

CENTRAL VALLEY MEDICAL CENTER SANTAQUIN CLINIC - PHASE II

210 EAST MAIN STREET

SANTAQUIN, UTAH 84655



DRAWING INDEX

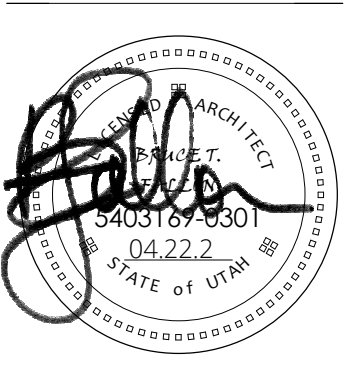
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CVMC
Santaquin

Phase II Addition

210 East Main Street
Santaquin, Utah 84655

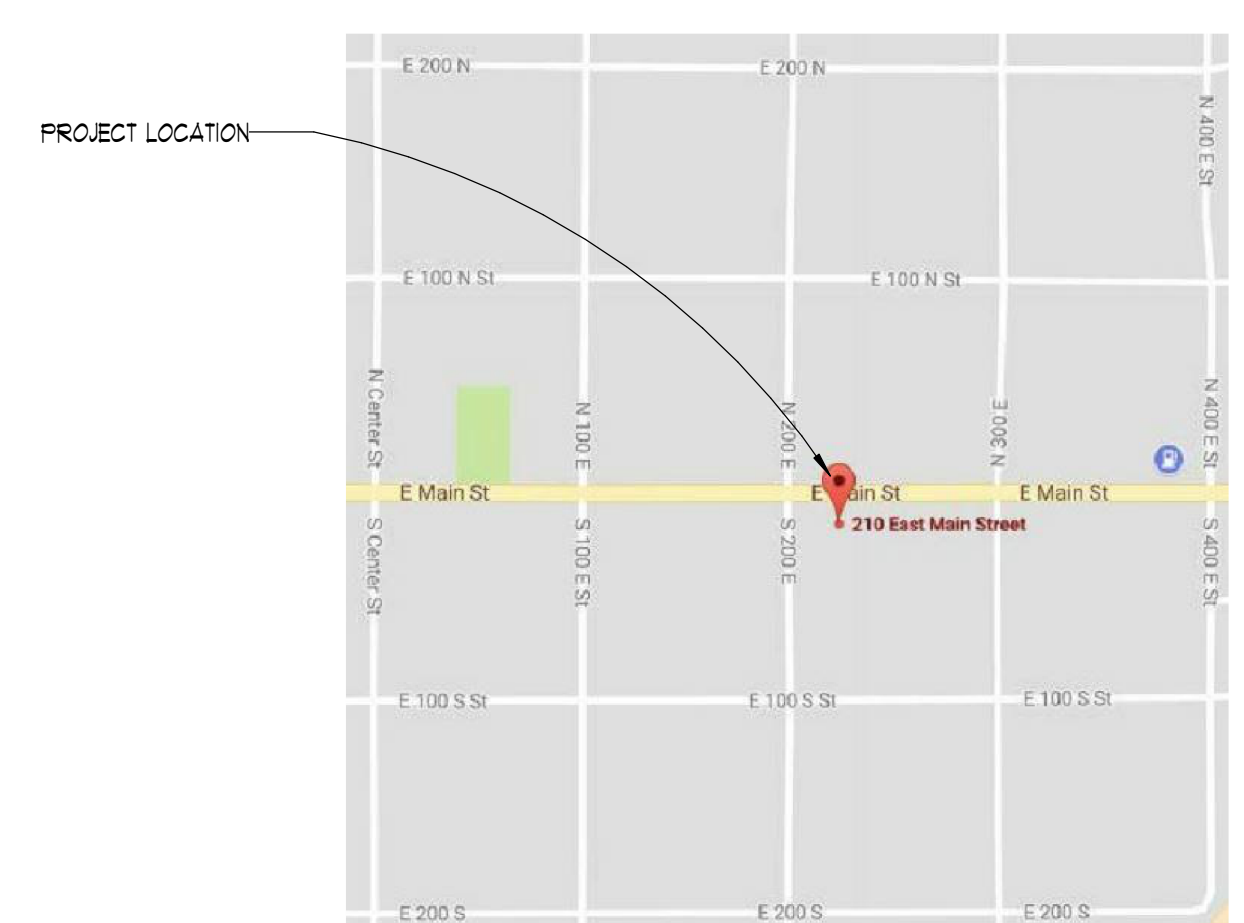


revision information		
no.	date	description

milestone issue date	11.8.2024
milestone issue description	SITE PLAN REVIEW
latest revision date	
latest revision description	

COVER SHEET

G1.1



VICINITY MAP
NOT TO SCALE

PROJECT TEAM

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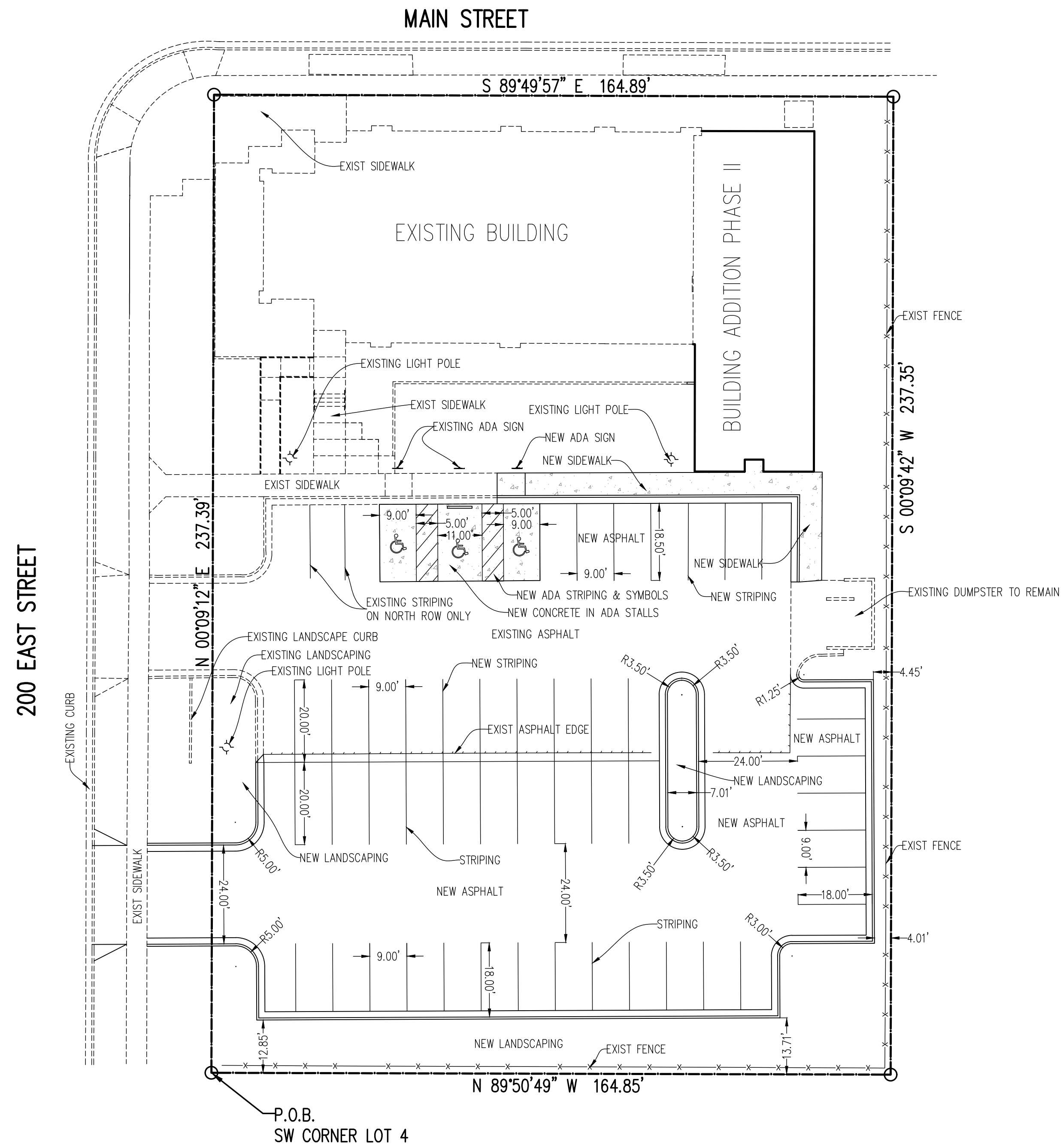
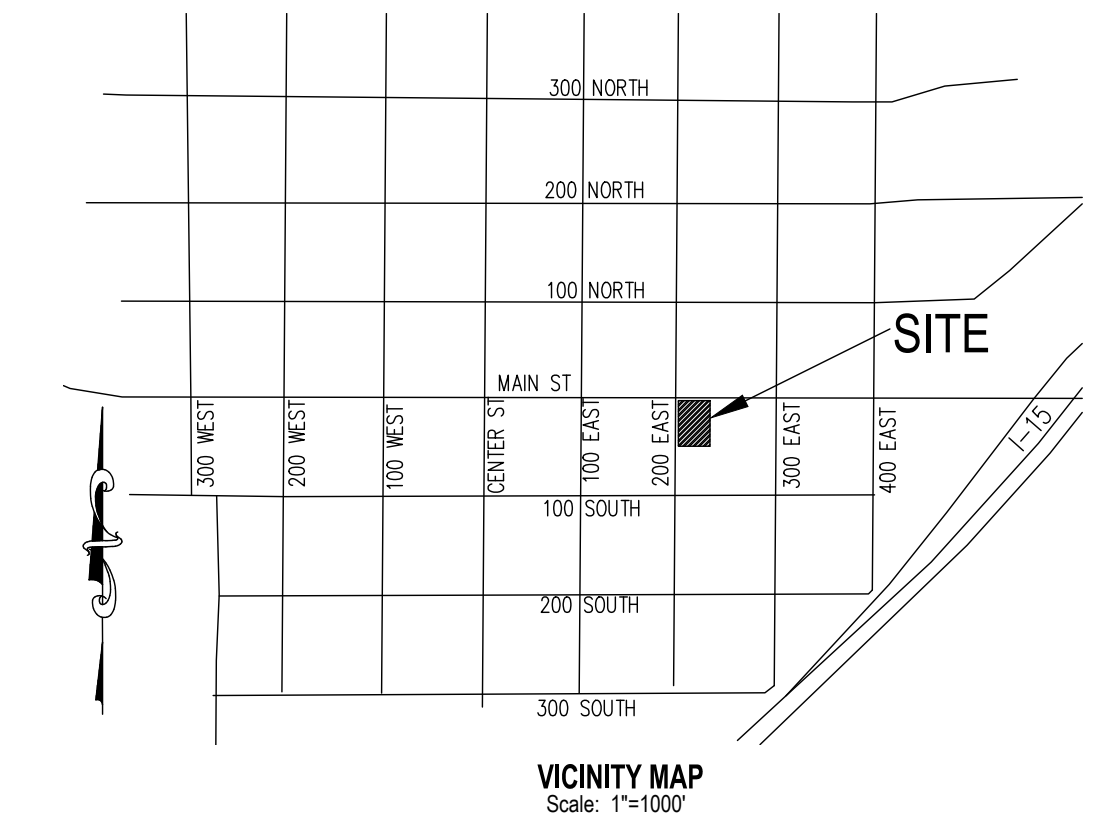
PROJECT DATA

SITE ADDRESS	210 EAST MAIN STREET, SANTAQUIN, UTAH 84655
PARCEL #	09-030-0019 - 09-030-0018
ZONING	M6C
GENERAL PLAN	MIXED-USE COMMERCIAL
EXISTING USE	MEDICAL OFFICE BUILDING
PROPOSED USE	MEDICAL OFFICE BUILDING
LAND AREA	0.30 ACRES

GENERAL NOTES

- ALL EXIT ACCESS DOORS AND EXITS SHALL BE OPENABLE FROM THE INSIDE WITHOUT THE USE OF A KEY OR ANY SPECIAL KNOWLEDGE OR EFFORT. USE OF MANUAL FLUSH BOLTS, EDGE BOLTS, TOP OR BOTTOM BOLTS, ETC. IS PROHIBITED.
- GLAZING IN DOORS OR IN FIXED OR OPERABLE PANELS ADJACENT TO A DOOR WHERE THE NEAREST EXPOSED EDGE IS WITHIN A 24 INCH ARC OF THE DOOR AND WHERE THE BOTTOM EXPOSED EDGE IS LESS THAN 60 INCHES ABOVE THE WALKING SURFACE MUST BE TEMPERED.
- TANK TYPE WATER CLOSETS SHALL HAVE A MAXIMUM WATER USE OF 1.6 GALLONS PER FLUSH. SHOWERS SHALL HAVE A MAXIMUM FLOW OF 2.5 GALLONS PER MINUTE.
- BURNING OF CONSTRUCTION WASTE MATERIALS IS PROHIBITED AT ALL TIMES.
- PROVIDE ONE RECESSED 2-A FIRE EXTINGUISHER FOR EVERY 3,000 SQ. FT. OF FLOOR AREA WITH A MAXIMUM TRAVEL DISTANCE OF 75 FEET TO AN EXTINGUISHER.
- STORAGE OF EQUIPMENT, SOILS, CONSTRUCTION MATERIALS ON PUBLIC RIGHT-OF-WAY (STREETS/SIDEWALKS) OR EASEMENT IS EXPRESSLY PROHIBITED.
- GENERAL CONTRACTOR TO PROCURE ALL REQUIRED PERMITS FROM AUTHORITY HAVING JURISDICTION, INCLUDING BUT NOT LIMITED TO BUILDING, ENGINEERING, RIGHT OF WAY, AND OTHER PERMITS REQUIRED FOR SUB-CONTRACTOR WORK.
- GENERAL CONTRACTOR TO PROVIDE REQUIRED FIRE EXTINGUISHERS TO BE PRESENT DURING CONSTRUCTION.
- DIMENSIONS ARE SHOWN TO FACE OF STUD, UNLESS NOTED OTHERWISE.
- GENERAL CONTRACTOR TO PROCURE REQUIRED ENCROACHMENT PERMIT FROM THE UTAH DEPARTMENT OF TRANSPORTATION (UDOT) AND COORDINATE THE INSTALLATION OF UTILITIES WITH UDOT.

CVMC SANTAQUIN - PHASE II ADDITION



ABBREVIATION TABLE

FFE	FINISHED FLOOR ELEV.
BOW	BACK OF WALK
GB	GRADE BREAK
TC	TOP OF CONCRETE
TBC	TOP BACK OF CURB
TA	TOP OF ASPHALT
EA	EDGE OF ASPHALT
RIM	RIM ELEVATION
FL	FLOWLINE
EG	EXIST GROUND
FG	FINISHED GRADE
TW	TOP OF WALL
BW	BOTTOM OF WALL
SF	SQUARE FOOTAGE
P.U.E.	PUBLIC UTILITY EASEMENT
SLB&M	SALT LAKE BASE & MERIDIAN
COR	CORNER
N	NORTH
S	SOUTH
E	EAST
W	WEST
P.I.	PRESSURIZED IRRIGATION
SS	SANITARY SEWER
SD	STORM DRAIN
T	TOWNSHIP
R	RANGE
RCP	REINFORCED CONCRETE PIPE
WM	WATER METER
CB	CATCH BASIN
SDMH	STORM DRAIN MANHOLE
SSMH	SANITARY SEWER MANHOLE
FH	FIRE HYDRANT
L.F.	LINEAR FEET
S=%	SLOPE
IE	INVERT ELEVATION
C.O.	CLEAN OUT
SL	SEWER LATERAL

GENERAL NOTES:

1. THE DEVELOPER AND THE GENERAL CONTRACTOR UNDERSTAND THAT IT IS HIS/HER RESPONSIBILITY TO ENSURE THAT ALL IMPROVEMENTS INSTALLED WITH THIS DEVELOPMENT ARE CONSTRUCTED IN FULL COMPLIANCE WITH ALL STATE AND SANTAQUIN CITY CODES, ORDINANCES AND STANDARDS. THESE PLANS ARE NOT ALL INCLUSIVE OF ALL MINIMUM CODES, ORDINANCES AND STANDARDS. THIS FACT DOES NOT RELIEVE THE DEVELOPER OR GENERAL CONTRACTOR FROM FULL COMPLIANCE WITH ALL MINIMUM STATE AND SANTAQUIN CITY CODES, ORDINANCES AND STANDARDS.
2. ALL RECOMMENDATIONS MADE IN A PERTINENT GEOTECHNICAL REPORT/STUDY SHALL BE FOLLOWED EXPLICITLY DURING CONSTRUCTION OF BUILDINGS AND SITE IMPROVEMENTS.
3. FEMA FLOODPLAIN: SITE IS LOCATED IN UNMAPPED AREA.
4. THE PROPOSED MEDICAL CLINIC WILL NOT BE FIRE SPRINKLED.

NOTES TO CONTRACTOR

1. CONTRACTOR TO FIELD VERIFY ALL EXISTING CURB & GUTTER, STORM DRAIN, & SEWER ELEVATIONS OR INVERTS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER WHEN ELEVATIONS OR INVERTS DO NOT MATCH PLANS.
2. THE LOCATION OF EXISTING UNDERGROUND UTILITIES IS SHOWN IN APPROXIMATE LOCATIONS. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE AND ALL UNDERGROUND UTILITIES, WHETHER OR NOT SUCH FACILITIES ARE SHOWN ON THESE PLANS.

SURVEYED DESCRIPTION

All of Lot 4, Block 21, Plat "B", Santaquin City Survey, more particularly described as follows:
Beginning at the Southwest Corner of Lot 4, Block 21, Plat "B", Santaquin City Survey; Thence N 00'09'12" E, 237.39 feet along the West line of said Lot 4 to the Northwest corner of said Lot 4; Thence S 89'49'57" E, 164.89 feet along the North line of said Lot 4 to the Northeast corner of said lot 4; Thence S 00'09'42" W, 237.35 feet to the Southeast corner of said Lot 4; Thence N 89'50'49" W, 164.85 feet along said South line to the point of beginning. Containing an area of 0.90 Acres.

TABULATIONS:

TOTAL PARCEL AREA	39,136 S.F. = 100%
BUILDING AREA:	7,354 S.F. = 18.8%
PARKING LOT/WALK AREA:	20,860 S.F. = 53.3%
LANDSCAPE AREA:	10,922 S.F. = 27.9%

PAVEMENT DESIGN

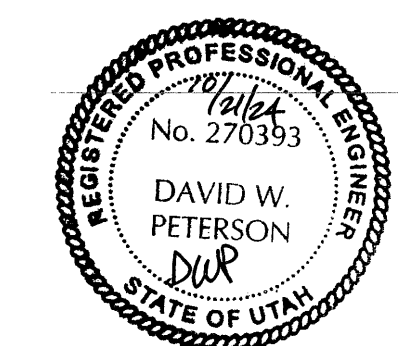
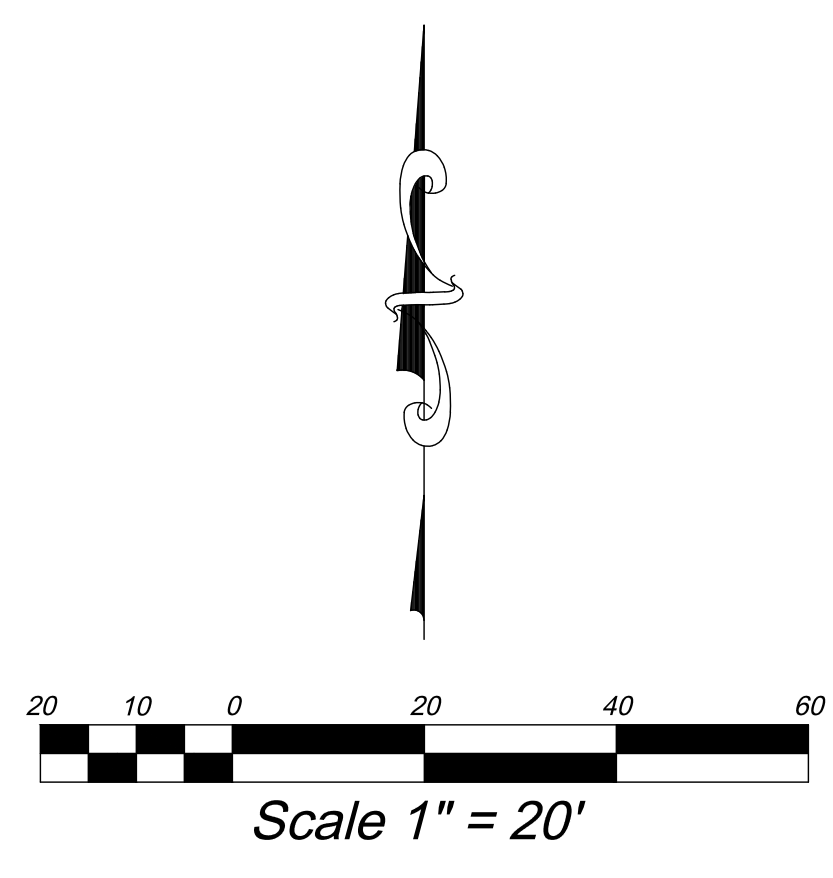
PARKING LOT
3" ASPHALT
10" BASE COURSE*
*SUBGRADE SHOULD BE PROOF-ROLLED TO IDENTIFY SOFT AREAS

PARKING TABULATIONS:

PARKING REQUIRED
5 STALLS PER EACH DOCTOR X 5 DOCTORS = 25 STALLS
1 PARKING STALL PER EACH STAFF EMPLOYEE X 18 EMPLOYEES = 18 STALLS
TOTAL STALLS REQUIRED = 43 STALLS
ADA STALL REQUIRED INCLUDING VAN = 3
ADA STALLS PROVIDED = 3 INCLUDING 1 VAN STALL
TOTAL STALLS PROVIDED = 56 STALLS

SHEET INDEX

C1	COVER SHEET/SITE PLAN
C2	DEMOLITION PLAN
C3	UTILITY PLAN
C4	GRADING & DRAINAGE PLAN
C5	EROSION CONTROL PLAN
C6	DETAIL SHEET



BENCH MARK	REVISIONS		
	Rev.	Date	Description
SEWER MANHOLE RIM IN MAIN ST & 200 EAST INTERSECTION ELEVATION = 4913.93			

Developer/Property Owner:
Central Valley Medical Center
48 West 1500 North, Nephi, Utah 84648
Phone: 435-623-3000

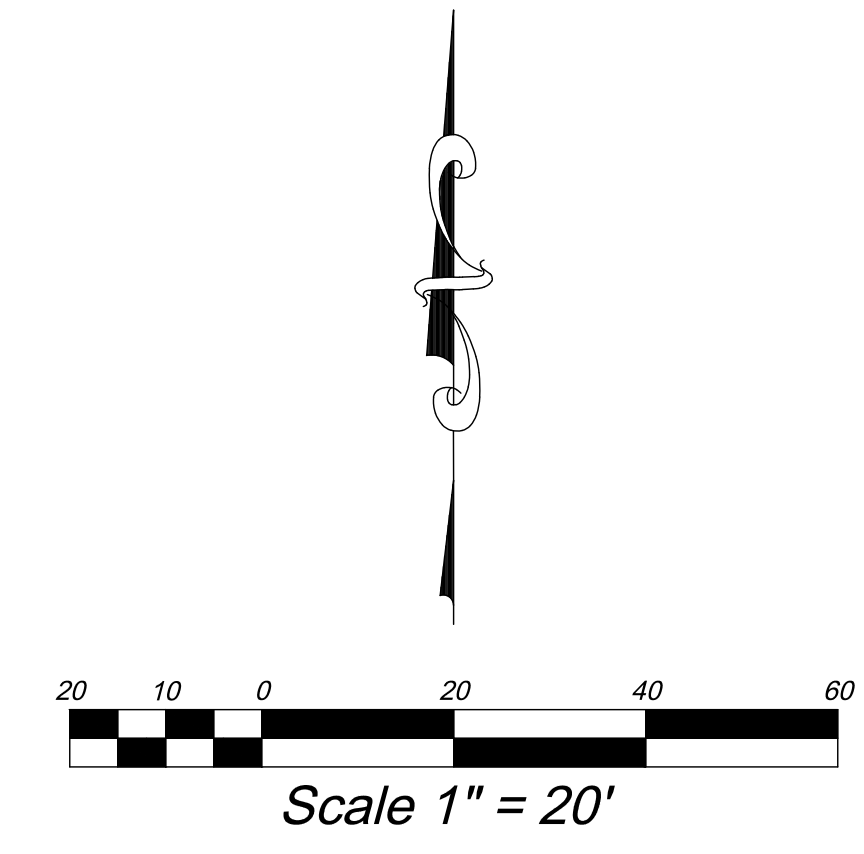
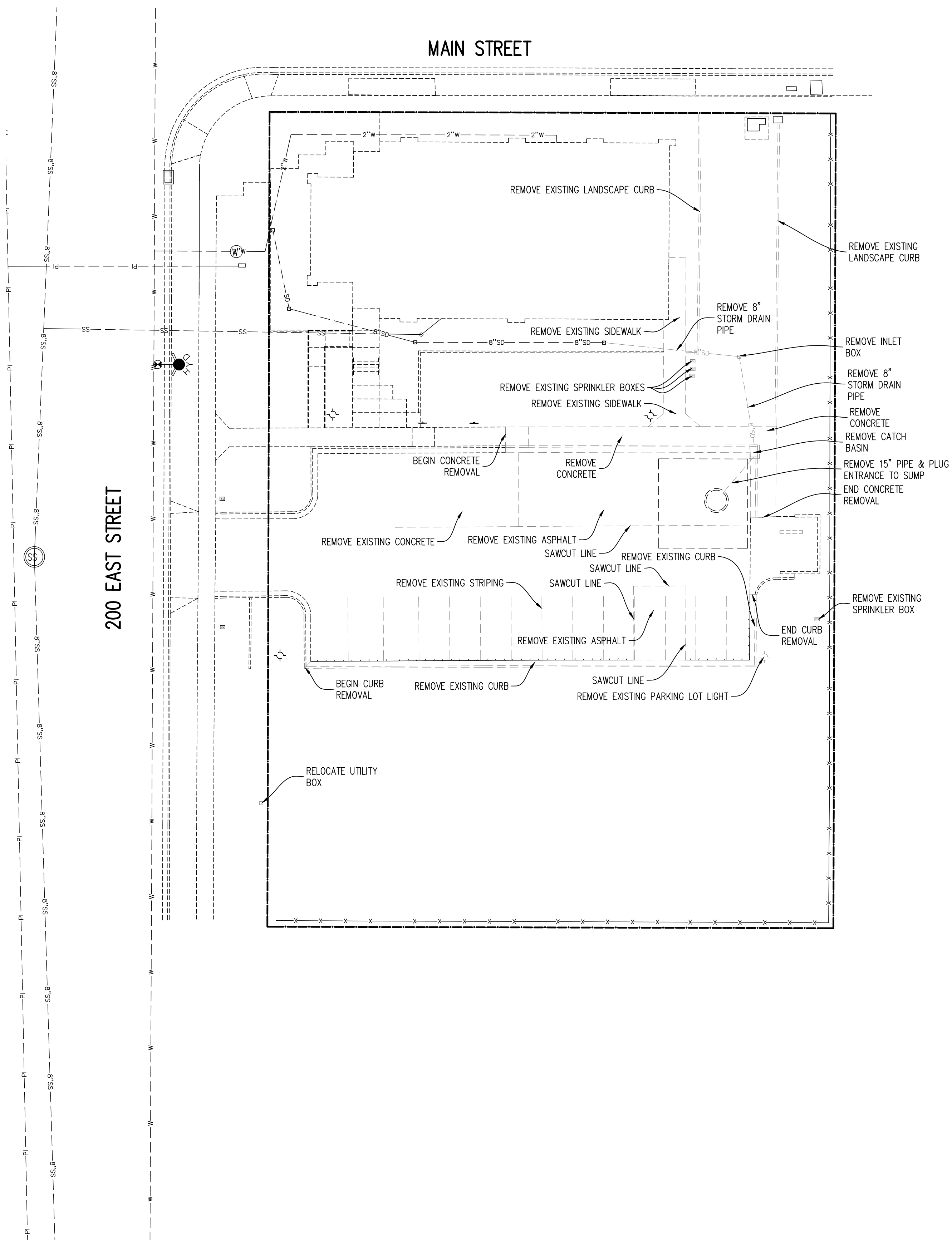
EXCEL ENGINEERING
David W. Peterson, P.E., License #270393
12 West 100 North, Suite 201C, American Fork, UT 84003
P: (801) 756-4504; david@excelcivil.com

CVMC SANTAQUIN - PHASE II ADDITION
SANTAQUIN 210 EAST MAIN STREET UTAH

Drawn by: D.W.P.
Designed by: D.W.P.
Checked by: D.W.P.

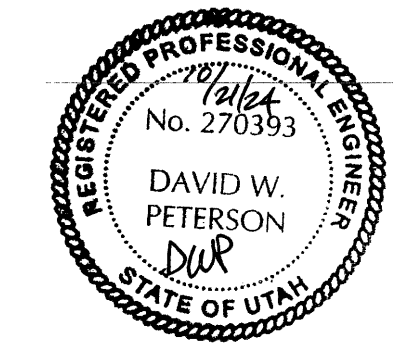
COVER SHEET & SITE PLAN

Scale: 1"=20'
Date: 10/21/24
C1



GENERAL NOTES:

1. THE DEVELOPER AND THE GENERAL CONTRACTOR UNDERSTAND THAT IT IS HIS/HER RESPONSIBILITY TO ENSURE THAT ALL IMPROVEMENTS INSTALLED WITH THIS DEVELOPMENT ARE CONSTRUCTED IN FULL COMPLIANCE WITH ALL STATE AND SANTAQUIN CITY CODES, ORDINANCES AND STANDARDS. THESE PLANS ARE NOT ALL INCLUSIVE OF ALL MINIMUM CODES, ORDINANCES AND STANDARDS. THIS FACT DOES NOT RELIEVE THE DEVELOPER OR GENERAL CONTRACTOR FROM FULL COMPLIANCE WITH ALL MINIMUM STATE AND SANTAQUIN CITY CODES, ORDINANCES AND STANDARDS.
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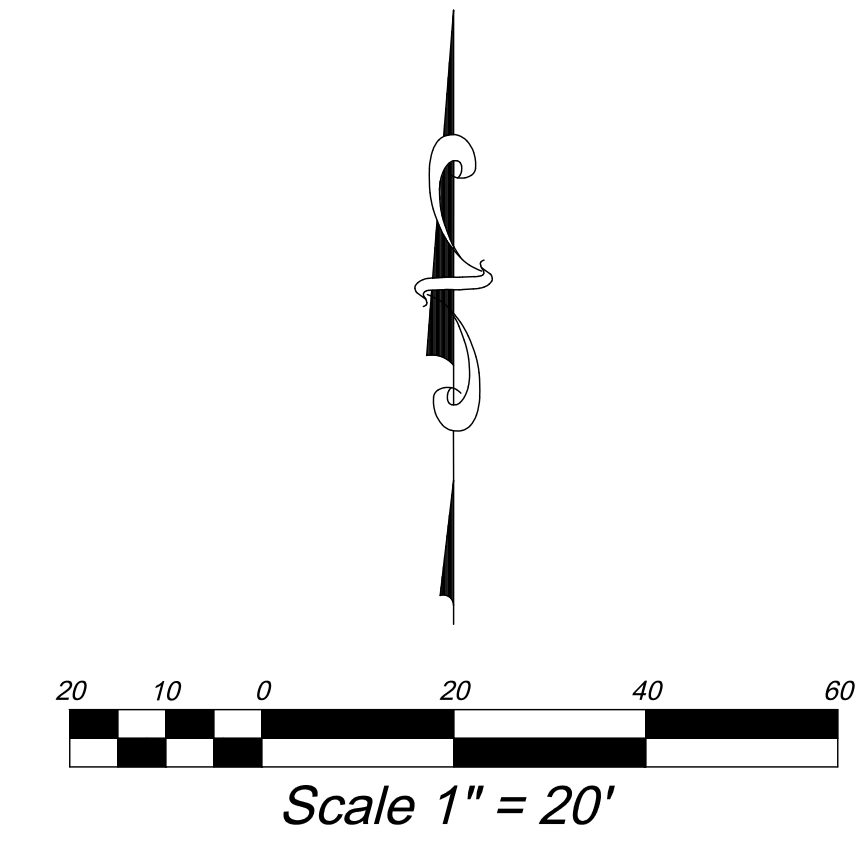
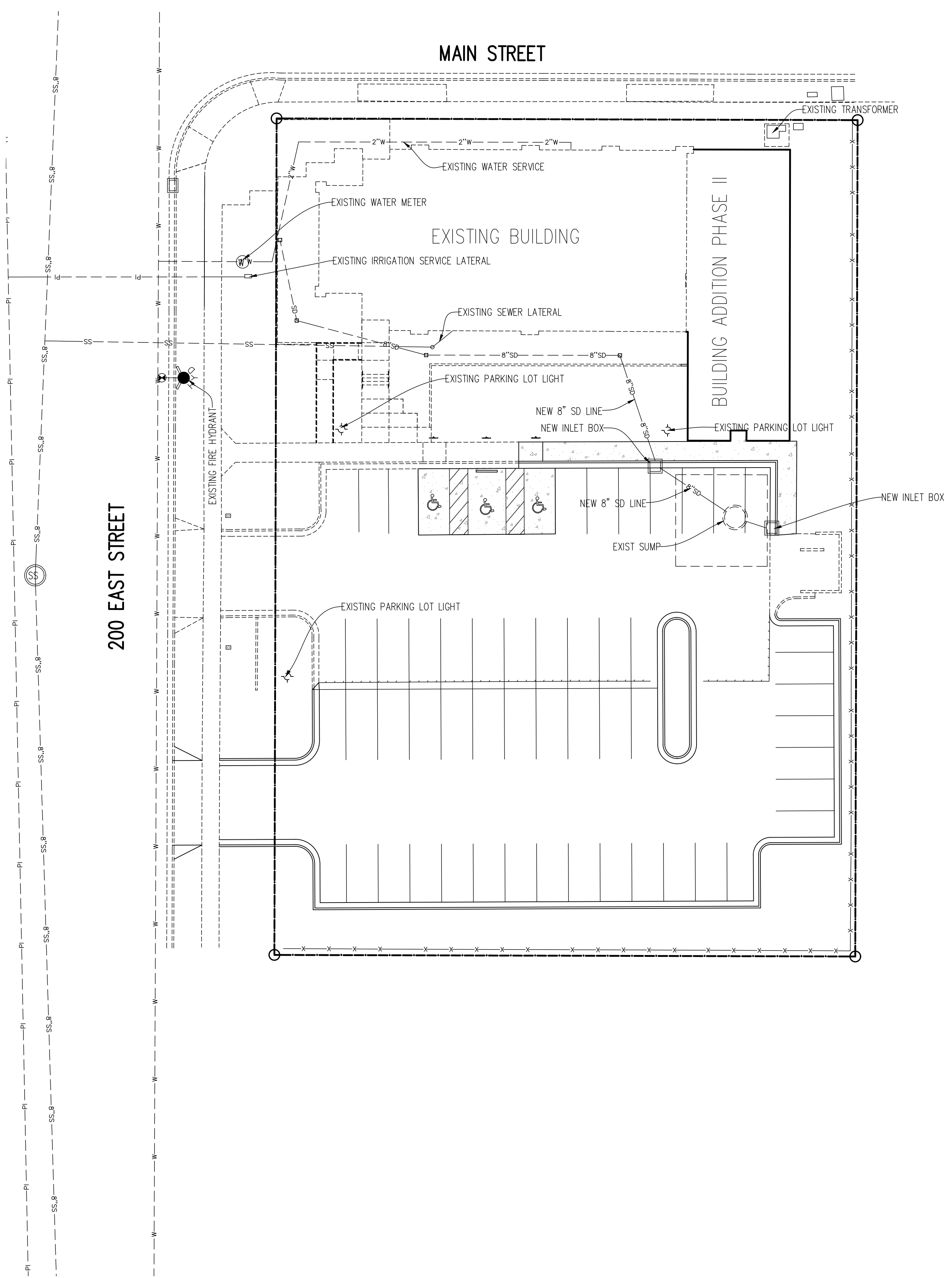


BENCH MARK	REVISIONS		
	Rev.	Date	Description
SEWER MANHOLE RIM IN MAIN ST & 200 EAST INTERSECTION ELEVATION = 4913.93			

Developer/Property Owner:
 Central Valley Medical Center
 48 West 1500 North, Nephi, Utah 84648
 Phone: 435-623-3000

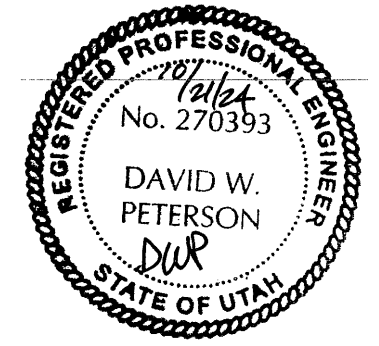
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 P: (801) 756-4504; david@excelcivil.com

CVMC SANTAQUIN - PHASE II ADDITION		UTAH
SANTAQUIN 210 EAST MAIN STREET		Scale: 1"=20'
Drawn by: D.W.P.	DEMOLITION PLAN	Date: 10/21/24
Designed by: D.W.P.		C2
Checked by: D.W.P.		



GENERAL NOTES:

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BENCH MARK		REVISIONS	
SEWER MANHOLE RIM IN MAIN ST & 200 EAST INTERSECTION ELEVATION = 4913.93		Rev.	Date
		Description	

Developer/Property Owner:
Central Valley Medical Center
48 West 1500 North, Nephi, Utah 84648
Phone: 435-623-3000

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David W. Peterson, P.E., License #270393
12 West 100 North, Suite 201C, American Fork, UT 84003
P: (801) 756-4504; david@excelcivil.com

CVMC SANTAQUIN - PHASE II ADDITION		UTAH
SANTAQUIN 210 EAST MAIN STREET		Scale: 1"=20'
Drawn by: D.W.P.	UTILITY PLAN	Date: 10/21/24
Designed by: D.W.P.		C3
Checked by: D.W.P.		

BMP: Concrete Waste Management CWM



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:
Prevent or reduce the discharge of pollutants to storm water from concrete waste by conducting washout off-site, performing on-site washout in a designated area, and training employees and subcontractors.

APPLICATIONS:
This technique is applicable to all types of sites.

INSTALLATION/APPLICATION CRITERIA:

- ▶ Store dry and wet materials under cover, away from drainage areas.
- ▶ Avoid mixing excess amounts of fresh concrete or cement on-site.
- ▶ Perform washout of concrete trucks off-site or in designated areas only.
- ▶ Do not wash out concrete trucks into storm drains, open ditches, streets, or streams.
- ▶ Do not allow excess concrete to be dumped on-site, except in designated areas.
- ▶ When washing concrete to remove fine particles and expose the aggregate, avoid creating runoff by draining the water within a bermed or level area. (See Earth Berm Barrier information sheet.)
- ▶ Train employees and subcontractors in proper concrete waste management.

LIMITATIONS:

- ▶ Off-site washout of concrete wastes may not always be possible.

MAINTENANCE:

- ▶ Inspect subcontractors to ensure that concrete wastes are being properly managed.
- ▶ If using a temporary pit, dispose hardened concrete on a regular basis.

Adapted from Salt Lake County BMP Fact Sheet

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS

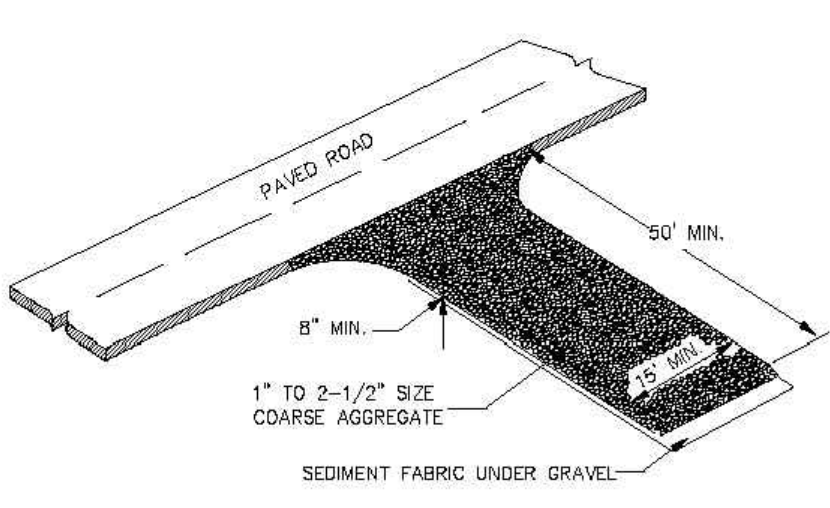
- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High Medium Low

BMP: Stabilized Construction Entrance and Wash Area SCEWA



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:
A stabilized pad of crushed stone located where construction traffic enters or leaves the site from or to paved surface. The area can be used to spray off vehicles before they leave the site.

APPLICATIONS:
At any point of ingress or egress at a construction site where adjacent traveled way is paved. Generally applies to sites over 2 acres unless special conditions exist.

INSTALLATION/APPLICATION CRITERIA:

- ▶ Clear and grub area and grade to provide maximum slope of 2%.
- ▶ Compact subgrade and place filter fabric if desired (recommended for entrances to remain for more than 3 months).
- ▶ Place coarse aggregate, 1 to 2-1/2 inches in size, to a minimum depth of 8 inches.
- ▶ Provide water to the area that can be used to spray off vehicles as needed to prevent the tracking of mud off of the construction site. This may not be needed during dry periods of work, but is needed when construction is proceeding under wet conditions.
- ▶ Provide berming as needed to prevent sediment laden wash water from entering storm water facilities or other water bodies, or leaving the site.

LIMITATIONS:

- ▶ Requires periodic top dressing with additional stones.
- ▶ Should be used in conjunction with street sweeping on adjacent public right-of-way.
- ▶ Must be situated such that waste water does not run off site.

MAINTENANCE:

- ▶ Inspect daily for loss of gravel or sediment buildup.
- ▶ Inspect adjacent roadway for sediment deposit and clean by shoveling and sweeping.
- ▶ Repair entrance and replace gravel as required to maintain control in good working condition.
- ▶ Expand stabilized area as required to accommodate traffic and prevent erosion at driveways.

Adapted from Salt Lake County BMP Fact Sheet

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS

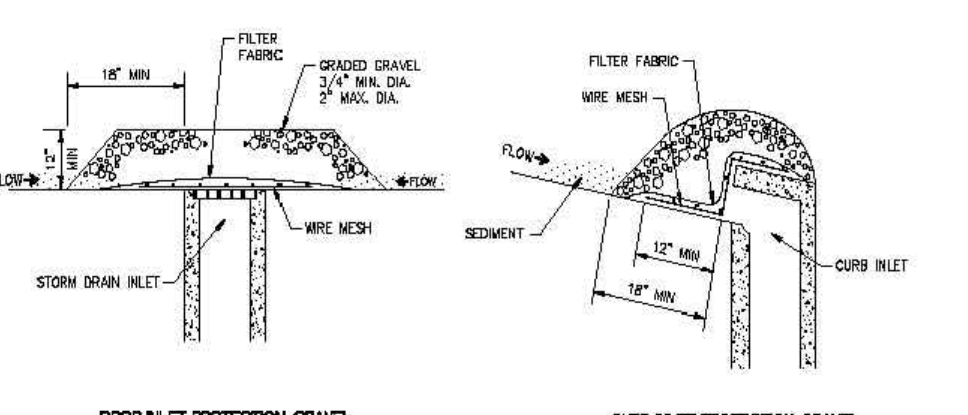
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- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High Medium Low

BMP: Inlet Protection - Gravel IPG



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:
Placement of gravel filter over inlet to storm drain to filter storm water runoff.

APPLICATION:
Construct at inlets in paved or unpaved areas where upgradient area is to be disturbed by construction activities.

INSTALLATION/APPLICATION CRITERIA:

- ▶ Place wire mesh (with 1/2 inch openings) over the inlet grate extending one foot past the grate in all directions.
- ▶ Place filter fabric over the mesh. Filter fabric should be selected based on soil type.
- ▶ Place graded gravel, to a minimum depth of 12-inches, over the filter fabric and extending 18-inches past the grate in all directions.

LIMITATIONS:

- ▶ Recommended for maximum drainage area of one acre.
- ▶ Excess flows may bypass the inlet requiring down gradient controls.
- ▶ Ponding will occur at inlet.

MAINTENANCE:

- ▶ Inspect inlet protection after every large storm event and at a minimum of once monthly.
- ▶ Remove sediment accumulated when it reaches 4-inches in depth.
- ▶ Replace filter fabric and clean or replace gravel if clogging is apparent.

Adapted from Salt Lake County BMP Fact Sheet

TARGETED POLLUTANTS

- Sediment
- Nutrients
- Toxic Materials
- Oil & Grease
- Floatable Materials
- Other Waste

IMPLEMENTATION REQUIREMENTS

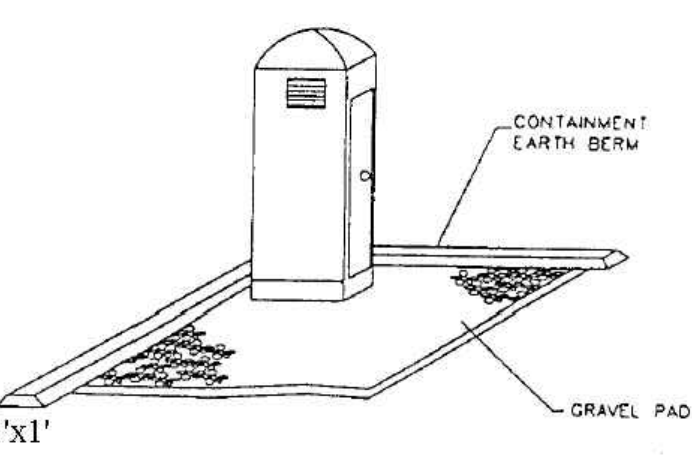
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- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High Medium Low

BMP: Portable Toilets PT



OBJECTIVES

- Housekeeping Practices
- Contain Waste
- Minimize Disturbed Areas
- Stabilize Disturbed Areas
- Protect Slopes/Channels
- Control Site Perimeter
- Control Internal Erosion

DESCRIPTION:
Temporary on-site sanitary facilities for construction personnel.

APPLICATION:
All sites with no permanent sanitary facilities or where permanent facility is too far from activities.

INSTALLATION/APPLICATION CRITERIA:

- ▶ Locate portable toilets in convenient locations throughout the site.
- ▶ Prepare level, gravel surface and provide clear access to the toilets for servicing and for on-site personnel.
- ▶ Construct earth berm perimeter (See Earth Berm Barrier Information Sheet), control for spill/protection leak.
- ▶ Stake toilets to prevent them from tipping.

LIMITATIONS:
No limitations.

MAINTENANCE:

- ▶ Portable toilets should be maintained in good working order by licensed service with daily observation for leak detection.
- ▶ Regular waste collection should be arranged with licensed service.
- ▶ All waste should be deposited in sanitary sewer system for treatment with appropriate agency approval.

Adapted from Salt Lake County BMP Fact Sheet

TARGETED POLLUTANTS

- Sediment
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- Other Waste

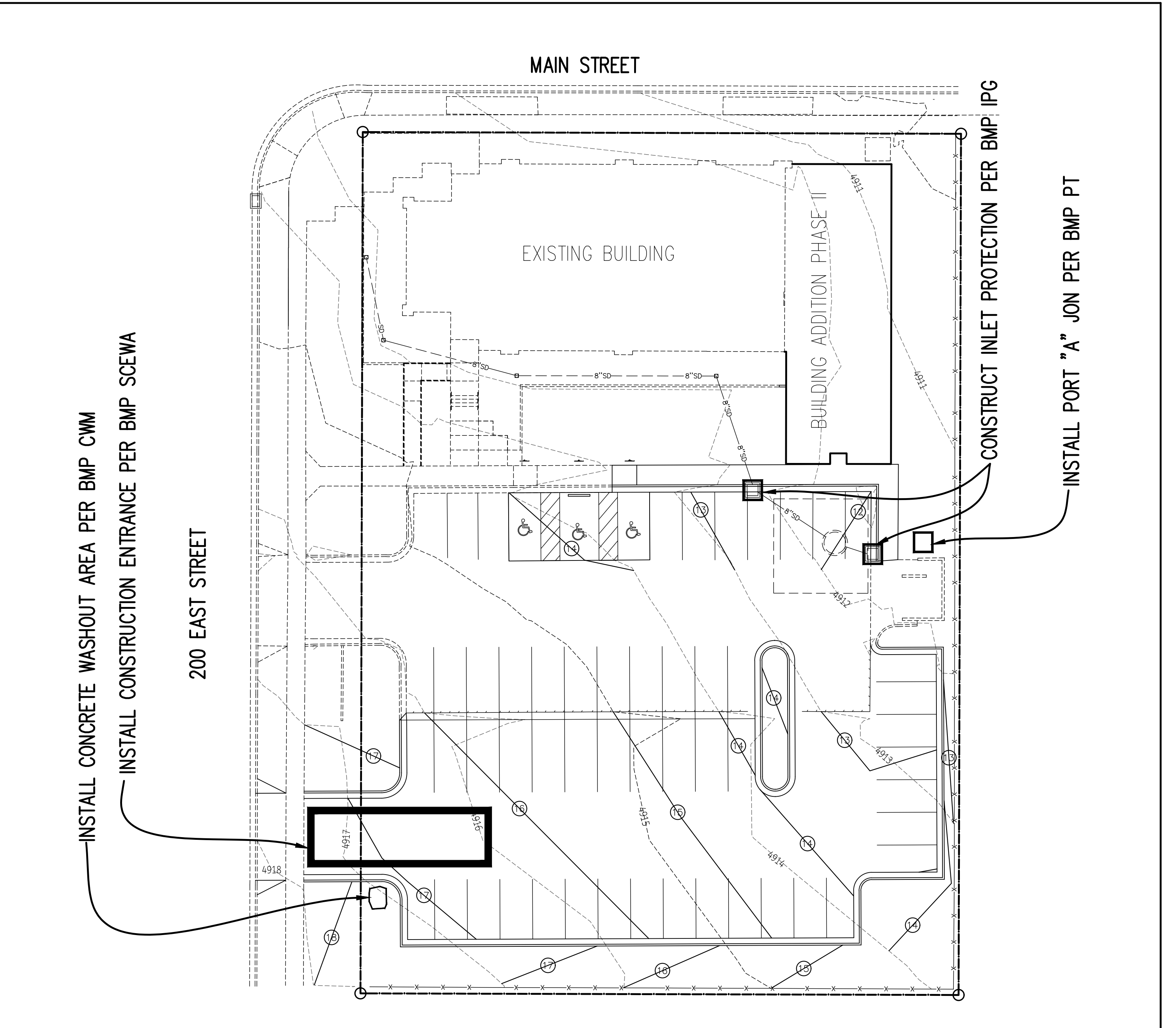
IMPLEMENTATION REQUIREMENTS

- High Impact
- Medium Impact
- Low or Unknown Impact

IMPLEMENTATION REQUIREMENTS

- Capital Costs
- O&M Costs
- Maintenance
- Training

■ High Medium Low



SWPPP BOOKLET NOTE:
CONTRACTOR IS RESPONSIBLE TO PREPARE AND SUBMIT A COMPLETE STORM WATER PREVENTION PLAN BOOKLET WITH FULL DETAILS BASED ON THE EPA SWPPP STANDARD TEMPLATE. THIS BOOKLET INCLUDES A COPY OF THE NOTICE OF INTENT AND AN ACKNOWLEDGEMENT LETTER OBTAINED FROM STATE AFTER APPLYING FOR AN NOI PERMIT.

EROSION CONTROL PLAN NOTES:

1. INSTALL A CONSTRUCTION ENTRANCE AS SHOWN ON THE PLAN PRIOR TO ANY GRADING ON THE SITE. SEE BMP SCEWA
2. INSTALL CONCRETE WASHOUT AREA. SEE BMP CWM
3. INSTALL PORT "A" JON. SEE BMP PT
4. CONSTRUCT STORM DRAIN FACILITIES AND INSTALL INLET PROTECTION AFTER INSTALLATION. SEE BMP IPG.
5. CONTRACTOR WILL BE RESPONSIBLE FOR THE IMPLEMENTATION AND MAINTENANCE OF BMP'S DURING CONSTRUCTION.
6. CONTRACTOR TO WATER SITE AT LEAST WEEKLY OR MORE FREQUENTLY AS NEEDED TO CONTROL DUST POLLUTION.

REVISIONS

Rev.	Date	Description

Scale 1" = 20'

DAVID W. PETERSON
REGISTERED PROFESSIONAL ENGINEER
No. 270393
STATE OF UTAH

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

Developer/Property Owner:
Central Valley Medical Center
48 West 1500 North, Nephi, Utah 84648
Phone: 435-623-3000

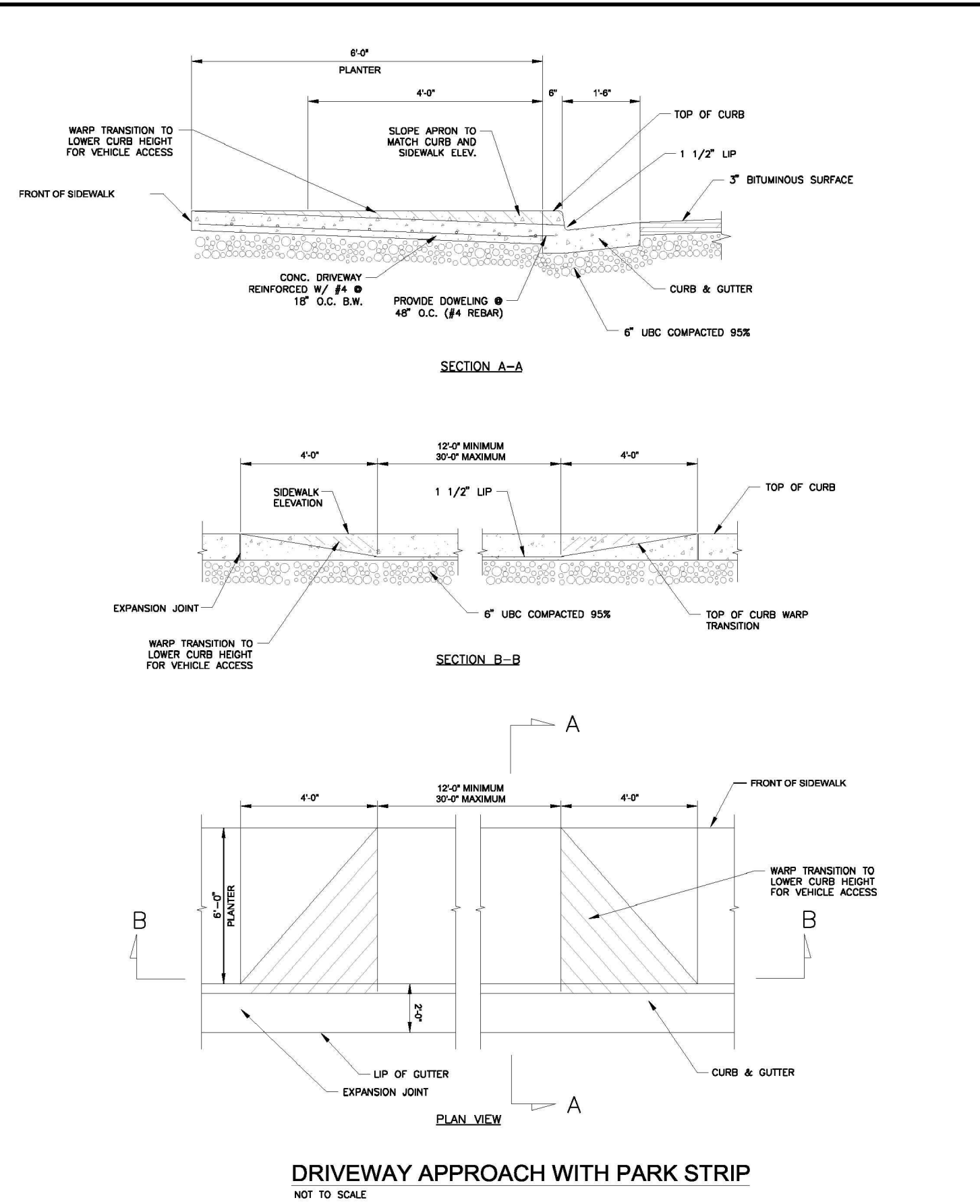
EXCEL ENGINEERING
David W. Peterson, P.E., License #270393
12 West 100 North, Suite 201C, American Fork, UT 84003
P: (801) 756-4504; david@excelcivil.com

CVMC SANTAQUIN - PHASE II ADDITION
SANTAQUIN 210 EAST MAIN STREET UTAH

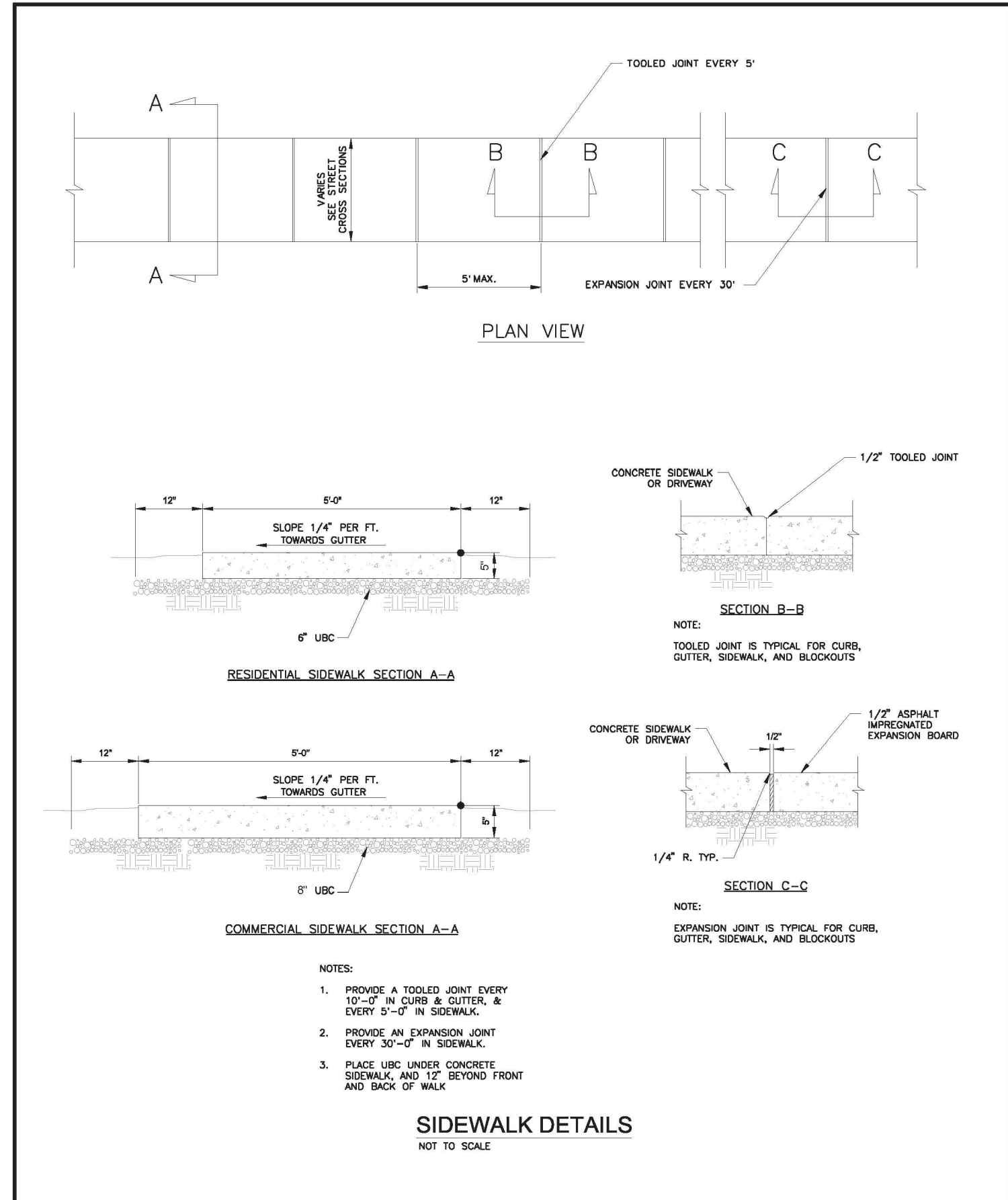
EROSION CONTROL PLAN

Drawn by: D.W.P.
Designed by: D.W.P.
Checked by: D.W.P.

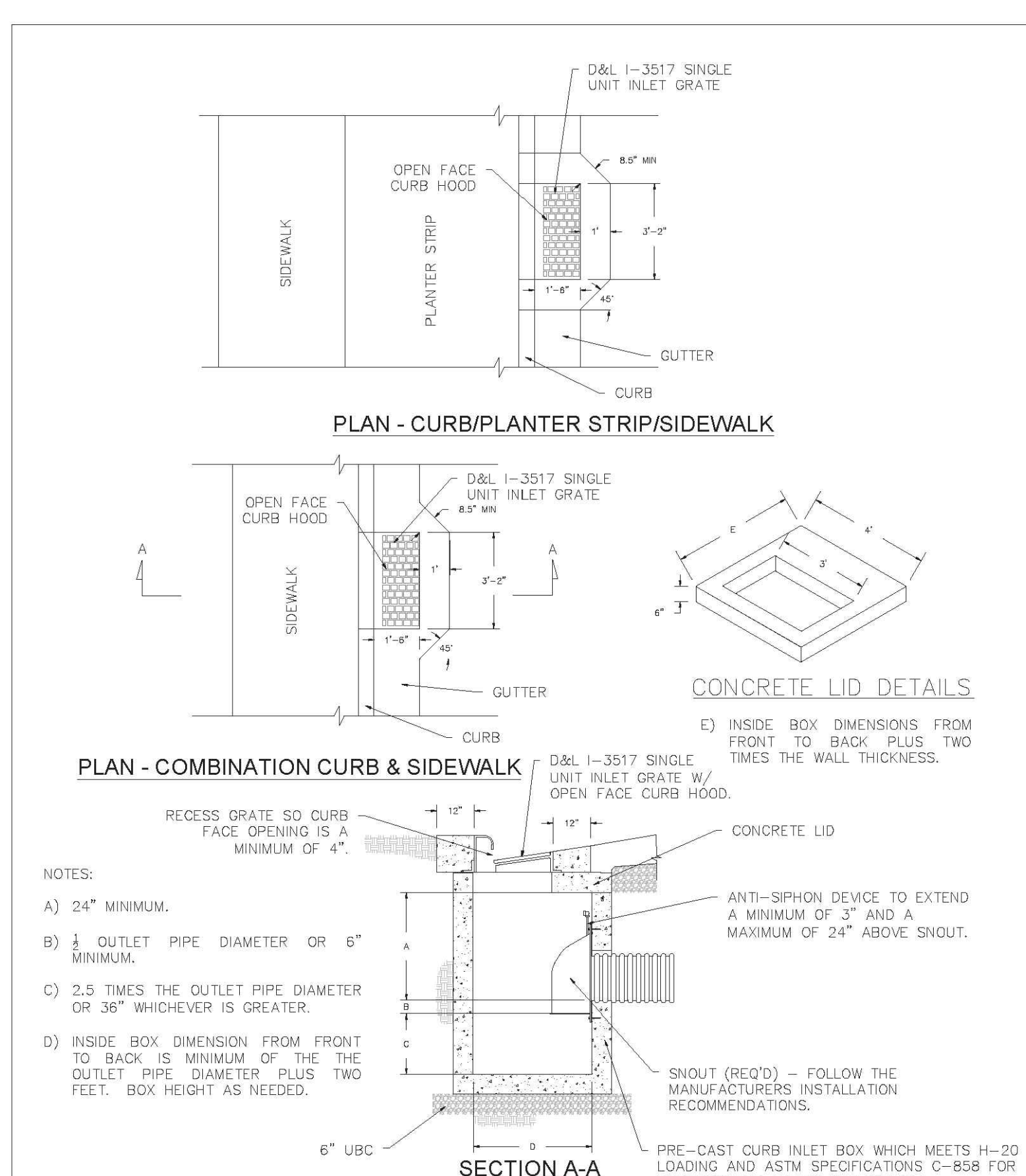
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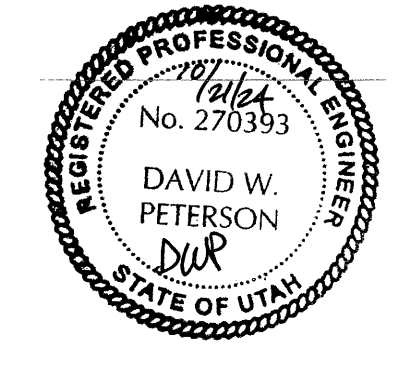
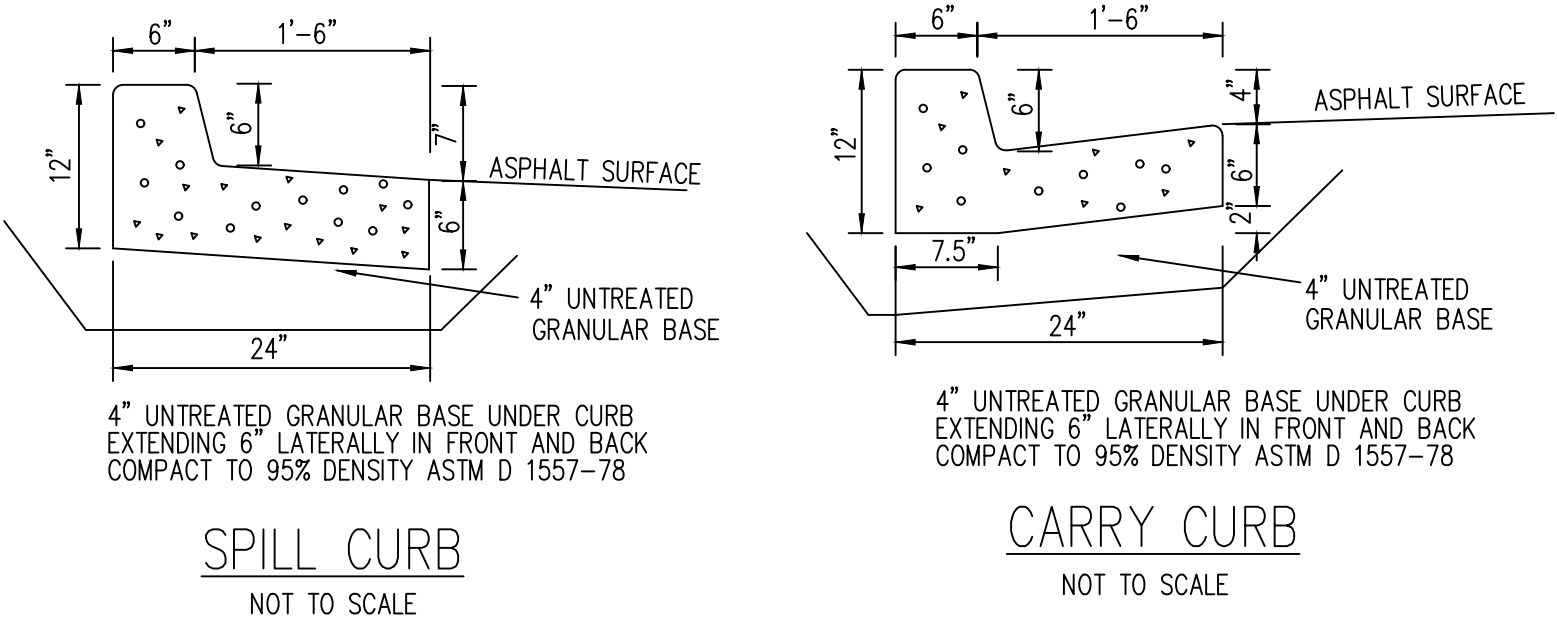
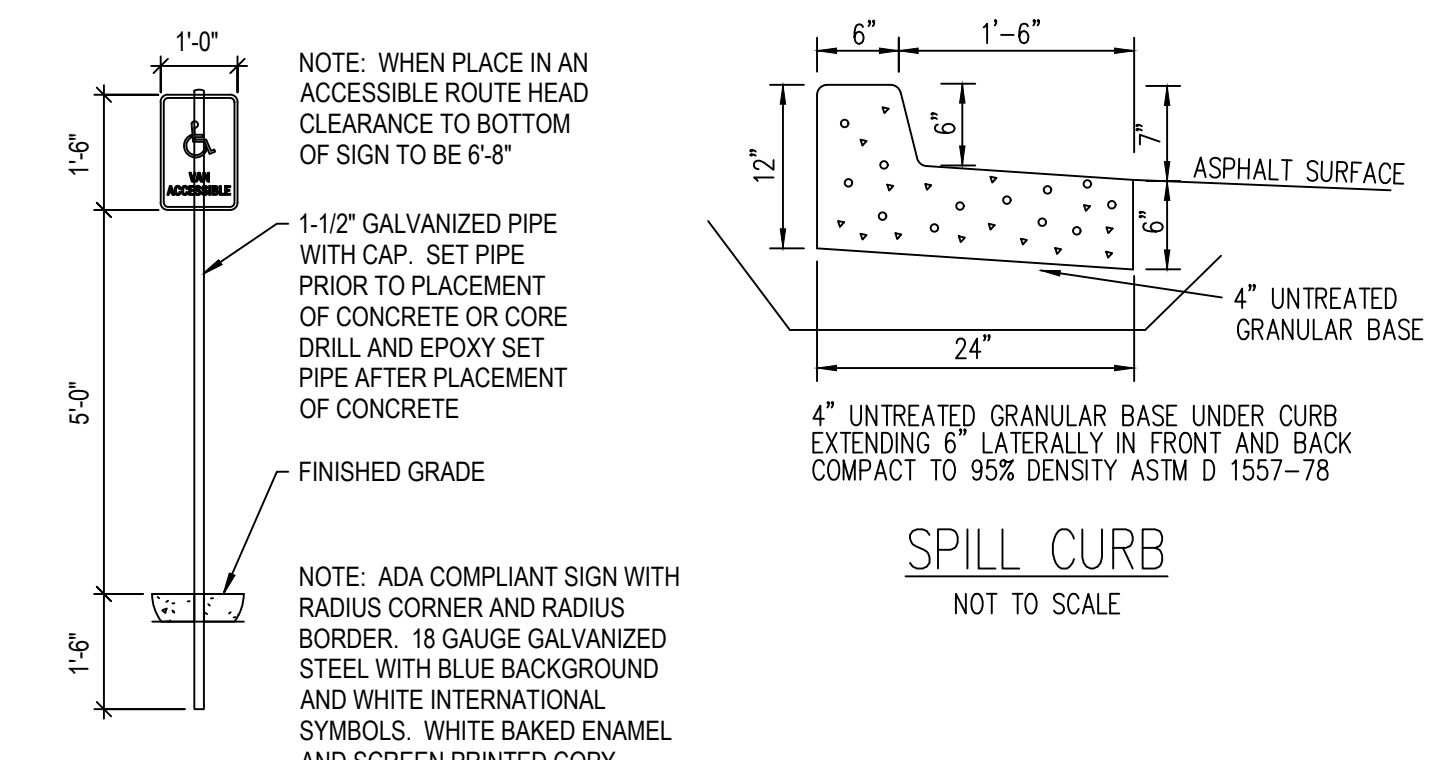
REVISIONS			DRIVEWAY APPROACH WITH PARK STRIP SANTAQUIN CITY 275 WEST MAIN STREET	CG3 10/21/24 10/21/24 10/21/24
NO.	DESCRIPTION			



REVISIONS			SIDEWALK DETAILS SANTAQUIN CITY 275 WEST MAIN STREET	CG5 10/21/24 10/21/24 10/21/24
NO.	DESCRIPTION			



REVISIONS			CURB INLET BOX ASSEMBLY SANTAQUIN CITY 275 WEST MAIN STREET	SD1 10/21/24 10/21/24 10/21/24
NO.	DESCRIPTION			

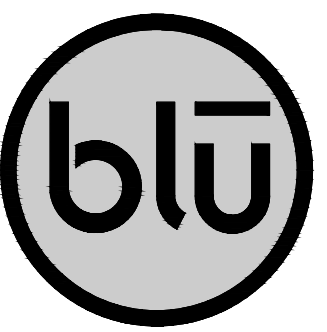


REVISIONS		
Rev.	Date	Description

Developer/Property Owner:
 Central Valley Medical Center
 48 West 1500 North, Nephi, Utah 84648
 Phone: 435-623-3000

EXCEL ENGINEERING
 David W. Peterson, P.E., License #270393
 12 West 100 North, Suite 201C, American Fork, UT 84003
 P: (801) 756-4504; david@excelcivil.com

CVMC SANTAQUIN - PHASE II ADDITION		UTAH
SANTAQUIN 210 EAST MAIN STREET		Scale: NTS
Drawn by: D.W.P.	DETAIL SHEET	Date: 10/21/24
Designed by: D.W.P.		C6
Checked by: D.W.P.		



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CENTRAL VALLEY MEDICAL CENTER
 SANTAQUIN CLINIC - PHASE 2
 210 East Main Street
 Santaquin, Utah

REVISIONS

NO.	DATE	DESCRIPTION

Stamp



10/25/2024
 Designed By: BP
 Drawn By: TH
 Date: 10/25/2024
 Checked By: BP
 Project No: 24-172

LANDSCAPE PLAN

Drawing number

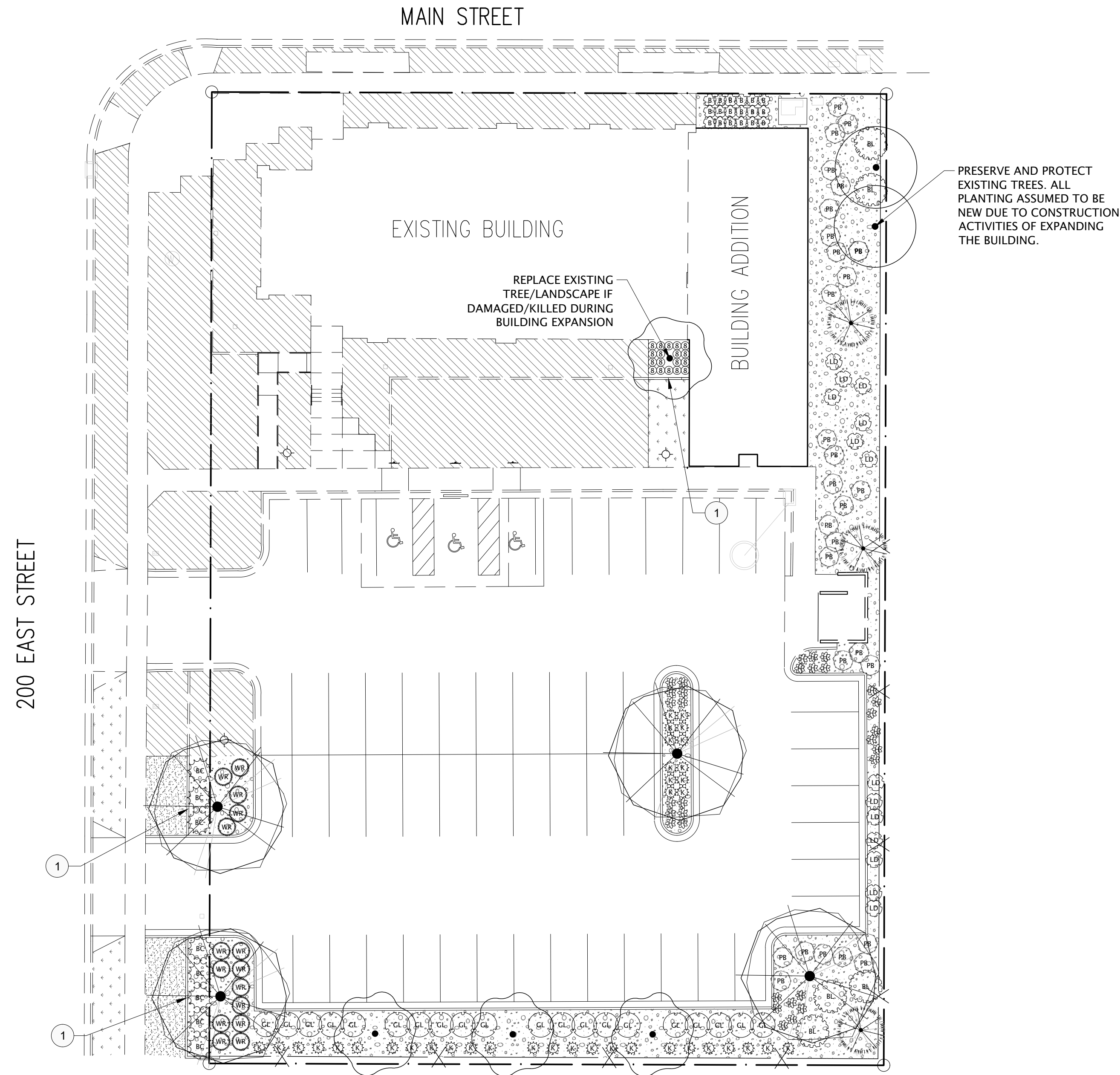
LP101

PLANT SCHEDULE

SYMBOL	BOTANICAL / COMMON NAME	CONT	CAL	QTY
DECIDUOUS TREES				
	GLEDITSIA TRIACANTHOS 'SKYLINE' / SKYLINE HONEY LOCUST	B&B	2" CAL	4
EVERGREEN TREES				
	PICEA OMORIKA / SERBIAN SPRUCE	B&B	6' HT MIN.	3
EXISTING TREES				
	EXISTING DECIDUOUS TREE TO REMAIN	-		2
ORNAMENTAL TREES				
	PRUNUS VIRGINIANA 'CANADA RED' / CANADA RED CHOKECHERRY	B&B	2" CAL	4
SHRUBS				
	BERBERIS THUNBERGII 'CRIMSON PYGMY' / CRIMSON PYGMY BARBERRY	5 GAL		18
	JUNIPERUS HORIZONTALIS 'BLUE CHIP' / BLUE CHIP JUNIPER	5 GAL		8
	PHYSOCARPUS OPULIFOLIUS 'LITTLE DEVIL' TM / DWARF NINEBARK	5 GAL		14
	PRUNUS BESSEYI 'PAWNEE BUTTES' / SAND CHERRY	5 GAL		30
	RHUS AROMATICA 'GRO-LOW' / GRO-LOW FRAGRANT SUMAC	5 GAL		20
	ROSA MEIDLAND SERIES 'WHITE' / WHITE MEIDLAND ROSE	5 GAL		15
	SAMBUCUS NIGRA 'EVA' / BLACK LACE® ELDERBERRY	5 GAL		5
ANNUALS/PERENNIALS				
	HEMEROCALLIS X 'STELLA DE ORO' / STELLA DE ORO DAYLILY	1 GAL		18
ORNAMENTAL GRASSES				
	CALAMAGOSTIS X ACUTIFLORA 'KARL FOERSTER' / FEATHER REED GRASS	1 GAL		37
	PENNISETUM ALOPECUROIDES 'HADELN' / HAMELN DWARF FOUNTAIN GRASS	1 GAL		32
GROUND COVERS				
	EXISTING LANDSCAPE TO BE PRESERVED AND PROTECTED	BED		8,053 SF
	POA PRATENSIS / KENTUCKY BLUEGRASS	SOD		482 SF
	POA PRATENSIS / KENTUCKY BLUEGRASS	SOD		722 SF
	ROCK MULCH - 1-1/2" TO 2" WASHED SOUTHTOWN COBBLE (STAKER PARSON OR NEPHI SANDSTONE). INSTALL OVER DEWITT PRO-5 WEED BARRIER.	BED		5,822 SF

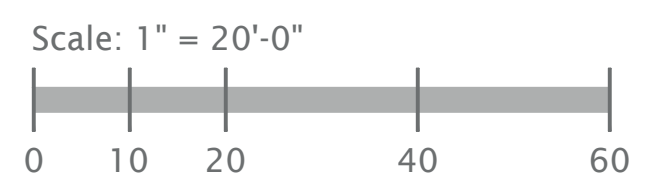
REFERENCE NOTES SCHEDULE

CODE	DESCRIPTION	DETAIL
1	6"x6" CAST-IN-PLACE CONCRETE EDGER- CONNECT TO EXISTING EDGER AS NEEDED.	4/LP501

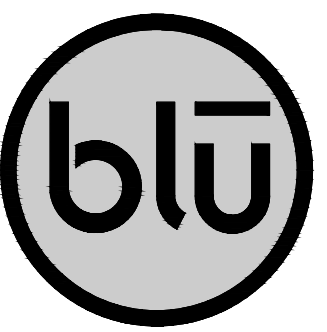


LANDSCAPE NOTES:

- ALL CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH THE LATEST AMERICAN PUBLIC WORKS ASSOCIATION (APWA) AND SANTAQUIN CITY STANDARDS, SPECIFICATIONS, AND DETAILS.
- ALL PLANT MATERIAL SHALL BE GROWN IN CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THIS WORK AND SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1 UNLESS OTHERWISE NOTED. PROVIDE TREES OF NORMAL GROWTH AND UNIFORM HEIGHTS, ACCORDING TO SPECIES, WITH STRAIGHT TRUNKS AND WELL DEVELOPED LEADERS, LATERALS, AND ROOTS.
- THE CONTRACTOR SHALL CALL BLUE STAKES AT 1-800-662-4111 FOR UNDERGROUND UTILITY LOCATIONS AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION OR EXCAVATION.
- EXISTING UTILITIES, EASEMENTS, AND STRUCTURES SHOWN ON THE DRAWINGS ARE IN ACCORDANCE WITH AVAILABLE RECORDS. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATION, SIZE, TYPE, AND STRUCTURES TO BE ENCOUNTERED ON THE PROJECT PRIOR TO ANY EXCAVATION AND CONSTRUCTION IN THE VICINITY OF THE EXISTING UTILITIES AND STRUCTURES.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL REQUIRED PERMITS, LICENSES, AND APPROVALS REQUIRED TO LEGALLY AND RESPONSIBLY COMPLETE THE WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL, DISPOSAL, OR RELOCATION OF ALL OBSTRUCTIONS AND DEBRIS WITHIN THE DELINEATED CONSTRUCTION AREA PRIOR TO STARTING NEW CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF ANY DEBRIS RESULTING FROM NEW CONSTRUCTION.
- CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID DAMAGE TO EXISTING FEATURES AND FACILITIES SCHEDULED TO REMAIN AS PART OF THE FINISHED CONSTRUCTION. REPAIR, REPLACEMENT, AND/OR REMOVAL AS DETERMINED BY OWNER SHALL BE AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL ROUGH GRADE TO WITHIN +/- A TENTH OF A FOOT FROM FINISH GRADE. ALL TURF GRASS AREAS SHALL BE GRADED 6" BELOW PROPOSED FINISH GRADE. SHRUB BEDS SHALL BE GRADED 16" BELOW PROPOSED FINISH GRADE.
- ALL COMPACTED AREAS DEVELOPED THROUGH CONSTRUCTION WITHIN PROPOSED LANDSCAPE AREAS SHALL BE SCARIFIED AND LOOSENEED TO A DEPTH OF 12" PRIOR TO LANDSCAPE AND IRRIGATION WORK BEGINNING.
- CONTRACTOR SHALL INSTALL A MIN. OF 4 INCHES OF PREMIUM OR AMENDED TOPSOIL FOR ALL TURF GRASS AREAS. INSTALL 12 INCHES OF PREMIUM OR AMENDED TOPSOIL IN ALL MANICURED SHRUB BEDS. CONTRACTOR SHALL TEST, AMEND, AND USE EXISTING STOCKPILE OF TOPSOIL ON SITE TO MEET SPECIFICATIONS. ALL PLANTING PITS SHALL RECEIVE PLANTING BACKFILL MIX PER SPECIFICATIONS.
- CONTRACTOR SHALL INSTALL A MIN. OF 3 INCHES OF ROCK MULCH ON WEED BARRIER FABRIC IN ALL SHRUB BEDS. APPLY PRE-EMERGENT TO ALL PLANTING BEDS BEFORE INSTALLING MULCH.
- NO PLANT SPECIES SUBSTITUTIONS WILL BE MADE WITHOUT APPROVAL OF OWNER.
- ALL PLANT LAYOUT SHALL BE VERIFIED AND APPROVED IN FIELD BY OWNER PRIOR TO PLANTING. FAILURE TO RECEIVE APPROVAL MAY RESULT IN RE-WORK BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- ALL AREAS WITHIN AND AFFECTED BY THIS PROJECT SHALL HAVE POSITIVE DRAINAGE. POSITIVE DRAINAGE SHALL BE PROVIDED TO DIRECT STORMWATER AWAY FROM ALL STRUCTURES.
- ALL CLARIFICATIONS OF DISCREPANCIES BETWEEN THE DRAWINGS AND THE SITE SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER PRIOR TO BEGINNING OF WORK.
- CONTRACTOR SHALL PROVIDE A ONE YEAR WARRANTY ON ALL PLANT MATERIAL FROM THE DATE OF FINAL ACCEPTANCE.

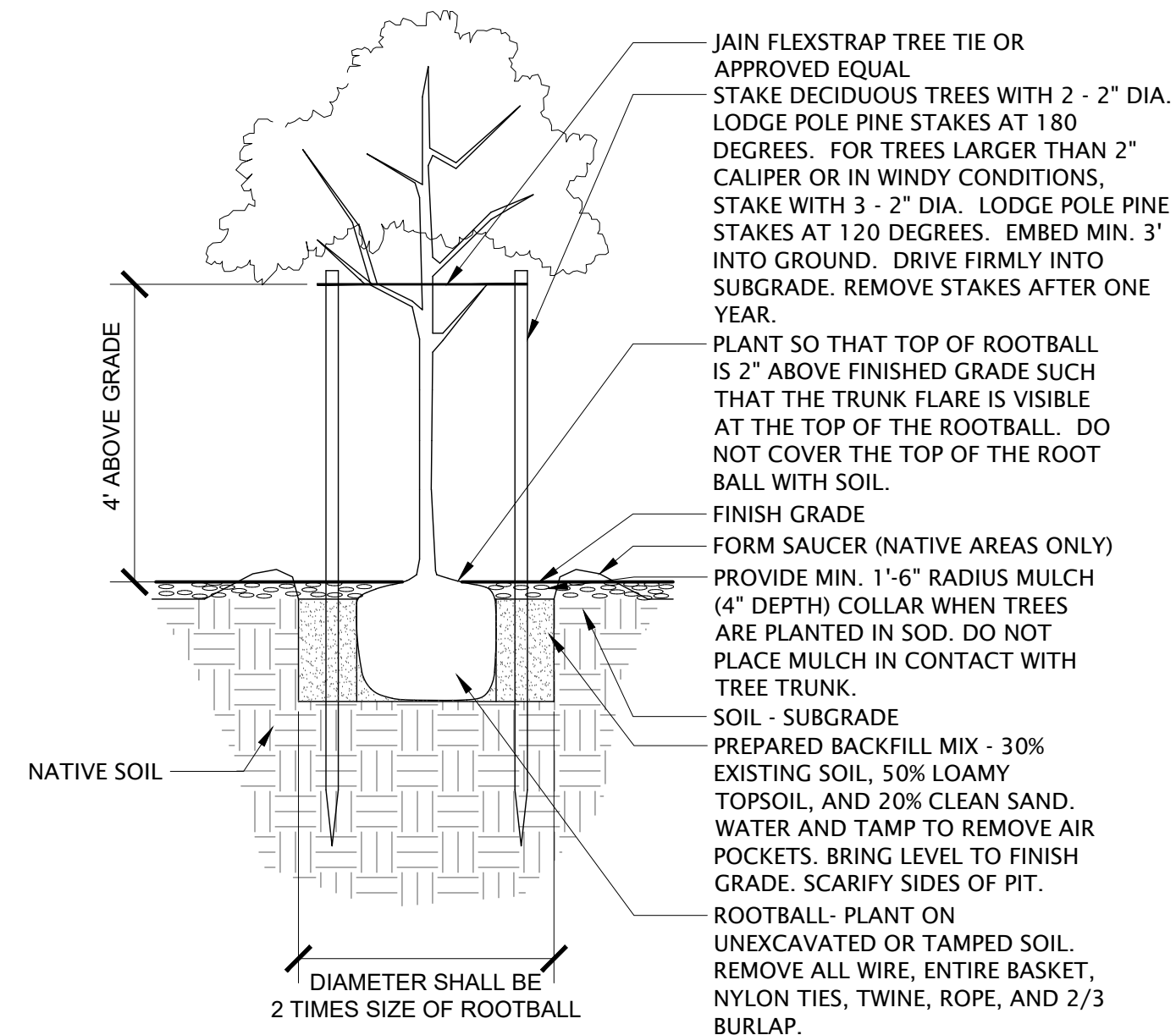


SITE PLAN APPROVAL SET

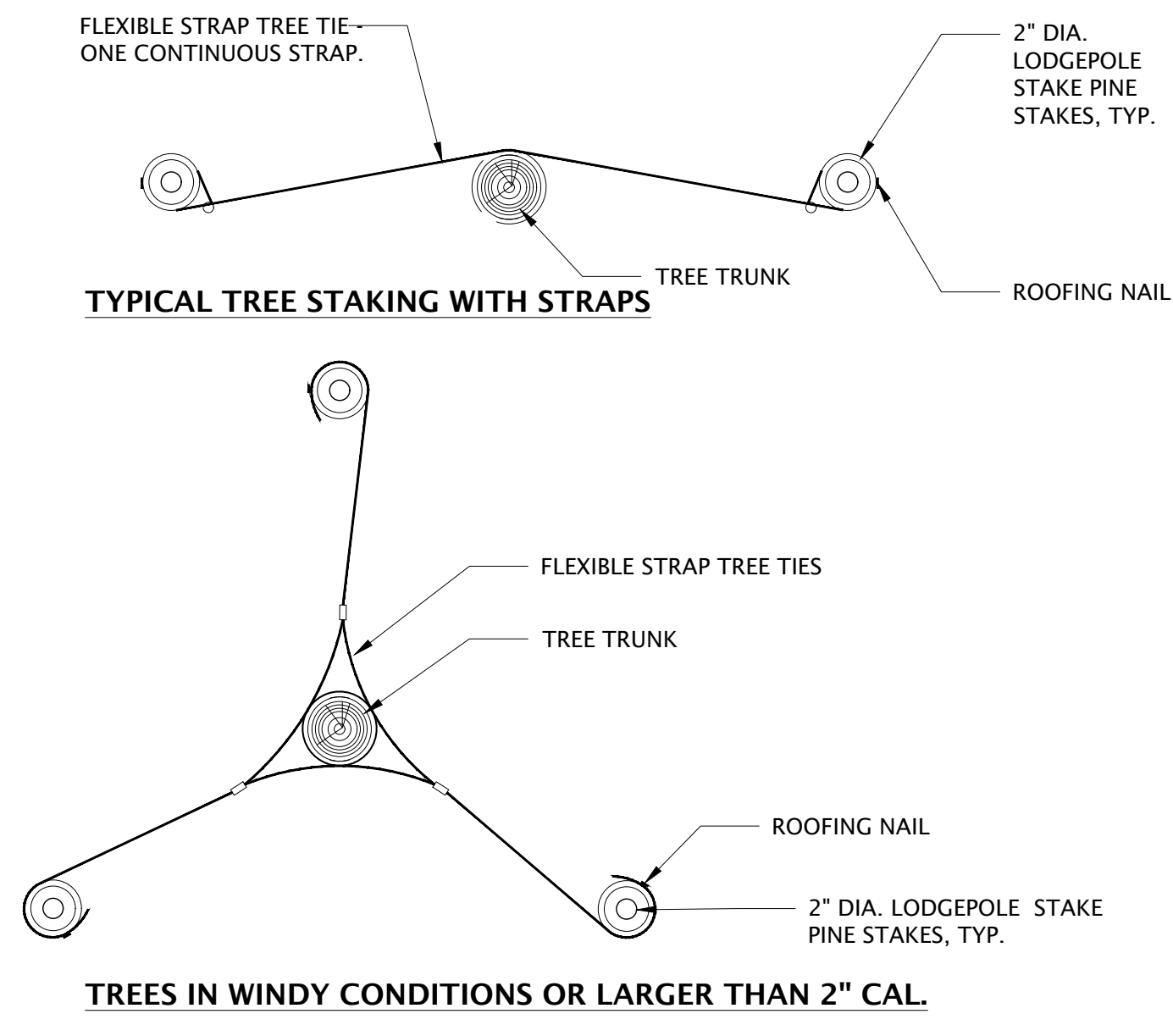


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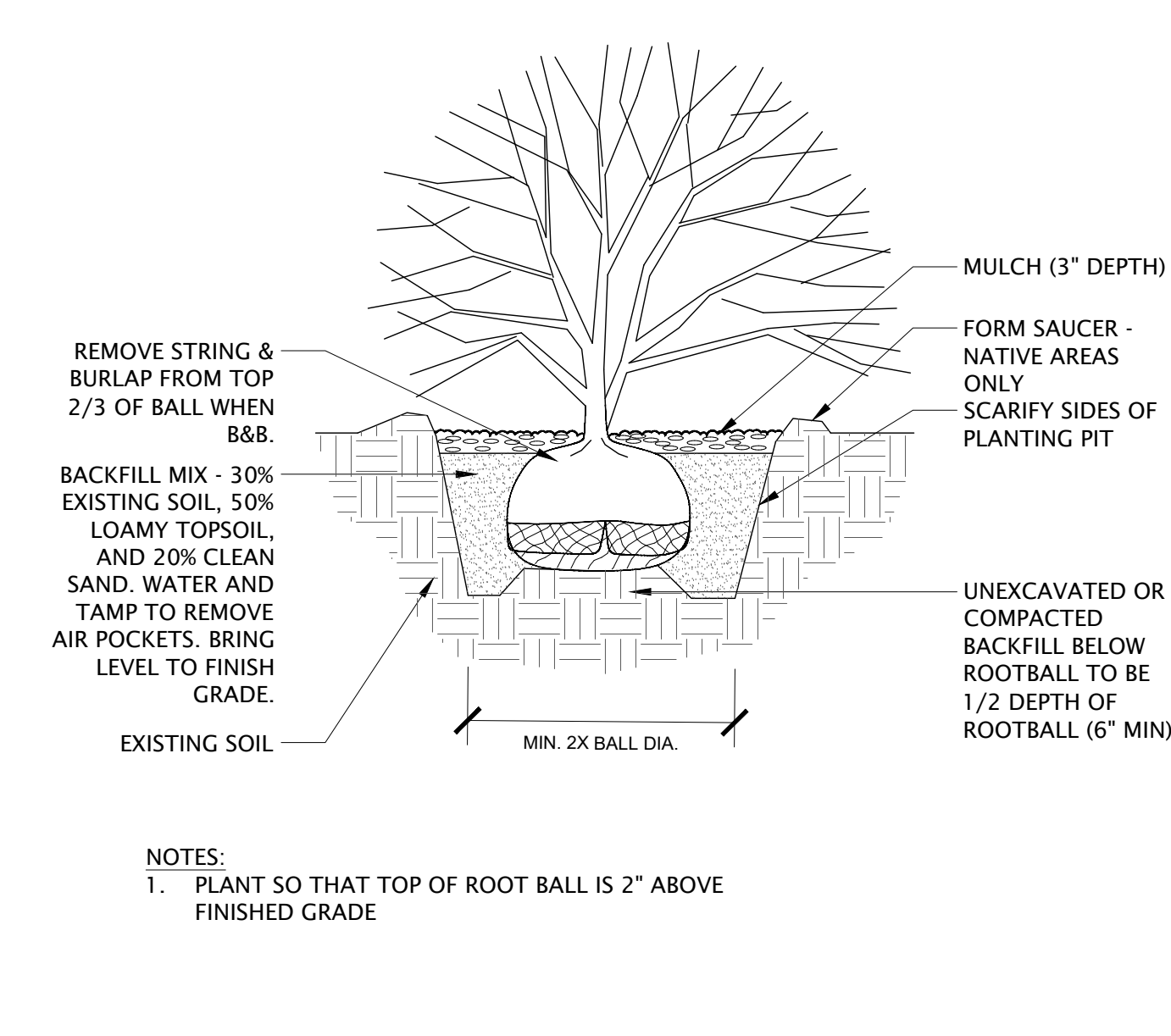
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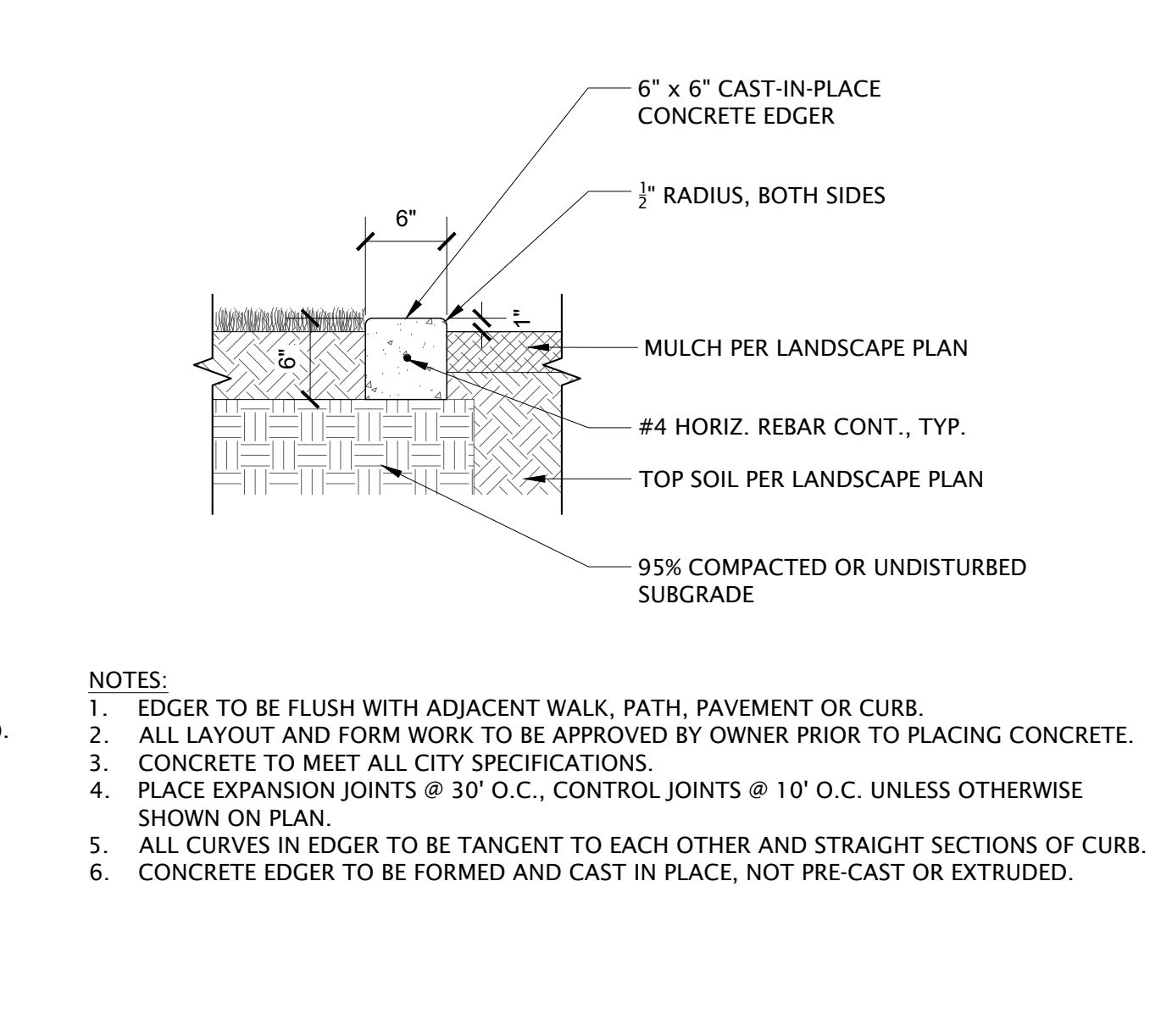
1 TREE PLANTING - FLEX STRAP
 NOT TO SCALE



2 TREE STAKING - FLEX STRAPS
 NOT TO SCALE



3 SHRUB DETAIL
 NOT TO SCALE

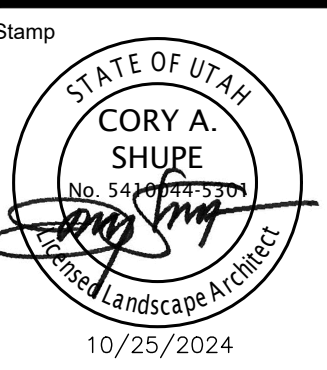


4 6" CONCRETE EDGER
 NOT TO SCALE

- NOTES:
 1. EDGER TO BE FLUSH WITH ADJACENT WALK, PATH, PAVEMENT OR CURB.
 2. ALL LAYOUT AND FORM WORK TO BE APPROVED BY OWNER PRIOR TO PLACING CONCRETE.
 3. CONCRETE TO MEET ALL CITY SPECIFICATIONS.
 4. PLACE EXPANSION JOINTS @ 30' O.C., CONTROL JOINTS @ 10' O.C. UNLESS OTHERWISE SHOWN ON PLAN.
 5. ALL CURVES IN EDGER TO BE TANGENT TO EACH OTHER AND STRAIGHT SECTIONS OF CURB.
 6. CONCRETE EDGER TO BE FORMED AND CAST IN PLACE, NOT PRE-CAST OR EXTRUDED.

CENTRAL VALLEY MEDICAL CENTER
 SANTAQUIN CLINIC - PHASE 2
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 Santaquin, Utah

NO.	DATE	DESCRIPTION

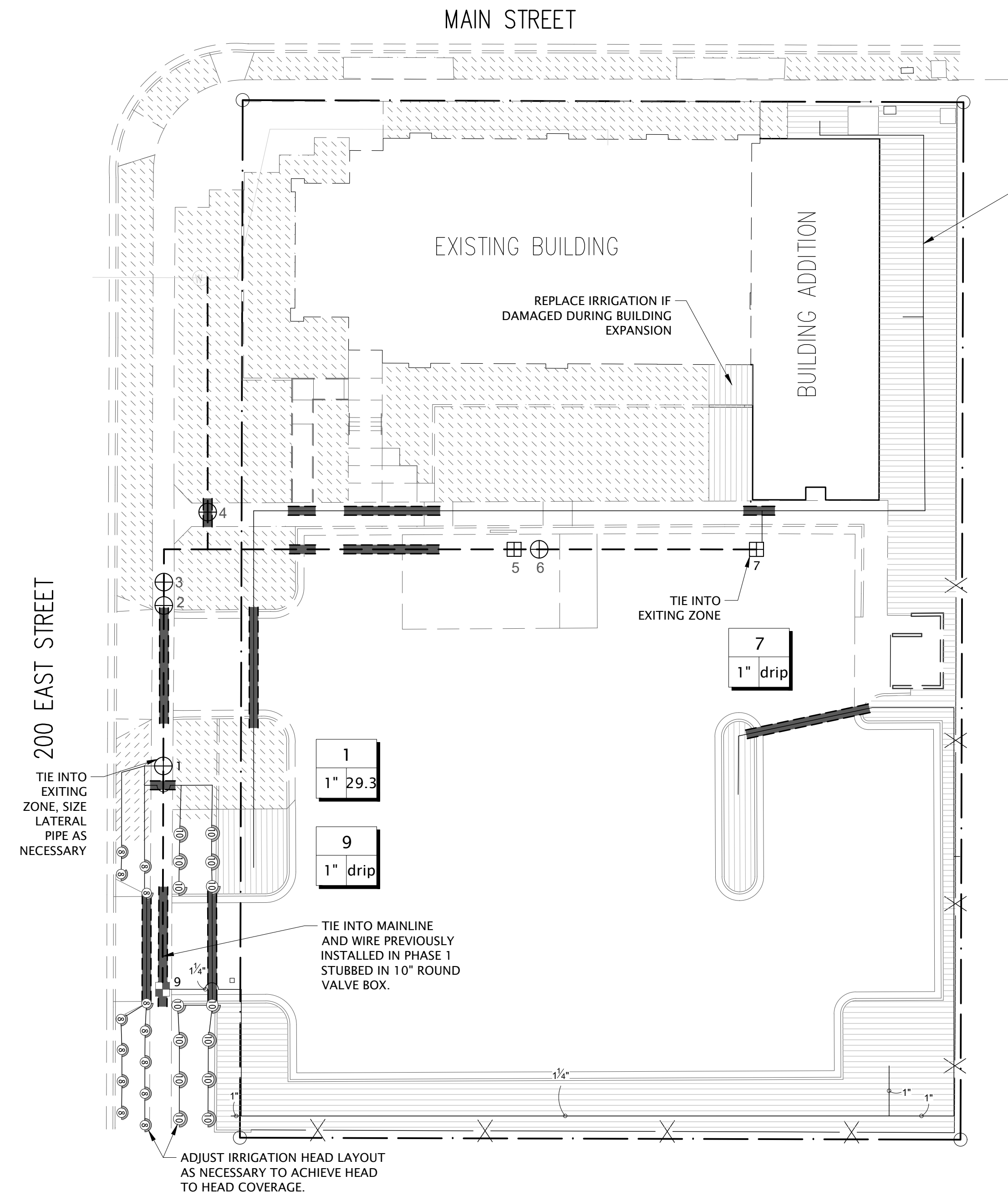


Designed By: BP
 Drawn By: TH
 Date: 10/25/2024
 Checked By: BP
 Project No: 24-172

LANDSCAPE
 DETAILS

Drawing number
LP501

SITE PLAN APPROVAL SET



LATERALS AND DRIP LINES ASSUMED TO BE NEW DUE TO CONSTRUCTION ACTIVITIES OF EXPANDING THE BUILDING.

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	RAIN BIRD 1804-U-SAM-PRS U8 SERIES TURF SPRAY 4.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE. PRESSURE REGULATING.
	RAIN BIRD 1804-U-SAM-PRS U10 SERIES TURF SPRAY 4.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. 1/2" NPT FEMALE THREADED INLET. WITH SEAL-A-MATIC CHECK VALVE. PRESSURE REGULATING.
	RAIN BIRD XCZ-100-PRB-COM WIDE FLOW DRIP CONTROL KIT FOR COMMERCIAL APPLICATIONS. 1" BALL VALVE WITH 1" PESB VALVE AND 1" PRESSURE REGULATING 40PSI QUICK-CHECK BASKET FILTER. 0.3GPM TO 20GPM.
	AREA TO RECEIVE DRIPLINE NETAFIM TLCV-04-18 TECHLINE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH CHECK VALVE. 0.4 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. 1.7MM.
	EXISTING VALVE TO BE PRESERVED AND PROTECTED
	EXISTING DRIP VALVE TO BE PRESERVED AND PROTECTED
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40
	IRRIGATION MAINLINE: PVC SCHEDULE 40
	PIPE SLEEVE: PVC SCHEDULE 40 SIZE: TWICE (2X) DIAMETER OF PIPE WITHIN, MIN. 4". LIMIT ONE PIPE PER SLEEVE
	Valve Callout # Valve Number # Valve Flow # Valve Size

REFERENCE NOTES SCHEDULE

SYMBOL	DESCRIPTION
	EXISTING IRRIGATION EQUIPMENT TO BE PRESERVED AND PROTECTED.

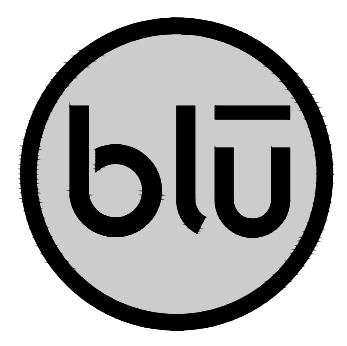
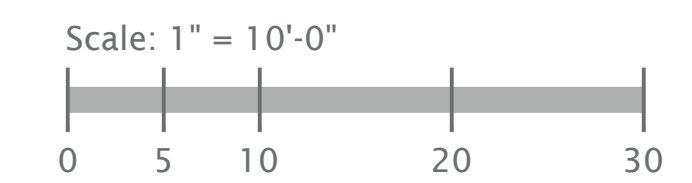
IRRIGATION NOTES

- THIS DRAWING IS DIAGRAMMATIC AND IS INTENDED TO CONVEY THE GENERAL LAYOUT OF IRRIGATION SYSTEM COMPONENTS. ALL IRRIGATION EQUIPMENT SHALL BE INSTALLED IN PLANTING AREAS WHEREVER POSSIBLE. LOCATE MAINLINE AND VALVES NEAR WALKS WHERE FEASIBLE.
- THE CONTRACTOR SHALL VERIFY THE AVAILABLE WATER PRESSURE AT THE SITE PRIOR TO CONSTRUCTION. REPORT ANY DISCREPANCIES BETWEEN THE WATER PRESSURE SHOWN ON THE DRAWINGS AND ACTUAL PRESSURE READINGS AT THE POINT OF CONNECTION TO THE LANDSCAPE ARCHITECT. WATER PRESSURE AT THE POINT OF CONNECTION IS EXPECTED TO BE A MINIMUM OF 63 PSI AND NOT TO EXCEED 80 PSI. IN THE EVENT THAT PRESSURE DIFFERENCES ARE NOT REPORTED PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO FAMILIARIZE HIMSELF WITH ALL STRUCTURES, SITE IMPROVEMENTS, WALKS, UTILITIES, AND GRADE CHANGES. COORDINATE LAYOUT OF THE IRRIGATION SYSTEM WITH OTHER TRADES SO THAT CONSTRUCTION CAN CONTINUE IN A NORMAL SEQUENCE OF EVENTS. ADJUSTMENTS MAY BE NECESSARY TO MAINTAIN FULL COVERAGE DEPENDING ON ACTUAL SITE CONDITIONS. ANY SIGNIFICANT CHANGES WILL REQUIRE WRITTEN APPROVAL FROM THE LANDSCAPE ARCHITECT PRIOR TO PLACEMENT. ALL MODIFICATIONS SHALL BE RECORDED ON 'AS-BUILT' DRAWINGS.
- DO NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM WHEN IT IS APPARENT IN THE FIELD THAT UNKNOWN OBSTRUCTIONS OR GRADING DIFFERENCES MAY NOT HAVE BEEN CONSIDERED IN THE ENGINEERING. SUCH OBSTRUCTIONS OR DIFFERENCES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT. IN THE EVENT THAT THIS NOTIFICATION IS NOT PERFORMED, CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ANY REVISIONS NECESSARY.
- CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PROTECT SITE CONDITIONS AND EXISTING IRRIGATION SYSTEM (IF ANY). IN THE EVENT THAT THE CONTRACTOR DAMAGES, DISPLACES OR OTHERWISE CAUSES OTHER TRADES WORK TO BE REINSTALLED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ORIGINAL CONDITION AT HIS OWN EXPENSE.
- THE CONTRACTOR SHALL FLUSH AND ADJUST ALL SPRINKLER HEADS AND VALVES FOR OPTIMUM PERFORMANCE.
- IRRIGATION CONTROLLER(S) SHALL BE GROUNDED PER ESTABLISHED ASIC GUIDELINES.
- IRRIGATION CONTROL WIRES SHALL BE COLOR CODED WIRE FOR DIRECT BURIAL. COMMON, HOT, & SPARE WIRES SHALL BE 14 AWG (WHITE, RED & YELLOW RESPECTIVELY). FOR CONTROL WIRE RUNS EXCEEDING 3000 FEET OR COMMON WIRE RUNS EXCEEDING 1500 FEET, USE 12 AWG WIRE. CONTRACTOR SHALL RUN 1 DEDICATED SPARE WIRE 'HOMERUN' FROM CONTROLLER TO TERMINUS OF EACH WIRE LEG. WHERE REQUIRED, COMMUNICATION WIRE TO FLOW SENSOR SHALL BE PAIGE ELECTRIC PE-39-3 CABLE. ALL WIRE SPLICES TO BE LOCATED IN VALVE BOX. ALL WIRE CONNECTIONS SHALL BE 3M DBRY.
- ALL MAINLINES, LATERAL LINES, AND CONTROL WIRES UNDER PAVING SHALL BE INSTALLED IN SEPARATE SLEEVES.

- ALL MAINLINE AND LATERAL LINE PIPE UP TO 3" IN SIZE SHALL BE SCHEDULE 40 PVC. 4" TO 6" PIPE SHALL BE CLASS 200 PVC. ALL LATERAL LINE FITTINGS SHALL BE SCHEDULE 80 PVC UNLESS OTHERWISE NOTED. ALL MAINLINE FITTINGS UNDER 3" SHALL BE SCHEDULE 80 PVC. MAINLINE FITTINGS 3" AND LARGER SHALL BE HARCO DUCTILE IRON, RESTRAIN PER MANUFACTURER'S RECOMMENDATIONS.
- CONTRACTOR SHALL USE WELD-ON P-70 PRIMER AND 711 LOW VOC CEMENT FOR ALL SOLVENT WELDED JOINTS.
- ALL LINES SHALL SLOPE TO DRAIN. ADD MANUAL DRAINS AT ALL MAINLINE LOW POINTS AS NECESSARY FOR COMPLETE DRAINAGE OF THE ENTIRE SYSTEM. INDICATE ALL DRAIN LOCATIONS ON 'AS-BUILT' DRAWINGS.
- ALL VALVE BOXES AND LIDS IN ROCK MULCH AREAS ARE TO BE TAN IN COLOR. ALIGN VALVE BOXES PARALLEL WITH EDGE OF PAVEMENT/PLANTING BEDS. WHERE FEASIBLE, LOCATE THE EDGE OF VALVE BOX 12"-18" FROM EDGE OF PAVEMENT.
- DRIP DISTRIBUTION TUBING TO BE BURIED BELOW MULCH AND STAKED AT MIN. 6" O.C. DRIP FITTINGS SHALL BE BARBED INSERT TYPE FITTINGS, COMPRESSION TYPE FITTINGS WILL NOT BE ACCEPTED. EMITTERS SHALL BE LOCATED ON UPHILL SIDE OF PLANTS. INSTALL DRIP FLUSH VALVE AT LOW POINT OF EACH DRIP ZONE AND AT THE END DRIP LINES.
- GUARANTEE: ALL WORK SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF ACCEPTANCE AGAINST ALL DEFECTS IN MATERIAL, EQUIPMENT, AND WORKMANSHIP. GUARANTEE SHALL COVER REPAIR OF DAMAGE TO ANY PART OF THE PREMISES RESULTING FROM LEAKS OR OTHER DEFECTS IN MATERIAL, EQUIPMENT, OR WORKMANSHIP TO THE SATISFACTION OF THE OWNER. REPAIRS, IF REQUIRED, SHALL BE DONE PROMPTLY AND AT NO ADDITIONAL COST TO THE OWNER.
- SEE DETAILS FOR ADDITIONAL INFORMATION. FOLLOW ALL PREFERRED IRRIGATION SPECIFICATIONS FROM SANTAQUIN CITY. ALL IRRIGATION EQUIPMENT NOT OTHERWISE DETAILED SHALL BE INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS AND SPECIFICATIONS.
- CONTRACTOR SHALL ENSURE THAT THERE IS PROPER HEAD TO HEAD COVERAGE IN IRRIGATION SYSTEM. ANY DISCREPANCIES OR DIFFICULTIES SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL INSTALL AND FOLLOW ALL CITY DETAILS AND ORDINANCES RELATING TO LANDSCAPE IRRIGATION.

NOTES

- EXISTING MAINLINE TO REMAIN OPERABLE DURING CONSTRUCTION.
- PROTECT EXISTING MAINLINE AND CONTROL WIRES. ADJUST AS NECESSARY FOR NEW CONSTRUCTION.
- EXISTING CONTROLLERS (2) ARE LOCATED IN MECHANICAL ROOM AND ON THE SOUTH EAST EXTERIOR WALL IN STAINLESS STEEL ENCLOSURE. COORDINATE WITH OWNER FOR ACCESS AND CONTROLLER PROGRAMMING. CONNECT AS NEEDED TO EXISTING CONTROLLERS
- REPLACE EXISTING 500 MICRON FILTER SCREEN WITH 200 MICRON FILTER SCREEN.



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CENTRAL VALLEY MEDICAL CENTER SANTAQUIN CLINIC - PHASE 2

210 East Main Street
Santaquin, Utah

REVISIONS

NO.	DATE	DESCRIPTION

Stamp: STATE OF UTAH, CORY A. SHUPE, No. 5420053700, Licensed Landscape Architect, 10/25/2024

Designed By: BP
Drawn By: TH
Date: 10/25/2024
Checked By: BP
Project No: 24-172

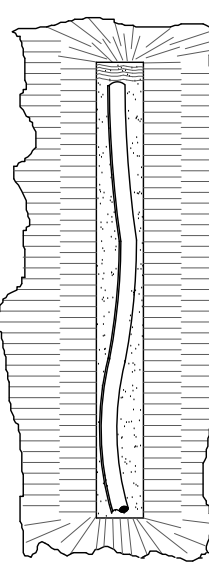
IRRIGATION PLAN

Drawing number

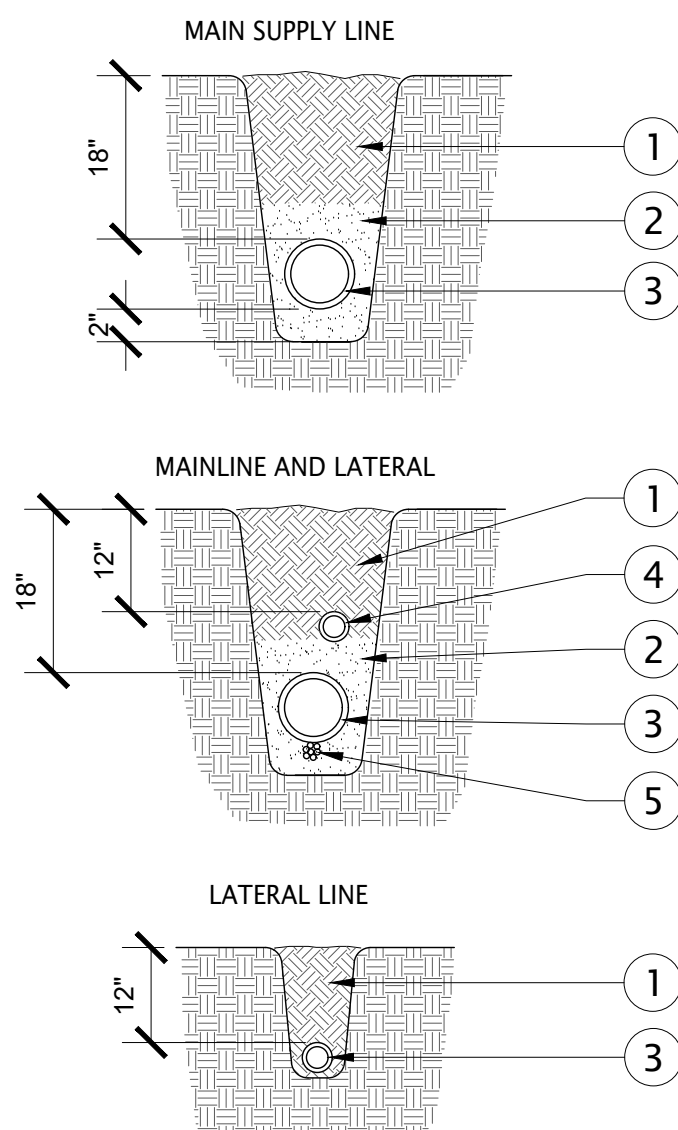
LI101

SITE PLAN APPROVAL SET

PLAN VIEW



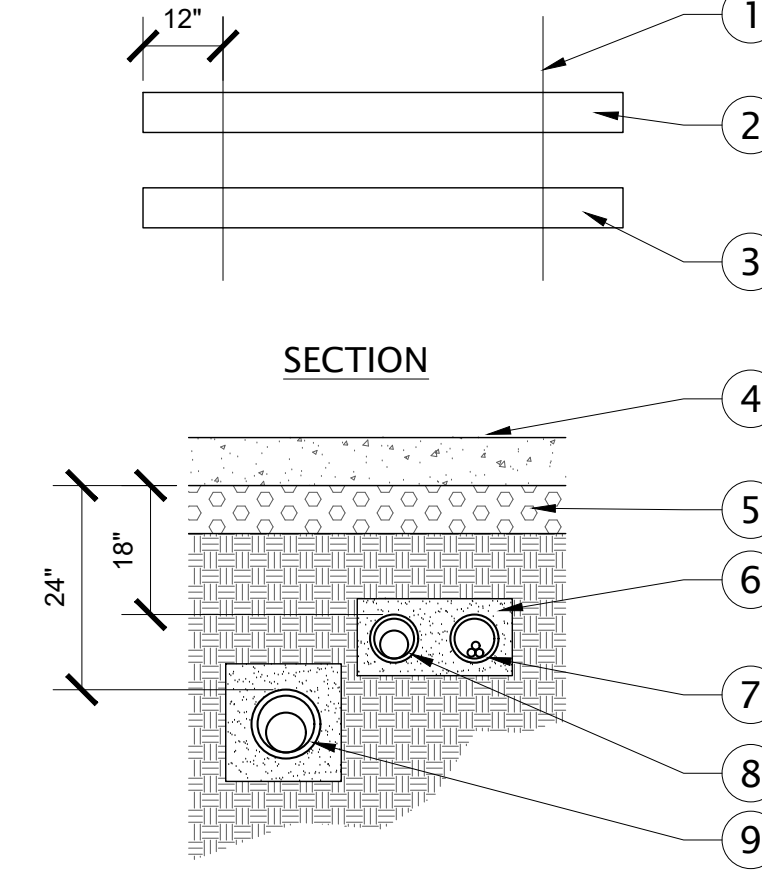
SECTIONS



- 1 DEBRIS FREE FILL
- 2 DEBRIS FREE SAND, 2" ABOVE AND BELOW MAINLINE.
- 3 MAINLINE
- 4 LATERAL LINE
- 5 TUBING OR WIRING TO BE TAPED TO MAINLINE EVERY 10'-0"

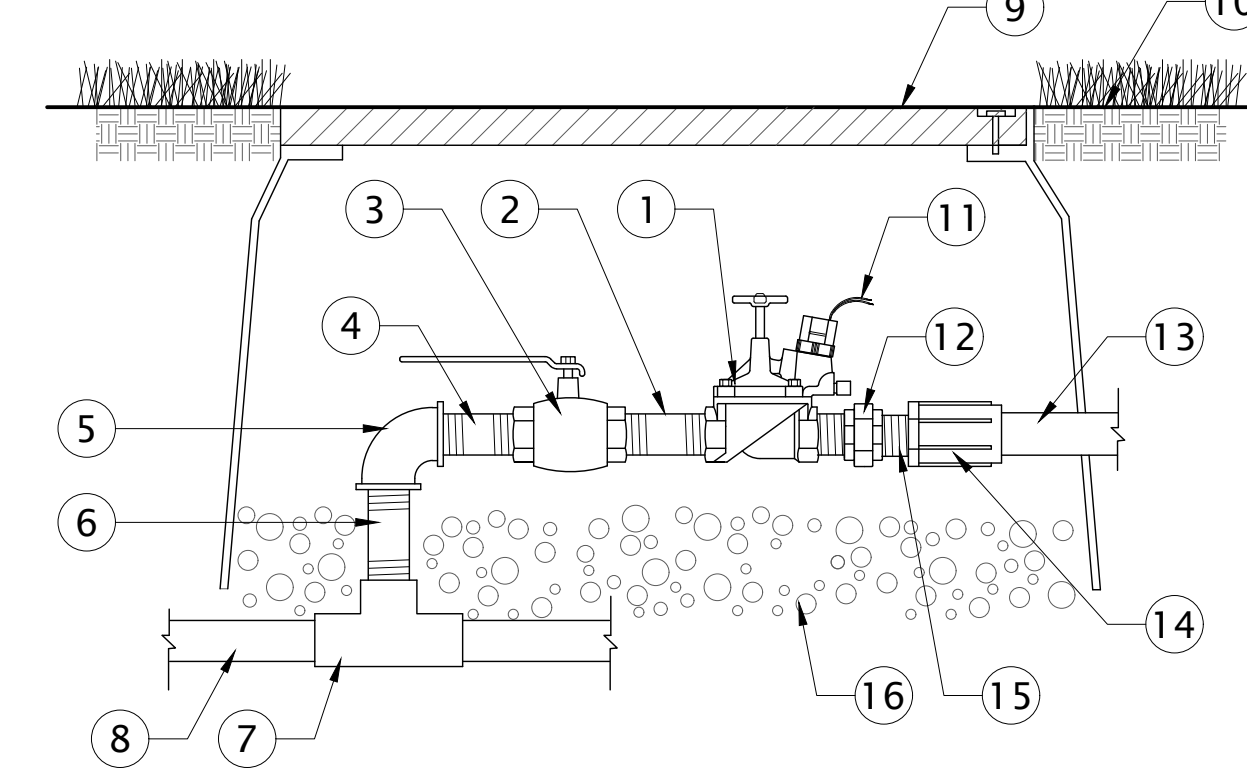
- NOTES:
1. TAPE AND BUNDLE TUBING OR WIRING AT 10' INTERVALS
 2. ALL 120 VOLT WIRING IN CONDUIT TO BE INSTALLED AS PER LOCAL CODES
 3. ALL PVC PIPING TO BE SNAKED IN TRENCHES AS SHOWN
 4. ALL TRENCH WIDTHS 8" MINIMUM

PLAN VIEW



- 1 PAVING SURFACE EDGE
- 2 SLEEVE, TYP.
- 3 EXTEND ALL SLEEVING MIN. OF 12" BEYOND EDGE OF PAVING, TYP.
- 4 PAVING SURFACE
- 5 COMPACTED BASE
- 6 SURROUND SLEEVE WITH 3" OF DEBRIS-FREE SAND.
- 7 IRRIGATION WIRES SLEEVE
- 8 LATERAL SLEEVING
- 9 MAIN LINE SLEEVE

- NOTES:
1. SEE NOTES (IRRIGATION LEGEND) FOR SLEEVE SIZING.
 2. 4" MIN. CLEARANCE IN ANY DIRECTION BETWEEN LATERALS, MAINLINE, OR SLEEVING.



- 1 AUTOMATIC CONTROL VALVE SEE LEGEND SHEET FOR TYPE.
- 2 SCH. 80 PVC THREADED NIPPLE
- 3 BRONZE BALL VALVE (SIZE SAME AS LINE SIZE)
- 4 SCH. 80 PVC THREADED NIPPLE
- 5 SCH. 80 PVC THREADED ELL
- 6 SCH. 80 PVC THREADED NIPPLE
- 7 PVC MAINLINE TEE (SXST)
- 8 MAINLINE (SIZE AS NOTED ON THE PLAN)
- 9 VALVE BOX, SIZE AS REQUIRED
- 10 FINISH GRADE
- 11 SLACK WIRE AT ALL CONNECTIONS PROVIDE 12" OF EXPANSION LOOP INSIDE VALVE BOX.
- 12 SCHEDULE 80 PVC UNION
- 13 LATERAL LINE TO HEADS
- 14 PVC ADAPTOR TYP.
- 15 SCHEDULE 80 PVC CLOSE NIPPLE ON BOTH SIDES OF UNION
- 16 GRAVEL LAYER (12" MIN. DEPTH)

- NOTES:
1. ALL IRRIGATION CONTROL WIRE SPLICES ARE TO BE MADE USING 3M DBR-Y SPLICE
 2. ALL VALVE BOXES AND LIDS IN ROCK MULCH AREAS ARE TO BE TAN IN COLOR. VALVE BOXES AND LIDS IN BARK MULCH AND LAWN AREAS TO BE STANDARD GREEN.

1 PIPE TRENCH

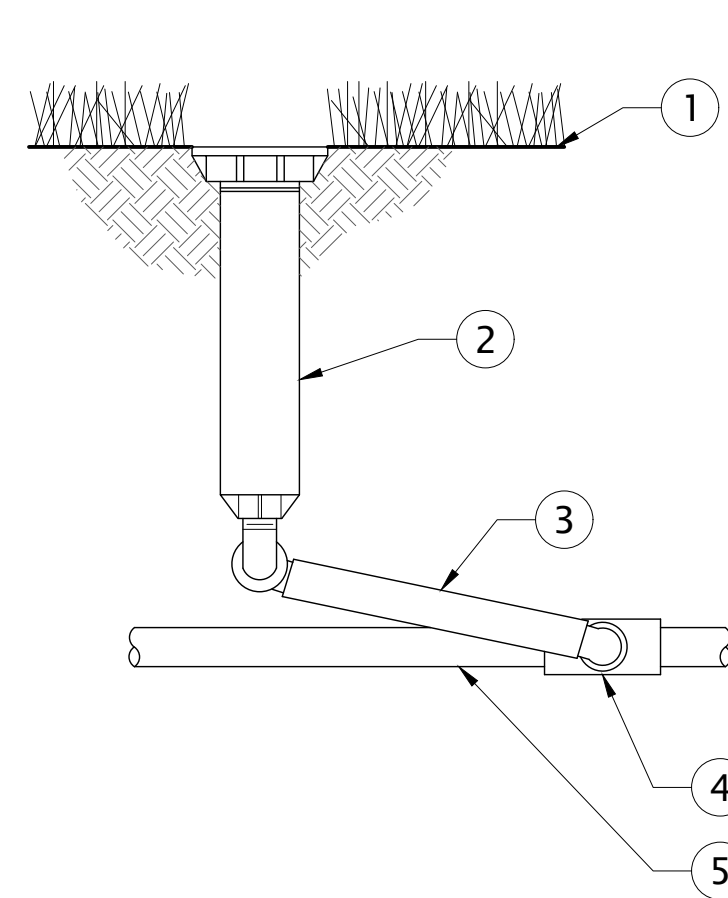
NOT TO SCALE

2 PIPE SLEEVE

NOT TO SCALE

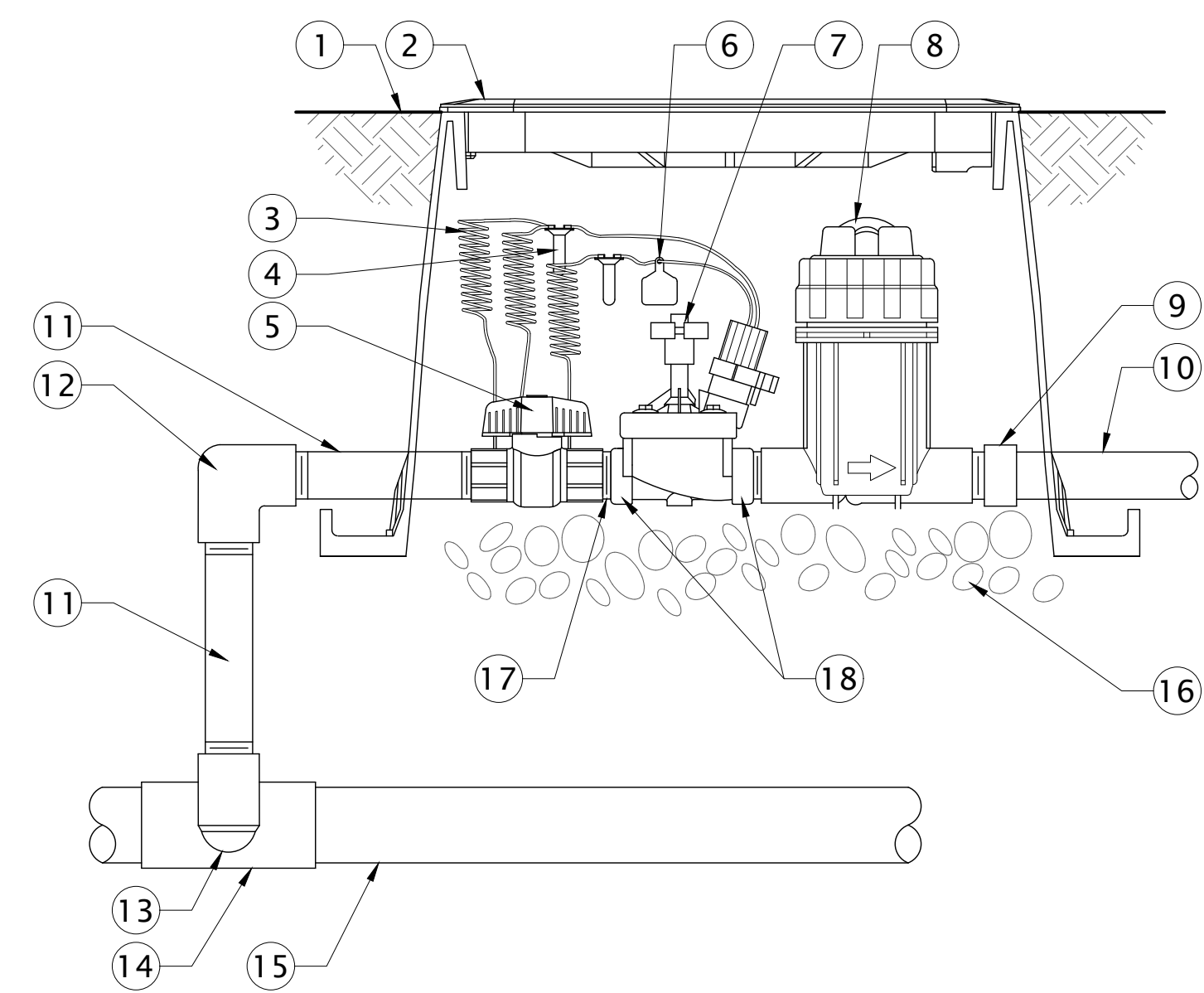
3 IRRIGATION CONTROL VALVE W/ BALL VALVE

NOT TO SCALE

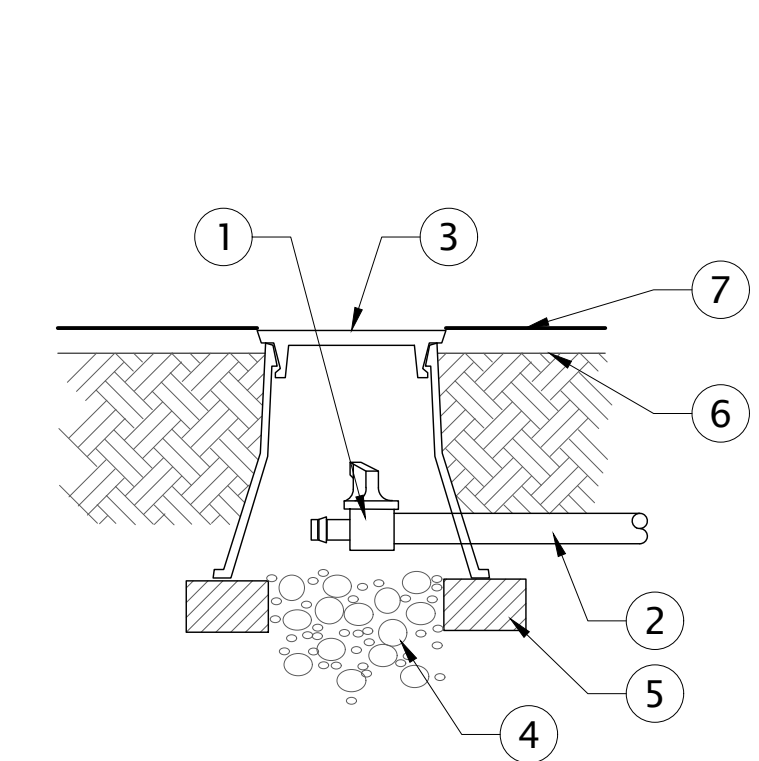


- 1 FINISH GRADE/TURF CROWN
- 2 POP-UP SPRINKLER
- 3 PREMANUFACTURED SWING ASSEMBLY
- 4 PVC SCH 40 TEE OR ELL
- 5 PVC SCH 40 LATERAL PIPE

- NOTES:
1. SWING JOINT ASSEMBLY: TWO SPIRAL BARB ELBOWS, 12-24" SWING PIPE, AND ONE 1/2" MARLEX STREET ELBOW.
 2. USE FIXED SPRAY NOZZLES WHENEVER POSSIBLE.



- 1 FINISH GRADE/TOP OF MULCH
- 2 VALVE BOX WITH COVER: RAIN BIRD VB-STD
- 3 30-INCH LINEAR LENGTH OF WIRE, COILED
- 4 WATERPROOF CONNECTION: RAIN BIRD DB SERIES
- 5 1 INCH BALL VALVE (INCLUDED IN XCZ-PRB-100 KIT)
- 6 ID TAG
- 7 REMOTE CONTROL VALVE: RAIN BIRD PESB (INCLUDED IN XCZ-100-PRB-COM KIT)
- 8 PRESSURE REGULATING QUICK CHECK BASKET FILTER: RAIN BIRD PRB-QKCHK-100 (INCLUDED IN XCZ-100-PRB-COM KIT)
- 9 PVC SCH 40 FEMALE ADAPTOR
- 10 LATERAL PIPE
- 11 PVC SCH 80 NIPPLE (LENGTH AS REQUIRED)
- 12 PVC SCH 40 ELL
- 13 PVC SCH 80 NIPPLE (2-INCH LENGTH, HIDDEN) AND PVC SCH 40 ELL
- 14 PVC SCH 40 TEE OR ELL
- 15 MAINLINE PIPE
- 16 3-INCH MINIMUM DEPTH OF 3/4-INCH WASHED GRAVEL
- 17 PVC SCH 80 NIPPLE, CLOSE (INCLUDED IN XCZ KIT)
- 18 ACTION MANIFOLD FITTINGS, (2 EA.) BUTTRESS NIPPLE 18011-X SPIGOT/SLIP ADAPTOR 18012-X



- 1 DRIP FLUSH VALVE
- 2 DRIP TUBING
- 3 10" ROUND VALVE BOX
- 4 GRAVEL SUMP - ONE CUBIC FOOT
- 5 BRICK SUPPORTS (2)
- 6 FINISH GRADE
- 7 TOP OF MULCH

- NOTES:
1. INSTALL DRIP FLUSH VALVE(S) AT LOW POINT OF EACH DRIP ZONE AND AT END OF LINES.
 2. ALL VALVE BOXES AND LIDS IN ROCK MULCH AREAS ARE TO BE TAN IN COLOR. VALVE BOXES AND LIDS IN BARK MULCH AND LAWN AREAS TO BE STANDARD GREEN.

4 POP-UP SPRAY/ROTARY

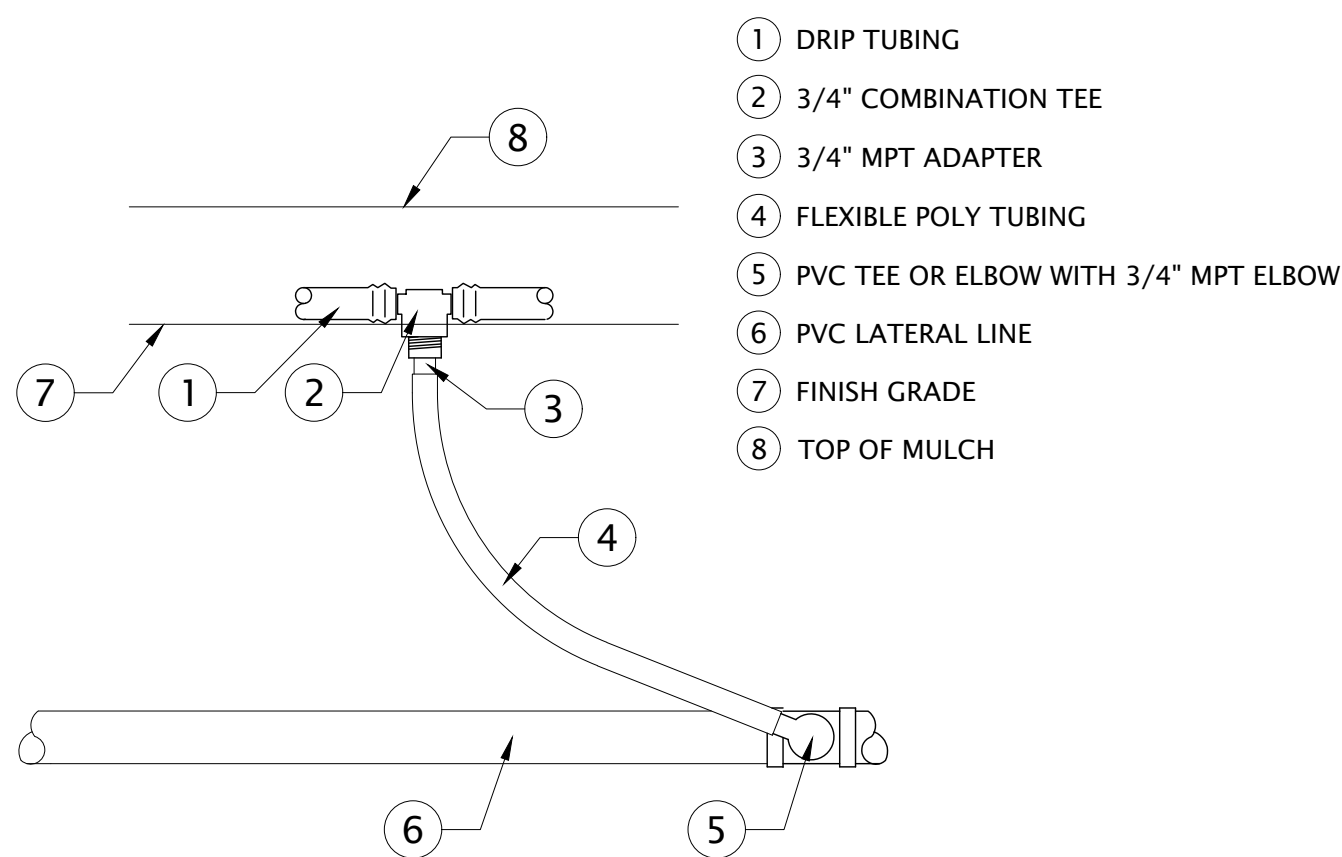
NOT TO SCALE

5 DRIP CONTROL ZONE KIT (RAINBIRD)

NOT TO SCALE

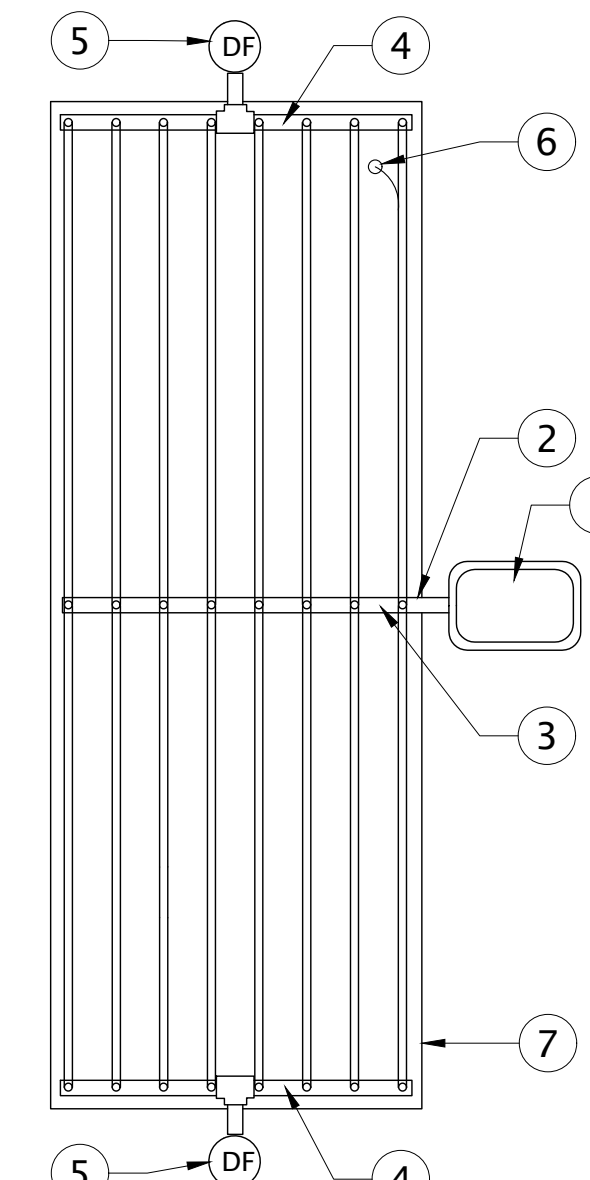
6 DRIP FLUSH VALVE

NOT TO SCALE



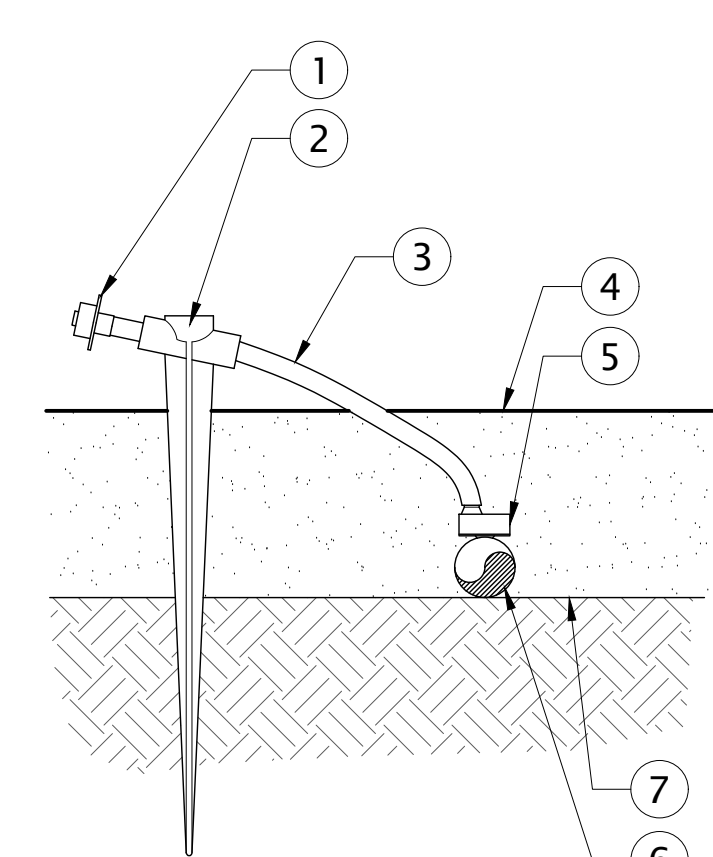
- 1 DRIP TUBING
- 2 3/4" COMBINATION TEE
- 3 3/4" MPT ADAPTER
- 4 FLEXIBLE POLY TUBING
- 5 PVC TEE OR ELBOW WITH 3/4" MPT ELBOW
- 6 PVC LATERAL LINE
- 7 FINISH GRADE
- 8 TOP OF MULCH

- NOTES:
1. INSTALL A MINIMUM OF ONE PVC TO DRIP TUBING CONNECTION FOR EVERY 5 GPM OF FLOW.
 2. CONSULT MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM RUN LENGTH.



- 1 IRRIGATION CONTROL VALVE
- 2 PVC TO DRIP TUBING CONNECTION (SEE DETAIL)
- 3 PVC SUPPLY HEADER
- 4 PVC EXHAUST HEADER (DRIP TUBING MAY BE USED IN PLACE OF PVC FOR SUB HEADERS PER MANUFACTURER'S DESIGN GUIDELINES)
- 5 DRIP FLUSH VALVE (SEE DETAIL)
- 6 INDICATOR EMITTER - (1) 1 GPH EMITTER INTO IN-LINE DRIP TUBING
- 7 MAINTAIN 4" GAP BETWEEN DRIP TUBING AND PERIMETER OF IRRIGATED AREA

- NOTES:
1. INSTALL A MINIMUM OF ONE PVC TO DRIP TUBING CONNECTION FOR EVERY 5 GPM OF FLOW.
 2. CONSULT MANUFACTURER'S RECOMMENDATIONS FOR MAXIMUM RUN LENGTH.



- NOTES:
1. USE RAIN BIRD XERIMAN TOOL XM-TOOL TO INSERT EMITTER DIRECTLY INTO 1/2" POLYETHYLENE TUBING.

- 1 DIFFUSER BUG CAP: RAIN BIRD DBC-025 (UNLESS OTHERWISE SPECIFIED)
- 2 UNIVERSAL 1/4" TUBING STAKE: RAIN BIRD TS-025
- 3 1/4" DISTRIBUTION TUBING: RAIN BIRD XQ TUBING (LENGTH AS REQUIRED)
- 4 TOP OF MULCH
- 5 SINGLE-OUTLET BARB INLET X BARB OUTLET EMITTER: RAIN BIRD XERI-BUG EMITTER
- 6 1/2" POLYETHYLENE TUBING: 2 RAIN BIRD XT-700 XERI-TUBE
- 7 FINISH GRADE

7 PVC TO DRIP TUBING CONNECTION

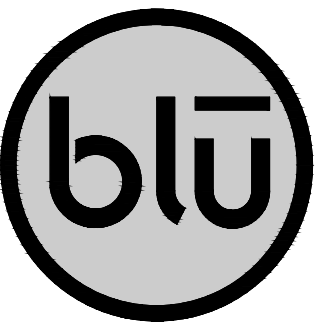
NOT TO SCALE

8 CENTER FEED IN LINE DRIP

NOT TO SCALE

9 DRIP EMITTER

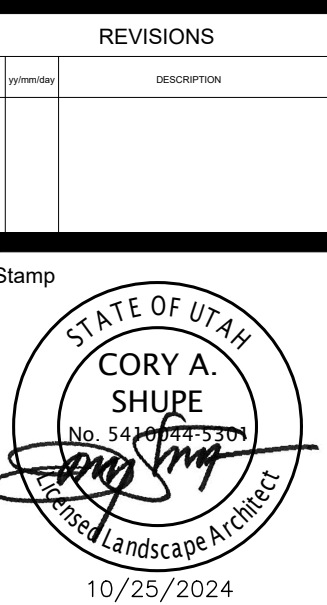
NOT TO SCALE



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CENTRAL VALLEY MEDICAL CENTER
SANTAQUIN CLINIC - PHASE 2
210 East Main Street
Santaquin, Utah



Designed By: BP
Drawn By: TH
Date: 10/25/2024
Checked By: BP
Project No: 24-172

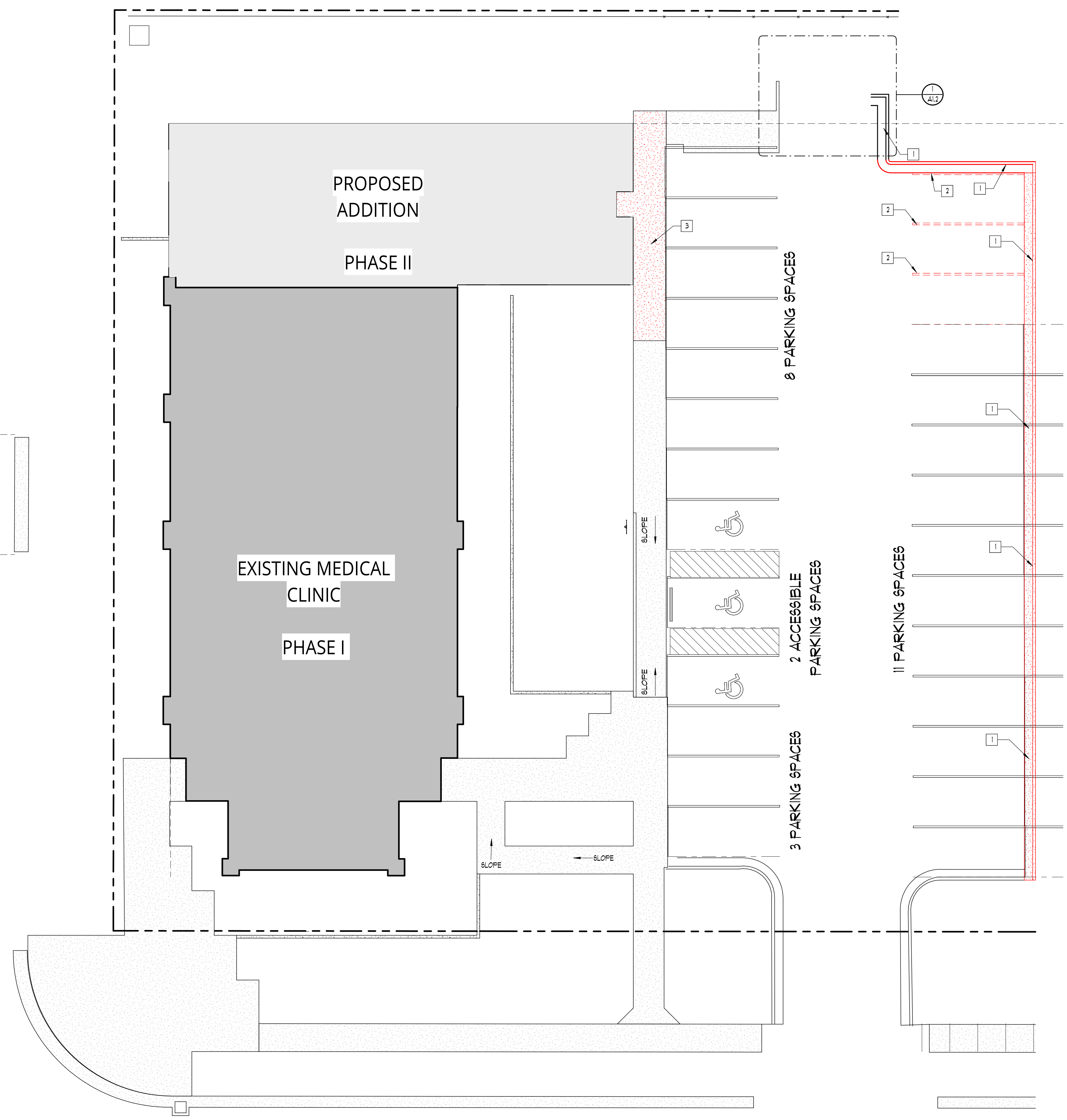
IRRIGATION
DETAILS

Drawing number
LI501

SITE PLAN APPROVAL SET

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MAIN STREET / U.S. HIGHWAY 6



PARKING INFORMATION:

EXISTING: 28 STALLS, INCLUDING 2 ACCESSIBLE STALLS (1 VAN ACCESSIBLE)

PROVIDED: 55 TOTAL STALLS

17,446 SQ. FT. PARKING PROVIDED

DEMOLITION NOTES

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
 - TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.3
 - TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.4
- | | |
|---|----------------------------|
| 1 | REMOVE CURB & GUTTER |
| 2 | REMOVE PARKING STRIP PAINT |
| 3 | REMOVE CONCRETE |

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Santaquin

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revision information		
no.	date	description

milestone issue date	11.8.2024
milestone issue description	SITE PLAN REVIEW
latest revision date	
latest revision description	

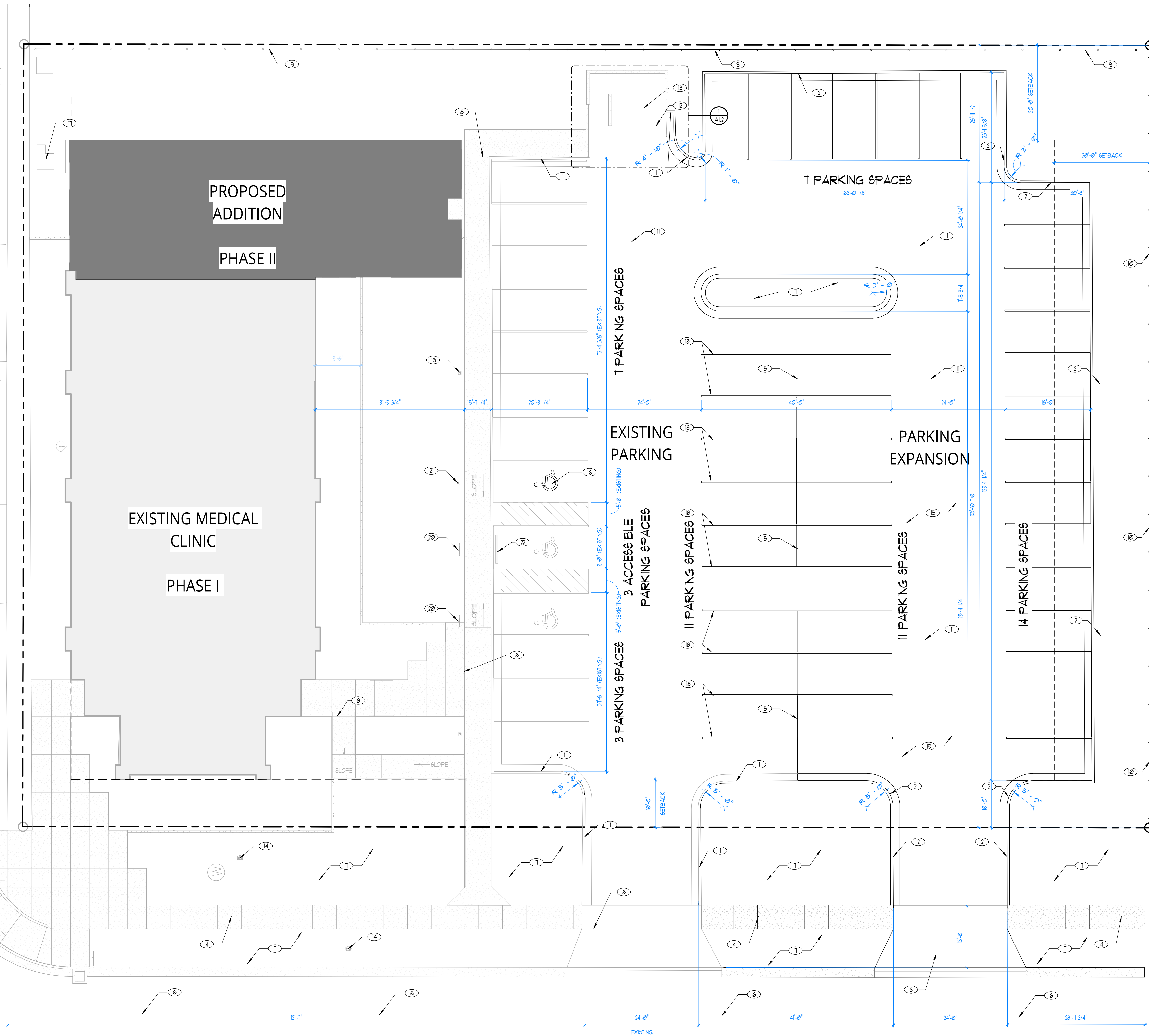
SITE PLAN PHASE II -
DEMOLITION

A1.4

200 EAST

1 SITE PLAN
1" = 10'-0"

MAIN STREET / U.S. HIGHWAY 6



1 SITE PLAN
1" = 10'-0"

200 EAST

PARKING INFORMATION:

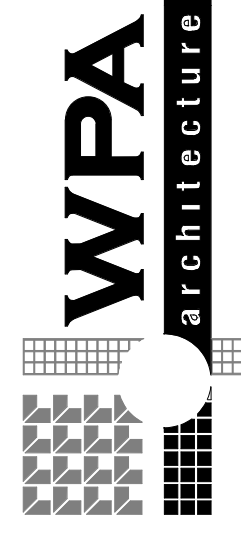
EXISTING: 28 STALLS, INCLUDING 2 ACCESSIBLE STALLS (1 VAN ACCESSIBLE)

PROVIDED: 55 TOTAL STALLS

17,446 SQ. FT. PARKING PROVIDED

SHEET NOTES

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.3
- TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.4
- ① EXISTING CURB & GUTTER TO REMAIN
- ② CONCRETE CURB AND GUTTER - SEE CIVIL DUGS
- ③ CONCRETE ENTRY APPROACH - SEE CIVIL DUGS
- ④ EXISTING SIDEWALK TO REMAIN
- ⑤ REMOVE EXISTING CURB & GUTTER. SEE CIVIL DUGS.
- ⑥ EXISTING ASPHALT - SEE CIVIL DUGS FOR ASPHALT REQUIREMENTS
- ⑦ LANDSCAPE AREA - SEE LANDSCAPE PLAN
- ⑧ EXPANSION JOINT
- ⑨ EXISTING FENCE TO REMAIN
- ⑩ 6'-0" HIGH FENCE - SEE DETAIL X1A.X
- ⑪ EXISTING ASPHALT, ADD SLURRY COAT AND STRIPE STALLS
- ⑫ EXISTING TRASH ENCLOSURE GATE CONSTRUCTED DURING PREVIOUS CONSTRUCTION PHASE
- ⑬ EXISTING TRASH CONTAINER PLACED DURING PREVIOUS CONSTRUCTION PHASE
- ⑭ FIRE HYDRANT - SEE CIVIL DUGS
- ⑮ NEW ASPHALT - SEE CIVIL DRAWINGS
- ⑯ PAINT ADA SYMBOL
- ⑰ EXISTING ELECTRICAL BOX
- ⑱ RESTRIPE EXISTING PARKING STALLS
- ⑲ EXISTING ELECTRICAL EQUIPMENT CONSTRUCTED DURING PREVIOUS PHASE
- ⑳ EXISTING ACCESSIBLE PARKING SIGN
- ㉑ ACCESSIBLE PARKING SIGN - SEE DETAIL XXXX.X
- ㉒ EXISTING 6' x 6' WHEEL STOP TO REMAIN



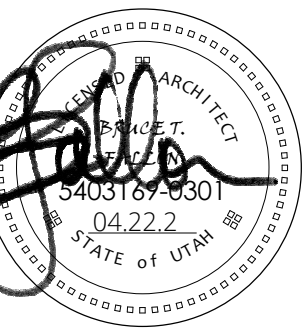
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no. date description

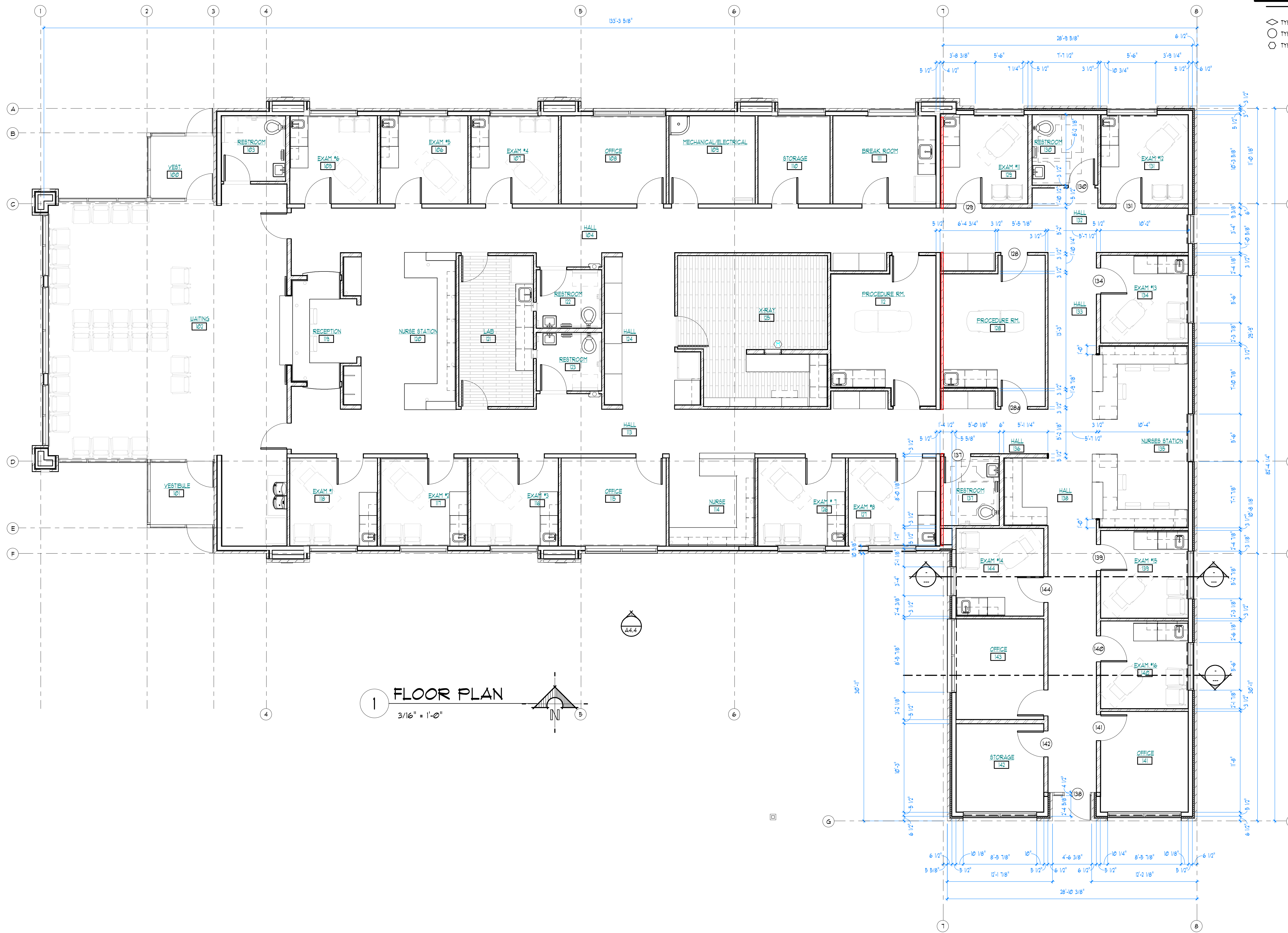
milestone issue date
11.15.2024
milestone issue description
SITE PLAN REVIEW
latest revision date
latest revision description

SITE PLAN PHASE II

A1.5

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- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.3
- TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.4



1 FLOOR PLAN
3/16" = 1'-0"



revision information		
no.	date	description
1	10.25.2011	Revision 1

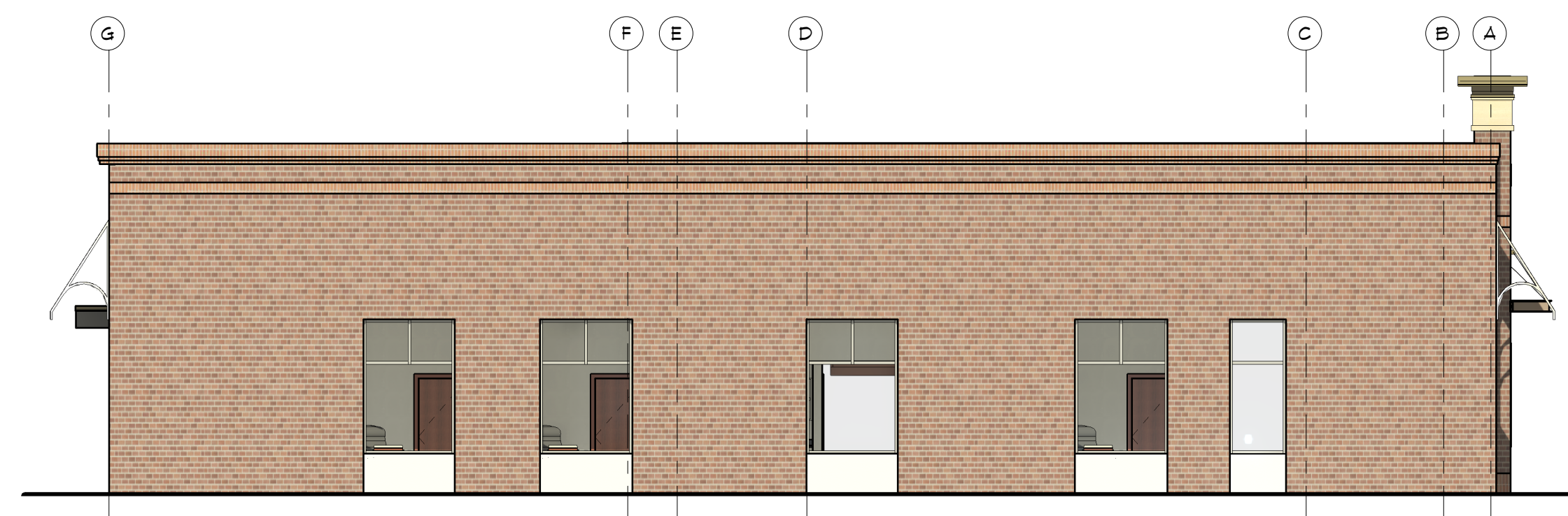
milestone issue date	11.15.2014
milestone issue description	SITE PLAN REVIEW
latest revision date	10.25.2011
latest revision description	Revision 1

SHEET NOTES

- ◇ TYPICAL REFERENCE FOR CONSTRUCTION TYPE - SEE SHEET A3.1
- TYPICAL REFERENCE FOR DOOR TYPE - SEE SHEET A3.3
- TYPICAL REFERENCE FOR WINDOW TYPE - SEE SHEET A3.4



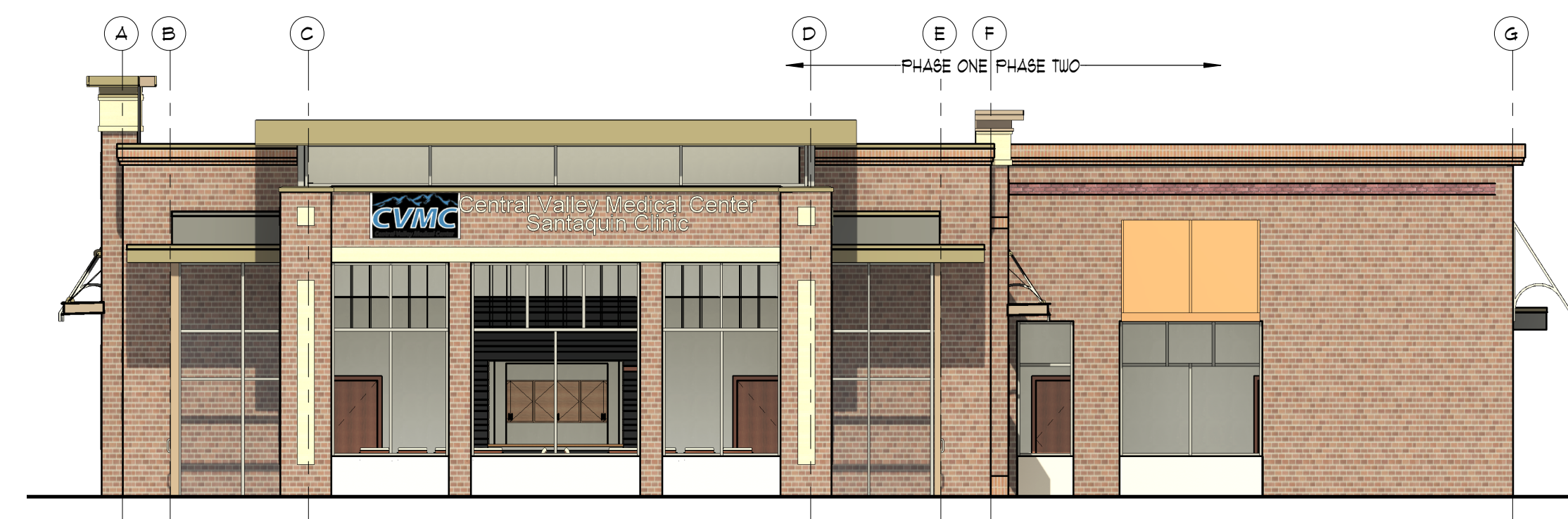
1 NORTH ELEVATION
1/8" = 1'-0"



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



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

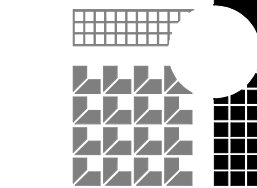


4 WEST ELEVATION
1/8" = 1'-0"

EXTERIOR FINISH SCHEDULE

ITEM DESCRIPTION	MANUFACTURER	COLOR / FINISH
KING SIZE BRICK VENEER	INTERSTATE BRICK	WALNUT
CAST STONE TRIMS	NEW CAST STONE	SANDSTONE FINISH COLOR: TUMBLEWEED
CERAMIC TILE	DALTILE	EVER ROCK EV04
ALUM. STOREFRONT ENTRANCES & WINDOWS	KAWNEER	LIGHT BRONZE
METAL DOORS & FRAMES	BENJAMIN MOORE	HC-86 KINGSFORT GRAY
PRE-MANUF METAL CANOPIES	BENJAMIN MOORE	CANOPY 1: HC-81 FAIRVIEW TAUPE CANOPY 2: HC-81 ASHLEY GRAY
PRE-FINISHED METAL FASCIA & DRIP EDGE	ALCOA	TERRA BRONZE
PRE-FINISHED METAL WALL CAP	ALCOA	TERRA BRONZE

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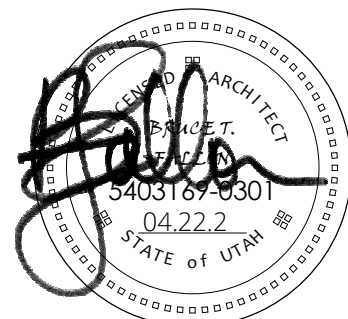
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REVISION INFORMATION		
no.	date	description

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SITE PLAN REVIEW
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latest revision description

EXTERIOR ELEVATIONS -
PHASE II

A4.4

ELECTRICAL	
SHEET #	SHEET NUMBER
E0.1	ELECTRICAL SYMBOLS & NOTES
E0.2	ELECTRICAL GENERAL NOTES
E1.1	ELECTRICAL PLAN - SITE
E1.2	PHOTOMETRIC PLAN
E2.1	ELECTRICAL PLAN - LEVEL 1
E3.1	LIGHTING PLAN - LEVEL 1
E3.2	ELECTRICAL PLAN - ROOF
E4.1	PANEL SCHEDULE
E5.1	ELECTRICAL DETAILS

ELECTRICAL SYMBOL LEGEND

ALL SYMBOLS MAY NOT BE USED. VERIFY WITH PLANS.
REFER TO SPECIFICATIONS AND PLAN NOTES FOR OTHER REQUIREMENTS

CONDUIT & CIRCUITRY	
	HOMERUN TO PANELBOARD *X* DENOTES PANELBOARD NAME - *#* DENOTES CIRCUIT NUMBER UNDERGROUND HOMERUN TO PANELBOARD
	PARTIAL HOMERUN TO PANELBOARD *X* DENOTES PANELBOARD NAME - *#* DENOTES CIRCUIT NUMBER ABOVE/ UNDERGROUND CONDUIT WITH WIRE COUNT
	LINE (HOT OR SWITCH LEG)
	NEUTRAL EQUIPMENT GROUND
	ISOLATED GROUND
	CONDUIT STUB-UP TO LEVEL ABOVE
	CONDUIT STUB-UP FROM BELOW GRADE
EQUIPMENT	
	277/480 VOLT PANELBOARD - NORMAL POWER (EXISTING - NEW - DEMOLITION)
	120/208 VOLT PANELBOARD - NORMAL POWER (EXISTING - NEW - DEMOLITION)
	277/480 VOLT PANELBOARD - EMERGENCY POWER (EXISTING - NEW - DEMOLITION)
	120/208 VOLT PANELBOARD - EMERGENCY POWER (EXISTING - NEW - DEMOLITION)
	DISTRIBUTION SWITCHGEAR/SWITCHBOARD (EXISTING - NEW - DEMOLITION)
	NON-FUSED DISCONNECT SWITCH (EXISTING - NEW - DEMOLITION)
	FUSED DISCONNECT SWITCH (EXISTING - NEW - DEMOLITION)
	MAGNETIC MOTOR STARTER (EXISTING - NEW - DEMOLITION)
	NEMA STARTER SIZE/NEMA ENCLOSURE
	COMBO STARTER/DISCONNECT (EXISTING - NEW - DEMOLITION)
	SWITCH SIZE # OF POLES/FUSE SIZE/NEMA ENCLOSURE
	LIGHTING CONTACTOR CABINET (EXISTING - NEW - DEMOLITION)
	ELECTRICITY METER (UTILITY OF OWNER / KWH OR DEMAND) (EXISTING - NEW - DEMOLITION)
	METER CT CABINET (EXISTING - NEW - DEMOLITION)
WIRING DEVICES (REFER TO SPECIFICATIONS FOR MOUNTING HEIGHTS)	
	5-20R SIMPLEX RECEPTACLE (EXISTING - NEW - DEMOLITION)
	5-20R DUPLEX RECEPTACLE (EXISTING - NEW - DEMOLITION)
	5-20R QUADPLEX RECEPTACLE (EXISTING - NEW - DEMOLITION)
	6-0R RECEPTACLE (EXISTING - NEW - DEMOLITION)
	SPECIAL RECEPTACLE (EXISTING - NEW - DEMOLITION)
	5-20R SIMPLEX FLOOR RECEPTACLE / POKE-THROUGH (EXISTING - NEW - DEMOLITION)
	5-20R DUPLEX FLOOR RECEPTACLE / POKE-THROUGH (EXISTING - NEW - DEMOLITION)
	5-20R QUADPLEX FLOOR RECEPTACLE / POKE-THROUGH (EXISTING - NEW - DEMOLITION)
	6-0R RECEPTACLE / POKE-THROUGH (EXISTING - NEW - DEMOLITION)
	SPECIAL FLOOR RECEPTACLE / POKE-THROUGH (EXISTING - NEW - DEMOLITION)
	JUNCTION BOX - FIELD DETERMINE FINAL CONNECTION (EXISTING - NEW - DEMOLITION)
	SERVICE POWER POLE - FIELD DETERMINE ACTUAL LENGTH (EXISTING - NEW - DEMOLITION)
	DIRECT CONNECTION TO EQUIPMENT FIELD VERIFY EXACT CONNECTION LOCATION AND SIZE
	SINGLE POLE TOGGLE SWITCH - *#* DENOTES SWITCH ZONE (EXISTING - NEW - DEMOLITION)
	3-WAY TOGGLE SWITCH (EXISTING - NEW - DEMOLITION)
	4-WAY TOGGLE SWITCH (EXISTING - NEW - DEMOLITION)
	KEYED SINGLE POLE TOGGLE SWITCH (EXISTING - NEW - DEMOLITION)
	DIMMER SWITCH - FIELD VERIFY COMPATIBILITY WITH LOAD TYPE (EXISTING - NEW - DEMOLITION)
	WALL-BOX OCCUPANCY SENSOR SWITCH - FIELD ADJUST (EXISTING - NEW - DEMOLITION)
	CEILING MOUNTED OCCUPANCY SENSOR - FIELD ADJUST (EXISTING - NEW - DEMOLITION)
	LOW-VOLTAGE SWITCHING POWER PACK (EXISTING - NEW - DEMOLITION)
COMMUNICATION (REFER TO SPECIFICATIONS FOR MOUNTING HEIGHTS)	
	WALL TELEPHONE ROUGH-IN - 1" C. WITH PULLSTRING (EXISTING - NEW - DEMOLITION)
	FLOOR TELEPHONE ROUGH-IN - 1" C. WITH PULLSTRING (EXISTING - NEW - DEMOLITION)
	WALL DATA TELEPHONE ROUGH-IN - 1" C. WITH PULLSTRING (EXISTING - NEW - DEMOLITION)
	FLOOR DATA TELEPHONE ROUGH-IN - 1" C. WITH PULLSTRING (EXISTING - NEW - DEMOLITION)

LIGHTING	
	FLUORESCENT FIXTURE - RECESSED OR SURFACE (EXISTING-NEW - DEMOLITION) (2'x4' SHOWN, OTHERS SIMILAR)
	EMERGENCY NIGHTLIGHT FIXTURE - RECESSED OR SURFACE (EXISTING-NEW - DEMOLITION) (2'x4' SHOWN, OTHERS SIMILAR)
	FLUORESCENT STRIP FIXTURE (EXISTING-NEW - DEMOLITION) (2'x4' SHOWN, OTHERS SIMILAR)
	EMERGENCY NIGHTLIGHT STRIP FIXTURE (EXISTING-NEW - DEMOLITION) (2'x4' SHOWN, OTHERS SIMILAR)
	DOWNLIGHT - WALL-WASHER - RECESSED OR SURFACE (EXISTING-NEW - DEMOLITION)
	EMERGENCY NIGHTLIGHT DOWNLIGHT / WALL-WASHER (EXISTING-NEW - DEMOLITION) - RECESSED OR SURFACE
	DECORATIVE WALL SCONCE - VERIFY MOUNTING HEIGHT (EXISTING-NEW - DEMOLITION)
	TRACK SECTION AND HEADS - PROVIDE ALL APPURTENANCES (EXISTING-NEW - DEMOLITION)
	EXISTING WALL PACK - VERIFY MOUNTING HEIGHT
	EXTERIOR RECTANGULAR FIXTURE ON POLE - VERIFY CONFIG. (EXISTING-NEW - DEMOLITION)
	EXTERIOR ROUND FIXTURE ON POLE - VERIFY CONFIGURATION (EXISTING-NEW - DEMOLITION)
	EMERGENCY LIGHTING UNIT (EXISTING-NEW - DEMOLITION)
	WALL-MOUNTED EXIT SIGN - SHADING DENOTE FACE (EXISTING - NEW - DEMOLITION) - ARROWS DENOTE CHEVRONS
	CEILING-MOUNTED EXIT SIGN - SHADING DENOTE FACE (EXISTING - NEW - DEMOLITION) - ARROWS DENOTE CHEVRONS
	COMBO EXIT SIGN / LIGHTING UNIT - SHADING DENOTE FACE (EXISTING - NEW - DEMOLITION) - ARROWS DENOTE CHEVRONS
FIRE ALARM	
	FIRE ALARM CONTROL PANEL (EXISTING - NEW - DEMOLITION)
	FIRE ALARM REMOTE ANNUNCIATOR PANEL (EXISTING - NEW - DEMOLITION)
	FIRE ALARM REMOTE PANEL (EXISTING - NEW - DEMOLITION)
	SMOKE DETECTOR - CEILING MOUNTED - CENTER IN TILE (EXISTING - NEW - DEMOLITION)
	HEAT DETECTOR - CEILING MOUNTED - CENTER IN TILE (EXISTING - NEW - DEMOLITION)
	FLAME DETECTOR - CEILING MOUNTED - CENTER IN TILE (EXISTING - NEW - DEMOLITION)
	SMOKE DETECTOR - DUCT/INTJ MOUNTED WITH SAMPLING TUBE (EXISTING - NEW - DEMOLITION)
	MANUAL FIRE ALARM PULLSTATION (EXISTING - NEW - DEMOLITION)
	FIRE FIGHTER TELEPHONE JACK (EXISTING - NEW - DEMOLITION)
	FIRE PROTECTION SYSTEM FLOW SWITCH (EXISTING - NEW - DEMOLITION)
	FIRE PROTECTION VALVE TAMPER SWITCH (EXISTING - NEW - DEMOLITION)
	FIRE PROTECTION SYSTEM WATER GONG (EXISTING - NEW - DEMOLITION)
	FIRE PROTECTION SYSTEM ELECTRIC BELL (EXISTING - NEW - DEMOLITION)
	ELECTRO-MAGNETIC DOOR HOLD (EXISTING - NEW - DEMOLITION)
	VISUAL STROBE - WALL MOUNTED - 110CD UNO (EXISTING - NEW - DEMOLITION)
	AUDIBLE HORN - WALL MOUNTED (EXISTING - NEW - DEMOLITION)
	SPEAKER - WALL MOUNTED (EXISTING - NEW - DEMOLITION)
	COMBINATION HORN/STROBE - WALL MOUNTED - 110CD UNO (EXISTING - NEW - DEMOLITION)
	COMBINATION SPEAKER/STROBE - WALL MOUNTED - 110CD UNO (EXISTING - NEW - DEMOLITION)
	VISUAL STROBE - CEILING MOUNTED - 110CD UNO - CENTER IN TILE (EXISTING - NEW - DEMOLITION)
	AUDIBLE HORN - CEILING MOUNTED - 110CD UNO - CENTER IN TILE (EXISTING - NEW - DEMOLITION)
	SPEAKER - CEILING MOUNTED - 110CD UNO - CENTER IN TILE (EXISTING - NEW - DEMOLITION)
	COMBINATION HORN/STROBE - CEILING MOUNTED - 110CD UNO (EXISTING - NEW - DEMOLITION) - CENTER IN TILE
	COMBINATION SPEAKER/STROBE - CEILING MOUNTED - 110CD UNO (EXISTING - NEW - DEMOLITION) - CENTER IN TILE
SECURITY / ACCESS	
	CARD READER (EXISTING - NEW - DEMOLITION)
	ELECTRO-MAGNETIC DOOR LOCK (EXISTING - NEW - DEMOLITION)
	ELECTRONIC DOOR LATCH (EXISTING - NEW - DEMOLITION)
	PUSH BUTTON (EXISTING - NEW - DEMOLITION)

SECTION 01 00 00 - GENERAL REQUIREMENTS

- DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED FOR EXACT DIMENSIONS; EXACT DIMENSIONS AND LOCATIONS SHALL BE DETERMINED BY MEASUREMENTS IN THE FIELD AND SHALL BE SUBJECT TO APPROVAL BY THE ENGINEER. THE CONTRACTOR SHALL VERIFY DIMENSION PRIOR TO ORDERING EQUIPMENT AND MATERIAL.
- BEFORE SUBMITTING A BID, IT WILL BE NECESSARY FOR EACH CONTRACTOR TO VISIT THE SITE AND ASCERTAIN FOR HIMSELF/HERSELF THE CONDITIONS TO BE MET IN INSTALLING THE WORK AND MAKE PROVISIONS FOR THE CONDITIONS IN THE FINAL PRICE. FAILURE TO COMPLY WITH THIS REQUIREMENT SHALL NOT BE CONSIDERED JUSTIFICATION FOR THE OMISSION OR FAULTY INSTALLATION OF ANY WORK. UPON SUBMITTING A BID, THE CONTRACTOR IS STATING THAT THE BID COVERS ALL WORK NECESSARY TO PROPERLY INSTALL THE SYSTEM INDICATED.
- IN CASE OF DISAGREEMENT BETWEEN THE DRAWING AND SPECIFICATIONS, OR WITHIN THE DRAWINGS OR SPECIFICATIONS, THE BID SHALL INCLUDE THE GREATER AMOUNT OF WORK AND THE MATTER SHALL BE REFERRED TO THE ENGINEER.
- THE CONTRACTOR SHALL SECURE AND PAY ALL FEES ASSOCIATED WITH ANY AND ALL NECESSARY PERMITS, LICENSES, AND INSPECTIONS REQUIRED FOR THE WORK.
- ALL WORK SHALL COMPLY WITH ALL PERTINENT NATIONAL, STATE AND LOCAL ORDINANCES AND CODES, AND ALL AMERICAN DISABILITIES ACT (ADA) REQUIREMENTS, AND ANY AMENDMENTS. NOTHING WITHIN THE DRAWINGS OR SPECIFICATIONS SHALL BE CONSTRUED AS WAIVING ANY OF THE RULES, REGULATIONS, OR REQUIREMENTS OF THE AUTHORITIES HAVING JURISDICTION. IN THE EVENT OF A CONFLICT, THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION SHALL GOVERN. THE CONFLICT SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY, AND NECESSARY MODIFICATION SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER OR ENGINEER.
- IF THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS ARE IN EXCESS OF THOSE REQUIRED BY THE PERMITS/REGULATIONS, THE CONTRACTOR SHALL TAKE PRECEDENCE.
- ALL EQUIPMENT AND MATERIALS FOR WHICH APPROVAL STANDARDS HAVE BEEN ESTABLISHED BY UNDERWRITERS' LABORATORIES, INC (UL), FACTORY MUTUAL (FM), AND AMERICAN STANDARD CODES SHALL BE SO APPROVED AND SHALL BEAR APPROVAL LABELS.
- ALL WORK SHALL BE IN COMPLIANCE WITH ALL APPLICABLE SAFETY REGULATIONS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MEANING OF THE DRAWINGS OR SPECIFICATIONS. REFERENCE SHALL BE MADE TO THE ENGINEER, WHOSE DECISION SHALL BE FINAL. THE ENGINEER WILL RESPOND WITHIN 10 BUSINESS DAYS AFTER RECEIPT OF REQUEST FOR INFORMATION. THE CONTRACTOR SHALL CONFORM TO THESE RESPONSES AS PART OF THE CONTRACT WITH NO ADDITIONAL COST TO THE OWNER OR ENGINEER. NO ALLEGED STATEMENT BY THE ARCHITECT/ENGINEER SHALL BE CONSIDERED AS A BASIS FOR THE CONTRACTOR TO TAKE PRECEDENCE.
- THE LISTING OF PRODUCT MANUFACTURERS, MATERIALS AND METHODS IS INTENDED TO ESTABLISH A STANDARD OF QUALITY. PRODUCTS BY OTHER MANUFACTURERS MAY BE ACCEPTED PROVIDED THEY HAVE THE EQUIVALENT CAPACITY, CONSTRUCTION, AND PERFORMANCE. THE ENGINEER SHALL BE THE SOLE JUDGE OF QUALITY AND EQUIVALENCE OF EQUIPMENT, MATERIALS, AND METHODS. HOWEVER, UNDER NO CIRCUMSTANCES SHALL ANY SUBSTITUTION BE MADE WITHOUT WRITTEN APPROVAL OF THE ENGINEER PRIOR TO BIDDING.
- EQUIPMENT HAS BEEN CHOSEN TO FIT WITHIN THE AVAILABLE SPACE. WHERE SUBSTITUTED OR ALTERNATIVE EQUIPMENT IS PROPOSED, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THAT THE EQUIPMENT WILL FIT WITHIN THE SPACE AVAILABLE, INCLUDING ALL REQUIRED CODE AND MAINTAINANCE CLEARANCES, AND TO COORDINATE ALL EQUIPMENT REQUIREMENTS WITH OTHER CONTRACTORS.
- OBTAIN ALL EQUIPMENT OR MATERIAL OF EACH TYPE THROUGH ONE SOURCE, LOCALLY WHEN POSSIBLE, FROM A SINGLE MANUFACTURER.
- SUBSTITUTIONS: PRODUCTS OF EQUAL PERFORMANCE CHARACTERISTICS MAY BE CONSIDERED. CONTRACTORS WISHING TO SUBSTITUTE A PRODUCT OR MATERIAL SHALL SUBMIT EACH REQUEST TO THE ENGINEER IN WRITING PRIOR TO BIDS BEING DUE. REQUESTS SHALL NOT BE CONSIDERED AFTER THAT TIME. THE ENGINEER SHALL REVIEW THE REQUEST AND IF ACCEPTABLE WILL ISSUE A LETTER ALLOWING THE SUBSTITUTION. ANY ANTICIPATED USE OF A NON-SPECIFIED PRODUCT WITHOUT WRITTEN APPROVAL IS STRICTLY THE RISK OF THE CONTRACTOR. IF A REQUEST IS REJECTED, THE CONTRACTOR SHALL FURNISH THE SPECIFIED PRODUCT OR MATERIAL. EACH CONTRACTOR IS RESPONSIBLE FOR COSTS INCURRED BY OTHER TRADES AS A RESULT OF ANY SUBSTITUTION MADE BY THE CONTRACTOR.
- SUBMITTALS: SUBMIT THE FOLLOWING IN ACCORDANCE WITH DIVISION 1 SPECIFICATIONS AND THE REQUIREMENTS OF THIS SECTION FOR EACH PIECE OF EQUIPMENT AND EACH TYPE OF COMPONENT AND MATERIAL.
 - SUBMIT PRODUCT DATA FOR EACH TYPE OF PRODUCT SPECIFIED.
 - SUBMIT SHOP/COORDINATION DRAWINGS AT A MINIMUM SCALE OF 1/4"=1'-0" DETAILING ALL MAJOR EQUIPMENT, COMPONENT, AND SYSTEMS IN RELATION TO WORK OF OTHER TRADES, INDICATING INSTALLATION, CODE, AND WORKING CLEARANCES AND ACCESS FOR ALL EQUIPMENT AND COMPONENTS.
 - SUBMIT SAMPLES OF COLOR, LETTERING, AND GRAPHICS FOR EACH IDENTIFICATION PRODUCT.
 - CONTRACTOR SHALL SEPARATE SUBMITTALS TO CONTAIN NO MORE THAN ONE SPECIFICATION SECTION.
 - WITHIN 30 DAYS AFTER AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT A MINIMUM OF FOUR (4) SUBMITTALS WITH COVERSHEET TO THE ENGINEER. IF ACCEPTABLE TO THE ARCHITECT/OWNER, AN ELECTRONIC VERSION CONTAINING THE COVERSHEET AND ALL SUBMITTAL DATA WITHIN ONE FILE MAY BE SUBMITTED IN LIEU OF THE 4 COPIES.
 - EACH SUBMITTAL SHALL INCLUDE THE FOLLOWING INFORMATION: SUBMITTALS THAT DO NOT COMPLY WITH THE FOLLOWING REQUIREMENTS WILL BE MARKED "REJECTED" AND RETURNED.
 - COVERSHEET: INDICATING THE NAME AND ADDRESS OF THE PROJECT, ARCHITECT, ENGINEER, AND CONTRACTOR, AND THE SUBMITTAL NAME AND NUMBER. NUMBER SHALL BE BASED ON THE SPECIFICATION SECTION, SUBMITTAL SEQUENCE NUMBER, AND A REVISION SEQUENCE NUMBER IS APPLICABLE. EX: 262726-02-R1 IS THE 1ST VERSION TO THE 2ND SUBMITTAL FOR SECTION 26 27 26.
 - LIST OF VARIATIONS: THIS PAGE SHALL LIST ALL VARIATIONS INCLUDING FURNISHED/UNFURNISHED OPTIONS AND FEATURES BETWEEN THE SUBMITTED ITEM AND THE SCHEDULED/SPECIFIED ITEM. IF THERE ARE NO VARIATIONS, THE PAGE SHALL STATE "NO VARIATIONS."
 - PRODUCT INFORMATION: CLEARLY INDICATE MANUFACTURER'S NAME, DESIGNATION, SIZE, PERFORMANCE AND CAPACITY DATA, DIMENSIONAL DATA, SUFFICIENT PICTORIAL AND DIAGRAMMATIC DATA TO SHOW CONFORMANCE WITH THE CONSTRUCTION DOCUMENTS. APPLICABLE INFORMATION SHALL BE CLEARLY INDICATED AND NON-APPLICABLE INFORMATION SHALL BE STRUCK-OUT.
 - WARRANTY INFORMATION: MANUFACTURER'S WARRANTY CERTIFICATE THAT MEETS OR EXCEEDS THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
 - CERTIFICATION BY THE GENERAL AND SUB-CONTRACTOR THAT MATERIAL SUBMITTED IS IN ACCORDANCE WITH THE CONSTRUCTION DOCUMENTS, SIGNED AND DATED.

- RECORD DRAWINGS: THE CONTRACTOR SHALL MAINTAIN A SET OF CLEARLY MARKED RECORD DRAWING PRINTS AT THE SITE, WHICH INDICATED ALL ALTERATIONS AND CHANGES. WITHIN 30 DAYS AFTER COMPLETION OF WORK, THE CONTRACTOR SHALL SUBMIT A REPRODUCIBLE SET IN OWNERS' REGISTERED FORMAT (PLOT, CAD, PDF, ETC.) WITH THE ENGINEER'S SEAL STRUCK-OUT AND EACH DRAWING MARKED WITH THE GENERAL AND ASSOCIATED SUB-CONTRACTORS' NAMES AND DATE.
- ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED, CONNECTED, AND ADJUSTED PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND CONDITIONS.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COORDINATING WITH ALL OTHER TRADES PRIOR TO SYSTEM INSTALLATION. THE CONTRACTOR SHALL REFER TO OTHER TRADE PLANS FOR OTHER WORK THAT MAY IMPACT HIS/HER WORK.
- WHERE SPACE REQUIREMENTS CONFLICT, THE FOLLOWING ORDER OF PRECEDENCE SHALL BE USED:
 - BUILDING LINES AND STRUCTURAL MEMBERS.
 - SOIL, DRAIN, AND CONDENSATE PIPING.
 - GREASE - RATED DUCTWORK.
 - REFRIGERANT AND VENT PIPING.
 - DUCTWORK.
 - HVAC AND DOMESTIC WATER PIPING.
 - FIRE PROTECTION (SPRINKLER & STANDPIPE) PIPING.
 - ELECTRICAL CONDUIT.
- THE CONTRACTOR SHALL TAKE CARE DURING WORK TO AVOID DAMAGE TO WORK BY OTHER TRADES. CONSTRUCTION DOCUMENTS SHALL TAKE PRECEDENCE.
- THE CONTRACTOR SHALL KEEP THE PREMISES FREE OF DEBRIS AND RUBBISH CAUSED BY HIS/HER WORK ON A DAILY BASIS. THIS DEBRIS AND RUBBISH SHALL BE REMOVED FROM THE BUILDING AND SITE.
- GUARANTEE: THE CONTRACTOR SHALL GUARANTEE THE ENTIRE INSTALLATION TO MINIMIZE THE HAZARD AND INTERRUPTION TO THE OCCUPANTS. DO NOT INTERRUPT SERVICES TO THE OCCUPANTS WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT/OWNER/TENANT, A MINIMUM OF 5 WORKING DAYS PRIOR TO THE INTERRUPTION. WHERE DISRUPTION OF A SERVICE BECOMES NECESSARY, PROVISIONS SHALL BE MADE TO PROVIDE TEMPORARY SERVICE THROUGHOUT THE INTERRUPTION OF THE PRIMARY SERVICE.

SECTION 26 00 00 - GENERAL REQUIREMENTS FOR ELECTRICAL SYSTEMS

- ALL ELECTRICAL COMPONENTS, DEVICES, AND ACCESSORIES SHALL BE LISTED AND LABELED AS DEFINED IN NFPA 70, BY A QUALIFIED TESTING AGENCY, AND MARKED FOR INTENDED LOCATION AND APPLICATION.
- PROTECT THE EXISTING WORK FROM RESTRICTED SPACE. DRAWINGS INDICATE DIMENSIONS OF SELECTED EQUIPMENT AND ACCESSORIES INCLUDING CLEARANCES BETWEEN EQUIPMENT, ADJACENT SURFACES AND OTHER ITEMS. THE CONTRACTOR IS RESPONSIBLE TO VERIFY FIELD DIMENSIONS AND NOTIFY THE ENGINEER IF REQUIRED CLEARANCES CANNOT BE MAINTAINED.
- PROTECT EXISTING WORK. EACH CONTRACTOR IS RESPONSIBLE FOR COSTS INCURRED BY OTHER TRADES AS A RESULT OF ANY SUBSTITUTION MADE BY THE CONTRACTOR.
- INTERRUPTION OF EXISTING ELECTRIC SERVICE: DO NOT INTERRUPT ELECTRIC SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED UNDER THE FOLLOWING CONDITIONS AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY ELECTRIC SERVICE ACCORDING TO REQUIREMENTS INDICATED:
 - NOTIFY ARCHITECT AND OWNER NO FEWER THAN FIVE BUSINESS DAYS IN ADVANCE OF PROPOSED INTERRUPTION OF ELECTRIC SERVICE.
 - DO NOT PROCEED WITH INTERRUPTION OF ELECTRIC SERVICE WITHOUT ARCHITECT'S OR OWNER'S WRITTEN PERMISSION.
 - COMPLY WITH NFPA 70.
 - STORE EQUIPMENT, COMPONENTS, AND MATERIALS IN A CLEAN, DRY LOCATION WHICH PROVIDES PROTECTION AGAINST THE WEATHER. ITEMS WHICH BECOME DAMAGED DUE TO WEATHER OR EXPOSURE SHALL BE REPLACED PRIOR TO INSTALLATION.
 - PROVIDE ALL TEMPORARY FACILITIES REQUIRED TO SUPPLY CONSTRUCTION POWER AND LIGHTING. INSTALL AND MAINTAIN FACILITIES IN A MANNER THAT WILL PROTECT THE PUBLIC AND WORKMEN THAT COMPLIES WITH ALL APPLICABLE LAWS AND REGULATIONS. IN GENERAL, ALL WIRING AND ELECTRICAL COMPONENT LIGHT FIXTURES AND ONLY 1" DIA. GLEX RECEPTACLES FOR EVERY 400-SQUARE FEET OF AREA (MINIMUM OF ONE EACH PER ROOM) UPON COMPLETION OF THE WORK, REMOVE ALL TEMPORARY FACILITIES FROM THE SITE.
 - TEST ALL WIRING AND CONNECTIONS FOR PROPER CONFIGURATION PRIOR TO ENERGIZING ANY PART OF THE SYSTEM.
 - VACUUM DIRT AND DEBRIS FROM WITHIN ENCLOSURES; DO NOT USE COMPRESSED AIR TO ASSIST IN CLEANING.
 - AT COMPLETION OF INSTALLATION, INSPECT EXPOSED FINISHES. REMOVE BURRS, DIRT AND CONSTRUCTION DEBRIS AND REPAIR DAMAGED FINISH, INCLUDING CHIPS, SCRATCHES, AND ABRASIONS BACK TO THE ORIGINAL FINISH.

SECTION 26 05 19 - LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

- CONDUCTORS AND CABLES: COPPER SHALL BE SOFT-DRAWN, ANNEALED WITH 98% CONDUCTIVITY OR ALUMINUM WITH THHN/THWN INSULATION.
- MULTI-CONDUCTOR CABLE: METAL-CLAD CABLE, TYPE MC ONLY. ALL MULTI-CONDUCTOR CABLES SHALL BE PROVIDED WITH AN INTERNAL EQUIPMENT GROUNDING CONDUCTOR. THE CABLE SHEATHING SHALL NOT BE USED FOR AN EQUIPMENT GROUND.
- CONNECTORS AND SPLICES: UL-LISTED, FACTORY-FABRICATED CONNECTORS AND SPLICES OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR BREAKER INSTALLATIONS.
 - FEEDERS: COPPER FOR FEEDERS SMALLER THAN #4 AWG; COPPER OR ALUMINUM FOR FEEDERS #4 AWG AND LARGER. SOLID FOR #10 AWG AND SMALLER; STRANDED FOR #8 AWG AND LARGER. CONDUCTOR SIZES INDICATED IN DRAWINGS ARE COPPER UNLESS NOTED OTHERWISE.
 - BRANCH CIRCUITS: COPPER, SOLID FOR #10 AWG AND SMALLER; STRANDED FOR #8 AWG AND LARGER.
 - CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS:
 - FEEDERS (EXPOSED AND CONCEALED) & BRANCH CIRCUIT (EXPOSED): TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY.
 - BRANCH CIRCUITS - INTERIOR, CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY OR METAL-CLAD CABLE, TYPE MC.
 - TYPE MC CABLE MAY BE INSTALLED ONLY IN THE FOLLOWING INSTALLATIONS:
 - SINGLE-PHASE CIRCUITS ONLY.
 - CONNECTION TO RECESSED LIGHTING FIXTURES WITH A MAXIMUM LENGTH OF 6'.
 - CONNECTION TO NEMA 5-15R AND 5-20R RECEPTACLES WITH A MAXIMUM LENGTH OF THE DISTANCE BETWEEN THE RECEPTACLE AND THE FINISH CEILING PLUS 6".
 - CLASS 1 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY.
 - CLASS 2 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY OR POWER-LIMITED CABLE, CONCEALED IN BUILDING FINISHES OR POWER-LIMITED TRAY CABLE, IN CABLE TRAY.
 - CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
 - CONDUCTORS MAY BE RUN IN PARALLEL ON SIZE #10 THROUGH 750 KCMIL INCLUSIVE, PROVIDED ALL PARALLEL CONDUCTORS ARE THE SAME SIZE, LENGTH, AND TYPE. PARALLEL CONDUCTORS SHALL BE SPACED AND TERMINATED AS TO ENSURE EQUAL DIVISION OF THE TOTAL CURRENT BETWEEN ALL PARALLEL CONDUCTORS INVOLVED.
 - CONDUCTOR SIZES INDICATED IN THE CONSTRUCTION DRAWINGS ARE MINIMUM SIZES. CONTRACTOR SHALL INCREASE CONDUCTOR SIZES ABOVE THOSE INDICATED TO LIMIT THE DROP IN VOLTAGE POTENTIALS AND TO BE IN ACCORDANCE TO THE FARTHEST POINT ON THE CIRCUIT FROM EXCEEDING 3% AT MAXIMUM LOAD FOR ALL LIGHTING AND POWER BRANCH CIRCUITS.
 - INSTALL A SEPARATE GROUNDED (NEUTRAL) CONDUCTOR FOR EACH OF THE FOLLOWING BRANCH CIRCUITS SERVING OR ORIGINATING FROM A GFI DEVICE OR BREAKER:
 - KEEP CONNECTIONS AND SPLICES TO A MINIMUM. SPLICES ARE NOT PERMITTED IN FEEDER CONDUCTORS UNLESS SPECIFICALLY INDICATED ON PLAN.
 - ALL CONNECTIONS AND SPLICES SHALL OCCUR WITHIN OUTLET BOXES, JUNCTION BOXES, SPLICE BOXES, OR OTHER DEVICES APPROVED FOR THIS PURPOSE.
 - MAKE SPLICES AND CONNECTIONS THAT ARE COMPATIBLE WITH CONDUCTOR MATERIAL AND THAT POSSESS EQUIVALENT OR BETTER MECHANICAL STRENGTH, CURRENT-CARRYING, AND INSULATION RATINGS THAN UNSPLICED CONDUCTORS. USE OXIDE INHIBITOR IN EACH SPLICE AND TAP CONDUCTOR FOR ALUMINUM CONDUCTORS.

SECTION 26 05 26 - GROUNDING AND BANDING FOR ELECTRICAL SYSTEMS

- INSULATED CONDUCTORS: COPPER OR TINNED-COPPER WIRE OR CABLE INSULATED FOR 600V UNLESS OTHERWISE REQUIRED BY APPLICABLE CODE. INSTALL SOLID CONDUCTOR FOR #8 AWG AND SMALLER, AND STRANDED CONDUCTORS FOR #6 AWG AND LARGER, UNLESS OTHERWISE INDICATED.
- BARE COPPER MARKING CABLE: 28 KCMIL, 14 STRANDS OF #17 AWG CONDUCTORS, 1/4" IN DIAMETER.
- BARE COPPER BANDING CONDUCTOR: #4 OR #6 AWG, STRANDED CONDUCTOR.
- BOLTED CONDUCTORS FOR CONDUCTORS AND PIPES: COPPER OR COPPER ALLOY, BOLTED PRESSURE-TYPE, WITH AT LEAST TWO BOLTS. SIZE FOR CONDUCTOR AND MATERIAL/PIPE THICKNESS.
- INSTALL INSULATED EQUIPMENT GROUNDING CONDUCTORS WITH OIL FEEDERS AND BRANCH CIRCUITS.
- HVAC AND PLUMBING EQUIPMENT: INSTALL A SEPARATE INSULATED EQUIPMENT GROUNDING CONDUCTOR TO EACH PIECE OF EQUIPMENT OPERATING AT 120 V AND MORE, INCLUDING AIR CLEANERS, HEATERS, DAMPERS, HUMIDIFIERS, WATER HEATERS, PUMPS, ETC. BAND CONDUCTOR TO EACH UNIT AND TO DUCT AND/OR CONNECTED METALLIC PIPING. INSTALL BANDING JUMPER TO BAND ACROSS FLEXIBLE CONNECTIONS TO ACHIEVE CONTINUITY.
- ROUTE GROUNDING CONDUCTORS ALONG SHORTEST AND STRAIGHTEST PATHS POSSIBLE, UNLESS OTHERWISE INDICATED OR REQUIRED BY CODE. AVOID OBSTRUCTING ACCESS OR PLACING CONDUCTORS WHERE THEY MAY BE SUBJECTED TO STRAIN, IMPACT OR DAMAGE.
- BANDING STRAPS AND JUMPERS: COPPER OR TINNED-COPPER TAPE, BRAIDED CONDUCTORS, TERMINATED WITH COPPER WIRE, 5/16" DIA. 1/16" THICK, INSTALLED IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE, EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.
 - BANDING TO STRUCTURE: BAND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS.
- BANDING TO EQUIPMENT MOUNTED ON VIBRATION ISOLATION HANGERS AND SUPPORTS: INSTALL SO VIBRATION IS NOT TRANSMITTED TO RIGIDLY MOUNTED EQUIPMENT.

SECTION 26 05 29 - HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS

- DESIGN SUPPORTS FOR MULTIPLE RACEWAYS AND EQUIPMENT CAPABLE OF SUPPORTING CONDUCTORS, TERMINATED WITH COPPER WIRE, 5/16" DIA. 1/16" THICK, INSTALLED IN LOCATIONS ACCESSIBLE FOR INSPECTION AND MAINTENANCE, EXCEPT WHERE ROUTED THROUGH SHORT LENGTHS OF CONDUIT.
 - BANDING TO STRUCTURE: BAND STRAPS DIRECTLY TO BASIC STRUCTURE, TAKING CARE NOT TO PENETRATE ANY ADJACENT PARTS.
- STEEL SLOTTED SUPPORT SYSTEMS: HOT-DIP GALVANIZED, FACTORY-FABRICATED COMPONENTS FOR FIELD ASSEMBLY WITH CHANNEL DIMENSIONS SELECTED FOR APPLICABLE LOAD REQUIREMENTS AND CONTENTS, AND CONNECTIONS. ADEQUATE TO RESIST MAXIMUM LOADS IMPOSED FOR THIS PROJECT, WITH A MINIMUM STRUCTURAL SAFETY FACTOR OF FIVE TIMES THE APPLIED FORCE.
- CONDUIT AND CABLE SUPPORT DEVICES: STEEL AND MALLEABLE-IRON HANGERS, CLAMPS, AND ASSOCIATED FITTINGS, DESIGNED FOR TYPES AND SIZES OF RACEWAY OR CABLE TO BE SUPPORTED.
- SUPPORT FOR CONDUCTORS IN VERTICAL CONDUIT: FACTORY-FABRICATED ASSEMBLY CONSISTING OF MALLEABLE IRON, THREADED BODY AND INSULATING WEDGING PLUG OR PULLS FOR NON-ARMORED ELECTRICAL CONDUCTORS OR CABLES IN RISER CONDUIT. PLUGS SHALL HAVE NUMBER, SIZE, AND SHAPE OF CONDUCTOR GRIPPING PIECES AS REQUIRED TO SUIT INDIVIDUAL CONDUCTORS OR CABLES SUPPORTED.
- POWDER-ACTUATED FASTENERS: THREADED-STEEL STUD, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE, STEEL, OR WOOD, WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
- MECHANICAL-EXPANSION ANCHORS: INSERT-WEDGE-TYPE, ZINC-COATED STEEL, FOR USE IN HARDENED PORTLAND CEMENT CONCRETE WITH TENSION, SHEAR, AND PULLOUT CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS IN WHICH USED.
- MAXIMUM SUPPORT SPACING AND MINIMUM HANGER ROD SIZE FOR RACEWAY: SPACE SUPPORTS FOR EMT, IMC, AND RMC AS NFPA 70. MINIMUM ROD SIZE SHALL BE 1/4" IN DIAMETER.
- MULTIPLE RACEWAYS OR CABLES: INSTALL TRAPEZE-TYPE SUPPORTS FABRICATED WITH STEEL SLOTTED SUPPORT SYSTEM, SIZED SO CAPACITY CAN BE INCREASED BY AT LEAST 25% IN FUTURE WITHOUT EXCEEDING SPECIFIED DESIGN LOAD LIMITS. SECURE RACEWAYS AND CABLES TO THESE SUPPORTS WITH TWO-BOLT CONDUIT CLAMPS OR SINGLE-BOLT CONDUIT CLAMPS USING SPRING FRICTION ACTION FOR RETENTION IN SUPPORT CHANNEL.
- SPRING-STEEL CLAMPS DESIGNED FOR SUPPORTING SINGLE CONDUITS WITHOUT BOLTS MAY BE USED FOR 1-1/2" AND SMALLER RACEWAYS SERVING BRANCH CIRCUITS AND COMMUNICATION SYSTEMS ABOVE SUSPENDED CEILINGS AND FOR FASTENING RACEWAYS TO TRAPEZE SUPPORTS.
- STRENGTH OF SUPPORT ASSEMBLIES: SELECT SIZES OF COMPONENTS SO STRENGTH WILL BE ADEQUATE TO CARRY WEIGHT OF SUPPORTED COMPONENTS PLUS 200 LB. MINIMUM.
 - MOUNTING AND ANCHORAGE OF SURFACE-MOUNTED EQUIPMENT AND COMPONENTS: ANCHOR AND FASTEN ELECTRICAL ITEMS AND THEIR SUPPORTS TO BUILDING STRUCTURAL ELEMENTS BY THE FOLLOWING METHODS UNLESS OTHERWISE INDICATED BY CODE:
 - TO WOOD: FASTEN WITH LAG SCREWS OR THROUGH BOLTS.
 - TO EXISTING CONCRETE: EXPANSION ANCHOR FASTENERS OR POWDER-ACTUATED DRIVEN THREADED STUDS PROVIDED WITH LOCK WASHERS AND NUTS MAY BE USED IN EXISTING STANDARD-WEDGE TYPE CONCRETE 4" THICK OR GREATER. DRILL HOLES FOR EXPANSION ANCHORS IN CONCRETE AT LOCATIONS AND TO DEPTHS THAT AVOID REINFORCING BARS.
 - TO STRUCTURAL STEEL: BEAM CLAMPS COMPLYING WITH MSS SP-69.
 - TO LIGHT STEEL: SHEET METAL SCREWS.
 - ITEMS MOUNTED ON HOLLOW WALLS AND NONSTRUCTURAL BUILDING SURFACES: MOUNT EQUIPMENT AND ENCLOSURES ON SLOTTED-CHANNEL RACKS ATTACHED TO SUBSTRATE.
- CONSTRUCT CONCRETE BASES WITH 3000-PSI, 28-DAY COMPRESSIVE-STRENGTH CONCRETE WITH DIMENSIONS INDICATED BUT NOT LESS THAN 4" LARGER IN BOTH DIRECTIONS THAN SUPPORTED UNIT.
 - CONDUCTORS AND CABLES: COPPER SHALL BE SOFT-DRAWN, ANNEALED WITH 98% CONDUCTIVITY OR ALUMINUM WITH THHN/THWN INSULATION.
 - MULTI-CONDUCTOR CABLE: METAL-CLAD CABLE, TYPE MC ONLY. ALL MULTI-CONDUCTOR CABLES SHALL BE PROVIDED WITH AN INTERNAL EQUIPMENT GROUNDING CONDUCTOR. THE CABLE SHEATHING SHALL NOT BE USED FOR AN EQUIPMENT GROUND.
 - CONNECTORS AND SPLICES: UL-LISTED, FACTORY-FABRICATED CONNECTORS AND SPLICES OF SIZE, AMPACITY RATING, MATERIAL, TYPE, AND CLASS FOR BREAKER INSTALLATIONS.
 - FEEDERS: COPPER FOR FEEDERS SMALLER THAN #4 AWG; COPPER OR ALUMINUM FOR FEEDERS #4 AWG AND LARGER. SOLID FOR #10 AWG AND SMALLER; STRANDED FOR #8 AWG AND LARGER. CONDUCTOR SIZES INDICATED IN DRAWINGS ARE COPPER UNLESS NOTED OTHERWISE.
 - BRANCH CIRCUITS: COPPER, SOLID FOR #10 AWG AND SMALLER; STRANDED FOR #8 AWG AND LARGER.
 - CONDUCTOR INSULATION AND MULTICONDUCTOR CABLE APPLICATIONS AND WIRING METHODS:
 - FEEDERS (EXPOSED AND CONCEALED) & BRANCH CIRCUIT (EXPOSED): TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY.
 - BRANCH CIRCUITS - INTERIOR, CONCEALED IN CEILINGS, WALLS, AND PARTITIONS: TYPE THHN/THWN, SINGLE CONDUCTORS IN RACEWAY OR METAL-CLAD CABLE, TYPE MC.
 - TYPE MC CABLE MAY BE INSTALLED ONLY IN THE FOLLOWING INSTALLATIONS:
 - SINGLE-PHASE CIRCUITS ONLY.
 - CONNECTION TO RECESSED LIGHTING FIXTURES WITH A MAXIMUM LENGTH OF 6'.
 - CONNECTION TO NEMA 5-15R AND 5-20R RECEPTACLES WITH A MAXIMUM LENGTH OF THE DISTANCE BETWEEN THE RECEPTACLE AND THE FINISH CEILING PLUS 6".
 - CLASS 1 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY.
 - CLASS 2 CONTROL CIRCUITS: TYPE THHN/THWN, IN RACEWAY OR POWER-LIMITED CABLE, CONCEALED IN BUILDING FINISHES OR POWER-LIMITED TRAY CABLE, IN CABLE TRAY.
 - CONCEAL CABLES IN FINISHED WALLS, CEILINGS, AND FLOORS, UNLESS OTHERWISE INDICATED.
 - CONDUCTORS MAY BE RUN IN PARALLEL ON SIZE #10 THROUGH 750 KCMIL INCLUSIVE, PROVIDED ALL PARALLEL CONDUCTORS ARE THE SAME SIZE, LENGTH, AND TYPE. PARALLEL CONDUCTORS SHALL BE SPACED AND TERMINATED AS TO ENSURE EQUAL DIV

SECTION 26 05 33 - RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

- 1. INDOORS, UNLESS OTHERWISE INDICATED:
1. EXPOSED, NOT SUBJECT TO PHYSICAL DAMAGE: RIGID STEEL CONDUIT FOR PIPES AND FITTINGS.
2. EXPOSED AND SUBJECT TO PHYSICAL DAMAGE: RIGID STEEL CONDUIT OR IMC. INCLUDES RACEWAYS IN AREAS WITH HEAVY TRAFFIC AND MECHANICAL ROOMS.
3. CONCEALED IN CEILINGS AND INTERIOR WALLS AND PARTITIONS: RIGID STEEL, IMC, OR EMT. RNC MAY BE USED IN NON-ENVIRONMENTAL AIR PLenums.
4. CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNEUMATIC, ELECTRIC SOLENOID OR MOTOR-DRIVEN EQUIPMENT); FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS. DAMP OR WET LOCATIONS: RIGID STEEL CONDUIT OR IMC.
5. BOXES SHEET-METAL TYPE 1, EXCEPT USE CAST-METAL, TYPE 4, IN DAMP OR WET LOCATIONS.
2. MINIMUM RACEWAY SIZE: RACEWAY SIZE SHALL BE AS FOLLOWS UNLESS OTHERWISE INDICATED:
1. UNDER SLAB AND UNDERGROUND: 1"
2. HOURLINE TO PANELBOARDS: 3/4"
3. ALL OTHER RACEWAY: 1/2"
3. METAL WIREWAYS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: COOPER B-LINE AND HOFFMAN.
1. DESCRIPTION: SHEET METAL WITH STANDARD ENAMEL FINISH, SIZED AND SHAPED AS INDICATED, TYPE 1 (INTERIOR) OR 3R (EXTERIOR), UNLESS OTHERWISE INDICATED.
2. FITTINGS AND ACCESSORIES: INCLUDE COUPLINGS, ELBOWS, ADAPTERS, END CAPS, AND OTHER FITTINGS THAT MATCH WIREWAYS AS REQUIRED BY MANUFACTURER.
3. WIREWAY COVERS: SCREW-COVER TYPE, UNLESS OTHERWISE INDICATED.
4. RACEWAY FITTINGS: COMPATIBLE WITH RACEWAYS AND SUITABLE FOR USE AND LOCATION.
1. RIGID AND INTERMEDIATE STEEL CONDUIT: USE THREADED RIGID STEEL CONDUIT FITTINGS, UNLESS OTHERWISE INDICATED.
2. PVC EXTERNALLY COATED, RIGID STEEL CONDUITS: USE ONLY FITTINGS LISTED FOR USE WITH THAT MATERIAL. PATCH AND SEAL ALL JOINTS, NICKS, AND SCRAPS IN PVC COATING AFTER INSTALLING CONDUITS AND FITTINGS.
3. EMT CONDUITS: SET-SCREW TYPE EXCEPT IN DAMP AND WET LOCATIONS. COMPRESSION TYPE.
5. INSTALL RACEWAY LEVEL AND SQUARE AND AT PROPER ELEVATION TO PROVIDE ADEQUATE HEADROOM. KEEP RACEWAYS AT LEAST 6" AWAY FROM PANELS, RUNS, RISERS, AND SLOTTED OR HOT-WATER PIPES.
6. INSTALL RACEWAY SEALING FITTINGS AT SUITABLE, APPROVED, AND ACCESSIBLE LOCATIONS AND FILL THEM WITH LISTED SEALING COMPOUND. FOR CONCEALED RACEWAYS, INSTALL EACH FITTING IN A FLUSH STEEL BOX WITH A BLANK COVER PLATE HAVING A FINISH SIMILAR TO THAT OF ADJACENT PLATES OR SURFACES. INSTALL RACEWAY SEALING FITTINGS WHERE CONDUITS ARE TO COLD LOCATIONS, SUCH AS BOUNDARIES OF REFRIGERATED SPACES AND WHERE OTHERWISE REQUIRED BY NFPA 70.
7. USE MAXIMUM OF 72" OF FLEXIBLE CONDUIT FOR EQUIPMENT SUBJECT TO VIBRATION, NOISE TRANSMISSION, OR MOVEMENT; AND FOR CONDUITS SUBJECT TO COLLAPSE UNDER LOADS.
8. IN INACCESSIBLE CEILING AREAS, POSITION BOXES WITHIN 6" OF RECESSED LUMINAIRE TO BE ACCESSIBLE THROUGH THE LUMINAIRE CEILING OPENING.
14. BOXES: INSTALL JUNCTION AND OUTLET BOXES AS FOLLOWS.
1. PROVIDE A MINIMUM OF 6" SEPARATION BETWEEN BACK-TO-BACK BOXES IN WALLS.
2. PROVIDE A MINIMUM OF 24" SEPARATION AND AT LEAST ONE PARTITION STUD BETWEEN BACK-TO-BACK BOXES IN FIRE-RATED PARTITIONS (2-HOURS OR LESS). BOX OPENINGS SHALL NOT EXCEED 16 SQUARE INCHES, WITH A MAXIMUM OF 100 SQUARE INCHES OF OPENING PER 100 SQUARE FEET OF PARTITION AREA.
3. USE MULTI-GANG BOXES WHERE MULTIPLE WIRING DEVICES ARE TO BE INSTALLED TOGETHER. DO NOT USE SECTIONAL BOXES.
4. PROVIDE PHYSICAL BARRIERS TO SEPARATE WIRING OF DIFFERENT VOLTAGES.
15. INSTALL TEMPORARY CLOSURES ON ALL RACEWAYS DURING CONSTRUCTION TO AVOID DIRT, WATER, AND DEBRIS FROM ENTERING THE RACEWAY SYSTEM.
16. PROVIDE KNOCKOUT PLUGS IN ALL UNUSED OPENINGS IN BOXES, WIREWAYS, AND ENCLOSURES.
17. INSTALL SLEEVES FOR PENETRATIONS OF FIRE-RATED FLOOR AND WALL ASSEMBLIES UNLESS OTHERWISE INDICATED.
18. MAINTAIN REQUIRED FIRE RATING OF WALLS, PARTITIONS, CEILINGS, AND FLOORS AT RACEWAY PENETRATIONS.
19. SEAL ROOF PENETRATION OF INDIVIDUAL RACEWAYS WITH FLEXIBLE, BOOT-TYPE FLASHING UNITS APPLIED IN COORDINATION WITH ROOFING WORK.

SECTION 26 02 20 - LOW-VOLTAGE TRANSFORMERS

- 1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: ACME ELECTRIC, EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
2. GENERAL TRANSFORMER REQUIREMENTS: FACTORY-ASSEMBLED AND TESTED, AIR-COOLING UNITS FOR 60-HZ SERVICE, WITH ONE RAIN-ORIENTED, NON-AGING SILICON STEEL CORE PER LEG AND CONTINUOUS WINDINGS WITHOUT SPLICES EXCEPT FOR TAPS. CORES AND COLS SHALL BE ENCAPSULATED WITH RESIN COMPOUND, SEALING OUT MOISTURE AND AIR. ENCLOSURE SHALL BE VENTILATE, NEMA TYPE 2, EXCEPT FOR EXTERIOR INSTALLATION SHALL BE TYPE 3R.
3. GENERAL PURPOSE DISTRIBUTION TRANSFORMERS
1. WINDINGS: ONE COIL PER PHASE IN PRIMARY AND SECONDARY.
2. TAPS FOR TRANSFORMERS 7.5 TO 24 KVA: ONE 5 PERCENT TAP ABOVE AND ONE 5 PERCENT TAP BELOW NORMAL FULL CAPACITY.
3. TAPS FOR TRANSFORMERS 25 KVA AND LARGER: TWO 2.5 PERCENT TAPS ABOVE AND TWO 2.5 PERCENT TAPS BELOW NORMAL FULL CAPACITY.
4. INSULATION CLASS: 220 DEG C, UL -COMPONENT-RECOGNIZED INSULATION SYSTEM WITH A MAXIMUM OF 150 DEG C RISE ABOVE 40 DEG C AMBIENT TEMPERATURE.
5. EFFICIENCY: PROVIDE AN EFFICIENCY RATING IN COMPLIANCE WITH NEMA TP1, CLASS 1 EFFICIENCY LEVELS.
4. DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANEL BOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF TRANSFORMERS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY OTHER CONSTRUCTION. MAINTAIN REQUIRED CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
5. INSTALL FLOOR-MOUNTED TRANSFORMER ON CONCRETE HOUSEKEEPING PAD WITH VIBRATION ISOLATION PADS TO PREVENT TRANSMISSION OF TRANSFORMER VIBRATION.
6. INCOMING AND OUTGOING RACEWAY SHALL BE FLEXIBLE TO PREVENT TRANSMISSION OF TRANSFORMER VIBRATION. INSTALL BANDING JUMPER ON EXTERIOR OF THE FLEXIBLE RACEWAY.
7. GROUND EQUIPMENT ACCORDING TO NFPA 70 FOR A SEPARATELY DERIVED SYSTEM AND DIVISION 26 SECTION "GROUNDING AND BANDING FOR ELECTRICAL SYSTEMS".
8. RECORD TRANSFORMER SECONDARY VOLTAGE AT EACH UNIT FOR AT LEAST 48 HOURS OF TYPICAL OCCUPANCY PERIOD. ADJUST TRANSFORMER TAPS TO PROVIDE OPTIMUM VOLTAGE CONDITIONS AT SECONDARY TERMINALS. OPTIMUM IS DEFINED AS EXCEEDING NAMEPLATE VOLTAGE PLUS 10 PERCENT AND NOT BEING LOWER THAN NAMEPLATE VOLTAGE MINUS 3 PERCENT AT MAXIMUM LOAD CONDITIONS. SUBMIT RECORDING AND TAP SETTINGS AS TEST RESULTS.

SECTION 26 05 53 - IDENTIFICATION FOR ELECTRICAL SYSTEMS

- 1. VERIFY IDENTITY OF EACH ITEM BEFORE INSTALLING IDENTIFICATION PRODUCTS.
2. APPLY IDENTIFICATION DEVICES TO SURFACES THAT REQUIRE FINISH OR CLEANING AFTER IDENTIFICATION WORK.
3. ATTACH IDENTIFICATION LABELS WITH MECHANICAL FASTENERS APPROPRIATE TO THE LOCATION AND SUBSTRATE.
4. IDENTIFY CONDUCTORS IN ENCLOSURES AND BOXES. USING COLOR-CODING TO IDENTIFY THE PHASE, FACTORY APPLIED OR FIELD APPLIED CONDUCTOR TAPE OR CABLE TIES FOR SIZES LARGER THAN 1/4". LOGS, LABEL BANDS OF TAPE OF TIES WITHIN 6" FROM TERMINATION AND AVOID OBSCURING FACTORY CABLE MARKINGS.
1. COLORS FOR 208/120V CIRCUITS:
1. PHASE A: BLACK.
2. PHASE B: RED.
3. PHASE C: BLUE.
4. NEUTRAL: WHITE.
5. GROUND: GREEN.
2. COLORS FOR 480/277V CIRCUITS:
1. PHASE A: BROWN.
2. PHASE B: YELLOW.
3. PHASE C: YELLOW.
4. NEUTRAL: GRAY.
5. GROUND: GREEN.
5. APPLY SELF-ADHESIVE FACTORY PRINT CIRCUIT NUMBER FOR CIRCUIT IDENTIFICATION TO EACH CIRCUIT BREAKER, BOX, AND DEVICE.
6. IDENTIFY THE COVERS OF EACH JUNCTION AND PULL BOX OF THE FOLLOWING SYSTEMS WITH FIELD-APPLIED PAINT. AFTER PAINT HAS BEEN APPLIED, PROVIDE PERMANENT WRITTEN IDENTIFICATION OF THE SOURCE AND CIRCUIT NUMBER, SIZES OF LETTERS SHALL BE APPROPRIATE FOR VIEWING FROM THE FLOOR. SYSTEMS SHALL BE AS FOLLOWS:
1. GENERAL POWER: NO COLOR
2. FIRE ALARM AND PROTECTION: RED.
3. SECURITY SYSTEM: BLUE.
4. TELECOMMUNICATION: ORANGE.
7. ATTACH MARKER TAPE TO CONDUCTORS TO BE EXTENDED IN THE FUTURE AND LIST THEIR USAGE.
8. INSTALL 2" WIDE PRESSURE-SENSITIVE VINYL FLOOR MARKING TAPE WITH BLACK AND YELLOW STRIPES TO SHOW WORKING CLEARANCES IN THE DIRECTION OF ACCESS TO LIVE PARTS. WORKSPACE SHALL BE AS REQUIRED BY NFPA 70 AND 29 CFR 1926.403. INSTALL WARNING LABEL ON EQUIPMENT WHICH READS "WARNING - AREA IN FRONT OF ELECTRICAL EQUIPMENT MUST BE KEPT CLEAR FOR 36 INCHES." DISTANCE INDICATED SHALL BE AS DEFINED IN NFPA 70. DO NOT INSTALL FLOOR MARKINGS OR WARNING SIGNS IN FINISHED SPACES.
9. INSTALL UNDERGROUND-LINE WARNING TAPE AS RECOMMENDED BY MANUFACTURER. METHOD OF INSTALLATION AND SUITABLE TO IDENTIFY AND LOCATE UNDERGROUND POWER AND COMMUNICATIONS UTILITY LINES. USE RED-COLOR TAPES FOR ELECTRICAL WITH INSCRIPTION OF "ELECTRICAL LINE - HIGH VOLTAGE" AND ORANGE-COLORED TAPES FOR COMMUNICATION WITH INSCRIPTION OF "TELEPHONE CABLE, CAV CABLE, OR COMMUNICATION CABLE." DURING BACKFILLING OF TRENCHES INSTALL CONTINUOUS UNDERGROUND-LINE WARNING TAPE DIRECTLY ABOVE LINE AT 6" BELOW FINISHED GRADE.
10. INSTALL UNIQUE DESIGNATION ENGRAVED, LAMINATED ACRYLIC OR MELAMINE LABEL WITH STAINLESS-STEEL MACHINE SCREWS WITH NUTS ON EACH PIECE OF EQUIPMENT. PROVIDE A SINGLE LINE OF TEXT WITH 1/2" HIGH LETTERS ON 1-1/2" HIGH LABEL, WHERE TWO LINES OF TEXT ARE REQUIRED, USE LABELS 2" HIGH. FOR ELEVATED EQUIPMENT, INCREASE SIZE OF LABELS AND LETTERS TO THOSE APPROPRIATE FOR VIEWING FROM THE FLOOR. LABEL SHALL INDICATE EQUIPMENT OR ITEM NAME/DESIGNATION, SERVICE VOLTAGE, SOURCE OF SERVICE, AND FOR SEPARATELY DERIVED SYSTEM, EQUIPMENT SUPPLIED BY SYSTEM. LABEL THE FOLLOWING EQUIPMENT:
1. SWITCHGEAR, SWITCHGEAR, MOTOR CONTROL CENTERS, PANELBOARDS, AND OVERCURRENT PROTECTION DEVICES WITHIN THEM.
2. CONTACTORS, PUSH-BUTTONS, ENCLOSURES, CABINETS, ENCLOSED SWITCHES AND CONTROLLERS.
3. TRANSFORMERS
4. MONITORING AND CONTROL EQUIPMENT.

SECTION 26 24 16 - PANELBOARDS

- 1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
2. ENCLOSURES: PROVIDE IDENTIFICATION AND LABELING FOR ALL IDENTIFIED CONDITIONS AT INSTALLED LOCATION. BACK BOX AND TRIM DOOR SHALL BE GALVANIZED STEEL, WITH MANUFACTURER'S STANDARD BAKED-ON FINISH APPLIED TO THE TRIM DOOR.
3. TRIM DOOR: PROVIDE TRIM WITH ENTIRE FRONT TRIM HINGED TO BOX AND WITH STANDARD DOOR WITH HINGED TRIM COVER. DOOR SHALL SECURE WITH VAULT-TYPE LATCH WITH TUMBLER LOCK, ALL KEYS TO BE KEPT IN THE MANUFACTURER'S DIRECTORY CARD WITH TRANSPARENT PROTECTIVE COVER ON INSIDE OF DOOR. BUSSING: HARD-DRAWN, 98% CONDUCTIVITY COPPER OF CAPACITY INDICATED. WHERE INDICATED PROVIDE OVERSIZED NEUTRAL BUSSING. PROVIDE EQUIPMENT GROUND BUS OF ADEQUATE SIZE FOR ALL CONDUCTOR TERMINATIONS, BANDED TO BOX, WHERE INDICATED. PROVIDE ISOLATED GROUND BUS OF ADEQUATE SIZE FOR ALL CONDUCTOR TERMINATIONS, INSULATED FROM BOX.
MAINS: CIRCUIT BREAKER OR LUGS ONLY, AS INDICATED. CONDUCTOR CONNECTIONS SHALL BE COMPRESSION TYPE, SUITABLE FOR USE WITH CONDUCTOR MATERIAL AND SIZES. PROVIDE FEED-THROUGH LUGS AT THE OPPOSITE END OF BUS FROM INCOMING MAINS, WHERE INDICATED.
6. INSTALL SERVICE EQUIPMENT LABEL FOR PANELBOARDS WITH ONE OR MORE MAIN SERVICE DISCONNECTING AND OVERCURRENT PROTECTIVE DEVICES.
7. PANEL BOARD SHORT-CIRCUIT CURRENT RATING: RATED FOR SERIES-CONNECTED SYSTEM WITH INTEGRAL OR REMOTE UPSTREAM OVERCURRENT PROTECTIVE DEVICES.
8. BRANCH OVERCURRENT PROTECTIVE DEVICES: BOLT-ON MOLDED-CASE CIRCUIT BREAKERS. PANELBOARD SHALL HAVE MOUNTING BRACKETS, BUS CONNECTIONS, FILLER PLATES, AND NECESSARY APPURTENANCES REQUIRED FOR FUTURE INSTALLATION OF DEVICES WITHOUT DISRUPTING EXISTING DEVICES.
9. MOLDED-CASE CIRCUIT BREAKER (MCCB) WITH TRIP PICKUP LEVELS: CAPABILITY TO MEET AVAILABLE FAULT CURRENTS AND APPLICATION LISTED FOR CONNECT LOAD.
1. MCCB NOT LARGER THAN 400A; THERMAL-MAGNETIC CIRCUIT BREAKER, INVERSE TIME-CURRENT ELEMENT FOR LOW-LEVEL OVERLOADS, AND 200A AND LARGER.
2. MCCB 400A AND LARGER: ELECTRONIC TRIP CIRCUIT BREAKER WITH RMS SENSING, FIELD-REPLACEABLE RATING PLUG OR FIELD-REPLICABLE ELECTRONIC TRIP, AND THE FOLLOWING FIELD-ADJUSTABLE INSTANTANEOUS TRIP SETTINGS: SHORT-CIRCUIT PICKUP LEVELS, LONG- AND SHORT-TIME TIME ADJUSTMENTS, GROUND-FAULT PICKUP LEVEL, TIME DELAY, AND 12T RESPONSE.
3. LUGS: MECHANICAL STYLE, SUITABLE FOR NUMBER, SIZE, TRIP RATINGS, AND CONDUCTOR MATERIALS.
4. MULTI-POLE UNITS ENCLOSED HAVE A SINGLE HOUSING.
5. GROUND-FAULT CIRCUIT INTERRUPTION (GFI), WHERE INDICATED OR REQUIRED, CLASS A GROUND-FAULT PROTECTION (6-MA TRIP) INTEGRALLY MOUNTED RELAY AND TRIP UNIT WITH ADJUSTABLE PICKUP AND TIME DELAY SETTINGS, PUSH-TO-TEST FEATURE, AND GROUND-FAULT INDICATOR.
6. SHUNT TRIP: WHERE INDICATED, 120V TRIP COIL ENERGIZED FROM SEPARATE CIRCUIT SET TO TRIP AT 75% OF RATED VOLTAGE.
7. KEY INTERLOCK: WHERE INDICATED, EXTERNALLY MOUNTED TO PROHIBIT CIRCUIT-BREAKER OPERATION; KEY SHALL BE REMOVABLE ONLY WHEN CIRCUIT BREAKER IS IN OFF POSITION.
8. SET FIELD-ADJUSTABLE CIRCUIT-BREAKER TRIP RANGES AS INDICATED. MOUNTING: HORIZONTAL CABINET PLUMB AND RIGID WITHOUT DISTORTION OF BOX WITH TOP OF TRIM 72" AFF.
11. DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANELBOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF PANELBOARDS AND COMPONENTS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY OTHER CONSTRUCTION. MAINTAIN REQUIRED CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
12. SURFACE-MOUNTED PANELBOARDS: INSTALL ENCLOSURE WITH 1/4" MINIMUM GAP BETWEEN ENCLOSURE AND WALL SURFACE.
13. INSTALL FILLER PLATES IN UNUSED SPACES.
14. WHEN ADDING NEW OVERCURRENT PROTECTION DEVICES TO EXISTING PANELBOARDS, INSTALL DEVICES OF THE SAME INTERRUPTING RATING, STYLE AND FROM THE SAME MANUFACTURER AS THE REMAINDER OF THE PANELBOARD. CREATE A DIRECTORY TO INDICATE INSTALLED CIRCUIT LOADS AFTER BALANCING PANELBOARD LOADS; INCORPORATE FINAL ROOM DESIGNATIONS. USE A COMPUTER OR TYPEWRITER TO CREATE A DIRECTORY.
15. LABELING: LABELING SHALL BE ACCOMMODATED AFTER SUBSTANTIAL COMPLETION, BUT NOT MORE THAN 60 DAYS AFTER FINAL ACCEPTANCE. MEASURE LOAD BALANCING AND MAKE CIRCUIT CHANGES TO BALANCE PHASE LOADS TO LESS THAN 20% PHASE IMBALANCE. MEASURE DURING PERIOD OF NORMAL SYSTEM LOADING. HOWEVER, PERFORM LOAD-BALANCING CIRCUIT CHANGES DURING NORMAL WORKING SCHEDULE AT TIME DIRECTED. AFTER CIRCUIT CHANGES, RECHECK LOADS DURING NORMAL LOAD PERIOD AND RE-BALANCE AS NEEDED. RECORD ALL LOAD READINGS BEFORE AND AFTER CHANGES AND SUBMIT TEST RECORDS.

SECTION 26 27 26 - WIRING DEVICES

- 1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: COOPER, HUBBELL, LEVITON, LUTRON, AND PANDUIT.
2. ELEMENTS TO BE IDENTIFIED: BALLASTS, BALLAST NUMBERS FOR PULLING STANDARD, IF APPLICABLE. IF DEVICE STYLE IS NOT INDICATED BY THE ARCHITECT, THEY SHALL BE "DECORATOR" STYLE OS INDICATED BELOW.
3. CONVENIENCE RECEPTABLES, 125V, 20A; NEMA 5-20R, P&S #26361 (SINGLE), P&S #2635 (DOUBLE).
4. GFI RECEPTABLES, 125V, 20A; NEMA 5-20R, P&S #2094. STRAIGHT BLADE, NON-FEED-THROUGH TYPE, INCLUDING INDICATOR LIGHT THAT IS LIGHTED WHEN DEVICE IS TRIPPED.
5. SNAP SWITCHES, 120/277V, 20A; P&S #2621 (SINGLE POLE), P&S 2622 (TWO POLE), P&S 2623 (THREE WAY), P&S 2624 (FOUR WAY).
6. OCCUPANCY SENSORS
1. WALL-SWITCH SENSORS: HUBBELL #LHMTS1, ADAPTIVE-, DUAL TECHNOLOGY TYPE, 120/277 V, ADJUSTABLE TIME DELAY UP TO 30 MINUTES, 100-DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 1000 SQ. FT.
2. CEILING-MOUNTED SENSORS: HUBBELL #OMNI-DT, ADAPTIVE-, DUAL TECHNOLOGY TYPE, SELF-ADJUSTING TIME DELAY UP TO 30 MINUTES, 360-DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE OF 2000 SQ. FT. PROVIDE HUBBELL #UPI UNIVERSAL VOLTAGE POWER SWITCH PACK TO POWER SENSORS AND CONTROL LIGHTING CIRCUIT.
7. WALL PLATES: SINGLE AND COMBINATION TYPES TO MATCH CORRESPONDING WIRING DEVICES. DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.
1. PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH.
2. FINISHED SPACES: SMOOTH, HIGH-IMPACT THERMOPLASTIC.
3. DAMP AND WET LOCATIONS: CAST ALUMINUM WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN "WET LOCATIONS."
7. DEVICE COLOR: WIRING DEVICE CATALOG NUMBERS IN SECTION TEXT DO NOT DESIGNATE DEVICE COLOR, UNLESS INDICATED OTHERWISE ON ARCHITECTURAL DRAWINGS. PROVIDE THE FOLLOWING COLORS:
1. DEVICES CONNECTED TO NORMAL POWER, MATCH EXISTING OR WHITE, UNLESS OTHERWISE INDICATED OR REQUIRED BY NFPA 70.
2. DEDICATED DEVICE CONNECTED TO NORMAL POWER: ORANGE.
3. MOUNTING HEIGHT: UNLESS INDICATED OTHERWISE, INSTALL DEVICES AT THE MANUFACTURER'S RECOMMENDED HEIGHT FROM THE CENTER OF THE INDICATOR LIGHT HOUSING TO ARCHITECT PRIOR TO INSTALL.
1. GENERAL RECEPTABLES: 18".
2. LIGHTING SWITCHES AND DIMMERS: 42".
3. ABOVE-COUNTER RECEPTABLES: 42" OR 6" ABOVE COUNTER HEIGHT, WHICH IS HIGHER.
9. PROTECTIVE BOXES FREE OF PLASTER, DRYWALL, JOINT COMPOUND, MORTAR, CEMENT, CONCRETE, DUST, PAINT, AND OTHER MATERIAL THAT MAY CONTAMINATE THE RACEWAY SYSTEM, CONDUCTORS, AND CABLES. INSTALL WIRING DEVICES AFTER ALL WALL PREPARATION, INCLUDING PAINTING, IS COMPLETE.
10. REPAIR WORK THAT HAS BEEN IN TEMPORARY USE DURING CONSTRUCTION OR THAT SHOW SIGNS THAT THEY WERE INSTALLED BEFORE BUILDING FINISHING OPERATIONS WERE COMPLETE.
11. WHEN CONDUCTORS LARGER THAN #12 AWG ARE INSTALLED ON 15A OR 20A CIRCUITS, SPLICE #12 AWG PIGTAILS FOR DEVICE CONNECTIONS.
12. INSTALL REMOUNT OUTLET BOXES: REMOVE THE FIBER OR PLASTIC WASHERS USED TO HOLD DEVICE MOUNTING SCREWS IN YOKES, ALLOWING METAL-TO-METAL CONTACT.
13. INSTALL GROUND PIN OF VERTICALLY MOUNTED RECEPTABLES UP, AND ON HORIZONTALLY MOUNTED RECEPTABLES TO THE LEFT.
14. DEVICE PLATES: DO NOT USE OVERSIZED OR EXTRA-DEEP PLATES. REPAIR WALL FINISHES AND REMOUNT OUTLET BOXES WHEN STANDARD DEVICE PLATES DO NOT FIT FLUSH OR DO NOT COVER ROUGH WALL OPENING.
15. ARRANGEMENT OF DEVICES: GROUP ADJACENT SWITCHES UNDER SINGLE, MULTIGANG WALL PLATES.
16. IDENTIFY PANELBOARD AND CIRCUIT NUMBER FROM WHICH SERVED: USE DURABLE WIRE MARKERS OR TAGS INSIDE OUTLET BOXES.
17. TEST CONVENIENCE RECEPTABLES WITH DIGITAL WIRING ANALYZER WITH DIGITAL OR LED INDICATORS.
1. LINE VOLTAGE: ACCEPTABLE RANGE IS 105V TO 132V.
2. LINE CURRENT: UNDER 15A LOAD. A VALUE OF 6% OR HIGHER IS NOT ACCEPTABLE.
3. GFI TRI: TEST FOR TRIPPING VALUES SPECIFIED IN UL 1436 AND UL 943.
4. USING THE TEST PLUG, VERIFY THAT THE DEVICE AND ITS OUTLET BOX ARE SECURELY MOUNTED.

SECTION 26 28 13 - FUSES

- 1. SUBMITTAL: IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE CURRENT-LIMITATION CURVES, TIME-CURRENT COORDINATION CURVES (AVERAGE MELT), CURRENT-LIMITATION CURVES (INSTANTANEOUS PEAK LET THROUGH CURRENT), AND COORDINATION CHARTS AND TABLES FOR EACH TYPE AND RATING OF FUSE.
2. EXTRA MATERIALS: FURNISH EXTRA FUSES; AT LEAST 10% OF QUANTITY INSTALLED FOR EACH TYPE AND SIZE, BUT NOT LESS THAN 3 OF EACH, THAT MATCH PRODUCTS INSTALLED.
3. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: BUSSMANN AND LITTELFUSE.
4. CARTRIDGE FUSES: NONRENEWABLE CARTRIDGE FUSES WITH VOLTAGE RATINGS CONSISTENT WITH CIRCUIT VOLTAGES.
1. SERVICE ENTRANCE: CLASS T, FAST ACTING.
2. FEEDER CIRCUIT: CLASS RK1, TIME DELAY.
3. MOTOR BRANCH CIRCUITS: CLASS RK1, TIME DELAY.
4. OTHER BRANCH CIRCUITS: CLASS RK5, TIME DELAY.
5. CONTROL CIRCUITS: CLASS CC, FAST ACTING.
5. EXAMINE EQUIPMENT, FUSES, AND HOLDERS BEFORE INSTALLATION FOR OVERHEATING, DISCOLORATION, AND DAMAGE. REPLACE FUSES THAT ARE OILY, MOISTURE DAMAGED OR PHYSICALLY DAMAGED. INSTALL FUSES OF SIZES AND WITH CHARACTERISTICS APPROPRIATE FOR EACH PIECE OF EQUIPMENT.
6. INSTALL FUSES IN FUSIBLE DEVICES. ARRANGE FUSES SO RATING IS ADJUSTABLE AND INSTANTANEOUS TRIP SETTING FOR CIRCUIT-BREAKER FRAME SIZES 200A AND LARGER.
7. INSTALL LABELS INDICATING FUSE REPLACEMENT INFORMATION ON INSIDE DOOR OF EACH FUSED SWITCH AND ADJACENT TO EACH FUSE BLOCK, SOCKET, AND HOLDER.
8. SPARE-FUSE CABINET: WALL-MOUNTED STEEL UNIT WITH FULL-LENGTH, RECESSED PHANO-HINGED DOOR AND KEY-CODED CAM LOCK AND PULL SIZED FOR ADEQUATE STORAGE OF SPARE FUSES SPECIFIED WITH 15% SPARE CAPACITY MINIMUM. PROVIDE 2 FUSE PULLERS FOR EACH SIZE OF FUSE FROM FUSE MANUFACTURER.

SECTION 26 28 16 - ENCLOSED SWITCHES AND CIRCUIT BREAKERS

- 1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS INCLUDE, BUT ARE NOT LIMITED TO: EATON CUTLER-HAMMER, GE, SIEMENS, AND SQUARE D.
2. FUSIBLE / NON-FUSIBLE SWITCHES
1. FUSIBLE SWITCH - HEAVY DUTY, SINGLE THROW, 600V; UL 98 AND NEMA 3R.
2. NON-FUSIBLE SWITCH - HEAVY DUTY, SINGLE THROW, 600V; UL 98 AND NEMA 3R. HANDLE IS POWER RATED, LOCKABLE HANDLE WITH CAPABILITY TO ACCEPT THREE PADLOCKS, AND INTERLOCKED WITH COVER IN CLOSED POSITION.
3. EQUIPMENT GROUND KIT: INTERNALLY MOUNTED AND LABELED FOR COPPER AND ALUMINUM GROUND CONDUCTORS.
4. NEUTRAL KIT: INTERNALLY MOUNTED, INSTALLED, CAPABLE OF BEING GROUNDING AND BANDED; LABELED FOR COPPER AND ALUMINUM NEUTRAL CONDUCTORS.
5. SERVICE-RATED SWITCHES: WHERE APPLICABLE, LABELED FOR USE AS SERVICE EQUIPMENT.
6. DRAWINGS INDICATE DIMENSIONS FOR SELECTED PANELBOARDS INCLUDING CLEARANCES. COORDINATE LAYOUT AND INSTALLATION OF SWITCHES AND BREAKERS WITH OTHER CONSTRUCTION THAT PENETRATES WALLS OR IS SUPPORTED BY THEM. MAINTAIN REQUIRED WORKSPACE CLEARANCES AND REQUIRED CLEARANCES FOR EQUIPMENT ACCESS DOORS AND PANELS.
7. SWITCHES AND CIRCUIT BREAKERS TO BE INSTALLED WITH TOPS AT UNIFORM HEIGHT UNLESS OTHERWISE INDICATED.
8. OCCUPY FUSES IN FUSIBLE DEVICES.

SECTION 26 51 00 - INTERIOR LIGHTING

- 1. SUBMITTAL: IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE FOR EACH TYPE OF LIGHTING FIXTURE, ARRANGED IN ORDER OF FIXTURE DESIGNATION, THE FOLLOWING:
1. MANUFACTURER, MODEL NUMBER, AND STATUS AND ADDRESS.
2. BALLAST, INCLUDING MANUFACTURER'S DATA FOR LAMPS.
3. LIFE, OUTPUT (LUMENS, CCT, ANDCRI), AND ENERGY-EFFICIENCY DATA FOR LAMPS.
4. PHOTOMETRIC DATA BASED ON LABORATORY TESTS OF EACH LIGHTING FIXTURE TYPE, BY A CERTIFIED MANUFACTURER'S LABORATORY.
5. SPECIAL WARRANTY PERIODS: 10 YEARS FAR EMERGENCY LIGHTING UNIT BATTERIES AND 7 YEARS FOR EMERGENCY FLOURESCENT BALLAST AND SELF-POWERED EXIT SIGN BATTERIES. WARRANTIES SHALL BE FROM DATE OF FINAL ACCEPTANCE. FULL WARRANTY SHALL APPLY FOR FIRST YEAR, AND PRORATED WARRANTY FOR THE REMAINING YEARS.
SUBJECT TO COMPLIANCE WITH REQUIREMENTS, AVAILABLE PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, PRODUCT(S) INDICATED ON THE LIGHTING FIXTURE SCHEDULE.
4. DIFFUSERS, LENSES AND GLOBES: ACRYLIC SHALL BE 1/8" MINIMUM, 100 % VIRGIN UV STABILIZED ACRYLIC PLASTIC WITH A HIGH RESISTANCE TO YELLOWING AND OTHER CHANGES DUE TO AGING, EXPOSURE TO HEAT, AND UV RADIATION. GLASS SHALL BE ANNEALED CRYSTAL GLASS UNLESS OTHERWISE NOTED.
5. FACTORY-APPLIED LABELS: INDICATE RECOMMENDED LAMPS AND BALLASTS, INCLUDING LAMP TYPE AND WATTAGE AND BALLAST TYPE. LABELS SHALL BE LOCATED WHERE THEY WILL BE DEADLY VISIBLE TO SERVICE PERSONNEL, BUT NOT SEEN FROM NORMAL VIEWING ANGLES WHEN LAMPS ARE IN PLACE.
6. LIGHT FIXTURE BALLASTS: ELECTRONIC INSTANT-START TYPE, DESIGNED FOR FULL LIGHT OUTPUT OF THE TYPE AND QUANTITY OF LAMPS SERVED. THE BALLAST FACTOR SHALL BE 0.9 OR HIGHER AND THE POWER FACTOR SHALL BE 0.98 OR HIGHER WITH LESS THAN 10% TOTAL HARMONIC DISTORTION. WHEN SERVING MULTIPLE LAMPS, BALLAST SHALL BE CONNECTED TO MAINTAIN FULL LIGHT OUTPUT ON SURVIVING LAMPS IF ONE OR MORE LAMPS FAIL.
7. BALLASTS: PROGRAMMED START FIXTURES: PROGRAMMED START BALLAST.
2. BALLASTS FOR LOW-TEMPERATURE ENVIRONMENTS (0 DEG F AND HIGHER): ELECTRONIC TYPE RATED FOR 0 DEG F STARTING AND OPERATING TEMPERATURE WITH INDICATED LAMP TYPES.
7. COMPACT FLOURESCENT BALLASTS: ELECTRONIC PROGRAMMED RAPID-START TYPE, DESIGNED FOR USE WITH LAMPS SERVED BY QUANTITY OF QUANTITY OF QUANTITY OF QUANTITY OF QUANTITY OF LAMP END-OF-LIFE DETECTION AND SHUTDOWN CIRCUIT AND AUTOMATIC LAMP STARTING AFTER LAMP REPLACEMENT. THE BALLAST FACTOR SHALL BE 0.95 OR HIGHER AND THE POWER FACTOR SHALL BE 0.98 OR HIGHER WITH LESS THAN 20% TOTAL HARMONIC DISTORTION.
8. EMERGENCY FLOURESCENT POWER UNIT: INTERNAL, SELF-CONTAINED, MODULAR, BATTERY-INVERTER UNIT FACTORY MOUNTED WITHIN LIGHTING FIXTURE BODY AND COMPATIBLE WITH BALLAST. NIGHTLIGHT / EMERGENCY OPERATION SHALL BE ONE LAMP CONTINUOUSLY AT A MINIMUM OUTPUT OF 1100 LUMENS. CONNECT UNSWITCHED CIRCUIT TO BATTERY-INVERTER UNIT AND SWITCHED CIRCUIT TO FIXTURE BALLAST. PROVIDE TEST BUTTON AND INDICATOR LIGHT WHERE VISIBLE AND ACCESSIBLE WITHOUT OPENING FIXTURE OR ENTERING CEILING SPACE. TEST BUTTON SHALL SIMULATE LOSS OF NORMAL POWER AND DEMONSTRATE UNIT OPERABILITY. INDICATOR LIGHT SHALL BE LED AND SHALL INDICATE NORMAL POWER ON. 90 MINUTE BATTERY SHALL BE SEALED, MAINTENANCE-FREE, NICKEL-CADMIUM TYPE WITH FULLY AUTOMATIC, SOLID STATE, CONSTANT-CURRENT TYPE CHARGER WITH SEALED POWER TRANSFER RELAY. PROVIDE FACTORY-INSTALLED INTEGRAL SELF-TEST DEVICE TO AUTOMATICALLY INITIATE CODE-REQUIRED TEST OF UNIT EMERGENCY OPERATION AT REQUIRED INTERVALS. TEST FAILURE IS ANNUNCIATED BY AN INTEGRAL AUDIBLE ALARM AND A FLASHING RED LED. SIGN SHALL AUTOMATICALLY ENERGIZE LAMP FROM BATTERY WHEN CIRCUIT VOLTAGE DROPS TO 80% OF NOMINAL VOLTAGE OR BELOW. WHEN NORMAL VOLTAGE IS RESTORED, BATTERY IS AUTOMATICALLY RECHARGED AND FLOATED ON CHARGER.
9. EXIT SIGNS: SELF-POWERED (BATTERY TYPE) SIGN WITH 50,000 HOURS LAMP LIFE SOURCE, AND BATTERY CHARGER IN A SELF-CONTAINED POWER PACK. 90 MINUTE BATTERY SHALL BE SEALED, MAINTENANCE-FREE, NICKEL-CADMIUM TYPE WITH FULLY AUTOMATIC, SOLID STATE, CONSTANT-CURRENT TYPE CHARGER WITH SEALED POWER TRANSFER RELAY. PROVIDE FACTORY-INSTALLED INTEGRAL SELF-TEST DEVICE TO AUTOMATICALLY INITIATE CODE-REQUIRED TEST OF UNIT EMERGENCY OPERATION AT REQUIRED INTERVALS. TEST FAILURE IS ANNUNCIATED BY AN INTEGRAL AUDIBLE ALARM AND A FLASHING RED LED. SIGN SHALL AUTOMATICALLY ENERGIZE LAMPS FROM BATTERY WHEN CIRCUIT VOLTAGE DROPS TO 80% OF NOMINAL VOLTAGE OR BELOW. WHEN NORMAL VOLTAGE IS RESTORED, BATTERY IS AUTOMATICALLY RECHARGED AND FLOATED ON CHARGER.
10. LAMPS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MEET THE REQUIREMENTS OF THE ILLINOIS ILLINOIS, ILLINOIS, AND OSRAM-SYLVANIA. PROVIDE LAMPS WITH MINIMUM PERFORMANCE AS INDICATED IN THE LIGHTING FIXTURE SCHEDULE. LAMP COLOR, BEAM ANGLE, WATTAGE AND OTHER PERFORMANCE CHARACTERISTIC SHALL BE CONFIRMED WITH BUILDING STANDARDS AND EXISTING FIXTURES IN THE AREA.
11. SET LUMINAIRES LEVEL, PLUMB, AND SQUARE WITH CEILINGS AND WALLS UNLESS OTHERWISE INDICATED. INSTALL LUMINAIRE AND CIRCUIT NUMBER FROM WHICH SERVED.
12. LAY-IN CEILING FIXTURES MAY USE THE GRID AS TO SUPPORT ELEMENT. ADDITIONALLY, INSTALL CEILING SUPPORT SYSTEM RODS OR WIRES, INDEPENDENT OF THE CEILING SUSPENSION DEVICES, FOR EACH FIXTURE. LOCATE NOT MORE THAN 6" FROM LIGHTING FIXTURE CORNERS.
13. FIXTURES OF SIZES LESS THAN CEILING GRID: INSTALL AS INDICATED ON REFLECTED CEILING PLAN OR IN THE LIGHTING FIXTURE SCHEDULE. INSTALLATION IS COMPLETE.
14. TEMPORARY LIGHTING: IF IT IS NECESSARY, AND APPROVED BY ARCHITECT, TO USE PERMANENT LUMINAIRE FOR TEMPORARY LIGHTING, INSTALL AND ENERGIZE THE MINIMUM NUMBER OF LUMINAIRES NECESSARY. WHEN CONSTRUCTION IS SUFFICIENTLY COMPLETE, REMOVE THE TEMPORARY LUMINAIRES, DISASSEMBLE, CLEAN THOROUGHLY, INSTALL NEW LAMPS, AND REINSTALL.
15. TEST EMERGENCY LIGHTING BY INTERRUPTING POWER SUPPLY TO DEMONSTRATE PROPER OPERATION. VERIFY TRANSFER FROM NORMAL POWER TO BATTERY AND RETRANSFER TO NORMAL.
16. ADJUST ALL AIMABLE LUMINAIRES IN THE PRESENCE OF ARCHITECT/OWNER. ADDITIONALLY, WHEN REQUESTED WITHIN 3 MONTHS OF DATE OF FINAL ACCEPTANCE, PROVIDE ON-SITE ASSISTANCE IN ADJUSTING AIMABLE LUMINAIRES TO SUIT ACTUAL OCCUPIED CONDITIONS.

SECTION 28 31 11 - DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

- 1. SYSTEM DESCRIPTION: NON-CODED ADDRESSABLE SYSTEM, WITH AUTOMATIC SENSITIVITY CONTROL OF CERTAIN SMOKE DETECTORS AND MULTIPLEXED SIGNAL TRANSMISSION, DEDICATED TO THE SYSTEM.
2. SUBMITTALS SHALL BE PREPARED BY PERSONS TRAINED AND CERTIFIED BY MANUFACTURER AND LICENSED BY AUTHORITIES HAVING JURISDICTION. PRIOR TO SUBMISSION TO THE ENGINEER, THE SUBMITTALS SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION. IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE THE FOLLOWING:
1. FLOOR PLANS TO INDICATE FINAL DEVICE AND APPLIANCE LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE.
2. INSTALLATION DETAILS, VOLTAGE DROP CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS, BATTERY-SIZE CALCULATIONS,
3. DRAWINGS SHOWING THE LOCATION OF EACH DETECTOR AND RATINGS OF EACH. SPACING AND SPACING SHALL BE IN ACCORDANCE WITH NFPA 72.
4. COMPLY WITH RECOMMENDATIONS IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER IN NFPA 72.
5. QUALIFICATION DATA FOR INSTALLER.
3. OBTAIN FIRE-ALARM SYSTEM FROM SINGLE SOURCE FROM SINGLE MANUFACTURER.
4. RECORD PARTS IN THE SYSTEM MANUAL ACCORDING TO NFPA 72 BY AN NRTL SYSTEMS OPERATOR'S DESCRIPTION.
1. FIRE-ALARM SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND SYSTEMS:
1. MANUAL STATIONS.
2. DUCT SMOKE DETECTORS.
3. VERIFIED AUTOMATIC ALARM OPERATION OF SMOKE DETECTORS.
4. AUTOMATIC SPRINKLER SYSTEM WATER FLOW.
5. HEAT DETECTORS IN ELEVATOR SHAFT AND PIT.
2. FIRE-ALARM SIGNAL SHALL INITIATE THE FOLLOWING ACTIONS:
1. CONTINUOUSLY OPERATE ALARM NOTIFICATION APPLIANCES.
2. TRANSMIT ALARM SIGNAL TO FIRE-ALARM CONTROL UNIT AND REMOTE ANNUNCIATORS, IF APPLICABLE.
3. TRANSMIT AN ALARM SIGNAL TO THE REMOTE ALARM RECEIVING STATION.
4. UNLOCK ELECTRIC DOOR LOCKS IN DESIGNATED EGRESS PATHS.
5. ACTIVATE VOICE/ALARM COMMUNICATION SYSTEM.
6. INITIATE NOTIFICATION APPLIANCE, AND AIR-CONDITIONING EQUIPMENT CONTROLS TO FIRE-ALARM MODE.
7. CLOSE SMOKE DAMPERS IN AIR DUCTS OF DESIGNATED AIR-CONDITIONING DUCT SYSTEMS.
8. ACTIVATE EMERGENCY SHUTOFFS FOR GAS AND FUEL SUPPLIES.
9. RECORD PARTS IN THE SYSTEM MANUAL WITH ONE AT LEAST TWO 3/4" METAL CHANNELS SPANNING AND SECURED TO CEILING TEES.
3. SUPERVISORY SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
1. VALVE SUPERVISORY SWITCH.
2. SYSTEM TROUBLE SIGNAL INITIATION SHALL BE BY ONE OR MORE OF THE FOLLOWING DEVICES AND ACTIONS:
1. OPEN CIRCUITS, SHORTS, AND GROUNDS IN DESIGNATED CIRCUITS.
2. OPENING, TAMPERING WITH, OR REMOVING ALARM-INITIATING AND SUPERVISORY SIGNAL-INITIATING DEVICES.
3. SIGNALING DEVICES AT FIRE-ALARM CONTROL UNIT.
4. GROUND OR A SINGLE BREAK IN FIRE-ALARM CONTROL UNIT INTERNAL CIRCUITS.
5. ABNORMAL AC VOLTAGE AT FIRE-ALARM CONTROL UNIT.
6. BREAK IN STANDBY BATTERY CIRCUITRY.
7. FAILURE OF BATTERY CHARGING.
5. SYSTEM TROUBLE AND SUPERVISORY SIGNAL ACTIONS: INITIATE NOTIFICATION APPLIANCE AND ANNUNCIATE AT FIRE-ALARM CONTROL UNIT AND REMOTE ANNUNCIATORS, IF APPLICABLE. RECORD THE EVENT ON SYSTEM PRINTER.

- 6. FIRE ALARM CONTROL UNIT: FIELD-PROGRAMMABLE, MICROPROCESSOR-BASED, MODULAR, POWER-LIMITED DESIGN WITH ELECTRONIC MODULES, COMPLYING WITH UL 864 AND LISTED AND LABELED BY AN NRTL. ADDRESSABLE INITIATION DEVICES THAT COMPLY WITH UL 864 SHALL BE INSTALLED IN THE FOLLOWING MANNER:
1. ADDRESSABLE INITIATION DEVICES INCLUDING ANNUNCIATION AND SUPERVISION, DISPLAY ALARM, SUPERVISORY, AND COMPONENT STATUS MESSAGES AND THE PROGRAMMING AND CONTROL MENU.
2. INITIATING DEVICE, NOTIFICATION APPLIANCE, AND SIGNALING LINE CIRCUITS: PROVIDE STYLE E SIGNALING LINE CIRCUITS. INSTALL NO MORE THAN 50 ADDRESSABLE DEVICES ON EACH SIGNALING LINE CIRCUIT.
3. TRANSMIT TO THE REMOTE ALARM RECEIVING STATION: DIGITAL ALARM COMMUNICATOR TRANSMITTER AUTOMATICALLY TRANSMITS ALARM, SUPERVISORY, AND TROUBLE SIGNALS TO 0 REMOTE ALARM STATION. IF SERVICE ON THE LINE IS INTERRUPTED FOR LONGER THAN 45 SECONDS, TRANSMITTER SHALL INITIATE A LOCAL TROUBLE SIGNAL AND TRANSMIT THE SIGNAL INDICATING LOSS OF TELEPHONE LINE TO THE REMOTE ALARM RECEIVING STATION OF THE REMAINING LINE. TRANSMITTER SHALL AUTOMATICALLY REPORT TELEPHONE SERVICE RESTORATION TO THE CENTRAL STATION. THE DIGITAL DATA TRANSMISSION SHALL INCLUDE ADDRESS OF THE ALARM-INITIATING DEVICE, ADDRESS OF THE SUPERVISORY SIGNAL, ADDRESS OF THE TROUBLE-INITIATING DEVICE, LOSS OF AC POWER, LOW BATTERY, ABNORMAL LOW BATTERY, LOW BATTERY, LOW BATTERY, AND COMMUNICATION BUS FAILURE. SECONDARY POWER SHALL BE BY MEANS OF INTEGRAL RECHARGEABLE BATTERY AND AUTOMATIC CHARGER. UNIT SHALL CONDUCT SELF-TEST EVERY 24 HOURS AND TRANSMIT REPORT TO CENTRAL STATION.
4. POWER: 24V DC OBTAINED FROM 120V AC SERVICE AND A POWER-SUPPLY MODULE, INITIATING DEVICES, NOTIFICATION APPLIANCES, SIGNALING LINES, TROUBLE SIGNALS, SUPERVISORY SIGNALS SHALL BE POWERED BY 24V-DC SOURCE. ALARM CURRENT DRAW OF ENTIRE FIRE-ALARM SYSTEM SHALL NOT EXCEED 80 PERCENT OF THE POWER-SUPPLY MODULE RATING.
5. BATTERY CHARGER, AND AUTOMATIC TRANSFER SWITCH: BATTERIES SHALL BE SEALED LEAD CALCIUM.
7. MANUAL FIRE-ALARM BOXES: COMPLY WITH UL 38. BOXES SHALL BE FINISHED IN RED WITH MOLDED, RAISED-LETTER OPERATING INSTRUCTIONS IN CONTRASTING COLOR. SHALL SHOW VISUAL INDICATION OF OPERATION; AND SHALL BE MOUNTED ON RECESSED OUTLET BOX. DOUBLE-ACTION MECHANISM REQUIRING TWO ACTIONS TO INITIATE AN ALARM, PULL-LEVER TYPE; WITH INTEGRAL ADDRESSABLE MODULE ARRANGED TO COMMUNICATE MANUAL-STATION STATUS (NORMAL, ALARM, OR TROUBLE) TO FIRE-ALARM CONTROL UNIT. STATION RESET SHALL BE BY KEY OR WRENCH OPERATED SWITCH.
8. VISUAL NOTIFICATION APPLIANCE: NOTIFICATION APPLIANCE SHALL BE MOUNTED ON RECESSED TERMINALS FOR SYSTEM CONNECTIONS, WHERE INDICATED PROVIDE FACTORY-INTEGRATED AUDIBLE AND VISIBLE DEVICES IN A SINGLE-MOUNTING ASSEMBLY. UNITS SHALL MATCH THE EXISTING APPLIANCES IN STYLE, FINISH, AND COLOR. FOR UNITS WITH GUARD TO PREVENT PHISH DAMAGE, LIGHT OUTPUT RATINGS SHALL BE DETERMINED WITH TESTS IN PLACE.
9. VISIBLE NOTIFICATION APPLIANCES: XENON STROBE LIGHTS COMPLY WITH UL 1971, WITH CLEAR OR NOMINAL WHITE POLYCARBONATE LENS. THE WORD "FIRE" IS ENGRAVED IN MINIMUM 1" HIGH LETTERS ON THE FACELATE. STROBES SHALL BE 15/30/75/10 CD, FIELD SELECTABLE. IF NOT INDICATED OTHERWISE, RATED LIGHT OUTPUT SHOULD BE SET TO 110 CD. FLASHING RATE SHALL BE 1.0 HZ.
10. UNITS: INSTALL ON CEILING OR ON WALL ADJACENT TO EACH ALARM HORN AND AT LEAST 6" BELOW THE CEILING.
11. AUDIBLE HORNS: ELECTRIC-VIBRATING-POLARIZED TYPE, 24V DC, WITH PROVISION FOR HOUSING THE OPERATING MECHANISM BEHIND A GRILLE. COMPLY WITH UL 464. HORNS SHALL PRODUCE A SOUND PRESSURE LEVEL OF 90 DBA, MEASURED 10' FROM THE HORN, USING THE CODED SIGNAL PRESCRIBED IN UL 464 TEST PROTOCOL. INSTALL ON CEILING OR ON WALL NOT LESS THAN 6" BELOW THE CEILING. INSTALL BELLS AND HORNS ON FLUSH-MOUNTED BOCK BOXES WITH THE DEVICE-OPERATING MECHANISM CONCEALED BEHIND A GRILLE.
12. ANNUNCIATOR: ANNUNCIATOR FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT FOR ALARM, SUPERVISORY, AND TROUBLE INDICATIONS. MANUAL SWITCHING FUNCTIONS SHALL MATCH THOSE OF FIRE-ALARM CONTROL UNIT, INCLUDING ACKNOWLEDGING, SILENCING, RESETTING, AND TESTING.
13. ADDRESSABLE INTERFACE DEVICE: MICROELECTRONIC MONITOR MODULE, NRTL LISTED FOR USE IN FIRE-ALARM SYSTEMS. THE DEVICE SHALL BE INSTALLED IN A WETTED APPLICATIONS WITH NORMALLY OPEN CONTACTS. INTEGRAL RELAY SHALL BE CAPABLE OF PROVIDING A DIRECT SIGNAL TO ELEVATOR CONTROLLER TO INITIATE ELEVATOR RECALL AND/OR TO CIRCUIT-BREAKER SHUNT TRIP FOR POWER SHUTDOWN.
14. WHERE SUBJECT TO DAMAGE OR ABUSE, PROVIDE FACTORY-FABRICATED WELDED WIRE FENCE AT LEAST 24 INCHES ABOVE FINISHED FLOOR.
15. SURFACE-MOUNT CONTROL UNITS(S) AND ANNUNCIATOR(S) WITH TOPS OF CABINETS NOT MORE THAN 72 INCHES ABOVE FINISHED FLOOR.
16. VERIFY THAT NRTL LISTED FOR USE WITH FIRE-ALARM SYSTEM IN THIS SECTION BEFORE MAKING CONNECTIONS.
17. GROUND FIRE-ALARM CONTROL UNIT AND ASSOCIATED CIRCUITS; COMPLY WITH IEEE 1100. INSTALL A GROUND WIRE FROM MAIN SERVICE GROUND TO FIRE-ALARM CONTROL UNIT.
18. TESTS SHALL BE WITNESSED BY AUTHORITIES HAVING JURISDICTION AND OWNER'S REPRESENTATIVE.
19. ENGAGE A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE TO INSPECT COMPONENTS, ASSEMBLIES, AND EQUIPMENT INSTALLATIONS, INCLUDING CONNECTIONS, AND TO ASSIST IN TESTING.
1. CONDUCT VISUAL INSPECTION PRIOR TO TESTING.
2. INSPECTION SHALL BE BASED ON COMPLETED RECORD DRAWINGS AND SYSTEM DOCUMENTATION THAT IS REQUIRED BY NFPA 72 IN ITS "COMPLETION DOCUMENTS, PREPARATION" TABLE IN THE "DOCUMENTATION" SECTION OF THE "FUNDAMENTALS OF FIRE ALARM SYSTEMS" CHAPTER.
3. COMPLY WITH "VISUAL INSPECTION FREQUENCIES" TABLE IN THE "INSPECTION" SECTION OF THE "INSPECTION, TESTING AND MAINTENANCE" CHAPTER IN NFPA 72; RETAIN THE "INITIAL ACCEPTANCE" COLUMN AND LIST ONLY THE INSTALLED COMPONENTS.
4. SYSTEM TESTING: COMPLY WITH "TEST METHODS" TABLE IN THE "TESTING" SECTION OF THE "INSPECTION, TESTING AND MAINTENANCE" CHAPTER IN NFPA 72.
5. TEST OPERATING MODES: VERIFY THE OPERATING MODE ACCORDING TO MANUFACTURER'S WRITTEN INSTRUCTIONS.
6. FIRE-ALARM SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.
7. PREPARE TEST AND INSPECTION REPORTS.

SECTION 28 31 11 - DIGITAL, ADDRESSABLE FIRE ALARM SYSTEM

- 1. SYSTEM DESCRIPTION: NON-CODED ADDRESSABLE SYSTEM, WITH AUTOMATIC SENSITIVITY CONTROL OF CERTAIN SMOKE DETECTORS AND MULTIPLEXED SIGNAL TRANSMISSION, DEDICATED TO FIRE-ALARM SERVICE ONLY.
2. SUBMITTALS SHALL BE PREPARED BY PERSONS TRAINED AND CERTIFIED BY MANUFACTURER AND LICENSED BY AUTHORITIES HAVING JURISDICTION. PRIOR TO SUBMISSION TO THE ENGINEER, THE SUBMITTALS SHALL BE APPROVED BY AUTHORITIES HAVING JURISDICTION. IN ADDITION TO THE REQUIREMENTS OF DIVISION 1 PROVIDE THE FOLLOWING:
1. FLOOR PLANS TO INDICATE FINAL DEVICE AND APPLIANCE LOCATIONS SHOWING ADDRESS OF EACH ADDRESSABLE DEVICE.
2. INSTALLATION DETAILS, VOLTAGE DROP CALCULATIONS FOR NOTIFICATION APPLIANCE CIRCUITS, BATTERY-SIZE CALCULATIONS,
3. DRAWINGS SHOWING THE LOCATION OF EACH DETECTOR AND RATINGS OF EACH. SPACING AND SPACING SHALL BE IN ACCORDANCE WITH NFPA 72.
4. COMPLY

