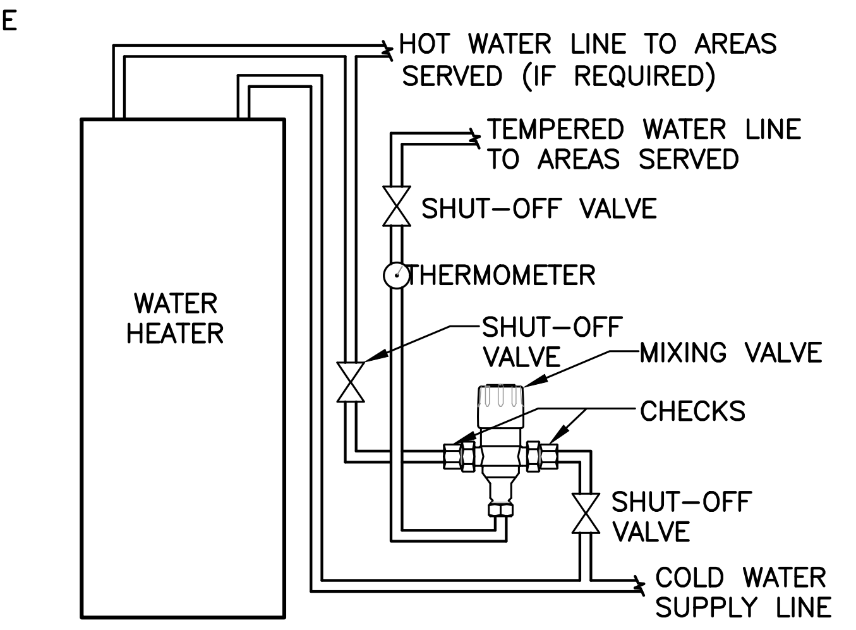
PIPING INSULATION DETAIL

SCALE: NONE



MIXING VALVE DESIGN STANDARD:
SYMMONS MAXLINE 8210CK (5 GPM)

SINGLE HAND WASH LOCATION



USED W/	GPM	MIXING VALVE	INLETS & OUTLETS
4–20GAL WH	14	SYMMONS 7–225–CK–F	1/2"
40GAL WH	14	SYMMONS 7–230–CK–F	3/4"

NOTE:
IF REQUIRED GPM EXCEEDS CAPABILITIES OF MIXING VALVES LISTED, PROVIDE MIXING VALVE WITH CAPABILITY NEEDED.

SERVING MULTIPLE FIXTURES

NOTES:
1. PROVIDE WITH SEPARATE CHECKS AND WALL MOUNTING BRACKET.
2. SHALL CONFORM TO ASSE 1070 – LIMIT THE TEMPERED WATER TEMPERATURE TO A MAXIMUM OF 110 deg F. IPC 2018, 607.1.2.
3. SET MIXING VALVE TEMPERATURE WHEN INSTALLATION IS COMPLETE.
4. FOLLOW ALL MANUFACTURER INSTALLATION AND OTHER INSTRUCTIONS.
5. APPROVED MANUFACTURERS: SYMMONS, POWERS, LEONARD, BRADLEY, WATTS, LAWLER.
6. INSTALL HANDY–SHIELD, AS MANUFACTURED BY PLUMBEREX SPECIALTY PRODUCTS, SAFETY COVERS ON ALL SUPPLY PIPING AND WASTE PIPING BENEATH HANDICAPPED LAVATORIES. SHIELDS SHALL MEET THE REQUIREMENTS OF UNIFORM FEDERAL ACCESSIBILITY STANDARDS 4.19.4 GSA AND ANSI DOCUMENT A117–1–1980.

WATER TEMPERING DETAILS

SCALE: NONE

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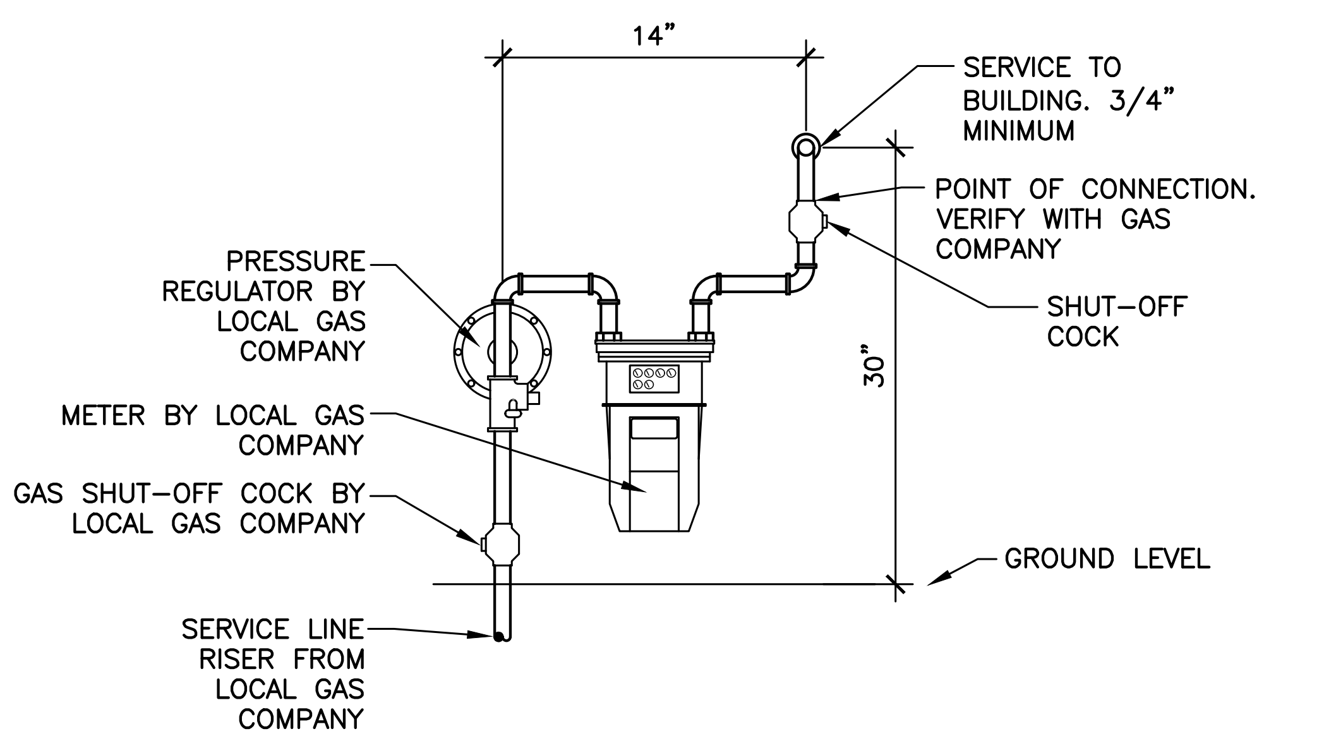

14"
SERVICE TO BUILDING. 3/4" MINIMUM
POINT OF CONNECTION. VERIFY WITH GAS COMPANY
PRESSURE REGULATOR BY LOCAL GAS COMPANY
SHUT–OFF COCK
30"
METER BY LOCAL GAS COMPANY
GAS SHUT–OFF COCK BY LOCAL GAS COMPANY
GROUND LEVEL
SERVICE LINE RISER FROM LOCAL GAS COMPANY

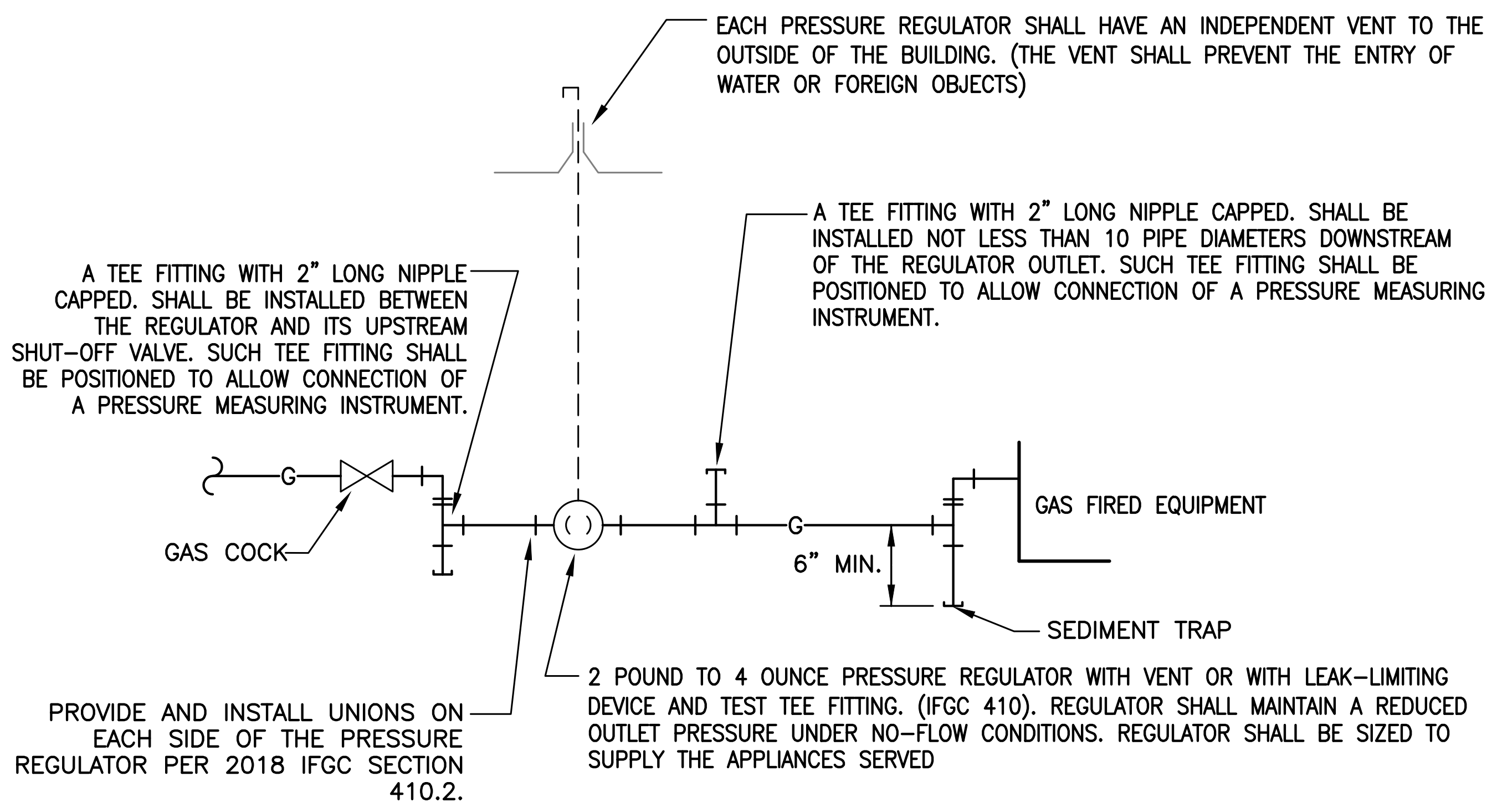
NOTES:

1. PAINT ALL EXTERIOR GAS PIPING WITH WEATHER RESISTANT PAINT.
2. FOR MULTIPLE METER INSTALLATIONS WHERE TWO OR MORE HOUSE LINES TERMINATE AT A MULTIPLE METER SET, THEY SHOULD BE SPACED NOT LESS THAN 10" NOR MORE THAN 12" APART.
3. METERS STACKED TWO ROWS HIGH (MAXIMUM).
4. GAS PIPING AT MULTIPLE METER INSTALLATIONS SHALL BE PLAINLY MARKED BY A METAL TAG OR OTHER PERMANENT MEANS ATTACHED TO THE PIPE BY THE INSTALLING AGENCY, DESIGNATING THE BUILDING OR THE PART OF THE BUILDING BEING SUPPLIED.
5. SEAL ALL PENETRATIONS INTO BUILDING WEATHER TIGHT.

GAS METER INSTALLATION

SCALE: NONE

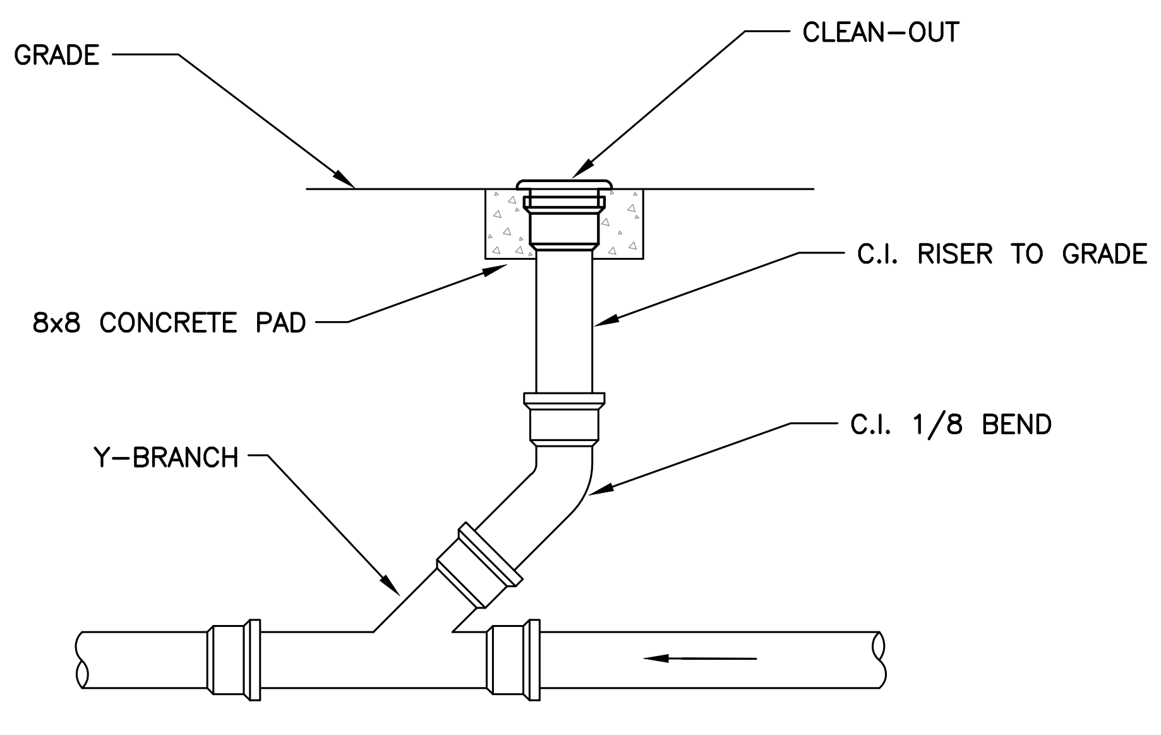
NOTE:
VENT TO OUTSIDE MAY BE ELIMINATED PROVIDED IF REGULATOR IS EQUIPPED WITH AND LABELED FOR USE WITH A VENT LIMITING DEVICE.


EACH PRESSURE REGULATOR SHALL HAVE AN INDEPENDENT VENT TO THE OUTSIDE OF THE BUILDING. (THE VENT SHALL PREVENT THE ENTRY OF WATER OR FOREIGN OBJECTS)
A TEE FITTING WITH 2" LONG NIPPLE CAPPED. SHALL BE INSTALLED NOT LESS THAN 10 PIPE DIAMETERS DOWNSTREAM OF THE REGULATOR OUTLET. SUCH TEE FITTING SHALL BE POSITIONED TO ALLOW CONNECTION OF A PRESSURE MEASURING INSTRUMENT.
A TEE FITTING WITH 2" LONG NIPPLE CAPPED. SHALL BE INSTALLED BETWEEN THE REGULATOR AND ITS UPSTREAM SHUT–OFF VALVE. SUCH TEE FITTING SHALL BE POSITIONED TO ALLOW CONNECTION OF A PRESSURE MEASURING INSTRUMENT.
G
G
GAS FIRED EQUIPMENT
GAS COCK
6" MIN.
SEDIMENT TRAP
2 POUND TO 4 OUNCE PRESSURE REGULATOR WITH VENT OR WITH LEAK–LIMITING DEVICE AND TEST TEE FITTING. (IFGC 410). REGULATOR SHALL MAINTAIN A REDUCED OUTLET PRESSURE UNDER NO–FLOW CONDITIONS. REGULATOR SHALL BE SIZED TO SUPPLY THE APPLIANCES SERVED
PROVIDE AND INSTALL UNIONS ON EACH SIDE OF THE PRESSURE REGULATOR PER 2018 IFGC SECTION 410.2.

NOTE:
PRESSURE REGULATORS INSTALLED INSIDE BUILDING SHALL BE PROVIDED WITH ACCESS.

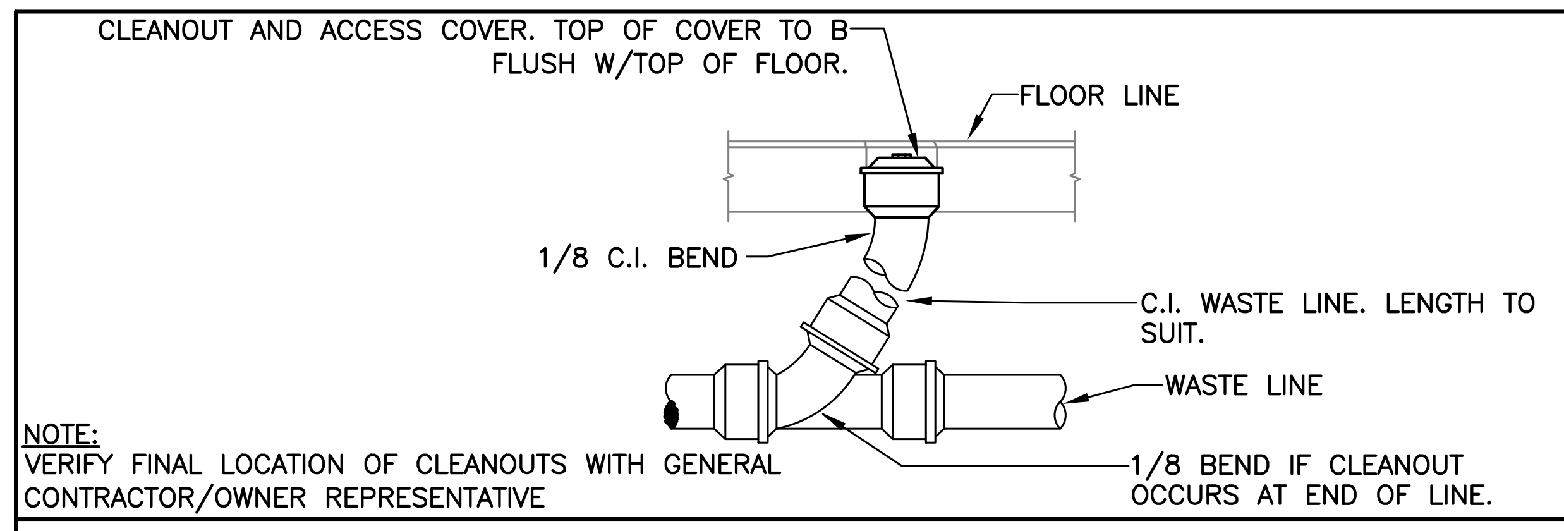
TYPICAL 2LB GAS CONNECTION DETAIL

SCALE: NONE



TYPICAL SURFACE CLEANOUT DETAIL

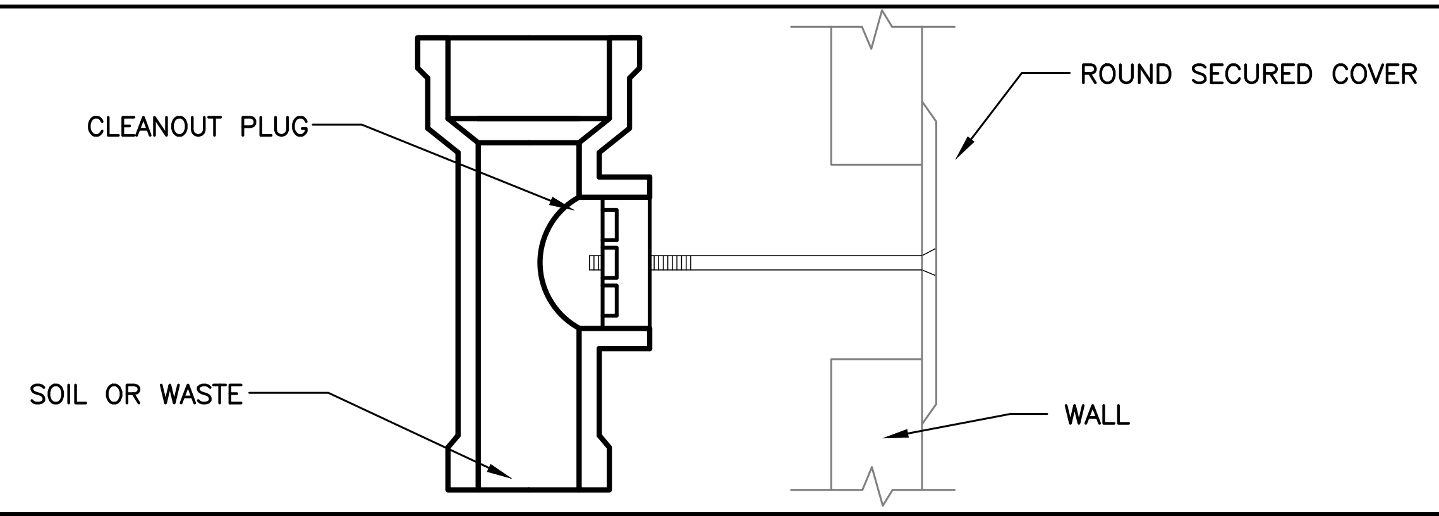
SCALE: NONE


CLEANOUT AND ACCESS COVER. TOP OF COVER TO B FLUSH W/TOP OF FLOOR.
FLOOR LINE
1/8 C.I. BEND
C.I. WASTE LINE. LENGTH TO SUIT.
WASTE LINE
1/8 BEND IF CLEANOUT OCCURS AT END OF LINE.

NOTE:
VERIFY FINAL LOCATION OF CLEANOUTS WITH GENERAL CONTRACTOR/OWNER REPRESENTATIVE

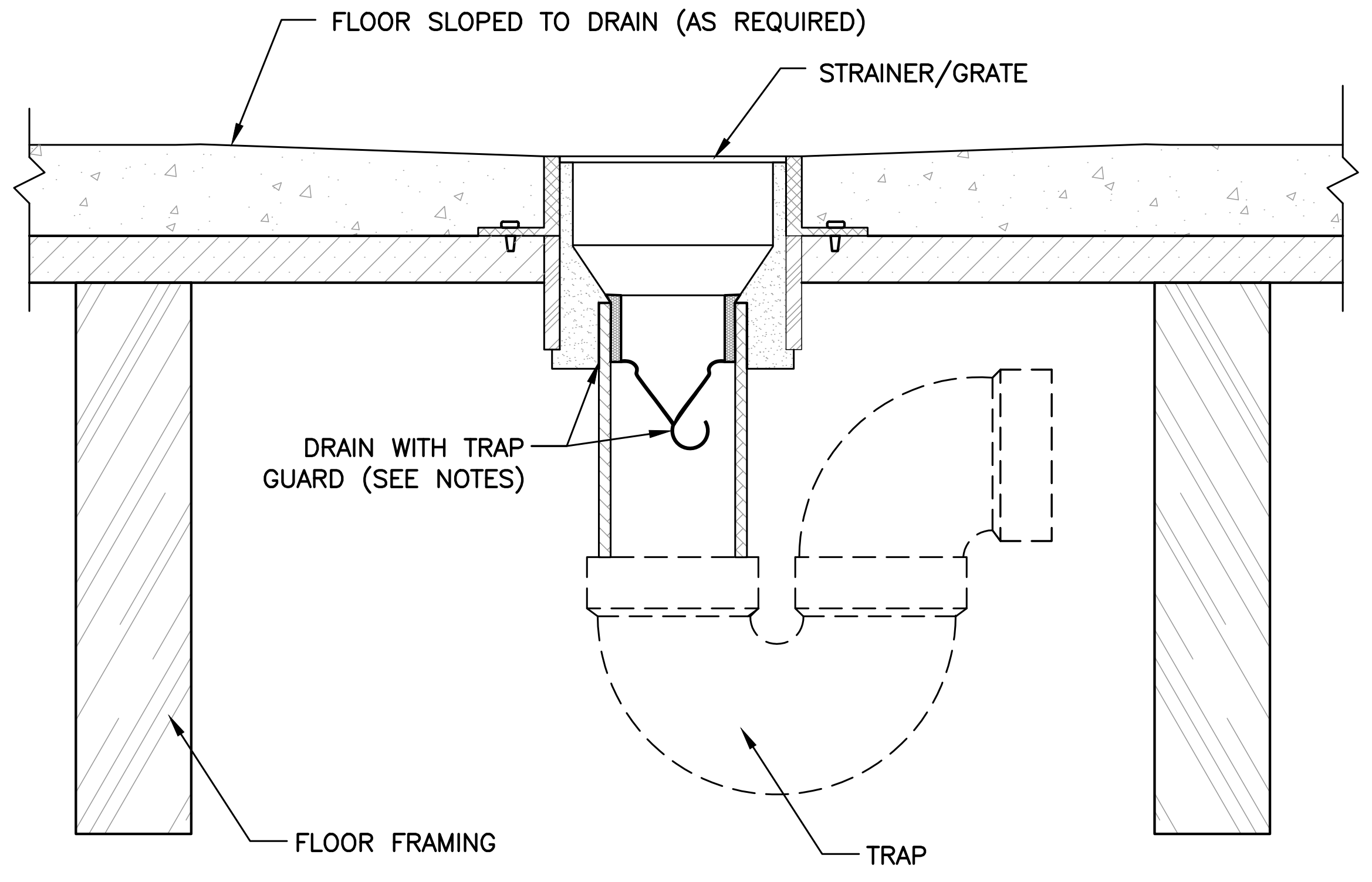
TYPICAL FLOOR CLEANOUT DETAIL

SCALE: NONE



TYPICAL WALL CLEANOUT DETAIL

SCALE: NONE

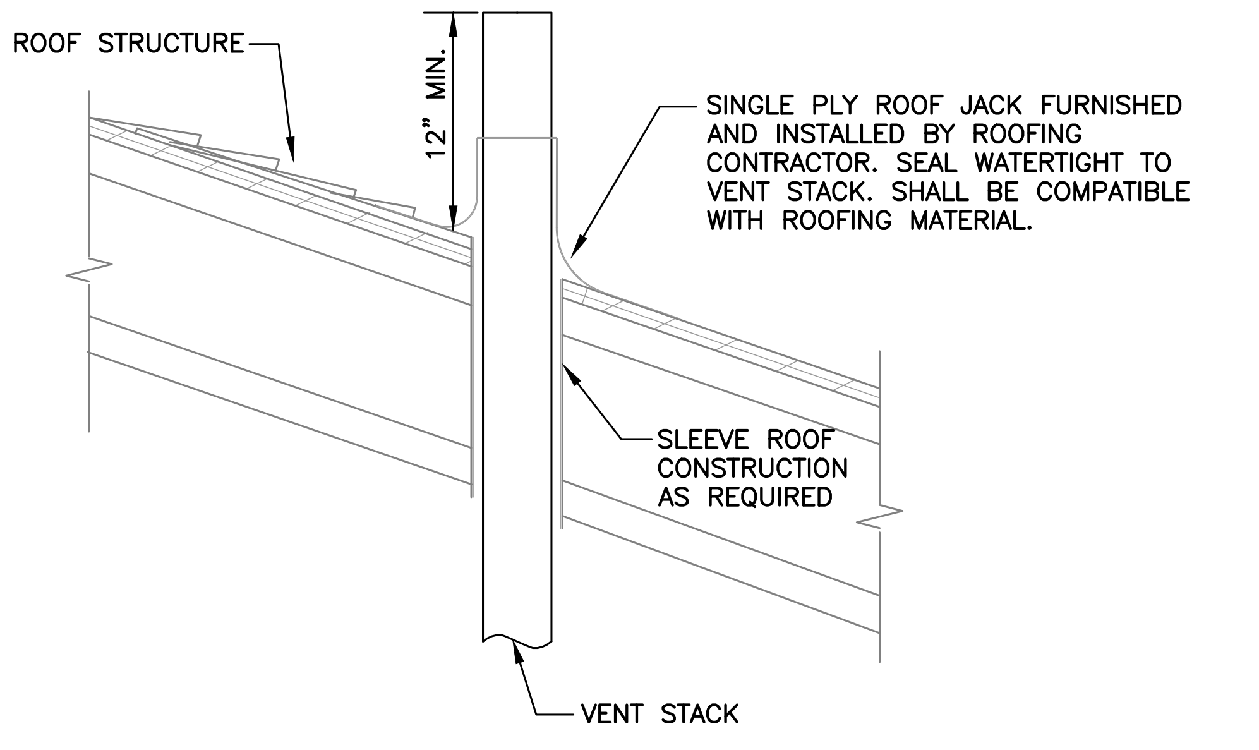

FLOOR SLOPED TO DRAIN (AS REQUIRED)
STRAINER/GRATE
DRAIN WITH TRAP GUARD (SEE NOTES)
FLOOR FRAMING
TRAP

NOTES:

1. TRAP GUARD FLOOR DRAIN BY PROSET SYSTEMS INC.
2. FOLLOW ALL MANUFACTURER INSTALLATION AND OTHER INSTRUCTIONS.
3. APPROVED MANUFACTURES: PROSET, J.R. SMITH, RECTORSEAL.

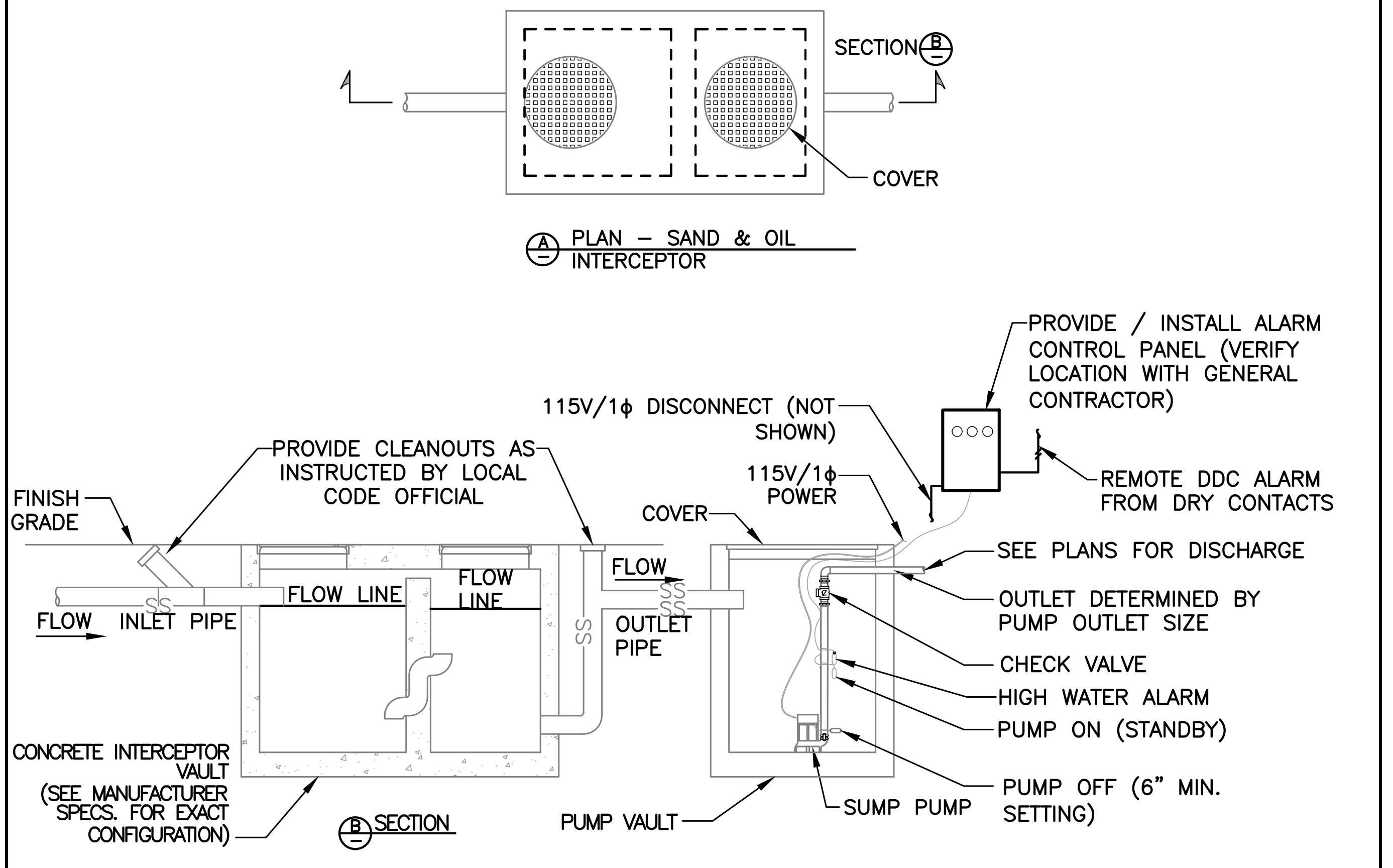
FLOOR DRAIN WITH TRAP GUARD

SCALE: NONE


ROOF STRUCTURE
12" MIN.
SINGLE PLY ROOF JACK FURNISHED AND INSTALLED BY ROOFING CONTRACTOR. SEAL WATERTIGHT TO VENT STACK. SHALL BE COMPATIBLE WITH ROOFING MATERIAL.
SLEEVE ROOF CONSTRUCTION AS REQUIRED
VENT STACK

TYPICAL VENT THROUGH SLOPED ROOF DETAIL

SCALE: NONE


SECTION B
COVER
A PLAN – SAND & OIL INTERCEPTOR
PROVIDE / INSTALL ALARM CONTROL PANEL (VERIFY LOCATION WITH GENERAL CONTRACTOR)
115V/1ϕ DISCONNECT (NOT SHOWN)
REMOTE DDC ALARM FROM DRY CONTACTS
PROVIDE CLEANOUTS AS INSTRUCTED BY LOCAL CODE OFFICIAL
115V/1ϕ POWER
FINISH GRADE
COVER
SEE PLANS FOR DISCHARGE
FLOW LINE
FLOW LINE
FLOW
OUTLET DETERMINED BY PUMP OUTLET SIZE
FLOW
INLET PIPE
SS
SS
OUTLET PIPE
CHECK VALVE
HIGH WATER ALARM
PUMP ON (STANDBY)
CONCRETE INTERCEPTOR VAULT (SEE MANUFACTURER SPECS. FOR EXACT CONFIGURATION)
PUMP OFF (6" MIN. SETTING)
B SECTION
PUMP VAULT
SUMP PUMP

NOTES:

1. PIPING, CLEANOUT CONFIGURATION, SIZE AND TYPE OF PIPING MATERIAL AS PER CITY OR SANITARY DISTRICT. INSPECTION BY CITY OR SANITARY DISTRICT PRIOR TO BACKFILLING AS REQUIRED.
2. INTERCEPTOR PIPING AND OTHER ASSOCIATED PIPING CHANGES THAT ARE NECESSARY TO INSTALL INTERCEPTOR MUST BE IN ACCORDANCE WITH LOCAL REGULATIONS.
3. INTERCEPTOR MUST BE PROPERLY VENTED IN ACCORDANCE WITH UNIFORM PLUMBING CODE STANDARDS.
4. THE STRUCTURE SHALL BE DESIGNED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE WHERE VALVE TO BE INSTALLED.
5. THE INLET PIPE SHALL BE AT AN ELEVATION 1" HIGHER THAN THE OUTLET PIPE.
6. THE BAFFLE IN THE INTERCEPTOR SHALL BE WITHIN 3" OF THE CEILING.
7. COVERS SHALL BE SOLID.
8. SANITARY WASTE FROM THE TOILETS MUST NOT BE PLUMBED THROUGH THE INTERCEPTOR.

SAND & OIL INTERCEPTOR WITH PUMP

SCALE: NONE

Date: 01.11.2023
Revision:

PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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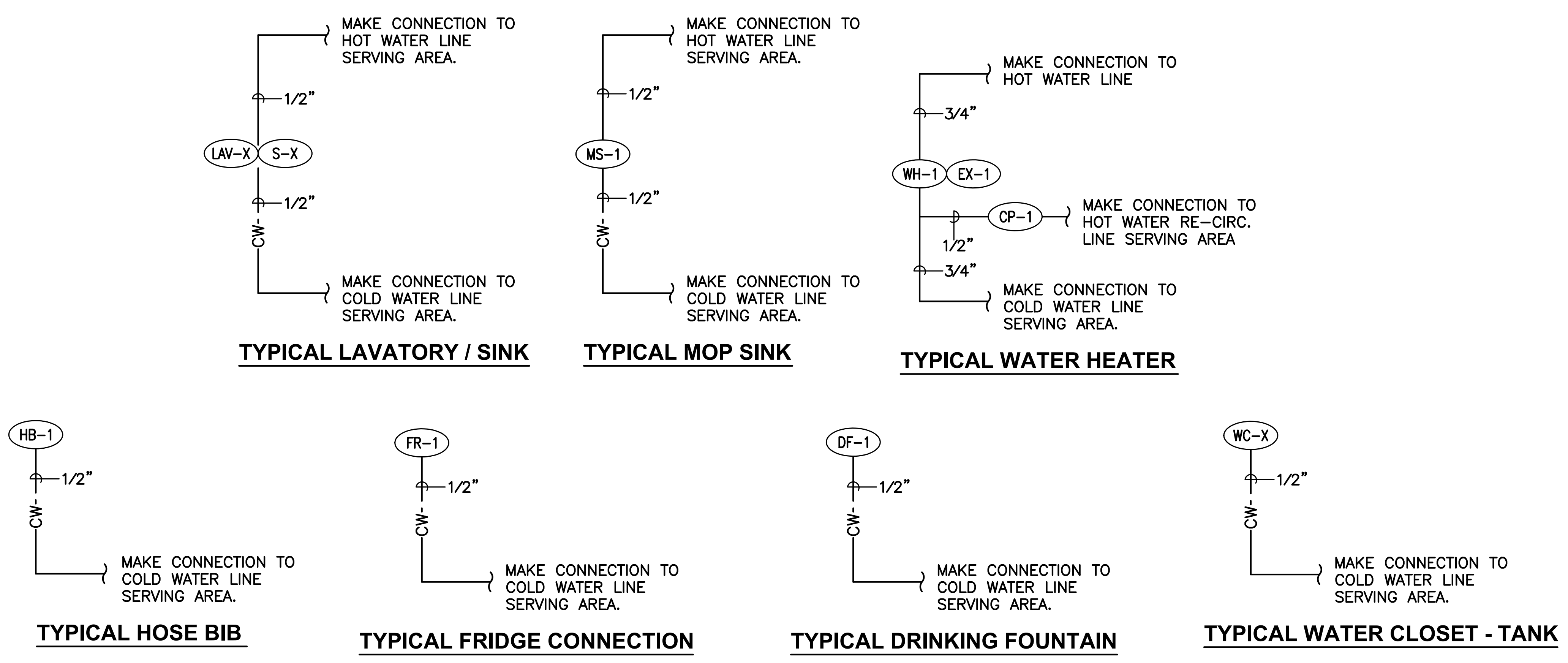
P5.2

PLUMBING
DETAILS


MAKE CONNECTION TO HOT WATER LINE SERVING AREA.
1/2"
LAV-X
S-X
1/2"
CW
MAKE CONNECTION TO COLD WATER LINE SERVING AREA.
MS-1
MAKE CONNECTION TO HOT WATER LINE
3/4"
WH-1
EX-1
CP-1
MAKE CONNECTION TO HOT WATER RE-CIRC. LINE SERVING AREA
HB-1
FR-1
DF-1
WC-X

TYPICAL LAVATORY / SINK

TYPICAL MOP SINK

TYPICAL WATER HEATER

TYPICAL HOSE BIB

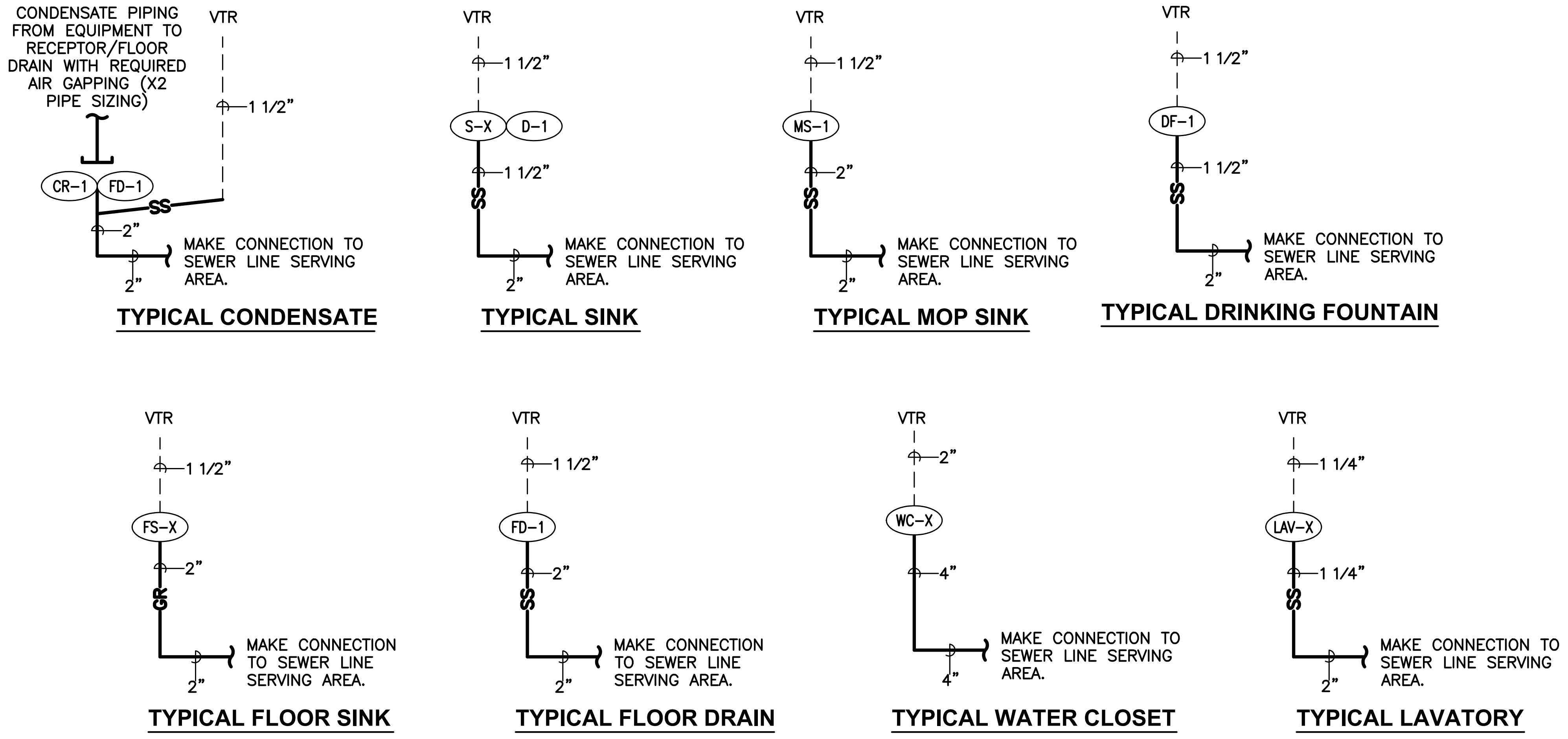
TYPICAL FRIDGE CONNECTION

TYPICAL DRINKING FOUNTAIN

TYPICAL WATER CLOSET - TANK

WATER PIPING SCHEMATICS

SCALE: NONE


CONDENSATE PIPING FROM EQUIPMENT TO RECEPTOR/FLOOR DRAIN WITH REQUIRED AIR GAPPING (X2 PIPE SIZING)
VTR
1 1/2"
CR-1
FD-1
2"
MAKE CONNECTION TO SEWER LINE SERVING AREA.
S-X
D-1
MS-1
DF-1
FS-X
FD-1
WC-X
4"
LAV-X
1 1/4"

TYPICAL CONDENSATE

TYPICAL SINK

TYPICAL MOP SINK

TYPICAL DRINKING FOUNTAIN

TYPICAL FLOOR SINK

TYPICAL FLOOR DRAIN

TYPICAL WATER CLOSET

TYPICAL LAVATORY

WASTE AND VENT PIPING SCHEMATICS

SCALE: NONE

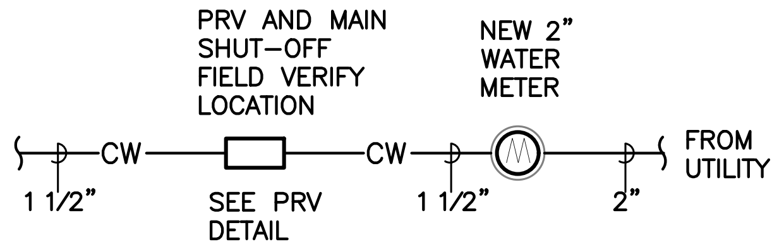
GENERAL NOTE: VENT AND CONDENSATE SHALL BE 12"–24" BELOW DECK/ROOF ABOVE TO AVOID CONDENSATION ICING

PLUMBING FIXTURE SCHEDULE

MARK	FIXTURE	PIPE SIZE					REMARKS
		TRAP	WASTE	VENT	C.W.	H.W.	
CP-1	HOT WATER RE-CIRCULATION PUMP WITH AQUASTAT.	——	——	——	——	1/2"	DESIGN GUIDE: TACO 006 CIRCULATOR 2 GPM @ 7.7 FT. HEAD, 115V/1ø/60HZ, 1/40 HP. PROVIDE WITH AQUASTAT FOR AUTOMATIC CIRCULATION PUMP CONTROL.
CR-1	CONDENSATE RECEPTOR	2"	2"	1 1/2"	——	——	CONDENSATE RECEPTOR WITH HUB FUNNEL FOR CONDENSATE FROM HIGH EFFICIENCY EQUIPMENT. PROVIDE AND INSTALL TRAP GUARD.
D-1	DISPOSAL	——	——	——	——	——	1/2 HP, 120 VOLT, 8 AMP AVE. LOAD, WASTE DISPOSAL WITH DISHWASHER DRAIN CONNECTION. CONNECT TO SINK AND PROVIDE ALL MOUNTING HARDWARE. CONTROL BY ELECTRICAL CONTRACTOR.
DF-1	DRINKING FOUNTAIN–HI/LOW	1 1/2"	1 1/2"	1 1/2"	1/2"	——	MURDOCK A172108F–UG–BF12–BCD ADA COMPLIANT DRINKING FOUNTAIN WITH BOTTLE FILLER, STAINLESS STEEL, WALL HUNG, HI–LO DUAL FOUNTAINS, GENERAL USE WITH FOUNTAIN CARRIER, 335 WATT, 4.4A, 120V.
EX-1	EXPANSION TANK	——	——	——	3/4"	——	WATTS PLT–5 (OR EQUAL), DRAWN STEEL POTABLE WATER EXPANSION TANK WITH DIAPHRAGM SEPARATING THE AIR CHAMBER FROM THE WATER CHAMBER. DIAPHRAGM MATERIALS SHALL BE FDA APPROVED.
FD-1	FLOOR DRAIN	2"	2"	1 1/2"	——	——	FLOOR DRAIN WITH STRAINER. PROVIDE AND INSTALL TRAP GUARD. SEE ARCHITECTURAL DRAWINGS FOR FLOOR TYPE.
FR-1	FRIDGE WATER CONNECTION	——	——	——	1/2"	——	RECESSED ICE MAKER/WATER OUTLET BOX WITH FACE PLATE AND SUPPLY VALVE. FIRE RATED / UL LISTED BOX AS REQUIRED.
FS-1	FLOOR SINK	2"	2"	1 1/2"	——	——	SANITARY FLOOR SINK WITH ACID RESISTING WHITE PORCELAIN ENAMEL COATED INTERIOR, LOOSE SET PORCELAIN ENAMEL COATED GRATE WITH ANTI–SPLASH DOME BOTTOM STRAINER.
HB-1	HOSE BIB, EXTERIOR–VANDAL RESISTANT	——	——	——	1/2"	——	FREEZELESS WALL MOUNTED HOSE BIB WITH ANTI–SIPHON VACUUM BREAKER AND KEY OPERATED VALVE.
LAV-1	LAVATORY–WALL MOUNTED–ADA COMPLIANT	1 1/4"	1 1/4"	1 1/4"	1/2"	1/2"	AMERICAN STANDARD–LUCERNE, WALL HUNG, VITREOUS CHINA BASIN, SINGLE LEVER MOEN 8413 FAUCET AND SAFETY COVERS FOR ALL EXPOSED PIPING. SEE ARCHITECTURAL DRAWINGS.
MS-1	MOP SINK	2"	2"	1 1/2"	1/2"	1/2"	AMERICAN STANDARD–FLORWELL, ENAMELED CAST IRON FLOOR MOUNTED MOP SINK, VINYL RIM GUARD AND AMERICAN STANDARD 8344.112 WALL MOUNTED FAUCET WITH THREADED HOSE CONNECTION.
S-1	SINK–COUNTER MOUNTED–SINGLE BOWL	1 1/2"	1 1/2"	1 1/2"	1/2"	1/2"	ELKAY–CELEBRITY, 18"x18" SINGLE BOWL, STAINLESS STEEL SINK, COUNTERTOP MOUNTED WITH LEDGEBACK, MOEN FAUCET (W/4" BLADE HANDLES) AND SAFETY COVERS FOR ALL EXPOSED PIPING.
TD-1	TRENCH DRAIN	3"	3"	2"	——	——	17' TRENCH DRAIN OWNER SUPPLIED, CONTRACTOR INSTALLED.
WC-1	WATER CLOSET–FLOOR MOUNT–TANK–ADA COMPLIANT (COMMON AREAS) 1.28 GPF	INT.	4"	2"	1/2"	——	GERBER AVALANCHE, ADA COMPLIANT VITREOUS CHINA ELONGATED TANK TOILET, OPEN SEAT W/O COVER. SEE ARCHITECTURAL DRAWINGS FOR HEIGHTS AND CLEARANCES.
WH-1	40 GALLON ELECTRIC WATER HEATER	——	——	——	3/4"	3/4"	DESIGN GUIDE: BRADFORD WHITE RE340T6. 40 GALLON ELECTRIC WATER HEATER W/ DRAIN PAN AND DRAIN. 21 g.p.h RECOVERY @ 90° RISE. 2500 W SIMULTANEOUS ELEMENT INPUT. 208V/1ø. 0.92 UEF.

NOTES:
1. VERIFY ALL MANUFACTURERS, FINISHES, AND OPTIONS WITH OWNER BEFORE ORDERING ANY PLUMBING FIXTURES.

2. MINIMUM UNDERGROUND SANITARY SEWER PIPING SIZE SHALL BE 2 INCHES.



WATER METER

BUILDING WATER PIPING CALCULATIONS

DESIGN CONDITIONS

CITY	– SPANISH FORK, UTAH
DEVELOPED PIPE LENGTH	– 200 FEET (VERIFY)
WATER PRESSURE	– 60 psi MIN. (VERIFY)
ANTICIPATED FIXTURE UNITS	– 51 fu

MINIMUM COMPOUND METER SIZE: 2"
MINIMUM MAIN DISTRIBUTION LINE SIZE: 1–1/2"
51 FU = APPROXIMATELY 30 GPM

GAS PIPING CALCULATIONS

DESIGN CONDITIONS

CITY	– SPANISH FORK, UTAH
LONGEST GAS PIPE	– 200 FEET (VERIFY)
GAS PRESSURE	– 2 POUND (VERIFY)
DERATION FACTOR	– 876

EQUIPMENT

UH–1 (x3)	257 CFH	(225,000 BTU/HR)
F–2.5	69 CFH	(60,000 BTU/HR)
F–4	92 CFH	(80,000 BTU/HR)
TOTAL	418 CFH	(365,000 BTU/HR)

NOTE: SEE PLUMBING FLOOR PLANS FOR GAS SCHEMATIC LAYOUT AND ALL SIZING.

Date: 01.11.2023
Revision:

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P6.1

PLUMBING SCHEDULES AND SCHEMATICS

SECTION 22 PLUMBING – GENERAL PROVISIONS

Not all specification items are used in every project.

PART 1 – GENERAL

– Scope:

Furnish all labor, materials, equipment, appliances and necessary incidentals for the complete installation of all plumbing shown on the drawings and as specified.

A. Work specified in this section

1. Sanitary soil, waste and vent systems.
2. Domestic hot and cold water systems.
3. Domestic water heaters.
4. Furnish and set all sleeves for pipes passing through walls and floors.
5. Pipe covering, insulation and wrapping.
6. Excavation and backfill.
7. Rougn–in and final connections to air conditioning equipment of condensate drains.
8. All plumbing fixtures, water heaters, valves, and other miscellaneous items or equipment required for a complete installation.
9. Provide collars at fire rated penetrations.

B. Provisions of this section apply to all work specified in all sections under Division 22. All items indicated on site, Architectural, Mechanical, or Plumbing drawings are to be provided complete from point of connection to finished fixture in conformance with all governing authority requirements. Nothing in these drawings or specifications shall be construed to permit work in violation of governing codes.

C. In addition, work in Division 22 is governed by the provisions of the Bidding Requirements, Contract Forms, General Conditions and all sections under Division 1, General Requirements.

1. Examination of Premises: Visit the site, verify all measurements and job conditions, and pay all costs necessary to perform the work. Coordinate division of fee responsibilities with the General Contractor.
2. The Plumbing Contractor shall be licensed and hold a current contracting license as a Plumbing Contractor that has been valid for a minimum of two years in the State where the project is located.
3. The Plumbing Contractor shall have a minimum of five years experience installing commercial plumbing systems similar to those described in these specifications and provide a list of previous projects, including name of project and contact person names and phone numbers if required by the General Contractor.
4. The Plumbing Contractor shall be able to bond work he is bidding to perform and shall provide a written statement from the bonding agency proposed to be used for this project as a separate document in addition to the plumbing bid submitted if required by the General Contractor. The bonding agency shall be one having a Best's insurance rating of A or A+.

D. Contractor is responsible for results caused by deviating from the plans.

– Regulations, Permits, Fees, Charges, Inspections:

A. Regulations: Comply with all applicable codes, rules and regulations. All materials and work must comply with local construction, mechanical, plumbing, electrical and fire codes. As a minimum, comply with the following: IMC, IPC, IECC, NEC, NFPA codes and all City codes.

B. In addition to the requirements of all governing codes, ordinances and agencies, conform to the requirements of the following codes and standards:

1. 2018 International Plumbing Code
2. 2018 International Building Code
3. 2018 International Mechanical Code
4. 2018 International Energy Conservation Code.

C. Current codes adopted by the respective jurisdiction will supercede the listed codes.

D. Fees and Permits: Pay all connection, installation, use, development, etc., fees and/or charges. Obtain and pay for all required permits and licenses. Coordinate division of fee responsibilities with the General Contractor.

E. Inspections: All work must be inspected and approved by local authorities. Prior to final approval, furnish the Architect with certificates of inspections and approvals by the local authorities in accordance with Division 1.

1. Preheat and interpass temperature shall be determined by temperature indicating crayons, contact pyrometers or other equally suitable means.

F. Postweld Heat Treatment: Postweld heat treatment for pressure components shall be as specified in Table 131 of ANSI B31.1.

– Drawings and Specifications:

A. Refer to Division 1 for information on submittals and shop drawings.

B. If a conflict exists between the drawings and specifications, promptly notify the Architect and Engineer.

– **Record Drawings:** Provide record drawings for all work under sections in Division 22. See Division 1 for detailed requirements covering preparation of record drawings.

– **Work and Materials:** Unless otherwise specified, all materials must be new and of the quality specified. The workmanship shall be of a quality that is acceptable to the Architect and is equal to the standards of the trades. Contractor must staff the project with sufficient skilled workmen, including a fully qualified construction Superintendent, to complete the work in the time allotted. The Superintendent must be qualified to supervise all of the work in his work category.

– **Approvals of Materials and Equipment:** Refer to Division 1 for description of material and equipment for prior approvals and substitutions. Must be received by Engineer 10 days prior to due date/bid opening.

– Maintenance Manual:

A. Prior to completion of the project, compile a complete equipment and maintenance manual for all equipment supplied under sections of Division 22 as described in Division 1.

B. Manuals shall be bound in a three–ring binder. A preliminary submittal of the manual shall be made to the Architect 90 days after receiving approved submittals. Final submittal of the manual shall be made four weeks prior to substantial completion of the project.

– **Equipment Purchases:** Arrange for purchase and delivery of all materials and equipment within 15 days after approval of submittals. Coordinate with General Contractor.

– Cooperative Work:

A. Correct without charge any work requiring alteration due to lack of proper supervision or failure to make proper provision in time. Correct without charge any damage to adjacent work caused by the alteration. See Division 1 for additional requirements.

B. Cooperative Work Includes:

1. General supervision and responsibility for proper location, rough–in and size of work related to Division 22 but provided under other divisions of these specifications.

2. Installation of sleeves, inserts and anchors bolts for work under sections in Division 22.

3. Electrical work as specified herein. Refer to Division 26 for requirements.

– Construction Facilities:

A. General: Under this division of the specifications execute all work in a manner to provide safe and lawful ingress and egress to the Owner's establishment and such facilities shall be kept clear of materials or equipment as directed by the Architect. Refer to Division 1 for additional requirements.

B. Furnish and maintain from the beginning to the completion of all work all lawful and necessary guards, railings, fences, canopies, lights, and warning signs. Take all necessary precautions required by city and state laws to avoid injury or damage to any and all persons and property.

– **Guarantee:** Guarantee all material, equipment, and workmanship for all sections under Division 22 in writing to be free from defects of material and workmanship for one year from date of final acceptance as outlined in Division 1. Replace without charge any material or equipment proving defective during this period. The guarantee shall include performance of the equipment under all conditions of load, installing any additional items of control and/or protective devices as required and the replacing of any refrigerant lost.

– Electrical Work:

A. Electrical wiring, including power wiring and control wiring (except as otherwise specified under Automatic Temperature Controls), all raceways, wiring, outlet and junction boxes, and labor for installation of the wiring and equipment shall be included in Electrical Division 26 of the specifications.

B. All starters in motor control centers are to be furnished and installed under the Electrical Division of the specifications.

C. Before ordering any motors and equipment. Verify the available voltage and phase for all motors with the Electrical Contractor.

D. Submit a complete list of all motors prior to final closeout of job indicating the locations, horsepower, voltage, phase specified in Table 132 of ANSI B.1.

E. All field wiring and equipment must conform to the applicable sections of the Electrical specifications, Division 26.

– **Welding Codes and Standards:** All welding and other criteria covered by this specification shall be in accordance with the following code:

A. ASME Boiler and Pressure Vessel Code

B. Section IX ANSI Code for Power Piping: B31.1

C. AWS D10.12.D10.12M Welded joints for gas piping.

– Product Handling

A. Protection: Take all precautions necessary to protect the materials of this section before, during, and after installation.

B. Replacements: In the event of damage, immediately repair all damaged and defective work to the approval of the Engineer, at not additional cost to the Owner.

– Submittals:

A. Manufacturer's Literature: Within 35 days after award of contract and before any of the materials of this section are delivered to the job site submit seven complete brochures of all materials and equipment, per Division 1 of the specifications.

B. Other Submittals:

1. Shop Drawings.
2. Sterilization Test Report
3. Test Data.

C. Sets in bound booklet form of written operating and maintenance instructions and brochures for equipment specified in this section. Fully instruct Owners Operating Personnel.

D. Record Drawings: Keep an accurate dimensioned record of As–Built locations and elevations, as referred to approved base datum, of buried concealed.

E. Operation and Maintenance Instructions: Deliver to Architect tow complete lines, manhole, cleanouts, valves, plugged tees, capped ends, and of work which is installed different from shown in the plans.

– Miscellaneous:

A. Examination of the site: Exercise care in examining the site and coordinate all work indicated on the drawings with existing conditions. Report to Architect in writing conditions that will prevent proper provisions of this work. Verify depth and location of all service lines with servicing companies having jurisdiction before excavating, by submission of the bid. The contractor warrants that he has familiarized himself with the existing conditions and will perform all work as required for hookup and as required by the contract documents at no additional cost.

B. Permits and fees: Arrange and pay for all permits, inspections and fee required by all governing agencies.

C. Service connections: Make all necessary arrangements with applicable utility company for connection to existing service lines. Pay all fees associated with work including meters, hookup charge and utility assessments fees.

D. Drawings: Coordinate all space requirements with other trades, drawings indicate desired location and arrangement of piping, equipment, and other items and are to be followed as closely as possible.

PART 2 – PRODUCTS

– General

A. Pipe sleeves and wrapping: Provide polished chromium plated and brass set screw flanges where plumbing piping pass through walls, floors, ceilings, and partitions in finished portions of building including flanges on pipes at fixtures. All sleeves in concrete and exterior walls shall be 20 GA. galvanized iron one inch O.D. larger than the pipe, caulked if below grade in a moisture proof manner. All pipes penetrating through fire walls and floors shall be properly safed with Dow Corning 3=6548 silicone RTV foam or equal. Install per manufacturer's directions.

B. Pipe Identification:

1. Piping identification per ANSI and OSHA Standards: Each individual pipeline shall be marked for quick and easy identification as to contents and character of material carried in the pipes by set on SNA or STR Marker.
2. Markers shall be installed and spaced at not more than 20 foot intervals and so located that markers shall be visible where piping is exposed.
3. Color scheme shall be as follows:

	Background or Color Band	Identification Marker
Domestic Hot Water –	Yellow	Black on Yellow
Domestic Hot Water Return –	Yellow	Black on Yellow
Domestic Cold Water –	Green	White on Green
Sanitary Sewer –	Green	White on Green
Sanitary Vent –	Green	White on Green
Natural Gas –	Yellow	Black on Yellow
Storm Water –	Green	White on Green
Freon –	Black	White on Black

C. One marker shall installed at each side of valves, special fittings and at branch take–offs. In furred spaces install one band 2 feet above floor and 19 inches below ceiling line.

D. Materials: Materials when not otherwise definitely specified shall conform to the applicable ASTM, ASME, AGA and ASA standards.

E. All gas fired equipment shall include a label indicating that the appliance has been adjusted, modified or re–calibrated for the altitude where in the project is to be located (Green Sticker). The appliance shall also include a compliance statement indicating that the appliance has been adjusted, modified or re–calibrated for the proper operation at the altitude of the project and shall be listed capable for use with natural gas or propane gas if propane is listed on the drawings.

– Pipe and Fitting Schedule:

Pipe and Fittings:

A. No pipe of foreign manufacturer will be acceptable on projects required to meet the Buy American Act.

B. All piping, fittings, flanges, etc. shall be free from defects and shall comply with the appropriate ASTM specifications.

C. Black steel pipe: ASTM A53 ERW Grade B, standard weight (schedule 40) or extra strong (schedule 80) as specified.

D. Copper tubing: ASTM B88, Type L or K as specified.

E. PVC pipe and fittings: ASTM D1785 Class 150 with ASTM D 2564 solvent cement joints unless otherwise specified. Schedule 40. PVC plastic pipe fittings: ASTM F 628, schedule 40.

F. PEX–AL–HPDE distribution system: ASTM F 1986 tubing and metal–insert type with copper or stainless–steel crimp ring and matching PEX–AL–HDPE tube dimensions. Manifold: Multiple–outlet, plastic or corrosion–resistand–metal assembly complying with ASTM F 877: with plastic or corrosion–resistant–metal valve for each outlet.

G. PP piping and fittings: ASTM F 2389; CSA B137.11

H. Acrylonitrile Butadiene Styrene (ABS) plastic pipe: ASTM D 2661, schedule 40, ASTM F 628 schedule 40. ABS plastic pipe fittings: ASTM F 409, accessible and replaceable, solvent cement and threaded types, drain pattern.

I. Cast iron soil pipe and fittings: ASTM A74

J. Welded black steel fittings: ASTM A234 grade B, 150–Pound for standard weight piping, 300–Pound for extra strong piping, or of weight or schedule of matching piping.

K. Threaded malleable iron fittings: ANSI B16.3, 150–Pound for standard weight piping, 300–Pound for extra strong piping, or weight or schedule of matching piping either black or galvanized to match piping.

L. Welded flanges: ASTM A181 grade B, 150–Pound for standard weight piping, 300–Pound for extra strong piping or of equal weight of connected equipment.

M. Copper fittings: Wrought copper, ANSI specification B16.22.

N. Ball valves domestic water: Bronze, fullport, class 150, threaded.
NIBCO T–585 or equal

O. Partition stop valves: T&S B–0415, Loose key type with wall flange.

P. Balancing cocks 2 inches and smaller shall be by Armstrong, NIBCO, Taco or Watts.

Q. Solder: Joints in copper piping above grade shall be stay safe 50 solder or 95–5 solder shall be silfos or silverflow for all refrigerant piping joints.

R. Condensate drains shall be Type L hard copper tubing with wrought–copper fittings (can't be used for condensing gas–fired applications) or PVC pipe and fittings where allowed. A P–trap shall be provided at drains.

S. Gas piping in the building and not buried shall be standard weight black steel pipe and shall have welded fittings. Gas piping buried shall be polyethylene pipe with continuous 18 gauge tracing wire with schedule 40 black steel epoxy coated transition risers and/or transition fittings per ASTM D2513 and installed in accordance with Questar Supply Company (or local utility company) regulations. Paint all exterior exposed gas piping.

T. Chilled water and heating system lines shall be standard weight black steel. Pipe 2–1/2 inch and smaller shall either have welded fittings, mechanical grooved fittings or malleable iron screwed fittings.

U. Domestic hot water, hot water return, and cold water piping shall be Type L or K hard tempered copper pipe with wrought–copper fittings using 95–5 solder. Pex tube piping may be used in lieu of copper on sizes 2–inches and smaller. Where piping is exposed outside partitions, use Type L or K hard copper tubing and wrought copper fittings.

V. Domestic hot water and cold water piping buried below grade shall be Type K soft tempered (annealed) copper without fittings or joints and covered with IMCOA IMCOSHIELD unicellular insulation. PEX tube piping may be used in lieu of copper on sizes 2–inches and smaller.

W. All soil, waste, vent, roof drain and roof drain overflow piping below ground shall be ABS or PVC plastic pipe, rated for domestic waste and vent, with ABS or PVC plastic socket type drain, waste vent pattern fittings, solvent cemented joints. Install ABS drainage pipe and fittings according to ASTM D661. Install PVC drainage pipe and fittings according to ASTM F891.

X. All soil, waste, vent, roof drain and overflow piping above ground shall be standard weight cast iron with no hub coupling or approved material meeting the standards set forth in IPC tables 702.1, 702.2, 702.3, and 702.4..

Y. Kitchen waste and vent serving fixtures capable of discharging or receiving waste liquids with temperatures in excess of 120 degrees F. shall be piped using No–Hub standard wight cast iron pipe for a minimum of 20 feet before changing to ABS pipe.

– Roof Flashing:

A. Sanitary Vent Flashings: SEMCO 1100–3 or 1100–5, with one–piece lead flashing and counterflashing sleeve.

– Pipe Sleeves:

A. At concrete walls for floors, adjust–to–crete, paramount, hole–out Sperzel Cretesleeve floor sleeves shall extend to top of concrete curbs for piping rising through floors. Wall sleeves shall be flush with finished surface, sleeves shall be sized to allow $\frac{1}{2}$ inch clearance around pipe insulation. Insulation and covering shall be continuous through wall and floor sleeves.

– Cleanouts:

A. Full size cleanouts shall be installed at the base of each soil waste stack. All other cleanouts shall be installed where shown on the drawings and where required by State, Local or National Plumbing Codes.

B. All cleanouts shall be installed in locations easily accessible for rodding. Cleanouts in wall shall be JR Smith 4402, in floors JR Smith 4023/ Cleanouts shall be JR Smith, Wade or Josam.

– Pipe Insulation:

A. All domestic hot water, hot water recirculation and cold water piping shall be covered with Owens Corning ASJ–25 fiberglass pipe insulation with vapor seal jacket. Insulation thickness shall be $\frac{1}{2}$ inch for cold water and 1 inch for hot water.

B. Insulate all piping under Lavatories accessible to physically handicapped with hot water supply and "P" trap prefabricated insulation, Handi Lav Guard.

– Pipe Hangers:

A. Hangers shall be supplied with factory installed isolation and DI–Chromate finish.

B. Pipe 2 inches and smaller: Grinnel F69. Pipe 2–1/2 inch and larger: Grinnel F65. Concrete Inserts: Grinnel 281 and 282. Riser clamps for copper piping: Grinnel 261P, plastic coated. Riser clamps for other piping: Grinnel 261,

C. Hanger rods shall conform to the following: Pipe size 2 inch and smaller: $\frac{3}{8}$ inch rods. Pipe size 2–1/2 inch and 3 inch: $\frac{1}{2}$ inch rods. Pipe size 3 inch and larger: $\frac{5}{8}$ inch rods.

– Plumbing Fixtures:

A. Fixtures shall be the water saving typer with maximum usage of 1.6 gallons per flush for water closets, 2.5 gallons per minute for showers, 3.0 gallons per minute for service sinks, 1.0 gallon per flush for urinals, 0.5 gallons per minute for public lavatories, 2.2 gallons per minute for private lavatories and 2.2 gallons per minute for sinks.

B. All fixtures shall be caulked to the floor or wall with water resistant white butyl rubber caulking compound. Trim for shall match in design. Supply faucets shall have renewable seats and barrels.

PLUMBING EQUIPMENT	MANUFACTURER
Floor Drains and Floor Sinks:	Zurn, JR Smith, Wade, Josam, Ancon, Mifab, Watts, or Equal
Trench Drains:	Zurn, JR Smith, Watts, Josam or approved equal
Roof Drains and Overflow:	Zurn, JR Smith, Wade, Watts, Josam, Ancon, Mifab
Cleanouts:	Zurn, JR Smith, Wade, Josam, Mikro, Mifab, Watts, or Equal
Valves:	Watts, Milwaukee, Crane, Kennedy, Stockham, Misson, Grinnell, Keystone, American Valve, or NIBCO
Shower Valves:	Powers, Symmons, Delta, Leonard, Moen, Bradley, Zurn, Acorn
Pipe Hangers and Supports:	Grinnell, Elcen, Kin–Line, Unistrut, F&S, B–Line, Michigan, Wesanco, or Piping Technology & Products
Insulation:	CertainTeed, Manville, Pittsburgh, Armstrong, LSP Products, or Owens–Corning
Plumbing Faucets:	American Standard, Chicago, Delta, Moen, Kohler, Symmons, T&S, Gerber, Zurn
Plumbing Fixtures:	American Standard, Kohler, Toto, Gerber, Watts, Zurn, Sterling, Lasco
Plumbing Supply Stops:	Eastman, Crane, Kohler, Wolverine, McGuire, Brasscraft, EBC, Zurn, Chicago
Water Closets:	American Standard, Gerber, Kohler, Toto, Sterling
Flush Valves:	Sloan. Delany, Zurn, Moen, American Standard, Gerber
Toilet Seats:	American Standard, Bemis, Kohler, Sperzel, Olsonite, Beneke, Gerber or Church
Pressure Reducing Valves:	Watts series 223, Zurn or Wilkins
Hose Bibs:	Chicago, Acorn, Wolverine, Woodford, McGuire, Watts, Mifab, Josam, Zurn, Sioux Chief, Prier, Smith
Electric Water Coolers:	Elkay, Sunroc, Halsey Taylor, Haws Corporation, Westinghouse, Murdock
Stainless Steel Sinks:	Elkay, Just, Moen, or approved equal
Disposals:	Insinkerator, Evergrind, Kenmore, or appoved equal
Gas Pressure Regulator:	Fisher, Equimeter, Pietro Fiorentini
Thermostatic Tempered Water Valves:	Symmons, Powers, Leonard, Bradley, Watts, Caleffi, Lawler, Acorn
P–Traps:	American Standard, Kohler, McGuire, Brasscraft, Dearborn, EBC
Shock Absorbers:	Zurn, Smith, Wade, Josam, PPP, Sioux Chief, Watts, Mifab
Sewer Ejectors:	Peabody–Barnes, Weil, Hydromatic, Gorman–Rupp, Swaby, Weinman, Zoeller
Gas Water Heaters:	AO Smith, Bradford White, Rheem, State, Rinnai, Ruud, National, PVI, or approved equal
Electric Water Heaters:	Lochnivar, AO Smith, Rheem, State, Ruud, PVI, National, EEMAX, Chronomite & Vaughn, or approved equal

– Electric Water Heater:

A. The water heater(s) shall be an approved manufacturer (see approved manufacturer list in Plumbing Fixtures 2.10). Heater(s) shall be listed by underwriters laboratories. Heater(s) shall have 150 PSI working pressure and be equipped with extruded high density anode rod. All internal surfaces of the heater(s) exposed to water shall be glass–lined with an alkaline borosilicate composition that has been fused to steel by firing at a temperature range of 1600° F. Electric heating elements shall be medium watt density with zinc plated copper sheath. Each element shall be controlled by an individually mounted thermostat and high temperature cutoff switch. The outer jacket shall be baked enamel finish and shall be provided with full size control compartment for performance of service and maintenance through hinged front panels and shall enclose the tank with foam insulation. Electrical junction box with heavy duty terminal block shall be provided (except on 120V and 277V, not junction box on DEL–6 thru 20). The drain valve shall be located in the front for ease of servicing. Heater tank shall have a three year limited warranty as outlined in the written warranty. Fully illustrated instruction manual to be included.

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Date: 01.11.2023
Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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P7.1

PLUMBING SPECIFICATIONS

- **Recirculating Hot Water Pump:**

A. A recirculating hot water pump of the size shown on the drawings shall be furnished and installed. The pumps shall be Bell & Gosset, Taco, Chicago, Pacific, Paco, Weinman, Amtrol, Grudnfos, Weil, or Armstrong of all bronze construction with mechanical seal and 1850 RPM drip–proof motor with thermal overload protection. Circulators shall be substantially supported with a full size pipe leg to the floor or by a cradle hanger from the ceiling.

- **Grease Interceptor:**

A. The grease interceptor shall be a type design and construction which is acceptable to the local Plumbing Code Official

B. All interceptors shall be constructed of reinforced concrete compartments which are factory constructed and delivered to the site for final assembly and piping. Tanks shall be water proof with no leaks.

C. Manholes shall be provided at each compartment and shall have a gasketed and sealed air tight lid to prevent odor leakage. Required venting shall be provided and where Local Code Officials. Provide and inspection manhole for their use.

D. All interceptors shall be installed on a 6" thick compacted gravel base.

- **Domestic Expansion Tank:**

A. ASME 150 PSI steel pressurized expansion tanks for portable use with ASME stamp of the size and capacity shown on the drawings shall be furnished and installed. Tank shall be complete with internal heavy duty Butyl Rubber Diaphragm, rigid Polypropylene liner on water side of tank, complying with FDA. Air charging fitting, tank drain, pressure gauge, air vent and connections as shown on the drawings. Supports for expansion tanks shall be furnished and installed by the plumber. Tanks shall be Watts, Amtrol, Taco, Armstrong or Zurn.

PART 3 – EXECUTION

- **Surface Conditions:**

A. Inspection: All plumbing shall be installed in accordance with the requirements of all governing authorities, The original design, and referenced standards.

B. Discrepancies:
   1. In the event of discrepancy, immediately notify the Architect.
   2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved. Interferences between installed work of various trades due to lack of coordination shall be resolved by the Architect whose decision is final. Relocate or offset any work as required to accommodate work of other trades at no extra cost to the Owner when so directed by the Architect.

- **Verification of Dimensions:**

A. Scaled and figured dimensions are approximate only. Before proceeding with work, carefully check and verify dimensions at site, and be responsible for properly fitting equipment and materials together and to the structure in spaces provided.

B. Drawings are essentially diagrammatic and many offsets, bends, special fittings and exact locations are not indicated. Carefully study drawings and premises in order to determine best methods, exact locations, routes, building obstructions, and install apparatus and equipment in available locations. Install apparatus and equipment in manner and in locations to avoid obstructions, preserve headroom, and keep openings and passageways clear.

- **Locations and Space Requirements:**

A. Contractor shall fully inform himself regarding peculiarities and limitation of spaces available for installation of work under this division. Drawings indicate desired location and arrangement of piping, equipment and other items and are to be followed as closely as possible. Work specified and not clearly defined by drawings shall be installed and arranged in a satisfactory manner. In any case and at any time a change in location required by obstacles or the installation of other trades not shown on the plumbing plans shall be made by contractor without additional charge provided the change is ordered before work is installed and no extra materials are required.

B. Verify all spaces, dimensions for all fixtures, equipment, or owner–furnished equipment and equipment furnished under other sections.

C. Obtain all necessary rough in data and dimensions for all fixtures, equipment, or owner–furnished equipment and equipment furnished under other sections.

D. Maintain ample headroom clearances and accessibility. Maintain ceiling heights.

E. Constantly check work of other trades to prevent interference with this installation.

- **Cutting and Patching:** Cut work and patch per Division 1 as necessary to properly install the new work. As the work progresses, coordinate necessary openings, holes, chases, etc., in their correct location. If the required openings, holes and chases are not in their correct locations, make the necessary corrections at no cost to the Owner. Avoid excessive cutting and do not cut structural members without the consent of the Architect. Patching by General Contractor at Mechanical, Plumbing or Fire Protection Contractor's expense. Include as a part of the work under this contract all structural framing required by penetrations through the roof and necessary steel to support ducts and pipes between structural steel unless shown on the structural drawings.

- **Closing–in of Unfinished Work:** Cover no work until inspected, tested and approved. Where work is covered before inspection and test,uncover it, and when inspected, tested and approved, restore all work to original proper condition.

- **Excavation and Backfill:**

A. Perform all necessary excavation, shoring and backfilling required for the proper laying of all pipes and conduits inside the building and premises, and outside as may be necessary. Conform to Division 2 requirements. Remove all excess excavated materials from the site or dispose of on site as directed by General Contractor.

B. Excavate all trenches open cut, keep trench banks as nearly vertical as practicable, and sheet and brace trenches where required for stability and safety. Excavate trenches true to line and make bottoms not less than 18" wide but no wider than necessary to provide ample work room. Grade trench bottoms accurately to provide uniform bearing and support for each section of pipe on undisturbed soil along its entire length. Dig "bell" holes after the trench bottom has been graded. Machine grade only to the top line of the pipes, doing the balance by hand. Do not cut any trench near or under footings without first consulting the Architect. Comply with OSHA requirements.

C. Provide backfilling and compaction in accordance with requirement of Division 2 and under the direction of the Architect and the Owner's testing firm to the required density. Make the first 2 feet of fill in 6" layers, each thoroughly compacted as directed, and free from rocks, large clods of earth, leaves, branches, and debris. Compact the rest of the backfill to prevent settlement as directed, using in the backfill no rocks larger than 4" in diameter, and using no rocks at all in the top 12".

- **Accessibility:**

A. Install valves, dampers, thermometers, gauges, traps, cleanouts, control devices or other specialties requiring reading, adjustment, inspection, repairs, removal or replacement conveniently and accessibly throughout the finished building. Where any of these devices are shown on the contract drawings to be installed above any inaccessible ceiling, the Mechanical Contractor shall furnish access doors or panels as required.

B. All access doors or panels in walls and ceilings required for access to control devices, traps, valves and similar devices are to be furnished and installed as part of the work under this section. Provide type as specified under Division 8.

C. Provide ducts which pierce a fire separation with fire dampers of same fire rating as the separation.

D. Refer to drawings and "Finish Schedule" for type of wall and ceiling in each area and for rated construction.

E. Coordinate work of various sections to locate valves, traps, and dampers with others to avoid unnecessary duplication of access doors.

- **Roof Flashings:** Flash and counterflash all piping, conduits and ductwork penetrating roofing membrane with flashing per roofing manufacturer's recommendations. Refer to architectural drawings for detailing of duct and pipe penetrations through roof.

- **Equipment Rough–in:**

A. Rough in all equipment and fixtures as designated on the drawings and in the specifications. The drawings indicate only the approximate location of rough–ins. The exact rough–in locations must be determined from large–scale certified drawings. The Contractor shall obtain all certified rough–in information before progressing with any work for rough–in final connections.

B. Be responsible for providing all outlets and services of proper size at the required locations.

C. Minor changes in the contract drawings shall be anticipated and provided for under this division of the specifications.

D. Rough–in only (unless otherwise designated on the drawings) shall include the following:
   1. Plumbing: Provide all services designated and required, including waste and water. Valve and cap all stub–outs for water and gas. Cap all waste and vent outlets.
   2. Mechanical: Provide all services as indicated and required, including all ductwork, piping and valves. Valve and cap all piping stub–outs. Cap all ductwork stub–outs in a manner suitable for future extension.

- **Owner–Furnished and Other Equipment:**

A. Rough–in only for all Owner–furnished equipment (see Division 1) and all equipment furnished under other sections of the specifications, except as otherwise specified and/or noted on the drawings.

B. Provide all services designated, valve and cap all piping, cap all waste piping and ductwork and leave in a clean and orderly manner.

C. Rough–in requirements shall be as outlined in the preceding paragraph titled "Equipment Rough–In."

- **Equipment Final Connections:**

A. Provide all piping final connections for all equipment under Division 22 as required herein specified and indicated on the drawings.

B. Plumbing: Provide final plumbing connections complete with shutoff valves, risers, traps, vacuum breakers and indirect wastes for all equipment furnished and installed under other sections of these specifications, except as otherwise designated. Included under the Plumbing section of the specifications are the final connections to the following:
   1. Miscellaneous equipment specified to be furnished and installed under other divisions of the specifications.
   2. Cold water make–up connections to air conditioning equipment.
   3. Kitchen equipment, furnished under other sections of the specifications.

- **Sterilization:**

A. Sterilize each unit that will have water in it, the water supply piping and distribution system with liquid chloride or hydrochloride before acceptance of operation in accordance with AWWA C601, "Standard for Disinfection Water Mains" work shall be done by contractor and unless otherwise required by Public Authorities having Jurisdiction, shall conform to the following:

B Materials
   1. Liquid Chlorine: U.S. Army Specification 4–1. 2. Hydrochloride: Liquid shall conform to FED. Spec. O–C–11RA (INT. 4).

C. Method: Amount of chlorine shall provide a dosage of 50 PPM minimum. Introduce chlorinating materials into lines and distribution system in approved manner after a contact period of 24 hours during which period chlorine residual shall be maintained at 5 PPM minimum, flush out systems with clean water until residual content is not greater than 0.2 PPM. Flush entire system open and close valves in lines being sterilized several times during contact period.

D. Sterilization report shall be turned into the Engineer for review prior to requesting a substantial completion inspection.

- **Machinery Accessories:**

A. Application: Do not install any equipment in an application not recommended by the manufacturer.

B. Installation: Align, level and adjust all equipment for proper operation. Install so connecting and disconnecting of piping and accessories can readily be done and so all parts are readily accessible for inspection, service and repair. Install equipment in accordance with manufacturer's recommendations.

- **Pipe and Equipment Supports:**

A. Where supports, foundations, stands, suspended platforms for machinery, tanks, or other equipment are indicated or specified, perform the following:
   1. Locate support members to avoid equipment strains and interference with piping connections, tube pulling or other maintenance operations.
   2. Where saddles are required, use cast iron or welded steel saddles with curvature to fit the tank shell.
   3. Mount power–driven equipment on common base with driver.

B. Concrete Inserts: Furnish and install all concrete inserts required for all materials and equipment specified and/or shown on the drawings for Division 22.

C. Concrete Foundations: Work under this section includes coordination of construction of all concrete foundations indicated or required for equipment specified herein or in other sections under Division 22. Materials and workmanship shall be described under Division 3.

D. Grout under all equipment after leveling, filling completely the space between machinery bed plate and foundation surface as specified in Division 3. Finish exposed surface of grout for a neat appearance.

E. Floor Stands: Where equipment is mounted standard or on legs, construct of structural steel or steel pipe and fittings, cross–brace and fasten with flanges or plates bolted to floor.

F. Ceiling or Wall Supports: Use suspended platform, strap hangers, bracket or shelf, whichever is most suitable for equipment and location. Construct of structural steel members, steel plates, rods or pipe as required. Cross–brace and fasten to building structure or inserts in an approved manner.

G. Steel Work: Neatly fabricate and erect steel work with burrs and welding spatter ground off. Paint after fabrication with a rust–inhibitive primer.

- **Hangers and Supports:**

A. Hold horizontal pipe runs firmly in place using approved steel and iron hangers, supports, and/or pipe rest unless otherwise indicated. Suspend hanger rods from concrete inserts or from approved brackets, clamps or clips. Hang pipes individually or in groups if supporting structure is adequate to support weight of piping and fluid. Except for buried piping, hang or support pipe runs so that they may expand or contract freely without strain to pipe or equipment.
   1. Horizontal steel piping: Provide hangers or supports every 10 ft. except every 8 ft. for piping 1–1/4 inch and smaller.
   2. Horizontal copper tubing: For 2 inch diameter and over, provide hangers every 10 feet, for 1–1/2 inch diameter and smaller every 6 feet.
   3. Horizontal cast–iron no–hub piping: Provide hangers or supports at each side of no–hub fittings. Provide anti–separation bracing at each 90 degree change in direction.
   4. Horizontal cast–iron hub and spigot piping: Provide hangers or supports at each hub.
   5. Vertical piping: Support at floor with iron pipe clamps.

- **Test:**

A. Perform test to Architect's satisfaction. Make test in presence of Owner's Rep and at the time suitable to him if requested. Furnish necessary labor and equipment and bear cost for testing. Cost of replacing and/or repairing damage resulting therefor shall be borne by this contractor, should the contractor refuse or neglect to make test necessary to satisfy the Architect that requirement of specifications and drawings are met, such tests may be made by an independent testing company and the contractor charged for all expenses.

B. Hydrostatic test: Make by completely filling piping system with water and eliminating accumulations of air so that leakage, no matter how small, will be apparent on testing gauge immediately. Maintain pressure until pipe under test has been examined, but in no case less than 24 hours. Test system at the following pressure:

SYSTEM	TEST PRESSURE
Domestic Cold Water	150 PSIG
Domestic Hot Water	150 PSIG

C. Sanitary soil, waste, bent systems test: Before installation of fixtures, cap end of system and fill lines with water to 10 feet above the section being tested. (including bents) and allow to stand for at least fifteen (15) minutes before inspection starts. Make test in sections if necessary or convenient. However, include interconnections between new sections and previously tested section in the new test.

D. Roof drainage system: Test as specified for sanitary system.

E. Gas systems: Test with compressed air at 10 PSI for six hours or longer as directed to provide a tight seal without leaks. Use pressure recorder to record pressure of all lines for duration of test.

F. Repair all leaks and retest as required.

- **Cleanouts:**

A. Provide cleanouts where indicated and required. Unless otherwise indicated, cleanouts shall be accessible with extensions to grade to outside of buildings, or to floors above as indicated or required. Do not locate cleanouts in public lobbies and public corridors unless approved by Architect.

B. Membranes: Where waterproofing membrane occurs under floor, bring membrane to cleanout without puncturing and permanently anchor to integral anchoring flange with heavy cast–iron clamping collar and rustproof bolts.

C. Covers: Set cleanout covers with all finished wall, floor or grade. In all cases securely anchor by means of integral lugs and bolts. Where surfacing material such as resilient coverings is specified, ascertain thickness being used and set cleanout top so finished floor is smooth.

D. Use Acorn 3500 thread compound.

- **Pipe Installation:**

A. Make pipe runs straight and true. Springing or forcing piping into place is not permitted. Install in manner to prevent any undue strain on equipment. Make joints smooth and unobstructed inside and out, and ream pipe ends thoroughly to remove burrs. Conceal piping in finished portions of the building except as otherwise directed or indicated. Cap or plug ends and openings in pipe and fittings immediately to exclude dirt until equipment is installed or final connections are made.

B. Install piping to clear beams unless sleeving is indicated. Constantly check work of other trades to prevent interference with this installation. Obtain approval from Architect if coring or cutting of concrete work is necessary due to failure to install required sleeves prior to the time of concrete pour. Cost of coring and cutting work shall be borne by the subcontractor.

C. Exposed plated or enameled pipe: Make connections to equipment with special care. Show not tool marks or threads.

D. Dielectric Unions: Make connections between two dissimilar metal pipes with dielectric unions.

E. Unions: Provide a union on one side of each shutoff valve. At both sides of automatic valves. At equipment connections and elsewhere indicated or required, unless flanges are indicated.

F. Floor, wall ceiling plates: Provide where pipes pierce finished surfaces.

G. Noise: Install soil, waste, and water piping in a manner that prevents any unusual noise from flow of water under normal conditions.

H. Shutoff Valves: Provide where indicated and required for adequate control of system and for isolation of fixture groups and equipment.

I. Buried Pipe: Install with minimum 36 inches coverage unless otherwise indicated. Lay piping accurately to grade where invert elevations are indicated. When required provide thrust blocks per manufacturer's recommendations.

J. Equipment and Materials: Install per manufacturer's recommendations.

K. Accessibility: Install work readily accessible for normal operation, reading of instruments, adjustments, service, inspections and repair. Provide access panels where indicated and required.

L. Pipe Joints: Make screwed joints with a minimum amount of compound applied to the male thread only. All joints shall be made per code requirements and manufacturer's recommendations.

M. Provide pipe isolation at all hangers for non–insulated materials.

N. Piping Rough–in for Fixtures: Support or secure to building construction of firmly anchored waste piping so that pipes cannot be displaced. Do not secure to walls. Use of makeshift devices, such as rope, wire, tape, etc. is prohibited.

O. Horizontal drainage piping shall be installed in uniform alignment at uniform slopes. The minimum slope for horizontal pipe 4" or larger in diameter may have a slot of not less than 1% ($\frac{1}{8}$ inch per foot). The minimum slope of horizontal pipe less that 4'; may have a slope of not less than 2% ($\frac{1}{4}$ inch per foot).

- **Cleanup:**

A. In addition to cleanup specified under Division 1, thoroughly clean all parts of the equipment. Where exposed parts are to be painted, thoroughly clean off any splattered construction materials and remove all oil and grease spots. Wipe the surface carefully and scrape out all cracks and corners.

B. Thoroughly flush and clean out all water circulating systems. Remove, clean and replace all strainer elements.

C. During the progress of the work, keep the premises clean and free of debris.

- **Painting:**

A. Except as otherwise specified or indicated in the architectural drawings and/or specifications, paint all exposed unfinished metal with one coat of rust–inhibiting primer.

B. Finished painting is specified under Division 9.

- **Connections to Services:** Provide all connections to sanitary sewer lines, storm sewer, gas lines, water lines, electrical services furnished under other contracts, except as otherwise specifically designated. Provide all necessary tees, taps and connections required to properly connect to all mains. Verify all required City requirements before making any piping connections to sanitary sewer, storm sewer, water or gas piping and conform to them during installation.

- **Welding:**

A. Procedures:
   1. All procedures and welders must be qualified in accordance with the requirements of Section IX, ASME Boiler and Pressure Vessel Code and ANSI code for power piping B31.1. Procedure qualification test records and acceptance shall be submitted with the welding procedure prior to the start of fabrication.
   2. Architect's inspector or authorized representative will review performance qualification records of individual welders.

B. Welding Processes: The following welding processes are permitted, provided that the procedure is qualified in accordance with Section IX, ASME Boiler and Pressure Vessel Code.
   1. Manual shielded metal–arc.
   2. Gas tungsten–arc.
   3. Other welding processes may be used providing they are qualified in accordance with Section IX, ASME Boiler and Pressure Vessel Code.

C. Restrictions: Weld bevel preparations shall be provided on all welding fittings and shall be machined or ground to remove all discoloration if flame or arc cut.

D. Welding Filler Material:
   1. A filler material control procedure shall be submitted to Owner for review and acceptance prior to performing any welding.
   2. All shielded metal–arc welding shall be performed using low–hydrogen type electrodes such as E 7018.

E. Preheat and Interpass Temperature:

F. Preheat for pressure components shall be as specified in Table 132 of ANSI B.1.

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Date: 01.11.2023
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PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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P7.2
PLUMBING SPECIFICATIONS

ELECTRICAL GENERAL NOTES:

1. WORK SHALL BE PERFORMED IN A WORKMANLIKE MANNER, PER INDUSTRY STANDARD, AND TO THE SATISFACTION OF THE ARCHITECT AND ENGINEER.
2. WORK, MATERIALS, AND EQUIPMENT SHALL CONFORM TO THE LATEST EDITIONS OF LOCAL, STATE AND NATIONAL CODES, STANDARDS AND ORDINANCES.
3. ELECTRICAL CONTRACTOR TO REFER TO THE CIVIL ENGINEER'S DRAWING AND COORDINATE ELECTRICAL INSTALLATION WITH ALL UTILITIES.
4. ELECTRICAL CONTRACTOR TO VERIFY ALL THE UTILITY COMPANY SERVICE (POWER, TELEPHONE, ETC.) TERMINATION POINTS PRIOR TO ROUGH-IN. PROVIDE CONDUIT AS REQUIRED TO ACCOMMODATE ALL UTILITY COMPANY SERVICES. REPORT ANY CONFLICTING CONDITIONS TO THE ARCHITECT.
5. EVERY CIRCUIT AND CIRCUIT MODIFICATION SHALL BE LEGIBLY IDENTIFIED AS TO ITS CLEAR, EVIDENT, AND SPECIFIC PURPOSE OR USE PER NEC 408.4(A).
6. ALL MATERIALS USED IN THIS INSTALLATION SHALL BE U.L. APPROVED AND NEW.
7. DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOF, ETC.
8. DETAILS ARE SHOWN ON DIFFERENT SHEETS. THE CONTRACTOR SHALL REFER TO THOSE DETAILS WHETHER OR NOT CALLED IN REFERENCE NOTES.
9. ELECTRICAL CONTRACTOR SHALL NOTIFY AND COORDINATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO DUCTS, PIPING, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER, OR PASS THROUGH ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
10. NO WIRING SHALL RUN IN DUCT WORK.
11. USE EPOXY ANCHORS TO SUPPORT THE ELECTRICAL EQUIPMENT. EXPANSION ANCHOR BOLTS ARE NOT ACCEPTED.
12. THE ELECTRICAL CONTRACTOR SHALL REVIEW AND COORDINATE WITH ARCHITECTURAL, CIVIL, STRUCTURAL, MECHANICAL, PLUMBING, AND OTHER DRAWINGS PRIOR TO BID.
13. ELECTRICAL CONTRACTOR SHALL REVIEW ALL ARCHITECT'S ELEVATIONS, SECTIONS, AND FLOOR PLANS PRIOR TO ROUGH-IN OF ELECTRICAL JUNCTION BOXES.
14. ALL JUNCTION BOXES SHALL HAVE MINIMUM DEPTH OF 2-1/8" UNLESS OTHERWISE SPECIFIED. SECURE ALL JUNCTION BOXES AS SHOWN IN THE DETAILS. FURNISH AND INSTALL PROPER PLASTER RINGS.
15. REFER TO ARCHITECTURAL CABINET CASEWORK ELEVATION DRAWINGS FOR CLARIFICATION ON MOUNTING AND PLACEMENT OF ALL RACEWAY, RECEPTACLES, AND SWITCHES.
16. MANY DEVICE MOUNTING LOCATIONS ARE DEPENDENT ON MILLWORK LOCATIONS. COORDINATE ALL APPLICABLE LOCATIONS WITH MILLWORK INSTALLER PRIOR TO BEGINNING WORK.
17. LIGHT SWITCHES INSTALLED ADJACENT TO EACH OTHER, SHALL BE GANGED TOGETHER WITH ONE PIECE COVER PLATE.
18. ALL WALL MOUNTED MOTION SENSORS SHALL BE A DUAL TECHNOLOGY MOTION SENSOR WITH INTEGRAL OVERRIDE SWITCH. MOTION SENSOR TO MOUNT IN A STANDARD SWITCH BOX. MOTION SENSOR TO HAVE A FIFTEEN MINUTE TIME DELAY SET AT TEN MINUTES TO SENSOR SET TO MANUAL ON. USE HUBBELL, SENSOR SWITCH, LEVITON, OR APPROVED EQUAL.
19. CONSULT ARCHITECTS REFLECTED CEILING PLANS FOR EXACT LOCATION OF LIGHTING FIXTURES, SPEAKERS, SMOKE DETECTORS, ETC.
20. ELECTRICAL CONTRACTOR SHALL MEET WITH THE CEILING AND MECHANICAL CONTRACTORS TO COORDINATE LOCATIONS, CLEARANCES, CEILING TYPES, AND ROUGH-IN REQUIREMENTS OF ALL LIGHTING FIXTURES PRIOR TO DUCT, PIPING, AND CEILING INSTALLATIONS.
21. ALL CEILING MOUNTED MOTION SENSORS SHALL BE A DUAL TECHNOLOGY MOTION SENSOR WITH POWER PACK AS REQUIRED TO CONTROL LIGHTING. MOTION SENSOR TO HAVE A FIFTEEN MINUTE DELAY SET AT TEN MINUTES TO SENSOR SET TO MANUAL ON. CONTRACTOR TO SUBMIT FLOOR PLAN TO MOTION SENSOR SUPPLIER FOR FACTORY TO LOCATED MOTION SENSOR FOR OPTIMAL PERFORMANCE TO AVOID NUISANCE SHUT OFF OF LIGHTING. MANUFACTURERS LAYOUT PLAN TO BE PART OF SUBMITTALS. PROVIDE SUFFICIENT BOX DEPTH AND CORRECT PLASTER RING TO ACCOMMODATE ACTUAL RELAY UNIT AND OCCUPANCY SENSOR INSTALLED. PROVIDE PROPER SEPARATION OF 120 VOLT AND CLASS 2 WIRING AS NECESSARY IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE. USE HUBBELL, SENSOR SWITCH, LEVITON OR APPROVED EQUAL.
22. CONNECT ALL EM FIXTURES, NIGHT LIGHTS, EGRESS LIGHTS, AND EXIT SIGNS TO UNSWITCHED CONDUCTOR.
23. HEAT TRACE SHALL BE RAN IN ALL NON-CONDITIONED ROOF DRAINS, GUTTERS, AND DOWNSPOUTS AND SHALL EXTEND AT LEAST 8" BEYOND THE DOWNSPOUT DISCHARGE.
24. THE ELECTRICAL CONTRACTOR SHALL TERMINATE THE ELECTRICAL CONNECTIONS TO ALL THE EQUIPMENT BY PROVIDING THE NECESSARY MALE/FEMALE CONNECTOR, RECEPTACLE, PLUG, ETC.
25. FINAL CONNECTIONS TO EQUIPMENT SHALL BE MADE AS PER MANUFACTURERS WRITTEN INSTRUCTIONS AND APPROVED WIRING DIAGRAMS AND DETAILS. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROVIDE ALL MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED. THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC,) OF EQUIPMENT FURNISHED UNDER OTHER DIVISIONS WITH APPROVED SHOP DRAWINGS PRIOR TO BEGINNING ROUGH-IN.
26. VERIFY EXACT LOCATION(S) OF ALL EQUIPMENT TO BE FURNISHED BY OTHERS PRIOR TO ROUGH-IN.
27. AT THE END OF THE JOB, PROVIDE BLANK COVER PLATES TO MATCH THE OTHER COVER PLATES FOR ALL JUNCTION BOXES WHERE DEVICES HAVE NOT YET BEEN INSTALLED.
28. FOR SERIES RATED EQUIPMENT, CONTRACTOR SHALL PROVIDE EQUIPMENT THAT HAS BEEN TESTED IN SERIES CONFIGURATION INDICATED AND PROVIDE IDENTIFICATION PER NEC 110.22 AND COMPLY WITH REQUIREMENTS OF NEC 240.86.

ELECTRICAL SYMBOLS

SYMBOL	EXPLANATION
———	BRANCH CIRCUIT CONCEALED IN CEILING OR WALL
— — —	BRANCH CIRCUIT CONCEALED IN GROUND OR FLOOR
A-1,3	BRANCH CIRCUIT HOMERUNS TO PANEL
135	ROOM NUMBER
CH 1	MECHANICAL EQUIPMENT SYMBOL
◇1	KEYED NOTE REFERENCE
42X	FEEDER TAG (SEE FEEDER SCHEDULE)
▭	LIGHTING AND POWER PANELBOARD
☐ NON-FUSED ◩ FUSED	DISCONNECT SWITCH
☒ NON-FUSED ☒ FUSED	DISCONNECT SWITCH WITH MOTOR STARTER
☒	MOTOR STARTER
VFD	VARIABLE FREQUENCY DRIVE
C	CONDUIT STUB
J	JUNCTION BOX
	ELECTRIC VEHICLE CHARGING STATION
⊖ WP A-3 REF	MODIFIER PANEL SPACE ASSIGNMENT EQUIPMENT DESIGNATION
WP	WEATHERPROOF COVER & LISTED WEATHER RESISTANT DEVICE
GFCI	PROTECTED BY FAULT CIRCUIT INTERRUPTER
+44	MOUNTING HEIGHT ABOVE FLOOR OR GRADE GIVEN IN INCHES.
REF	REFRIGERATOR
DW	DISHWASHER
DISP	DISPOSAL
WASH	WASHING MACHINE
EWC	ELECTRIC WATER COOLER
USB	HUBBELL USB15AC5W OR EQUAL DUPLEX PLUS USB CHARGER
TR	TAMPER RESISTANT
⊖	DUPLEX RECEPTACLE OUTLET
⊕	QUAD RECEPTACLE OUTLET
⊖	SPLIT WIRED DUPLEX RECEPTACLE OUTLET
⊜	220V RECEPTACLE OUTLET
⊕	ISOLATED GROUND RECEPTACLE
⦶ ▽	RECEPTACLE FLOOR DEVICE
⦶ ▽	CEILING MOUNTED DEVICE
▲	SPECIAL RECEPTACLE
○	MOTOR OUTLET
▣	EXHAUST FAN
Ⓣ	THERMOSTAT OUTLET
S	REMOTE SENSOR OUTLET
▼	TELEPHONE OUTLET
▽(#)	COMPUTER DATA OUTLET (#) INDICATES JACK QUANTITIES
▼	NETWORK AND VOICE OUTLET
◉	WIRELESS ACCESS POINT CEILING MOUNTED
TV	TELEVISION OUTLET

SYMBOL	EXPLANATION
F1	FIXTURE TYPE SYMBOL
▭	LINIER FIXTURE (TYPICAL)
▭	EMERGENCY LIGHTING UNIT
⌖	SURFACE OR PENDANT MOUNTED FIXTURE
▣	RECESSED FIXTURE
-○	WALL MOUNTED FIXTURE
▭	WALL PACK
▭	STRIP FIXTURE
▽ ▽	TRACK LIGHTING
BUGEYE EGRESS	EMERGENCY LIGHTING UNIT
⊗	WALL MOUNTED EXIT LIGHT (SINGLE FACE)
⊗	WALL MOUNTED EXIT LIGHT (DOUBLE FACE)
⊗	CEILING MOUNTED EXIT LIGHT
⊗	CEILING MOUNTED EXIT LIGHT (DOUBLE FACE)
⊗)	EXIT LIGHT WITH PROTECTIVE COVER
$	SINGLE POLE SWITCH (SUBSCRIPT AS INDICATED BELOW)
2	TWO POLE SWITCH
3	3-WAY SWITCH
4	4-WAY SWITCH
D	DIMMER SWITCH
K	KEYED SWITCH
T	TIMER SWITCH
M	MANUAL STARTER WITH THERMAL OVERLOAD
F	PADDLE FAN SPEED CONTROL. (CANARM "CN" SERIES)
OC	OCCUPANCY SENSOR SWITCH
LV	LOW VOLTAGE CONTROL SWITCH
LV/D	LOW VOLTAGE CONTROL SWITCH WITH DIMMER
OC/D	OCCUPANCY SENSOR CONTROL SWITCH WITH DIMMER
OC/2	DUAL RELAY OCCUPANCY SENSOR CONTROL SWITCH
$$	DOUBLE GANG SWITCH
$a,b,c LV a,b S	LOW VOLTAGE MULTI BUTTON CONTROL SWITCH (LETTER INDICATES CONTROL OF CORRESPONDING FIXTURES)
ab	CONTROLLING SWITCH (LETTER INDICATES CONTROL OF CORRESPONDING FIXTURES)
S	OCCUPANCY SENSOR (CEILING MOUNTED)
DT	DUAL TECHNOLOGY OCCUPANCY SENSOR (CEILING MOUNTED)
PIR	PASSIVE INFRARED OCCUPANCY SENSOR (CEILING MOUNTED)
RC	ROOM CONTROLLER
LS	DAYLIGHT SENSOR
Ⓟ	PHOTOCELL
Ⓥ	VOLUME CONTROL
▣	WALL SPEAKER
●	CEILING SPEAKER
▭◀	SURVEILLANCE CAMERA
DVR	SURVEILLANCE DIGITAL VIDEO RECORDER
NURSE	NURSE CALL ANNUNCIATOR PANEL
N	NURSE CALL EMERGENCY CALL DEVICE
Ⓝ	NURSE CALL EMERGENCY CALL LIGHT

SYMBOL	EXPLANATION
T F	TAMPER AND FLOW
FACP	FIRE ALARM CONTROL PANEL
RFAA	REMOTE FIRE ALARM ANNUNCIATOR PANEL
NAC	FIRE ALARM NAC PANEL
VOICE	FIRE ALARM VOICE PANEL
D/H	DOOR HOLDER
F/S	FIRE/SMOKE DAMPER
F	FIRE ALARM PULL STATION
☒	FIRE ALARM STROBE
☒◁	FIRE ALARM HORN/STROBE
☒◁LF	FIRE ALARM HORN/STROBE (LF = LOW FREQUENCY)
☒◁)	FIRE ALARM HORN/STROBE WITH PROTECTIVE COVER
☒◀	FIRE ALARM SPEAKER/STROBE
☒◀LF	FIRE ALARM SPEAKER/STROBE (LF = LOW FREQUENCY)
☐◀	FIRE ALARM SPEAKER
☐◀LF	FIRE ALARM SPEAKER (LF = LOW FREQUENCY)
☐◁	FIRE ALARM HORN
☐◁LF	FIRE ALARM HORN (LF = LOW FREQUENCY)
⊗	FIRE ALARM STROBE CEILING MOUNTED
⊗◁	FIRE ALARM HORN/STROBE CEILING MOUNTED
⊗◁LF	FIRE ALARM HORN/STROBE CEILING MOUNTED (LF = LOW FREQUENCY)
○◁	FIRE ALARM HORN CEILING MOUNTED
○◁LF	FIRE ALARM HORN CEILING MOUNTED (LF = LOW FREQUENCY)
○	SMOKE DETECTOR (SUBSCRIPT AS INDICATED BELOW)
B	SMOKE ALARM BATTERY-BACKED
C	SMOKE/CARBON MONOXIDE ALARM COMBO BATTERY-BACKED
D	DUCT SMOKE DETECTOR
R	SMOKE DETECTOR WITH ADDRESSABLE RELAY
S	SMOKE DETECTOR WITH SOUNDER BASE
○	HEAT DETECTOR
▲	GAS DETECTOR
CO	CARBON MONOXIDE DETECTOR
CO/NO2	CARBON MONOXIDE/NITROGEN DIOXIDE SENSOR (GARAGE)
☎	ADA TWO-WAY COMMUNICATIONS SYSTEM
KP	ACCESS CONTROL KEY PAD
CR	ACCESS CONTROL CARD READER
SDS	ACCESS CONTROL DOOR STRIKE
ML	ACCESS CONTROL MAG LOCK
DS	ACCESS CONTROL DOOR SENSOR
◐	ACCESS CONTROL REQUEST TO EXIT
▣	PUSHBUTTON
-Ⓑ	BELL

NOTE: ALL SYMBOLS MAY NOT BE USED.

ABBREVIATIONS INDEX

#	NUMBER	DC	DIRECT CURRENT	KW	KILOWATT	PT	POTENTIAL TRANSFORMER
φ	PHASE	DISP	DISPOSAL	LRA	LOCKED ROTOR AMPS	PV	PHOTOVOLTAIC
1φ	SINGLE PHASE	DRY	DRYER	LTG	LIGHTING	PVC	POLYVINYL CHLORIDE
2P	TWO-POLE	DW	DISHWASHER	MATV	MASTER ANTENNA TELEVISION	(R)	RELOCATE
3φ	THREE PHASE	DWG	DRAWING	MAX	MAXIMUM	RECP	RECEPTACLE
4P	FOUR-POLE	EC	EMPTY CONDUIT	MB	MAIN BUS	REF	REFRIGERATOR
AC	ALTERNATING CURRENT	EM	EMERGENCY	MCB	MAIN CIRCUIT BREAKER	REQ	REQUIRED
AFF	ABOVE FINISHED FLOOR	EMG	EMERGENCY GENERATOR	MCC	MOTOR CONTROL CENTER	RLA	RATED LOAD AMPS
AFG	ABOVE FINISHED GRADE	EMT	ELECTRICAL METALLIC TUBING	MCM	1000 CIRCULAR MILLS	RMS	ROOT MEAN SQUARE
AFP	ARC FAULT PROTECTOR	EPO	EMERGENCY POWER OFF	MH	MANHOLE	SE	SERVICE ENTRANCE
AHJ	AUTHORITY HAVING JURISDICTION	EWC	ELECTRIC WATER COOLER	MIC	MICROPHONE	SPD	SURGE PROTECTION DEVICE
AIC	AMP INTERRUPTING CURRENT (SYMMETRICAL)	EWH	ELECTRIC WATER HEATER	MIN	MINIMUM	SPEC	SPECIFICATION
AL	ALUMINUM	(E)	EXISTING	MLO	MAIN LUGS ONLY	SPK	SPEAKER
AM	AMPS METER	(F)	FUTURE	MNF	MANUFACTURER	SS	SELECTOR SWITCH
AMP	AMPERE	FA	FIRE ALARM	MTG	MOUNTING	SW	SWITCH
ANN	ANNUNCIATOR	FACP	FIRE ALARM CONTROL PANEL	MTR	MOTOR	SWBD	SWITCHBOARD
ATS	AUTOMATIC TRANSFER SWITCH	FC	FOOT CANDLE	MW	MICROWAVE	SWGR	SWITCHGEAR
AUX	AUXILIARY	FLA	FULL LOAD AMPS	(N)	NEW	TTB	TELEPHONE TERMINAL BOARD
AWG	AMERICAN WIRE GAUGE	FT	FOOT	N/A	NOT APPLICABLE	TBC	TELEPHONE TERMINAL CABINET
BC	BARE COPPER	FRZ	FREEZER	NC	NORMALLY CLOSED	TV	TELEVISION
BFG	BELOW FINISH GRADE	FS	FUSED SWITCH	NEC	NATIONAL ELECTRICAL CODE	TYP	TYPICAL
C	CONDUIT	GFAF	DUAL FUNCTION GFCI/AFCI CIRCUIT BREAKER	NEMA	NATIONAL MANUFACTURING ASSOCIATION	UG	UNDERGROUND
CAB	CABINET	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	NFC	NATIONAL FIRE CODE	UNO	UNLESS NOTED OTHERWISE
CATB	COMMUNITY ANTENNA TELEVISION	GFEP	GROUND-FAULT EQUIPMENT PROTECTION	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION	UPS	UNINTERRUPTIBLE POWER SUPPLY
CATV	CABLE TELEVISION	GFP	GROUND FAULT PROTECTOR	NFS	NON FUSED SWITCH	V	VOLT (KV-KILOVOLT)
CFCI	CONTRACTOR FURNISHED CONTRACTOR INSTALLED	GRC	GALVANIZED RIGID CONDUIT	NIC	NOT IN CONTRACT	VA/R	VOLT-AMPS/REACTIVE
CKT	CIRCUIT	GRD	GROUND	NL	NIGHT LIGHT	VM	VOLT METER
CLG	CEILING	HP	HORSE POWER	NO	NORMALLY OPEN	W	WATTS
CNTR	CONTRACTOR	HZ	HERTZ	NTS	NOT TO SCALE	W/	WITH
CO	CONVENIENCE OUTLET	IG	ISOLATED GROUND	OFCI	OWNER FURNISHED CONTRACTOR INSTALLED	WASH	WASHER
CRT	COMPUTER TERMINAL	IMC	INTERMEDIATE METALLIC CONDUIT	OFOI	OWNER FURNISHED OWNER INSTALLED	WH	WATTHOUR
CT	CURRENT TRANSFORMER	IN	INCH	OS&Y	OUTSIDE SCREW AND YOKE	W/O	WITHOUT
CU	COPPER	J-BOX	JUNCTION BOX	PB	PUSH BUTTON	WP	WEATHER PROOF
C/W	CONDUIT WITH	KV	KILOVOLT	PF	POWER FACTOR	XFMR	TRANSFORMER
(D)	DEMOLISH/DELETE	KVA	KILOVOLT AMPERES	PFR	PHASE FAILURE RELAY	XFMR-SW	TRANSFORMER SWITCH
DB	DECIBEL	KVAR	KILOVARS	PNL	PANEL	XP	EXPLOSION PROOF

NOTE: THIS IS A TYPICAL ABBREVIATION LIST. NOT ALL ABBREVIATIONS MAY BE USED ON THIS PROJECT.

DESIGN CONTACTS

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ELECTRICAL TEAM LEAD:	DAVID SWEARINGEN
ELECTRICAL DESIGNER:	RILEY CRUMP

SHEET INDEX

SHEET NUMBER	SHEET TITLE
E0.1	ELECTRICAL COVER SHEET
E1.1	BUILDING #1 FLOOR PLAN
E1.2	BUILDING #1 MEZZ. PLAN
E4.1	ENLARGED FLOOR PLANS
E5.1	ELECTRICAL DETAILS
E5.2	ELECTRICAL DETAILS
E5.3	ELECTRICAL DETAILS
E6.1	ELECTRICAL SCHEDULES
E7.1	ELECTRICAL SPECIFICATIONS

COMMISSIONING NOTES:

C408.3 LIGHTING SYSTEM FUNCTIONAL TESTING.
CONTROLS FOR AUTOMATIC LIGHTING SYSTEMS SHALL COMPLY WITH SECTION C408.3.

C408.3.1 FUNCTIONAL TESTING.
TESTING SHALL ENSURE THAT CONTROL HARDWARE AND SOFTWARE ARE CALIBRATED, ADJUSTED, PROGRAMMED AND IN PROPER WORKING CONDITION IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. THE CONSTRUCTION DOCUMENTS SHALL STATE THE PARTY WHO WILL CONDUCT THE REQUIRED FUNCTIONAL TESTING. WHERE REQUIRED BY THE CODE OFFICIAL, AN APPROVED PARTY INDEPENDENT FROM THE DESIGN OR CONSTRUCTION OF THE PROJECT SHALL BE RESPONSIBLE FOR THE FUNCTIONAL TESTING AND SHALL PROVIDE DOCUMENTATION TO THE CODE OFFICIAL CERTIFYING THAT THE INSTALLED LIGHTING CONTROLS MEET THE PROVISIONS OF SECTION C405. WHERE OCCUPANT SENSORS, TIME SWITCHES, PROGRAMMABLE SCHEDULE CONTROLS, PHOTOSENSORS OR DAYLIGHTING CONTROLS ARE INSTALLED, THE FOLLOWING PROCEDURES SHALL BE PERFORMED:

1. CONFIRM THAT THE PLACEMENT, SENSITIVITY AND TIME-OUT ADJUSTMENTS FOR OCCUPANT SENSORS YIELD ACCEPTABLE PERFORMANCE.
2. CONFIRM THAT THE TIME SWITCHES AND PROGRAMMABLE SCHEDULE CONTROLS ARE PROGRAMMED TO TURN THE LIGHTS OFF.

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Date: 01.11.2023
Revision:

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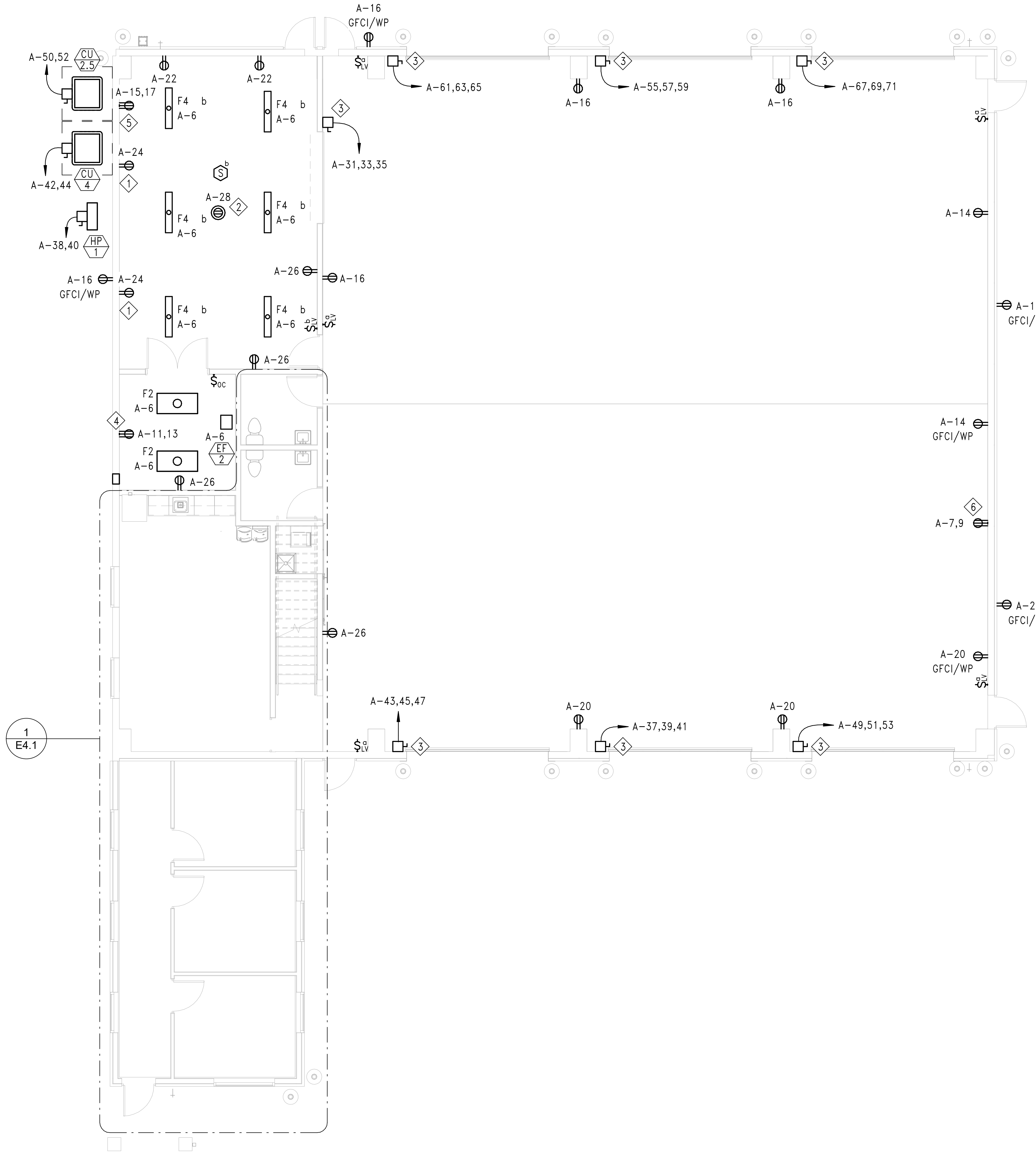

MAIN FLOOR ELECTRICAL PLAN - BUILDING #1

1/8" = 1'-0"

ELECTRICAL KEYED NOTES:

1 WOODSHOP RECEPTACLES FOR BENCH. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.

2 RECEPTACLE FOR DROPCORD. ELECTRICAL CONTRACTOR TO PROVIDE DROPCORD FOR THE CEILING DUPLEX.

3 DISCONNECT FOR OVERHEAD DOOR. COORDINATE ELECTRICAL REQUIREMENTS WITH DOOR INSTALLER PRIOR TO ROUGH-IN.

4 RECEPTACLE FOR AIR COMPRESSOR. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.

5 RECEPTACLE FOR WELDER. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.

6 RECEPTACLE FOR PRESSURE WASHER. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.

Date: 02.10.2022
Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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SPANISH FORK CITY

BUILDINGS & GROUNDS SHOP

300 WEST 500 SOUTH

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ELECTRICAL
1837 S. EAST BAY BLVD.
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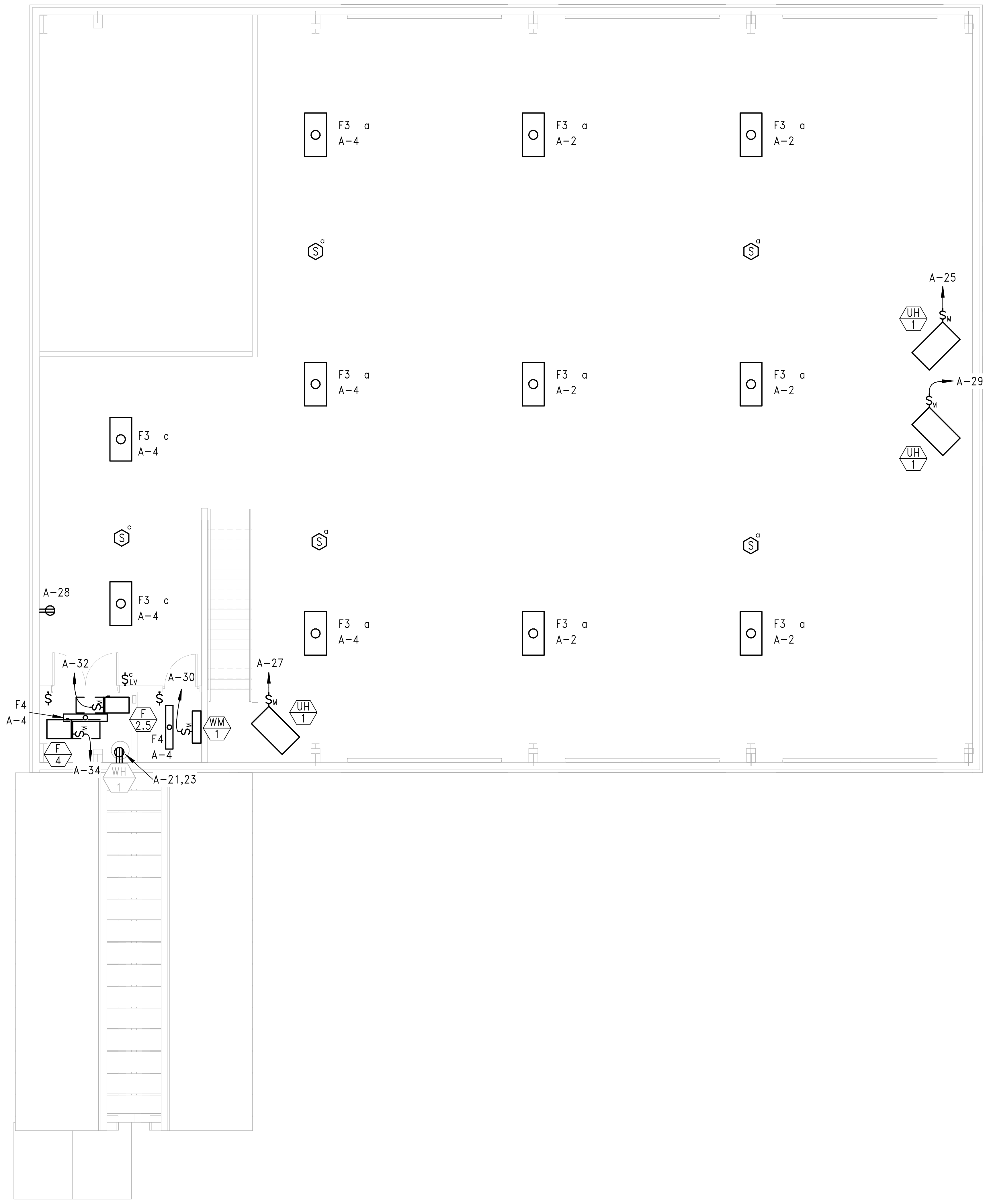
E1.1

BUILDING #1 FLOOR PLAN

ELECTRICAL KEYED NOTES:



MEZZANINE ELECTRICAL PLAN - BUILDING #1

1/8" = 1'-0"

Date: 02.10.2022
Revision:

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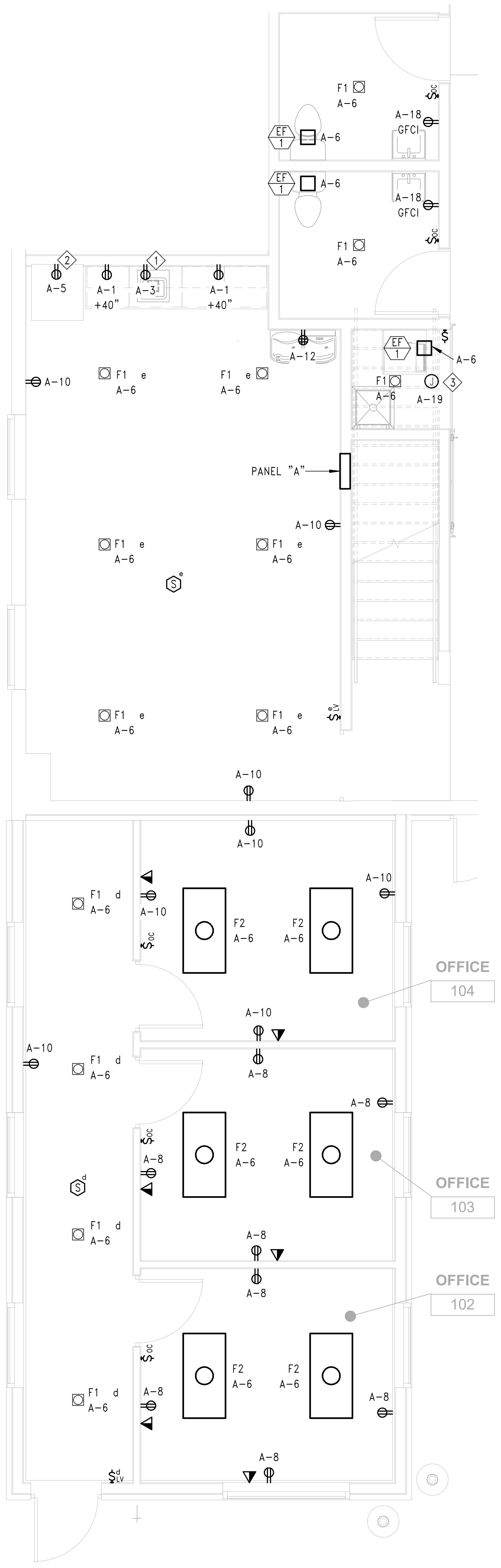
E1.2

BUILDING #1 MEZZ. PLAN



ENLARGED FRONT ENTRANCE

1/4" = 1'-0"

ELECTRICAL KEYED NOTES:

1 RECEPTACLE FOR DISHWASHER/DISPOSAL. VERIFY EXACT LOCATION WITH CABINET INSTALLER PRIOR TO ROUGH-IN. PROVIDE WITH AIR SWITCH FOR DISPOSAL LOCATED IN SINK.

2 RECEPTACLE FOR REFRIGERATOR. LOCATE SUCH THAT THE APPLIANCE WILL SIT TIGHT AGAINST THE WALL.

3 PROVIDE CONDUIT FOR FUTURE ICE MACHINE. VERIFY TYPE OF LOAD WITH ARCHITECT. VERIFY EXACT LOCATION AND HEIGHT WITH CABINET INSTALLER PRIOR TO ROUGH-IN.

Date: 02.10.2022

Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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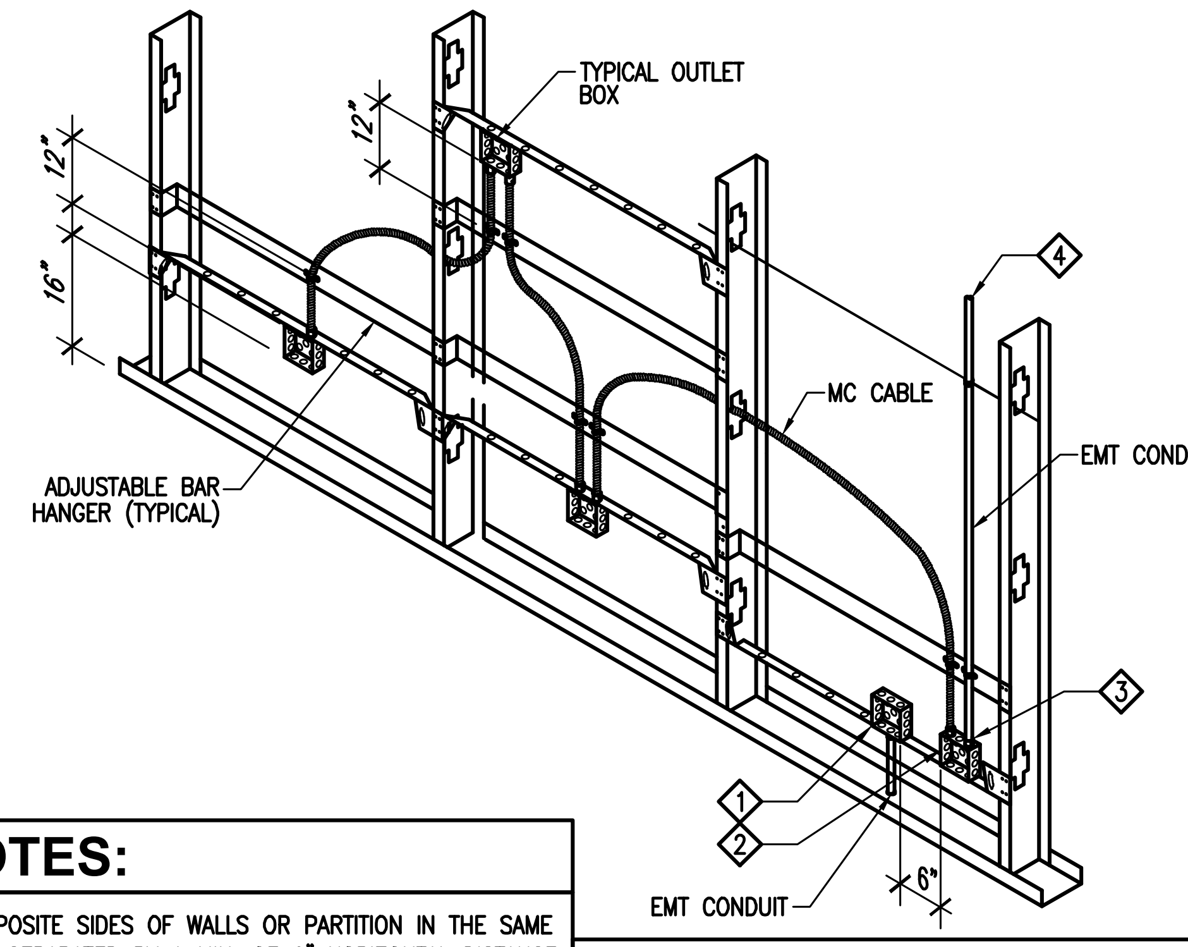
E4.1

ENLARGED FLOOR PLANS



KEYED NOTES:

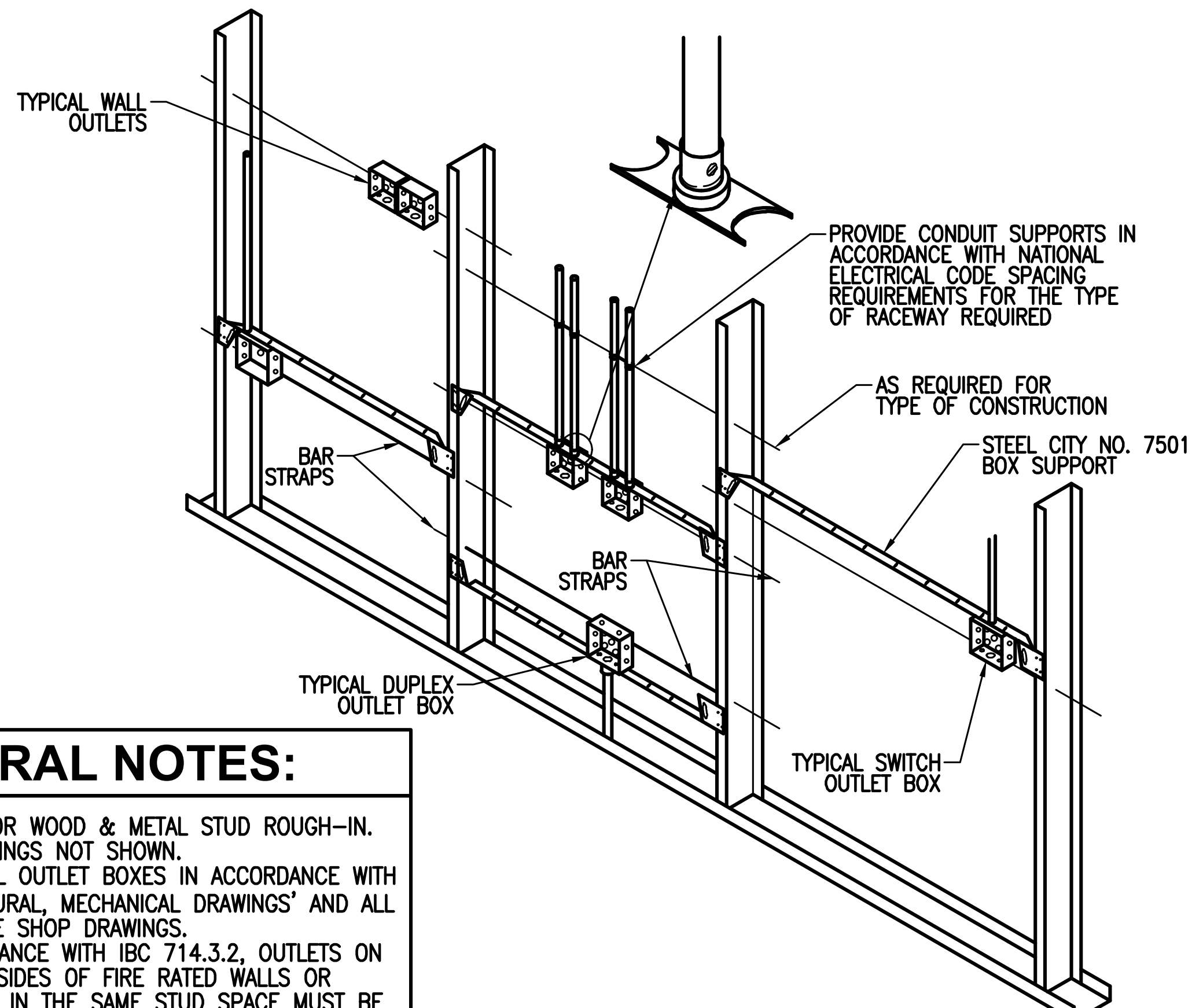
1. OUTLET BOXES ON OPPOSITE SIDES OF WALLS OR PARTITION IN THE SAME STUD SPACE MUST BE SEPARATED BY A MIN. OF 6" HORIZONTAL DISTANCE.
2. ELECTRICAL BOXES INSTALLED IN FIRE RESISTANT WALLS OR PARTITIONS SHALL COMPLY WITH IBC 714.3.2 (24" SEPARATION ON OPPOSITE SIDES.)
3. INSULATED THROAT EMT CONNECTOR.
4. HOME RUN TO PANEL MUST BE IN RACEWAY.

GENERAL NOTES:

1. TYPICAL FOR WOOD AND METAL STUD ROUGH IN.
2. PLASTER RINGS NOT SHOWN. COORDINATE RING DEPTH TO BE FLUSH WITH FINAL FINISH SURFACE.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS, AND WITH ALL APPLICABLE SHOP DRAWINGS.

4 ROUGH-IN DETAIL FOR MC CABLE

SCALE: NTS

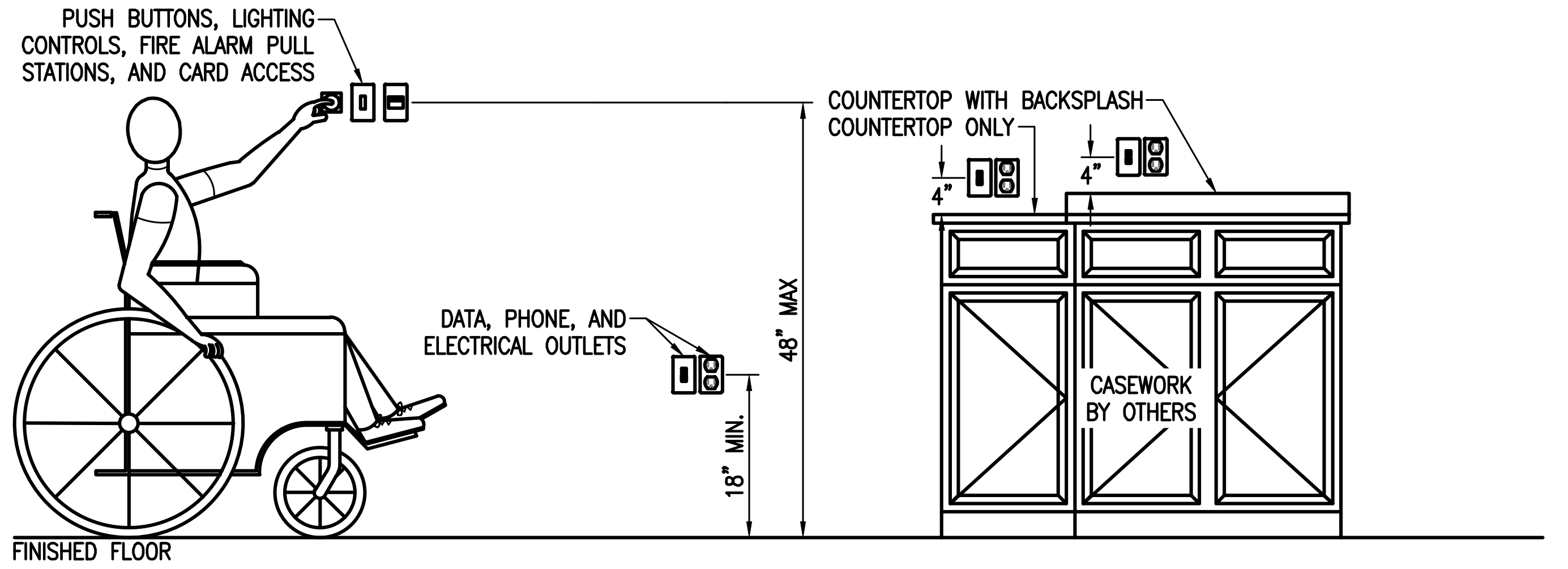

TYPICAL WALL OUTLETS
PROVIDE CONDUIT SUPPORTS IN ACCORDANCE WITH NATIONAL ELECTRICAL CODE SPACING REQUIREMENTS FOR THE TYPE OF RACEWAY REQUIRED
AS REQUIRED FOR TYPE OF CONSTRUCTION
STEEL CITY NO. 7501 BOX SUPPORT
BAR STRAPS
BAR STRAPS
TYPICAL DUPLEX OUTLET BOX
TYPICAL SWITCH OUTLET BOX

GENERAL NOTES:

1. TYPICAL FOR WOOD & METAL STUD ROUGH-IN.
2. PLASTER RINGS NOT SHOWN.
3. LOCATE ALL OUTLET BOXES IN ACCORDANCE WITH ARCHITECTURAL, MECHANICAL DRAWINGS' AND ALL APPLICABLE SHOP DRAWINGS.
4. IN ACCORDANCE WITH IBC 714.3.2, OUTLETS ON OPPOSITE SIDES OF FIRE RATED WALLS OR PARTITIONS IN THE SAME STUD SPACE MUST BE SEPARATED BY MINIMUM OF 24" HORIZONTAL DISTANCE.

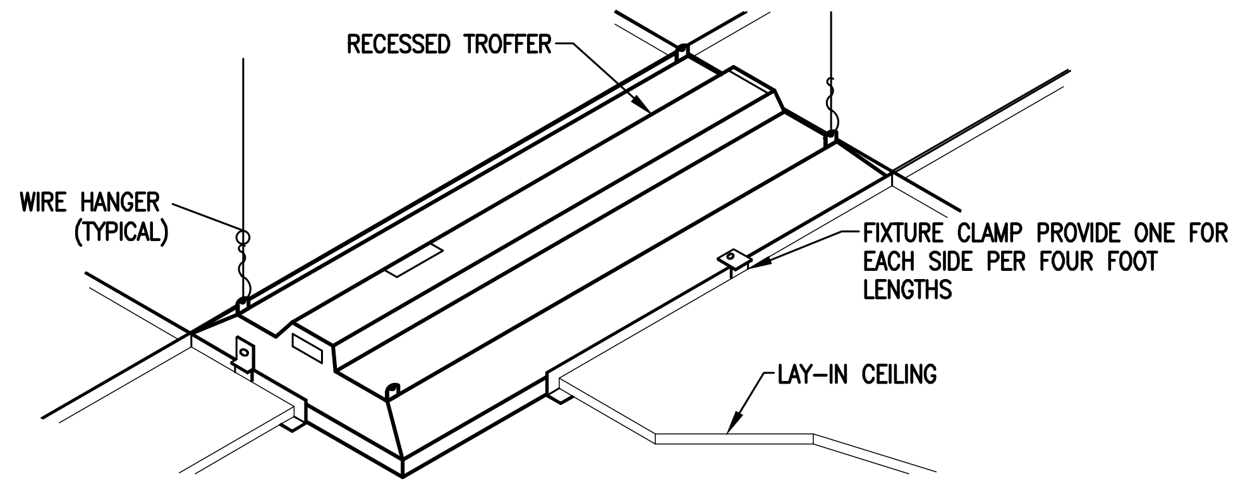
--- ROUGH-IN DETAIL FOR CONDUIT

SCALE: NTS


PUSH BUTTONS, LIGHTING CONTROLS, FIRE ALARM PULL STATIONS, AND CARD ACCESS
COUNTERTOP WITH BACKSPLASH
COUNTERTOP ONLY
4"
4"
DATA, PHONE, AND ELECTRICAL OUTLETS
48" MAX
18" MIN.
CASEWORK BY OTHERS
FINISHED FLOOR

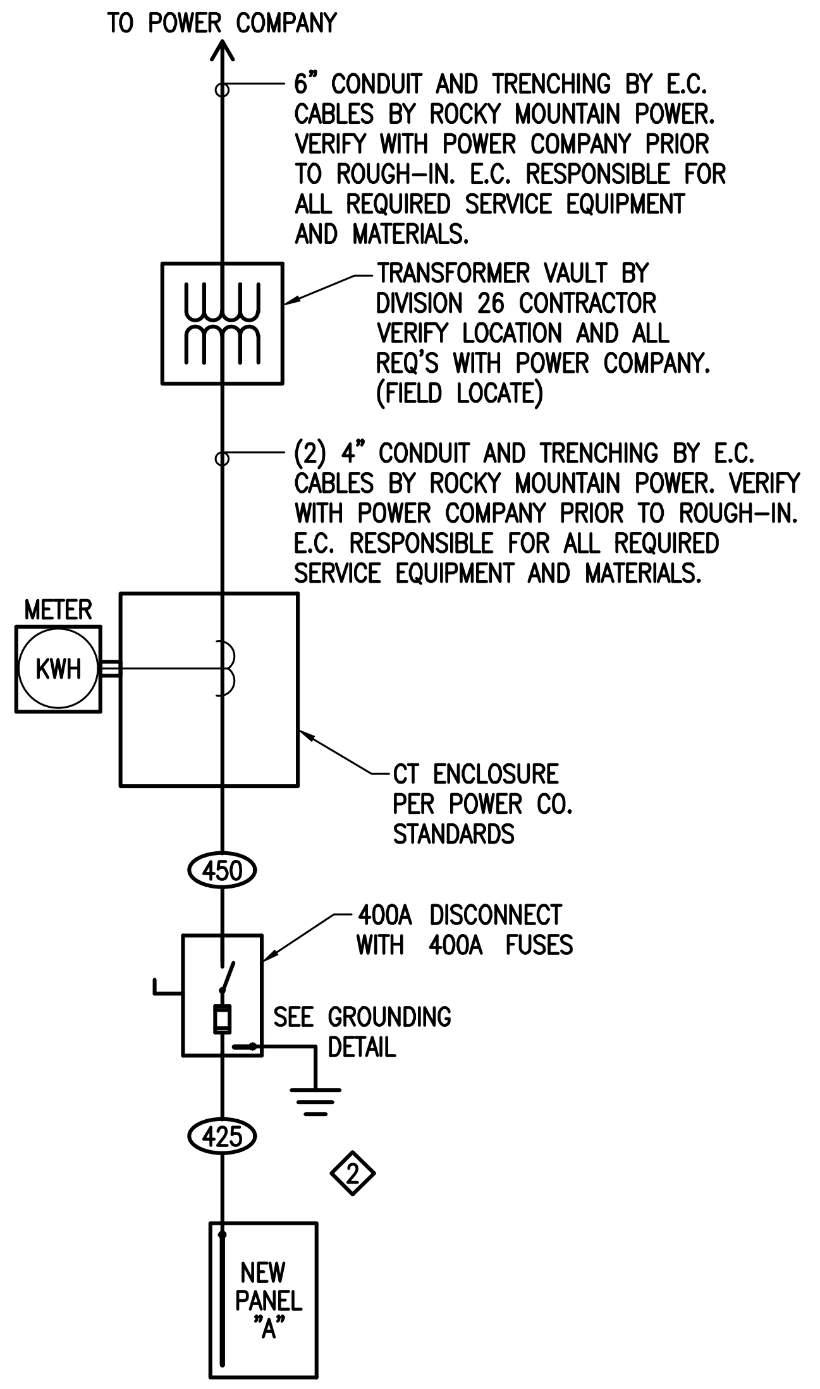
1 DEVICE MOUNTING HEIGHTS INSTALLATION DETAIL

SCALE: NTS


RECESSED TROFFER
WIRE HANGER (TYPICAL)
FIXTURE CLAMP PROVIDE ONE FOR EACH SIDE PER FOUR FOOT LENGTHS
LAY-IN CEILING

2 TYPICAL RECESSED FIXTURE MOUNTING DETAIL

SCALE: NTS


TO POWER COMPANY
6" CONDUIT AND TRENCHING BY E.C. CABLES BY ROCKY MOUNTAIN POWER. VERIFY WITH POWER COMPANY PRIOR TO ROUGH-IN. E.C. RESPONSIBLE FOR ALL REQUIRED SERVICE EQUIPMENT AND MATERIALS.
TRANSFORMER VAULT BY DIVISION 26 CONTRACTOR VERIFY LOCATION AND ALL REQ'S WITH POWER COMPANY. (FIELD LOCATE)
(2) 4" CONDUIT AND TRENCHING BY E.C. CABLES BY ROCKY MOUNTAIN POWER. VERIFY WITH POWER COMPANY PRIOR TO ROUGH-IN. E.C. RESPONSIBLE FOR ALL REQUIRED SERVICE EQUIPMENT AND MATERIALS.
METER
KWH
CT ENCLOSURE PER POWER CO. STANDARDS
450
400A DISCONNECT WITH 400A FUSES
SEE GROUNDING DETAIL
425
2
NEW PANEL "A"

KEYED NOTES:

1. METER PER POWER COMPANY STANDARDS.
2. PROVIDE AVAILABLE FAULT CURRENT FIELD MARKINGS AT PANEL PER NEC 110.24.
3. ARC ENERGY REDUCTION PER NEC 240.87.

3 POWER ONE-LINE DIAGRAM

SCALE: NTS

COPPER FEEDER SCHEDULE

TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING
	PVC	EMT	QUAN.	SIZE			PVC	EMT	QUAN.	SIZE			PVC	EMT	QUAN.	SIZE	
212	3/4"	3/4"	2	#12	25	21	1-1/4"	1-1/4"	2	#1	130	235	2"	2"	2	350 KCMIL	310
312	3/4"	3/4"	3	#12		31	1-1/4"	1-1/4"	3	#1		335	2-1/2"	2-1/2"	3	350 KCMIL	
412	3/4"	3/4"	4	#12		41	1-1/2"	1-1/2"	4	#1		435	3"	2-1/2"	4	350 KCMIL	
20	3/4"	3/4"	2	#10	35	21X	1-1/4"	1-1/4"	2	1/0	150	240	2"	2"	2	400 KCMIL	335
30	3/4"	3/4"	3	#10		31X	1-1/2"	1-1/2"	3	1/0		340	2-1/2"	2-1/2"	3	400 KCMIL	
40	3/4"	3/4"	4	#10		41X	1-1/2"	1-1/2"	4	1/0		440	3"	3"	4	400 KCMIL	
28	3/4"	3/4"	2	#8	50	22X	1-1/4"	1-1/4"	2	2/0	175	250	2-1/2"	2-1/2"	2	500 KCMIL	380
38	3/4"	3/4"	3	#8		32X	1-1/2"	1-1/2"	3	2/0		350	3"	2-1/2"	3	500 KCMIL	
48	3/4"	3/4"	4	#8		42X	2"	2"	4	2/0		450	4"	3-1/2"	4	500 KCMIL	
26	3/4"	3/4"	2	#6	65	23X	1-1/2"	1-1/4"	2	3/0	200	260	2-1/2"	2-1/2"	2	600 KCMIL	420
36	3/4"	3/4"	3	#6		33X	2"	2"	3	3/0		360	3-1/2"	3-1/2"	3	600 KCMIL	
46	1"	1"	4	#6		43X	2"	2"	4	3/0		460	4"	4"	4	600 KCMIL	
24	3/4"	3/4"	2	#4	85	24X	1-1/2"	1-1/2"	2	4/0	230						
34	1"	1"	3	#4		34X	2"	2"	3	4/0							
44	1-1/4"	1-1/4"	4	#4		44X	2-1/2"	2-1/2"	4	4/0							
23	1"	1"	2	#3	100	225	2"	2"	2	250 KCMIL	255						
33	1"	1"	3	#3		325	2"	2"	3	250 KCMIL							
43	1-1/4"	1-1/4"	4	#3		425	3"	2-1/2"	4	250 KCMIL							
22	1"	1"	2	#2	115	230	2"	2"	2	300 KCMIL	285						
32	1-1/4"	1-1/4"	3	#2		330	2-1/2"	2-1/2"	3	300 KCMIL							
42	1-1/4"	1-1/4"	4	#2		430	3"	2-1/2"	4	300 KCMIL							

EQUIPMENT GROUNDING CONDUCTORS SCHEDULE

OVERCURRENT DEVICE	COPPER
15	14
20	12
30	10
40	10
60	10
100	8
200	6
300	4
400	3
500	2
600	1
800	1/0

NOTE:
1. SEE EQUIPMENT GROUND CONDUCTOR SCHEDULES OR SERVICE GROUNDING DETAIL FOR GROUND CONDUCTORS RATING.
2. ALL INSULATION SHALL BE THHN (ABOVE GRADE) OR THWN (BELOW GRADE) UNLESS NOTED OTHERWISE.
3. PVC CONDUIT SIZE IS BASED ON SCHEDULE 40 PVC. PVC & THWN ARE APPROVED FOR UNDERGROUND FEEDERS ONLY.

ALUMINUM FEEDER SCHEDULE

TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING	TYPE	CONDUIT SIZE		CONDUCTORS		75°C AMP RATING
	PVC	EMT	QUAN.	SIZE			PVC	EMT	QUAN.	SIZE			PVC	EMT	QUAN.	SIZE	
212 AL	3/4"	3/4"	2	#12	20	21 AL	1-1/4"	1-1/4"	2	#1	100	235 AL	2"	2"	2	350 KCMIL	250
312 AL	3/4"	3/4"	3	#12		31 AL	1-1/4"	1-1/4"	3	#1		335 AL	2-1/2"	2-1/2"	3	350 KCMIL	
412 AL	3/4"	3/4"	4	#12		41 AL	1-1/2"	1-1/2"	4	#1		435 AL	3"	3"	4	350 KCMIL	
20 AL	3/4"	3/4"	2	#10	30	21X AL	1-1/4"	1-1/4"	2	1/0	120	240 AL	2"	2"	2	400 KCMIL	270
30 AL	3/4"	3/4"	3	#10		31X AL	1-1/2"	1-1/2"	3	1/0		340 AL	2-1/2"	2-1/2"	3	400 KCMIL	
40 AL	3/4"	3/4"	4	#10		41X AL	1-1/2"	1-1/2"	4	1/0		440 AL	3"	3"	4	400 KCMIL	
28 AL	3/4"	3/4"	2	#8	40	22X AL	1-1/4"	1-1/4"	2	2/0	135	250 AL	2-1/2"	2-1/2"	2	500 KCMIL	310
38 AL	3/4"	3/4"	3	#8		32X AL	1-1/2"	1-1/2"	3	2/0		350 AL	3"	3"	3	500 KCMIL	
48 AL	3/4"	3/4"	4	#8		42X AL	2"	2"	4	2/0		450 AL	4"	4"	4	500 KCMIL	
26 AL	3/4"	3/4"	2	#6	50	23X AL	1-1/2"	1-1/4"	2	3/0	155	260 AL	2-1/2"	2-1/2"	2	600 KCMIL	340
36 AL	3/4"	3/4"	3	#6		33X AL	2"	2"	3	3/0		360 AL	3-1/2"	3-1/2"	3	600 KCMIL	
46 AL	1"	1"	4	#6		43X AL	2"	2"	4	3/0		460 AL	4"	4"	4	600 KCMIL	
24 AL	3/4"	3/4"	2	#4	65	24X AL	1-1/2"	1-1/2"	2	4/0	180						
34 AL	1"	1"	3	#4		34X AL	2"	2"	3	4/0							
44 AL	1-1/4"	1-1/4"	4	#4		44X AL	2-1/2"	2-1/2"	4	4/0							
23 AL	1"	1"	2	#3	75	225 AL	2"	2"	2	250 KCMIL	205						
33 AL	1"	1"	3	#3		325 AL	2"	2"	3	250 KCMIL							
43 AL	1-1/4"	1-1/4"	4	#3		425 AL	3"	2-1/2"	4	250 KCMIL							
22 AL	1"	1"	2	#2	90	230 AL	2"	2"	2	300 KCMIL	230						
32 AL	1-1/4"	1-1/4"	3	#2		330 AL	2-1/2"	2-1/2"	3	300 KCMIL							
42 AL	1-1/4"	1-1/4"	4	#2		430 AL	3"	2-1/2"	4	300 KCMIL							

EQUIPMENT GROUNDING CONDUCTORS SCHEDULE

OVERCURRENT DEVICE	COPPER	ALUMINUM
15	14	12
20	12	10
30	10	8
40	10	8
60	10	8
100	8	6
200	6	4
300	4	2
400	3	1
500	2	1/0
600	1	2/0
800	1/0	3/0

NOTE:
1. SEE EQUIPMENT GROUND CONDUCTOR SCHEDULES OR SERVICE GROUNDING DETAIL FOR GROUND CONDUCTORS RATING.
2. ALL INSULATION SHALL BE THHN (ABOVE GRADE) OR THWN (BELOW GRADE) UNLESS NOTED OTHERWISE.
3. PVC CONDUIT SIZE IS BASED ON SCHEDULE 40 PVC. PVC & THWN ARE APPROVED FOR UNDERGROUND FEEDERS ONLY.

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Date: 01.11.2023
Revision:

PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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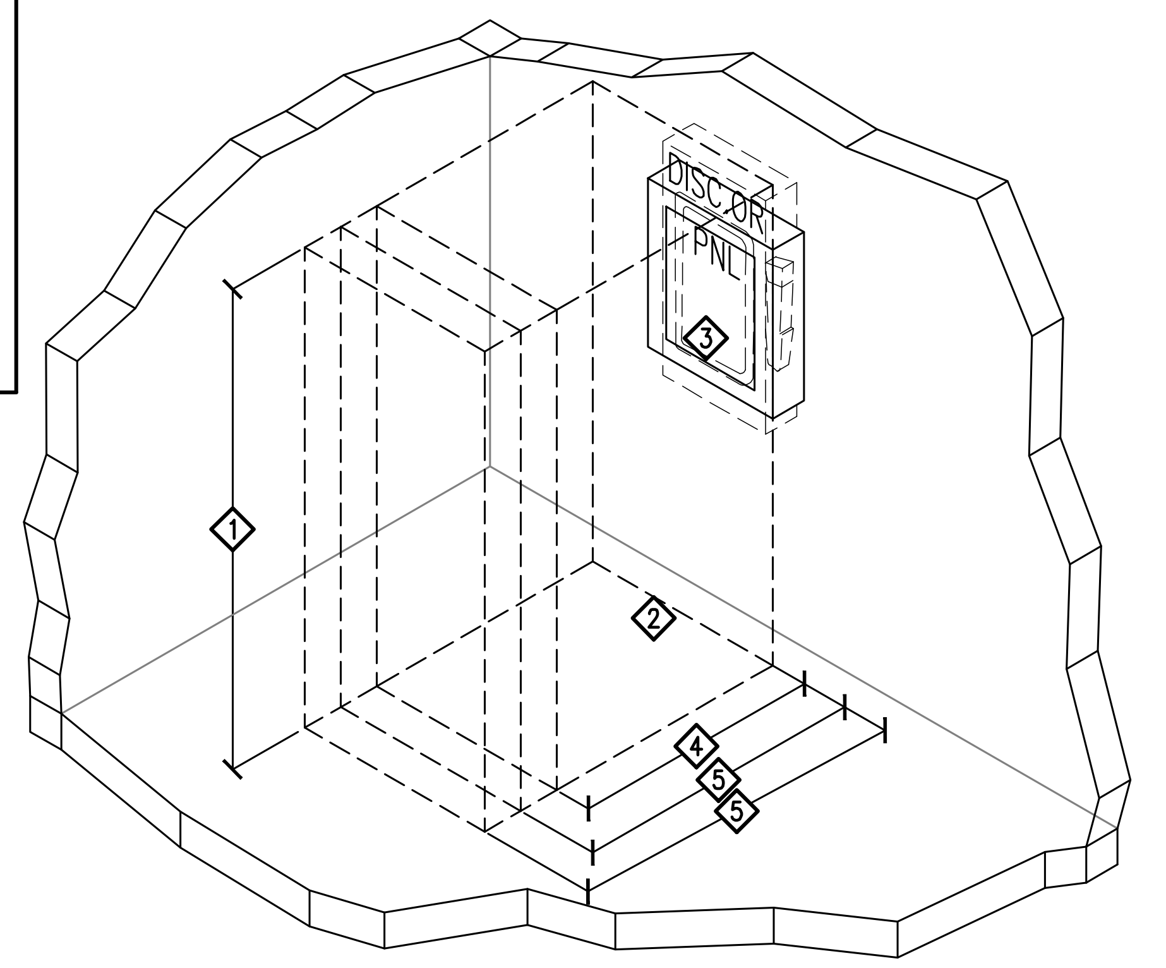
E5.1

KEYED NOTES:

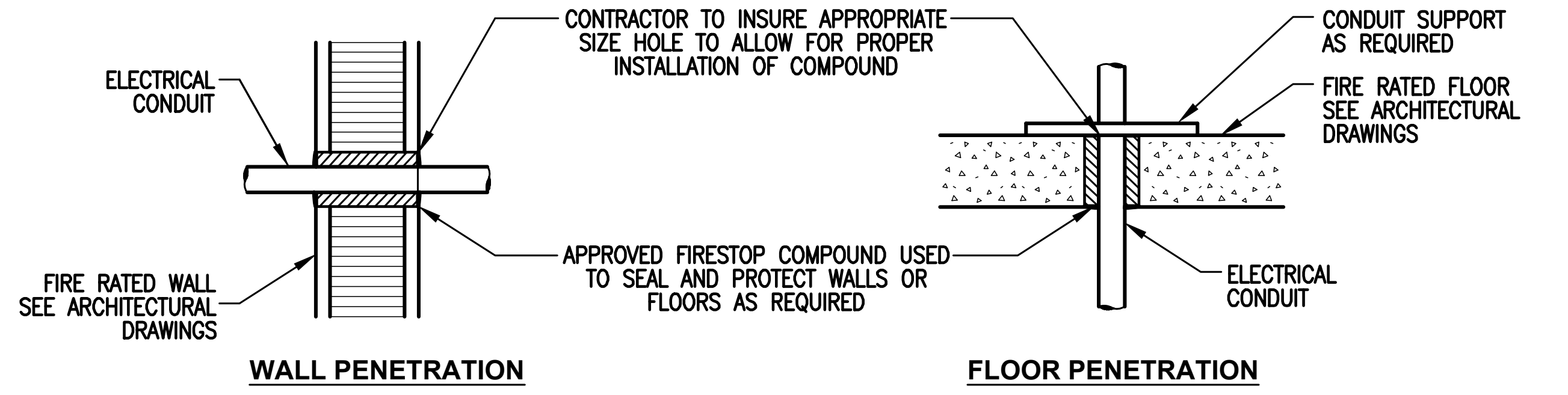
1. THE MINIMUM HEADROOM OF WORKING SPACE SHALL BE 6½ FT.
2. THE WIDTH OF THE WORKING SPACE SHALL BE THE WIDTH OF THE EQUIPMENT OR 30 IN., WHICHEVER IS GREATER. THE PANEL DOOR SHALL OPEN AT LEAST 90 DEGREES.
3. ALL CIRCUIT BREAKERS OR DISCONNECT HANDLES SHALL BE NOT MORE THAN 6 FT 7 IN. ABOVE THE FLOOR WHEN IN THEIR HIGHEST POSITION.
4. 3 FT CLEARANCE IF 0–150V TO GROUND
5. 3.5FT CLEARANCE IF 151–600V TO GROUND. 4FT IF EXPOSED LIVE PARTS ON BOTH SIDES OF THE WORKING SPACE.

GENERAL NOTE:

1. ALL WORKING SPACE CLEARANCE FROM FACE OF PANEL.



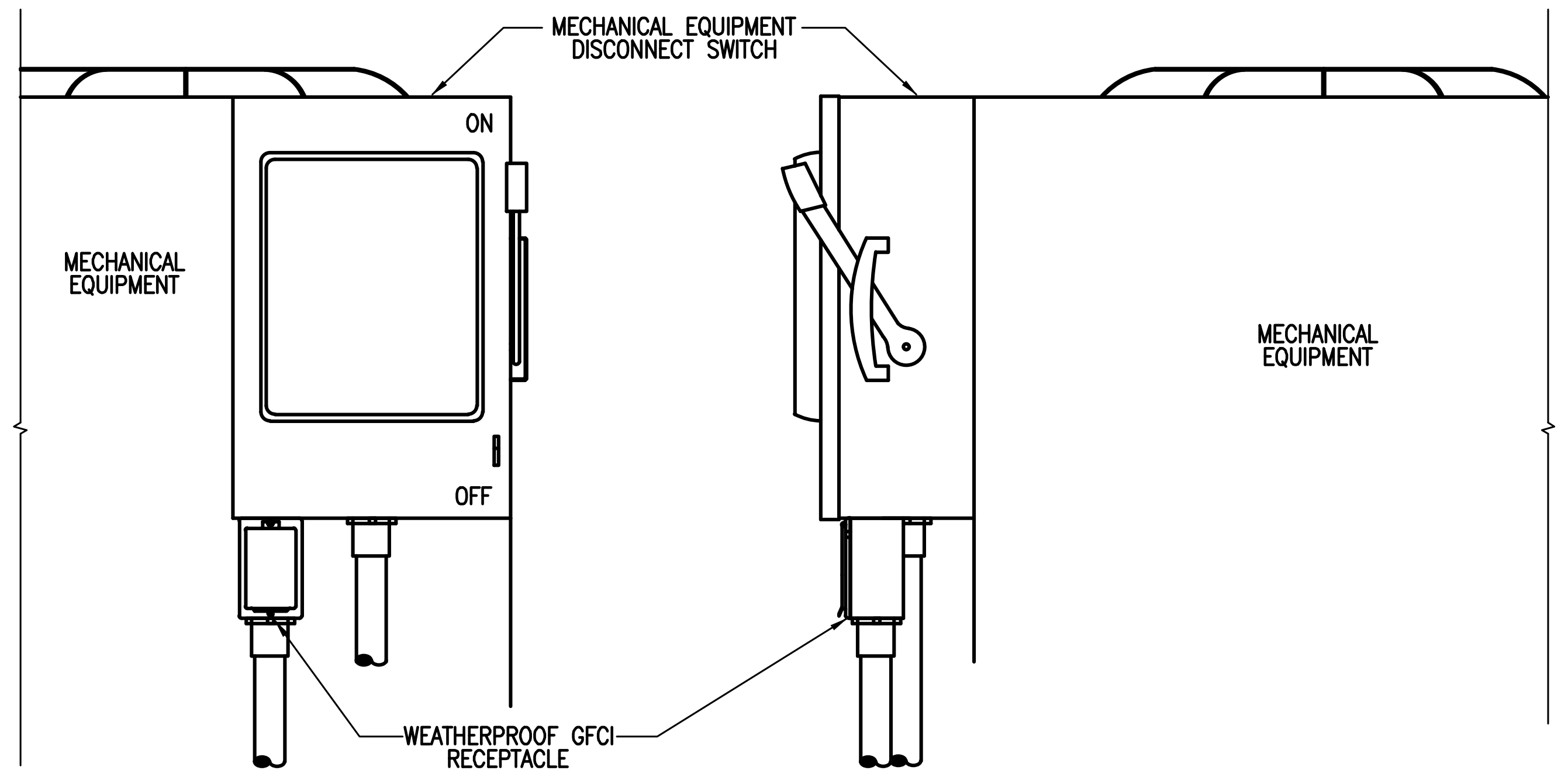
6 ELECTRICAL EQUIPMENT WORK SPACE CLEARANCES
SCALE: NTS


ELECTRICAL CONDUIT
CONTRACTOR TO INSURE APPROPRIATE SIZE HOLE TO ALLOW FOR PROPER INSTALLATION OF COMPOUND
FIRE RATED WALL SEE ARCHITECTURAL DRAWINGS
APPROVED FIRESTOP COMPOUND USED TO SEAL AND PROTECT WALLS OR FLOORS AS REQUIRED
CONDUIT SUPPORT AS REQUIRED
FIRE RATED FLOOR SEE ARCHITECTURAL DRAWINGS
ELECTRICAL CONDUIT
WALL PENETRATION
FLOOR PENETRATION

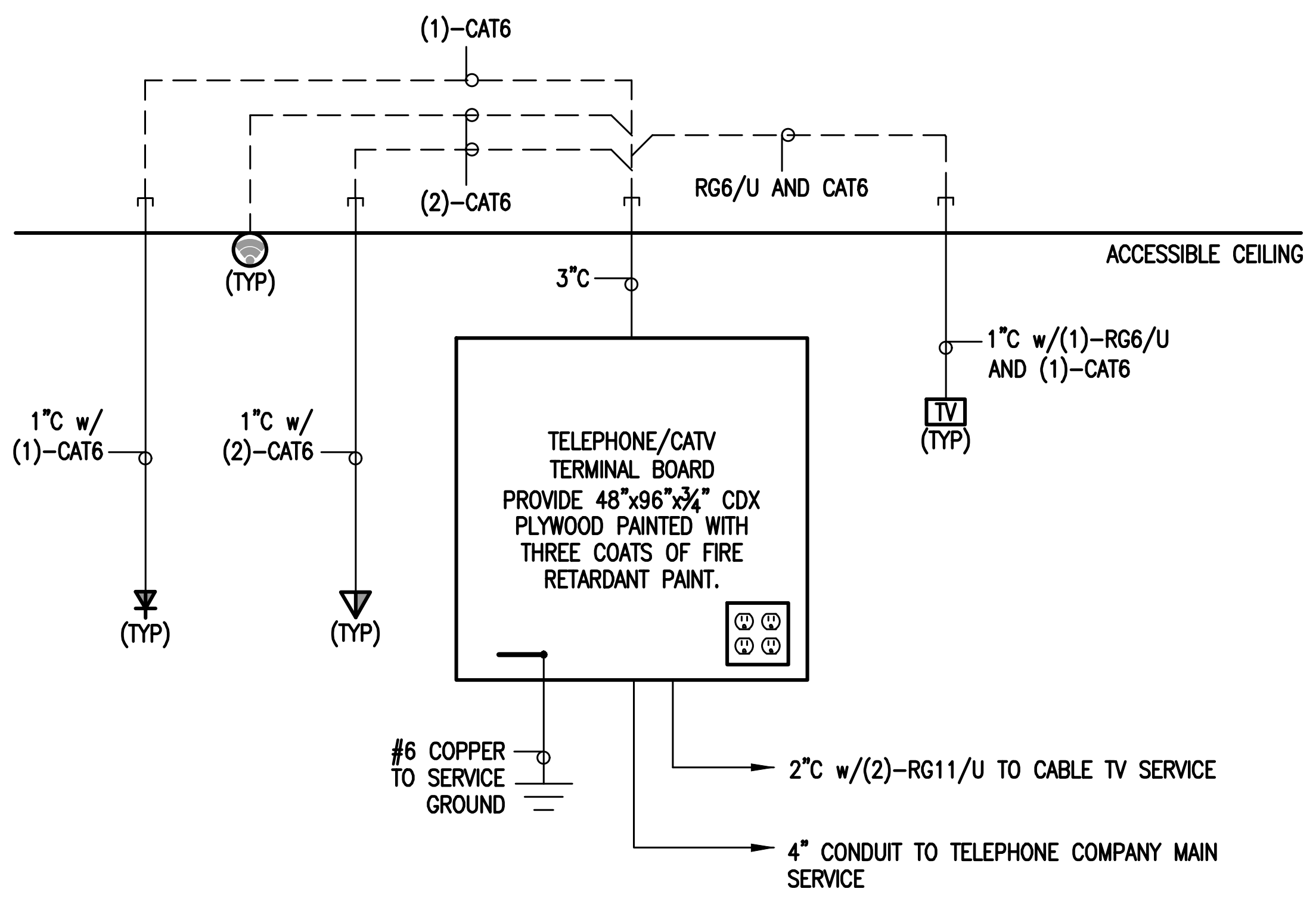
NOTE:

1. ALL FIRE STOPPING COMPOUND TO BE INSTALLED UNDER STRICT ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

3 FIRE RATED PENETRATION DETAIL
SCALE: NTS


MECHANICAL EQUIPMENT DISCONNECT SWITCH
ON
OFF
MECHANICAL EQUIPMENT
MECHANICAL EQUIPMENT
WEATHERPROOF GFCI RECEPTACLE

4 WEATHERPROOF RECEPTACLE INSTALLATION DETAIL
SCALE: NTS


(1)–CAT6
(2)–CAT6
RG6/U AND CAT6
ACCESSIBLE CEILING
(TYP)
3"C
1"C w/(1)–RG6/U AND (1)–CAT6
TV
(TYP)
1"C w/ (1)–CAT6
1"C w/ (2)–CAT6
(TYP)
(TYP)
TELEPHONE/CATV TERMINAL BOARD PROVIDE 48"x96"x¾" CDX PLYWOOD PAINTED WITH THREE COATS OF FIRE RETARDANT PAINT.
#6 COPPER TO SERVICE GROUND
2"C w/(2)–RG11/U TO CABLE TV SERVICE
4" CONDUIT TO TELEPHONE COMPANY MAIN SERVICE

5 COMMUNICATIONS RISER DIAGRAM
SCALE: NTS

NOTE:

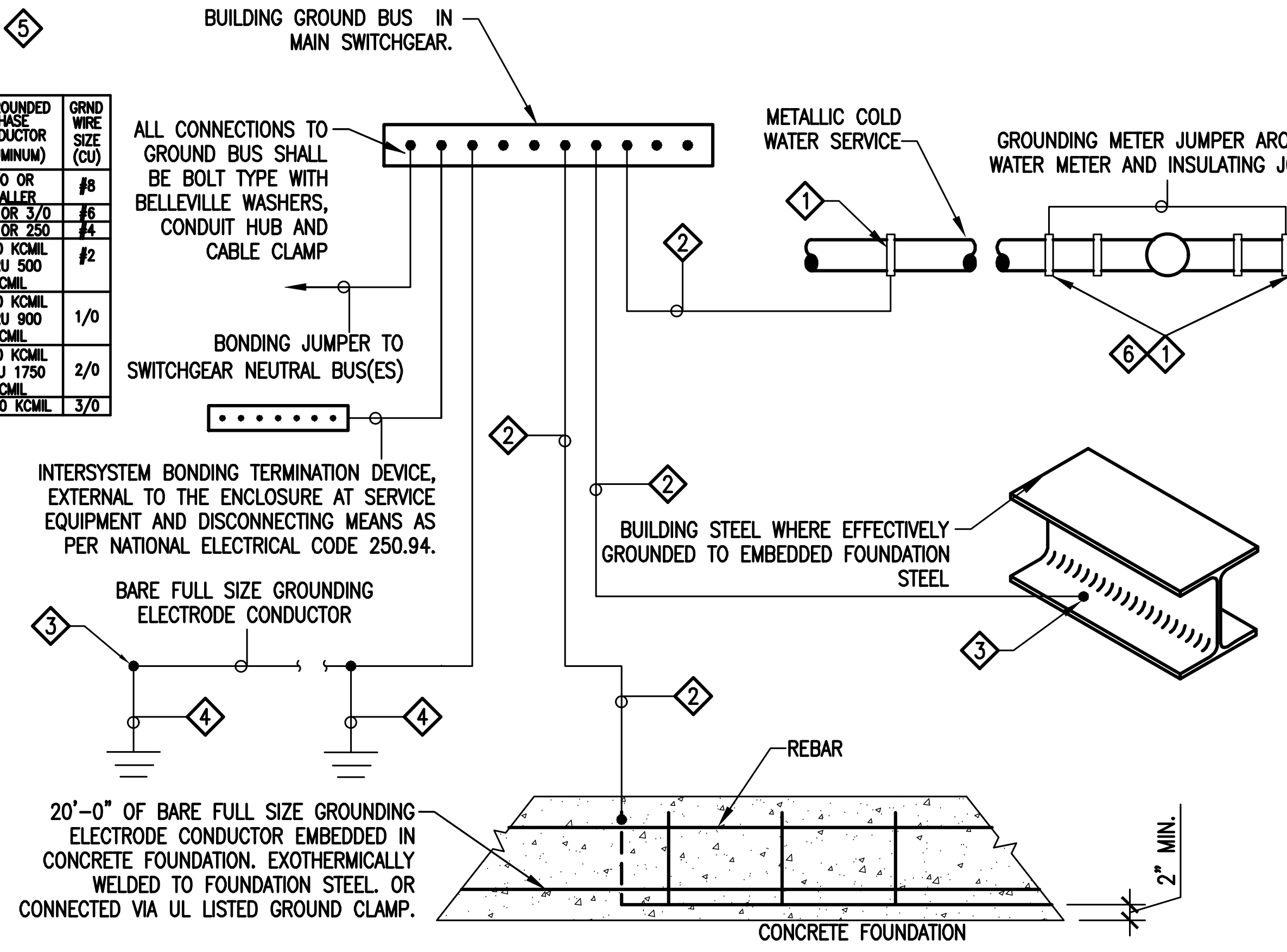
1. WHEN PRESENT CONTRACTOR SHALL PROVIDE ALL GROUNDING MEANS INDICATED. CONTRACTOR SHALL REFER TO ELECTRICAL ONE–LINE DIAGRAM AND GROUNDING ELECTRODE CONDUCTOR SCHEDULE (THIS DETAIL) FOR GROUNDING ELECTRODE CONDUCTOR SIZE. CONTRACTOR SHALL REFER TO ELECTRICAL SPECIFICATIONS FOR SPECIFICS OF GROUNDING SYSTEM INSTALLATION AND MATERIALS.
2. GROUNDING ROD SHALL BE MIN. 9FT. AWAY FROM IRRIGATION CONTROLLER.

KEYED NOTE:

1. T&B 3900 BU GROUND CLAMP WITH 3/4" CONDUIT HUB AND CABLE CLAMP
2. FULL SIZE GROUNDING ELECTRODE CONDUCTOR IN PVC.
3. EXOTHERMICALLY WELDED (TYPICAL)
4. DRIVEN GROUND RODS ⅝"x8' COPPER/STEEL ON BUILDING EXTERIOR
5. TABLE TAKEN FROM NEC 250.66. UNGROUNDED PHASE CONDUCTOR REFERS TO THE SIZE OF THE LARGEST UNGROUNDED SERVICE–ENTRANCE CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS. SEE NEC 250.66.
6. BOND METAL PIPING PER NEC 250.104.

GROUNDING ELECTRODE CONDUCTOR ⑤

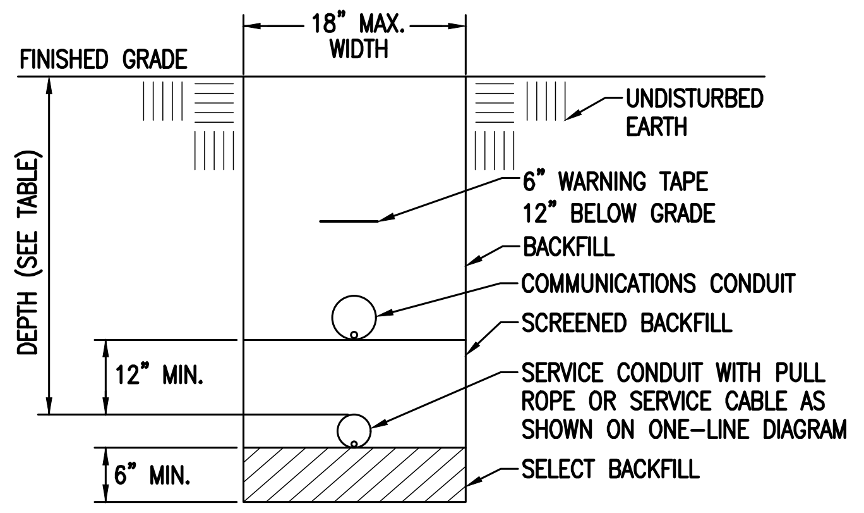
UNGROUNDED PHASE CONDUCTOR (COPPER)	UNGROUNDED PHASE CONDUCTOR (ALUMINUM)	GRND WIRE SIZE (CU)
#2 OR SMALLER	1/0 OR SMALLER	#8
1 OR 1/0	2/0 OR 3/0	#6
2/0 OR 3/0	4/0 OR 250	#4
>3/0 THRU 350 KCMIL	>250 KCMIL THRU 500 KCMIL	#2
>350 KCMIL THRU 600 KCMIL	>500 KCMIL THRU 900 KCMIL	1/0
>600 KCMIL THRU 1100 KCMIL	>900 KCMIL THRU 1750 KCMIL	2/0
>1100 KCMIL	>1750 KCMIL	3/0


BUILDING GROUND BUS IN MAIN SWITCHGEAR.
ALL CONNECTIONS TO GROUND BUS SHALL BE BOLT TYPE WITH BELLEVILLE WASHERS, CONDUIT HUB AND CABLE CLAMP
BONDING JUMPER TO SWITCHGEAR NEUTRAL BUS(ES)
INTERSYSTEM BONDING TERMINATION DEVICE, EXTERNAL TO THE ENCLOSURE AT SERVICE EQUIPMENT AND DISCONNECTING MEANS AS PER NATIONAL ELECTRICAL CODE 250.94.
BARE FULL SIZE GROUNDING ELECTRODE CONDUCTOR
METALLIC COLD WATER SERVICE
GROUNDING METER JUMPER AROUND WATER METER AND INSULATING JOINTS
BUILDING STEEL WHERE EFFECTIVELY GROUNDED TO EMBEDDED FOUNDATION STEEL
REBAR
20'–0" OF BARE FULL SIZE GROUNDING ELECTRODE CONDUCTOR EMBEDDED IN CONCRETE FOUNDATION. EXOTHERMICALLY WELDED TO FOUNDATION STEEL. OR CONNECTED VIA UL LISTED GROUND CLAMP.
CONCRETE FOUNDATION
2" MIN.
1
2
3
4
6

1 SERVICE GROUNDING DETAIL
SCALE: NTS

LOCATION DESCRIPTION	MIN. DEPTH
BELOW CONCRETE SLAB (NOT TRAFFIC)	18 INCHES
BELOW TRAFFIC SURFACES	24 INCHES
PARKING LOT (PAVED OR NON–PAVED)	24 INCHES
OTHER LOCATIONS	24 INCHES
UTILITY SECONDARY	24 INCHES*
UTILITY PRIMARY	48 INCHES*

(SEE NEC TABLE 300.5)
* VERIFY ALL DIMENSIONS WITH LOCAL POWER COMPANY STANDARDS AND SPECIFICATIONS.



2 TRENCHING DETAIL
SCALE: NTS

Date: 01.11.2023
Revision:

PRELIMINARY PLANS
PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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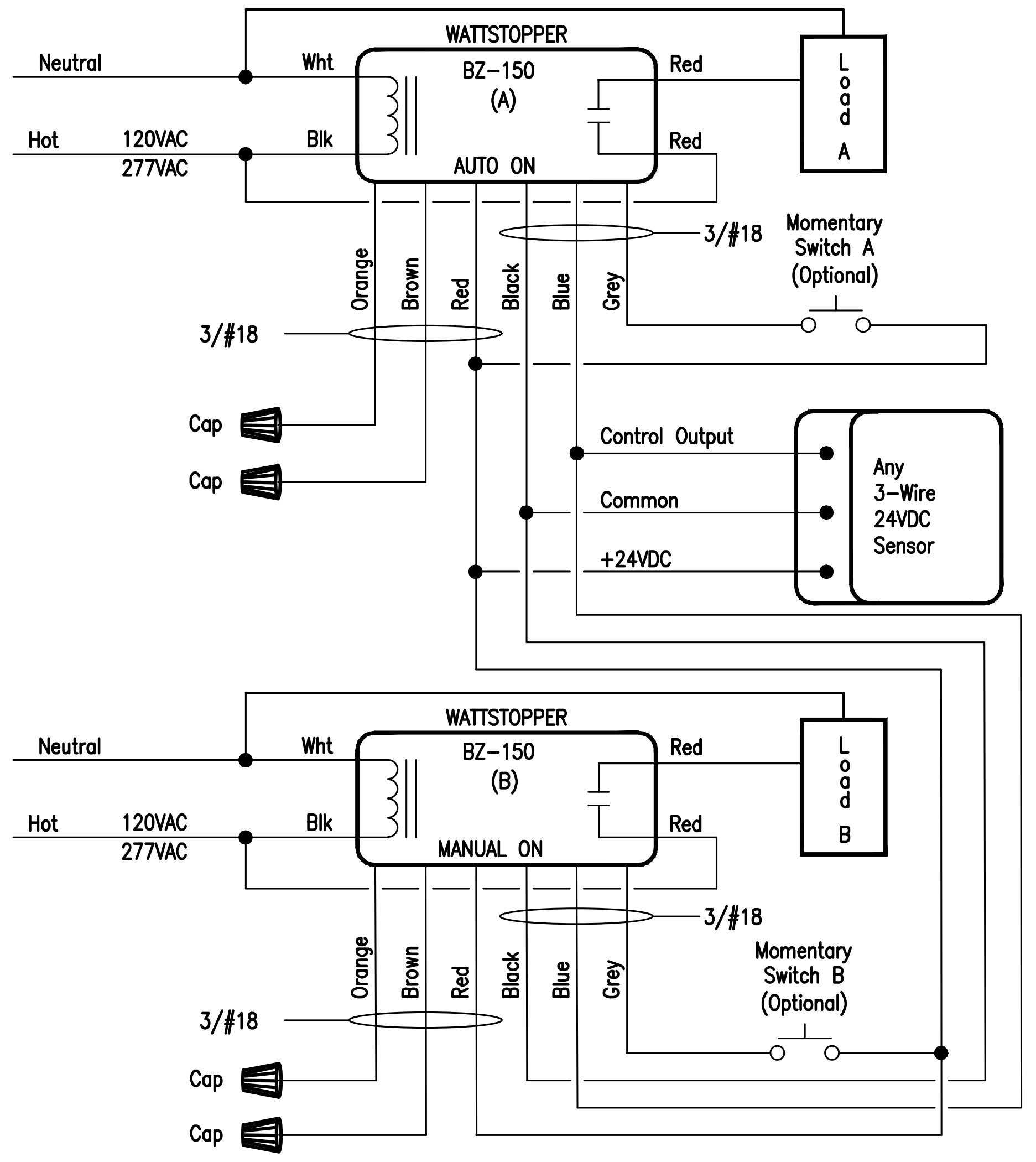
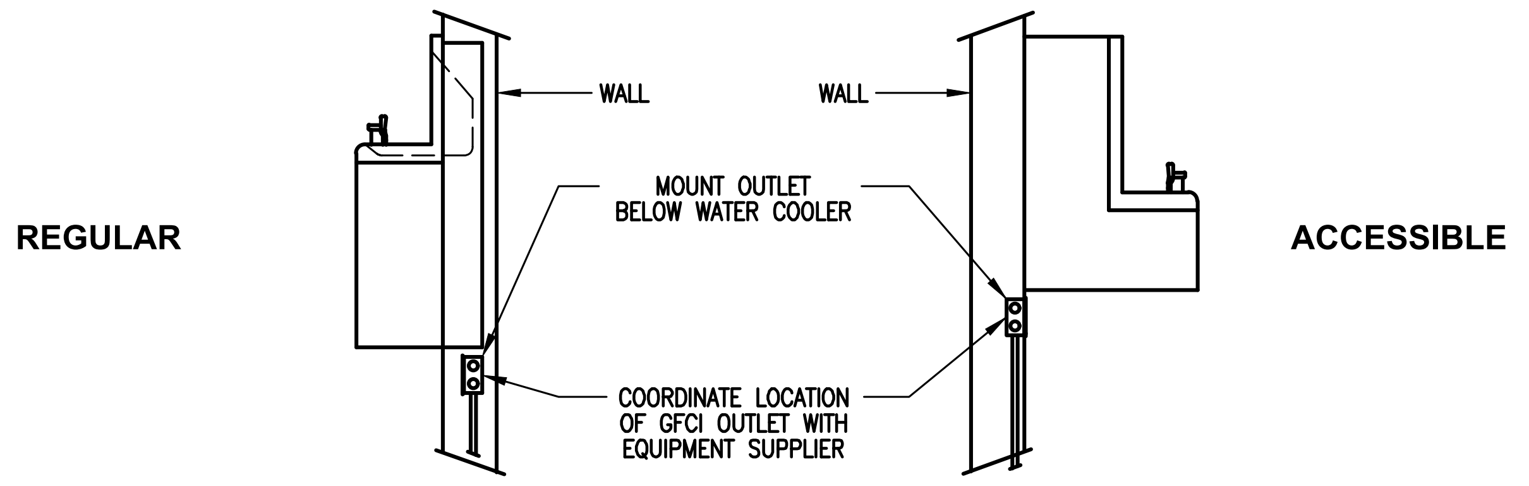


3 MOTION SENSOR WITH LV SWITCH

SCALE: NTS



4 ELECTRIC WATER COOLER INSTALLATION DETAIL

SCALE: NTS

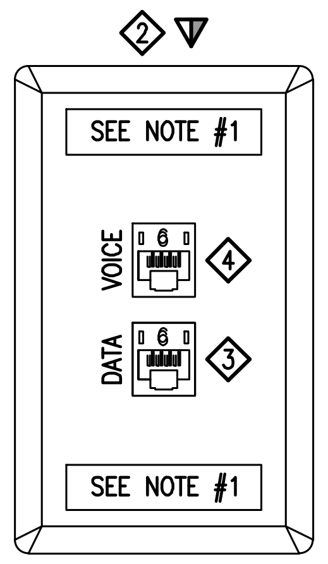
KEYED NOTES:

- ① 1-PORT SINGLE GANG FACEPLATE (HUBBELL #IFP11*)
- ② 2-PORT SINGLE GANG FACEPLATE (HUBBELL #IFP12*)
- ③ CAT 6 8-POSITION JACK (HUBBELL #HXJ6*)
- ④ CAT 6 VOICE JACK (HUBBELL #HXJU*)
- ⑤ COAXIAL F-TYPE JACK (HUBBELL #NSF70*)

GENERAL NOTES:

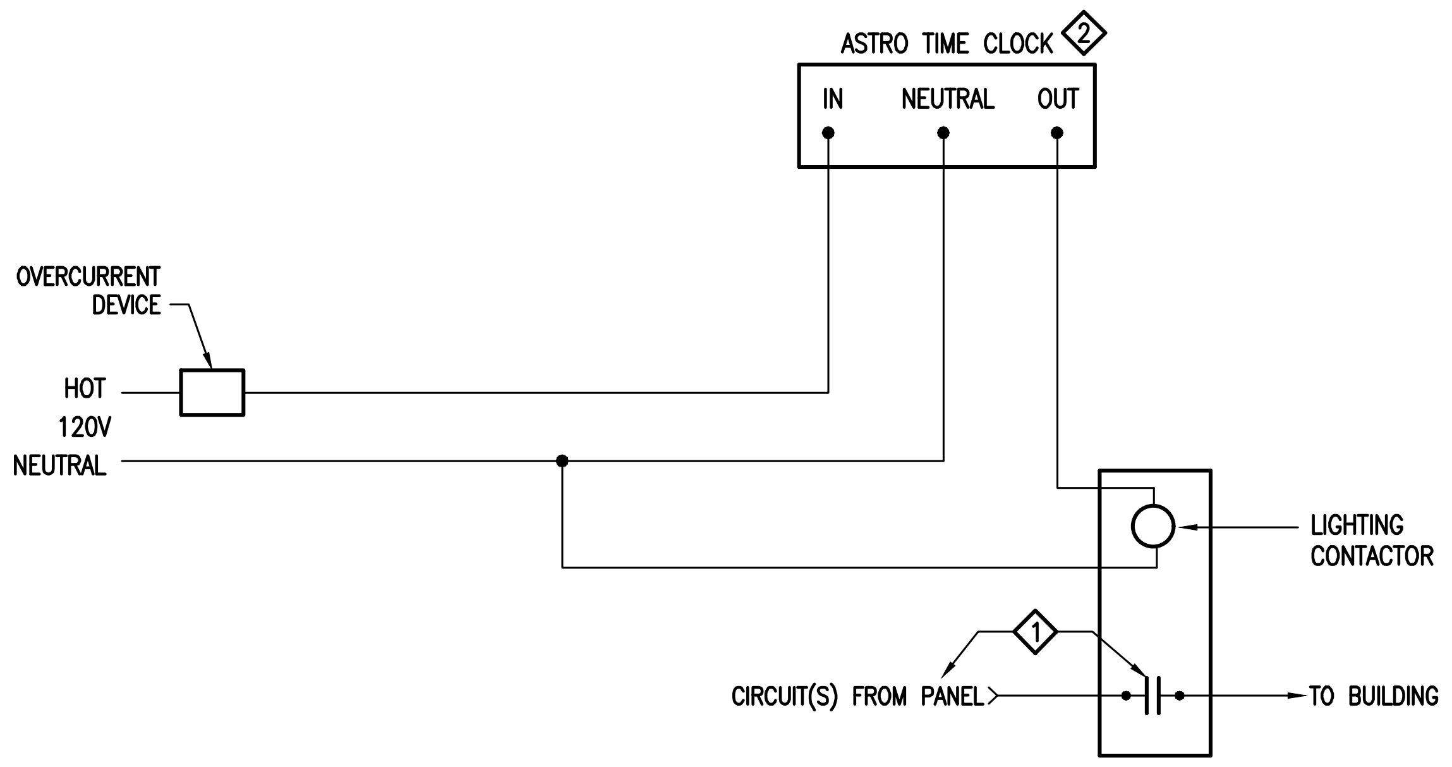
1. COORDINATE STATION AND PORT LABELING WITH OWNER.
2. ALL PATCH CABLES AND STATION CABLES SHALL BE PROVIDED AND INSTALLED BY EC.
3. ALL PATCHING AND/OR CROSS CONNECTION SHALL BE PERFORMED BY THE EC.

* MATCH FACEPLATE COLOR TO RECEPTACLES.



1 DATA/VOICE JACK INSTALLATION DETAIL

SCALE: NTS



KEYED NOTE:

- ① CONTACTOR AMPERAGE SHALL BE COMPATIBLE WITH CIRCUIT AMPERAGE
- ② TIME CLOCK SHALL BE CAPABLE OF RETAINING PROGRAMMING AND TIME SETTING DURING LOSS OF POWER FOR A PERIOD OF AT LEAST 10 HOURS.

2 LIGHTING CONTROL WIRING DIAGRAM

SCALE: NTS

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E5.3

LOAD CALCULATIONS

GROSS BUILDING AREA:	7,567	SQ. FT
BUILDING VOLTAGE:	208	VOLTS
PHASE	3	PHASE
OCCUPANCY TYPE:	BUSINESS	
GENERAL LOADS:		
LIGHTING W/ 125% DEMAND:	3,204	VA
RECEPTACLE LOAD:	13,176	VA
FIRST 10,000 VA @ 100%	10,000	VA
REMAINDER @50%	1,588	VA
ADJUSTED RECEPTACLE TOTAL LOAD:	11,588	VA
TOTAL:	14,792	VA
HVAC LOADS:		
COOLING/HEATING	14,343	VA
RESISTANCE HEATING W/ 125% DEMAND:	4,536	VA
WATER HEATING:	5,000	VA
TOTAL:	23,879	VA
EQUIPMENT LOADS:		
AIR COMPRESSORS:	4,800	VA
MOTORS	25,200	VA
TOTAL:	35,760	VA
NET COMPUTED LOAD:	74,431	VA
NET COMPUTED AMPS:	207	AMPS

EQUIPMENT SCHEDULE

SYMBOL	DESCRIPTION	SERVICE		DISCONNECT		STARTER	LOAD			MOCP/ BRKR	REMARKS
		VOLTS	PHASE	SIZE	FUSE		HP/TON	VA	AMPS		
WM 1	FAN COIL INDOOR UNIT	208 V	1Ø	2 POLE SWITCH	-	INTEGRAL	-	2,288	11.0A	28A	POWERED FROM OUTDOOR UNIT
F 2.5	FURNACE FAN	120 V	1Ø	MANUAL STARTER	-	INTEGRAL	-	1,176	9.8A	15A	
F 4	FURNACE FAN	120 V	1Ø	MANUAL STARTER	-	INTEGRAL	-	1,956	16.3A	20A	
CU 2.5	AIR COOLED CONDENSING UNIT	208 V	1Ø	30A NEMA 3R	-	INTEGRAL	2½ TON	3,494	16.8A	30A	
CU 4	AIR COOLED CONDENSING UNIT	208 V	1Ø	30A NEMA 3R	-	INTEGRAL	4 TON	5,429	26.1A	40A	
EF 1	EXHAUST FAN	120 V	1Ø	INTEGRAL PLUG	-	-	-	15	0.1A	20A	EF CONTROLLED WITH LIGHTING
EF 2	EXHAUST FAN	120 V	1Ø	INTEGRAL PLUG	-	-	-	32	0.3A	20A	EF CONTROLLED WITH LIGHTING
HP 1	UNIT HEATER	208 V	1Ø	MANUAL STARTER	-	-	-	2,288	11.0A	28A	
UH 1	UNIT HEATER	120 V	1Ø	MANUAL STARTER	-	-	-	447	7.1A	20A	
WH 1	WATER HEATER	208 V	1Ø	PLUG/ CORD	-	-	-	5,000	24.0A	20A	
CP 1	RECIRCULATION PUMP	120 V	1Ø	PLUG/ CORD	-	-	FRAC	240	2.0A	20A	

NOTES:

1. VERIFY ALL EQUIPMENT LOCATIONS AND CONNECTION REQUIREMENTS (i.e. VOLTAGE, PHASE, FLA, ETC.) WITH MECHANICAL DRAWINGS/SUBMITTALS BEFORE FOR ACTUAL EQUIPMENT INSTALLED.
2. ALL FUSES SHALL BE DUAL ELEMENT TIME DELAY. FINAL BREAKER/FUSE & DISCONNECT SIZE SHALL BE DETERMINED BY MANUFACTURER'S RECOMMENDATION FOR ACTUAL EQUIPMENT INSTALLED.
3. MAXIMUM VALUES INDICATED.
4. DISCONNECTING MEANS NOT REQUIRED FOR EQUIPMENT WITHIN SIGHT (AS DEFINED IN NEC) OF BRANCH PANEL SERVING EQUIPMENT. SEE NEC 422.31 (B).
5. DISCONNECTING MEANS NOT REQUIRED FOR APPLIANCES NOT OVER 300 VA. SEE NEC 422.31 (A).

FAULT CURRENT CALCULATION TABLE

MAIN UTILITY COMPANY TRANSFORMER	TRANSFORMER KVA	AFC AT UTILITY	%Z
EDIT ME	0	A	0.00%

CONFIGURATION						FEEDER			SYSTEM								
FROM		TO		LENGTH	SOURCE FAULT CURRENT	FEEDER SIZE	FEEDERS PER PHASE	WIRE CONSTANT	LINE TO LINE VOLTS	XFMR SECONDARY VOLTS	PHASE	KVA	%Z	MOTOR LOAD	FAULT CURRENT AT EQUIPMENT	FULL OR SERIES RATED	MINIMUM SYMMETRICAL EQUIPMENT AIC RATING
TRANSFORMER	UTILITY	SWITCHBOARD	METER	85'-0"	0 AIC	2/0 AL	1	7,301	208 V		3Ø		-		0 AIC	FULL	0 AIC
SWITCHBOARD	METER	PANELBOARD	A					#N/A			3Ø		-		#N/A	FULL	#N/A
								#N/A			3Ø		-		#N/A	FULL	#N/A
								#N/A			3Ø		-		#N/A	FULL	#N/A
								#N/A			3Ø		-		#N/A	FULL	#N/A
								#N/A			3Ø		-		#N/A	FULL	#N/A

NOTE: DISTANCES INDICATED ARE FOR FAULT-CURRENT ANALYSIS ONLY. CONTRACTOR SHALL USE FIELD MEASUREMENTS ESTABLISH CONDUCTOR LENGTHS FOR ORDERING PURPOSES.

PANEL SCHEDULE "A"

VOLTAGE: 208 Y/ 120 VOLTS
BUS RATING (AMPS): 225
REMARKS:
MOUNTING: FLUSH
PHASE: 3
MAIN LUGS ONLY
ENCLOSURE: NEMA 1
WIRE: 4
MINIMUM EQUIPMENT RATING: SEE FAULT CURRENT TABLE

CIRCUIT BREAKER				CIRCUIT NAME	FEEDER			CKT. LOAD		LOAD/PHASE (VA)			CKT. LOAD		FEEDER			CIRCUIT NAME	CIRCUIT BREAKER			
No.	AMPS	POLE	MOD.		C	WIRE	GRD	DEMAND FACTOR	WATTS	ØA	ØB	ØC	WATTS	DEMAND FACTOR	GRD	WIRE	C		MOD.	POLE	AMPS	No.
1	20	1	GFCI	CO-KITCHEN	¾"	#12	#12	1.00	1,500	2,430			930	1.25	#12	#12	¾"	MEZZ LIGHTING	-	1	20	2
3	20	1	GFCI	DISHWASHER / DISPOSAL	¾"	#12	#12	1.00	1,200		2,033		833	1.25	#12	#12	¾"	MEZZ LIGHTING	-	1	20	4
5	20	1	GFCI	REFRIGERATOR	¾"	#12	#12	1.00	1,200			2,000	800	1.25	#12	#12	¾"	FLOOR 1 LIGHITNG	-	1	20	6
7	30	1	GFCI	PRESSURE WASHER	¾"	#10	#10	1.00	120	1,560			1,440	1.00	#12	#12	¾"	OFFICE 102 & 103 REC	-	1	20	8
9	30	1	-	-	¾"	#10	#10	1.00	120		1,560		1,440	1.00	#12	#12	¾"	OFFICE 104 BREAKROOM REC	-	1	20	10
11	30	1	-	AIR COMPRESSOR	¾"	#10	#10	1.00	2,400			3,150	750	1.00	#12	#12	¾"	WATER FOUNTAIN	GFCI	1	20	12
13	30	1	-	-	¾"	#10	#10	1.00	2,400	2,940			540	1.00	#12	#12	¾"	GARAGE REC	GFCI	1	20	14
15	50	1	-	WELDER	¾"	#8	#10	1.00	2,880		3,780		900	1.00	#12	#12	¾"	GARAGE REC	GFCI	1	20	16
17	50	1	-	-	¾"	#8	#10	1.00	2,880			3,240	360	1.00	#12	#12	¾"	BATHROOM	-	1	20	18
19	20	1	GFCI	ICE MACHINE	¾"	#12	#12	1.00	1,086	1,806			720	1.00	#12	#12	¾"	GARAGE REC	GFCI	1	20	20
21	40	2	GFCI	WH-1	¾"	#8	#10	1.00	2,500		2,860		360	1.00	#12	#12	¾"	WOOD SHOP REC	-	1	20	22
23	-	-	-	-	-	#8	-	1.00	2,500			2,860	360	1.00	#12	#12	¾"	WOOD SHOP BENCH REC	-	1	20	24
25	20	1	-	UH-1	¾"	#12	#12	1.25	447	1,167			720	1.00	#12	#12	¾"	WOOD SHOP REC	-	1	20	26
27	20	1	-	UH-1	¾"	#12	#12	1.25	447		807		360	1.00	#12	#12	¾"	CEILING REC	-	1	20	28
29	20	1	-	UH-1	¾"	#12	#12	1.25	447			2,735	2,288	1.25	#10	#10	¾"	WM-1	-	1	30	30
31	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	2,376			1,176	1.00	#12	#12	¾"	F-2.5	-	1	20	32
33	-	-	-	-	-	#12	-	1.00	1,200		3,156		1,956	1.00	#10	#10	¾"	F-4	-	1	30	34
35	-	-	-	-	-	#12	-	1.00	1,200			1,200		1.00				SPACE	-			36
37	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	2,344			1,144	1.00	#12	#12	¾"	HP-1	-	2	20	38
39	-	-	-	-	-	#12	-	1.00	1,200		2,344		1,144	1.00	-	#12	-	-	-	-	-	40
41	-	-	-	-	-	#12	-	1.00	1,200			3,914	2,714	1.00	#10	#8	¾"	CU-4	-	2	40	42
43	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	3,914			2,714	1.00	-	#8	-	-	-	-	-	44
45	-	-	-	-	-	#12	-	1.00	1,200		1,200			1.00				SPACE	-			46
47	-	-	-	-	-	#12	-	1.00	1,200			1,200		1.00				SPACE	-			48
49	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	2,947			1,747	1.00	#10	#10	¾"	CU-2.5	-	2	30	50
51	-	-	-	-	-	#12	-	1.00	1,200		2,947		1,747	1.00	-	#10	-	-	-	-	-	52
53	-	-	-	-	-	#12	-	1.00	1,200			1,200		1.00				SPACE	-			54
55	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	1,200				1.00				SPACE	-			56
57	-	-	-	-	-	#12	-	1.00	1,200		1,200			1.00				SPACE	-			58
59	-	-	-	-	-	#12	-	1.00	1,200			1,200		1.00				SPACE	-			60
61	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	1,200				1.00				SPACE	-			62
63	-	-	-	-	-	#12	-	1.00	1,200		1,200			1.00				SPACE	-			64
65	-	-	-	-	-	#12	-	1.00	1,200			1,200		1.00				SPACE	-			66
67	20	3	-	OVERHEAD DOOR	¾"	#12	#12	1.00	1,200	1,200				1.00				SPACE	-			68
69	-	-	-	-	-	#12	-	1.00	1,200		1,200			1.00				SPACE	-			70
71	-	-	-	-	-	#12	-	1.00	1,200			1,200		1.00				SPACE	-			72
73			-	SPACE				1.00		0				1.00				SPACE	-			74
75			-	SPACE				1.00			0			1.00				SPACE	-			76
77			-	SPACE				1.00				0		1.00				SPACE	-			78
79			-	SPACE				1.00		0				1.00				SPACE	-			80
81			-	SPACE				1.00			0			1.00				SPACE	-			82
83			-	SPACE				1.00				0		1.00				SPACE	-			84

NOTES :

1. ALL INSULATION ON CONDUCTORS TO BE THHN UNLESS NOTED OTHERWISE. INSULATION ON ALL UNDERGROUND EXTERIOR CONDUCTORS SHALL BE THHW.
2. LOAD DEMANDS CALCULATED AS PER SECTIONS 210 & 220 OF THE NATIONAL ELECTRICAL CODE.
3. PANEL COVER SHALL BE FIELD MARKED FOR FLASH PROTECTION WITH A PERMANENT LABEL AS REQUIRED BY THE NATIONAL ELECTRICAL CODE SECTION 110. LABEL SHALL READ: "DANGER: POTENTIAL ARC FLASH HAZARD"
4. PANELBOARD SHALL BE FIELD MARKED WITH THE AVAILABLE FAULT CURRENT PER NEC 408.6.
5. FIRE ALARM SYSTEMS SHALL HAVE BRANCH CIRCUITS IDENTIFIED BY RED LABELS STATING “FIRE ALARM CIRCUIT” AS REQUIRED BY THE NATIONAL ELECTRICAL CODE ARTICLE 760.41B
6. ABBREVIATIONS: CO-CONVENIENCE OUTLET, RR-RESTROOM, (N)ORTH, (S)OUTH, (E)AST, (W)EST.

ØA	ØB	ØC	TOTALS	
25,085	24,287	25,099	74,471	CONNECTED LOAD (VA)
			207	CONNECTED LOAD (A)
344	320	884	1,548	DEMAND FACTOR ADJUSTMENTS (VA)
25,429	24,607	25,983	76,019	TOTAL LOAD (VA)
212	205	217		TOTAL LOAD (A)
			217	MAXIMUM LOAD (A)
33%	32%	34%		PHASE BALANCE

LIGHT FIXTURE SCHEDULE

FIXTURE NUMBER	FIXTURE MANUFACTURER	FIXTURE CATALOG #	LAMPS		FIXTURE			DESCRIPTION	REMARKS
			TYPE	QTY.	VOLTS	WATTS	MOUNTING		
F1	HALO JUNO LIGHTOLIER WESTINGHOUSE PRESCOLITE SATCO	SMD6R6935WH 6RLS 10LM 30K 90CRI 120 FRPC WH S-5-R-8-35K-10 63221 LBS5LEDA10L-35K-8-WH S9331	LED 3500 KELVIN 600 LUMENS 80 CRI	-	120	16.4	SURFACE CEILING	LED SURFACE LIGHT	
F2	METALUX LITHONIA DAY-BRITE LSI COLUMBIA ORACLE	24FR-LD4-40-UNV-L835-CD1-U 2BLT4-40L-ADP-EZ1-LP835 2FGG45L835-2-D-UNV-DIM-EMLED PEC24-LED-SS-RAD-WW-UE LTRE24-35LWG-RFA-EDU 24-ODVH-LED-3000L-DIM10-MVOLT-35K-80	LED 3500 KELVIN 4000 LUMENS 80 CRI	-	120	45	LAY-IN GRID	2X4 LED LAY-IN VOLUMETRIC	
F3	METALUX LITHONIA DAY-BRITE LSI COLUMBIA ORACLE	HBLED-LD5-18SE-W-UNV-L840-CD2-U IBG 18000LM SEF ACL GND MVOLT OZ10 40K 70CRI DWH FBX16LL40-UNV XLHB2-4-S-LED-SS-NW-UE-XX LLHV4-35H-NST-E-U CB4-LED-16000L-DIM10-MVOLT-W-40K-80	LED 4000 KELVIN 18000 LUMENS 80 CRI	-	120	155	PENDANT OR SURFACE	LED 2X4 HIGH BAY	
F4	METALUX LITHONIA DAY-BRITE LSI COLUMBIA ORACLE	4SNLED-LD4-30SL-LW-UNV-L835-CD1-U ZL1N-L48-3000LM-FST-MVOLT-35K-80CRI-WH FSS440L835-UNV-DIM SDL-4-LED-SS-WW-UE LCL4-35LW-EDU 4-OC1-LED-3000L-DIM10-MVOLT-35K-80	LED 3500 KELVIN 3000 LUMENS 80 CRI	-	120	29	SURFACE/CHAIN	48" LED STRIP	

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Date: 01.11.2023
Revision:

PRELIMINARY PLANS

PRELIMINARY DRAWING SUBJECT TO CHANGE. DRAWING INCOMPLETE AND NOT INTENDED FOR PERMITTING, PRICING, OR CONSTRUCTION.

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E6.1

ELECTRICAL SPECIFICATIONS

GENERAL PROVISION

A. REFERENCE
1. THE GENERAL CONDITIONS AND OTHER CONTRACT DRAWINGS AS SET FORTH IN THE FOREGOING PAGES ARE HEREBY INCORPORATED INTO AND BECOME A PART OF THE SPECIFICATIONS FOR WORK UNDER THIS TITLE, INSOFAR AS THEY APPLY HERETO.
2. ALL SPECIFICATIONS UNDER THIS DIVISION TITLE ARE DIRECTED TO AND ARE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR, UNLESS OTHER TRADES OR PERSONS ARE SPECIFICALLY MENTIONED, “ELECTRICAL CONTRACTOR” IS INFERRED AND INTENDED.

B. CONTRACT DRAWINGS
1. THE DRAWINGS ACCOMPANYING THESE SPECIFICATIONS ARE COMPLEMENTARY EACH TO THE OTHER AND WHAT IS CALLED FOR BY ONE SHALL BE AS IF CALLED FOR BY BOTH.
2. CONSULT ALL CONTRACT DRAWINGS WHICH MAY AFFECT THE LOCATION OF EQUIPMENT, CONDUIT AND WIRING AND MAKE MINOR ADJUSTMENTS IN LOCATION TO SECURE COORDINATION.
3. WIRING LAYOUT IS SCHEMATIC AND EXACT LOCATIONS SHALL BE DETERMINED BY FIELD CONDITIONS.
4. OTHER THAN MINOR ADJUSTMENTS SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR APPROVAL BEFORE PROCEEDING WITH THE WORK.

C. JOB-SITE COPY OF DOCUMENTS
1. MAINTAIN AT THE SITE, ONE COPY OF ALL DRAWINGS, SPECIFICATIONS, ADDENDA APPROVED SHOP DRAWINGS, CHANGE ORDERS AND OTHER MODIFICATIONS, IN GOOD ORDER AND MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION. THESE SHALL BE AVAILABLE TO THE OWNER'S REPRESENTATIVE. THE DRAWINGS MARKED TO RECORD ALL CHANGES MADE DURING CONSTRUCTION SHALL BE DELIVERED TO THE OWNER'S REPRESENTATIVE FOR THE OWNER UPON COMPLETION OF THE WORK. AN ADDITIONAL SET OF DRAWINGS WILL BE FURNISHED BY THE OWNER'S REPRESENTATIVE FOR THIS PURPOSE UPON REQUEST.

D. MANUFACTURER'S DRAWINGS
1. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR REVIEW. (6) COPIES OF MANUFACTURER'S DRAWINGS AND WIRING DIAGRAMS. THE ENGINEER WILL REVIEW CONTRACTOR'S SHOP DRAWINGS AND RELATED SUBMITTALS (AS INDICATED BELOW) WITH RESPECT TO THE ABILITY OF THE DETAILED WORK, WHEN COMPLETE, TO BE A PROPERLY FUNCTIONING INTEGRAL ELEMENT OF THE OVERALL SYSTEM DESIGNED BY THE ENGINEER. BEFORE SUBMITTING A SHOP DRAWING OR ANY RELATED MATERIAL TO THE ENGINEER, CONTRACTOR SHALL: REVIEW EACH SUCH SUBMISSION FOR CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, SEQUENCES,AND OPERATIONS OF CONSTRUCTION, AND SAFETY PRECAUTIONS AND PROGRAMS INCIDENTAL THERETO, ALL OF WHICH ARE THE SOLE RESPONSIBILITY OF CONTRACTOR: APPROVE EACH SUCH SUBMISSION BEFORE SUBMITTING IT; AND SO STAMP EACH SUCH SUBMISSION BEFORE SUBMITTING IT. THE ENGINEER SHALL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION UNLESS CONTRACTOR ADVISES ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT WHICH IS ACKNOWLEDGED BY ENGINEER IN WRITING. THE ITEMS, TYPES OF SUBMITTALS AND RELATED MATERIAL (IF ANY) CALLED FOR ARE INDICATED BELOW:

ITEMS	TYPE SUBMITTALS REQUESTED
LIGHTING AND POWER PANELS	SHOP DRAWINGS
LIGHTING FIXTURES	CATALOG CUTS

E. GUARANTEES
1. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DEFECTS, REPAIRS AND REPLACEMENTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR AFTER DATE OF SUBSTANTIAL COMPLETION AS DETERMINED BY THE OWNER'S REPRESENTATIVE. PRODUCT GUARANTEES GREATER THAN ONE (1) YEAR SHALL BE PASSED ALONG TO THE OWNER FOR FULL BENEFIT OF THE MANUFACTURER'S WARRANTY.

WORK INCLUDED

A. INSTALLATION, MATERIALS, AND WORKMANSHIP
1. FURNISH AND INSTALL ALL NECESSARY ANCHORS, SUPPORTS, STRAPS, BOXES, FITTINGS AND OTHER SIMILAR APPURTENANCES NOT INDICATED ON THE DRAWINGS BUT WHICH ARE REQUIRED FOR A COMPLETE AND PROPERLY INSTALLED SYSTEM CONSISTENT WITH THE ARCHITECTURAL TREATMENT OF THE BUILDING.
2. THE ELECTRICAL CONTRACTOR, INSOFAR AS THE WORK IS CONCERNED, SHALL AT ALL TIMES KEEP THE PREMISES IN A NEAT AND ORDERLY CONDITION. AND AT THE COMPLETION OF THE WORK, SHALL PROPERLY CLEAN UP AND CART AWAY DEBRIS AND EXCESS MATERIALS. ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF DUMPSTER & REFUSED DISPOSAL AS REQUIRED FOR ELECTRICAL WORK.
3. ALL MATERIALS SHALL BE NEW AND UNDETERIORATED AND OF A QUALITY NOT LESS THAN THE MINIMUM SPECIFIED.

B. COORDINATION OF PLANS AND SPECIFICATIONS
1. CONTACT THE OWNER'S REPRESENTATIVE IMMEDIATELY IF THERE IS ANY QUESTIONS REGARDING THE MEANING OR INTENT OF EITHER PLANS OR SPECIFICATIONS, OR UPON NOTICING ANY DISCREPANCIES OR OMISSIONS IN EITHER PLANS OR SPECIFICATIONS.

C. CUTTING AND PATCHING
1. ALL ELECTRICAL EQUIPMENT SHALL BE KEPT DRY AND CLEAN DURING THE CONSTRUCTION PERIOD. INTERIOR OF ALL ENCLOSURES SHALL BE CLEANED OF DIRT AND DEBRIS BEFORE INSTALLING TRIM OR COVERS.
2. ALL FINISHED SURFACES OF EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL BE THOROUGHLY CLEANED OF DIRT AND ALL SCRATCHED OR DAMAGED SURFACES SHALL BE TOUCHED UP WITH MATCHING MATERIALS BEFORE FINAL ACCEPTANCE OF THE WORK.
3. WHEN ALL WORK IS COMPLETED AND ALL WORK HAS BEEN SATISFACTORILY TESTED AND ACCEPTED BY THE OWNER'S REPRESENTATIVE, ALL CONDUIT AND OTHER EXPOSED SURFACES SHALL BE THOROUGHLY CLEANED.

CODES AND FEES

A. CODES:
1. ALL WORK PERFORMED UNDER THIS SPECIFICATION SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE AS PREPARED AND PUBLISHED BY THE NATIONAL FIRE PROTECTION ASSOCIATION AND ANY APPLICABLE STATE OR LOCAL CODES.

B. FEES:
1. OBTAIN AND PAY FOR ANY AND ALL PERMITS REQUIRED BY ALL LAWS AND REGULATIONS AND PUBLIC AUTHORITY HAVING SUCH JURISDICTION.

TESTS AND INSPECTIONS

A. OBTAIN ALL INSPECTIONS REQUIRED BY ALL LAWS, ORDINANCES, RULES, REGULATIONS OR PUBLIC AUTHORITY HAVING JURISDICTION AND OBTAIN CERTIFICATES OF SUCH INSPECTIONS AND SUBMIT SAME TO THE OWNER'S REPRESENTATIVE. PAY ALL FEES, CHARGES AND OTHER EXPENSES IN CONNECTION THEREIN. OBTAIN OCCUPANCY PERMIT AS REQUIRED BY OWNER. FINAL PAYMENT SHALL NOT BE MADE UNTIL OCCUPANCY PERMIT IS OBTAINED.

B. WORK SHALL BE UNACCEPTABLE WHEN FOUND TO BE DEFECTIVE OR CONTRARY TO THE PLANS SPECIFICATIONS, CODES SPECIFIED OR ACCEPTED STANDARDS OF GOOD WORKMANSHIP.

C. THE CONTRACTOR SHALL PROMPTLY CORRECT ALL WORK FOUND UNACCEPTABLE BY THE OWNER'S REPRESENTATIVE WHETHER OBSERVED BEFORE OR AFTER SUBSTANTIAL COMPLETION AND WHETHER OR NOT FABRICATED, INSTALLED OR COMPLETED. THE CONTRACTOR SHALL BEAR ALL COSTS OF CORRECTING SUCH UNACCEPTABLE WORK, INCLUDING COMPENSATION FOR THE OWNERS REPRESENTATIVE ADDITIONAL SERVICES MADE NECESSARY THEREBY.

CONDUIT

A. FURNISH AND INSTALL ALL CONDUITS, BOXES, FITTINGS, ETC., FOR A COMPLETE RACEWAY SYSTEM.

B. ALL WIRING SHALL BE RUN IN EMT CONDUIT OR MC CABLE WITH GROUND CONDUCTOR UNLESS OTHERWISE NOTED.

C. ALL CONDUIT SIZES STATED HEREIN OR MARKED ON THE DRAWINGS ARE MINIMUM SIZE AND SHALL BE NO LESS THAN ½" UNLESS OTHERWISE NOTED.

D. ALL CONDUIT SHALL BE SUBSTANTIALLY SUPPORTED BY PIPE STRAPS OR SUITABLE CLAMPS OR HANGERS ATTACHED TO THE ELEMENTS OF THE BUILDING STRUCTURE TO PROVIDE RIGID INSTALLATION; IN NO CASE SHALL CONDUIT BE ATTACHED OR SUPPORTED FROM ADJOINING PIPE OR INSTALLED IN SUCH A MANNER AS TO PREVENT THE READY REMOVAL OF OTHER PIPE FOR REPAIRS.

WIRE AND CABLE

A. ALL CONDUCTORS SHALL BE COPPER AND OF THE AWG SIZE AND TYPE SHOWN ON THE DRAWINGS. WHERE NO SIZE OR TYPE IS SHOWN. CONDUCTORS SHALL NOT BE LESS THAN #12 TYPE XHHW, THHN, OR THWN. CONDUCTORS #8 AWG AND LARGER SHALL BE STRANDED COPPER AND HAVE 600 VOLT INSULATION; BE UL LABELED AND OF AMERICAN MANUFACTURER.

B. ALL BRANCH CIRCUITS SHALL BE MC CABLE.

C. 1ALL CONNECTIONS ARE TO BE MADE USING PRESSURE TYPE TERMINALS.

D. THE FOLLOWING COLOR CODE SHALL BE USED:

	120/240 VOLT	120/208 VOLT	277/480 VOLT
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	RED	ORANGE
PHASE C		BLUE	YELLOW
NEUTRAL	WHITE	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN

E. CONDUCTORS NO. 10 AWG OR SMALLER SHALL HAVE INSULATION COLORED AS NOTED ABOVE.

F. CONDUCTORS NO. 8 AWG OR LARGER SHALL HAVE INSULATION COLORED AS NOTED ABOVE OR COLORED TAPE, MINIMUM SIZE ½", WRAPPED TWICE AROUND AT THE FOLLOWING POINTS:
1. AT EACH TERMINAL.
2. AT EACH CONDUIT ENTRANCE.
3. AT INTERVALS NOT MORE THAN 12 INCHES APART IN ALL BOXES, PANEL TUBS, SWITCHBOARDS, ETC.

G. ALL BRANCH CIRCUITS SHALL BE MARKED IN THE PANEL BOARD GUTTERS. MARKERS SHALL INDICATE CORRESPONDING BRANCH--CIRCUIT NUMBERS.

H. EACH BRANCH CIRCUIT REQUIRING A NEUTRAL SHALL BE FURNISHED WITH A SEPARATE INDIVIDUAL NEUTRAL CONDUCTOR.

BOXES AND PLATES

A. FURNISH AND INSTALL ALL OUTLET, JUNCTION, AND PULL BOXES AS INDICATED ON THE DRAWINGS AND AS NECESSARY TO INSTALL THE REQUIRED CONDUIT AND WIRING IN A NEAT AND WORKMANLIKE MANNER.

B. PULL BOXES AND JUNCTION BOXES SHALL BE GALVANIZED AND OF THE CORRECT SIZE AND GAUGE, SIZED IN ACCORDANCE WITH CODE REQUIREMENTS AND SHALL BE U.L. LABELED.

C. BOXES AT EXTERIOR AREAS TO BE WATERTIGHT AND DUST-TIGHT WITH CASKETED COVERS.

D. ALL BOXES FOR EXPOSED WORK IN FINISHED SPACES SHALL BE "FS" TYPE WITH THREADED HUBS WITH RIGID CONDUIT RISER (DEEP WIRE MOLD BOXES).

E. ALL BOXES SHALL BE RIGIDLY SUPPORTED INDEPENDENT OF THE CONDUIT SYSTEM. BOXES CAST INTO MASONRY OR CONCRETE ARE CONSIDERED TO BE RIGIDLY SUPPORTED.

F. FLOOR BOXES:
1. DESCRIPTION: FLOOR BOXES COMPATIBLE WITH FLOOR BOX SERVICE FITTINGS PROVIDED IN ACCORDANCE WITH THE WIRING DEVICES SECTION OF THIS SPECIFICATION; WITH PARTITIONS TO SEPARATE MULTIPLE SERVICES; FURNISHED WITH ALL COMPONENTS, ADAPTERS, AND TRIMS REQUIRED FOR COMPLETE INSTALLATION.
2. USE CAST IRON OR NONMETALLIC FLOOR BOXES WITHIN SLAB ON GRADE.
3. USE SHEET-STEEL, CAST IRON, OR NONMETALLIC FLOOR BOXES WITHIN SLAB ABOVE GRADE.
4. METALLIC FLOOR BOXES: FULLY ADJUSTABLE (WITH INTEGRAL MEANS FOR LEVELING ADJUSTMENT PRIOR TO AND AFTER CONCRETE POUR).
5. MANUFACTURER: SAME AS MANUFACTURER OF FLOOR BOX SERVICE FITTINGS.

G. COMPOSITE UNDERGROUND BOXES/ENCLOSURES: COMPLY WITH SCTE 77.

WIRING DEVICES

H. WIRING DEVICES SHALL BE SIMILAR TO THOSE LISTED BELOW AND OF SPECIFIED AMPERAGE. OTHER SPECIAL PURPOSE DEVICES SHALL BE AS SPECIFIED ON THE DRAWINGS.

I. DUPLEX GROUNDING TYPE RECEPTACLE - 20 AMP, 125 VOLT
1. HUBBELL 5352
2. ARROW HART 5352

J. SINGLE POLE SWITCHES - 20 AMP, 120 VOLT

K. WEATHERPROOF RECEPTACLES - 20 AMP, 125 VOLT - NEMA 5-20R
1. HUBBELL 5352 WITH 5205 COVER INTERMATIC GUARDIAN
2. I SERIES, NEMA 3R COVER
3. ARROW HART 5352 WITH 4500 COVER

E. G.F.C.I. RECEPTACLE - 20 AMP, 125 VOLT - NEMA 5-20 R
1. HUBBELL GF 5262 WITH MATCHING NYLON COVER PLATE OR WO-26 W.P. COVER

F. GROUND ALL RECEPTACLES IN ACCORDANCE WITH ARTICLE 250.146 OF NEC AND AS INDICATED IN THE GROUNDING SECTION OF THIS SPECIFICATION.

IDENTIFICATION

A. EACH PIECE OF SERVICE EQUIPMENT AND INDIVIDUAL SWITCHES, ALL DISCONNECTS, STARTERS, ALL EXHAUST FAN MANUAL STARTING SWITCHES.

B. IDENTIFICATION SHALL BE IN THE FORM OF LAMINATED PLASTIC NAMEPLATES, BLACK RACE, WITH THE LETTERS ENGRAVED INTO THE WHITE BACKGROUND, MINIMUM ¼" HIGH. PLATES SHALL BE DRILLED ON EACH END FOR SHEET METAL SCREW ATTACHMENT. NO “DYMO” OR SIMILAR TYPE LABELS WILL BE ALLOWED.

C. PANEL BOARD DIRECTORY: A TYPED CIRCUIT DIRECTORY SHALL BE PROVIDED INDICATING LOCAL AREA SERVED AND LOCATION FOR EACH BRANCH CIRCUIT.

GROUNDING

A. ALL FEEDERS AND BRANCH CIRCUITS OVER 100 VOLTS SHALL INCLUDE A GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH NEC TABLE 250-122, EXCEPT NOT BE SMALLER THAN #12 FOR POWER AND LIGHTING CIRCUITS AND #14 FOR CONTROL CIRCUITS. ALL GROUND CONDUCTORS SHALL BE GREEN, OR AS SPECIFIED UNDER THE WIRE AND CABLE SECTION OF THIS SPECIFICATION.

B. ALL GROUND CLAMPS SHALL BE PENN-UNION “GPL” TYPE OR SIMILAR BY O.Z. OR BURNDY.

C. CONDUIT FOR SOLITARY GROUND CONDUCTORS SHALL BE RIGID SCHEDULE 40 PVC NON- METALLIC ELECTRICAL CONDUIT WITH U.L. LABEL SOLITARY GROUND CONDUCTORS SHALL NOT BE PLACED THROUGH METALLIC SLEEVES OR CONDUITS AND SHALL NOT BE COMPLETELY ENCIRCLED BY METALLIC HANGERS OR SUPPORTS.

D. THE GROUND CONDUCTOR SHALL BE CONNECTED TO THE NEUTRAL IN ONLY TWO LOCATIONS -ON THE SUPPLY SIDE OF THE SERVICE DISCONNECT MEANS PER NEC--250--24 AND ON SEPARATELY DERIVED SYSTEMS PER NEC 250-30.

E. AT EACH RECEPTACLE BOX, THE GROUND CONDUCTOR SHALL ENTER AND CONNECT, WITH NORMAL WIRING CONNECTOR, TO: 1) THE GROUND PIGTAIL TO RECEPTACLE: 2) THE GROUND PIGTAIL TO THE BOX GROUND SCREW; AND 3) THE OUTGOING GROUND CONDUCTOR TO NEXT DEVICE, IF NOT AT END OF RUN. METAL TO METAL CONTACT BETWEEN THE DEVICE YOKE AND THE OUTLET BOX IS NOT ACCEPTABLE AS A BOND FOR EITHER SURFACE. MOUNTED BOXES OR FLUSH TYPE BOXES.

F. CONDUIT SYSTEM SHALL BE ELECTRICALLY CONTINUOUS. ALL LOCK NUTS SHALL CUT THROUGH ENAMELED OR PAINTED SURFACES ON ENCLOSURES. WHERE ENCLOSURES AND NON-CURRENT CARRYING METALS ARE ISOLATED FROM THE CONDUIT SYSTEM, USE BONDING JUMPERS WITH APPROVED CLAMPS. WHERE REDUCING WASHERS ARE USED AND WHERE CONCENTRIC OR ECCENTRIC KNOCKOUTS ARE NOT COMPLETELY REMOVED BONDING BUSHINGS SHALL BE REQUIRED.

POWER AND LIGHTING PANELS

A. FURNISH AND INSTALL, AS SCHEDULED AND SHOWN ON THE DRAWINGS, POWER PANELS FOR OPERATION ON VOLTAGES INDICATED.

B. ALL TERMINATIONS SHALL BE MARKED “75°C ONLY”, “60/75° C” OR LISTED FOR USE OF 75° C INSULATED CONDUCTORS AT FULL 75° C AMPACITY.

C. ALL BUS BARS SHALL BE SILVER OR TIN PLATED COPPER.

D. CABINETS SHALL BE OF COMMERCIAL GALVANIZED SHEET STEEL, CODE GAUGE AND SIZE, SURFACE OR RECESSED MOUNTED AS CALLED FOR IN THE DRAWINGS.

E. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.

F. PANEL SHALL HAVE A COPPER GROUND BAR SIMILAR TO NEUTRAL BAR IN NUMBER, SIZE, AND TYPE OF ANTI-TURN SOLDERLESS LUGS. THIS GROUND BAR SHALL BE FACTORY BONDED TO THE PANEL TUB IN THE GUTTER SPACE OPPOSITE THE MAINS AND THE NEUTRAL ASSEMBLY AND SHALL HAVE THE SCREWDRIVER SLOTS FACING THE FRONT OF THE PANEL.

G. QUALITY STANDARD: SQUARE D TYPE NQ.

LIGHTING FIXTURES

A. CONTRACTOR SHALL FURNISH AND INSTALL LIGHTING FIXTURES AS INDICATED IN FIXTURE SCHEDULE SHOWN ON DRAWINGS, AND SPECIFIED HEREIN.

B. NEUTRAL ASSEMBLY SHALL HAVE INDIVIDUAL ANTI-TURN SOLDERLESS TERMINALS, SIMILAR TO SQUARE D TYPE PK, FOR CONNECTION OF ULTIMATE NUMBER OF NEUTRAL WIRES. SHEET METAL TERMINAL STRIPS AND CONNECTIONS WILL BE REJECTED.

C. ALL LIGHTING FIXTURES INSTALLED BY THE ELECTRICAL CONTRACTOR SHALL BE FURNISHED COMPLETE WITH AS INDICATED ON THE FIXTURE SCHEDULE.

D. ANY LIGHTING FIXTURES SCRATCHED, BENT, CRACKED OR IN ANY WAY DAMAGED BEFORE ACCEPTANCE BY OWNER SHALL BE REPLACED AT THIS CONTRACTOR'S EXPENSE.

E. ALL LIGHTING FIXTURES SHALL BE IN WORKING ORDER AT THE TIME OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER.

F. ALL LIGHTING FIXTURES ARE TO BE GROUNDED ON THE INTERIOR OF THE FIXTURE HOUSING, ON CLEAN BARE METAL (FREE OF PAINT). BY USE OF PIGTAIL AND FASTENED BY A SCREW USED FOR NO OTHER PURPOSE.

TELEPHONE/DATA SYSTEMS

A. SUMMARY
1. INCLUDES BUT NOT LIMITED TO
   a. FURNISH AND INSTALL BUILDING TELEPHONE AND COMPUTER NETWORK RACEWAY AND CABLE SYSTEM AS DESCRIBED IN CONTRACT DOCUMENTS INCLUDING, BUT NOT LIMITED TO, RACEWAY, OUTLETS, MODULAR JACKS, DEVICE PLATES, CABLES, PUNCH DOWN BLOCKS, BACKBOARDS, CABINETS, PATCH PANELS, GROUNDING AND OTHER MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE SYSTEM.
   b. FURNISH AND INSTALL MAIN SERVICE RACEWAY AS DESCRIBED IN CONTRACT DOCUMENTS AND TO COMPLY WITH TELEPHONE COMPANY REQUIREMENTS.

B. COMPONENTS
1. TELEPHONE OUTLET BOX SHALL BE SINGLE DEVICE BOX.
2. BUILDING TELEPHONE AND COMPUTER NETWORK SYSTEM CABLE
   a. 23 GAUGE, SOLID TINNED COPPER, FOUR TWISTED PAIRS. CATEGORY 6
   b. USE PLENUM-RATED CABLE IN CEILINGS AND AREAS USED FOR PLENUM AIR RETURN
3. TELEPHONE TERMINATION BLOCKS
   a. UL VERIFIED CATEGORY 6.
   b. 110 TERMINATION WITH TIN LEAD PLATED IDC
4. NETWORK PATCH PANELS
   a. UL VERIFIED CATEGORY 6
   b. 110 TERMINATION WITH TIN LEAD PLATED IDC
   c. 19" RACK MOUNT WITH BACKBOARD MOUNTING FRAME.
   d. 48 PORTS
5. TELEPHONE/NETWORK JACKS
   a. WALL JACKS
      1) CAT6 - HUBBELL HXJ6 OR ALTERNATE MANUFACTURER WITH EQUIVALENT PERFORMANCE STANDARD.
   b. PLATES
      1) HUBBELL - IFP SERIES (PORT QUANTITY AS REQUIRED, COLOR BY ARCHITECT)
6. BACKBOARDS: INTERIOR GRADE PLYWOOD WITHOUT VOIDS, ¾ INCH THICK; UL-LABELED FIRE RETARDANT.
   a. SIZE: 48 INCHES WIDE 96 INCHES HIGH.
   b. DO NOT PAINT OVER UL LABEL.
   c. PROVIDE ONE 48" MULTI-OUTLET POWER STRIP WITH INTEGRAL SURGE PROTECTION AND OUTLETS AT 6" O.C. (MINIMUM 7 OUTLETS) MOUNTED AT CENTER OF TERMINAL BOARD.

C. INSTALLATION
1. RUN 1" CONDUIT TO ACCESSIBLE CEILING SPACE FROM EACH OUTLET. INSTALL CABLE FROM TERMINAL BOARD TO EACH TELEPHONE/NETWORK OUTLET.
2. TERMINATE CABLES AT EACH OUTLET WITH SPECIFIED MODULAR JACK ASSEMBLY.
3. TERMINATE CABLES ON PUNCH DOWN BLOCKS OR PATCH PANELS AT TERMINAL BOARD.
4. PROVIDE TYPED LABELS AT ALL JACKS CORRESPONDING TO TYPED NUMBERING SYSTEM AT PATCH PANEL OR TERMINAL STRIP.

D. QUALITY ASSURANCE
1. COMPLY WITH APPLICABLE PORTIONS OF NEC ANSI/EIA/TIA 568 AS TO TYPE PRODUCTS USED AND INSTALLATION OF COMPONENTS. PROVIDE PRODUCTS AND MATERIALS WHICH HAVE BEEN UL-LISTED AND LABELED.

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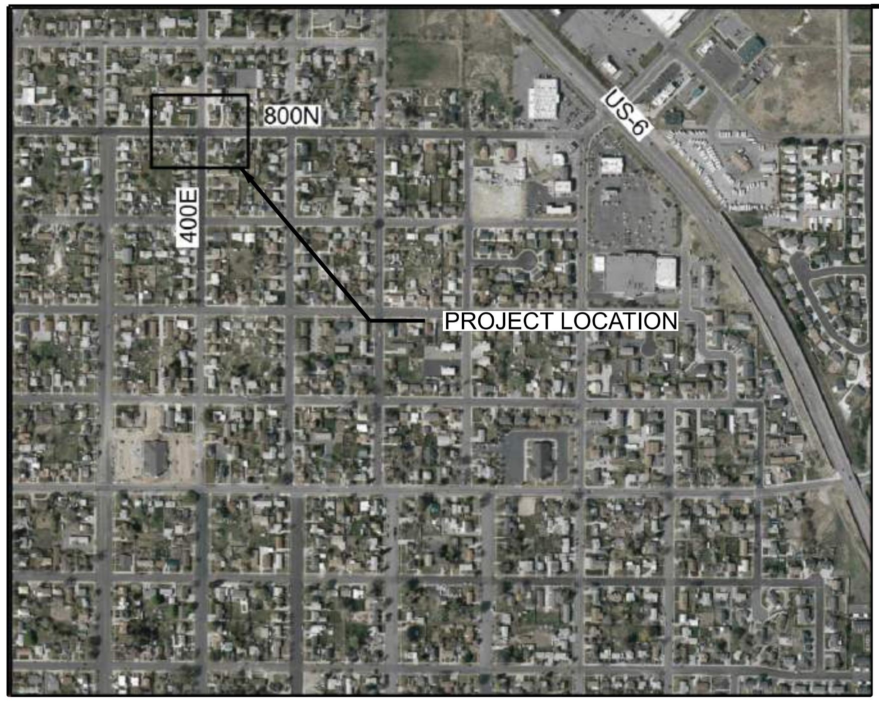
E7.1



VICINTY MAP

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

MAYOR
MIKE MENDENHALL

CITY COUNCIL
CHAD ARGYLE
STACY BECK
BRANDON GORDEN
SHANE MARSHALL
KEVIN OYLER

APPROVALS

ENGINEERING MANAGER ______________________ JERED JOHNSON

WATER DIVISON MANAGER ______________________ JOHN WATERS

PROJECT MANAGER ______________________ DILLON MUIRBROOK

PUBLIC WORKS DIRECTOR ______________________ CHRIS THOMPSON

INDEX OF SHEETS

SHEET NUMBER	NUMBER OF SHEETS	DISCRIPTION
1	1	TITLE/INDEX OF SHEETS
SC-01	1	SURVEY CONTROL
RMV-01	1	REMOVAL
RD-01	1	ROADWAY/STRIPING/UTILITY
DT-01	1	DETAIL
DR-01	1	DRAINAGE
SG-01	1	SIGNAL
SG-02	1	SIGNAL CIRCUIT
SG-S01 TO SG-S03	3	SIGNAL SCHEDULE
ITS-01	1	ITS
ITS-S01	1	ITS SCHEDULE

PROFESSIONAL ENGINEER
No. 4817631
TRISTAN R.
PEDERSEN
01/19/2023
STATE OF UTAH

THIS SEAL APPLIES TO ALL SHEETS
CONTAINING THIS SIGNATURE

DESIGN ENGINEER ______________________
VERIFIED FOR SUBMISSION FOR ADVERTISMENT

EST. 1855
SPANISH FORK
PRIDE & PROGRESS

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

SURVEY CONTROL NOTES:

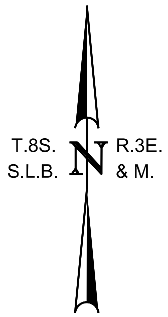
1. THE "PROJECT COORDINATES" AND BEARINGS AND DISTANCES DERIVED THEREFROM ARE EXPRESSED IN A LOCAL GROUND SYSTEM DEFINED AS FOLLOWS:

HORIZONTAL DATUM = NORTH AMERICAN DATUM OF 1983 (N.A.D. 83) (2011) Epoch 2010.
VERTICAL DATUM = NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D. 88)
COORDINATE SYSTEM = US STATE PLANE 1983, UTAH CENTRAL ZONE (4302)
GEOID MODEL = GEOID18
UNITS = US SURVEY FOOT

2. THE CONTROL SURVEY WAS PERFORMED IN SEPTEMBER 2022. ALL SURVEY CONTROL COORDINATES WERE ESTABLISHED USING THE UTAH REFERENCE NETWORK GLOBAL POSITIONING SYSTEM (TURN GPS).

3. CONTROL POINT MARKS ARE SUBJECT TO THE EFFECTS OF SURFACE ACTIVITY AND SEASONAL MOVEMENTS. MARKS MAY ALSO BE DISTURBED, DAMAGED, OR REMOVED AFTER THE COMPLETION OF THIS SURVEY. CONTROL POINT POSITIONS SHOULD BE FIELD VERIFIED PRIOR TO SUBSEQUENT SURVEY ACTIVITIES.

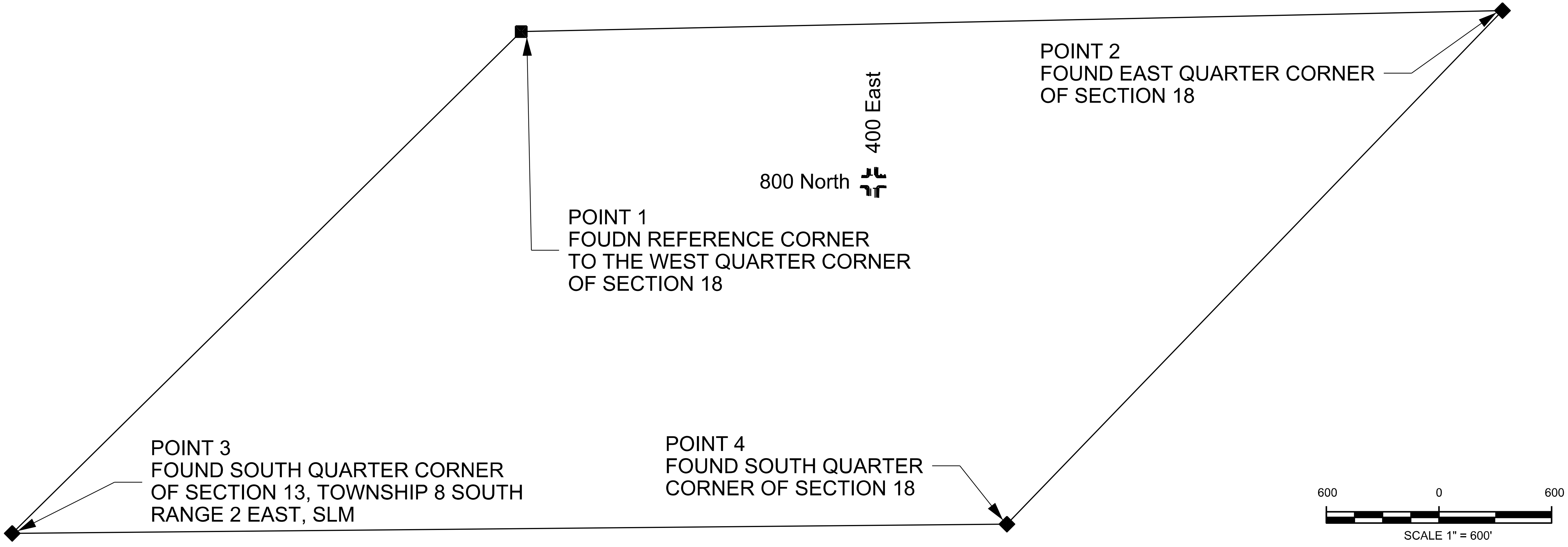
4. LATITUDE AND LOGITUDE LISTED IN TABLE TO BE USED FOR AID IN FINDING CORNERS AND NOT TO BE USED FOR CALIBRATION PURPOSES.



No. 7027191
JEFF STROMBERG
12/15/2022
ELECTRONIC SEAL

PRIMARY CONTROL POINTS

NAME	LATITUDE	LONGITUDE	STATE PLANE NORTHING	STATE PLANE EASTING	ELEVATION	DESCRIPTION
1	N40°07'20.18713"	W111°39'15.88778"	7213300.151	1597236.852	4557.06	REFERENCE COR TO W1/4 SECTION 18
2	N40°07'21.37569"	W111°38'08.57438"	7213411.920	1602465.768	4586.43	E1/4 OF SECTION 18
3	N40°06'53.71258"	W111°39'50.74748"	7210626.190	1594524.123	4569.56	S1/4 OF SECTION 13
4	N40°06'54.28974"	W111°38'42.51307"	7213300.151	1597236.852	4557.06	S1/4 OF SECTION 18



REVISIONS
NO.	DATE	APPROVED BY	REMARKS

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

APPROVED
PROFESSIONAL LAND SURVEYOR
1/19/2023
DATE

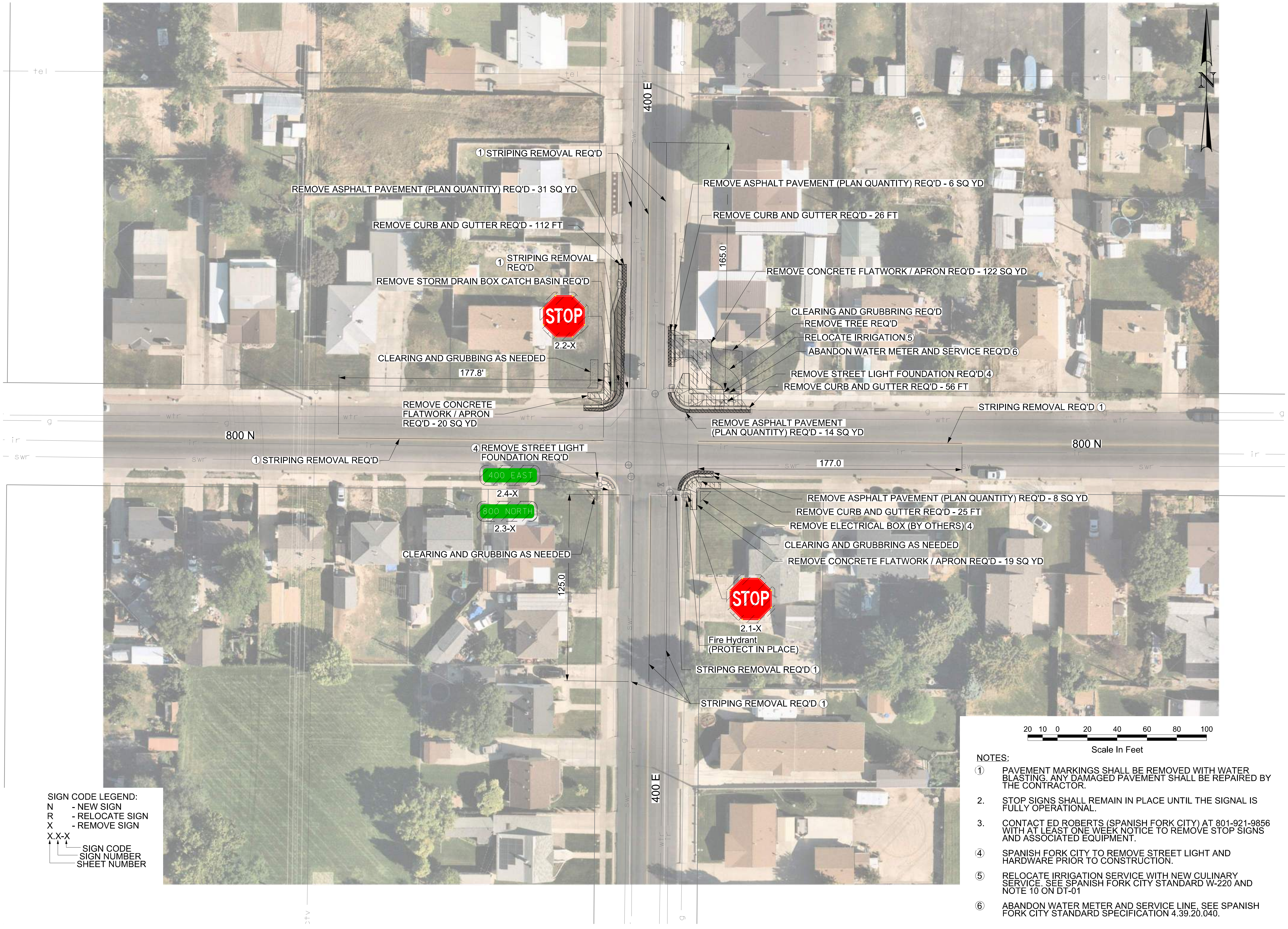
DRAWN BY	JCS
QC CHECKED BY	

SPANISH FORK
PRIDE & PROGRESS
EST. 1855

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

SURVEY CONTROL

SHEET NO. SC-01


N
400 E
① STRIPING REMOVAL REQ'D
REMOVE ASPHALT PAVEMENT (PLAN QUANTITY) REQ'D - 31 SQ YD
REMOVE CURB AND GUTTER REQ'D - 112 FT
① STRIPING REMOVAL REQ'D
REMOVE STORM DRAIN BOX CATCH BASIN REQ'D
STOP
2.2-X
CLEARING AND GRUBBING AS NEEDED
177.8'
REMOVE CONCRETE FLATWORK / APRON REQ'D - 20 SQ YD
800 N
① STRIPING REMOVAL REQ'D
④ REMOVE STREET LIGHT FOUNDATION REQ'D
400 EAST
2.4-X
800 NORTH
2.3-X
CLEARING AND GRUBBING AS NEEDED
125.0
REMOVE ASPHALT PAVEMENT (PLAN QUANTITY) REQ'D - 6 SQ YD
REMOVE CURB AND GUTTER REQ'D - 26 FT
165.0
REMOVE CONCRETE FLATWORK / APRON REQ'D - 122 SQ YD
CLEARING AND GRUBBING REQ'D
REMOVE TREE REQ'D
RELOCATE IRRIGATION ⑤
ABANDON WATER METER AND SERVICE REQ'D ⑥
REMOVE STREET LIGHT FOUNDATION REQ'D ④
REMOVE CURB AND GUTTER REQ'D - 56 FT
STRIPING REMOVAL REQ'D ①
REMOVE ASPHALT PAVEMENT (PLAN QUANTITY) REQ'D - 14 SQ YD
800 N
177.0
REMOVE ASPHALT PAVEMENT (PLAN QUANTITY) REQ'D - 8 SQ YD
REMOVE CURB AND GUTTER REQ'D - 25 FT
REMOVE ELECTRICAL BOX (BY OTHERS) ④
CLEARING AND GRUBBING AS NEEDED
REMOVE CONCRETE FLATWORK / APRON REQ'D - 19 SQ YD
STOP
2.1-X
Fire Hydrant (PROTECT IN PLACE)
STRIPNG REMOVAL REQ'D ①
STRIPING REMOVAL REQ'D ①
400 E
tel
wtr
swr
ir
g
20 10 0 20 40 60 80 100
Scale In Feet

SIGN CODE LEGEND:
N - NEW SIGN
R - RELOCATE SIGN
X - REMOVE SIGN
X.X-X
SIGN CODE
SIGN NUMBER
SHEET NUMBER

NOTES:

① PAVEMENT MARKINGS SHALL BE REMOVED WITH WATER BLASTING. ANY DAMAGED PAVEMENT SHALL BE REPAIRED BY THE CONTRACTOR.

2. STOP SIGNS SHALL REMAIN IN PLACE UNTIL THE SIGNAL IS FULLY OPERATIONAL.

3. CONTACT ED ROBERTS (SPANISH FORK CITY) AT 801-921-9856 WITH AT LEAST ONE WEEK NOTICE TO REMOVE STOP SIGNS AND ASSOCIATED EQUIPMENT.

④ SPANISH FORK CITY TO REMOVE STREET LIGHT AND HARDWARE PRIOR TO CONSTRUCTION.

⑤ RELOCATE IRRIGATION SERVICE WITH NEW CULINARY SERVICE. SEE SPANISH FORK CITY STANDARD W-220 AND NOTE 10 ON DT-01

⑥ ABANDON WATER METER AND SERVICE LINE. SEE SPANISH FORK CITY STANDARD SPECIFICATION 4.39.20.040.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

DRAWN BY RMP
QC CHECKED BY TRP

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

APPROVED
PROFESSIONAL ENGINEER
1/19/2023
DATE

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

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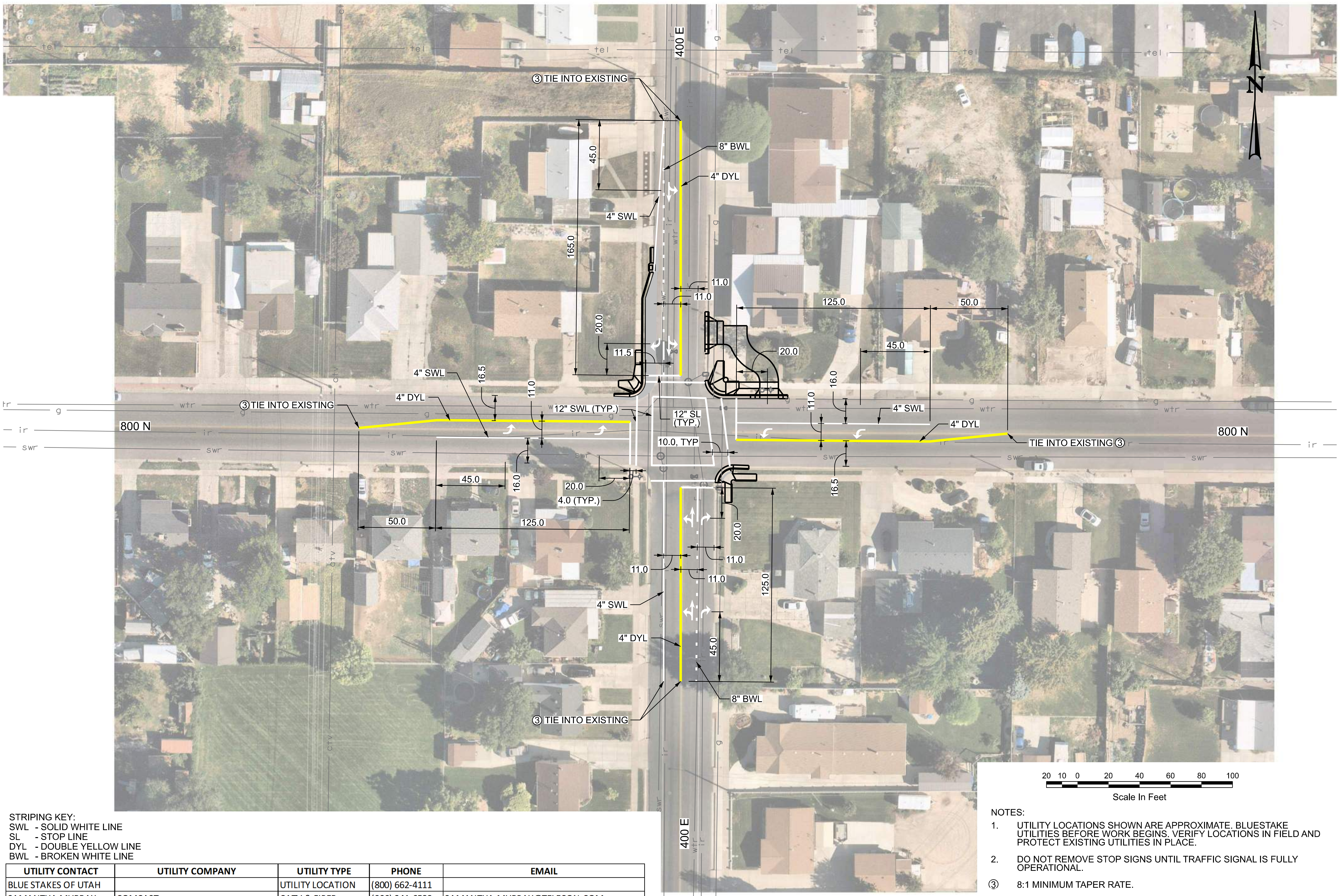
REMOVAL

SHEET NO. RMV-01



STRIPING KEY:
SWL - SOLID WHITE LINE
SL - STOP LINE
DYL - DOUBLE YELLOW LINE
BWL - BROKEN WHITE LINE

UTILITY CONTACT	UTILITY COMPANY	UTILITY TYPE	PHONE	EMAIL
BLUE STAKES OF UTAH		UTILITY LOCATION	(800) 662-4111	
SAMANTHA MURRAY	COMCAST	CATV & FIBER	(906) 241-6588	SAMANTHA.MURRAY@TELECON.COM
LARRY BUHLER	LUMEN/CENTURYLINK	FIBER & TELE	(385) 479-7357	LARRY.BUHLER@LUMEN.COM
JOHN STAPLES	DOMINION ENERGY	GAS	(801) 324-3970	MAP.REQUESTS@DOMINIONENERGY.COM
DILLION MUIRBROOK	SPANISH FORK CITY	SWR, WTR, SD, IRR	(801) 804-4626	DMUIRBROOK@SPANISHFORK.ORG
TOM COOPER	SPANISH FORK POWER AND LIGHT	POWER	(801) 804-4430	TCOOPER@SPANISHFORK.ORG

NOTES:

1. UTILITY LOCATIONS SHOWN ARE APPROXIMATE. BLUESTAKE UTILITIES BEFORE WORK BEGINS. VERIFY LOCATIONS IN FIELD AND PROTECT EXISTING UTILITIES IN PLACE.
2. DO NOT REMOVE STOP SIGNS UNTIL TRAFFIC SIGNAL IS FULLY OPERATIONAL.
③ 8:1 MINIMUM TAPER RATE.
4. SEE SHEET DT-01 FOR DETAILS.
5. SEE SG SHEET SERIES FOR SIGNAL PLANS AND DETAILS.
6. SEE ITS SHEET SERIES FOR ITS PLANS AND DETAILS.
7. SEE DR SHEET FOR DRAINAGE PLAN.

NO.	DATE	APPROVED BY	REMARKS

REVISIONS

DRAWN BY RMP

QC CHECKED BY TRP

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

1/19/2023
DATE

APPROVED

PROFESSIONAL ENGINEER

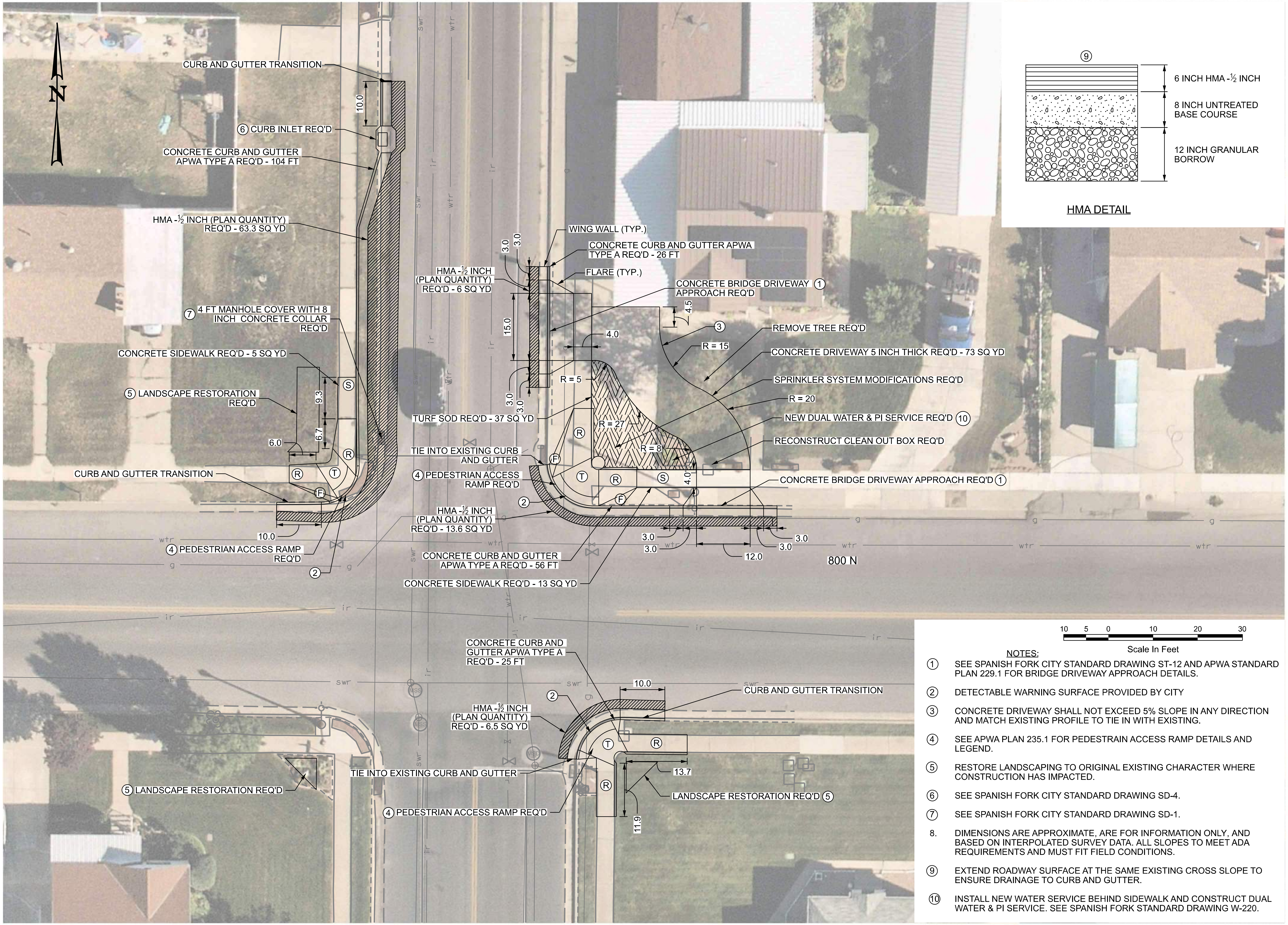
SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

SPANISH FORK
EST. 1855
PRIDE & PROGRESS

ROADWAY/STRIPING/UTILITY

SHEET NO. RD-01

$$file$$
$$date$$


N
CURB AND GUTTER TRANSITION
10.0
⑥ CURB INLET REQ'D
CONCRETE CURB AND GUTTER APWA TYPE A REQ'D - 104 FT
HMA -½ INCH (PLAN QUANTITY) REQ'D - 63.3 SQ YD
⑦ 4 FT MANHOLE COVER WITH 8 INCH CONCRETE COLLAR REQ'D
CONCRETE SIDEWALK REQ'D - 5 SQ YD
⑤ LANDSCAPE RESTORATION REQ'D
9.3
6.7
6.0
CURB AND GUTTER TRANSITION
10.0
④ PEDESTRIAN ACCESS RAMP REQ'D
②
WING WALL (TYP.)
CONCRETE CURB AND GUTTER APWA TYPE A REQ'D - 26 FT
FLARE (TYP.)
CONCRETE BRIDGE DRIVEWAY ① APPROACH REQ'D
HMA -½ INCH (PLAN QUANTITY) REQ'D - 6 SQ YD
3.0
3.0
15.0
3.0
3.0
4.5
4.0
③
R = 15
R = 5
R = 27
R = 8
REMOVE TREE REQ'D
CONCRETE DRIVEWAY 5 INCH THICK REQ'D - 73 SQ YD
SPRINKLER SYSTEM MODIFICATIONS REQ'D
R = 20
NEW DUAL WATER & PI SERVICE REQ'D ⑩
RECONSTRUCT CLEAN OUT BOX REQ'D
CONCRETE BRIDGE DRIVEWAY APPROACH REQ'D ①
TURF SOD REQ'D - 37 SQ YD
TIE INTO EXISTING CURB AND GUTTER
④ PEDESTRIAN ACCESS RAMP REQ'D
②
HMA -½ INCH (PLAN QUANTITY) REQ'D - 13.6 SQ YD
CONCRETE CURB AND GUTTER APWA TYPE A REQ'D - 56 FT
CONCRETE SIDEWALK REQ'D - 13 SQ YD
4.0
3.0
3.0
12.0
3.0
3.0
800 N
R
T
S
F
CONCRETE CURB AND GUTTER APWA TYPE A REQ'D - 25 FT
②
10.0
CURB AND GUTTER TRANSITION
HMA -½ INCH (PLAN QUANTITY) REQ'D - 6.5 SQ YD
TIE INTO EXISTING CURB AND GUTTER
④ PEDESTRIAN ACCESS RAMP REQ'D
⑤ LANDSCAPE RESTORATION REQ'D
13.7
LANDSCAPE RESTORATION REQ'D ⑤
11.9
swr
wtr
ir
g
⑨
6 INCH HMA -½ INCH
8 INCH UNTREATED BASE COURSE
12 INCH GRANULAR BORROW
HMA DETAIL
10 5 0 10 20 30
Scale In Feet

NOTES:

① SEE SPANISH FORK CITY STANDARD DRAWING ST-12 AND APWA STANDARD PLAN 229.1 FOR BRIDGE DRIVEWAY APPROACH DETAILS.

② DETECTABLE WARNING SURFACE PROVIDED BY CITY

③ CONCRETE DRIVEWAY SHALL NOT EXCEED 5% SLOPE IN ANY DIRECTION AND MATCH EXISTING PROFILE TO TIE IN WITH EXISTING.

④ SEE APWA PLAN 235.1 FOR PEDESTRAIN ACCESS RAMP DETAILS AND LEGEND.

⑤ RESTORE LANDSCAPING TO ORIGINAL EXISTING CHARACTER WHERE CONSTRUCTION HAS IMPACTED.

⑥ SEE SPANISH FORK CITY STANDARD DRAWING SD-4.

⑦ SEE SPANISH FORK CITY STANDARD DRAWING SD-1.

8. DIMENSIONS ARE APPROXIMATE, ARE FOR INFORMATION ONLY, AND BASED ON INTERPOLATED SURVEY DATA. ALL SLOPES TO MEET ADA REQUIREMENTS AND MUST FIT FIELD CONDITIONS.

⑨ EXTEND ROADWAY SURFACE AT THE SAME EXISTING CROSS SLOPE TO ENSURE DRAINAGE TO CURB AND GUTTER.

⑩ INSTALL NEW WATER SERVICE BEHIND SIDEWALK AND CONSTRUCT DUAL WATER & PI SERVICE. SEE SPANISH FORK STANDARD DRAWING W-220.

NO.	DATE	APPROVED BY	REMARKS
REVISIONS			

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

APPROVED
PROFESSIONAL ENGINEER
1/19/2023
DATE
DRAWN BY
QC CHECKED BY

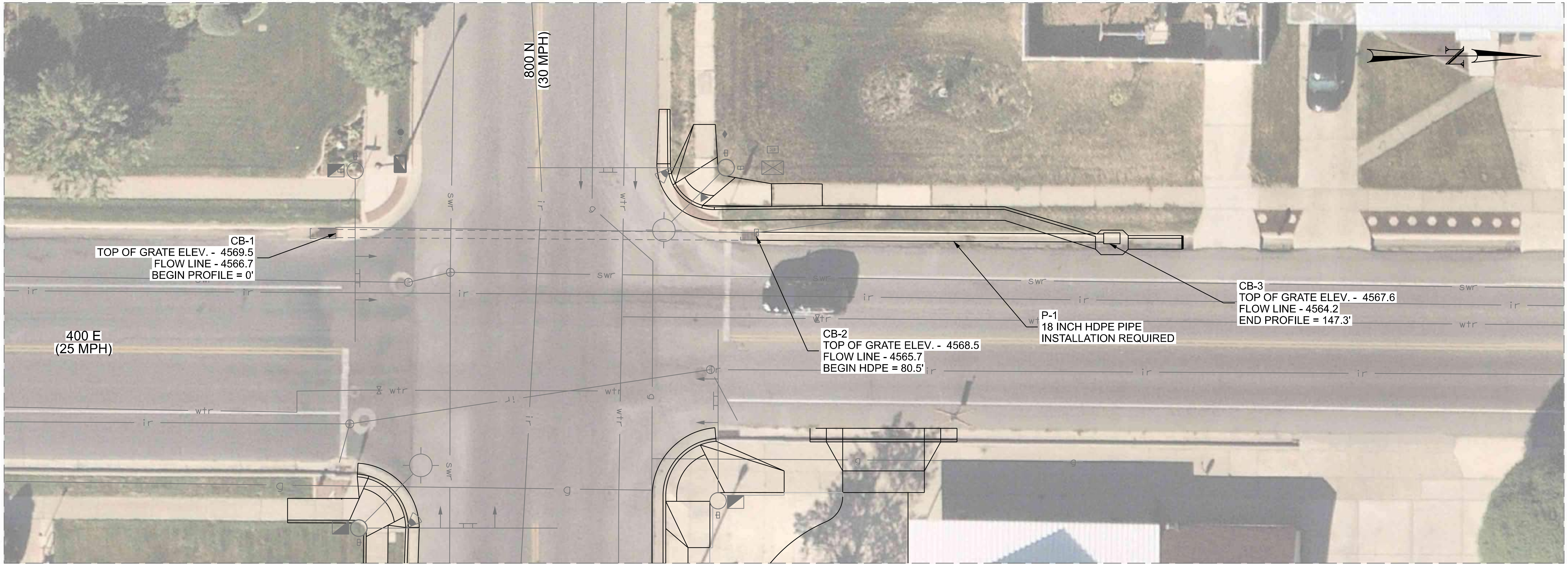
SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

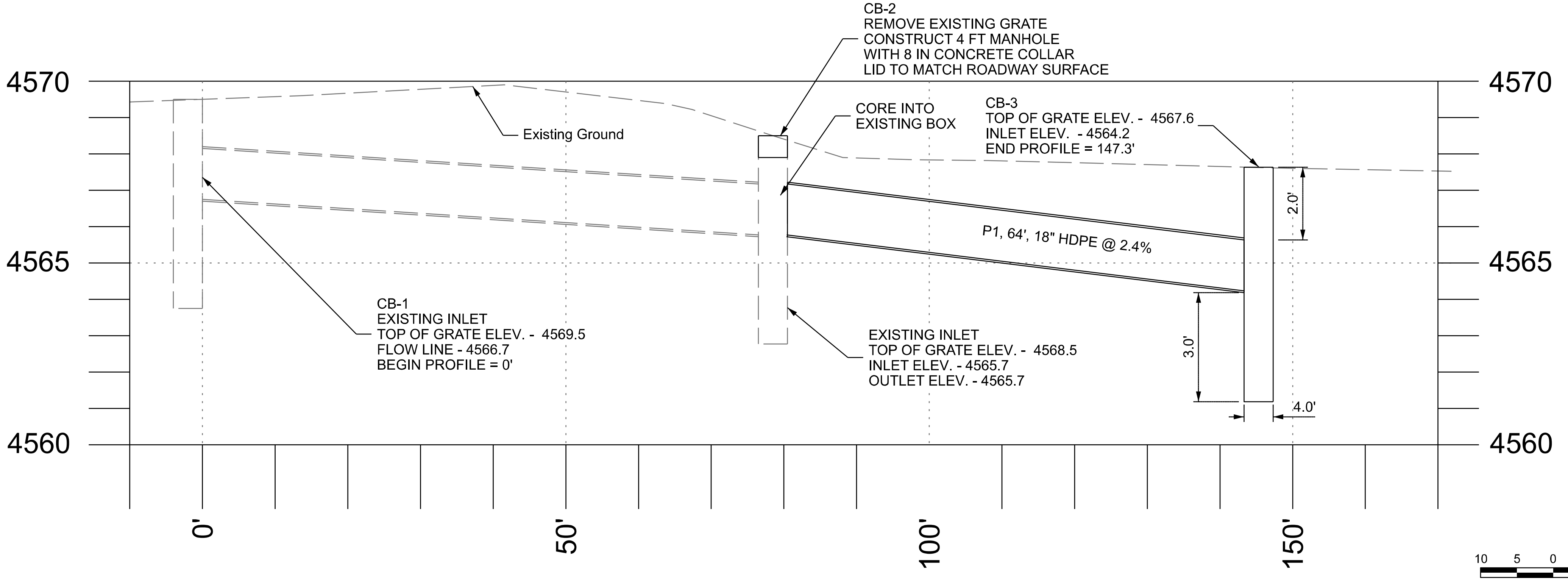
SPANISH FORK
PRIDE & PROGRESS

DETAIL

SHEET NO. DT-01

$$files$$
$$date$$





10 5 0 10 20 30

Scale In Feet

NOTES:

1. DIMENSIONS ARE APPROXIMATE, ARE FOR INFORMATION ONLY, AND BASED ON INTERPOLATED SURVEY DATA. FIT TO FIELD CONDITIONS.
2. PROFILE VERTICAL EXAGGERATION IS 5V:1H.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

DRAWN BY	RMP
QC CHECKED BY	TRP

APPROVED

PROFESSIONAL ENGINEER

1/19/2023
DATE

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

SPANISH FORK
PRIDE & PROGRESS
EST. 1855

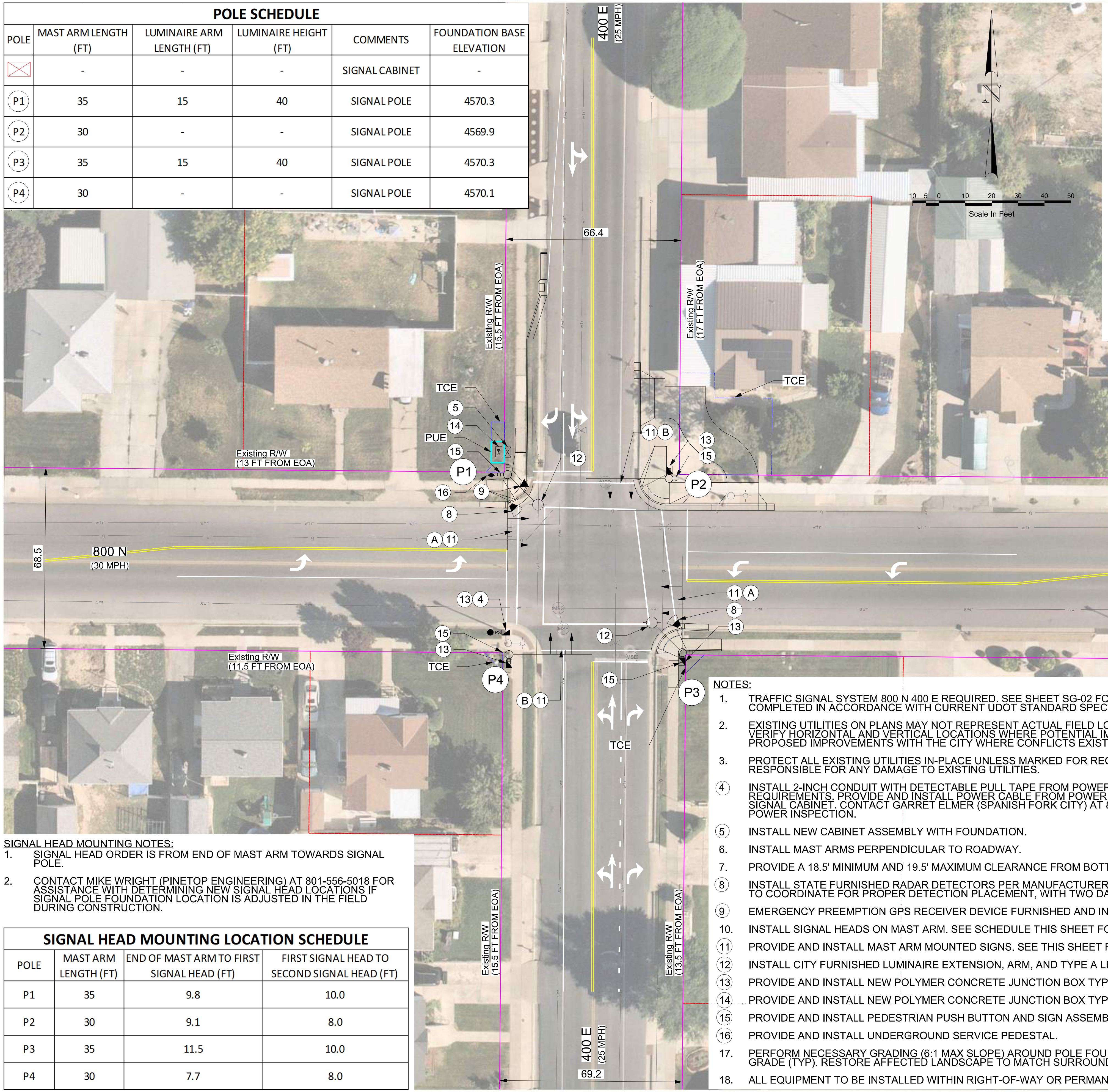
DRAINAGE

SHEET NO. DR-01

$$date$$ $$files$$

POLE SCHEDULE

POLE	MAST ARM LENGTH (FT)	LUMINAIRE ARM LENGTH (FT)	LUMINAIRE HEIGHT (FT)	COMMENTS	FOUNDATION BASE ELEVATION
☒	-	-	-	SIGNAL CABINET	-
P1	35	15	40	SIGNAL POLE	4570.3
P2	30	-	-	SIGNAL POLE	4569.9
P3	35	15	40	SIGNAL POLE	4570.3
P4	30	-	-	SIGNAL POLE	4570.1


400 E
(25 MPH)
800 N
(30 MPH)
66.4
68.5
68.4
69.2
Existing R/W (15.5 FT FROM EOA)
Existing R/W (17 FT FROM EOA)
Existing R/W (13 FT FROM EOA)
Existing R/W (12.5 FT FROM EOA)
Existing R/W (11.5 FT FROM EOA)
Existing R/W (13.5 FT FROM EOA)
TCE
PUE
P1
P2
P3
P4
A
B
N
10 5 0 10 20 30 40 50
Scale In Feet

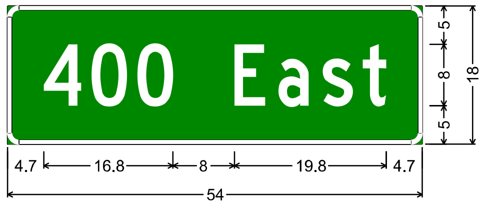
SIGNAL HEAD MOUNTING NOTES:

1. SIGNAL HEAD ORDER IS FROM END OF MAST ARM TOWARDS SIGNAL POLE.
2. CONTACT MIKE WRIGHT (PINETOP ENGINEERING) AT 801-556-5018 FOR ASSISTANCE WITH DETERMINING NEW SIGNAL HEAD LOCATIONS IF SIGNAL POLE FOUNDATION LOCATION IS ADJUSTED IN THE FIELD DURING CONSTRUCTION.

SIGNAL HEAD MOUNTING LOCATION SCHEDULE

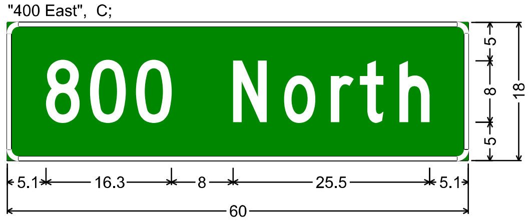
POLE	MAST ARM LENGTH (FT)	END OF MAST ARM TO FIRST SIGNAL HEAD (FT)	FIRST SIGNAL HEAD TO SECOND SIGNAL HEAD (FT)
P1	35	9.8	10.0
P2	30	9.1	8.0
P3	35	11.5	10.0
P4	30	7.7	8.0

Ⓐ



DS3-3 Single Street Name Sign Mast Arm;
1.5" Radius, 0.5" Border, White on Green;
"400 East", C;

Ⓑ



DS3-3 Single Street Name Sign Mast Arm;
1.5" Radius, 0.5" Border, White on Green;
"800 North", C;

NOTES:

1. TRAFFIC SIGNAL SYSTEM 800 N 400 E REQUIRED. SEE SHEET SG-02 FOR MORE INFORMATION. ALL WORK AND MATERIALS TO BE PROVIDED AND COMPLETED IN ACCORDANCE WITH CURRENT UDOT STANDARD SPECIFICATIONS AND DRAWINGS UNLESS NOTED OTHERWISE.
2. EXISTING UTILITIES ON PLANS MAY NOT REPRESENT ACTUAL FIELD LOCATION. BLUESTAKE UTILITIES BEFORE WORK BEGINS. CONTRACTOR TO VERIFY HORIZONTAL AND VERTICAL LOCATIONS WHERE POTENTIAL IMPACTS EXIST PRIOR TO CONSTRUCTION. COORDINATE FINAL LOCATION OF ALL PROPOSED IMPROVEMENTS WITH THE CITY WHERE CONFLICTS EXIST.
3. PROTECT ALL EXISTING UTILITIES IN-PLACE UNLESS MARKED FOR RECONSTRUCTION, RELOCATION, OR ABANDONMENT. CONTRACTOR RESPONSIBLE FOR ANY DAMAGE TO EXISTING UTILITIES.

④ INSTALL 2-INCH CONDUIT WITH DETECTABLE PULL TAPE FROM POWER SOURCE TO UNDERGROUND SERVICE PEDESTAL PER SPANISH FORK CITY REQUIREMENTS. PROVIDE AND INSTALL POWER CABLE FROM POWER SUPPLY TO UNDERGROUND SERVICE PEDESTAL (USP) AND FROM USP TO SIGNAL CABINET. CONTACT GARRET ELMER (SPANISH FORK CITY) AT 801-804-4629 THIRTY (30) DAYS BEFORE POWER SERVICE IS REQUIRED AND FOR POWER INSPECTION.

⑤ INSTALL NEW CABINET ASSEMBLY WITH FOUNDATION.

6. INSTALL MAST ARMS PERPENDICULAR TO ROADWAY.
7. PROVIDE A 18.5' MINIMUM AND 19.5' MAXIMUM CLEARANCE FROM BOTTOM OF SIGNAL HEAD TO TOP OF PAVEMENT.

⑧ INSTALL STATE FURNISHED RADAR DETECTORS PER MANUFACTURER'S STANDARD. CONTACT MIKE WRIGHT (PINETOP ENGINEERING) AT 801-556-5018 TO COORDINATE FOR PROPER DETECTION PLACEMENT, WITH TWO DAYS ADVANCED NOTICE.

⑨ EMERGENCY PREEMPTION GPS RECEIVER DEVICE FURNISHED AND INSTALLED AT 25 - 30 FT HEIGHT BY OTHERS AT A LATER DATE.

10. INSTALL SIGNAL HEADS ON MAST ARM. SEE SCHEDULE THIS SHEET FOR MOUNTING LOCATION.

⑪ PROVIDE AND INSTALL MAST ARM MOUNTED SIGNS. SEE THIS SHEET FOR DETAILS.

⑫ INSTALL CITY FURNISHED LUMINAIRE EXTENSION, ARM, AND TYPE A LED LUMINAIRE.

⑬ PROVIDE AND INSTALL NEW POLYMER CONCRETE JUNCTION BOX TYPE B.

⑭ PROVIDE AND INSTALL NEW POLYMER CONCRETE JUNCTION BOX TYPE C.

⑮ PROVIDE AND INSTALL PEDESTRIAN PUSH BUTTON AND SIGN ASSEMBLY AND COUNTDOWN PEDESTRIAN SIGNAL HEAD FOR EACH CROSSING.

⑯ PROVIDE AND INSTALL UNDERGROUND SERVICE PEDESTAL.

17. PERFORM NECESSARY GRADING (6:1 MAX SLOPE) AROUND POLE FOUNDATION TO ENSURE NO MORE THAN ONE FOOT OF FOUNDATION IS ABOVE GRADE (TYP). RESTORE AFFECTED LANDSCAPE TO MATCH SURROUNDING MATERIAL AND GRADE.
18. ALL EQUIPMENT TO BE INSTALLED WITHIN RIGHT-OF-WAY OR PERMANENT EASEMENT, CONTRACTOR TO STAKE R/W PRIOR TO CONSTRUCTION.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

DRAWN BY	RMP
QC CHECKED BY	TRP

APPROVED
T.
PROFESSIONAL ENGINEER
1/19/2023
DATE

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

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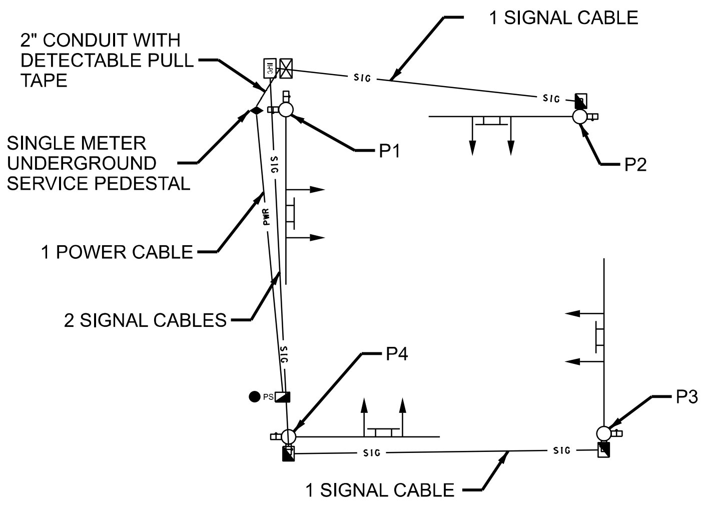
SIGNAL

SHEET NO. SG-01

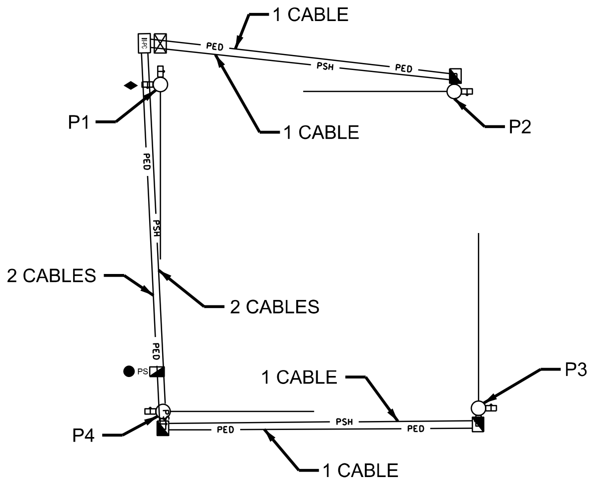

1 SIGNAL CABLE
2" CONDUIT WITH DETECTABLE PULL TAPE
SINGLE METER UNDERGROUND SERVICE PEDESTAL
P1
P2
1 POWER CABLE
2 SIGNAL CABLES
P4
P3
1 SIGNAL CABLE
SIG
PWR
PS

SIGNAL CIRCUIT

7-CONDUCTOR 14 AWG STRANDED CABLE, IMSA 20-1 WITH 6 AWG BARE SOLID COPPER GROUND WIRE IN 2-INCH CONDUIT

POWER CIRCUIT

1/0 TRIPLEX URD ALUMINUM CONDUCTOR WITH 6 AWG BARE SOLID COPPER GROUND WIRE IN 2-INCH CONDUIT

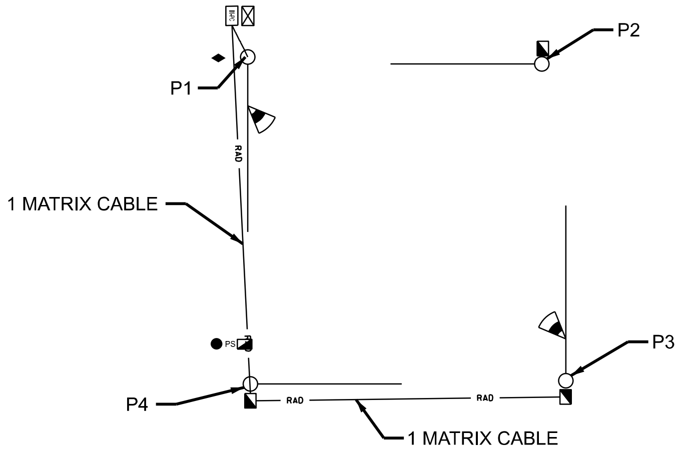


PEDESTRIAN SIGNAL CIRCUIT

7-CONDUCTOR 14 AWG STRANDED CABLE, IMSA 20-1 IN SAME CONDUIT AS SIGNAL CIRCUIT.

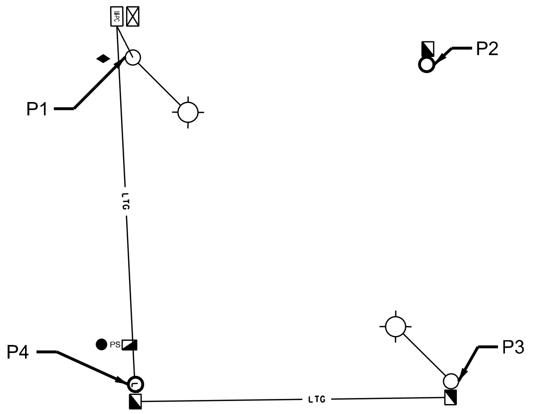
PUSH BUTTON CIRCUIT

4-CONDUCTOR 14 AWG STRANDED CABLE, IMSA 20-1 IN 2-INCH CONDUIT



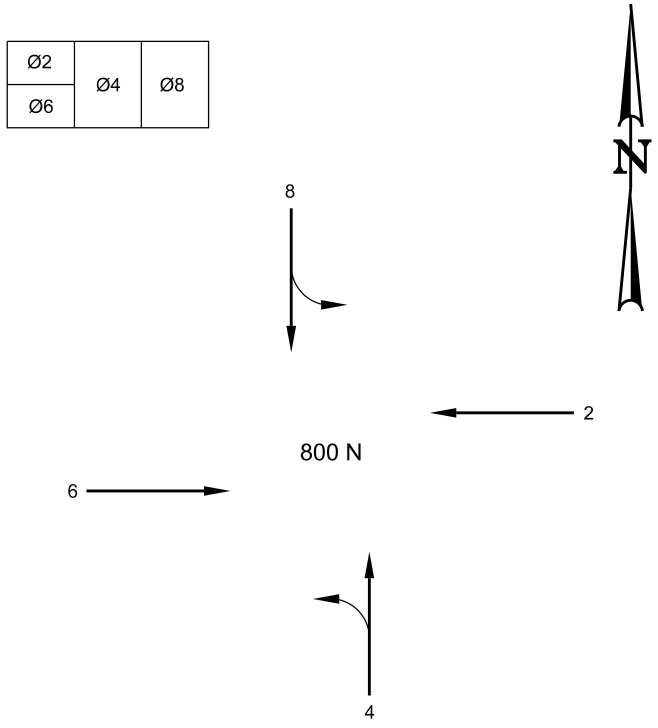
MATRIX DETECTION CIRCUIT

SMART SENSOR MATRIX CABLE (SEE SG-S02 FOR DETAILS) WITH 12 AWG GROUND WIRE IN 2-INCH CONDUIT

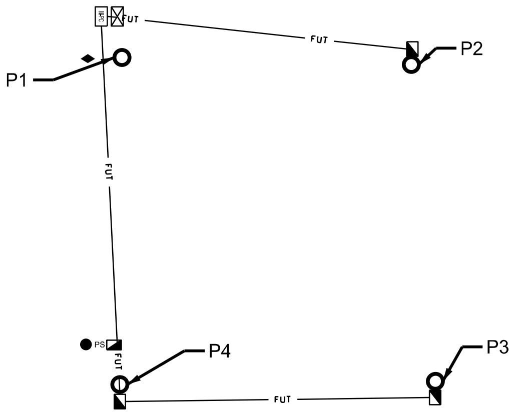


LIGHTING CIRCUIT

#12 AWG BLUE STRANDED COPPER THHN WITH 6 AWG BARE SOLID COPPER GROUND WIRE IN 2-INCH CONDUIT



PHASING DIAGRAM



FUTURE USE CONDUIT

TWO 2-INCH CONDUITS WITH DETECTABLE PULL TAPE

NO.	DATE	APPROVED BY	REMARKS

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SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

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1/19/2023
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SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

SPANISH FORK
PRIDE & PROGRESS
EST. 1855

SIGNAL CIRCUT

SHEET NO. SG-02

$$date$$
$$files$$

LEGEND

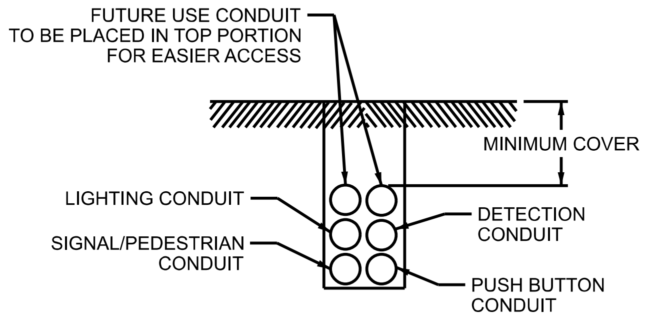
Existing	PROPOSED	
— pwr —	— PWR —	POWER SOURCE CIRCUIT CONDUIT
— sig —	— SIG —	SIGNAL CIRCUIT CONDUIT
— ped —	— PED —	PEDESTRIAN SIGNAL CIRCUIT CONDUIT
— psh —	— PSH —	PEDESTRIAN PUSH BUTTON CIRCUIT CONDUIT
— rad —	— RAD —	RADAR DETECTION CIRCUIT CONDUIT
— ltg —	— LTG —	LIGHTING CIRCUIT CONDUIT
— fut —	— FUT —	FUTURE USE CONDUIT
(P1)	(P1)	SIGNAL POLE IDENTIFICATION
		DUAL MAST ARM SIGNAL POLE
		MAST ARM SIGNAL POLE
		SIGNAL POLE LUMINAIRE EXTENSION WITH ARM
		SIGNAL POLE LUMINAIRE EXTENSION WITH VERTICAL ATTACHMENT
		MAST ARM MOUNTED SIGN
● ps	● PS	POWER SOURCE
○	○	TRAFFIC SIGNAL POLE
		TYPE 0 - 1 SECTION SIGNAL HEAD ASSEMBLY
		TYPE I - 3 SECTION SIGNAL HEAD ASSEMBLY
		TYPE II - 3 SECTION SIGNAL HEAD ASSEMBLY
		TYPE III - 3 SECTION (ALL AROWS) SIGNAL HEAD ASSEMBLY
		TYPE IV - 4 SECTION SIGNAL HEAD ASSEMBLY
		TYPE V - 5 SECTION SIGNAL HEAD ASSEMBLY
		TYPE VI - 4 SECTION (ALL ARROWS) SIGNAL HEAD ASSEMBLY
		TYPE VII - 4 SECTION SIGNAL HEAD ASSEMBLY
		PEDESTRIAN HYBRID BEACON - 3 SECTION SIGNAL HEAD ASSEMBLY
		VIBRATION MITIGATOR
☒	☒	TRAFFIC SIGNAL CONTROLLER CABINET
■	■	TYPE A JUNCTION BOX
◩	◩	TYPE B JUNCTION BOX
▥	▥	TYPE C JUNCTION BOX
III-pc	III-PC	TYPE III JUNCTION BOX (ATMS)
		SAME JUNCTION BOX USED FOR SIGNAL CIRCUIT
		PEDESTRIAN SIGNAL HEAD WITH PUSH BUTTON
		AUDIBLE PEDESTRIAN SIGNAL HEAD
		PUSH BUTTON
◇	◆	UNDERGROUND SERVICE PEDESTAL (USP)
	◀	PREEMPTION CONTROL SYSTEM DETECTOR
		DIRECTIONAL ANTENNA
		VIDEO DETECTION CAMERA
	■◀	CCTV CAMERA
		RADAR DETECTION, DILEMMA ZONE
		RADAR DETECTION, STOP BAR
		WIRELESS DETECTION PUCK
		WIRELESS DETECTION, ACCESS POINT
		WIRELESS DETECTION, REPEATER
		SENSOR LOOP
		RRFB (WITH INTEGRATED PEDESTRIAN CONFIRMATION PILOT LIGHT)

EXISTING EQUIPMENT

	SALVAGE										REMOVE																		RELOCATE								
	TRAFFIC SIGNAL CONTROLLER	TRAFFIC SIGNAL CABINET	UNDERGROUND SERVICE PEDESTAL	SIGNAL HEAD	COUNTDOWN PEDESTRIAN SIGNAL HEAD	LED LUMINAIRE HEAD	RADAR DETECTION SENSOR	WIRELESS DETECTION ACCESS POINT/REPEATER	WIRELESS DETECITON PUCKS	VIBRATION MITIGATOR	VIDEO DETECTION CAMERA	TRAFFIC SIGNAL CABINET FOUNDATION	UNDERGROUND SERVICE PEDESTAL FOUNDATION	MAST ARM SIGNAL POLE FOUNDATION	TRAFFIC SIGNAL POLE FOUNDATION	LUMINAIRE POLE FOUNDATION	MAST ARM SIGNAL POLE	TRAFFIC SIGNAL POLE	MAST ARM	HIGHWAY LUMINAIRE POLE	LUMINAIRE EXTENSION	LUMINAIRE ARM	SIGNAL HEAD	PEDESTRIAN SIGNAL HEAD	PEDESTRIAN PUSH BUTTON	MAST ARM MOUNTED SIGN	JUNCTION BOX	WIRE/CABLE	TRAFFIC SIGNAL CONTROLLER CABINET	SIGNAL HEAD	COUNTDOWN PEDESTRIAN SIGNAL HEAD	LUMINARE EXTENSION & ARM	PREEMPTION RECEIVER	MAST ARM MOUNTED SIGN	RADAR DETECTION SENSOR	WIRELESS DETECTION ACCESS POINT/REPEATER	OVERHEAD DEVICE ON LUMINAIRE EXTENSION
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	FT	EA	EA	EA	EA	EA	EA	EA	EA	EA
				NONE															NONE													NONE					
TOTAL																																					

*

* THESE ITEMS ARE PAID UNDER THE TRAFFIC SIGNAL SYSTEM LUMP ITEM, UNLESS NOTED OTHERWISE



NOTES:

1. REFER TO UDOT SL SERIES STANDARD DRAWINGS FOR MINIMUM CONDUIT DEPTH REQUIREMENTS.
2. MINIMUM OF 6 CONDUITS ARE REQUIRED FOR EACH ROAD CROSSING LOCATION.

BORING DETAIL

NOTES:

1. CONTACT DILLON MUIRBROOK (SPANISH FORK CITY) AT 801-804-4626 TO SCHEDULE/COORDINATE ON THE FOLLOWING ITEMS:

   SALVAGED ITEMS: PROVIDE 2 DAYS NOTICE. ENSURE ALL SALVAGED ITEMS HAVE ALL PARTS AND ASSOCIATED HARDWARE.

   SIGNAL INSPECTION: 8 DAYS PRIOR TO TURN-ON CONTACT SPANISH FORK CITY REPRESENTATIVE TO REQUEST AN IN-PROGRESS SIGNAL INSPECTION.

   SIGNAL TURN-ON: PROVIDE 5 DAYS NOTICE. COMPLETE UDOT TRAFFIC SIGNAL TURN-ON CHECKLIST PRIOR TO CALLING SPANISH FORK CITY REPRESENTATIVE.

2. CONTRACTOR IS RESPONSIBLE TO DISPOSE OF REMOVAL ITEMS AND ASSUME RESPONSIBILITY THEREAFTER. REUSE MATERIALS ONLY AS SPECIFIED OR AS APPROVED BY THE ENGINEER.
3. REFER TO UDOT STD DWG SL SERIES FOR DETAILS.
4. CONDUIT INSTALLATION METHOD SHALL BE TRENCHLESS AND MUST BE APPROVED BY CITY.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

APPROVED
PROFESSIONAL ENGINEER
1/19/2023
DATE
DRAWN BY RMP
QC CHECKED BY TRP

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

SIGNAL SCHEDULE

SHEET NO. SG-S01

$$files$$
$$date$$

CONTRACTOR FURNISHED MATERIAL

	STRUCTURAL SUPPORT							POWER					CONDUIT							JUNCTION BOX			SIGN	
	MAST ARM SIGNAL POLE FOUNDATION - 3' x 12' (30' TO 65')	MAST ARM SIGNAL POLE FOUNDATION - 3' x 14' (70' TO 75')	MAST ARM SIGNAL POLE FOUNDATION - 4' x 14' (80' TO 85')	TRAFFIC SIGNAL/PED POLE FOUNDATION - 2' x 3'	HIGHWAY LUMINAIRE POLE FOUNDATION - 2.5' x 8'	CABINET FOUNDATION	UNDERGROUND SERVICE PEDESTAL FOUNDATION	UNDERGROUND SERVICE PEDESTAL	DUAL METER UNDERGROUND SERVICE PEDESTAL	POWER SOURCE (120 VOLT)	1/0 TRIPLEX ALUMINUM CONDUTOR PS TO USP	1/0 TRIPLEX ALUMINUM CONDUTOR PS TO CABINET	2" CONDUIT	2 1/2" CONDUIT	3" CONDUIT	2" CONDUIT WITH DETECTABLE PULL TAPE (FUTURE USE)	TRENCHING PAVED SURFACE	TRENCHING UNPAVED SURFACE	DIRECTIONAL BORING	TYPE A	TYPE B	TYPE C	MAST ARM MOUNTED SIGN	BLANK-OUT SIGN WITH MOUNTING BRACKETS
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT	EA	EA	EA	EA / SQ FT	EA
800 N 400 E	4					1	1	1		1	65	15	1200						200		4	1	2 / 6.8 2 / 7.5	
TOTAL	4					1	1	1		1	$	$	$	$	$	$	$	$	$		4	1		
USE	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

$ THESE ITEMS ARE CALCULATED BY THE CONTRACTOR

* THESE ITEMS ARE COMBINED ON ESTIMATE AS TRAFFIC SIGNAL SYSTEM

CONTRACTOR FURNISHED MATERIAL

	SIGNAL AND PEDESTRIAN								LIGHTING			GROUNDING			DETECTION		
	4 CONDUCTOR NO. 14 CABLE (SIGNAL CIRCUIT)	7 CONDUCTOR NO. 14 CABLE (SIGNAL CIRCUIT)	7 CONDUCTOR NO. 14 CABLE (PED CIRCUIT)	4 CONDUCTOR NO. 14 CABLE (PUSH BUTTON CIR)	COUNTDOWN PEDESTRIAN SIGNAL HEAD	PUSH BUTTON AND SIGN ASSEMBLY	PUSH BUTTON FRAME STAND-OFF BRACKET	POWDER COATING ALL STEEL COMPONENTS	NO. 4 SINGLE CONDUCTOR CABLE	NO. 6 SINGLE CONDUCTOR CABLE	NO. 12 BLUE STRANDED COPPER THHN CABLE	GROUND ROD	NO. 6 BARE COPPER GROUND WIRE	NO. 12 STRANDED GROUND WIRE (STOP BAR DETECTION)	SMART SENSOR ADVANCE CABLE (SEE NOTE 5)	SMART SENSOR MATRIX CABLE (SEE NOTE 5)	PREEMPTION CONTROL CABLE
LOCATION	LIN FT	LIN FT	LIN FT	LIN FT	EA	EA	EA	LUMP	LIN FT	LIN FT	LIN FT	EA	LIN FT	LIN FT	LIN FT	LIN FT	LIN FT
800 N 400 E		550	420	360	8	8		1			315	5	940	250		250	
TOTAL	$	$	$	$					$	$	$	$	$	$	$	$	$
USE	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

$ THESE ITEMS ARE CALCULATED BY THE CONTRACTOR

* THESE ITEMS ARE COMBINED ON ESTIMATE AS TRAFFIC SIGNAL SYSTEM

NOTES:

1. SEE UDOT STD DWG SL SERIES AND SECTIONS 02892 AND 16530.
2. CONTACT SPANISH FORK LIGHT & POWER A MINIMUM OF THIRTY (30) DAYS BEFORE POWER SERVICE IS REQUIRED. SEE UDOT STD DWG SL 4C FOR UNDERGROUND SERVICE PEDESTAL DETAILS. CONTACT RAUL CHRISTENSEN (SPANISH FORK CITY) AT (801-921-9837) THREE (3) DAYS IN ADVANCE OF UNDERGROUND SERVICE PEDESTAL INSPECTION. MAKE ALL ARRANGEMENTS WITH SPANISH FORK LIGHT & POWER FOR INSTALLATION.
3. PLACE ALL CONDUIT IN SAME BORE SHOT WHERE POSSIBLE.
4. CONSTRUCT SIGNAL IN A MANNER TO AVOID DAMAGE TO EXISTING UTILITIES. ASSUME RESPONSIBILITY FOR ANY UTILITY DAMAGED BY CONSTRUCTION OPERATIONS. THE PLANS SHOW BURIED UTILITY LOCATIONS IN THEIR APPROXIMATE LOCATION ONLY.
5. SMART SENSOR CABLE: COLOR-CODED, TWISTED PAIR, 6 - CONDUCTOR WIRE WITH 20 AWG FOR POWER AND 22 AWG FOR COMMUNICATION. WAVETRONIX PART # WX-SS-705 OR APPROVED EQUIVALENT.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

DRAWN BY	RMP
QC CHECKED BY	TRP

APPROVED
PROFESSIONAL ENGINEER
1/19/2023
DATE

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

EST. 1855
SPANISH FORK
PRIDE & PROGRESS

SIGNAL SCHEDULE

SHEET NO. SG-S02

$$file$$
$$data$$

STATE FURNISHED MATERIAL

SIGNAL SCHEDULE

	TRAFFIC SIGNAL				
	CONTROLLER	M.M.U.	SIGNAL CABINET	BATTERY BACKUP (IN CABINET)	POWDER COATING
LOCATION	EA	EA	EA	EA	LUMP
800 N 400 E	1	1	1		
TOTALS	1	1	1		

	POLES										
	BASE PLATE ADAPTER	5'6" TRAFFIC / PED POLE (SLIP BASE)	11' TRAFFIC / PED POLE (SLIP BASE)	15' TRAFFIC / PED POLE (SLIP BASE)	TYPE-A MAST ARM SIGNAL POLE (30' TO 55')	TYPE-B MAST ARM SIGNAL POLE (60' TO 75')	TYPE-C MAST ARM SIGNAL POLE (80' TO 85')	TYPE-DC DUAL MAST ARM POLE (30' TO 45')	TYPE-A POLE CAP	TYPE-B POLE CAP	TYPE-C POLE CAP
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
800 N 400 E					4				2		
TOTALS					4				2		

	MAST ARMS												
	30' MAST ARM	35' MAST ARM	40' MAST ARM	45' MAST ARM	50' MAST ARM	55' MAST ARM	60' MAST ARM	65' MAST ARM	70' MAST ARM	75' MAST ARM	80' MAST ARM	85' MAST ARM	VIBRATION MITIGATOR
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
800 N 400 E	2	2											
TOTALS	2	2											

	ANCHOR BOLTS	
	2" x 66" ANCHOR BOLT (MAST POLES)	1" x 36" ANCHOR BOLT (TRAFFIC POLES)
LOCATION	EA	EA
800 N 400 E	16	
TOTALS	16	

HIGHWAY LIGHTING SCHEDULE

	POLE / EXTENSIONS							
	40' HIGHWAY LUMINAIRE POLE (SLIP BASE)	30' HIGHWAY LIGHT POLE (SLIP BASE)	LUMINAIRE POLE CAP	25' LUMINAIRE EXTENSION (2' 6") (FOR TYPE-A MAST POLE)	30' LUMINAIRE EXTENSION (7' 6") (FOR TYPE-A MAST POLE)	40' LUMINAIRE EXTENSION (17' 6") (FOR TYPE-A MAST POLE)	40' LUMINAIRE EXTENSION (12' 6") (FOR TYPE-B MAST POLE)	VERTICAL LUMINAIRE EXTENSION
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA
800 N 400 E						2		
TOTALS						2		

	ARMS				LED's	
	10' LUMINAIRE ARM	15' LUMINAIRE ARM	10' DUAL LUMINAIRE ARM	15' DUAL LUMINAIRE ARM	MULTI-VOLT / TYPE-A (250W)	MULTI-VOLT / TYPE-B (400W)
LOCATION	EA	EA	EA	EA	EA	EA
800 N 400 E		2			2	
TOTALS		2			2	

STATE FURNISHED MATERIAL

DETECTION SCHEDULE

	RADAR DETECTION										
	ADVANCE RADAR SENSOR (DILEMMA ZONE)	STOPBAR RADAR SENSOR (MATRIX)	SENSOR MOUNT	100' CABLE W-CONNECTOR	120' CABLE W-CONNECTOR	EPOXY SPLICE KIT	CLICK-650 RADAR INTERFACE (4 SENSORS)	CLICK-656 RADAR INTERFACE (6 SENSORS)	2-SENSOR BACKPLATE	4-SENSOR BACKPLATE	2 / 4 CHANNEL RACK CARDS (USED W-BACKPLATES)
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA	EA
800 N 400 E		2	2	2		2	1				
TOTALS		2	2	2		2	1				

	AUDIBLE PED BUTTONS		
	2-WIRE AUDIBLE PED BUTTON (FOR FULL INTERSECTION)	2-WIRE CENTRAL CONTROL UNIT	4-WIRE AUDIBLE PED BUTTON (FOR 1 OR 2 CROSSINGS)
LOCATION	EA	EA	EA
800 N 400 E			
TOTALS			

SIGNAL HEAD SCHEDULE

	LED MODULES					
	RED BALL	YELLOW BALL	GREEN BALL	RED ARROW	YELLOW ARROW	GREEN ARROW
LOCATION	EA	EA	EA	EA	EA	EA
800 N 400 E	8	8	8			
TOTALS	8	8	8			

	POLYMER SIGNAL HEADS (SEE NOTE 4)							
	1-SECTION SIGNAL HEAD	3-SECTION SIGNAL HEAD	4-SECTION SIGNAL HEAD	5-SECTION SIGNAL HEAD	HYBRID BEACON SIGNAL HEAD (HAWK)	TYPE-7 SIGNAL HEAD (DUAL-RED)	3 SECTION ASTRO-BRAC ASSEMBLY	4/5 SECTION ASTRO BRAC ASSEMBLY
LOCATION	EA	EA	EA	EA	EA	EA	EA	EA
800 N 400 E		8					8	
TOTALS		8					8	

RRFB

	RECTANGULAR RAPID FLASHING BEACON (RRFB)					
	LED BEACON	AC CONTROLLER	SOLAR CONTROLLER	SOLAR PANEL ASSEMBLY	MOUNTING KIT FOR SIDE-OF-POLE SOLAR PANEL ASSEMBLY	MOUNTING KIT FOR TOP-OF-POLE SOLAR PANEL ASSEMBLY
LOCATION	EA	EA	EA	EA	EA	EA
800 N 400 E						
TOTALS						

NOTES:

1. NOTIFY DILLON MUIRBROOK (SPANISH FORK CITY) AT 801-804-4626 4-6 WEEKS PRIOR TO THE DATE STATE FURNISHED MATERIALS ARE NEEDED.
2. PICK UP STATE FURNISHED ANCHOR BOLTS, SIGNAL POLE STEEL, AND OTHER ELECTRONICS HARDWARE AT STATE WAREHOUSE. PROVIDE LOADING EQUIPMENT AND PERSONNEL FOR PICK-UP. CONTACT GREG PALMER, (801) 965-4258, TO SCHEDULE PICK-UP. MINIMUM 48 HOURS ADVANCE NOTICE REQUIRED.
3. POLYMER SIGNAL HEAD ASSEMBLIES INCLUDE SIGNAL HEAD HOUSING, VISORS, AND LOUVERED BACK PLATE WITH RETROREFLECTIVE TAPE WHEN APPLICABLE.
4. CONTRACTOR TO POWDER COAT BLACK FINISH ALL SIGNAL POLES, MAST ARMS, AND LUMINAIRE ARMS & EXTENSIONS, AND POLE CAPS.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

DRAWN BY RMP

QC CHECKED BY TRP

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

1/19/2023
DATE

APPROVED
PROFESSIONAL ENGINEER

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

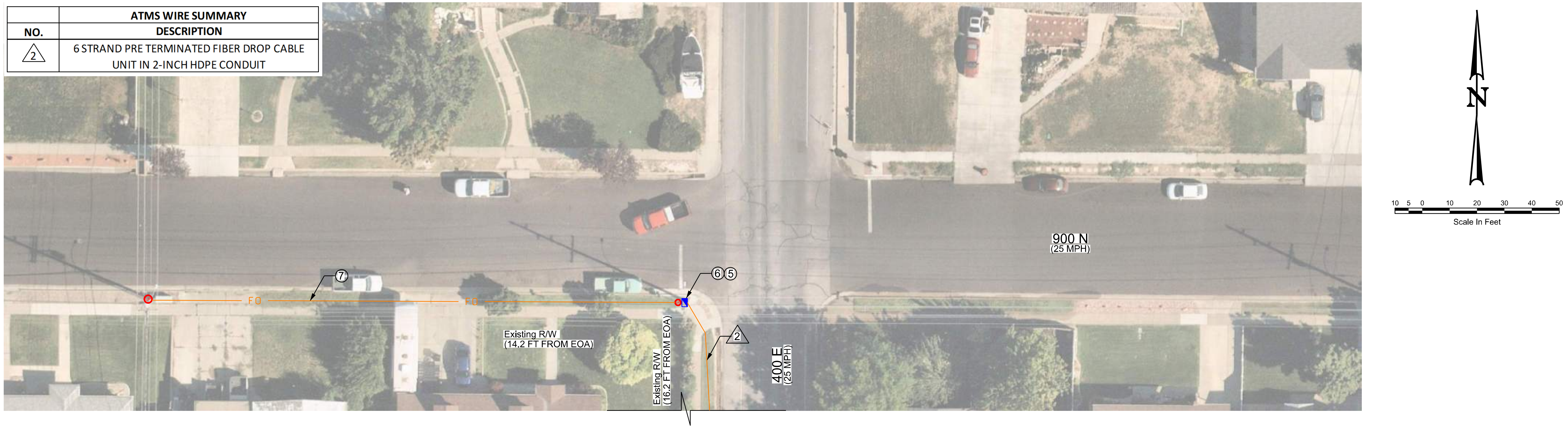
SPANISH FORK
PRIDE & PROGRESS
EST. 1855

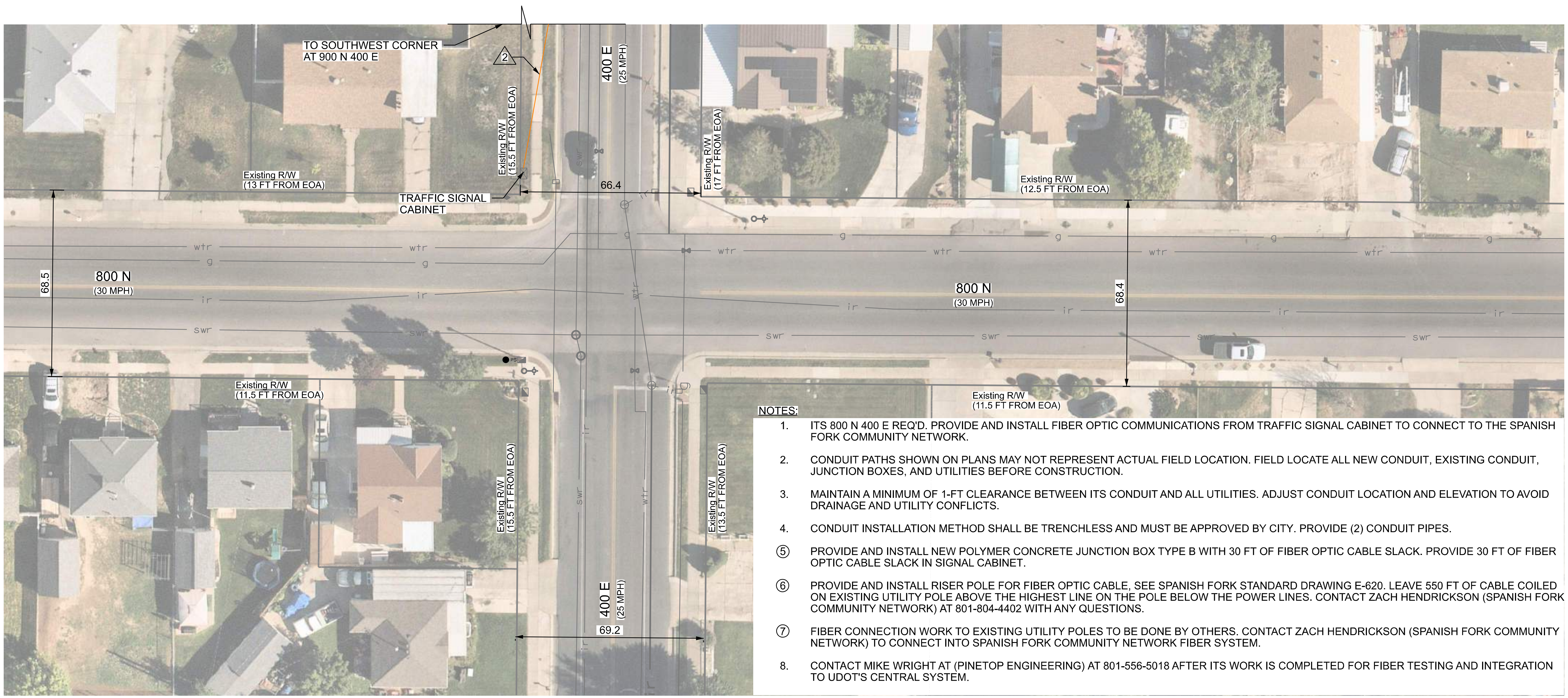
SIGNAL SCHEDULE

SHEET NO. SG-S03

$$date$$ $$file$$

ATMS WIRE SUMMARY	
NO.	DESCRIPTION
②	6 STRAND PRE TERMINATED FIBER DROP CABLE UNIT IN 2-INCH HDPE CONDUIT





NOTES:

1. ITS 800 N 400 E REQ'D. PROVIDE AND INSTALL FIBER OPTIC COMMUNICATIONS FROM TRAFFIC SIGNAL CABINET TO CONNECT TO THE SPANISH FORK COMMUNITY NETWORK.
2. CONDUIT PATHS SHOWN ON PLANS MAY NOT REPRESENT ACTUAL FIELD LOCATION. FIELD LOCATE ALL NEW CONDUIT, EXISTING CONDUIT, JUNCTION BOXES, AND UTILITIES BEFORE CONSTRUCTION.
3. MAINTAIN A MINIMUM OF 1-FT CLEARANCE BETWEEN ITS CONDUIT AND ALL UTILITIES. ADJUST CONDUIT LOCATION AND ELEVATION TO AVOID DRAINAGE AND UTILITY CONFLICTS.
4. CONDUIT INSTALLATION METHOD SHALL BE TRENCHLESS AND MUST BE APPROVED BY CITY. PROVIDE (2) CONDUIT PIPES.

⑤ PROVIDE AND INSTALL NEW POLYMER CONCRETE JUNCTION BOX TYPE B WITH 30 FT OF FIBER OPTIC CABLE SLACK. PROVIDE 30 FT OF FIBER OPTIC CABLE SLACK IN SIGNAL CABINET.

⑥ PROVIDE AND INSTALL RISER POLE FOR FIBER OPTIC CABLE, SEE SPANISH FORK STANDARD DRAWING E-620. LEAVE 550 FT OF CABLE COILED ON EXISTING UTILITY POLE ABOVE THE HIGHEST LINE ON THE POLE BELOW THE POWER LINES. CONTACT ZACH HENDRICKSON (SPANISH FORK COMMUNITY NETWORK) AT 801-804-4402 WITH ANY QUESTIONS.

⑦ FIBER CONNECTION WORK TO EXISTING UTILITY POLES TO BE DONE BY OTHERS. CONTACT ZACH HENDRICKSON (SPANISH FORK COMMUNITY NETWORK) TO CONNECT INTO SPANISH FORK COMMUNITY NETWORK FIBER SYSTEM.

8. CONTACT MIKE WRIGHT AT (PINETOP ENGINEERING) AT 801-556-5018 AFTER ITS WORK IS COMPLETED FOR FIBER TESTING AND INTEGRATION TO UDOT'S CENTRAL SYSTEM.

REVISIONS

NO.	DATE	APPROVED BY	REMARKS

DRAWN BY RMP

QC CHECKED BY TRP

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

APPROVED

PROFESSIONAL ENGINEER

1/19/2023
DATE

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

ITS

SHEET NO. ITS-01

$$date$$
$$file$$

ITS

	COMMUNICATIONS									CCTV						POLYMER CONCRETE BOX			SALVAGE			REMOVE
	FIBER JUMPER, SMF, LC-ST, DUPLEX, 3 FT	CISCO 8-PORT ETHERNET SWITCH	6 STRAND PRETERMINATED DROP CABLE UNIT	SPLICE CASE	FUSION SPLICE	2" IN CONDUIT	TRENCHING UNPAVED SURFACE	DIRECTIONAL BORING	CAT 5 ETHERNET PATCH CABLE, 4"	AXIS IP / HD / PLZ CAMERA KIT (CCTV)	AXIS / WALL MOUNT ARM	AXIS / POLE MOUNT BRACKET	POLYPHASER TRANSTECTOR (RJ45 SURGE PROJECTOR)	CCTV CAMERA CABLE (CAT 6 F/UTP CABLE)	STRANDED INSULATED GROUND WIRE, AWG 12 GAGE	POLYMER CONCRETE JUNCTION BOX, TIER 22, TYPE II	RISER POLE	GROUND ROD 3/4" X 10'	FIELD ETHERNET SWITCH, 7UTP PORT, 2SMF PORTS, DIN RAIL MOUNT	MPEG2/MPEG4/MJPEG ENCODER	ETHERNET SWITCH	WIRE/CABLE
LOCATION	EA	EA	LIN FT	EA	EA	LIN FT	LIN FT	LIN FT	EA	EA	EA	EA	EA	LIN FT	LIN FT	EA	EA	EA	EA	EA	EA	FT
800 N 400 E	2	1	1100			840		420								1	1					
TOTALS																						
USE	*	*	**	**	**	**	**	**	***	***	***	***	***	**	**	**	**	**				

* STATE FURNISHED AND INSTALLED
** CONTRACTOR FURNISHED AND INSTALLED
*** STATE FURNISHED AND CONTRACTOR INSTALLED
$ THESE ITEMS ARE CALCULATED BY THE CONTRACTOR

REVISIONS			
NO.	DATE	APPROVED BY	REMARKS

SPANISH FORK CITY
800 NORTH 400 EAST SIGNAL

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PROFESSIONAL ENGINEER

SPANISH FORK - PUBLIC WORKS
40 S. MAIN STREET, OFFICE 210
SPANISH FORK UTAH 84660

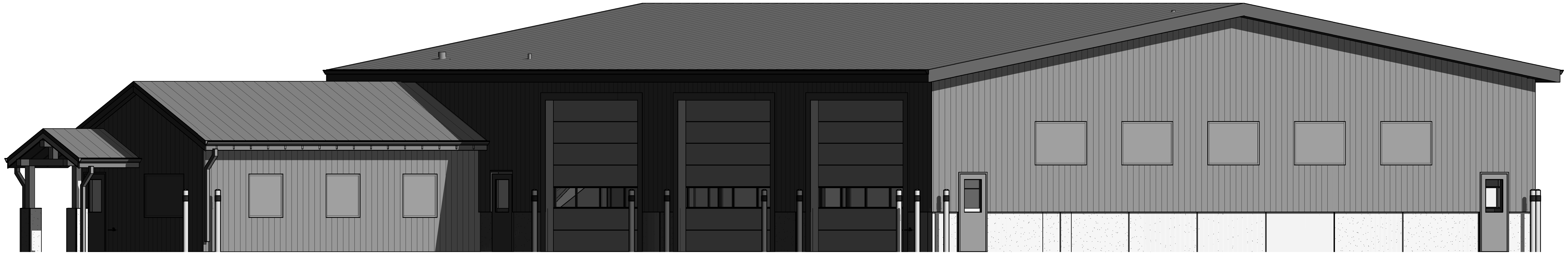
ITS SCHEDULE

SHEET NO. ITS-S01

FACILITIES SHOP

SPANISH FORK CITY

433 SOUTH MAIN STREET SPANISH FORK, 84660



OWNER

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UTAH 84660

CIVIL

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SPRINGVILLE, UTAH 84663
MATT LAURENDEAU
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matt.l@jonesanddemille.com

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VICINITY MAP

GENERAL NOTES

1. SEE ELECTRICAL DRAWINGS FOR RELATED SITE UTILITIES.
2. SEE LANDSCAPE DRAWINGS FOR OTHER SITE IMPROVEMENTS.
3. COMPLY WITH SPANISH FORK CITY STANDARDS, SPECIFICATIONS, AND DRAWINGS.
4. COMPLY WITH REQUIREMENTS OF PROJECT GEO-TECHNICAL REPORT.
5. FINISH GRADE AND FINISH SIDEWALKS, TO SLOPE AWAY FROM BUILDING WITH POSITIVE DRAINAGE.

PROJECT DATA

SITE ADDRESS:	200 E RIVER BOTTOM ROAD SPANISH FORK, UT 84660
PARCEL NUMBER:	27:019:0029
ZONING:	P-F
GENERAL PLAN:	AGRICULTURAL
EXISTING USE:	VACANT
PROPOSED USE:	OFFICE/MAINTENANCE BUILDING
LAND AREA:	2.45 ACRES

Date: 01.11.2023
Revision:

5403169-0301
06.10.2019
date

Alan R. Poulson
Bruce T. Fallon

WPA
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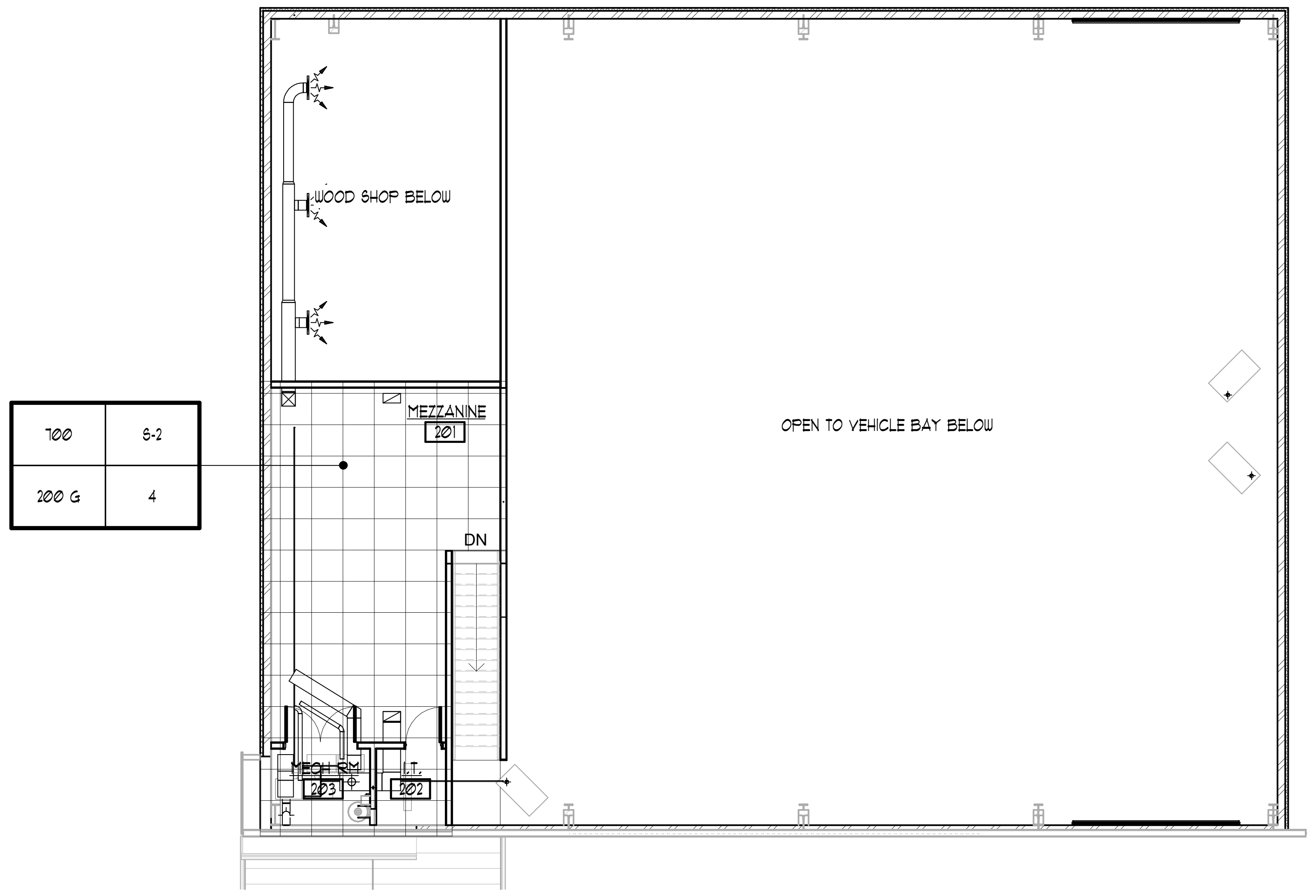
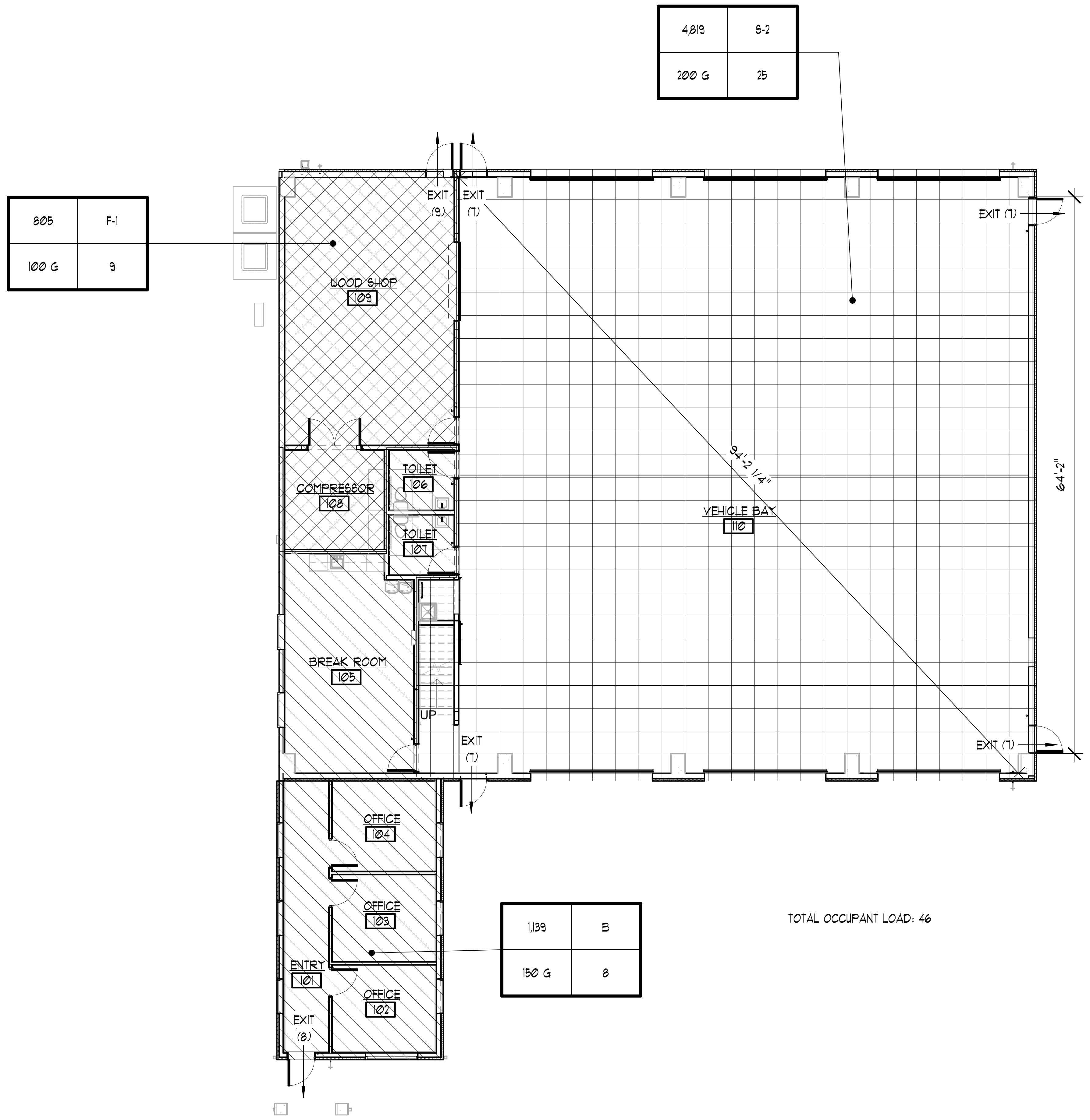
FACILITIES SHOP
SPANISH FORK CITY
SPANISH FORK, UTAH 84660
433 SOUTH MAIN STREET

CHECK SET - 01.11.2023

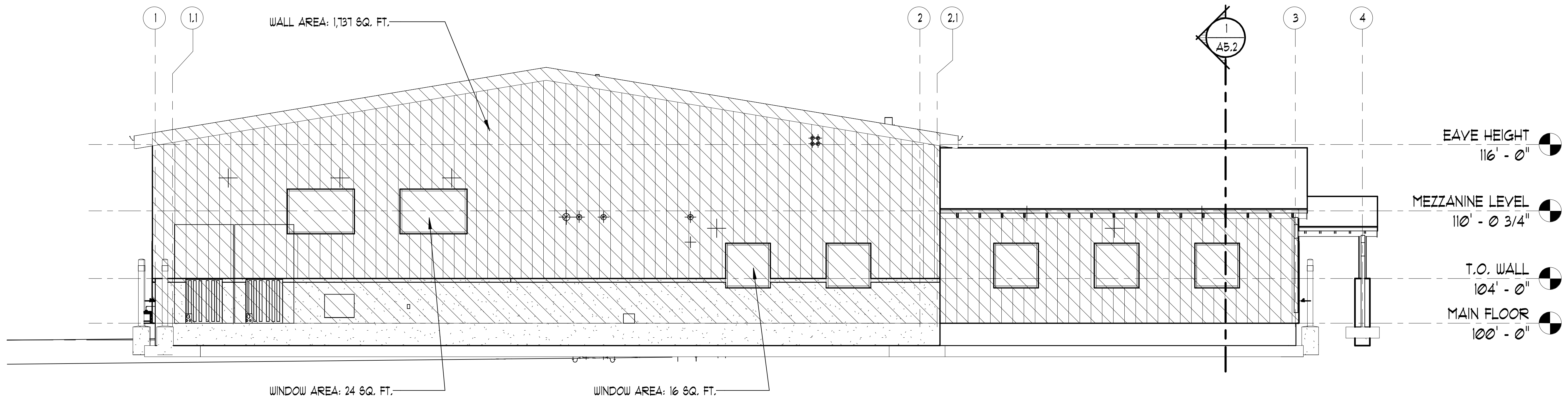
G1.1
COVER SHEET



② MEZZANINE LEVEL - CODE ANALYSIS
3/32" = 1'-0"



① MAIN FLOOR - CODE ANALYSIS
3/32" = 1'-0"



③ NORTH ELEVATION - CODE ANALYSIS
1/8" = 1'-0"

CODE ANALYSIS

APPLICABLE CODES

2018 INTERNATIONAL BUILDING CODE (IBC)	2018 INTERNATIONAL FIRE CODE
2018 INTERNATIONAL PLUMBING CODE	2020 NATIONAL ELECTRICAL CODE (NEC)
2018 INTERNATIONAL MECHANCIAL CODE	AMERICAN'S WITH DISABILITIES ACT
2018 INTERNATIONAL ENERGY CONSERVATION CODE	ICC/ANSI A117.1 - 2009

OCCUPANCIES AND TYPE OF CONSTRUCTION (IBC CHAPTERS 3 & 6)

MAIN OCCUPANCY	S-2
CONSTRUCTION TYPE:	VB

AREA OF BUILDING (IBC CHAPTER 5)

ACTUAL AREA BREAKDOWN BY AREA (PER DEFINITION "AREA, BUILDNG," IBC CH. 2)

LOCATION:	TOTAL AREA:
MAIN FLOOR	6,763 SQ. FT.
MEZZANINE	700 SQ. FT.
TOTAL BUILDING AREA:	11,969 SQ. FT.

ACTUAL AREA BREAKDOWN BY OCCUPANCY (PER DEFINITION "AREA, BUILDNG," IBC CH. 2)

LOCATION:	B	F-1	S-2	TOTAL AREA:
MAIN FLOOR	1,139 SQ. FT.	805 SQ. FT.	4,819 SQ. FT.	6,763 SQ. FT.
MEZZANINE	0 SQ. FT.	0 SQ. FT.	700 SQ. FT.	700 SQ. FT.
TOTAL BUILDING AREA:	1,139 SQ. FT.	805 SQ. FT.	5,519 SQ. FT.	7,463 SQ. FT.

ALLOWABLE BUILDING AREA (IBC SECTION 506)

B OCCUPANCY (NS):	9,000 SQ. FT. (ALLOWABLE AREA PER FLOOR)
F-1 OCCUPANCY (NS)::	8,500 SQ. FT. (ALLOWABLE AREA PER FLOOR)
S-2 OCCUPANCY (NS):	13,500 SQ. FT. (ALLOWABLE AREA PER FLOOR)

AREA CALCULATIONS
AREA MODFICATIONS BY OCCUPANCY

NO INCREASE REQUIRED AS SIZE OF BUILDING WITHIN ALLOWABLE BUILDING AREA FOR OCCUPANCY AND A BUILDING OF ONE STORY ABOVE GRADE PLANE.

HEIGHT OF BUILDING (TABLES 504.3 AND 504.4; SECTION 504)

	TOTAL ALLOWABLE HEIGHT	ACTUAL HEIGHT
HEIGHT IN STORIES	2 STORIES	1 STORY
HEIGHT IN FEET	40' - 0"	21' - 0"

NOTE: THE BUILDING WILL NOT BE FIRE SPRINKLED PER SECTION 903.3.1.1 (NFPA-13).

FIRE-RESISTANCE OF EXTERIOR WALLS AND OPENINGS (SECTIONS 601 AND 704.8)
FIRE RESISTANCE RATING FOR EXTERIOR WALLS

EXTERIOR BEARING WALL	(TABLE 601)	
NORTH, EAST, SOUTH & WEST EXTERIOR WALLS		NOT REQUIRED
EXTERIOR NON-BEARING WALL	(TABLES 601 AND 602)	NOT REQUIRED

NOTE: FIRE SPARATION DISTANCE IS GREATER THAN 10 FEET ON ALL SIDES

PROTECTION OF EXTERIOR WALL OPENINGS

NO PROTECTION IS REQUIRED OF EXTERIOR WALL OPENINGS AS ALL FIRE SEPARATION DISTANCES, EXCEPT FOR THE NORTH ELEVATION ARE GREATER THAN 20 FEET AS SHOWN ON IBC TABLE 705.8.

NORTH ELEVATION REQUIRES 15 PERCENT FOR EXTERIOR WALLS 10 FEET TO LESS THAN 15 FEET.

TOTAL WALL AREA: 1,737 SQ. FT.
TOTAL WALL OPENINGS: 128 SQ. FT. (7.4 PERCENT) - NO PROTECTION REQUIRED

OCCUPANCY SEPARATIONS (TABLE 508.4)

NONE REQUIRED

FIRE RATED CONSTRUCTION (IBC TABLE 601)

BUILDING ELEMENT	RATING	CODE REFERENCE
HORIZONTAL SEPARATION (R OCCUPANCY ONLY)	NON-RATED	SECTION 420.3
OCUPANCY SEPARATION (FIRE PARTITIONS)	NOT REQUIRED	SECTION 508
MECHANICAL ROOM SEPARATION	NOT REQUIRED	TABLE 509
PRIMARY STRUCTURAL FRAME PROTECTION	NON-RATED	TABLE 601
BEARING WALLS - EXTERIOR	NON-RATED	TABLE 601
BEARING WALLS - INTERIOR	NON-RATED	TABLE 601
FLOOR CONSTRUCTION	NON-RATED	TABLE 601
ROOF CONSTRUCTION	NON-RATED	TABLE 601
NON-BEARING WALLS - EXTERIOR	NON-RATED	TABLE 602
NON-BEARING WALLS - INTERIOR	NON-RATED	TABLE 602
PROTECTION OF EXTERIOR OPENINGS	NOT REQUIRED	SECTION / TABLE 705.8
FIRE WALLS	NOT REQUIRED	TABLE 706.4
FIRE BARRIERS	NOT REQUIRED	SECTION 707
FIRE PARTITIONS	NOT REQUIRED	SECTION 708
HORIZONTAL ASSEMBLIES	NON-RATED	SECTION 711.2
VERTICAL OPENINGS (FIRE BARRIER)	NOT REQUIRED	SECTION 712
SHAFT ENCLOSURES (FIRE BARRIER)	NOT REQUIRED	SECTION 713
AUTOMATC SPRINKLER SYSTEM	NO	SECTION 903
FIRE RATED CORRIDORS (FIRE PARTITIONS)	NOT REQUIRED	TABLE 1020.1
INTERIOR EXIT STAIRWAYS (FIRE BARRIER)	NOT REQUIRED	SECTION 1023

PLUMBING FIXTURE CALCULATIONS:

OCCUPANT LOAD: 46

WATER CLOSETS:	FACTORY & INDUSTRIAL REQUIRED - 1 PER 100 OCCUPANTS REQUIRED: 1 PROVIDED: 2
LAVATORIES:	FACTORY & INDUSTRIAL REQUIRED - 1 PER 100 OCCUPANTS REQUIRED: 1 PROVIDED: 2
DRINKING FOUNTAIN:	FACTORY & INDUSTRIAL REQUIRED - 1 PER 400 OCCUPANTS REQUIRED: 1 PROVIDED: 2
SERVICE SINK:	FACTORY & INDUSTRIAL REQUIRED - 1 REQUIRED: 1 PROVIDED: 1

CHECK SET - 01.11.2023

Date: 01.11.2023
Revision:

LICENSED ARCHITECT
BRUCE T. FALLON
5403169-0301
06.10.2019
date
STATE of UTAH

Alan R. Poulson
Bruce T. Fallon

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G1.2
CODE ANALYSIS

ACCESSIBILITY CLEARANCE NOTES

(ICC/ANSI A117.1-2009)

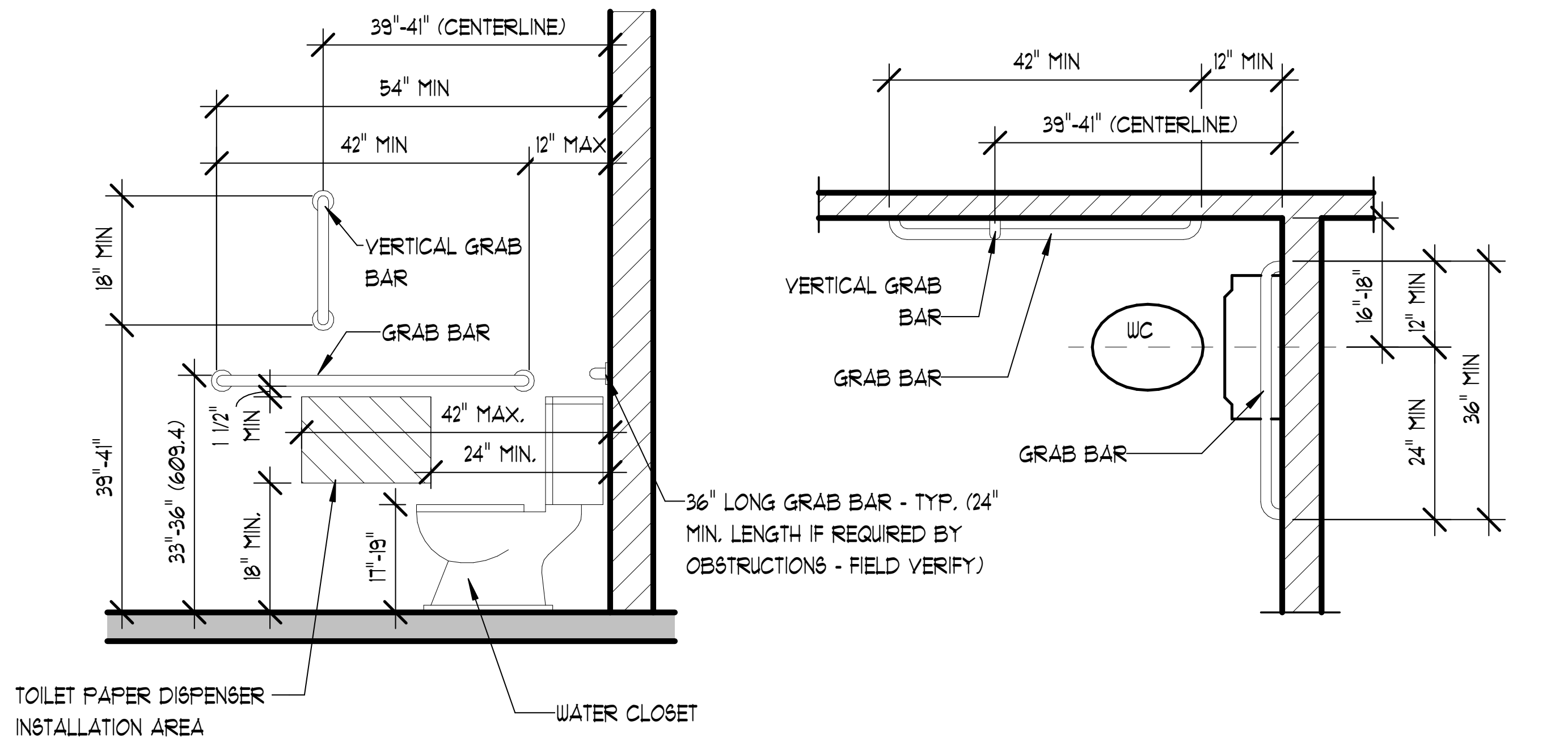
- 1 60" DIAMETER WHEELCHAIR TURNING SPACE (304.3.1)
- 2 30" X 48" CLEARANCE FOR WATER CLOSET (1004.11.3.1.2.2.1 & 1004.11.3.1.2.2.2)
- 3 30" X 48" CLEAR FLOOR SPACE FOR FORWARD APPROACH TO SINK/WORK SPACE/APPLIANCE (305.3, 606.2, 1003.12.3.1, 1003.12.4.1, 1003.12.5.2)
- 4 30" X 48" CLEAR FLOOR SPACE FOR PARALLEL/ADJACENT APPROACH TO SINK/APPLIANCE (305.3, 1004.10.1, 1004.11.1.1, 100412.2)
- 5 30" X 48" CLEAR FLOOR SPACE BEYOND SWING OF DOOR FOR INDIVIDUAL USE (603.2.2 EXCEPTION, 1003.11.2 EXCEPTION)
- 6 56" X 60" CLEARANCE FOR WATER CLOSET (604.3.1)
- 7 66" X 60" CLEARANCE FOR WATER CLOSET (1003.11.2.4.4)

NOTE: CLEAR FLOOR OR GROUND SPACES, CLEARANCE AT FIXTURES, AND WHEELSHAIR TURNING SPACES SHALL BE PERMITTED TO OVERLAP (603.2.2, 100311.2.4.4, & 1004.11.3.1.2.2.4)

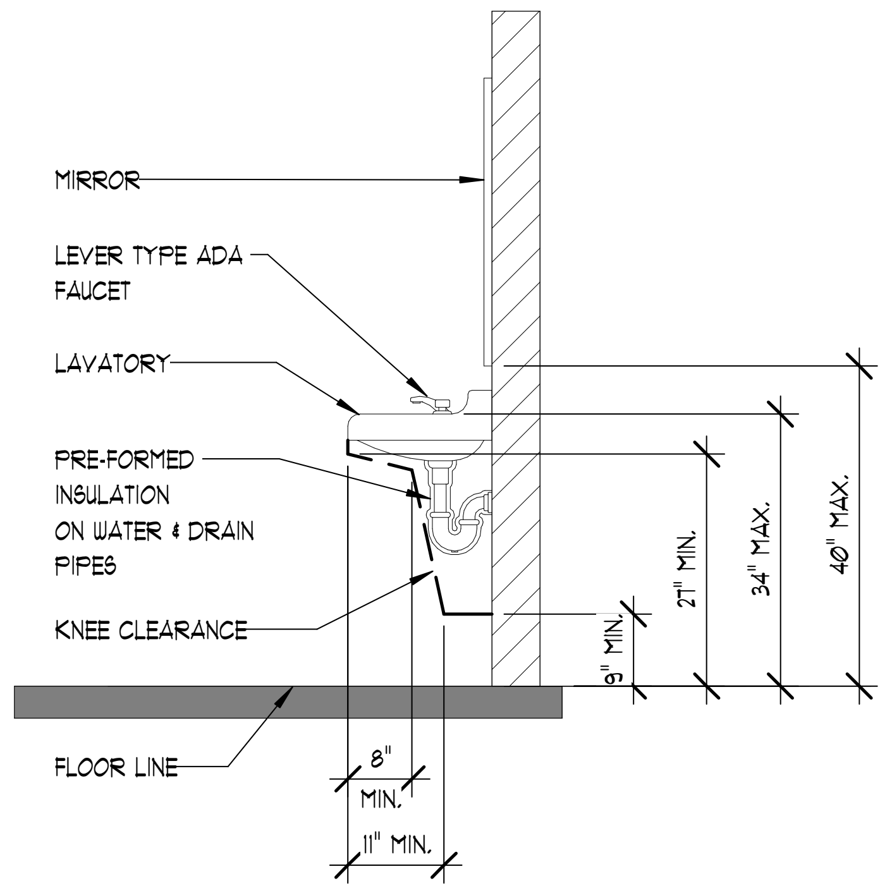
ADA REFERENCES

(ICC/ANSI A117.1-2009)

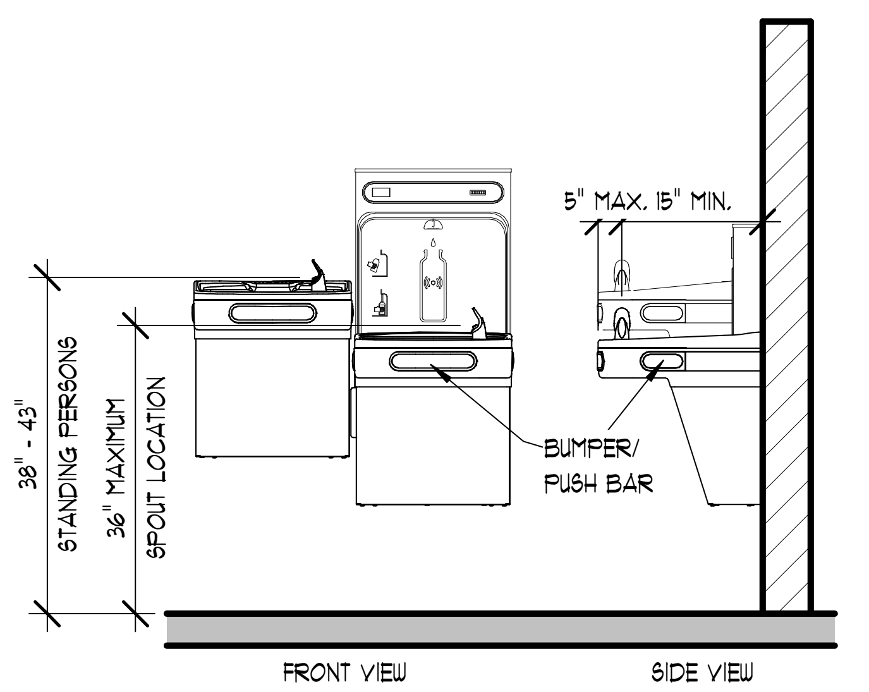
1. DRINKING FOUNAIN - 602
2. RESTROOM - 603-606
   MIRROR - 603.3
   WATER CLOSET - 604
   GRAB BARS - 604.5
   DISPENSER - 604.7
   LAVATORY - 606



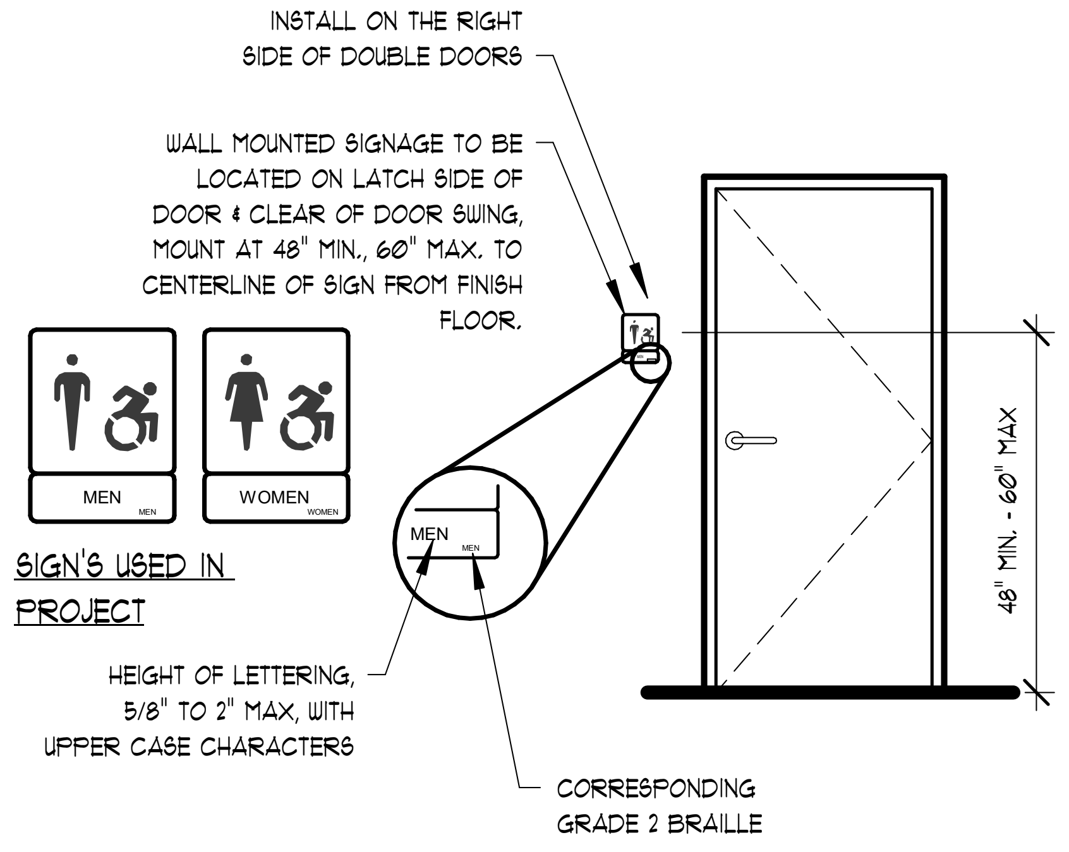
1 ACCESSIBLE TOILET CLEARANCES
1/2" = 1'-0"



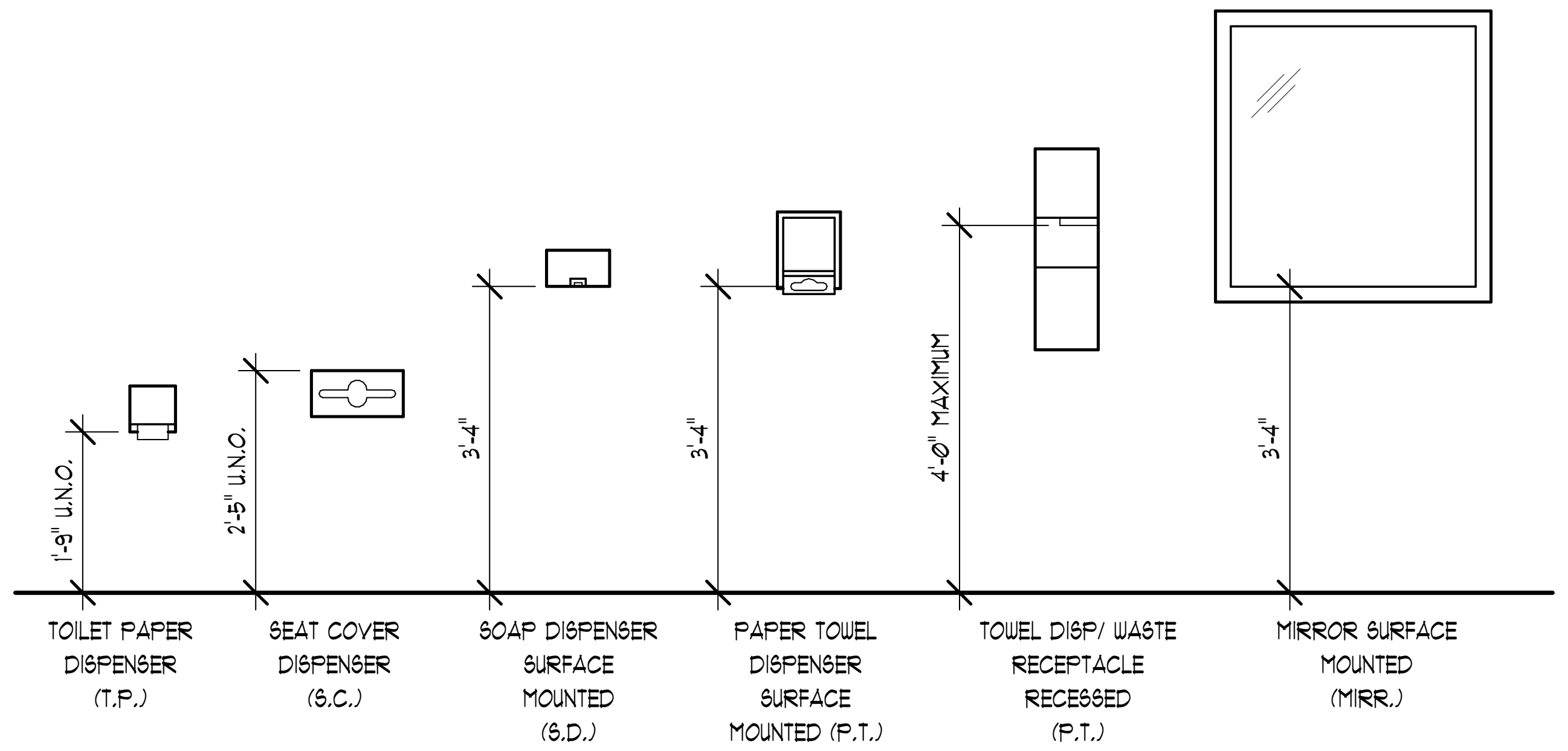
2 ACCESSIBLE VANITY CLEARANCES
1/2" = 1'-0"



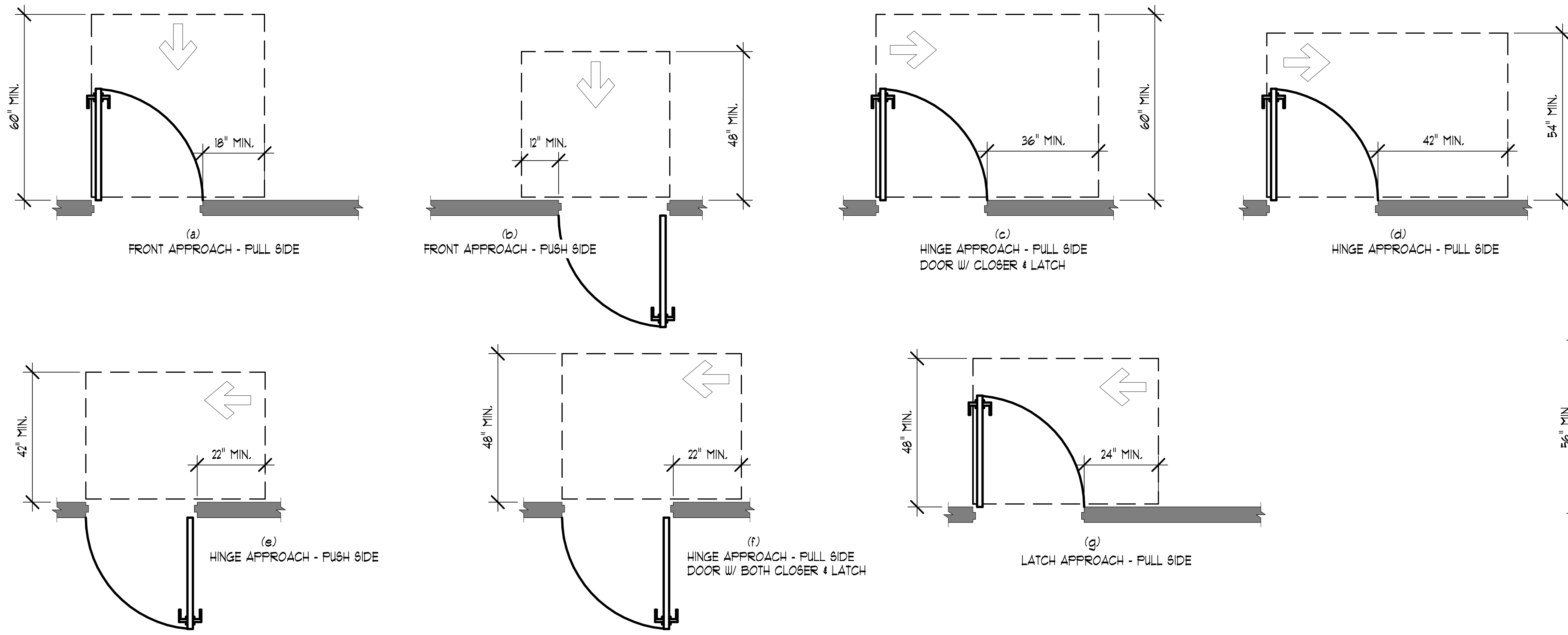
3 ACCESSIBLE DRINKING FOUNTAIN
1/2" = 1'-0"


INSTALL ON THE RIGHT SIDE OF DOUBLE DOORS
WALL MOUNTED SIGNAGE TO BE LOCATED ON LATCH SIDE OF DOOR & CLEAR OF DOOR SWING, MOUNT AT 48" MIN., 60" MAX. TO CENTERLINE OF SIGN FROM FINISH FLOOR.
MEN
WOMEN
SIGN'S USED IN PROJECT
HEIGHT OF LETTERING, 5/8" TO 2" MAX, WITH UPPER CASE CHARACTERS
CORRESPONDING GRADE 2 BRAILLE
48" MIN. - 60" MAX

4 SIGN MOUNTING DETAIL
3/8" = 1'-0"


1'-9" U.N.O.
2'-5" U.N.O.
3'-4"
3'-4"
4'-0" MAXIMUM
3'-4"
TOILET PAPER DISPENSER (T.P.)
SEAT COVER DISPENSER (S.C.)
SOAP DISPENSER SURFACE MOUNTED (S.D.)
PAPER TOWEL DISPENSER SURFACE MOUNTED (P.T.)
TOWEL DISP/ WASTE RECEPTACLE RECESSED (P.T.)
MIRROR SURFACE MOUNTED (MIRR.)

5 ACCESSORY MOUNTING HEIGHTS
1/2" = 1'-0"



(a) FRONT APPROACH - PULL SIDE

(b) FRONT APPROACH - PUSH SIDE

(c) HINGE APPROACH - PULL SIDE DOOR W/ CLOSER & LATCH

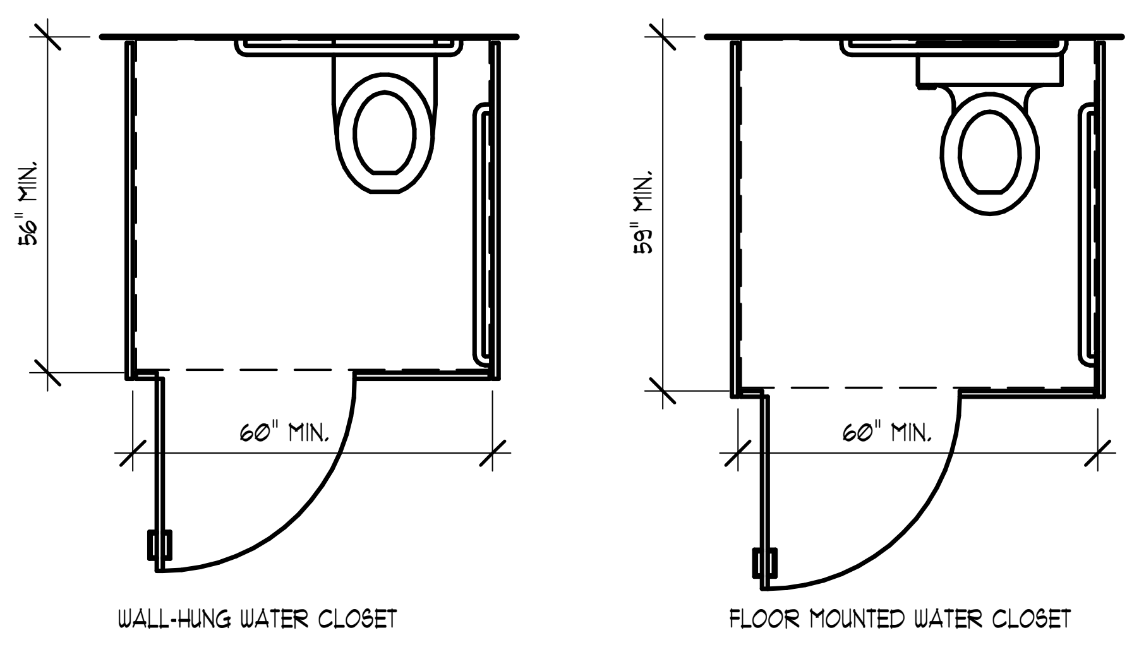
(d) HINGE APPROACH - PULL SIDE

(e) HINGE APPROACH - PUSH SIDE

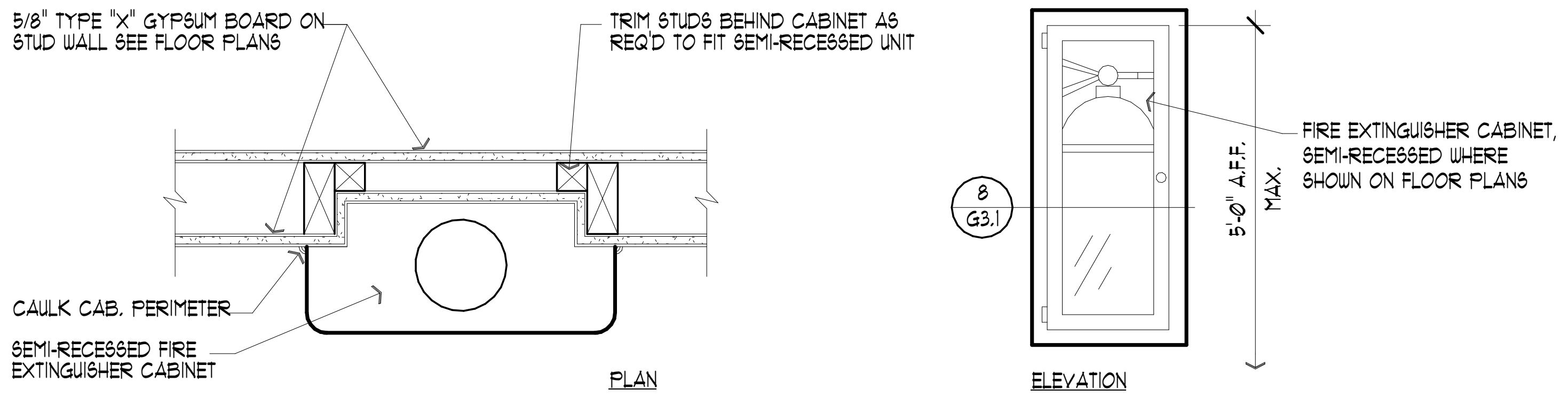
(f) HINGE APPROACH - PULL SIDE DOOR W/ BOTH CLOSER & LATCH

(g) LATCH APPROACH - FULL SIDE

6 ACCESSIBLE DOOR CLEARANCES
3/8" = 1'-0"



7 ACCESSIBLE TOILET COMPARTMENT
3/8" = 1'-0"


5/8" TYPE "X" GYPSUM BOARD ON STUD WALL SEE FLOOR PLANS
TRIM STUDS BEHIND CABINET AS REQ'D TO FIT SEMI-RECESSED UNIT
CAULK CAB. PERIMETER
SEMI-RECESSED FIRE EXTINGUISHER CABINET
PLAN
8
G3.1
5'-0" A.F.F. MAX.
FIRE EXTINGUISHER CABINET, SEMI-RECESSED WHERE SHOWN ON FLOOR PLANS
ELEVATION

8 FIRE EXTINGUISHER DETAIL
1 1/2" = 1'-0"

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Date: 01.11.2023

Revision:

BRUCE T. FALLON
5403169-0301
06.10.2019

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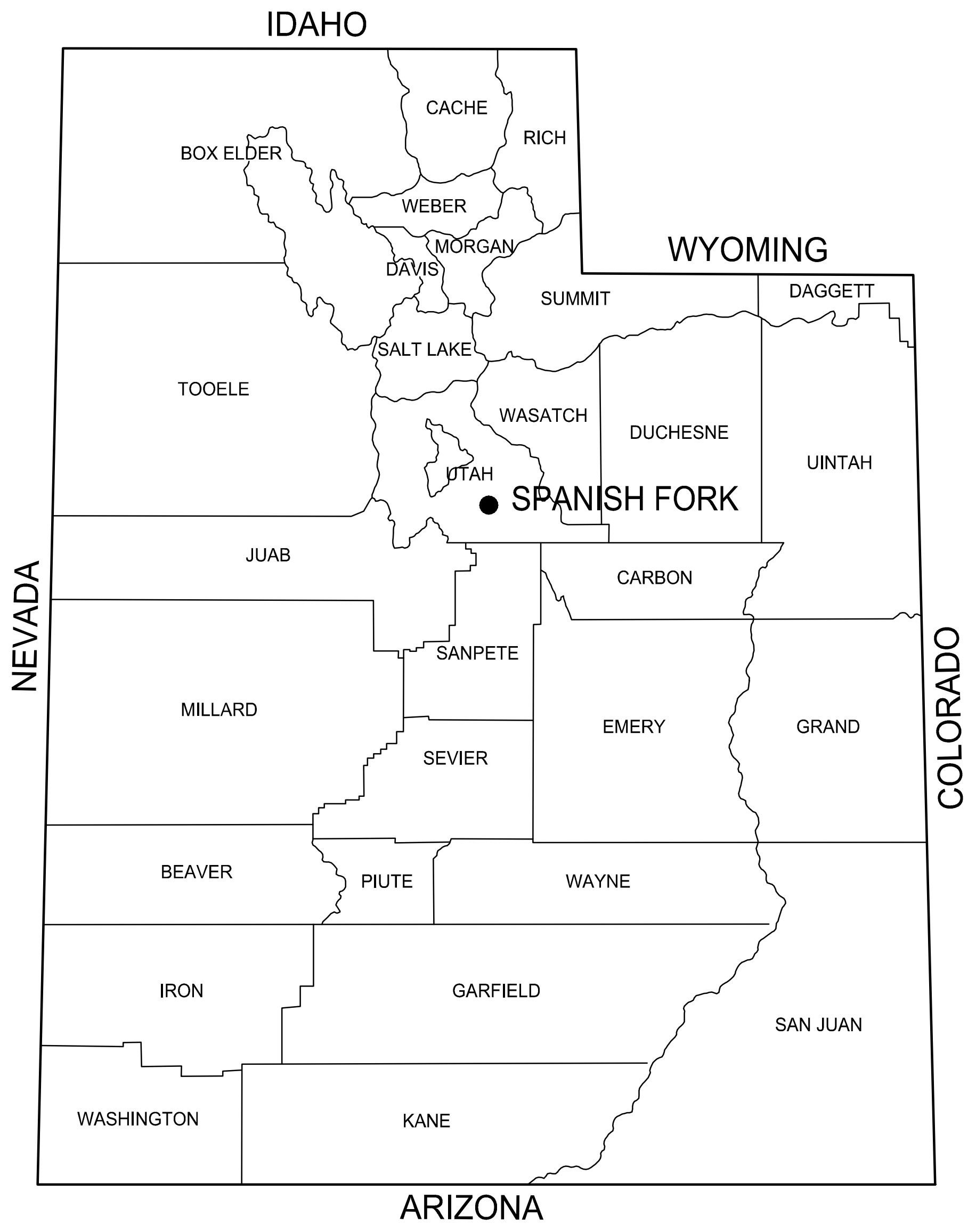
433 SOUTH MAIN STREET
SPANISH FORK, UTAH 84660

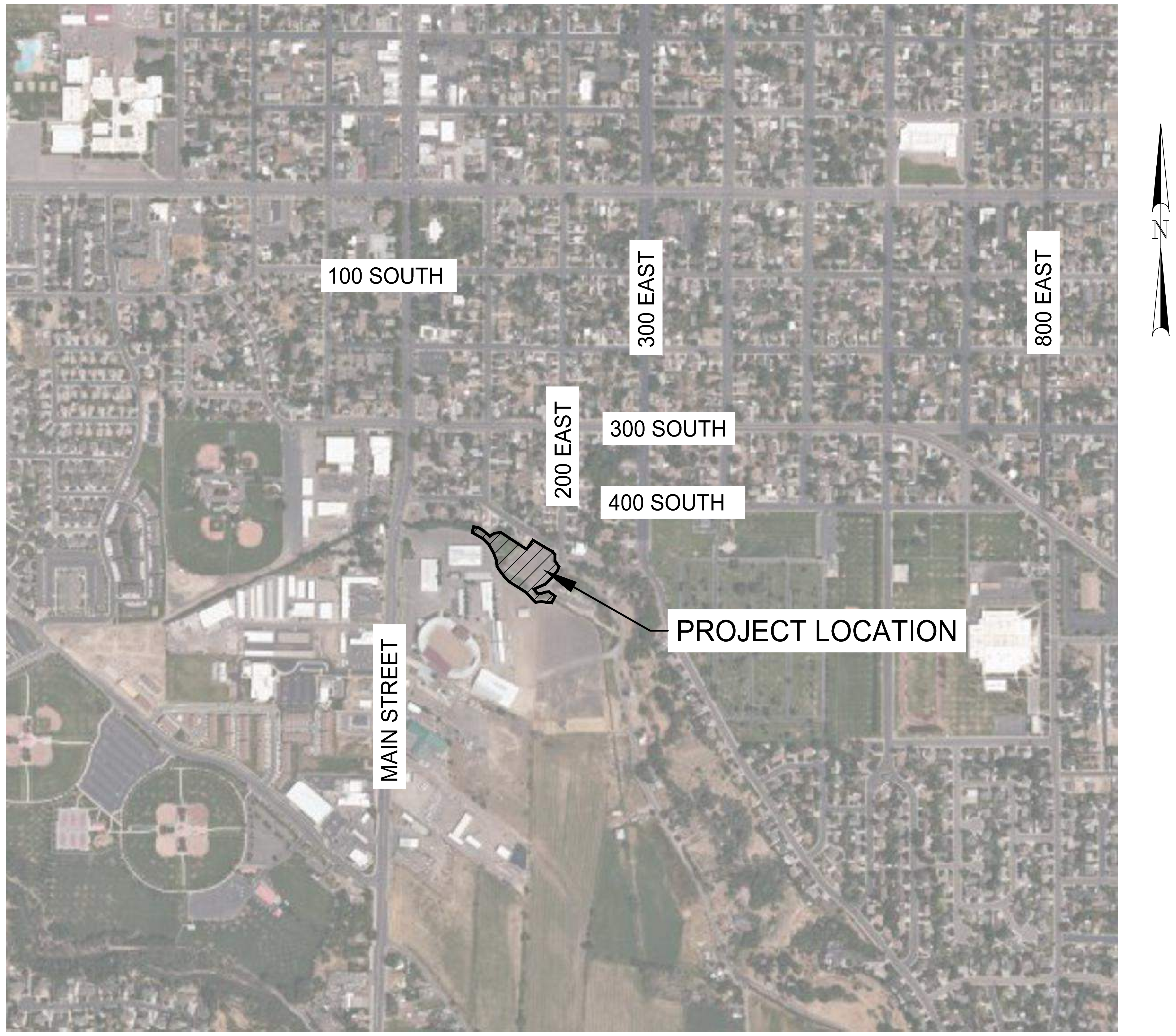
G1.3
ACCESSIBILITY REQUIREMENTS

SPANISH FORK CITY
FACILITIES SHOP SITE
SPANISH FORK, UTAH
2023

PROJECT NO.	SHEET NO.
2201-005	C-001

SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION





VICINITY MAP

APPROVAL

RECOMMENDED FOR APPROVAL:

ENGINEER DATE

APPROVED:

CLIENT DATE

INDEX TO SHEETS

SHEET NO.	SHEET TITLE
C-001	TITLE
C-002	LEGEND & NOTES
V-101	SURVEY CONTROL
C-101	SITE PLAN
C-201	GRADING AND DRAINAGE
C-301	UTILITY PLAN
C-401	EROSION CONTROL PLAN
C-501 TO C-504	DETAILS
	ELECTRICAL DESIGN

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CIVIL & STRUCTURAL ENGINEERING - SURVEYING
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h:\jd\proj\2201-005\dwg\title - c-001

LEGEND

EXISTING FEATURES

swr	SANITARY SEWER LINE
SMH	SANITARY SEWER MANHOLE
wtr	CULINARY WATER LINE
	CULINARY WATER VALVE
be	BURIED POWER LINE
e	OVERHEAD POWER LINE
btel	BURIED TELEPHONE LINE
tel	OVERHEAD TELEPHONE LINE
bctv	BURIED CABLE TV LINE
ctv	OVERHEAD CABLE TV LINE
fo	FIBER OPTIC LINE
gas	NATURAL GAS LINE
ir	IRRIGATION LINE
sd	STORM DRAIN
—x—x—x—x—	FENCE LINE (BARBED OR STOCKTIGHT)
	FENCE LINE (CHAIN LINK)
	DRAINAGE CULVERT
	CONCRETE SURFACING (SIDEWALK, CURB, GUTTER, ETC.)
	FLOW LINE OF DITCH
	EDGE OF ASPHALT SURFACING
	EDGE OF GRAVEL SURFACING
	EDGE OF DIRT SURFACING
	FIRE HYDRANT
Ⓜ	WATER METER
M	GAS METER
	STRUCTURE
G.W. EPP	POWER POLE & GUY WIRE
	TREE
○	DELINEATOR POST
	STREET SIGN
	TELEPHONE PEDESTAL
	MAILBOX
WMH	WATER MANHOLE
	LIGHT POLE

MISC. FEATURES

	SUBDIVISION BOUNDARY LINE
	LOT LINES
r/w r/w	EXISTING RIGHT OF WAY LINE
	EXISTING N/A LINE
r/w r/w BLOCK LINE	EXISTING CITY BLOCK LINES
R/W R/W	PROPOSED RIGHT-OF-WAY LINE
	SECTION LINE
	QUARTER SECTION LINE
	(P.U.E.) PUBLIC UTILITY EASEMENT
	DEED LINE
	PROPERTY LINE

ABBREVIATIONS

TBC	TOP BACK OF CURB	EPP	POWER POLE
FLG	FLOW LINE OF GUTTER	SMH	SEWER MANHOLE
LOC	LIP OF CURB	CMH	COMMUNICATION MANHOLE
TSW	TOP OF SIDEWALK	R/W	RIGHT-OF-WAY
TOC	TOP OF CONCRETE	T.C.E.	TEMPORARY CONSTRUCTION EASEMENT
EOA	EDGE OF ASPHALT		
TOA	TOP OF ASPHALT	P.U.E.	PUBLIC UTILITY EASEMENT
TOG	TOP OF GRATE		
FLC	FLOW LINE OF CULVERT	STA	STATION
SW	SIDEWALK	L / LT	LEFT
FG	FINISHED GRADE	R / RT	RIGHT
TOW	TOP OF WALL		
BOW	BOTTOM OF WALL		

PROPOSED FEATURES

SWR	SANITARY SEWER LINE
SMH	SANITARY SEWER MANHOLE
SCO	SANITARY SEWER SERVICE
WTR	CULINARY WATER LINE
	CULINARY WATER VALVE
BE	BURIED POWER LINE
E	OVERHEAD POWER LINE
BTEL	BURIED TELEPHONE LINE
TEL	OVERHEAD TELEPHONE LINE
BCTV	BURIED CABLE TV LINE
CTV	OVERHEAD CABLE TV LINE
FO	FIBER OPTIC LINE
GAS	NATURAL GAS LINE
IR	IRRIGATION LINE
SD	STORM DRAIN
—X—X—X—X—	FENCE LINE (BARBED OR STOCKTIGHT)
	FENCE LINE (CHAIN LINK)
	DRAINAGE CULVERT
	EDGE OF ASPHALT
	EDGE OF CONCRETE
	FIRE HYDRANT
M	CULINARY WATER METER
M	GAS METER
○	DELINEATOR POST
	STREET SIGN
EPP	POWER POLE
	MAILBOX
	LIGHT POLE
	CONCRETE SURFACING
	ASPHALT SURFACING
CUT CUT	TOP OF CUT LIMITS
FILL FILL	TOE OF FILL LIMITS

UTILITY CONTACTS

UTILITY	CONTACT	COMPANY	NUMBER
TELECOMMUNICATIONS	JEFF HOUSTON	COMCAST	435-224-2356
TELECOMMUNICATIONS	LARRY BUHLER	LUMEN/CENTURYLINK	385-479-7357
NATURAL GAS	SL MAPPING DEPARTMENT	DOMINION ENERGY UTAH	801-324-3970
POWER	RYAN BAGLEY	SOUTH UTAH VALLEY ELECTRIC S.D.	801-465-8020
TELECOMMUNICATIONS POWER WATER SEWER IRRIGATION NATURAL GAS	MASON SPENCER	SPANISH FORK CITY	385-216-3583

GENERAL NOTES

1. REQUEST ACCEPTANCE FROM ENGINEER PRIOR TO MAKING MODIFICATIONS TO DRAWINGS, SPECIFICATIONS, OR CONSTRUCTION SCHEDULE.
2. PERFORM CONSTRUCTION IN ACCORDANCE WITH LATEST VERSION (2017) OF APWA UTAH CHAPTER MANUAL OF STANDARD SPECIFICATIONS AND MANUAL OF STANDARD PLANS, INCLUDING AMENDMENTS, (APWA STANDARDS), DDW RULES, INTERNATIONAL BUILDING CODE (IBC), INTERNATIONAL PLUMBING CODE (IPC), INTERNATIONAL FIRE CODE (IFC), INTERNATIONAL RESIDENTIAL CODE (IRC), AND/OR OWNER STANDARDS AND SPECIFICATIONS.
3. IN CASE OF CONFLICT BETWEEN CODES, REFERENCE STANDARDS, STATE RULES, DRAWINGS AND SPECIFICATIONS, ADHERE TO MOST STRINGENT REQUIREMENTS.
4. EXISTING UTILITIES ARE SHOWN IN APPROXIMATE LOCATIONS ONLY AND ARE BASED ON UTILITY MAPS AND FIELD SURVEY.
5. LOCATE AND PROTECT EXISTING UTILITIES AND ANY OBSTRUCTIONS DURING COURSE OF CONSTRUCTION. NOTIFY BLUE STAKES (811) AT LEAST 48 HOURS IN ADVANCE OF ANY CONSTRUCTION ACTIVITIES ON SITE. RESTORE UTILITIES DAMAGED DURING CONSTRUCTION TO CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION PRIOR TO CONSTRUCTION.
6. NOTIFY ENGINEER OR PROJECT REPRESENTATIVE WITH ANY CONFLICTS BETWEEN EXISTING FEATURES AND NEW CONSTRUCTION.
7. UNLESS DETAILED, SPECIFIED OR INDICATED OTHERWISE, CONSTRUCTION SHALL BE AS INDICATED IN APPLICABLE TYPICAL DETAILS AND GENERAL NOTES
8. BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO, EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL AND SECURITY.
9. MEET UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY AND U.S. EPA REQUIREMENTS, RULES, AND REGULATIONS.
10. OBTAIN REQUIRED APPROVALS AND PERMITS AND PAY REQUIRED FEES FOR CONSTRUCTION.
11. CONDUCT CONSTRUCTION OPERATIONS WITH NECESSARY SIGNS, BARRICADES, AND FLASHERS PLACED TO COMPLY WITH OSHA, UTAH STATE INDUSTRIAL COMMISSION, LOCAL SAFETY STANDARDS, AND MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
12. NO FULL ROAD CLOSURES WILL BE PERMITTED WITHOUT PRIOR APPROVAL OF OWNER. MAINTAIN TRAFFIC IN TWO DIRECTIONS AT ALL TIMES FOR ROADS AND ROAD CROSSINGS, UNLESS EXTENUATING CIRCUMSTANCES PROHIBIT. ROAD CLOSURE REQUESTS MUST BE MADE 1 WEEK BEFORE NEEDING TO CLOSE THE ROAD.
13. PROVIDE WRITTEN NOTIFICATION INCLUDING CONTACT INFORMATION, TO RESIDENTS AND BUSINESSES IMPACTED BY CONSTRUCTION. PROVIDE NOTICE MINIMUM OF 48 HOURS IN ADVANCE OF WORK BEING PERFORMED. MAINTAIN DRIVEWAY ACCESS TO RESIDENCES AND BUSINESSES AT ALL TIMES UNLESS PARKING ARRANGEMENTS HAVE BEEN MADE WITH RESIDENTS AND BUSINESSES WHILE WORK IS COMPLETED ADJACENT TO OR ON THEIR PROPERTIES.
14. WORK WITH INDIVIDUAL PROPERTY OWNERS OR BUSINESS FOR ACCESS AND PERMISSION TO CONNECT TO UTILITY SERVICE AT PROPERTIES.
15. OBTAIN RIGHT OF INGRESS AND EGRESS SHOULD WORK OR PERSONNEL VENTURE ONTO PRIVATE PROPERTY WHICH IS NOT INCLUDED IN OWNER ACQUIRED RIGHTS-OF-WAY AND EASEMENTS.
16. CONSTRUCTION WORK WITHIN 30 FEET OF A GOVERNMENT SURVEY MONUMENT OR PUBLIC LAND SURVEY GOVERNMENT CORNER LOCATION MUST OBTAIN A COUNTY PERMIT BEFORE BEGINNING CONSTRUCTION WORK.

GENERAL CONSTRUCTION NOTES

1. NOTIFY OWNER, AT LEAST TWO BUSINESS DAYS PRIOR TO BEGINNING CONSTRUCTION.
2. SCHEDULE AND ATTEND PRE-CONSTRUCTION MEETING PRIOR TO STARTING CONSTRUCTION ACTIVITIES. SCHEDULE MEETING THROUGH OWNER OR OWNER'S REPRESENTATIVE.
3. PROVIDE CONSTRUCTION SCHEDULE TO ENGINEER AND OWNER.
4. FIELD VERIFY EXISTING CONDITIONS. LENGTHS, VOLUMES, AND AREAS INDICATED ARE APPROXIMATE AND ARE PROVIDED TO ASSIST CONTRACTOR. DETERMINE EXACT MEASUREMENTS, AS NECESSARY.
5. VERIFY DIMENSIONS BEFORE STARTING WORK AND IMMEDIATELY NOTIFY ENGINEER OF ANY DISCREPANCIES.
6. OBTAIN APPROVAL FROM OWNER PRIOR TO CONSTRUCTION FOR USE OF STAGING AREAS (IF ANY) NOT SHOWN ON DRAWINGS. COORDINATE WITH OWNER TO IDENTIFY POTENTIAL USEABLE STAGING AREAS. RESTORE STAGING AREA TO PRECONSTRUCTION CONDITION.
7. PROTECT EXISTING IMPROVEMENTS DURING CONSTRUCTION AND REPLACE OR RESTORE IMPROVEMENTS DAMAGED AS RESULT OF CONSTRUCTION ACTIVITY. RESTORE IMPROVEMENTS TO AS-GOOD-AS OR BETTER-THAN CONDITION THAT EXISTED PRIOR TO CONSTRUCTION. REPAIR IRRIGATION/SPRINKLERS WITHIN 24 HOURS FOLLOWING PLACEMENT OF IMPROVEMENTS.
8. PROPERLY BACKFILL, COMPACT, AND RESTORE PAVEMENT WITHIN STREET RIGHT-OF-WAY.
9. DISPOSE WASTE OFF SITE AT LANDFILL OR OTHER LEGAL DISPOSAL FACILITY.
10. REMOVE SURPLUS EXCAVATION FROM SITE. USE TOPSOIL OR OTHER NATIVE MATERIAL IN LANDSCAPE OR NATIVE GRADING. STOCKPILE TOPSOIL SEPARATELY FROM OTHER EXCAVATED MATERIALS. PLACE TOPSOIL IN LANDSCAPED AREAS IN 4 INCHES THICK MINIMUM AND GRADE TO DRAIN.
11. PERFORM CONSTRUCTION QUALITY CONTROL TESTING, INCLUDING SOILS, BACKFILL CONCRETE, UTILITIES, ETC.
12. PERFORM MATERIALS TESTING AND SUBMIT COPIES OF TEST RESULTS TO ENGINEER AND/OR OWNER AS REQUIRED PER SPECIFICATIONS. COORDINATE TESTING WITH INSPECTORS AND/OR ENGINEER. PERFORM DENSITY TESTING ON TRENCH BACKFILL, GRANULAR BORROW, AND UTBC PLACEMENT FOR ROADWAY AND PRIOR TO ANY CONCRETE PLACEMENT WHERE NECESSARY. SEE SPECIFICATIONS FOR TESTING FREQUENCY.
13. PROVIDE SITE DUST CONTROL AND SUPPRESSION FOR DURATION OF PROJECT, INCLUDING WEEKENDS.

GENERAL ACCESSIBILITY NOTES

1. DO NOT EXCEED MAXIMUM SLOPES FOR ADA ACCESSIBLE ROUTE AS FOLLOWS:
   LONGITUDINAL SLOPE: 5%
   CROSS SLOPE: 2%
2. DO NOT EXCEED MAXIMUM SLOPES FOR ADA ACCESSIBLE CURB RAMPS AS FOLLOWS:
   LONGITUDINAL SLOPE: 8.33%
   CROSS SLOPE: 2%
3. DO NOT EXCEED MAXIMUM SLOPES FOR ACCESSIBLE PARKING SPACES AND AISLE AS FOLLOWS:
   LONGITUDINAL SLOPE: 2%
   CROSS SLOPE: 2%
4. DO NOT EXCEED 2% MAXIMUM SLOPE FOR EXTERIOR LANDINGS.

GENERAL EROSION CONTROL NOTES

1. PREPARE AND SUBMIT STORM WATER POLLUTION PREVENTION PLAN (SWPPP). PRIOR TO STARTING CONSTRUCTION FILE NOTICE OF INTENT (NOI) AND AT END OF CONSTRUCTION FILE NOTICE OF TERMINATION (NOT).
2. PERFORM CONSTRUCTION WORK IN ACCORDANCE WITH UTAH POLLUTION DISCHARGE ELIMINATION SYSTEM (UPDES) REGULATIONS.
3. DURING CONSTRUCTION, PREVENT AND CONTROL EROSION DUE TO WIND AND WATER. FOLLOW PROCEDURES AND BEST MANAGEMENT PRACTICES INDICATED IN SWPPP AND INSTALL EROSION CONTROL MEASURES INDICATED IN SWPPP.
4. PROVIDE ADDITIONAL EROSION CONTROL MEASURES WHEN UNFORESEEN PROBLEMS OCCUR OR IF SWPPP DOES NOT FUNCTION AS INTENDED. ADJUST EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) AS NECESSARY DUE TO GRADE CHANGES DURING CONSTRUCTION. OWNER MAY REQUEST ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
5. KEEP STREETS CLEAN AND FREE FROM SOIL AND DEBRIS DURING CONSTRUCTION.
6. PROTECT STORM DRAIN FACILITIES ON SITE AND ADJACENT TO SITE FROM SITE RUNOFF. INSTALL INLET PROTECTION DEVICES IMMEDIATELY UPON INDIVIDUAL INLETS BECOMING FUNCTIONAL.
7. SEED AREAS DISTURBED DURING CONSTRUCTION WITH APPROPRIATE NATIVE SEED MIX OR PLACE LANDSCAPING TO MATCH EXISTING.
8. DISPOSE OF WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) IN MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM SITE.
9. STABILIZE CONSTRUCTION AREAS AT END OF EACH WORKING DAY. INCLUDE BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF PAVING FOR ROAD CONSTRUCTION.
10. MAINTAIN MEASURES CONTAINED IN SWPPP IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF SITE. CHECK EROSION AND SEDIMENTATION CONTROL MEASURES BY QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF END OF RAINFALL EVENT. COMPLETE ANY NEEDED CLEANING AND REPAIRS WITHIN TIME FRAMES SPECIFIED IN SWPPP AND/OR UPDES GENERAL PERMIT.
11. CLEAN UTILITY LINES TO REMOVE DIRT AND DEBRIS PRIOR TO BEING PUT INTO SERVICE. PROTECT DOWN-GRADE LINES FROM WASH-WATER DURING CLEANING PROCESS TO AVOID CONTAMINATION AND COMPROMISING OUTFALL CLEANLINESS.
12. POWER WASH EXCAVATION EQUIPMENT BEFORE ENTERING DIFFERENT VEGETATION MATRIX.

GENERAL UTILITY NOTES

1. PROVIDE UTILITY PIPING AND APPURTENANCES IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND IN CONFORMANCE WITH APPROPRIATE JURISDICTIONAL SPECIFICATIONS AND DETAILS.
2. PROVIDE SUBMITTALS TO ENGINEER FOR REVIEW AND ACCEPTANCE FOR BEDDING, BACKFILL, PIPE, METERS, BOXES, VALVES, FIRE HYDRANTS, BLOWOFFS, VAULTS, MANHOLES, INLET BOXES, ETC. PROVIDE SUBMITTALS WITH SUFFICIENT INFORMATION TO SHOW THAT PROPOSED PRODUCTS AND MATERIALS CONFORM TO OWNER'S STANDARDS AND SPECIFICATIONS.
3. VERIFY RIM AND INVERT ELEVATIONS PRIOR TO FABRICATION OF MANHOLES, VAULTS, AND INLET BOXES.
4. WHEN WITHIN PAVED OR OTHER IMPROVED AREAS, ADJUST UTILITY MANHOLES, VALVE BOXES, AND OTHER BOXES AND CONSTRUCT CONCRETE COLLAR PER APWA OR OWNER SPECIFICATIONS.
5. PROVIDE TESTING RESULTS AS REQUIRED PER OWNER SPECIFICATION SUCH AS PRESSURE TESTING, DEFLECTION TESTING, AIR TESTING AND VIDEO INSPECTIONS.

GENERAL CULINARY WATER NOTES

1. PROVIDE JOINT RESTRAINTS ON ALL FITTINGS AND VALVES WITH MECHANICAL JOINTS.
2. PROVIDE THRUST BLOCKS AND/OR LENGTH OF RESTRAINED JOINTS FOR WATER LINE FITTINGS IN ACCORDANCE WITH OWNER'S STANDARDS AND SPECIFICATIONS.
3. MAINTAIN 10 FOOT HORIZONTAL SEPARATION BETWEEN CULINARY WATER LINES AND SANITARY SEWER LINES.
4. WHERE CULINARY WATER LINE CROSSES OVER TOP OF SANITARY SEWER LINE, MAINTAIN VERTICAL SEPARATION OF 18 INCHES BETWEEN WATER LINE AND SEWER LINE. IF 18 INCHES VERTICAL SEPARATION CANNOT BE ACHIEVED OVER SEWER LINE, OBTAIN ACCEPTANCE FROM ENGINEER AND OWNER FOR PROPOSED APPROACH.
5. DO NOT HAVE JOINT IN CULINARY WATER LINE WITHIN 10 FEET OF SANITARY SEWER LINE CROSSING.
6. FLUSH, DISINFECT AND TEST CULINARY WATER LINES TO MEET MINIMUM REQUIREMENTS OUTLINED IN APWA STANDARDS, DIVISION OF DRINKING WATER RULES AND/OR OWNER'S STANDARD SPECIFICATIONS, ADHERE TO MOST STRINGENT REQUIREMENTS.

GENERAL SANITARY SEWER NOTES

1. MAINTAIN 10 FOOT HORIZONTAL SEPARATION BETWEEN CULINARY WATER LINES AND SANITARY SEWER LINES.
2. WHERE CULINARY WATER LINE CROSSES OVER TOP OF SANITARY SEWER LINE, MAINTAIN VERTICAL SEPARATION OF 18 INCHES BETWEEN WATER LINE AND SEWER LINE. IF 18 INCHES VERTICAL SEPARATION CANNOT BE ACHIEVED OVER SEWER LINE, OBTAIN ACCEPTANCE FROM ENGINEER AND OWNER FOR PROPOSED APPROACH.
3. CUT PIPES OFF FLUSH WITH INSIDE WALL OF BOX OR MANHOLE AND APPLY GROUT AT CONNECTION OF PIPE TO PROVIDE SMOOTH FINISH. REMOVE JAGGED OR SHARP EDGES AT PIPE CONNECTIONS AND APPLY GROUT FOR SMOOTH FINISH.
4. USE NON-SHRINK GROUT WHEREVER GROUT IS REQUIRED FOR SANITARY SEWER FACILITIES.
5. REMOVE SILT AND DEBRIS FROM MANHOLES AND PIPE. MAINTAIN MANHOLES AND PIPES IN CLEAN CONDITION UNTIL FINAL ACCEPTANCE BY OWNER.
6. CLEAN MANHOLE LIDS AND OTHER COVERS TO REMOVE ASPHALT, CONCRETE, TAR OR OTHER ADHESIVES TO ALLOW ACCESS.

GENERAL STORM WATER NOTES

1. USE NON-SHRINK GROUT WHEREVER GROUT IS REQUIRED FOR STORM DRAIN FACILITIES.
2. CUT PIPES OFF FLUSH WITH INSIDE WALL OF BOX OR MANHOLE AND APPLY GROUT AT CONNECTION OF PIPE TO PROVIDE SMOOTH FINISH. REMOVE JAGGED OR SHARP EDGES AT PIPE CONNECTIONS AND APPLY GROUTED TO PROVIDE SMOOTH FINISH.
3. APPLY GROUT BETWEEN GRADE RINGS. FOR EACH INLET BOX THAT IS LOCATED NEXT TO CURB, REMOVE PROTRUDING, JAGGED OR SHARP CONCRETE EDGES AND APPLY GROUT BETWEEN BOTTOM OF INLET LID FRAME AND TOP OF CONCRETE BOX. FINISH GROUT TO CREATE SMOOTH, BEVELED TRANSITION AT EDGES IN CLEANOUT AND INLET BOXES. APPLY GROUT AROUND ALL EDGES OF RESTRICTIVE ORIFICE PLATE.
4. REMOVE SNAP TIES, NAILS, REBAR AND OTHER PROTRUSIONS FROM BOX OR PIPE INSIDE SURFACE, AND FROM FORM WORK, PLASTIC AND CARDBOARD.
5. REMOVE SILT AND DEBRIS FROM INLET BOXES, COMBO BOXES, JUNCTION BOXES, AND PIPE. MAINTAIN BOXES AND PIPES IN CLEAN CONDITION UNTIL FINAL ACCEPTANCE BY OWNER.
6. CLEAN MANHOLE LIDS AND INLET GRATES TO REMOVE ASPHALT, CONCRETE, TAR OR OTHER ADHESIVES TO ALLOW ACCESS.
7. PLACE INLET, COMBO AND JUNCTION BOXES ON 12-INCH MINIMUM COMPACTED STABILIZATION MATERIAL.
8. REMOVE SILT AND DEBRIS FROM INLET BOXES, COMBO BOXES, JUNCTION BOXES, AND PIPE. MAINTAIN BOXES AND PIPES ARE IN CLEAN CONDITION UNTIL FINAL ACCEPTANCE BY OWNER.

GENERAL IRRIGATION NOTES

1. PROVIDE JOINT RESTRAINTS FOR MECHANICAL JOINTS.
2. PROVIDE THRUST BLOCKS AND/OR LENGTH OF RESTRAINED JOINTS FOR WATER LINE FITTINGS IN ACCORDANCE WITH OWNER'S STANDARDS AND SPECIFICATIONS.

MATERIAL NOTES

1. USE ONLY THE MATERIALS AND METHODS DESCRIBED IN CMT ENGINEERING GEOTENCHNICAL REPORT, DATED APRIL 27, 2022, FOR SITE PREPERATION AND GRADING; INCLUDING EXCAVATION, FILL MATERIAL, PLACEMENT AND COMPACTION, TRENCHING AND STABILIZATION.
2. EARTHWORK
   A. COMPACT BACKFILL, EMBANKMENT, IMPORTED FILL AND PAVEMENT MATERIALS TO THE FOLLOWING PERCENT OF ASTM D1557 MAXIMUM LABORATORY DENSITY

BENEATH AND UP TO 4-FT BEYOND STRUCTURE	95
BENEATH AND UP TO 2-FT BEHOND FLATWORK AND PAVEMENT	95
SITE GRADING BEYOND AREA DESCRIBED ABOVE	92
UTILITY TRENCHES WITHIN STRUCTURAL AREAS	96
ROAD-BASE AND SUB-BASE	96
NON-STRUCTURAL FILL	90

   B. USE ONLY IMPORT MATERIAL SPECIFICED IN GEOTECHNICAL REPORT.

STRUCTURAL FILL PLACED BELOW STRUCTURES, FLATWORK AND PAVEMENT	WELL GRADED SAND/GRAVEL MIX MAX PARTICLE DIA. = 4-IN MIN. PASSING 3/4-IN. = 70% MAX PASSING NO. 200 = 20% MAX P.I. = 10
SITE GRADING FILL PLACED OVER LARGER AREAS TO RAISE GRADE	SANDY TO GRAVELLY MAX PARTICLE DIA. = 6-IN MIN. PASSING 3/4-IN. = 70% MAX. PASSING NO. 200 = 50% MAX P.I. = 15
NON-STRUCTURAL FILL PLACED OVER NON-STRUCTURE AREAS, E.G. LANDSCAPING	ON SITE OR IMPORT MAX PARTICLE DIA. = 8-IN NOT CONTAINING EXCESSIVE AMOUNTS OF DEGRADABLE/ORGANIC MATERIAL.
STABILIZATION FILL PLACED TO STABILIZE SOFT AREAS PRIOR TO PLACING STRUCTURAL AND/OR SITE GRADING FILL	COARSE, ANGULAR GRAVELS AND COBBLES = 1 - 8-IN. OR, GRAVEL = 1.5 - 2-IN. AND, STABILIZATION FABRIC
TOP SOIL 4" THICK TO BE PLACED IN NON-TRAVELED AREAS	MEET REQUIREMENTS OF APWA 31 05 13 FREE OF WEED, LUMPS OR CLODS, ROOTS STICKS AND STONES LARGER THAN 1-1/2 INCH DIAMETER

   C. GEOTECHNICAL NOTE ON ON-SITE MATERIAL
   1. ON-SITE SAND AND GRAVEL SOILS DO NOT APPEAR SUITABLE FOR USE AS STRUCTURAL FILL, BUT MAY BE USED AS SITE GRADING FILL AND NON-STRUCTURAL FILL.
   2. ON-SITE SILT/CLAY SOILS ARE NOT SUITABLE FOR USE AS STRUCTURAL FILL OR SITE GRADING FILL, BUT MAY BE USED AS NON-STRUCTURAL FILL. NOTE THAT THESE SILT/CLAY SOILS ARE MOISTURE-SENSITIVE, WHICH MEANS THEY ARE INHERENTLY MORE DIFFICULT TO WORK WITH IN PROPER MOISTURE CONDITIONS (THEY ARE VERY SENSITIVE TO CHANGES IN MOISTURE CONTENT), REQUIRING VERY CLOSE MOISTURE CONTROL DURING PLACEMENT AND COMPACTION. THIS WILL BE VERY DIFFICULT, IF NOT IMPOSSIBLE DURING WET AND COLD PERIODS OF THE YEAR.

STAMP:

REVISIONS
ORIGINAL SUBMISSION FOR AUTHORIZATION

SCALE: NONE
DWG NAME: TITLE - C-001
SHT SET: ####
DWG CREATED: CR_DATE
UPDATED: 1/10/2023
PLOTTED: 1/12/2023

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PROJECT DESIGN ENGINEER
QUALITY MANAGEMENT REVIEW
APPROVAL RECOMM.
APPROVED

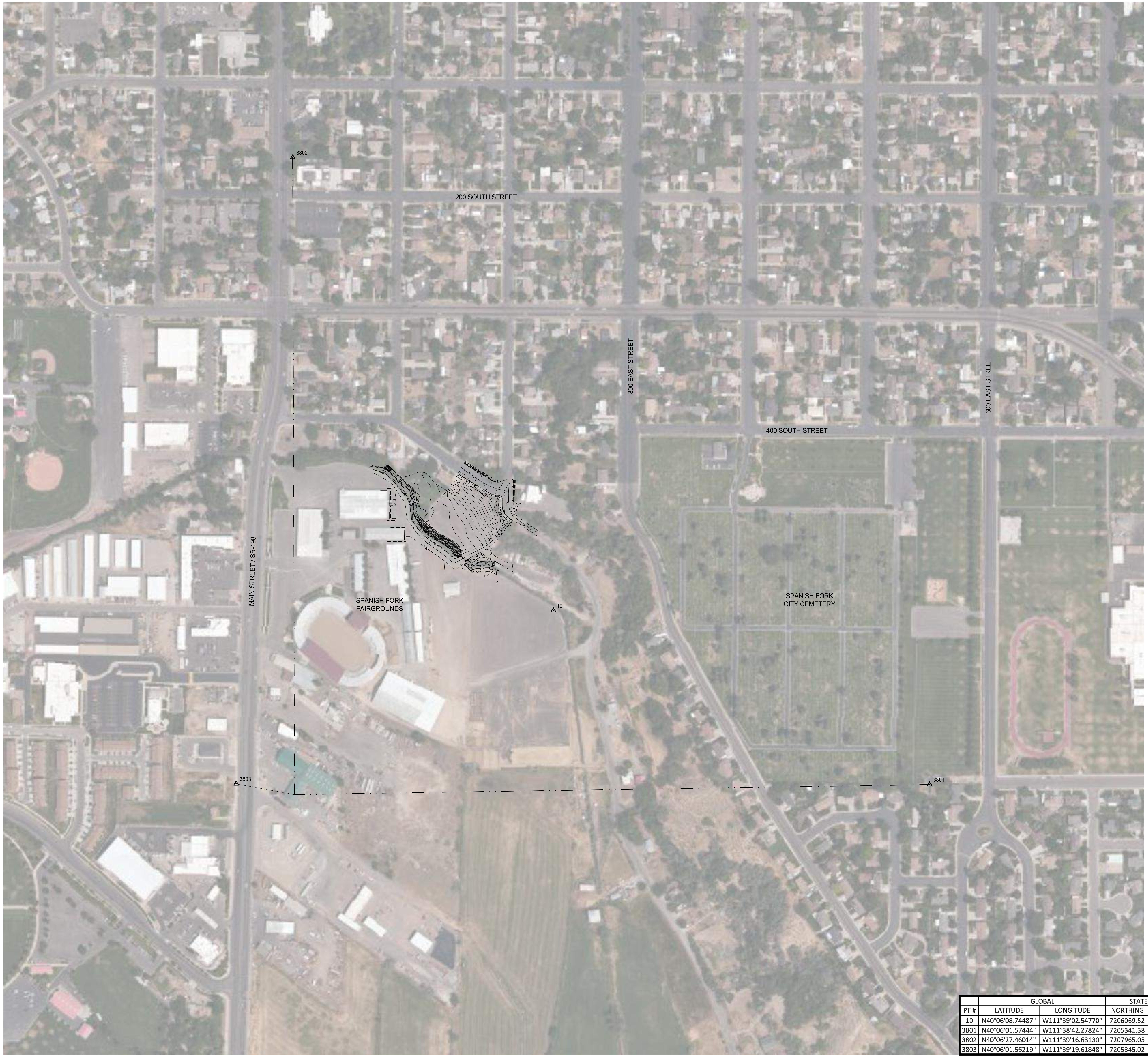
SPANISH FORK CITY
FACILITIES SHOP SITE
LEGEND & NOTES

PROJECT NUMBER: 2201-005

SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

UTAH
COUNTY

SHEET NO. C-002



SURVEY DATUM

1. THE "PROJECT COORDINATES" AND BEARINGS AND DISTANCES DERIVED THEREFROM ARE EXPRESSED IN A LOCAL GROUND SYSTEM DEFINED AS FOLLOWS:

HORIZONTAL DATUM = NORTH AMERICAN DATUM OF 1983 (N.A.D.83)
VERTICAL DATUM = NORTH AMERICAN VERTICAL DATUM OF 1988 (N.A.V.D. 88)
COORDINATE SYSTEM = US STATE PLANE 1983, UTAH CENTRAL ZONE (4302)
PROJECTED AT GROUND
GEOID MODEL = GEOID 18
UNITS = US SURVEY FOOT
FALSE NORTHING = -7,000,000
FALSE EASTING = -1,000,000
COMBINED SCALE FACTOR = 0.99969464 / 1.0003054533

POINTS WERE SCALED FROM COORDINATE 0,0 IN THE NAD 83 US STATE PLANE UTAH CENTRAL ZONE COORDINATE SYSTEM USING THE COMBINED SCALE FACTOR LISTED ABOVE.
(SCALING LATITUDE = N20°31'27.66067")
(SCALING LONGITUDE = W116°02'57.11642")

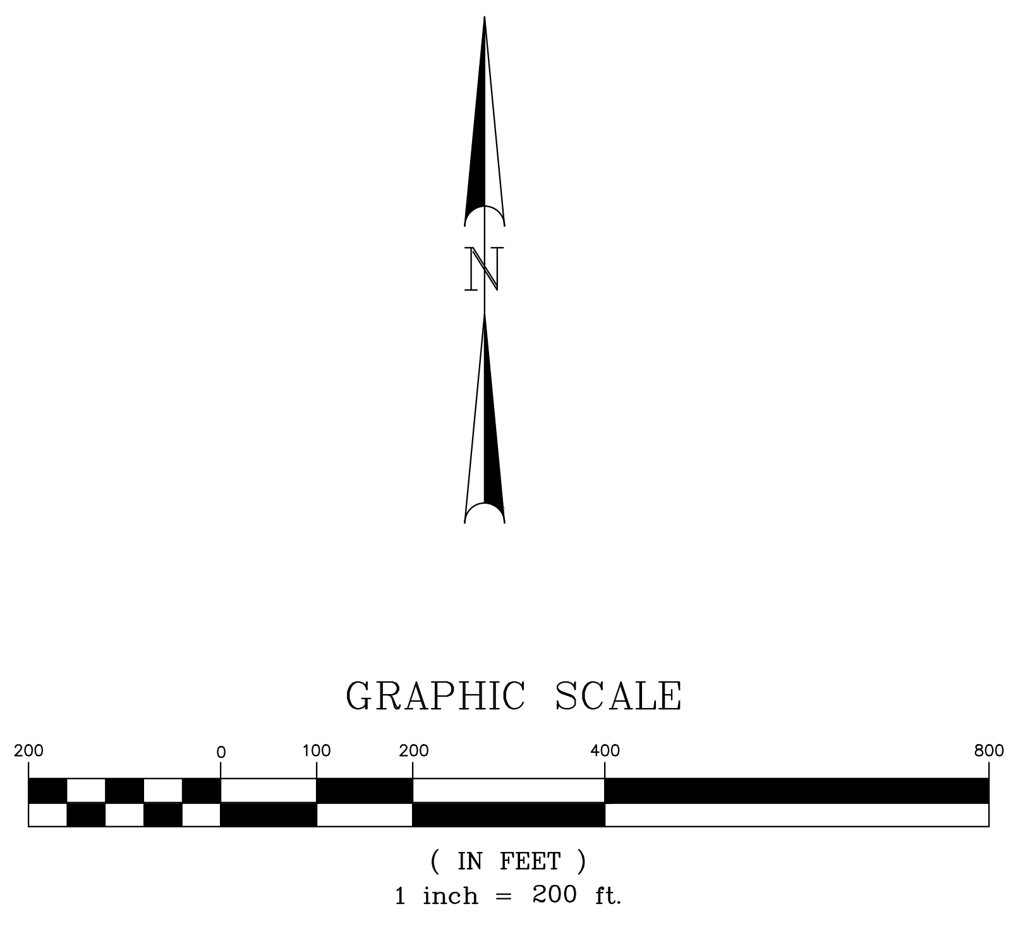
TO CONVERT TO STATE PLANE COORDINATES USE THE FOLLOWING:
STATE PLANE NORTHING= (PROJECT NORTHING + 7,000,000)/ 1.0003054533
STATE PLANE EASTING= (PROJECT EASTING + 1,000,000)/ 1.0003054533

2. THE CONTROL SURVEY WAS PERFORMED IN MARCH 2022. SURVEY CONTROL COORDINATES WERE ESTABLISHED USING THE NGS ONLINE POSITIONING USER SERVICE (OPUS).

SURVEYOR'S CERTIFICATE

I, CORY B. SMITH, A PROFESSIONAL LAND SURVEYOR AS PRESCRIBED BY THE LAWS OF THE STATE OF UTAH, HOLDING CERTIFICATE #11349296, CERTIFY THAT I HAVE PREPARED THE CONTROL DIAGRAM REPRESENTED HEREIN AND THAT THE SAME IS AN ACCURATE REPRESENTATION OF A CONTROL SURVEY, AND WAS CONDUCTED UNDER MY DIRECT SUPERVISION

CORY B. SMITH, P.L.S. #11349296



(IN FEET)
1 inch = 200 ft.

	GLOBAL		STATE PLANE		PROJECT			
PT #	LATITUDE	LONGITUDE	NORTHING	EASTING	NORTHING	EASTING	ELEVATOIN	DESCRIPTION
10	N40°06'08.74487"	W111°39'02.54770"	7206069.52	1598260.93	208270.63	598749.12	4588.658	REBAR WITH CAP
3801	N40°06'01.57444"	W111°38'42.27824"	7205341.38	1599834.68	207542.28	600323.35	4688.449	QT COR S SEC 19-- UTAH COUNTY BRASS CAP DATED 1955
3802	N40°06'27.46014"	W111°39'16.63130"	7207965.05	1597169.91	210166.75	597657.77	4590.225	QT COR W SEC 19-- UTAH COUNTY BRASS CAP DATED 1956
3803	N40°06'01.56219"	W111°39'19.61848"	7205345.02	1596933.27	207545.92	597421.06	4589.625	SW COR SEC 19 WITNESSES CORNER-- UTAH COUNTY BRASS CAP

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS
						ORIGINAL SUBMISSION FOR AUTHORIZATION

REVISIONS

SCALE: 1" = 200'
DWG NAME: SURVEY CONTROL 2201-005
SHT SET: ####
DWG CREATED: 10/2022
PEN TBL: ---
UPDATED: 1/10/2023
PLOTTED: 1/12/2023

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APPROVAL RECOMM: DATE PROJECT DESIGN ENGINEER
APPROVED: DATE
DESIGN: - CHECK: -
DRAWN: CBS 10/22 CHECK: -
QUANT: - CHECK: -
REVIEW
DATE: -
BY: -

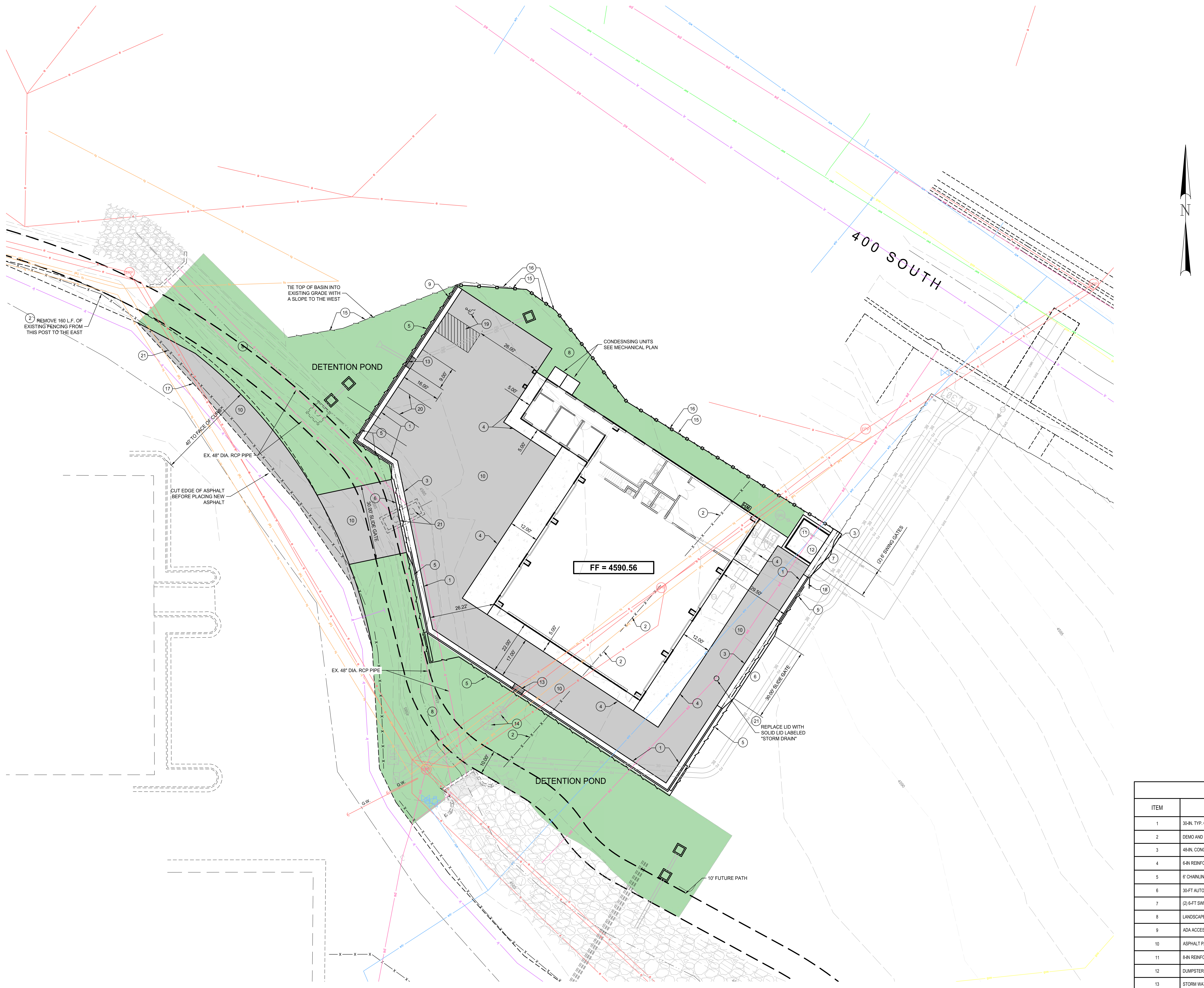
SPANISH FORK CITY
FACILITIES SHOP SITE
SURVEY CONTROL

PROJECT NUMBER: 2201-005

SUBMITTAL:

UTAH
COUNTY

SHEET NO. V-101


400 SOUTH
N
DETENTION POND
DETENTION POND
FF = 4590.56
TIE TOP OF BASIN INTO EXISTING GRADE WITH A SLOPE TO THE WEST
② REMOVE 160 L.F. OF EXISTING FENCING FROM THIS POST TO THE EAST
40' TO FACE OF CURB
EX. 48" DIA. RCP PIPE
CUT EDGE OF ASPHALT BEFORE PLACING NEW ASPHALT
30.00' SLIDE GATE
CONDESNSING UNITS SEE MECHANICAL PLAN
(2) 6' SWING GATES
REPLACE LID WITH SOLID LID LABELED "STORM DRAIN"
10' FUTURE PATH
26.00'
9.00'
16.00'
5.00'
12.00'
26.22'
22.00'
17.00'
29.50'
10.00'
G.W.
4585
4590

GENERAL NOTES:

1. ALL IMPROVEMENTS MUST COMPLY WITH ADA STANDARDS
2. ALL PAVEMENT MARKING TO MEET REQUIREMENTS OF LATEST EDITION OF M.U.T.C.D. (MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES).
3. ALL EXISTING IMPROVEMENTS DISTURBED DURING CONSTRUCTION ARE TO BE RESTORED OR REPLACED TO PRE-EXISTING CONDITIONS UNLESS OTHERWISE SPECIFICALLY NOTED ON PLAN.
4. NOTIFY ENGINEER OF ANY DISCREPANCIES IN DESIGN OR STAKING.
5. COORDINATE LANDSCAPING WITH BART MORRILL 801-804-4615.

SITE SUMMARY

ITEM	DESCRIPTION	DETAIL	UNITS	TOTAL QUANTITY
1	30-IN. TYP. CURB AND GUTTER; INCL. 8-IN BASE.	ST-512 / C-502	LF	293
2	DEMO AND REMOVE EXISTING TWO RAIL FENCE		LF	280
3	48-IN. CONCRETE CROSS GUTTER, INCL. 8-IN BASE.	ST-512 / C-502	SF	406
4	6-IN REINFORCED CONCRETE FLATWORK; INCL. 6-IN BASE.	C-503	SF	2431
5	6' CHAINLINK FENCE; INCL. TENSION WIRE, CONCRETE FOOTING AND POST	APWA PLAN 831	LF	310
6	30-FT AUTOMATED CHAIN LINK SLIDE GATE.		EA	2
7	(2) 6-FT SWING GATE WITH PRIVACY SLATS (95% MIN. PRIVACY FACTOR)	APWA PLAN 831	EA	1
8	LANDSCAPE AREA. COORDINATE WITH SPANISH FORK CITY.		SF	13,646
9	ADA ACCESSIBLE PARKING SIGN; INCL. POST, AND BASE	C-503	EA	1
10	ASPHALT PAVEMENT; INCL. 3-IN. ASPHALT , 8-IN. ROADBASE.	C-503	SF	10,821
11	8-IN REINFORCED CONCRETE DUMPSTER PAD; INCL. 6-IN BASE.	C-503	SF	256
12	DUMPSTER ENCLOSURE	C-503	EA	1
13	STORM WATER INLET BOX	SD-404 / C-502	EA	2
14	REMOVE TREES		EA	1
15	DEMO AND REMOVE EXISTING CHAIN LINK FENCE		LF	422
16	PRECAST CONCRETE WALL	G-113 / C-502	LF	407
17	SAWCUT EXISTING PAVEMENT	N/A	LF	164
18	4-FT SWING GATE	APWA PLAN 831	EA	1
19	ADA PARKING STALL STRIPING	C-503	EA	1
20	PARKING STRIPING	C-503	LF	1
21	RAISE MANHOLE FRAME,AND LID AND POUR CONCRETE COLLAR	SD-401 / C-502	EA	3

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS

ORIGINAL SUBMISSION FOR AUTHORIZATION

REVISIONS

SCALE: 1" = 20'
DWG NAME: C-101_SITE
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

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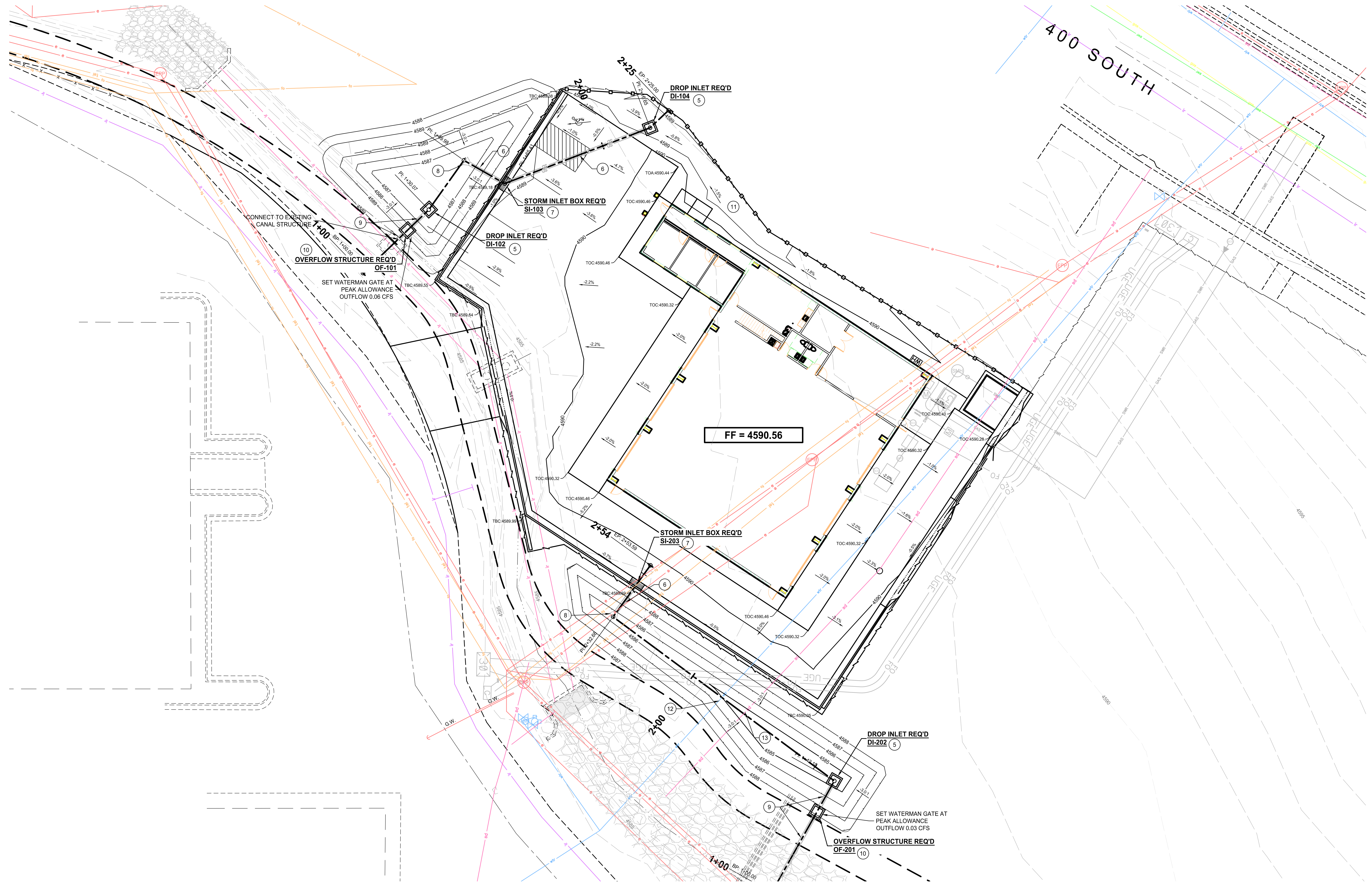
APPROVAL RECOMM: PROJECT DESIGN ENGINEER DATE
APPROVED: QUALITY MANAGEMENT REVIEW DATE

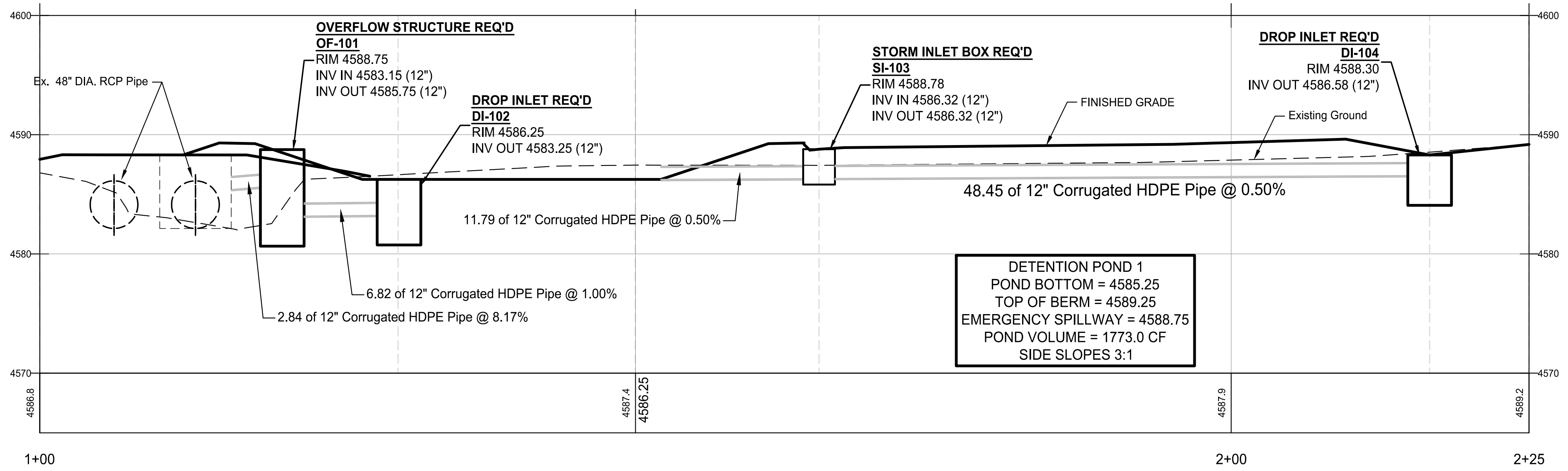
SPANISH FORK CITY
FACILITIES SHOP SITE
SITE PLAN

PROJECT NUMBER: 2201-005
SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

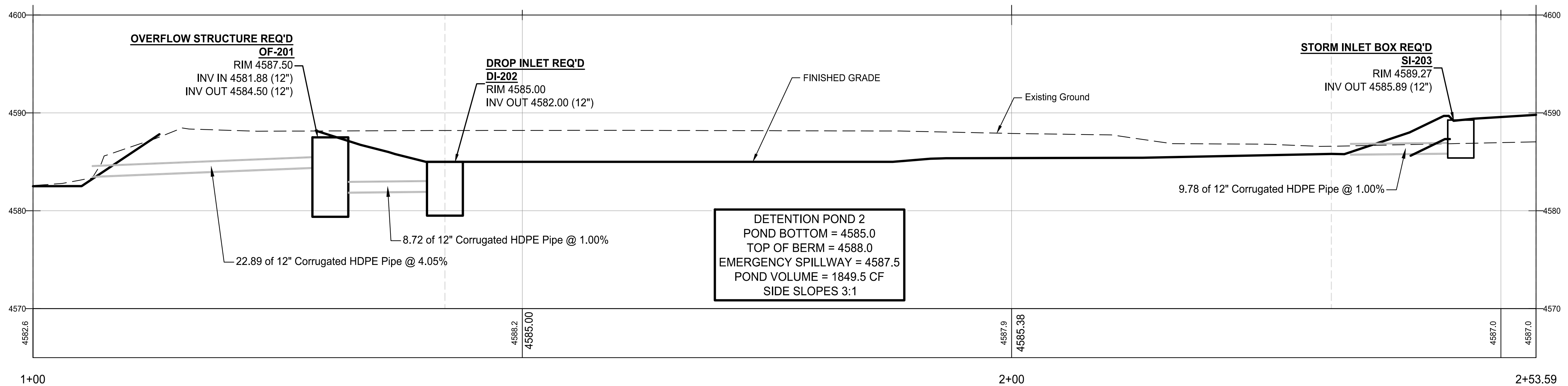
UTAH
COUNTY

SHEET NO. C-101





DETENTION POND 1
POND BOTTOM = 4585.25
TOP OF BERM = 4589.25
EMERGENCY SPILLWAY = 4588.75
POND VOLUME = 1773.0 CF
SIDE SLOPES 3:1



DETENTION POND 2
POND BOTTOM = 4585.0
TOP OF BERM = 4588.0
EMERGENCY SPILLWAY = 4587.5
POND VOLUME = 1849.5 CF
SIDE SLOPES 3:1

DRAINAGE AND GRADING SUMMARY

ITEM	DESCRIPTION	DETAIL	UNITS	TOTAL QUANTITY
1	EARTHWORK; INCL. EXCAVATION, PLACEMENT AND COMPACTION OF SUB-BASE MATERIAL.	N/A	CY	
2	IMPORT SUB-BASE	N/A	CY	
3	EXPORT SUB-BASE	N/A	CY	
4	CONTOUR AND COMPACT 8-IN OF TOP SUB-GRADE LIFT.	N/A	SF	
5	3-FT X 3-FT DROP INLET WITH GRATE OPENING	SD-411/C-502	EA	3
6	12-IN POLYPROPYLENE (PP) PIPE		LF	75
7	STORM WATER INLET BOX	SD-404/C-502	EA	2
8	12-IN FLARED END SECTION		EA	2
9	12-IN C-900 PVC PIPE		LF	50
10	OVERFLOW OUTLET STRUCTURE WITH WATERMAN GATE	SD-411/C-502	EA	2
11	1' DEEP SWALE; GRADE TO DRAIN AWAY FROM WALL		LF	50
12	LOWER EXISTING 6" PVC WATER LINE UNDER RETENTION BASIN TO MAINTAIN MINIMU 4' COVER		LF	40
13	LOWER EXISTING 12" STEEL STORM DRAIN PIPE UNDER RETENTION BASIN TO MAINTAIN MIN. 1' COVER. FIELD VERIFY PIPE SIZE AND MATERIAL. MAINTAIN MIN. 0.5% SLOPE		LF	50
14				

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS
						ORIGINAL SUBMISSION FOR AUTHORIZATION

REVISIONS

SCALE: 1" = 20'
DWG NAME: C-102_GRADING
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

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APPROVED: QUALITY MANAGEMENT REVIEW DATE

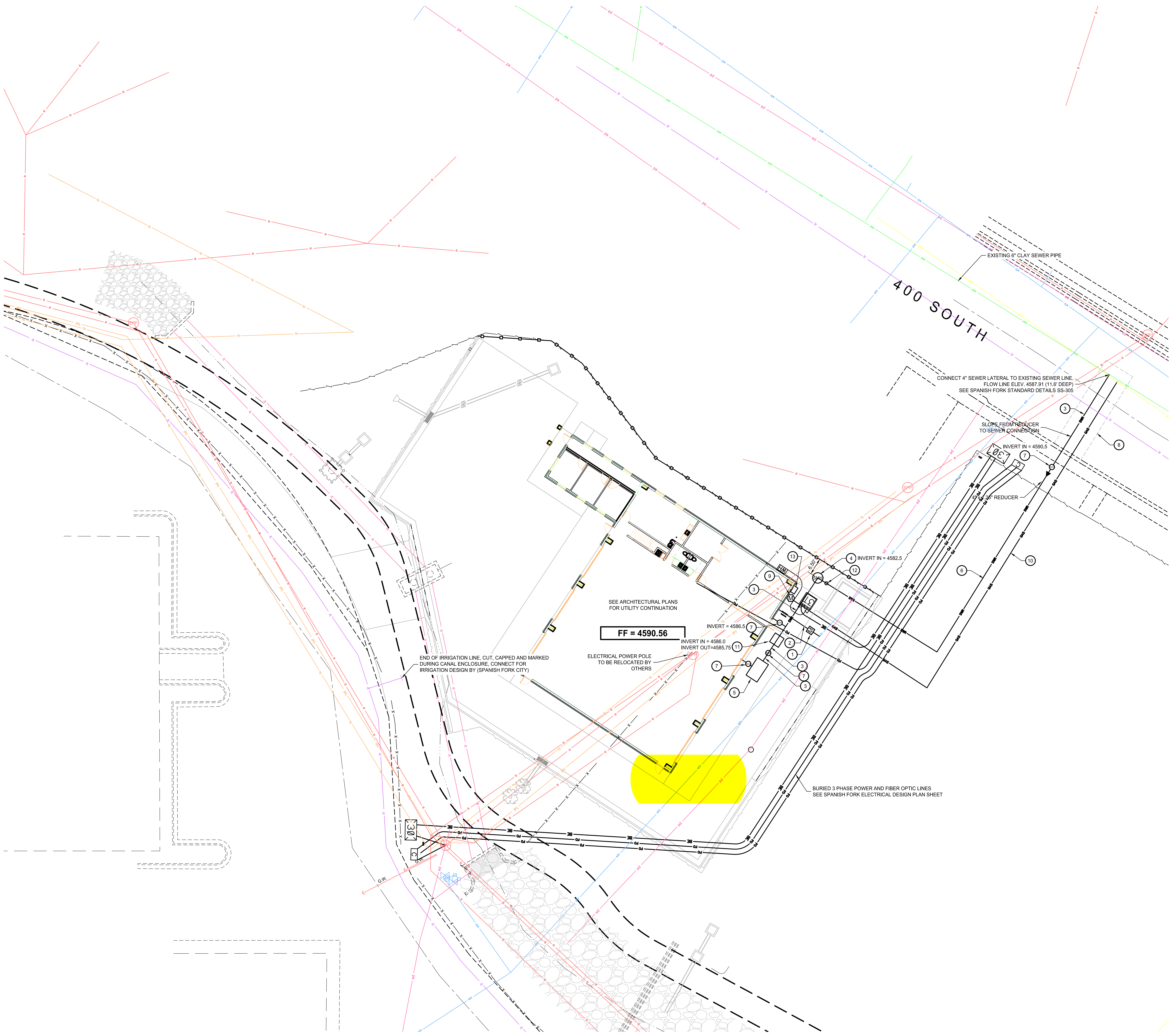
SPANISH FORK CITY
FACILITIES SHOP SITE
GRADING AND DRAINAGE

PROJECT NUMBER: 2201-005

SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

UTAH
COUNTY

SHEET NO. C-201


400 SOUTH
EXISTING 6" CLAY SEWER PIPE
CONNECT 4" SEWER LATERAL TO EXISTING SEWER LINE. FLOW LINE ELEV. 4587.91 (11.6' DEEP) SEE SPANISH FORK STANDARD DETAILS SS-305
SLOPE FROM REDUCER TO SEWER CONNECTION
INVERT IN = 4590.5
4"x1.25" REDUCER
INVERT IN = 4582.5
SEE ARCHITECTURAL PLANS FOR UTILITY CONTINUATION
FF = 4590.56
INVERT = 4586.5
INVERT IN = 4586.0
INVERT OUT=4585.75
ELECTRICAL POWER POLE TO BE RELOCATED BY OTHERS
END OF IRRIGATION LINE, CUT, CAPPED AND MARKED DURING CANAL ENCLOSURE, CONNECT FOR IRRIGATION DESIGN BY (SPANISH FORK CITY)
BURIED 3 PHASE POWER AND FIBER OPTIC LINES SEE SPANISH FORK ELECTRICAL DESIGN PLAN SHEET
6.50'
SMH
SCO
EPP
HM
M
BE
FO
GAS
SWR
wtr
sd
ir
e
tel
oj
30
31
1
2
3
4
5
6
7
8
9
10
11
12
13

GENERAL NOTES:

1. EXISTING UNDERGROUND UTILITIES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS BASED UPON RECORD INFORMATION AVAILABEL. VERIFY ALL LOCATIONS AND INFORM ENGINEER OF ANY CONFLICTS OR DISCREPANCIES.

UTILITY SUMMARY

ITEM	DESCRIPTION	DETAIL	UNITS	TOTAL QUANTITY
1	2-IN. WATER SERVICE CONNECTION ASSEMBLY; INCL. SADDLE, CORP, SETTER AND MANHOLE.(METER PROVIDED BY OWNER)	W-214/C-501	EA	1
2	2-IN. SDR-9 POLYPIPE WATER LINE	W-214/C-501	LF	20
3	4-IN. SEWER SDR-35 PVC PIPE @ 2% SLOPE, MIN. 42" BURY DEPTH	SS-305/C-501	LF	110
4	150-GAL. E-ONE DH152-93 SEWER LIFT STATION; INCL. PIPE, PUMP, BALLAST, TANK AND BEDDING MATERIAL	C-504	EA	1
5	1,000-GAL. CONCRETE GREASE TRAP; INCL BEDDING MATERIAL.	SS-308/C-501	EA	1
6	1.25-IN PVC SCH. 40 FORCED MAIN SEWER MAIN, MIN.42" BURY DEPTH		LF	110
7	SEWER CLEAN OUT	SS-305/C-501	EA	4
8	ASPHALT TRENCH RESTORATION (T-PATCH)	G-101/C-502	SF	450
9	GAS METER, COORDINATE WITH DOMINION ENERGY		EA	1
10	GAS LINE, COORDINATE WITH DOMINION ENERGY		LF	200
11	SEWER SAMPLING MANHOLE	SS-306/C-501	EA	1
12	LATERAL VALVE ASSEMBLY	C-504	EA	1
13	SENTRY PROTECT PLUS DUPLEX ALARM PANEL; INLC. MOUNT TO BUILDING	C-504	EA	1

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS
		ORIGINAL SUBMISSION FOR AUTHORIZATION				

REVISIONS

SCALE: 1" = 20'
DWG NAME: C-103_UTILITY
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

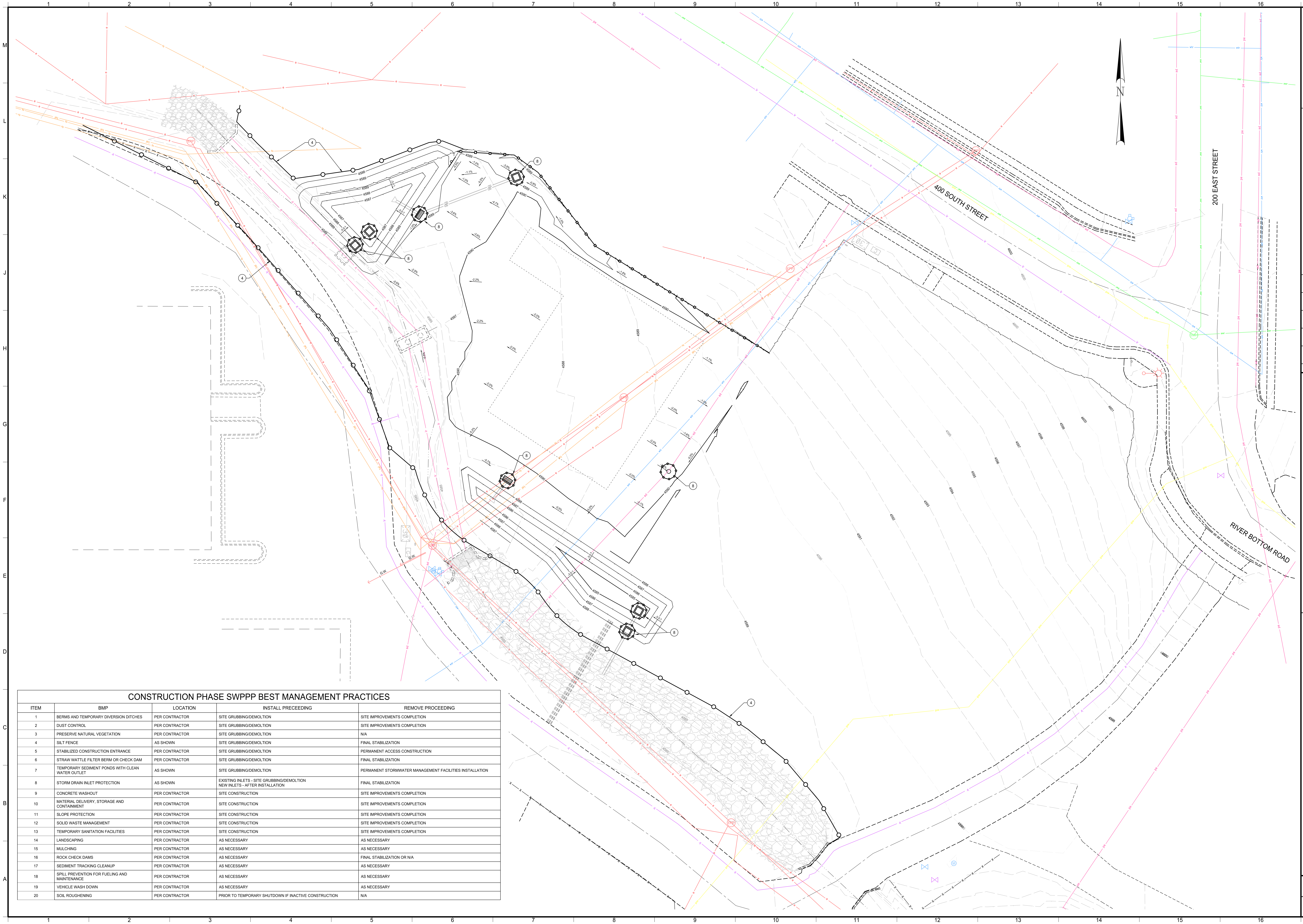
Jones & DeMille Engineering, Inc.
CIVIL & STRUCTURAL ENGINEERING - SURVEYING
GIS - ENVIRONMENTAL - MATERIALS TESTING
1.800.748.5275 www.jonesanddemille.com

APPROVAL RECOMM: PROJECT DESIGN ENGINEER DATE
APPROVED: QUALITY MANAGEMENT REVIEW DATE

SPANISH FORK CITY
FACILITIES SHOP SITE
UTILITY PLAN

PROJECT NUMBER: 2201-005
SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

UTAH
COUNTY
SHEET NO. C-301



CONSTRUCTION PHASE SWPPP BEST MANAGEMENT PRACTICES

ITEM	BMP	LOCATION	INSTALL PRECEEDING	REMOVE PROCEEDING
1	BERMS AND TEMPORARY DIVERSION DITCHES	PER CONTRACTOR	SITE GRUBBING/DEMOLTION	SITE IMPROVEMENTS COMPLETION
2	DUST CONTROL	PER CONTRACTOR	SITE GRUBBING/DEMOLTION	SITE IMPROVEMENTS COMPLETION
3	PRESERVE NATURAL VEGETATION	PER CONTRACTOR	SITE GRUBBING/DEMOLTION	N/A
4	SILT FENCE	AS SHOWN	SITE GRUBBING/DEMOLTION	FINAL STABILIZATION
5	STABILIZED CONSTRUCTION ENTRANCE	PER CONTRACTOR	SITE GRUBBING/DEMOLTION	PERMANENT ACCESS CONSTRUCTION
6	STRAW WATTLE FILTER BERM OR CHECK DAM	PER CONTRACTOR	SITE GRUBBING/DEMOLTION	FINAL STABILIZATION
7	TEMPORARY SEDIMENT PONDS WITH CLEAN WATER OUTLET	AS SHOWN	SITE GRUBBING/DEMOLTION	PERMANENT STORMWATER MANAGEMENT FACILITIES INSTALLATION
8	STORM DRAIN INLET PROTECTION	AS SHOWN	EXISTING INLETS - SITE GRUBBING/DEMOLTION NEW INLETS - AFTER INSTALLATION	FINAL STABILIZATION
9	CONCRETE WASHOUT	PER CONTRACTOR	SITE CONSTRUCTION	SITE IMPROVEMENTS COMPLETION
10	MATERIAL DELIVERY, STORAGE AND CONTAINMENT	PER CONTRACTOR	SITE CONSTRUCTION	SITE IMPROVEMENTS COMPLETION
11	SLOPE PROTECTION	PER CONTRACTOR	SITE CONSTRUCTION	SITE IMPROVEMENTS COMPLETION
12	SOLID WASTE MANAGEMENT	PER CONTRACTOR	SITE CONSTRUCTION	SITE IMPROVEMENTS COMPLETION
13	TEMPORARY SANITATION FACILITIES	PER CONTRACTOR	SITE CONSTRUCTION	SITE IMPROVEMENTS COMPLETION
14	LANDSCAPING	PER CONTRACTOR	AS NECESSARY	AS NECESSARY
15	MULCHING	PER CONTRACTOR	AS NECESSARY	AS NECESSARY
16	ROCK CHECK DAMS	PER CONTRACTOR	AS NECESSARY	FINAL STABILIZATION OR N/A
17	SEDIMENT TRACKING CLEANUP	PER CONTRACTOR	AS NECESSARY	AS NECESSARY
18	SPILL PREVENTION FOR FUELING AND MAINTENANCE	PER CONTRACTOR	AS NECESSARY	AS NECESSARY
19	VEHICLE WASH DOWN	PER CONTRACTOR	AS NECESSARY	AS NECESSARY
20	SOIL ROUGHENING	PER CONTRACTOR	PRIOR TO TEMPORARY SHUTDOWN IF INACTIVE CONSTRUCTION	N/A

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS
	ORIGINAL SUBMISSION FOR AUTHORIZATION					

REVISIONS

SCALE: 1" = 20'
DWG NAME: C-104_EROSIONCONTROL
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

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GIS - ENVIRONMENTAL - MATERIALS TESTING
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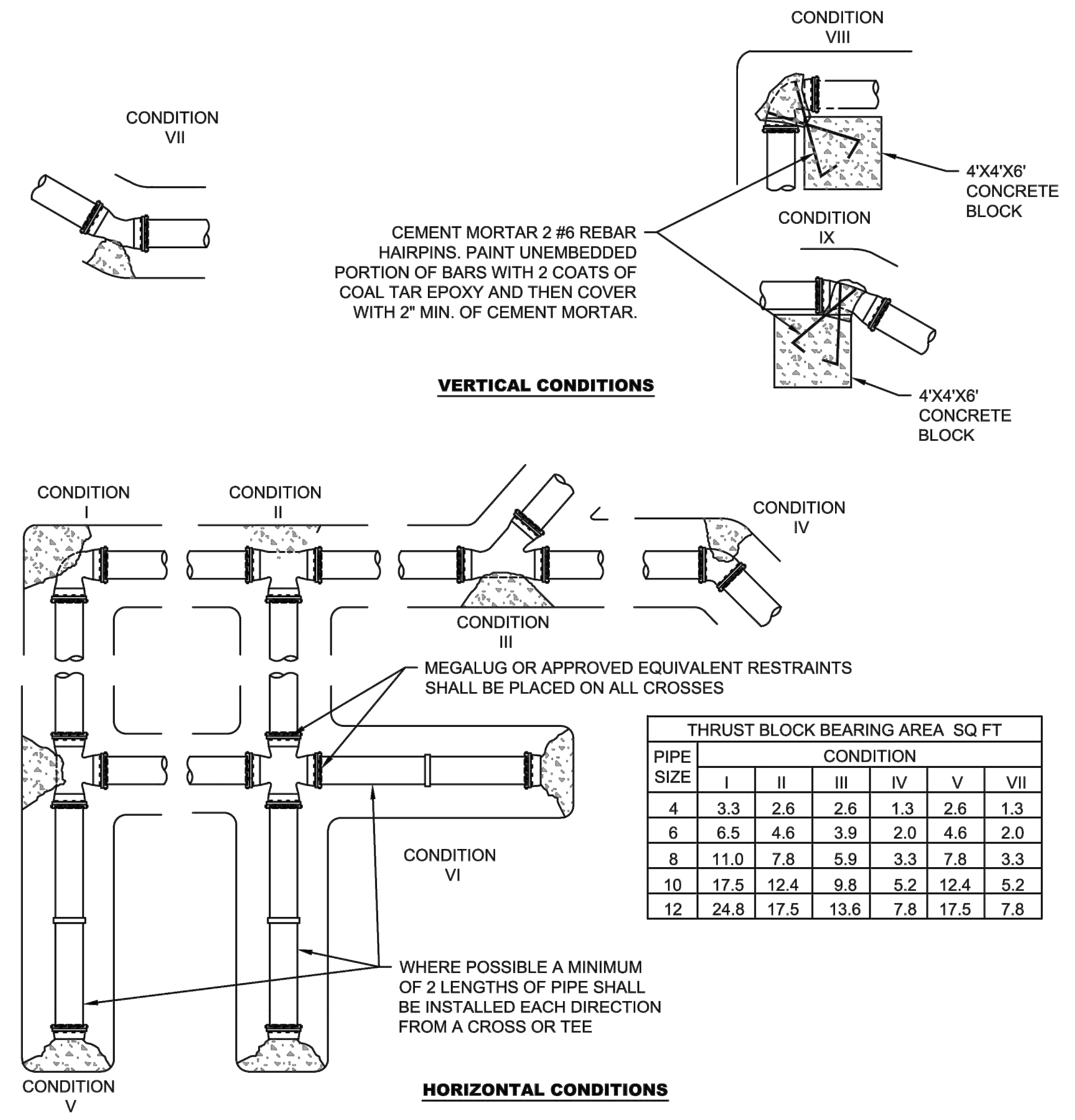
APPROVAL RECOMM: PROJECT DESIGN ENGINEER DATE
APPROVED: QUALITY MANAGEMENT REVIEW DATE

SPANISH FORK CITY
FACILITIES SHOP SITE
EROSION CONTROL PLAN

PROJECT NUMBER: 2201-005
SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

UTAH
COUNTY

SHEET NO. C-401


CONDITION VIII
CONDITION VII
4'X4'X6' CONCRETE BLOCK
CEMENT MORTAR 2 #6 REBAR HAIRPINS. PAINT UNEMBEDDED PORTION OF BARS WITH 2 COATS OF COAL TAR EPOXY AND THEN COVER WITH 2" MIN. OF CEMENT MORTAR.
CONDITION IX
4'X4'X6' CONCRETE BLOCK
VERTICAL CONDITIONS
CONDITION I
CONDITION II
CONDITION IV
CONDITION III
MEGALUG OR APPROVED EQUIVALENT RESTRAINTS SHALL BE PLACED ON ALL CROSSES
CONDITION VI
WHERE POSSIBLE A MINIMUM OF 2 LENGTHS OF PIPE SHALL BE INSTALLED EACH DIRECTION FROM A CROSS OR TEE
CONDITION V
HORIZONTAL CONDITIONS

THRUST BLOCK BEARING AREA SQ FT

PIPE SIZE	CONDITION					
	I	II	III	IV	V	VII
4	3.3	2.6	2.6	1.3	2.6	1.3
6	6.5	4.6	3.9	2.0	4.6	2.0
8	11.0	7.8	5.9	3.3	7.8	3.3
10	17.5	12.4	9.8	5.2	12.4	5.2
12	24.8	17.5	13.6	7.8	17.5	7.8

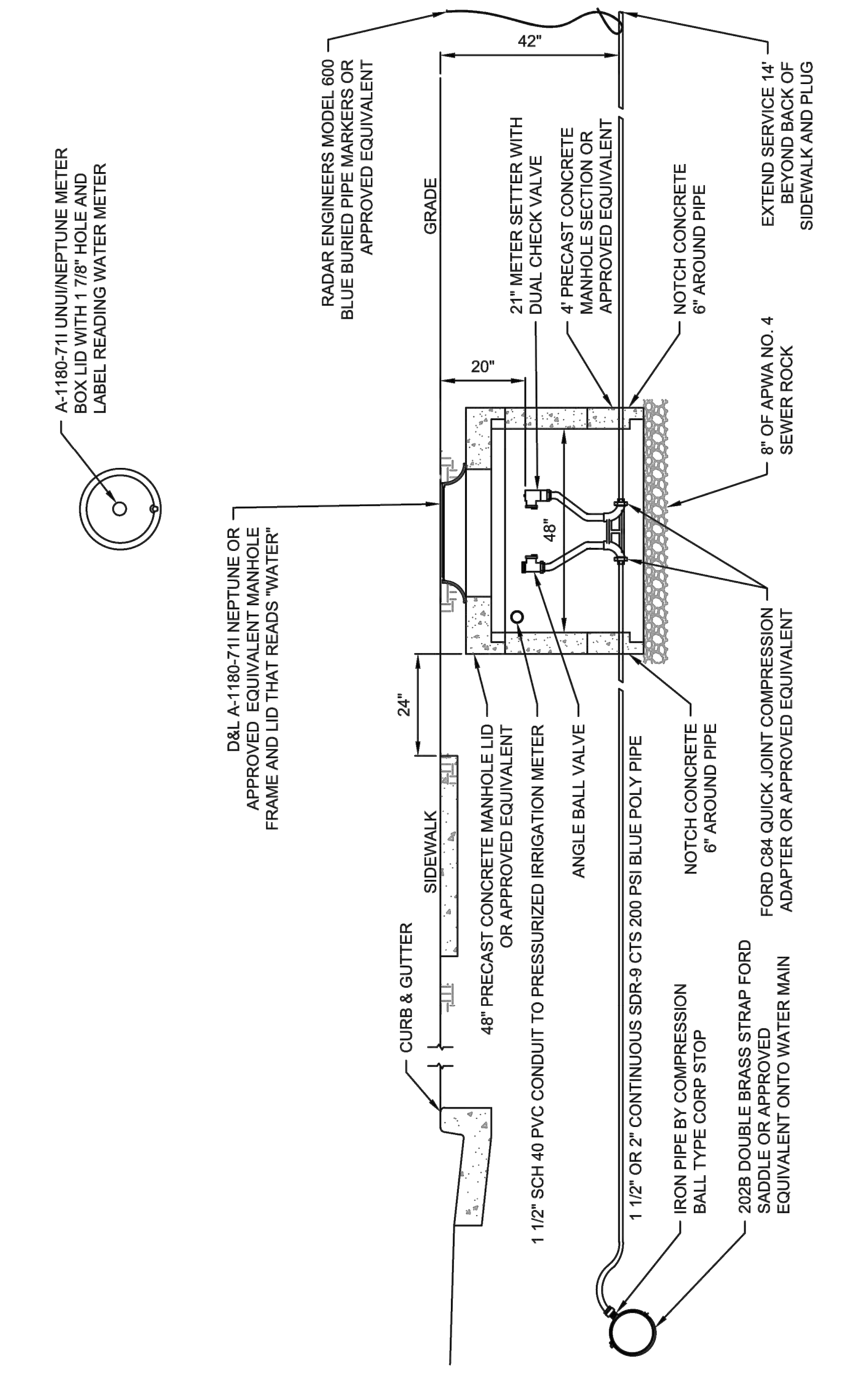
NOTES:

1. MECHANICAL RESTRAINING DEVICES INSTALLED ACCORDING TO THE STANDARD DRAWINGS MAY BE USED IN PLACE OF CONCRETE THRUST BLOCKS. USE MECHANICAL RESTRAINING IN UNSTABLE SOILS.
2. ALL CONCRETE THRUST BLOCK BEARING FACES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
3. A MINIMUM APWA CLASS 2000 PORTLAND CEMENT CONCRETE SHALL BE USED ON ALL HORIZONTAL THRUST BLOCKS AND APWA CLASS 4000 ON VERTICAL.
4. THRUST BLOCKS SHALL NOT INTERFERE WITH ACCESS TO JOINTS AND BOLTS.
5. FITTINGS SHALL BE ENCASED IN AN 8 MIL VINYL WRAP PLASTIC COVER.
6. ALL FITTING JOINTS SHALL BE MECHANICAL.
7. HORIZONTAL THRUST BLOCKS FOR PIPE WITH LARGER THAN 12" I.D. SHALL HAVE A DESIGN SUBMITTED THAT IS STAMPED BY A LICENSED PROFESSIONAL ENGINEER.

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
CONCRETE THRUST BLOCKS FOR PRESSURE PIPE

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 6/19/2018
SCALE NONE
STANDARD W-201


A-1180-71I UNUI/NEPTUNE METER BOX LID WITH 1 7/8" HOLE AND LABEL READING WATER METER
RADAR ENGINEERS MODEL 600 BLUE BURIED PIPE MARKERS OR APPROVED EQUIVALENT
GRADE
42"
21" METER SETTER WITH DUAL CHECK VALVE
4' PRECAST CONCRETE MANHOLE SECTION OR APPROVED EQUIVALENT
NOTCH CONCRETE 6" AROUND PIPE
EXTEND SERVICE 14' BEYOND BACK OF SIDEWALK AND PLUG
20"
8" OF APWA NO. 4 SEWER ROCK
48"
D&L A-1180-71I NEPTUNE OR APPROVED EQUIVALENT MANHOLE FRAME AND LID THAT READS "WATER"
24"
SIDEWALK
CURB & GUTTER
48" PRECAST CONCRETE MANHOLE LID OR APPROVED EQUIVALENT
1 1/2" SCH 40 PVC CONDUIT TO PRESSURIZED IRRIGATION METER
ANGLE BALL VALVE
1 1/2" OR 2" CONTINUOUS SDR-9 CTS 200 PSI BLUE POLY PIPE
NOTCH CONCRETE 6" AROUND PIPE
FORD C84 QUICK JOINT COMPRESSION ADAPTER OR APPROVED EQUIVALENT
IRON PIPE BY COMPRESSION BALL TYPE CORP STOP
202B DOUBLE BRASS STRAP FORD SADDLE OR APPROVED EQUIVALENT ONTO WATER MAIN

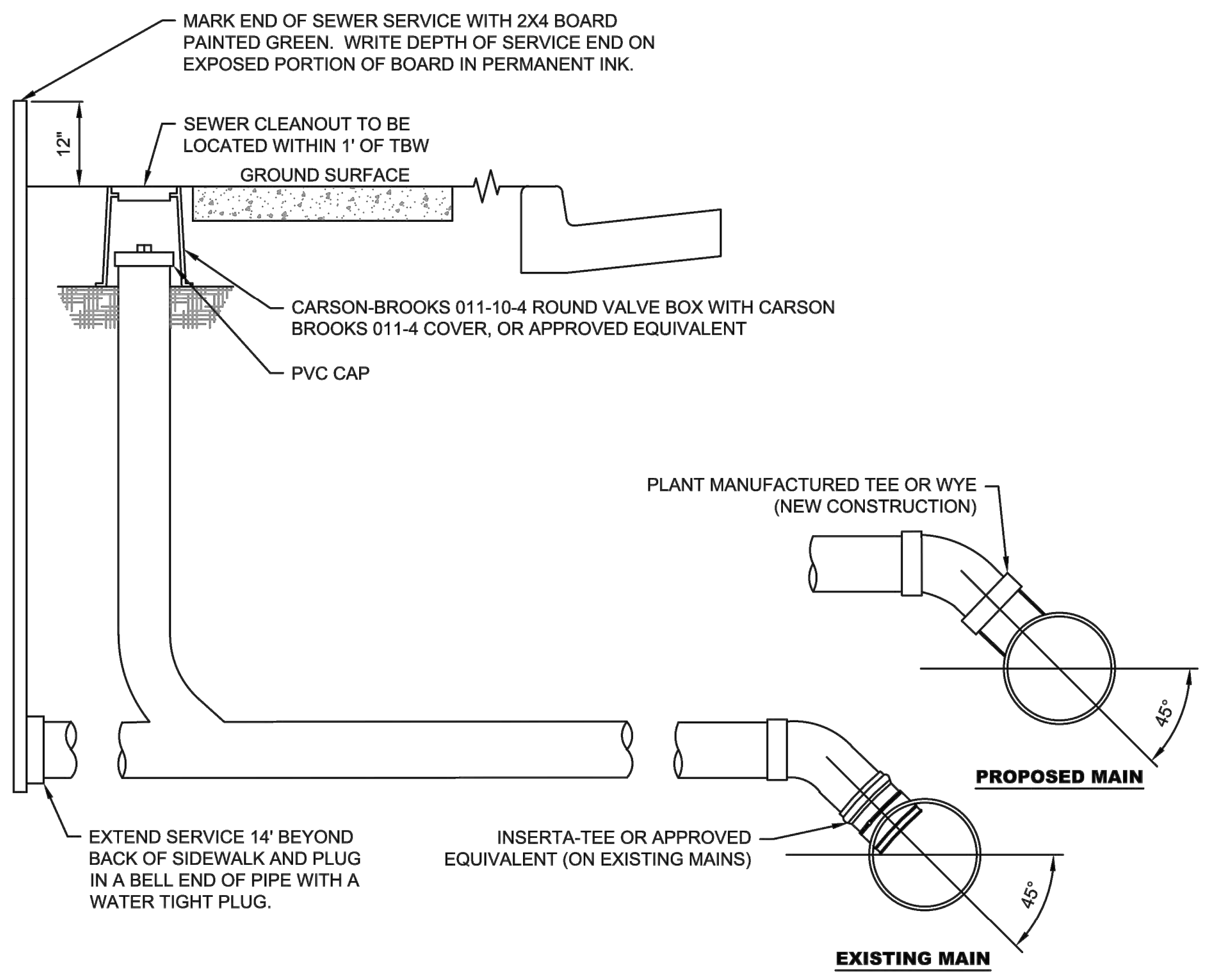
NOTES:

1. BURY CONDUIT 18" BELOW GRADE.
2. CONTRACTOR SHALL INSTALL 1 1/2" AND 2" METERS (METER TO BE PROVIDED BY SPANISH FORK CITY).
3. TYPE OF METER TO BE USED SHALL BE DETERMINED BY THE CITY.

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
2" WATER SERVICE

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 2/15/2022
SCALE NONE
STANDARD W-214


MARK END OF SEWER SERVICE WITH 2X4 BOARD PAINTED GREEN. WRITE DEPTH OF SERVICE END ON EXPOSED PORTION OF BOARD IN PERMANENT INK.
12"
SEWER CLEANOUT TO BE LOCATED WITHIN 1' OF TBW
GROUND SURFACE
CARSON-BROOKS 011-10-4 ROUND VALVE BOX WITH CARSON BROOKS 011-4 COVER, OR APPROVED EQUIVALENT
PVC CAP
PLANT MANUFACTURED TEE OR WYE (NEW CONSTRUCTION)
45°
PROPOSED MAIN
EXTEND SERVICE 14' BEYOND BACK OF SIDEWALK AND PLUG IN A BELL END OF PIPE WITH A WATER TIGHT PLUG.
INSERTA-TEE OR APPROVED EQUIVALENT (ON EXISTING MAINS)
45°
EXISTING MAIN

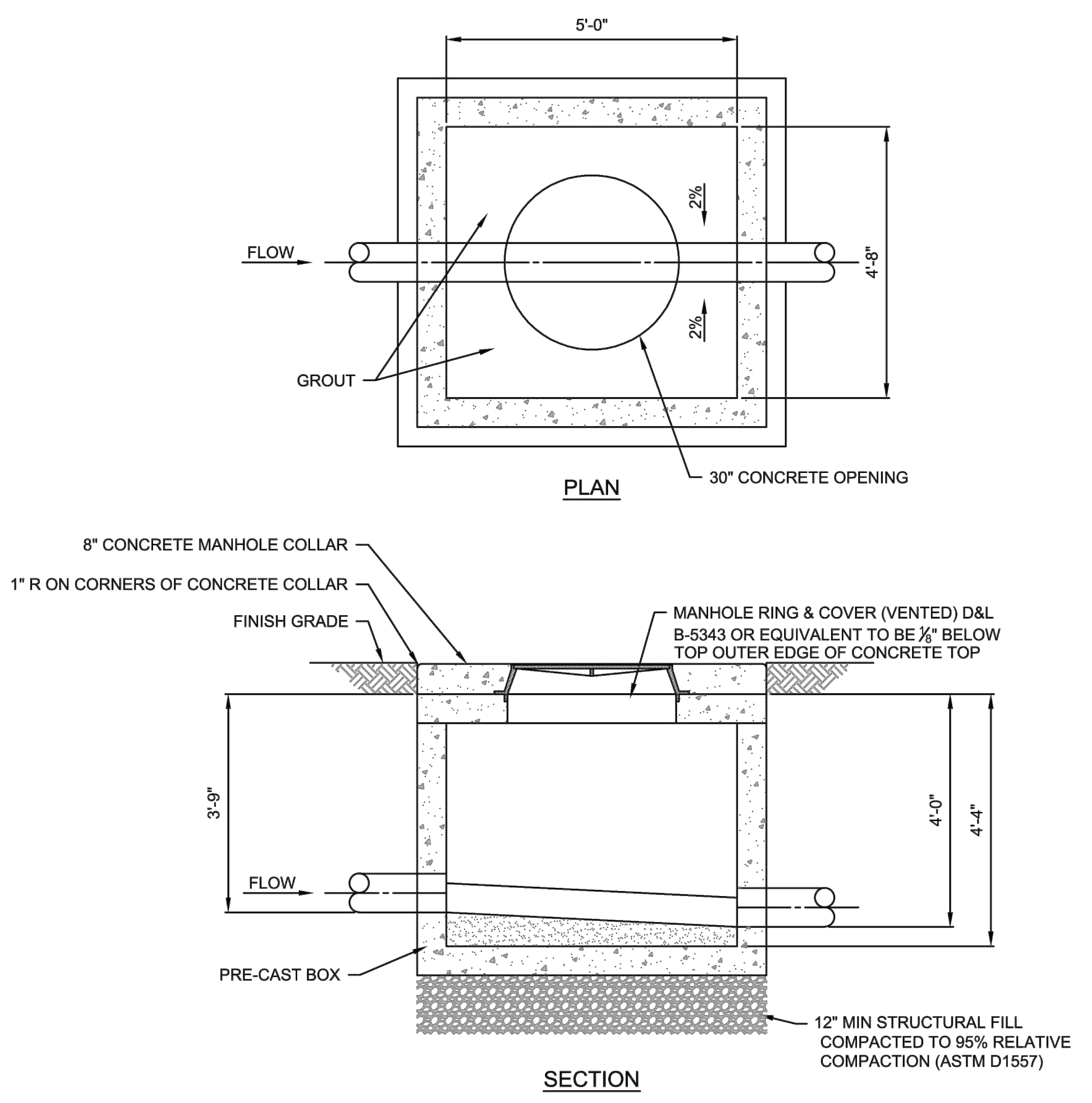
NOTES:

1. THE MINIMUM SLOPE IS 2% FOR A 4" LATERAL AND 1% FOR A 6" LATERAL.
2. SEWER LATERALS SHALL HAVE A MINIMUM OF 42" OF COVER FROM FINISH GRADE AT PROPERTY LINE AND 36" AT PLUG.
3. INSERTA-TEE MAY ONLY BE USED WHEN APPROVED BY CITY ENGINEER.

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
SEWER SERVICE

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 10/6/2020
SCALE NONE
STANDARD SS-305


5'-0"
FLOW
2%
4'-8"
2%
GROUT
30" CONCRETE OPENING
PLAN
8" CONCRETE MANHOLE COLLAR
1" R ON CORNERS OF CONCRETE COLLAR
FINISH GRADE
MANHOLE RING & COVER (VENTED) D&L B-5343 OR EQUIVALENT TO BE ⅛" BELOW TOP OUTER EDGE OF CONCRETE TOP
3'-9"
4'-0"
4'-4"
FLOW
PRE-CAST BOX
12" MIN STRUCTURAL FILL COMPACTED TO 95% RELATIVE COMPACTION (ASTM D1557)
SECTION

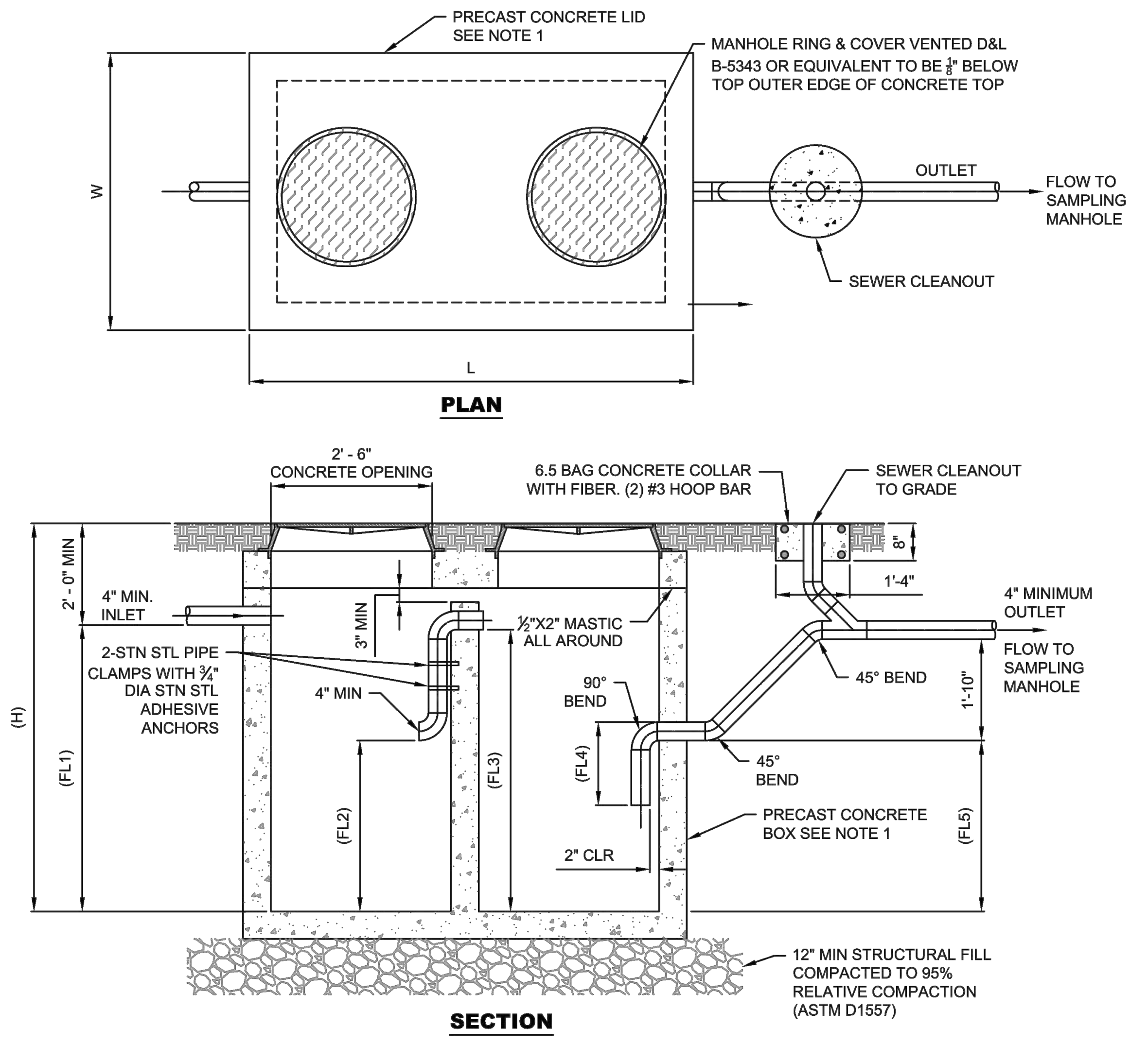
NOTES:

1. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4000 PSI.
2. REINFORCING STEEL SHALL BE ASTW A615 GRADE 60.
3. THE CONCRETE OVER THE REINFORCING STEEL SHALL BE A MINIMUM OF 1 1/2- INCH.
4. THE STRUCTURE SHALL BE DESIGNED AND STAMPED BY A REGISTERED PROFESSIONAL ENGINEER LICENSED IN THE STATE OF UTAH.
5. THE STRUCTURE SHALL AT MINIMUM MEET THE FOLLOWING DESIGN CRITERIA:
   - a) WALLS DESIGNED FOR SATURATED EQUIVALENT FLUID.
   - b) TRUCK LOADING USING AN AASHTO H-20 TRUCK LOAD.
6. PIPING PER CITY REQUIREMENTS..
7. THE MINIMUM WIDTH OF CHANNEL WITHIN MANHOLE TO BE DIAMETER OF PIPE.

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
SAMPLING MANHOLE 4FT OR LESS

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 1/18/2022
SCALE NONE
STANDARD SS-306


PRECAST CONCRETE LID SEE NOTE 1
MANHOLE RING & COVER VENTED D&L B-5343 OR EQUIVALENT TO BE ⅛" BELOW TOP OUTER EDGE OF CONCRETE TOP
W
OUTLET
FLOW TO SAMPLING MANHOLE
SEWER CLEANOUT
L
PLAN
2' - 6" CONCRETE OPENING
6.5 BAG CONCRETE COLLAR WITH FIBER. (2) #3 HOOP BAR
SEWER CLEANOUT TO GRADE
8"
1'-4"
2' - 0" MIN
4" MIN. INLET
3" MIN
½"X2" MASTIC ALL AROUND
4" MINIMUM OUTLET
2-STN STL PIPE CLAMPS WITH ¾" DIA STN STL ADHESIVE ANCHORS
4" MIN
90° BEND
45° BEND
1'-10"
FLOW TO SAMPLING MANHOLE
(H)
(FL1)
(FL2)
(FL3)
(FL4)
45° BEND
PRECAST CONCRETE BOX SEE NOTE 1
(FL5)
2" CLR
12" MIN STRUCTURAL FILL COMPACTED TO 95% RELATIVE COMPACTION (ASTM D1557)
SECTION

1000 - 1200 GALLON GREASE TRAP SCHEDULES

CAPACITY	LENGTH (L)	WIDTH (W)	HEIGHT (H)	INLET (FL1)	INLET (FL2)	INLET (FL3)	INLET (FL4)	INLET (FL5)
1000 GALLON	8'-0"	5'-0"	7'-2"	5'-2"	3'-1"	5'-1"	1'-6"	3'-1"
1200 GALLON	8'-0"	5'-0"	7'-8"	5'-8"	3'-7"	5'-7"	2'-0"	3'-7"

NOTES:

1. THE SUPPLIER OF THE PRECAST BOX, SHALL DESIGN AND PROVIDE DRAWINGS AND CALCULATIONS STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF UTAH AND SUBMITTED TO SPANISH FORK CITY FOR REVIEW.
2. SUPPLIER SHALL COORDINATE WITH OWNER THE SIZE AND LOCATION OF ALL PIPE PENETRATIONS PRIOR TO FABRICATION.
3. SAMPLING MANHOLE SHALL BE INSTALLED DOWNSTREAM OF GREASE TRAP.
4. GREASE TRAP SIZING TO BE SIZED BY A LICENSED ENGINEER AND SIZED IN ACCORDANCE WITH THE CURRENTLY ADOPTED INTERNATIONAL PLUMBING CODE.

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
1000 - 1200 GALLON GREASE TRAPS

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 1/18/2022
SCALE NONE
STANDARD SS-308

STAMP:

NO.	DATE	DESIGN REV BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS
		ORIGINAL SUBMISSION FOR AUTHORIZATION				

REVISIONS

SCALE: NTS
DWG NAME: C-501_DETAILS
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

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GIS - ENVIRONMENTAL - MATERIALS TESTING
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APPROVAL RECOMM: PROJECT DESIGN ENGINEER DATE
APPROVED: QUALITY MANAGEMENT REVIEW DATE

SPANISH FORK CITY

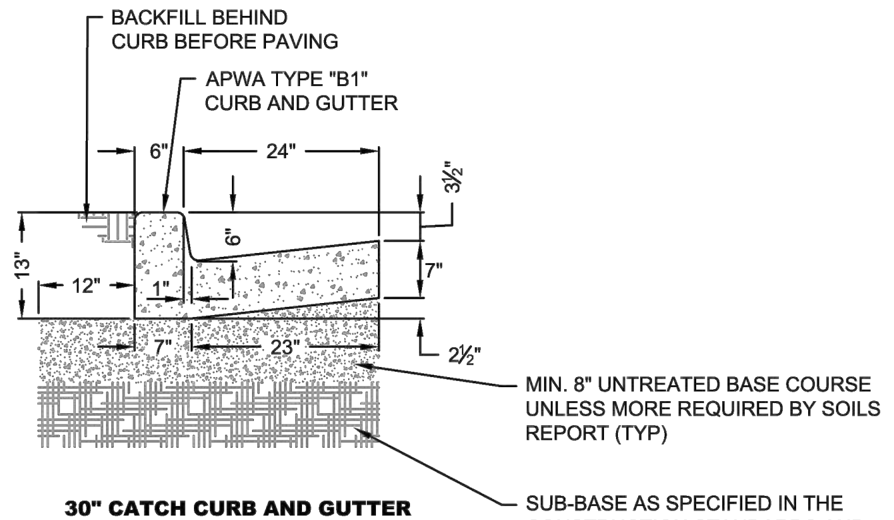
FACILITIES SHOP SITE

DETAILS

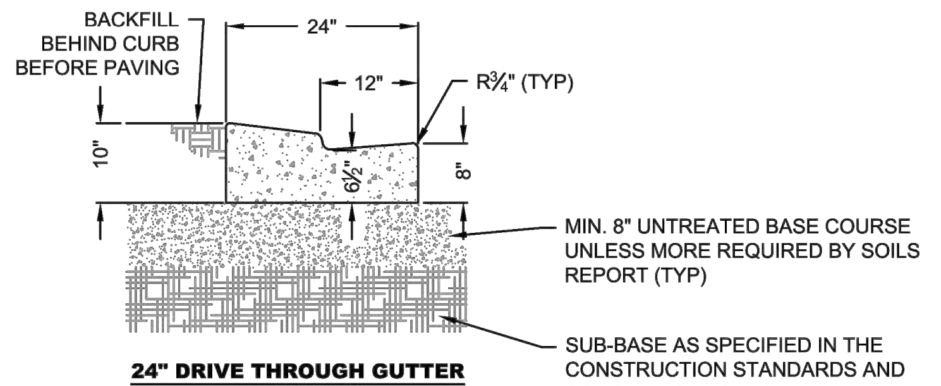
SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION
PROJECT NUMBER: 2201-005

UTAH
COUNTY

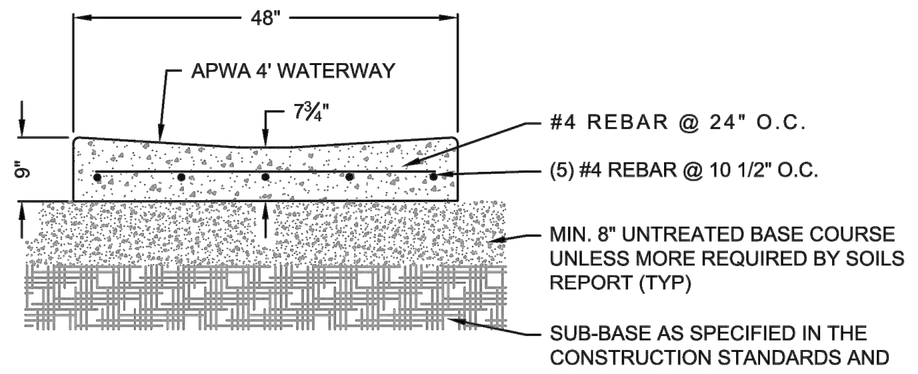
SHEET NO. C-501


BACKFILL BEHIND
CURB BEFORE PAVING
APWA TYPE "B1"
CURB AND GUTTER
6"
24"
3½"
6"
13"
12"
1"
7"
7"
23"
2½"
MIN. 8" UNTREATED BASE COURSE UNLESS MORE REQUIRED BY SOILS REPORT (TYP)
SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT (TYP)

30" CATCH CURB AND GUTTER


BACKFILL
BEHIND CURB
BEFORE PAVING
24"
12"
R¾" (TYP)
10"
6½"
8"
MIN. 8" UNTREATED BASE COURSE UNLESS MORE REQUIRED BY SOILS REPORT (TYP)
SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT (TYP)

24" DRIVE THROUGH GUTTER
SEE NOTE 9


48"
APWA 4' WATERWAY
7¾"
9"
#4 REBAR @ 24" O.C.
(5) #4 REBAR @ 10 1/2" O.C.
MIN. 8" UNTREATED BASE COURSE UNLESS MORE REQUIRED BY SOILS REPORT (TYP)
SUB-BASE AS SPECIFIED IN THE CONSTRUCTION STANDARDS AND SOILS REPORT (TYP)

CROSS GUTTER

NOTES:

1. SUB-BASE UNDER ALL CURBS AND GUTTERS SHALL MATCH WHAT IS IN THE ROAD WITH A MINIMUM OF 8" OF COMPACTED UNTREATED BASE COURSE.
2. IF CONCRETE IS TO BE POURED NEXT TO A CURB #4 REBAR SHALL BE DOWELED 3" INTO CURB AND 4" INTO SIDEWALK. REBAR SHALL BE INSTALLED A MINIMUM OF 2" FROM TOP OF SIDEWALK AND CURB 24" O.C.
3. SIDEWALKS SHALL HAVE CONSTRUCTION JOINTS EVERY 5'.
4. TOP FRONT OF SIDEWALK SHALL BE PLACED AT THE SAME GRADE AS TOP BACK OF CURB.
5. TACK SHALL BE APPLIED TO LIP OF CURB AND EXTEND 1' ONTO GRAVEL ROAD BASE.
6. PAVERS, FABRIC, SAND MATERIAL AND INSTALLATION SHALL MEET THE SPECIFICATIONS AND REQUIREMENTS OF APWA 32 14 13 (PRECAST CONCRETE UNIT PAVING) AND 32 14 16 (BRICK UNIT PAVING).
7. ESTABLISH PAVER PATTERN TO ASSURE ALL CUT EDGE PAVERS SHALL BE HALF PAVERS OR LARGER.
8. ALL PAVERS SHALL MATCH THE ORGINAL COLOR OF THE DARK RED CONCRETE PAVERS ON MAIN STREET
9. MODIFIED CURB & GUTTER IS ONLY TO BE USED IN THE RESIDENTIAL SUB LOCAL ROAD - 42' RIGHT OF WAY UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER.

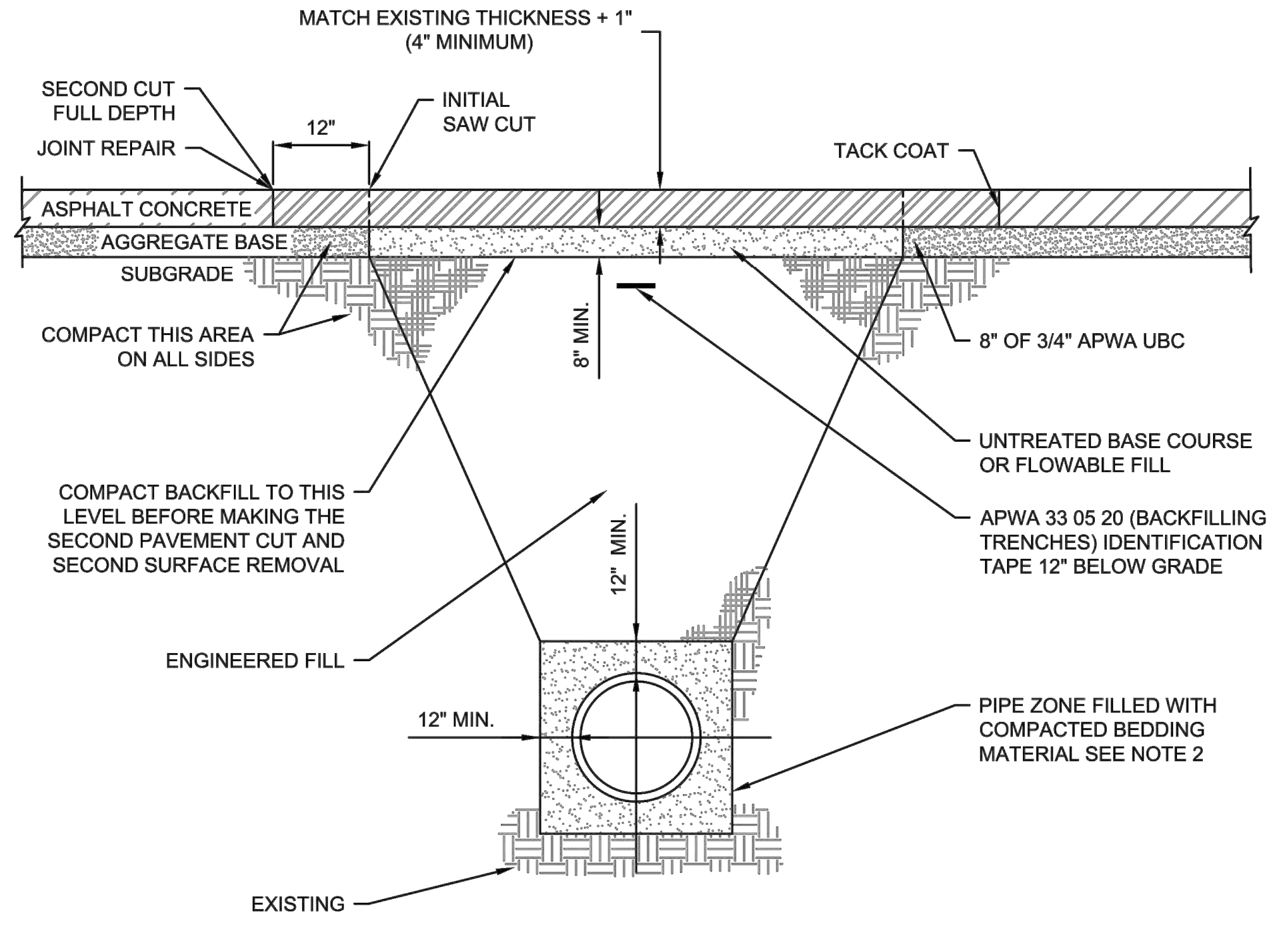
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
APPROVED CURB & GUTTERS

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 1/18/2022

SCALE
NONE

STANDARD
ST-512


MATCH EXISTING THICKNESS + 1"
(4" MINIMUM)
SECOND CUT
FULL DEPTH
JOINT REPAIR
12"
INITIAL
SAW CUT
TACK COAT
ASPHALT CONCRETE
AGGREGATE BASE
SUBGRADE
COMPACT THIS AREA
ON ALL SIDES
8" MIN.
8" OF 3/4" APWA UBC
UNTREATED BASE COURSE
OR FLOWABLE FILL
COMPACT BACKFILL TO THIS LEVEL BEFORE MAKING THE SECOND PAVEMENT CUT AND SECOND SURFACE REMOVAL
APWA 33 05 20 (BACKFILLING TRENCHES) IDENTIFICATION TAPE 12" BELOW GRADE
12" MIN.
ENGINEERED FILL
12" MIN.
PIPE ZONE FILLED WITH COMPACTED BEDDING MATERIAL SEE NOTE 2
EXISTING

NOTES:

1. PAVEMENT CUTS SHALL BE A MINIMUM OF 3' X 3' AND ALSO BE MADE 12 INCHES OUTSIDE THE EDGE OF TRENCH FOR TRENCHES DEEPER THAN 4 FEET.
2. BEDDING MATERIAL SHALL EXTEND A MINIMUM OF 6" BELOW THE PIPE. BEDDING MATERIAL PER 39.35.040 B.
3. ASPHALT SHALL BE CUT TO THE SPECIFIED WIDTH DURING PIPELINE CONSTRUCTION AND SUBSURFACE RESTORATION. THE FINAL SAW-CUT SHALL BE AN ADDITIONAL 12" WIDER THAN THE EXISTING TRENCH ON EACH SIDE, REMOVING THE ASPHALT AND PROCEEDING WITH THE REMAINDER OF THE RESTORATION.
4. USE APWA NO. 4 SEWER ROCK FOR GRAVITY PIPE BEDDING MATERIAL. USE SAND AS A BEDDING MATERIAL FOR PRESSURE PIPE AND ELECTRICAL AND COMMUNICATION CONDUIT. BEDDING SAND MUST COMPACT SUFFICIENTLY TO SUPPORT THE PIPE AND SHALL MEET THE CITY'S GRADATION.

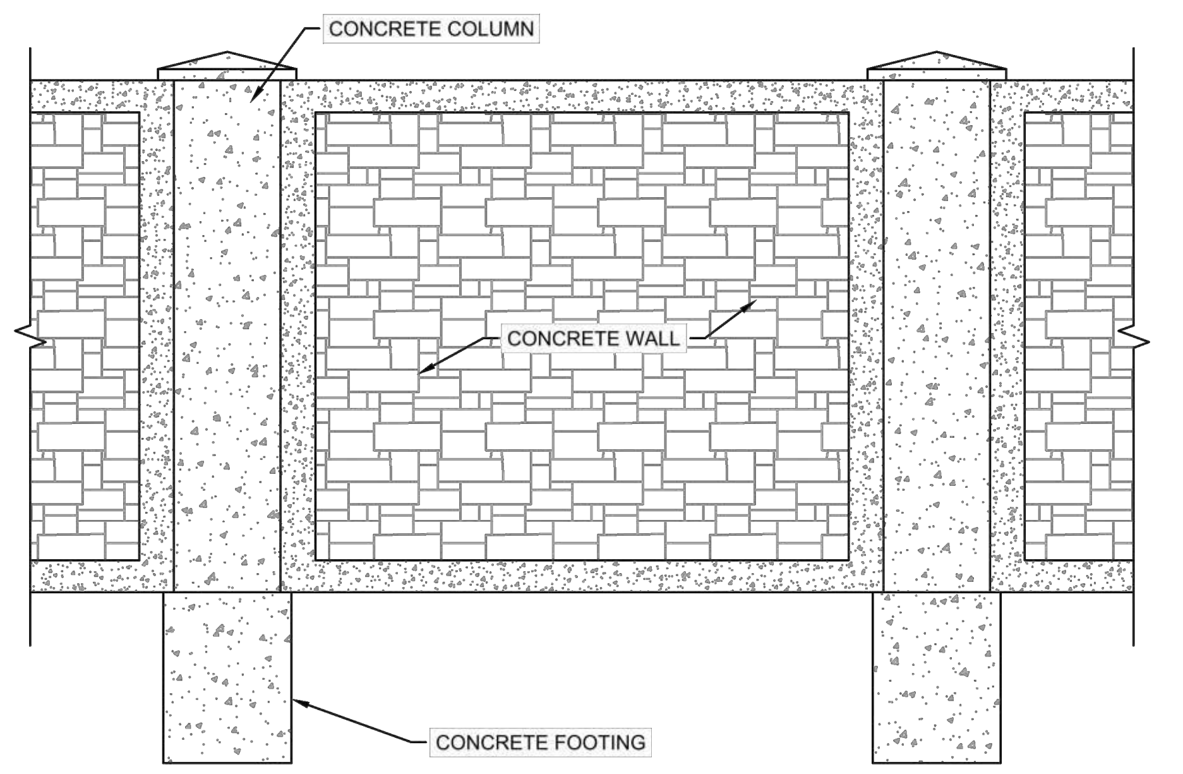
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
ASPHALT RESTORATION
DEEP EXCAVATION & UTILITY POTHOLE REPAIR

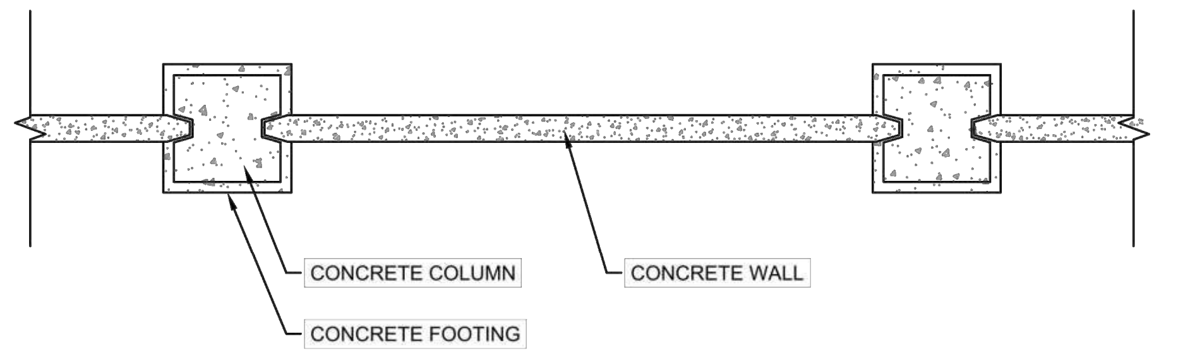
DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 10/6/2020

SCALE
NONE

STANDARD
G-101



WALL FRONT VIEW



WALL PLAN VIEW

NOTES:

1. CONCRETE WALL SHALL BE REQUIRED ALONG ARTERIAL, COLLECTOR STREETS AND DIVISIONS BETWEEN LAND USES AS DEFINED IN TITLE 15.
2. IF CONCRETE WALL IS TO BE ALONG I-15, US-6 OR RAILROAD TRACKS THE WALL SHALL BE 8' TALL.
3. THE WALL SHALL BE STAINED WITH A BASE COAT AND 3 OTHER COLORS OR IF WALL TO BE BLOCK THEN IT NEEDS TO BE GRAFFITI PROOFED. THE WALL COLORS MUST BE REVIEWED AND APPROVED BY THE CITY ENGINEER OR HIS/HER DESIGNEE.
4. SEE STREET IMPROVEMNETS 4.39.20.030. F. FOR WALL TYPES AND COLORS.

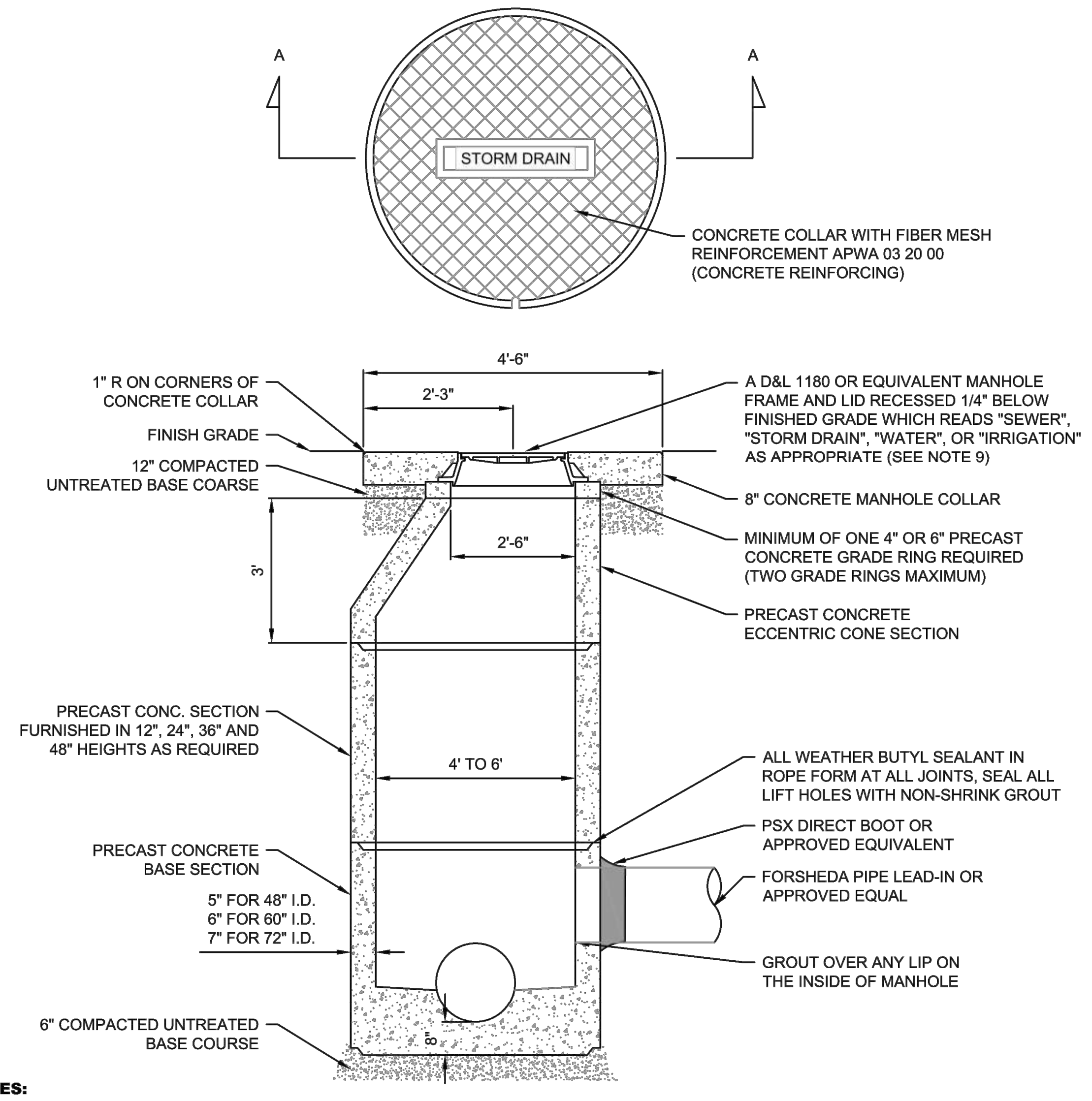
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
CONCRETE WALL DETAIL

DRAWN: JLR
DESIGN: MHC
REVISION:
DATE: 10/6/2020

SCALE
NONE

STANDARD
G-113


A
A
STORM DRAIN
CONCRETE COLLAR WITH FIBER MESH REINFORCEMENT APWA 03 20 00 (CONCRETE REINFORCING)
4'-6"
2'-3"
1" R ON CORNERS OF CONCRETE COLLAR
FINISH GRADE
12" COMPACTED UNTREATED BASE COARSE
A D&L 1180 OR EQUIVALENT MANHOLE FRAME AND LID RECESSED 1/4" BELOW FINISHED GRADE WHICH READS "SEWER", "STORM DRAIN", "WATER", OR "IRRIGATION" AS APPROPRIATE (SEE NOTE 9)
8" CONCRETE MANHOLE COLLAR
2'-6"
3'
MINIMUM OF ONE 4" OR 6" PRECAST CONCRETE GRADE RING REQUIRED (TWO GRADE RINGS MAXIMUM)
PRECAST CONCRETE ECCENTRIC CONE SECTION
PRECAST CONC. SECTION FURNISHED IN 12", 24", 36" AND 48" HEIGHTS AS REQUIRED
4' TO 6'
ALL WEATHER BUTYL SEALANT IN ROPE FORM AT ALL JOINTS, SEAL ALL LIFT HOLES WITH NON-SHRINK GROUT
PSX DIRECT BOOT OR APPROVED EQUIVALENT
PRECAST CONCRETE BASE SECTION
FORSHEDA PIPE LEAD-IN OR APPROVED EQUAL
5" FOR 48" I.D.
6" FOR 60" I.D.
7" FOR 72" I.D.
GROUT OVER ANY LIP ON THE INSIDE OF MANHOLE
6" COMPACTED UNTREATED BASE COURSE
8"

NOTES:

1. USE 4' I.D. MANHOLES FOR MAIN LINES LESS THEN 18" IN DIAMETER; 5' I.D. MANHOLES FOR MAIN LINES 18" TO 30" IN DIAMETER, AND 6' I.D. FOR MAIN LINES GREATER THAN 30" IN DIAMETER.
2. FLAT LIDS MAY BE USED IN LIEU OF ECCENTRIC CONES WHERE NECESSARY. FLAT LIDS SHALL BE OF ECCENTRIC DESIGN AND MEET H20 LIVE LOADING. NO FLAT RING AND COVERS WILL BE ALLOWED UNLESS APPROVED BY CITY ENGINEER OR HIS/HER DESIGNEE.
3. MANHOLE RIMS PLACED IN FIELDS SHALL HAVE SOLID LIDS AND BE BURIED 2 FEET DEEP.
4. MANHOLE RIMS OUT OF STREETS SHALL BE PLACED 4 INCHES ABOVE GRADE.
5. CONCRETE COLLAR AND RIM SHALL BE INSTALLED 1/4" BELOW PAVEMENT SURFACE AFTER THE 1 YEAR PRESERVATION COAT.
6. MANHOLE COLLARS AND RINGS SHALL BE PROTECTED BY A COVERING DURING A SEAL COAT.
7. STORM MANHOLES MAY HAVE FLAT BOTTOMS IN THE BASES.
8. CONCRETE COLLAR SHALL BE PLACED AFTER THE 1 YEAR PRESERVATION COAT WHEN APPLICABLE.
9. IN PAVED AREAS WITH A SLOPE GREATER THAN 5% USE AN EJIW 3624 TWIST BASE OR APPROVED EQUIVALENT.
10. ALL STORM DRAIN MANHOLES CONNECTED TO STORM DRAIN INLETS SHALL HAVE A FLAT BOTTOM WITH 18" MIN. FROM FLOW LINE TO BOTTOM OF BOX.
11. ALL STORM DRAIN MANHOLES NOT CONNECTED TO AN INLET BOX SHALL HAVE A TROUGH.

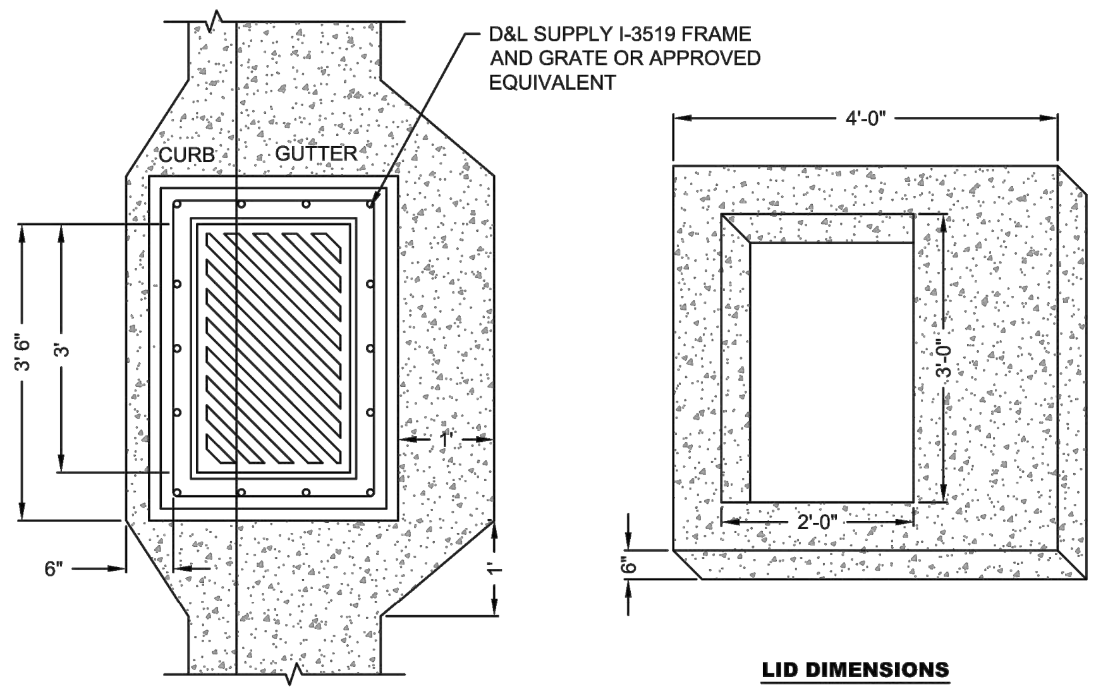
SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
STORM DRAIN MANHOLE

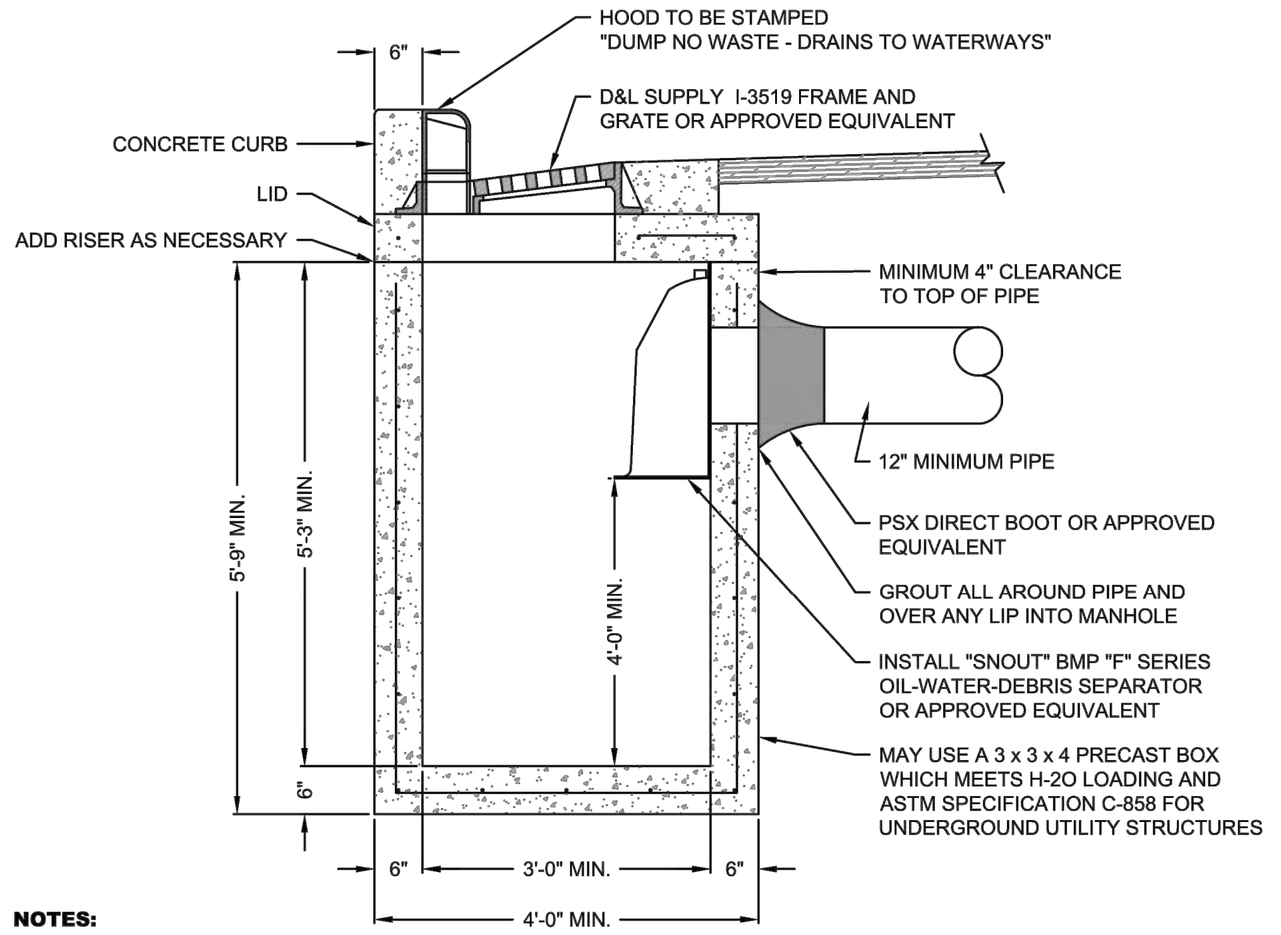
DRAWN: JLR
DESIGN: CJP
CHECK: CMT
DATE: 6/15/18

SCALE:
NONE

STANDARD
SD-401



LID DIMENSIONS


HOOD TO BE STAMPED
"DUMP NO WASTE - DRAINS TO WATERWAYS"
6"
D&L SUPPLY I-3519 FRAME AND GRATE OR APPROVED EQUIVALENT
CONCRETE CURB
LID
ADD RISER AS NECESSARY
MINIMUM 4" CLEARANCE TO TOP OF PIPE
12" MINIMUM PIPE
PSX DIRECT BOOT OR APPROVED EQUIVALENT
GROUT ALL AROUND PIPE AND OVER ANY LIP INTO MANHOLE
INSTALL "SNOUT" BMP "F" SERIES OIL-WATER-DEBRIS SEPARATOR OR APPROVED EQUIVALENT
MAY USE A 3 x 3 x 4 PRECAST BOX WHICH MEETS H-2O LOADING AND ASTM SPECIFICATION C-858 FOR UNDERGROUND UTILITY STRUCTURES
5'-9" MIN.
5'-3" MIN.
4'-0" MIN.
6"
6"
3'-0" MIN.
6"
4'-0" MIN.

NOTES:

1. ALL STORM TRANSMISSION LINES SHALL RUN THROUGH STORM MANHOLES.
2. BOX SHALL BE SIZED ACCORDING TO TABLE ON STANDARD #32.
3. UNLESS OTHERWISE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER, #4 REBAR WILL BE SPACED AT MINIMUM OF 12" O.C. IN ALL DIRECTIONS IN CONCRETE, ALL REBAR SHALL OVERLAP A MINIMUM OF 14".
4. KNOCKOUT BOXES SHALL BE ALLOWED WITH CONCRETE COLLARS.

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
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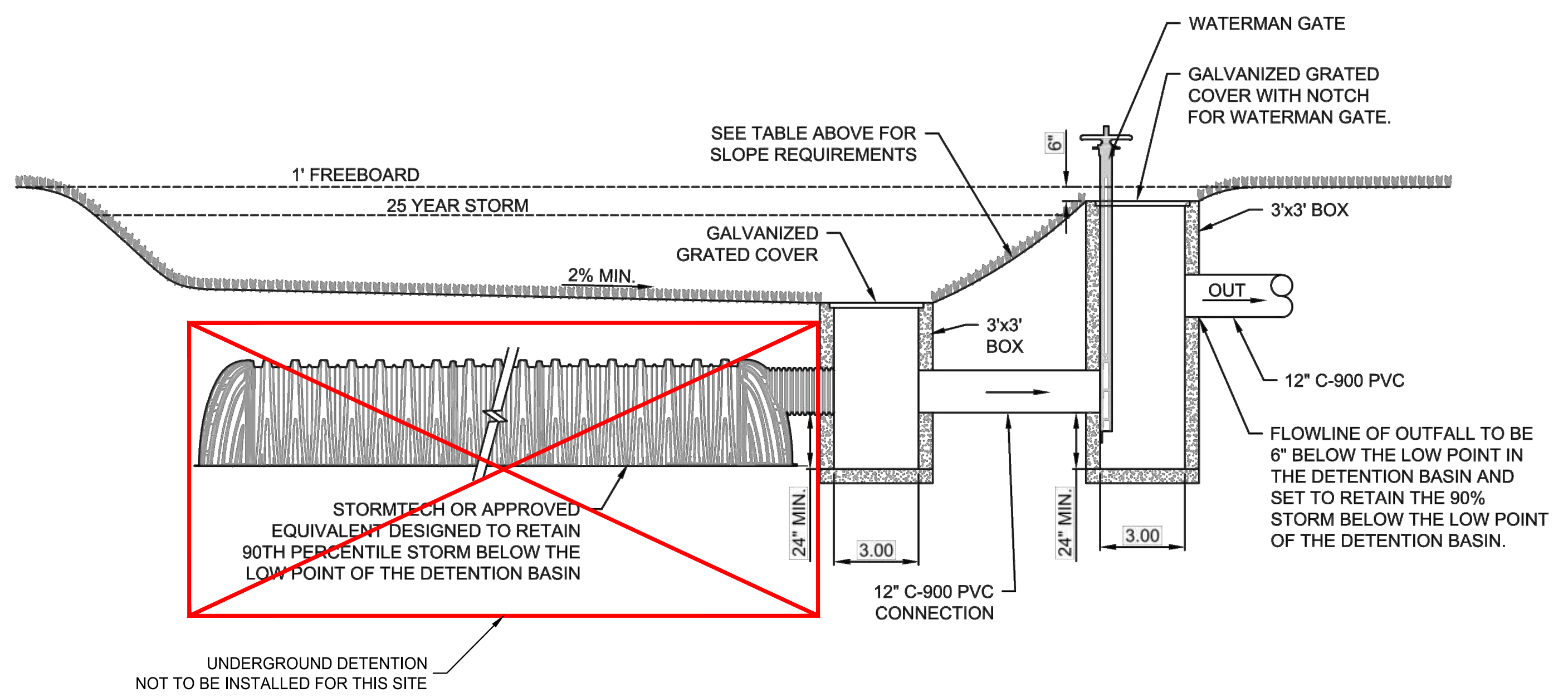
STANDARD DRAWING
STORM WATER INLET BOX

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 10/6/2020

SCALE
NONE

STANDARD
SD-404

DEPTH	SLOPE
18"	2:1
3'	3:1
ABOVE 3'	4:1


WATERMAN GATE
GALVANIZED GRATED COVER WITH NOTCH FOR WATERMAN GATE.
SEE TABLE ABOVE FOR SLOPE REQUIREMENTS
6"
1' FREEBOARD
25 YEAR STORM
3'x3' BOX
GALVANIZED GRATED COVER
2% MIN.
OUT
3'x3' BOX
12" C-900 PVC
FLOWLINE OF OUTFALL TO BE 6" BELOW THE LOW POINT IN THE DETENTION BASIN AND SET TO RETAIN THE 90% STORM BELOW THE LOW POINT OF THE DETENTION BASIN.
~~STORMTECH OR APPROVED EQUIVALENT DESIGNED TO RETAIN 90TH PERCENTILE STORM BELOW THE LOW POINT OF THE DETENTION BASIN~~
24" MIN.
3.00
24" MIN.
3.00
12" C-900 PVC CONNECTION
UNDERGROUND DETENTION NOT TO BE INSTALLED FOR THIS SITE

SPANISH FORK CITY
40 SOUTH MAIN STREET
SPANISH FORK, UT 84660
(801) 804-4550

STANDARD DRAWING
LOW IMPACT DEVELOPMENT (LID) DETENTION BASIN OVERFLOW

DRAWN: JLR
DESIGN: MHC
REVISION: .
DATE: 6/19/2018

SCALE
NONE

STANDARD
SD-411

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS

ORIGINAL SUBMISSION FOR AUTHORIZATION
REVISIONS

SCALE: NTS
DWG NAME: C-501_DETAILS
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

Jones & DeMille Engineering, Inc.
CIVIL & STRUCTURAL ENGINEERING - SURVEYING
GIS - ENVIRONMENTAL - MATERIALS TESTING
1.800.748.5275 www.jonesanddemille.com

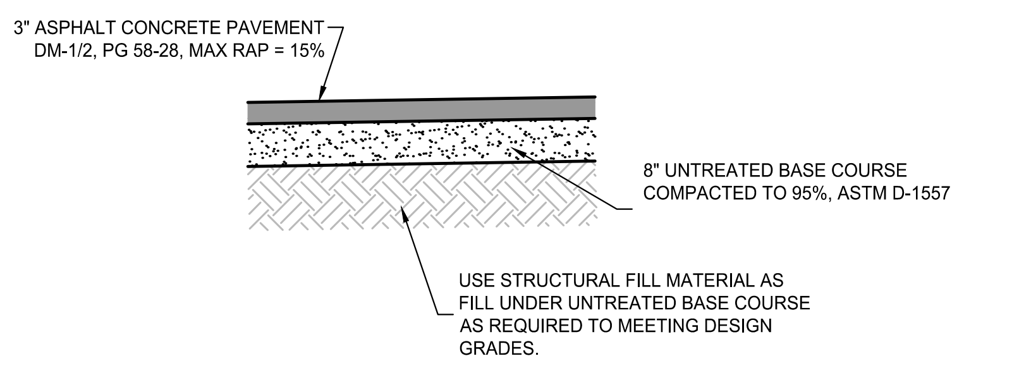
APPROVAL RECOMM: PROJECT DESIGN ENGINEER DATE
APPROVED: QUALITY MANAGEMENT REVIEW DATE

SPANISH FORK CITY
FACILITIES SHOP SITE
DETAILS

PROJECT NUMBER: 2201-005
SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

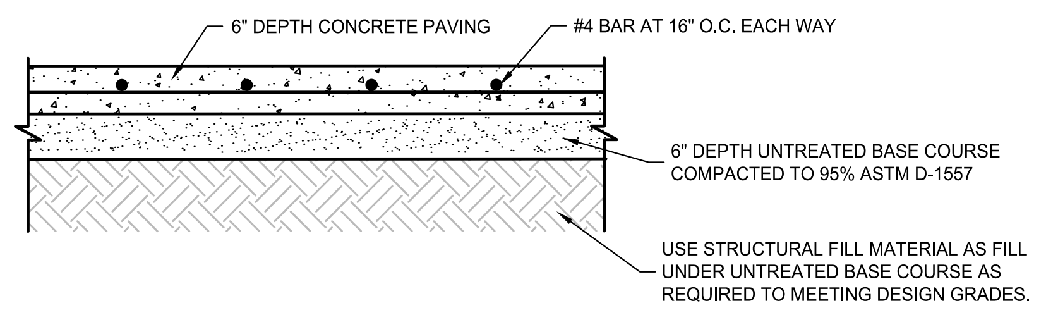
UTAH
COUNTY

SHEET NO. C-502

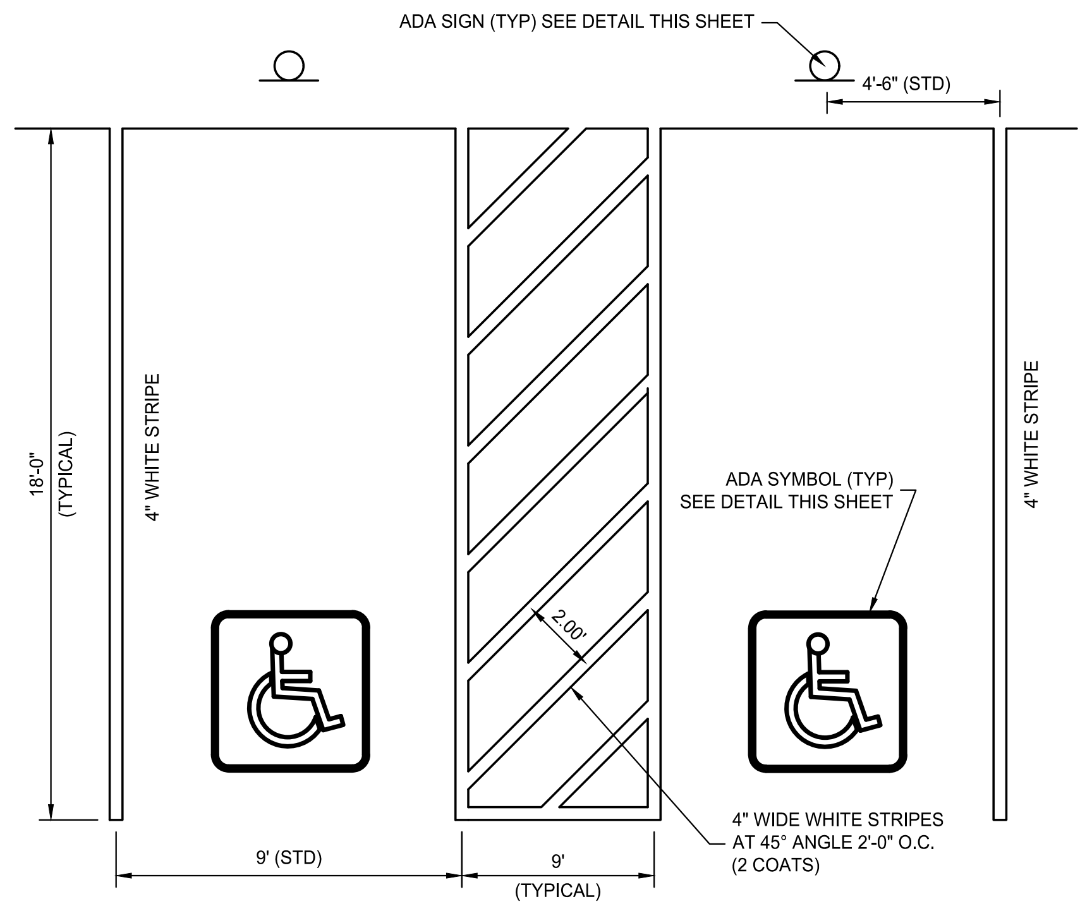

3" ASPHALT CONCRETE PAVEMENT
DM-1/2, PG 58-28, MAX RAP = 15%
8" UNTREATED BASE COURSE
COMPACTED TO 95%, ASTM D-1557
USE STRUCTURAL FILL MATERIAL AS FILL UNDER UNTREATED BASE COURSE AS REQUIRED TO MEETING DESIGN GRADES.

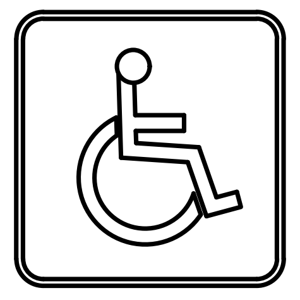
NOTES:
1. BASE COURSE TO HAVE A MINIMUM CBR VALUE OF 70

K1 *ASPHALT PAVING*


6" DEPTH CONCRETE PAVING
#4 BAR AT 16" O.C. EACH WAY
6" DEPTH UNTREATED BASE COURSE
COMPACTED TO 95% ASTM D-1557
USE STRUCTURAL FILL MATERIAL AS FILL UNDER UNTREATED BASE COURSE AS REQUIRED TO MEETING DESIGN GRADES.

G1 *CONCRETE PAVING*

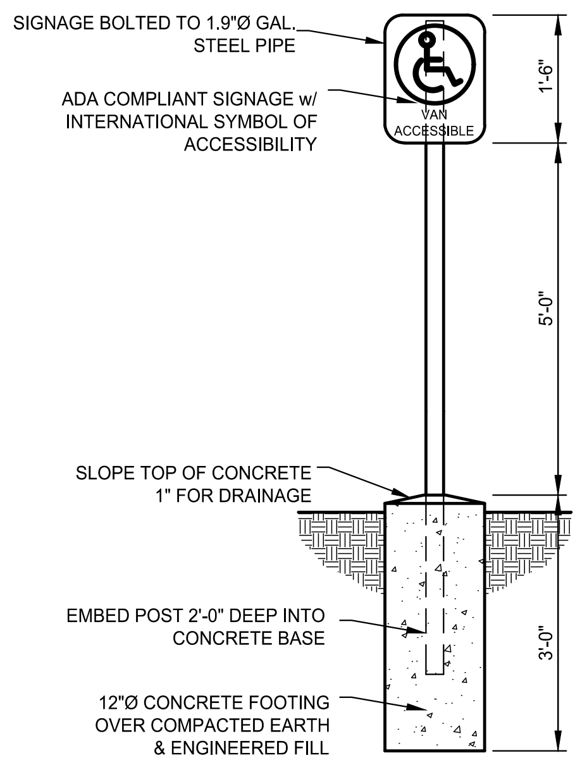




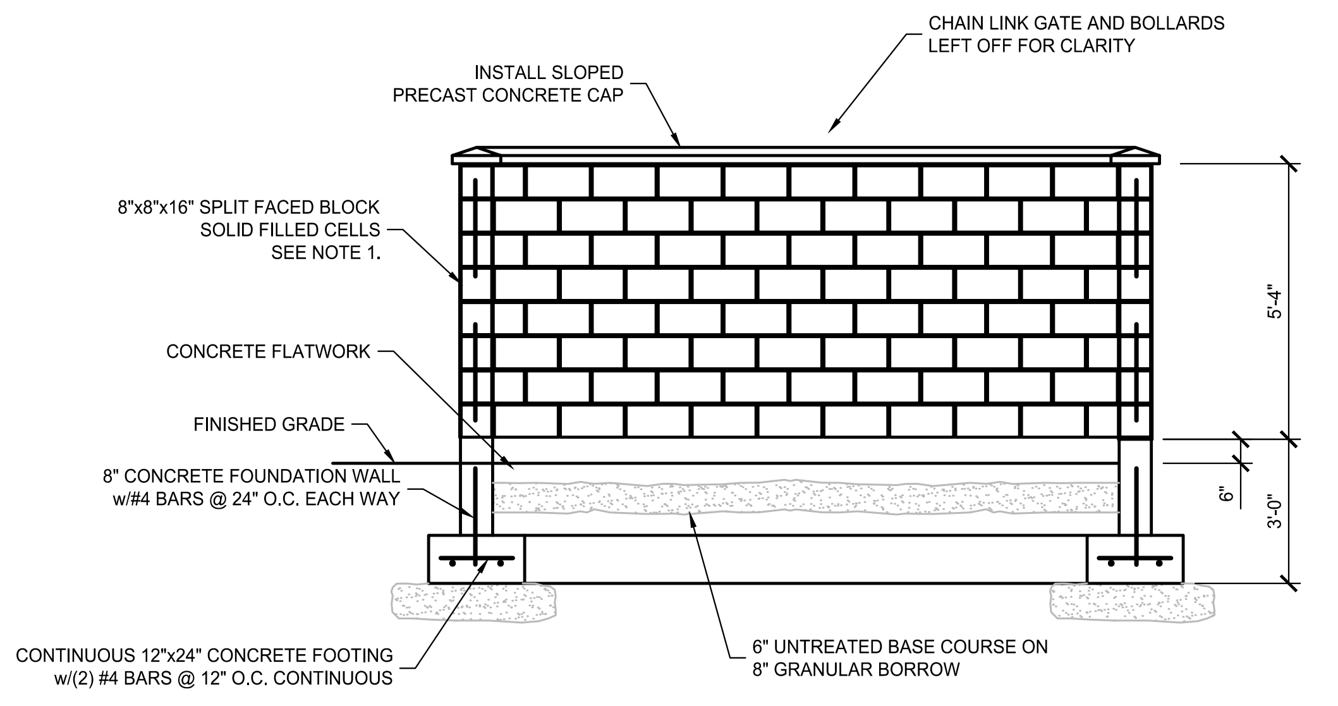
PAINTED EMBLEM ON ASPHALT PAVING TYP. AT ALL ADA PARKING STALLS PER CITY REQUIREMENTS. (2 COATS)

NOTE: SEE SPECIFICATIONS FOR PAINT TYPE AND COLOR. (2 COATS)

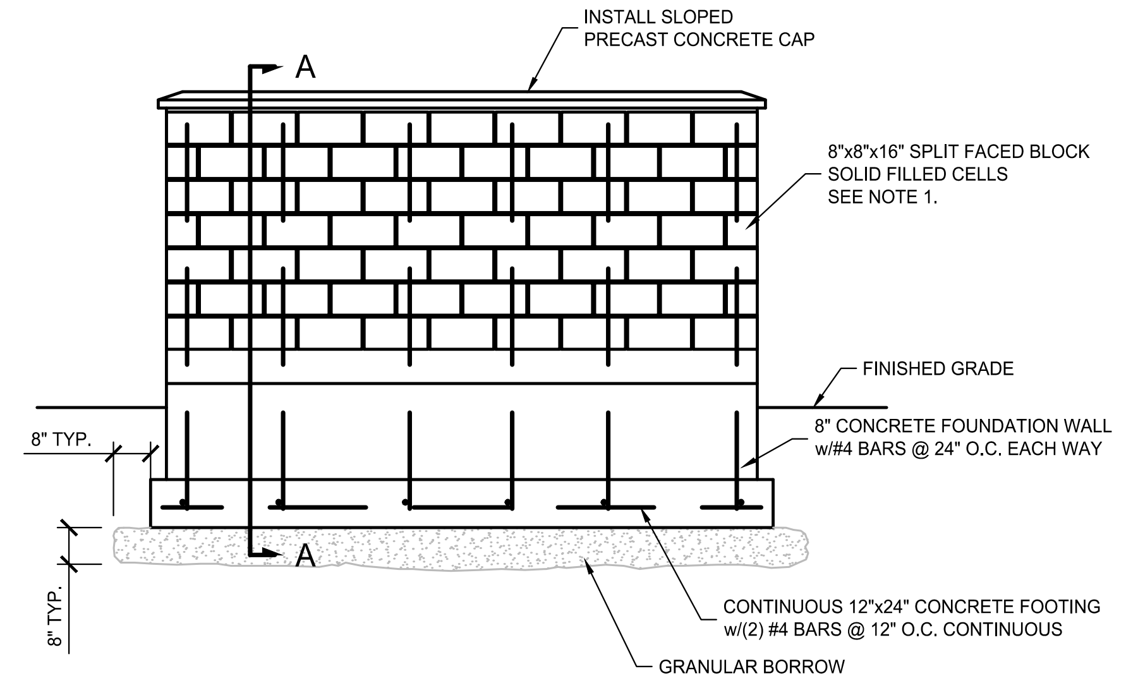
G5 *ADA PARKING STALLS*


SIGNAGE BOLTED TO 1.9"Ø GAL. STEEL PIPE
ADA COMPLIANT SIGNAGE w/ INTERNATIONAL SYMBOL OF ACCESSIBILITY
VAN ACCESSIBLE
1'-6"
5'-0"
SLOPE TOP OF CONCRETE 1" FOR DRAINAGE
EMBED POST 2'-0" DEEP INTO CONCRETE BASE
12"Ø CONCRETE FOOTING OVER COMPACTED EARTH & ENGINEERED FILL
3'-0"

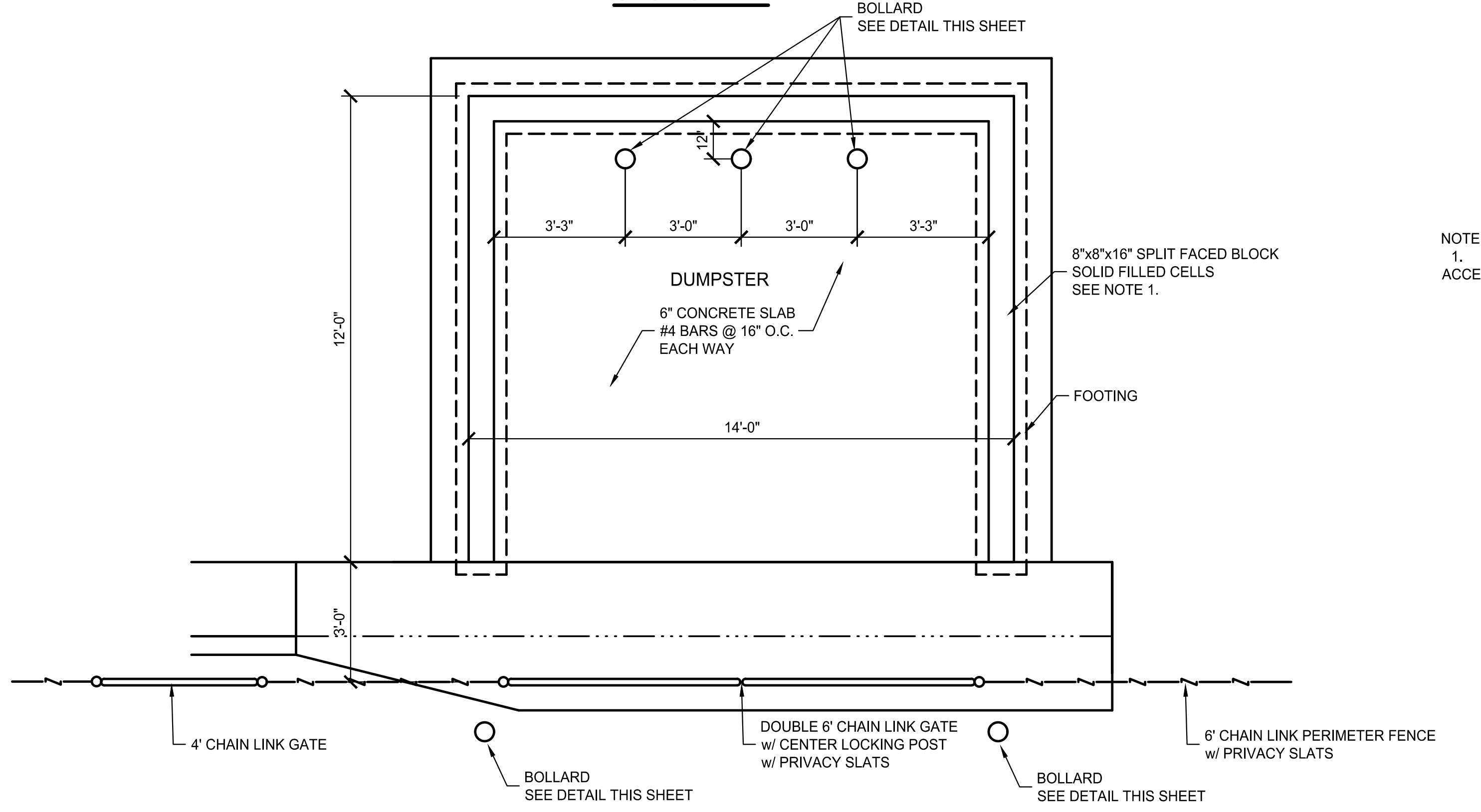
G13 *ADA PARKING SIGN*


CHAIN LINK GATE AND BOLLARDS LEFT OFF FOR CLARITY
INSTALL SLOPED PRECAST CONCRETE CAP
8"x8"x16" SPLIT FACED BLOCK SOLID FILLED CELLS SEE NOTE 1.
CONCRETE FLATWORK
FINISHED GRADE
8" CONCRETE FOUNDATION WALL w/#4 BARS @ 24" O.C. EACH WAY
CONTINUOUS 12"x24" CONCRETE FOOTING w/(2) #4 BARS @ 12" O.C. CONTINUOUS
6" UNTREATED BASE COURSE ON 8" GRANULAR BORROW
5'-4"
6"
3'-0"

SECTION A-A


A
INSTALL SLOPED PRECAST CONCRETE CAP
8"x8"x16" SPLIT FACED BLOCK SOLID FILLED CELLS SEE NOTE 1.
FINISHED GRADE
8" CONCRETE FOUNDATION WALL w/#4 BARS @ 24" O.C. EACH WAY
8" TYP.
8" TYP.
A
CONTINUOUS 12"x24" CONCRETE FOOTING w/(2) #4 BARS @ 12" O.C. CONTINUOUS
GRANULAR BORROW

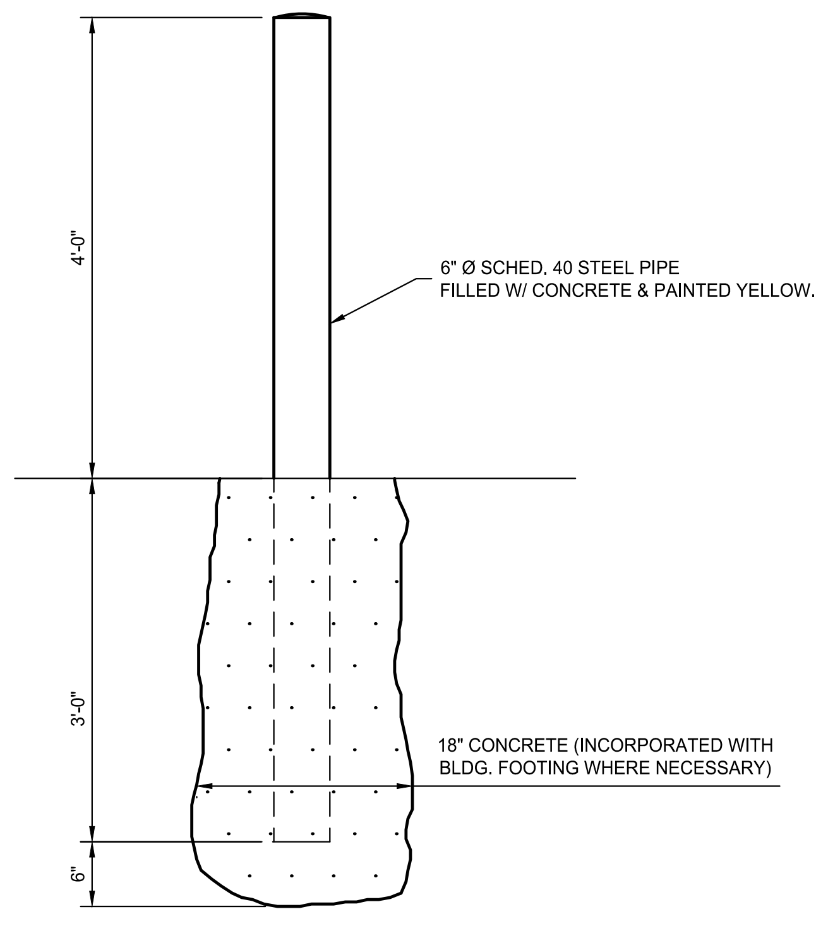
SIDE VIEW


BOLLARD SEE DETAIL THIS SHEET
12"
3'-3"
3'-0"
3'-0"
3'-3"
DUMPSTER
6" CONCRETE SLAB #4 BARS @ 16" O.C. EACH WAY
8"x8"x16" SPLIT FACED BLOCK SOLID FILLED CELLS SEE NOTE 1.
FOOTING
12'-0"
14'-0"
3'-0"
4' CHAIN LINK GATE
BOLLARD SEE DETAIL THIS SHEET
DOUBLE 6' CHAIN LINK GATE w/ CENTER LOCKING POST w/ PRIVACY SLATS
BOLLARD SEE DETAIL THIS SHEET
6' CHAIN LINK PERIMETER FENCE w/ PRIVACY SLATS

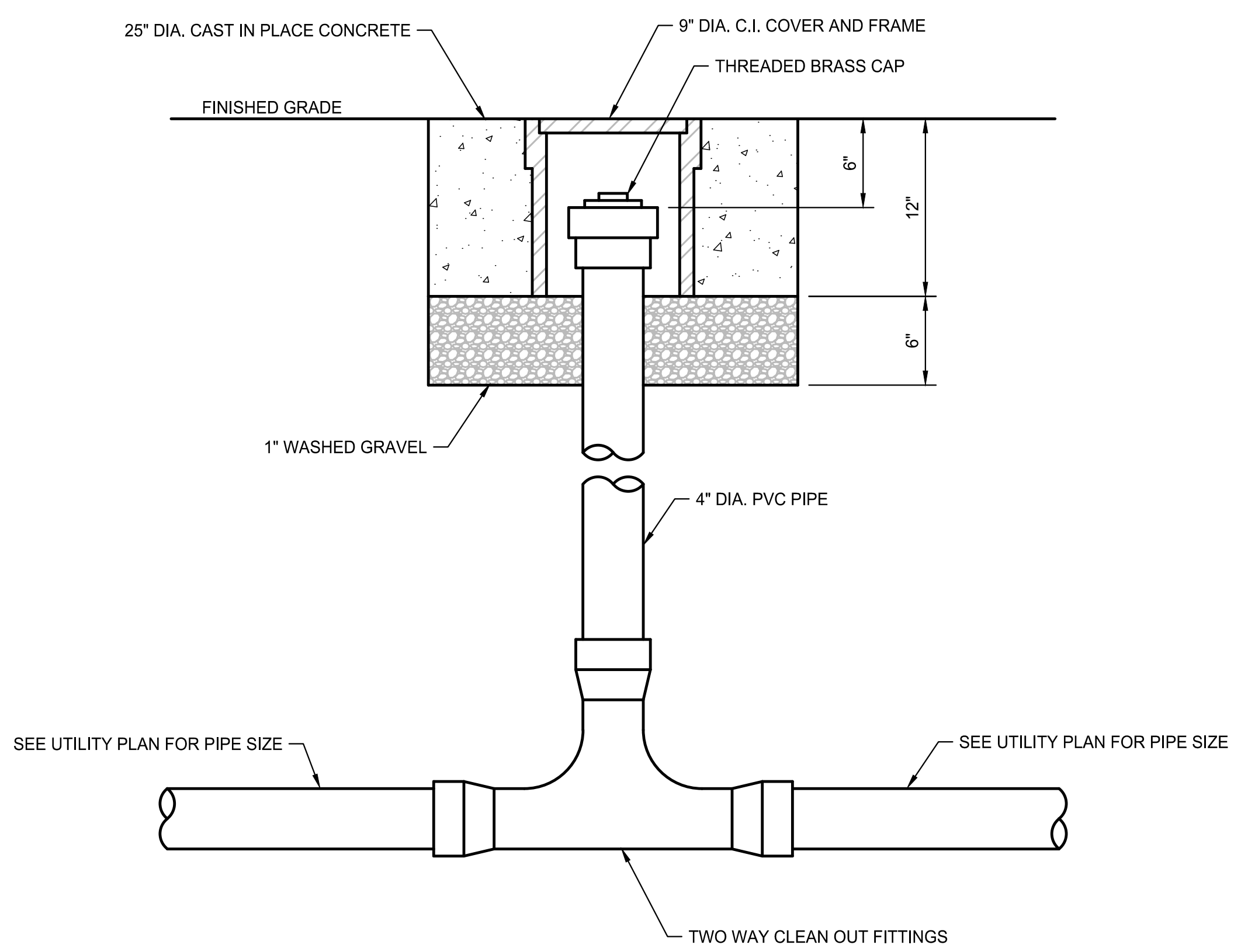
PLAN VIEW

NOTE:
1. BLOCK COLOR TO BE COORDINATED AND ACCEPTED BY ENGINEER AND OWNER.

A1 *DUMPSTER ENCLOSURE*


4'-0"
6" Ø SCHED. 40 STEEL PIPE FILLED W/ CONCRETE & PAINTED YELLOW.
3'-0"
18" CONCRETE (INCORPORATED WITH BLDG. FOOTING WHERE NECESSARY)
6"

A9 *PIPE BOLLARD*


25" DIA. CAST IN PLACE CONCRETE
9" DIA. C.I. COVER AND FRAME
THREADED BRASS CAP
FINISHED GRADE
6"
12"
6"
1" WASHED GRAVEL
4" DIA. PVC PIPE
SEE UTILITY PLAN FOR PIPE SIZE
SEE UTILITY PLAN FOR PIPE SIZE
TWO WAY CLEAN OUT FITTINGS

A13 *SEWER CLEAN OUT*

STAMP:

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ORIGINAL SUBMISSION FOR AUTHORIZATION

REVISIONS

SCALE: NTS
DWG NAME: C-501_DETAILS
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
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APPROVED: QUALITY MANAGEMENT REVIEW DATE

SPANISH FORK CITY

FACILITIES SHOP SITE

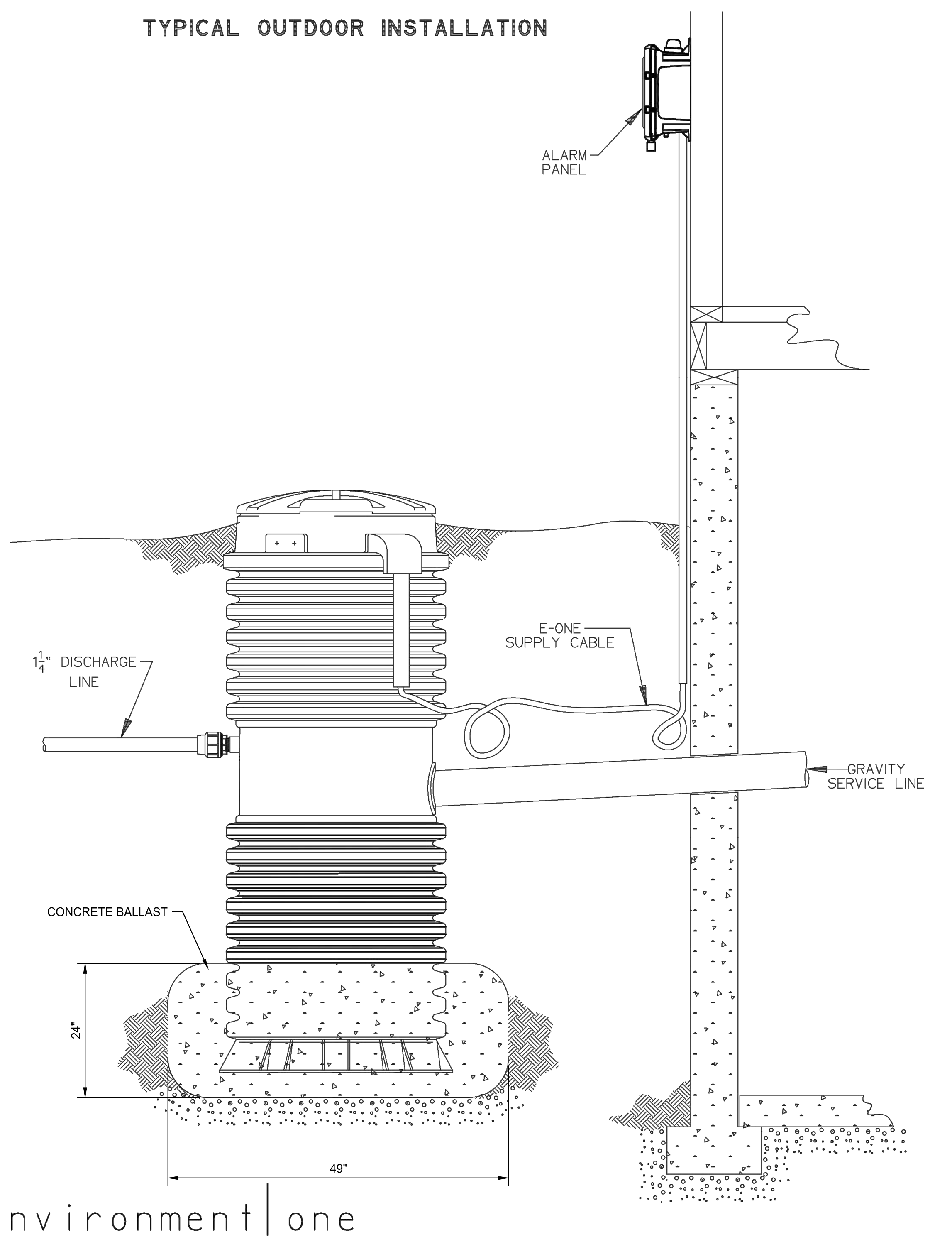
DETAILS

PROJECT NUMBER: 2201-005
SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION

UTAH
COUNTY

SHEET NO. C-503

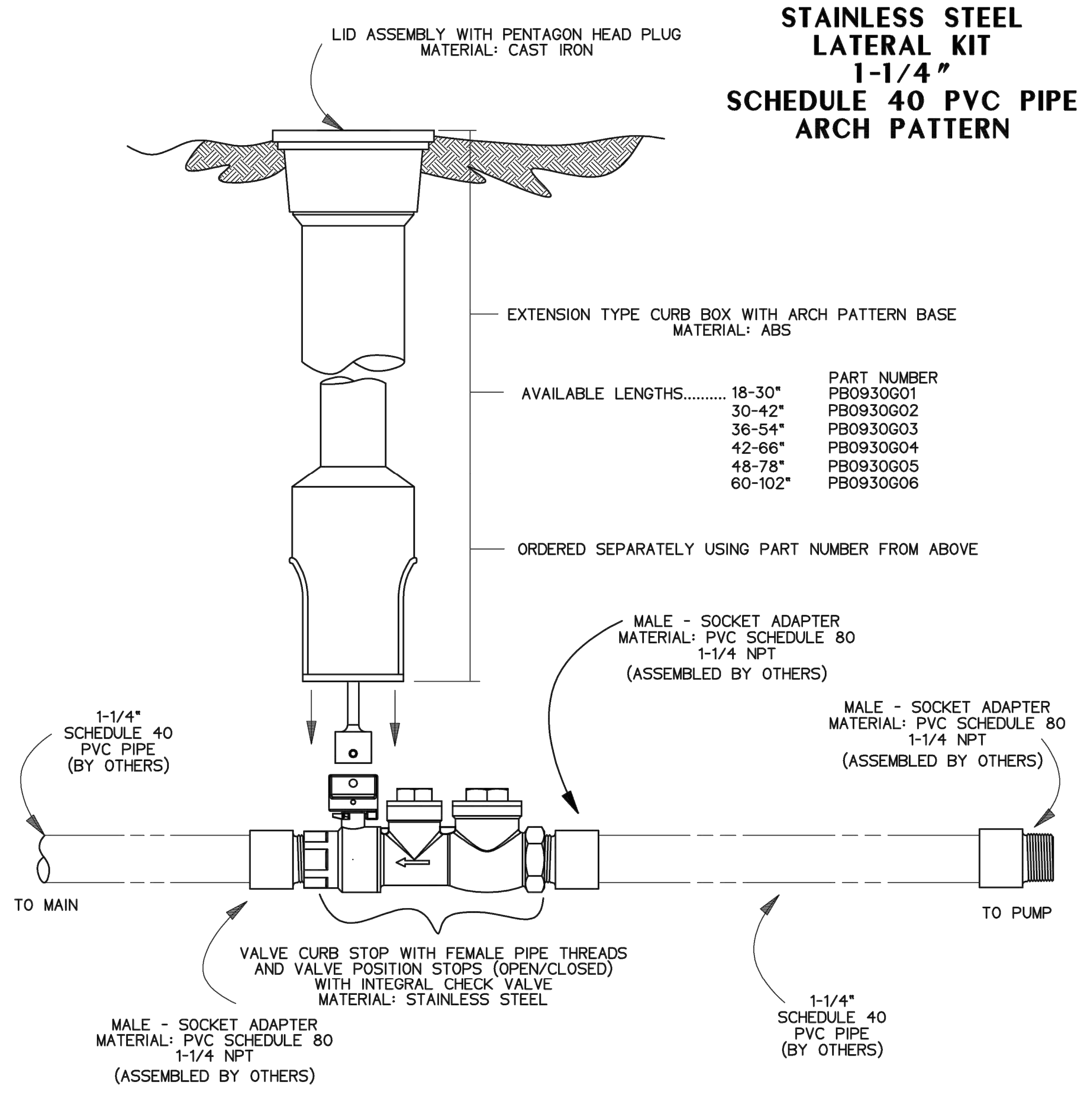
TYPICAL OUTDOOR INSTALLATION



environment | one
CORPORATION

LM000112 REV. B

STAINLESS STEEL LATERAL KIT 1-1/4" SCHEDULE 40 PVC PIPE ARCH PATTERN


LID ASSEMBLY WITH PENTAGON HEAD PLUG
MATERIAL: CAST IRON
EXTENSION TYPE CURB BOX WITH ARCH PATTERN BASE
MATERIAL: ABS
AVAILABLE LENGTHS.......... 18-30" PB0930G01
PART NUMBER
30-42" PB0930G02
36-54" PB0930G03
42-66" PB0930G04
48-78" PB0930G05
60-102" PB0930G06
ORDERED SEPARATELY USING PART NUMBER FROM ABOVE
MALE - SOCKET ADAPTER
MATERIAL: PVC SCHEDULE 80
1-1/4 NPT
(ASSEMBLED BY OTHERS)
1-1/4"
SCHEDULE 40
PVC PIPE
(BY OTHERS)
MALE - SOCKET ADAPTER
MATERIAL: PVC SCHEDULE 80
1-1/4 NPT
(ASSEMBLED BY OTHERS)
TO MAIN
TO PUMP
VALVE CURB STOP WITH FEMALE PIPE THREADS
AND VALVE POSITION STOPS (OPEN/CLOSED)
WITH INTEGRAL CHECK VALVE
MATERIAL: STAINLESS STEEL
MALE - SOCKET ADAPTER
MATERIAL: PVC SCHEDULE 80
1-1/4 NPT
(ASSEMBLED BY OTHERS)
1-1/4"
SCHEDULE 40
PVC PIPE
(BY OTHERS)

NOTES:

1. SS CURB STOP/CHECK VALVE AND FITTINGS ARE PROVIDED SEPARATELY, TO BE ASSEMBLED BY OTHERS
2. TO ASSEMBLE, APPLY A DOUBLE LAYER OF TEFLON TAPE, AND A LAYER OF PIPE DOPE (SUPPLIED BY OTHERS) TO THE THREADS ON THE PLASTIC FITTINGS AND INSTALL PER THE MANUFACTURER'S INSTRUCTIONS
   *FOR SS FITTING INTO SS THREAD, USE EITHER PIPE DOPE OR TEFLON TAPE, NOT BOTH
3. ASSEMBLY IS TO BE PRESSURE TESTED (BY OTHERS)
4. ASSEMBLY IS TO BE USED WITH SCHEDULE 40 PVC PIPE
5. TO ORDER SS LATERAL KIT, USE PART NUMBER NC0193G03
6. CURB BOX IS TO BE ORDERED SEPARATELY, SEE ABOVE

KIT PARTS ARE NOT ASSEMBLED

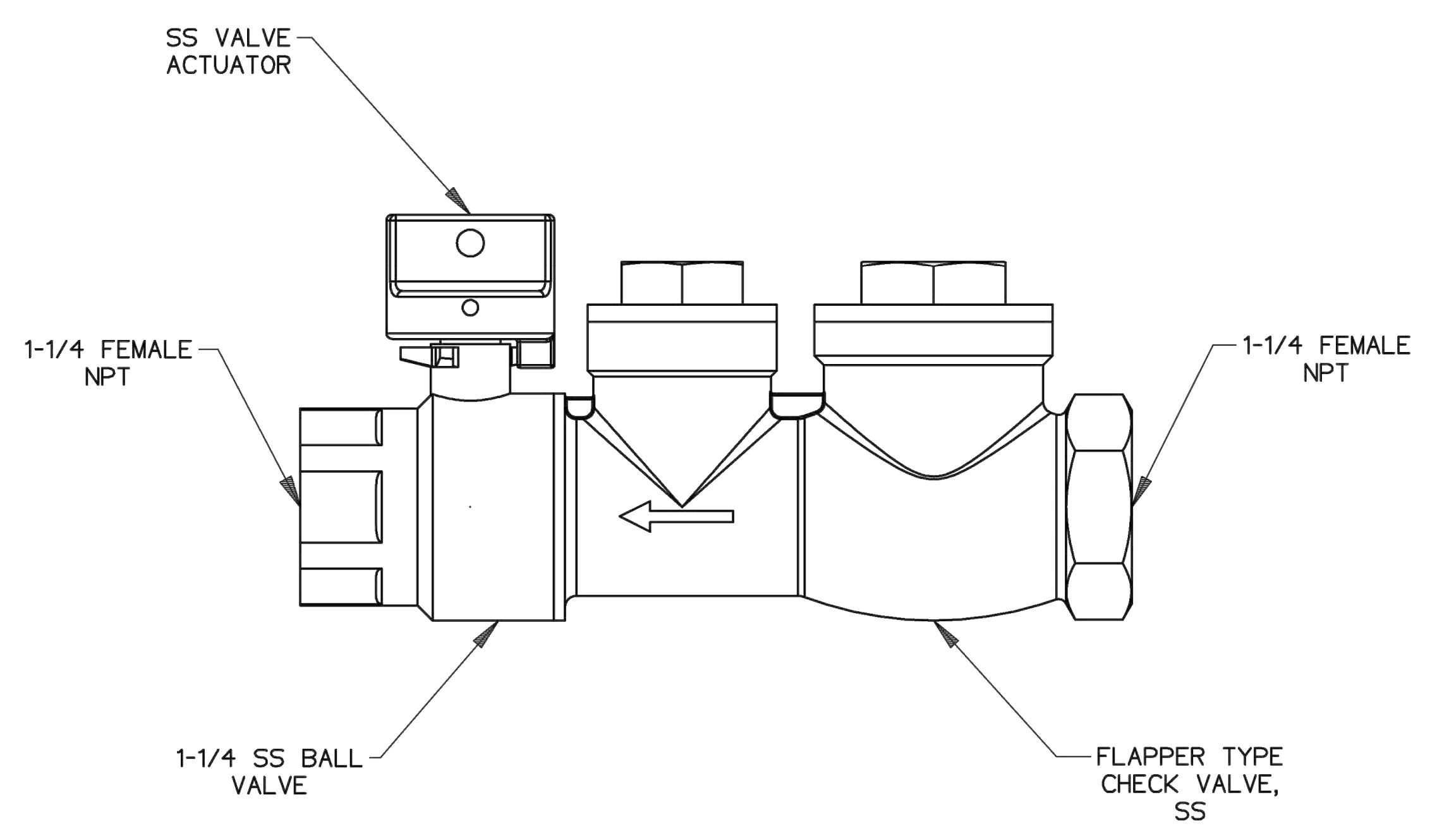
SGS	DN	11/02/11	C	3/16
DR BY	CHK'D	DATE	ISSUE	SCALE

eone
SEWER SYSTEMS

STAINLESS STEEL LATERAL KIT
1-1/4" SCHEDULE 40 PIPE

NA0330P04

STAINLESS STEEL LATERAL ASSEMBLY NO FITTINGS



PART IS A BALL VALVE CURB STOP WITH FEMALE PIPE THREADS, VALVE POSITION STOPS (OPEN/CLOSED), AND INTEGRAL CHECK VALVE
MATERIAL: STAINLESS STEEL

PRESSURE RATING: 235 PSI

TO ORDER SS LATERAL, NO FITTINGS
USE PART NUMBER NB0184P01

NOTES:

1. FOR SS FITTING INTO SS THREAD, USE PIPE DOPE OR TEFLON TAPE, NOT BOTH
2. FOR PLASTIC FITTINGS INTO SS THREAD, USE BOTH PIPE DOPE AND 2 LAYERS OF TEFLON TAPE

SGS	DN	09/20/11	A	3/16
DR BY	CHK'D	DATE	ISSUE	SCALE

eone
SEWER SYSTEMS

STAINLESS STEEL LATERAL ASSEMBLY
NO FITTINGS

NA0330P05

Lift Station Summary	
Lift Station Name	E|One DH-152
Inlet Pipe ID [in]	4
Discharge Pipe ID [in]	1.25
Rated Capacity [gal]	150
Pump Count	2
HP	1
RPM	1725
Volts	120 or 240
Hertz	60
Phase	Single

System Summary	
Design Flow Rate [gpm]	0.42
Length [ft]	135
Pipe Diameter [in]	1.25
Design Avg. Velocity [fps]	0.11
Min. Dynamic Head [ft]	12.09
Max. Dynamic Head [ft]	13.75
Min. H-W Coefficient	100
Max. H-W Coefficient	140

Elevation Summary - Reported Volumes

Description	Elevation	Wet Area Dia. [in]	Sum Vol. [gal]
Lift Station Invert	4580.04	24.5	0
Pump Off	4581.42	36.0	58
Pump On	4581.75	36.0	74
Alarm	4582.42	36.0	106
Pipe Invert In	4582.50	36.0	0
Top of Wet Well	4583.08	36.0	150
Rim Elevation	4590.50		

STAMP:

NO.	DATE	DESIGN REV. BY	DWGS CORR. BY	SHEETS AFFECTED	REQUEST BY	REMARKS

ORIGINAL SUBMISSION FOR AUTHORIZATION
REVISIONS

SCALE: NTS
DWG NAME: C-501_DETAILS
SHT SET: ####
DWG CREATED: 04/2022
PEN TBL: _1stndrd-ir2800.ctb
UPDATED: 1/13/2023
PLOTTED: 1/13/2023

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CIVIL & STRUCTURAL ENGINEERING - SURVEYING
GIS - ENVIRONMENTAL - MATERIALS TESTING
1.800.748.5275 www.jonesanddemille.com

APPROVAL RECOMM: PROJECT DESIGN ENGINEER DATE
APPROVED: QUALITY MANAGEMENT REVIEW DATE

SPANISH FORK CITY
FACILITIES SHOP SITE
DETAILS

SUBMITTAL: 90% REVIEW - NOT FOR CONSTRUCTION
PROJECT NUMBER: 2201-005

UTAH
COUNTY

SHEET NO. C-504

ELECTRICAL LEGEND

PRIMARY ELECTRICAL CONDUIT	—
SECONDARY ELECTRICAL CONDUIT	—
SHADOW CONDUIT	—
SERVICE DROP	∨
PRIMARY SECTIONALIZERS	1Ø 3Ø
STREETLIGHT	○
SECONDARY JUNCTION BOX	Ⓙ (PEDESTAL TYPE)
TRANSFORMERS	T (PAD) △ (POLE)

ELECTRIC NOTES:

1. CONDUIT FOR STREET LIGHTS SHALL BE 1" SCHEDULE 40 RIGID NONMETALLIC CONDUIT (RNC).
2. CONDUIT FOR SERVICE DROPS SHALL BE 2" (RNC).
3. CONDUIT FOR 1 PHASE AND SECONDARY CABLE SHALL BE 3" SCHEDULE 40 RIGID NONMETALLIC CONDUIT (RNC).
4. CONDUIT FOR 3 PHASE SHALL BE 6" SCHEDULE 40 RIGID NONMETALLIC CONDUIT (RNC).
5. LONG–RADIUS ELBOWS CONSTRUCTED OF EITHER RIGID METAL OR FIBERGLASS ARE REQUIRED FOR ANY ANGLE 45 DEG OR GREATER.
6. SECONDARY CABLE SHALL BE 4/O KCMIL URD TYPE UNLESS OTHERWISE SPECIFIED.
7. SECONDARY, 1 PHASE AND 3 PHASE TRANSFORMER CONDUITS SHALL BE AT A DEPTH OF 4' TO TOP OF CONDUIT.
8. 3 PHASE CONDUITS SHALL BE AT A DEPTH OF 6' TO TOP OF CONDUIT, UNLESS OTHERWISE SPECIFIED.
9. SERVICE DROP CONDUIT SHALL BE AT A DEPTH OF 4' TO TOP OF CONDUIT.
10. STREET LIGHT CONDUCTORS SHALL BE #10 STR CU TYPE THWN.
11. STREET LIGHTS SHALL BE LED, DECORATIVE POLE UNLESS OTHERWISE SPECIFIED.
12. (1)– SHADOW CONDUIT SHALL BE REQUIRED AT EACH POWER ROAD CROSSING. CONDUIT SHALL BE THE SAME SIZE AND TYPE AS LARGEST POWER CONDUIT BEING INSTALLED

COMMUNICATIONS LEGEND

COMMUNICATIONS CONDUIT	—
SHADOW CONDUIT	—
COMM. SERVICE DROP	∨
COMMUNICATIONS BOXES	Ⓒ SM, C M, C LG

SFCN NOTES:

1. CONDUIT FOR SERVICE DROPS SHALL BE 1" SCHEDULE 40 RIGID NONMETALLIC CONDUIT (RNC).
2. CONDUIT FOR SECONDARY RUNS SHALL BE 2" (RNC).
3. CONDUIT FOR MAIN RUNS SHALL BE 2" (RNC).
4. CONDUIT FOR FIBER OPTICS SHALL BE 3" (RNC) UNLESS OTHERWISE SPECIFIED.
5. LONG–RADIUS ELBOWS CONSTRUCTED OF EITHER RIGID METAL OR FIBERGLASS ARE REQUIRED FOR ANY ANGLE 45 DEG OR GREATER.
6. COMMUNICATIONS CONDUITS SHALL RUN BEHIND (FARTHEST FROM PROPERTY LINE) ELECTRICAL CONDUITS AND STUB UP BEHIND ELECTRICAL BOXES UNLESS OTHERWISE SPECIFIED.
7. (1)– SHADOW CONDUIT SHALL BE REQUIRED AT EACH COMMUNICATION ROAD CROSSING. CONDUIT SHALL BE THE SAME SIZE AND TYPE AS LARGEST COMMUNICATIONCONDUIT BEING INSTALLED

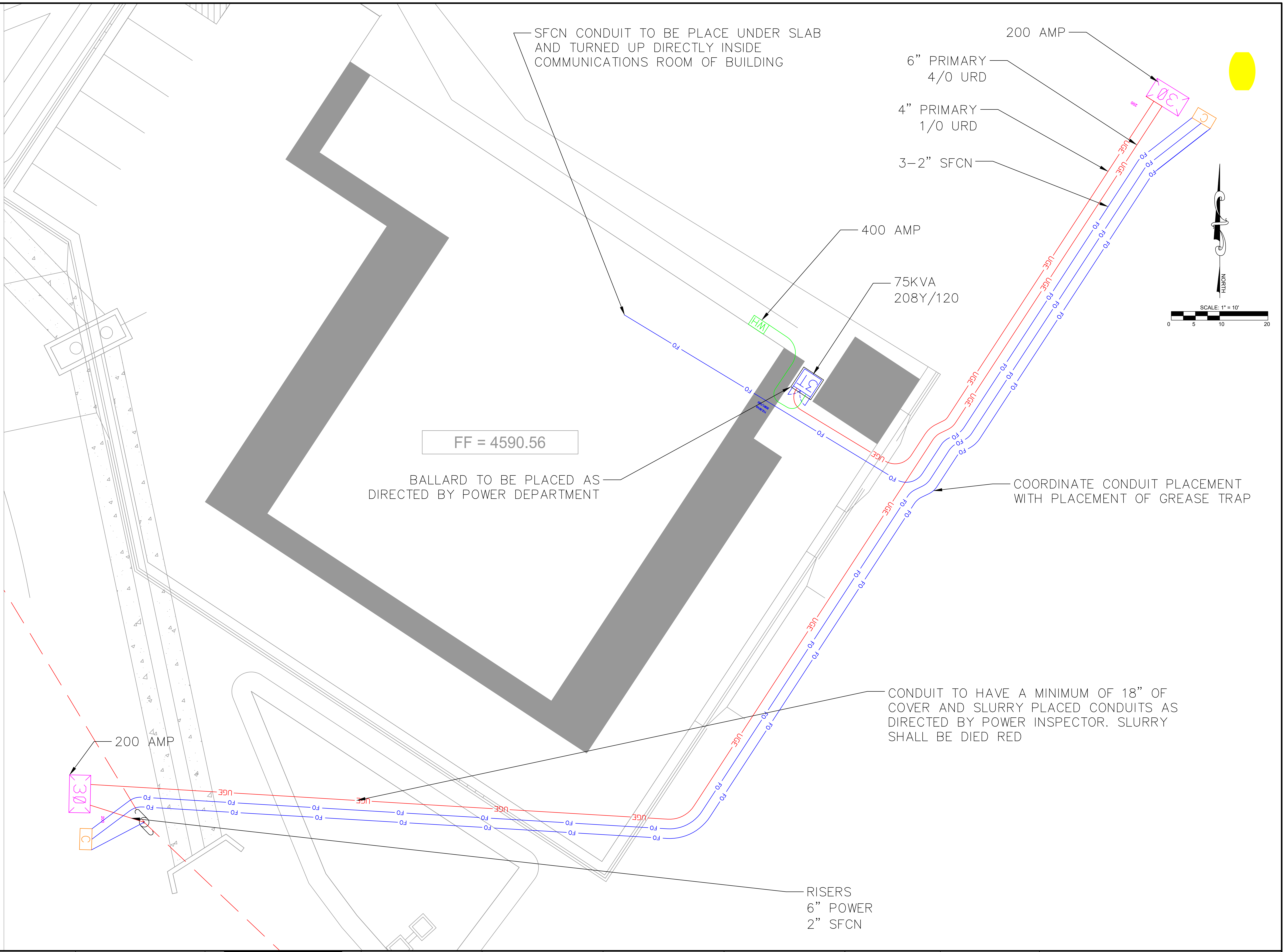
GENERAL NOTES:

DEVELOPER SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, EASEMENTS, AND RIGHTS–OF–WAY. DEVELOPER SHALL FOLLOW ALL OF SPANISH FORK CITY STANDARDS.

GENERAL NOTES:

THIS MAP IS INTENDED FOR INFORMATIONAL PURPOSES ONLY. THIS MAP DOES NOT SHOW THE ACTUAL, AND EXACT LOCATION(S) OF ANY CONDUITS, BOXES, LIGHTS, OR OTHER APPARATUS. THESE ITEMS SHALL BE PLACED ACCORDING TO SPANISH FORK CITY STANDARDS, AND BY FIELD VERIFICATION.

CONSTRUCTION NOTES:


SFCN CONDUIT TO BE PLACE UNDER SLAB AND TURNED UP DIRECTLY INSIDE COMMUNICATIONS ROOM OF BUILDING
200 AMP
6" PRIMARY 4/0 URD
4" PRIMARY 1/0 URD
3–2" SFCN
400 AMP
75KVA 208Y/120
FF = 4590.56
BALLARD TO BE PLACED AS DIRECTED BY POWER DEPARTMENT
COORDINATE CONDUIT PLACEMENT WITH PLACEMENT OF GREASE TRAP
CONDUIT TO HAVE A MINIMUM OF 18" OF COVER AND SLURRY PLACED CONDUITS AS DIRECTED BY POWER INSPECTOR. SLURRY SHALL BE DIED RED
200 AMP
RISERS
6" POWER
2" SFCN
30
C
UGE
FO
200
NORTH
SCALE: 1" = 10'
0
5
10
20

BUILDING & GROUNDS FACILITY

ELECTRICAL DESIGN

SFCN DESIGN

SPANISH FORK CITY ELECTRIC
2160 NORTH 175 EAST
SPANISH FORK, UTAH 84660
(801) 804-4430

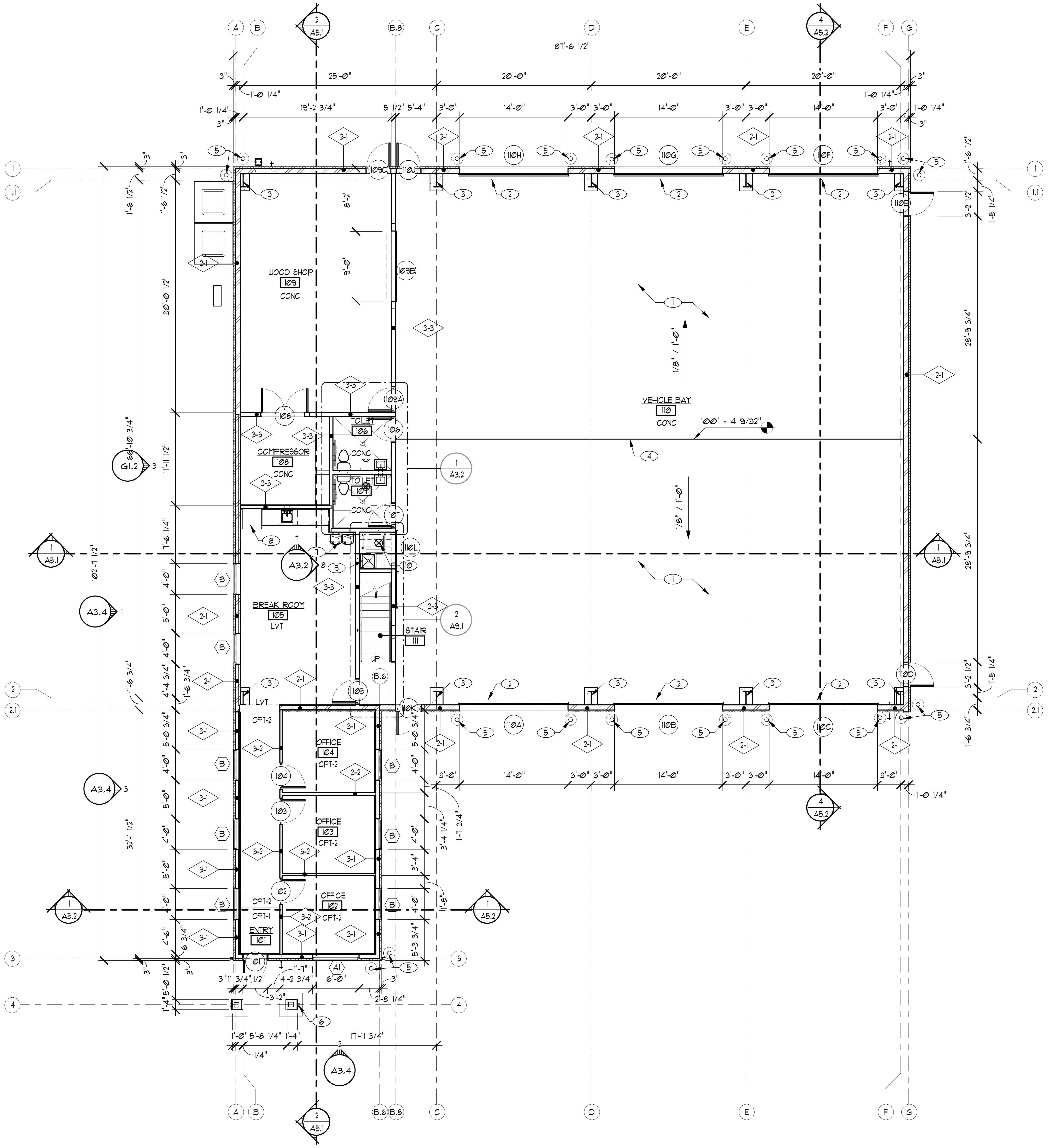
DISCLAIMER:
SPANISH FORK CITY makes no warranty with respect to the accuracy, completeness, or usefulness of these maps. Spanish Fork City assumes no liability for direct, indirect, special, or consequential damages resulting from the use or misuse of these maps or any of the information contained herein. Portions may be copied for incidental uses, but may not be resold.

SPANISH FORK
POWER & LIGHT

SCALE:	1"=30'	APPROVED:		ELECTRICAL CHECKED BY:	
DRAWN BY:	TOM COOPER	DRAWING APPROVAL:		SFCN CHECKED BY:	
DATE DRAWN:	01/09/2023	SHEET SIZE:	ARCH D		

ELECTRICAL APPROVED BY: DATE:

SFCN APPROVED BY: DATE:

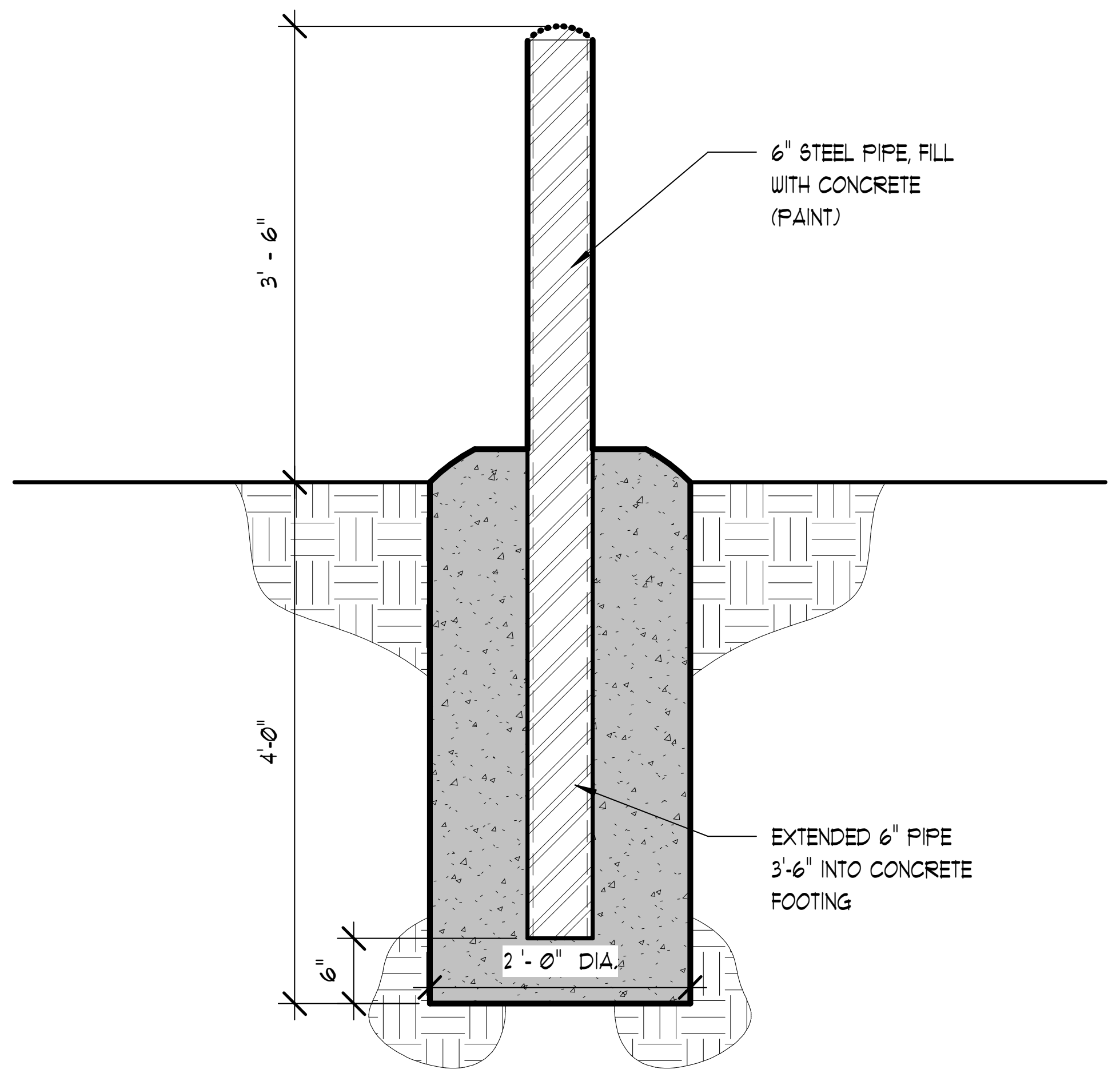


① MAIN FLOOR PLAN

1/8" = 1'-0"

SHEETNOTES:

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- ○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
- ⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3
- (1) CONCRETE SLAB, SEE STRUCTURAL DWG'S - SLOPE TO TRENCH DRAINS
- (2) TRENCH DRAINS - SEE PLUMBING DWG'S & DETAIL 2/A5.2
- (3) STEEL STRUCTURE PROVIDED BY METAL BUILDING MANUFACTURER, TYP.
- (4) FLOOR RIDGE LINE
- (5) CONC. FILLED PIPE BOLLARD - PAINT
- (6) 4" X 6" PRE-FINISHED METAL DOWNSPOUT
- (7) DRINKING FOUNTAIN WITH BOTTLE FILLER - SEE PLUMBING DWG'S
- (8) OWNER PROVIDED REFRIGERATOR - N.I.C.
- (9) MOP SINK - SEE PLUMBING DWG'S
- (10) OWNER PROVIDED ICE MAKER - N.I.C.
- (11) STANDING SEAM METAL ROOF BELOW - SEE ROOF PLAN


6" STEEL PIPE, FILL WITH CONCRETE (PAINT)
EXTENDED 6" PIPE 3'-6" INTO CONCRETE FOOTING
3' - 6"
4'-0"
6"
2'-0" DIA.

② BOLLARD DETAIL

3/4" = 1'-0"

CHECK SET - 01.11.2023

Date: 01.11.2023

Revision:

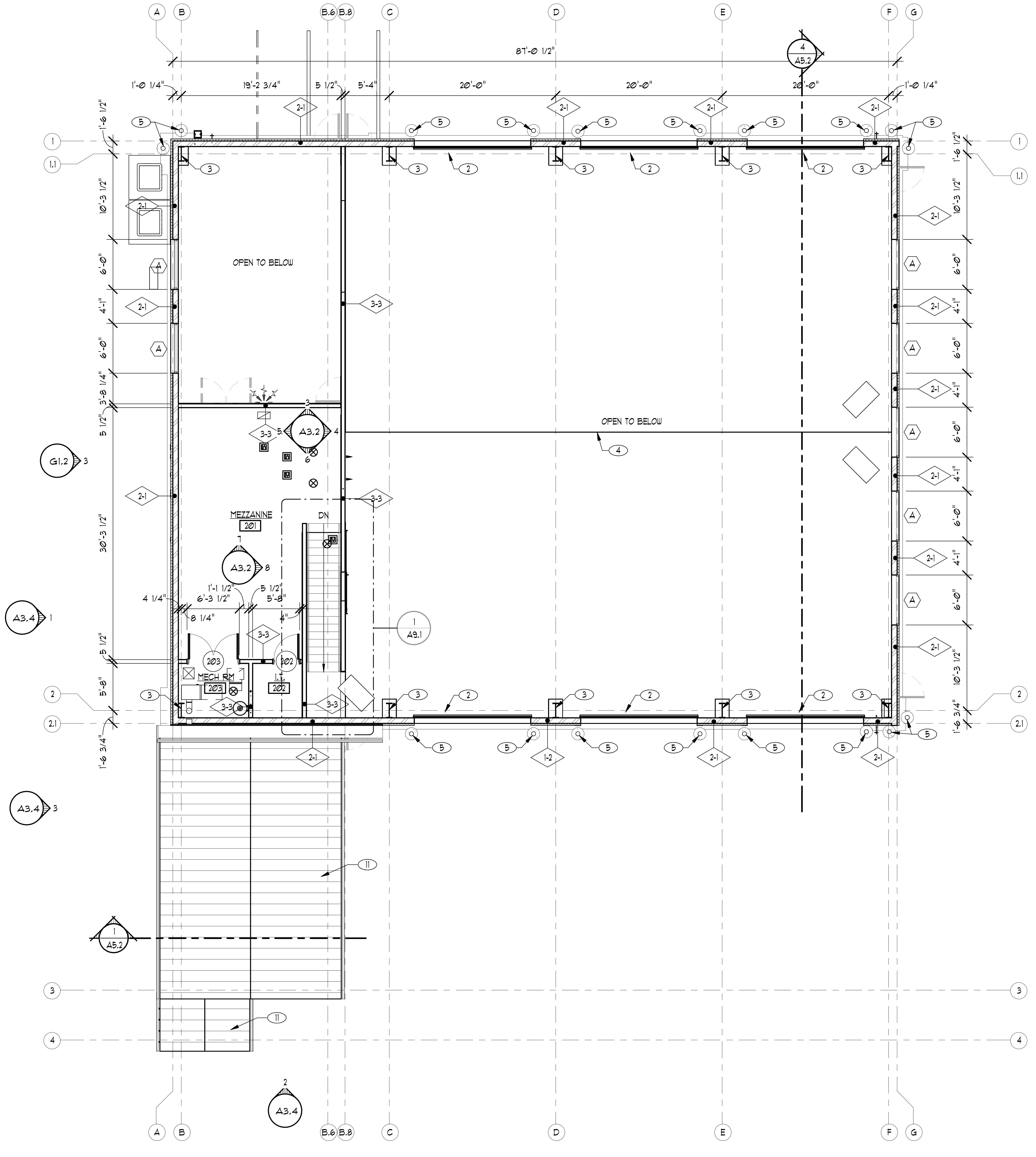
Alan R. Poulson
Bruce T. Fallon

WPA architecture
475 North Freedom Blvd.
Provo, Utah 84601
Tel: (801) 374-0800
info@wpa-architecture.com

FACILITIES SHOP

SPANISH FORK CITY
SPANISH FORK, UTAH 84660
433 SOUTH MAIN STREET

A2.1
BUILDING #1 FLOOR PLAN



① MEZZANINE LEVEL

1/8" = 1'-0"

SHEETNOTES:

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- ○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
- ⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3

1. CONCRETE SLAB, SEE STRUCTURAL DWG'S - SLOPE TO TRENCH DRAINS
2. TRENCH DRAINS - SEE PLUMBING DWG'S & DETAIL 2/A5.2
3. STEEL STRUCTURE PROVIDED BY METAL BUILDING MANUFACTURER, TYP.
4. FLOOR RIDGE LINE
5. CONC. FILLED PIPE BOLLARD - PAINT
6. 4" X 6" PRE-FINISHED METAL DOWNSPOUT
7. DRINKING FOUNTAIN WITH BOTTLE FILLER - SEE PLUMBING DWG'S
8. OWNER PROVIDED REFRIGERATOR - N.I.C.
9. MOP SINK - SEE PLUMBING DWG'S
10. OWNER PROVIDED ICE MAKER - N.I.C.
11. STANDING SEAM METAL ROOF BELOW - SEE ROOF PLAN

Date: 01.11.2023

Revision:

LICENSED ARCHITECT
BRUCE T. FALLON
5403169-0301
06.10.2019
date
STATE of UTAH

Alan R. Poulson
Bruce T. Fallon

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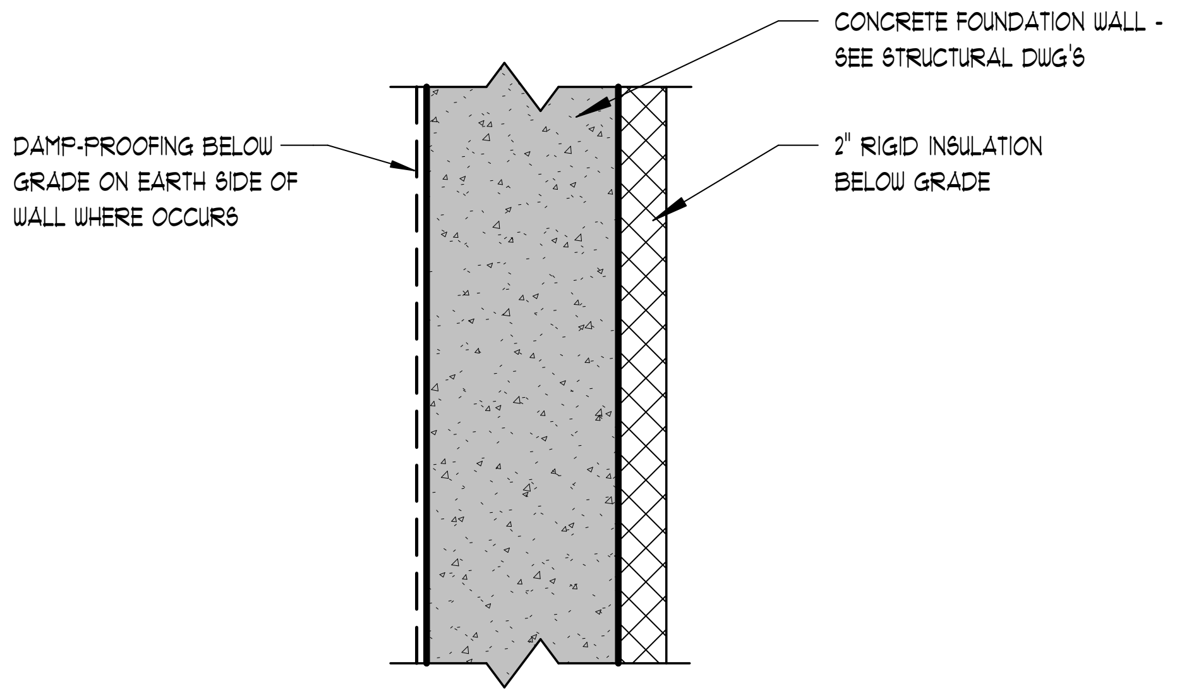
FACILITIES SHOP
SPANISH FORK CITY
433 SOUTH MAIN STREET
SPANISH FORK, UTAH 84660

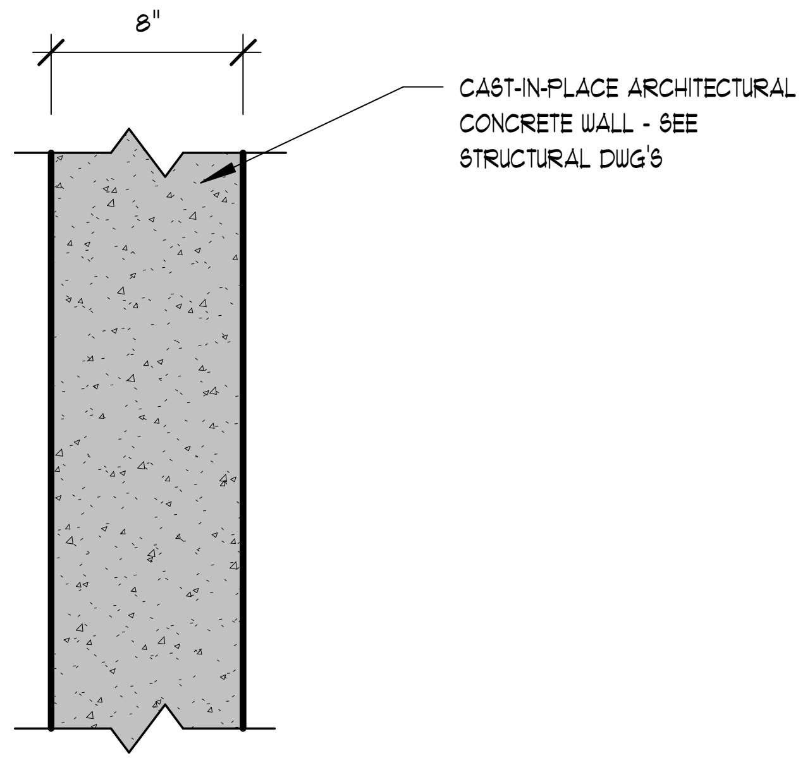
CHECK REVIEW SET 12.09.2022

A2.2

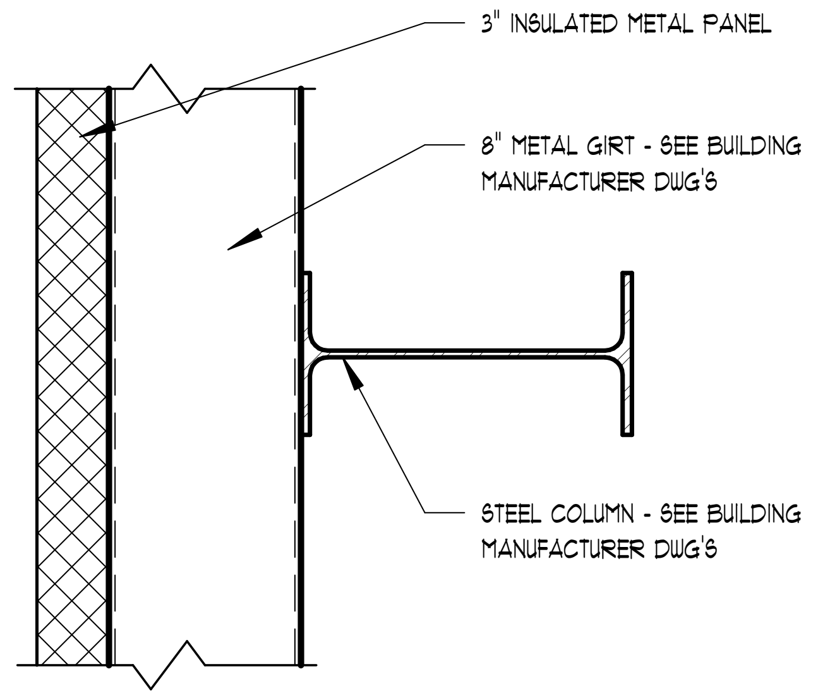
BUILDING #1 MEZZ. PLAN


CONCRETE FOUNDATION WALL - SEE STRUCTURAL DWG'S
DAMP-PROOFING BELOW GRADE ON EARTH SIDE OF WALL WHERE OCCURS
2" RIGID INSULATION BELOW GRADE

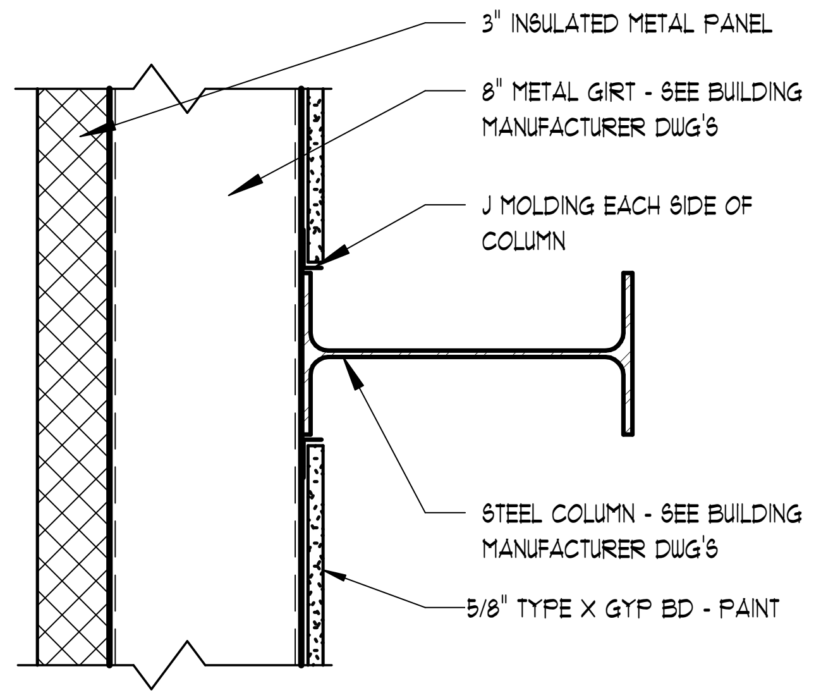
1-1 WALL CONSTRUCTION
1 1/2" = 1'-0"


8"
CAST-IN-PLACE ARCHITECTURAL CONCRETE WALL - SEE STRUCTURAL DWG'S

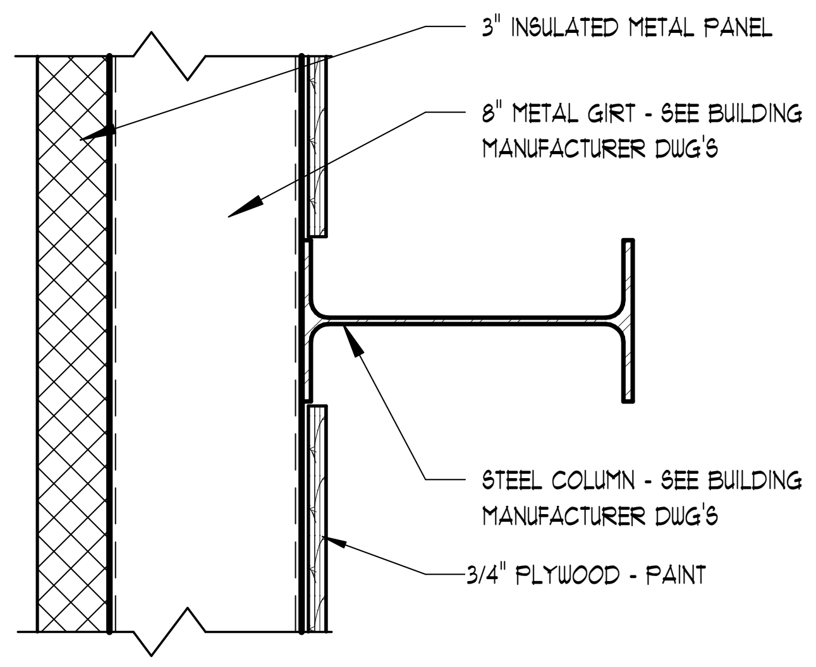
1-2 WALL CONSTRUCTION
1 1/2" = 1'-0"


3" INSULATED METAL PANEL
8" METAL GIRT - SEE BUILDING MANUFACTURER DWG'S
STEEL COLUMN - SEE BUILDING MANUFACTURER DWG'S

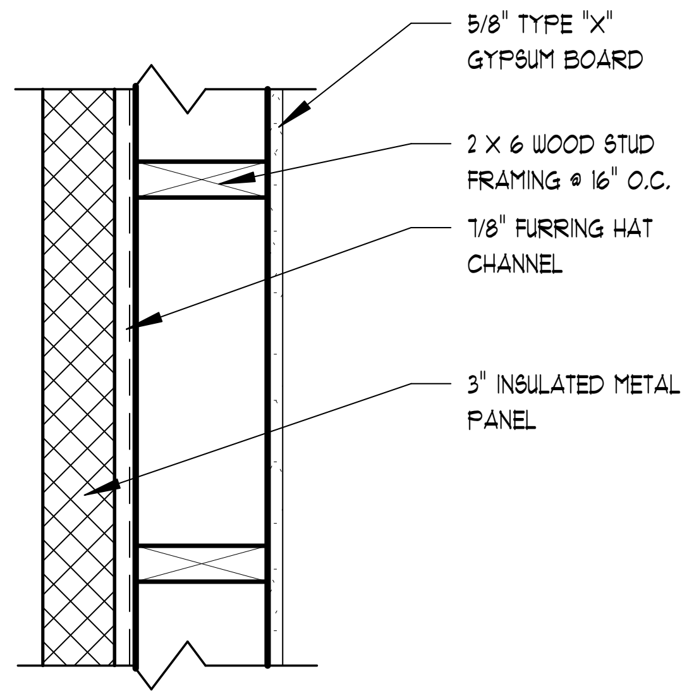
2-1 WALL CONSTRUCTION
1 1/2" = 1'-0"


3" INSULATED METAL PANEL
8" METAL GIRT - SEE BUILDING MANUFACTURER DWG'S
J MOLDING EACH SIDE OF COLUMN
STEEL COLUMN - SEE BUILDING MANUFACTURER DWG'S
5/8" TYPE X GYP BD - PAINT

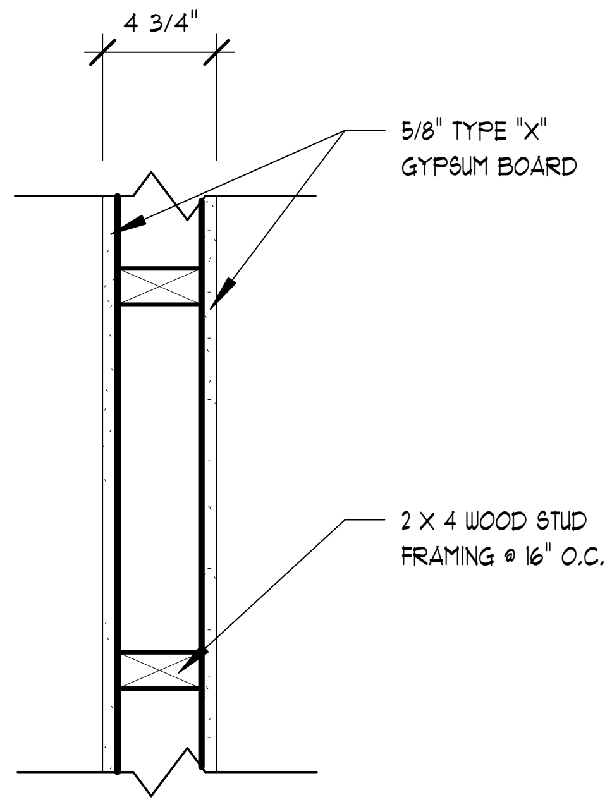
2-2 WALL CONSTRUCTION
1 1/2" = 1'-0"


3" INSULATED METAL PANEL
8" METAL GIRT - SEE BUILDING MANUFACTURER DWG'S
STEEL COLUMN - SEE BUILDING MANUFACTURER DWG'S
3/4" PLYWOOD - PAINT

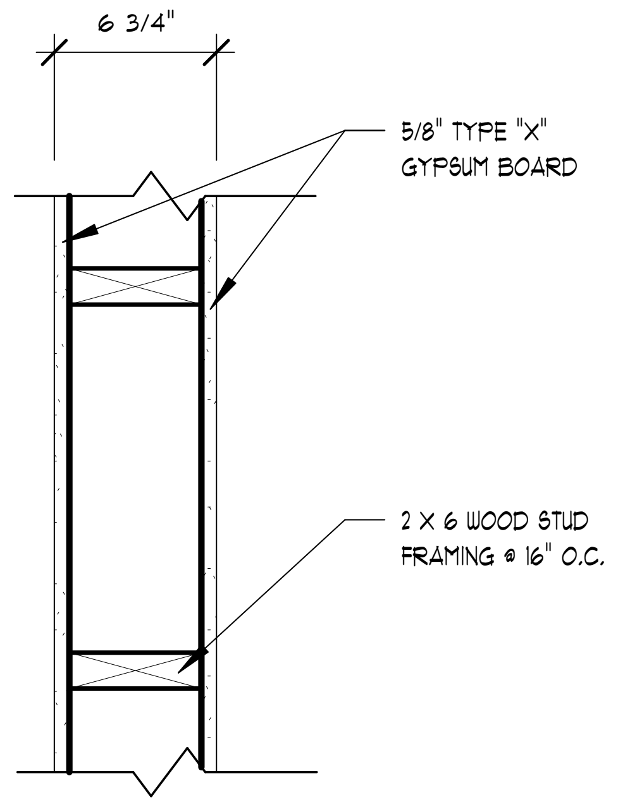
2-3 WALL CONSTRUCTION
1 1/2" = 1'-0"


5/8" TYPE "X" GYPSUM BOARD
2 X 6 WOOD STUD FRAMING @ 16" O.C.
7/8" FURRING HAT CHANNEL
3" INSULATED METAL PANEL

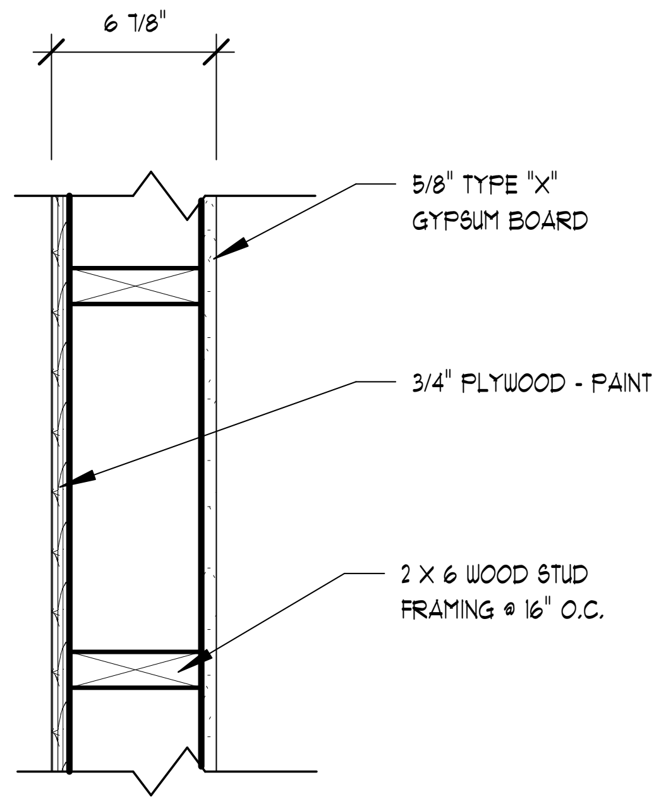
4-1 WALL CONSTRUCTION
1 1/2" = 1'-0"


4 3/4"
5/8" TYPE "X" GYPSUM BOARD
2 X 4 WOOD STUD FRAMING @ 16" O.C.

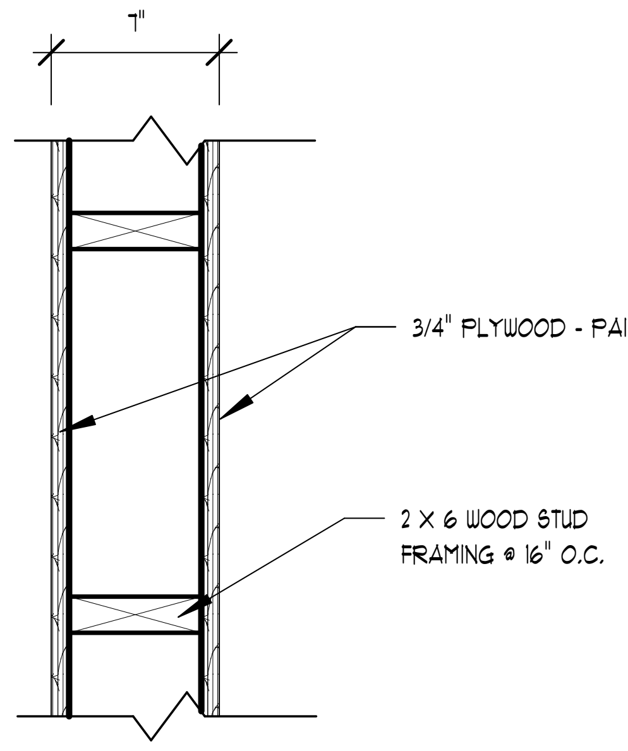
4-2 WALL CONSTRUCTION
1 1/2" = 1'-0"


6 3/4"
5/8" TYPE "X" GYPSUM BOARD
2 X 6 WOOD STUD FRAMING @ 16" O.C.

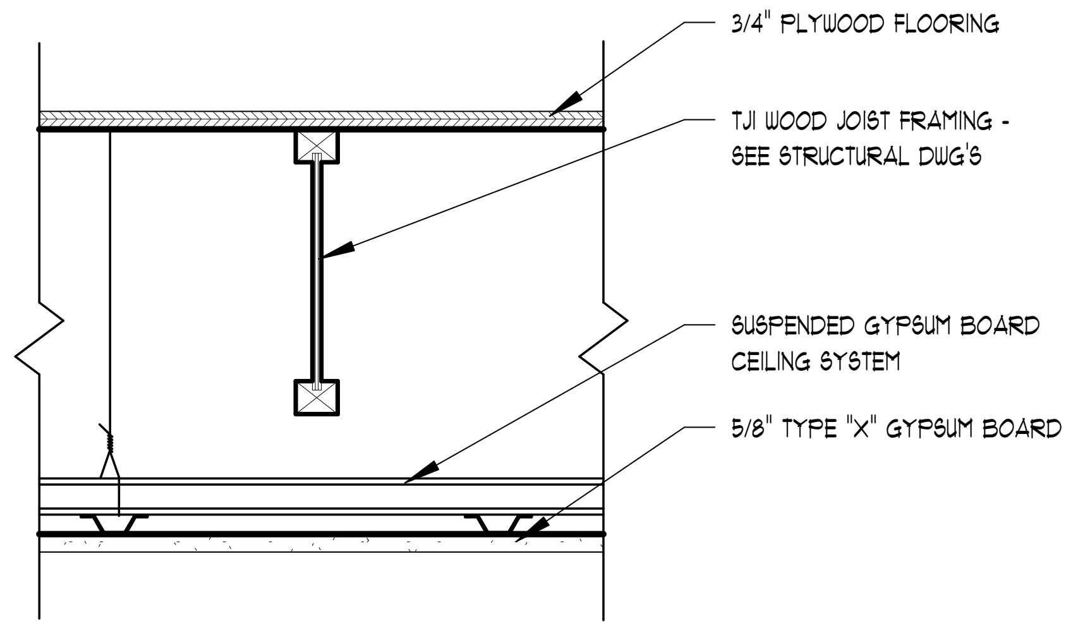
4-3 WALL CONSTRUCTION
1 1/2" = 1'-0"


6 7/8"
5/8" TYPE "X" GYPSUM BOARD
3/4" PLYWOOD - PAINT
2 X 6 WOOD STUD FRAMING @ 16" O.C.

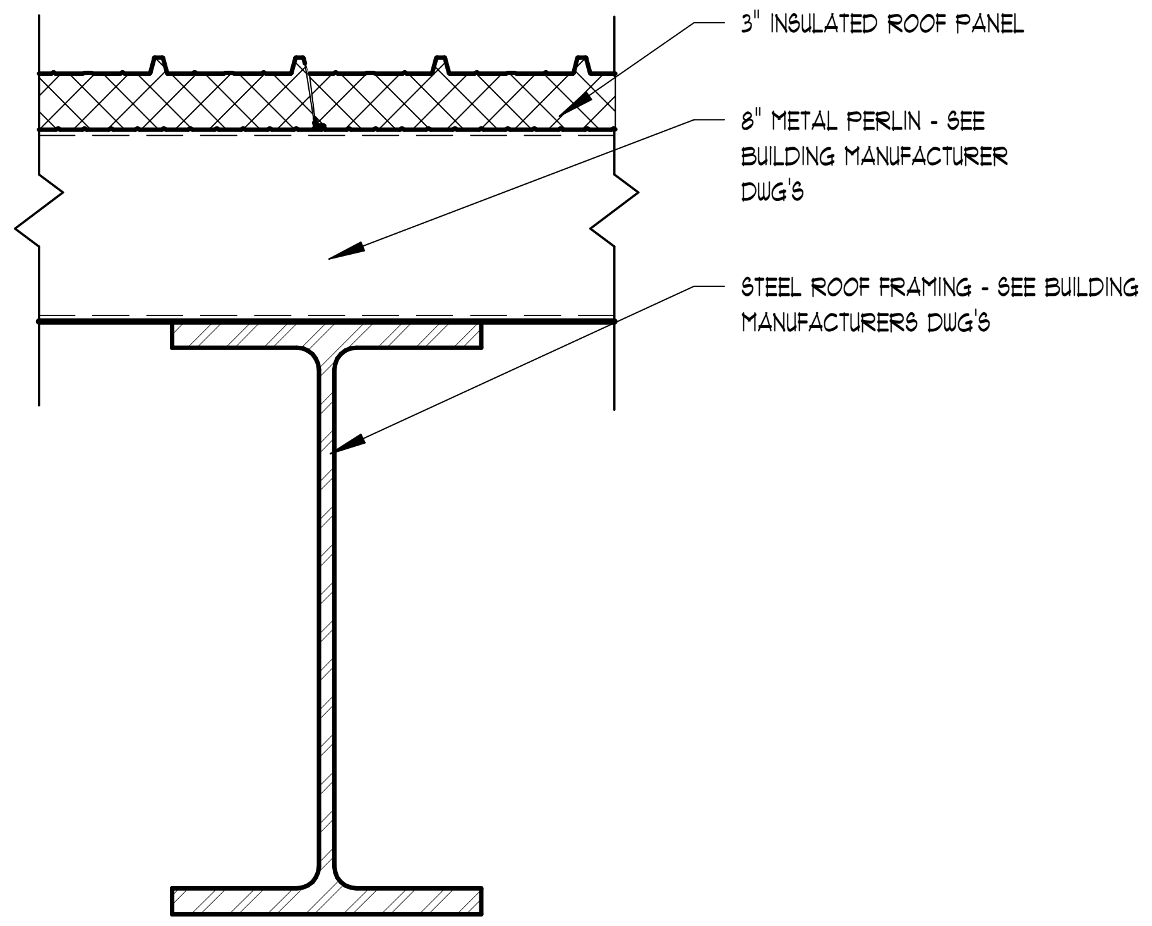
4-4 WALL CONSTRUCTION
1 1/2" = 1'-0"



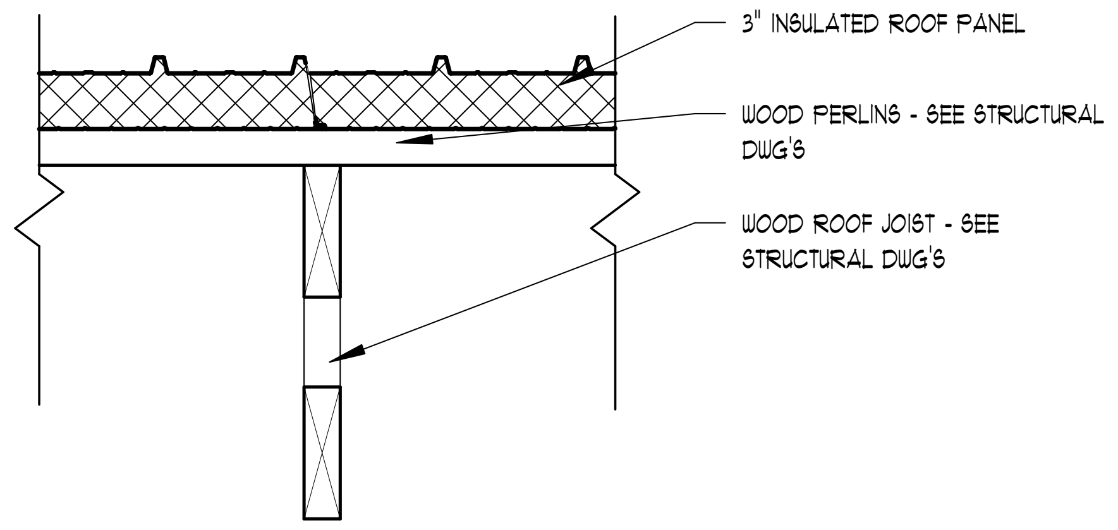
4-5 WALL CONSTRUCTION
1 1/2" = 1'-0"


3/4" PLYWOOD FLOORING
TJI WOOD JOIST FRAMING - SEE STRUCTURAL DWG'S
SUSPENDED GYPSUM BOARD CEILING SYSTEM
5/8" TYPE "X" GYPSUM BOARD

8-1 FLOOR/CEILING CONSTRUCTION
1 1/2" = 1'-0"


3" INSULATED ROOF PANEL
8" METAL PERLIN - SEE BUILDING MANUFACTURER DWG'S
STEEL ROOF FRAMING - SEE BUILDING MANUFACTURERS DWG'S

9-1 ROOF/CEILING CONSTRUCTION
1 1/2" = 1'-0"


3" INSULATED ROOF PANEL
WOOD PERLINS - SEE STRUCTURAL DWG'S
WOOD ROOF JOIST - SEE STRUCTURAL DWG'S

10-1 ROOF/CEILING CONSTRUCTION
1 1/2" = 1'-0"

CHECK SET - 01.11.2023

Date: 01.11.2023
Revision:

Fallon
BRUCE T. FALLON
5403169-0301
06.10.2019
date

Alan R. Poulson
Bruce T. Fallon

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FACILITIES SHOP
SPANISH FORK CITY
SPANISH FORK, UTAH 84660
433 SOUTH MAIN STREET

A3.1
CONSTRUCTION TYPES

FINISH SCHEDULE

RM. NUMBER	ROOM NAME	FLOOR FINISH	BASE FINISH	WALL FINISH				CEILING	COMMENTS	RM. NUMBER
				NORTH	EAST	SOUTH	WEST			
101	ENTRY	CPT-1 / CPT-2	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	PTDC-1		101
102	OFFICE	CPT-2	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	PTDC-1		102
103	OFFICE	CPT-2	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	PTDC-1		103
104	OFFICE	CPT-2	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	PTDC-1		104
105	BREAK ROOM	LVT	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	PTDC-1		105
106	TOILET	CONC-S	RB	FRP / PTDW-1	FRP / PTDW-1	FRP / PTDW-1	FRP / PTDW-1	PTDC-1		106
107	TOILET	CONC-S	RB	FRP / PTDW-1	FRP / PTDW-1	FRP / PTDW-1	FRP / PTDW-1	PTDC-1		107
108	COMPRESSOR	CONC-S	NONE	PTDW-2	PTDW-2	PTDW-2	PTDW-2	PTDC-2		108
109	WOOD SHOP	CONC-S	NONE	PTDW-2	PTDW-2	PTDW-2	PTDW-2	EXP		109
110	VEHICLE BAY	CONC-S	NONE	PTDW-3	PTDW-3	PTDW-3	PTDW-3	EXP		110
111	STAIR	RT&R	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	EXP		111
201	MEZZANINE	PLY-P	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	EXP		201
202	I.T.	PLY-P	RB	PTDW-2	PTDW-2	PTDW-2	PTDW-2	EXP		202
203	MECH RM	PLY-P	RB	PTDW-1	PTDW-1	PTDW-1	PTDW-1	EXP		203

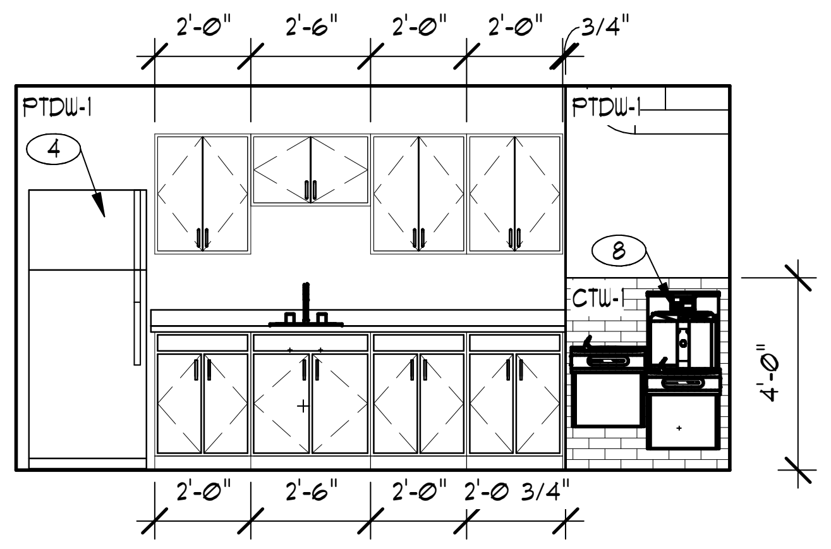
FINISH LEGEND

LOCATION	MARK	MATERIAL TYPE	MANUFACTURER	STYLE/COLOR	SIZE	NOTES
BASE						
BASE	MTL-3	TRIM METAL AND DOORS	-	-	-	-
CEILINGS						
CEILINGS	MTL-2	PREFINISHED INSULTED WALL PANELS	-	-	-	-
WALLS						
WALLS	MTL-1	PREFINISHED INSULATED ROOFING PANELS	-	-	-	-

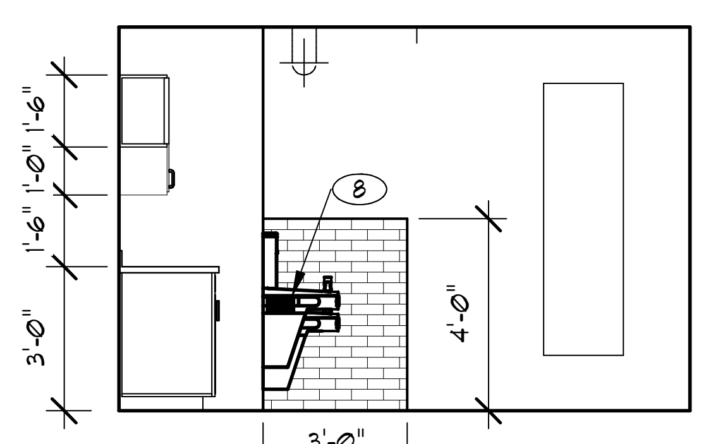
SHEETNOTES:

◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3

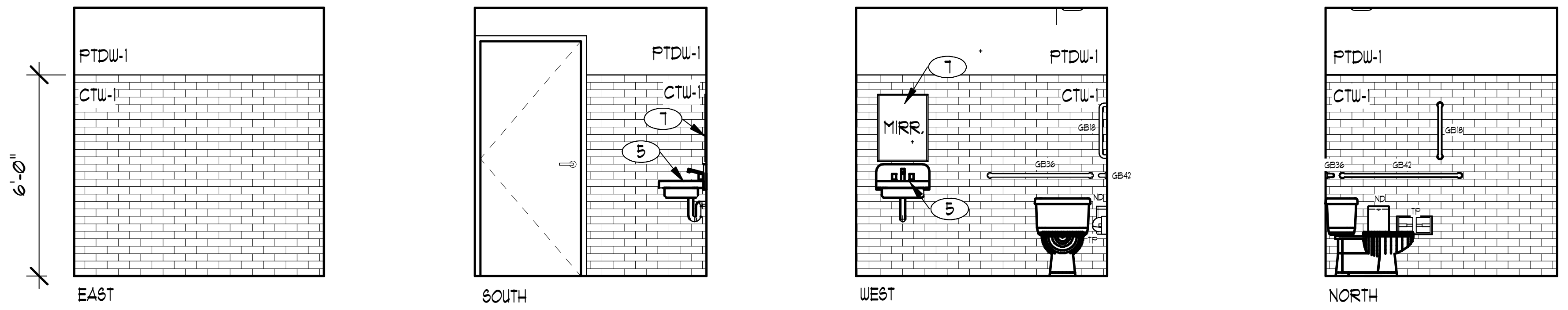
①	WATER CLOSET - SEE PLUMBING DWG'S
②	LAVATORY - SEE PLUMBING DWG'S
③	MOP SINK - SEE PLUMBING DWG'S
④	OWNER PROVIDED REFRIGERATOR - N.I.C.
⑤	SINK - SEE PLUMBING DWG'S
⑥	MILLORK - SEE INTERIOR ELEVATIONS
⑦	WALL MOUNTED MIRROR
⑧	DRINKING FOUNTAIN W/BOTTLE FILLING STATION - SEE PLUMBING DWG'S
⑨	OWNER PROVIDED ICE MAKER - N.I.C.
⑩	PLASTIC LAMINATE COUNTER



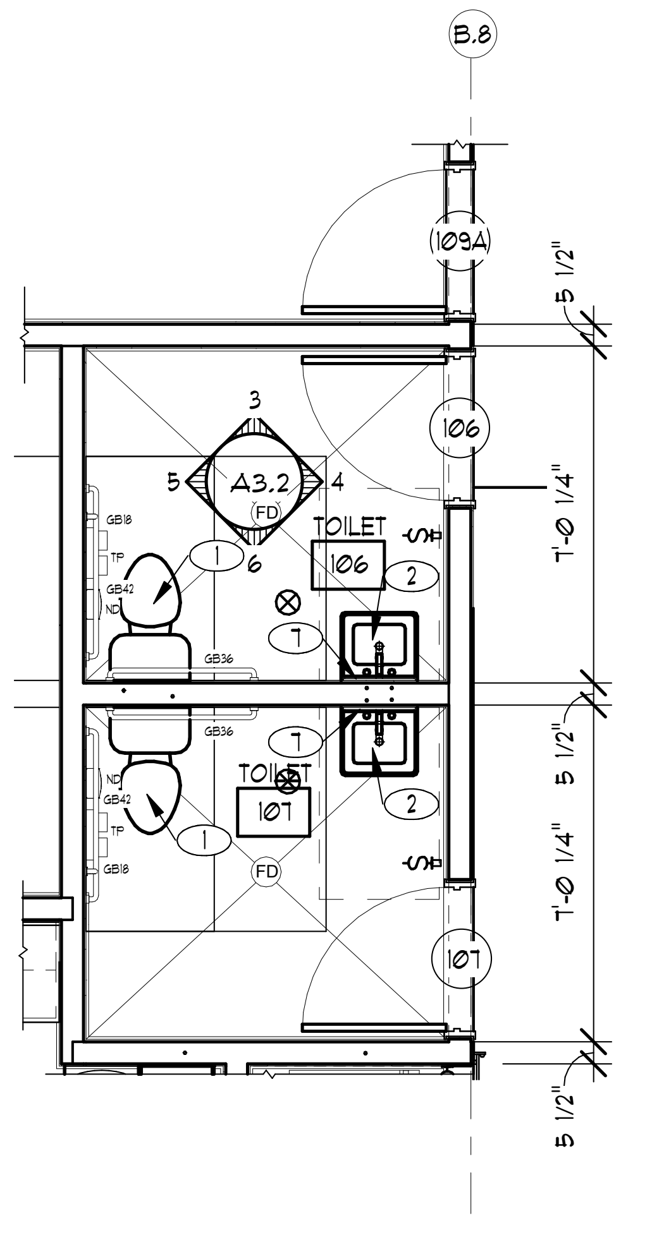
⑦ BREAK ROOM 105
1/4" = 1'-0"



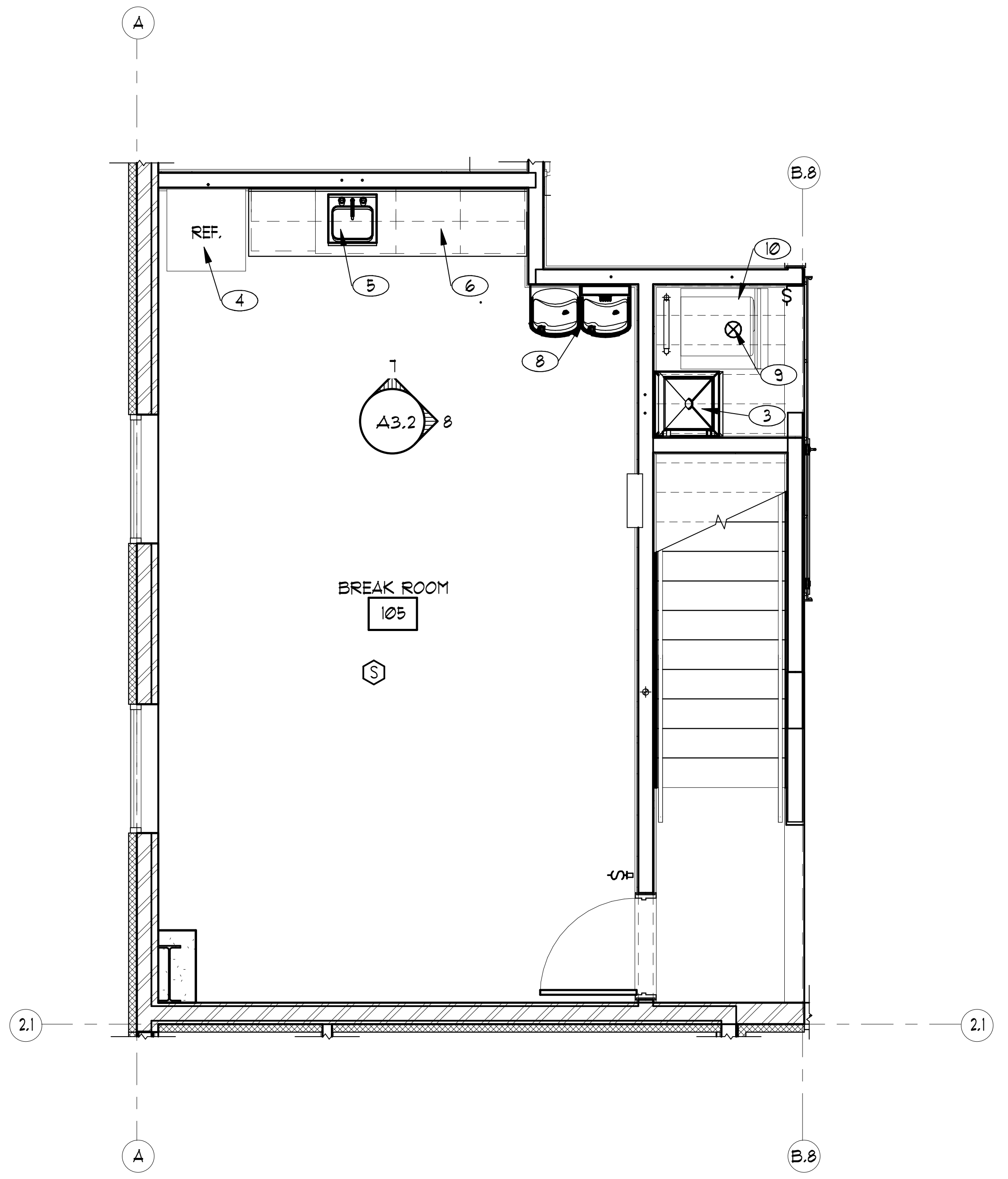
⑧ BREAK ROOM 105
1/4" = 1'-0"



③ TOILET 106 & 107 (MIRR.)
1/4" = 1'-0"



① MAIN LEVEL - TOILETS 106 & 107
1/4" = 1'-0"



② MAIN LEVEL - BREAK ROOM
1/4" = 1'-0"

Date: 01.11.2023
Revision:

BRUCE T. FALLON
5403169-0301
06.10.2019

Alan R. Poulson
Bruce T. Fallon

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FACILITIES SHOP
SPANISH FORK CITY
433 SOUTH MAIN STREET
SPANISH FORK, UTAH 84660

CHECK SET - 01.11.2023

A3.2
ROOM FINISH SCHEDULE

DOOR SCHEDULE

DOOR NUMBER	ROOM NUMBER	DOOR TYPE	DOOR SIZE			DETAILS		HW SET	FIRE RATING	COMMENTS
			WIDTH	HEIGHT	THICKNESS	HEAD	JAMB			
101	101	A	3' - 0"	7' - 2"	1 3/4"			01		
102	102	B	3' - 0"	7' - 2"	1 3/4"			02		
103	103	B	3' - 0"	7' - 2"	1 3/4"			02		
104	104	B	3' - 0"	7' - 2"	1 3/4"			02		
105	105	A	3' - 0"	7' - 2"	1 3/4"			03		
106	106	C	3' - 0"	7' - 0"	1 3/4"			04		
107	107	C	3' - 0"	7' - 0"	1 3/4"			04		
108	108	D	6' - 0"	7' - 0"	1 3/4"			05		
109	107	C	3' - 0"	7' - 0"	1 3/4"					
109A	109	A	3' - 0"	7' - 2"	1 3/4"			03		
109B	109	1	9' - 0"	10' - 0"				06		
109C	109	A	3' - 0"	7' - 2"	1 3/4"			01		
110	107	A	3' - 0"	7' - 2"	1 3/4"					
110A	110	2	14' - 0"	14' - 0"	2"			06		
110B	110	2	14' - 0"	14' - 0"	2"			06		
110C	110	2	14' - 0"	14' - 0"	2"			06		
110D	110	A	3' - 0"	7' - 2"	1 3/4"			01		
110E	110	A	3' - 0"	7' - 2"	1 3/4"			01		
110F	110	2	14' - 0"	14' - 0"	2"			06		
110G	110	2	14' - 0"	14' - 0"	2"			06		
110H	110	2	14' - 0"	14' - 0"	2"			06		
110J	110	A	3' - 0"	7' - 2"	1 3/4"			01		
110K	110	A	3' - 0"	7' - 2"	1 3/4"					
110L	110	E	4' - 10"	7' - 0"	1 3/4"			07		
202	202	A	3' - 0"	7' - 2"	1 3/4"			05		
203	203	D	6' - 0"	7' - 0"	1 3/4"			08		

DOOR HARDWARE SCHEDULE

HARDWARE GROUP: ONE

DOOR(S): 101, 109C, 110D, 110E, 110J

#		ITEM	PRODUCT#	FIN.	MANU.
3	EA	HINGE	3BB81 4.5 X 4.5 NRP	626	IVE
1	EA	ENTRY / OFFICE	L153R C	626	GEN
1	EA	SURFACE CLOSER	4040XP RWPA AL X SNB	689	LCN
1	EA	KICK PLATE	198S 10 X 34	630	HAG
1	SET	SEALS	160V 17'	GRY	NGP
1	EA	DOOR SWEEP	200NA 36"	AL	NGP
1	EA	THRESHOLD	425E 36"	628	NGP

HARDWARE GROUP: TWO

DOOR(S): 102, 103, 104

#		ITEM	PRODUCT#	FIN.	MANU.
3	EA	HINGE	3BB81 4.5 X 4.5	652	IVE
1	EA	ENTRY / OFFICE	L153R C	626	GEN
1	EA	WALL STOP	1270	626	TR
3	EA	SILENCERS	SR64	GRY	IVE

HARDWARE GROUP: THREE

DOOR(S): 105, 109A

#	2	ITEM	PRODUCT#	FIN.	MANU.
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PASSAGE SET	L110R	626	GEN
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	WALL STOP	1270	626	TR
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP: FOUR

DOOR(S): 106, 107

#	2	ITEM	PRODUCT#	FIN.	MANU.
3	EA	HINGE	5BB1HW 4.5 X 4.5 NRP	630	IVE
1	EA	PRIVACY SET	L140R	626	GEN
1	EA	SURFACE CLOSER	4040XP SCUSH	689	LCN
1	EA	WALL STOP	1270	626	TR
3	EA	SILENCER	SR64	GRY	IVE

HARDWARE GROUP: FIVE

DOOR(S): 108

#	2	ITEM	PRODUCT#	FIN.	MANU.
6	EA	HINGES	5BB1HW 4.5 X 4.5 NRP	630	IVE
2	EA	FLUSH BOLT	3917-12	626	TR
1	EA	PASSAGE SET	L110R	626	GEN
1	EA	SURFACE CLOSER	4040XP SCUSH	626	LCN
2	EA	DOOR STOP	1214	626	TR
1	EA	DUSTPROOF STRIKE	3910	626	TR
2	EA	BRUSH SWEEP	600 A		NA
1	EA	ASTRAGAL	158 NA (MOUNT INSIDE IN-ACTIVE LEAF)		NA
1	EA	GASKETING	5040 B (HEAD & JAMBS)	GRY	NA

HARDWARE GROUP: SIX

DOOR(S): 109B, 110A, 110B, 110C, 110F, 110G, 110H

#	2	ITEM	PRODUCT#	FIN.	MANU.
1	EA	RIM CYLINDER	12E-72 STD R808	626	BE

HARDWARE GROUP: SEVEN

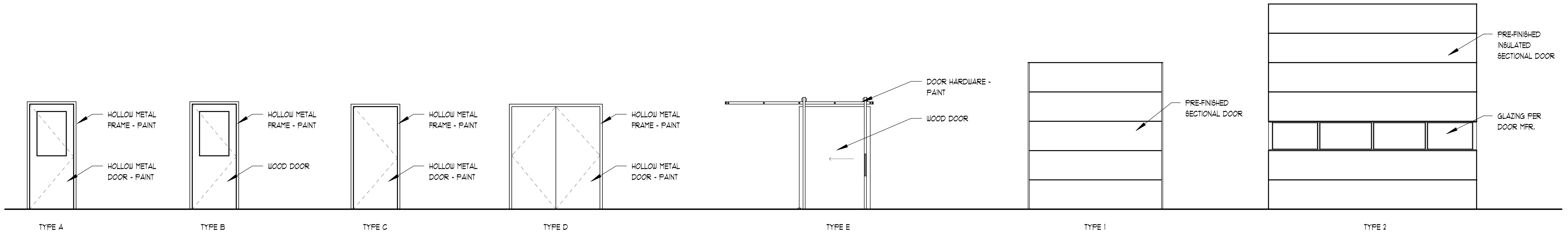
DOOR(S): 110L

#	2	ITEM	PRODUCT#	FIN.	MANU.
1	EA	OPEN RAIL	OBF80-20 SINGLE DOOR	626	BRI
1	EA	LONG DOOR PULL	9264F 12" 6" STD	630	IVE

HARDWARE GROUP: EIGHT

DOOR(S): 203

#		ITEM	PRODUCT#	FIN.	MANU.
3	EA	HINGE	3BB81 4.5 X 4.5 NRP	626	IVE
1	EA	ENTRY / OFFICE	L153R C	626	GEN


HOLLOW METAL FRAME - PAINT
HOLLOW METAL DOOR - PAINT
TYPE A
HOLLOW METAL FRAME - PAINT
WOOD DOOR
TYPE B
HOLLOW METAL FRAME - PAINT
HOLLOW METAL DOOR - PAINT
TYPE C
HOLLOW METAL FRAME - PAINT
HOLLOW METAL DOOR - PAINT
TYPE D
DOOR HARDWARE - PAINT
WOOD DOOR
TYPE E
PRE-FINISHED SECTIONAL DOOR
TYPE 1
PRE-FINISHED INSULATED SECTIONAL DOOR
GLAZING PER DOOR MFR.
TYPE 2

1 DOOR TYPES

1/4" = 1'-0"

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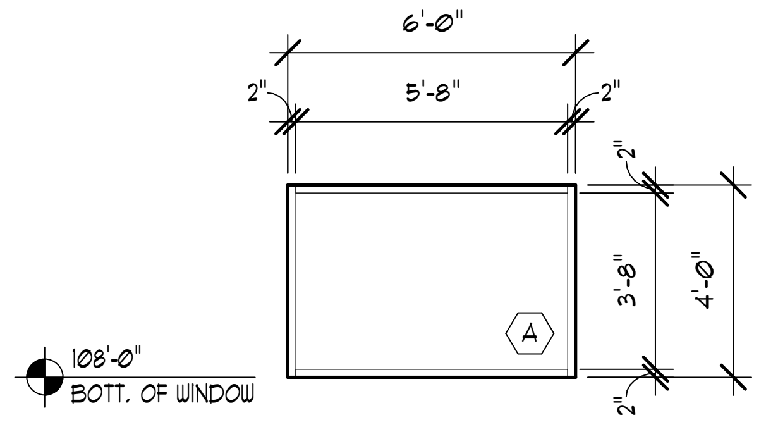
A3.3
DOOR SCHEDULE & DETAILS

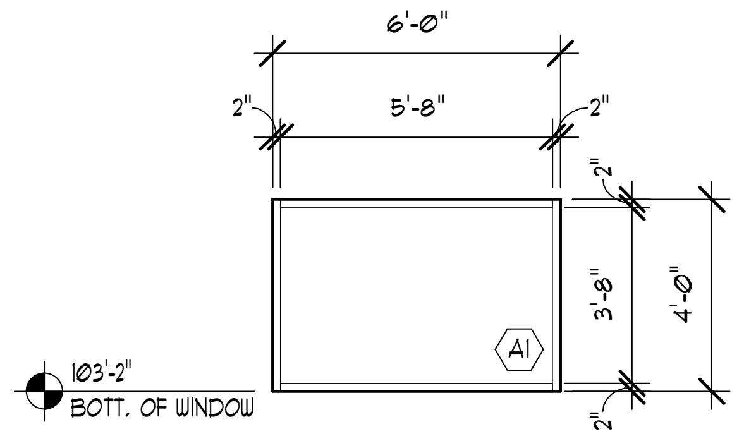
GLAZING SCHEDULE

Type Mark	Glazing Description
1	



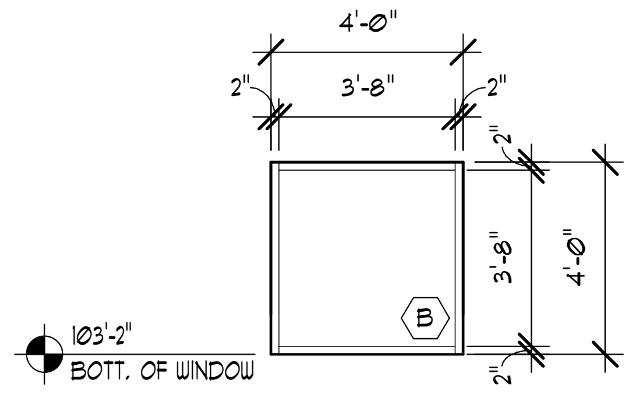
WINDOW TYPE A

1/4" = 1'-0"



WINDOW TYPE A1

1/4" = 1'-0"



WINDOW TYPE B

1/4" = 1'-0"

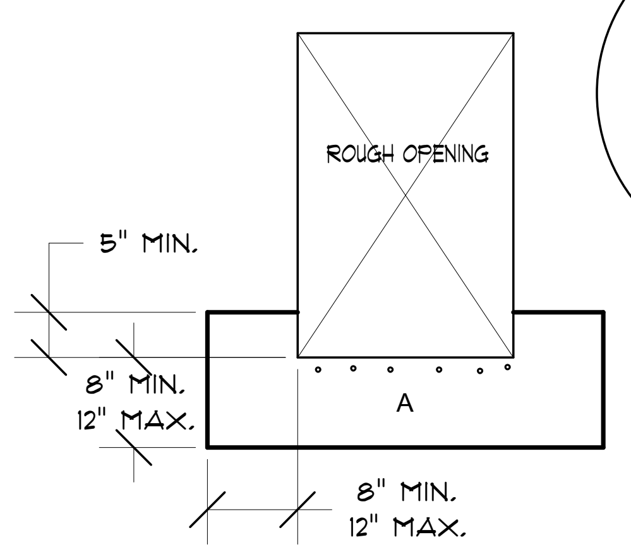


FIG. 1

INSTALL FLASHING PAPER: SILL PIECE "A" FIRST, ATTACH AT EDGE OF OPENING ONLY.

MATERIALS

FLASHING PAPER AND WEATHER BARRIER PAPER: PER FEDERAL SPECIFICATION UU-B-90a: VAPOR BARRIER COATED AND REINFORCED. SEE SPECIFICATIONS FOR GRADE.

SILL FLASHING AND BUTTERFLY: 25 MIL BITUTHENE (VYCOR PLUS) DRIP FLASHING: PER SPECIFICATIONS

NOTE: MANUFACTURERS RECOMMENDED FLASHING MATERIAL AND INSTALLATION PROCEDURES SUPERCEDE THE ABOVE LISTED MATERIALS AND INSTALLATION DETAILS AS SHOWN.

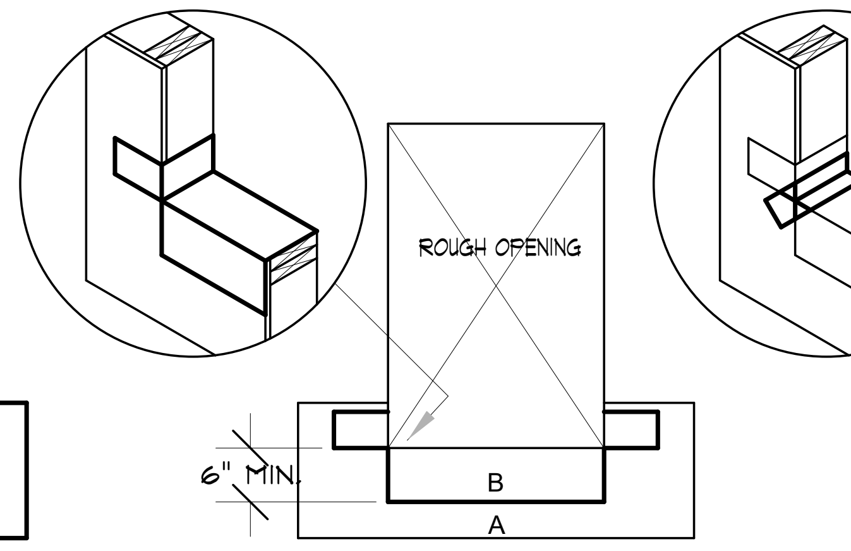


FIG. 2

INSTALL SILL FLASHING PIECE "B": EXTEND SILL FLASHING UP JAMB 4" MIN.

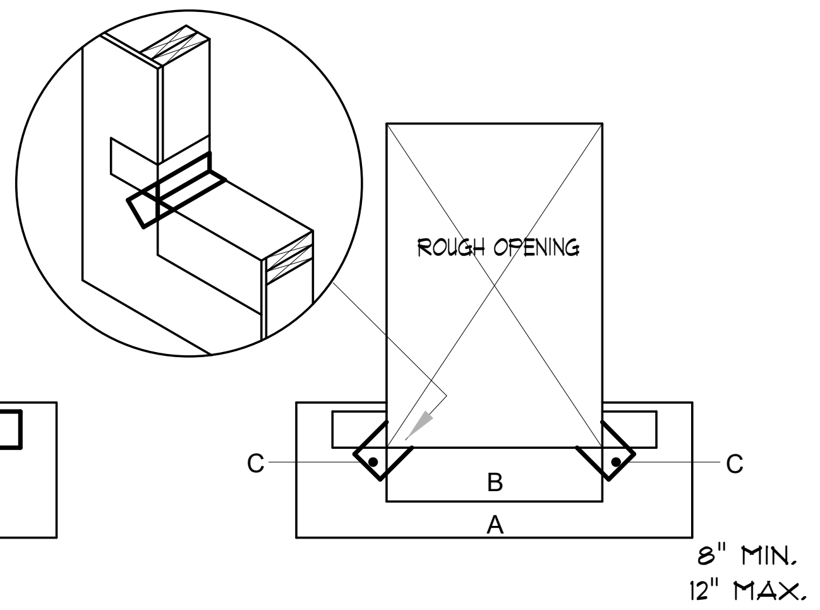


FIG. 3

INSTALL 4" WIDE BUTTERFLY FLASHING PIECE "C" AT LOWER CORNERS OF OPENING; FLASHING SHOULD BE STARTED AT THE INTERIOR SURFACE OF THE OPENING,
OVER THE SILL FLASHING, THEN FOLDED OVER THE EXTERIOR SURFACES OF THE SILL FLASHING AND PRESSED INTO PLACE

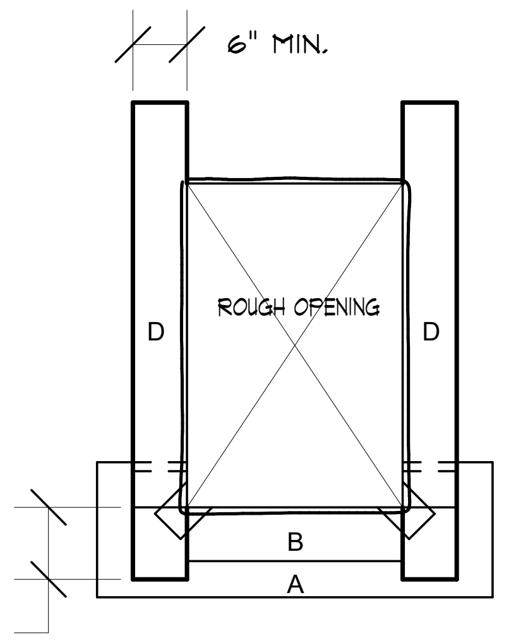


FIG. 4

INSTALL FLASHING PAPER PIECE "D" AT JAMBS. ATTACH AT EDGE OF OPENING ONLY; APPLY A BEAD OF SEALANT WITHIN 1/2" OF OPENING

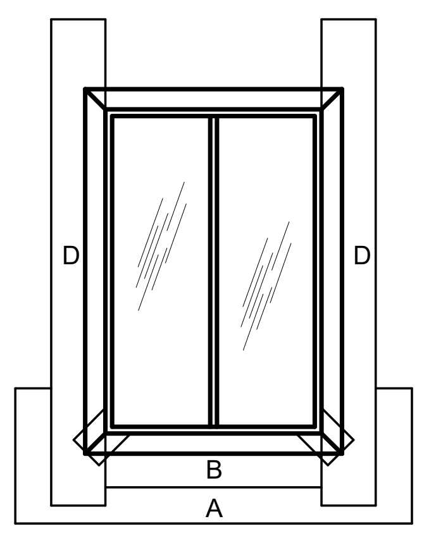


FIG. 5

SET WINDOW NAILING FLANGE INTO SEALANT AND FASTEN TO STRUCTURE

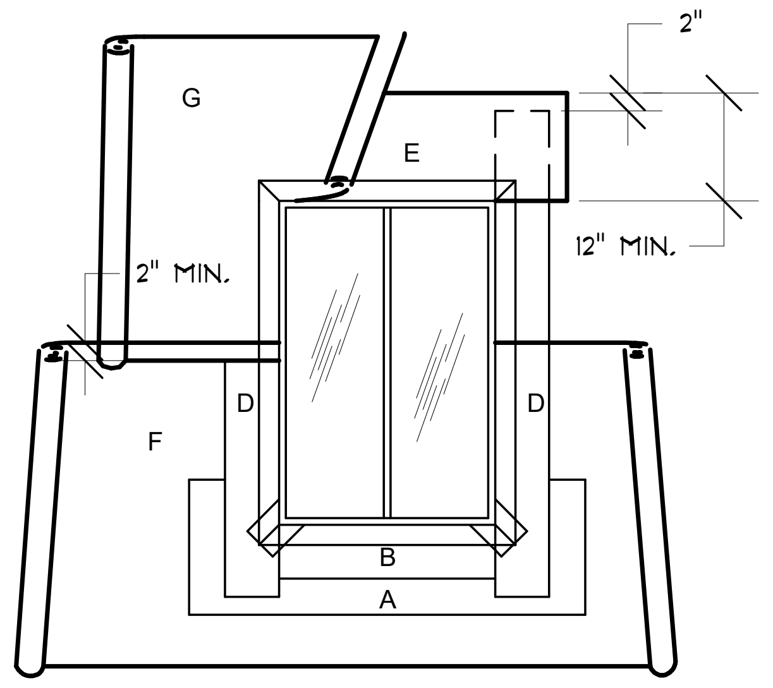


FIG. 6

INSTALL DRIP FLASHING PIECE (NOT SHOWN)
ACROSS TOP OF FRAME. APPLY FLASHING PAPER "E" AT HEAD, OVERLAPPING DRIP FLASHING AND JAMB PIECES. WEATHER BARRIER PAPER, APPLIED WITH EXTERIOR FINISH MATERIAL, IS APPLIED SHINGLE FASHION. PIECE "F" UNDERLAYS THE SILL PIECE. PIECE "G" SHOULD OVERLAP PIECE "F" BY AT LEAST 2".

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A3.4
WINDOW TYPES & DETAILS

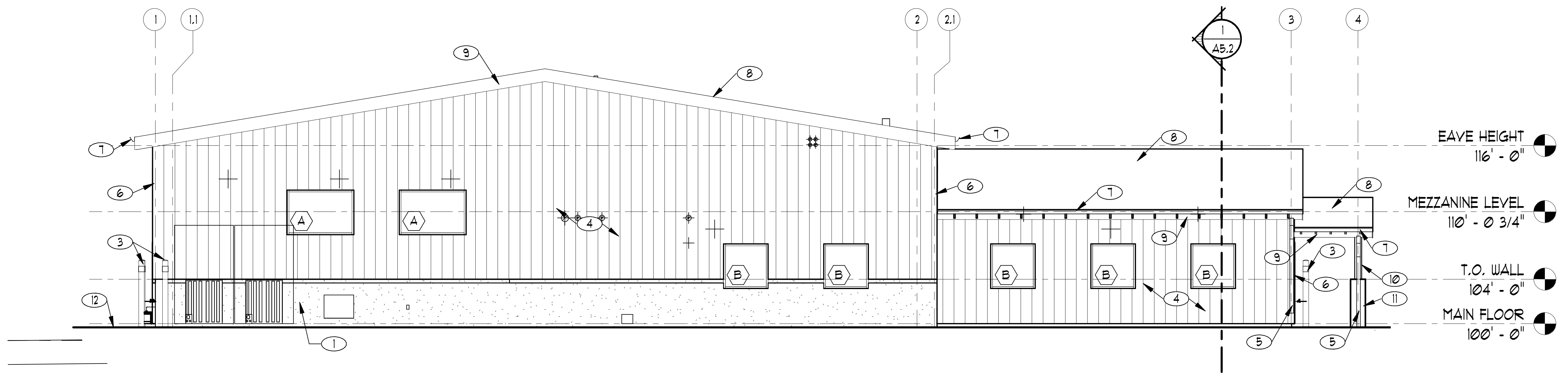
EXTERIOR FINISH LEGEND

MARK	ITEM DESCRIPTION	MANUFACTURER	STYLE/COLOR	SIZE	NOTES
MTL-1	PREFINISHED INSULATED ROOFING PANELS	-	-	-	-
MTL-2	PREFINISHED INSULTED WALL PANELS	-	-	-	-
MTL-3	TRIM METAL AND DOORS	-	-	-	-

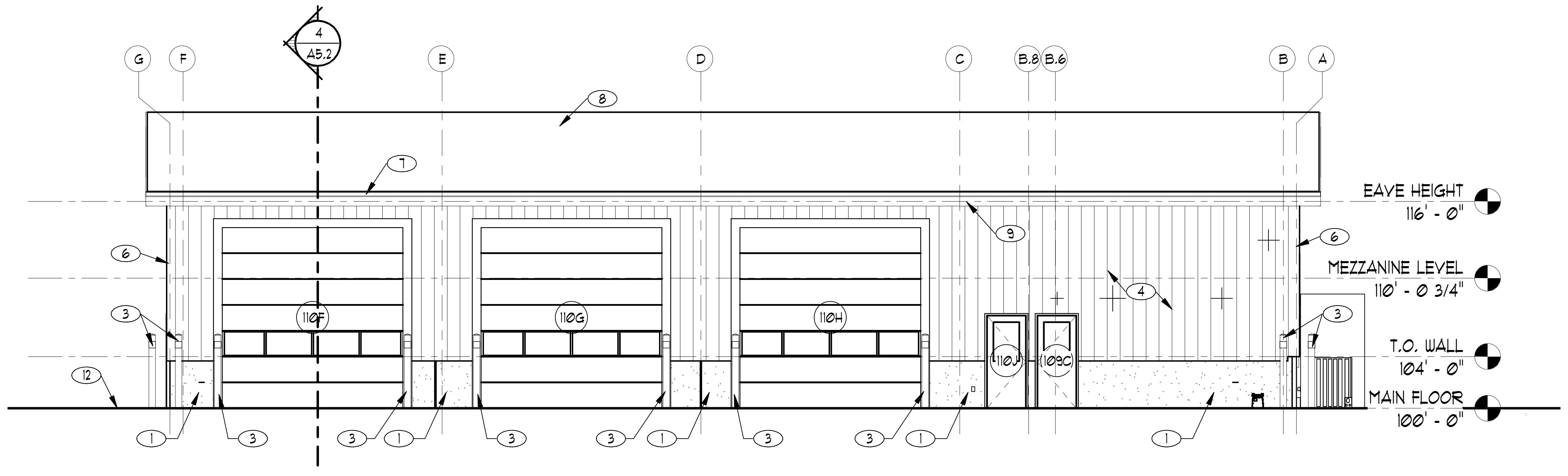
SHEETNOTES:

◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3

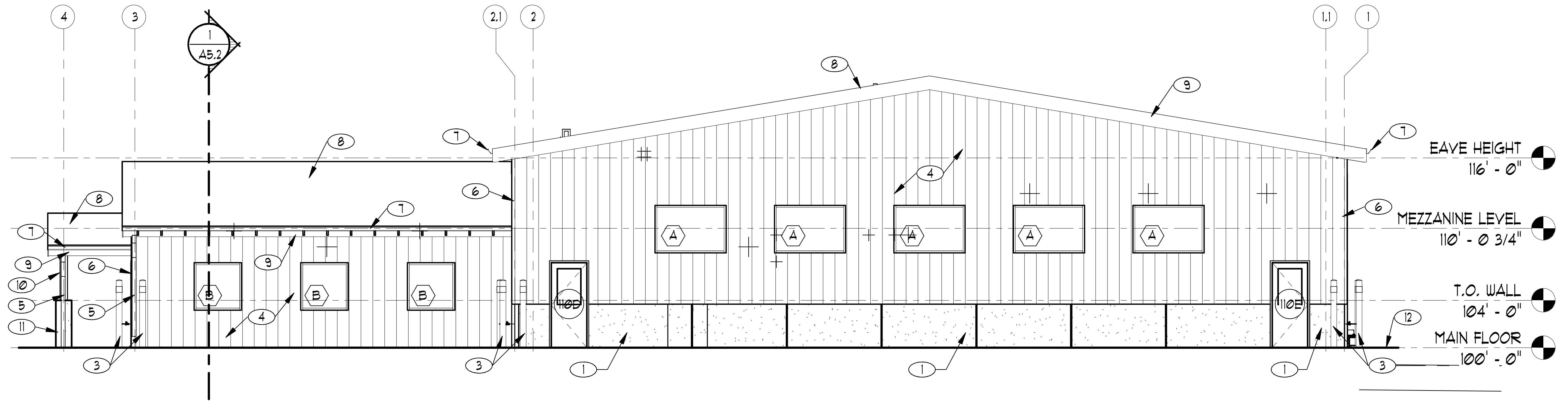
1 CONCRETE FOOTING & FOUNDATION - SEE STRUCTURAL DWG'S
2 CAST-IN-PLACE ARCHITECTURAL CONCRETE WALL w/ EXPOSED V-GROOVES & FORM TIE HOLES
3 PIPE BOLLARD - PAINT
4 INSULATED METAL PANELS
5 PRE-FINISHED METAL DOWNSPOUT
6 PRE-FINISHED METAL CORNER TRIM
7 PRE-FINISHED METAL GUTTER
8 INSULATED METAL ROOF PANELS
9 PRE-FINISHED METAL FASCIA
10 WOOD COLUMN, STAIN - SEE STRUCTURAL DWG'S
11 CONCRETE PIER - SEE STRUCTURAL DWG'S
12 APPROXIMATE FINISH GRADE - SEE CIVIL DWG'S



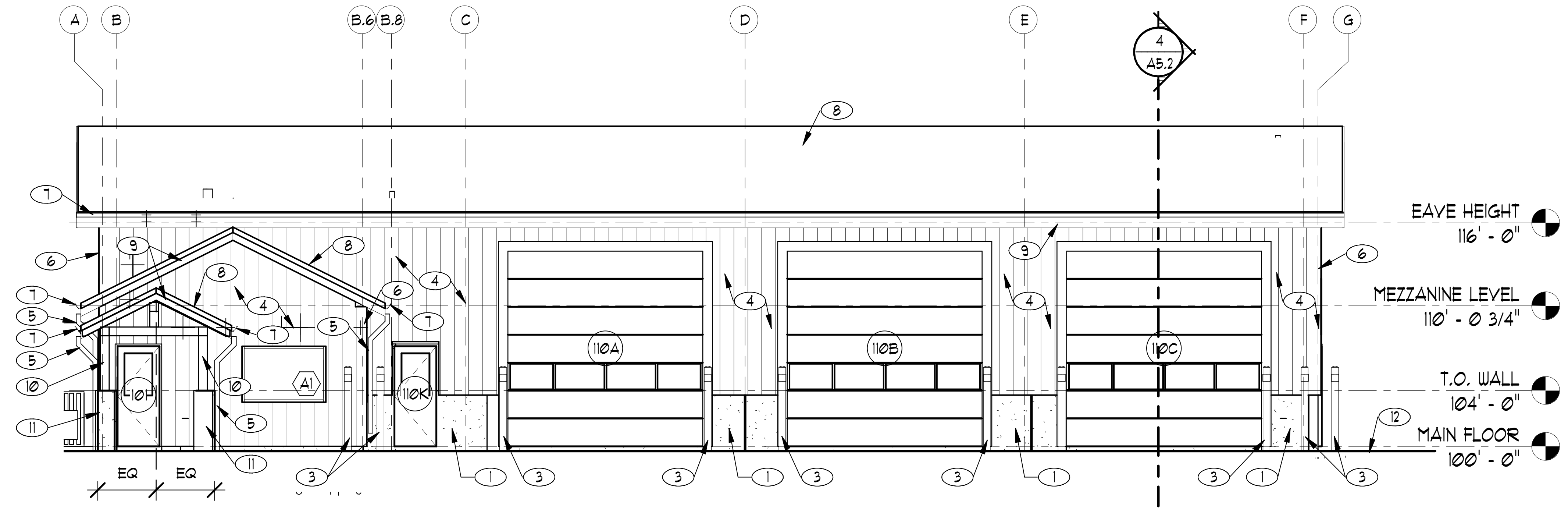
1 NORTH ELEVATION
1/8" = 1'-0"



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



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



4 WEST ELEVATION
1/8" = 1'-0"

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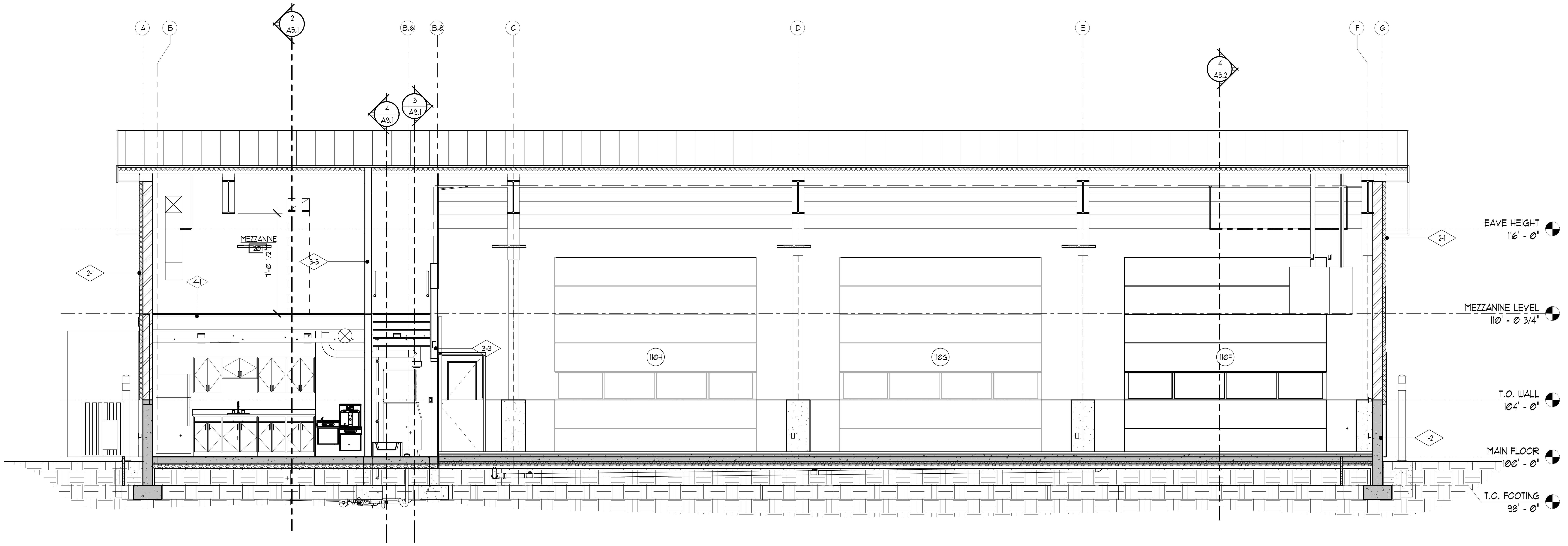
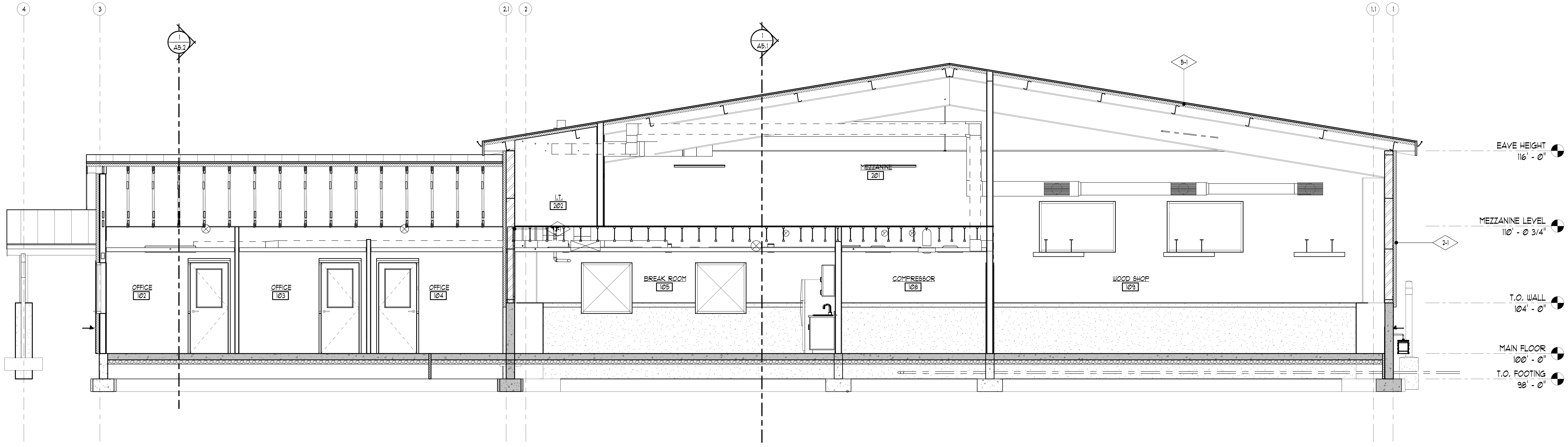
A4.1
EXTERIOR ELEVATIONS



① BUILDING SECTION 1
1/4" = 1'-0"



② BUILDING SECTION 2
1/4" = 1'-0"

SHEETNOTES:

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- ○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
- ⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3
- (1) UNDISTURBED EARTH OR ENGINEERED FILL
- (2) CONCRETE FOOTING & FOUNDATION - SEE STRUCTURAL DWG'S
- (3) CONCRETE SLAB OVER GRAVEL BASE - SEE STRUCTURAL DWG'S
- (4) INSULATED METAL PANELS
- (5) PRE-FINISHED METAL GUTTER
- (6) INSULATED METAL ROOF PANELS
- (7) PRE-FINISHED METAL RIDGE CAP
- (8) WOOD ROOF JOIST - SEE STRUCTURAL DWG'S
- (9) PRE-FINISHED METAL FASCIA OVER CONTINUOUS FASCIA BOARD
- (10) WOOD BEAM, STAIN - SEE STRUCTURAL DWG'S
- (11) PRE-FINISHED METAL SOFFIT
- (12) GYPSUM BOARD CEILING - SEE REFLECTED CEILING PLAN
- (13) PRE-FINISHED METAL DOWNSPOUT
- (14) PIPE BOLLARD - PAINT

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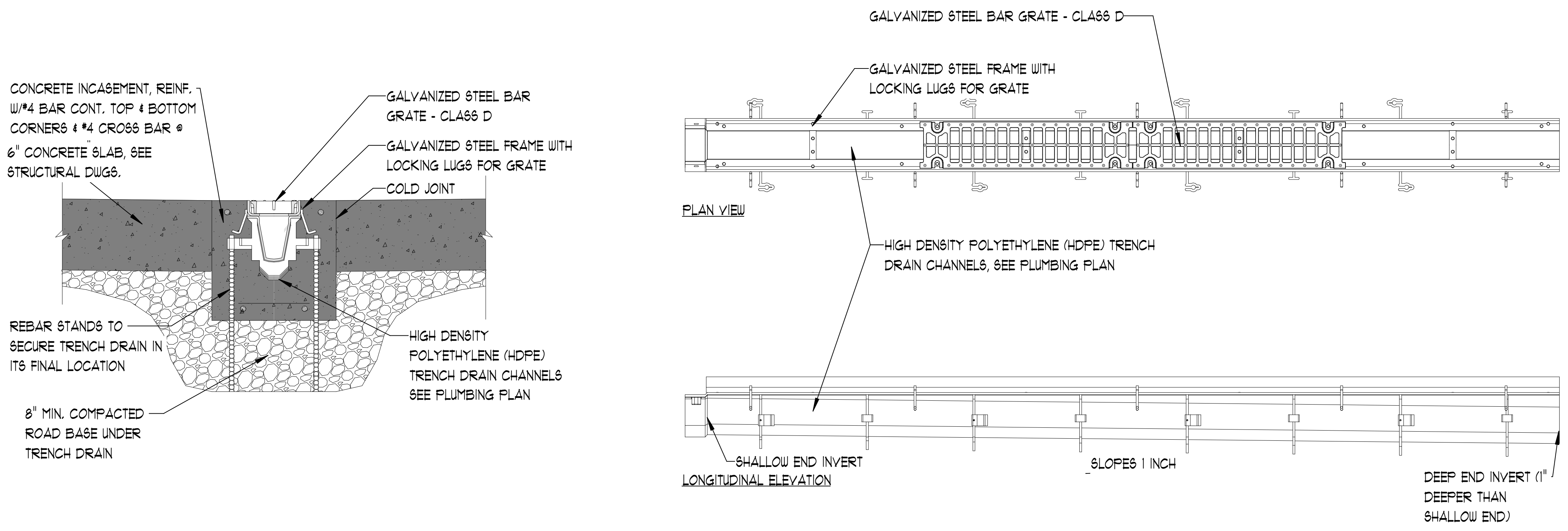
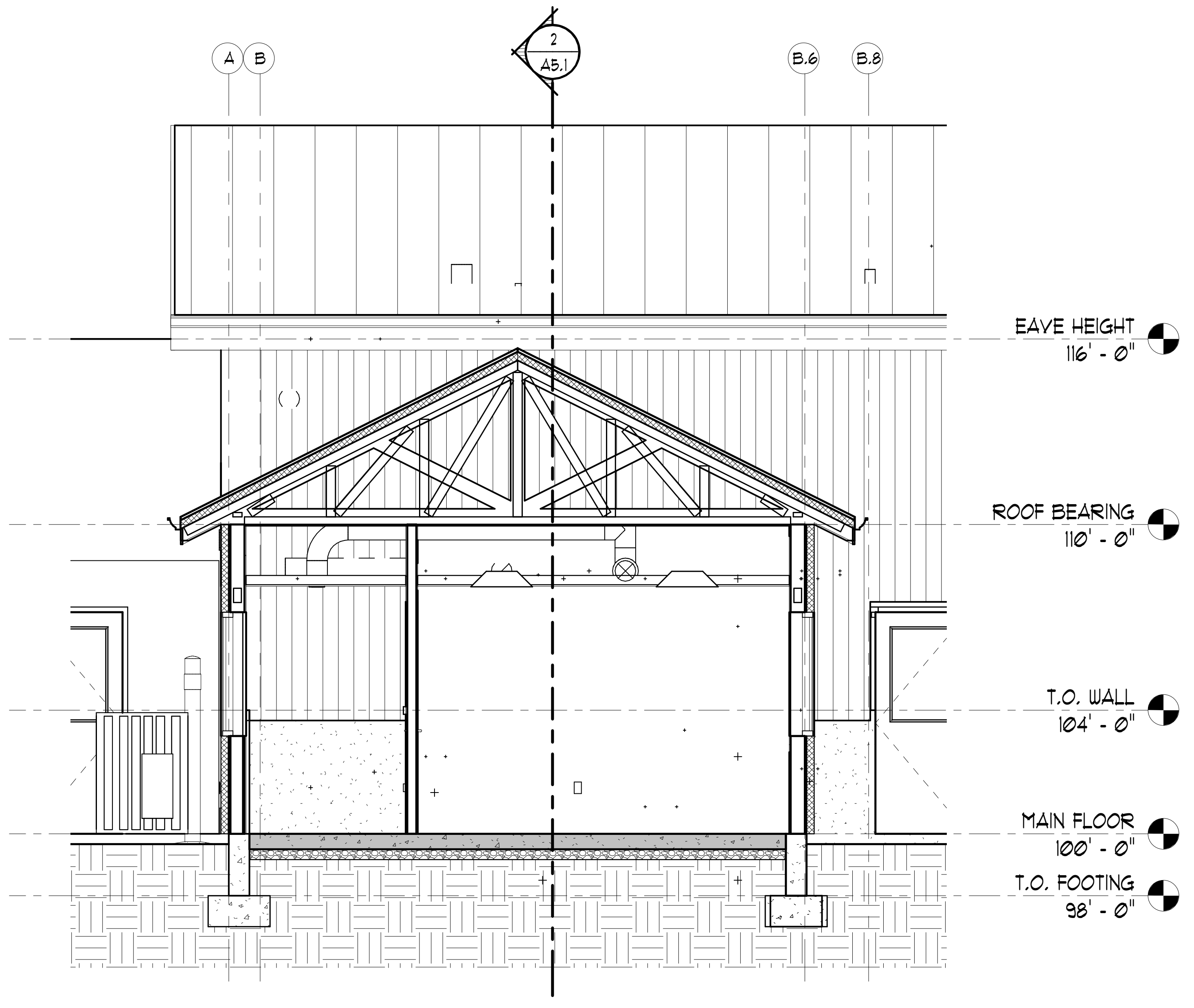
A5.1
BUILDING SECTIONS


CONCRETE INCASEMENT, REINF. W/#4 BAR CONT. TOP & BOTTOM CORNERS & #4 CROSS BAR @
6" CONCRETE SLAB, SEE STRUCTURAL DWGS.
GALVANIZED STEEL BAR GRATE - CLASS D
GALVANIZED STEEL FRAME WITH LOCKING LUGS FOR GRATE
COLD JOINT
REBAR STANDS TO SECURE TRENCH DRAIN IN ITS FINAL LOCATION
HIGH DENSITY POLYETHYLENE (HDPE) TRENCH DRAIN CHANNELS SEE PLUMBING PLAN
8" MIN. COMPACTED ROAD BASE UNDER TRENCH DRAIN
GALVANIZED STEEL BAR GRATE - CLASS D
GALVANIZED STEEL FRAME WITH LOCKING LUGS FOR GRATE
PLAN VIEW
HIGH DENSITY POLYETHYLENE (HDPE) TRENCH DRAIN CHANNELS, SEE PLUMBING PLAN
SHALLOW END INVERT
LONGITUDINAL ELEVATION
SLOPES 1 INCH
DEEP END INVERT (1" DEEPER THAN SHALLOW END)

② TRENCH DRAIN

1" = 1'-0"

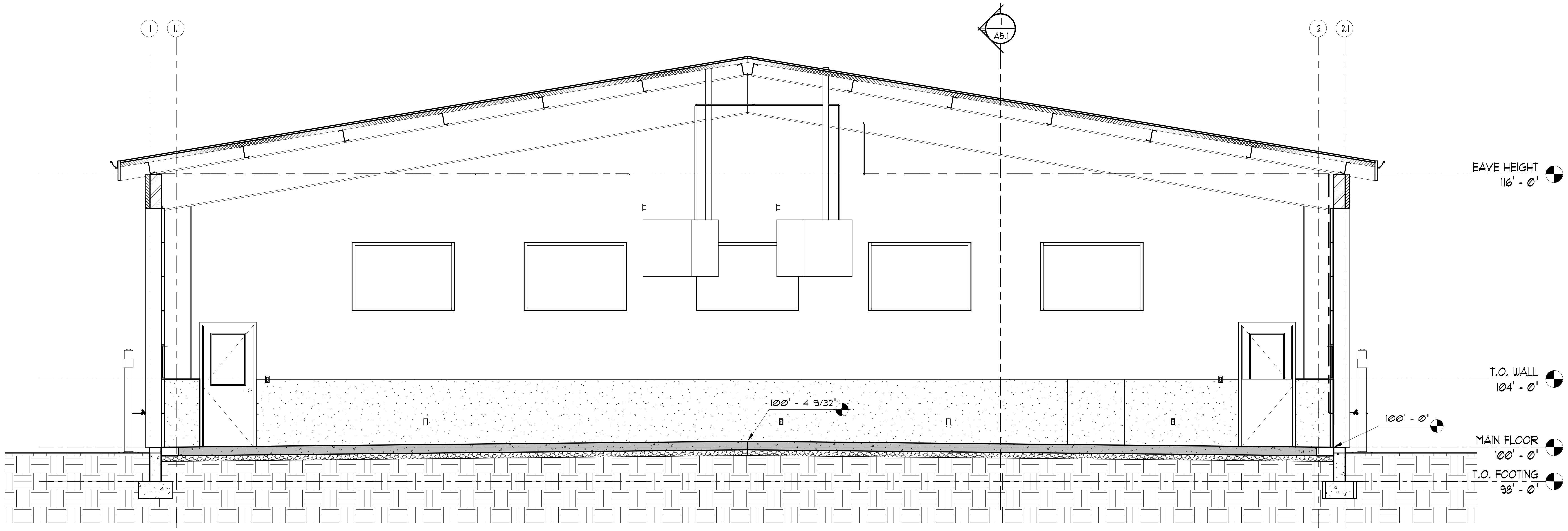


① BUILDING SECTION 3

1/4" = 1'-0"

SHEETNOTES:

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- ○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
- ⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3
- (1) UNDISTURBED EARTH OR ENGINEERED FILL
- (2) CONCRETE FOOTING & FOUNDATION - SEE STRUCTURAL DWG'S
- (3) CONCRETE SLAB OVER GRAVEL BASE - SEE STRUCTURAL DWG'S
- (4) INSULATED METAL PANELS
- (5) PRE-FINISHED METAL GUTTER
- (6) INSULATED METAL ROOF PANELS
- (7) PRE-FINISHED METAL RIDGE CAP
- (8) WOOD ROOF JOIST - SEE STRUCTURAL DWG'S
- (9) PRE-FINISHED METAL FASCIA OVER CONTINUOUS FASCIA BOARD
- (10) WOOD BEAM, STAIN - SEE STRUCTURAL DWG'S
- (11) PRE-FINISHED METAL SOFFIT
- (12) GYPSUM BOARD CEILING - SEE REFLECTED CEILING PLAN
- (13) PRE-FINISHED METAL DOWNSPOUT
- (14) PIPE BOLLARD - PAINT



④ BUILDING SECTION 4

1/4" = 1'-0"

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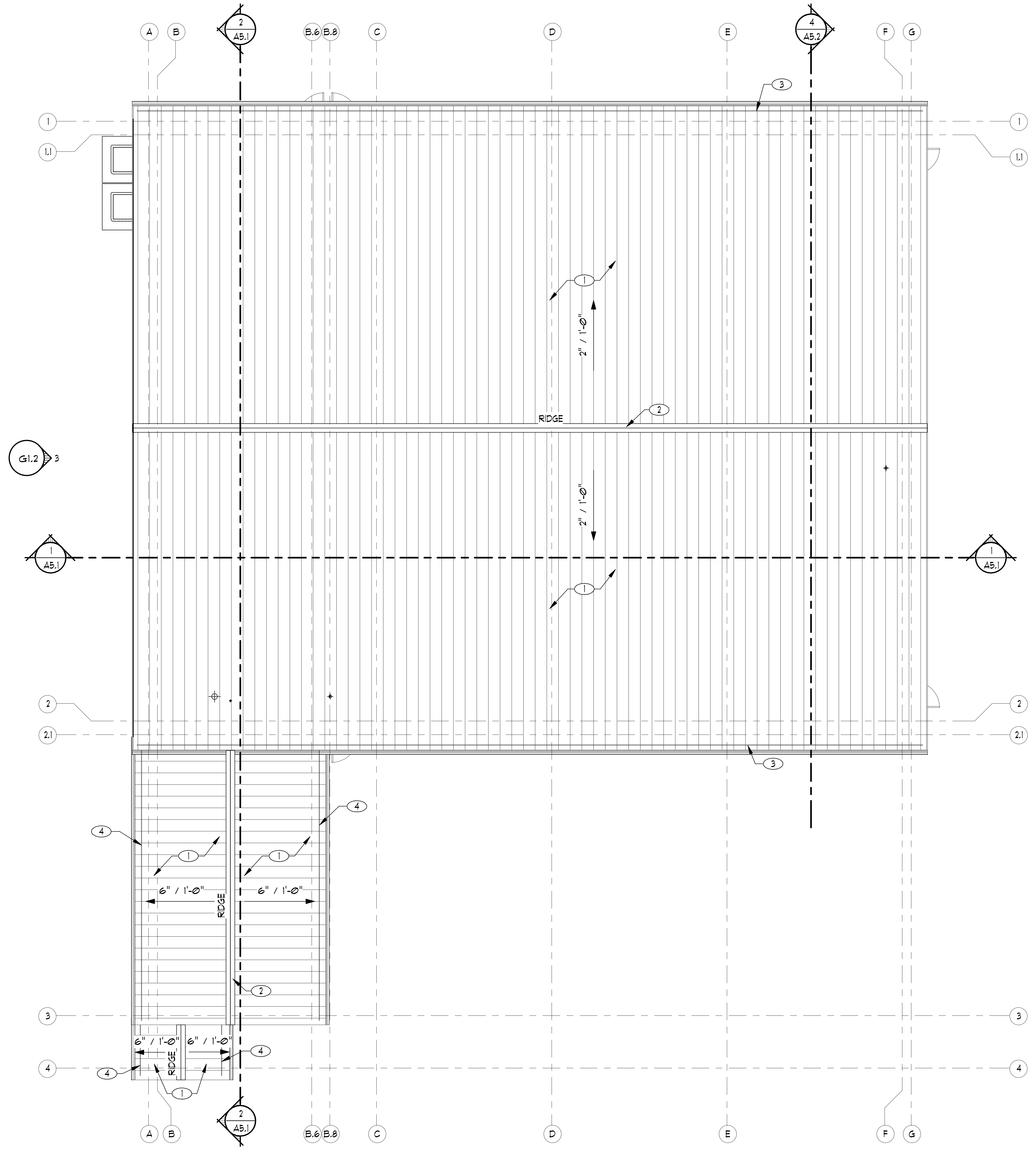
A5.2

BUILDING SECTIONS



① ROOF PLAN

1/8" = 1'-0"

SHEETNOTES:

◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3
(1) STANDING SEAM METAL ROOF
(2) PREFINISHED METAL RIDGE CAP
(3) TWO RAIL SNOW GUARD
(4) SINGLE RAIL SNOW GUARD

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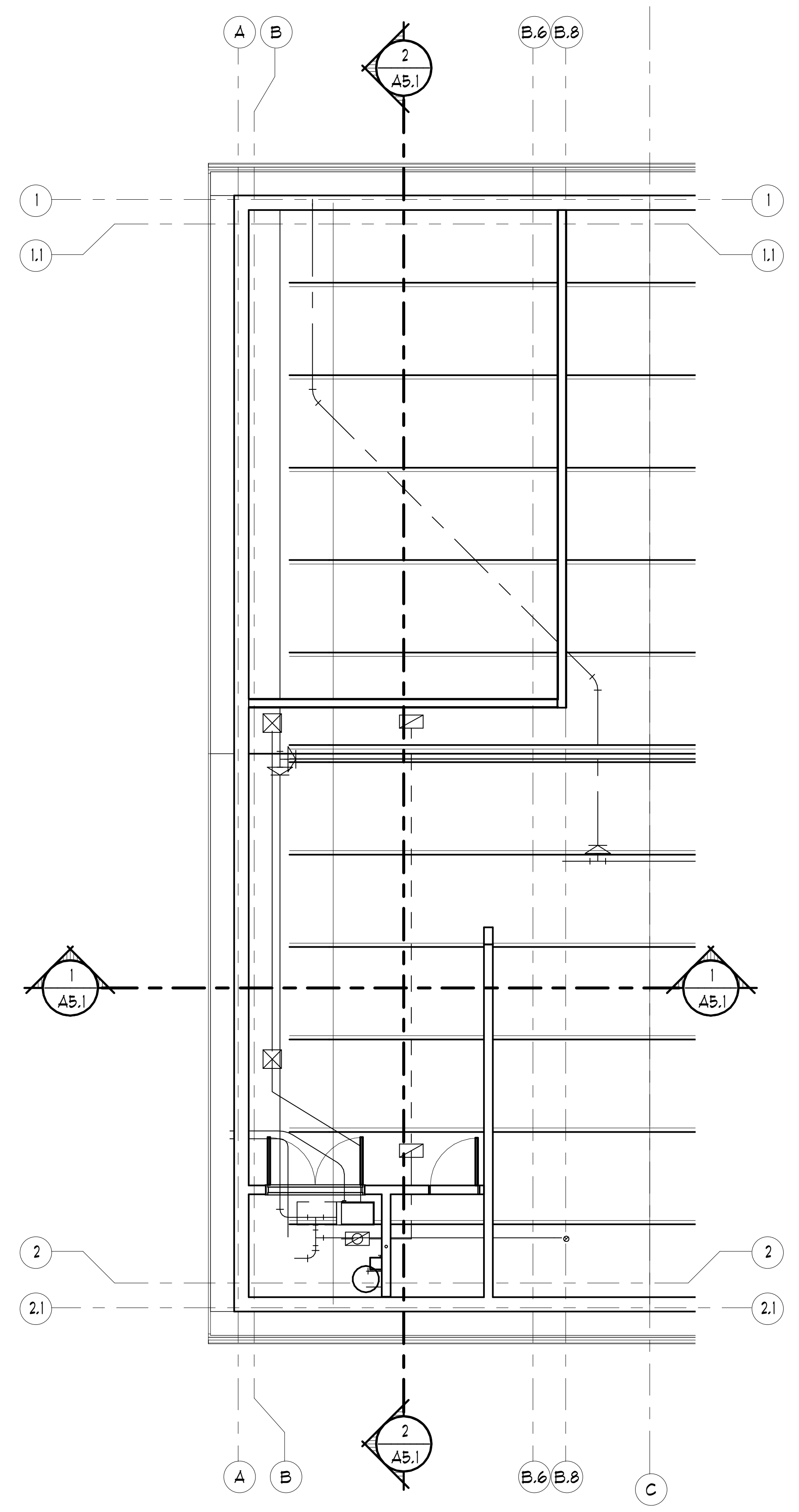
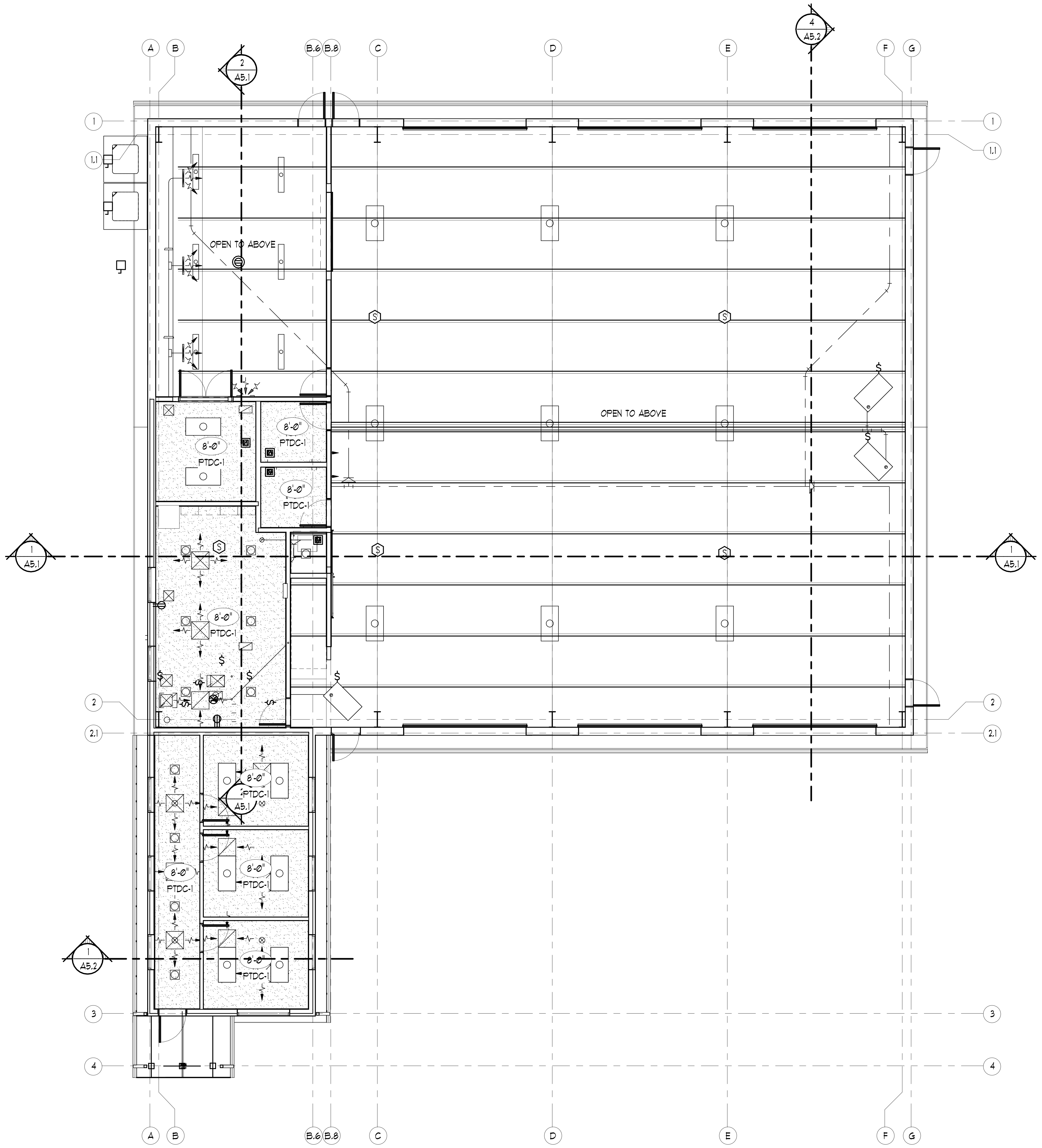
A7.1
ROOF PLAN



2 MEZZANINE - REFLECTED CEILING PLAN

1/8" = 1'-0"



1 MAIN FLOOR REFLECTED CEILING PLAN

1/8" = 1'-0"

SHEETNOTES:

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- ○ TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.2
- ⬡ TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.3

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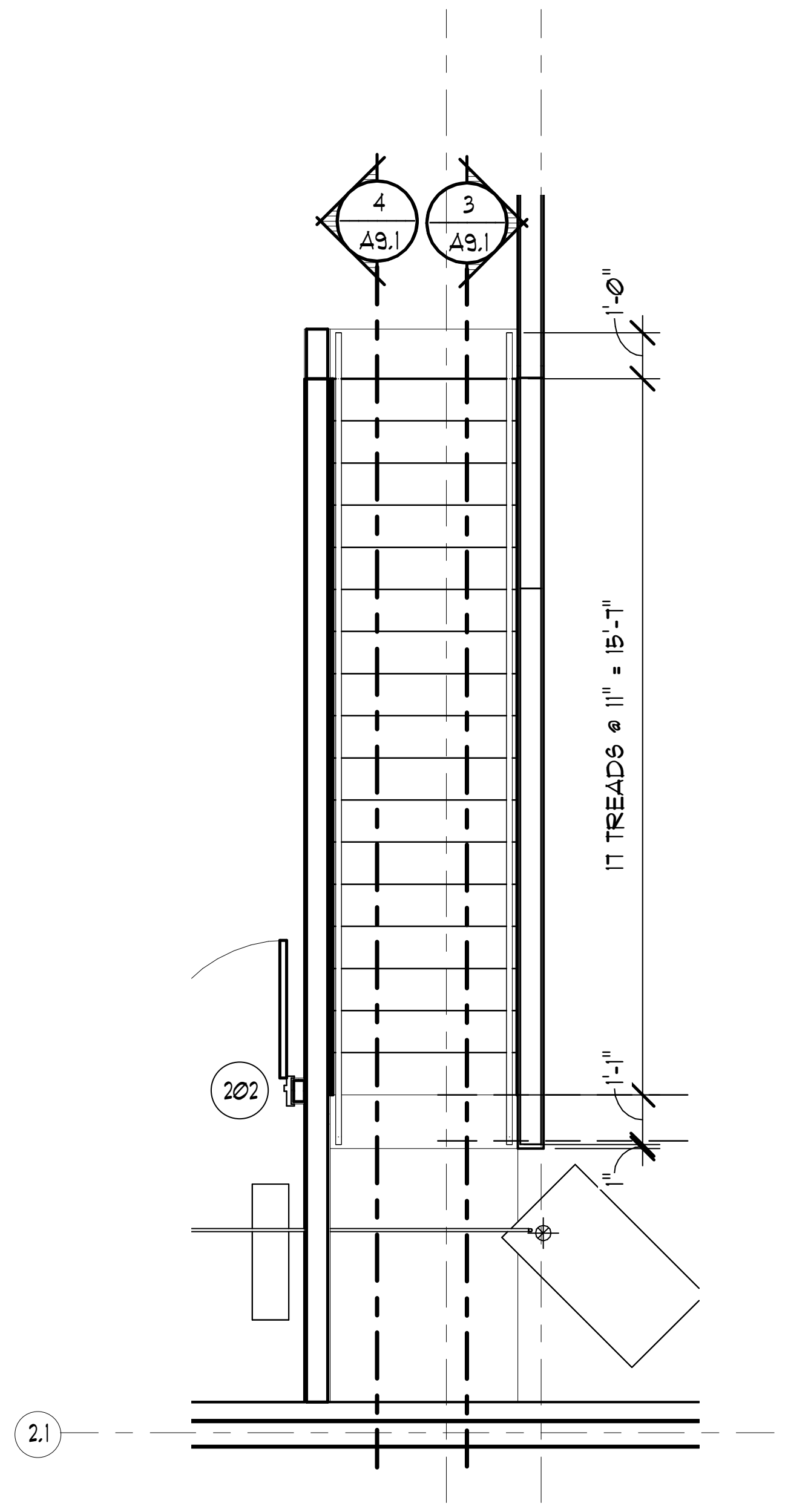
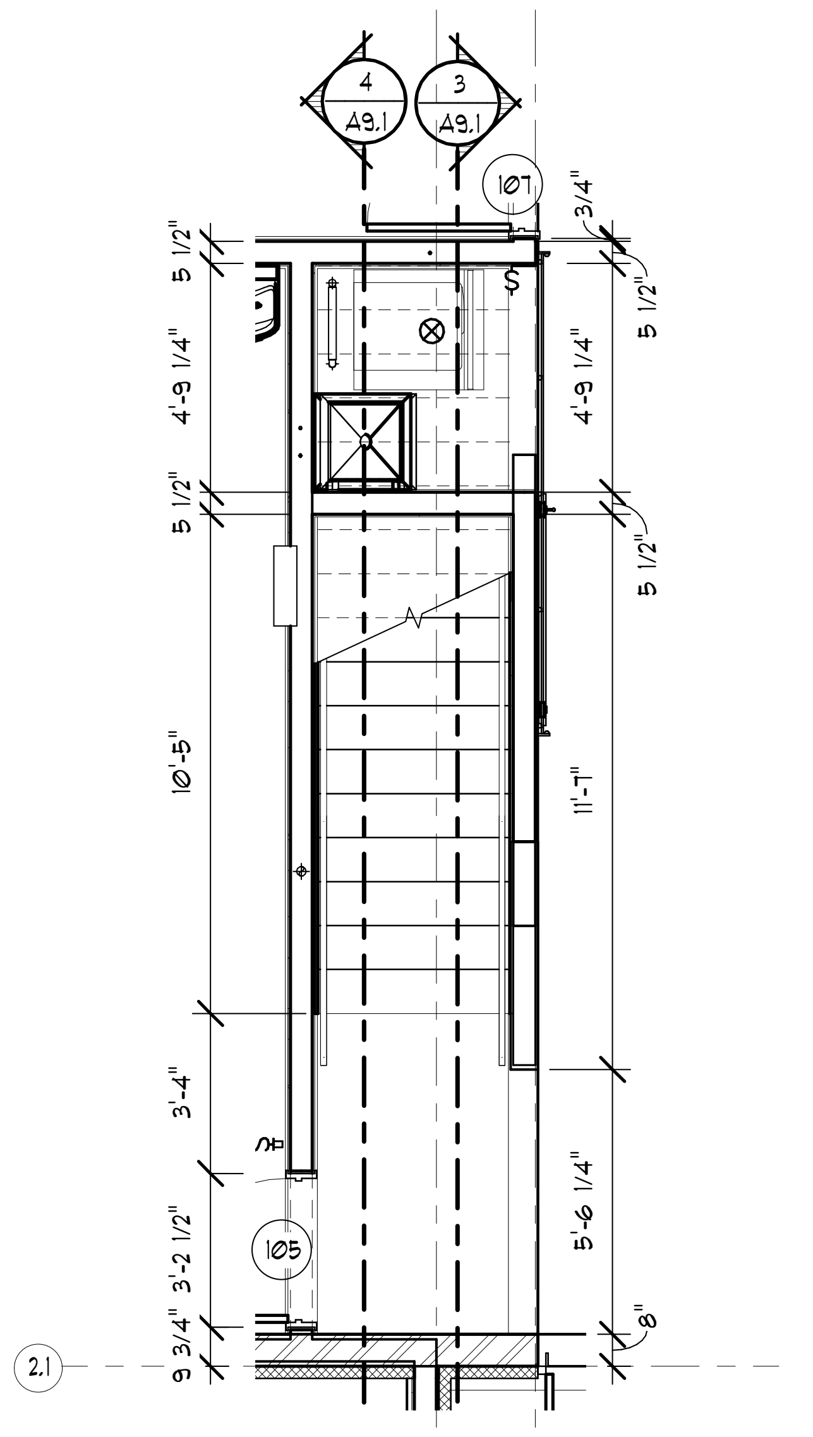
A8.1

MAIN FLOOR - REFLECTED CEILING PLAN



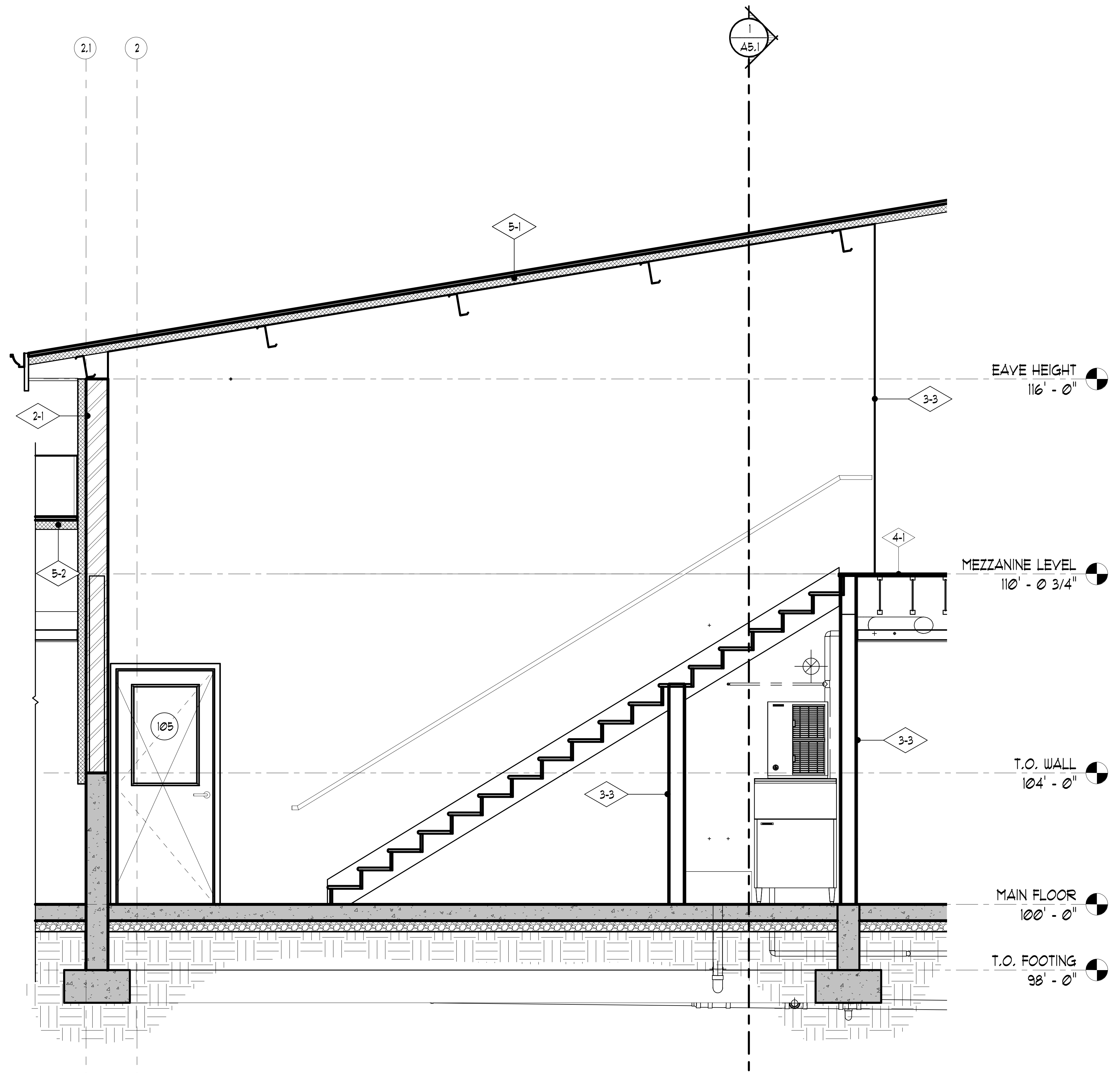
① STAIR #111 MEZZANINE LEVEL

1/4" = 1'-0"



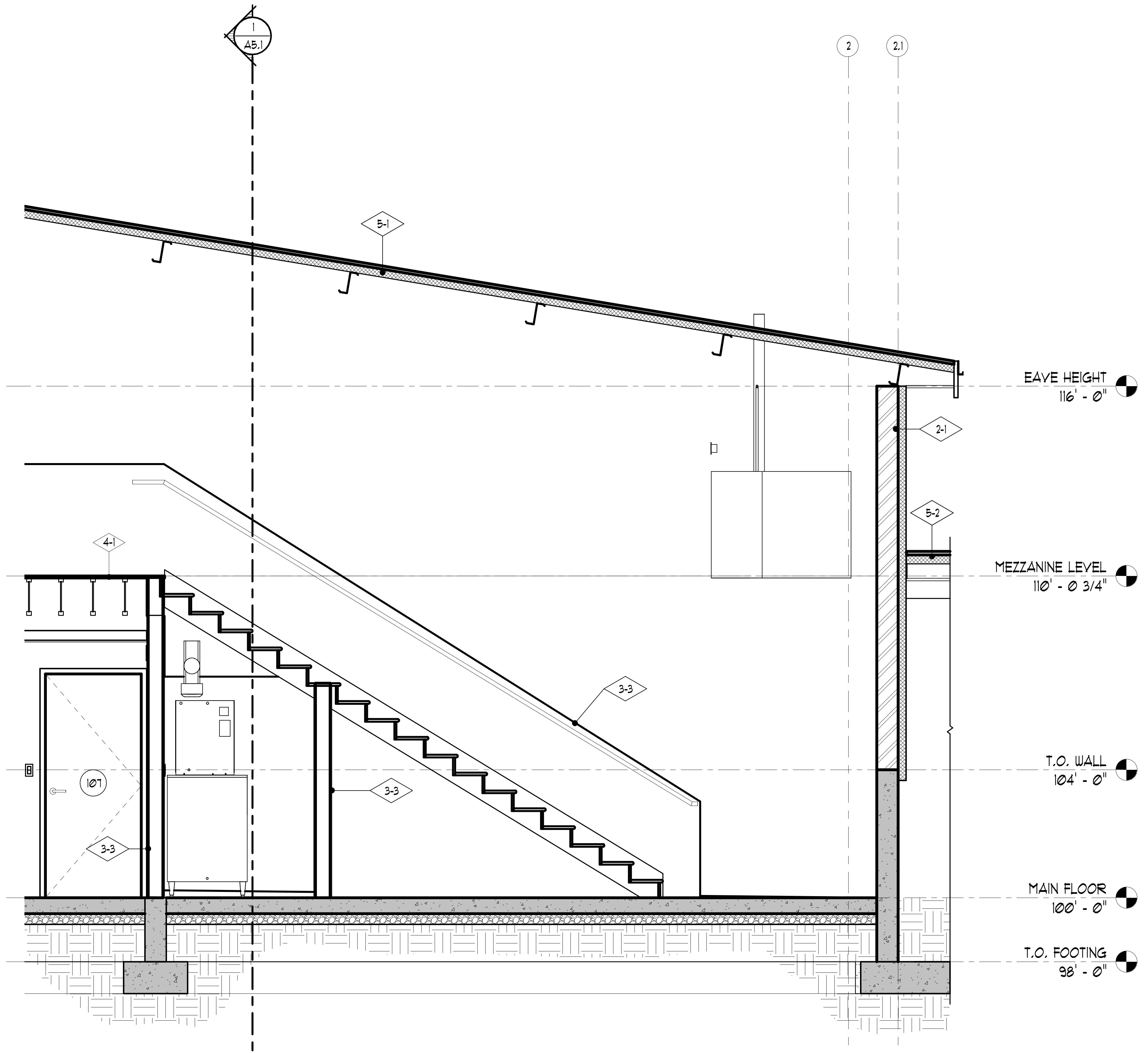
② STAIR #111 MAIN LEVEL

1/4" = 1'-0"



④ STAIR 111 SECTION

3/8" = 1'-0"



③ STAIR 111 SECTION

3/8" = 1'-0"

CHECK SET - 01.11.2023

Date: 01.11.2023

Revision:

BRUCE T. FALLON
5403169-0301
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STATE of UTAH

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A9.1

LARGE SCALE STAIR PLANS AND SECTIONS

STRUCTURAL GENERAL NOTES

BASIS OF DESIGN

1. GOVERNING BUILDING CODE.. 2018 IBC

2. OCCUPANCY CATEGORY... II

3. LOAD COMBINATIONS:
   ASD - GRAVITY AND LATERAL..................................... 1605.3.1

4. GRAVITY DESIGN:
   LIVE LOAD (CONCENTRATED LOADS)
   ALL AREAS... 1500 LBS
   ROOF LIVE LOAD
   (NOT CONCURRENT WITH ROOF SNOW LOAD)......... 20 PSF
   ROOF SNOW LOAD
   GROUND SNOW LOAD... 43 PSF
   FLAT ROOF SNOW LOAD.. 30 PSF
   Is... 1.00
   Ce... 1.00
   Ct.. 1.0
   DRIFTING PER ASCE 7

5. LATERAL DESIGN:
   WIND DESIGN PER ASCE 7-16
   ULTIMATE DESIGN WIND SPEED............................... 103 MPH
   EXPOSURE.. C
   INTERNAL PRESSURE COEFFICIENT....................... 0.18
   TOPOGRAPHIC FACTOR... 1.00

   SEISMIC DESIGN PER ASCE7-16
   Ss CHART VALUE.. 1.501 g
   S1 CHART VALUE.. 0.55 g
   SITE COEFFICIENT FA.. 1.2
   SITE COEFFICIENT FV.. 1.50
   SDS.. 1.201 g
   SD1... 0.55 g
   SOIL SITE CLASS... E
   SEISMIC DESIGN CATEGORY...................................... D
   IMPORTANCE FACTOR Ie... 1.00
   PORTION OF SNOW LOAD INCLUDED......................... 0%

GENERAL

1. THE GENERAL CONTRACTOR SHALL:
   - A. BECOME FAMILIAR WITH ALL PORTIONS OF THE CONTRACT DOCUMENTS AND INSURE THAT ALL SUBCONTRACTORS ARE FAMILIAR WITH THOSE PORTIONS PERTAINING TO THEIR AREA OF WORK. NO DEVIATIONS WILL BE ALLOWED UNLESS AGREED UPON BY ALL PARTIES IN WRITING PRIOR TO CONSTRUCTION FABRICATION.
   - B. VERIFY ALL DIMENSIONS AND ELEVATIONS. COORDINATE ALL DOORS, WINDOWS, NON-BEARING INTERIOR AND EXTERIOR WALLS, ELEVATIONS, SLOPES, STAIRS, CURBS, DRAINS, RECESSES, DEPRESSIONS, RAILINGS, WATERPROOFING, FINISHES, CHAMFERS, KERFS, ETC.
   - C. FIELD VERIFY ALL SITE CONDITIONS AND IMMEDIATELY NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER REGARDING ACTUAL CONDITIONS AT THE SITE WHICH ARE NOT PER THE DRAWINGS.
   - D. COORDINATE ALL WORK BETWEEN THE VARIOUS TRADES AND SUBCONTRACTORS. REPORT ANY MODIFICATIONS TO THE STRUCTURAL PORTION OF THE BUILDING BY OTHER TRADES TO THE ARCHITECT AND STRUCTURAL ENGINEER.
   - E. BE RESPONSIBLE FOR SAFETY AND PROTECTION IN AND AROUND THE JOB SITE AND/OR ADJACENT PROPERTIES.
   - F. REPORT PROGRESS OF WORK TO ARCHITECT AND STRUCTURAL ENGINEER.
   - G. COORDINATE AND VERIFY LOCATIONS AND WEIGHTS OF MECHANICAL UNITS AND/OR OTHER EQUIPMENT OR DEVICES PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY SUPPORTING STRUCTURE. SUCH LOADS SHALL BE REPORTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW. ADDITIONAL FRAMING MAY BE REQUIRED FOR THE PROPER SUPPORT OF SUCH UNITS AND/OR EQUIPMENT. LATERAL SUPPORT FOR THE EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT INSTALLER.
   - H. COORDINATE AND VERIFY ROOF, FLOOR, AND WALL OPENINGS REQUIRED WITH ARCHITECTURAL, MECHANICAL, ELECTRICAL, AND/OR OTHER DRAWINGS PRIOR TO CONSTRUCTION. REPORT OPENINGS REQUIRED WHICH ARE NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW.
   - I. COORDINATE ANY CONSTRUCTION SITUATION NOT COVERED BY THESE PLANS, GENERAL NOTES, OR SPECIFICATIONS WITH THE ARCHITECT AND STRUCTURAL ENGINEER.

2. CONTRACT DOCUMENTS:
   - A. REFER TO THE SPECIFICATIONS FOR INFORMATION NOT COVERED BY THESE GENERAL NOTES OR THE DRAWINGS.
   - B. DETAILS, SECTIONS AND NOTES SHOWN ON THE STRUCTURAL DRAWINGS ARE INTENDED TO BE TYPICAL AND SHALL APPLY TO ALL SIMILAR SITUATIONS ELSEWHERE, UNLESS NOTED OR SHOWN OTHERWISE.
   - C. THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE OVER SHOP DRAWINGS UNLESS SPECIFICALLY NOTED OTHERWISE.
   - D. INFORMATION ON DRAWINGS INDICATING EXISTING CONDITIONS IS BASED ON BEST PRESENT KNOWLEDGE, BUT MAY NOT BE ENTIRELY ACCURATE AND MUST BE FIELD VERIFIED.

3. BUILDING CODE COMPLIANCE:
   - A. INSPECTION, TESTING, CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF THE GOVERNING BUILDING CODE AND STANDARDS. ASTM, IBC, AND OTHER DESIGNATIONS SHALL BE AS AMENDED TO LATEST DATE UNLESS NOTED OTHERWISE.

4. CONSTRUCTION SEQUENCE, SHORING, AND BRACING REQUIREMENTS:
   - A. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR THE METHOD, MEANS, AND SEQUENCE OF ALL STRUCTURAL ERECTION EXCEPT WHEN SPECIFICALLY NOTED OTHERWISE ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE TEMPORARY SHORING AND BRACING TO PROVIDE ADEQUATE VERTICAL AND LATERAL SUPPORT DURING ERECTION. THIS SHORING AND BRACING SHALL REMAIN IN PLACE UNTIL ALL PERMANENT MEMBERS ARE PLACED AND ALL FINAL CONNECTIONS ARE COMPLETED, INCLUDING ALL ROOF AND FLOOR ATTACHMENTS.
   - B. NON-BEARING INTERIOR WALLS SHALL BE ADEQUATELY BRACED TO THE STRUCTURE ABOVE WITH ALLOWANCE FOR DEFLECTION OF THE STRUCTURE ABOVE AND/OR BELOW.
   - C. BUILDING WALLS WHICH RETAIN EARTH MUST BE BRACED AT THE TOP. DO NOT BACKFILL UNLESS BRACING IS PROVIDED OR UNTIL THE COMPLETE FLOOR OR ROOF SYSTEM IS IN PLACE, TYPICAL, UNLESS NOTED OTHERWISE.

5. OMISSIONS AND/OR CONFLICTS:
   - A. OMISSIONS IN AND/OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE CONTRACT DOCUMENTS SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER AND SHALL BE RESOLVED BEFORE PROCEEDING WITH ANY WORK INVOLVED.
   - B. IN CASE OF CONFLICTS IN THE STRUCTURAL WORK, THE MOST STRINGENT REQUIREMENTS, AS DIRECTED BY THE ARCHITECT AND STRUCTURAL ENGINEER, SHALL BE IMPLEMENTED AT NO ADDITIONAL COST TO THE OWNER.

6. MISCELLANEOUS:
   - A. DURING AND AFTER CONSTRUCTION, THE CONTRACTOR AND/OR OWNER SHALL KEEP THE LOADS ON THE STRUCTURE WITHIN THE LIMITS OF THE DESIGN.
   - B. OBSERVATION VISITS TO THE SITE BY REPRESENTATIVES OF THE ARCHITECT AND/OR STRUCTURAL ENGINEER SHALL NOT BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
   - C. STAIRS ARE TO BE AS PER THE ARCHITECTURAL DRAWINGS.
   - D. ALL WORK SHALL BE DONE IN ACCORDANCE WITH OSHA REQUIREMENTS. ANY CONFLICTS BETWEEN THESE DOCUMENTS AND OSHA REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT AND STRUCTURAL ENGINEER BEFORE PROCEEDING WITH WORK.

7. SUBMITTALS:
   - A. THE FOLLOWING ITEMS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION, ERECTION, INSTALLATION, OR OTHERWISE BEING INCORPORATED INTO THE WORK.
     MATERIALS CERTIFICATION FOR ALL CONCRETE MATERIALS.
     MIX DESIGNS FOR EACH TYPE OF CONCRETE.
     REINFORCING STEEL SHOP DRAWINGS.
     STRUCTURAL STEEL SHOP DRAWINGS.
     WELDING PROCEDURES AND CERTIFICATIONS.
   - B. A MINIMUM OF TWO WEEKS SHALL BE ALLOWED FOR THE REVIEW OF ALL SUBMITTALS BY THE ARCHITECT AND STRUCTURAL ENGINEER.
   - C. REQUESTS FOR SUBSTITUTIONS SHALL BE SUBMITTED TO THE ARCHITECT AND STRUCTURAL ENGINEER IN WRITING. REASON(S) FOR THE REQUEST AND COST DIFFERENTIALS SHALL BE INCLUDED IN THE REQUESTS. SUBSTITUTIONS ARE NOT ALLOWED UNLESS APPROVED IN WRITING BY THE ARCHITECT AND STRUCTURAL ENGINEER.

8. DEFERRED SUBMITTALS:
   - A. THE FOLLOWING ITEMS REQUIRING DEFERRED SUBMITTALS ARE LISTED BELOW. THESE ITEMS SHALL BE DESIGNED AND FABRICATED BY THE MANUFACTURER ACCORDING TO THE SPECIFICATIONS GIVEN IN THE CONTRACT DOCUMENTS.

     PRE-ENGINEERED METAL BUILDING

   - B. THESE DEFERRED SUBMITTALS SHALL FIRST BE SUBMITTED TO THE PROJECT ARCHITECT AND/OR ENGINEER FOR REVIEW AND COORDINATION. UPON THE COMPLETION OF THE ARCHITECT/ENGINEER REVIEW, THE ARCHITECT/ENGINEER WILL SUBMIT THE DEFERRED SUBMITTALS TO THE BUILDING OFFICIAL FOR REVIEW AND APPROVAL. THE SUBMITTAL TO THE BUILDING OFFICIAL SHALL INCLUDE A LETTER STATING THAT THE ARCHITECT/ENGINEER REVIEW HAS BEEN PERFORMED AND THAT THE PLANS AND THE CALCULATIONS FOR THE DEFERRED SUBMITTAL ITEMS ARE FOUND TO BE IN GENERAL CONFORMANCE WITH THE DESIGN DRAWINGS WITH NO EXCEPTIONS.
   - C. THE FINAL SUBMITTAL SHALL BE SIGNED AND SEALED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE IN WHICH CONSTRUCTION WILL OCCUR AND SHALL BE AVAILABLE AT THE JOBSITE THROUGHOUT CONSTRUCTION.
   - D. CONSTRUCTION RELATED TO DEFERRED SUBMITTALS SHALL NOT COMMENCE UNTIL THE BUILDING OFFICIAL HAS APPROVED THE SUBMITTAL.

QUALITY ASSURANCE PLAN FOR STRUCTURE

1. INSPECTION:
   - A. THE OWNER SHALL PROVIDE SPECIAL INSPECTION BY QUALIFIED INSPECTORS FOR THE FOLLOWING TYPES OF CONSTRUCTION IN ACCORDANCE WITH IBC, SECTION 1704 AND 1707, THE SPECIFICATIONS, AND THE ATTACHED TABLES INCLUDED IN THESE GENERAL NOTES.
     SOILS: THE BOTTOM OF EXCAVATIONS AND PLACEMENT OF STRUCTURAL FILL. SEE ATTACHED TABLE LABELED REQUIRED VERIFICATION AND INSPECTION OF SOILS.
     REINFORCED CONCRETE: DURING THE CASTING OF ALL CONCRETE AND TAKING OF ALL TEST SPECIMENS, AND SHALL VERIFY THE PLACEMENT OF ALL REINFORCING. INSPECTOR SHALL BE ACI-II OR ICC CERTIFIED. SEE ATTACHED TABLE LABELED REQUIRED VERIFICATION AND INSPECTION OF CONCRETE/STEEL CONSTRUCTION.
     BOLTING: ALL HIGH STRENGTH BOLTS AND BOLTS EMBEDDED IN CONCRETE AND/OR EPOXY. SEE ATTACHED TABLE LABELED REQUIRED VERIFICATION AND INSPECTION OF CONCRETE/STEEL CONSTRUCTION.
     WELDING: ALL SHOP AND FIELD WELDS. INSPECTOR SHALL BE AWS-QC1 CERTIFIED. SEE ATTACHED TABLE LABELED REQUIRED VERIFICATION AND INSPECTION OF STEEL CONSTRUCTION.
     POST-INSTALLED ANCHORS: THE FIRST 25 POST-INSTALLED ANCHORS SHALL BE INSPECTED AND 10 PERCENT OF THE REMAINING ANCHORS SHALL BE INSPECTED.

2. TESTING:
   - A. THE OWNER SHALL PROVIDE TESTING BY QUALIFIED TESTING AGENCIES FOR THE FOLLOWING TYPES OF CONSTRUCTION IN ACCORDANCE WITH IBC, SECTION 1708 AND THE SPECIFICATIONS.
     SOILS: COMPACTION OF STRUCTURAL FILL.
     CONCRETE: STRENGTH, SLUMP, AIR, AND TEMPERATURE.
     BOLTING: PROPER INSTALLATION AND CORRECT TORQUE AND/OR TENSION.
     WELDING: TYPE, SIZE, LENGTH, AND QUALITY OF ALL SHOP AND FIELD WELDS BY APPROVED METHODS. ULTRASONICALLY TEST ALL COMPLETE PENETRATION WELDS.

3.. THE CONTRACTOR SHALL:
   - A. SUBMIT A STATEMENT OF RESPONSIBILITY TO THE OWNER AND BUILDING OFFICIAL PRIOR TO COMMENCING WORK ON STRUCTURE THAT INCLUDES AWARENESS OF THE QUALITY ASSURANCE PLAN REQUIREMENTS, ACKNOWLEDGMENT THAT CONTROL WILL BE EXERCISED TO OBTAIN CONFORMANCE TO CONSTRUCTION DOCUMENTS, PROCEDURES FOR EXERCISING CONTROL, METHOD AND FREQUENCY OF REPORTING, AND IDENTIFICATION AND QUALIFICATIONS OF PERSONNEL IN CHARGE OF CONTROL.
   - B. CORRECT ALL WORK FOUND TO BE DEFICIENT AT NO ADDITIONAL COST TO THE OWNER.
   - C. COORDINATE ALL THE REQUIRED INSPECTIONS, TESTING, AND/OR STRUCTURAL OBSERVATIONS OF THE QUALITY ASSURANCE PLAN. DO NOT PROCEED WITH SUBSEQUENT WORK UNTIL THE REQUIRED INSPECTIONS, TESTING, AND STRUCTURAL OBSERVATIONS HAVE BEEN PROVIDED. NOTIFY THE ARCHITECT AND STRUCTURAL ENGINEER AT LEAST 48 HOURS PRIOR TO ANY REQUIRED OBSERVATIONS.
   - D. PROVIDE COPIES OF THE DAILY INSPECTION REPORTS AND ALL TESTING RESULTS TO THE ARCHITECT, STRUCTURAL ENGINEER, OWNER, AND BUILDING OFFICIAL.

SOILS

1. SOILS REPORT BY: CMT ENGINEERING LABORATORIES
2. SOILS REPORT NUMBER AND DATE: 18199, April 27, 2022

3. SOIL BEARING PRESSURE: 1500 PSF

4. MINIMUM FROST COVER: 30"

5. LATERAL SOIL PRESSURE FLUID EQUIVALENT DENSITY
   - A. ACTIVE 37 PCF
   - B. AT REST 56 PCF
   - C. PASSIVE 375 PCF

6. COEFFICIENT OF FRICTION 0.45

7. THE SOILS ENGINEER SHALL REVIEW ALL EXCAVATIONS AND FILL PLACEMENT PRIOR TO PLACING **CONCRETE.**

SITE PREPARATION

1. CLEARING: THE ENTIRE BUILDING AREA SHALL BE SCRAPED TO REMOVE THE TOPSOIL INCLUDING ALL VEGETATION, DEBRIS, AND DELETERIOUS MATERIAL. SEE SOILS REPORT.

2. PRE-LOADING OF BUILDING FOOTPRINT: SEE SOILS REPORT

3. PROOF ROLLING: THE NATURAL UNDISTURBED SOIL BELOW ALL FOOTINGS SHALL BE PROOF ROLLED PRIOR TO PLACING CONCRETE. REMOVE ALL SOFT SPOTS AND REPLACE WITH COMPACTED STRUCTURAL FILL.

4. COMPACTED STRUCTURAL FILL: SEE SOILS REPORT

5. CONSULT THE PROJECT SPECIFICATIONS AND SOILS REPORT FOR FURTHER EARTHWORK REQUIREMENTS. THE SOILS ENGINEER SHALL REVIEW ALL EXCAVATIONS AND FILL PLACEMENT PRIOR TO PLACING CONCRETE.

CONCRETE

1. CODES AND STANDARDS:
   - A. CONCRETE CONSTRUCTION, WORKMANSHIP, AND MATERIALS SHALL COMPLY WITH THE AMERICAN CONCRETE INSTITUTE (ACI) EDITIONS OF:
     - I. ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
     - II. ACI 318, "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE", EXCEPT AS MODIFIED BY THE IBC.
     - III. ACI 347, "RECOMMENDED PRACTICE FOR CONCRETE FORM WORK".

2. MATERIALS:
   - A. CEMENT SHALL CONFORM TO ASTM C150, TYPE I, II PORTLAND CEMENT.
   - B. HARD ROCK AGGREGATES SHALL CONFORM TO ASTM C33. LIGHTWEIGHT AGGREGATES SHALL CONFORM TO ASTM C330.
   - C. WATER SHALL BE POTABLE.
   - D. AIR ENTRAINMENT SHALL CONFORM TO ASTM C260.
   - E. FLY ASH, CLASS F POZZOLAN SHALL CONFORM TO ASTM C618.
   - F. CALCIUM CHLORIDE SHALL NOT BE USED.
   - G. DEFORMED BAR ANCHORS (DBA) SHALL CONFORM TO ASTM A496.
   - H. HEADED ANCHOR STUDS (HAS) SHALL CONFORM TO ASTM A108.
   - I. SILICA FUME (2% TO SUSPENDED PARKING SLABS) SHALL CONFORM TO ASTM C1240

3. MIX DESIGNS:
   - A. ONLY ONE TYPE OF CONCRETE SHALL BE PLACED AT THE SITE AT ANY GIVEN TIME.
   - B. A MIX DESIGN THAT PRODUCES THE LOWEST SLUMP COMPATIBLE WITH PROPER PLACEMENT SHALL BE USED, 4" MAXIMUM.
   - C. CONCRETE MIXES SHALL CONFORM TO THE FOLLOWING:

CONCRETE MIX DESIGN TABLE

TYPE OF MEMBER	MIN. STRENGTH @ 28 DAYS (PSI)	MAX. W/C (RATIO)	DRY WEIGHT (PCF)	MAX AGGREGTE SIZE (INCHES)	AIR ENTRAIN-MENT (%)	MIN. CEMENT PER YARD (LBS)	EXPOSURE CLASS
EXTERIOR MEMBERS							
FOOTINGS	4000	0.45	145	1	6±1.5	564	F0,S0,P0,C0
WALLS, PIERS, BEAMS	4500	0.45	145	3/4	6±1.5	611	F2,S0,P0,C1
OTHER SITE CONCRETE	4500	0.45	145	3/4	6±1.5	611	F2,S0,P0,C1
INTERIOR SLABS ON GRADE	4000	0.45	145	1	-	564	F0,S0,P0,C0

   - D. LIMIT FLY ASH TO 25% OF THE TOTAL CEMENTITIOUS MATERIAL.
   - E. PEA GRAVEL AGGREGATE AND/OR PLASTICIZER MAY BE USED IN CONGESTED AREAS WHEN REQUIRED TO PROPERLY FILL ALL VOIDS AND/OR FOR WORKABILITY. (CONTRACTORS OPTION).

4. CONSTRUCTION:
   - A. CONCRETE SHALL BE PROPERLY VIBRATED DURING PLACEMENT.
   - B. PRIOR TO PLACING CONCRETE, CHECK WITH ALL TRADES TO INSURE PROPER PLACEMENT OF OPENINGS, BLOCK OUTS, SLEEVES, CURBS, CONDUITS, BOLTS, INSERTS, EMBEDS, DOWELS, ETC. ANCHOR BOLTS AND DOWELS SHALL BE PLACED PRIOR TO CASTING CONCRETE.
   - C. CONSTRUCTION JOINTS AND BULKHEADS SHALL BE FORMED WITH A KEY WAY. ALL CONTACT SURFACES, NEW OR EXISTING, AT CONSTRUCTION JOINTS SHALL BE INTENTIONALLY ROUGHENED TO A 1/4" AMPLITUDE PRIOR TO CASTING ADJACENT POUR.
   - D. GROUT SOLID AROUND ALL JOIST AND BEAM ENDS, TYPICAL UNLESS NOTED OTHERWISE.
   - E. OPENINGS IN FLOORS AND/OR WALLS SHALL HAVE ADDITIONAL REINFORCING AROUND ALL SIDES OF THE OPENING EQUIVALENT TO THE BARS CUT BY THE OPENING WITH HALF ON EACH SIDE OF THE OPENING OR 2-#5 BARS, WHICHEVER IS GREATER, UNLESS NOTED OTHERWISE. BARS PARALLEL TO THE PRINCIPAL REINFORCING SHALL RUN FULL LENGTH OF THE SPAN. BARS IN THE OTHER DIRECTION SHALL RUN 24 INCHES BEYOND THE EDGE OF THE OPENING OR END WITH A STANDARD HOOK. ALSO PROVIDE 2-#5 X 4'-0" DIAGONAL BARS AT EACH CORNER OF EACH OPENING.
   - F. NO PENETRATION SHALL BE ALLOWED THROUGH ANY CONCRETE BEAM, JOIST, COLUMN, PIER, OR JAMB WITHOUT THE ARCHITECT?S AND STRUCTURAL ENGINEER'S PRIOR WRITTEN APPROVAL. PENETRATIONS SHALL BE RE-ROUTED AS REQUIRED AT THESE LOCATIONS.
   - G. ALL BOLT HOLES TO BE FILLED WITH EPOXY SHALL BE WIRE BRUSHED AND CLEANED WITH COMPRESSED AIR. FOLLOW MANUFACTURERS RECOMMENDATIONS.

4. FOOTINGS:
   - A. FOOTINGS SHALL BEAR ON PROPERLY PREPARED MATERIAL. SEE THE SITE PREPARATION NOTES.
   - B. FOOTINGS SHALL BE CENTERED BELOW THE WALL AND/OR COLUMN ABOVE, TYPICAL UNLESS NOTED OTHERWISE.
   - C. EXTERIOR FOOTINGS SHALL BEAR BELOW THE EFFECTS OF FROST.
   - D. PROVIDE A 2X4 BEVELED KEY WAY IN ALL CONTINUOUS WALL FOOTINGS.
   - E. STAGGER FOOTING CONSTRUCTION JOINTS FROM WALL CONSTRUCTION JOINTS ABOVE BY AT LEAST 6 FEET.
   - F. REINFORCING IN CONTINUOUS FOOTINGS SHALL BE CONTINUOUS AT CORNERS AND/OR INTERSECTIONS BY PROVIDING PROPER LAP LENGTHS AND/OR CORNER BARS.
   - G. CONTINUOUS FOOTINGS WITHOUT CONCRETE FOUNDATION WALLS ABOVE SHALL BE REINFORCED WITH A MINIMUM OF 2-#6 LONGITUDINAL TOP BARS IN ADDITION TO REINFORCING SPECIFIED IN THE FOOTING SCHEDULE. AT OPENINGS, PROVIDE (1) #6 TOP BAR FOR EACH FOOT OF FOOTING WIDTH OR PORTION THEREOF, EXTEND 24" BEYOND EDGE OF OPENING, EACH SIDE.
   - H. NO PENETRATIONS SHALL BE ALLOWED THROUGH ANY CONCRETE FOOTING. WHEN CONFLICTS ARISE BETWEEN UNDERGROUND PLUMBING, UTILITIES, ETC., THE FOOTING SHALL BE STEPPED DOWN BELOW THE CONFLICT AND A CONCRETE WALL, PIER, COLUMN ETC., SHALL BE EXTENDED TO THE FOOTING AS REQUIRED.
   - I. BEARING SURFACES FOR FOOTINGS WHICH ARE, OR BECOME, UNDERMINED DURING CONSTRUCTION SHALL BE BACKFILLED WITH A LEAN-MIX CONCRETE (2000 PSI MIN.).

5. SLABS ON GRADE:
   - A. INTERIOR SLABS ON GRADE SHALL BE A MINIMUM OF 4 INCHES THICK, SHALL BEAR ON A 4 INCH MINIMUM LAYER OF FREE-DRAINING GRAVEL, AND SHALL BE REINFORCED WITH #4 BARS AT 24" O.C. BOTH WAYS, TYPICAL UNLESS NOTED OTHERWISE. PROVIDE CHAIRS WITH SAND PLATES FOR PROPER PLACEMENT.
   - B. SLABS ON GRADE SHALL BE SUBDIVIDED BY CONSTRUCTION AND/OR CONTRACTION (CONTROL) JOINTS INTO ROUGHLY SQUARES WHOSE SIDES SHALL NOT EXCEED 15 FEET IN EITHER DIRECTION.
   - C. SEE ARCHITECTURAL FOR EXTERIOR SLABS ON GRADE, TYPICAL, UNLESS NOTED OTHERWISE.

6. WALLS:
   - A. CONCRETE WALLS SHALL BE REINFORCED AS FOLLOWS, UNLESS NOTED OTHERWISE:

WALL THICKNESS (SHEAR WALLS)	VERTICAL REINFORCING (GF 0.0012)	HORIZONTAL REINFORCING (GF 0.002)
6"	#4 @ 18" O.C.	#4 @ 16" O.C.
8"	#4 @ 18" O.C.	#4 @ 12" O.C.
10"	#4 @ 16" O.C.	#5 @ 14" O.C.
12"	#4 @ 18" O.C.,E.F.	#4 @ 16" O.C.,E.F.

   - B. PLACE VERTICAL REINFORCING IN THE CENTER OF THE WALL (EXCEPT FOR BASEMENT WALLS, RETAINING WALLS, OR WHEN EACH FACE IS SPECIFIED).
   - C. VERTICAL REINFORCING SHALL BE DOWELED TO CONCRETE FOOTING OR STRUCTURE BELOW AND TO STRUCTURE ABOVE WITH THE SAME SIZE BAR AND SPACING, TYPICAL, UNLESS NOTED OTHERWISE.
   - D. PROVIDE CORNER BARS AT ALL INTERSECTIONS AND CORNERS. USE SAME SIZE BAR AND SPACING AS THE HORIZONTAL REINFORCING.
   - E. HORIZONTAL REINFORCING SHALL TERMINATE AT THE ENDS OF WALLS AND AT OPENINGS WITH A STANDARD HOOK.
   - F. WHEN TWO CURTAINS OF STEEL ARE REQUIRED, THE SPLICES IN THE HORIZONTAL REINFORCING OF EACH CURTAIN SHALL NOT OCCUR AT THE SAME LOCATION.
   - G. PENETRATIONS THROUGH ANY CONCRETE WALL SHALL BE BUILT INTO THE WALL AS THE WALL IS BEING CONSTRUCTED AND SHALL BE REVIEWED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO INSTALLATION.
   - H. PROVIDE DRAINAGE AT THE BASE OF RETAINING WALLS AND AT THE BASE OF ALL BASEMENT WALLS.

REINFORCING STEEL

1. CODES AND STANDARDS:
   - A. REINFORCING STEEL SHALL COMPLY WITH:
     - I. CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE".
     - II. AMERICAN CONCRETE INSTITUTE "DETAILING MANUAL", ACI 315 (OR SP-66).

2. MATERIALS:
   - A. REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS AND SHALL CONFORM TO ASTM A615, GRADE 60, WITH A DESIGN YIELD STRENGTH OF 60,000 PSI, EXCEPT AS NOTED BELOW.
     - I. DOWELS TO BE BENT IN THE FIELD DURING CONSTRUCTION SHALL BE ASTM A615, GRADE 40 OR ASTM A706, GRADE 60, "LOW-ALLOY STEEL".
     - II. REINFORCING TO BE WELDED SHALL BE ASTM A706, GRADE 60,"LOW-ALLOY STEEL".
   - B. MASONRY JOINT REINFORCING SHALL CONFORM TO ASTM 951 AND SHALL BE MANUFACTURED FROM WIRE WHICH CONFORMS TO ASTM A82.
   - C. MECHANICAL SPLICE COUPLERS SHALL BE CAPABLE OF DEVELOPING 125% OF THE SPECIFIED STRENGTH OF THE BAR.

3. CONSTRUCTION:
   - A. REINFORCING SHALL BE DETAILED, BOLSTERED, AND SUPPORTED PER ACI 315.
   - B. REINFORCING STEEL SHALL BE FREE OF LOOSE FLAKY RUST, SCALE, GREASE, OIL, DIRT, AND OTHER MATERIALS WHICH MIGHT AFFECT OR IMPAIR BOND.
   - C. REINFORCING SHALL BE CONTINUOUS IN WALLS, BEAMS, COLUMNS, SLABS, FOOTINGS, ETC.
   - D. SPLICES IN CONTINUOUS REINFORCING SHALL BE MADE IN AREAS OF COMPRESSION AND/OR AT POINTS OF MINIMUM STRESS, TYPICAL UNLESS NOTED OTHERWISE. LAP SPLICES SHALL BE MINIMUM OF 40 BAR DIAMETERS LONG IN CONCRETE AND 48 BAR DIAMETERS LONG IN MASONRY, TYPICAL UNLESS NOTED OTHERWISE. MINIMUM LAP SHALL BE 24 INCHES LONG. DOWELS SHALL HAVE A MINIMUM OF 30 BAR DIAMETERS EMBEDMENT. TENSION SPICES SHALL BE USED IN CONCRETE WHEN SPECIFICALLY NOTED, USE A CLASS B SPLICE. SPLICES IN TOP BARS IN SUSPENDED SLABS AND BEAMS SHALL BE MADE AT MID SPAN. SPLICES IN BOTTOM BARS IN SUSPENDED SLABS AND BEAMS SHALL BE MADE AT SUPPORTS.
   - E. BENDS SHALL BE MADE COLD. DO NOT USE HEAT. BENDS SHALL BE DONE IN THE FABRICATOR'S SHOP UNLESS SPECIFICALLY NOTED FOR THE FIELD. DO NOT UN-BEND OR RE-BEND A PREVIOUSLY BENT BAR.
   - F. REINFORCING STEEL IN CONCRETE SHALL BE SECURELY ANCHORED AND TIED IN PLACE PRIOR TO PLACING CONCRETE AND SHALL BE POSITIONED WITH THE FOLLOWING MINIMUM CONCRETE COVER:
     CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH 3" CONCRETE EXPOSED TO EARTH OR WEATHER:
     #6 AND LARGER..2"
     #5 AND SMALLER..1-1/2"
     CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
     SLABS AND WALLS, #11 AND SMALLER........................... 3/4"
     BEAMS AND COLUMNS, MAIN REINFORCING OR TIES.. 1-1/2"
     SLABS ON GRADE.. CENTER OF SLAB
   - G. REINFORCING STEEL IN MASONRY SHALL BE PLACED PRIOR TO GROUTING AND SHALL BE PLACED, POSITIONED, AND LOCATED ACCORDING TO THE STRUCTURAL DRAWINGS. IT SHALL BE SECURED AGAINST DISPLACEMENT AT INTERVALS NOT TO EXCEED 200 BAR DIAMETERS OR TEN FEET.
   - H. NO REINFORCING SHALL BE WELDED UNLESS SPECIFICALLY NOTED AS SUCH. USE E90XX ELECTRODES AND ASTM A706 REINFORCING. COMPLY WITH AWS D1.4 REQUIREMENTS.
   - I. EPOXY COATED REINFORCING BARS SHALL BE USED WHEN SPECIFICALLY NOTED. INCREASE LAP SPLICE LENGTHS AS REQUIRED BY THE IBC AND ACI.

STRUCTURAL STEEL

1. CODES AND STANDARDS:
   - A. STRUCTURAL STEEL DESIGN, FABRICATION, AND ERECTION SHALL COMPLY WITH:
     - I. THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360-10)", WITH "COMMENTARY".
     - II. AISC "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES (AISC 303-10)" EXCLUDING SECTIONS 1.5.1,4.4,7.5.4, AND 7.13.3.
     - III. AMERICAN WELDING SOCIETY (AWS-D1.1) "STRUCTURAL WELDING CODE - STEEL", EXCLUDING ITEMS CONFLICTING WITH AISC REQUIREMENTS.

2. MATERIALS:
   - A. STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL CONFORM TO ASTM A992. OTHER STRUCTURAL STEEL SHAPES, PLATES, ANGLES, ETC. SHALL CONFORM TO ASTM A36. RUSSIAN STEEL IS NOT PERMITTED.
   - B. HOLLOW STRUCTURAL SECTIONS SHALL CONFORM TO ASTM A500, GRADE B, WITH A MINIMUM YIELD STRENGTH Fy = 46 KSI.
   - C. STRUCTURAL PIPE SHALL CONFORM TO ASTM A53, WITH A MINIMUM YIELD STRENGTH Fy = 35 KSI.
   - D. HIGH STRENGTH BOLTS SHALL CONFORM TO ASTM A325 (A490). ANCHOR RODS SHALL HAVE HEADED STUDS AND SHALL CONFORM TO ASTM F1554. ALL OTHER BOLTS SHALL CONFORM TO ASTM A307 OR BETTER.
   - E. HEADED ANCHOR STUDS AND DEFORMED BAR ANCHORS SHALL CONFORM TO THE MANUFACTURER'S SPECIFICATIONS.
   - F. ALL MEMBERS AND WELDS WHICH HAVE COMPLETE PENETRATION GROOVE WELDS SHALL MEET THE CHARPY V-NOTCH TOUGHNESS IMPACT TEST OF 20 FOOT POUNDS AT 70 DEGREES FAHRENHEIT.

3. CONSTRUCTION:
   - A. FABRICATION SHALL BE DONE IN AN APPROVED FABRICATOR'S SHOP.
   - B. CAMBER IN BEAMS SHALL BE AS INDICATED ON PLANS.
   - C. PROVIDE A SHOP COAT OF PAINT ON ALL STEEL ITEMS, EXCEPT AT AREAS OF WELDING AND/OR BOLTING.
   - D. USE HIGH STRENGTH (8000 PSI MINIMUM AT 28 DAY), NON-SHRINK, LIQUID EPOXY GROUT BENEATH ALL STEEL BASE PLATES AND BEARING PLATES. MIX GROUT WITH SAND OR PEA GRAVEL AS RECOMMENDED BY THE MANUFACTURER. PLACE GROUT AS SOON AS STEEL MEMBER HAS BEEN PROPERLY POSITIONED AND ALIGNED.
   - E. WHERE STRUCTURAL STEEL WIDE FLANGE, PIPE, OR HOLLOW STRUCTURAL SECTIONS ARE EMBEDDED IN CONCRETE OR MASONRY AND REINFORCING BARS BUTT TO IT, DEFORMED BAR ANCHORS OR REINFORCING BARS WITH THE SAME SIZE AND SPACING AS THE ADJACENT REINFORCING BARS, 48 BAR DIAMETERS LONG, SHALL BE WELDED TO THE STRUCTURAL STEEL. THE MANUFACTURER?S WELDING PROCEDURES SHALL BE ADHERED TO.

4. BOLTED CONNECTIONS:
   - A. STEEL TO STEEL BOLTED CONNECTIONS SHALL BE MADE WITH ASTM A325 HIGH STRENGTH BOLTS AND NUTS, UNLESS NOTED OTHERWISE. BOLTS SHALL CARRY THE IDENTIFYING MARK OF THREE (3) RADIAL LINES.
   - B. ALL OTHER BOLTED CONNECTIONS SHALL BE MADE WITH BOLTS AND NUTS CONFORMING TO ASTM A307 UNLESS NOTED OTHERWISE.
   - C. BOLTS SHALL BE 3/4" DIAMETER, TYPICAL, UNLESS NOTED OTHERWISE. STANDARD SPACING SHALL BE 3" O.C. AND STANDARD EDGE DISTANCE SHALL BE 1½", TYPICAL, UNLESS NOTED OTHERWISE.
   - D. BOLT SHALL BE BEARING TYPE CONNECTIONS WITH THREADS EXCLUDED UNLESS NOTED OTHERWISE.
   - E. BOLTED CONNECTIONS SHALL BE TIGHTENED AND SHALL HAVE WASHERS AS REQUIRED BY AISC UNLESS NOTED OTHERWISE.
   - F. ENLARGING OF HOLES SHALL BE ACCOMPLISHED BY MEANS OF REAMING. DO NOT USE A TORCH ON ANY BOLT HOLES.

5. WELDED CONNECTIONS:
   - A. WELDING AND GAS CUTTING SHALL BE DONE PER AWS.
   - B. WELDERS SHALL BE CURRENTLY CERTIFIED ACCORDING TO AWS. ALL WELDING PROCEDURES SHALL BE PRE-QUALIFIED. WELDERS SHALL FOLLOW WELDING PROCEDURES.
   - C. WELDED CONNECTIONS SHALL BE MADE USING LOW HYDROGEN MATCHING FILLER MATERIAL ELECTRODES, UNLESS NOTED OTHERWISE.
   - D. WELDS SHALL HAVE THE SLAG REMOVED.
   - E. FULL PENETRATION WELDS, SHOP OR FIELD, SHALL HAVE BACKER BARS REMOVED, BE BACK GOUGED, AND REWELDED PER AWS TO HAVE FULL PENETRATION WELD.

POST-INSTALLED ANCHORS

1. EPOXY ANCHORS:
   - A. THE FOLLOWING EPOXY ADHESIVES SYSTEMS SHALL BE ALLOWED:
     FOR CONCRETE:
     HILTI HIT-HY 200
     SIMPSON SET-3G
   - B. ANCHOR RODS SHALL BE ASTM A-307, THREADED AND GALVANIZED, AND THE DIAMETER AS INDICATED ON PLAN.
   - C. SCREEN TUBES SHALL BE USED AT UNGROUTED MASONRY UNITS.
   - D. ALL ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. AS A MINIMUM BOLT HOLES SHALL BE WIRE BRUSHED AND CLEANED WITH COMPRESSED AIR.

2. MECHANICAL ANCHORS
   - A. THE FOLLOWING MECHANICAL ANCHORS SHALL BE ALLOWED:
     SIMPSON TITEN HD
     HILTI KWIK HUD-EZ
   - B. ALL ANCHORS SHALL BE INSTALLED PER MANUFACTURER'S INSTRUCTIONS. AS A MINIMUM BOLT HOLES SHALL BE WIRE BRUSHED AND CLEANED WITH COMPRESSED AIR.

3. SUBSTITUTES: CONTRACTOR SHALL SUBMIT A WRITTEN REQUEST FOR APPROVAL TO THE ARCHITECT AND STRUCTURAL ENGINEER.

PRE-ENGINEERED METAL BUILDING

1. PRODUCT:
   - A. THE PRE-ENGINEERED METAL BUILDING SHALL COMPLY WITH THE RECOMMENDATIONS OF THE METAL BUILDING MANUFACTURER'S ASSOCIATION (MBMA).

2. DESIGN:
   - A. THE METAL BUILDING MANUFACTURER SHALL BE RESPONSIBLE FOR THE DESIGN AND FABRICATION OF THE PRE-ENGINEERED METAL BUILDING.
   - B. THE PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED IN THE STATE OF UTAH.
   - C. THE PRE-ENGINEERED METAL BUILDING SHALL BE DESIGNED TO MEET OR EXCEED THE DESIGN LOADS IN THE BASIS OF DESIGN SECTION OF THESE GENERAL NOTES.
   - D. ALL COLUMNS, BASE PLATES, AND ANCHOR BOLTS SHALL BE DESIGNED AND PROVIDED BY THE METAL BUILDING MANUFACTURER. ANCHOR BOLT CAPACITY SHALL BE BASED ON BOLT TO CONCRETE CONNECTION, NOT ON STEEL STRENGTH ALONE.
   - E. SHOP DRAWINGS AND CALCULATIONS SHALL INDICATE THE DESIGN LOADS, THE LOAD COMBINATIONS, AND THE MAXIMUM REACTIONS TO THE FOUNDATIONS.
   - F. FOOTINGS AND FOUNDATIONS SHOWN ON THE DRAWINGS MAY VARY DEPENDING ON THE FINAL DESIGN REACTIONS PROVIDED IN THE CALCULATIONS. THEREFORE, THE SHOP DRAWINGS AND CALCULATIONS MUST BE SUBMITTED, REVIEWED, AND RETURNED PRIOR TO CASTING ANY FOOTINGS AND/OR FOUNDATIONS AND BEFORE REINFORCING STEEL IS FABRICATED.

3. FABRICATION AND ERECTION:
   - A. ALL BASE PLATES SHALL BEAR ON NON-SHRINK GROUT. ALL ANCHOR RODS SHALL BE 3/4" DIAMETER MINIMUM WITH HEADED STUDS, AND SHALL HAVE EMBEDMENT AS REQUIRED, 12" MINIMUM.

WOOD

1. CODES AND STANDARDS:
   - A. WOOD CONSTRUCTION SHALL COMPLY WITH:
     - I. THE AMERICAN FOREST & PAPER ASSOCIATION "NATIONAL DESIGN SPECIFICATION", AFPA-NDS.
     - II. THE GRADING REQUIREMENTS OF THE WESTERN WOODS PRODUCTS ASSOCIATION, WWPA.

2. MATERIALS:
   - A. STRUCTURAL LUMBER SHALL BE AS FOLLOWS AND SHALL BE CLEARLY MARKED AS TO SPECIES AND GRADE:
     - I. JOISTS, BEAMS OR HEADERS - DOUGLAS FIR-LARCH #2 OR BETTER.
     - II. POSTS AND COLUMNS - DOUGLAS FIR-LARCH #1 OR BETTER.
     - III. STUDS - DOUGLAS FIR-LARCH #2 OR BETTER. STUD GRADE AND STANDARD GRADE ARE NOT ALLOWED.
   - B. MANUFACTURED JOISTS SHALL BE AS PER THE DRAWINGS UNLESS OTHERWISE APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO BIDDING. ALTERNATE JOIST MANUFACTURERS PRODUCTS ARE ACCEPTABLE PROVIDED THE SECTION PROPERTIES, DESIGN PARAMETERS, AND LOADING CAPACITIES OF THE SPECIFIED PRODUCT ARE MET OR EXCEEDED.
   - C. STRUCTURAL GLUED-LAMINATED TIMBER SHALL BE MANUFACTURED AND IDENTIFIED PER AITC A190.1 AND ASTM D 3737. IT SHALL BE 24F-V4 FOR SIMPLE SPANS AND 24F-V8 FOR CONTINUOUS SPANS OR CANTILEVERED BEAMS AND CLEARLY MARKED, MEETING THE GRADE REQUIREMENTS AS DEFINED BY THE IBC.
   - D. STRUCTURAL LAMINATED-VENEER-LUMBER (LVL) SHALL CONFORM TO THE FOLLOWING MINIMUM DESIGN PARAMETERS:
     Fb = 2,600 PSI.
     Fv = 285 PSI.
     E = 2,000,000 PSI
   - G. WOOD STRUCTURAL PANELS SHALL BE EXPOSURE 1 GRADE OR BETTER A.P.A. RATED SHEATHING WITH EXTERIOR GLUE AND SHALL CONFORM TO STANDARD PS 1-07, OR PS 2-04.
   - H. WOOD CONNECTORS SHALL BE SIMPSON STRONG-TIE UNLESS OTHERWISE APPROVED BY THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO BIDDING.
   - I. WOOD JOISTS AND BEAMS SHALL BE DESIGNED AND STAMPED BY A PROFESSIONAL ENGINEER CURRENTLY LICENSED IN THE STATE IN WHICH CONSTRUCTION WILL OCCUR.

3. CONSTRUCTION:
   - A. ROOF AND FLOOR JOISTS SHALL BE AS NOTED ON THE PLANS. ALL JOISTS SHALL BE LATERALLY SUPPORTED AT THE ENDS BY SOLID BLOCKING AND/OR A METAL HANGER.
   - B. MANUFACTURED JOISTS SHALL BE ERECTED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND SHALL BE DESIGNED TO SUPPORT THE MAXIMUM LOADS INDICATED IN THE MANUFACTURER'S PUBLISHED LOAD TABLES.
   - C. PROVIDE APPROVED BRIDGING AT 8'-0" O.C. MAXIMUM SPACING FOR ALL DIMENSIONAL LUMBER, LVL, PSL, AND LSL JOISTS. PROVIDE BRIDGING IN ALL OTHER MANUFACTURED JOISTS PER THE MANUFACTURER'S RECOMMENDATIONS UNLESS OTHERWISE SHOWN ON PLAN.
   - D. HOLES IN WOOD CONNECTORS (FRAMING ANCHORS, JOIST HANGERS, PURLIN ANCHORS, ETC.) MUST BE FILLED WITH NAILS AS SPECIFIED BY THE MANUFACTURER, TYPICAL, UNLESS NOTED OTHERWISE.
   - E. BOLTS THRU WOOD SHALL HAVE WASHERS UNDER NUTS. ALL BOLTS HOLES SHALL BE 1/32 TO 1/16 INCH LARGER THAN BOLTS. NUTS SHALL BE TIGHTENED SNUGLY, BUT NOT SO TIGHT AS TO CAUSE CRUSHING OF THE WOOD. DO NOT COUNTERSINK BOLTS UNLESS SPECIFICALLY NOTED.
   - F. NAILING OF MEMBERS SHALL CONFORM TO THE FASTENING SCHEDULE IN THE IBC, TABLE 2304.9.1, UNLESS NOTED OTHERWISE.
   - G. EDGE NAILING BETWEEN PANELS OF SHEATHING SHALL OCCUR ALONG A SINGLE COMMON BACK UP MEMBER. SHEATHING SHALL BE EDGE NAILED TO ALL MEMBERS ATTACHED TO DRAG STRUTS, HOLD DOWNS, FLOOR TIE ANCHORS, ETC.
   - H. CORNERS AND INTERSECTIONS OF SHEAR WALLS SHALL BE BUILT INTEGRALLY. THE SHEATHING FROM EACH WALL SHALL BE EDGE NAILED TO A COMMON BACK UP MEMBER.
   - I. SILL PLATES FOR SHEAR WALLS SHALL BE 2X MATERIAL (3X WHEN SPECIFIED), AND ANCHOR BOLTS SHALL HAVE A 3"X3" SIMPSON BPS 5/8-6 ANCHOR BOLT PLATE OR EQUAL WHICH SHALL BE INSTALLED A MAXIMUM OF 1/2" FROM THE WOOD STRUCTURAL PANEL FACE OF THE WALL.
   - J. LAMINATED BUILT-UP BEAMS OF 2X__ MEMBERS 10" DEEP OR LESS SHALL BE NAILED TOGETHER WITH NOT LESS THAN 16d NAILS AT 12" O.C., STAGGERED. USE (2)-20d COMMON NAILS AT ALL SUPPORTS. 2X__ MEMBERS DEEPER THAN 10" SHALL BE BOLTED TOGETHER WITH 1/2" BOLTS AT 16" O.C. STAGGERED WITH 2 BOLTS AT SUPPORTS.
   - K. SPLIT RINGS SHALL BE TECO SPLIT RINGS AS MANUFACTURED BY THE TIMBER ENGINEERING COMPANY UNLESS OTHERWISE APPROVED BY THE ARCHITECT AND ENGINEER PRIOR TO BIDDING. SPLIT RINGS SHALL BE MANUFACTURED FROM HOT ROLLED S.A.E.-1010 CARBON STEEL. EACH RING SHALL FORM A CLOSED TRUE CIRCLE WITH THE PRINCIPAL AXIS OF THE CROSS SECTION OF THE RING PARALLEL TO THE GEOMETRIC AXIS OF THE RING. THE RING SHALL FIT SNUGLY IN THE PREPARED GROOVE. GROVES FOR SPLIT RINGS SHALL NOT BE GREATER THEN 1/16"DEEPER THAN REQUIRED. DEPTH OF GROVE SHALL BE EQUAL ON BOTH WOOD MEMBERS.

Date: 1/19/2023
Revision:

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S-001

GENERAL NOTES

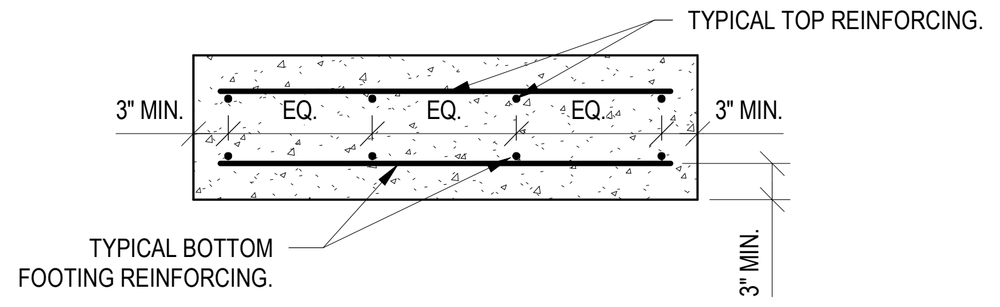
CONCRETE FOOTING SCHEDULE

BEARING PRESSURE = 1500 PSF

MARK	WIDTH	LENGTH	THICK.	BOTTOM REINFORCING	TOP REINFORCING	NOTES
F-4	4'-0"	4'-0"	12"	(4) - #5 E.W.	-	-
F-5	5'-0"	5'-0"	12"	(5) - #5 E.W.	-	-
F-2C	2'-0"	CONT.	12"	(2) #5 L.W. #4 @ 24" O.C. C.W.	-	-
C.W. = CROSSWISE			E.W. = EACH WAY		L.W. = LENGTHWISE	

NOTES:

1. ALL FOOTINGS SHALL BEAR ON PROPERLY PREPARED MATERIAL. SEE THE SITE PREPARATION NOTES.
2. ALL FOOTINGS SHALL BE CENTERED BELOW THE WALL AND/OR COLUMN ABOVE, TYP., U.N.O.
3. ALL EXTERIOR FOOTINGS SHALL BEAR BELOW THE EFFECTS OF THE FROST.
4. PROVIDE A 2X4 BEVELED KEY WAY IN ALL CONTINUOUS WALL FOOTINGS.
5. PROVIDE DOWELS WITH STANDARD HOOKS FROM FOOTINGS TO ANY REINFORCED ELEMENT ABOVE WITH SIZE AND SPACING TO MATCH VERTICAL REINFORCING IN ELEMENT ABOVE.
6. PROVIDE MINIMUM COVER FOR ALL REINFORCING PER GENERAL NOTES.
7. ANY INCREASE IN THE SIZE OF FOOTINGS SHOWN MAY REQUIRE ADDITIONAL REINFORCING, COORDINATE WITH THE ARCHITECT AND STRUCTURAL ENGINEER.
8. PENETRATIONS THROUGH FOOTINGS ARE NOT ALLOWED, UNLESS APPROVED BY THE ARCHITECT AND/OR STRUCTURAL ENGINEER IN WRITING PRIOR TO CASTING FOOTING.
9. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.

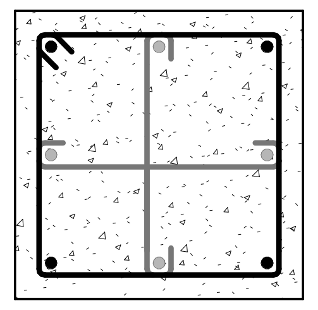


CONCRETE PIER SCHEDULE

MARK	WIDTH	LENGTH	REINFORCING		TYPE	NOTES
			VERTICAL	TIES SETS		
CP-1	1'-8"	2'-3"	(8) #7	(3) #4 @ 12"O.C.	C	
CP-2	1'-2"	2'-3"	(4) #6	(3) #4 @ 12"O.C.	D	

NOTES:

1. PROVIDE MINIMUM COVER FOR ALL REINFORCING PER THE GENERAL NOTES.
2. PROVIDE DOWELS WITH STANDARD HOOKS AND/OR PROPER LAP TO THE STRUCTURE BELOW WITH SIZE AND SPACING TO MATCH THE VERTICAL REINFORCING IN THE PIER ABOVE, TYP., U.N.O.
3. PROVIDE A MINIMUM OF TWO SETS OF TIES IN THE TOP FIVE INCHES OF EVERY PIER, TYP., U.N.O.
4. PENETRATIONS THROUGH CONCRETE PIERS ARE NOT ALLOWED.
5. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.



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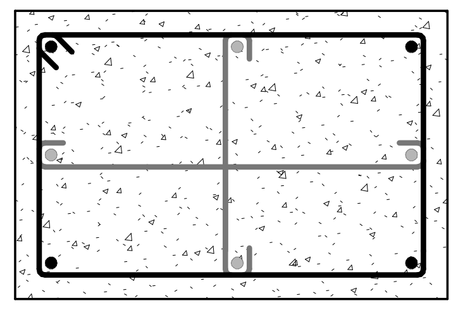

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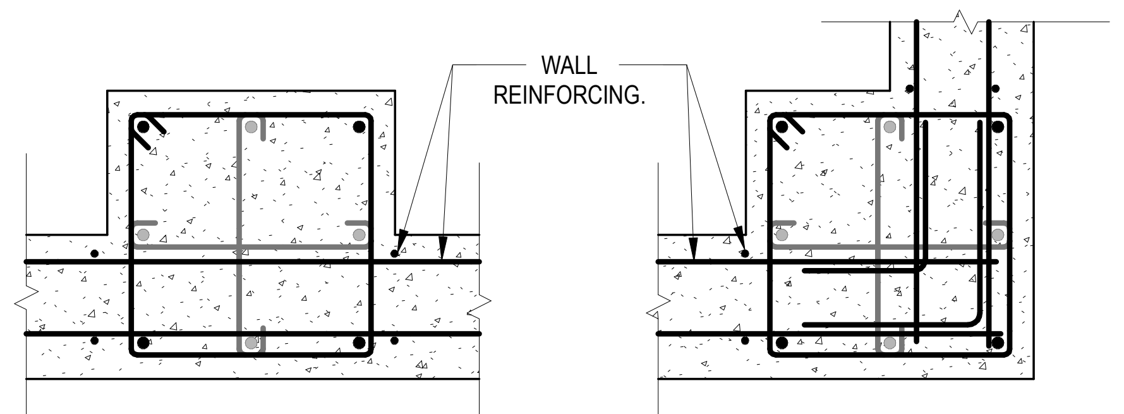


TYPE 'C'

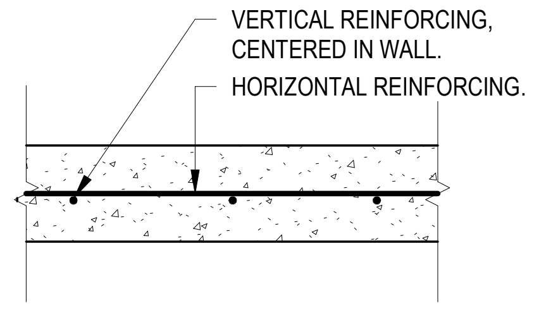
TYPE 'D'

CONCRETE WALL SCHEDULE

MARK	THICKNESS	REINFORCING			WALL TYPE	NOTES
		VERTICAL	HORIZONTAL	TOP AND BOTTOM		
CW-8A	8"	#4 @ 16" O.C.	#4 @ 12" O.C.	(2) #4	-	-
I.F. = INSIDE FACE		O.F. = OUTSIDE FACE		E.F. = EACH FACE	* PLACE BARS CLOSEST TO FORMS.	

NOTES:

1. PROVIDE MINIMUM COVER FOR ALL REINFORCING PER THE GENERAL NOTES.
2. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTING WALLS. SEE DETAIL???.
3. PROVIDE DOWELS WITH STANDARD HOOKS AND/OR PROPER LAP TO THE STRUCTURE BELOW WITH SIZE AND SPACING TO MATCH THE VERTICAL REINFORCING IN THE WALL ABOVE, TYP., U.N.O.
4. WHEN SINGLE CURTAIN OF REINFORCING IS SPECIFIED, PLACE THE VERTICAL REINFORCING IN THE CENTER OF THE WALL, TYP., U.N.O.
5. WHEN A DOUBLE CURTAIN OF REINFORCING IS SPECIFIED, PLACE EACH CURTAIN OF STEEL AT THE FACE OF THE WALL WITH MINIMUM COVER AS SPECIFIED IN THE GENERAL NOTES. PLACE THE VERTICAL REINFORCING CLOSEST TO THE FORMS, TYP., U.N.O.
6. PROVIDE VERTICAL JAMB REINFORCING EACH SIDE OF OPENING PER THE GENERAL NOTES, U.N.O. EXTEND FULL HEIGHT OF WALL BETWEEN LEVELS.
7. SPLICE VERTICAL REINFORCING AT FLOOR LEVELS ONLY, TYP., U.N.O.
8. SPLICES IN HORIZONTAL REINFORCING IN ONE CURTAIN SHALL BE STAGGERED FROM SPLICES IN THE OPPOSITE CURTAIN A MINIMUM OF FOUR FEET.
9. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.



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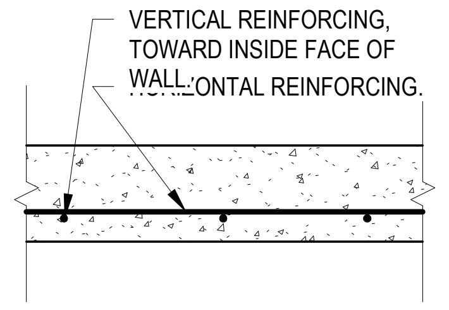

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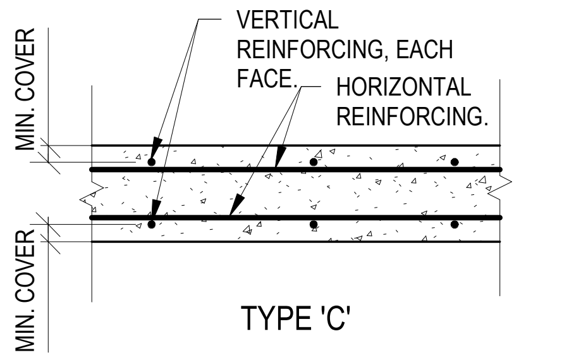

TYPE 'C'

ABBREVIATIONS

@	AT
AB	ANCHOR BOLT
ABV	ABOVE
ALT	ALTERNATE
APPROX	APPROXIMATE
ARCH	ACHITECT
BLDG	BUILDING
BLW	BELOW
BM	BEAM
BOT	BOTTOM
BRG	BEARING
BTWN	BETWEEN
CJ	CONSTRUCTION /CONTROLJOINT
CJP	COMPLETE JOINT PENETRATION
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
CONTR	CONTRACTOR
CTR	CENTER
D.B.	DECK BEARING
D.B.A.	DEFORMED BAR ANCHOR
DBL	DOUBLE
DET	DETAIL
DIA (Ø)	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DK	DECK
DN	DOWN
DWG	DRAWING
DWL	DOWEL
E.F.	EACH FACE
E.J.	EXPANSION JOINT
E.W.	EACH WAY
EA	EACH
EL	ELEVATION
ELECT	ELECTRICAL
ELEV	ELEVATOR
ENG	ENGINEER
EQ	EQUAL
EQUIP	EQUIPMENT
EXIST (E)	EXISTING
EXP	EXPOSED/ EXPANSION
EXT	EXTERIOR
F.D.	FLOOR DRAIN
F.F.	FINISH FLOOR
F.S.E.	FINISH FLOOR ELEVATION
F.V.	FIELD VERIFY
FDTN	FOUNDATION
FIN	FINISH
FL	FLOOR
FT	FOOT
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLU-LAMINATED BEAM
GR	GRADE
G.S.N.	GENERAL STRUCTURAL NOTES
HB	HORIZONTAL BRIDGING
HORIZ	HORIZONTAL
H.S.A.	HEADED STUD ANCHORS
HSS	HOLLLOW STRUCTURAL STEEL
HT	HEIGHT
I.F.	INSIDE FACE
IBC	INTERNATIONAL BUILDING CODE
ICBO	INTERNATIONAL CONFERENCE OF BUILDING OFFICIALS
ICC	INTERNATIONAL CODE COUNCIL
IN	INCHES
INSUL	INSULATION
INT	INTERIOR
JT	JOINT
JST	JOIST
K	KIPS - 1,000 POUNDS
KLF	KIPS PER LINEAR FOOT
KSF	KIPS PER SQUARE FOOT
KSI	KIPS PER SQUARE INCH
LBS	POUNDS
LF	LINEAR FOOT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAS	MASONRY
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
NTS	NOT TO SCALE
O	OBSERVE
O.C.	ON CENTER
O.F.	OUTSIDE FACE
OPNG	OPENING
OPP	OPPOSITE
P	PERFORM
PCF	POUNDS PER CUBIC FOOT
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAR FOOT
PNL	PANEL
PP	PARTIAL PENETRATION
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
P/T	POST TENSIONED
PT	POINT
REINF	REINFORCING
REQ'D	REQUIRED
SFRS	SEISMIC FORCE RESISTING SYSTEM
SHT	SHEET
SIM	SIMILAR
S.O.G.	SLAB ON GRADE
SQ	SQUARE
STD	STANDARD
ST	STEEL
STIFF	STIFFENER
STRUCT	STRUCTURAL
T&B	TOP AND BOTTOM
T.O.	TOP OF
TEMP	TEMPERATURE
T.C.	TOP OF CONCRETE
T.F.	TOP OF FOOTING
T.S.	TOP OF SLAB
T.ST.	TOP OF STEEL
T.W.	TOP OF WALL
TYP	TYPICAL
U.N.O.	UNLESSS NOTED OTHERWISE
VERT	VERTICAL
W.P.	WORK POINT
W/	WITH
WF	WIDE FLANGE
WT	WEIGHT
W.W.F.	WELDED WIRE FABRIC
YD	YARD

CONCRETE CONSTRUCTION (IBC 2018 1705.3)

ITEM	CONTIN-UOUS	PERIODIC	DETAILED INSTRUCTION AND FREQUENCIES
CONCRETE CONSTRUCTION (IBC 1705.3)			
REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS		X	VERIFY PRIOR TO PLACING CONCRETE THAT REINFORCING IS OF SPECIFIED TYPE, GRADE AND SIZE; THAT IT IS FREE OF OIL, DIRT, AND RUST; THAT IT IS LOCATED AND SPACED PROPERLY; THAT HOOKS, BENDS, TIES, STIRRUPS, AND SUPPLEMENTAL...
REINFORCING BAR WELDING			
A. VERIFY WELDABILITY OF REINFORCING BARS OTHER THAN ASTM A706		X	
B. INSPECT SINGLE-PASS FILLET WELDS, MAXIMUM 5/16"		X	
C. INSPECT ALL OTHER WELDS	X		
CAST-IN BOLTS AND EMBEDS		X	INSPECTION OF ANCHORS OR EMBEDS CAST IN CONCRETE IS REQUIRED WHEN ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.
POST-INSTALLED ANCHORS OR DOWELS.		X	ALL POST-INSTALLED ANCHORS/DOWELS SHALL BE SPECIALLY INSPECTED AS REQUIRED BY THE APPROVED ICC-ES REPORT.
A. ADHESIVE ANCHORS INSTALLED IN HORIZONTALLY OR UPWARDLY INCLINED ORIENTATIONS TO RESIST SUSTAINED TENSION LOADS.	X		
B. MECHANICAL ANCHORS AND ADHESIVE ANCHORS NOT DEFINED IN 4.a.		X	
USE OF REQUIRED MIX DESIGN		X	VERIFY THAT ALL MIXES USED COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS; ACI 318-11: CH. 4,5.2-5.4; AND IBC 1904.3, 1913.2, 1913.3.
CONCRETE SAMPLING FOR STRENGTH TESTS, SLUMP, AIR CONTENT, AND TEMPERATURE	X		
CONCRETE AND SHOTCRETE PLACEMENT	X		
CURING TEMPERATURE AND TECHNIQUES		X	VERIFY THAT THE AMBIENT TEMPERATURE FOR CONCRETE IS KEPT AT >50°F FOR AT LEAST 7 DAYS AFTER PLACEMENT. HIGH-EARLY-STRENGTH CONCRETE SHALL BE KEPT AT >50°F FOR AT LEAST 3 DAYS. ACCELERATED CURING METHODS MAY BE USED (SEE ACI 318: 5.11.3). THE AMBIENT TEMPERATURE FOR SHOTCRETE SHALL BE >40°F FOR THE SAME PERIOD OF TIME AS NOTED FOR CONCRETE. SHOTCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST 24 HOURS AFTER SHOTCRETING. ALL CONCRETE MATERIALS, REINFORCEMENT, FORMS FILLERS, AND GROUND SHALL BE FREE FROM FROST. IN HOT WEATHER CONDITIONS ENSURE THAT APPROPRIATE MEASURES ARE TAKEN TO AVOID PLASTIC SHRINKAGE CRACKING AND THAT THE SPECIFIED WATER/CEMENT RATIO IS NOT EXCEEDED.
PRE-STRESSED CONCRETE	X		APPLICATION OF PRESTRESSING FORCES AND GROUTING OF BONDED PRESTRESSING TENDONS.
ERECTION OF PRECAST CONCRETE		X	VERIFY THAT ALL PRECAST ELEMENTS ARE LIFTED, ASSEMBLED AND BRACED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
STRENGTH VERIFICATION		X	VERIFY THAT ADEQUATE STRENGTH HAS BEEN ACHIEVED PRIOR TO THE REMOVAL OF SHORES AND FORMS OR THE STRESSING OF POST-TENSIONED TENDONS.
FORMWORK		X	VERIFY THAT THE FORMS ARE PLACED PLUMB AND CONFORM TO THE SHAPES, LINES, AND DIMENSIONS OF THE MEMBERS AS REQUIRED BY THE APPROVED CONSTRUCTION DOCUMENTS.
REINFORCEMENT COMPLYING WITH ASTM A 615 IN SPECIAL MOMENT FRAMES, SPECTION STRUCTURAL WALLS, AND COUPLING BEAMS		X	VERFY THAT ASTM A 615 REINFORCING STEEL USED IN THESE AREAS COMPLIES WITH ACI 318: 21.1.5.2 BY MEANS OF CERTIFIED MILL TEST REPORTS. IF THIS REINFORCING STEEL IS TO BE WELDED CHEMICAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318: 3.5.2.

CONCRETE CONSTRUCTION (IBC 1705.3 AND 1705.12.1)

ITEM	CONTIN-UOUS	PERIODIC	DETAILED INSTRUCTION AND FREQUENCIES
CONCRETE CONSTRUCTION (IBC 1705.3)			
REINFORCING STEEL, INCLUDING PRESTRESSING TENDONS		X	VERIFY PRIOR TO PLACING CONCRETE THAT REINFORCING IS OF SPECIFIED TYPE, GRADE AND SIZE; THAT IT IS FREE OF OIL, DIRT, AND RUST; THAT IT IS LOCATED AND SPACED PROPERLY; THAT HOOKS, BENDS, TIES, STIRRUPS, AND SUPPLEMENTAL...
CAST-IN BOLTS AND EMBEDS		X	INSPECTION OF ANCHORS OR EMBEDS CAST IN CONCRETE IS REQUIRED WHEN ALLOWABLE LOADS HAVE BEEN INCREASED OR WHERE STRENGTH DESIGN IS USED.
POST-INSTALLED ANCHORS OR DOWELS		X	ALL POST-INSTALLED ANCHORS/DOWELS SHALL BE SPECIALLY INSPECTED AS REQUIRED BY THE APPROVED ICC-ES REPORT.
USE OF REQUIRED MIX DESIGN		X	VERIFY THAT ALL MIXES USED COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS; ACI 318-11: CH. 4,5.2-5.4; AND IBC 1904.3, 1913.2, 1913.3.
CONCRETE SAMPLING FOR STRENGTH TESTS, SLUMP, AIR CONTENT, AND TEMPERATURE	X		
CONCRETE AND SHOTCRETE PLACEMENT	X		
CURING TEMPERATURE AND TECHNIQUES		X	VERIFY THAT THE AMBIENT TEMPERATURE FOR CONCRETE IS KEPT AT >50°F FOR AT LEAST 7 DAYS AFTER PLACEMENT. HIGH-EARLY-STRENGTH CONCRETE SHALL BE KEPT AT >50°F FOR AT LEAST 3 DAYS. ACCELERATED CURING METHODS MAY BE USED (SEE ACI 318: 5.11.3). THE AMBIENT TEMPERATURE FOR SHOTCRETE SHALL BE >40°F FOR THE SAME PERIOD OF TIME AS NOTED FOR CONCRETE. SHOTCRETE SHALL BE KEPT CONTINUOUSLY MOIST FOR AT LEAST 24 HOURS AFTER SHOTCRETING. ALL CONCRETE MATERIALS, REINFORCEMENT, FORMS FILLERS, AND GROUND SHALL BE FREE FROM FROST. IN HOT WEATHER CONDITIONS ENSURE THAT APPROPRIATE MEASURES ARE TAKEN TO AVOID PLASTIC SHRINKAGE CRACKING AND THAT THE SPECIFIED WATER/CEMENT RATIO IS NOT EXCEEDED.
PRE-STRESSED CNCRETE	X		
ERECTION OF PRECAST CONCRETE		X	VERIFY THAT ALL PRECAST ELEMENTS ARE LIFTED, ASSEMBLED AND BRACED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
STRENGTH VERIFICATION		X	VERIFY THAT ADEQUATE STRENGTH HAS BEEN ACHIEVED PRIOR TO THE REMOVAL OF SHORES AND FORMS OR THE STRESSING OF POST-TENSIONED TENDONS.
FORMWORK		X	VERIFY THAT THE FORMS ARE PLACED PLUMB AND CONFORM TO THE SHAPES, LINES, AND DIMENSIONS OF THE MEMBERS AS REQUIRED BY THE APPROVED CONSTRUCTION DOCUMENTS.
REINFORCEMENT COMPLYING WITH ASTM A 615 IN SPECIAL MOMENT FRAMES, SPECTION STRUCTURAL WALLS, AND COUPLING BEAMS		X	VERFY THAT ASTM A 615 REINFORCING STEEL USED IN THESE AREAS COMPLIES WITH ACI 318: 21.1.5.2 BY MEANS OF CERTIFIED MILL TEST REPORTS. IF THIS REINFORCING STEEL IS TO BE WELDED CHEMICAL TESTS SHALL BE PERFORMED IN ACCORDANCE WITH ACI 318: 3.5.2.

SOILS CONSTRUCTION (IBC 1705.6)

ITEM	CONTIN-UOUS	PERIODIC	DETAILED INSTRUCTION AND FREQUENCIES
SOILS CONSTRUCTION (IBC 1705.6):			
VERIFY SUBGRADE IS ADEQUATE TO ACHIEVE DESIGN BEARING CAPACITY		X	PRIOR TO PLACEMENT OF CONCRETE.
VERIFY EXCAVATIONS EXTEND TO PROPER DEPTH AND MATERIAL		X	PRIOR TO PLACEMENT OF COMPACTED FILL OR CONCRETE.
VERIFY THAT SUBGRADE HAS BEEN APPROPRIATELY PREPARED PRIOR TO PLACING COMPACTED FILL		X	PRIOR TO PLACEMENT OF COMPACTED FILL.
PERFORM CLASSIFICATION AND TESTING OF COMPACTED FILL MATERIALS		X	ALL MATERIALS SHALL BE CHECKED AT EACH LIFT FOR PROPER CLASSIFICATIONS AND GRADATIONS NOT LESS THAN ONCE FOR EACH 10,000 SQUARE-FEET OF SURFACE AREA.
VERIFY PROPER MATERIALS, DENSITIES AND LIFT THICKNESSES DURING PLACEMENT AND COMPACTION	X		

Date: 1/19/2023
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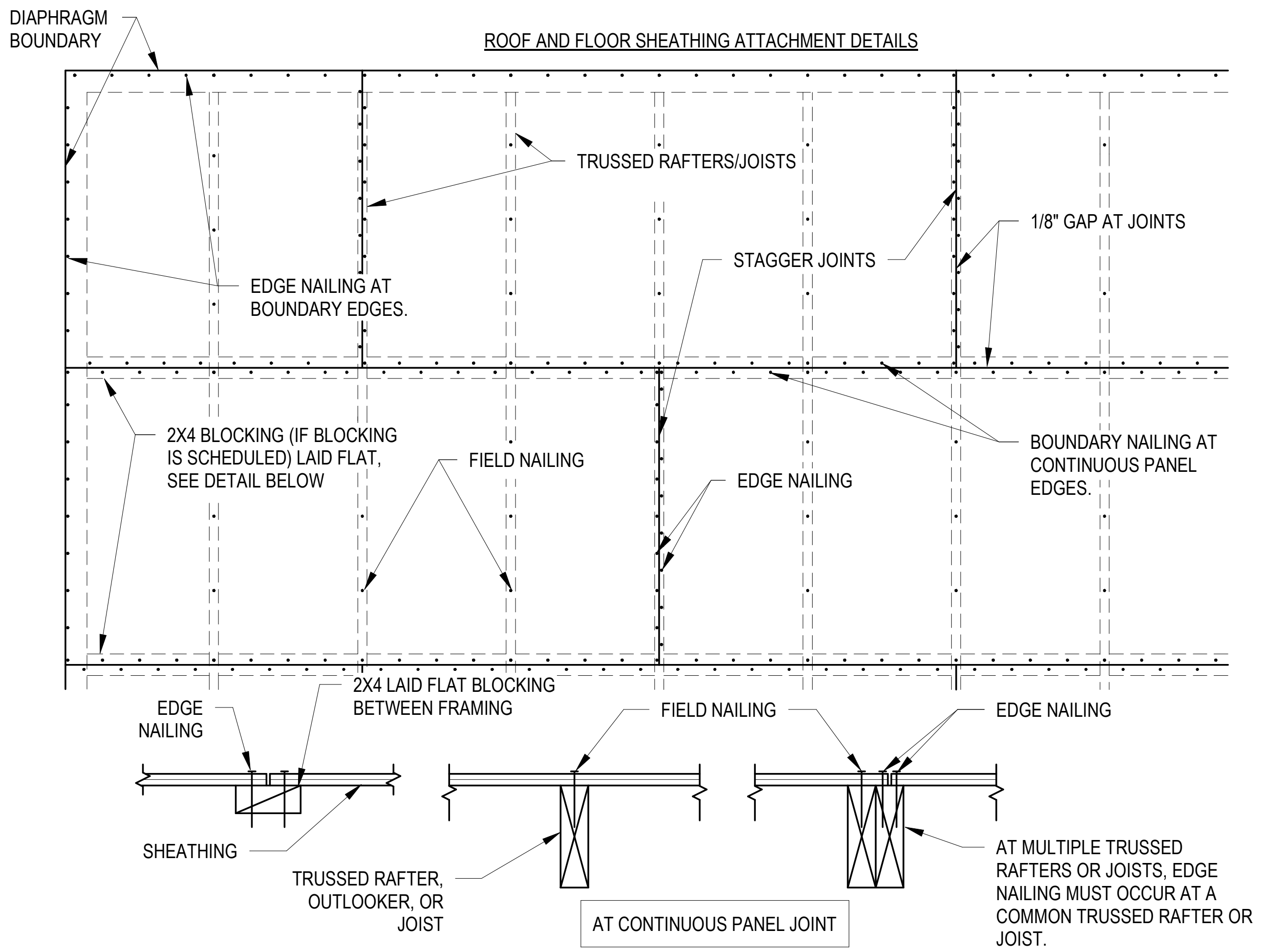
S-002

SCHEDULES
CONCRETE

FLOOR AND ROOF SHEATHING SCHEDULE

LOCATION	SHEATHING	EDGE NAILING	FIELD NAILING	BOUNDARY NAILING	BLOCKING AT PANEL EDGES
FLOOR	23/32" T & G 48/24 SPAN RATING	10D AT 6" O.C.	10D AT 12" O.C.	10D AT 6" O.C.	NO
ROOF	19/32" 40/20 SPAN RATING	10D AT 6" O.C.	10D AT 12" O.C.	10D AT 6" O.C.	NO

NOTES:
1. SEE PARTIAL PLAN BELOW FOR LOCATION OF BOUNDARY, EDGE, AND FIELD NAILING.
2. ALL FASTENERS, INCLUDING NAILS IN PRESERVATIVE TREATED WOOD, SHALL BE HOT DIPPED ZINC COATED GALVANIZED STEEL, STAINLESS STEEL, SILICONE BRONZE, OR COPPER UNLESS SILL PLATE IS BORATE TREATED OR IS OF LSL MATERIAL.
3. FLOOR SHEATHING SHALL BE GLUED AND NAILED TO THE STRUCTURE.
4. JOIST SUPPLIER TO PROVIDE JOIST HANGERS.
5. JOIST SUPPLIER TO PROVIDE WEB STIFFENERS ON JOISTS AT BEARING AND CONCENTRATED LOADS.


DIAPHRAGM BOUNDARY
ROOF AND FLOOR SHEATHING ATTACHMENT DETAILS
TRUSSED RAFTERS/JOISTS
1/8" GAP AT JOINTS
STAGGER JOINTS
EDGE NAILING AT BOUNDARY EDGES.
2X4 BLOCKING (IF BLOCKING IS SCHEDULED) LAID FLAT, SEE DETAIL BELOW
FIELD NAILING
EDGE NAILING
BOUNDARY NAILING AT CONTINUOUS PANEL EDGES.
EDGE NAILING
2X4 LAID FLAT BLOCKING BETWEEN FRAMING
FIELD NAILING
EDGE NAILING
SHEATHING
TRUSSED RAFTER, OUTLOOKER, OR JOIST
AT CONTINUOUS PANEL JOINT
AT MULTIPLE TRUSSED RAFTERS OR JOISTS, EDGE NAILING MUST OCCUR AT A COMMON TRUSSED RAFTER OR JOIST.

ALL ROOF AND FLOOR SHEATHING EDGES MUST BE SUPPORTED BY TRUSSED RAFTER, JOIST OR 2X4 LAID FLAT IF BLOCKING SCHEDULED.

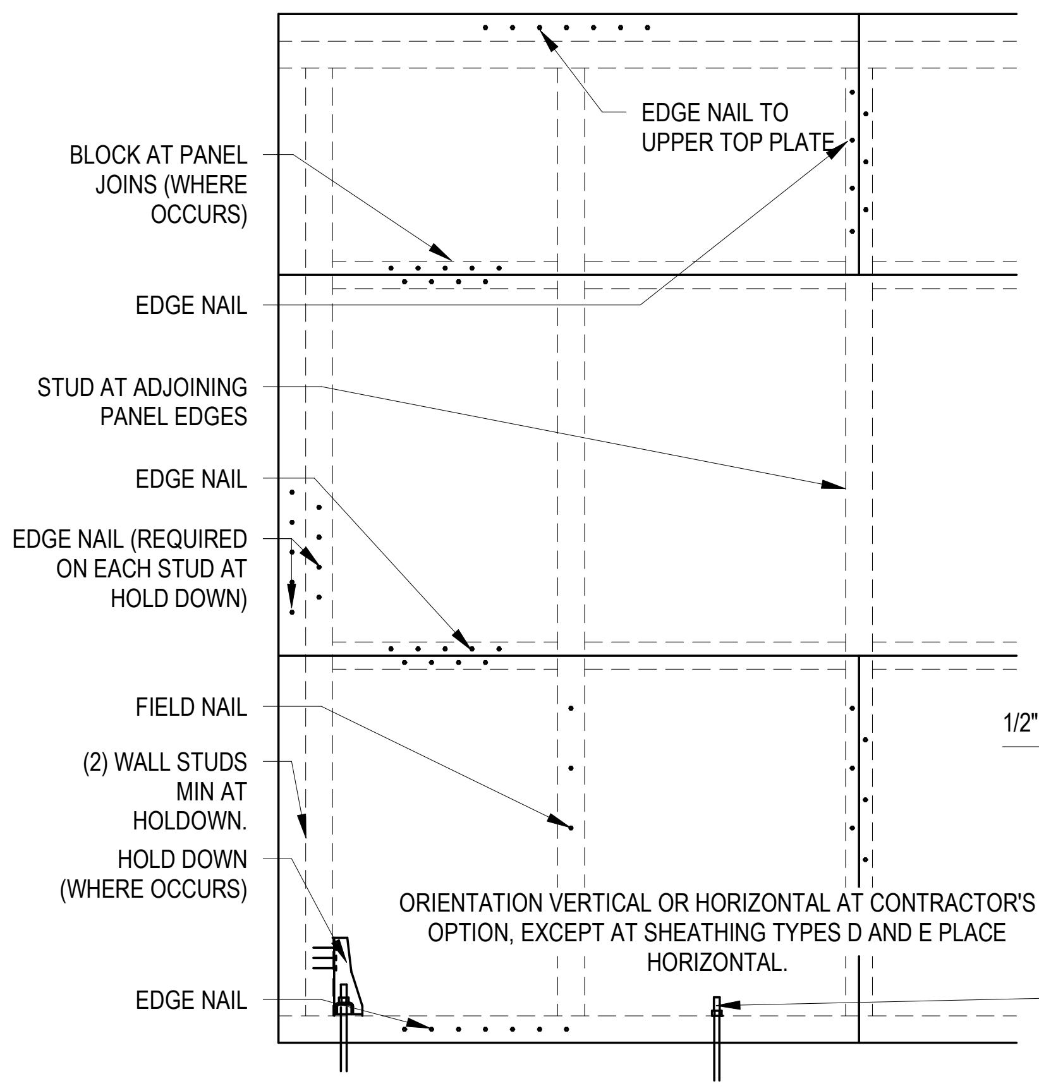
WOOD WALL SCHEDULE

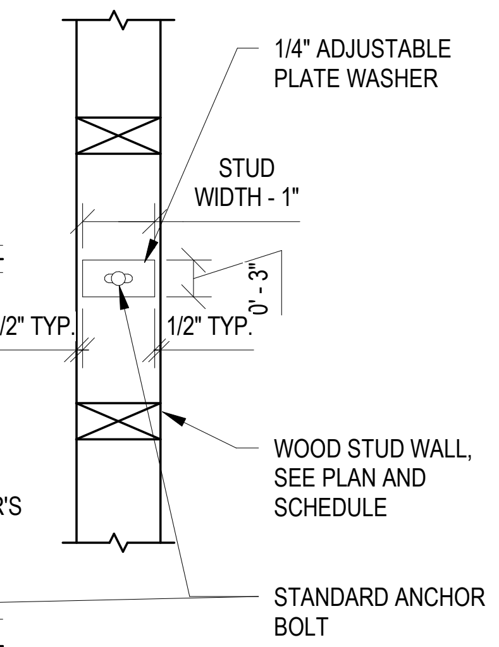
MARK	WALL STUDS	SILL PLATE	TOP PLATE	NOTES
WW-4.1	2X4	2X4	(2) 2X4	-
WW-6.1	2X6	2X6	(2) 2X6	-

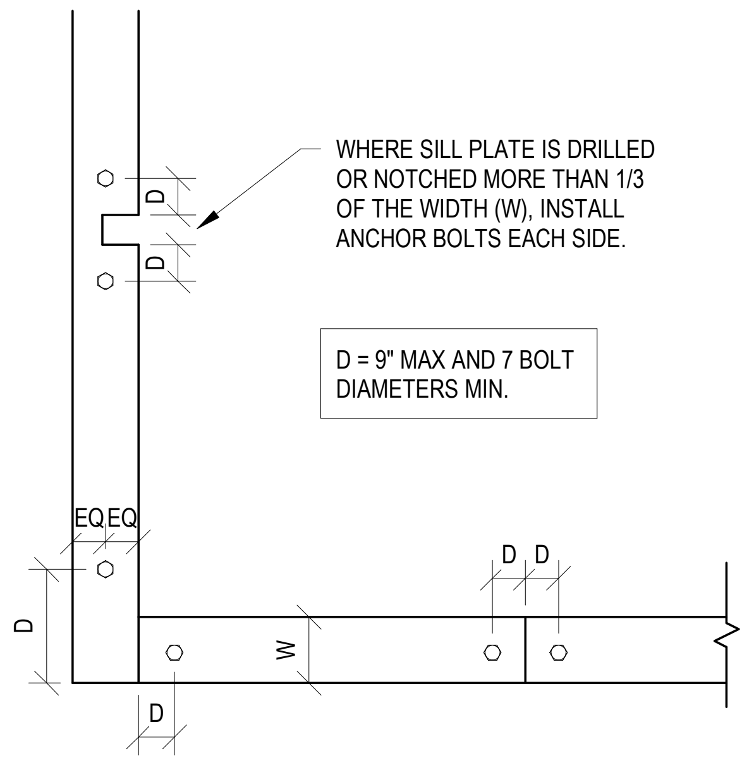
WALL SHEATHING SCHEDULE

MARK	MIN. PLATE SIZE	MIN STUD SIZE AT ABUTTING JOINT	WOOD SHEATHING THICKNESS AND TYPE	FASTENERS	EDGE NAIL SPACING	FIELD NAIL SPACING	SILL ATTACHMENT	A35/LTP4 SPACING	NOTES
-A	2X	2X	7/16" APA RATED	8d NAILS	6" O.C.	12" O.C.	16d NAILS AT 8" O.C. IN WOOD, OR 5/8"Ø X 6" EMBED AT 48" O.C.	32" O.C.	-
-B	2X	2X	7/16" APA RATED	8d NAILS	4" O.C.	12" O.C.	16d NAILS AT 5" O.C. IN WOOD, OR 5/8"Ø X 6" EMBED AT 48" O.C.	22" O.C.	-
-C	2X	2X	7/16" APA RATED	8d NAILS	3" O.C.	12" O.C.	16d NAILS AT 4" O.C. IN WOOD, OR 5/8"Ø X 6" EMBED AT 36" O.C.	16" O.C.	-
-D	3X	3X	7/16" APA RATED	8d NAILS	2" O.C.	12" O.C.	16d NAILS AT 3" O.C. IN WOOD, OR 3/4"Ø X 7" EMBED AT 24" O.C.	12" O.C.	PLACE SHEATHING WITH LONG DIRECTION HORIZ.
-E	3X	3X	7/16" APA RATED (BOTH SIDES OF WALL)	10d NAILS	3" O.C.	12" O.C.	(2) 16d NAILS AT 3.5" O.C. IN WOOD, OR 3/4"Ø X 7" EMBED AT 16" O.C.	8" O.C.	PLACE SHEATHING WITH LONG DIRECTION HORIZ.

NOTES:
1. ALL ANCHOR BOLTS SHALL HAVE A 1/4" x 3" x SILL PLATE WIDTH MINUS 1" SQUARE WASHER MINIMUM BETWEEN THE SILL PLATE AND THE NUT, SEE ANCHOR BOLT PLATE WASHER DETAIL ON THIS SCHEDULE.
2. MINIMUM SILL PLATE ANCHORAGE SHALL BE 16d NAILS AT 16" O.C. IN WOOD, OR 5/8"Ø X 7" EMBED AT 48" O.C. (2 BOLTS PER WALL, MIN.) IN CONCRETE. SEE SHEATHING SCHEDULE FOR ADDITIONAL ANCHORAGE REQUIREMENTS, IF APPLICABLE.
3. 5/8"Ø ANCHOR BOLTS MAY BE REPLACED WITH 5/8"Ø BY MANUFACTURER SPECIFIED EMBEDMENT CONCRETE SCREW ANCHORS OR EXPANSION/WEDGE ANCHORS. THE SCREW ANCHORS MAY BE POWERS "WEDGE-BOLT+" (ICC ESR-2526), SIMPSON "TITEN HD" (ICC ESR-2713). THE EXPANSION/WEDGE ANCHORS MAY BE POWERS "POWER-STUD+ SD1" (ICC ESR-1917), HILTI "KWIK BOLT TZ" (ICC ESR-1917), OR SIMPSON "STRONG-BOLT" (ICC ESR-1771). CLEAN HOLE WITH OIL FREE COMPRESSED AIR BEFORE INSTALLING BOLT.
4. POST-INSTALLED ANCHORS NOT ALLOWED IN POST-TENSIONED CONCRETE SLAB.
5. ALL WOOD IN CONTACT WITH CONCRETE SHALL BE PRESSURE TREATED.
6. ALL FASTENERS, INCLUDING NAILS IN PRESERVATIVE TREATED WOOD, SHALL BE HOT-DIPPED ZINC COATED GALVANIZED STEEL, STAINLESS STEEL, SILICONE BRONZE, OR COPPER UNLESS SILL PLATE IS BORATE TREATED OR IS OF LSL MATERIAL.
7. ALL STUDS AND PLATES SHALL MEET THE MATERIALS REQUIREMENTS SPECIFIED IN THE GENERAL NOTES.
8. ALIGN STUDS WITH FRAMING MEMBERS ABOVE, TYP., U.N.O.
9. PROVIDE SILL PLATE AT BOTTOM OF WALL AND DOUBLE TOP PLATE AT TOP OF WALL, TYP., U.N.O.
10. SILL PLATES NEXT TO GYPCRETE SHALL BE DOUBLE SILL PLATES, TYP., U.N.O.
11. PROVIDE SPLICES IN PLATES CENTERED OVER STUDS ONLY. STAGGER TOP PLATE SPLICES AT LEAST SIX FEET.
12. PROVIDE FULL HEIGHT STUDS BETWEEN FRAMING LEVELS, TYP., U.N.O. PROVIDE PLATES AT BEARING LOCATIONS ONLY. DO NOT PROVIDE INTERMEDIATE PLATES IN WALLS BETWEEN FRAMING LEVELS.
13. ANCHOR BOLTS IN SILL PLATES SHALL BE PLACED SO AS NOT TO COINCIDE WITH THE LOCATION OF THE STUDS ABOVE.
14. ANCHOR BOLTS SHALL BE CENTERED IN SILL PLATE, TYP., U.N.O.
15. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION.


EDGE NAIL TO UPPER TOP PLATE
BLOCK AT PANEL JOINS (WHERE OCCURS)
EDGE NAIL
STUD AT ADJOINING PANEL EDGES
EDGE NAIL
EDGE NAIL (REQUIRED ON EACH STUD AT HOLD DOWN)
FIELD NAIL
(2) WALL STUDS MIN AT HOLDOWN.
HOLD DOWN (WHERE OCCURS)
EDGE NAIL
ORIENTATION VERTICAL OR HORIZONTAL AT CONTRACTOR'S OPTION, EXCEPT AT SHEATHING TYPES D AND E PLACE HORIZONTAL.


1/4" ADJUSTABLE PLATE WASHER
STUD WIDTH - 1"
0' - 3"
1/2" TYP.
1/2" TYP.
WOOD STUD WALL, SEE PLAN AND SCHEDULE
STANDARD ANCHOR BOLT


WHERE SILL PLATE IS DRILLED OR NOTCHED MORE THAN 1/3 OF THE WIDTH (W), INSTALL ANCHOR BOLTS EACH SIDE.
D
D
D = 9" MAX AND 7 BOLT DIAMETERS MIN.
EQ EQ
D
D D
W
D

NOTE:
ANY SEGMENT OF BASE PLATE SHALL HAVE A MINIMUM OF (2) ANCHOR BOLTS. IF BOTTOM PLATE IS NOTCHED EXTRA BOLT SHALL BE INSTALLED INTO CONCRETE.

SEE PLANS AND WOOD WALL SCHEDULE FOR ANCHOR BOT SIZE AND SPACING.

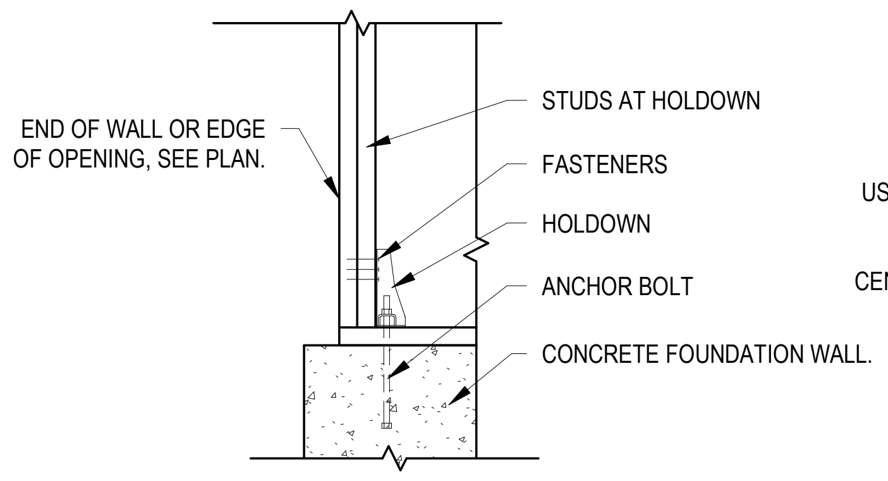
MINIMUM NAILING

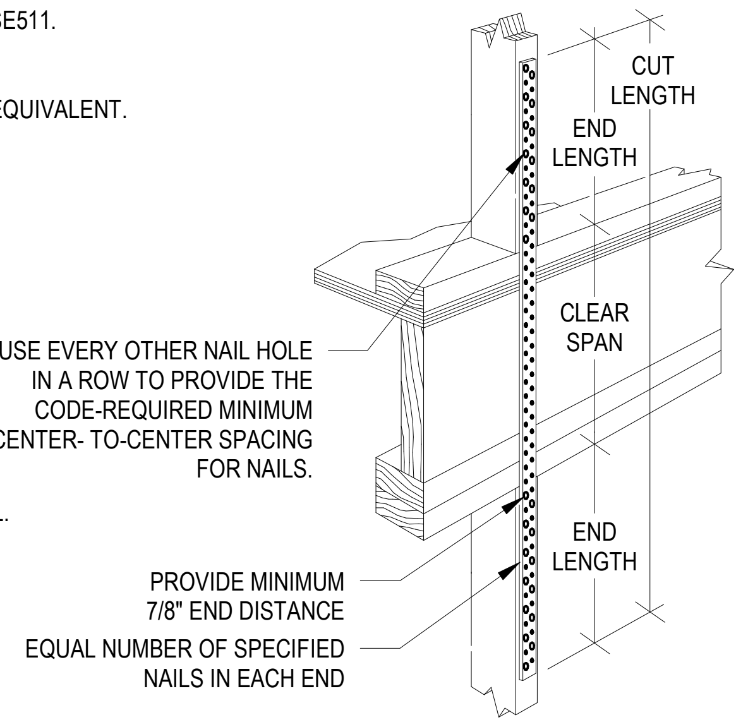
CONNECTION	NAILING	LOCATION
JOIST TO SILL OR GIRDER	(3) 8d COMMON	TOENAIL
BRIDGING TO JOIST	(2) 8d COMMON	TOENAIL EACH END
JOIST/BLOCKING TO SILL	16d @ 16" O.C.	TYP. FACE NAIL
TOP PLATE TO STUD	(2) 16d COMMON	END NAIL
STUD TO SOLE PLATE	(2) 16d COMMON	END NAIL
DOUBLE STUDS	16d @ 24" O.C.	FACE NAIL
DOUBLE TOP PLATES	16d @ 16" O.C.	TYP. FACE NAIL
DOUBLE TOP PLATES	(8) 16d COMMON	LAP SPLICE
BLOCKING BETWEEN JOISTS TO TOP PLATE	(3) 8d COMMON	TOENAIL
RIM JOIST TO TOP PLATE	8d @ 16" O.C.	
TOP PLATES, LAPS, AND INTERSECTIONS	(2) 16d COMMON	FACE NAIL
CONT. HEADER, (2) PCS.	16d COMMON	16" O.C. ALONG EDGE
CEILING JOIST TO PLATE	(3) 8d COMMON	TOENAIL
CONT. HEADER TO STUD	(4) 8d COMMON	TOENAIL
CEILING JOISTS, LAPS OVER PARTITIONS	(3) 16d COMMON	FACE NAIL
CEILING JOISTS TO PARALLEL RAFTERS	(3) 16d COMMON	FACE NAIL
RAFTER TO PLATE	(3) 8d COMMON	TOENAIL
1" DIAGONAL BRACE TO EACH STUD AND PLATE	(2) 8d COMMON	FACE NAIL
BUILT-UP CORNER STUDS	16d @ 24" O.C.	FACE NAIL
BUILT-UP GIRDER/BEAM	20d @ 32" O.C.	FACE NAIL EACH SIDE
COLLAR TIE TO RAFTER	(3) 10d COMMON	FACE NAIL
JACK RAFTER TO HIP	(3) 10d COMMON	FACE NAIL
	(2) 16d COMMON	TOENAIL
ROOF RAFTER TO 2X RIDGE BEAM	(2) 16d COMMON	TOENAIL/FACENAIL
JOIST TO BAND JOIST	(3) 16d COMMON	FACE NAIL
LEDGER STRIP	(3) 16d COMMON	FACE NAIL @ EACH JOIST
PANEL SHEATHING	6d COMMON	1/2" AND LESS
	8d COMMON	19/32" TO 3/4"
	10d COMMON	7/8" TO 1"
COMBINATION SUBFLOOR UNDERLAYMENT TO FRAMING	8d COMMON	3/4" OR LESS
	10d COMMON	7/8" TO 1"

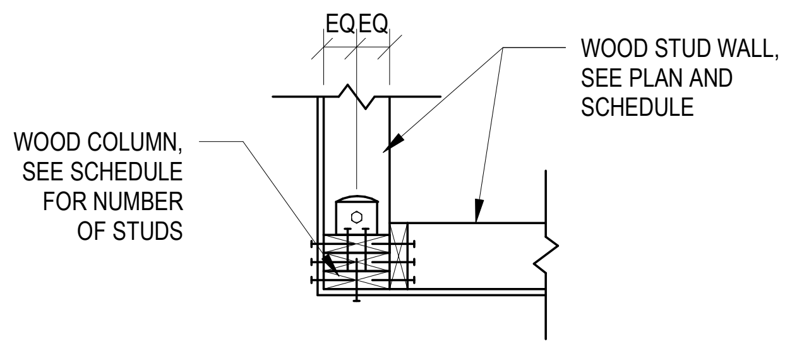
HOLDOWN AND STRAP SCHEDULE

MARK	HOLDOWN OR STRAP TYPE	MIN. STUDS AT HOLDOWN/STRAP	FASTENERS	STRAP END LENGTH	HOLDOWN ANCHOR BOLT DIAMETER	ANCHOR BOLT EMBED LENGTH	
HDU2	HDU2-SDS2.5	(2) 2X	(6) SDS 1/4"X2.1/2"	-	5/8"	10"	
HDU4	HDU4-SDS2.5	(2) 2X	(10) SDS 1/4"X2.1/2"	-	5/8"	10"	
HDU5	HDU5-SDS2.5	(2) 2X	(14) SDS 1/4"X2.1/2"	-	5/8"	12"	
HDU11	HDU11-SDS2.5	6X	(30) SDS 1/4"X2.1/2"	-	1"	7"	
CS14	CS14	(1) 2X	(30) 8d NAILS	16"	-	-	(15) 8d NAILS EACH END
CS16	CS16	(1) 2X	(22) 8d NAILS	13"	-	-	(11) 8d NAILS EACH END
CS18	CS18	(1) 2X	(18) 8d NAILS	11"	-	-	(9) 8d NAILS EACH END

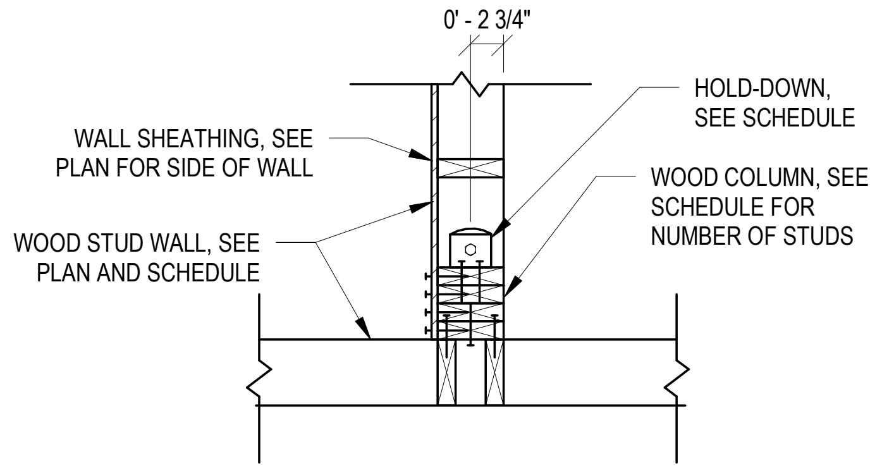
NOTES:
1. ALL WOOD COLUMNS TO BE NAILED OR BOLTED TOGETHER PER DETAIL A3/SE511.
2. NO NAILS REQUIRED IN CLEAR SPAN SECTION OF STRAP.
3. HALF OF STRAP FASTENERS IN EACH END.
4. ANCHORS MAY BE DRILLED AND EPOXIED WITH HILTI HIT-HY 200 EPOXY OR EQUIVALENT.
5. DRILL AND EPOXY EMBEDMENT LENGTH LISTED IN PARENTHESIS.


END OF WALL OR EDGE OF OPENING, SEE PLAN.
STUDS AT HOLDOWN
FASTENERS
HOLDOWN
ANCHOR BOLT
CONCRETE FOUNDATION WALL.


CUT LENGTH
END LENGTH
USE EVERY OTHER NAIL HOLE IN A ROW TO PROVIDE THE CODE-REQUIRED MINIMUM CENTER- TO-CENTER SPACING FOR NAILS.
CLEAR SPAN
END LENGTH
PROVIDE MINIMUM 7/8" END DISTANCE
EQUAL NUMBER OF SPECIFIED NAILS IN EACH END


EQ EQ
WOOD STUD WALL, SEE PLAN AND SCHEDULE
WOOD COLUMN, SEE SCHEDULE FOR NUMBER OF STUDS

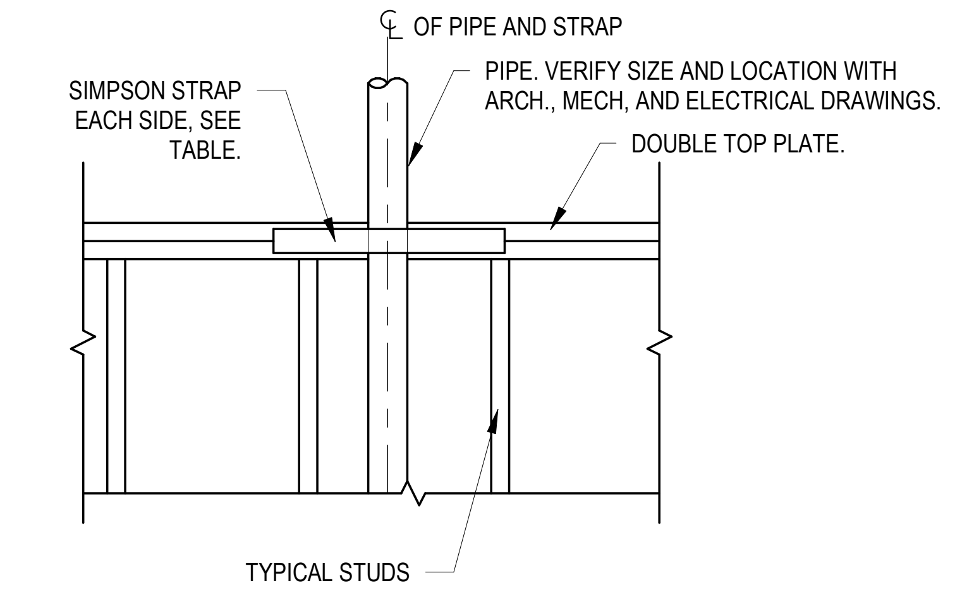
EXTERIOR CORNER

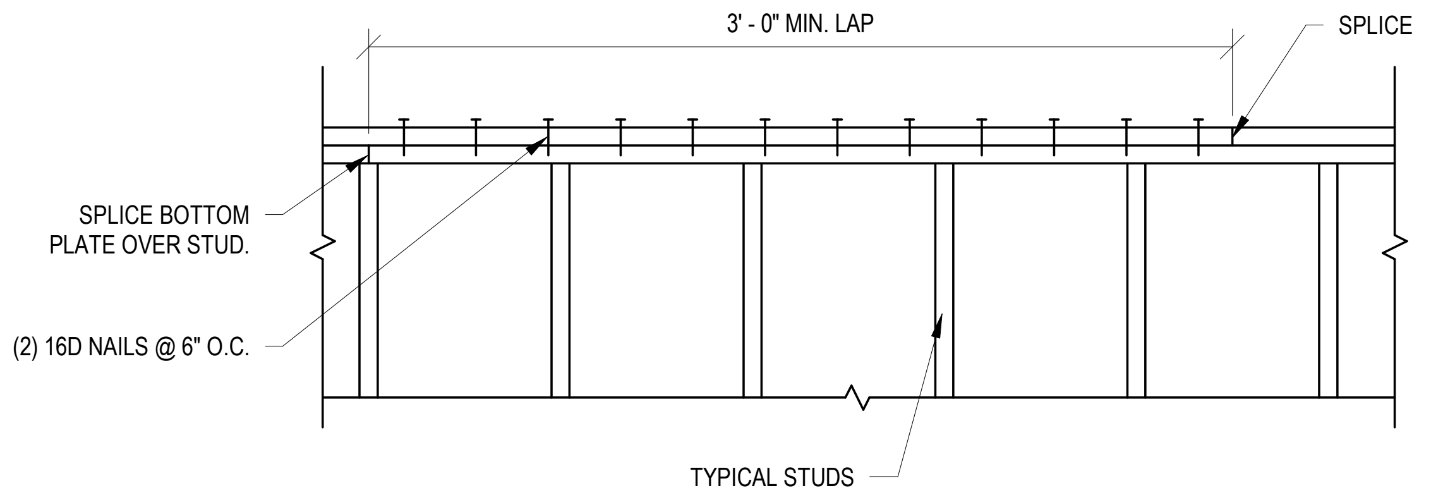

0' - 2 3/4"
HOLD-DOWN, SEE SCHEDULE
WALL SHEATHING, SEE PLAN FOR SIDE OF WALL
WOOD COLUMN, SEE SCHEDULE FOR NUMBER OF STUDS
WOOD STUD WALL, SEE PLAN AND SCHEDULE

INTERIOR TO EXTERIOR WALL INTERSECTION

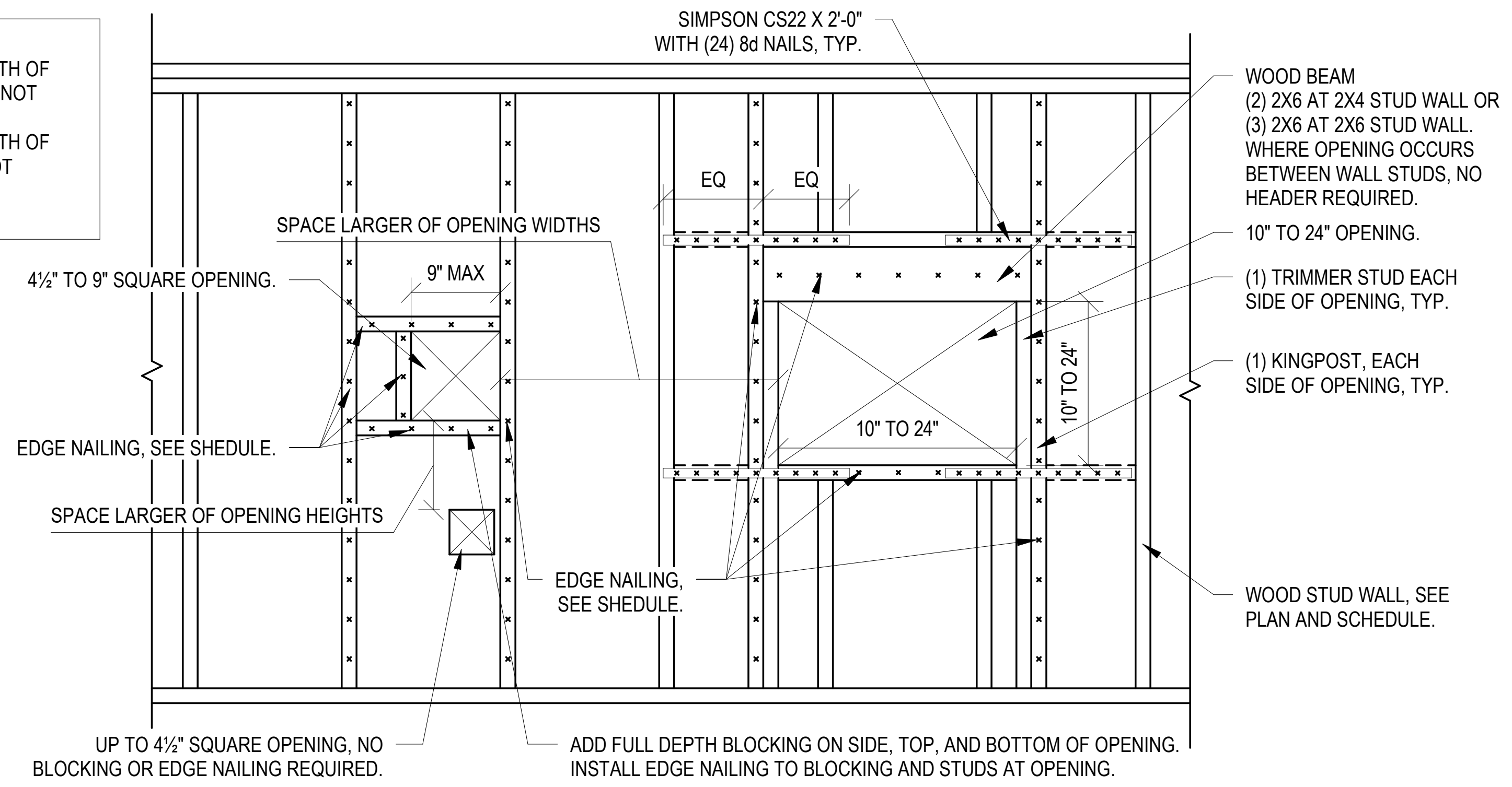
TOP PLATE SPLICE SCHEDULE

HOLE SIZE	STRAPS
LESS THAN 1/3 STUD WIDTH	NONE REQUIRED
BETWEEN 1/3 AND 2/3 STUD WIDTH	ST2115 WITH (6) 16d COMMON NAILS EACH END
GREATER THAN 2/3 STUD WIDTH	ST6224 WITH (10) 16d COMMON NAILS EACH END


℄ OF PIPE AND STRAP
SIMPSON STRAP EACH SIDE, SEE TABLE.
PIPE. VERIFY SIZE AND LOCATION WITH ARCH., MECH, AND ELECTRICAL DRAWINGS.
DOUBLE TOP PLATE.
TYPICAL STUDS



NOTES:
1. MAXIMUM ACCUMULATED LENGTH OF HORIZONTAL OPENINGS SHALL NOT EXCEED 10% OF WALL LENGTH.
2. MAXIMUM ACCUMULATED LENGTH OF VERTICAL OPENINGS SHALL NOT EXCEED 20% OF WALL HEIGHT.


SIMPSON CS22 X 2'-0" WITH (24) 8d NAILS, TYP.
WOOD BEAM (2) 2X6 AT 2X4 STUD WALL OR (3) 2X6 AT 2X6 STUD WALL. WHERE OPENING OCCURS BETWEEN WALL STUDS, NO HEADER REQUIRED.
EQ
EQ
SPACE LARGER OF OPENING WIDTHS
10" TO 24" OPENING.
4½" TO 9" SQUARE OPENING.
9" MAX
(1) TRIMMER STUD EACH SIDE OF OPENING, TYP.
(1) KINGPOST, EACH SIDE OF OPENING, TYP.
10" TO 24"
10" TO 24"
EDGE NAILING, SEE SHEDULE.
SPACE LARGER OF OPENING HEIGHTS
EDGE NAILING, SEE SHEDULE.
WOOD STUD WALL, SEE PLAN AND SCHEDULE.
UP TO 4½" SQUARE OPENING, NO BLOCKING OR EDGE NAILING REQUIRED.
ADD FULL DEPTH BLOCKING ON SIDE, TOP, AND BOTTOM OF OPENING. INSTALL EDGE NAILING TO BLOCKING AND STUDS AT OPENING.

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Revision:

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S-003

SCHEDULES WOOD