THEIL ROAD PROPERTIES, LP

48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR 2002 RECTOR ROAD PARAGOULD, ARKANSAS

DESIGN TEAM

ARCHITECT
STUDIO 6 ARCHITECTS
1120 GARRISON AVE, SUITE 1A
FORT SMITH, ARKANSAS
479.782.4085

CIVIL ENGINEER
CRAFTON, TULL & ASSOCIATES, INC.
10825 FINANCIAL CENTRE PARKWAY, STE 300
LITTLE ROCK, ARKANSAS
501.664.3245

STRUCTURAL ENGINEER
BEATTY ENGINEERING, PLLC
2411 FAYETTEVILLE RD, SUITE B
VAN BUREN, ARKANSAS
479.474.4412

MECHANICAL / ELECTRICAL ENGINEER
HP ENGINEERING, INC.
5214 WEST VILLAGE PARKWAY, SUITE 120
ROGERS, ARKANSAS
479.899.6370

BUILDING DATA

APPLICABLE CODES:

BUILDING CODE: 2012 ARKANSAS FIRE PREVENTION CODE, VOLUME I & 2

LIFE SAFETY CODE: NFPA 101 LIFE SAFETY CODE - 2012

ELECTRICAL CODE: NATIONAL ELECTRICAL CODE - 2014

PLUMBING CODE: 2006 ARKANSAS PLUMBING CODE

MECHANICAL CODE: 2010 ARKANSAS MECHANICAL CODE

FUEL GAS CODE: 2006 ARKANSAS FUEL GAS CODE

ACCESSIBILITY CODE: 2009 ICC ANSI A117.1 as adopted by the AFPC Vol. II.

LOCATION MAP

LOCATION MAP

DWELLING UNIT TABULATION - NET RENTABLE AREA CALCULATIONS

BUILDING DESIGNATION	UNIT DESIGNATION	UNIT TYPE	UNITS PER BUILDING	NUMBER OF BUILDINGS	TOTAL UNITS	NET AREA PER UNIT	NET AREA PER BUILDING	TOTAL NET AREA	DRAWING SHEET REFRENCE
1A	1FLo8	1 BEDROOM ADAPTABLE	1	2	2	597	1,194	2,388	A1A2.1
	1FLhc8	1 BEDROOM ACCESSIBLE	1		2	597			A1A2.1
1B	1FLo8	1 BEDROOM ADAPTABLE	2	11	22	597	1,194	13,134	A1B2.1
2A	2FLo8	2 BEDROOM ADAPTABLE	1	2	2	974	1,948	3,896	A2A2.1
	2FLhc8	2 BEDROOM ACCESSIBLE	1		2	974			A2A2.1
2B	2FLo8	2 BEDROOM ADAPTABLE	2	9	18	974	1,948	17,532	A2B2.1
					48			36,950	

NON-DWELLING UNIT TABULATION - NET AREA CALCULATIONS

BUILDING DESIGNATION	UNIT DESIGNATION	UNIT TYPE	UNITS PER BUILDING	NUMBER OF BUILDINGS	TOTAL UNITS	NET AREA PER UNIT	NET AREA PER BUILDING	TOTAL NET AREA	DRAWING SHEET REFRENCE
3A	--	LAUNDRY/ SAFE ROOM/ COMMUNIT ROOM	1	1	1	1,209	1,209	1,209	A3A2.1
					TOTAL NET AREA (ALL BUILDINGS)			38,159	

DWELLING UNIT TABULATION - GROSS AREA CALCULATIONS

BUILDING DESIGNATION	UNIT DESIGNATION	UNIT TYPE	UNITS PER BUILDING	NUMBER OF BUILDINGS	TOTAL UNITS	GROSS AREA PER UNIT	GROSS AREA PER BUILDING	TOTAL GROSS AREA	DRAWING SHEET REFRENCE
1A	1FLo8	1 BEDROOM ADAPTABLE	1	2	2	959	1,918	3,836	A1A2.1
	1FLhc8	1 BEDROOM ACCESSIBLE	1		2	959			A1A2.1
1B	1FLo8	1 BEDROOM ADAPTABLE	2	11	22	959	1,918	21,098	A1B2.1
2A	2FLo8	2 BEDROOM ADAPTABLE	1	2	2	1,335	2,670	5,340	A2A2.1
	2FLhc8	2 BEDROOM ACCESSIBLE	1		2	1,335			A2A2.1
2B	2FLo8	2 BEDROOM ADAPTABLE	2	9	18	1,335	2,670	24,030	A2B2.1
					48			54,304	

NON-DWELLING UNIT TABULATION - GROSS AREA CALCULATIONS

BUILDING DESIGNATION	UNIT DESIGNATION	UNIT TYPE	UNITS PER BUILDING	NUMBER OF BUILDINGS	TOTAL UNITS	GROSS AREA PER UNIT	GROSS AREA PER BUILDING	TOTAL GROSS AREA	DRAWING SHEET REFRENCE
3A	--	LAUNDRY/ SAFE ROOM/ COMMUNIT ROOM	1	1	1	1,209	1,209	1,209	A3A2.1
					TOTAL GROSS AREA (ALL BUILDINGS)			55,513	

INDEX OF DRAWINGS

OWNER
THEIL ROAD PROPERTIES, LP
612 E. Canal Street, Paragould, Arkansas 72450 PHONE (870) 239-8084

(OWNER'S SIGNATURE) *(DATE)*

ARCHITECT
STUDIO 6 ARCHITECTS
1120 Garrison Avenue, Suite 1A, Fort Smith, Arkansas 72901 PHONE (479) 782-4085

(ARCHITECT'S SIGNATURE) *(DATE)*

GENERAL CONTRACTOR
CRAIG CUSTOM CONSTRUCTION, LLC
13200 W. Markham Street, Suite 104, Little Rock, Arkansas 72211 PHONE (501) 255-6688

(CONTRACTOR'S SIGNATURE) *(DATE)*

CONTRACTOR'S BONDING COMPANY
NORTH AMERICAN SPECIALTY INSURANCE COMPANY
1200 Main Street, Suite 800, Kansas City, Missouri 64105-2478

(CONTRACTOR'S BONDING COMPANYSIGNATURE) *(DATE)*

MORTGAGE COMPANY
PRUDENTIAL HUNTOON PAIGE
6805 Morrison Blvd, Suite 385, Charlotte, North Carolina 28211

(MORTGAGE COMPANY'S SIGNATURE) *(DATE)*

CERTIFICATION

"I hereby certify that these plans and specifications have been prepared by me, or under my supervision. I further certify that to the best of my knowledge these plans and specifications are required by law and in compliance with the Arkansas Fire Prevention Code for the State of Arkansas.

Signature

REGISTERED ARCHITECT JAMES M REDDICK No. 1237 ARKANSAS

Jan. 29, 2021

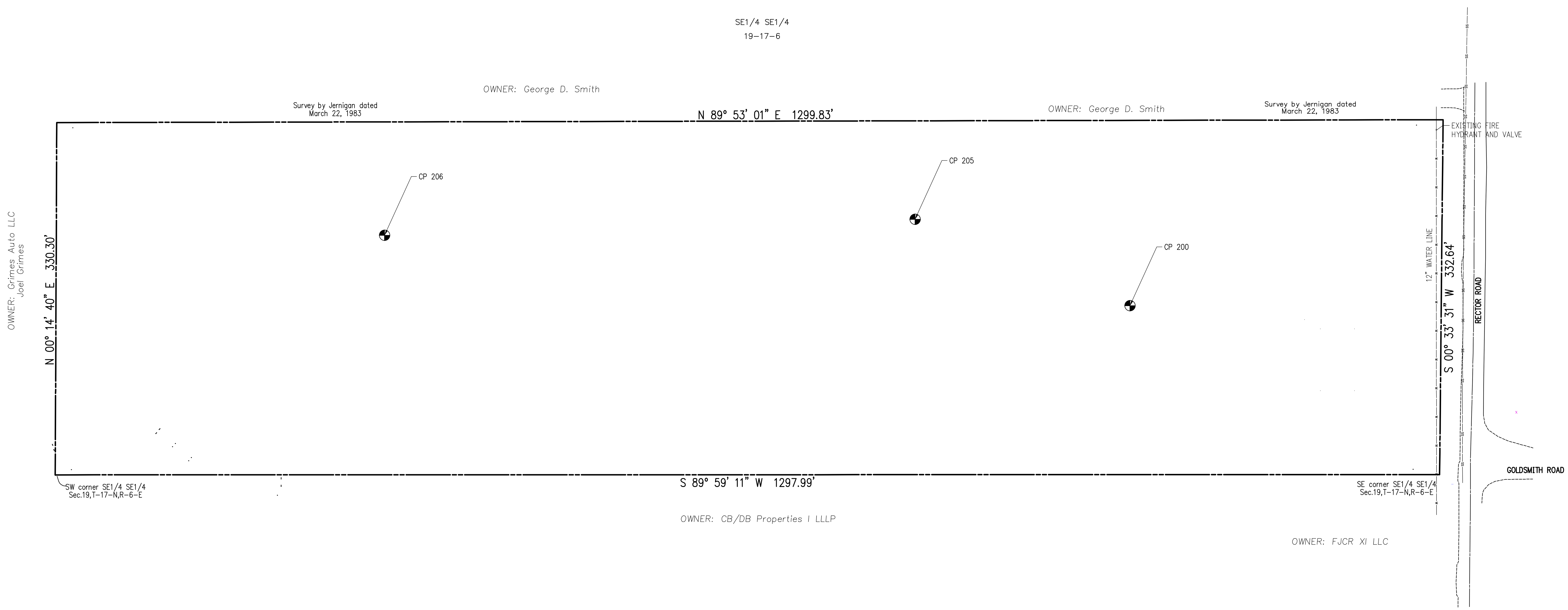
DATE: 01/29/2021

JOB NO.: 20-003

SET NO.

STUDIO 6 ARCHITECTS EST. 1919
1120 Garrison Avenue
Suite 1A
Fort Smith, AR 72901
479.782.4085
www.GoStudio6.com

OWNER
THEIL ROAD PROPERTIES, LP
PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS



POINT TABLE				
POINT #	DESCRIPTION	NORTHING	EASTING	ELEVATION
200	TEMPORARY CONTROL POINT	640092.10	1762557.72	283.34
205	TEMPORARY CONTROL POINT	640173.05	1762356.21	283.75
206	TEMPORARY CONTROL POINT	640158.10	1761858.66	282.96

NOTE

ONLY THE CONTROL POINTS, COORDINATE VALUES, AND ELEVATIONS SHOWN ON THIS SHEET SHALL BE USED ON THIS PROJECT. CRAFTON, TULL & ASSOCIATES SHALL NOT BE RESPONSIBLE FOR ANY CONSEQUENCES OF USING CONTROL POINTS, COORDINATE VALUES OR ELEVATIONS ESTABLISHED OR DERIVED FROM OTHER SOURCES. CRAFTON, TULL & ASSOCIATES, AT ITS SOLE DISCRETION, MAY ALLOW THE USE OF ALTERNATIVE OR ADDITIONAL CONTROL, BY A WRITTEN AMENDMENT TO THIS SHEET SEALED BY THE RESPONSIBLE SURVEYOR. USERS OF THESE CONTROL POINTS SHALL EXERCISE DUE CARE AND GOOD SURVEYING PRACTICE AND IMMEDIATELY NOTIFY THE CRAFTON, TULL & ASSOCIATES PROJECT ENGINEER OF ANY INCONSISTENCIES IN THE OBSERVED COORDINATE VALUES, ELEVATIONS AND DESCRIPTIONS FOR CONTROL POINTS SHOWN ON THIS SHEET.

LEGEND

SYMBOLS

CONTROL POINT

LINEWORK

PROPERTY LINE

RIGHT-OF-WAY

CENTERLINE

SITE BENCHMARK AND CONTROL

CONTROL POINTS WERE DETERMINED WITH GPS WITH NAVD 88 DATUM.

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CERTIFICATE OF AUTHORIZATION:
CERTIFICATE OF AUTHORIZATION CRAFTON, TULL & ASSOCIATES, INC. No. 109 ARKANSAS ENGINEER

GRAPHIC SCALE IN FEET
50' 0 50'

HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT
PARAGOULD, ARKANSAS

Key Plan

No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

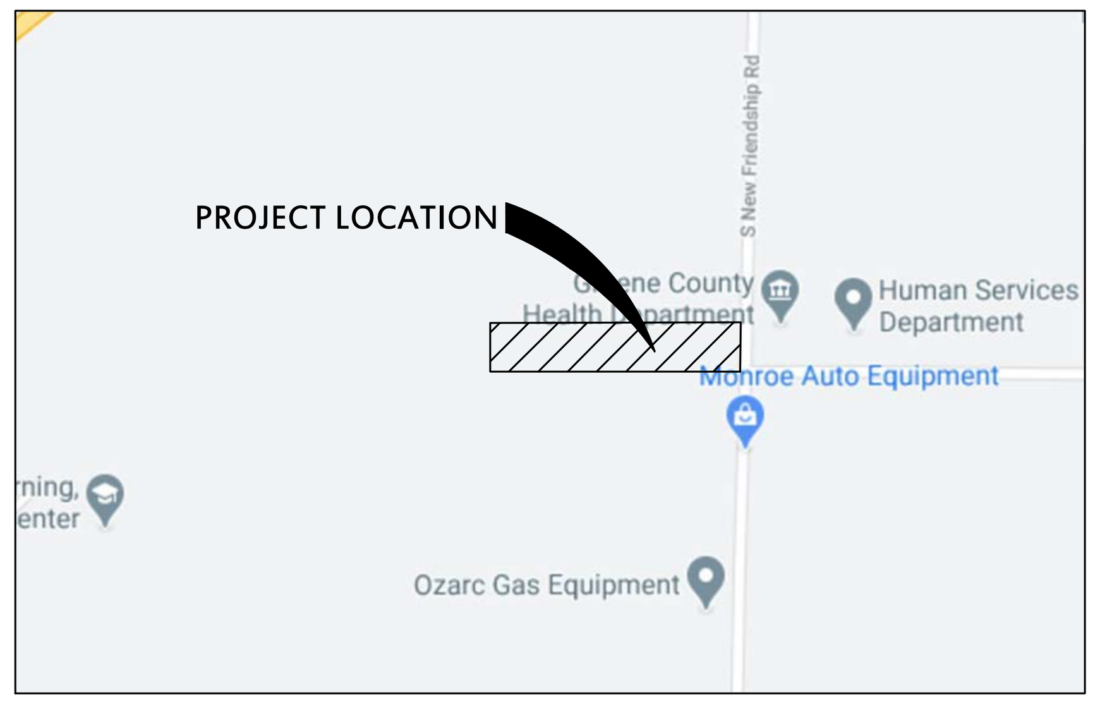
STATE OF ARKANSAS ★ ★ ★ REGISTERED PROFESSIONAL ENGINEER ★ ★ ★ No. 9407 JERRY J. KELSO
01/29/2021

PROJECT CONTROL SHEET

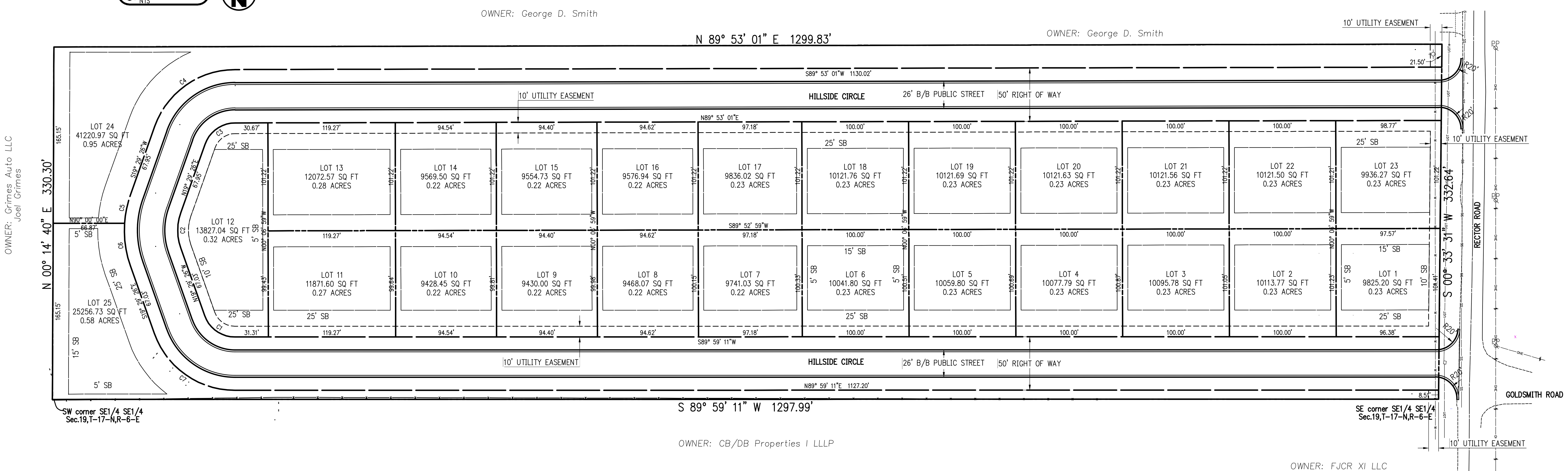
C-001

HILLSIDE MANOR

PRELIMINARY PLAT



VICINITY MAP
NTS



GENERAL NOTES

1. THE DESIGN, INSPECTION, AND CERTIFICATION OF ANY RETAINING WALL SHOWN OR REFERENCED HEREIN, INCLUDING BUT NOT LIMITED TO, SEGMENTAL RETAINING WALLS, MASS GRAVITY WALLS, GABION WALLS, ETC., GREATER THAN FORTY-EIGHT INCHES IN HEIGHT, SHALL BE BY OTHERS. ANY RETAINING WALL DATA SHOWN OR REFERENCED HEREIN SHALL BE ONLY FOR COORDINATION OF THE WALL LOCATION AND ELEVATIONS.
2. THE EXISTENCE AND LOCATION OF ANY UNDERGROUND UTILITY PIPES OR STRUCTURES SHOWN ON THESE DRAWINGS IS BASED ON A SEARCH OF THE AVAILABLE RECORDS. TO THE BEST OF OUR KNOWLEDGE THERE ARE NO EXISTING UTILITIES EXCEPT AS SHOWN ON THESE DRAWINGS. CRAFTON TULL ASSUMES NO RESPONSIBILITY REGARDING THE ACCURACY OF THE DEPICTED LOCATION(S) OF THE UNDERGROUND FACILITIES ON THESE DRAWINGS. CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ANY OTHER FACILITIES NOT SHOWN ON THESE DRAWINGS. CONTRACTOR SHALL VERIFY LOCATION OF ALL FACILITIES BEFORE BEGINNING WORK.
3. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR WILL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK. THIS REQUIREMENT WILL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE DUTY OF THE ENGINEER TO CONDUCT CONSTRUCTION REVIEW OF THE CONTRACTOR'S PERFORMANCE IS NOT INTENDED TO INCLUDE REVIEW OF THE ADEQUACY OF THE CONTRACTOR'S SAFETY MEASURES IN OR NEAR THE CONSTRUCTION SITE.
4. THIS DOCUMENT AND THE IDEAS AND DESIGNS INCORPORATED HEREIN, AS AN INSTRUMENT OF PROFESSIONAL SERVICES, IS THE PROPERTY OF CRAFTON, TULL & ASSOCIATES, INC. AND IS NOT TO BE USED, IN WHOLE OR PART, FOR ANY OTHER PROJECT WITHOUT THE WRITTEN AUTHORIZATION OF CRAFTON, TULL & ASSOCIATES, INC.
5. CONTRACTOR SHALL NOT CAUSE ANY LONG-TERM INCONVENIENCE TO THE PUBLIC, ADJACENT PROPERTY OWNERS, PEDESTRIANS, ETC. DURING CONSTRUCTION OF THIS PROJECT. CONTRACTOR SHALL PROVIDE ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES DURING CONSTRUCTION.
6. CONTRACTOR SHALL CONTACT THE **ENGINEER** FOR CLARIFICATION IF A DISCREPANCY OR INCONSISTENCY IS IDENTIFIED IN THE PLANS OR SPECIFICATIONS.
7. CONTRACTOR IS RESPONSIBLE FOR THE DESIGN AND IMPLEMENTATION OF ALL SHEETING, SHORING, AND SPECIAL EXCAVATION MEASURES REQUIRED ON THE PROJECT WHICH ARE NECESSARY TO CONFORM TO OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
8. ENGINEER OF RECORD SHALL OBSERVE THE INSTALLATION OF THE WATER & SEWER MAINS. BEYOND THAT SCOPE, CRAFTON TULL & ASSOCIATES, INC. (CTA) HAS NOT BEEN RETAINED BY THE OWNER FOR CONSTRUCTION ADMINISTRATION OR OBSERVATION SERVICES FOR THE WORK INDICATED ON THESE DRAWINGS. THEREFORE, CTA HEREBY NOTIFIES ALL PARTIES INVOLVED THAT CRAFTON, TULL & ASSOCIATES, INC. ASSUMES NO RESPONSIBILITY FOR THE INTERPRETATION, COORDINATION, OR ADMINISTRATION OF THESE DOCUMENTS AND/OR DEVIATIONS THEREOF. FURTHERMORE, CRAFTON, TULL & ASSOCIATES, INC. WILL NOT BE RESPONSIBLE FOR ANY EFFECTS THAT ANY CHANGES TO THESE DOCUMENTS MAY HAVE ON ANY RELATED TRADES, CONSTRUCTION SEQUENCES, OR OPERATION OF THE COMPLETED PROJECT EXCEPT AS SPECIFICALLY NOTED IN THE AGREEMENT BETWEEN CRAFTON, TULL & ASSOCIATES AND THE OWNER.
9. **ENERGIZED ELECTRICAL LINE SAFETY, WARNINGS, AND ADVANCED NOTICES:** ALL OWNERS, GENERAL CONTRACTORS, AND SUBCONTRACTORS ASSOCIATED WITH THIS PROJECT SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH, COMPLYING WITH, AND THE ENFORCEMENT OF ARKANSAS CODES AR ST § 11-5-307 AND § AR ST 11-5-308 AND ANY OTHER CURRENT STATE CODES PERTAINING TO ADVANCE NOTICE REQUIREMENTS AND FOR SAFETY OF ALL PERSONNEL, INCLUDING THE GENERAL PUBLIC, PERTAINING TO ANY WORK, MOVEMENT, AND ACTIVITY IN CLOSE PROXIMITY TO ANY ENERGIZED ELECTRICAL LINE.

PROJECT INFORMATION

BUILDING SETBACK: FRONT 25'; SIDE 5'; SIDE EXTERIOR 10'; REAR 15'

SITE AREA: 9.88 AC. (430,372 SQ.FT.)

ZONING: R-2

ADDRESS: 2002 RECTOR ROAD
PARAGOULD, ARKANSAS

DENSITY:

USAGE: TWO FAMILY DWELLING

SITE ENGINEER: CRAFTON TULL
10825 FINANCIAL CENTRE PARKWAY, SUITE 300
LITTLE ROCK, AR 72211
PHONE: 501.664.3245
FAX: 501.664.6704

48 UNITS TOTAL

PROPERTY DESCRIPTION

THAT PART OF THE SOUTHEAST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 19, TOWNSHIP 17 NORTH, RANGE 6 EAST, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT A FOUND REBAR MARKING THE SOUTHWEST CORNER OF SAID SE1/4 SE1/4, RUN THENCE N 0° 14'40"E 330.30 FEET TO THE SOUTH LINE OF A SURVEY DATED MARCH 22, 1983 BY MARVIN JERNIGAN, RUN THENCE N 89°53'01"E ALONG SAID 1983 LINE 1299.83 FEET TO THE WEST RIGHT OF WAY OF RECTOR ROAD, RUN THENCE S 0°33'31"W ALONG SAID RIGHT OF WAY 332.64 FEEN TOTHE SOUTH LINE OF SAID SE1/4 SE1/4, RUN THENCE S 89°59'11"W 1297.99 FEET TO THE TRUE POINT OF BEGINNING, CONTAINING 9.88 ACRES, MORE OR LESS, SUBJECT TO ANY UTILITY EASEMENTS OR RIGHT OF WAY OF RECORD.

BASIS OF BEARINGS

STATE PLANE, NAD83 ARKANSAS NORTH ZONE

FLOOD NOTE:

THIS PROPERTY **IS NOT** IN FLOOD ZONE "A" OR "AE", AND IS **OUT**SIDE THE 100-YEAR FLOOD PLAIN AS SHOWN ON THE NATIONAL FLOOD INSURANCE PROGRAM'S FIRM PANEL NUMBER **05055C0355 F**, EFFECTIVE DATE **MAY 16, 2013**.

THE ABOVE STATEMENT IS FOR INFORMATION ONLY AND THIS SURVEYOR ASSUMES NO LIABILITY FOR THE CORRECTNESS OF THE CITED MAP(S). IN ADDITION, NO INDEPENDENT STUDY OF THE LIKELIHOOD OF FLOODING OF THE SURVEYED PROPERTY HAS BEEN DONE BY THE SURVEYOR AND NO OPINION OF FLOOD HAZARDS IS INCLUDED IN THIS SURVEY. THE FLOOD HAZARD ZONE BOUNDARIES SHOWN HEREON WERE SCALED FROM THE MAPS CITED AND ARE NOT THE RESULT OF INDEPENDENT COMPUTATION OR ANALYSIS.

CURVE TABLE

CURVE #	LENGTH	RADIUS	DELTA	CHORD DIRECTION	CHORD LENGTH
C1	36.93'	30.00'	70°31'23"	N54° 45' 08"W	34.64'
C2	34.02'	50.00'	38°58'53"	N0° 00' 00"W	33.37'
C3	36.86'	30.00'	70°23'34"	N54° 41' 14"E	34.58'
C4	98.29'	80.00'	70°23'34"	S54° 41' 14"W	92.22'
C5	27.28'	100.00'	15°37'50"	S11° 40' 31"W	27.20'
C6	40.75'	100.00'	23°21'03"	S7° 48' 55"E	40.47'
C7	98.47'	80.00'	70°31'23"	S54° 45' 08"E	92.37'

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GRAPHIC SCALE IN FEET
50' 0 50'

HILLSIDE MANOR
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Key Plan

No.	Description	Date

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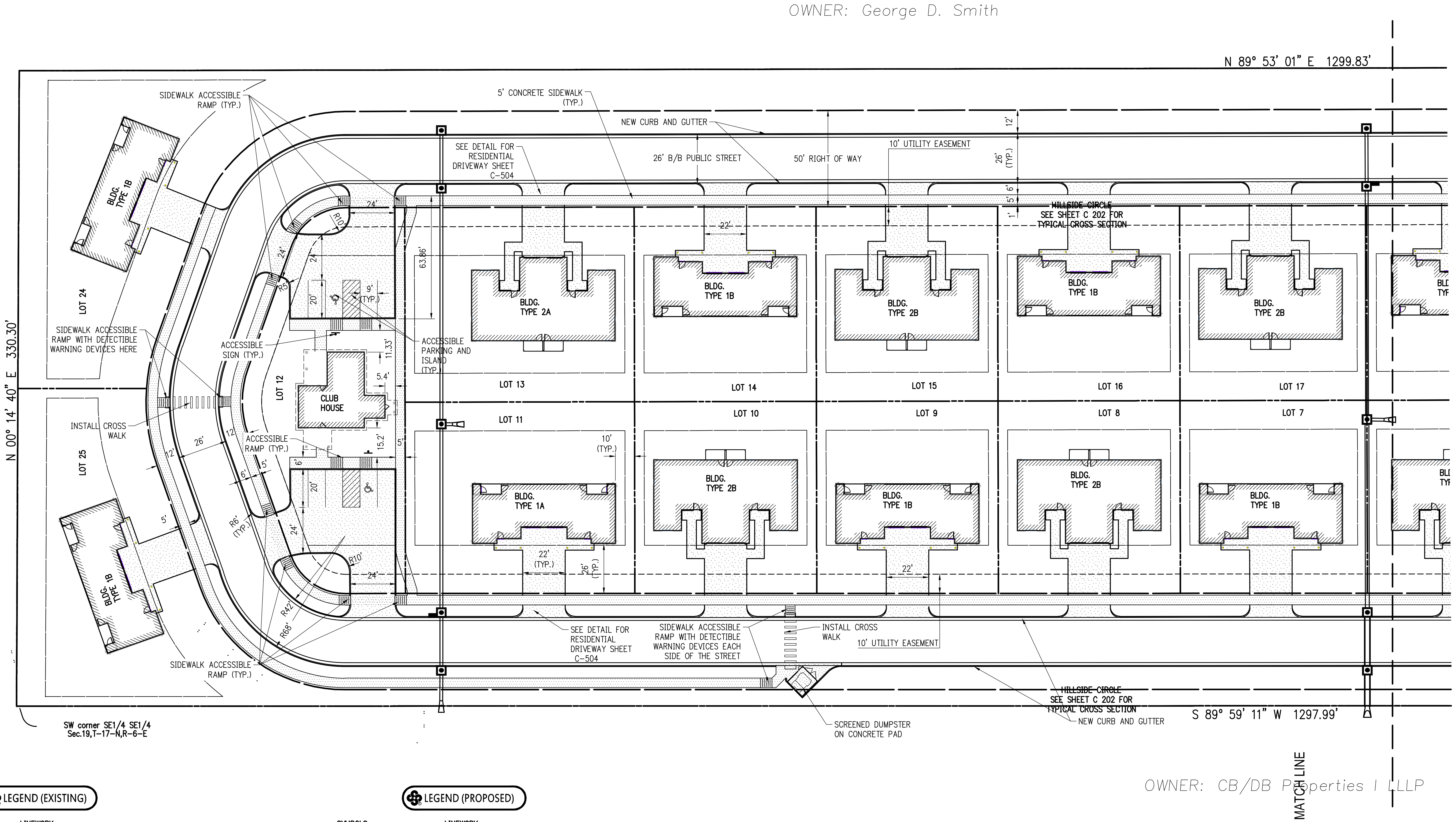
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9407 JERRY J. KELSO
01/29/2021

PRELIMINARY PLAT

C-002



LEGEND (EXISTING)

SYMBOLS

- FOUND IRON PIN
- LIGHT POLE
- POWER POLE
- TELEPHONE PEDESTAL
- TV PEDESTAL
- MANHOLE
- SANITARY SEWER CLEANOUT
- GAS METER
- GAS VALVE
- STORM SEWER PIPE
- DOWN GUY
- WATER VALVE
- FIRE HYDRANT ASSEMBLY
- AIR RELEASE VALVE
- FIRE DEPARTMENT CONNECTION
- WATER METER
- SPRINKLER HEAD
- ELECTRIC PEDESTAL
- GRATED INLET
- DROP INLET
- TREE
- TREE TO BE REMOVED

LINEWORK

- EASEMENT
- CURB
- INTERMEDIATE CONTOUR
- INDEX CONTOUR
- SANITARY SEWER LINE
- GAS LINE
- WATER LINE (SPECIFY SIZE & TYPE)
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- UNDERGROUND TELEVISION
- OVERHEAD TELEVISION
- CHAIN LINK FENCE
- WOOD FENCE
- BARBED WIRE FENCE
- FIBER OPTIC
- RIGHT OF WAY
- ROAD CENTERLINE

LEGEND (PROPOSED)

SYMBOLS

- SET IRON PIN
- LIGHT POLE
- POWER POLE
- TELEPHONE PEDESTAL
- TV PEDESTAL
- MANHOLE
- SANITARY SEWER CLEANOUT
- GAS METER
- GAS VALVE
- STORM SEWER PIPE
- STRUCTURE NUMBER
- WATER VALVE
- FIRE HYDRANT ASSEMBLY
- AIR RELEASE VALVE
- FIRE DEPARTMENT CONNECTION
- WATER METER
- BACK FLOW PREVENTER
- REDUCER
- RECTANGULAR DROP INLET, GRATED INLET OR JUNCTION BOX (SPECIFY ON PLAN SHEET)
- CIRCULAR DROP INLET, GRATED INLET OR JUNCTION BOX (SPECIFY ON PLAN SHEET)
- CONCRETE SIDEWALK
- HEAVY DUTY ASPHALT
- CONCRETE PAVEMENT
- REGULAR DUTY ASPHALT

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- WOOD FENCE
- BARBED WIRE FENCE
- BUILDING SET BACK
- RIGHT OF WAY
- PROPERTY LINE
- ROAD CENTERLINE

PAVING LEGEND:

- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT

SITE NOTES

1. THE DESIGN, INSPECTION, AND CERTIFICATION OF ANY RETAINING WALL SHOWN OR REFERENCED HEREIN, INCLUDING BUT NOT LIMITED TO, SEGMENTAL RETAINING WALLS, MASS GRAVITY WALLS, GABION WALLS, ETC., GREATER THAN FORTY-EIGHT INCHES IN HEIGHT, SHALL BE BY OTHERS. ANY RETAINING WALL DATA SHOWN OR REFERENCED HEREIN SHALL BE FOR COORDINATION OF THE WALL LOCATION AND ELEVATIONS ONLY.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY/STATE/FEDERAL REGULATIONS AND CODES AND OSHA STANDARDS.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.
4. ALL CURB DIMENSIONS AND RADII ARE TO **BACK** OF CURB UNLESS OTHERWISE NOTED.
5. ALL PAVEMENT MARKINGS DIMENSIONS **BACK** OF CURB UNLESS OTHERWISE NOTED.
6. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
7. ALL CURB/SIDEWALK/HANDICAP RAMP DESIGNS SHALL CONFORM TO ADA STANDARDS OR LOCAL RESTRICTIVE CODES, WHICHEVER IS MORE RESTRICTIVE.
8. CONTRACTOR SHALL ENSURE ALL NECESSARY PERMITS ARE OBTAINED PRIOR TO CONSTRUCTION START.
9. CONTRACTOR SHALL MATCH NEW CURB AND GUTTER, CONCRETE, AND PAVEMENT TO EXISTING IN GRADE AND ALIGNMENT.
10. CONTRACTOR SHALL MAINTAIN ALL EXISTING PARKING, SIDEWALKS, DRIVES, ETC. CLEAR AND FREE FROM ANY CONSTRUCTION ACTIVITY AND/OR MATERIAL TO ENSURE EASY AND SAFE PEDESTRIAN AND VEHICULAR TRAFFIC TO AND FROM THE SITE.

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CERTIFICATE OF AUTHORIZATION: CERTIFICATE OF AUTHORIZATION CRAFTON, TULL & ASSOCIATES, INC. No. 109

GRAPHIC SCALE IN FEET

30' 0 30'

HILLSIDE MANOR 48 UNITS RESIDENTIAL DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

No.	Description	Date

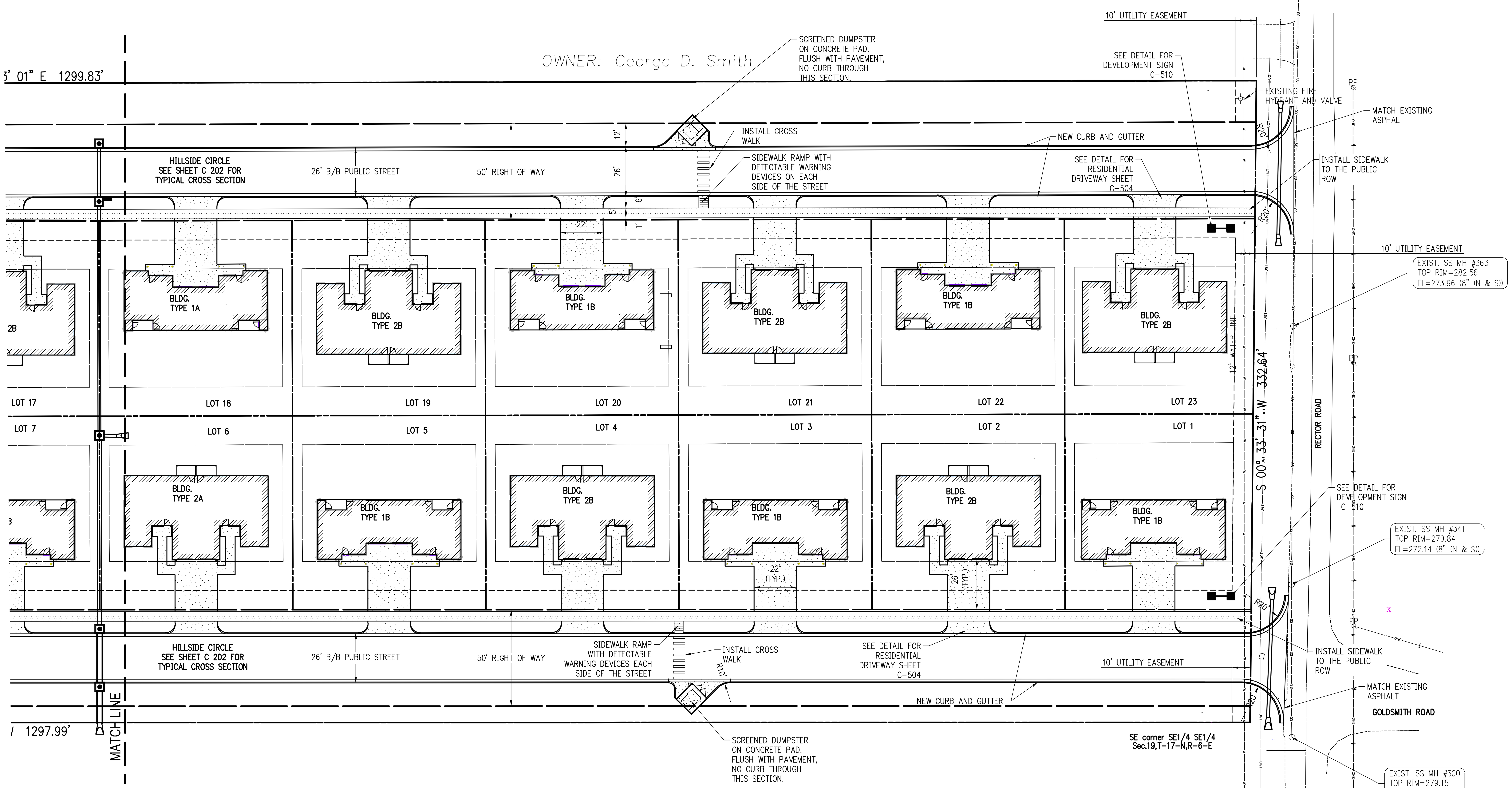
PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9407 JERRY J. KELSO

01/29/2021

SITE PLAN WEST

C-101



LEGEND (EXISTING)

SYMBOLS

- FOUND IRON PIN
- LIGHT POLE
- POWER POLE
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LEGEND (PROPOSED)

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- ASPHALT PAVEMENT

SITE NOTES

1. THE DESIGN, INSPECTION, AND CERTIFICATION OF ANY RETAINING WALL SHOWN OR REFERENCED HEREIN, INCLUDING BUT NOT LIMITED TO, SEGMENTAL RETAINING WALLS, MASS GRAVITY WALLS, GABION WALLS, ETC., GREATER THAN FORTY-EIGHT INCHES IN HEIGHT, SHALL BE BY OTHERS. ANY RETAINING WALL DATA SHOWN OR REFERENCED HEREIN SHALL BE FOR COORDINATION OF THE WALL LOCATION AND ELEVATIONS ONLY.
2. ALL WORK AND MATERIALS SHALL COMPLY WITH ALL CITY/COUNTY/STATE/FEDERAL REGULATIONS AND CODES AND OSHA STANDARDS.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.
4. ALL CURB DIMENSIONS AND RADII ARE TO **BACK** OF CURB UNLESS OTHERWISE NOTED.
5. ALL PAVEMENT MARKINGS DIMENSIONS **BACK** OF CURB UNLESS OTHERWISE NOTED.
6. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
7. ALL CURB/SIDEWALK/HANDICAP RAMP DESIGNS SHALL CONFORM TO ADA STANDARDS OR LOCAL RESTRICTIVE CODES, WHICHEVER IS MORE RESTRICTIVE.
8. CONTRACTOR SHALL ENSURE ALL NECESSARY PERMITS ARE OBTAINED PRIOR TO CONSTRUCTION START.
9. CONTRACTOR SHALL MATCH NEW CURB AND GUTTER, CONCRETE, AND PAVEMENT TO EXISTING IN GRADE AND ALIGNMENT.
10. CONTRACTOR SHALL MAINTAIN ALL EXISTING PARKING, SIDEWALKS, DRIVES, ETC. CLEAR AND FREE FROM ANY CONSTRUCTION ACTIVITY AND/OR MATERIAL TO ENSURE EASY AND SAFE PEDESTRIAN AND VEHICULAR TRAFFIC TO AND FROM THE SITE.

PAVING LEGEND:

- CONCRETE SIDEWALK
- CONCRETE PAVEMENT
- ASPHALT PAVEMENT

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CERTIFICATE OF AUTHORIZATION — CRAFTON, TULL & ASSOCIATES, INC. No. 109 — ARKANSAS ENGINEER

GRAPHIC SCALE IN FEET
30' 0 30'

HILLSIDE MANOR 48 UNITS RESIDENTIAL DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

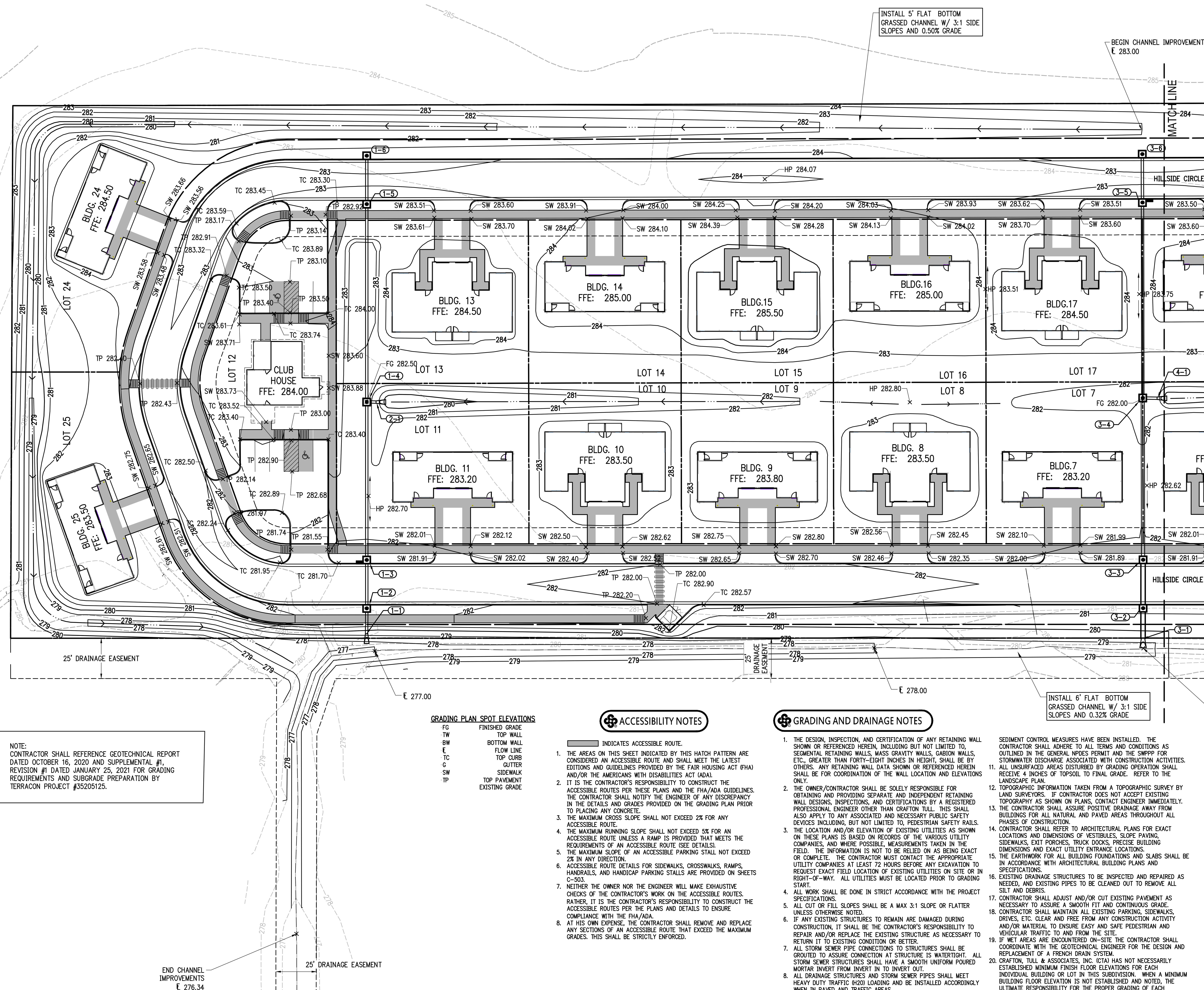
No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 9407 JERRY J. KELSO
01/29/2021

SITE PLAN EAST

C-102



NOTE:
CONTRACTOR SHALL REFERENCE GEOTECHNICAL REPORT DATED OCTOBER 16, 2020 AND SUPPLEMENTAL #1, REVISION #1 DATED JANUARY 25, 2021 FOR GRADING REQUIREMENTS AND SUBGRADE PREPARATION BY TERRACON PROJECT #35205125.

GRADING PLAN SPOT ELEVATIONS

FG	FINISHED GRADE
TW	TOP WALL
BW	BOTTOM WALL
℄	FLOW LINE
TC	TOP CURB
G	GUTTER
SW	SIDEWALK
TP	TOP PAVEMENT
	EXISTING GRADE

ACCESSIBILITY NOTES

INDICATES ACCESSIBLE ROUTE.

1. THE AREAS ON THIS SHEET INDICATED BY THIS HATCH PATTERN ARE CONSIDERED AN ACCESSIBLE ROUTE AND SHALL MEET THE LATEST EDITIONS AND GUIDELINES PROVIDED BY THE FAIR HOUSING ACT (FHA) AND/OR THE AMERICANS WITH DISABILITIES ACT (ADA).
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT THE ACCESSIBLE ROUTES PER THESE PLANS AND THE FHA/ADA GUIDELINES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY IN THE DETAILS AND GRADES PROVIDED ON THE GRADING PLAN PRIOR TO PLACING ANY CONCRETE.
3. THE MAXIMUM CROSS SLOPE SHALL NOT EXCEED 2% FOR ANY ACCESSIBLE ROUTE.
4. THE MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% FOR AN ACCESSIBLE ROUTE UNLESS A RAMP IS PROVIDED THAT MEETS THE REQUIREMENTS OF AN ACCESSIBLE ROUTE (SEE DETAILS).
5. THE MAXIMUM SLOPE OF AN ACCESSIBLE PARKING STALL NOT EXCEED 2% IN ANY DIRECTION.
6. ACCESSIBLE ROUTE DETAILS FOR SIDEWALKS, CROSSWALKS, RAMPS, HANDRAILS, AND HANDICAP PARKING STALLS ARE PROVIDED ON SHEETS C-503.
7. NEITHER THE OWNER NOR THE ENGINEER WILL MAKE EXHAUSTIVE CHECKS OF THE CONTRACTOR'S WORK ON THE ACCESSIBLE ROUTES. RATHER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT THE ACCESSIBLE ROUTES PER THE PLANS AND DETAILS TO ENSURE COMPLIANCE WITH THE FHA/ADA.
8. AT HIS OWN EXPENSE, THE CONTRACTOR SHALL REMOVE AND REPLACE ANY SECTIONS OF AN ACCESSIBLE ROUTE THAT EXCEED THE MAXIMUM GRADES. THIS SHALL BE STRICTLY ENFORCED.

GRADING AND DRAINAGE NOTES

1. THE DESIGN, INSPECTION, AND CERTIFICATION OF ANY RETAINING WALL SHOWN OR REFERENCED HEREIN, INCLUDING BUT NOT LIMITED TO, SEGMENTAL RETAINING WALLS, MASS GRAVITY WALLS, GABION WALLS, ETC., GREATER THAN FORTY-EIGHT INCHES IN HEIGHT, SHALL BE BY OTHERS. ANY RETAINING WALL DATA SHOWN OR REFERENCED HEREIN SHALL BE FOR COORDINATION OF THE WALL LOCATION AND ELEVATIONS ONLY.
2. THE OWNER/CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING AND PROVIDING SEPARATE AND INDEPENDENT RETAINING WALL DESIGNS, INSPECTIONS, AND CERTIFICATIONS BY A REGISTERED PROFESSIONAL ENGINEER OTHER THAN CRAFTON TULL. THIS SHALL ALSO APPLY TO ANY ASSOCIATED AND NECESSARY PUBLIC SAFETY DEVICES INCLUDING, BUT NOT LIMITED TO, PEDESTRIAN SAFETY RAILS.
3. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF EXISTING UTILITIES ON SITE OR IN RIGHT-OF-WAY. ALL UTILITIES MUST BE LOCATED PRIOR TO GRADING START.
4. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
5. ALL CUT OR FILL SLOPES SHALL BE A MAX 3:1 SLOPE OR FLATTER UNLESS OTHERWISE NOTED.
6. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITION OR BETTER.
7. ALL STORM SEWER PIPE CONNECTIONS TO STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATERTIGHT. ALL STORM SEWER STRUCTURES SHALL HAVE A SMOOTH UNIFORM POURED MORTAR INVERT FROM INVERT IN TO INVERT OUT.
8. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND BE INSTALLED ACCORDINGLY WHEN IN PAVED AND TRAFFIC AREAS.
9. ALL STORM SEWER MANHOLES IN PAVED AREAS SHALL BE FLUSH WITH THE PAVEMENT AND SHALL HAVE TRAFFIC BEARING RINGS AND COVERS. MANHOLES IN UNPAVED AREAS SHALL BE 1" ABOVE FINISH GRADE. LIDS SHALL BE LABELED PER JURISDICTIONAL SPECIFICATIONS.
10. SITE GRADING SHALL NOT PROCEED UNTIL APPROPRIATE EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED. THE CONTRACTOR SHALL ADHERE TO ALL TERMS AND CONDITIONS AS OUTLINED IN THE GENERAL NPDES PERMIT AND THE SWPPP FOR STORMWATER DISCHARGE ASSOCIATED WITH CONSTRUCTION ACTIVITIES.
11. ALL UNSURFACED AREAS DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL TO FINAL GRADE. REFER TO THE LANDSCAPE PLAN.
12. TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY BY LAND SURVEYORS. IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON PLANS, CONTACT ENGINEER IMMEDIATELY.
13. THE CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS THROUGHOUT ALL PHASES OF CONSTRUCTION.
14. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT UTILITY ENTRANCE LOCATIONS.
15. THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS.
16. EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIRED AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.
17. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.
18. CONTRACTOR SHALL MAINTAIN ALL EXISTING PARKING, SIDEWALKS, DRIVES, ETC. CLEAR AND FREE FROM ANY CONSTRUCTION ACTIVITY AND/OR MATERIAL TO ENSURE EASY AND SAFE PEDESTRIAN AND VEHICULAR TRAFFIC TO AND FROM THE SITE.
19. IF WET AREAS ARE ENCOUNTERED ON-SITE THE CONTRACTOR SHALL COORDINATE WITH THE GEOTECHNICAL ENGINEER FOR THE DESIGN AND REPLACEMENT OF A FRENCH DRAIN SYSTEM.
20. CRAFTON, TULL & ASSOCIATES, INC. (CTA) HAS NOT NECESSARILY ESTABLISHED MINIMUM FINISH FLOOR ELEVATIONS FOR EACH INDIVIDUAL BUILDING OR LOT IN THIS SUBDIVISION. WHEN A MINIMUM BUILDING FLOOR ELEVATION IS NOT ESTABLISHED AND NOTED, THE ULTIMATE RESPONSIBILITY FOR THE PROPER GRADING OF EACH INDIVIDUAL LOT OR PARCEL SHALL REST WITH THE LOT'S OWNER. TYPICALLY, THE MINIMUM FINISH FIRST FLOOR ELEVATIONS SHOULD BE AT LEAST TWELVE INCHES (12") ABOVE THE FINISHED TOP OF STREET CURB ELEVATION ASSOCIATED WITH EACH INDIVIDUAL LOT OR PARCEL OR AS REQUIRED BY LOCAL AND STATE CODES.

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PARAGOULD, ARKANSAS

Key Plan

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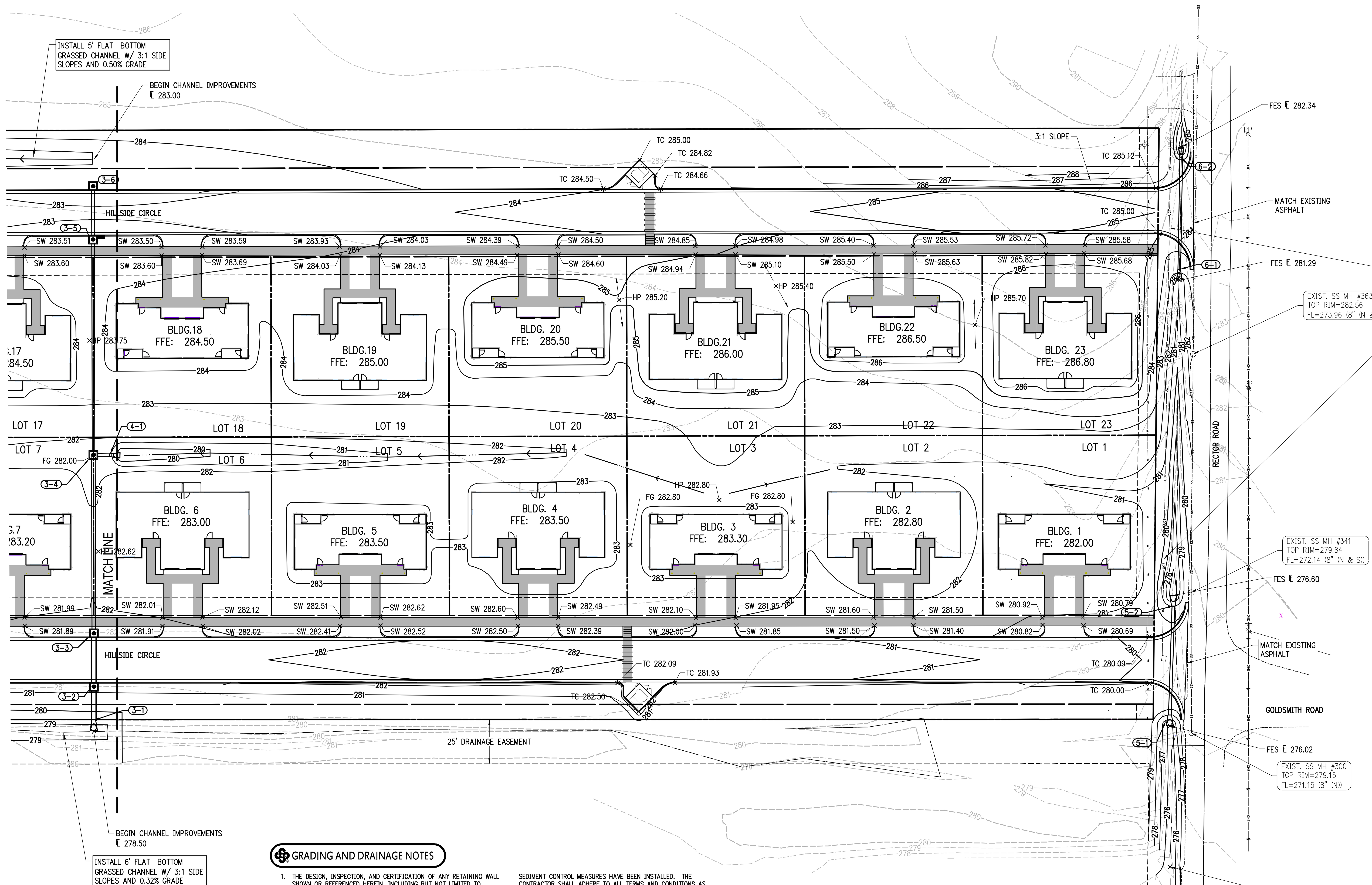
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 9407
JERRY J. KELSO
01/29/2021

GRADING PLAN WEST

C-103



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ACCESSIBILITY NOTES

INDICATES ACCESSIBLE ROUTE.

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3. THE MAXIMUM CROSS SLOPE SHALL NOT EXCEED 2% FOR ANY ACCESSIBLE ROUTE.
4. THE MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% FOR AN ACCESSIBLE ROUTE UNLESS A RAMP IS PROVIDED THAT MEETS THE REQUIREMENTS OF AN ACCESSIBLE ROUTE (SEE DETAILS).
5. THE MAXIMUM SLOPE OF AN ACCESSIBLE PARKING STALL NOT EXCEED 2% IN ANY DIRECTION.
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GRADING PLAN SPOT ELEVATIONS

FG	FINISHED GRADE
TW	TOP WALL
BW	BOTTOM WALL
℄	FLOW LINE
TC	TOP CURB
G	GUTTER
SW	SIDEWALK
TP	TOP PAVEMENT
	EXISTING GRADE

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GRAPHIC SCALE IN FEET
30' 0 30'

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48 UNITS
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Key Plan

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No. 9407
JERRY J. KELSO
01/29/2021

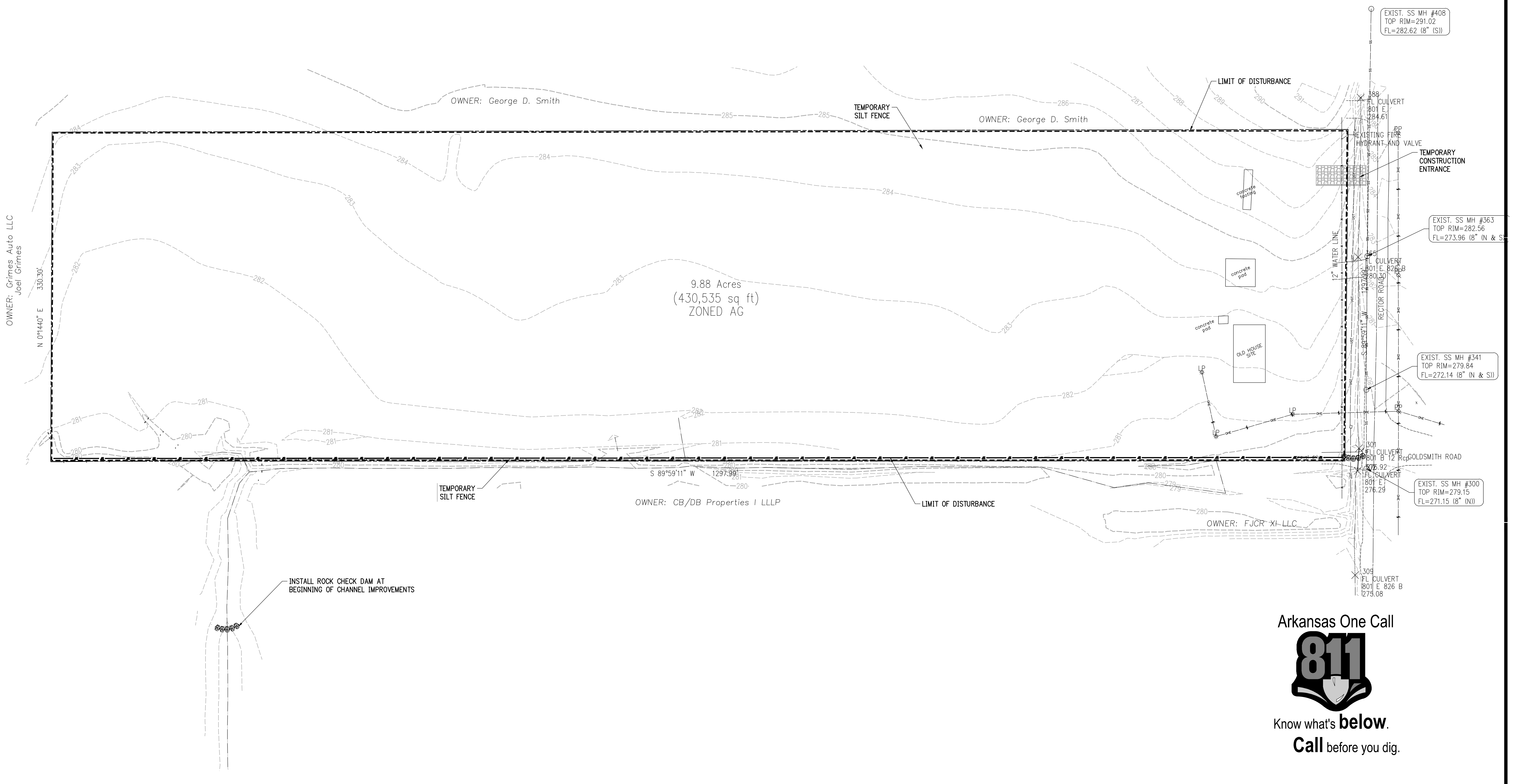
GRADING PLAN EAST

C-104

EROSION CONTROL LEGEND

- PS — PERMANENT SEEDING
- TPS — TEMPORARY PARKING AND STORAGE
- BOUNDARY LINE
- RIGHT OF WAY LINE
- LIMITS OF DISTURBANCE
- GRADE BREAK
- CONTOUR ELEVATIONS
- STORM DRAIN
- DIRECTION OF OVERLAND FLOW W/ GRADE
- LIMITS OF DRAINAGE SUB-BASIN
- CD — ROCK CHECK DAM
- CE — STABILIZED CONSTRUCTION EXIT (ENTRANCE)
- DD — CHANNELED DIVERSIONS
- DS — DEWATERING SYSTEM / STRUCTURE
- SF — SILT FENCE
- ST — SEDIMENT BASIN WITH STONE OUTLET
- IP1 — BLOCK AND AGGREGATE INLET SEDIMENT DEVICE
- IP2 — CURB INLET GRAVEL SEDIMENT FILTER
- IP3 — GRATED INLET GRAVEL SEDIMENT FILTER
- IP4 — SILT FENCE INLET PROTECTION
- OP1 — RIP RAP SLOPE PROTECTION (SEE SIZE THIS SHEET)
- ECL — PERMANENT EROSION CONTROL LINING
- SB — TEMPORARY SEDIMENT BASIN

NOTE: SEE SITE PLAN FOR EXISTING LEGEND SYMBOLS



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GRAPHIC SCALE IN FEET
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01/29/2021

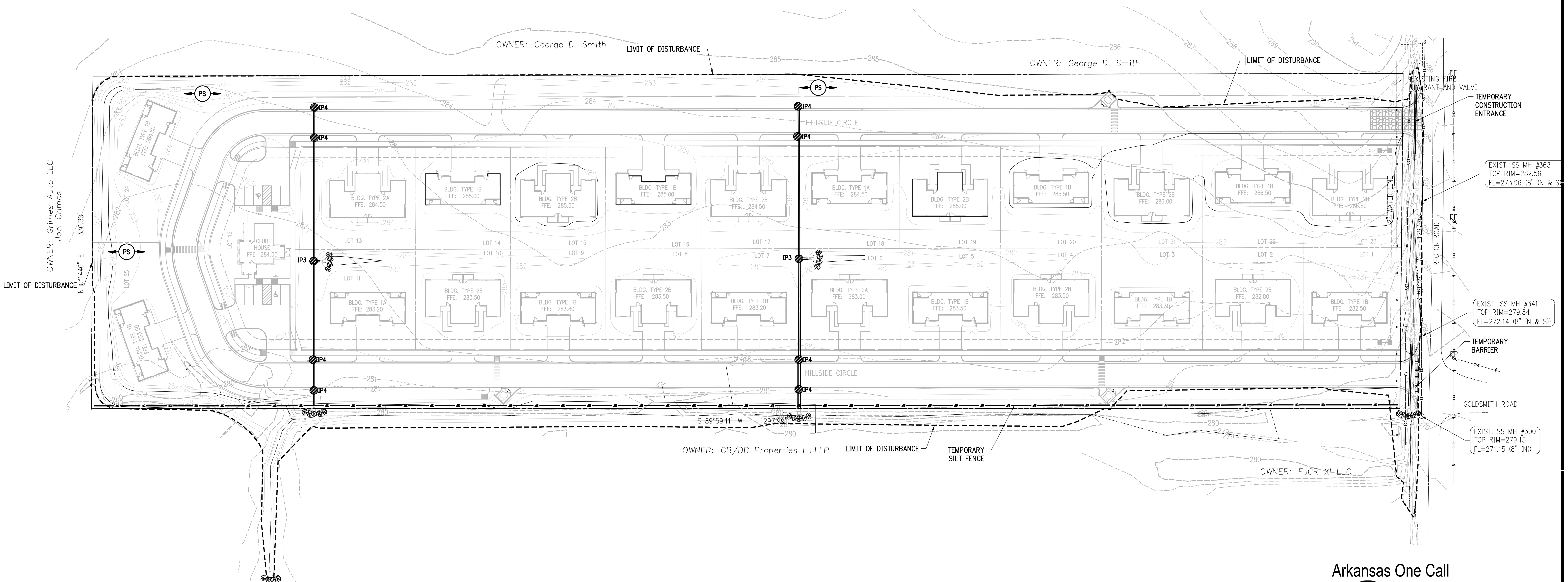
EROSION CONTROL PLAN PHASE I

C-105

EROSION CONTROL LEGEND

Symbol	Description	Symbol	Description	Symbol	Description
PS	PERMANENT SEEDING	CD	ROCK CHECK DAM	OP1	RIP RAP SLOPE PROTECTION (SEE SIZE THIS SHEET)
TPS	TEMPORARY PARKING AND STORAGE	CE	STABILIZED CONSTRUCTION EXIT (ENTRANCE)	ECL	PERMANENT EROSION CONTROL LINING
	BOUNDARY LINE	DD	CHANNELED DIVERSIONS	SB	TEMPORARY SEDIMENT BASIN
	RIGHT OF WAY LINE	DS	DEWATERING SYSTEM / STRUCTURE		
	LIMITS OF DISTURBANCE	SF	SILT FENCE		
	GRADE BREAK	ST	SEDIMENT BASIN WITH STONE OUTLET		
	CONTOUR ELEVATIONS	IP1	BLOCK AND AGGREGATE INLET SEDIMENT DEVICE		
	STORM DRAIN	IP2	CURB INLET GRAVEL SEDIMENT FILTER		
XX.X%	DIRECTION OF OVERLAND FLOW W/ GRADE	IP3	GRATED INLET GRAVEL SEDIMENT FILTER		
	LIMITS OF DRAINAGE SUB-BASIN	IP4	SILT FENCE INLET PROTECTION		

NOTE: SEE SITE PLAN FOR EXISTING LEGEND SYMBOLS



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HILLSIDE MANOR 48 UNITS RESIDENTIAL DEVELOPMENT

PARAGOULD, ARKANSAS

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9407 JERRY J. KELSO
01/29/2021

EROSION CONTROL PLAN PHASE II

C-106

PHASE I

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES/EXITS.
2. PREPARE TEMPORARY PARKING AND STORAGE AREAS. UPON IMPLEMENTATION AND INSTALLATION OF THE FOLLOWING: TRAILER, PARKING, LAY DOWN, PORTA-POTTY, WHEEL WASH, CONCRETE WASH-OUT, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, ETC., DENOTE THEM ON THE SITE MAPS IMMEDIATELY AND NOTE ANY CHANGES IN THE LOCATIONS AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS.
3. CONSTRUCT THE SILT FENCES ON THE SITE.
4. CONSTRUCT THE SEDIMENTATION AND SEDIMENT TRAP BASINS.
5. HALT ALL ACTIVITIES AND CONTACT THE CIVIL ENGINEER CONSULTANT TO PERFORM INSPECTION OF BMPs. GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT STORM WATER PRE-CONSTRUCTION MEETING WITH ENGINEER AND ALL GROUND-DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.
6. CLEAR AND GRUB THE SITE.
7. START CONSTRUCTION OF THE BUILDING PAD AND STRUCTURES.
8. BEGIN GRADING THE SITE.

PHASE II

1. TEMPORARILY SEED DENUDED AREAS.
2. INSTALL UTILITIES, UNDERDRAINS, STORM SEWERS, CURBS AND GUTTERS.
3. INSTALL RIP-RAP AROUND OUT STRUCTURES.
4. INSTALL INLET PROTECTION AROUND ALL STORM SEWER STRUCTURES.
5. PREPARE SITE FOR PAVING.
6. PAVE SITE.
7. INSTALL INLET PROTECTION DEVICES.
8. COMPLETE GRADING AND INSTALL PERMANENT SEEDING AND PLANTING.
9. REMOVE ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES IF SITE IS STABILIZED.

GENERAL EROSION NOTES:

A. THE STORMWATER POLLUTION PREVENTION PLAN IS COMPRISED OF THIS DRAWING (SITE MAP), THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN THE SPECIFICATIONS SECTION 312800 (EROSION AND SEDIMENTATION CONTROL), PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.

B. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND THE STATE OF ARKANSAS NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

C. CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST OF OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.

D. BEST MANAGEMENT PRACTICES (BMP) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AND APPLICABLE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY THE PERMITTING AGENCY OR OWNER.

E. SITE MAP MUST CLEARLY DELINEATE ALL STATE WATERS. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON THE SITE AT ALL TIMES.

F. CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.

G. GENERAL CONTRACTOR SHALL DENOTE THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, AND AREA FOR PORTABLE FACILITIES, OFFICE TRAILERS AND TOILET FACILITIES.

H. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE AND EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

I. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN UP FUEL OR CHEMICAL SPILLS AND LEAKS.

J. DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM-BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

K. RUBBISH, TRASH, GARBAGE, LITTER OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM BEING BLOWN OR WASHED OFF-SITE.

L. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THIS PLAN AND SWPPP SHALL BE INITIATED AS SOON AS POSSIBLE.

M. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS STOPPED FOR AT LEAST 14 DAYS SHALL BE TEMPORARY SEEDED.

N. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED NO LATER THAN 14 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRING IN THESE AREAS. REFER TO THE GRADING PLAN AND/OR LANDSCAPE PLAN.

O. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCE/EXIT IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES EXIT ONTO THE PUBLIC ROADS. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF-SITE.

P. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

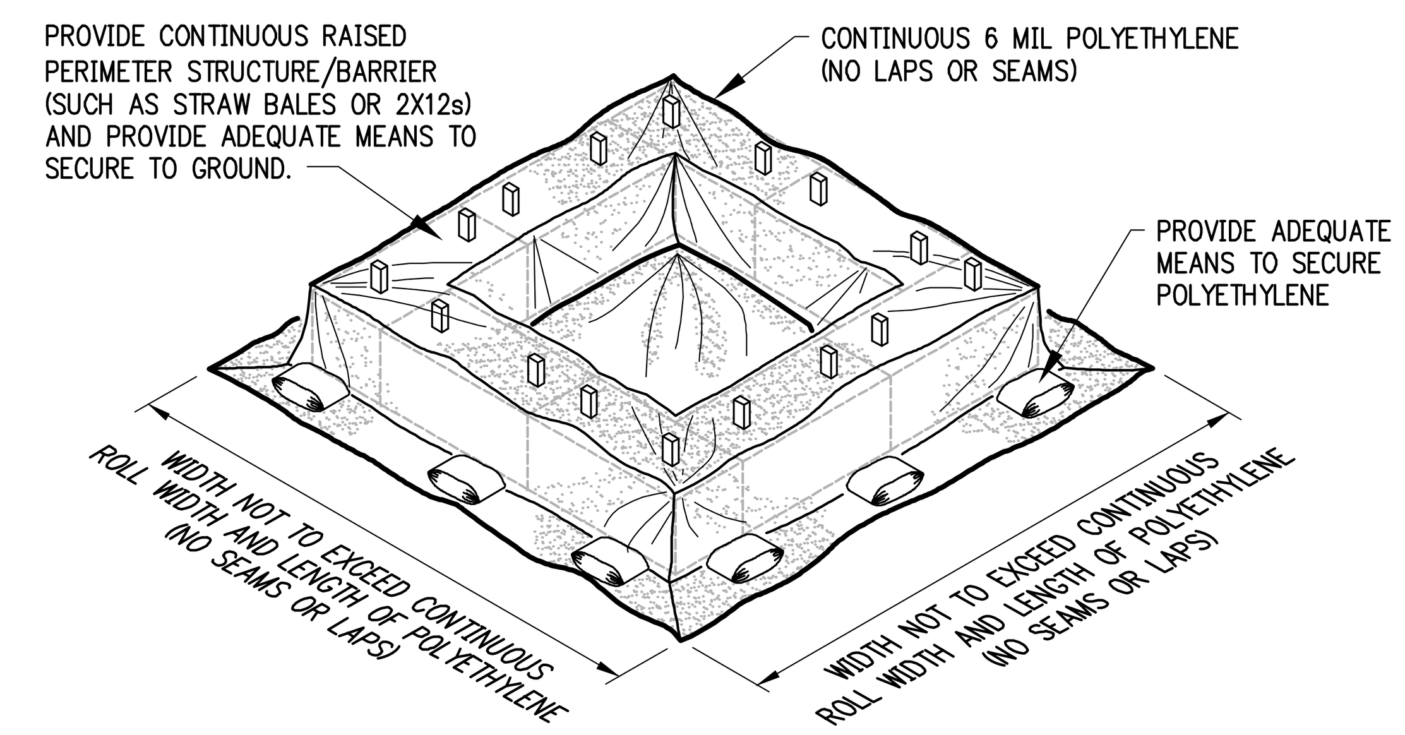
Q. CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.

R. ON-SITE AND OFF-SITE STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH THE GENERAL PERMIT.

S. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

T. DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) TO PREVENT EROSION.

U. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.



CONCRETE WASH-OUT BASIN

NTS

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

NOTE: GENERAL CONTRACTOR TO COMPLETE TABLE WITH THEIR SPECIFIC PROJECT SCHEDULE

CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
ROUGH GRADE / SEDIMENT CONTROL																		
TEMPORARY CONTROL MEASURES																		
STRIP & STOCKPILE TOPSOIL																		
STORM FACILITIES																		
TEMPORARY CONSTRUCTION ROADS																		
FOUNDATION / BUILDING CONSTRUCTION																		
SITE CONSTRUCTION																		
PERMANENT CONTROL STRUCTURES																		
FINISH GRADING																		
LANDSCAPING/SEED/FINAL STABILIZATION																		

ACREAGE SUMMARY

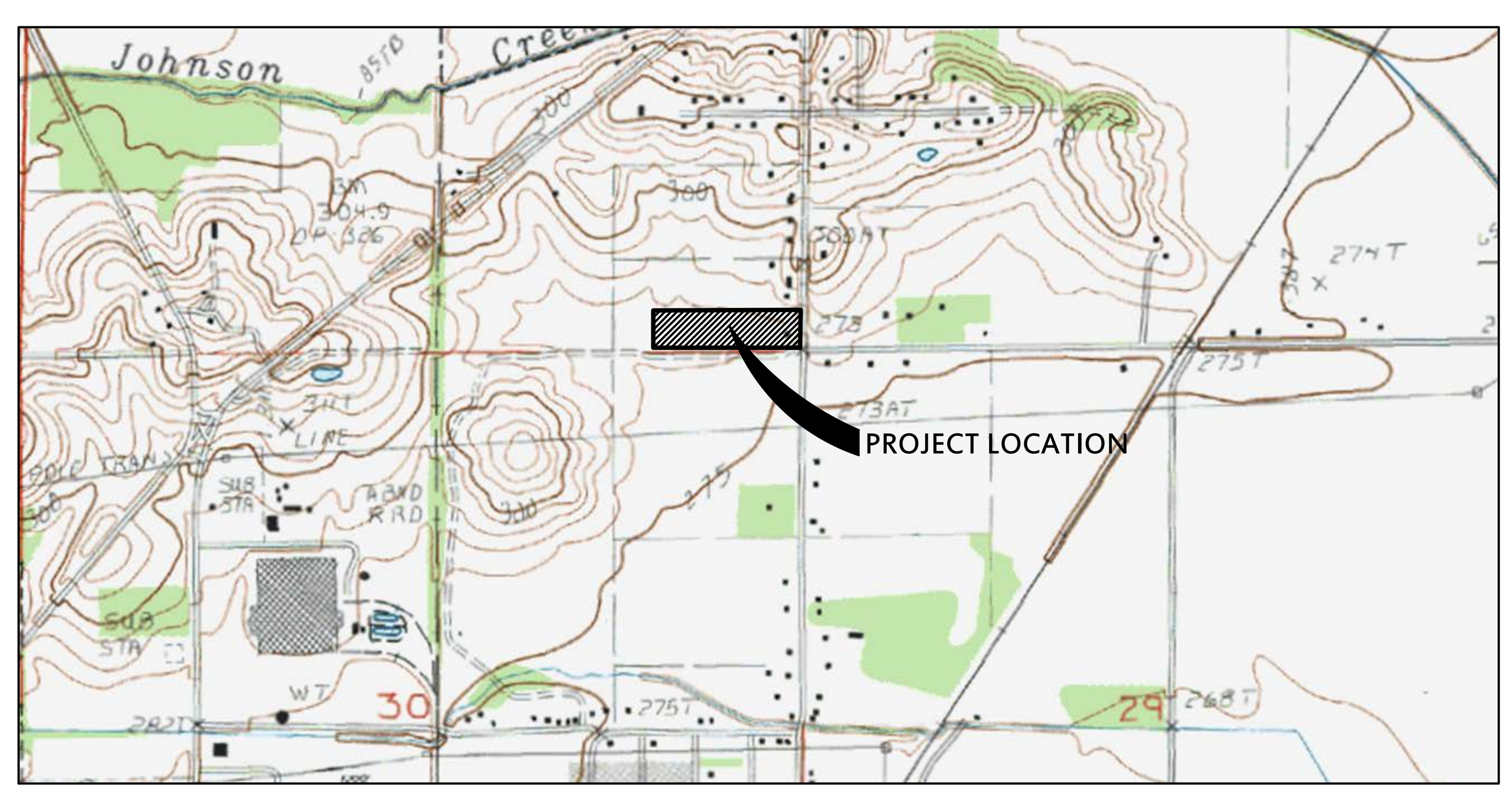
IMPERVIOUS AREA	4.0
SEEDED AREA	5.88
TOTAL DISTURBED	9.88

DEVELOPER/OWNER:
ENTER DEVELOPER INFORMATION

SITE OPERATOR/GENERAL CONTRACTOR:

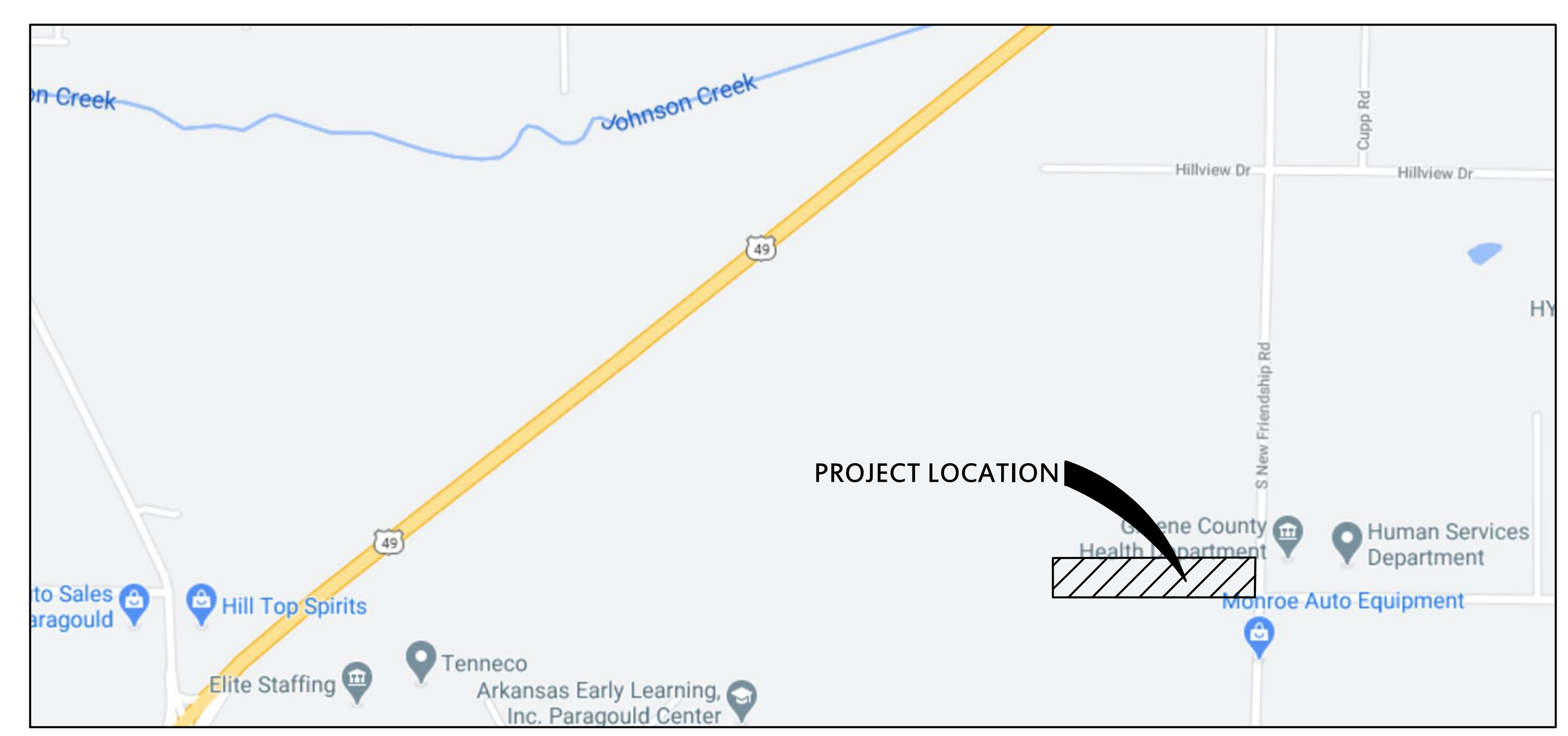
SUPERINTENDENT:

T.B.M.
ENTER BENCHMARK INFORMATION



USGS QUADRANGLE MAP

NTS



VICINITY MAP

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HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT
PARAGOULD, ARKANSAS

Key Plan

No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 9407 JERRY J. KELSO

01/29/2021

EROSION CONTROL NOTES

C-107

UTILITY NOTES

1. THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CONTACT THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATION OF EXISTING UTILITIES WITHIN THE WORK ZONE.
2. CONTRACTOR SHALL NOTIFY THE UTILITY AUTHORITIES' INSPECTORS 72 HOURS BEFORE CONNECTING TO ANY EXISTING FACILITIES. CONTRACTOR SHALL COORDINATE AND SCHEDULE TIE-INS/CONNECTIONS WITH ALL UTILITY COMPANIES.
3. ALL UNDERGROUND LINES SHALL BE INSTALLED, INSPECTED, AND APPROVED PRIOR TO BACKFILLING.
4. ALL NECESSARY INSPECTIONS AND/OR CERTIFICATIONS REQUIRED BY CODES AND/OR UTILITY COMPANIES SHALL BE PERFORMED PRIOR TO ANNOUNCED BUILDING POSSESSION AND THE FINAL CONNECTION OF SERVICE.
5. GENERAL CONTRACTOR IS TO COORDINATE WITH APPROPRIATE UTILITY COMPANIES PRIOR TO CONSTRUCTION, ADJUSTMENT, OR RELOCATION OF EXISTING UTILITIES.
6. THRUST BLOCKING SHALL BE PROVIDED AT ALL BENDS, TEES, AND FIRE HYDRANTS.
7. DIMENSIONS SHOWN ARE TO CENTERLINE OF PIPE OR FITTING.
8. MINIMUM HORIZONTAL SEPARATION BETWEEN WATERLINES AND SANITARY/STORM SEWERS SHALL BE AT LEAST TEN FEET. WHERE WATERLINES CROSS SANITARY SEWERS THE WATERLINE SHALL BE PLACED ABOVE THE SEWER WITH A MINIMUM VERTICAL SEPARATION, OUTSIDE-TO-OUTSIDE, OF 18". IF IT IS NOT POSSIBLE TO CONFORM TO THESE DIMENSIONS OR DEFINED PLACEMENT, THE WATERLINE SHALL BE ENCASED IN WATERTIGHT PIPE WITH SEALED WATERTIGHT ENDS EXTENDING AT LEAST TEN FEET EITHER SIDE OF THE CROSSING.
9. THE CONTRACTOR SHALL INCLUDE IN THE BID PRICE ALL MATERIAL AND LABOR ASSOCIATED WITH THE TESTING OF THE WATER AND SEWER LINES REQUIRED BY THE LOCAL AND/OR STATE AGENCIES.
10. TOPS OF EXISTING MANHOLES SHALL BE RAISED AS NECESSARY TO BE FLUSH WITH FINISHED PAVEMENT ELEVATIONS, AND MANHOLES IN UNPAVED AREAS TO BE 1" ABOVE FINISHED GROUND ELEVATIONS WITH WATER TIGHT LIDS.
11. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL REGULATIONS.
12. REFER TO BUILDING PLANS FOR SITE LIGHTING AND ELECTRICAL PLAN.
13. ALL MATERIALS, CONSTRUCTION, AND INSPECTION FOR WATER AND SANITARY SEWER LINES SHALL BE PER THE SPECIFICATIONS OF THE APPROPRIATE AGENCY.
14. THE CONTRACTOR SHALL COORDINATE WITH THE FIRE DEPARTMENT AND THE WATER COMPANY TO PLAN THE IMPROVEMENTS TO THE WATER MAINS AND TO ENSURE ADEQUATE FIRE PROTECTION IS CONSTANTLY AVAILABLE TO THE SITE THROUGHOUT THE PROJECT. CONTRACTOR WILL BE RESPONSIBLE FOR ARRANGING ANY REQUIRED WATER MAIN SHUT-OFFS WITH THE WATER COMPANY DURING CONSTRUCTION. ALL COSTS ASSOCIATED WITH WATERMAIN SHUT-OFFS WILL BE THE RESPONSIBILITY OF THE CONTRACTOR; NO ADDITIONAL COMPENSATION WILL BE PROVIDED.
15. DAMAGE TO ALL EXISTING FACILITIES DESIGNATED TO REMAIN WILL BE REPLACED AT CONTRACTOR'S EXPENSE.
16. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS, AND EXACT UTILITY ENTRANCE LOCATIONS.
17. GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TAP AND TIE ON FEES REQUIRED AS WELL AS COSTS OF UNDERGROUND SERVICE CONNECTIONS TO THE BUILDING.
18. GENERAL CONTRACTOR SHALL PROVIDE ALL CONDUITS AS SHOWN ON THE PLANS, VERIFY LOCATION OF UTILITY TIE-INS, AND PROVIDE NYLON PULL CORDS INSIDE THE CONDUIT.
19. THE CONTRACTOR SHALL INCLUDE IN BID PRICE THE DAILY RECORD KEEPING OF THE RECORD CONDITION OF ALL OF THE UNDERGROUND UTILITIES, CONSTRUCTION STAKE-OUT, PREPARATION OF THE NECESSARY/REQUIRED WATER AND SEWER RECORD DRAWINGS TO BE SUBMITTED, AND ALL OTHER INFORMATION REQUIRED FOR OBTAINING PERMITS AND RELEASE OF BONDS.
20. **ENERGIZED ELECTRICAL LINE SAFETY, WARNINGS, AND ADVANCED NOTICES:** ALL OWNERS, GENERAL CONTRACTORS, AND SUBCONTRACTORS ASSOCIATED WITH THIS PROJECT SHALL BE RESPONSIBLE FOR FAMILIARIZING THEMSELVES WITH, COMPLYING WITH, AND THE ENFORCEMENT OF ARKANSAS CODES AR ST § 11-5-307 AND § AR ST 11-5-308 AND ANY OTHER CURRENT STATE CODES PERTAINING TO ADVANCE NOTICE REQUIREMENTS AND FOR SAFETY OF ALL PERSONNEL, INCLUDING THE GENERAL PUBLIC, PERTAINING TO ANY WORK, MOVEMENT, AND ACTIVITY IN CLOSE PROXIMITY TO ANY ENERGIZED ELECTRICAL LINE.

LEGEND (EXISTING SYMBOLS)

SYMBOLS

- FOUND IRON PIN
- LIGHT POLE
- POWER POLE
- TELEPHONE PEDESTAL
- TV PEDESTAL
- MANHOLE
- SANITARY SEWER CLEANOUT
- GAS METER
- GAS VALVE
- STORM SEWER PIPE
- DOWN GUY
- WATER VALVE
- FIRE HYDRANT ASSEMBLY
- AIR RELEASE VALVE
- FIRE DEPARTMENT CONNECTION
- WATER METER
- SPRINKLER HEAD
- ELECTRIC PEDESTAL
- GRATED INLET
- DROP INLET
- TREE
- TREE TO BE REMOVED

LINEWORK

- EASEMENT
- CURB
- INTERMEDIATE CONTOUR
- INDEX CONTOUR
- SANITARY SEWER LINE
- GAS LINE
- WATER LINE (SPECIFY SIZE & TYPE)
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- UNDERGROUND TELEVISION
- OVERHEAD TELEVISION
- CHAIN LINK FENCE
- WOOD FENCE
- BARBED WIRE FENCE
- FIBER OPTIC
- RIGHT OF WAY
- ROAD CENTERLINE

LEGEND (CONSTRUCT)

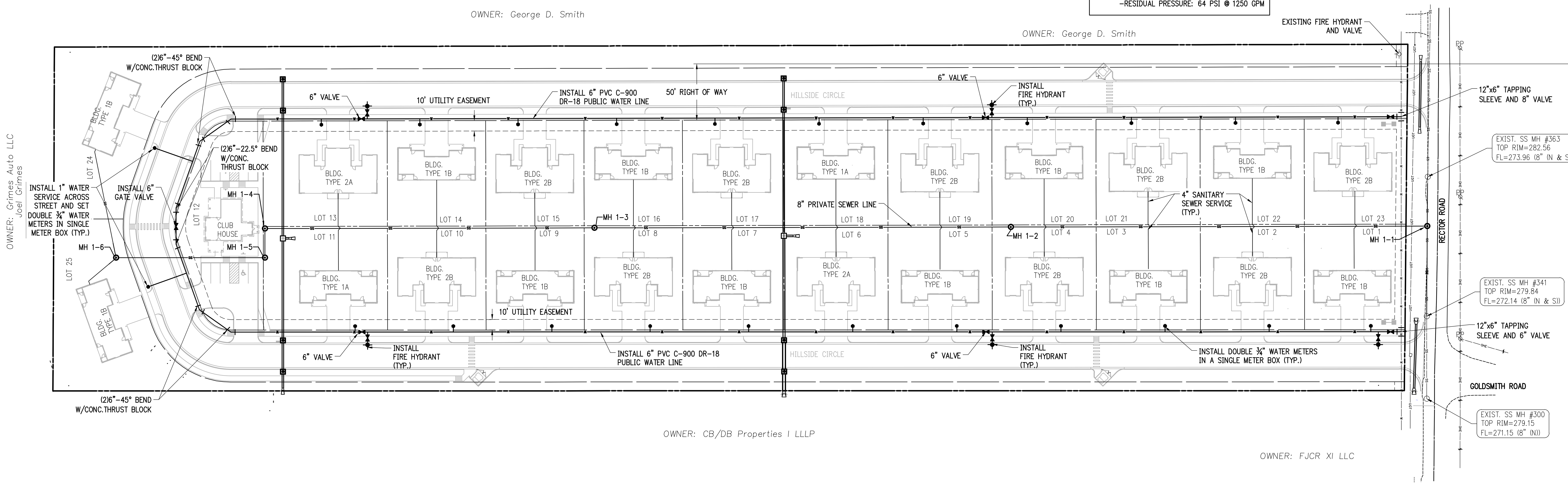
SYMBOLS

- SET IRON PIN
- LIGHT POLE
- POWER POLE
- TELEPHONE PEDESTAL
- TV PEDESTAL
- MANHOLE
- SANITARY SEWER CLEANOUT
- GAS METER
- GAS VALVE
- STORM SEWER PIPE
- STRUCTURE NUMBER
- WATER VALVE
- FIRE HYDRANT ASSEMBLY
- AIR RELEASE VALVE
- FIRE DEPARTMENT CONNECTION
- WATER METER
- BACK FLOW PREVENTER
- REDUCER
- RECTANGULAR DROP INLET, GRATED INLET OR JUNCTION BOX (SPECIFY ON PLAN SHEET)
- CIRCULAR DROP INLET, GRATED INLET OR JUNCTION BOX (SPECIFY ON PLAN SHEET)

LINEWORK

- EASEMENT
- CURB
- INTERMEDIATE CONTOUR
- INDEX CONTOUR
- SANITARY SEWER LINE
- GAS LINE
- WATER LINE
- UNDERGROUND TELEPHONE
- UNDERGROUND ELECTRIC
- OVERHEAD ELECTRIC
- FIBER OPTIC
- UNDERGROUND TELEVISION
- OVERHEAD TELEVISION
- CHAIN LINK FENCE
- WOOD FENCE
- BARBED WIRE FENCE
- BUILDING SET BACK
- RIGHT OF WAY
- PROPERTY LINE
- ROAD CENTERLINE

EXISTING WATER PRESSURES:
FIRE HYDRANT LOCATED ADJACENT TO SITE
-STATIC PRESSURE: 72 PSI
-RESIDUAL PRESSURE: 64 PSI @ 1250 GPM



NOTE:
WATER AND SEWER LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST ADDITION OF SPECIFICATIONS BY PARAGOULD WATER, LIGHT, AND CABLE.

SEE SHEETS C-507 AND C-508

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PARAGOULD, ARKANSAS

Key Plan

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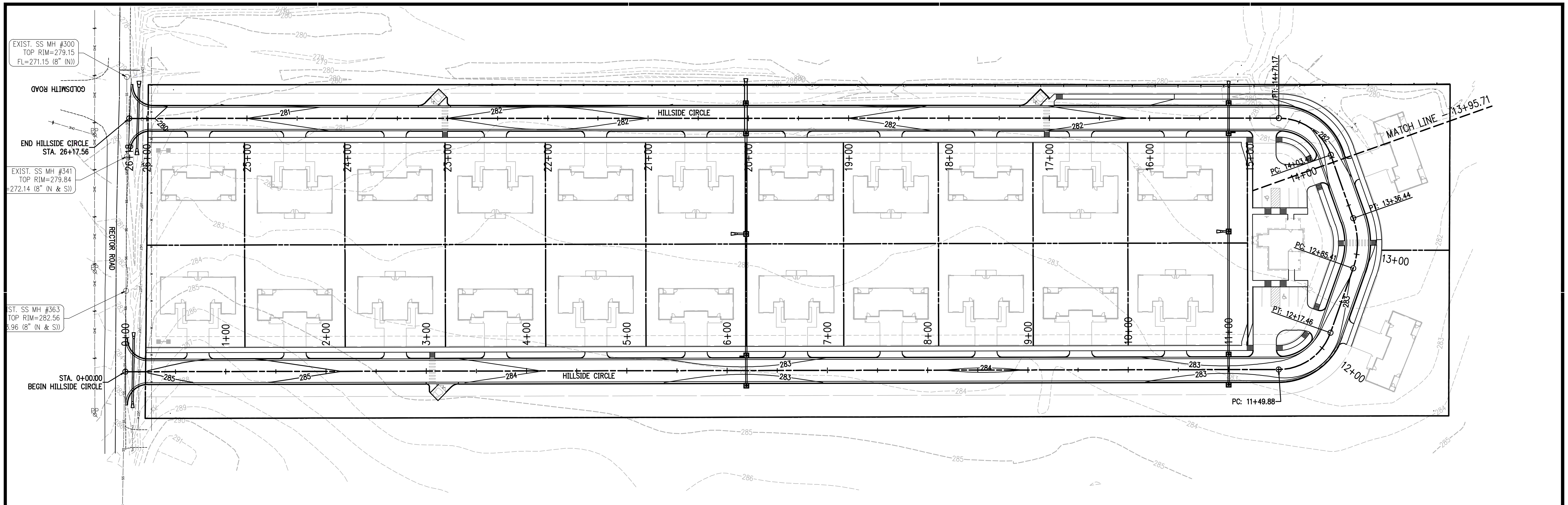
STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 9407 JERRY J. KELSO

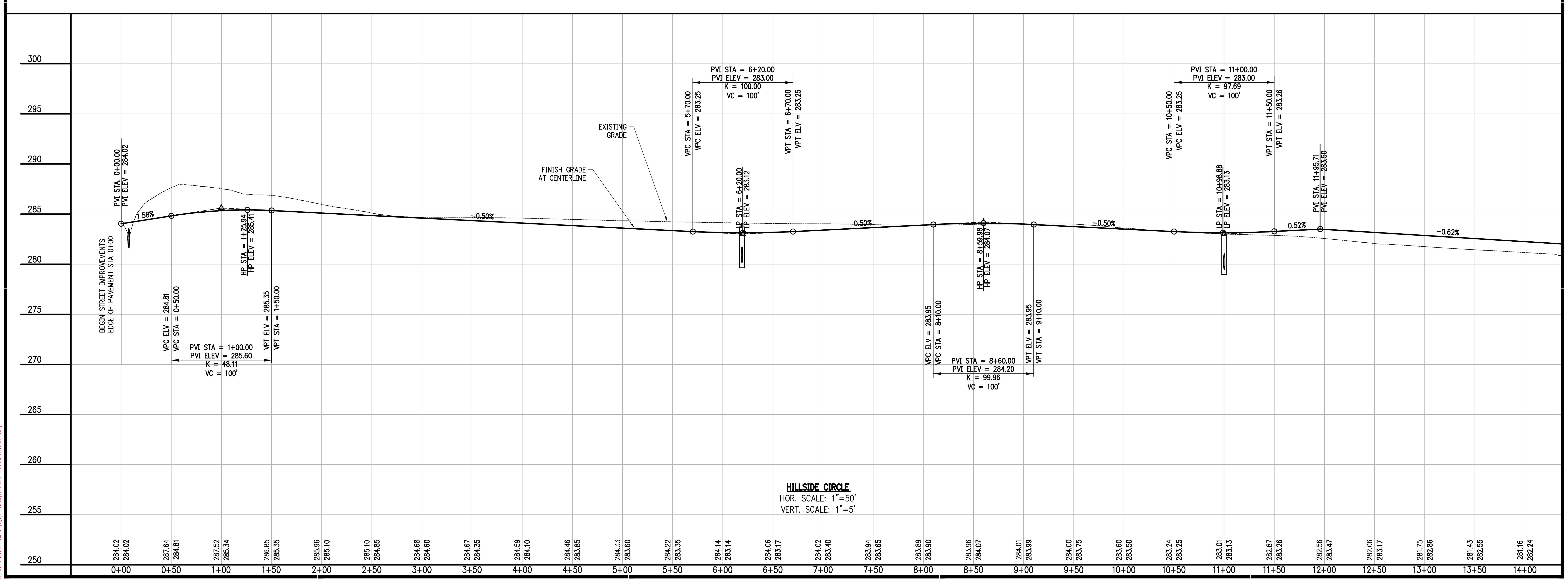
01/29/2021

UTILITY PLAN

C-108



CONTRACTOR SHALL CONSTRUCT PUBLIC STREETS IN ACCORDANCE WITH THE CITY OF PARAGOULD "ORDINANCE FOR SUBDIVISION STREET DESIGN AND CONSTRUCTION REQUIREMENTS" LATEST ADDITION ON FILE WITH THE CITY CLERK OF PARAGOULD.



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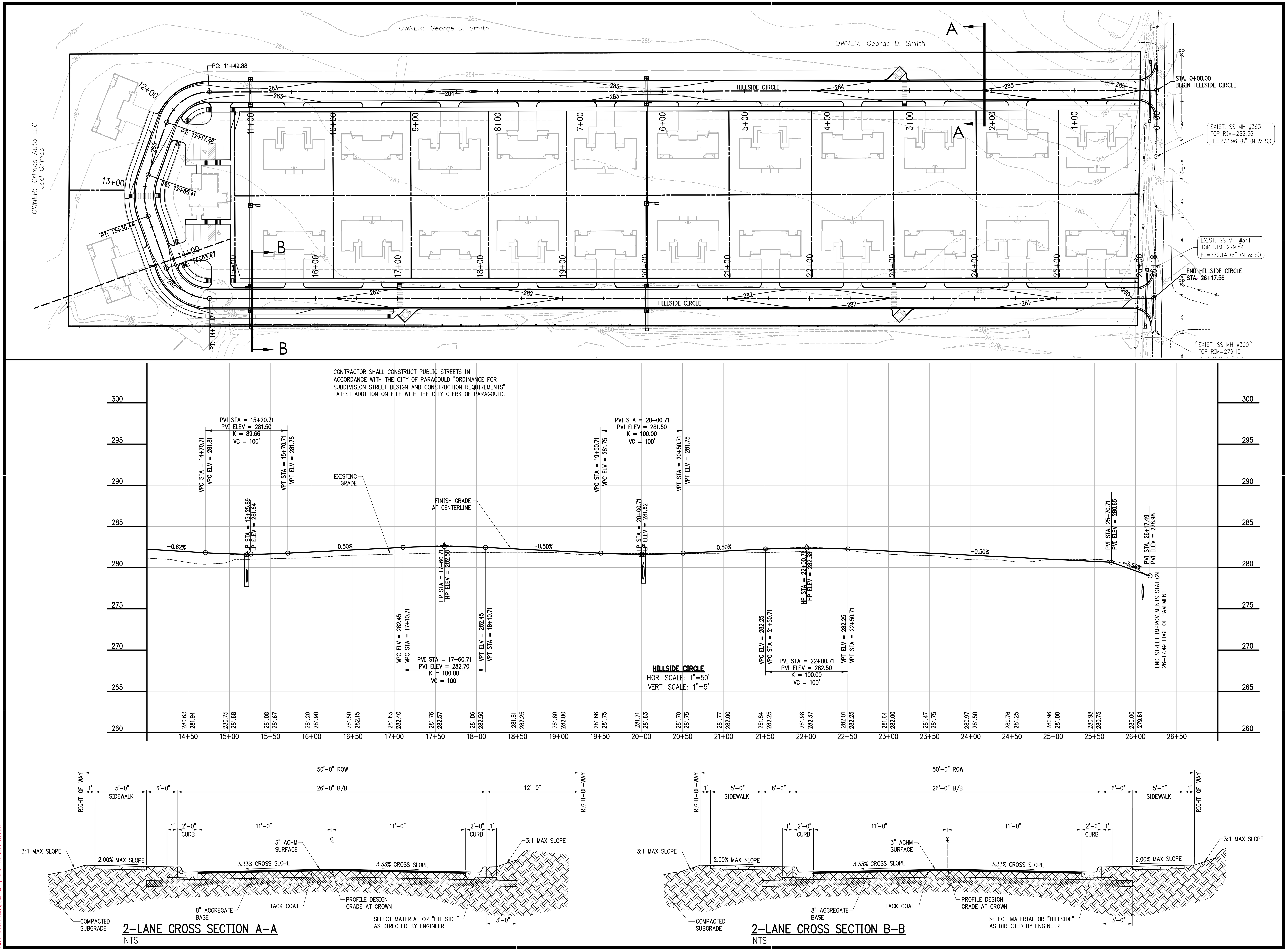
ROAD PLAN AND PROFILE SHT.1

C-201



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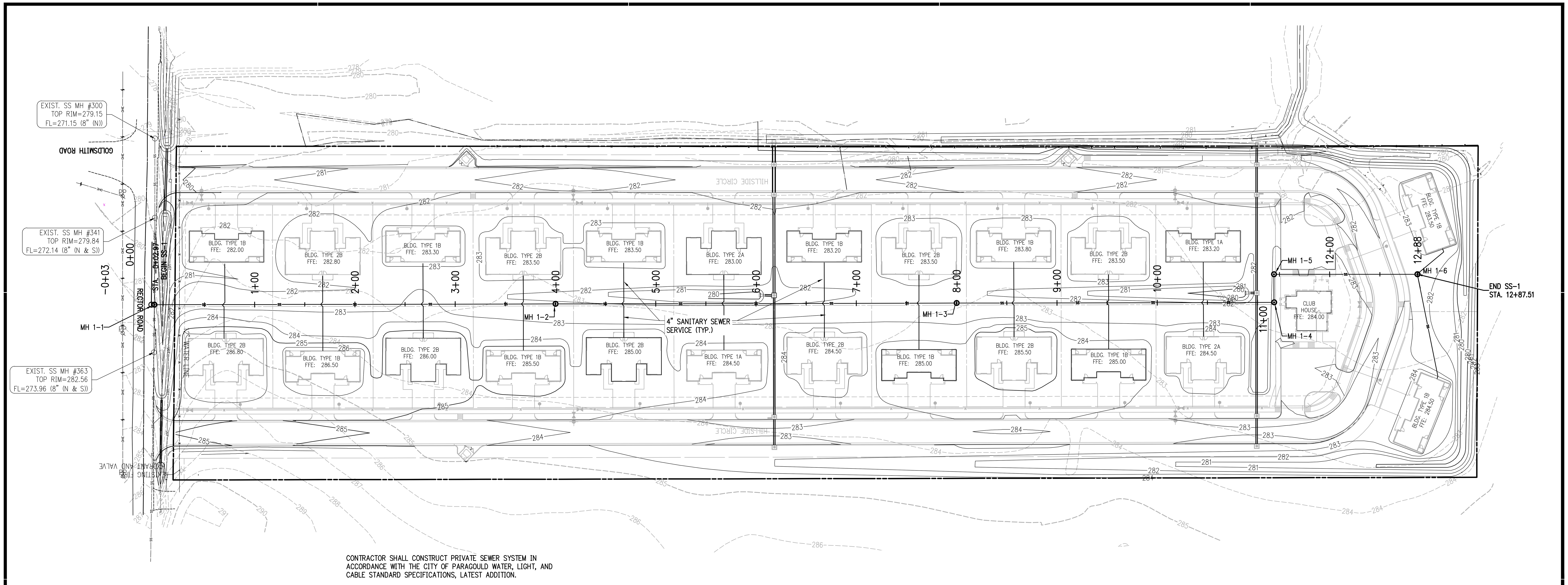
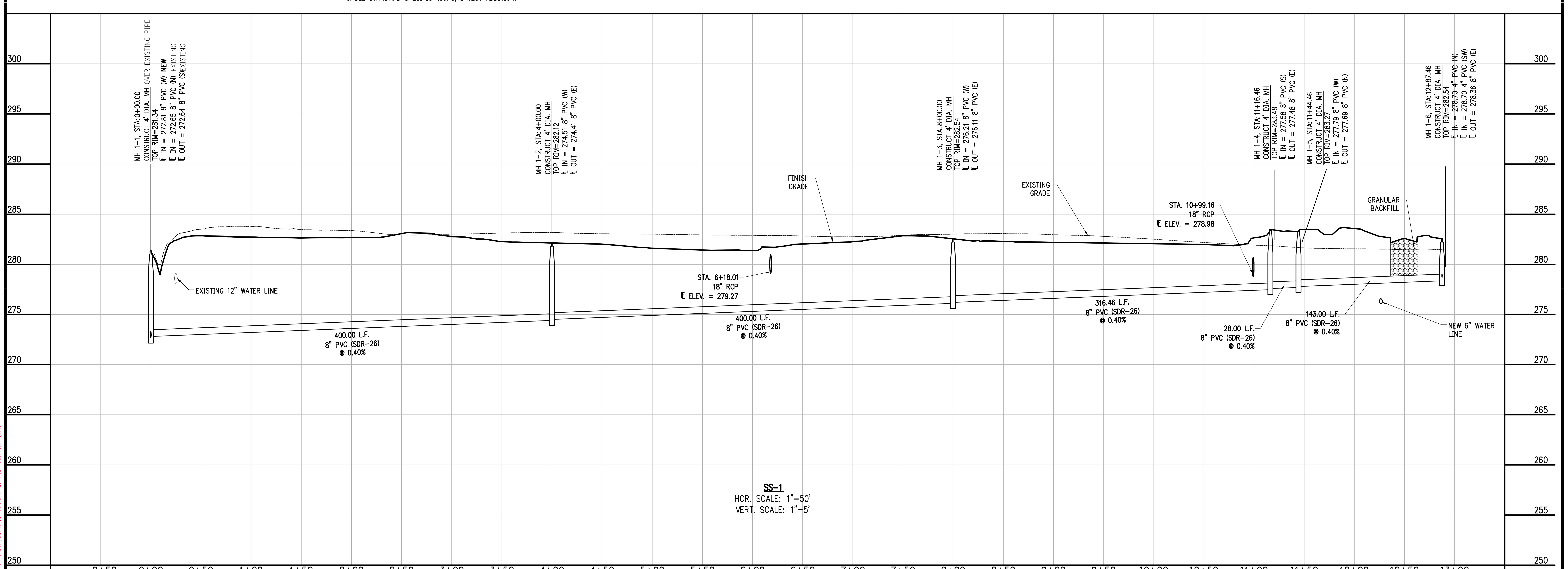
ROAD PLAN AND PROFILE SHT.2

C-202





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No. 9407
JERRY J. KELSO
01/29/2021

SANITARY SEWER LINE PLAN AND PROFILE

C-203

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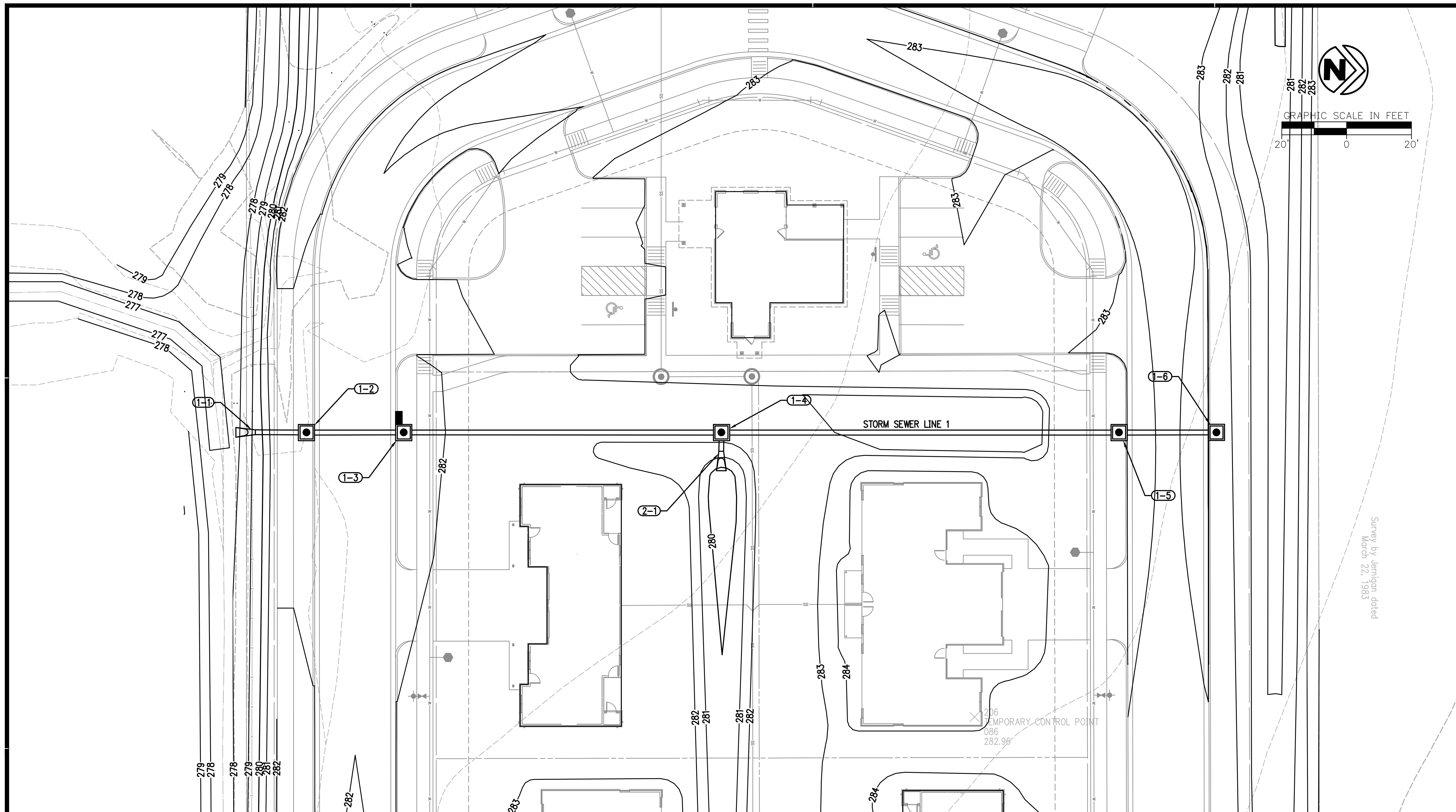

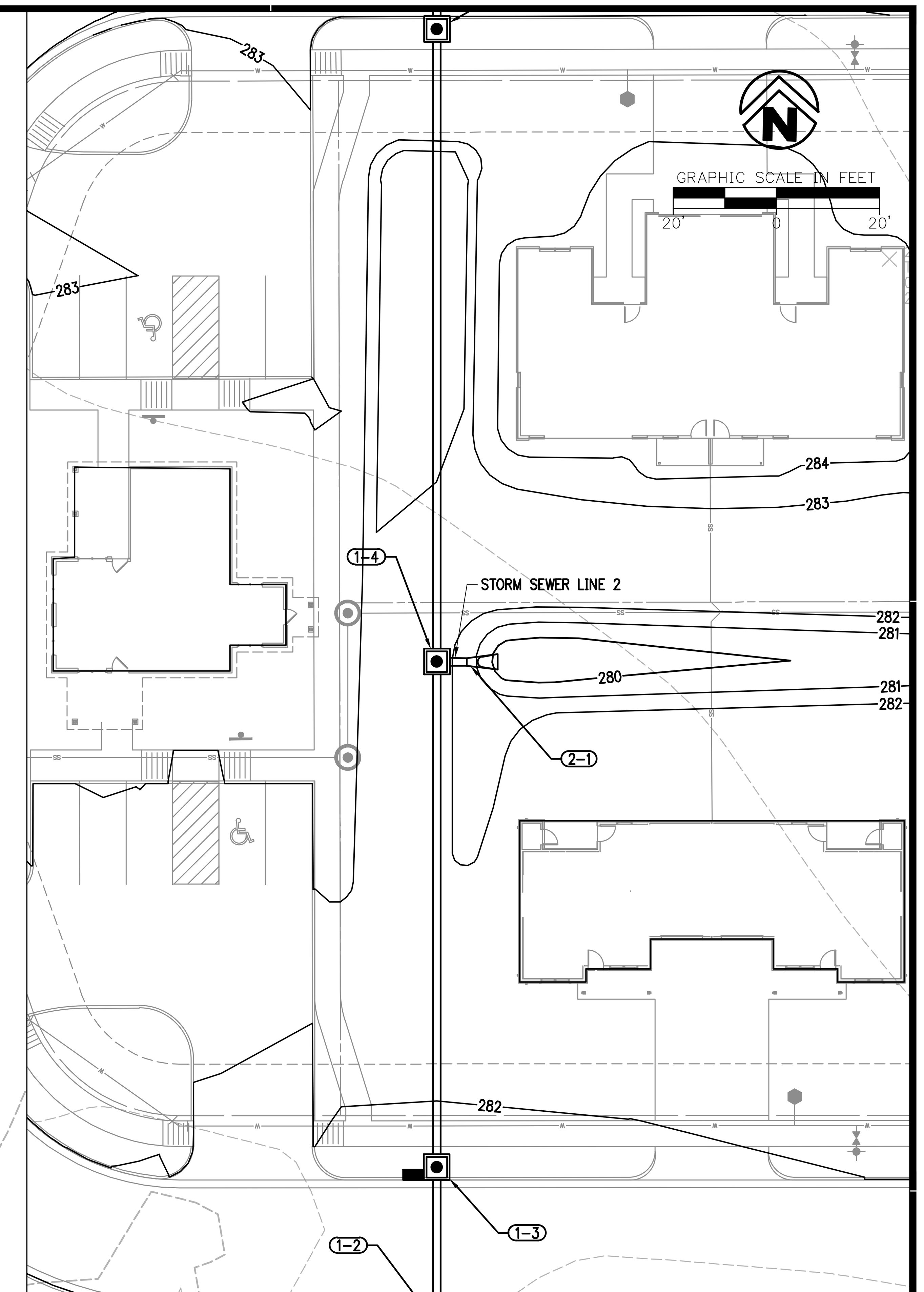

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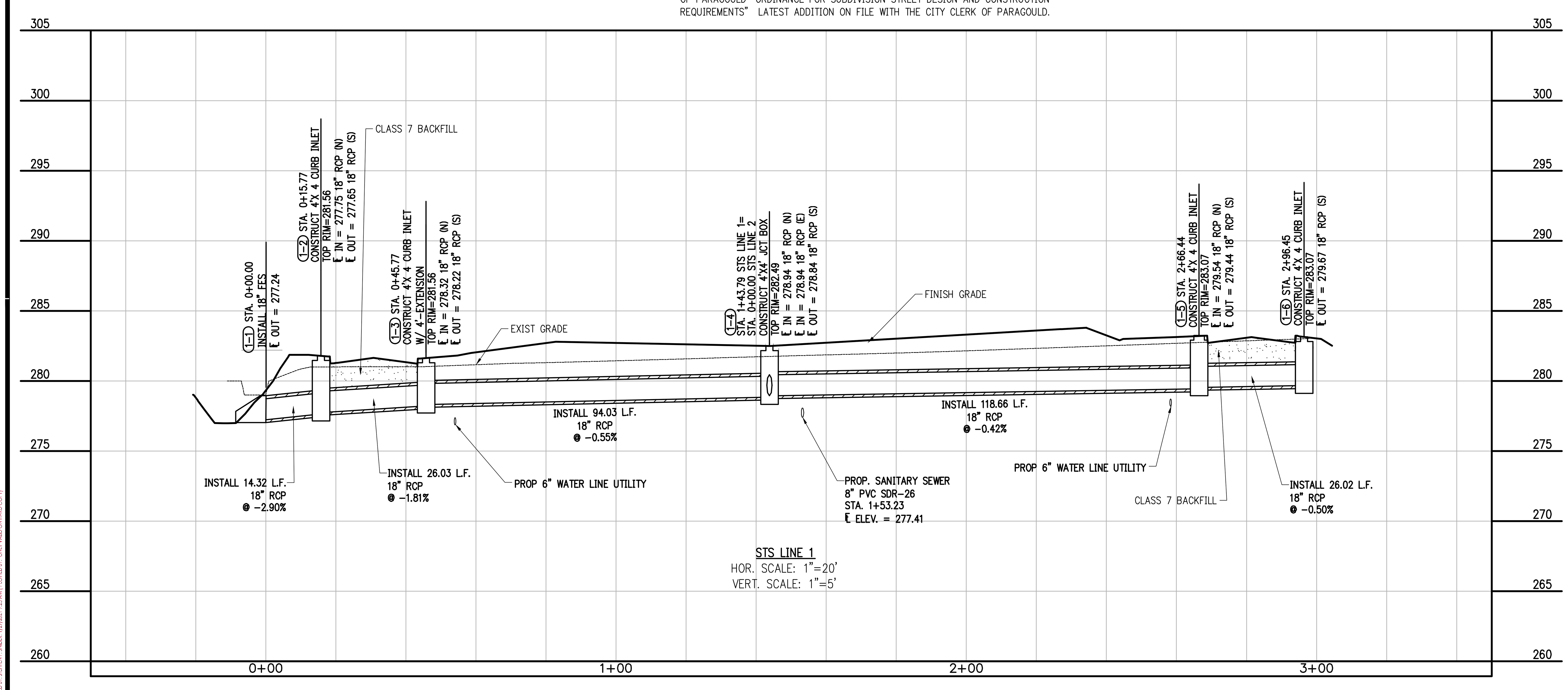

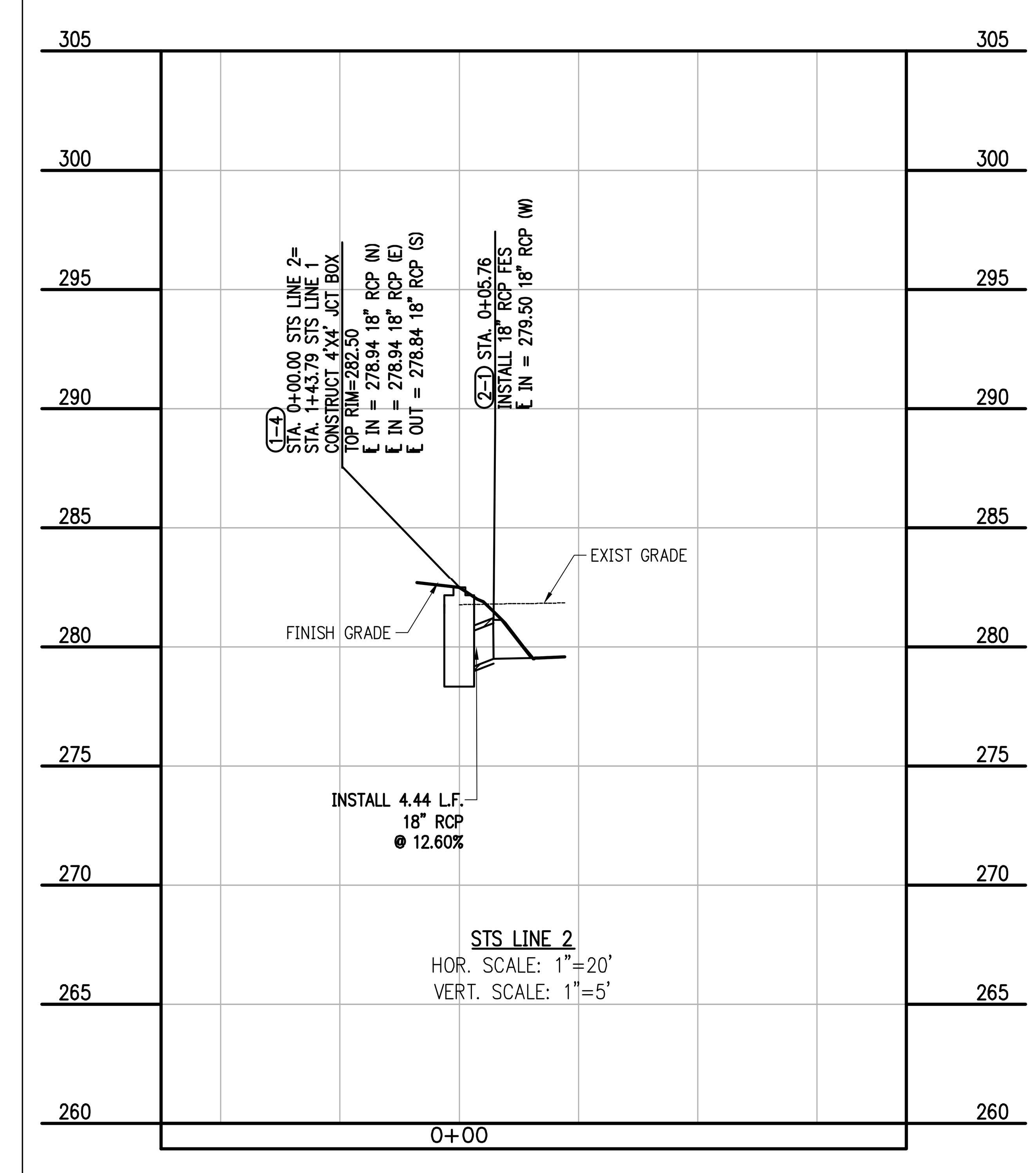

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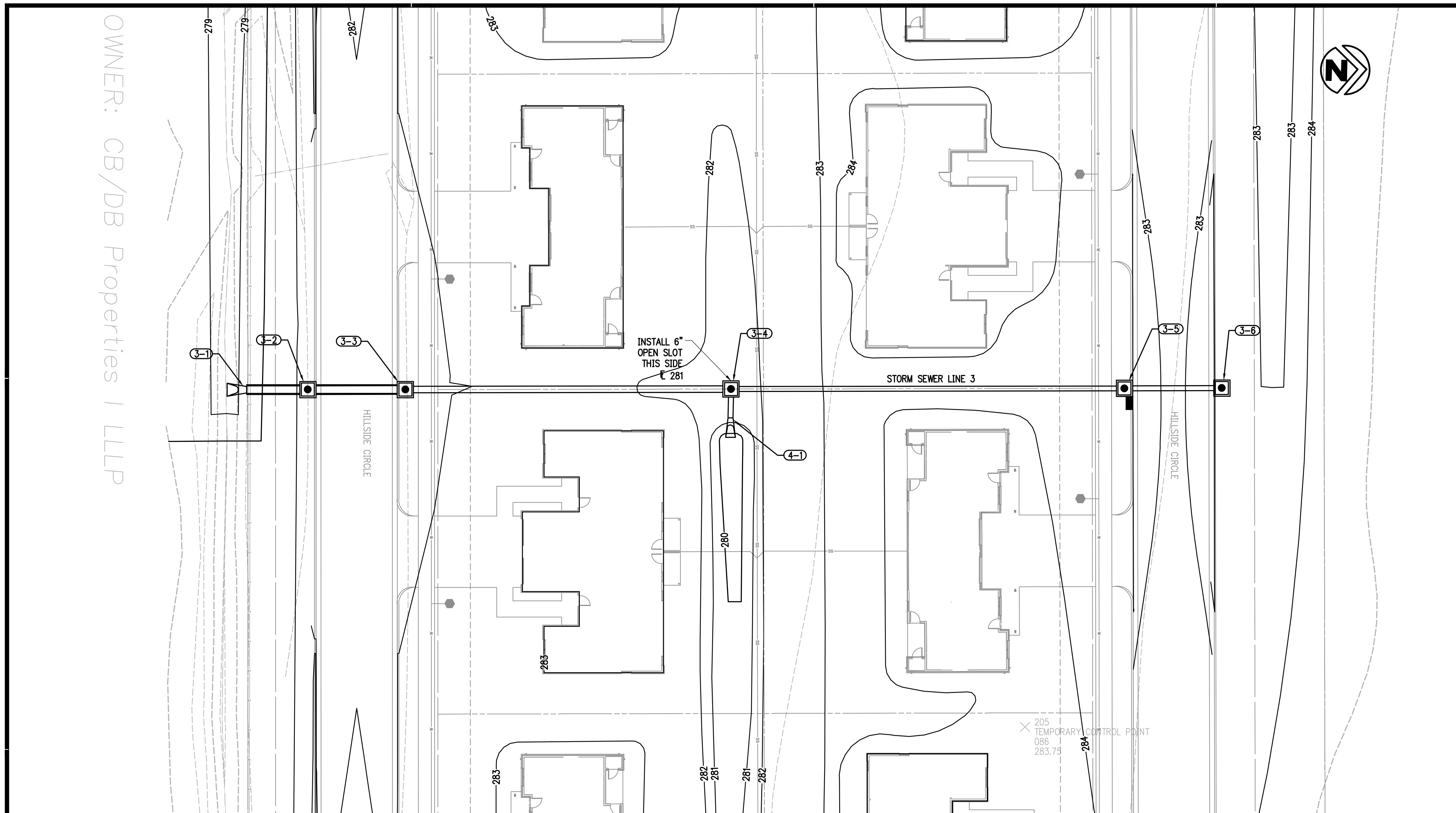
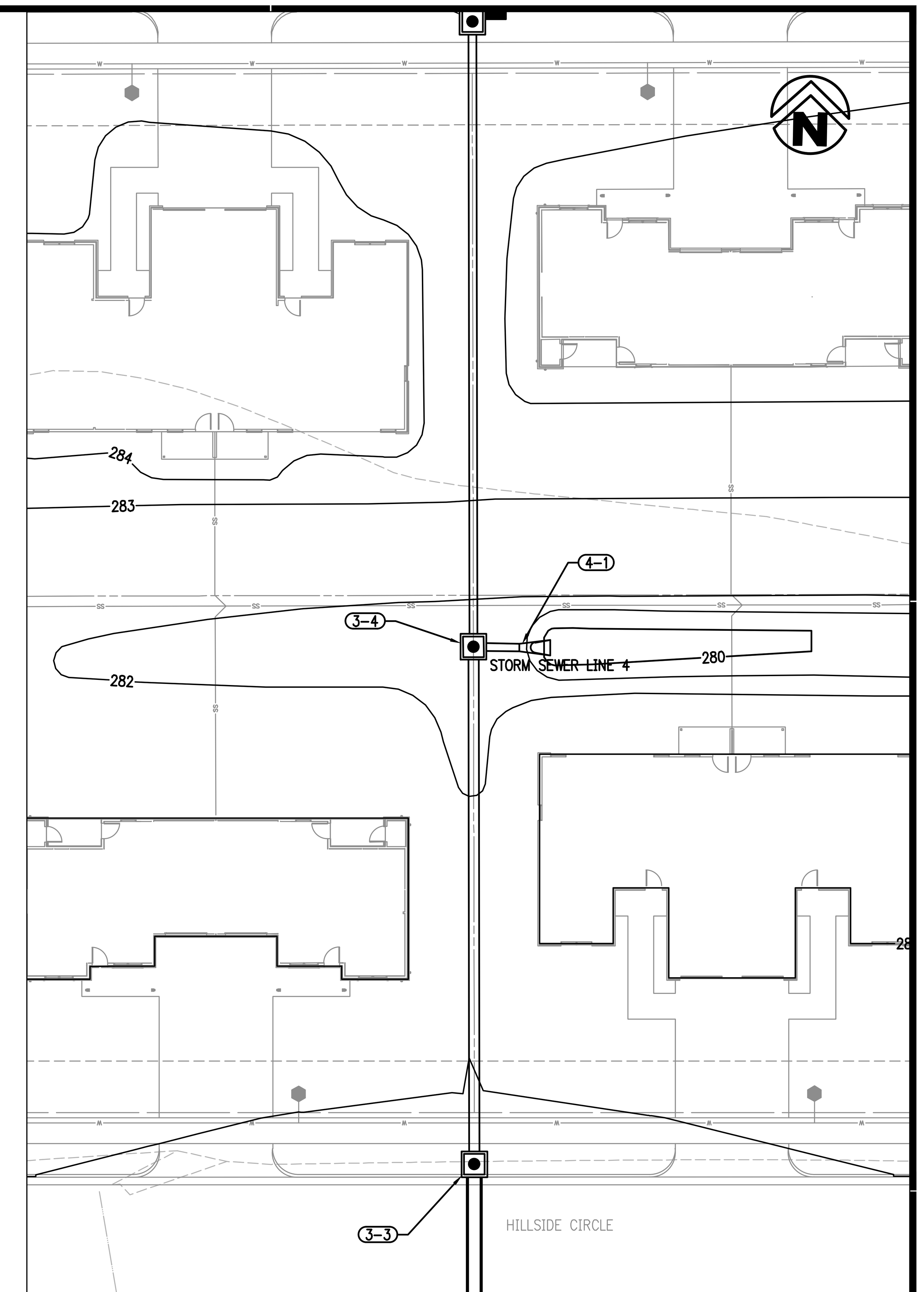
STORM SEWER PLAN AND PROFILE
LINES 1 & 2

C-204





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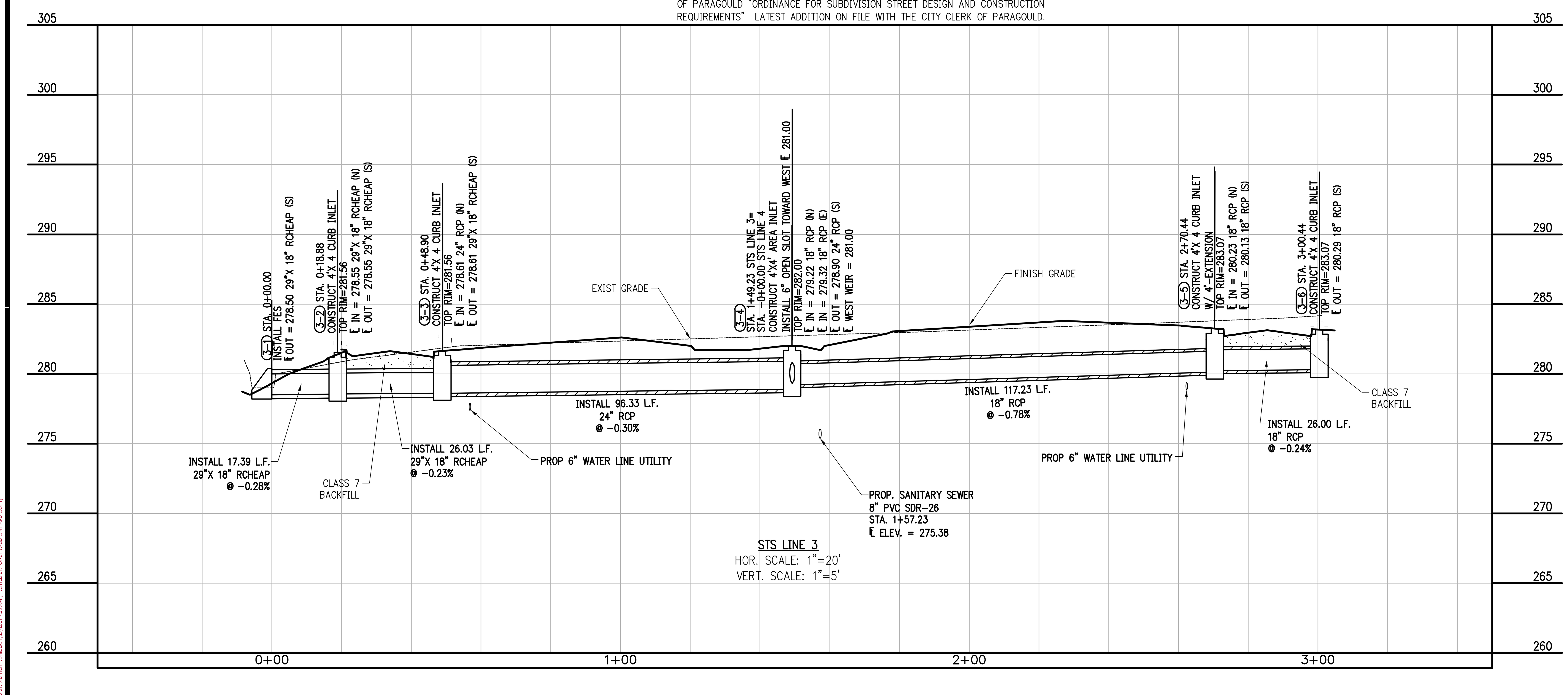

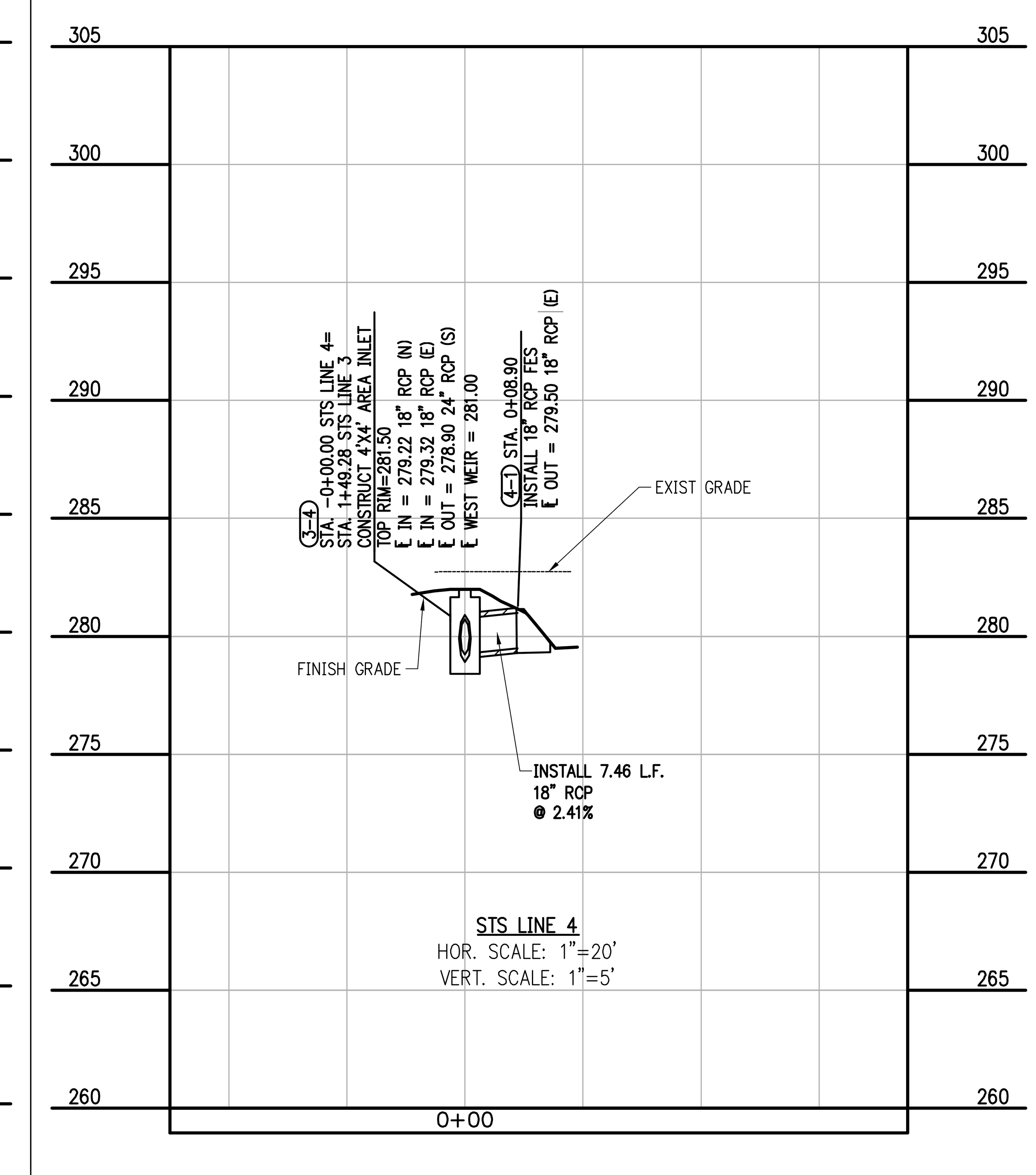

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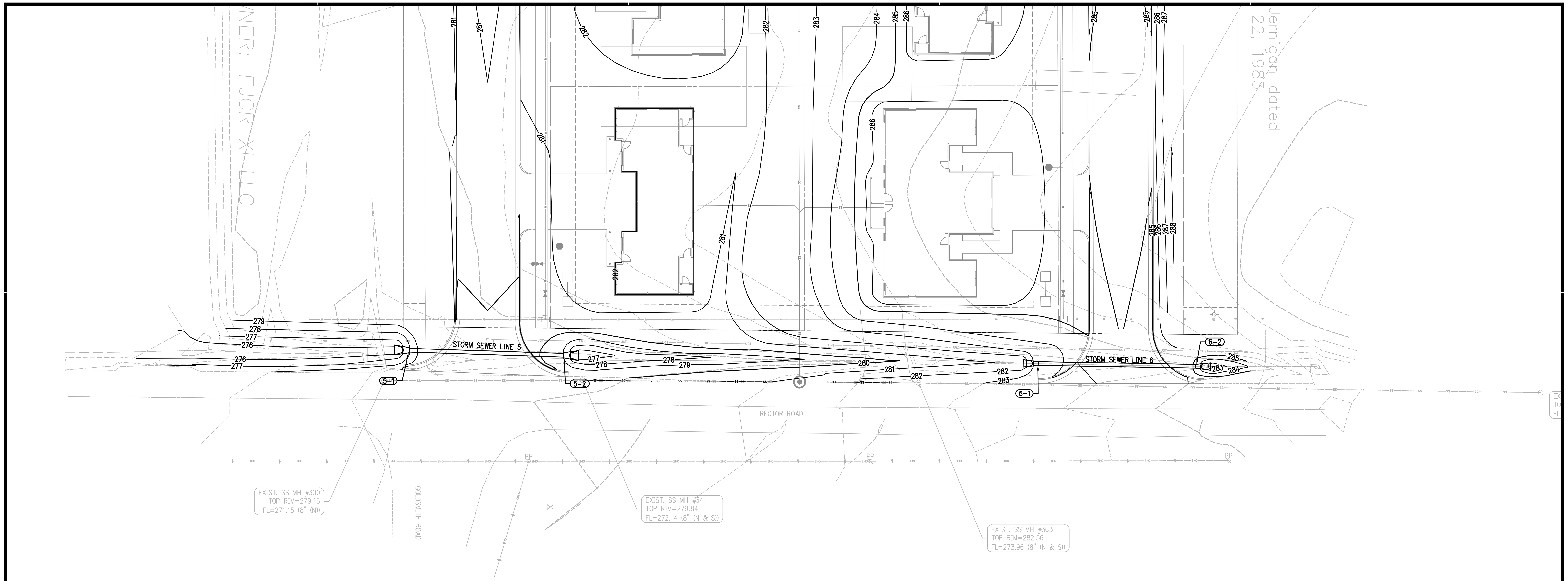
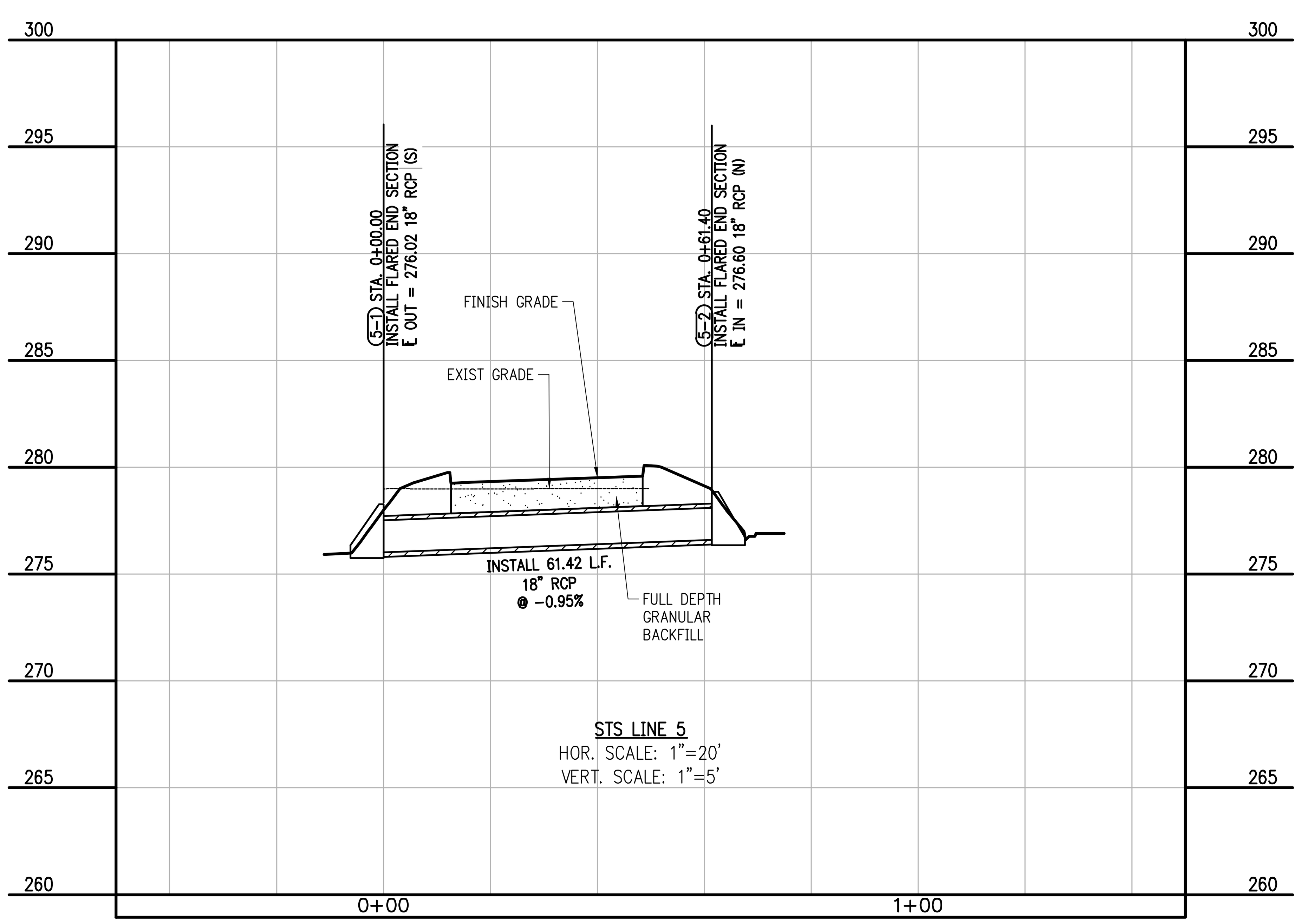
STORM SEWER PLAN AND PROFILE
LINES 3 & 4

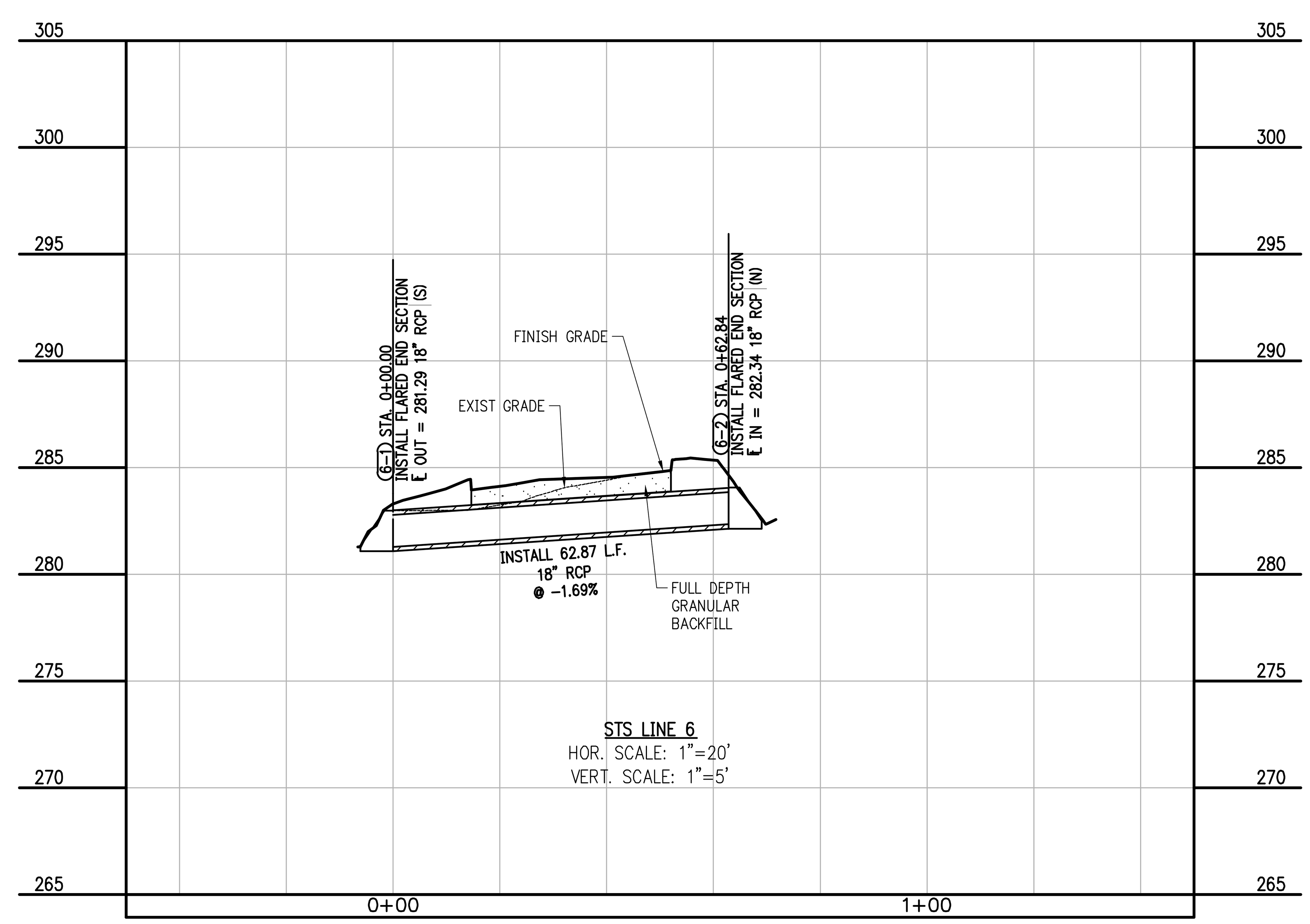
C-205



CONTRACTOR SHALL INSTALL STORM SEWER SYSTEM IN ACCORDANCE WITH THE CITY OF PARAGOULD "ORDINANCE FOR SUBDIVISION STREET DESIGN AND CONSTRUCTION REQUIREMENTS" LATEST ADDITION ON FILE WITH THE CITY CLERK OF PARAGOULD.



STS LINE 5
HOR. SCALE: 1"=20'
VERT. SCALE: 1"=5'



STS LINE 6
HOR. SCALE: 1"=20'
VERT. SCALE: 1"=5'

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GRAPHIC SCALE IN FEET
20' 0 20'

HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

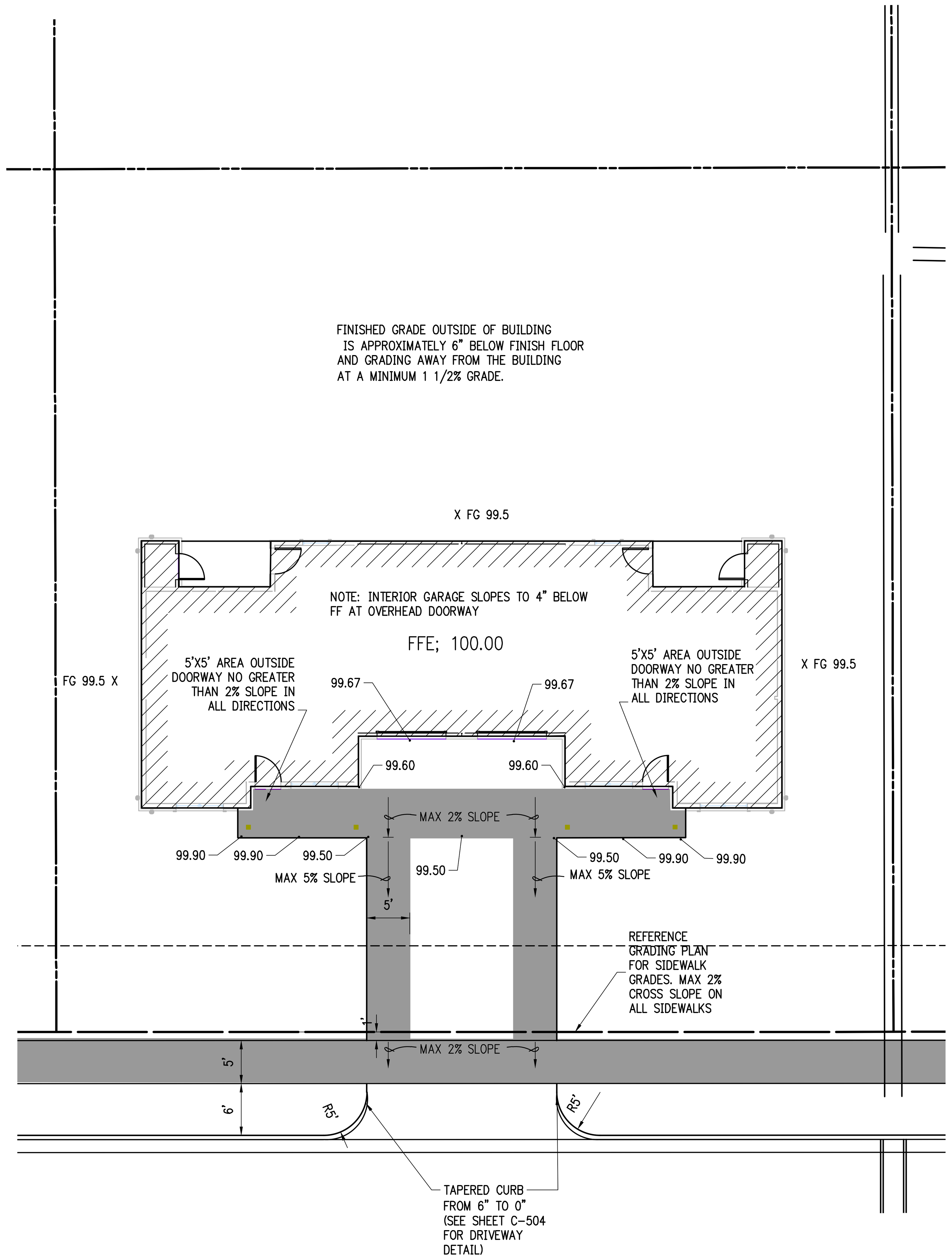
No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9407 JERRY J. KELSO
01/29/2021

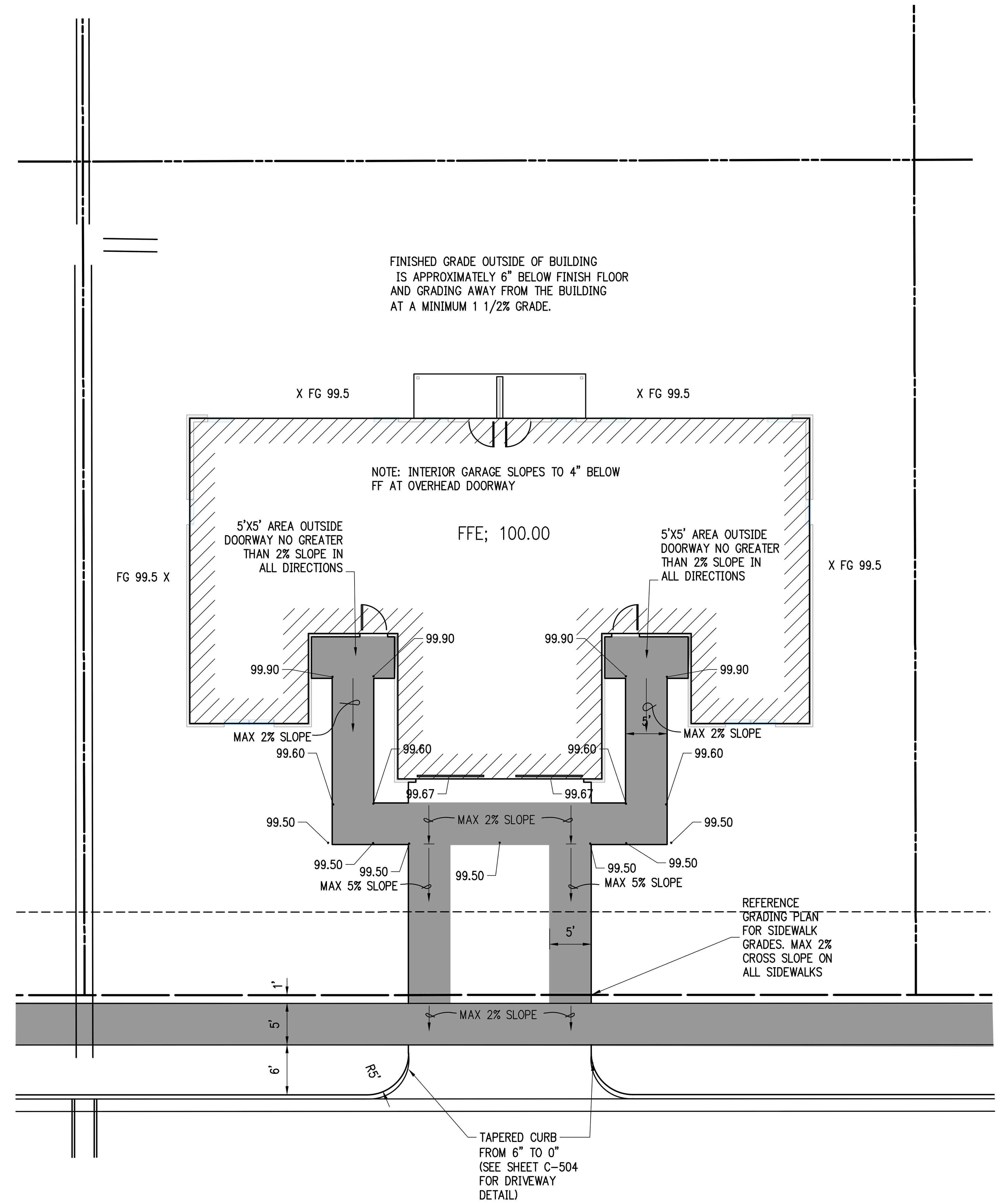
STORM SEWER PLAN AND PROFILE
LINES 5 & 6

C-206



BUILDING TYPE 1A AND 1B

SCALE: 1"=10'-0"



BUILDING TYPE 2A AND 2B

SCALE: 1"=10'-0"

TYPICAL GRADING AROUND EACH BUILDING.
REFERENCE GRADING PLAN FOR ACTUAL FINISH
FLOOR ELEVATIONS AND GRADES ALONG THE STREET.

ACCESSIBILITY NOTES

INDICATES ACCESSIBLE ROUTE.

1. THE AREAS ON THIS SHEET INDICATED BY THIS HATCH PATTERN ARE CONSIDERED AN ACCESSIBLE ROUTE AND SHALL MEET THE LATEST EDITIONS AND GUIDELINES PROVIDED BY THE FAIR HOUSING ACT (FHA) AND/OR THE AMERICANS WITH DISABILITIES ACT (ADA).
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT THE ACCESSIBLE ROUTES PER THESE PLANS AND THE FHA/ADA GUIDELINES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCY IN THE DETAILS AND GRADES PROVIDED ON THE GRADING PLAN PRIOR TO PLACING ANY CONCRETE.
3. THE MAXIMUM CROSS SLOPE SHALL NOT EXCEED 2% FOR ANY ACCESSIBLE ROUTE.
4. THE MAXIMUM RUNNING SLOPE SHALL NOT EXCEED 5% FOR AN ACCESSIBLE ROUTE UNLESS A RAMP IS PROVIDED THAT MEETS THE REQUIREMENTS OF AN ACCESSIBLE ROUTE (SEE DETAILS).
5. THE MAXIMUM SLOPE OF AN ACCESSIBLE PARKING STALL NOT EXCEED 2% IN ANY DIRECTION.
6. ACCESSIBLE ROUTE DETAILS FOR SIDEWALKS, CROSSWALKS, RAMPS, HANDRAILS, AND HANDICAP PARKING STALLS ARE PROVIDED ON SHEETS C-503.
7. NEITHER THE OWNER NOR THE ENGINEER WILL MAKE EXHAUSTIVE CHECKS OF THE CONTRACTOR'S WORK ON THE ACCESSIBLE ROUTES. RATHER, IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONSTRUCT THE ACCESSIBLE ROUTES PER THE PLANS AND DETAILS TO ENSURE COMPLIANCE WITH THE FHA/ADA.
8. AT HIS OWN EXPENSE, THE CONTRACTOR SHALL REMOVE AND REPLACE ANY SECTIONS OF AN ACCESSIBLE ROUTE THAT EXCEED THE MAXIMUM GRADES. THIS SHALL BE STRICTLY ENFORCED.

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HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT
PARAGOULD, ARKANSAS

Key Plan

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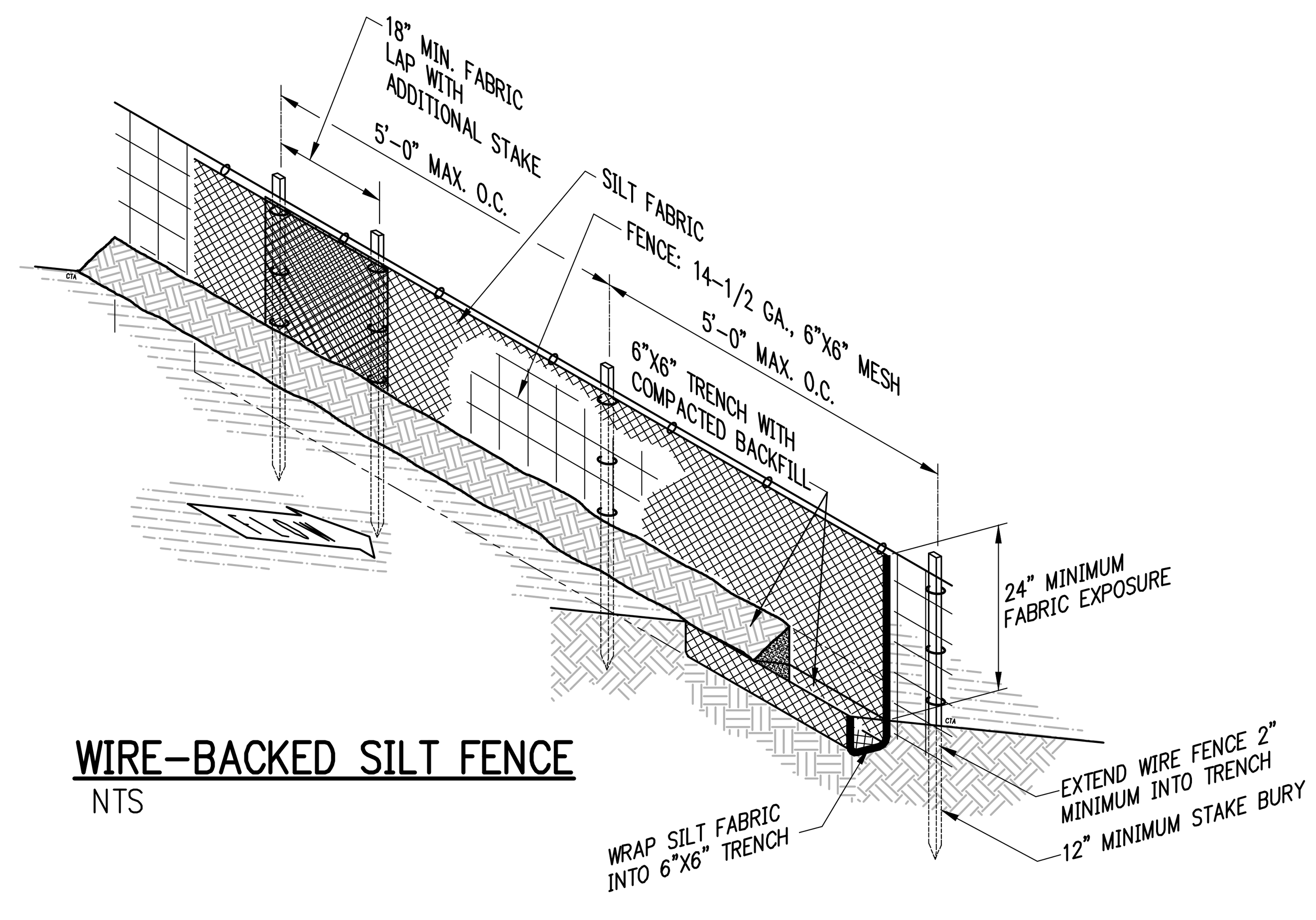
STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 9407 JERRY J. KELSO

01/29/2021

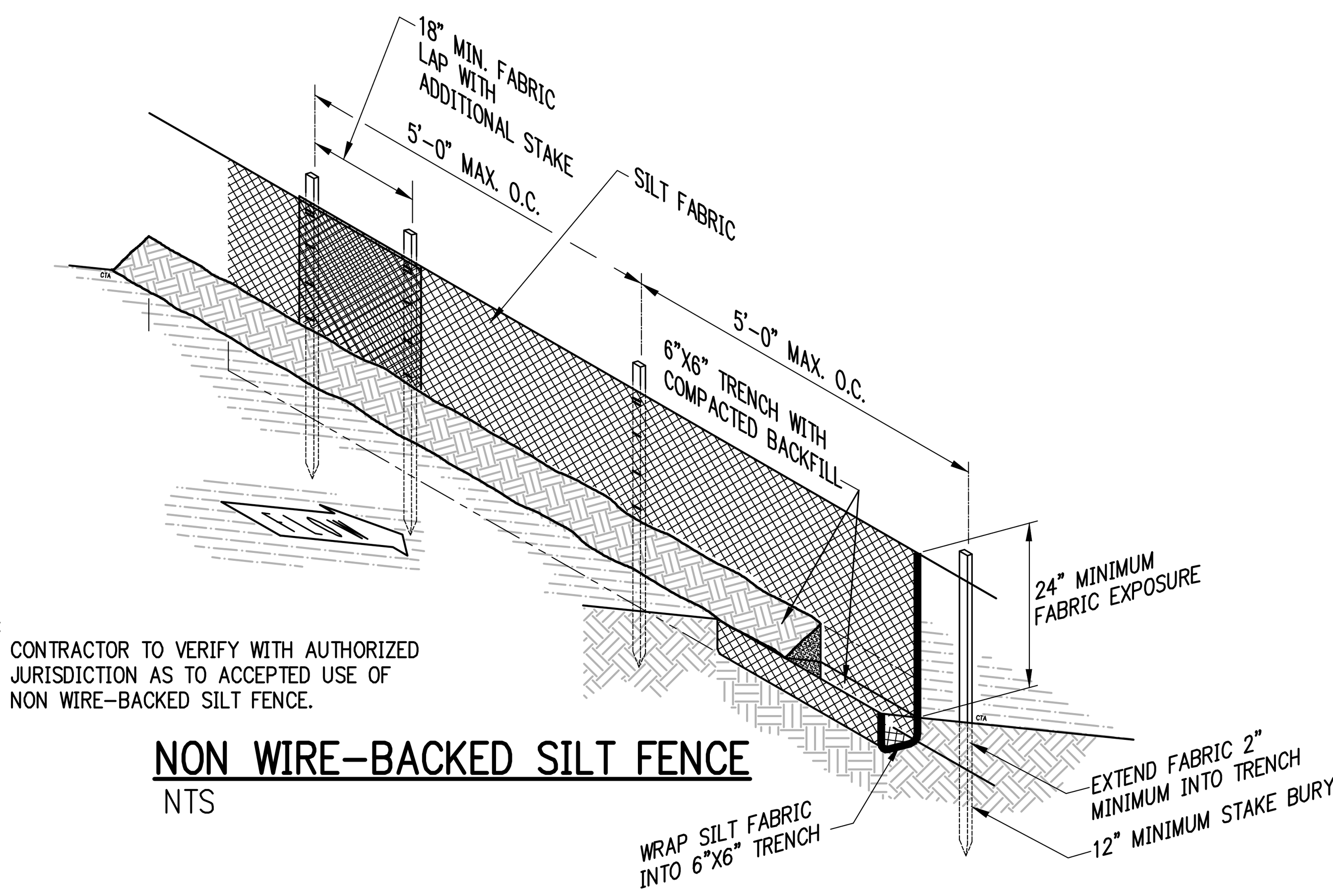
TYPICAL BUILDINGS LAYOUTS

C-501

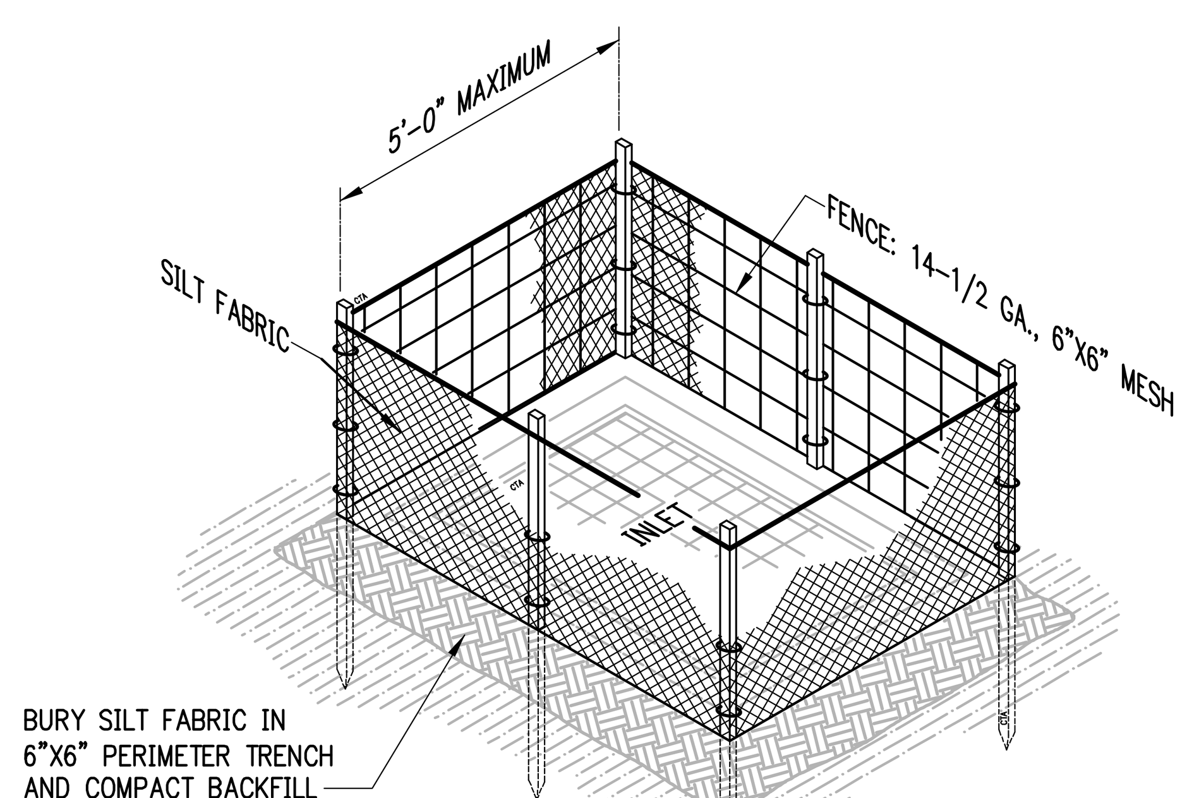


WIRE-BACKED SILT FENCE
NTS

NOTE:
1. CONTRACTOR TO VERIFY WITH AUTHORIZED JURISDICTION AS TO ACCEPTED USE OF NON WIRE-BACKED SILT FENCE.

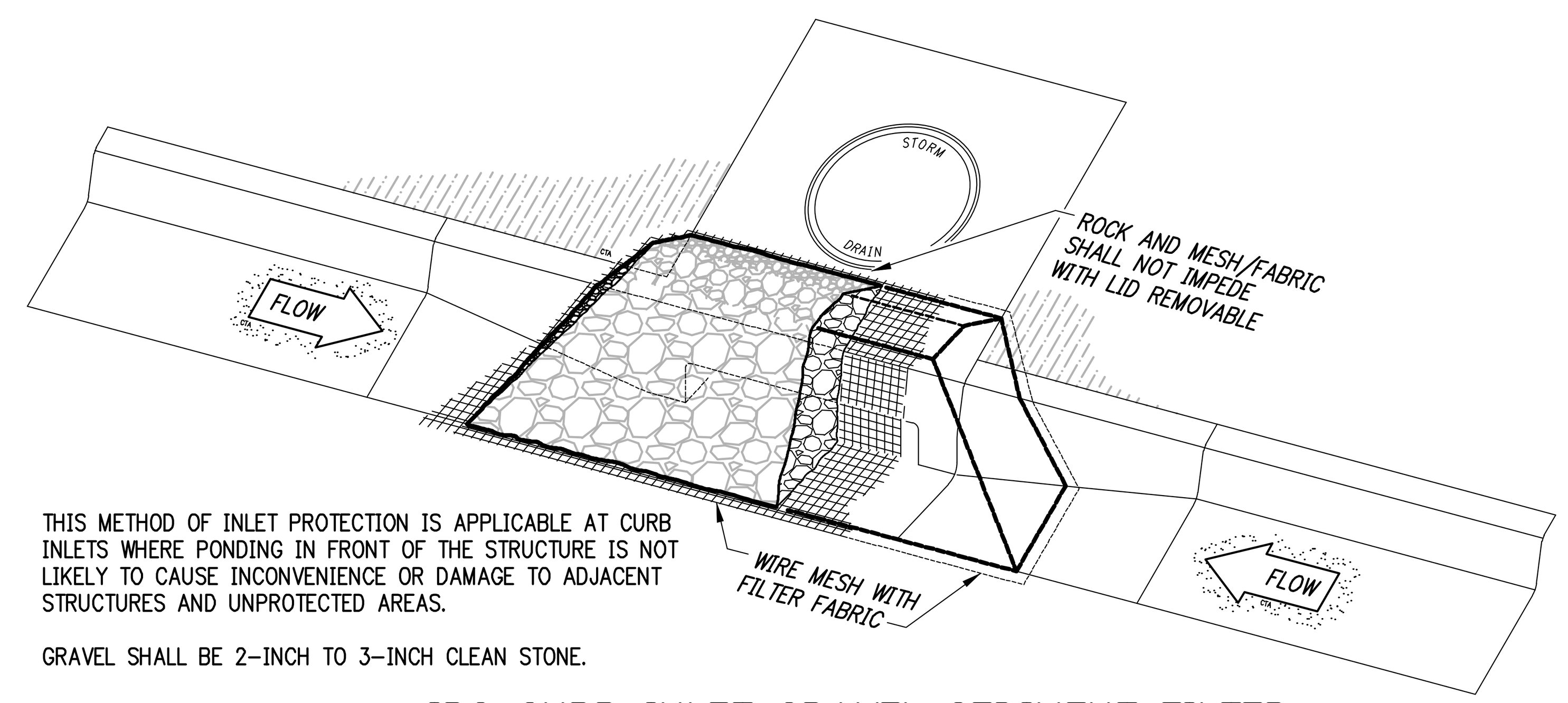


NON WIRE-BACKED SILT FENCE
NTS



SILT FABRIC SHALL BE SECURITY FASTENED TO WIRE FENCING.

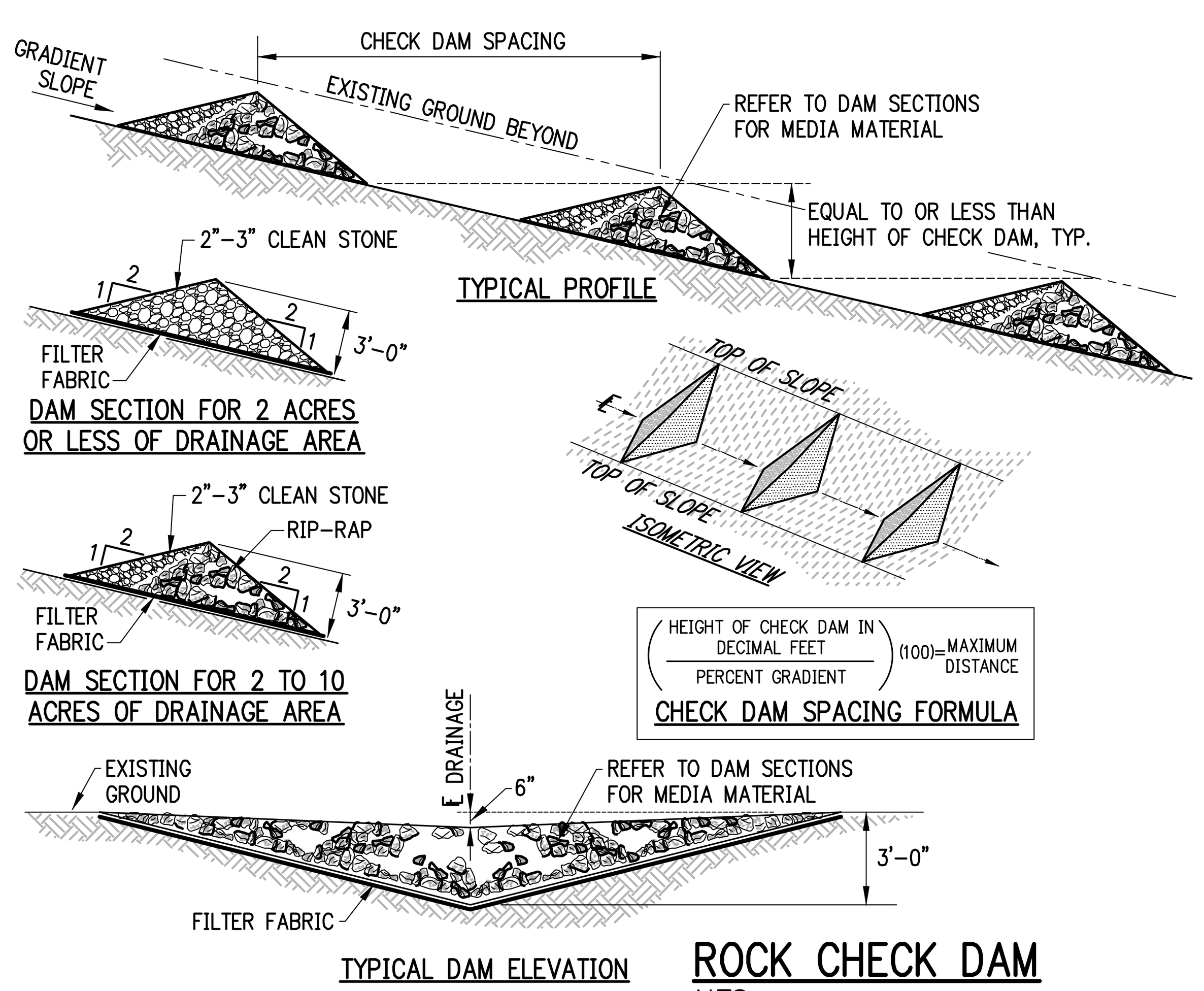
IP4 SILT FENCE INLET PROTECTION
NTS



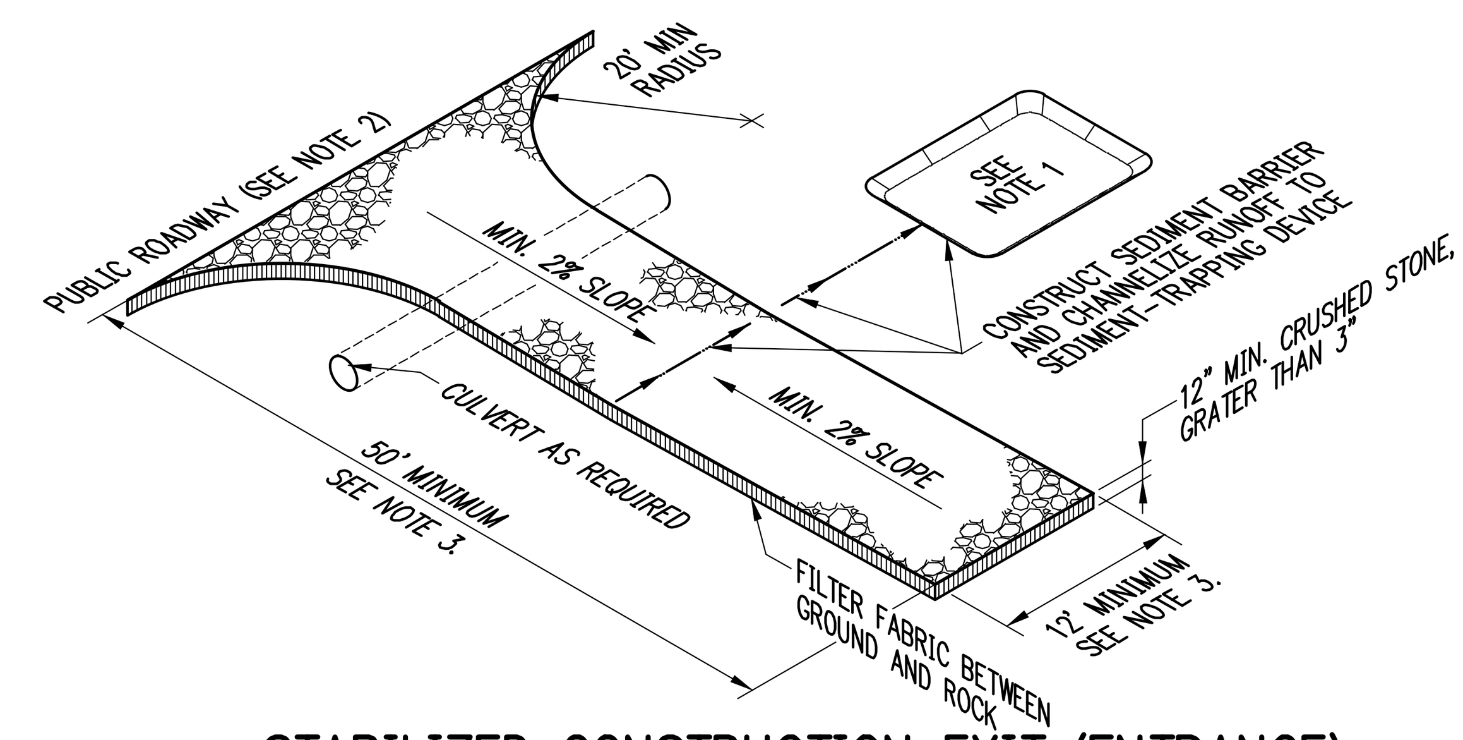
THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL SHALL BE 2-INCH TO 3-INCH CLEAN STONE.

IP2 CURB INLET GRAVEL SEDIMENT FILTER
NTS



ROCK CHECK DAM
NTS



1. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCE/EXIT IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES EXIT ONTO THE PUBLIC ROADS. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF SITE.
2. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
3. LENGTH AND WIDTH TO SUIT SITE, CONSTRUCTION TRAFFIC AND EFFECTIVENESS.

STABILIZED CONSTRUCTION EXIT (ENTRANCE)
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HILLSIDE MANOR
48 UNITS
RESIDENTIAL
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PARAGOULD, ARKANSAS

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01/29/2021

EROSION CONTROL DETAILS

C-502

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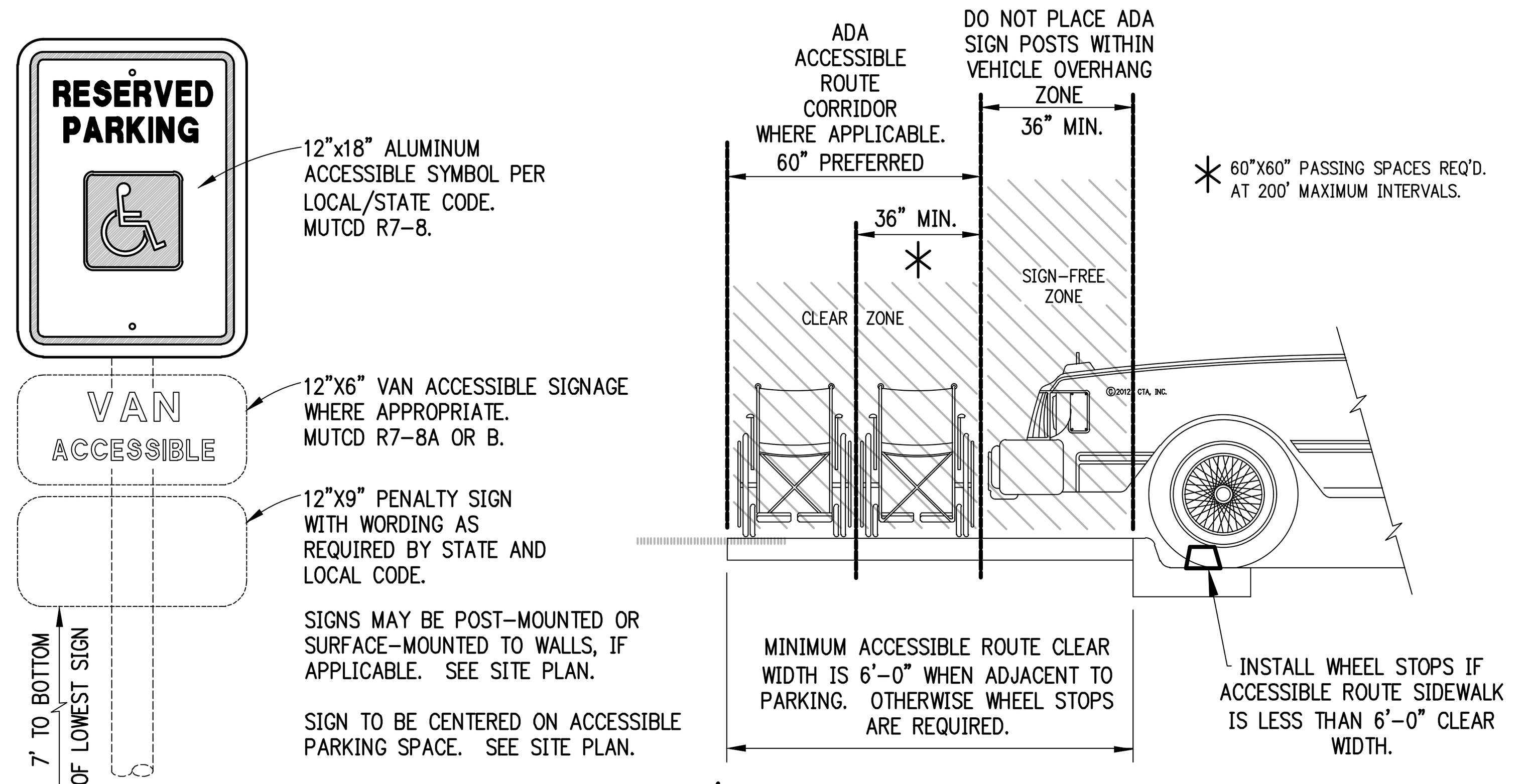
HILLSIDE MANOR 48 UNITS RESIDENTIAL DEVELOPMENT

PARAGOULD, ARKANSAS



12"x18" ALUMINUM ACCESSIBLE SYMBOL PER LOCAL/STATE CODE. MUTCD R7-8.

12"X6" VAN ACCESSIBLE SIGNAGE WHERE APPROPRIATE. MUTCD R7-8A OR B.

12"X9" PENALTY SIGN WITH WORDING AS REQUIRED BY STATE AND LOCAL CODE.

SIGNS MAY BE POST-MOUNTED OR SURFACE-MOUNTED TO WALLS, IF APPLICABLE. SEE SITE PLAN.

SIGN TO BE CENTERED ON ACCESSIBLE PARKING SPACE. SEE SITE PLAN.

MINIMUM ACCESSIBLE ROUTE CLEAR WIDTH IS 6'-0" WHEN ADJACENT TO PARKING. OTHERWISE WHEEL STOPS ARE REQUIRED.

ACCESSIBLE SIGN / PLACEMENT LIMITS

NTS AUG. 25, 2020

MINIMUM ACCESSIBLE PARKING SPACE REQUIREMENTS

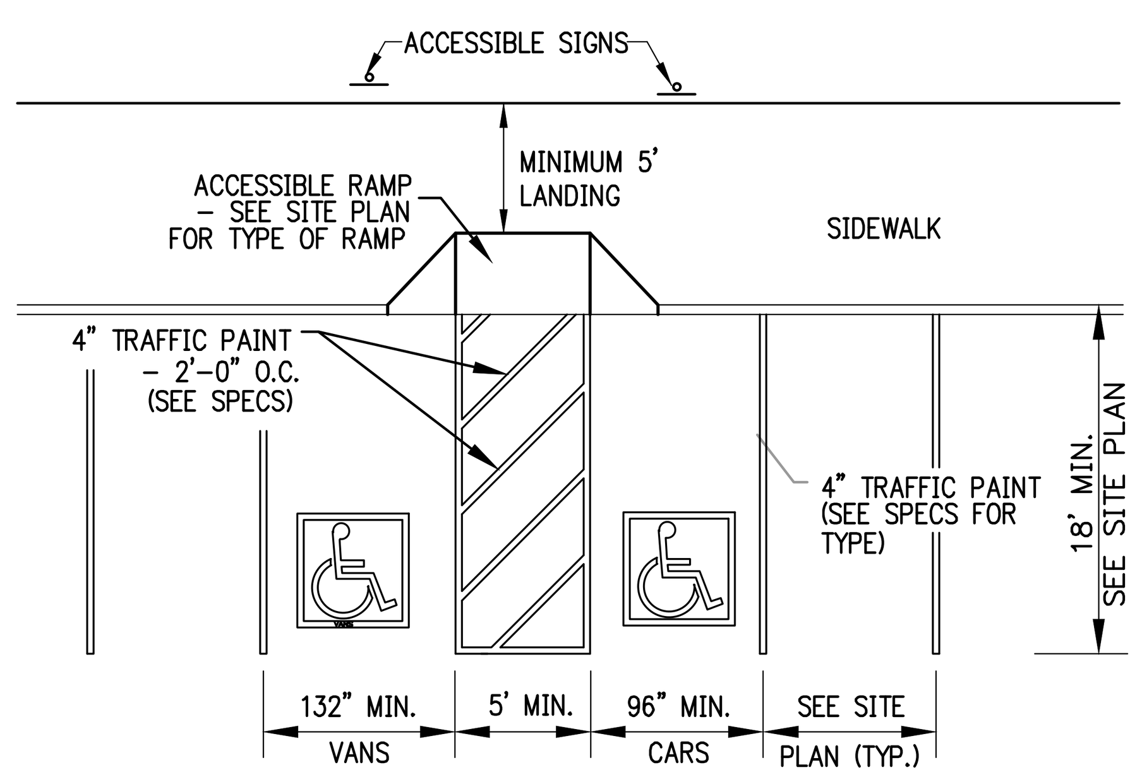
ON-SITE (PRIVATE) ACCESSIBLE PARKING SCHEDULE		
TOTAL NUMBER OF PARKING SPACES REQUIRED PROVIDED (PER LOT)	TOTAL MINIMUM NUMBER OF ACCESSIBLE PARKING SPACES (60" & 96" AISLES) COLUMN "A"	VAN-ACCESSIBLE PARKING SPACES WITH MIN. 96" WIDE ACCESS AISLE
1 TO 25	1	1
26 TO 50	2	1
51 TO 75	3	1
76 TO 100	4	1
101 TO 150	5	1
151 TO 200	6	1
201 TO 300	7	2
301 TO 400	8	2
401 TO 500	9	2
501 TO 1000	2% OF TOTAL PARKING PROVIDED IN EACH LOT	1/6 OF COLUMN "A"
1001 & OVER	20 PLUS 1 FOR EACH 100 OVER 1000	1/6 OF COLUMN "A"

AUG. 25, 2020

ON-STREET (PUBLIC) ACCESSIBLE PARKING SCHEDULE	
TOTAL NUMBER OF MARKED OR METERED PARKING SPACES ON THE BLOCK PERIMETER	TOTAL REQUIRED NUMBER OF ACCESSIBLE PARKING SPACES
1 TO 25	1
26 TO 50	2
51 TO 75	3
76 TO 100	4
101 TO 150	5
151 TO 200	6
201 AND OVER	4 PERCENT OF TOTAL

CARPORT AND GARAGE PARKING SPACES:
AT LEAST ONE CARPORT OR GARAGE SPACE SHALL BE ADA ACCESSIBLE IF EITHER ARE FEATURED AS SITE AMENITIES.

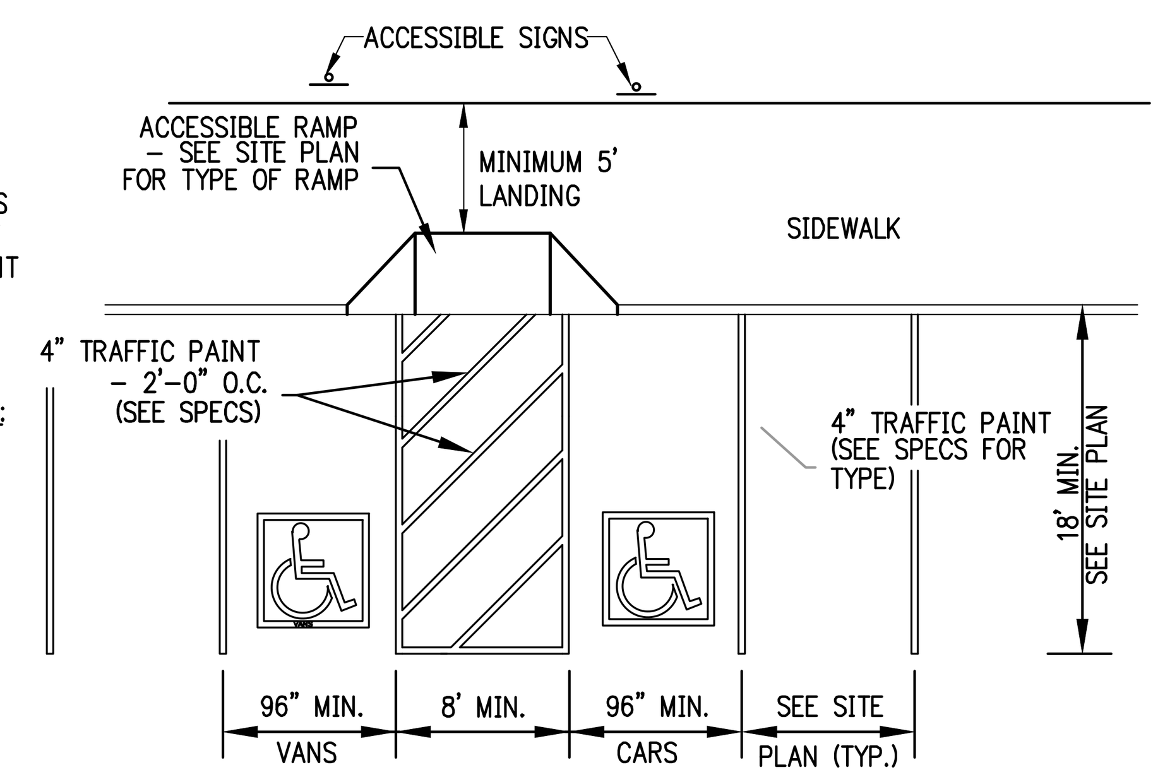
208.2.4 VAN PARKING SPACES:
FOR EVERY SIX OR FRACTIONAL OF SIX PARKING SPACES REQUIRED BY 208.2 TO COMPLY WITH 502, AT LEAST ONE SHALL BE A VAN PARKING SPACE COMPLYING WITH 502.



ALTERNATE "A"

ALL DIMENSIONS ARE TO CENTERLINE OF STRIPE UNLESS OTHERWISE NOTED. COLOR OF ALL ACCESSIBLE TRAFFIC PAINT SHALL BE PER LOCAL CODE (WHITE, YELLOW, ETC.)

208.2.4 VAN PARKING SPACES:
FOR EVERY SIX OR FRACTIONAL OF SIX PARKING SPACES REQUIRED BY 208.2 TO COMPLY WITH 502, AT LEAST ONE SHALL BE A VAN PARKING SPACE COMPLYING WITH 502.

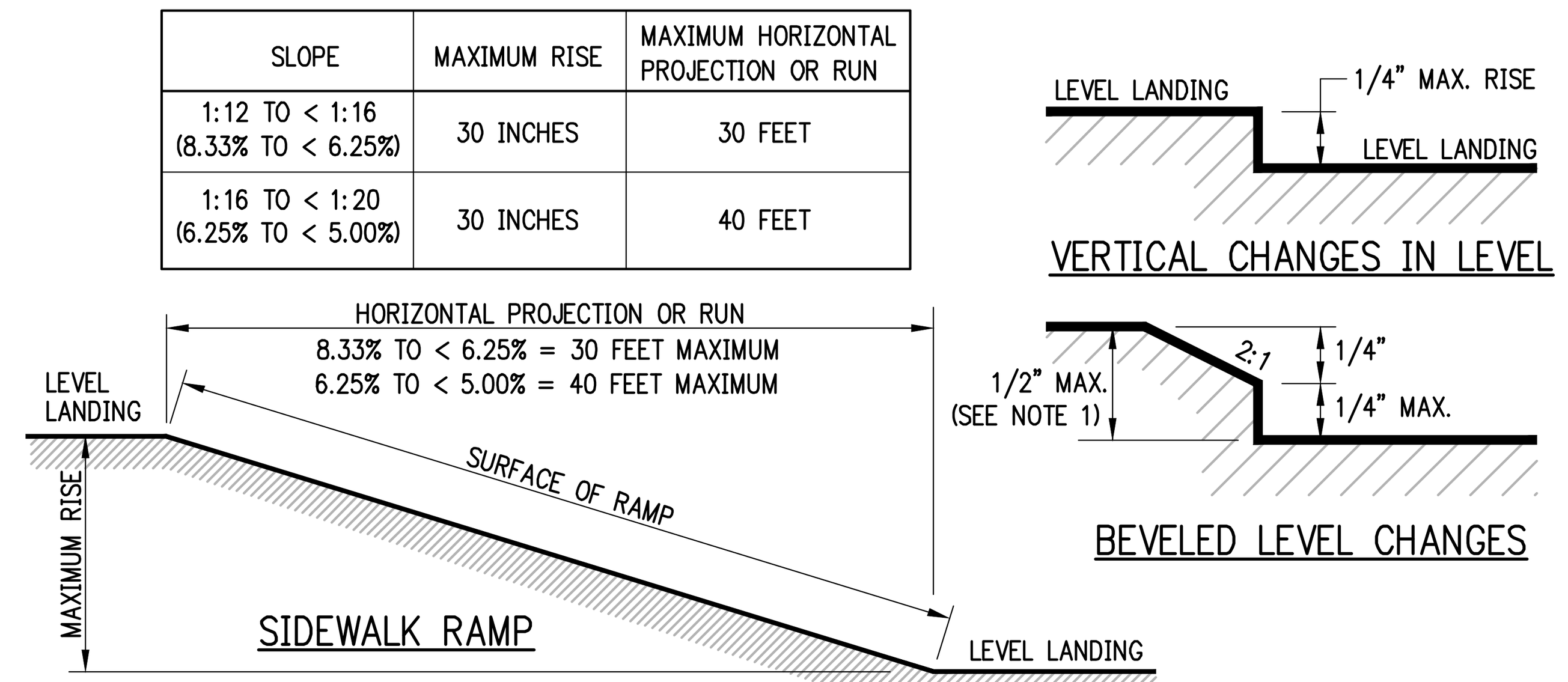


ALTERNATE "B"

VAN ACCESSIBLE PARKING STRIPING

NTS AUG. 25, 2020

SLOPE	MAXIMUM RISE	MAXIMUM HORIZONTAL PROJECTION OR RUN
1:12 TO < 1:16 (8.33% TO < 6.25%)	30 INCHES	30 FEET
1:16 TO < 1:20 (6.25% TO < 5.00%)	30 INCHES	40 FEET

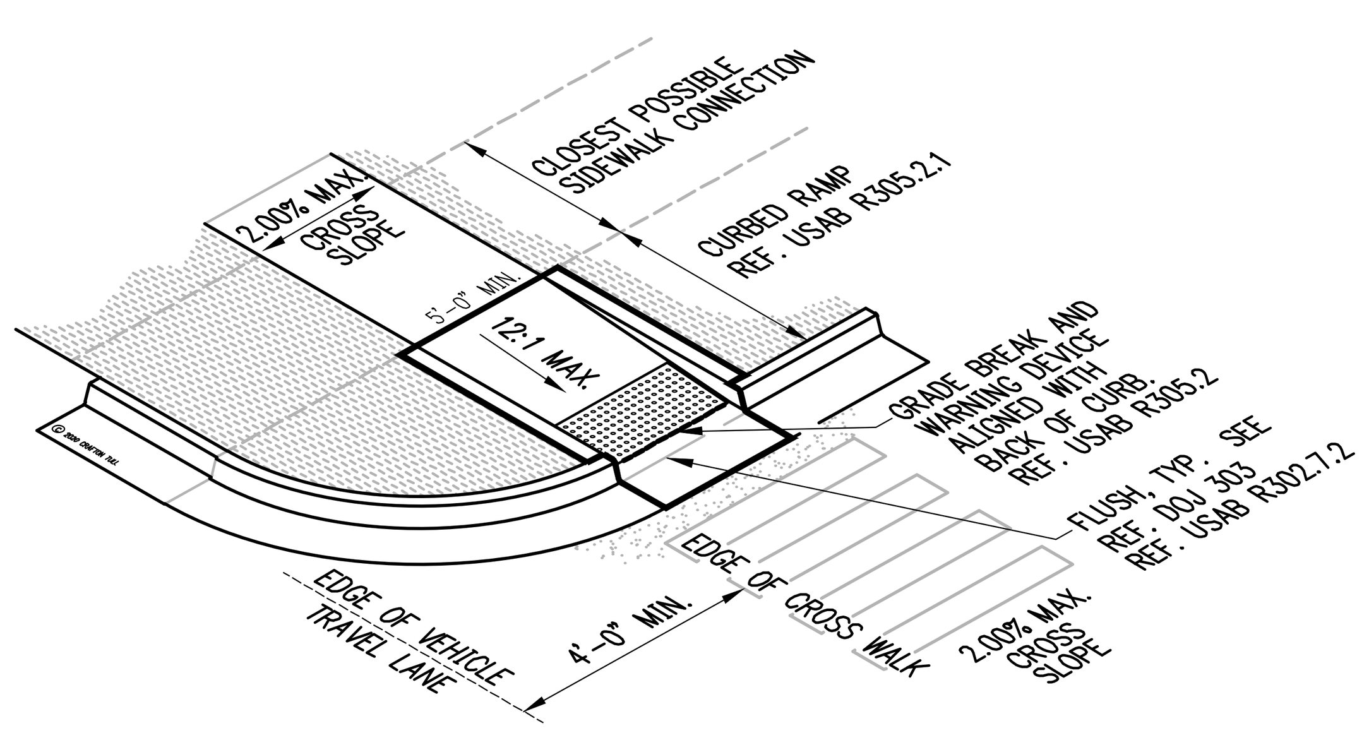


NOTES:

1. CHANGES IN LEVEL GREATER THAN 1/2 INCH SHALL BE ACCOMPLISHED BY MEANS OF A RAMP.
2. RAMP RUNS GREATER THAN SIX INCHES OF RISE OR GREATER SIX FEET IN HORIZONTAL PROJECTION SHALL HAVE HANDRAILS ON BOTH SIDES, EXCEPT CURB RAMPS.
3. HANDRAILS SHALL BE 34" TO 38" HIGH AND A MINIMUM OR 36" APART AND MUST EXTEND 12" BEYOND TOP AND BOTTOM OF THE RAMP SEGMENT. SEE HANDRAIL DETAILS.

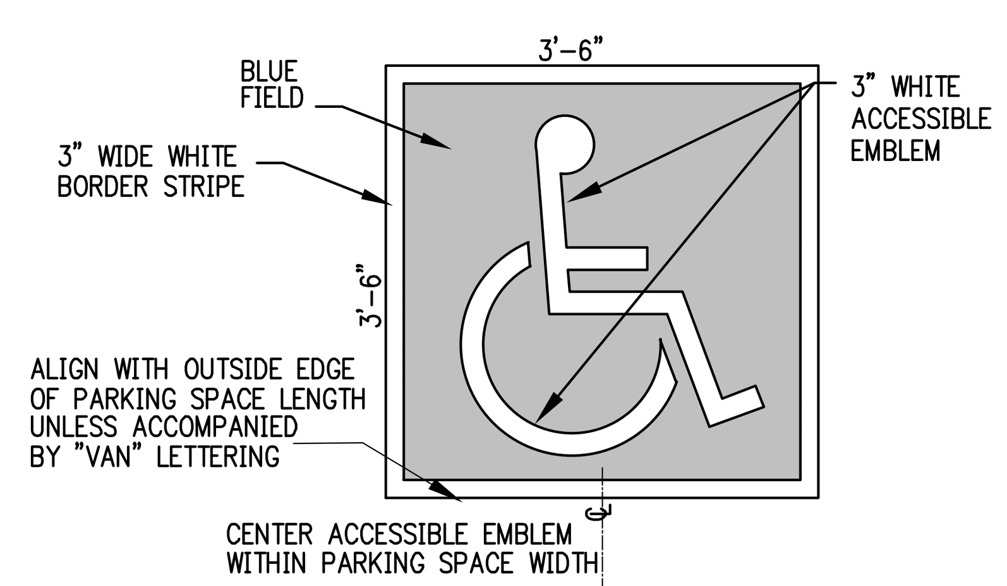
IN-LINE ACCESSIBLE ROUTE / SIDEWALK RAMP - CHANGES IN LEVEL

NTS AUG. 25, 2020



CURBED SINGLE ACCESSIBLE RAMP

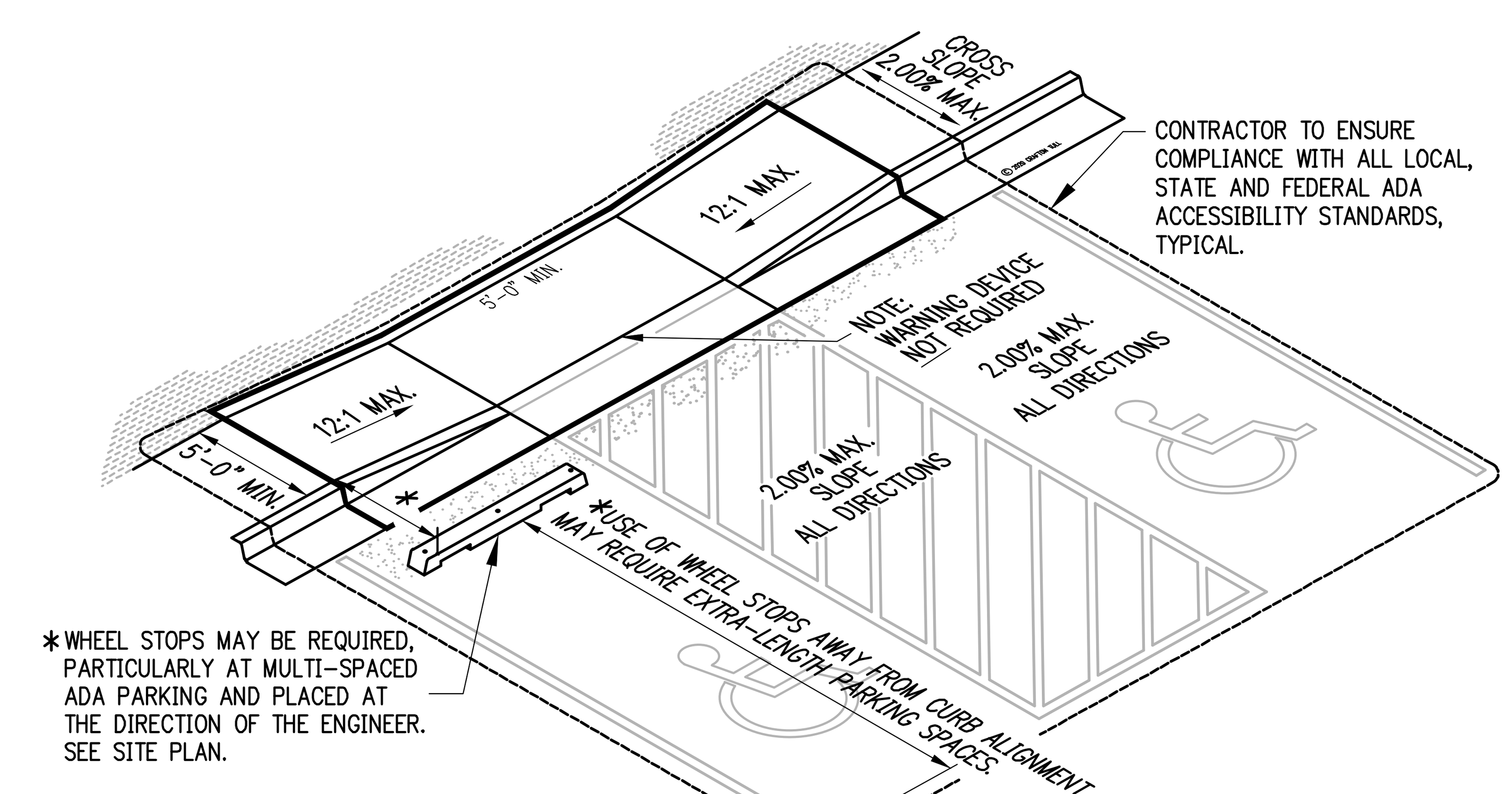
NTS SMALLER RADIUS / NARROW SIDEWALKS



NOTE: LOCAL CODE MAY REQUIRE A WHITE FIELD WITH BLUE EMBLEM OR ANOTHER COLOR ARRANGEMENT. THE CONTRACTOR SHALL VERIFY THE REQUIRED PAINT COLOR WITH LOCAL OFFICIAL PRIOR TO PAINTING PAVEMENT MARKINGS.

ACCESSIBLE PAVEMENT EMBLEM

NTS AUG. 25, 2020

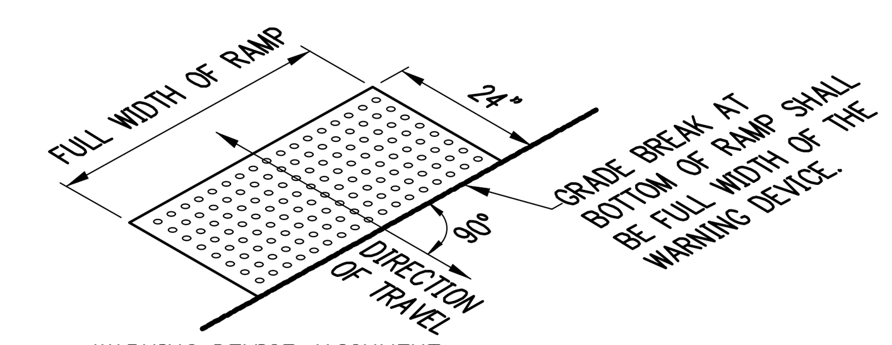


CONTRACTOR TO ENSURE COMPLIANCE WITH ALL LOCAL, STATE AND FEDERAL ADA ACCESSIBILITY STANDARDS, TYPICAL.

*WHEEL STOPS MAY BE REQUIRED, PARTICULARLY AT MULTI-SPACED ADA PARKING AND PLACED AT THE DIRECTION OF THE ENGINEER. SEE SITE PLAN.

DEPRESSED SIDEWALK AND CURB ACCESSIBLE RAMP

NTS WITH ADA PARKING AUG. 25, 2020



WARNING DEVICE ALIGNMENT

1. DETECTABLE WARNING SURFACES SHALL CONSIST OF TRUNCATED DOMES ALIGNED IN A SQUARE OR RADIAL GRID PATTERN AND SHALL COMPLY WITH ADA 705 GUIDELINES.
2. DETECTABLE WARNING SURFACES SHALL CONTRAST VISUALLY WITH ADJACENT GUTTER, STREET OR HIGHWAY, OR PEDESTRIAN ACCESS ROUTE SURFACE, EITHER LIGHT-ON-DARK OR DARK-ON-LIGHT.

DETECTABLE WARNING DEVICE

NTS AUG. 25, 2020

Key Plan

No.	Description	Date

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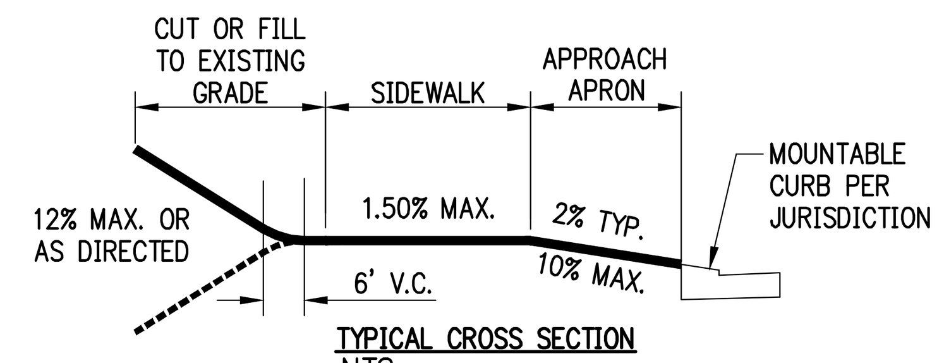
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

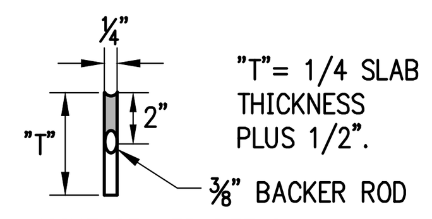
STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9407 JERRY J. KELSO
01/29/2021

ADA DETAILS

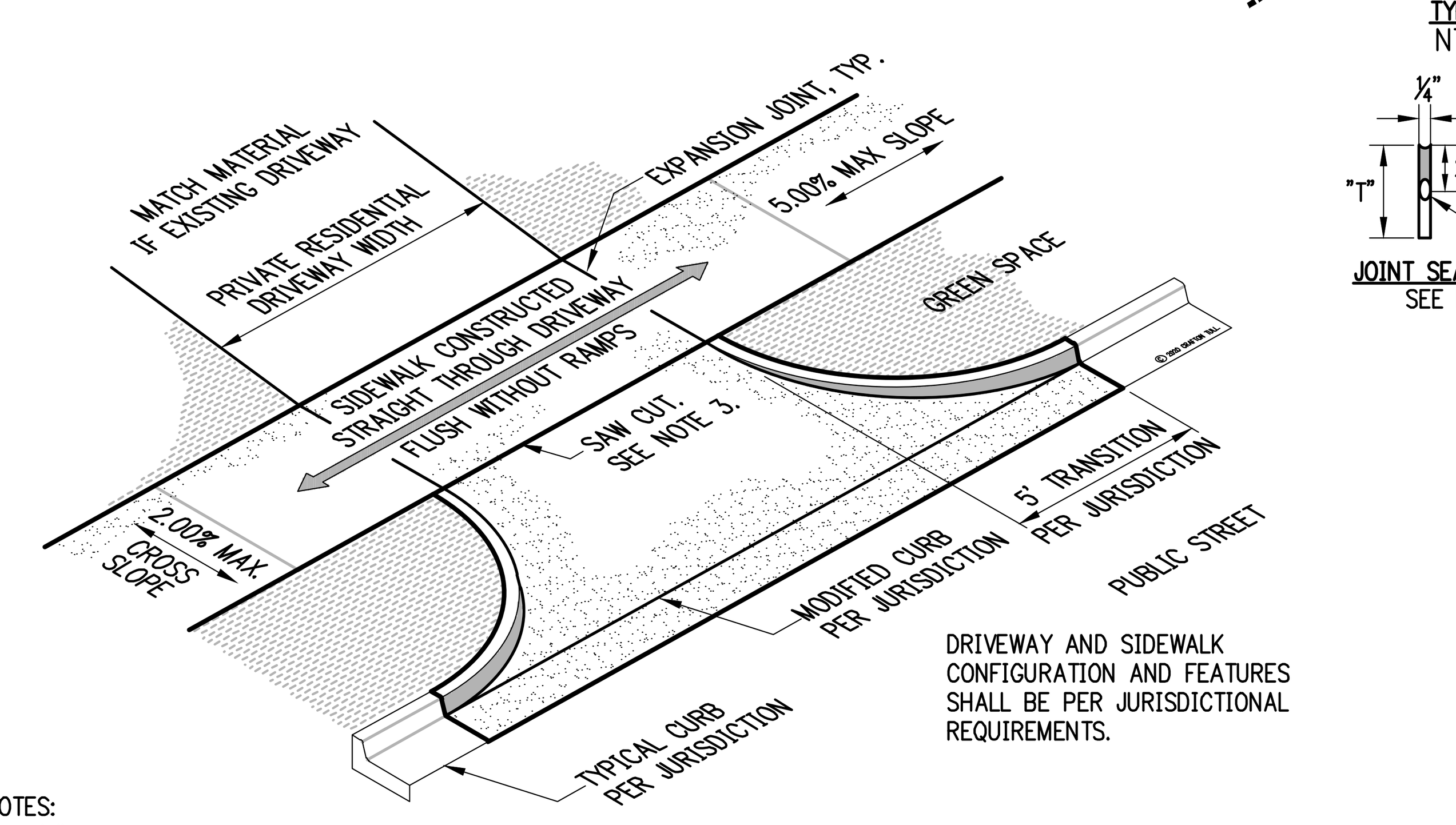
C-503



TYPICAL CROSS SECTION
NTS



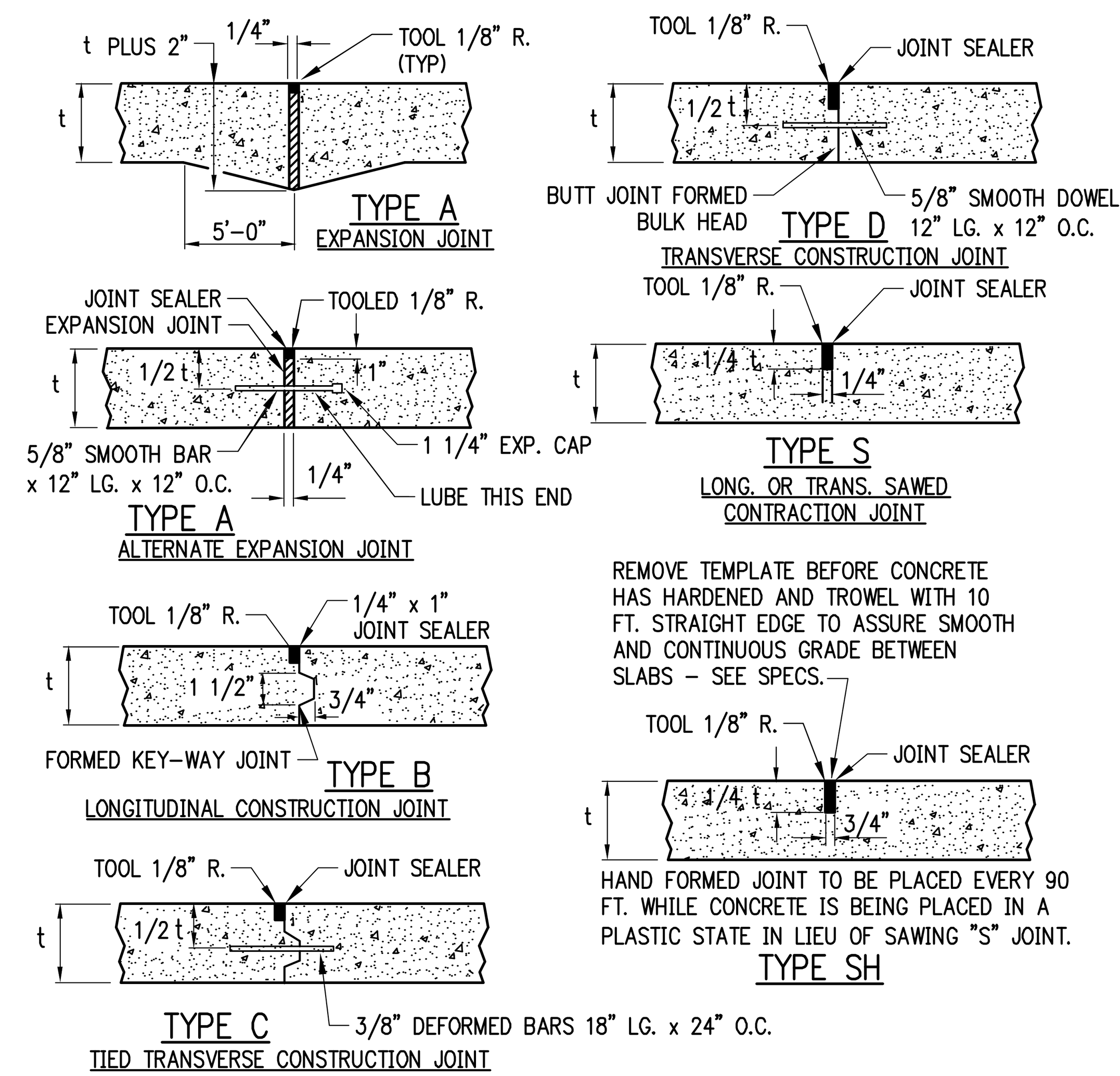
JOINT SEALER DETAIL
SEE NOTE 3



NOTES:
1. 1/2" PREFORMED EXPANSION MATERIAL CONFORMING TO AASHTO M213, ASTMD-1752, SUCH AS ASPHALTIC FIBER EXPANSION JOINT MATERIAL, REDWOOD, OR EQUAL AS DIRECTED BY THE ENGINEER SHALL BE PLACED AS SHOWN.
2. DRIVEWAY SECTION BEHIND APRON SHALL BE 6" AGGREGATE BASE COURSE FOR EXISTING GRAVEL DRIVES, 2" ASPHALT W/ 4" AGGREGATE BASE COURSE FOR EXISTING ASPHALT DRIVES, OR 4" CONCRETE FOR EXISTING CONCRETE DRIVES TO MATCH EXISTING DRIVEWAY SURFACE MATERIAL.
3. CONCRETE DRIVEWAY APRON TO BE SAWCUT AT 15' INTERVALS AS SHOWN, AND FILLED WITH APPROVED JOINT SEALER (SEE DETAIL).
4. CONCRETE DRIVEWAYS TO BE CLASS A, 3500 PSI, 5.5 BAG MIX WITH 5-8% AIR ENTRAINMENT.
5. SIDEWALK ALIGNMENT AND GRADES THROUGH DRIVES SHALL BE PER JURISDICTIONAL STANDARDS INCLUDING ADA ACCESSIBILITY STANDARDS.

PRIVATE RESIDENTIAL DRIVEWAY WITH SIDEWALK

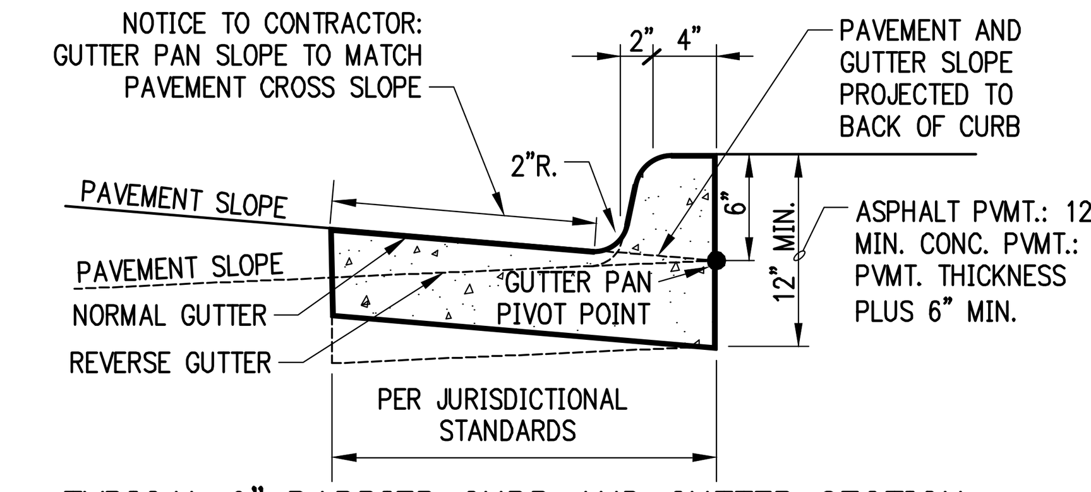
NTS
CONTRACTOR TO COMPLY WITH JURISDICTIONAL STANDARDS
AUG. 25, 2020



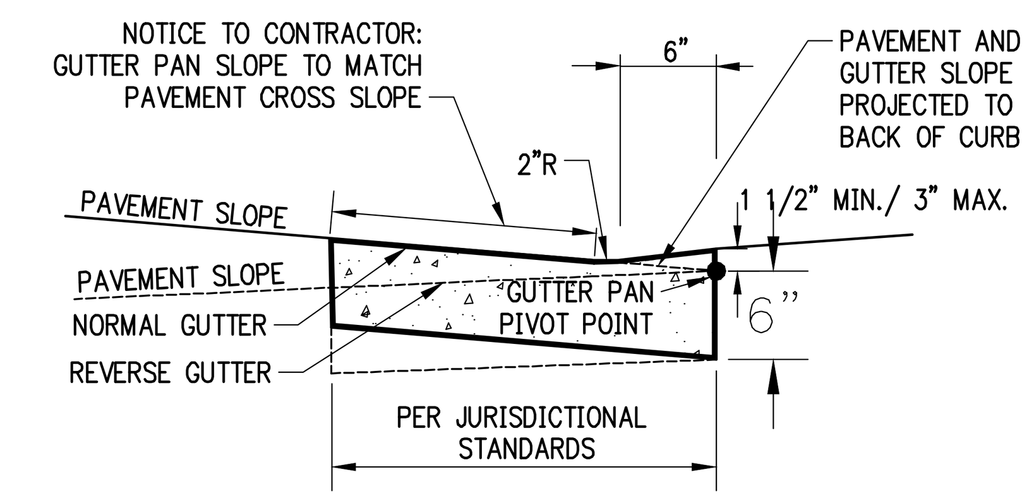
NOTES:
1. ALL JOINTS SPACING NOT TO EXCEED 15'-0" INTERVALS.
2. SAWED JOINTS SHALL BE CUT AS SOON AS POSSIBLE AFTER FINISH WORK IS COMPLETE & CONCRETE HAS CURED TO ACCEPT TYPE OF SAW EQUIPMENT.
3. ASSURE SAW JOINTS ARE CLEAN AND DRY PRIOR TO THE APPLICATION OF THE JOINT SEALANT.
4. SPECIFIED JOINT SEALANT APPLIED IN ACCORDANCE WITH SEALANT MANUFACTURER'S REQUIREMENTS SEALANT TOOLED 1/8" BELOW PAVEMENT SURFACE.
5. DRILLING BY HAND OR PUSHING DOWEL BARS INTO GREEN CONCRETE IS NOT ACCEPTABLE.
6. COMPLETELY FILL HOLE WITH EPOXY GROUT AND INSERT DOWEL WITH EXPANSION CAPS.
7. DOWELS SHALL BE ALIGNED PERPENDICULAR TO THE JOINT.

CONCRETE PAVEMENT JOINTING DETAIL

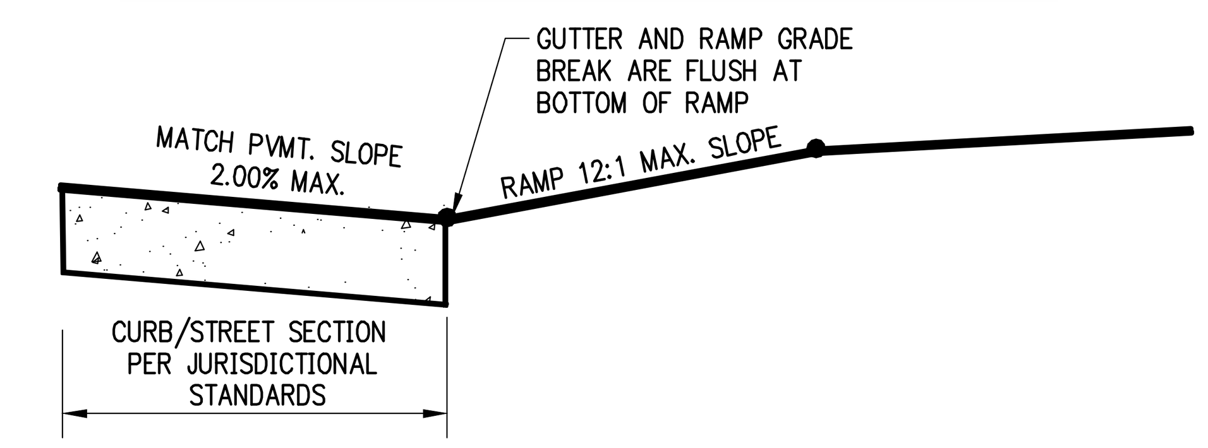
NTS
AUG. 25, 2020



TYPICAL 6" BARRIER CURB AND GUTTER SECTION



TYPICAL MOUNTABLE CURB SECTION AT DRIVEWAYS



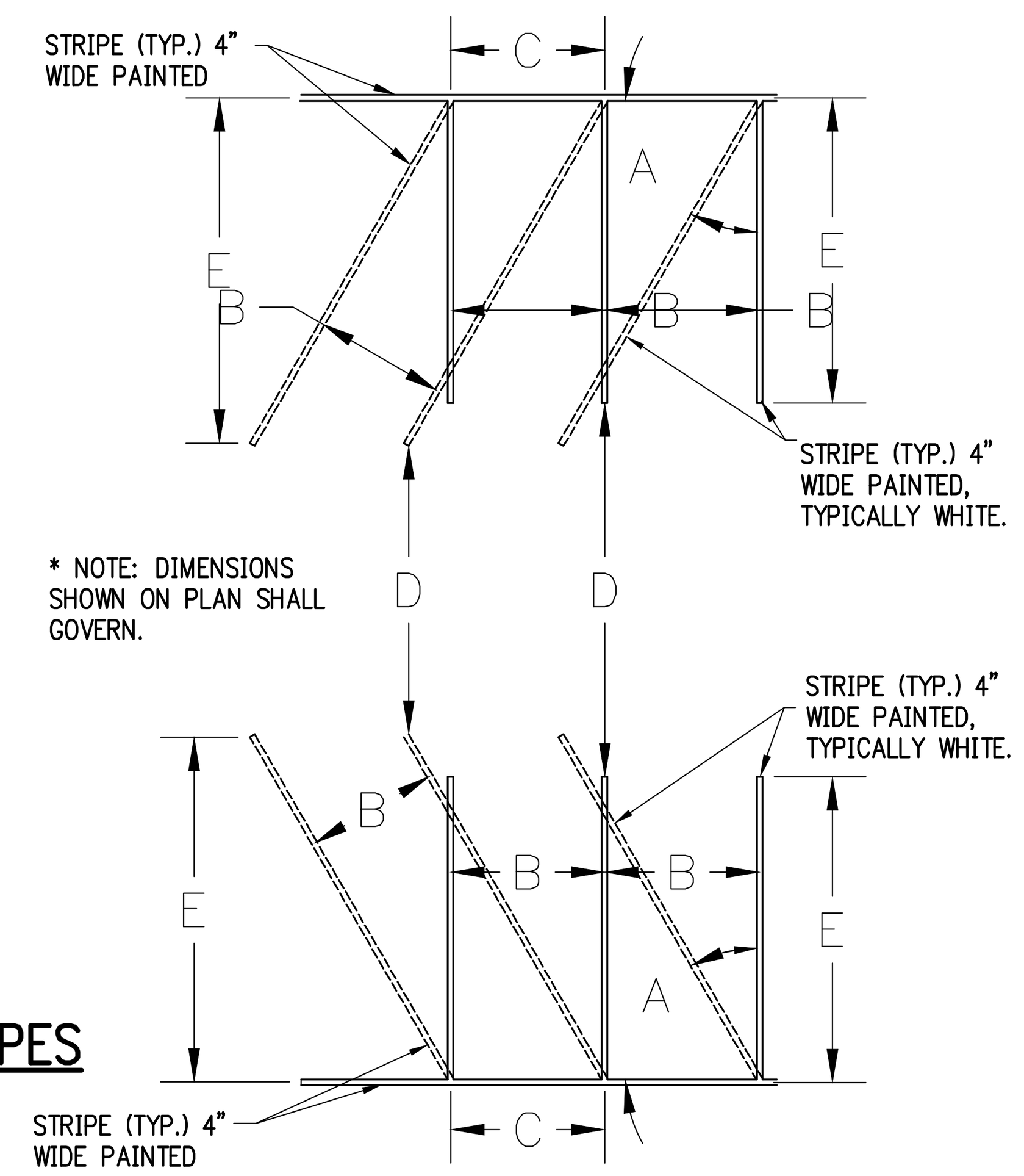
STREET GUTTER AT RAMP TYP. SECTION

TYPICAL CURB AND GUTTER SECTIONS

NTS
AUG. 13, 2020

STRIPING DIMENSIONS						
ANGLE (A)	TYPE	WIDTH (IN FT.) (B)	CURB LENGTH (IN FT.) (C)	ONE-WAY AISLE WIDTH (IN FT.) (D)	TWO-WAY AISLE WIDTH (IN FT.) (D)	STALL DEPTH (IN FT.) (E)
0°	STANDARD	8	22.5	12	24	8
PARALLEL	COMPACT	7.5	19.5	12	24	7.5
30°	STANDARD	9	18	12	24	17
	COMPACT	7.5	15	12	24	14
45°	STANDARD	9	12.5	12	24	19
	COMPACT	7.5	10.5	12	24	16
60°	STANDARD	9	10.5	18	24	20
	COMPACT	7.5	8.5	15	24	16.5
90°	STANDARD	9	9	24	24	19
	COMPACT	7.5	7.5	22	24	15

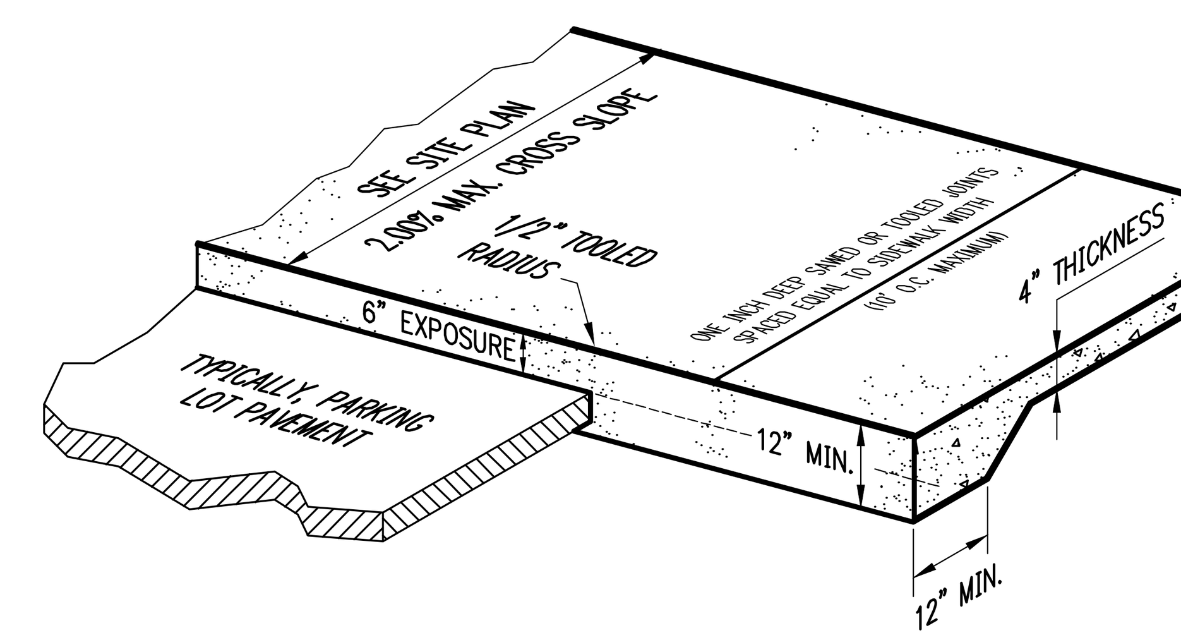
NOTES:
1. LETTERS, NUMBERS AND ARROWS FOR DRIVEWAYS, PARKING LOTS AND STREETS SHALL BE APPLIED ACCORDING TO REQUIREMENTS AS OUTLINED IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
2. PAVEMENT MARKINGS ARE TO BE PAINTED REFLECTIVE WHITE. MARKINGS SHALL BE THERMOPLASTIC IF CALLED FOR IN THE PLANS OR SPECIFICATIONS.



PARKING STRIPES

NTS

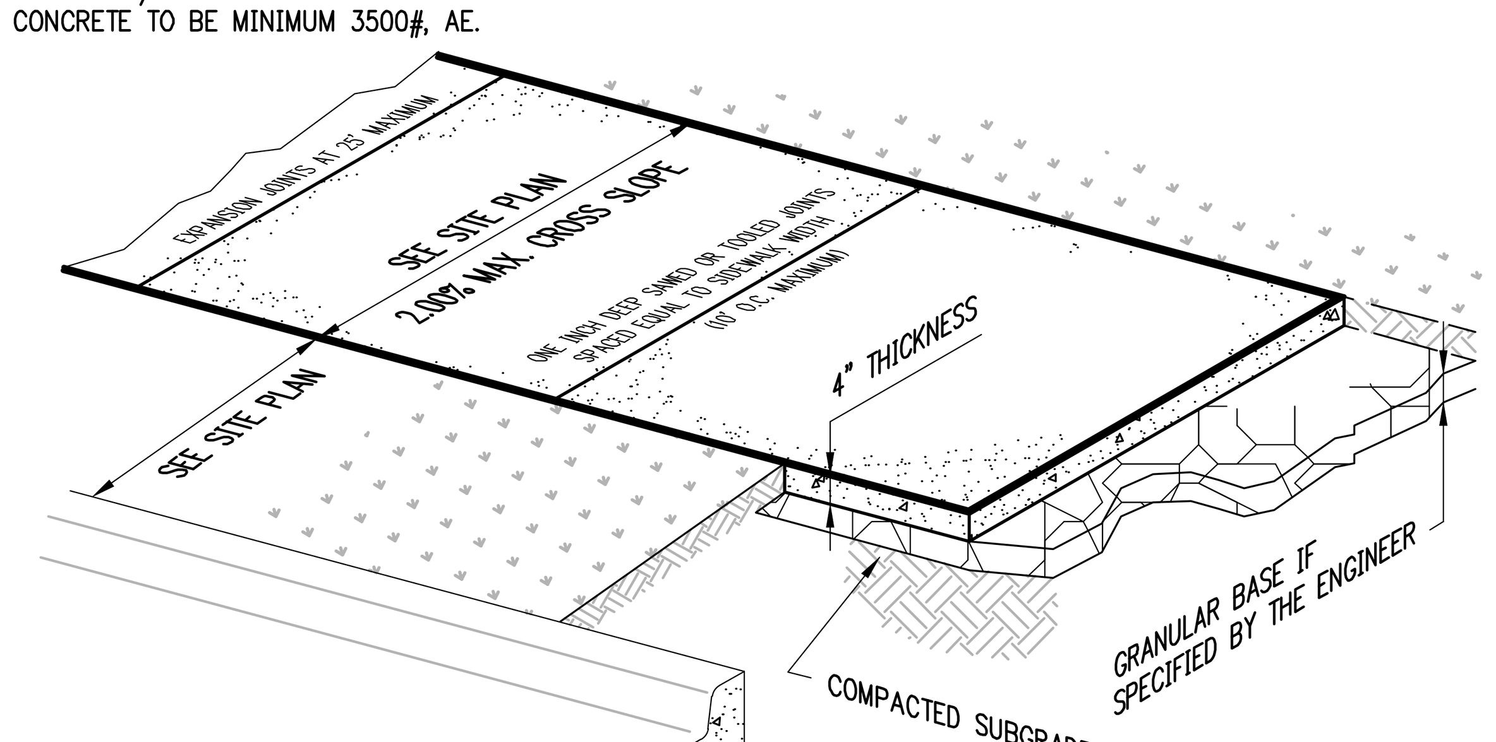
NOTES:
1. PROVIDE 1/2" EXPANSION JOINT BETWEEN SIDEWALK AND ALL FIXED OBJECTS.
2. PROVIDE 1/2" TOOLED RADIUS ON ALL EDGES.
3. CONCRETE TO BE MINIMUM 3500#, AE.



PRIVATE SIDEWALK WITH TURNED DOWN EDGE

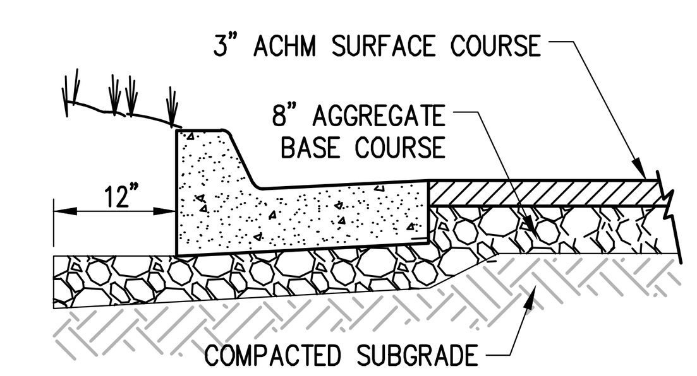
NTS

NOTES:
1. PROVIDE 1/2" EXPANSION JOINT BETWEEN SIDEWALK AND ALL FIXED OBJECTS.
2. PROVIDE 1/2" TOOLED RADIUS ON ALL EDGES.
3. CONCRETE TO BE MINIMUM 3500#, AE.

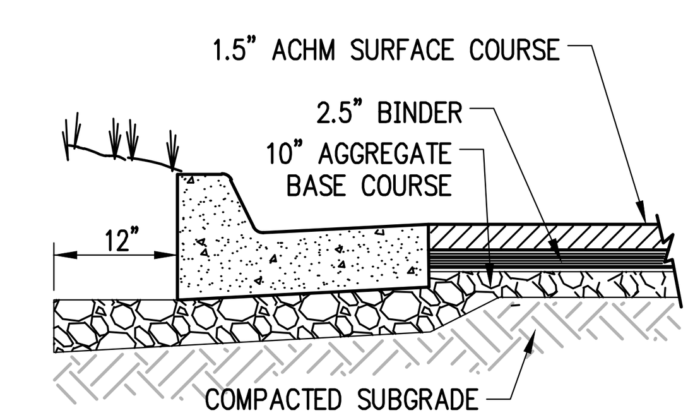


PRIVATE SIDEWALK WITH GREEN SPACE

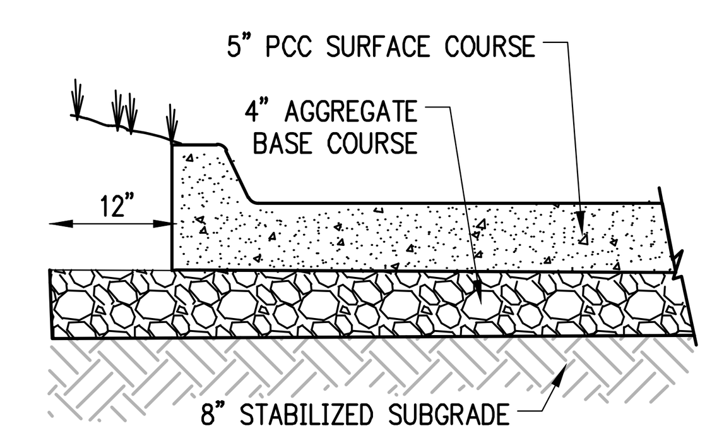
NTS



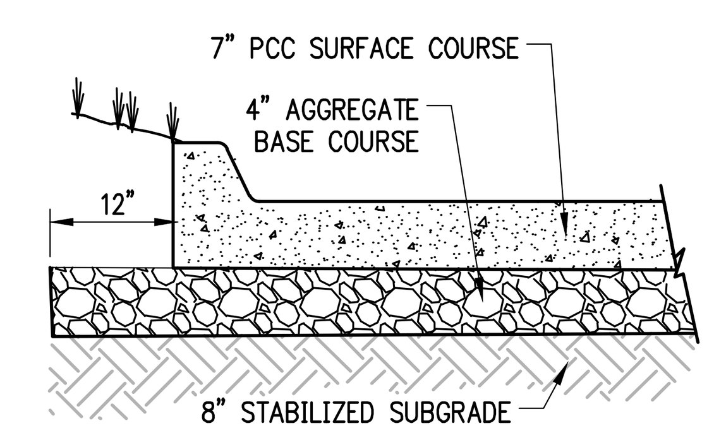
REGULAR DUTY ASPHALT PAVEMENT



HEAVY DUTY ASPHALT PAVEMENT



REGULAR DUTY CONCRETE PAVEMENT



HEAVY DUTY CONCRETE PAVEMENT

NOTES:
1. THE SUBGRADE UNDER PAVEMENTS SHALL BE PREPARED IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS.
2. AFTER PROOF ROLLING WITH A LOADED TANDEM AXLE DUMP TRUCK AND PREPARING DEEP SUBGRADE DEFICIENCIES, THE ENTIRE SUBGRADE SHOULD BE SCARIFIED TO A DEPTH OF 8" AND UNIFORMLY COMPACTED TO AT LEAST 95% OF MODIFIED PROCTOR.
3. AGGREGATE BASE COURSE MIXTURES SHALL CONFORM WITH THE GRADATION, COMPACTION AND OTHER REQUIREMENTS SHOWN IN THE CONTRACT SPECIFICATIONS OR WITH THE LOCAL STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. ASPHALTIC SURFACE AND BINDER COURSES SHALL CONFORM WITH THE GRADATION, COMPACTION AND OTHER REQUIREMENTS SHOWN IN THE CONTRACT SPECIFICATIONS OR WITH THE LOCAL STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
5. PORTLAND CEMENT CONCRETE PAVEMENT SHALL CONFORM WITH THE REQUIREMENTS SHOWN IN THE CONTRACT SPECIFICATIONS OR WITH THE LOCAL STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
6. THE CONTRACTOR SHALL APPLY A TACK COAT TO THE FACE OF THE CONCRETE GUTTER WHERE THE GUTTER CONTACTS ASPHALT.

PAVEMENT SECTIONS

NTS
AUG. 25, 2020

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CERTIFICATE OF AUTHORIZATION:
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HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

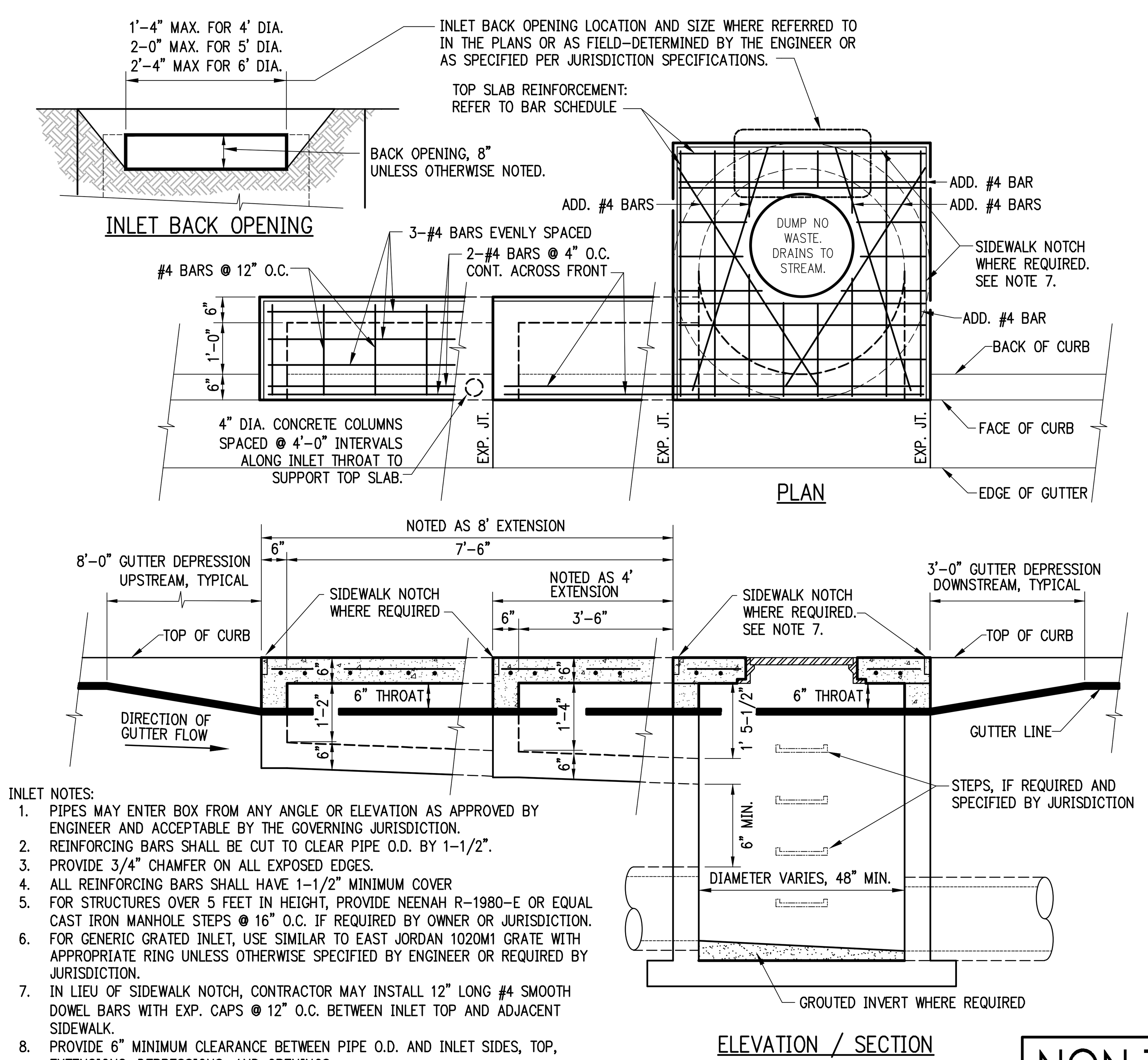
No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS — REGISTERED PROFESSIONAL ENGINEER — No. 9407 — JERRY J. KELSO
01/29/2021

STANDARD DETAILS SHT.1

C-504



INLET NOTES:

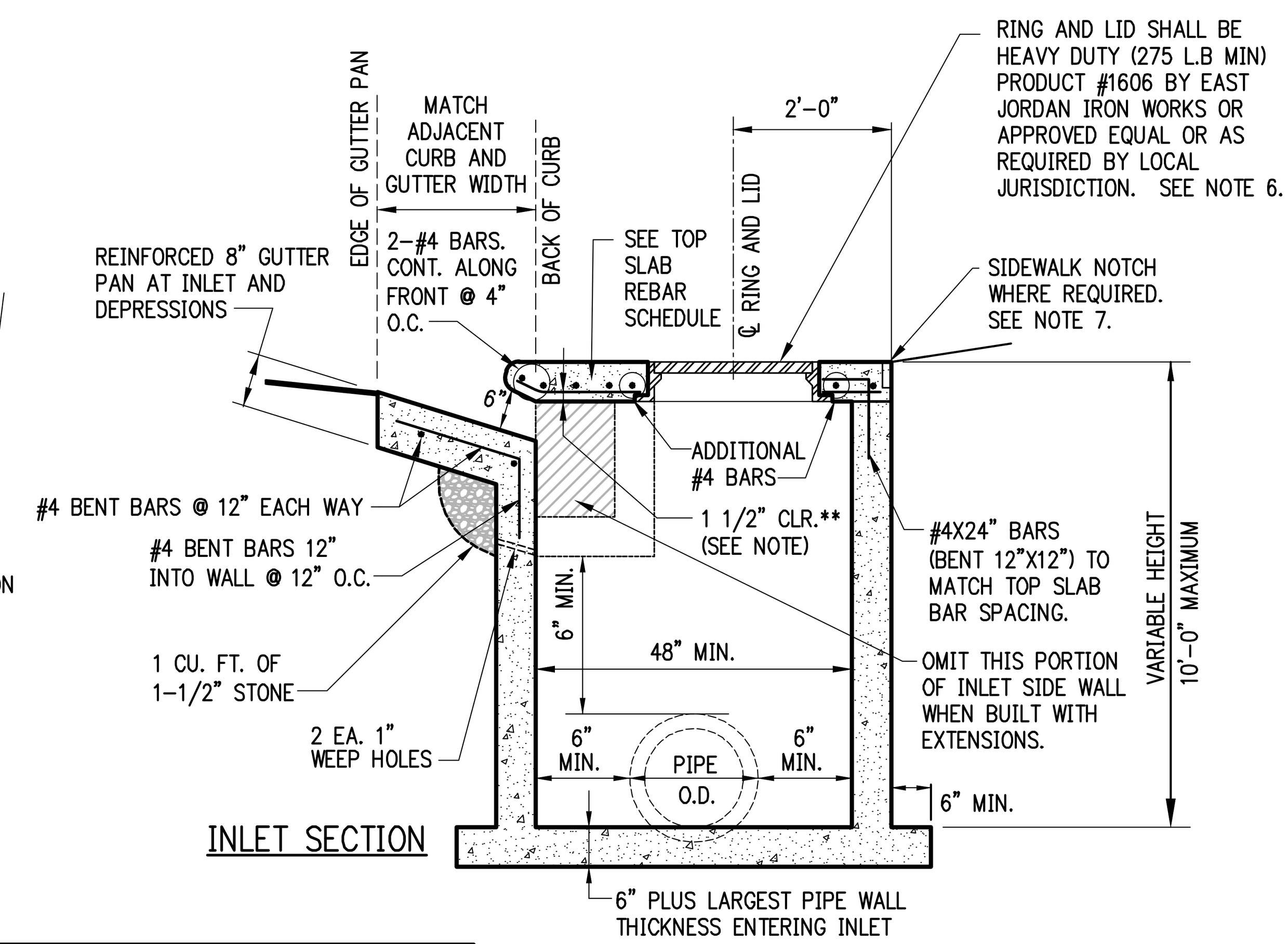
1. PIPES MAY ENTER BOX FROM ANY ANGLE OR ELEVATION AS APPROVED BY ENGINEER AND ACCEPTABLE BY THE GOVERNING JURISDICTION.
2. REINFORCING BARS SHALL BE CUT TO CLEAR PIPE O.D. BY 1-1/2".
3. PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES.
4. ALL REINFORCING BARS SHALL HAVE 1-1/2" MINIMUM COVER
5. FOR STRUCTURES OVER 5 FEET IN HEIGHT, PROVIDE NEENAH R-1980-E OR EQUAL CAST IRON MANHOLE STEPS @ 16" O.C. IF REQUIRED BY OWNER OR JURISDICTION.
6. FOR GENERIC GRATED INLET, USE SIMILAR TO EAST JORDAN 1020M1 GRATE WITH APPROPRIATE RING UNLESS OTHERWISE SPECIFIED BY ENGINEER OR REQUIRED BY JURISDICTION.
7. IN LIEU OF SIDEWALK NOTCH, CONTRACTOR MAY INSTALL 12" LONG #4 SMOOTH DOWEL BARS WITH EXP. CAPS @ 12" O.C. BETWEEN INLET TOP AND ADJACENT SIDEWALK.
8. PROVIDE 6" MINIMUM CLEARANCE BETWEEN PIPE O.D. AND INLET SIDES, TOP, EXTENSIONS, DEPRESSIONS, AND OPENINGS.
9. CONCRETE TO BE CLASS B, 3500#, WITH 4%-7% A.E.

INLET INSIDE DIAMETER SCHEDULE		
DIAMETER OF LARGEST PIPE ENTERING INLET	INSIDE INLET DIAMETER	MINIMUM INLET WALL THICKNESS
12" TO 27"	4'-0" DIA.	6"
30" TO 42"	5'-0" DIA.	8"
48" TO 54"	6'-0" DIA.	
PIPES ARE LIMITED TO 60 DEGREES. IF GREATER, USE NEXT LARGER-DIAMETER INLET BARREL.		

NON-TRAFFIC TOP SLAB REINFORCEMENT SCHEDULE	
INSIDE DIAMETER OF INLET BARREL	TOP SLAB BARS
4'-0"	#4s @ 8" O.C. EACH WAY CENTERED
5'-0"	#4s @ 7" O.C. EACH WAY CENTERED
6'-0"	#5s @ 9" O.C. EACH WAY CENTERED

**REBAR CLEARANCE NOTE
SINGLE MAT: 2-1/2" CLEAR
DOUBLE MAT: 1-1/2" CLEAR

L (LENGTH) ALONG CURB IF APPLICABLE
W (WIDTH) FRONT TO BACK
4' X 6'
TYPICAL CURB INLET AND JUNCTION MANHOLE NOMENCLATURE



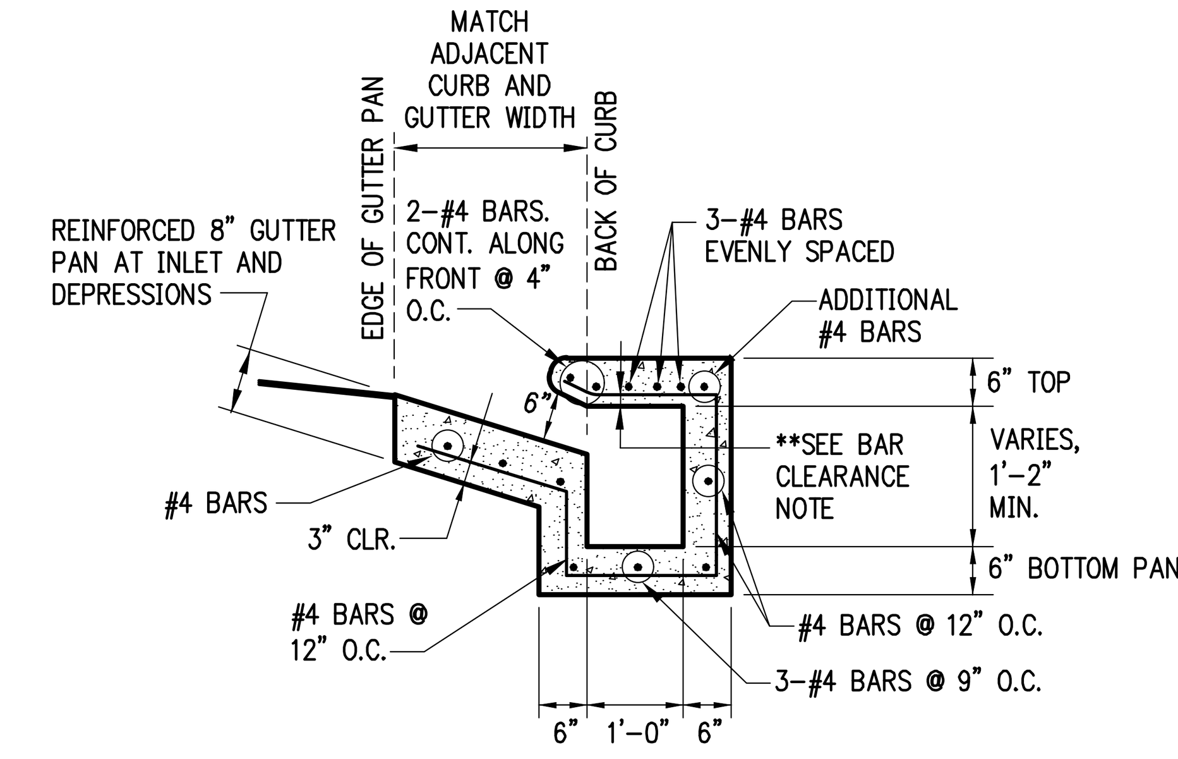
NON-TRAFFIC ONLY

TYPICAL CIRCULAR NON-TRAFFIC CURB INLET (TYPICAL CIRCULAR NON-TRAFFIC JUNCTION BOX & GRATED INLET SIMILAR)

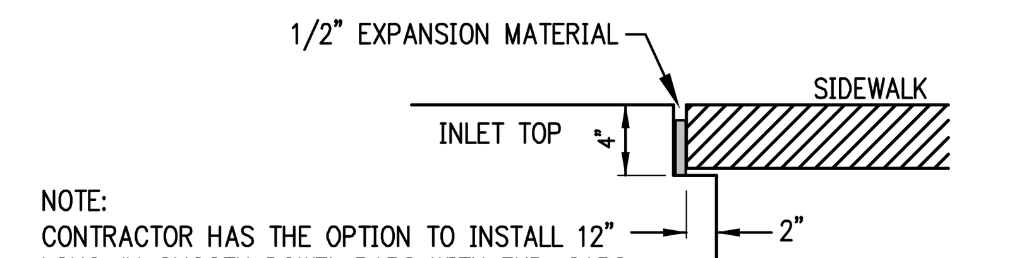
NTS

NOTE: THIS DETAIL IS GENERIC, NOT JURISDICTION OR SITE-SPECIFIC. USE JURISDICTION-SPECIFIC DETAILS WHEN AND WHERE REQUIRED.
THIS NON-TRAFFIC DETAIL IS INTENDED FOR SIDEWALK LOADING ONLY WITH UNIFORMLY DISTRIBUTED LIVE LOAD OF 100 PSF OF CONCENTRATED LIVE LOAD OF 3000 POUNDS.

REVISED 04/16/15



TYPICAL NON-TRAFFIC EXTENSION SECTION

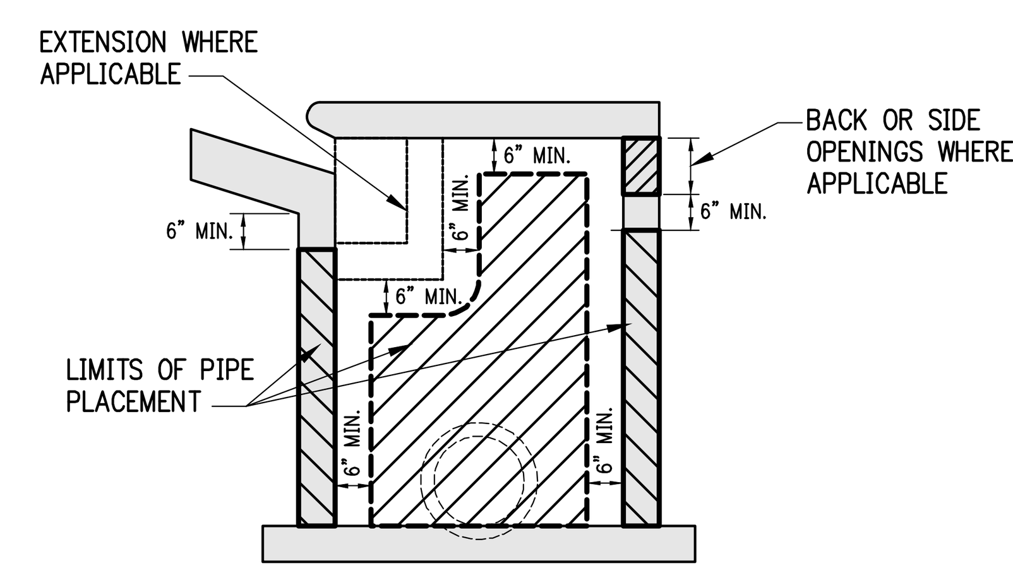


NOTE:
CONTRACTOR HAS THE OPTION TO INSTALL 12" LONG #4 SMOOTH DOWEL BARS WITH EXP. CAPS AT 18" O.C. BETWEEN INLET AND ADJACENT SIDEWALK IN LIEU OF CONSTRUCTING SIDEWALK NOTCH.

DETAIL OF NOTCH FOR SIDEWALK SUPPORTS

SEE PLANS FOR SIDEWALK LOCATIONS

REVISED 04/03/15



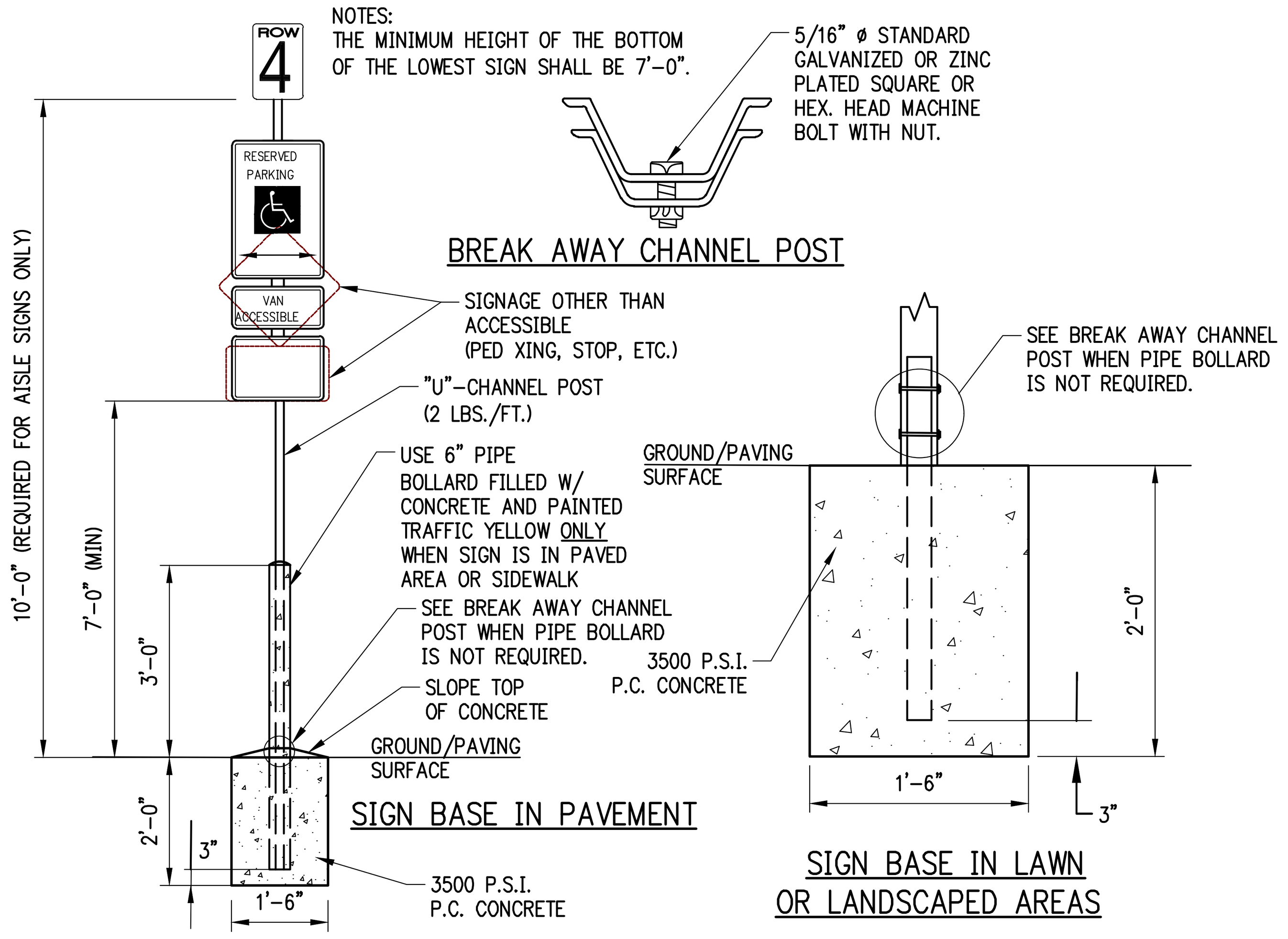
PIPE CLEARANCE PLACEMENT LIMITS

MAINTAIN 6" MINIMUM CLEARANCE BETWEEN PIPE O.D. AND INLET SIDES, TOP, EXTENSIONS, DEPRESSIONS, AND OPENINGS.

CONCRETE CHARACTERISTICS	CLASS A	CLASS B
MIN. COMPRESSION STRENGTH (PSI AT 28 DAYS)	3000	3500
MIN. CEMENT CONTENT (BAGS PER CUBIC YARD)	5.5	6.0
MAX. NET WATER / 94LB. BAG (GALLONS)	6.5	5.5
SLUMP RANGE (INCHES)	1-4*	1-4*
AIR CONTENT RANGE (%)	4-7	4-7
MAX. FLY ASH CONTENT (%)	20	20

* MAX. SLUMP SHALL BE 2" WHEN SLIP FORM PAVEMENT METHODS ARE USED.

NOTES:
THE MINIMUM HEIGHT OF THE BOTTOM OF THE LOWEST SIGN SHALL BE 7'-0".



SIGN POST INSTALLATION

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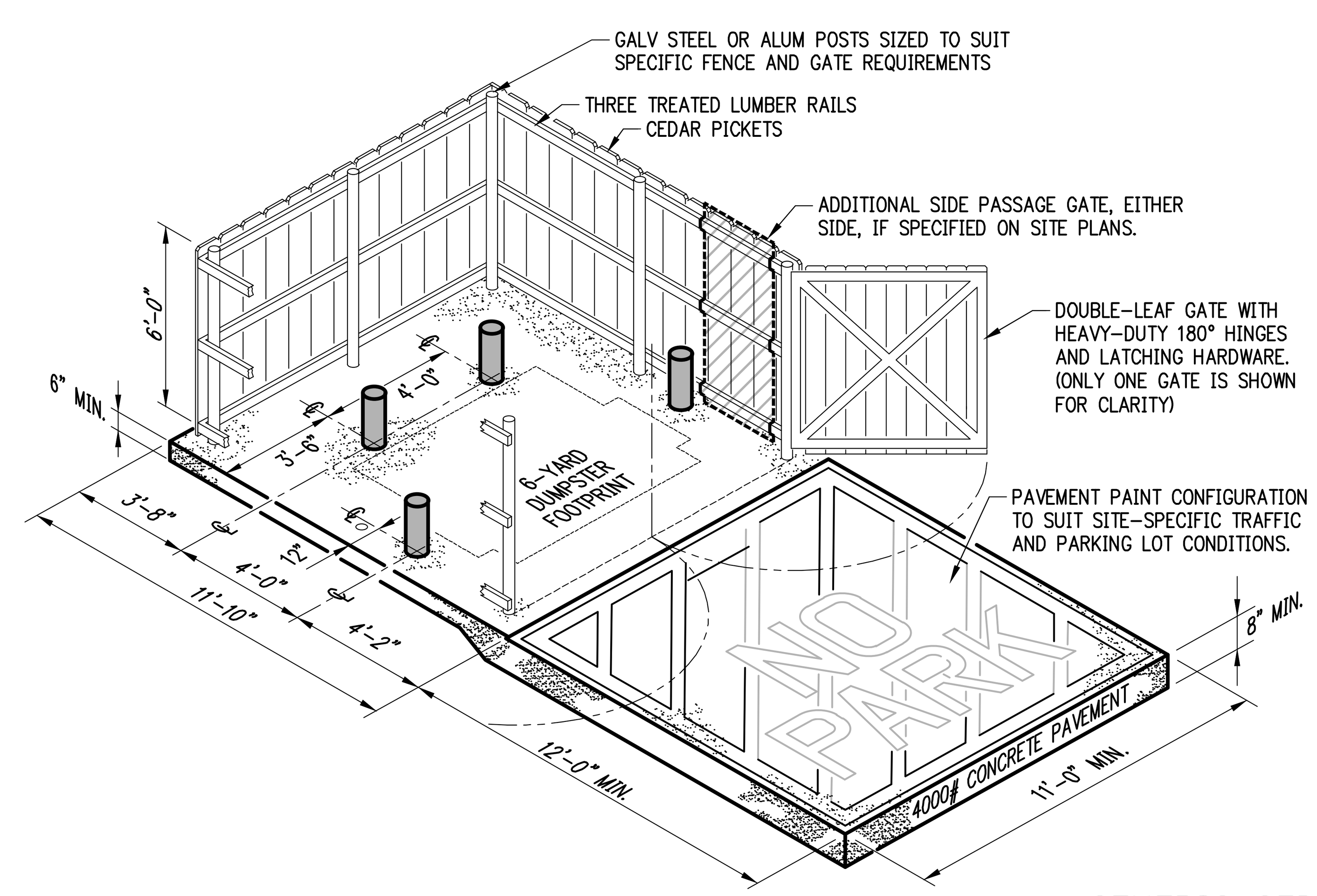

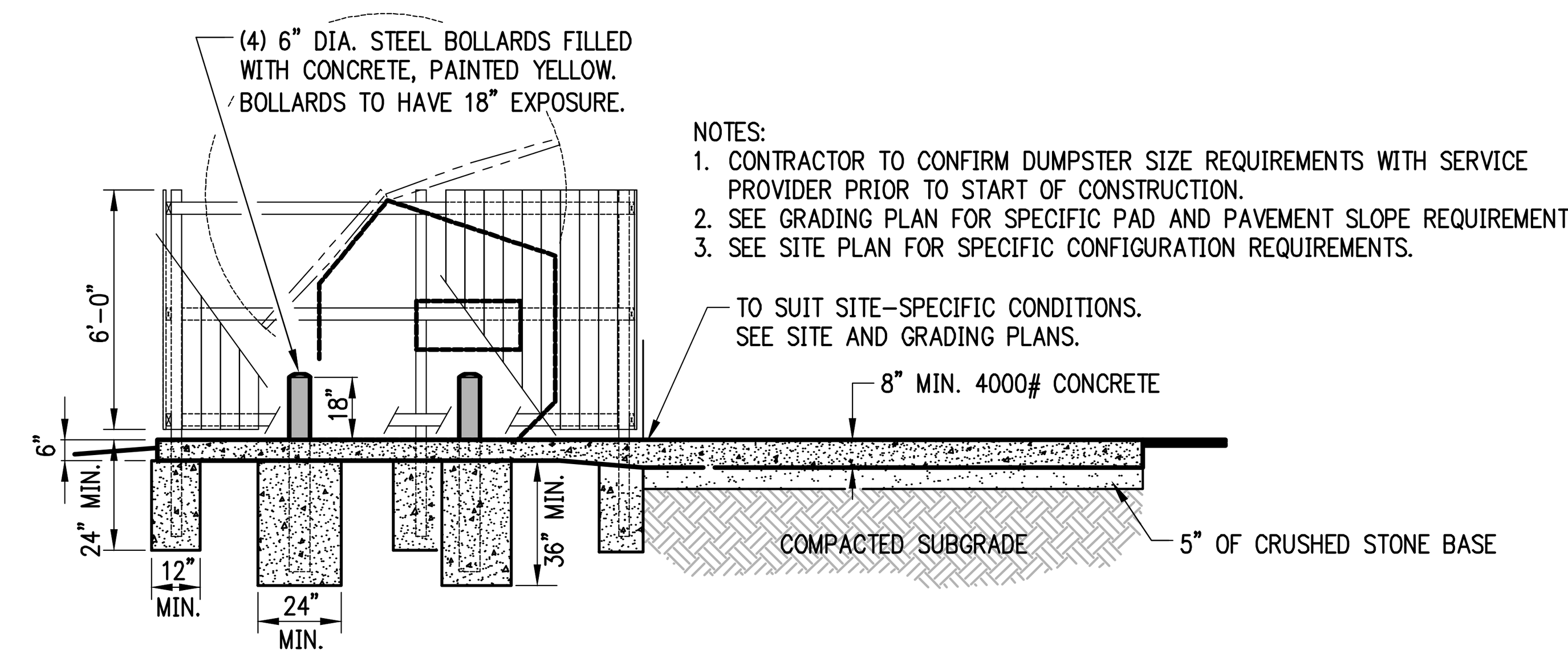

NOTES:

1. CONTRACTOR TO CONFIRM DUMPSTER SIZE REQUIREMENTS WITH SERVICE PROVIDER PRIOR TO START OF CONSTRUCTION.
2. SEE GRADING PLAN FOR SPECIFIC PAD AND PAVEMENT SLOPE REQUIREMENTS.
3. SEE SITE PLAN FOR SPECIFIC CONFIGURATION REQUIREMENTS.

GENERIC CEDAR PRIVACY FENCE SCREENED DUMPSTER

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HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

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ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 9407 JERRY J. KELSO
01/29/2021

STANDARD DETAILS SHT.2

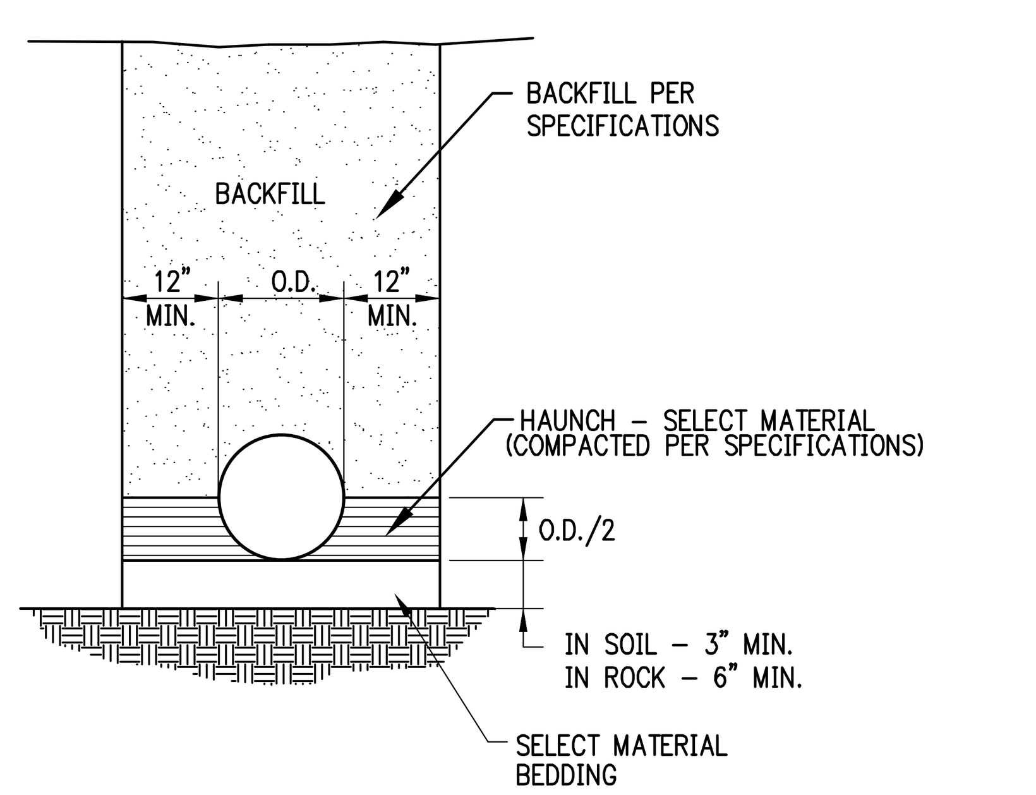
C-505

NOTES:

1. UNDER PAVEMENT, BACKFILL ENTIRE EXCAVATION WITH CLASS 7 AGGREGATE BASE MATERIAL COMPACTED IN 8" LIFTS TO A MINIMUM OF 95% STANDARD PROCTOR DENSITY.

CONSTRUCTION SEQUENCE

1. PLACE SELECT BEDDING MATERIAL TO GRADE.
2. COMPACT SELECT BEDDING BELOW THE PIPE.
3. INSTALL PIPE TO GRADE.
4. PLACE AND COMPACT THE HAUNCH AREA UP TO THE MIDDLE OF THE PIPE.
5. COMPLETE BACKFILL ACCORDING TO SPECIFICATIONS.

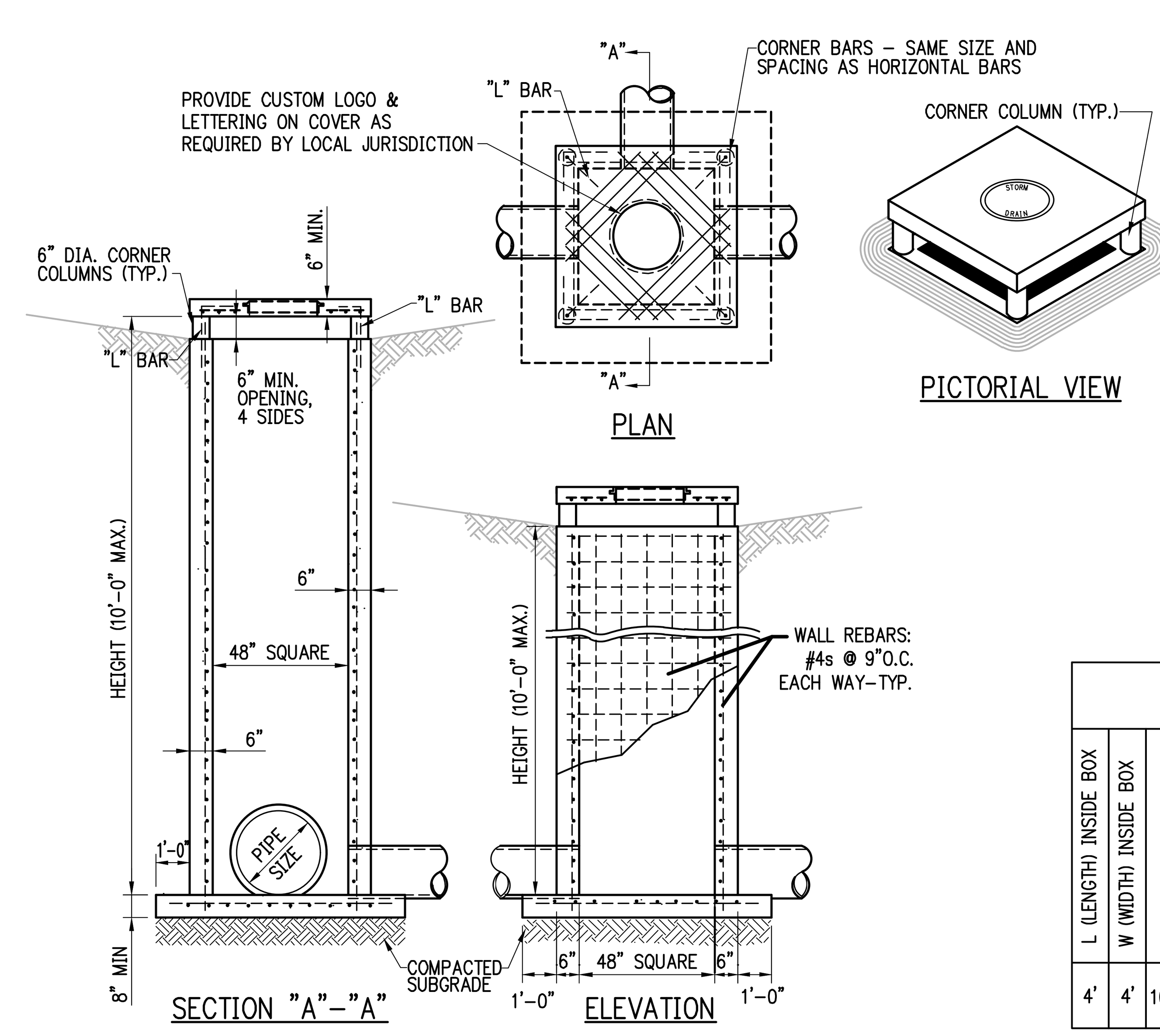


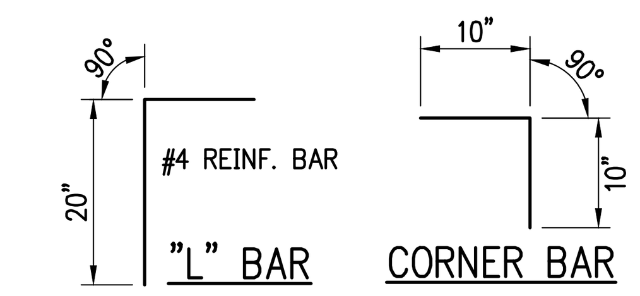
CONCRETE PIPE INSTALLATION

NTS

CONCRETE CHARACTERISTICS	CLASS A	CLASS B
MIN. COMPRESSION STRENGTH (PSI AT 28 DAYS)	3000	3500
MIN. CEMENT CONTENT (BAGS PER CUBIC YARD)	5.5	6.0
MAX. NET WATER / 94LB. BAG (GALLONS)	6.5	5.5
SLUMP RANGE (INCHES)	1-4*	1-4*
AIR CONTENT RANGE (%)	4-7	4-7
MAX. FLY ASH CONTENT (%)	20	20

* MAX. SLUMP SHALL BE 2" WHEN SLIP FORM PAVEMENT METHODS ARE USED.





NOTES:

1. PROVIDE 3/4" CHAMFER ON ALL EXPOSED EDGES UNLESS ADJACENT TO SIDEWALKS OR OTHER CONCRETE SURFACES.
2. BASE AND INLET WALLS TO BE POURED MONOLITHICALLY.
3. PIPES MAY ENTER BOX FROM ANY ANGLE OR ELEVATION APPROVED BY THE ENGINEER.
4. ALL #4 & #5 REINFORCING BARS TO BE GRADE 60 AND HAVE 1-1/2" MINIMUM COVER. >#5, 2" COVER.
5. TOP SLAB, CLASS B, 3500#, 4%-7% A.E
6. PIPES SHALL NOT CONNECT AT OR WITHIN 6" OF ANY CORNER EDGE.

NON-TRAFFIC RECTANGULAR AREA INLET REINFORCEMENT SCHEDULE

L (LENGTH) INSIDE BOX	W (WIDTH) INSIDE BOX	H (HEIGHT) TOP OF BOX TO ℄	T (TOP) SLAB THICKNESS	A (WALL) THICKNESS	TOP SLAB STEEL	RING AND LID DIAGONAL BARS	BOTTOM SLAB STEEL
4'	4'	10' MAX.	6"	6"	#4s @ 6" BOTH WAYS	8-#4s @ 6" X 5' LONG	#4s @ 6" BOTH WAYS

NON-TRAFFIC ONLY

TYPICAL 4'X4' NON-TRAFFIC RECTANGULAR BARREL AREA INLET

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NOTE: THIS DETAIL IS GENERIC, NOT JURISDICTION OR SITE-SPECIFIC. USE JURISDICTION-SPECIFIC DETAILS WHEN AND WHERE REQUIRED.

REVISED 04/16/15

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STATE OF ARKANSAS ★★★ REGISTERED PROFESSIONAL ENGINEER ★★★ No. 9407 JERRY J. KELSO

01/29/2021

STANDARD DETAILS SHT.3

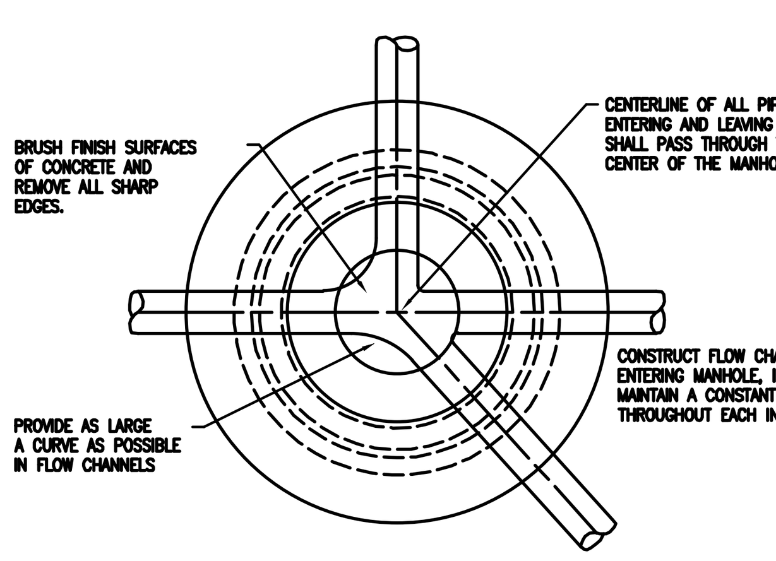
C-506

GRAVITY SEWER DETAIL SHEET

NOTES TYPICAL TO ALL MANHOLES

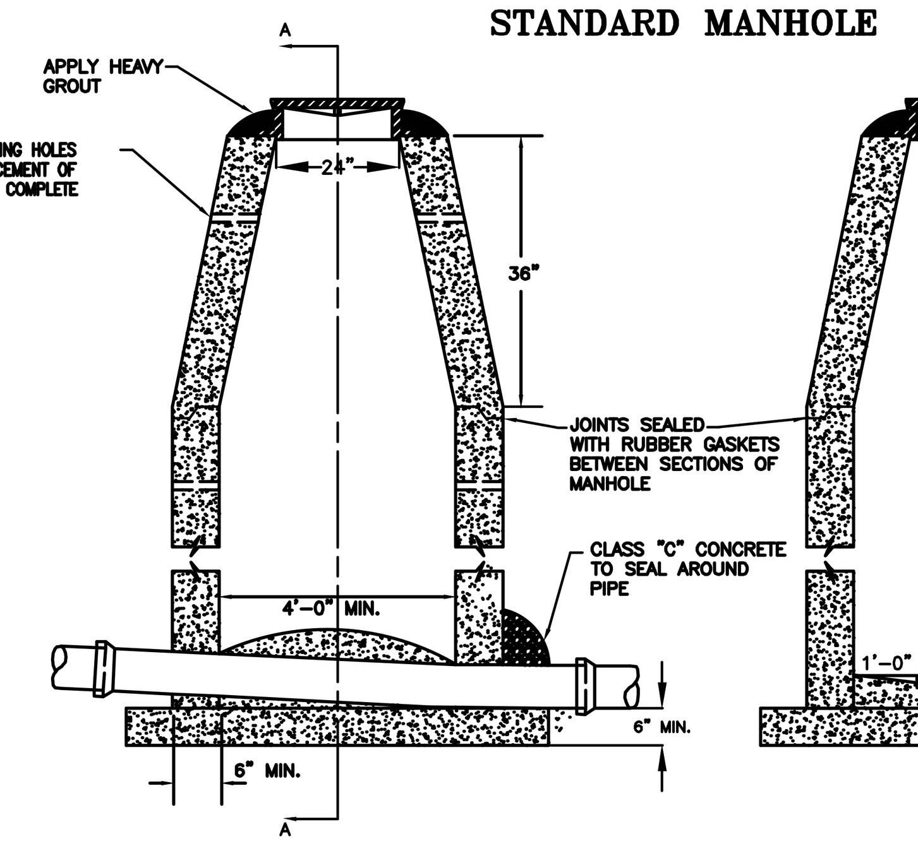
1. MANHOLE BASES TO BE OF CLASS "C" CONCRETE ON UNDISTURBED SUB-GRADE OR ON SELECTED FILL MATERIAL AS AUTHORIZED.
2. MANHOLE SIDEWALL MATERIAL TO BE PRE-CAST CONCRETE IN ACCORDANCE WITH PROPOSAL FORM REQUIREMENTS.
   a. 4' I.D. FOR SEWER SIZES 6" THRU 24"
   b. 5' I.D. FOR SEWER SIZES 24" THRU 30"
   c. 6' I.D. FOR SEWER SIZES 36" THRU 42"
3. SET MANHOLE TOPS AS FOLLOWS:
   a. IN STREETS, ROADS, HIGHWAYS, AND OTHER PAVED AREAS: FLUSH WITH FINISHED PAVING GRADE.
   b. UNDEVELOPED AREAS, SUCH AS FIELDS, WOODS, ETC.: 12" ABOVE GROUND
   c. OTHER AREAS: 1" ABOVE GROUND
4. MANHOLE FRAMES SHALL HAVE MIN. OPENING OF 22" DIA.

STANDARD MANHOLE



PLAN

STANDARD MANHOLE



SIDE ELEVATION

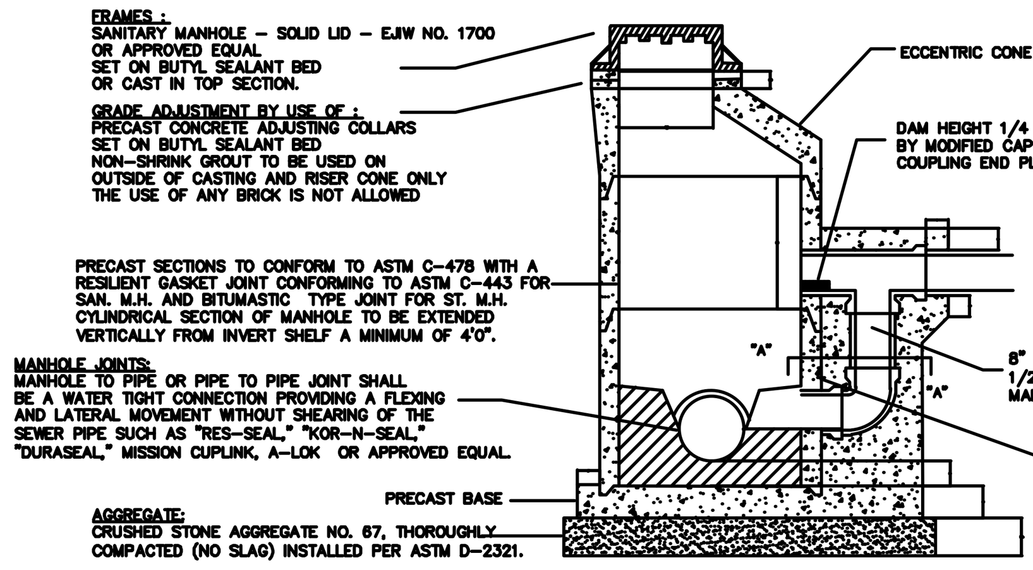
SECTION A–A

MINIMUM MANHOLE DIAMETERS
REFER TO PLAN FOR SPECIFIC SIZING REQUIREMENTS

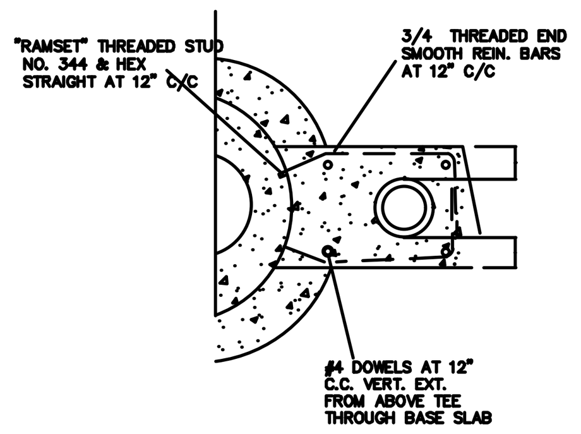
M.H. INSIDE DIAMETERS	M.H. INSIDE DIAMETERS
48"	30"
60"	36"
72"	48"
84"	54"
90"	60"
96"	60"

NOTES:
1. A DROP M.H. SHALL BE CONSTRUCTED IN SEWERS WHEREVER THE DISTANCE BETWEEN INVERTS IS 2.0' OR GRATER
2. ALL SECTIONS SHALL BE PRECAST CONFORMING TO C–478

ALL HOLES FOR PIPE TO MANHOLE CONNECTIONS ARE TO BE CORED AT THE TINE OF PRECAST MANUFACTURE. THESE CORED HOLES SHALL HAVE MEASURED ALONG THE INSIDE PERIMETER OF THE MANHOLE A MINIMUM DISTANCE OF 8" BETWEEN ADJACENT HOLES.MINIMUM MANHOLE DIAMETERS SHALL BE INCREASED ACCORDINGLY.

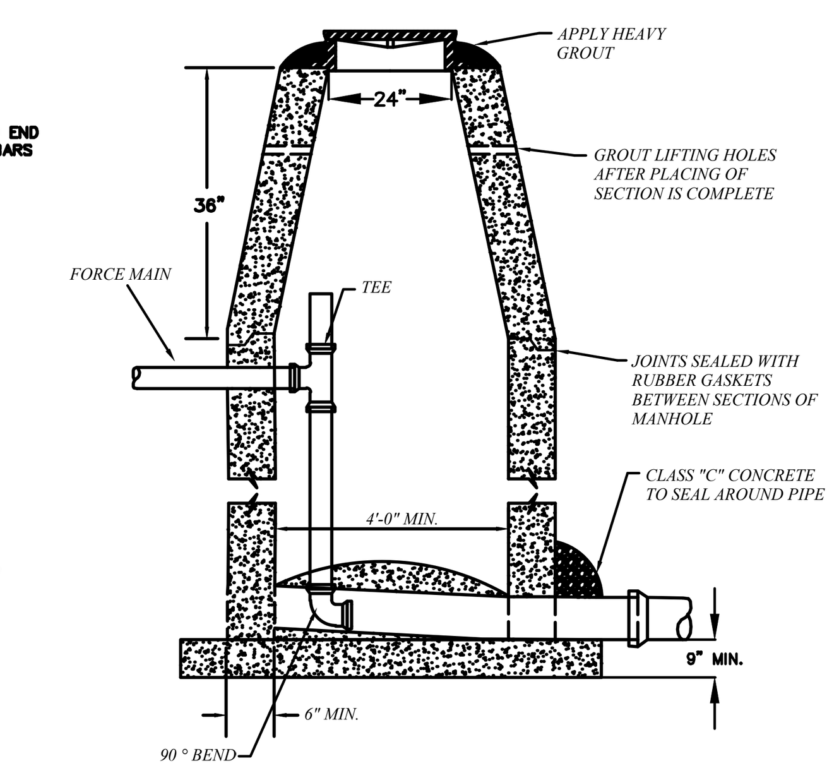


SANITARY SEWER
DROP MANHOLE DETAIL
NOT TO SCALE



SECTION "A" – "A"

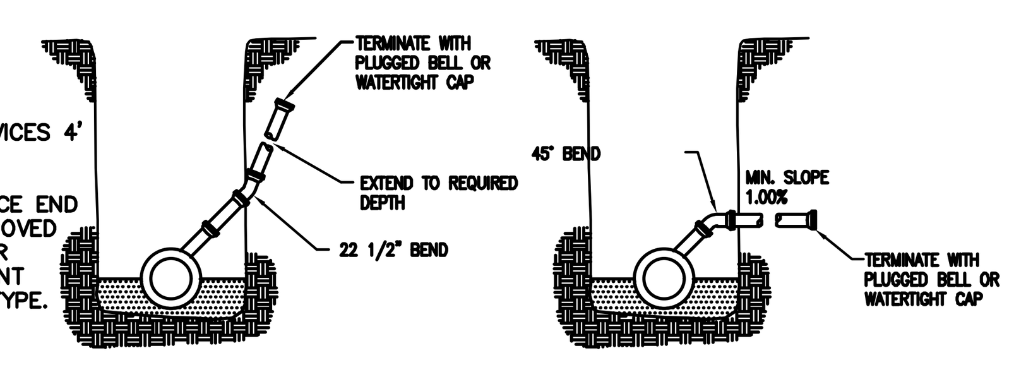
FORCE MAIN MANHOLE CONNECTION



SIDE ELEVATION

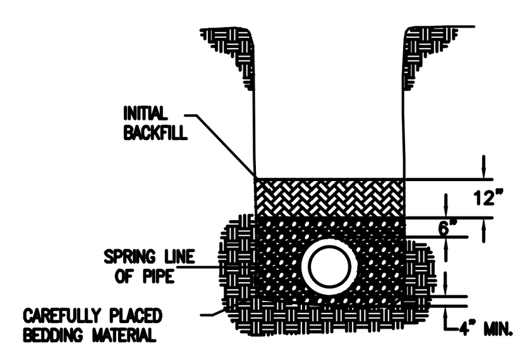
MANHOLE DETAILS

NOTES:
1. TERMINATE SEWER SERVICES 4' BELOW FINISHED GRADE.
2. MARK THE SEWER SERVICE END LOCATION WITH AN APPROVED METHOD. CONTACT SEWER MAINTENANCE DEPARTMENT FOR APPROVE MARKER TYPE.



FROM DEEP MAIN — NORMAL DEPTH

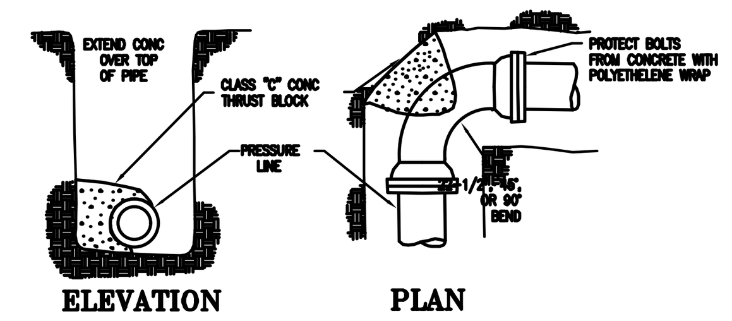
SERVICE CONNECTIONS



CLASS "B"

1. SPECIFIED GRANULAR PIPE BEDDING MATERIAL TO EXTEND A MINIMUM OF 4" BELOW PIPE BOTTOM AND EXTEND UP 6" ABOVE TOP OF PIPE, AND INITIAL BACKFILL 12" ABOVE GRANULAR PIPE BEDDING MATERIAL, HAND PACKED AND COMPACTED BEFORE PLACING ANY REMAINING BACKFILL.

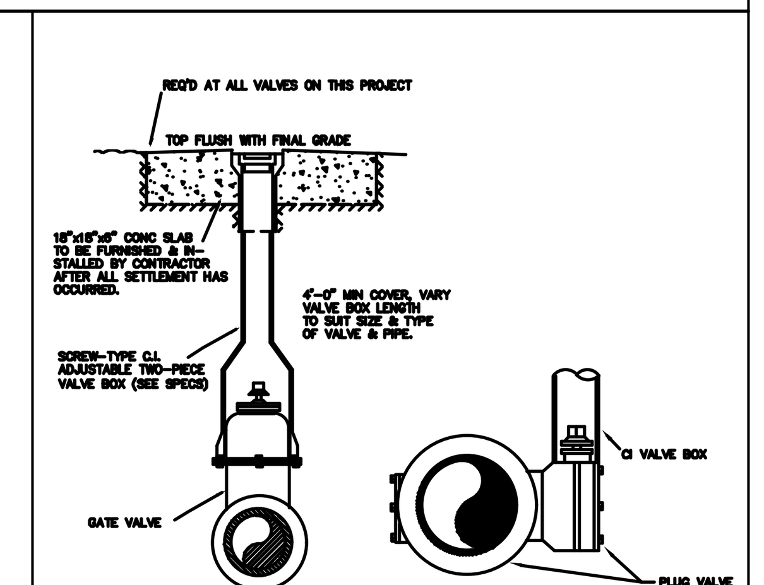
BEDDING DETAIL



ELEVATION — PLAN

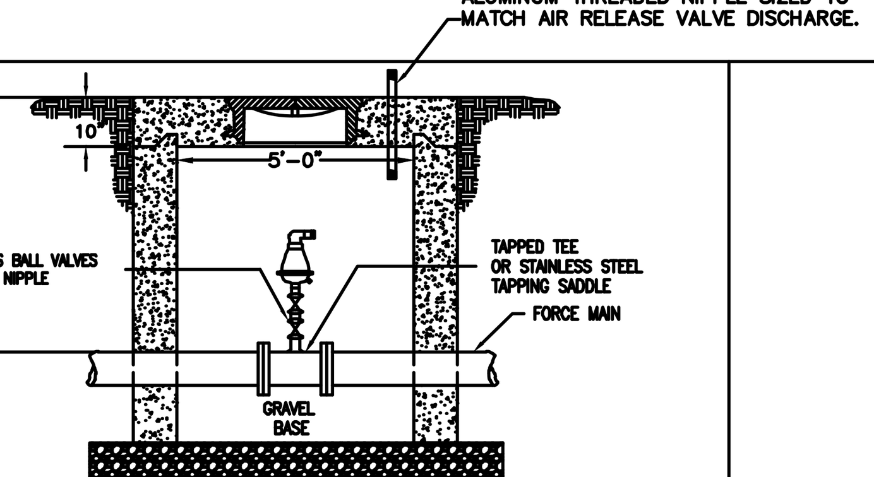
1. BEARING AREA TO BE DETERMINED IN FIELD IN EACH CASE. MIN. BEARING AREA TO BE 2 SQ. FT.
2. ALL CONC. THRUST BLOCKS SHALL BE POURED AGAINST UNDISTURBED SOIL.

THRUST BLOCKING DETAIL
FOR PRESSURE LINES

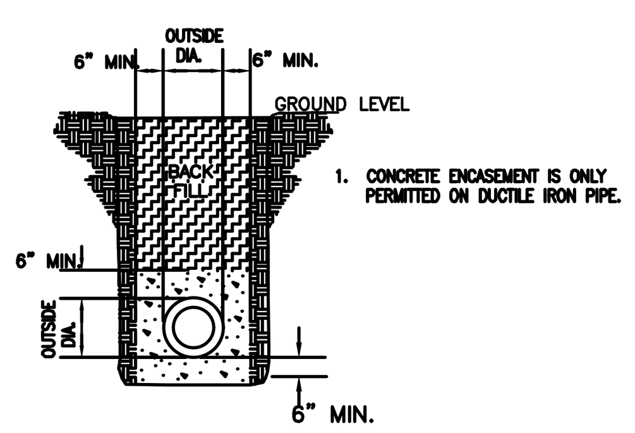


VALVE BOX DETAIL

NOTES:
1. 5' DIAMETER MANHOLE WITH A FLAT TOP
2. INCLUDE STANDARD 36" CAST IN RING & VENTED LID
3. CAST DOGHOUSE STYLE MANHOLE.
4. PLACE 1' THICK LAYER OF #67 CRUSHED STONE BELOW MANHOLE.
5. A.R.I. AIR RELEASE VALVE 2" D–025 or 3" D–023 AS INDICATED ON PLANS.
6. PLACE 1 FOOT OF #67 CRUSHED STONE BELOW VALVE VAULT.

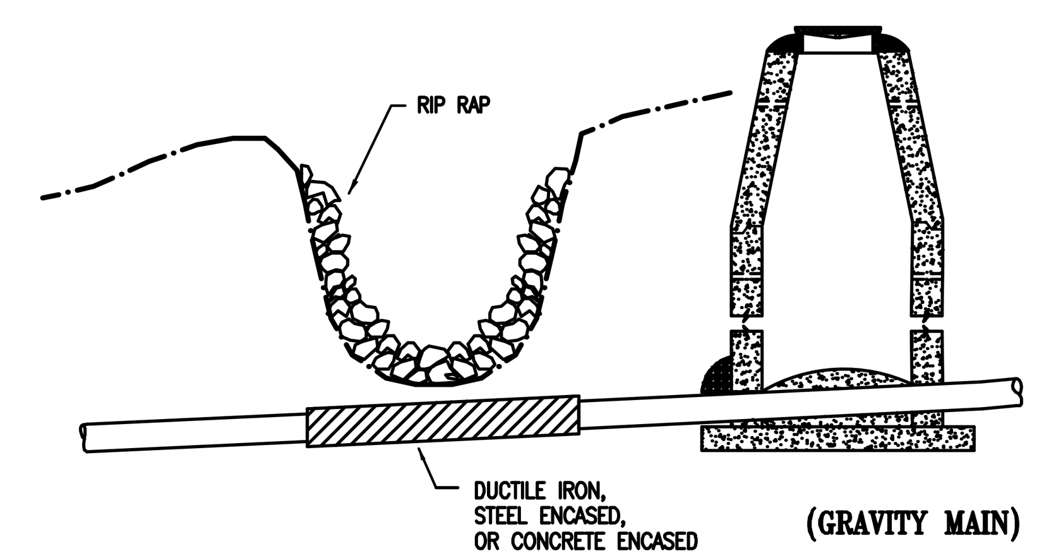


AIR RELEASE VALVE MH



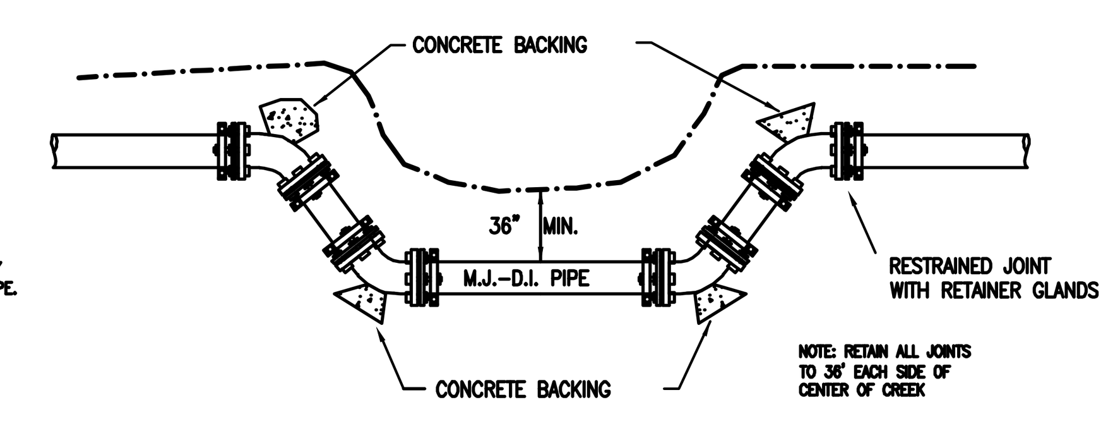
1. CONCRETE ENCASEMENT IS ONLY PERMITTED ON DUCTILE IRON PIPE.

CONCRETE ENCASEMENT



(GRAVITY MAIN)

1. CONCRETE ENCASEMENT IS ONLY PERMITTED ON DUCTILE IRON PIPE.

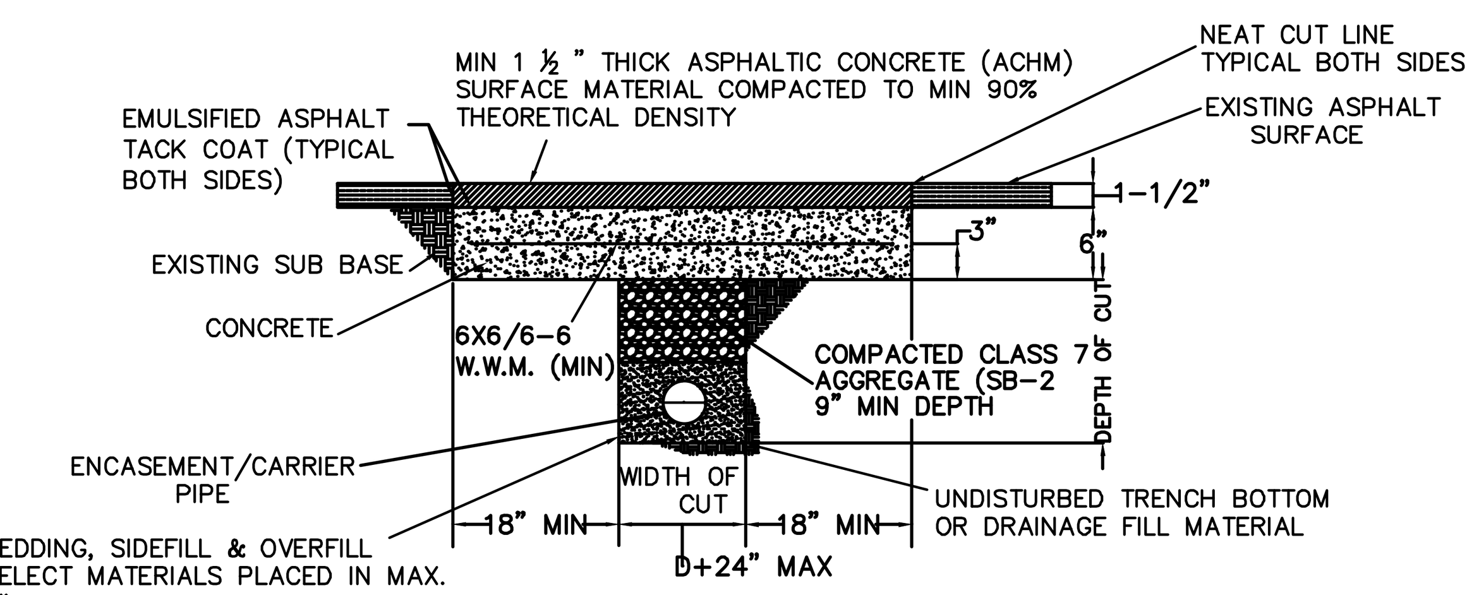


USE THRUST BLOCKING OR THRUST RESTRAINMENT

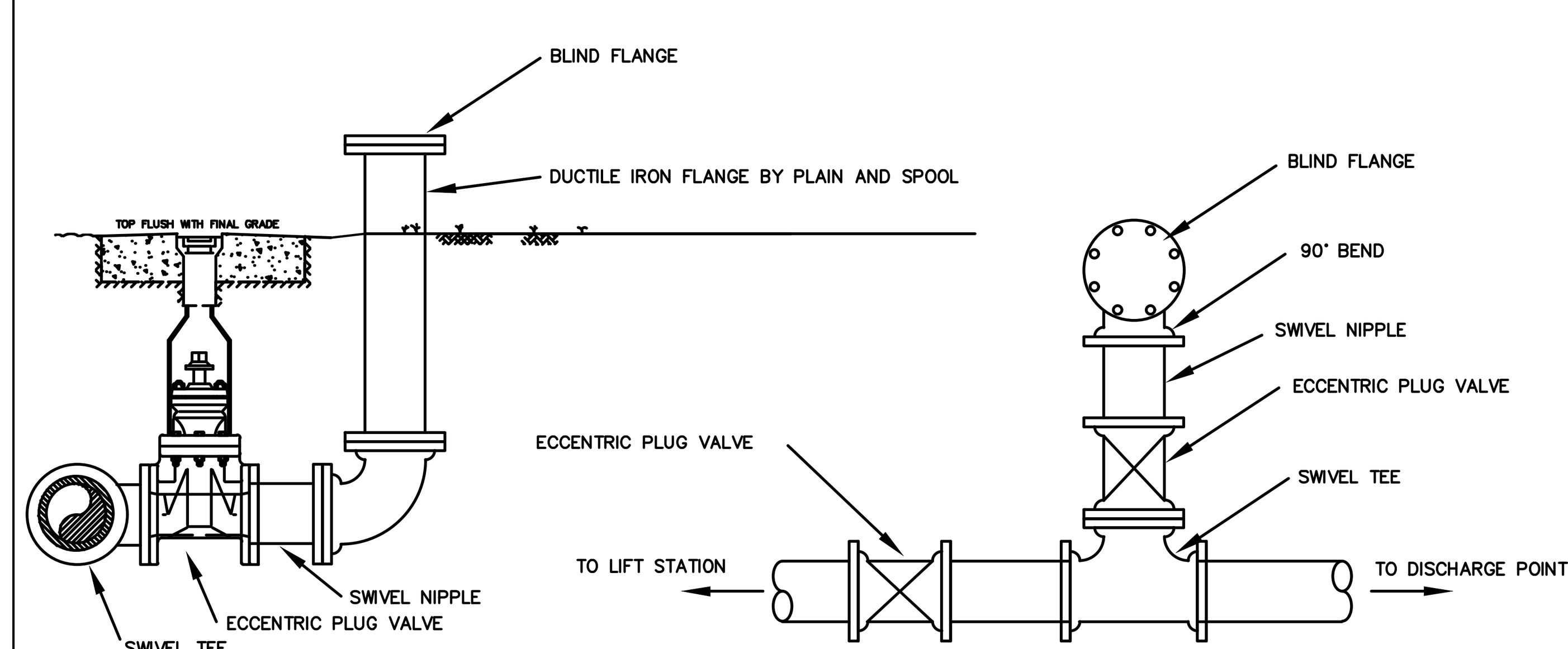
(FORCE MAIN)

CREEK CROSSING DETAIL

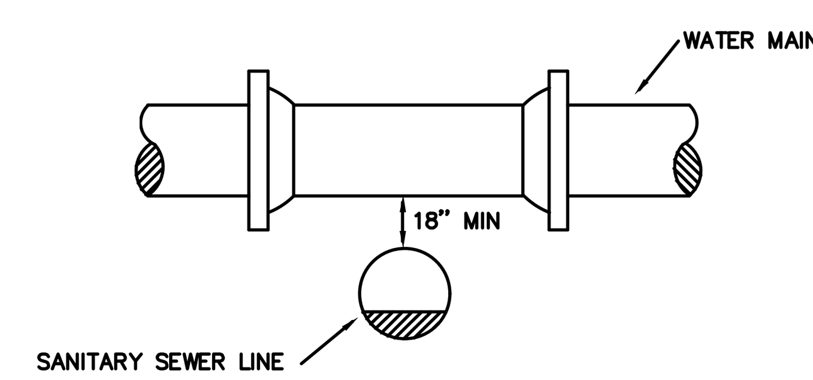
SELECT BACKFILL MATERIAL – SHALL CONSIST OF FINE GRANULAR MATERIAL, FREE OF CLUMPS, CLODS, STONES, ROOTS, DEBRISAND FROZEN MATERIAL CONSOLIDATION OF BACKFILL BY SATURATION OR PONDING WITH WATER SHALL NOT BE PERMITTED



TYPICAL SECTION OF REPAIR FOR UTILITY CUT ON ASPHALT PAVED SURFACES



BY PASS PUMPING CONNECTION



TYPICAL SEWER CROSSING

The operating routine shall include necessary protective measures to detect and remove or destroy any contaminant of concern or regulation that might enter the distribution system. every precaution must be taken against the possibility of sewage contamination of the water in the distribution system. Water mains and sanitary sewers shall be constructed as far apart as practicable, and shall be separated by undisturbed and compacted earth. A minimum horizontal distance of ten feet should be maintained between water lines and sewer lines or other sources of contamination. Water lines and sewers shall not be laid in the same trench except on the written approval of the Arkansas Department of Health. Water mains necessarily in close proximity to sewers must be placed so that the bottom of the water line will be at least 18 inches above the top of the sewer line at its highest point. If this distance must unavoidably be reduced, the water line or the sewer line must be encased in watertight pipe with sealed watertight ends extending at least ten feet either side of the crossing. Any joint in the encasement pipe is to be mechanically restrained. The encasement pipe may be vented to the surface if carrying water or sewer under pressure. Where a water line must unavoidably pass beneath the sewer line, at least 18 inches of separation must be maintained between the outside of the two pipes in addition to the preceding encasement requirement. Exceptions to this must be approved in writing by the Arkansas Department of Health.

A minimum horizontal distance of three feet shall be maintained between water lines and other underground utilities of a non-sanitary nature (gas, electric, etc.). Exceptions to this must be approved in writing by the Arkansas Department of Health and Human Services.

PLWC
PARAGOULD LIGHT WATER & CABLE
Engineering Services
P.O. Box 9 - 1901 Jones Road
Paragould, Arkansas 72451

DESIGNED BY
DRAWN BY
CHECKED BY
DATE 3/13/2017
PLWC PROJECT NO.
SHEET NO. 1 of 1

10825 Financial Centre Parkway, Suite 300
Little Rock, Arkansas 72211
Crafton Tull
engineering | surveying
501.664.3245 t 501.664.6704 f
www.craftontull.com

CERTIFICATE OF AUTHORIZATION:
CERTIFICATE OF AUTHORIZATION — CRAFTON, TULL & ASSOCIATES, INC. No. 109 — ARKANSAS ENGINEER

HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT
PARAGOULD, ARKANSAS

Key Plan

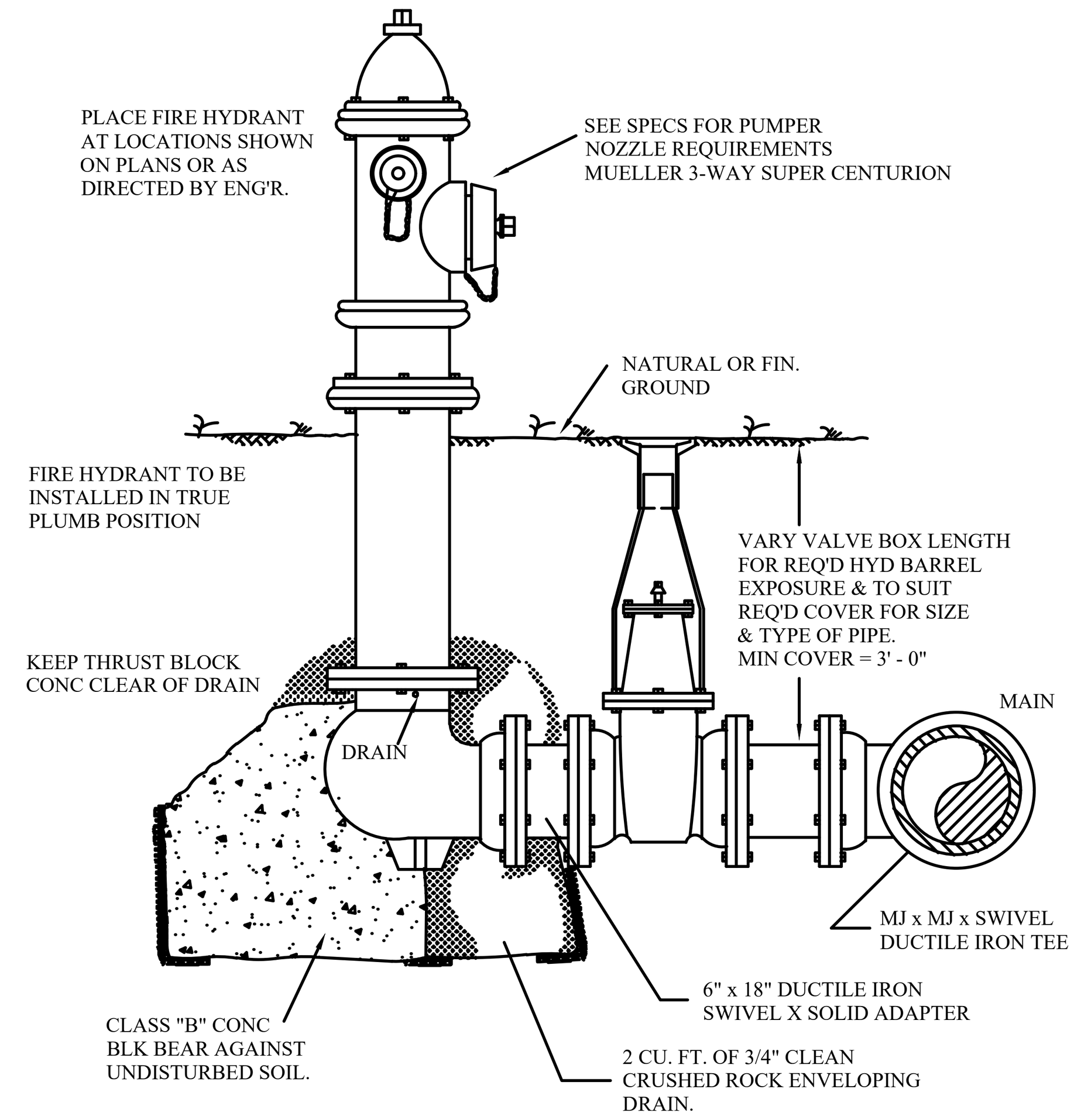
No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

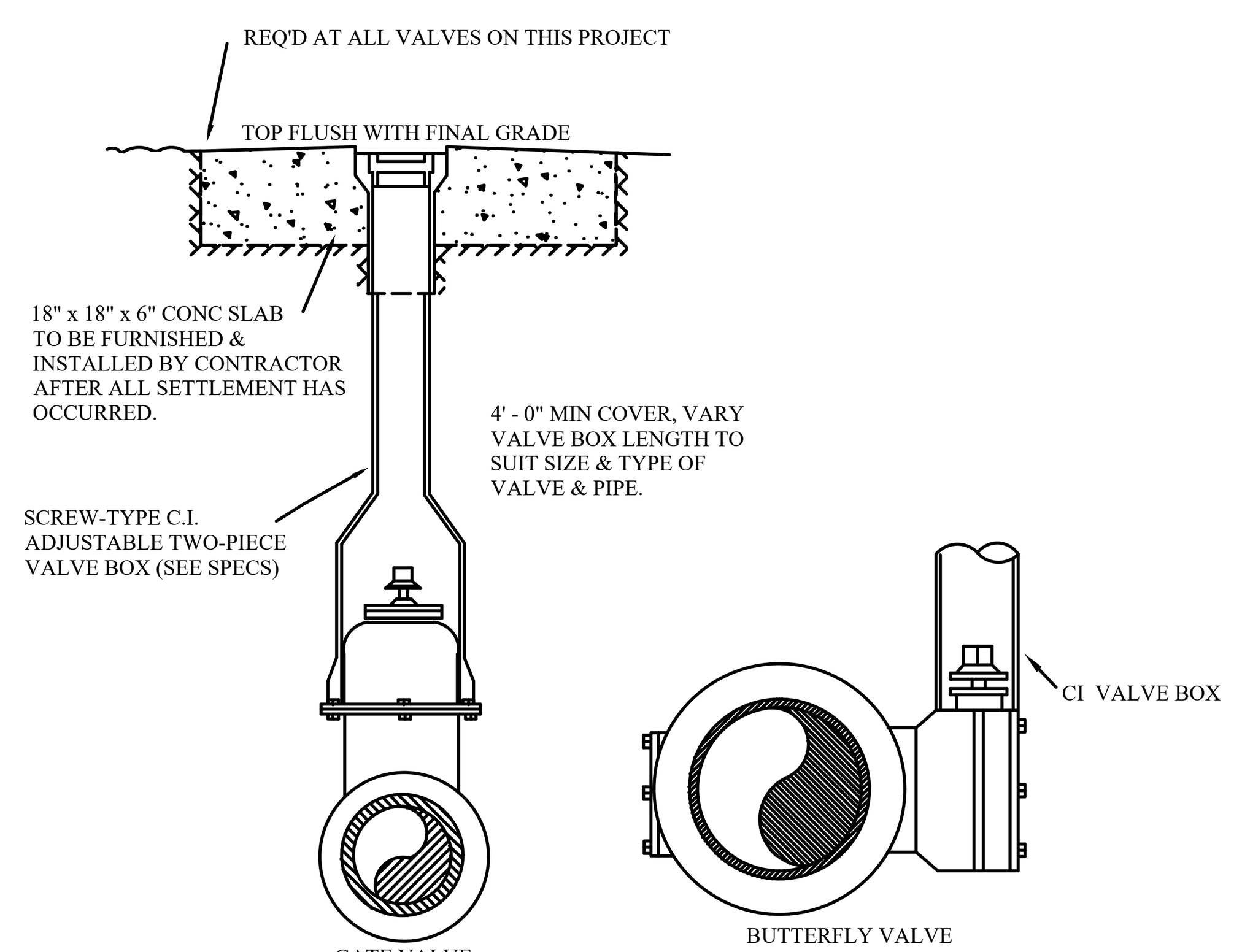
WATER AND SEWER DETAILS SHT.1

C-507

NOTE:
SEE SECTION 0220 - WATER DISTRIBUTION SYSTEM IN PLWC REQUIREMENTS FOR UTILITY DESIGN AND INSTALLATION



FIRE HYDRANT DETAIL

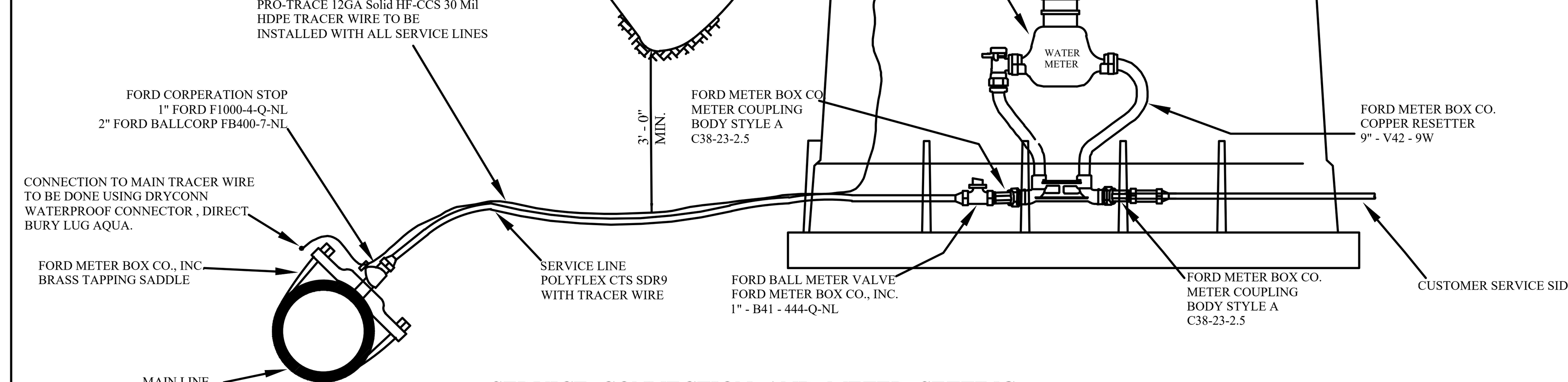


VALVE BOX DETAIL

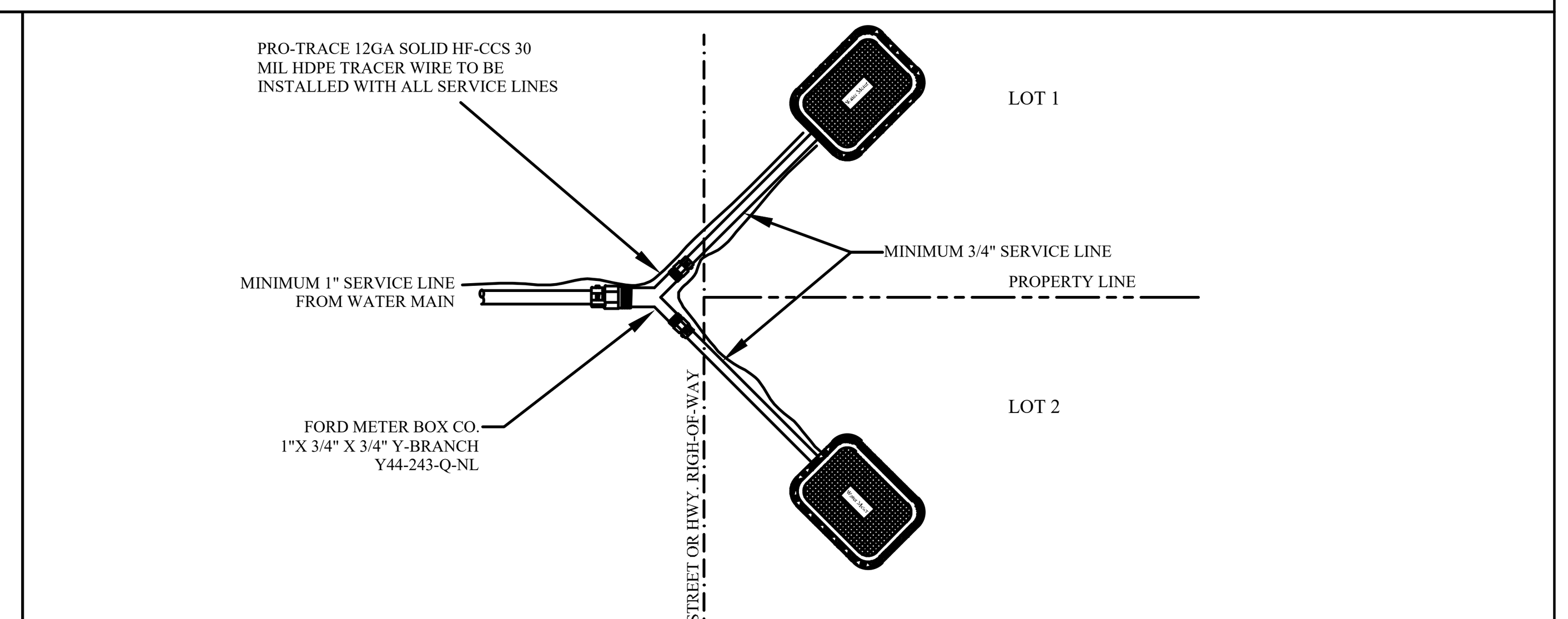
NOTES:

1. IN RESIDENTIAL SUBDIVISIONS WATER SERVICES SHALL BE DESIGNED WHERE ONE SERVICE LINE WILL SERVE TWO SUBDIVISION LOTS WHERE POSSIBLE. A MINIMUM PIPE SIZE OF ONE INCH WILL BE USED FOR ALL WATER SERVICES FROM THE MAIN TO THE WATER METER SETTING(S). IT IS THE DESIGN ENGINEERS RESPONSIBILITY THAT ALL SERVICES ARE DESIGNED TO PROVIDE ADEQUATE WATER FOR THE EXPECTED PEAK DEMAND AT EACH RESIDENCE.
2. BACKFILL AROUND METER BOX TO BE HAND TAMPED TO INSURE NO SETTLEMENT

Meter Box: Southern Distrubutores, Inc.
Rhino Rectangular Box MB-17.5, Item #179
Meter Box Lid: MB-175.5 Flip Reader Lid, Item #186



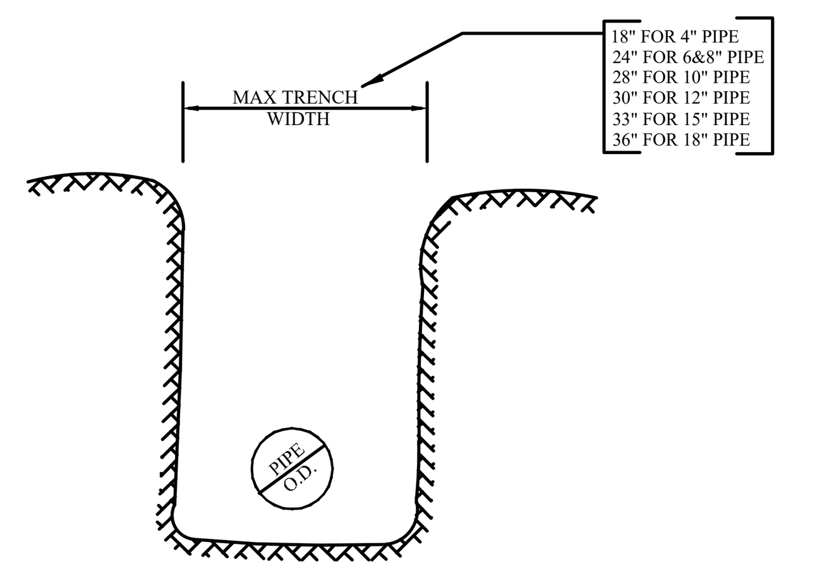
SERVICE CONNECTION AND METER SETTING



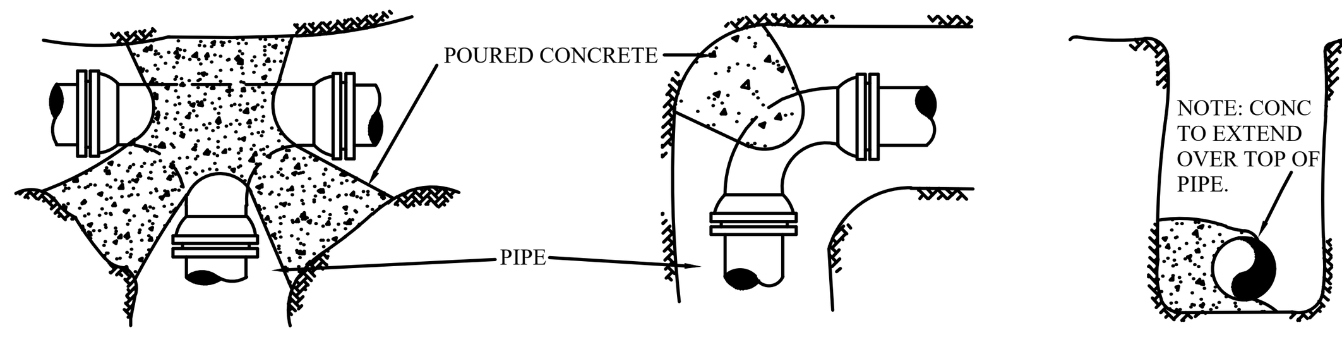
SERVICE CONNECTION WITH DUEL METER SETTING

NOTES:

1. ALL PIPE TRENCHES THAT LIE UNDER DRIVING SURFACES SHALL BE BACK FILLED WITH CLASS 8 LIMESTONE COMPACTED TO 98% MODIFIED PROCTOR (ASTM D1557) UP TO THE DESIGN SUBGRADE OR AS DIRECTED BY THE DESIGN ENGINEER AND APPROVED BY PLWC.
2. ALL PIPE TRENCHES THAT LIE IN OTHER AREAS MAY BE PLACED BY ANY METHOD THAT WILL NOT DISTURB THE PIPE OR AS DIRECTED BY THE DESIGN ENGINEER AND APPROVED BY PLWC.

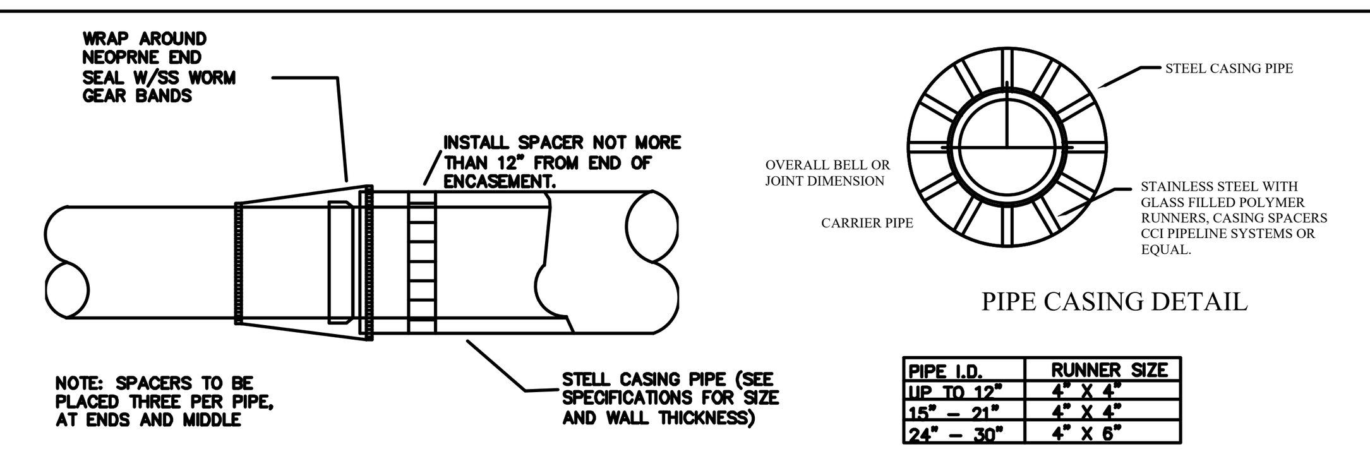


TYPICAL WATER PIPE BEDDING AND BACKFILL DETAIL



ALL CONCRETE THRUST BLOCKING TO BE POURED AGAINST UNDISTURBED SOIL.

THRUST BLOCK DETAILS

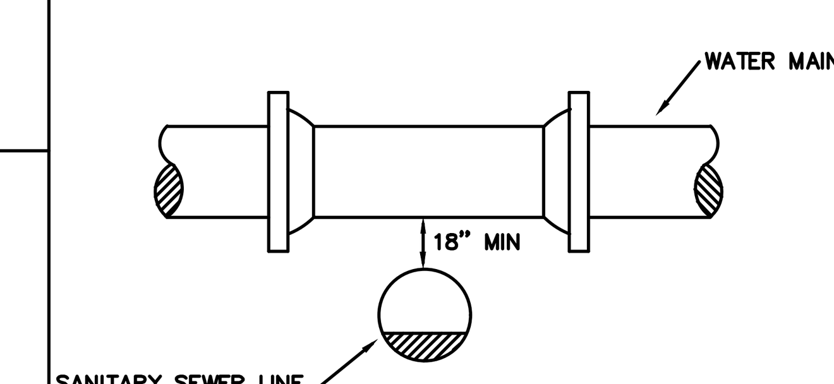


PIPE CASING DETAIL

PIPE I.D.	RUNNER SIZE
UP TO 12"	4" X 4"
14" - 21"	4" X 4"
24" - 30"	4" X 6"

CASING DIAMETER	16"	18"	20"	24"	30"	36"	>36"
MIN. WALL THICKNESS	.250	.250	.312	.375	.500	.500	SPECIAL DESIGN

PIPE ENCASEMENT FOR RAILROAD & HIGHWAY CROSSINGS



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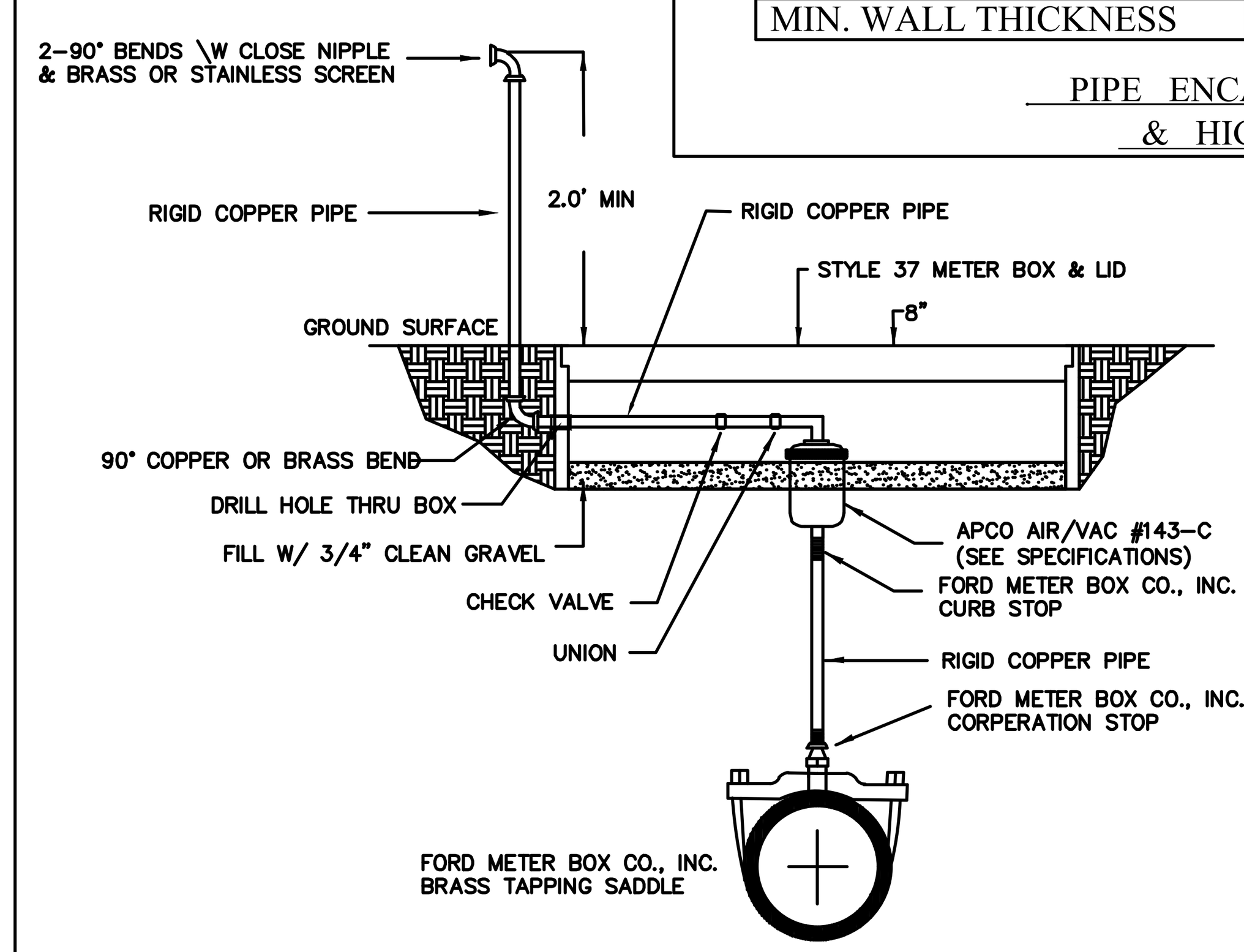
A minimum horizontal distance of three feet shall be maintained between water lines and other underground utilities of a non-sanitary nature (gas, electric, etc.). Exceptions to this must be approved in writing by the Arkansas Department of Health and Human Services.

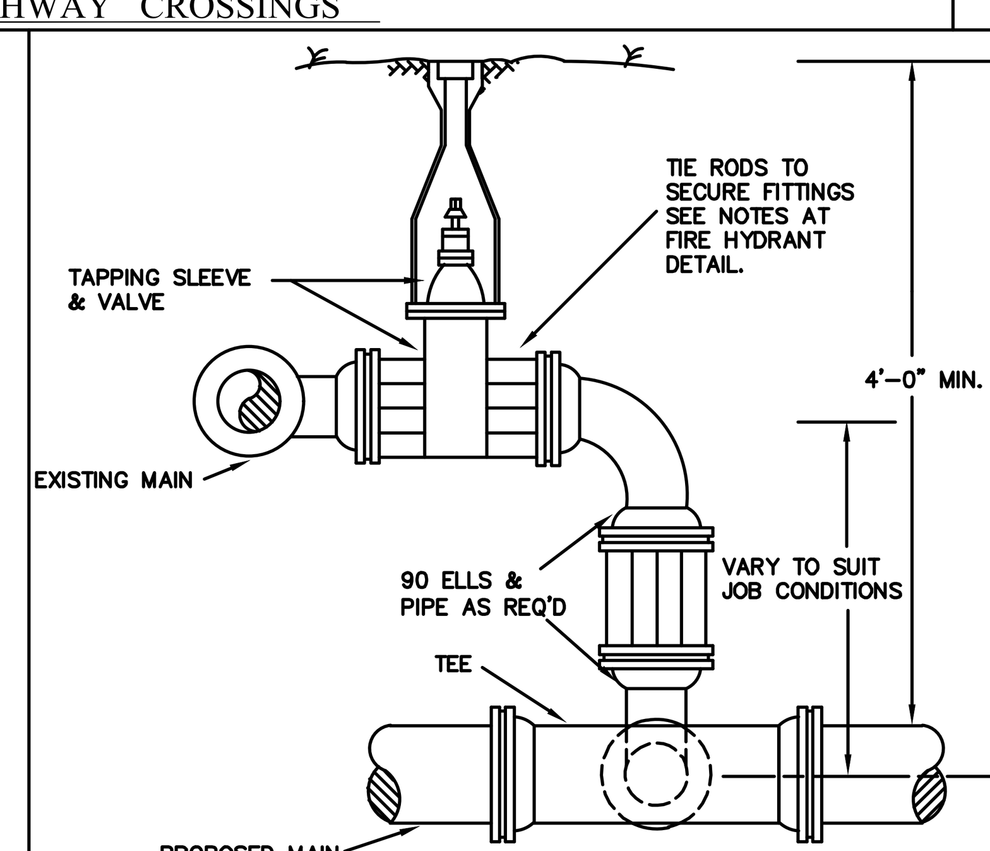
REACTION BACKING TABLE				
SIZE	REQUIRED SQ. FT. OF UNDISTURBED EARTHWALL FOR REACTION BACKING — TYPE OF FITTINGS			
	TEE	90°	45°	22 1/2°
2"	1	1	1	1
3"	1	1	1	1
4"	1	2	1	1
6"	3	3	2	1
8"	4	4	3	2
10"	7	7	4	2
12"	10	10	5	3
14"	13	13	7	4
16"	17	17	9	5
18"	21	21	12	6
20"	26	26	14	7
24"	38	38	20	10
30"	59	59	32	16
36"	85	85	46	23

NOTES:

1. ALL FITTINGS SHALL BE MECHANICAL JOINTS.
2. DO NOT COVER BELLS OR FLANGES WITH CONCRETE.
3. WRAP ALL FITTINGS WITH VISQUEEN.
4. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
5. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
6. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL SHALL BE BACKED.
7. REACTION BACKING TABLE IS BASED ON 150 PSI AND SOIL BEARING PRESSURE OF 2,000 LB./SQ. FT. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS DIRECTED BY THE ENGINEER.
8. ALL MECHANICAL JOINTS MUST HAVE RETAINER GLANDS.



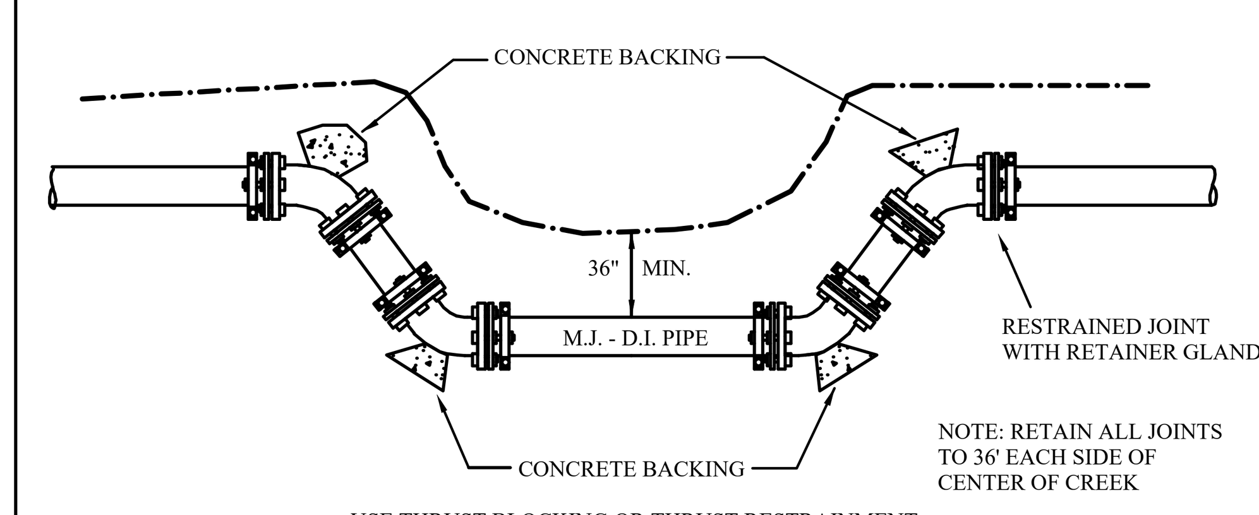
COMBINATION AIR/VACUUM VALVE DETAIL



NOTES:

1. ALL SADDLES, STRAPS, AND BOLTS SHALL BE POLYWRAPPED.
2. ALL THREADED OUTLETS SHALL HAVE A DOUBLE WRAP OF TEFLON TAPE ON THREADS.
3. VALVE BOXES SHALL BE INSTALLED ON ALL VALVES.

TYPICAL CONNECTION OF MAINS



USE THRUST BLOCKING OR THRUST RESTRAINMENT

CREEK CROSSING DETAIL

PLWC
PARAGOULD LIGHT WATER & CABLE

Engineering Services
P.O. Box 9 - 1901 Jones Road
Paragould, Arkansas 72451

WATER DETAILS

NO.	DATE	DESCRIPTION

ENGINEERS STAMP

10825 Financial Centre Parkway, Suite 300
Little Rock, Arkansas 72211

Crafton Tull
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501.664.3245 t 501.664.6704 f
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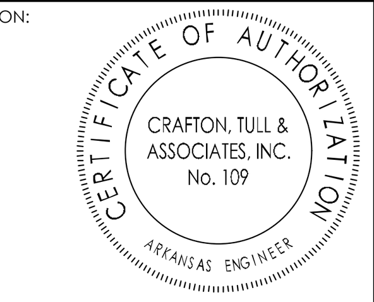
CERTIFICATE OF AUTHORIZATION:



HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

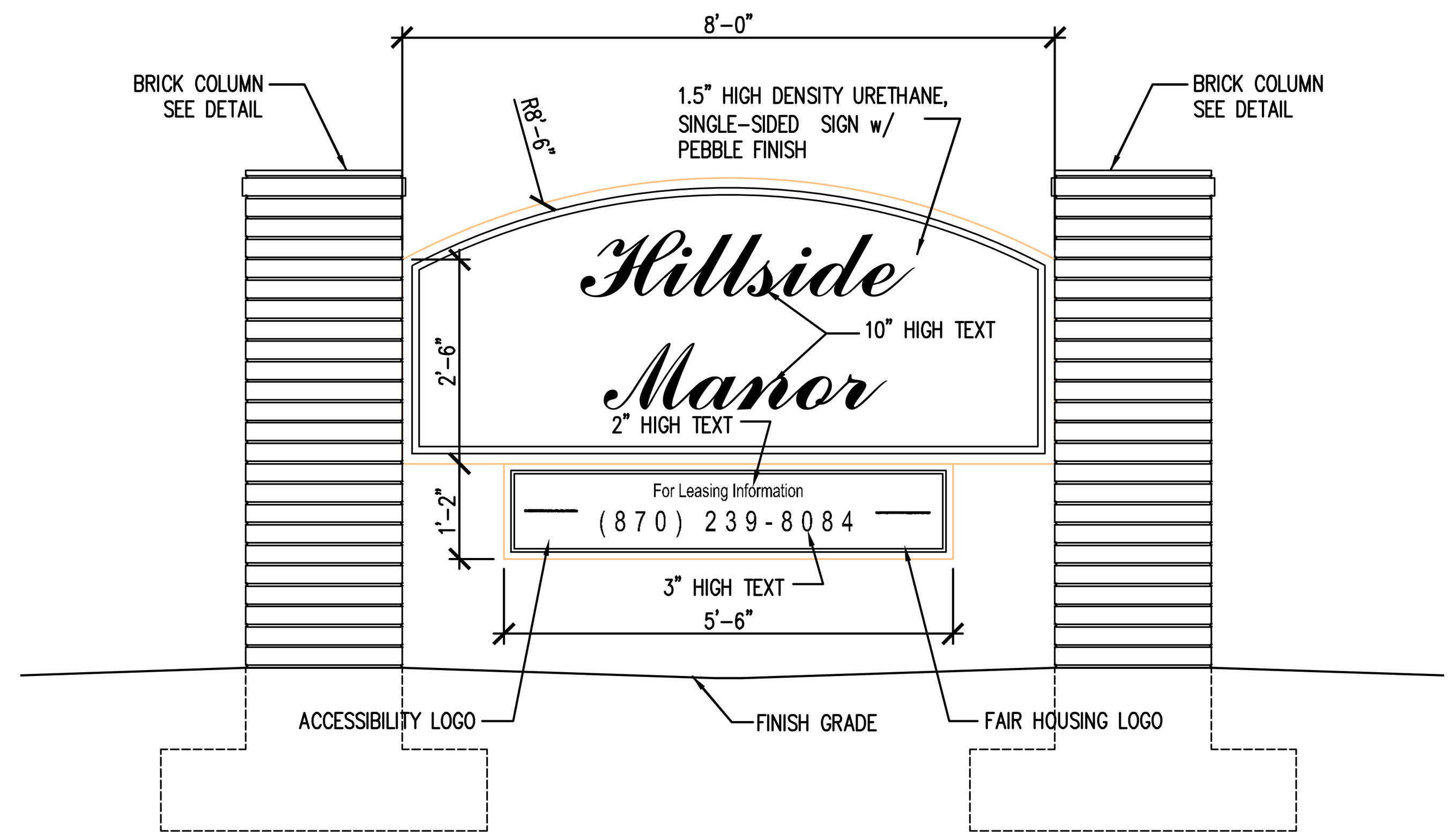
No.	Description	Date

DESIGNED BY	?
DRAWN BY	TG
CHECKED BY	
DATE	10/29/2018
PLWC PROJECT NO.	?

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

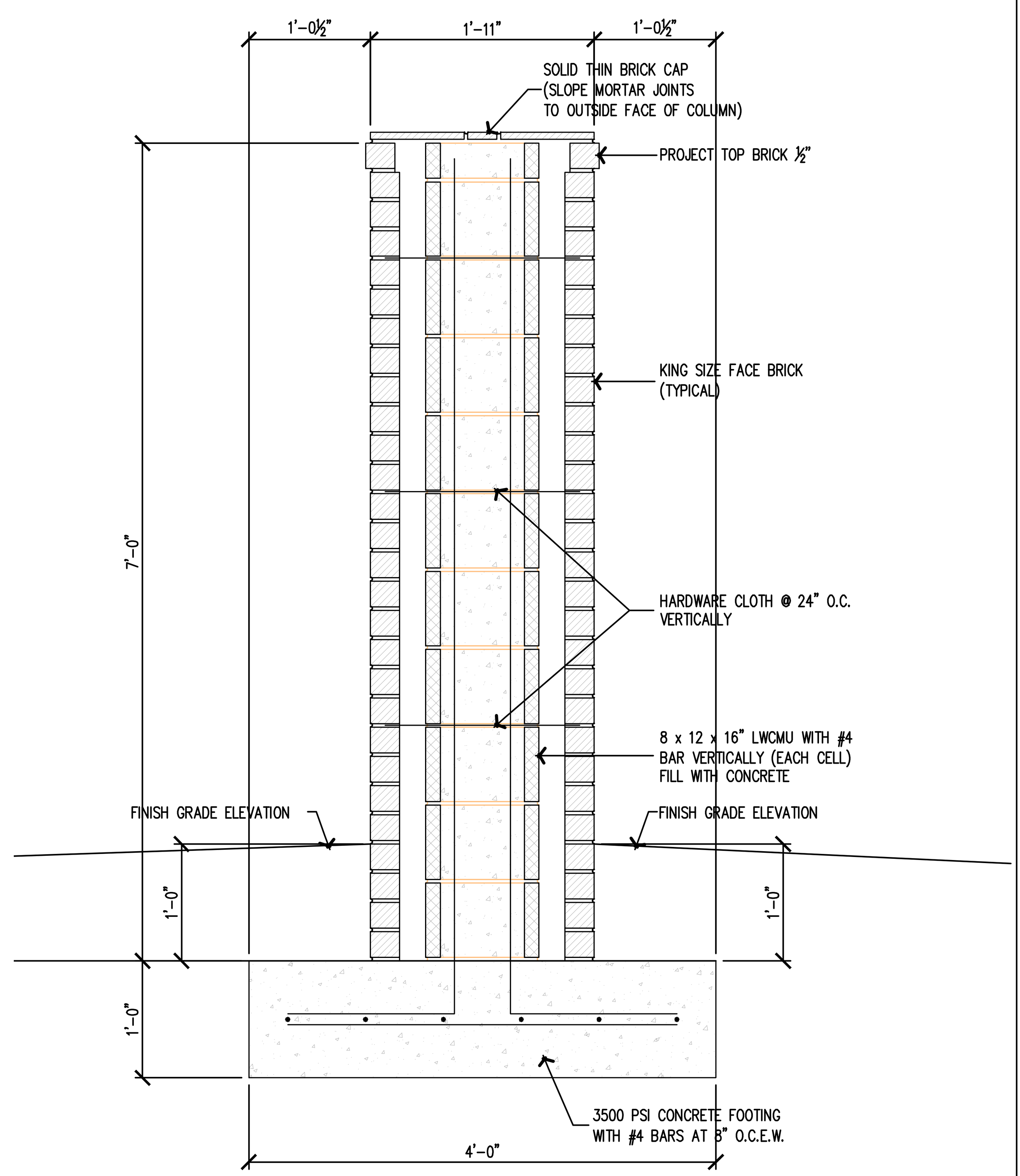
WATER AND SEWER DETAILS SHT.2

C-508



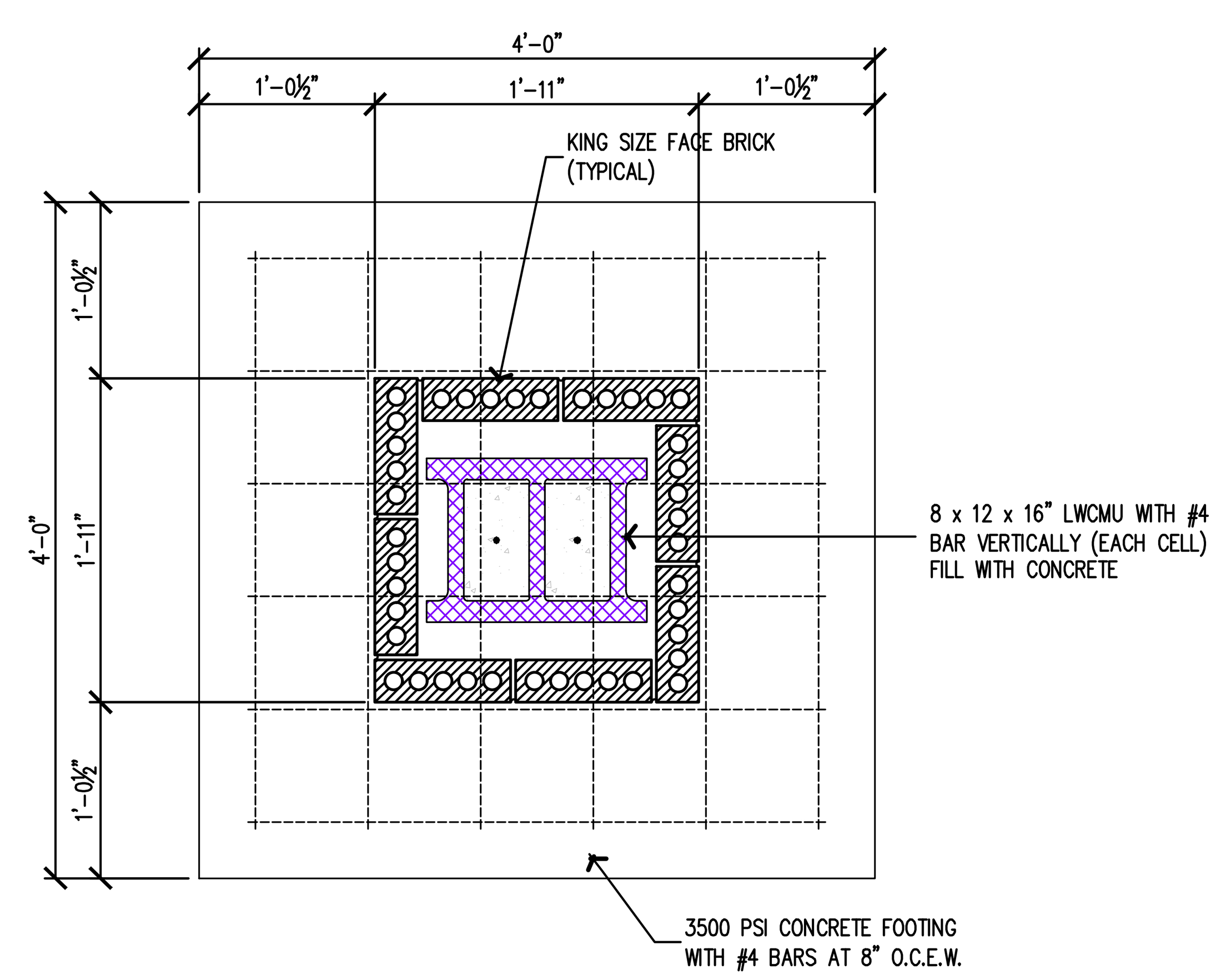
DEVELOPMETNT_SIGN_DETAIL

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



SECTION_@_BRICK_COLUMN

SCALE:1"=1'-0"



PLAN_@_BRICK_COLUMN

SCALE:1"=1'-0"

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CERTIFICATE OF AUTHORIZATION:

CERTIFICATE OF AUTHORIZATION
CRAFTON, TULL & ASSOCIATES, INC.
No. 109
ARKANSAS ENGINEER

HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT

PARAGOULD, ARKANSAS

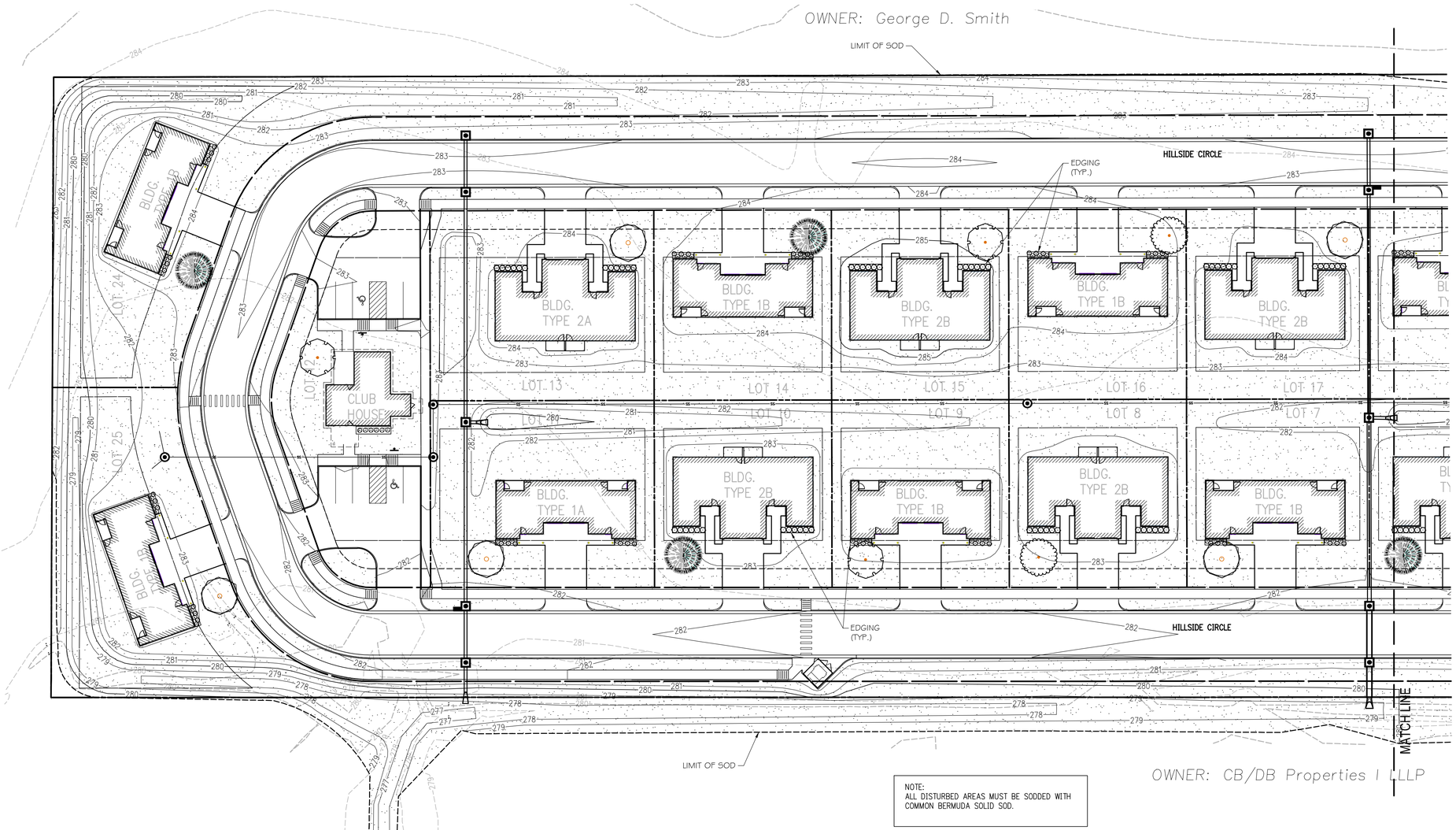
Key Plan

No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

SIGN DETAIL

C-509



NOTE:
ALL DISTURBED AREAS MUST BE SODDED WITH COMMON BERMUDA SOLID SOD.

PLANT_SCHEDULE

TREES	BOTANICAL / COMMON NAME	CONT	QTY
	LIRIODENDRON TULIPIFERA / TULIP TREE	1.5" CAL.	7
	QUERCUS SHUMARDII / SHUMARD RED OAK	1.5" CAL.	4
	TAXODIUM DISTICHUM / BALD CYPRESS	1.5" CAL.	7
	ULMUS PARVIFOLIA `ALLEE` / ALLEE LACEBARK ELM	1.5" CAL.	7
SHRUBS	BOTANICAL / COMMON NAME	SIZE	QTY
	BUXUS MICROPHYLLA `WINTERGREEN` / BOXWOOD	1 GAL	132
	RHAPHIOLEPIS INDICA / INDIAN HAWTHORN	1 GAL	162
GROUND COVERS	BOTANICAL / COMMON NAME	CONT	QTY
	CYNODON DACTYLON / BERMUDA GRASS	SOLID SOD	28,650 SY

LANDSCAPE NOTES

1. CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO STARTING ANY WORK. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE ONE-CALL SYSTEM. ALL UTILITY LOCATIONS SHOWN ON THIS PLAN ARE APPROXIMATE AND ARE BASED ON SURVEY INFORMATION, SITE DEVELOPMENT PLANS, UTILITY RECORDS, ETC.
2. ALL PLANT MATERIAL SHALL BE NURSERY GROWN. THE SIZE AND GRADING SHALL MEET OR EXCEED THE LATEST EDITION OF AMERICAN STANDARDS FOR NURSERY STOCK PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
3. ALL ENTRANCE/EXIT PLANTINGS SHALL BE INSTALLED AND MAINTAINED TO PROVIDE CLEAR SIGHT DISTANCE FROM THE STREETS AND THE ENTRANCE/EXIT LOCATIONS.
4. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING REQUIRED SHRUBS AND TREES PER CITY LANDSCAPE ORDINANCE OR UNTIL PROJECT IS TURNED OVER AND ACCEPTED BY OWNER.
5. NO CHANGES TO THE PLANT SCHEDULE ARE ALLOWED WITHOUT APPROVAL OF THE OWNER, LANDSCAPE ARCHITECT AND CITY. SUBSTITUTED PLANTS SHALL MEET THE SAME CRITERIA REGARDING TYPE, SIZE AND FUNCTION AS THOSE PLANTS SHOWN ON THE PLAN.
6. ALL LAWN AREAS ARE TO RECEIVE 4" OF TOPSOIL TO FINAL GRADE. ALL SHRUB AREAS SHALL RECEIVE 6" OF TOPSOIL. SOIL SHALL BE AMENDED TO ENHANCE FAVORABLE GROWING CONDITIONS. ALL EXISTING SOD/WEEDS SHALL BE REMOVED FROM PLANTING BED AREAS.
7. ALL PLANT BEDS SHALL BE TREATED WITH A WEED BARRIER AND A MINIMUM OF 3" SHREDDED HARDWOOD MULCH. TREES NOT LOCATED IN PLANT BEDS SHALL RECEIVE A MULCH SAUCER PER DETAIL.
8. ALL TREES AND SHRUBS SHALL BE INSTALLED IN ACCORDANCE WITH THE DETAILS PROVIDED.
9. ALL SHRUBS AND TREES SHALL BE TREATED WITH 13-13-13 TIME RELEASE FERTILIZER UPON COMPLETION OF THEIR INSTALLATION.
10. ALL DISTURBED AREAS NOT TO RECEIVE PLANTINGS SHALL BE SEEDED WITH 60% BERMUDA GRASS AND 40% ANNUAL RYEGRASS AT 5 LBS PER 1,000 SF DURING THE APPROPRIATE TIME OF YEAR FOR THE SEED TO GERMINATE; IF THIS CANNOT BE ACCOMPLISHED, THE CONTRACTOR SHALL CALL THE LANDSCAPE ARCHITECT FOR A GRASS SEED SUBSTITUTION.
11. AT A MINIMUM, SOD SHALL BE INSTALLED ON 3:1 SLOPES AND GREATER AND AN EIGHTEEN INCH (18") STRIP OF SOD SHALL BE INSTALLED BEHIND ALL CURBS AND ADJACENT TO ALL SIDEWALKS AND ENTRY WALKS.

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CERTIFICATE OF AUTHORIZATION
CRAFTON, TULL & ASSOCIATES, INC.
No. 109
ARKANSAS ENGINEER

GRAPHIC SCALE IN FEET
30' 0 30'

HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT

PARAGOULD, ARKANSAS

Key Plan

No.	Description	Date

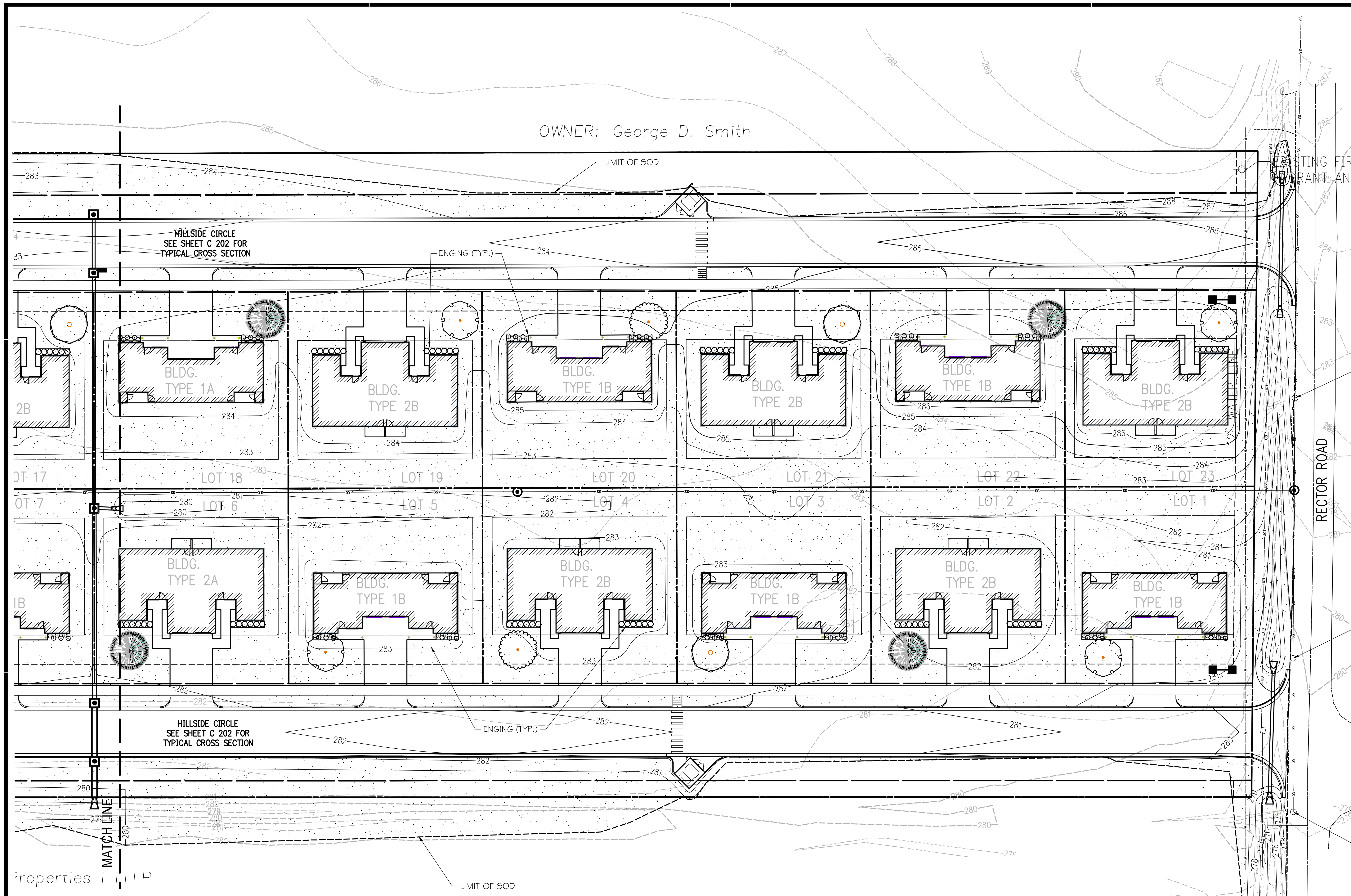
PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

REGISTERED LANDSCAPE ARCHITECT
AUSTIN P. PAUL
License No. 2588
STATE OF ARKANSAS

01/29/2021

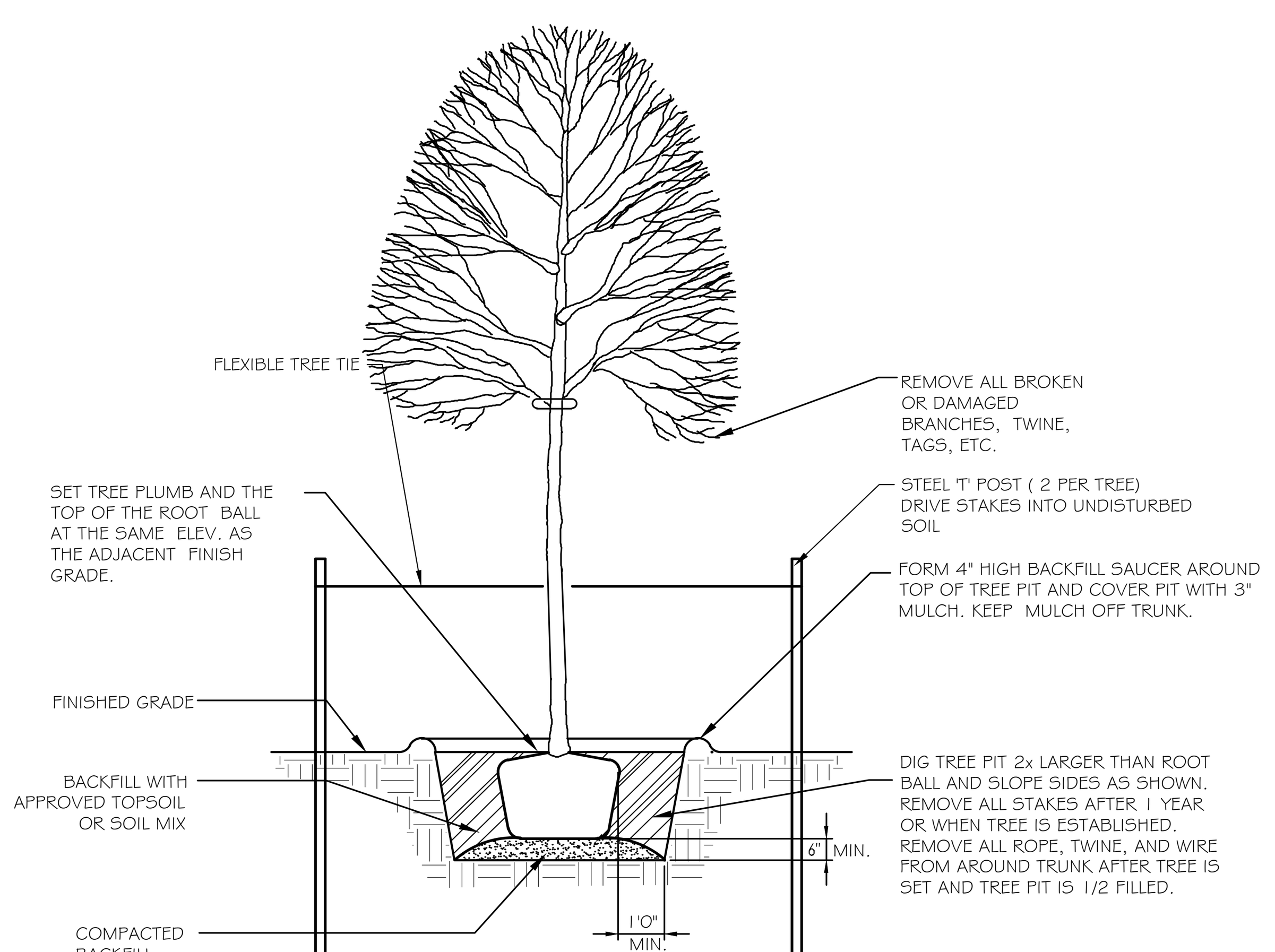
LANDSCAPE PLAN WEST

L-101

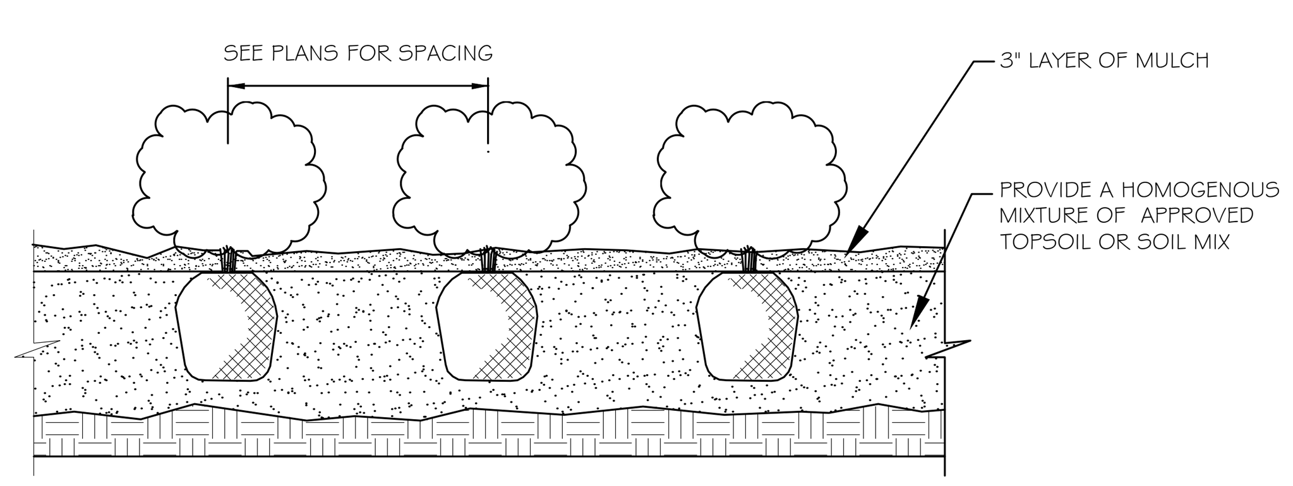


LEGEND	
TREES	BOTANICAL / COMMON NAME
	LIRIODENDRON TULIPIFERA / TULIP TREE
	QUERCUS SHUMARDII / SHUMARD RED OAK
	TAXODIUM DISTICHUM / BALD CYPRESS
	ULMUS PARVIFOLIA `ALLEE` / ALLEE LACEBARK ELM
SHRUBS	BOTANICAL / COMMON NAME
	BUXUS MICROPHYLLA `WINTERGREEN` / BOXWOOD
	RHAPHIOLEPIS INDICA / INDIAN HAWTHORN
GROUND COVERS	BOTANICAL / COMMON NAME
	CYNODON DACTYLON / BERMUDA GRASS

NOTE:
ALL DISTURBED AREAS MUST BE SODDED WITH COMMON BERMUDA SOLID SOD.

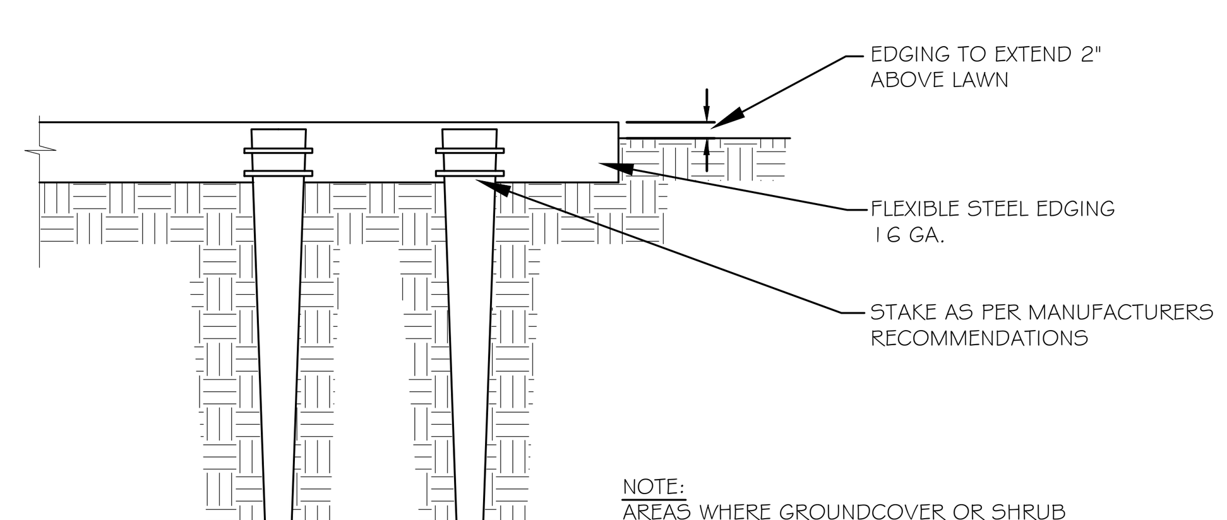


TREE PLANTING DETAIL
NTS



NOTES:
APPLY APPLICATION OF BALAN OR APPROVED EQUAL PRE-EMERGENT FOR WEED CONTROL.

SHRUB PLANTING DETAIL
NTS



NOTE:
AREAS WHERE GROUNDCOVER OR SHRUB MASS PLANTING BORDER CURB, WILL NOT HAVE EDGING.

CHAMFER EDGING TO BE FLUSH WITH FINISHED GRADE ADJACENT TO PAVING OR CURBS.

STEEL EDGING DETAIL
NTS

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CERTIFICATE OF AUTHORIZATION:
CERTIFICATE OF AUTHORIZATION CRAFTON, TULL & ASSOCIATES, INC. No. 109 ARKANSAS ENGINEER

GRAPHIC SCALE IN FEET
30' 0 30'

HILLSIDE MANOR
48 UNITS
RESIDENTIAL
DEVELOPMENT
PARAGOULD, ARKANSAS

Key Plan

No.	Description	Date

PROJECT NO: 20804700
ISSUE DATE: 1/29/2021
CONTACT: J.KELSO
CHECKED BY:

REGISTERED LANDSCAPE ARCHITECT
AUSTIN E. PAUL
License Number 686
STATE OF ARKANSAS
01/29/2021

LANDSCAPE PLAN EAST

L-102

Estimated Conduit List	List of 90s
1" PVC - 425'	1" PVC - 50
2" PVC - 7150'	2" PVC - 49
2.5/3" PVC - 170'	2" PLWC FG - 55
	2.5/3" PVC - 2

Set 40' pole

CC AA AA AA AA AA

Set 3ϕ sectionalizer

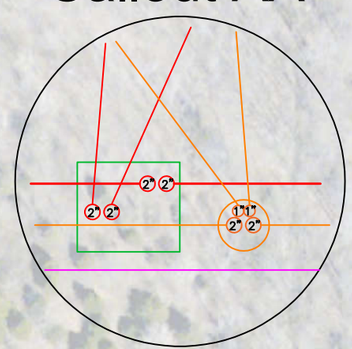
Set Fiber HH
90 up extra fiber conduit

AA AA BB BB BB BB

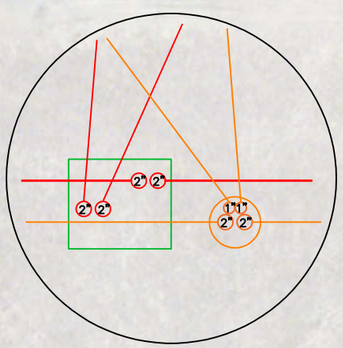
Set 40' pole

** - indicates electric meter & fiber entrance locations

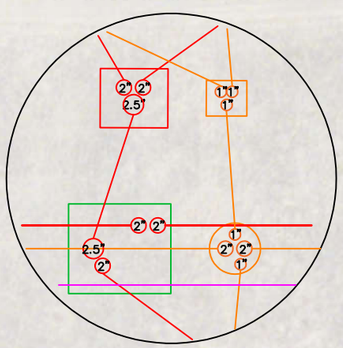
Callout AA



Callout BB



Callout CC



PLWC
PARAGOULD LIGHT WATER & CABLE

N W E S

- Sectionalizer
- Transformer
- Secondary Pedestal
- Fiber Pedestal
- Fiber Pull Box
- Fiber Cabinet
- Fiber Handhold
- Primary Electric
- Fiber
- Fiber

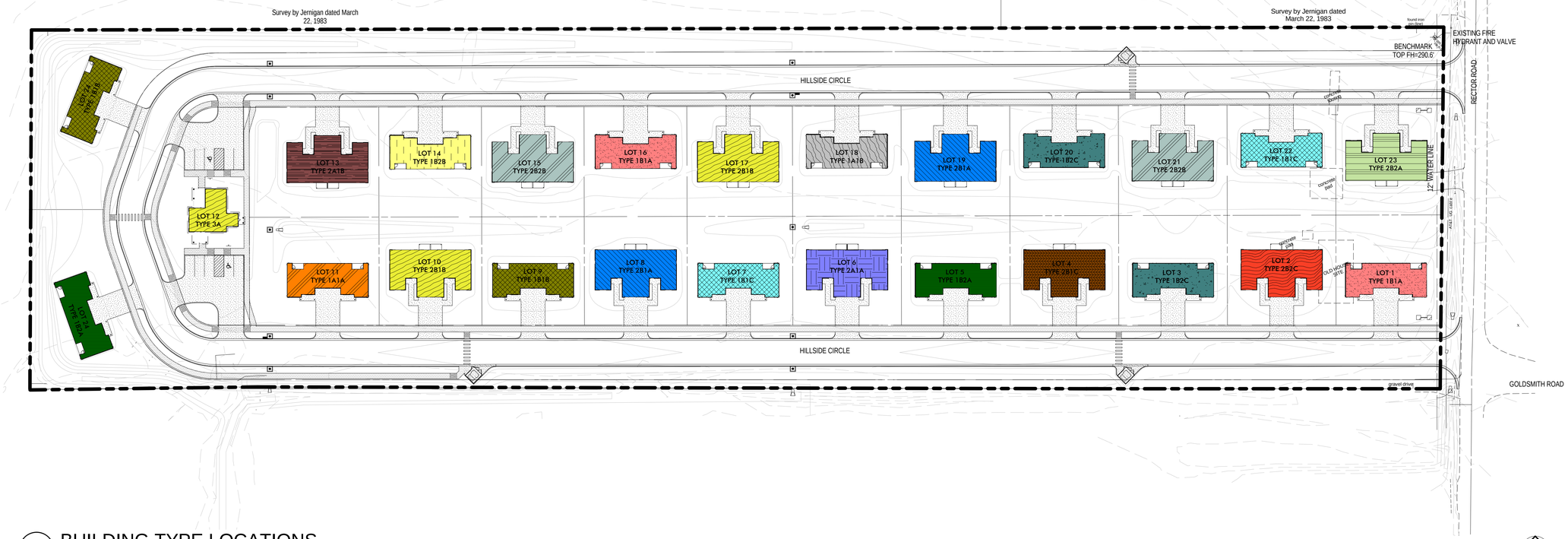
Hillside Manor

Paragould, Arkansas

Electric. & Fiber Design

Jan. 26th 2021

Sheet 1

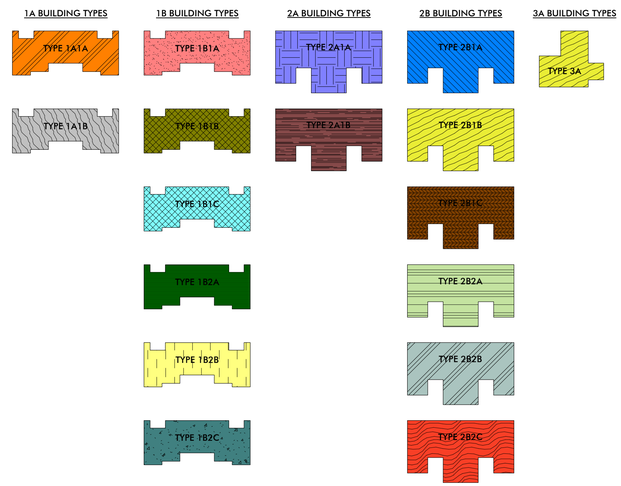


1 BUILDING TYPE LOCATIONS

1" = 50'-0"

REFER TO BUILDING ELEVATIONS, FOR LOCATIONS OF ROOF HIPS/ GABLES AND EXTERIOR FINISHES AT EACH BUILDING TYPE.

BUILDING TYPE LEGEND



STUDIO 6 ARCHITECTS EST. 1919
1120 Garrison Avenue
Suite 1A
Fort Smith, AR 72901
479.782.4085
www.GoStudio6.com

CONSULTANTS

OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

REGISTERED ARCHITECT JAMES W REDDITT No. 1237 ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

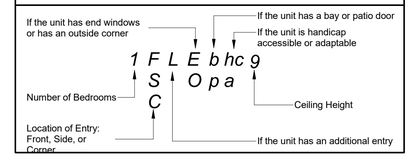
SHEET TITLE
BUILDING TYPE LOCATIONS

DISCIPLINE - SHEET NUMBER
A1.1

BUILDING & LIFE SAFETY CODE DATA - BLDG 1A:

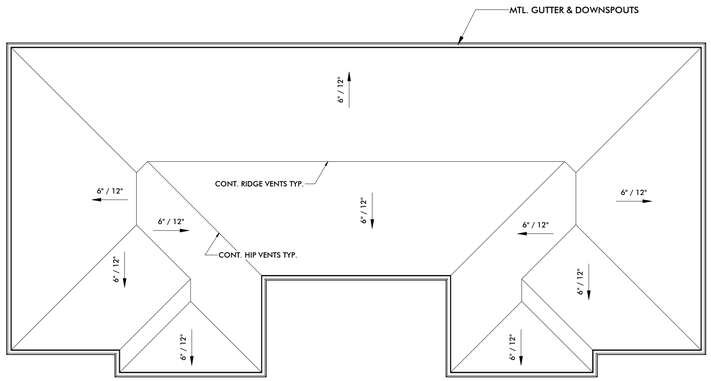
BUILDING CODE REFERENCE:	**ARKANSAS FIRE PREVENTION CODE - 2012 EDITION**
TYPE OF CONSTRUCTION: TABLE 601	NEW BUILDING TYPE V-B; NON-SPRINKLERED
OCCUPANCY CLASSIFICATION: CHAPTER 3, SECTION 310.4	NEW BUILDING: GROUP R-2 RESIDENTIAL
HEIGHT & AREA LIMITATIONS:	HEIGHT (TABLE 503) 40 FEET ALLOWABLE 2 STORIES (TABLE 503) ALLOWABLE 7,000 SF AREA (TABLE 503) ALLOWABLE
AREA CALCULATIONS:	BUILDING 1A: **TOTAL BUILDING AREA = 1,918 SF**
OCCUPANT LOADS: TABLE 1004.1.2	200 GROSS SF PER PERSON BUILDING 1B: 1,918 SF/200 = 9 OCCUPANTS
EXIT ACCESS TRAVEL DISTANCE: TABLE 1016.2	200 FT MAXIMUM WITHOUT SPRINKLER SYSTEM
FIRE PROTECTION REQUIREMENTS: TABLE 601 (U.N.O.)	
-RATED EXTERIOR WALLS	EXTERIOR WALL TO PROPERTY LINE BETWEEN BUILDINGS IS > 10' (TABLE 602) — 0 HOUR
- FIRE SEPARATION AT EXIT STAIR	RATED WALLS (SECTION 713.4 EXCEPTION) — 1 HOUR SELF CLOSING DOORS TO DWELLING UNITS FROM STAIR SHAFT (SECTION 716.5) — 1 HOUR
- FIRE PARTITIONS	BETWEEN DWELLING UNITS (SECTION 708.3) — 1 HOUR FIRE PARTITIONS TO BEGIN AT TOP OF FIRST FLOOR SLAB OR FLOOR/CEILING ASSEMBLY AND EXTEND TO CELING MEMBRANE WITHIN DWELLING UNIT
- ATTIC SPACE DRAFTSTOPPING	EVERY 3,000 SF OR EVERY TWO DWELLING UNITS WHICHEVER IS LESS (SECTION 718.4)
- HORIZONTAL FIRE SEPARATION	BETWEEN DWELLING UNITS (SECTION 711.3) — 1 HOUR

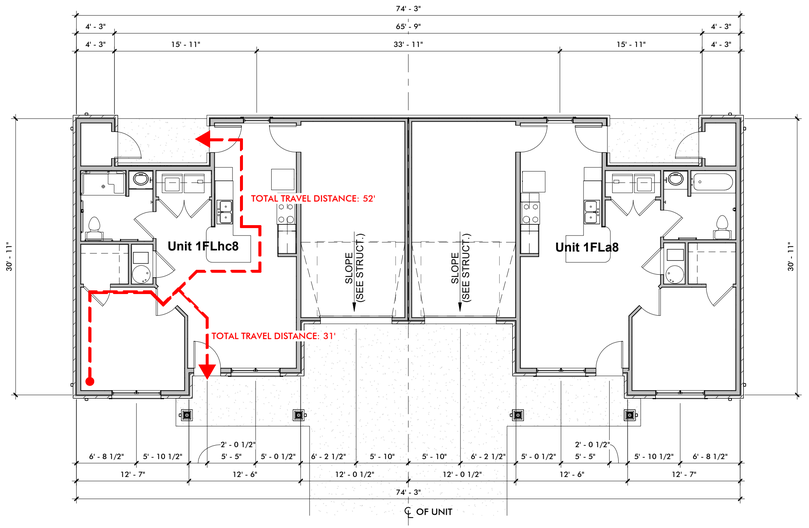
UNIT DESIGNATIONS



BUILDING 1A UNIT COUNT

UNIT DESIGNATION	UNIT TYPE	UNIT QTY	AREA PER UNIT	AREA ALL UNITS	%
Unit 1FLa8	1 BEDROOM ADAPTABLE	1	959 SF	959 SF	50%
Unit 1FLhc8	1 BEDROOM ACCESSIBLE	1	959 SF	959 SF	50%
		2		1918 SF	100%





2 ROOF PLAN - BUILDING 1A

1/8" = 1'-0"

REFER TO BUILDING ELEVATIONS, FOR LOCATIONS OF ROOF HIPS/ GABLES AT EACH BUILDING TYPE.

1 BUILDING 1A - FIRST FLOOR PLAN

1/8" = 1'-0"

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PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

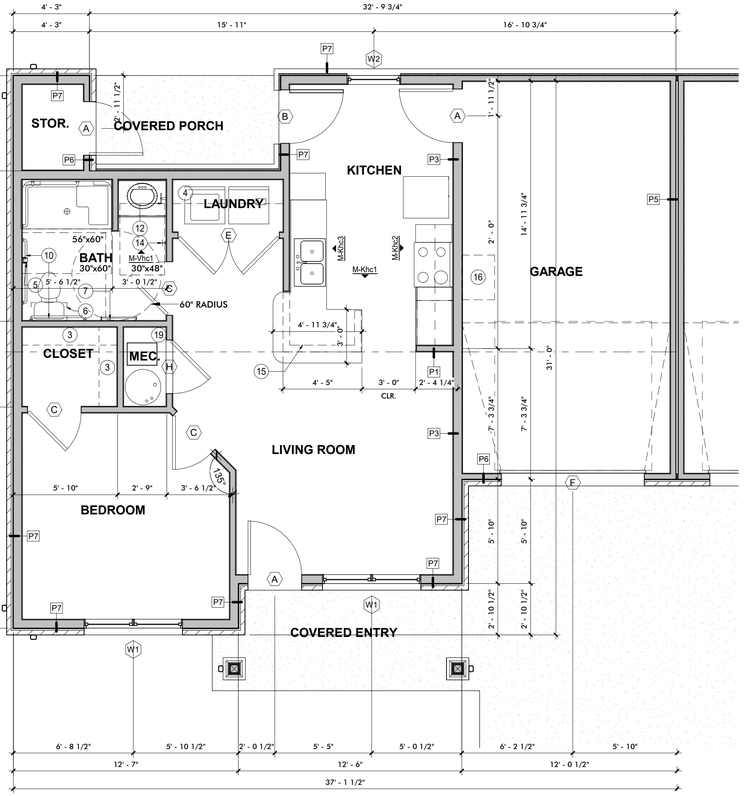
REGISTERED ARCHITECT JAMES W REDDITT No. 1237 ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BUILDING 1A - FLOOR PLANS

DISCIPLINE - SHEET NUMBER
A1A2.1

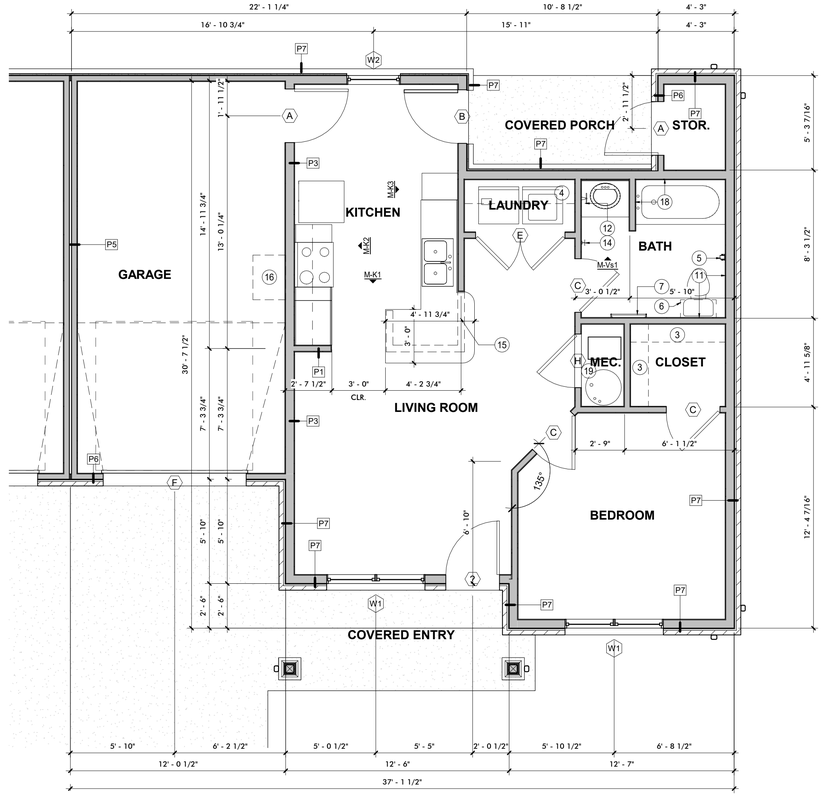


3 1FLhc8@ 1st FLOOR (BUILDING 1A)

1/4" = 1'-0"

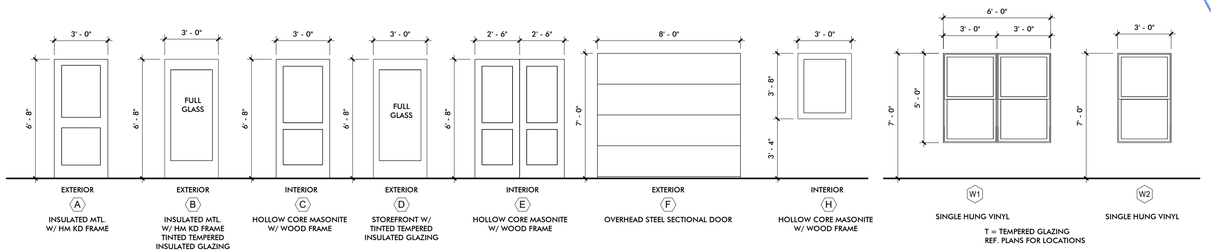
UNIT PLAN KEYED NOTES

3	CLOSET SHELVING AT 5'-0" A.F.F.
4	16" DEEP LAUNDRY SHELF AT 4'-6" A.F.F.
5	TOILET PAPER HOLDER
6	WALL CABINET CENTERED ON TOILET - REF. MILLWORK ELEVATIONS.
7	TOWEL BAR AT 4'-0" A.F.F.
10	GRAB BARS - REF. DETAIL 3/A4A1.1 FOR LAYOUT
11	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 3/A4A1.1
12	TOWEL RING AT 4'-0" A.F.F.
14	ROBE HOOK AT 4'-0" A.F.F.
15	2x4 PONY WALL BELOW COUNTER
16	22"x30" ATTIC ACCESS PANEL - UNINSULATED
18	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 11/A4A1.1
19	HVAC/ WATER HEATHER PLATFORM - REF. 10/A4A1.1



1 1FLa8 @ 1st FLOOR (BUILDING 1A)

1/4" = 1'-0"



BUILDING 1A - DOOR TYPES

WINDOW TYPES

BUILDINGS 1A - ROOM FINISH SCHEDULE

SPAC	FLOOR	BASE	WALLS	CEILING	DOOR CASING	REMARKS
LIVING ROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
KITCHENS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
BATHROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD @ WET WALLS
BEDROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
CLOSETS / LAUNDRY	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
GARAGE	CONCRETE	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
STORAGE	CONCRETE	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	

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REGISTERED ARCHITECT JAMES W REDDITT No. 1237 ARKANSAS

Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003

DATE: 01/29/2021

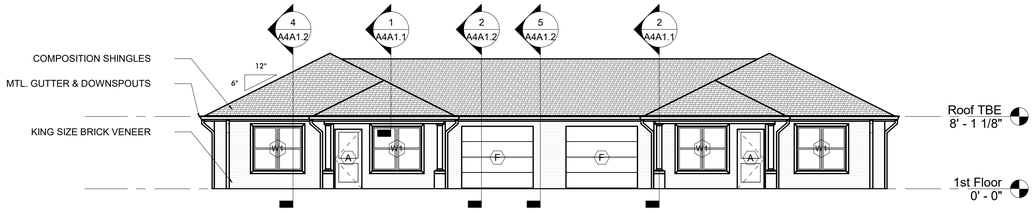
ISSUED

SHEET TITLE

BUILDING 1A - ENLARGED UNIT

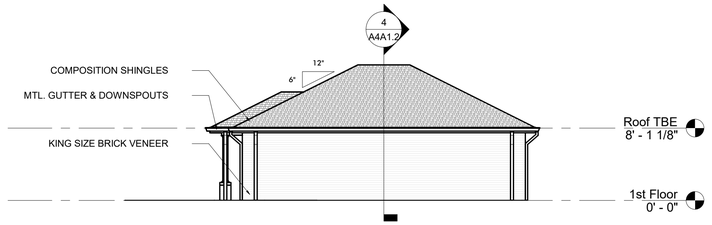
DISCIPLINE - SHEET NUMBER

A1A2.3



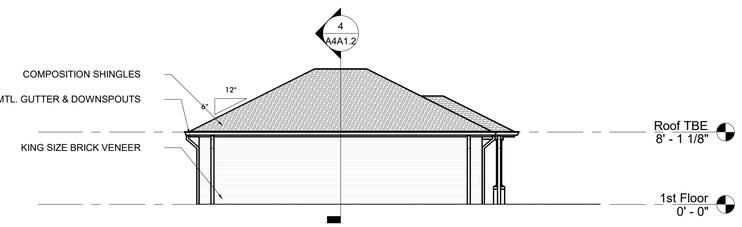
1 EAST ELEVATION - BUILDING 1A1A

1/8" = 1'-0"



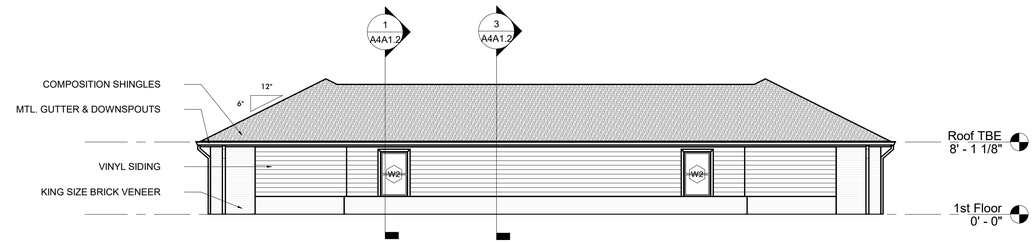
2 NORTH ELEVATION - BUILDING 1A1A

1/8" = 1'-0"



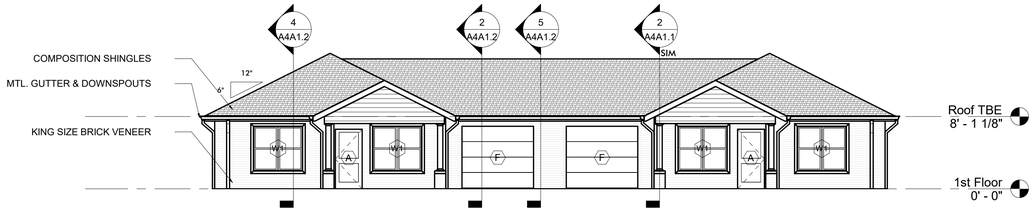
3 SOUTH ELEVATION - BUILDING 1A1A

1/8" = 1'-0"



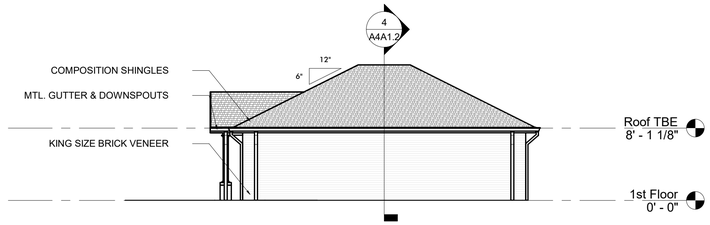
4 WEST ELEVATION - BUILDING 1A1A

1/8" = 1'-0"



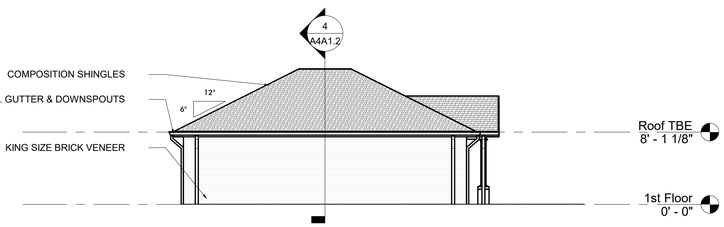
5 EAST ELEVATION - BUILDING 1A1B

1/8" = 1'-0"



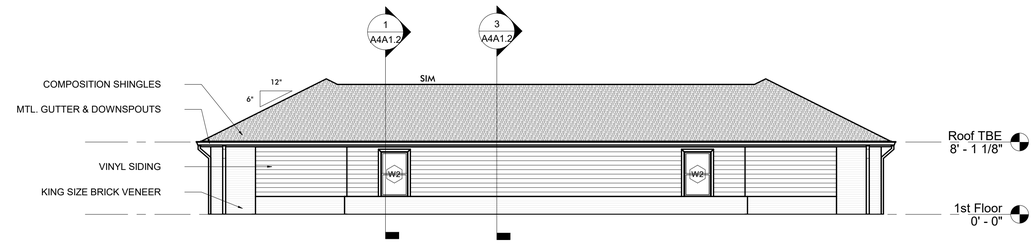
6 NORTH ELEVATION - BUILDING 1A1B

1/8" = 1'-0"



7 SOUTH ELEVATION - BUILDING 1A1B

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 1A1B

1/8" = 1'-0"

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LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

REGISTERED ARCHITECT
JAMES W REDDITT
No. 1237
ARKANSAS

Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

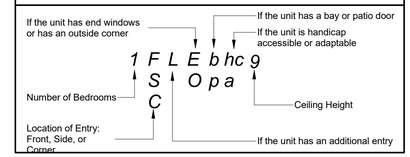
SHEET TITLE
BUILDING 1A - EXTERIOR

DISCIPLINE - SHEET NUMBER
A1A3.1

BUILDING & LIFE SAFETY CODE DATA - BLDG 1A:

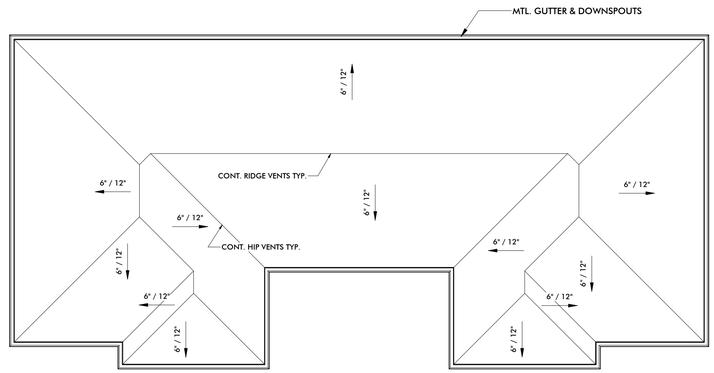
BUILDING CODE REFERENCE:	**ARKANSAS FIRE PREVENTION CODE - 2012 EDITION**
TYPE OF CONSTRUCTION: TABLE 601	NEW BUILDING TYPE V-B; NON-SPRINKLERED
OCCUPANCY CLASSIFICATION: CHAPTER 3, SECTION 310.4	NEW BUILDING: GROUP R-2 RESIDENTIAL
HEIGHT & AREA LIMITATIONS:	HEIGHT (TABLE 503) 40 FEET ALLOWABLE 2 STORIES (TABLE 503) ALLOWABLE 7,000 SF AREA (TABLE 503) ALLOWABLE
AREA CALCULATIONS:	BUILDING 1A: **TOTAL BUILDING AREA = 1,918 SF**
OCCUPANT LOADS: TABLE 1004.1.2	200 GROSS SF PER PERSON BUILDING 1B: 1,918 SF/200 = 9 OCCUPANTS
EXIT ACCESS TRAVEL DISTANCE: TABLE 1016.2	200 FT MAXIMUM WITHOUT SPRINKLER SYSTEM
FIRE PROTECTION REQUIREMENTS: TABLE 601 (U.N.O.)	
-RATED EXTERIOR WALLS	EXTERIOR WALL TO PROPERTY LINE BETWEEN BUILDINGS IS > 10' (TABLE 602) — 0 HOUR
- FIRE SEPARATION AT EXIT STAIR	RATED WALLS (SECTION 713.4 EXCEPTION) — 1 HOUR SELF CLOSING DOORS TO DWELLING UNITS FROM STAIR SHAFT (SECTION 716.5) — 1 HOUR
- FIRE PARTITIONS	BETWEEN DWELLING UNITS (SECTION 708.3) FIRE PARTITIONS TO BEGIN AT TOP OF FIRST FLOOR SLAB OR FLOOR/CEILING ASSEMBLY AND EXTEND TO CELING MEMBRANE WITHIN DWELLING UNIT — 1 HOUR
- ATTIC SPACE DRAFTSTOPPING	EVERY 3,000 SF OR EVERY TWO DWELLING UNITS WHICHEVER IS LESS (SECTION 718.4)
- HORIZONTAL FIRE SEPARATION	BETWEEN DWELLING UNITS (SECTION 711.3) — 1 HOUR

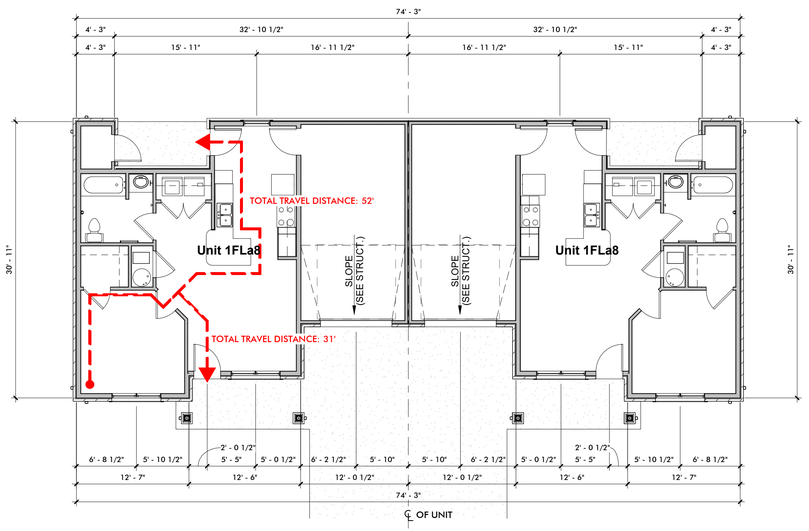
UNIT DESIGNATIONS



BUILDING 1B UNIT COUNT

UNIT DESIGNATION	UNIT TYPE	UNIT QTY	AREA PER UNIT	AREA ALL UNITS	%
Unit 1FLa8	1 BEDROOM ADAPTABLE	2	959 SF	1918 SF	100%
		2		1918 SF	100%





2 ROOF PLAN - BUILDING 1B

1/8" = 1'-0"

REFER TO BUILDING ELEVATIONS, FOR LOCATIONS OF ROOF HIPS/ GABLES AT EACH BUILDING TYPE.

1 BUILDING 1B - FIRST FLOOR PLAN

1/8" = 1'-0"

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REGISTERED ARCHITECT JAMES W REDDITT No. 1237 ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

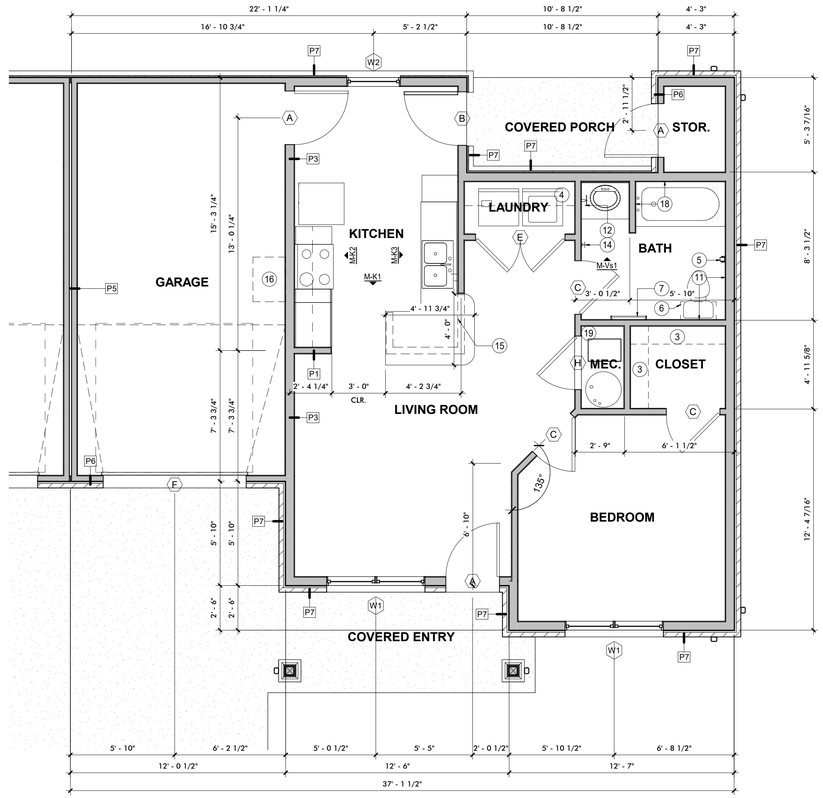
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BUILDING 1B - FLOOR PLANS

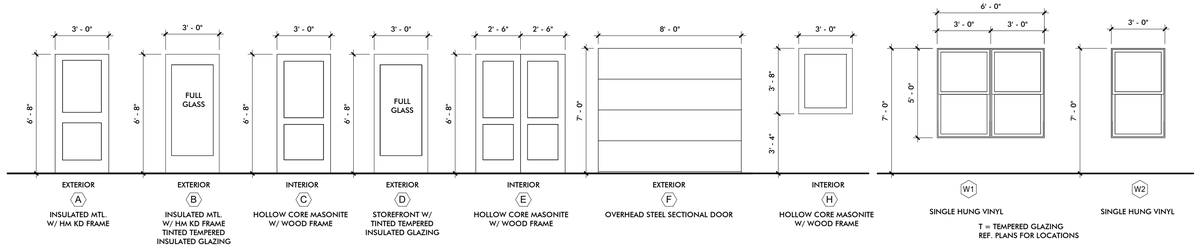
DISCIPLINE - SHEET NUMBER
A1B2.1

UNIT PLAN KEYED NOTES

3	CLOSET SHELVING AT 5'-0" A.F.F.
4	16" DEEP LAUNDRY SHELF AT 4'-6" A.F.F.
5	TOILET PAPER HOLDER
6	WALL CABINET CENTERED ON TOILET - REF. MILLWORK ELEVATIONS.
7	TOWEL BAR AT 4'-0" A.F.F.
11	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 3/A4A1.1
12	TOWEL RING AT 4'-0" A.F.F.
14	ROBE HOOK AT 4'-0" A.F.F.
15	2x4 PONY WALL BELOW COUNTER
16	22"x30" ATTIC ACCESS PANEL - UNINSULATED
18	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 11/A4A1.1
19	HVAC/ WATER HEATHER PLATFORM - REF. 10/A4A1.1



1 1FLa8 @ 1st FLOOR (BUILDING 1B)
1/4" = 1'-0"



BUILDING 1A - DOOR TYPES

WINDOW TYPES

BUILDINGS 1A - ROOM FINISH SCHEDULE

SPAC	FLOOR	BASE	WALLS	CEILING	DOOR CASING	REMARKS
LIVING ROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
KITCHENS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
BATHROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD @ WET WALLS
BEDROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
CLOSETS / LAUNDRY	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
GARAGE	CONCRETE	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
STORAGE	CONCRETE	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	

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REGISTERED ARCHITECT JAMES W REDDICK No. 1237 ARKANSAS

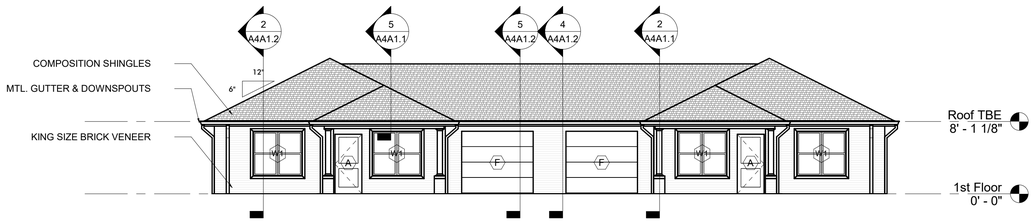
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

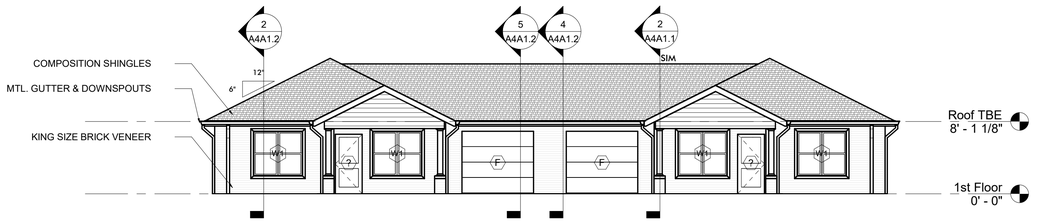
SHEET TITLE
BUILDING 1B - ENLARGED UNIT

DISCIPLINE - SHEET NUMBER
A1B2.3



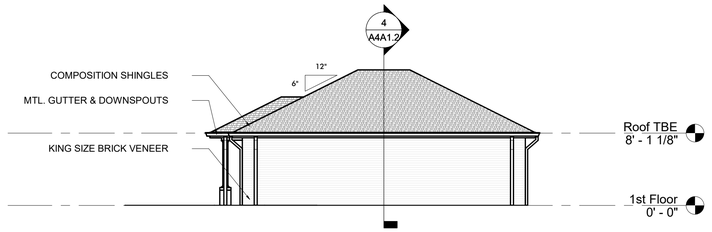
1 EAST ELEVATION - BUILDING 1B1A

1/8" = 1'-0"



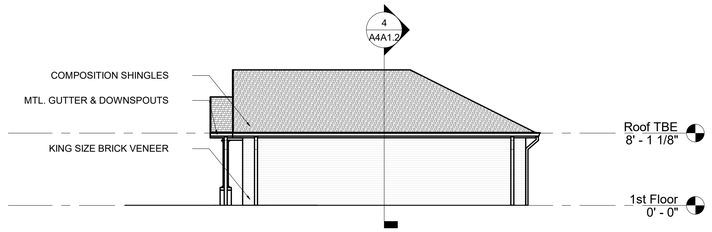
5 EAST ELEVATION - BUILDING 1B1B

1/8" = 1'-0"



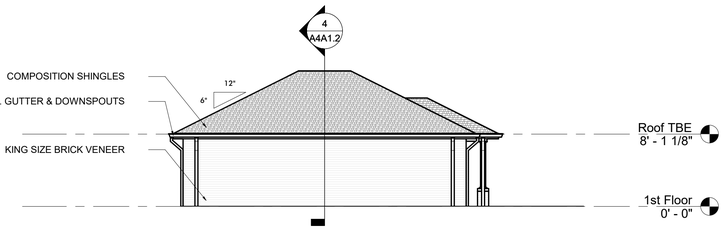
3 NORTH ELEVATION - BUILDING 1B1A

1/8" = 1'-0"



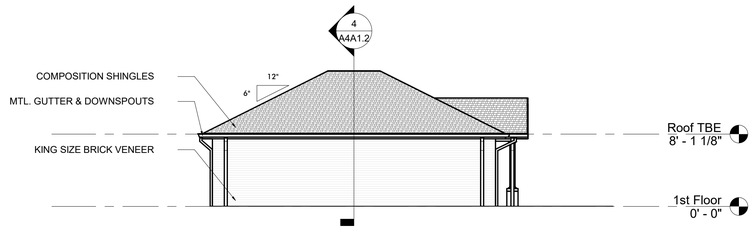
6 NORTH ELEVATION - BUILDING 1B1B

1/8" = 1'-0"



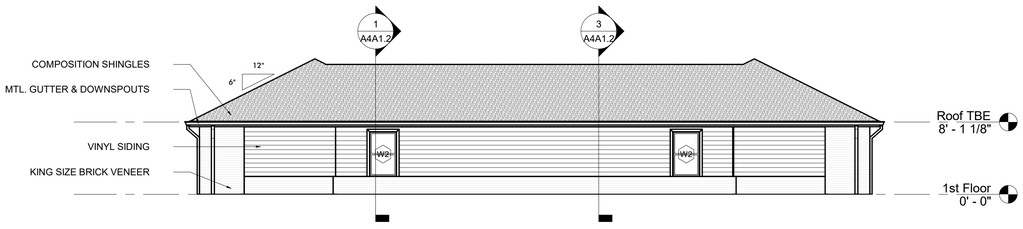
2 SOUTH ELEVATION - BUILDING 1B1A

1/8" = 1'-0"



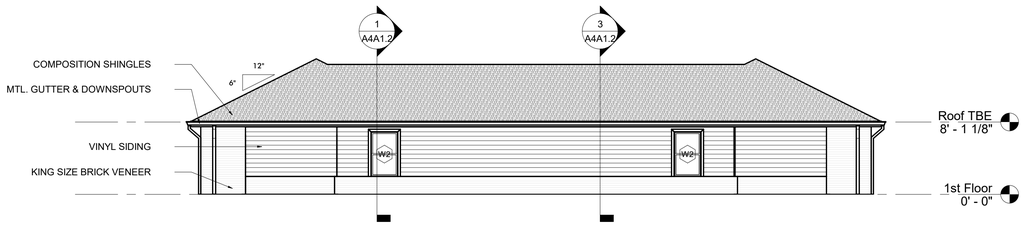
7 SOUTH ELEVATION - BUILDING 1B1B

1/8" = 1'-0"



4 WEST ELEVATION - BUILDING 1B1A

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 1B1B

1/8" = 1'-0"

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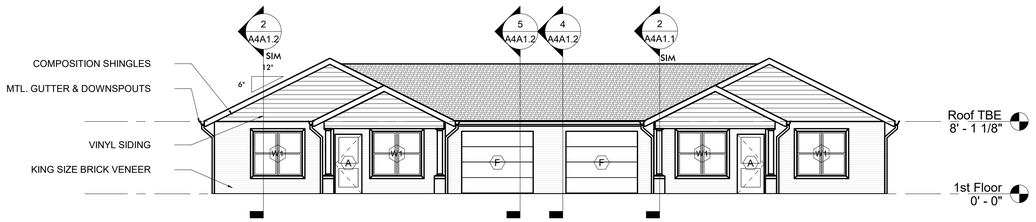
REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

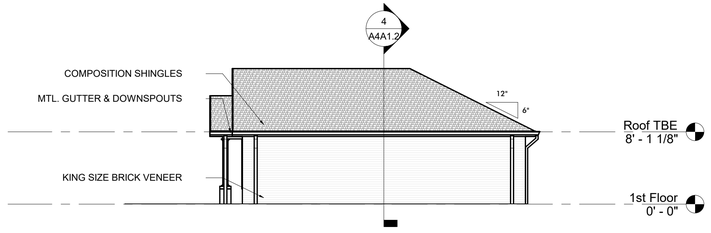
SHEET TITLE
BUILDING 1B - EXTERIOR

DISCIPLINE - SHEET NUMBER
A1B3.1



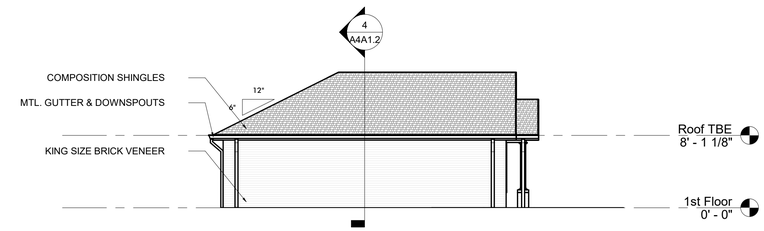
1 EAST ELEVATION - BUILDING 1B1C

1/8" = 1'-0"



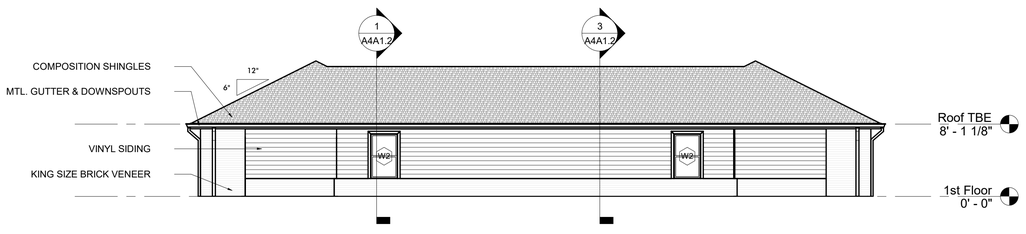
2 NORTH ELEVATION - BUILDING 1B1C

1/8" = 1'-0"



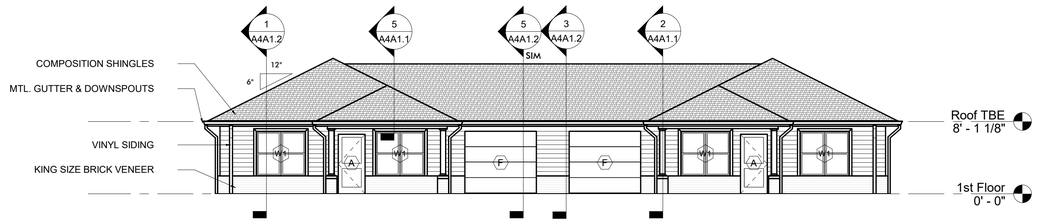
3 SOUTH ELEVATION - BUILDING 1B1C

1/8" = 1'-0"



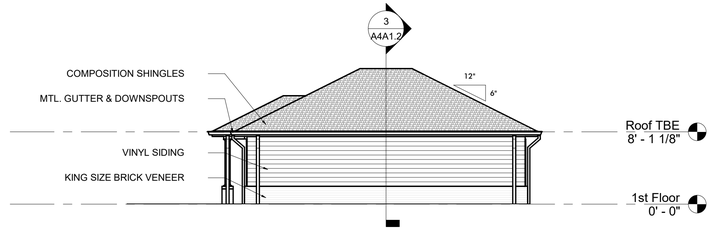
4 WEST ELEVATION - BUILDING 1B1C

1/8" = 1'-0"



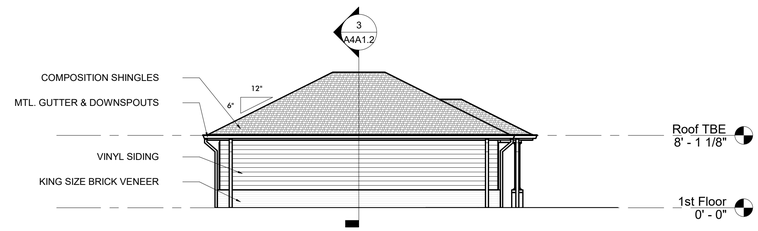
5 EAST ELEVATION - BUILDING 1B2A

1/8" = 1'-0"



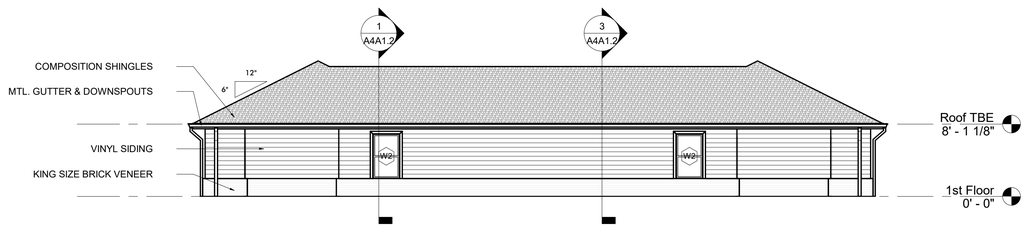
6 NORTH ELEVATION - BUILDING 1B2A

1/8" = 1'-0"



7 SOUTH ELEVATION - BUILDING 1B2A

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 1B2A

1/8" = 1'-0"

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CONSULTANTS

OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

REGISTERED ARCHITECT JAMES W REDDITT No. 1237 ARKANSAS

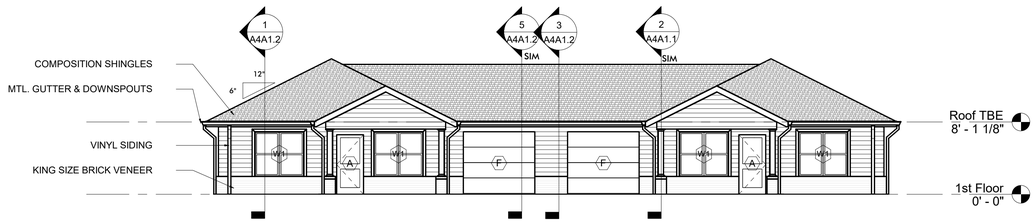
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

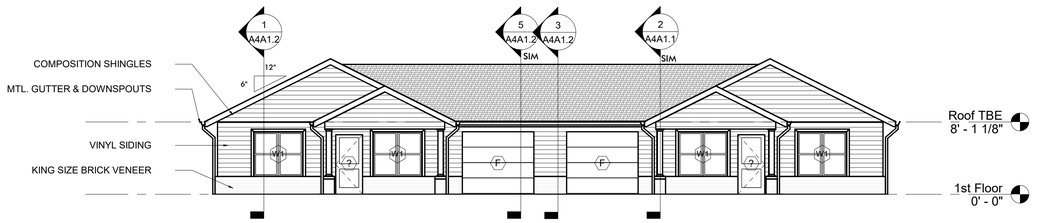
SHEET TITLE
BUILDING 1B - EXTERIOR

DISCIPLINE - SHEET NUMBER
A1B3.2



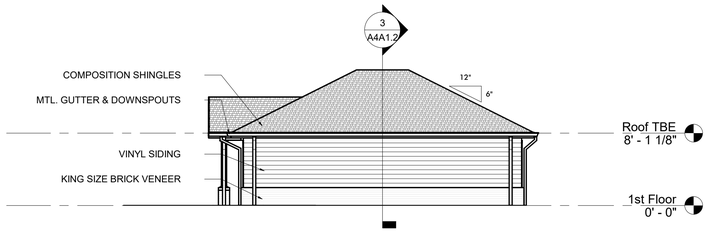
1 EAST ELEVATION - BUILDING 1B2B

1/8" = 1'-0"



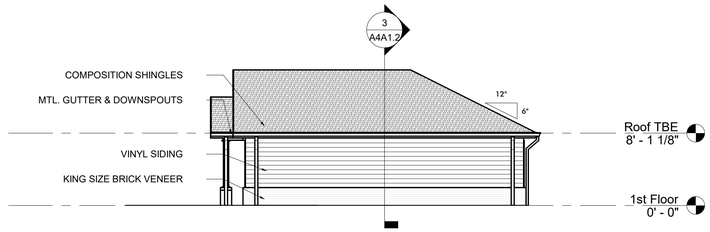
5 EAST ELEVATION - BUILDING 1B2C

1/8" = 1'-0"



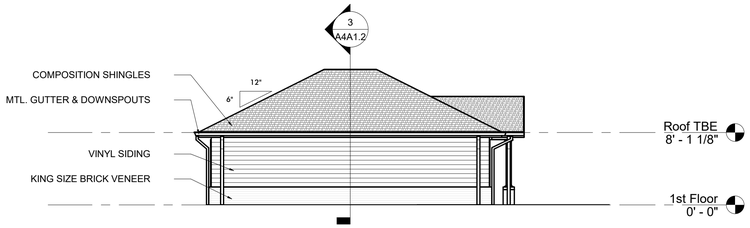
2 NORTH ELEVATION - BUILDING 1B2B

1/8" = 1'-0"



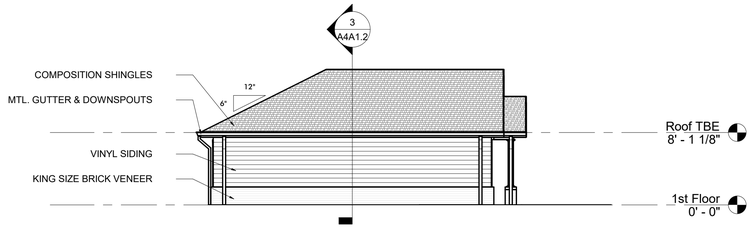
6 NORTH ELEVATION - BUILDING 1B2C

1/8" = 1'-0"



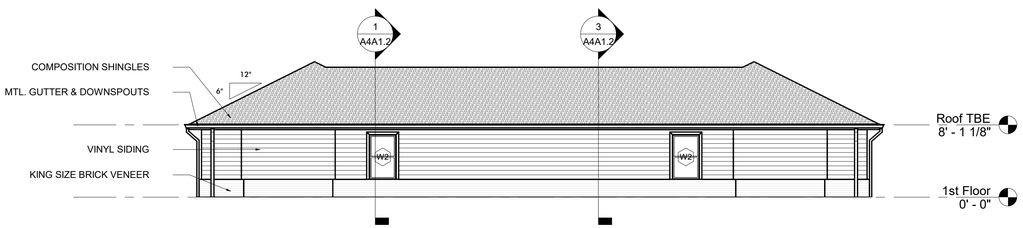
3 SOUTH ELEVATION - BUILDING 1B2B

1/8" = 1'-0"



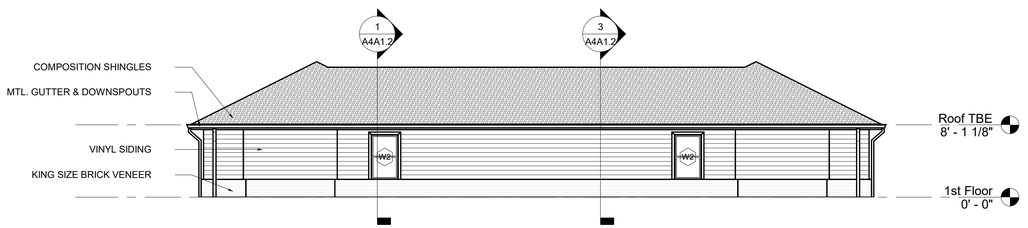
7 SOUTH ELEVATION - BUILDING 1B2C

1/8" = 1'-0"



4 WEST ELEVATION - BUILDING 1B2B

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 1B2C

1/8" = 1'-0"

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LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

REGISTERED ARCHITECT
JAMES W REDDITT
No. 1237
ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

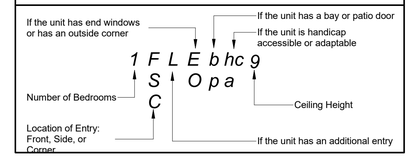
SHEET TITLE
BUILDING 1B - EXTERIOR

DISCIPLINE - SHEET NUMBER
A1B3.3

BUILDING & LIFE SAFETY CODE DATA - BLDG 2A

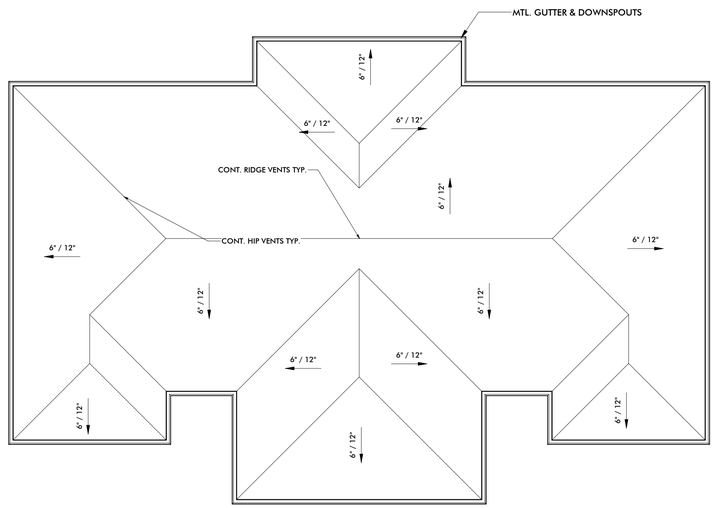
BUILDING CODE REFERENCE:	**ARKANSAS FIRE PREVENTION CODE - 2012 EDITION**	
TYPE OF CONSTRUCTION: TABLE 601	NEW BUILDING TYPE V-B; NON-SPRINKLERED	
OCCUPANCY CLASSIFICATION: CHAPTER 3, SECTION 310.4	NEW BUILDING: GROUP R-2 RESIDENTIAL	
HEIGHT & AREA LIMITATIONS:	HEIGHT (TABLE 503) 40 FEET ALLOWABLE 2 STORIES (TABLE 503) ALLOWABLE 7,000 SF AREA (TABLE 503) ALLOWABLE	
AREA CALCULATIONS:	BUILDING 2B: **TOTAL BUILDING AREA = 2,670 SF**	
OCCUPANT LOADS: TABLE 1004.1.2	200 GROSS SF PER PERSON BUILDING 2B: 2,670 SF/200 = 13 OCCUPANTS	
EXIT ACCESS TRAVEL DISTANCE: TABLE 1016.2	200 FT MAXIMUM WITHOUT SPRINKLER SYSTEM	
FIRE PROTECTION REQUIREMENTS: TABLE 601 (U.N.O.)		
-RATED EXTERIOR WALLS	EXTERIOR WALL TO PROPERTY LINE BETWEEN BUILDINGS IS > 10' (TABLE 602)	0 HOUR
- FIRE SEPARATION AT EXIT STAIR	RATED WALLS (SECTION 713.4 EXCEPTION) SELF CLOSING DOORS TO DWELLING UNITS FROM STAIR SHAFT (SECTION 716.5)	1 HOUR 1 HOUR
- FIRE PARTITIONS	BETWEEN DWELLING UNITS (SECTION 708.3) FIRE PARTITIONS TO BEGIN AT TOP OF FIRST FLOOR SLAB OR FLOOR/CEILING ASSEMBLY AND EXTEND TO CELING MEMBRANE WITHIN DWELLING UNIT	1 HOUR
- ATTIC SPACE DRAFTSTOPPING	EVERY 3,000 SF OR EVERY TWO DWELLING UNITS WHICHEVER IS LESS (SECTION 718.4)	
- HORIZONTAL FIRE SEPARATION	BETWEEN DWELLING UNITS (SECTION 711.3)	1 HOUR

UNIT DESIGNATIONS



BUILDING 2A UNIT COUNT

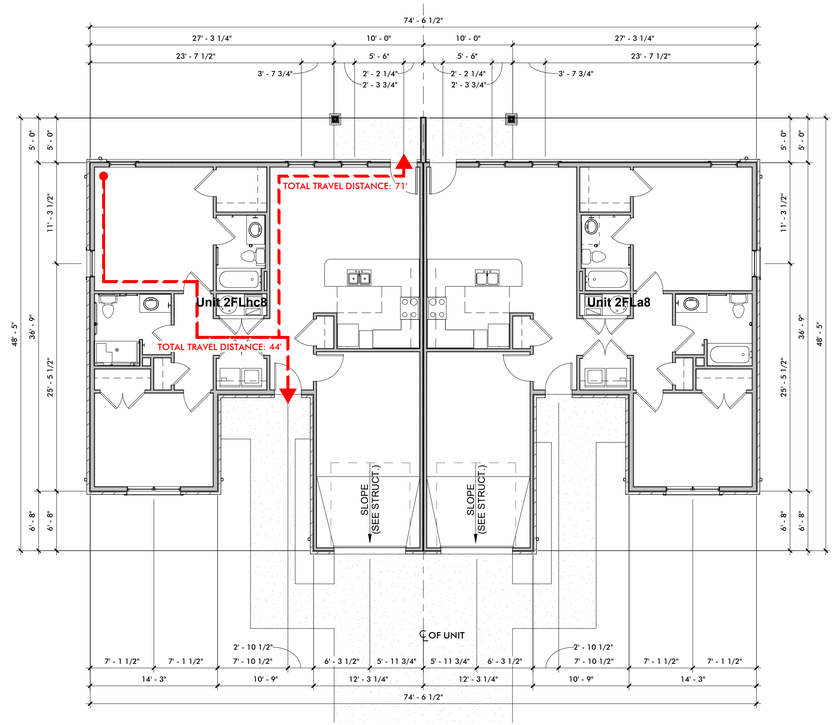
UNIT DESIGNATION	UNIT TYPE	UNIT QTY	AREA PER UNIT	AREA ALL UNITS	%
Unit 2FLa8	1 BEDROOM ADAPTABLE	1	1335 SF	1335 SF	50%
Unit 2FLhc8	1 BEDROOM ACCESSIBLE	1	1335 SF	1335 SF	50%
		2		2670 SF	100%



2 ROOF PLAN - BUILDING 2A

1/8" = 1'-0"

REFER TO BUILDING ELEVATIONS, FOR LOCATIONS OF ROOF HIPS/ GABLES AT EACH BUILDING TYPE.



1 BUILDING 2A - FIRST FLOOR PLAN

1/8" = 1'-0"

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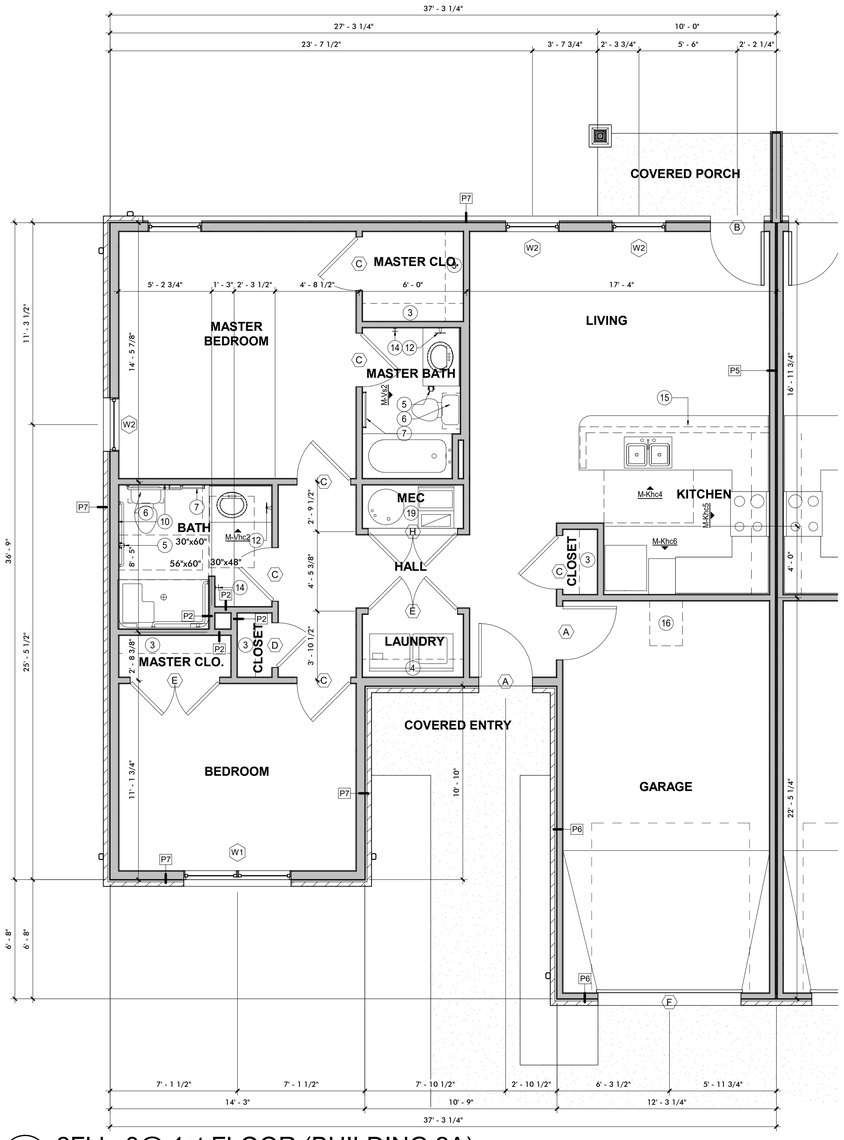
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BUILDING 2A - FLOOR PLANS

DISCIPLINE - SHEET NUMBER
A2A2.1

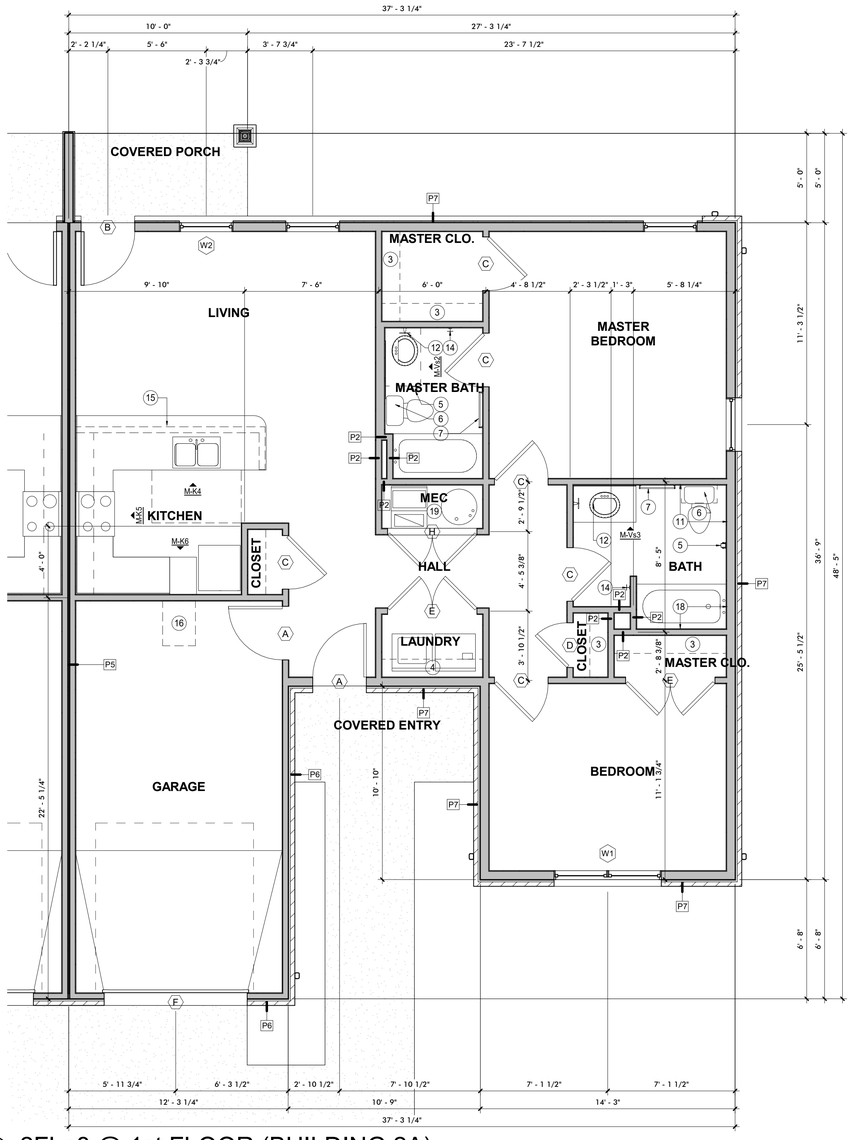


2 2FLhc8@ 1st FLOOR (BUILDING 2A)
1/4" = 1'-0"

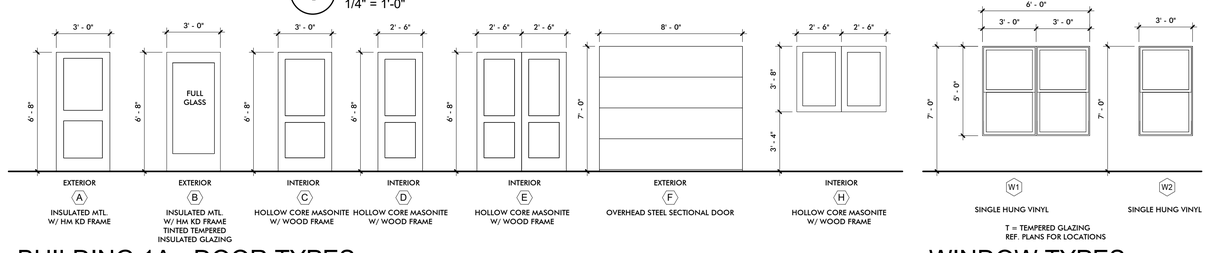
UNIT PLAN KEYED NOTES

3	CLOSET SHELVING AT 5'-0" A.F.F.
4	16" DEEP LAUNDRY SHELF AT 4'-6" A.F.F.
5	TOILET PAPER HOLDER
6	WALL CABINET CENTERED ON TOILET - REF. MILLWORK ELEVATIONS.
7	TOWEL BAR AT 4'-0" A.F.F.
10	GRAB BARS - REF. DETAIL 3/A4A1.1 FOR LAYOUT
11	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 3/A4A1.1
12	TOWEL RING AT 4'-0" A.F.F.
14	ROBE HOOK AT 4'-0" A.F.F.
15	2x4 PONY WALL BELOW COUNTER
16	22"x30" ATTIC ACCESS PANEL - UNINSULATED
18	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 11/A4A1.1
19	HVAC/ WATER HEATHER PLATFORM - REF. 10/A4A1.1

M-K6 Copy 1



1 2FLa8 @ 1st FLOOR (BUILDING 2A)
1/4" = 1'-0"



BUILDING 1A - DOOR TYPES

WINDOW TYPES

BUILDINGS 1A - ROOM FINISH SCHEDULE

SPAC	FLOOR	BASE	WALLS	CEILING	DOOR CASING	REMARKS
LIVING ROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP. PAINTED	
KITCHENS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP. PAINTED	
BATHROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP. PAINTED	MOISTURE RESISTANT GYP. BOARD @ WET WALLS
BEDROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP. PAINTED	
CLOSETS / LAUNDRY	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP. PAINTED	
GARAGE	CONCRETE	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP. PAINTED	

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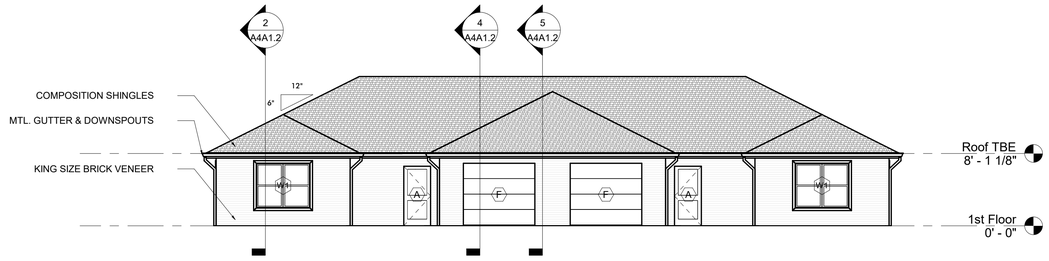
REGISTERED ARCHITECT JAMES W REDDELL No. 1237 ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

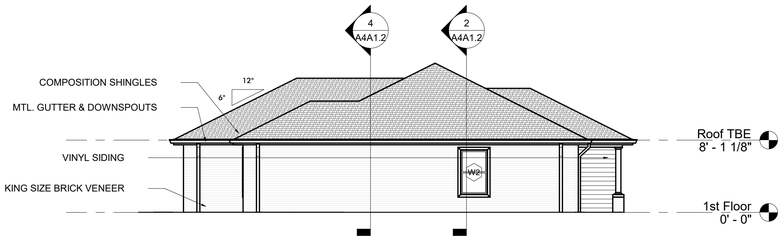
SHEET TITLE
BUILDING 2A - ENLARGED UNIT

DISCIPLINE - SHEET NUMBER
A2A2.3



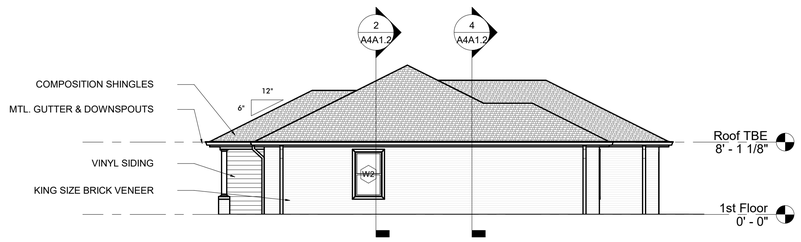
1 EAST ELEVATION - BUILDING 2A1A

1/8" = 1'-0"



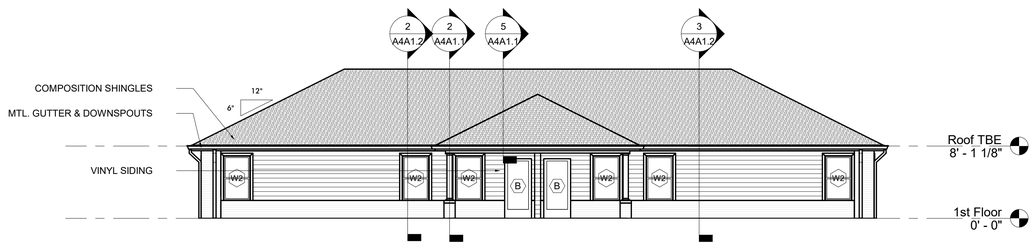
2 NORTH ELEVATION - BUILDING 2A1A

1/8" = 1'-0"



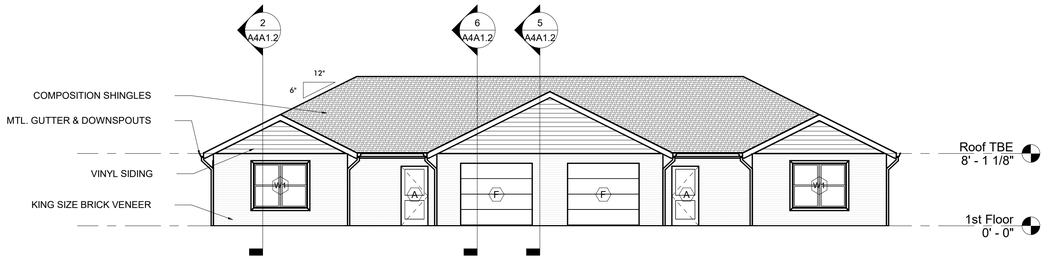
3 SOUTH ELEVATION - BUILDING 2A1A

1/8" = 1'-0"



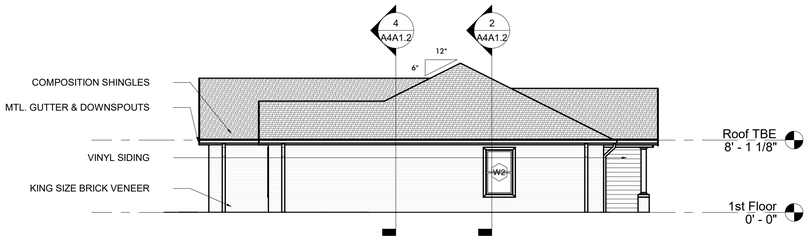
4 WEST ELEVATION - BUILDING 2A1A

1/8" = 1'-0"



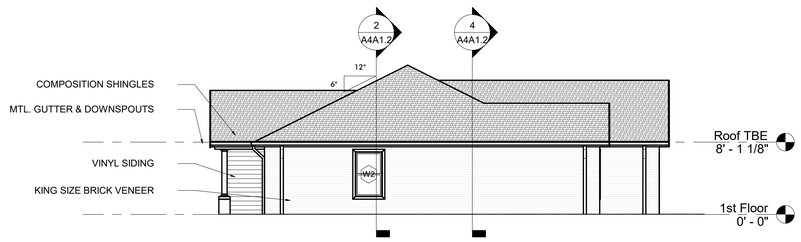
5 EAST ELEVATION - BUILDING 2A1B

1/8" = 1'-0"



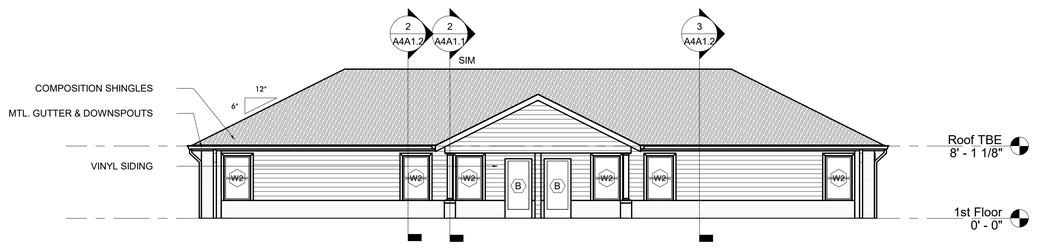
6 NORTH ELEVATION - BUILDING 2A1B

1/8" = 1'-0"



7 SOUTH ELEVATION - BUILDING 2A1B

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 2A1B

1/8" = 1'-0"

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Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

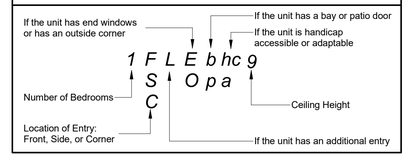
SHEET TITLE
BUILDING 2A - EXTERIOR

DISCIPLINE - SHEET NUMBER
A2A3.1

BUILDING & LIFE SAFETY CODE DATA - BLDG 2A

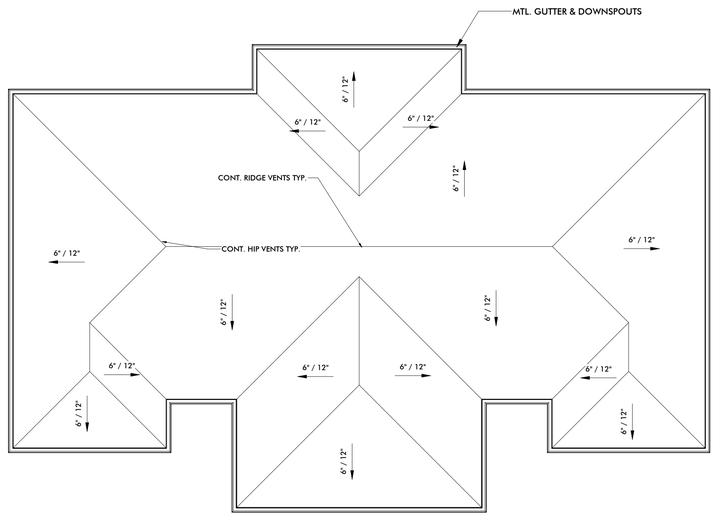
BUILDING CODE REFERENCE:	**ARKANSAS FIRE PREVENTION CODE - 2012 EDITION**
TYPE OF CONSTRUCTION: TABLE 601	NEW BUILDING TYPE V-B; NON-SPRINKLERED
OCCUPANCY CLASSIFICATION: CHAPTER 3, SECTION 310.4	NEW BUILDING: GROUP R-2 RESIDENTIAL
HEIGHT & AREA LIMITATIONS:	HEIGHT (TABLE 503) 40 FEET ALLOWABLE 2 STORIES (TABLE 503) ALLOWABLE 7,000 SF AREA (TABLE 503) ALLOWABLE
AREA CALCULATIONS:	BUILDING 2B: **TOTAL BUILDING AREA = 2,670 SF**
OCCUPANT LOADS: TABLE 1004.1.2	200 GROSS SF PER PERSON BUILDING 2B: 2,670 SF/200 = 13 OCCUPANTS
EXIT ACCESS TRAVEL DISTANCE: TABLE 1016.2	200 FT MAXIMUM WITHOUT SPRINKLER SYSTEM
FIRE PROTECTION REQUIREMENTS: TABLE 601 (U.N.O.)	
-RATED EXTERIOR WALLS	EXTERIOR WALL TO PROPERTY LINE BETWEEN BUILDINGS IS > 10' (TABLE 602) — 0 HOUR
- FIRE SEPARATION AT EXIT STAIR	RATED WALLS (SECTION 713.4 EXCEPTION) — 1 HOUR SELF CLOSING DOORS TO DWELLING UNITS FROM STAIR SHAFT (SECTION 716.5) — 1 HOUR
- FIRE PARTITIONS	BETWEEN DWELLING UNITS (SECTION 708.3) — 1 HOUR FIRE PARTITIONS TO BEGIN AT TOP OF FIRST FLOOR SLAB OR FLOOR/CEILING ASSEMBLY AND EXTEND TO CELING MEMBRANE WITHIN DWELLING UNIT
- ATTIC SPACE DRAFTSTOPPING	EVERY 3,000 SF OR EVERY TWO DWELLING UNITS WHICHEVER IS LESS (SECTION 718.4)
- HORIZONTAL FIRE SEPARATION	BETWEEN DWELLING UNITS (SECTION 711.3) — 1 HOUR

UNIT DESIGNATIONS



BUILDING 2B UNIT COUNT

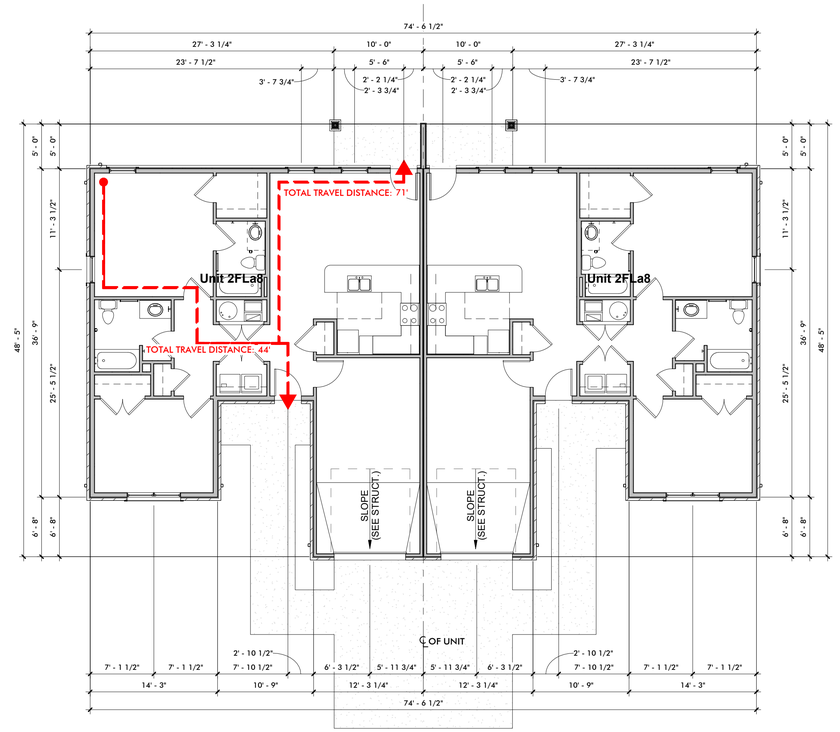
UNIT DESIGNATION	UNIT TYPE	UNIT QTY	AREA PER UNIT	AREA ALL UNITS	%
Unit 2FLa8	1 BEDROOM ACCESSIBLE	2	1335 SF	2670 SF	100%
		2		2670 SF	100%



2 ROOF PLAN - BUILDING 2B

1/8" = 1'-0"

REFER TO BUILDING ELEVATIONS, FOR LOCATIONS OF ROOF HIPS/ GABLES AT EACH BUILDING TYPE.



1 BUILDING 2B - FIRST FLOOR PLAN

1/8" = 1'-0"

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PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

REGISTERED ARCHITECT JAMES W REDDITT No. 1237 ARKANSAS

Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

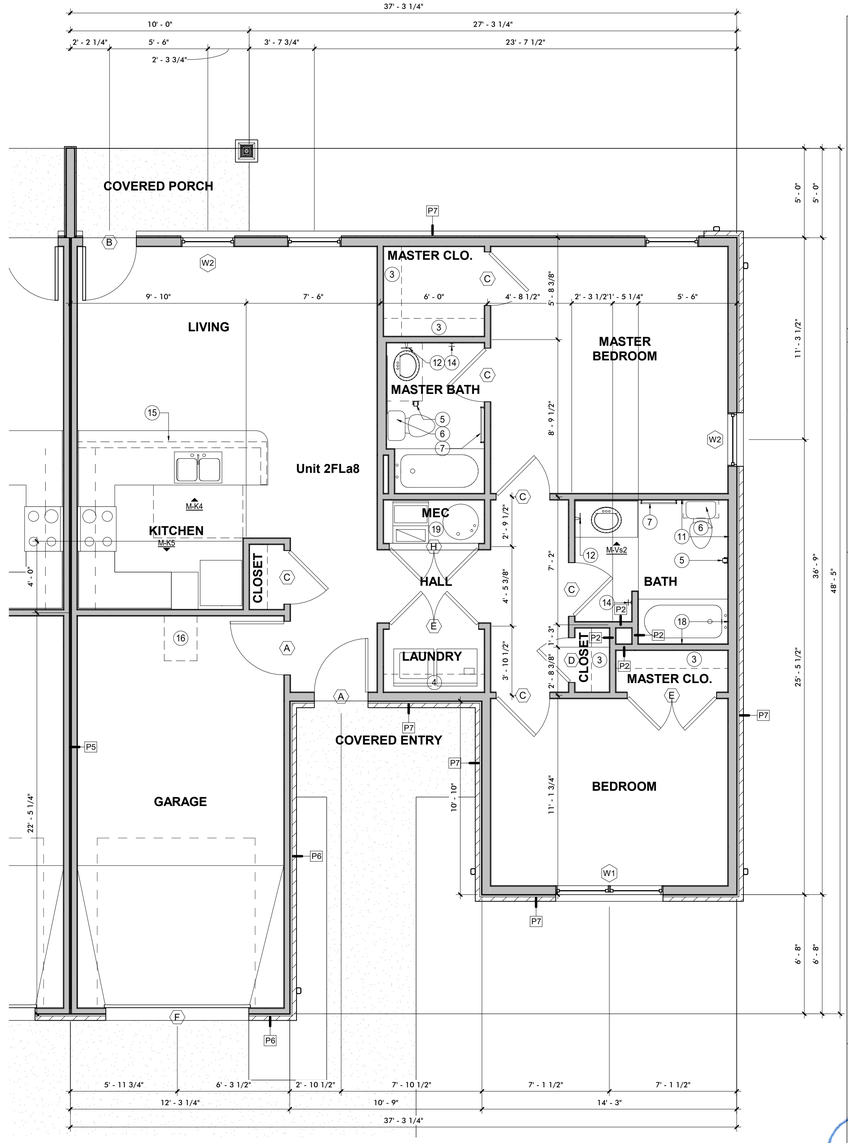
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BUILDING 2B - FLOOR PLANS

DISCIPLINE - SHEET NUMBER
A2B2.1

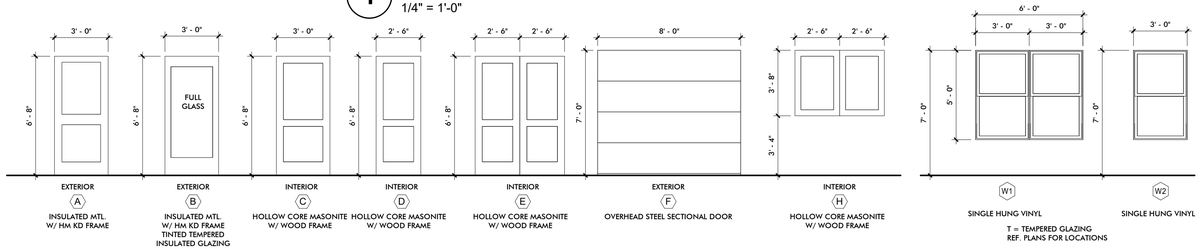
UNIT PLAN KEYED NOTES

3	CLOSET SHELVING AT 5'-0" A.F.F.
4	16" DEEP LAUNDRY SHELF AT 4'-6" A.F.F.
5	TOILET PAPER HOLDER
6	WALL CABINET CENTERED ON TOILET - REF. MILLWORK ELEVATIONS.
7	TOWEL BAR AT 4'-0" A.F.F.
11	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 3/A4A1.1
12	TOWEL RING AT 4'-0" A.F.F.
14	ROBE HOOK AT 4'-0" A.F.F.
15	2x4 PONY WALL BELOW COUNTER
16	22"x30" ATTIC ACCESS PANEL - UNINSULATED
18	PROVIDE BLOCKING FOR FUTURE GRAB BARS - REF. 11/A4A1.1
19	HVAC/ WATER HEATHER PLATFORM - REF. 10/A4A1.1



1 2FLa8 @ 1st FLOOR (BUILDING 2B)

1/4" = 1'-0"



BUILDING 1A - DOOR TYPES

WINDOW TYPES

BUILDINGS 1A - ROOM FINISH SCHEDULE

SPAC	FLOOR	BASE	WALLS	CEILING	DOOR CASING	REMARKS
LIVING ROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
KITCHENS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
BATHROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD @ WET WALLS
BEDROOMS	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
CLOSETS / LAUNDRY	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
GARAGE	CONCRETE	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	

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Jan. 29, 2021

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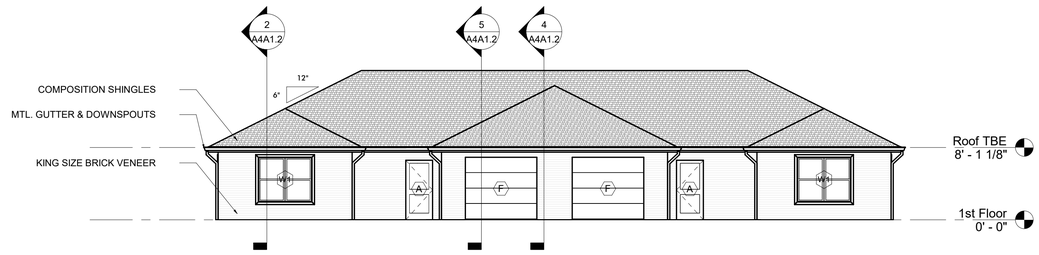
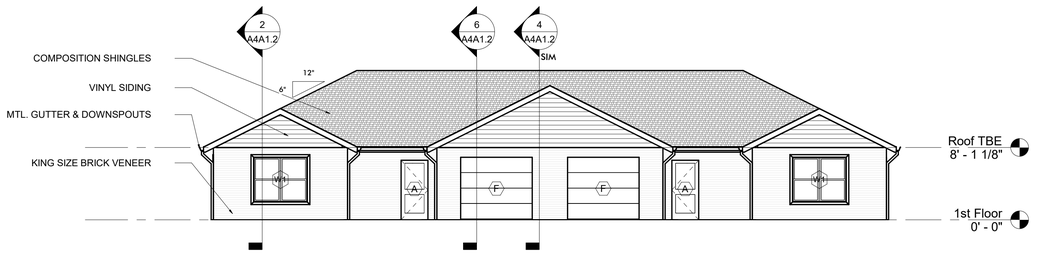
SHEET TITLE
BUILDING 2B - ENLARGED UNIT

DISCIPLINE - SHEET NUMBER
A2B2.3



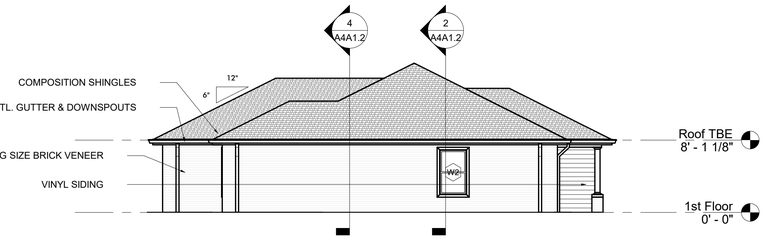
1 EAST ELEVATION - BUILDING 2B1A

1/8" = 1'-0"



5 EAST ELEVATION - BUILDING 2B1B

1/8" = 1'-0"



2 NORTH ELEVATION - BUILDING 2B1A

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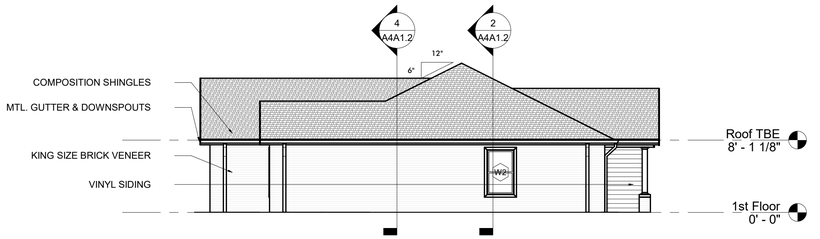
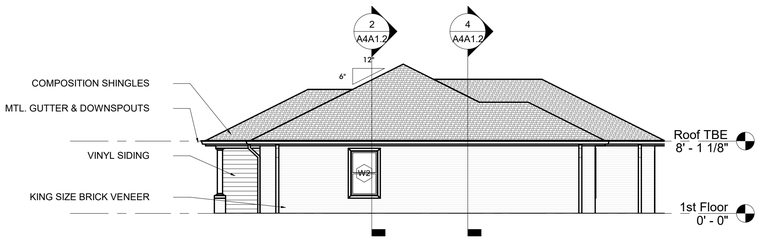


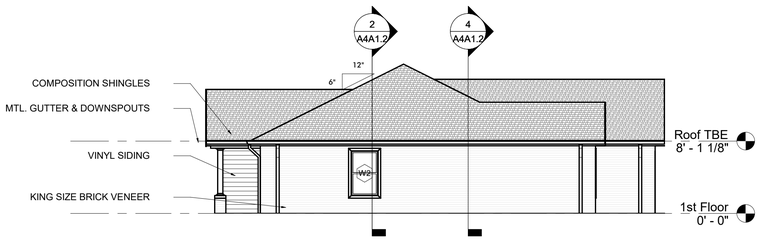
6 NORTH ELEVATION - BUILDING 2B1B

1/8" = 1'-0"



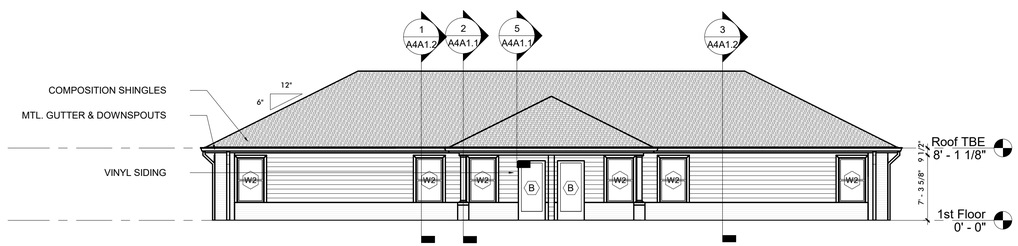
3 SOUTH ELEVATION - BUILDING 2B1A

1/8" = 1'-0"



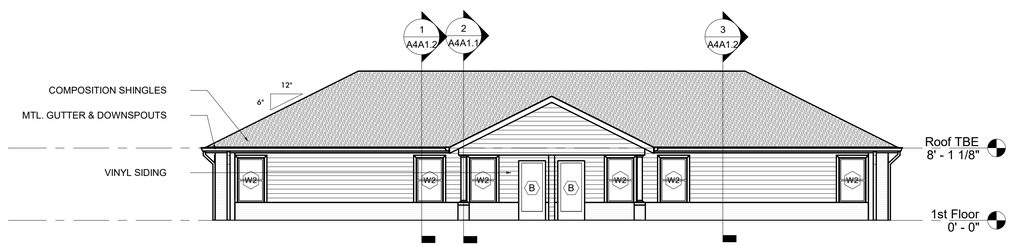
7 SOUTH ELEVATION - BUILDING 2B1B

1/8" = 1'-0"



4 WEST ELEVATION - BUILDING 2B1A

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 2B1B

1/8" = 1'-0"

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Jan. 29, 2021

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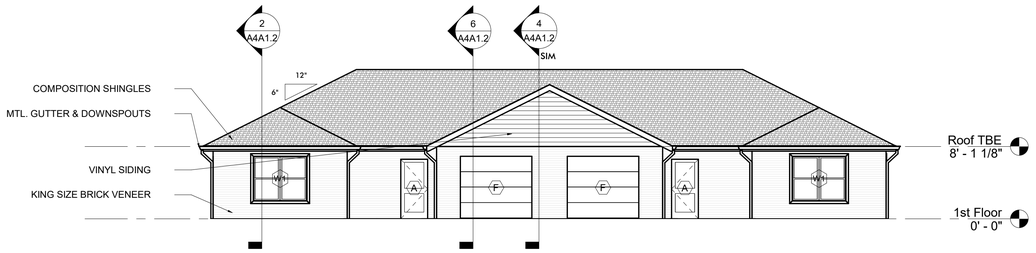
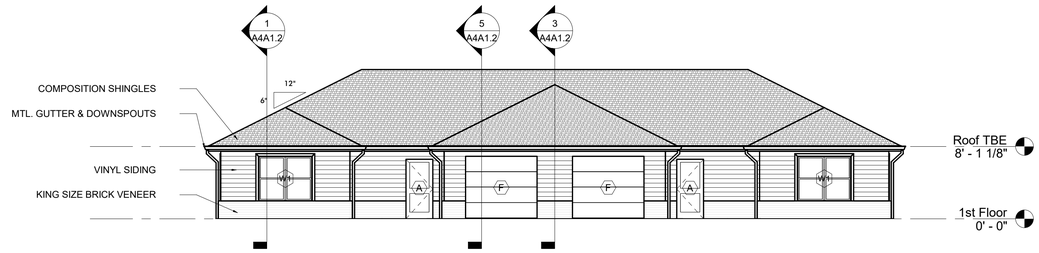
SHEET TITLE
BUILDING 2B - EXTERIOR

DISCIPLINE - SHEET NUMBER
A2B3.1



1 EAST ELEVATION - BUILDING 2B1C

1/8" = 1'-0"



5 EAST ELEVATION - BUILDING 2B2A

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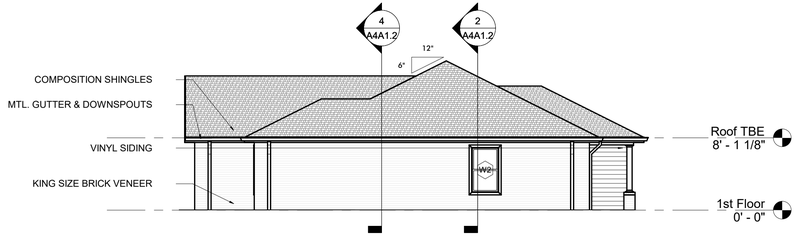
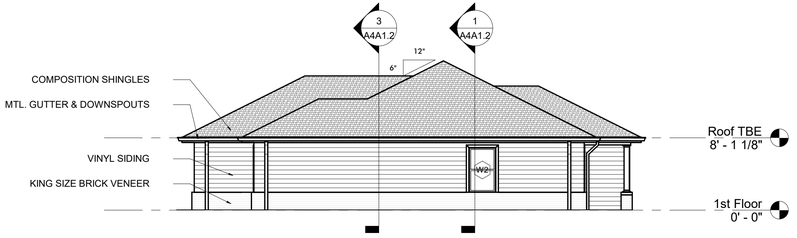


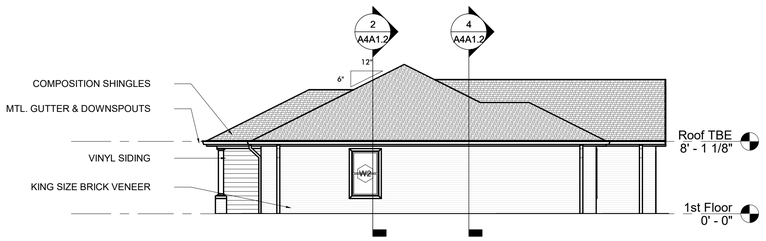
2 NORTH ELEVATION - BUILDING 2B1C

1/8" = 1'-0"



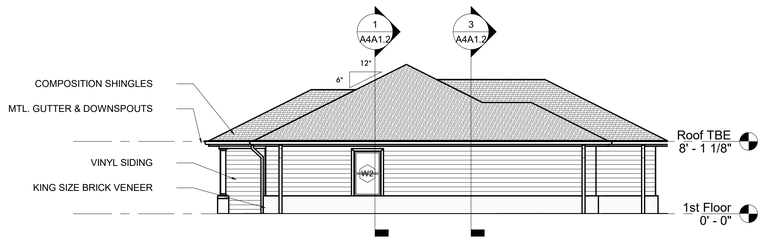
6 NORTH ELEVATION - BUILDING 2B2A

1/8" = 1'-0"



3 SOUTH ELEVATION - BUILDING 2B1C

1/8" = 1'-0"

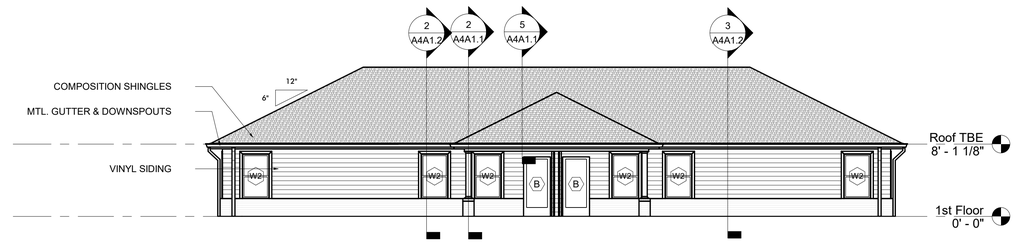


7 SOUTH ELEVATION - BUILDING 2B2A

1/8" = 1'-0"

4 WEST ELEVATION - BUILDING 2B1C

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 2B2A

1/8" = 1'-0"

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REGISTERED ARCHITECT
JAMES W REDDITT
No. 1237
ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
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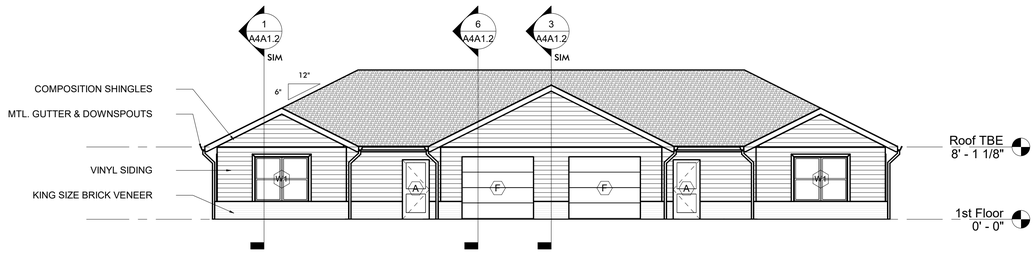
ISSUED

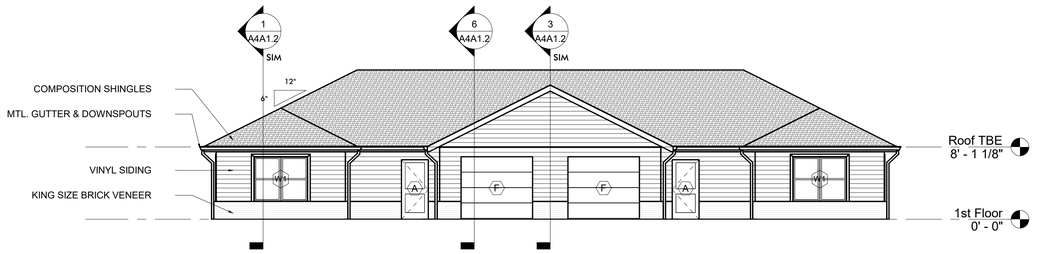
SHEET TITLE
BUILDING 2B - EXTERIOR

DISCIPLINE - SHEET NUMBER
A2B3.2



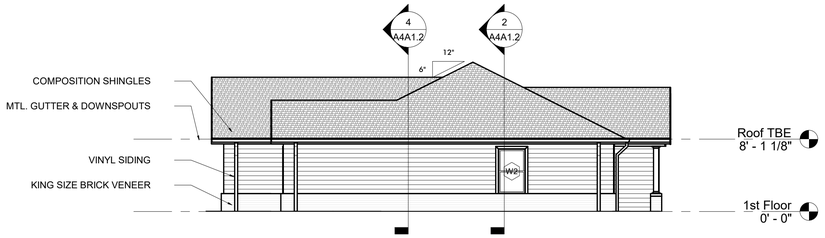
1 EAST ELEVATION - BUILDING 2B2B

1/8" = 1'-0"



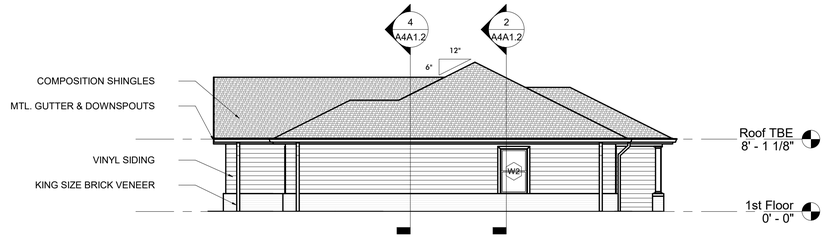
5 EAST ELEVATION - BUILDING 2B2C

1/8" = 1'-0"



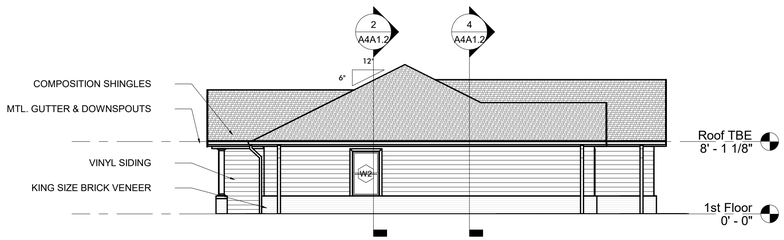
2 NORTH ELEVATION - BUILDING 2B2B

1/8" = 1'-0"



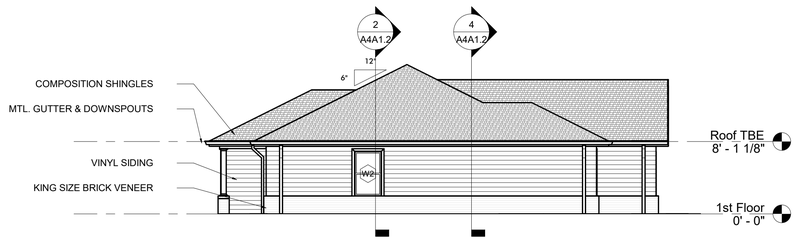
6 NORTH ELEVATION - BUILDING 2B2C

1/8" = 1'-0"



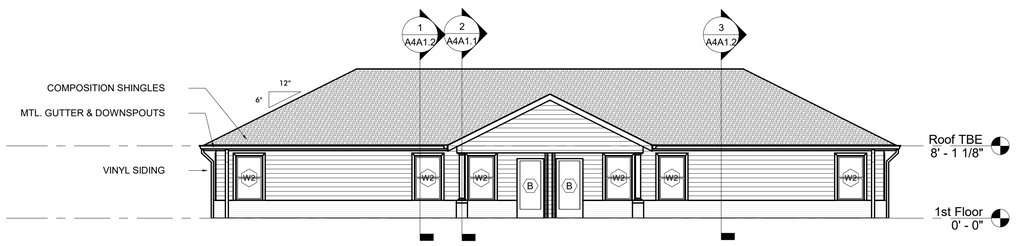
3 SOUTH ELEVATION - BUILDING 2B2B

1/8" = 1'-0"



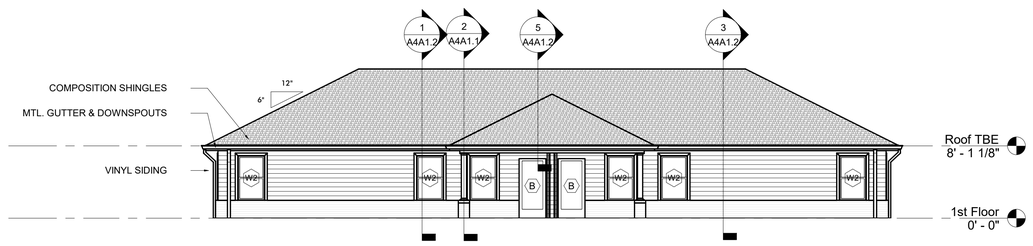
7 SOUTH ELEVATION - BUILDING 2B2C

1/8" = 1'-0"



4 WEST ELEVATION - BUILDING 2B2B

1/8" = 1'-0"



8 WEST ELEVATION - BUILDING 2B2C

1/8" = 1'-0"

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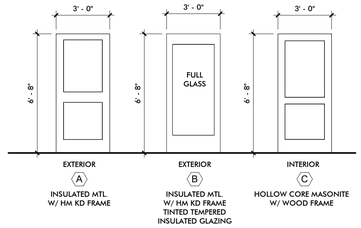
SHEET TITLE

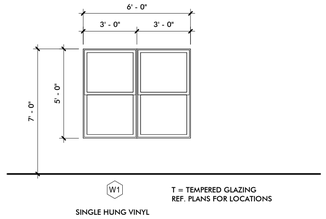
BUILDING 2B - EXTERIOR

DISCIPLINE - SHEET NUMBER

A2B3.3



BUILDING 3A- DOOR TYPES



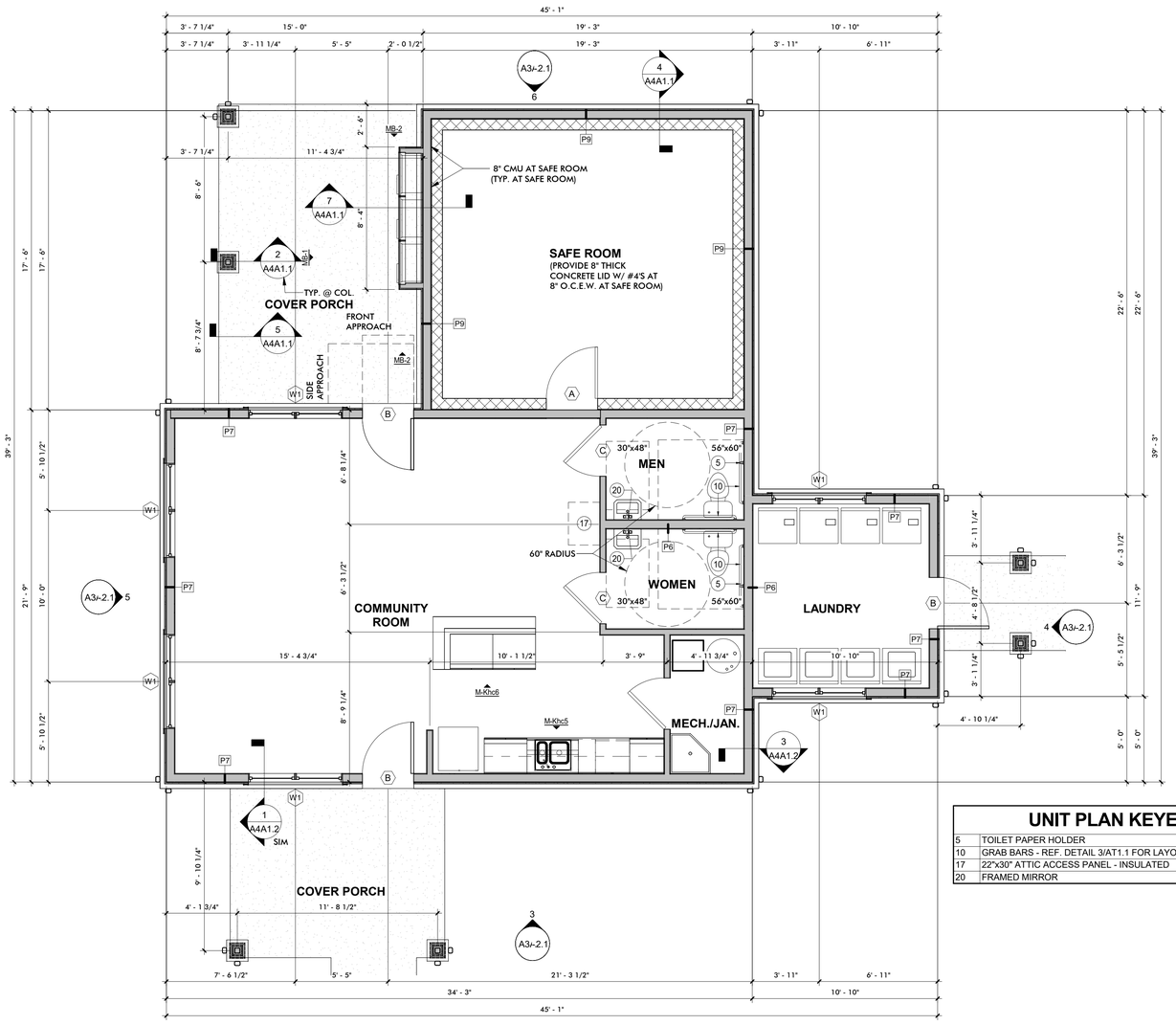
WINDOW TYPES

BUILDINGS 3A - ROOM FINISH SCHEDULE

SPAC	FLOOR	BASE	WALLS	CEILING	DOOR CASING	REMARKS
COMMUNITY	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	
MEN	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD
WOMEN	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD
MECH./JAN.	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD
LAUNDRY	VINYL PLANK	1x4 FJP, PAINTED	PAINTED GYP. BOARD	PAINTED GYP. BOARD	1x4 FJP, PAINTED	MOISTURE RESISTANT GYP. BOARD

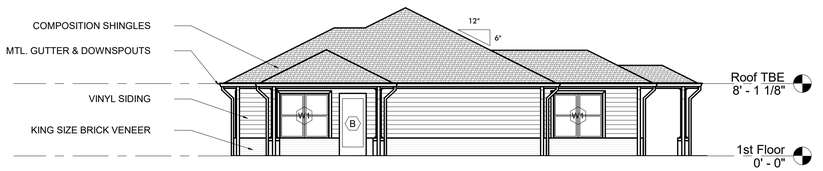
BUILDING & LIFE SAFETY CODE DATA - BLDG 3A

BUILDING CODE REFERENCE:	**ARKANSAS FIRE PREVENTION CODE - 2012 EDITION**
TYPE OF CONSTRUCTION: TABLE 601	NEW BUILDING TYPE V-B; NON-SPRINKLERED
OCCUPANCY CLASSIFICATION: CHAPTER 3, SECTION 303.1.1, 304.1	NEW BUILDING: GROUP B
HEIGHT & AREA LIMITATIONS:	HEIGHT (TABLE 503) 40 FEET ALLOWABLE 2 STORIES (TABLE 503) ALLOWABLE 9,000 SF AREA (TABLE 503) ALLOWABLE
AREA CALCULATIONS:	BUILDING 3A: **TOTAL BUILDING AREA = 1211 SF**
OCCUPANT LOADS: TABLE 1004.1.2	100 GROSS SF PER PERSON BUILDING 3A: 874 SF/100 = 12 OCCUPANTS
EXIT ACCESS TRAVEL DISTANCE: TABLE 1016.2	200 FT MAXIMUM WITHOUT SPRINKLER SYSTEM
FIRE PROTECTION REQUIREMENTS: TABLE 601 (U.N.O.) **-RATED EXTERIOR WALLS**	EXTERIOR WALL TO PROPERTY LINE BETWEEN 0 HOUR BUILDINGS IS > 10' (TABLE 602)



UNIT PLAN KEYED NOTES

5	TOILET PAPER HOLDER
10	GRAB BARS - REF. DETAIL 3/AT1.1 FOR LAYOUT
17	22"x30" ATTIC ACCESS PANEL - INSULATED
20	FRAMED MIRROR

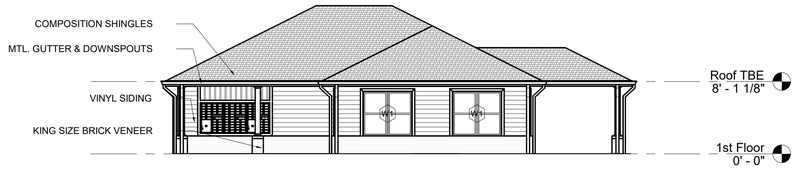


3 EAST ELEVATION - BUILDING 3A

1/8" = 1'-0"

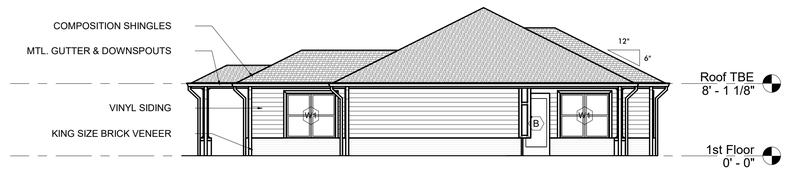
4 NORTH ELEVATION - BUILDING 3A

1/8" = 1'-0"



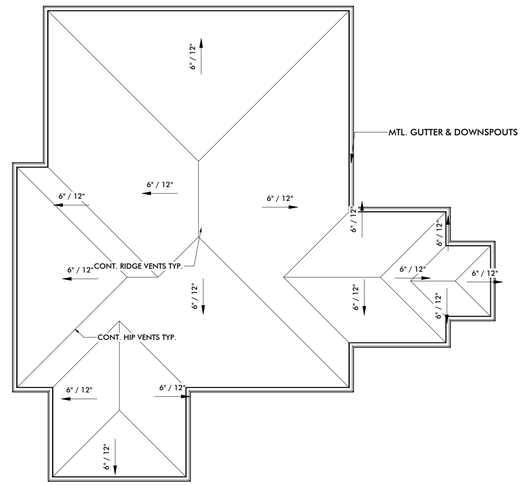
5 SOUTH ELEVATION - BUILDING 3A

1/8" = 1'-0"



6 WEST ELEVATION - BUILDING 3A

1/8" = 1'-0"



1 BUILDING 3A - FIRST FLOOR PLAN

1/4" = 1'-0"

2 ROOF PLAN - BUILDING 3A

1/8" = 1'-0"

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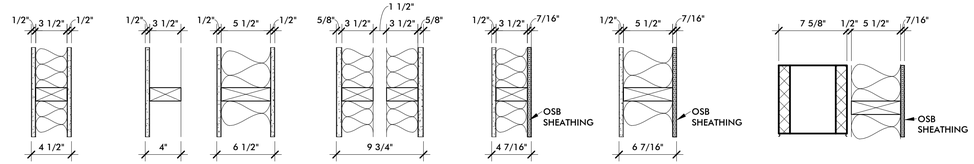
ISSUED

SHEET TITLE
BUILDING 3A - FLOOR PLAN, ROOF PLAN, AND EXTERIOR ELEVATIONS

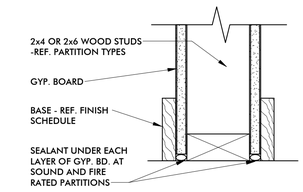
DISCIPLINE - SHEET NUMBER
A3A2.1

PARTITION NOTES:

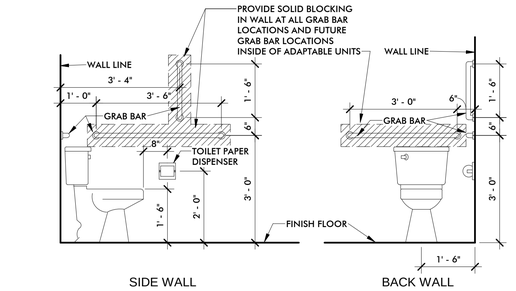
1. REFER TO ENLARGED UNIT FLOOR PLANS FOR PARTITION DESIGNATIONS.
2. PARTITIONS ARE TYPICALLY P1 UNLESS SHOWN OTHERWISE.
3. 1/2" GYPSUM BOARD TYPCIAL . PROVIDE MOISTURE-RESISTANT GYPSUM BOARD AT WET AREAS. PROVIDE 5/8" U.L. RATED GYPSUM BOARD AT PARTY WALLS.
4. SEE FINISH SCHEDULE AND SPECS FOR FINISHES.



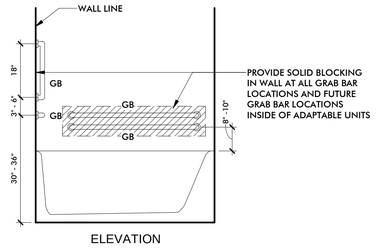
12 PARTITION TYPES
1 1/2" = 1'-0"

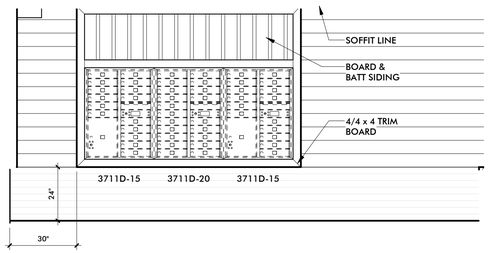


6 BASE DETAIL
3" = 1'-0"

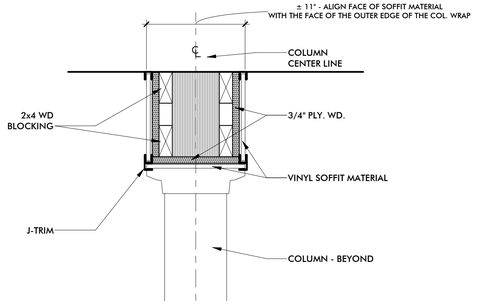


3 ACCESSIBLE TOILET DETAIL
1/2" = 1'-0"

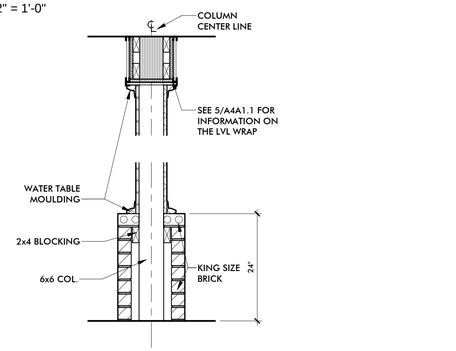




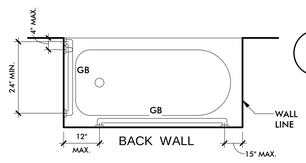
8 MB-1
3/8" = 1'-0"



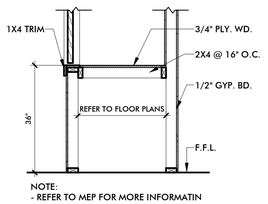
5 LVL WRAP
1 1/2" = 1'-0"



2 SECTION @ EXTERIOR COL.
3/4" = 1'-0"

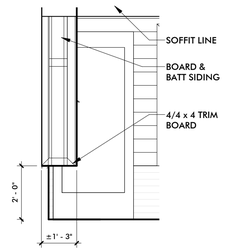


11 ACCESSIBLE BATHTUB DETAIL
1/2" = 1'-0"



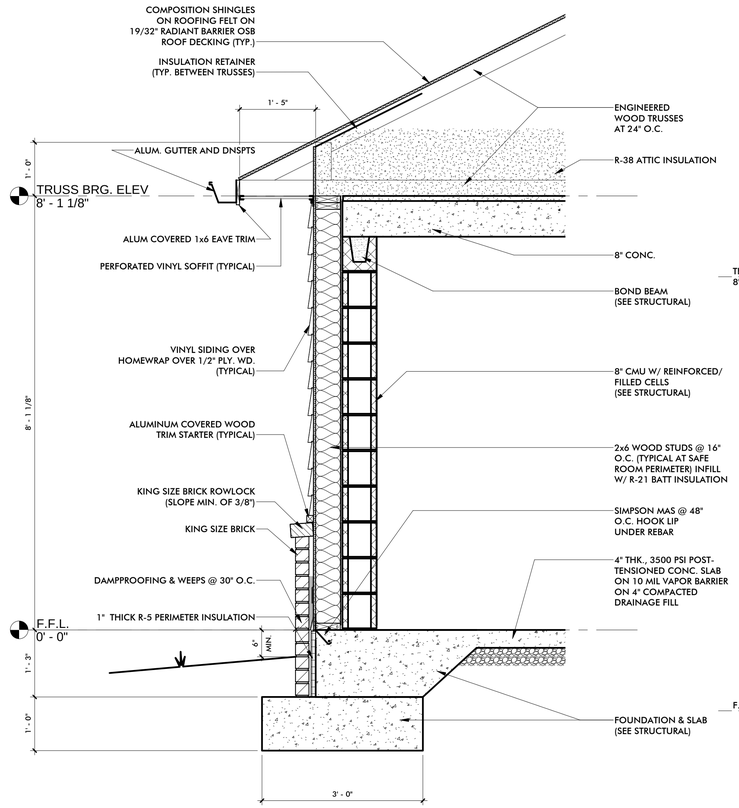
10 MEC. CLOSET
1/2" = 1'-0"

NOTE: SEE WALL SECTION 6/A4A1.1 FOR GENERAL ANNOTATIONS AND DIMENSIONS

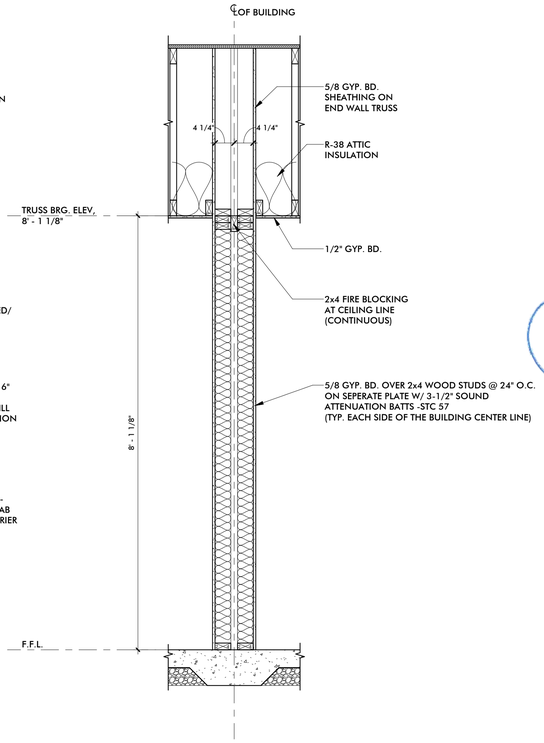


9 MB-2
3/8" = 1'-0"

7 SECTION @ MAILBOX
3/4" = 1'-0"



4 SAFE ROOM WALL SECTION
3/4" = 1'-0"



1 PARTY WALL SECTION
3/4" = 1'-0"

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CONSULTANTS

OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

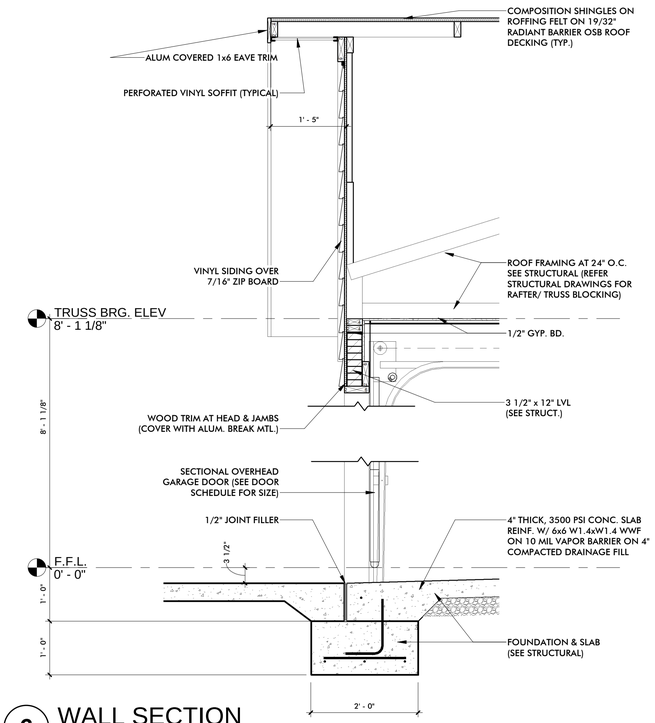
REGISTERED ARCHITECT JAMES W. REDDELL No. 1237 ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

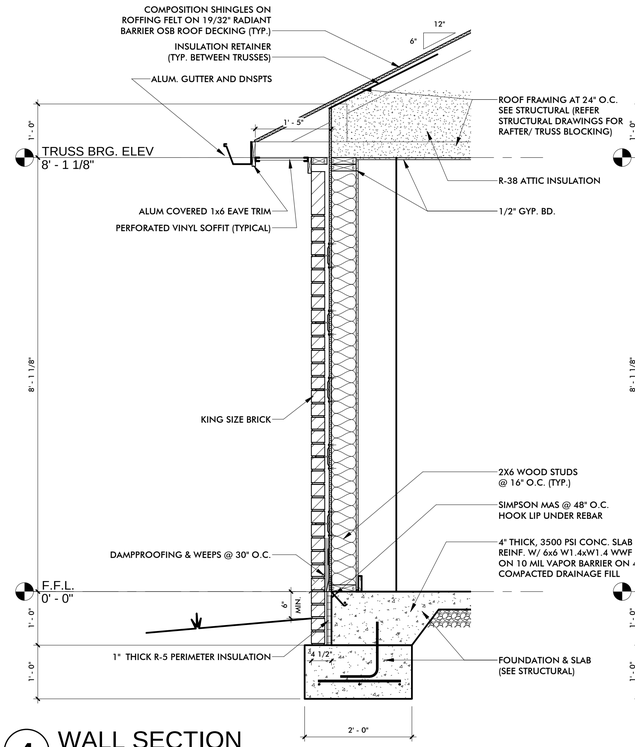
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
PARTITIONS & DETAILS

DISCIPLINE - SHEET NUMBER
A4A1.1



6 WALL SECTION
3/4" = 1'-0"



4 WALL SECTION
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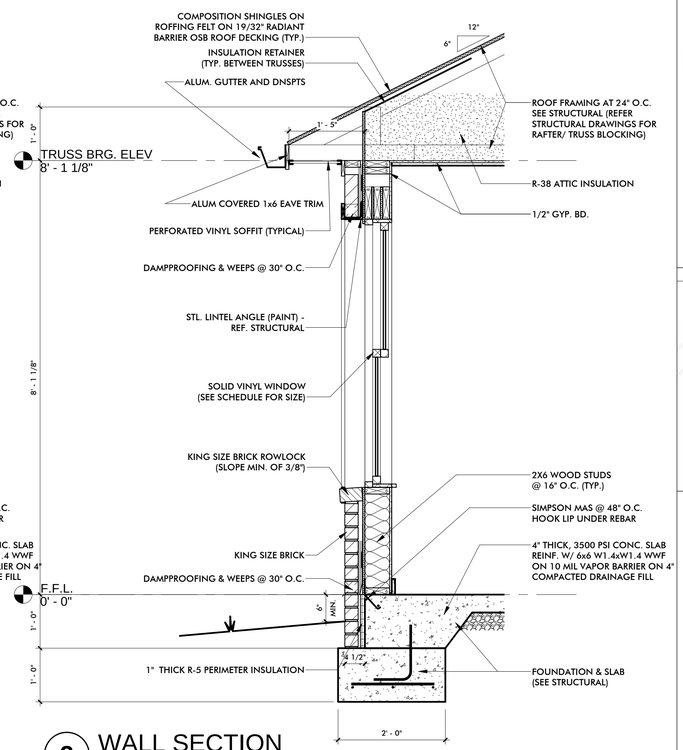
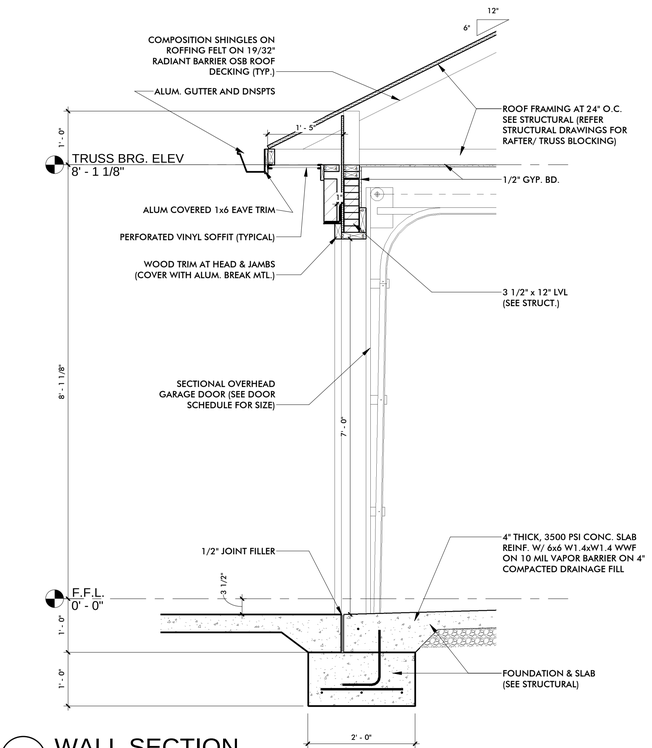
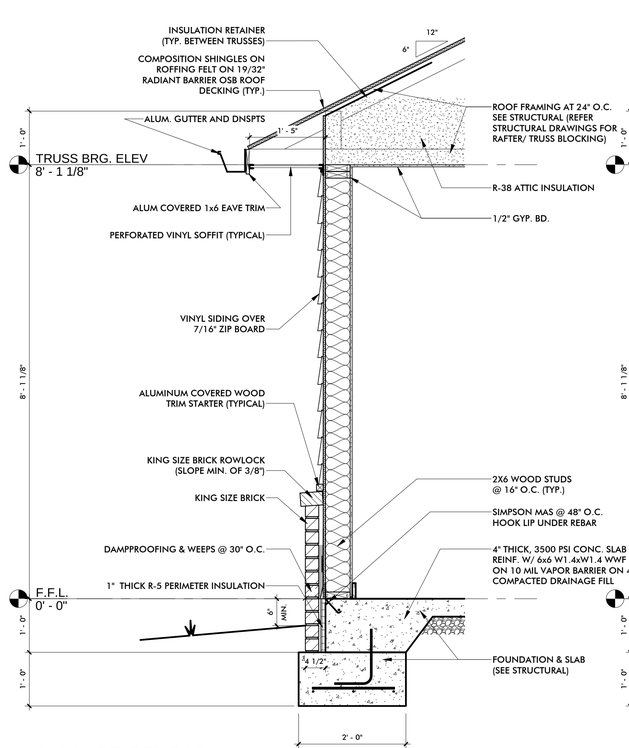


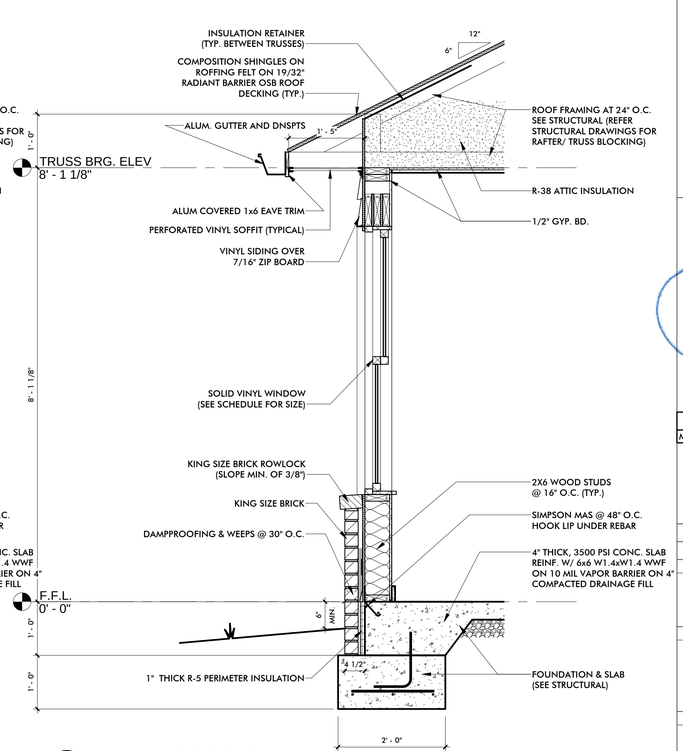
2 WALL SECTION
3/4" = 1'-0"



5 WALL SECTION
3/4" = 1'-0"



3 WALL SECTION
3/4" = 1'-0"



1 WALL SECTION
3/4" = 1'-0"

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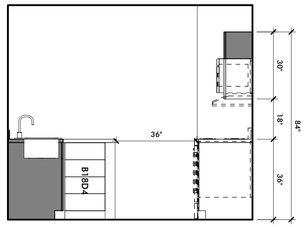
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

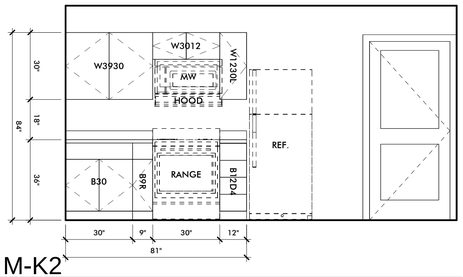
PROJECT NO:	20-003
DATE:	01/29/2021
ISSUED	

SHEET TITLE
WALL SECTION

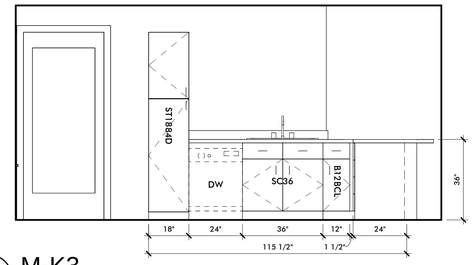
DISCIPLINE - SHEET NUMBER
A4A1.2



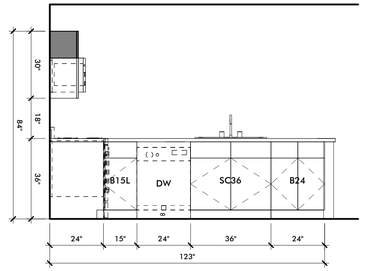
1 M-K1
3/8" = 1'-0"



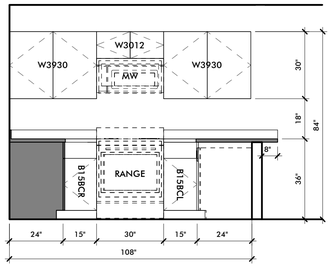
2 M-K2
3/8" = 1'-0"



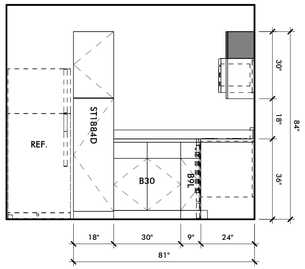
3 M-K3
3/8" = 1'-0"



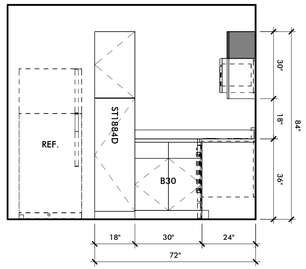
4 M-K4
3/8" = 1'-0"



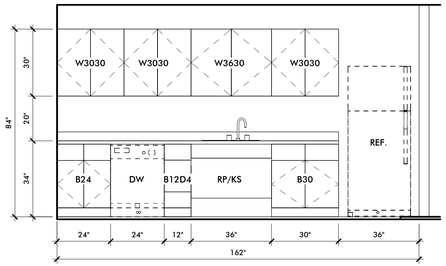
5 M-K5
3/8" = 1'-0"



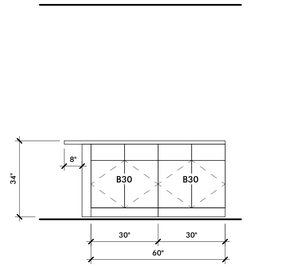
6A M-K6
3/8" = 1'-0"



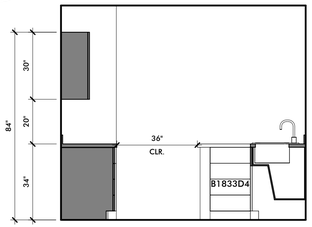
6B M-K6 - ALT.
3/8" = 1'-0"



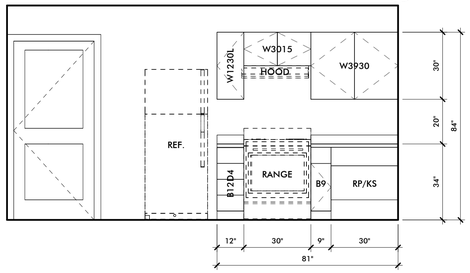
7 M-K7
3/8" = 1'-0"



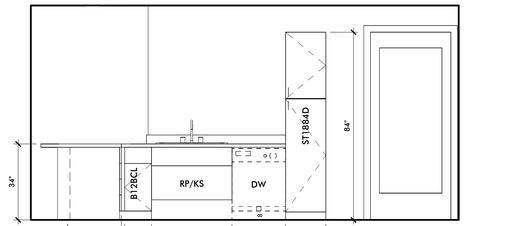
8 M-K8
3/8" = 1'-0"



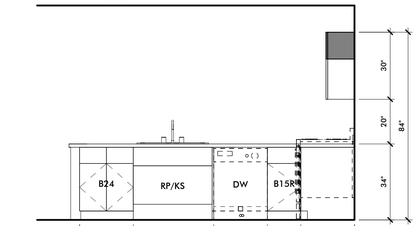
11 M-Khc1
3/8" = 1'-0"



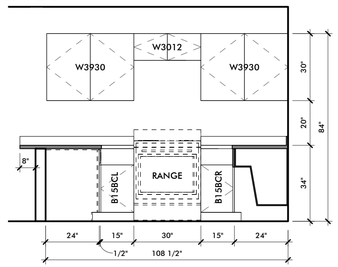
12 M-Khc2
3/8" = 1'-0"



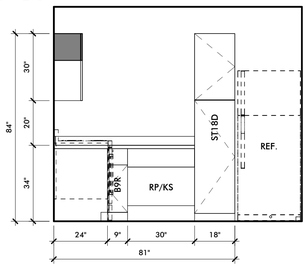
13 M-Khc3
3/8" = 1'-0"



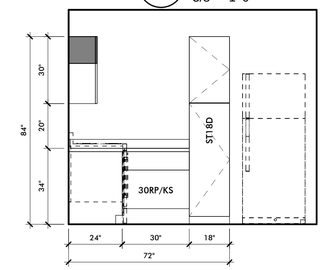
14 M-Khc4
3/8" = 1'-0"



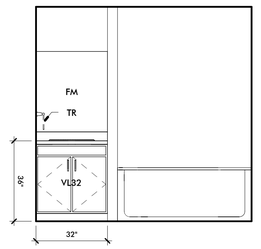
15 M-Khc5
3/8" = 1'-0"



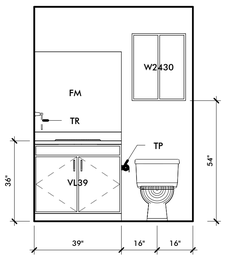
16A M-Khc6
3/8" = 1'-0"



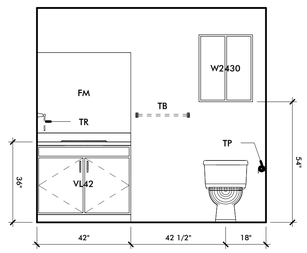
16B M-Khc6 ALT.
3/8" = 1'-0"



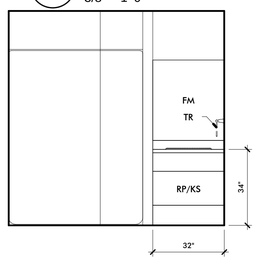
17 M-Vs1
3/8" = 1'-0"



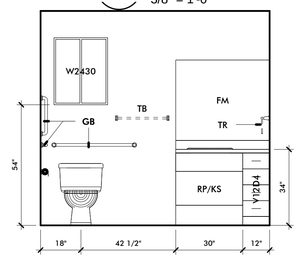
18 M-Vs2
3/8" = 1'-0"



19 M-Vs3
3/8" = 1'-0"



21 M-Vhc1
3/8" = 1'-0"



22 M-Vhc2
3/8" = 1'-0"

ABBREVIATIONS

RP/KS - REMOVABLE PANEL / KNEE SPACE

FM - FRAMELESS MIRROR

PL - PLASTIC LAMINATE

BR - BRACING

TR - TOWEL RING AT 48" A.F.F.

RH - TOWEL HOOK

TB - TOWEL BAR

GB - GRAB BARS AT ACCESSIBLE UNITS ONLY / PROVIDE BLOCKING AT ADAPTABLE UNITS

MILLWORK NOTES

1. ALL INTERIOR ELEVATIONS ARE DRAWN TO 3/8" SCALE.
2. ALL CABINETS ARE BASED UPON MID-AMERICA MILLWORK COMPONENTS.
3. UNIT MILLWORK MAY BE OPP. HAND AT SOME LOCATIONS. REFER TO OVERALL FLOOR PLANS FOR ORIENTATION.
4. REFER TO ROOM FINISH SCHEDULE FOR BASE & WALL FINISHES.
5. CONTRACTOR TO FIELD VERIFY DIMENSIONS PRIOR TO MILLWORK FABRICATION.
6. 4" SPLASH UNLESS NOTED OTHERWISE.
7. CONTRACTOR SHALL COORDINATE POWER & DATA OUTLETS INSIDE CABINETS WITH ELECTRICAL.

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OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

REGISTERED ARCHITECT
JAMES M REDDICK
No. 1237
ARKANSAS
Jan. 29, 2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
MILLWORK & INTERIOR ELEVATIONS

DISCIPLINE - SHEET NUMBER
A4A1.3

REQUIRED SPECIAL INSPECTIONS - BY TESTING AGENCY

In addition to the regular inspections required by Section 110, the following items require Special Inspection in accordance with Section 1704 and 1705 of the 2012 IBC.

SECTION 1704.2.5
FABRICATORS

Verify fabrication / quality control procedures.

TABLE 1705.3
REQUIRED VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION

	VERIFICATION AND INSPECTION TASK	CONTINUOUS (C) OR PERIODIC (P)	REQUIRED
1.	Inspection of reinforcing steel, including prestressing tendons, and placement.	P	N
2.	Inspection of reinforcing steel welding in accordance with Table 1705.2.2, Item 2b.	-	N
3.	Inspection of anchors cast in concrete where allowable loads have been increased or where strength design is used.	P	N
4.	Inspection of anchors post-installed in hardened concrete members.	P	Y
5.	Verifying use of required mix design.	P	Y
6.	At the time fresh concrete is sampled to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	C	Y
7.	Inspection of concrete and shotcrete placement for proper application techniques.	C	N
8.	Inspection for maintenance of specified curing temperature and techniques.	P	N
9.	Inspection of prestressed concrete: a. Application of prestressing force. b. Grouting of bonded prestressing tendons in the seismic force-resisting system.	 C C	 N N
10.	Erection of precast concrete members.	P	N
11.	Verification of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs.	P	N
12.	Inspect formwork for shape, location and dimensions of the concrete member being formed.	P	N

TABLE 1705.5
REQUIRED VERIFICATION AND INSPECTION OF WOOD CONSTRUCTION

	VERIFICATION AND INSPECTION TASK	CONTINUOUS (C) OR PERIODIC (P)	REQUIRED
1.	Special inspections of the fabrication process of prefabricated wood structural elements and assemblies shall be in accordance with Section 1704.2.5. Special inspections of site-built assemblies shall be in accordance with the requirements that follow:	P	N
2.	1705.5.1 High-load diaphragms. High-load diaphragms designed in accordance with Section 2306.2 shall be installed with special inspections as indicated in Section 1704.2. The special inspector shall inspect the wood structural panel sheathing to ascertain whether it is of the grade and thickness shown on the approved building plans. Additionally, the special inspector must verify the nominal size of framing members at adjoining panel edges, the nail or staple diameter and length, the number of fastener lines and that the spacing between fasteners in each line and at edge margins agrees with the approved building plans.	P	N
3.	1705.5.2 Metal-plate-connected wood trusses spanning 60 feet or greater. Where a truss clear span is 60 feet (18 288 mm) or greater, the special inspector shall verify that the temporary installation restraint/bracing and the permanent individual truss member restraint/bracing are installed in accordance with the approved truss submittal package.	P	N

TABLE 1705.6
REQUIRED VERIFICATION AND INSPECTION OF SOILS

	VERIFICATION AND INSPECTION TASK	CONTINUOUS (C) OR PERIODIC (P)	REQUIRED
1.	Verify materials below shallow foundations are adequate to achieve the design bearing capacity.	P	Y
2.	Verify excavations are extended to proper depth and have reached proper material.	P	Y
3.	Perform classification and testing of compacted fill materials.	P	Y
4.	Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill.	C	Y
5.	Prior to placement of compacted fill, observe subgrade and verify that site has been prepared properly.	P	Y

CONCRETE MATERIAL

1. ALL CONCRETE SHALL BE NORMAL WEIGHT (DENSITY=145 PCF) AND SHALL HAVE A 28-DAY COMPRESSIVE STRENGTH IN ACCORDANCE WITH THE FOLLOWING, U.N.O.:

ALL FOUNDATIONS	3000 PSI
FOUNDATION WALLS	3000 PSI
INTERIOR SLABS	3500 PSI
ALL OTHER CONCRETE (U.N.O.)	3000 PSI
CURBS & SIDEWALKS	SEE CIVIL

WATER-TO-CEMENT PLUS POZZOLANIC MATERIALS RATIO SHALL BE IN ACCORDANCE WITH THE FOLLOWING:

F'c (psi)	NON-AIR ENTRAINED	AIR ENTRAINED
6,000	0.41	------
5,000	0.48	0.40
4,000	0.57	0.48
3,000	0.68	0.59

2. ALL FOUNDATION CONCRETE SHALL BE 4-6% AIR ENTRAINED. SLAB CONCRETE SHALL NOT HAVE ENTRAINED AIR, U.N.O.
3. THE SLUMP OF ALL CONCRETE SHALL NOT EXCEED 4" UNLESS A HIGH RANGE WATER-REDUCING ADMIXTURE IS USED. THE SLUMP OF CONCRETE PRIOR TO ADDITION OF A HIGH-RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 4". THE SLUMP OF CONCRETE CONTAINING A HIGH RANGE WATER-REDUCING ADMIXTURE SHALL NOT EXCEED 9". DRILLED PIER CONCRETE SHALL HAVE A SLUMP OF 5"-7".
4. THE COARSE AGGREGATE SIZE SHALL BE ASTM C33 #57 OR LARGER.
5. THE CONTRACTOR SHALL SUBMIT CONCRETE MIX DESIGNS FOR REVIEW A MINIMUM OF ONE WEEK PRIOR TO PLACEMENT OF ANY CONCRETE. THE CONCRETE MIX DESIGNS SHALL INCLUDE ALL STRENGTH DATA NECESSARY TO SHOW COMPLIANCE WITH THE PROJECT SPECIFICATIONS FOR EITHER THE TRIAL BATCH OR FIELD EXPERIENCE METHOD.
6. FLY ASH TO BE LIMITED TO 25% OF TOTAL CEMENTITIOUS MATERIAL BY WEIGHT.

CONCRETE REINFORCING STEEL

1. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60, UNLESS NOTED OTHERWISE. ALL WELDED REINFORCING BARS SHALL CONFORM TO ASTM A706. DEFORMED BAR ANCHORS (DBA) SHALL CONFORM TO ASTM A496.
2. ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185. WIRE FABRIC SHALL BE SUPPLIED IN SHEETS. ROLLED FABRIC WILL NOT BE ACCEPTED. WIRE FABRIC SHALL BE PLACED AT THE MID-DEPTH OF THE SLAB. WIRE FABRIC SHALL BE SUPPORTED ON CONTINUOUS HIGH CHAIRS SPACED NOT MORE THAN 4 FEET O.C.
3. ALL REINFORCING SHALL BE DETAILED, FABRICATED, AND PLACED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE DETAILING MANUAL. ALL DOWELS ARE TO BE TIED IN PLACE. IF ANY DOWELS ARE 'STABBED' AFTER THE CONCRETE HAS BEEN PLACED, THE CONCRETE SHALL BE REMOVED AND REPLACED.
4. ALL REINFORCING SHALL BE SUPPORTED IN FORMS, SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER, IN ACCORDANCE WITH THE LATEST EDITION OF THE CRSI "MANUAL OF STANDARD PRACTICE".
5. MINIMUM CONCRETE COVER, UNLESS NOTED OTHERWISE:

UNFORMED SURFACE IN CONTACT WITH THE GROUND	3 IN.
FORMED SURFACES EXPOSED TO EARTH OR WEATHER:	
#6 BARS AND LARGER	2 IN.
#5 BARS AND SMALLER	1½ IN.
FORMED SURFACES NOT EXPOSED TO EARTH OR WEATHER:	
BEAMS, GIRDERS AND COLUMNS	1½ IN.
SLABS, WALLS AND JOISTS:	
#11 BARS AND SMALLER	¾ IN.
#14 AND #18 BARS	1½IN.

6. ALL BASE PLATES, ANCHOR BOLTS, SUPPORT ANGLES, ETC., WHICH ARE BELOW GRADE SHALL BE COVERED WITH A MINIMUM OF 3" OF CONCRETE.
7. PROVIDE CORNER BARS AT ALL CORNERS AND INTERSECTIONS OF CONCRETE WALLS, CONCRETE BEAMS, CONTINUOUS FOOTINGS, THICKENED SLABS AND TURNDOWNS. CORNER BAR SIZE SHALL MATCH HORIZONTAL BAR SIZE. CORNER BARS ARE TO BE LAPPED 40 BAR DIAMETERS.
8. ALL LAP SPLICES SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE, UNLESS NOTED OTHERWISE. WHERE CLASSES ARE NOT CALLED OUT ON DRAWINGS, USE CLASS "B" SPLICES.

TENSION SPLICE (IN.)					
BAR SIZE	TOP BARS		OTHER BARS		COMPRESSION SPLICES (IN.)
	CLASS A	CLASS B	CLASS A	CLASS B	
#3	16	21	12	16	12
#4	21	28	16	21	15
#5	27	35	21	27	19
#6	32	42	25	32	23
#7	47	61	36	47	26
#8	53	69	41	53	30
#9	60	78	46	60	34
#10	68	88	52	68	38
#11	75	98	58	75	42

FOUNDATION, SLAB-ON-GRADE - GENERAL

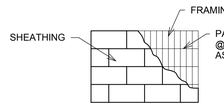
1. FOUNDATION DESIGN IS BASED ON THE INFORMATION AND RECOMMENDATIONS PROVIDED IN THE GEOTECHNICAL REPORT PREPARED BY TERRACON CONSULTANTS, INC. DATED OCTOBER 16, 2020.
2. THE FOUNDATIONS HAVE BEEN DESIGNED FOR A NET ALLOWABLE BEARING PRESSURE OF 2,000 PSF.
3. ALL BEARING MATERIAL SHALL BE INSPECTED BY THE INDEPENDENT TESTING AGENCY PRIOR TO CONCRETE PLACEMENT. THE INDEPENDENT TESTING AGENCY SHALL BE THE SOLE JUDGE AS TO THE SUITABILITY OF THE BEARING MATERIAL. FOOTING ELEVATIONS SHALL BE ADJUSTED AS REQUIRED.
4. FOOTINGS MAY BE POURED INTO AN EARTHEN FORMED TRENCH IF SOIL CONDITIONS PERMIT.
5. FOUNDATION WALLS THAT RETAIN EARTH SHALL BE BRACED AGAINST BACK FILLING PRESSURES UNTIL FLOOR SLABS AT TOP AND BOTTOM ARE IN PLACE OR UNTIL THE CONCRETE HAS ATTAINED ITS FULL COMPRESSIVE STRENGTH FOR CANTILEVER WALLS.
6. WHERE FOUNDATION WALLS ARE TO HAVE EARTH PLACED ON EACH SIDE, PLACE FILL SIMULTANEOUSLY SO AS TO MAINTAIN A COMMON ELEVATION ON EACH SIDE OF THE WALL.
7. VERIFY THE USE AND EXTENT OF PERIMETER INSULATION WITH ARCHITECTURAL DRAWINGS PRIOR TO THE INSTALLATION OF FOUNDATIONS. INSTALL PERIMETER INSULATION AS REQUIRED.
8. UNDER-SLAB DRAINAGE FILL TO BE A MINIMUM 4-INCH COMPACTED LAYER OF WASHED ASTM C33 No. 57 STONE.
9. NO BUILDING FOUNDATIONS, INCLUDING GRADE BEAMS, ARE TO BE PENETRATED WITH CONDUITS, PIPES, ETC. UNLESS SPECIFICALLY SHOWN ON THE STRUCTURAL PLANS OR EXPRESS CONSENT IS GIVEN BY THE E.O.R.

POST-INSTALLED ANCHORS

1. ANCHOR CAPACITY USED IN DESIGN SHALL BE BASED ON THE TECHNICAL DATA PUBLISHED BY HILTI OR SUCH OTHER METHOD AS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD. SUBSTITUTION REQUESTS FOR ALTERNATE PRODUCTS MUST BE APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO USE. CONTRACTOR SHALL PROVIDE CALCULATIONS DEMONSTRATING THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERFORMANCE VALUES OF THE SPECIFIED PRODUCT. SUBSTITUTIONS WILL BE EVALUATED BY THEIR HAVING AN ICC ESR SHOWING COMPLIANCE WITH THE RELEVANT BUILDING CODE FOR SEISMIC USES, LOAD RESISTANCE, INSTALLATION CATEGORY, AND AVAILABILITY OF COMPREHENSIVE INSTALLATION INSTRUCTIONS. ADHESIVE ANCHOR EVALUATION WILL ALSO CONSIDER CREEP, IN-SERVICE TEMPERATURE AND INSTALLATION TEMPERATURE.
2. INSTALL ANCHORS PER THE MANUFACTURER INSTRUCTIONS, AS INCLUDED IN THE ANCHOR PACKAGING.
3. OVERHEAD ADHESIVE ANCHORS MUST BE INSTALLED USING THE HILTI PROFI SYSTEM.
4. THE CONTRACTOR SHALL ARRANGE AN ANCHOR MANUFACTURER'S REPRESENTATIVE TO PROVIDE ONSITE INSTALLATION TRAINING FOR ALL OF THEIR ANCHORING PRODUCTS SPECIFIED. THE STRUCTURAL ENGINEER OF RECORD MUST RECEIVE DOCUMENTED CONFIRMATION THAT ALL OF THE CONTRACTOR'S PERSONNEL WHO INSTALL ANCHORS ARE TRAINED PRIOR TO THE COMMENCEMENT OF INSTALLING ANCHORS.
5. ANCHOR CAPACITY IS DEPENDANT UPON SPACING BETWEEN ADJACENT ANCHORS AND PROXIMITY OF ANCHORS TO EDGE OF CONCRETE. INSTALL ANCHORS IN ACCORDANCE WITH SPACING AND EDGE CLEARANCES INDICATED ON THE DRAWINGS.
6. EXISTING REINFORCING BARS IN THE CONCRETE STRUCTURE MAY CONFLICT WITH SPECIFIC ANCHOR LOCATIONS. UNLESS NOTED ON THE DRAWINGS THAT THE BARS CAN BE CUT, THE CONTRACTOR SHALL REVIEW THE EXISTING STRUCTURAL DRAWINGS AND SHALL UNDERTAKE TO LOCATE THE POSITION OF THE REINFORCING BARS AT THE LOCATIONS OF THE CONCRETE ANCHORS, BY HILTI FERROSCAN, GPR, X-RAY, CHIPPING OR OTHER MEANS.
7. MECHANICAL ANCHORS FOR USE IN CONCRETE TO BE HILTI KWIK BOLT-TZ EXPANSION ANCHORS PER ICC ESR-1917.
8. MECHANICAL ANCHORS FOR USE IN GROUTED MASONRY TO BE HILTI KWIK BOLT 3 EXPANSION ANCHORS PER ICC ESR-1385.
9. POST-INSTALLED EPOXY FOR CONCRETE TO BE HILTI HIT-RE 500v3, U.N.O. PER ICC ESR-3814
10. POST-INSTALLED EPOXY FOR MASONRY TO BE HILTI HIT-HY 270, U.N.O. PER ICC ESR-4143.

WOOD NOTES

1. ALL SAWN LUMBER SHALL BE NO. 1/NO. 2 DFL OR EQUIVALENT. ALL DESIGN VALUES ARE IN ACCORDANCE WITH THE NFoPA NATIONAL DESIGN SPECIFICATION (LATEST EDITION).
2. LVL'S ARE TO BE LP SOLIDSTART 2900Fb-2.0E AS MANUFACTURED BY LOUISIANA-PACIFIC CORPORATION, OR EQUAL.
3. EXTERIOR SHEATHING TO BE 7/16" APA RATED OSB, OR EQUAL. ATTACH SHEATHING W/ 8d NAILS ON A 6/12 PATTERN. ALL PANEL EDGES ARE TO BE BLOCKED.
4. EXTERIOR STUD WALLS TO BE ANCHORED TO THE FOUNDATION WITH SIMPSON MASA @ 48" O.C. MAX. AND AT THE ENDS OF EACH WALL, MINIMUM 2 PER WALL.
5. ROOF SHEATHING TO BE 19/32" RADIANT BARRIER OSB, OR EQUAL, 32/16 SPAN RATING, WITH 8d NAILS @ 6" O.C. AT EDGES AND BOUNDARIES AND 12" O.C. IN THE FIELD. SHEATHING TO SPAN OVER AT LEAST 2 SUPPORTS.
6. ALL SIMPSON STRONG-TIE FASTENERS SHALL BE INSTALLED PER THE MANUFACTURERS DIRECTIONS.



NOTE: SHEATHING PANELS MAY BE HORIZONTAL OR VERTICAL. VERTICAL PANEL JOINTS ARE TO BE STAGGERED

ENGINEERED WOOD TRUSS NOTES

1. TRUSS MANUFACTURER TO DESIGN ALL TEMPORARY AND PERMANENT TRUSS BRACING TO PROVIDE A POSITIVE LOAD PATH TO THE SHEAR WALLS.
2. PROVIDE EAVE BLOCKING AT ALL SHEAR WALLS. EAVE BLOCKING SHALL CONSIST OF THE FOLLOWING:
   A. AT HEEL HEIGHTS LESS THAN 11", PROVIDE SOLID 2x BLOCKING AT EVERY OTHER SPACE. SLOPE TOP TO MATCH ROOF SLOPE.
   B. AT HEEL HEIGHTS GREATER THEN 11", PROVIDE TRUSS BLOCKING AT EVERY SPACE. SLOPE TOP TO MATCH ROOF SLOPE.
3. PROVIDE RIDGE BLOCKING AT ALL RIDGES. RIDGE BLOCKING SHALL CONSIST OF TWO ROWS OF 2x4 BLOCKING AT EACH TRUSS SPACE. EACH ROW OF BLOCKING SHALL BE SEPARATED TO ALLOW FOR CONTINUOUS RIDGE VENT.
4. ROOF SHEATHING TO BE ATTACHED TO EAVE BLOCKING AND RIDGE BLOCKING WITH BOUNDARY NAILING PATTERN.
5. ALL ROOF TRUSSES TO BE TIED DOWN WITH SIMPSON H1 AT EACH BEARING POINT.
6. ALL SIMPSON STRONG-TIE FASTENERS SHALL BE INSTALLED PER THE MANUFACTURERS DIRECTIONS.
7. END WALL TRUSSES SHALL HAVE VERTICAL MEMBERS SPACED 16" O.C. MAX. MEMBERS SHALL BE ROTATED WITH STRONG AXIS PERPENDICULAR TO SPAN.

ABBREVIATIONS

A.B.	ANCHOR BOLT	LL	LIVE LOAD
AFF	ABOVE FINISH FLOOR	LLH	LONG LEG HORIZONTAL
ARCH.	ARCHITECT	LLV	LONG LEG VERTICAL
B.O.D.	BOTTOM OF DECK	LONG.	LONGITUDINAL
B.O.S.	BOTTOM OF STEEL	LW	LIGHTWEIGHT
BFF.	BELOW FINISH FLOOR	MANUF.	MANUFACTURER
BLDG.	BUILDING	MAX.	MAXIMUM
BOT.	BOTTOM	MIN.	MINIMUM
C.J.	CONSTRUCTION JOINT	MISC.	MISCELLANEOUS
C.L.	CENTERLINE	NW	NORMAL WEIGHT
CLR.	CLEAR	O.C.	ON CENTER
CMU	CONCRETE MASONRY UNIT	O.H.D.	OVER HEAD DOOR
COL.	COLUMN	OH	OPPOSITE HAND
CONC.	CONCRETE	PEMB	PRE-ENGINEERED METAL BUILDING
CONT.	CONTINUOUS	PCF	POUNDS PER CUBIC FOOT
DB	DECK BEARING	PCI	POUNDS PER CUBIC INCH
D.B.A.	DEFORMED BAR ANCHOR	PLF	POUNDS PER LINEAR FOOT
DIA.	DIAMETER	PSF	POUNDS PER SQUARE FOOT
E.E.	EACH END	PSI	POUNDS PER SQUARE INCH
E.F.	EACH FACE	QTY.	QUANTITY
E.W.	EACH WAY	RE:	REFER
ELEV.	ELEVATION	REINF.	REINFORCEMENT
FFE	FINISH FLOOR ELEVATION	REQ'D.	REQUIRED
FND.	FOUNDATION	S.C.	SAW CUT
FTG.	FOOTING	SCHED.	SCHEDULE
G.B.	GRADE BEAM	SIM.	SIMILAR
GA.	GAUGE	STD.	STANDARD
GALV.	GALVANIZED	T&B	TOP AND BOTTOM
H.	HORIZONTAL	TF	TOP OF FOOTING
HORIZ.	HORIZONTAL	TGB	TOP OF GRADE BEAM
HSA	HEADED STUD ANCHOR	TP	TOP OF PEDESTAL
IMP	INSULATED METAL PANEL	TPC	TOP OF PIER CAP
ICP	INSULATED CONCRETE PANEL	T.O.S.	TOP OF STEEL
INSUL.	INSULATION	TW	TOP OF WALL
INT.	INTERIOR	TYP.	TYPICAL
JB	JOIST BEARING	U.N.O.	UNLESS NOTED OTHERWISE
KSI	KIPS PER SQUARE INCH	V.	VERTICAL
LGST	LIGHT GAGE STEEL TRUSS	VERT.	VERTICAL

GENERAL NOTES

1. THE STRUCTURE IS DESIGNED TO BE SELF-SUPPORTING AND STABLE AFTER THE BUILDING IS FULLY COMPLETED. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE AND TO ENSURE THE SAFETY OF THE BUILDING AND ITS COMPONENT PARTS DURING ERECTION. THIS INCLUDES THE ADDITION OF ANY SHORING, TEMPORARY BRACING, GUYS OR TIEDOWNS WHICH MIGHT BE NECESSARY. SUCH MATERIAL SHALL REMAIN THE CONTRACTOR'S PROPERTY AFTER THE COMPLETION OF THE PROJECT.
2. IT IS SOLELY THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL APPLICABLE SAFETY CODES AND REGULATIONS DURING ALL PHASES OF CONSTRUCTION.
3. ALL DIMENSIONS ON THE STRUCTURAL DRAWINGS SHALL BE COORDINATED WITH THE ARCHITECTURAL DRAWINGS. THE ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY RELEVANT DIMENSIONAL DISCREPANCIES.
4. GOVERNING CODE: 2012 ARKANSAS FIRE PREVENTION CODE.
5. ALL FRAMING SHALL BE COORDINATED WITH THE MECHANICAL DRAWINGS TO ENSURE ADEQUATE CLEARANCES FOR CHASES, DUCT WORK, PIPING, ETC.
6. DESIGN LOADS:

ROOF:	
TCDL:	10 PSF
BCDL:	10 PSF
TCLL:	20 PSF
BCLL:	10 PSF (NONCONCURRENT)
SAFER ROOM:	
DEAD LOAD:	10 PSF + SELF-WT.
LIVE LOAD:	100 PSF
SNOW DESIGN CRITERIA:	
GROUND SNOW LOAD:	10 PSF
SNOW IMPORTANCE FACTOR:	1.0
FLAT ROOF SNOW LOAD:	10 PSF
WIND DESIGN CRITERIA:	
RISK CATEGORY:	II
BASIC WIND SPEED:	115 mph
EXPOSURE CATEGORY:	B
COMPONENT AND CLADDING LOADS PER IBC TABLE 1609.6.2.1(2)	
SEISMIC DESIGN CRITERIA:	
SITE CLASS:	D
SEISMIC RISK CATEGORY:	II
SEISMIC IMPORTANCE FACTOR:	1.0
SEISMIC DESIGN CATEGORY:	D

S_S = 1.325 F_a = 1.0 S_{MS} = 1.325 S_{DS} = 0.883
S_1 = 0.462 F_v = 1.538 S_{M1} = 0.711 S_{D1} = 0.474
BASIC SEISMIC-FORCE-RESISTING SYSTEM: ORDINARY LIGHT-FRAMED SHEAR WALLS
ANALYSIS PROCEDURE: EQUIVALENT LATERAL-FORCE PROCEDURE

MISCELLANEOUS

1. THESE GENERAL NOTES SUPPLEMENT THE PROJECT SPECIFICATIONS. REFER TO THE PROJECT SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE STRUCTURAL DRAWINGS ARE INTENDED TO BE USED WITH ARCHITECTURAL AND MECHANICAL DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING REQUIREMENTS FROM SUCH DRAWINGS INTO THEIR SHOP DRAWINGS AND WORK.
3. ANY DETAIL TITLED AS A TYPICAL DETAIL IS APPLICABLE THROUGHOUT THE DESIGN DRAWINGS. THESE DETAILS ARE DEFINED AS GENERAL STANDARDS THAT ARE USUALLY IDENTIFIED BY SPECIFIC REFERENCE WITHIN THE DRAWINGS.
4. NO OPENINGS SHALL BE MADE IN ANY STRUCTURAL MEMBER WITHOUT THE WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
5. NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT WRITTEN APPROVAL OF THE PROFESSIONAL-OF-RECORD.
6. OPENINGS IN WALLS AND DECK, WHICH ARE 1'-4" AND LESS ON A SIDE, ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO THE ARCHITECTURAL AND MECHANICAL DRAWINGS FOR SUCH OPENINGS.
7. THE CONTRACTOR IS RESPONSIBLE FOR LIMITING THE AMOUNT OF CONSTRUCTION LOAD IMPOSED ON THE STRUCTURAL FRAMING. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN CAPACITY OF THE FRAMING AT THE TIME THE LOADS ARE IMPOSED.
8. THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES.
9. DO NOT SCALE THESE DRAWINGS. USE SPECIFIED DIMENSIONS.
10. CONTRACTORS CONSTRUCTION AND/OR ERECTION SEQUENCES SHALL RECOGNIZE AND CONSIDER THE EFFECTS OF THERMAL MOVEMENTS OF STRUCTURAL ELEMENTS DURING THE CONSTRUCTION PERIOD.
11. THE CONTRACTOR SHALL INFORM THE PROFESSIONAL-OF-RECORD IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE PROFESSIONAL-OF-RECORD'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE PROFESSIONAL-OF-RECORD OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE PROFESSIONAL-OF-RECORD HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.

SUBMITTAL PROCEDURES

1. SHOP DRAWINGS SHALL BE PRODUCED FROM SCRATCH. THE SHOP DRAWINGS SHALL NOT BE PRODUCED FROM DIGITAL COPIES OR SCANS OF THE E.O.R. DRAWINGS. IF THE E.O.R. DRAWINGS ARE DIGITALLY REPRODUCED AND USED IN SUBMITTED SHOP DRAWINGS, THE SHOP DRAWINGS SHALL BE REJECTED IN WHOLE.
2. TRANSMIT SUBMITTALS SUFFICIENTLY IN ADVANCE OF RELATED CONSTRUCTION ACTIVITIES TO AVOID UNNECESSARY DELAY. THE STRUCTURAL ENGINEER FOR THIS PROJECT MAY WITHHOLD ACTION ON A SUBMITTAL REQUIRING COORDINATION WITH OTHER SUBMITTALS UNTIL ALL RELATED SUBMITTALS ARE RECEIVED.
3. SHOP DRAWINGS SHALL BE SUBMITTED IN AN **UNLOCKED** 'PDF' ELECTRONIC FORMAT. LOCKED 'PDF' FILES WILL NOT BE ACCEPTED. THE SHOP DRAWINGS WILL BE REVIEWED, MARKED UP, AND RETURNED IN 'PDF' ELECTRONIC FORMAT.

SEISMIC NOTE

I hereby certify that the structural load carrying members of this building structure have been designed in accordance with Arkansas Act 1100 1991.

Jason R Myers, P.E.
Arkansas Registration No. 10445

LOOSE ANGLE LINTELS

SPAN	LINTEL ANGLE (LLV)	BEARING
L ≤ 6'	L4x4x¼	6"
6' < L ≤ 9'	L6x4x5/16	8"
9' < L ≤ 12'	8"x4"x5/16" BENT PL	8"

NOTE:
1. EQUIV. BENT PL CAN BE USED IN LIEU OF ROLLED ANGLE.
2. ALL LINTELS ARE TO BE HOT-DIPPED GALVANIZED.
3. DO NOT PLACE EXPANSION JOINTS IN THE MASONRY ON EITHER SIDE OF AN OPENING WITHOUT CONSULTNG THE E.O.R.

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(479) 474-4412
CERTIFICATE OF AUTHORIZATION
MYERS ENGINEERING PLLC
No. 972
ARKANSAS ENGINEER

THEIL ROAD PROPERTIES, LP

RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER 10445 JASON R MYERS 01/29/2021

REVISIONS

MARK	DATE	DESCRIPTION

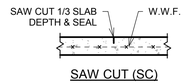
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE

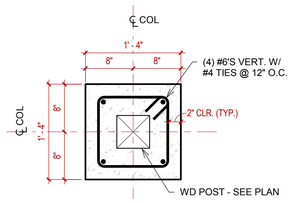
STRUCTURAL NOTES

DISCIPLINE - SHEET NUMBER

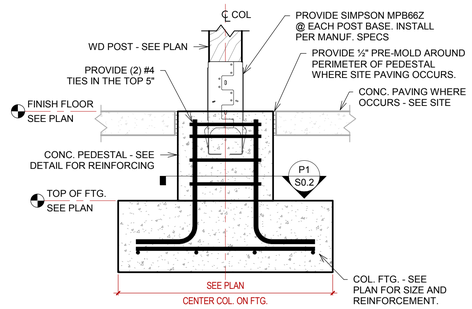
S0.1



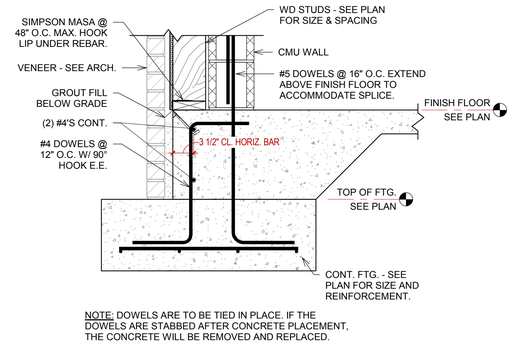
4 SLAB JOINT DETAILS
3/4" = 1'-0"



P1 16X16 PEDESTAL
1" = 1'-0"

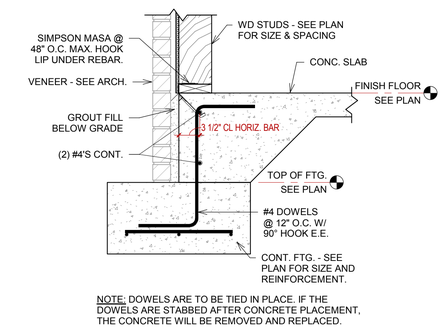


3 TYP. WD. POST FTG.
1" = 1'-0"



NOTE: DOWELS ARE TO BE TIED IN PLACE. IF THE DOWELS ARE STABBED AFTER CONCRETE PLACEMENT, THE CONCRETE WILL BE REMOVED AND REPLACED.

2 CONT. FTG. W/ CMU
1" = 1'-0"



NOTE: DOWELS ARE TO BE TIED IN PLACE. IF THE DOWELS ARE STABBED AFTER CONCRETE PLACEMENT, THE CONCRETE WILL BE REMOVED AND REPLACED.

1 CONT. FTG. W/ WD STUDS
1" = 1'-0"

6 CONC. SLAB TO WALL
1 1/2" = 1'-0"

5 TYP. WALL BASE
1" = 1'-0"

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PARAGOULD, ARKANSAS

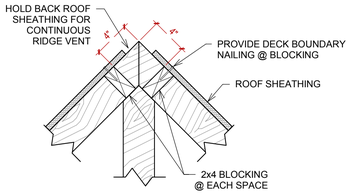
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
19445
LOGAN R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

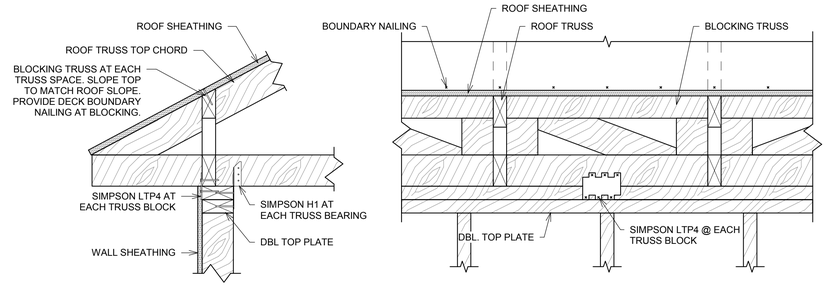
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
FOUNDATION & SLAB DETAILS

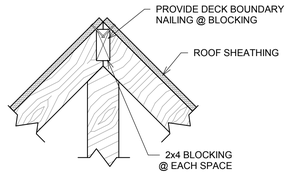
DISCIPLINE - SHEET NUMBER
S0.2



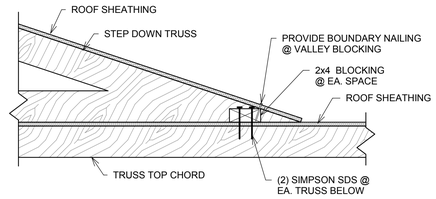
2 RIDGE BLOCKING
1 1/2" = 1'-0"



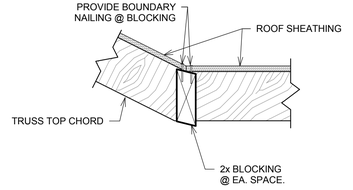
1 EAVE BLOCKING - TRUSS
1 1/2" = 1'-0"



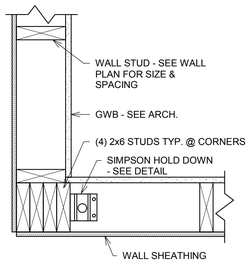
5 HIP BLOCKING
1 1/2" = 1'-0"



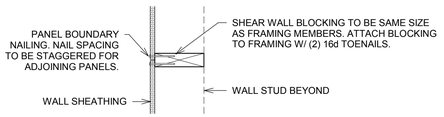
4 STEP DOWN TRUSS BLOCKING
1 1/2" = 1'-0"



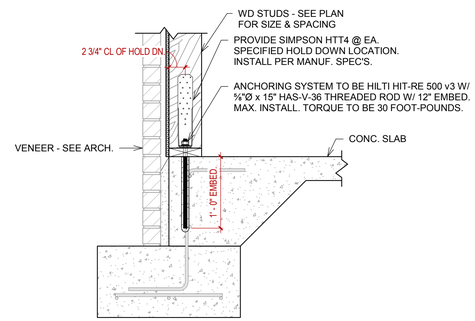
3 VALLEY BLOCKING
1 1/2" = 1'-0"



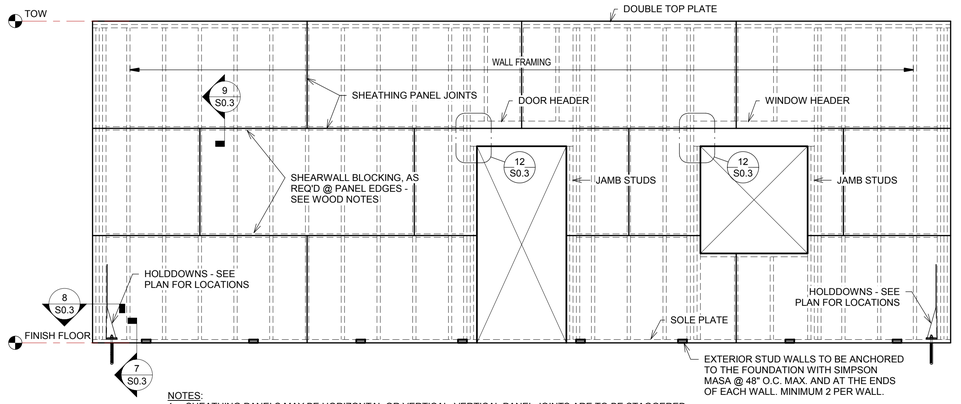
8 HOLD DOWN @ SHEAR WALL CORNER
1 1/2" = 1'-0"



9 WD. - WALL - BLOCKING DETAIL
1 1/2" = 1'-0"

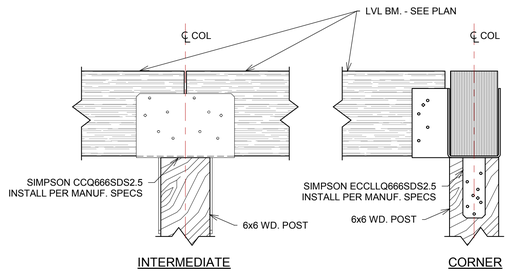


7 HOLD DOWN CONNECTOR DETAIL
1" = 1'-0"

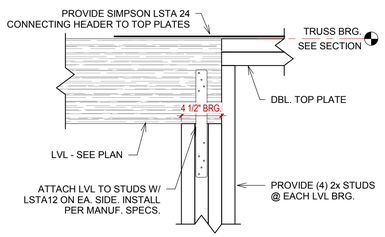


NOTES:
1. SHEATHING PANELS MAY BE HORIZONTAL OR VERTICAL. VERTICAL PANEL JOINTS ARE TO BE STAGGERED.
2. SHEARWALL BLOCKING TO BE SAME SIZE AS FRAMING MEMBERS. ATTACH BLOCKING TO STUDS W/ (2) 16d TOENAILS.
3. DOUBLE TOP PLATE SPLICES SHALL BE STAGGERED BY 4'-0" MINIMUM.
4. NAILED CONNECTIONS SHALL CONFORM TO TABLE 2304.9.1 OF THE IBC, U.N.O.
5. SEE WOOD NOTES ON S0.1 FOR GENERAL INFORMATION.
6. COORDINATE WITH ARCH. FOR LOCATION AND DIMENSIONS OF ALL WALL OPENINGS.

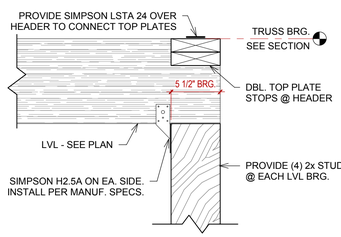
6 TYP. WD STUD WALL FRAMING CONDITIONS
3/8" = 1'-0"



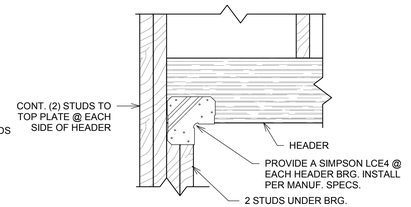
15 WD. BM. CONX. @ WD. POST
1 1/2" = 1'-0"



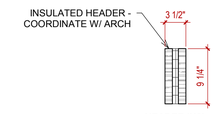
14 LVL BRG PARALLEL TO WALL
1 1/2" = 1'-0"



13 LLV BRG PERPINDICULAR TO WALL
1 1/2" = 1'-0"

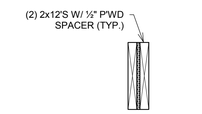


12 TYP. HEADER BRG.
1 1/2" = 1'-0"



NOTE: PROVIDE 2 STUDS UNDER HEADER BRG.

11 EXTERIOR HEADERS
1" = 1'-0"



NOTE: PROVIDE 2 STUDS UNDER HEADER BRG.

10 INTERIOR HEADERS
1" = 1'-0"

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(479) 474-4412
CERTIFICATE OF AUTHORIZATION
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No. 972
ARKANSAS ENGINEER

THEIL ROAD PROPERTIES, LP

RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

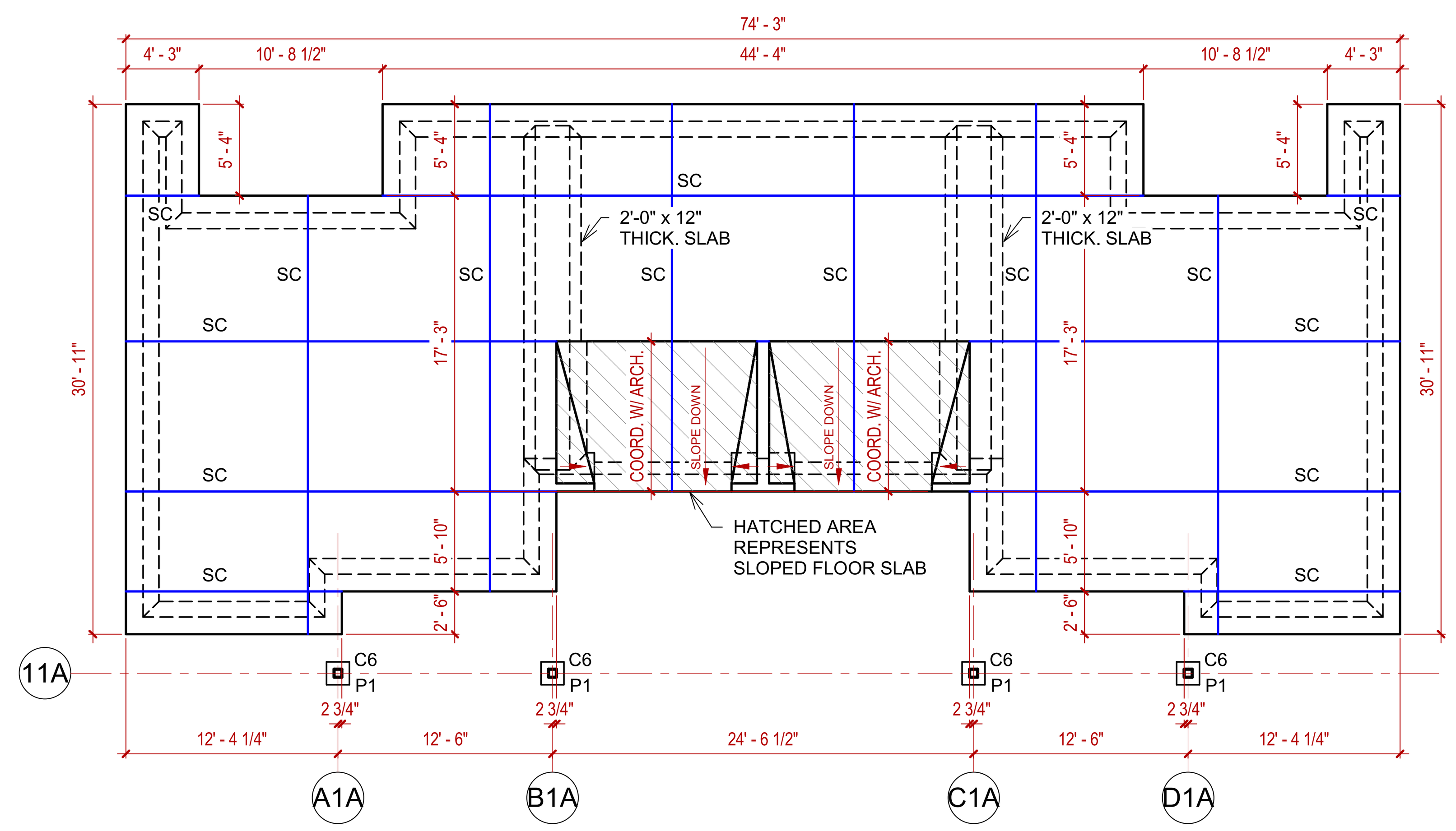
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 18440
JASON R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
FRAMING DETAILS

DISCIPLINE - SHEET NUMBER
S0.3

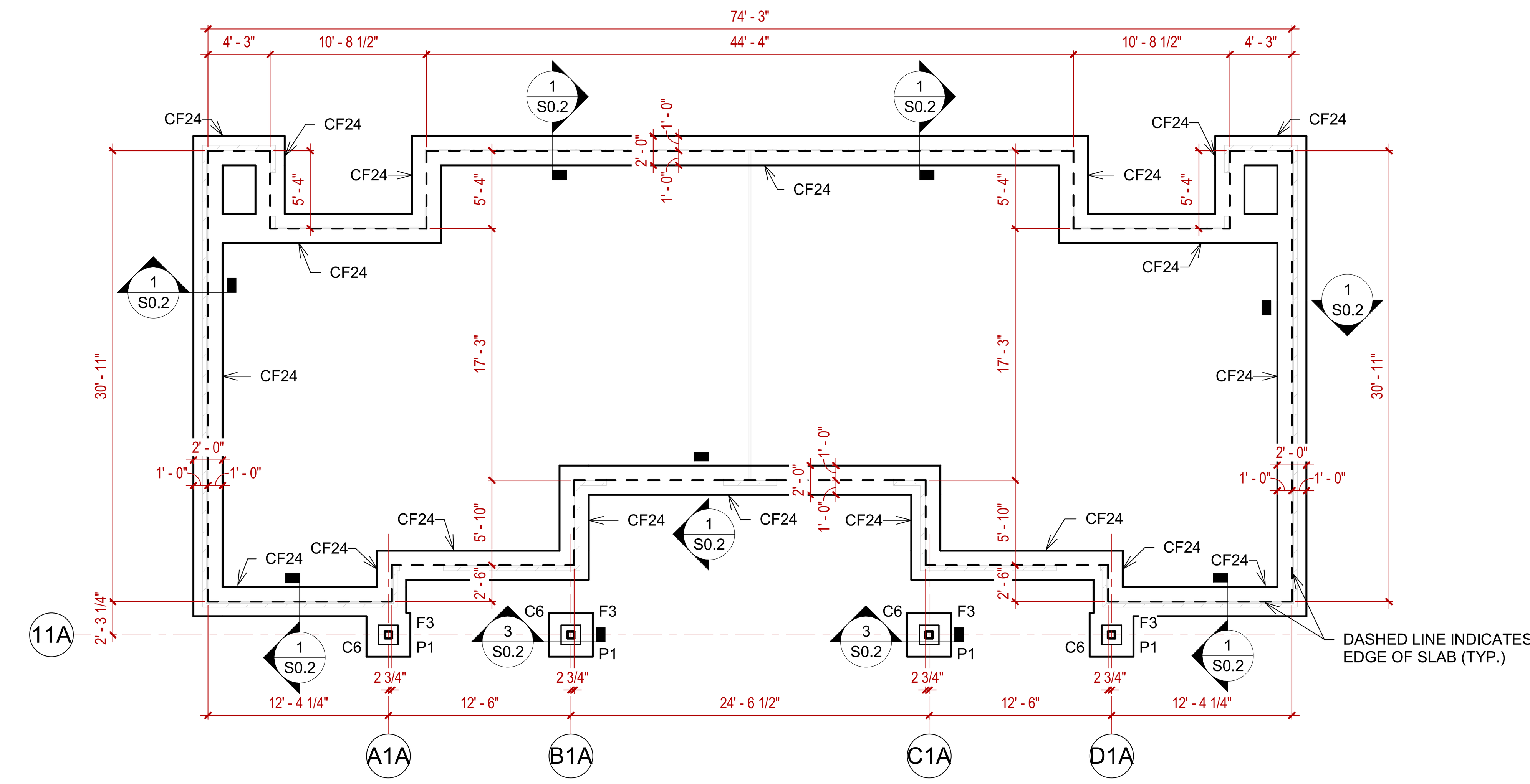


PLAN NOTES:
1. FINISH FLOOR ELEVATION (FFE) = 100.00' (ASSUMED), U.N.O.
2. SLAB TO BE 4" CONCRETE WITH 6x6-W1.4xW1.4 W.W.F.
3. SLAB TO BE UNDERLAIN WITH 15 MIL VAPOR BARRIER ON 4" DRAINAGE FILL.
4. ALL DIMENSIONS ARE TO EDGE OF SLAB OR TO GRIDLINES, U.N.O.
5. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

COLUMN SCHEDULE

COL MARK	SIZE
C6	6x6 WD POST

2 BLDG. 1A SLAB PLAN
1/8" = 1'-0"



PLAN NOTES:
1. FINISH FLOOR ELEVATION (FFE) = 100.00' (ASSUMED), U.N.O.
2. TOP OF FOOTING (TF) ELEVATION = 98.75', U.N.O.
3. TOP OF PEDESTAL (TP) ELEVATION = 100.00', U.N.O.
4. ALL WOOD POSTS ARE TO BEAR @ TOP OF PEDESTAL ELEVATION, U.N.O.
5. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
6. COORDINATE NORTH WITH SITE.

SPREAD FOOTING SCHEDULE

FTG MARK	LENGTH	WIDTH	THICKNESS	REINFORCEMENT
F3	3' - 0"	3' - 0"	1' - 0"	(4) #5'S EACH WAY

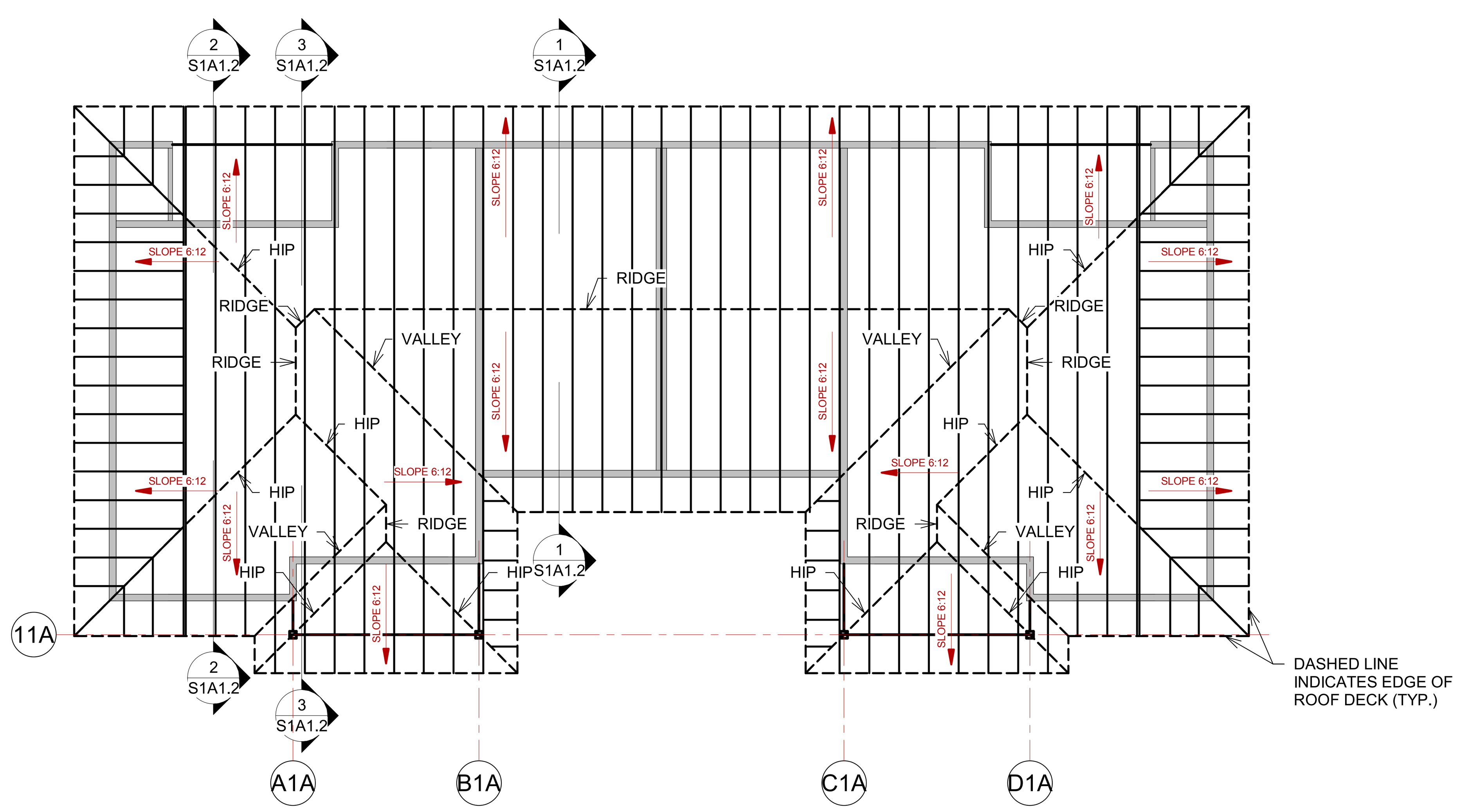
COLUMN SCHEDULE

COL MARK	SIZE
C6	6x6 WD POST

CONTINUOUS FOOTING SCHEDULE

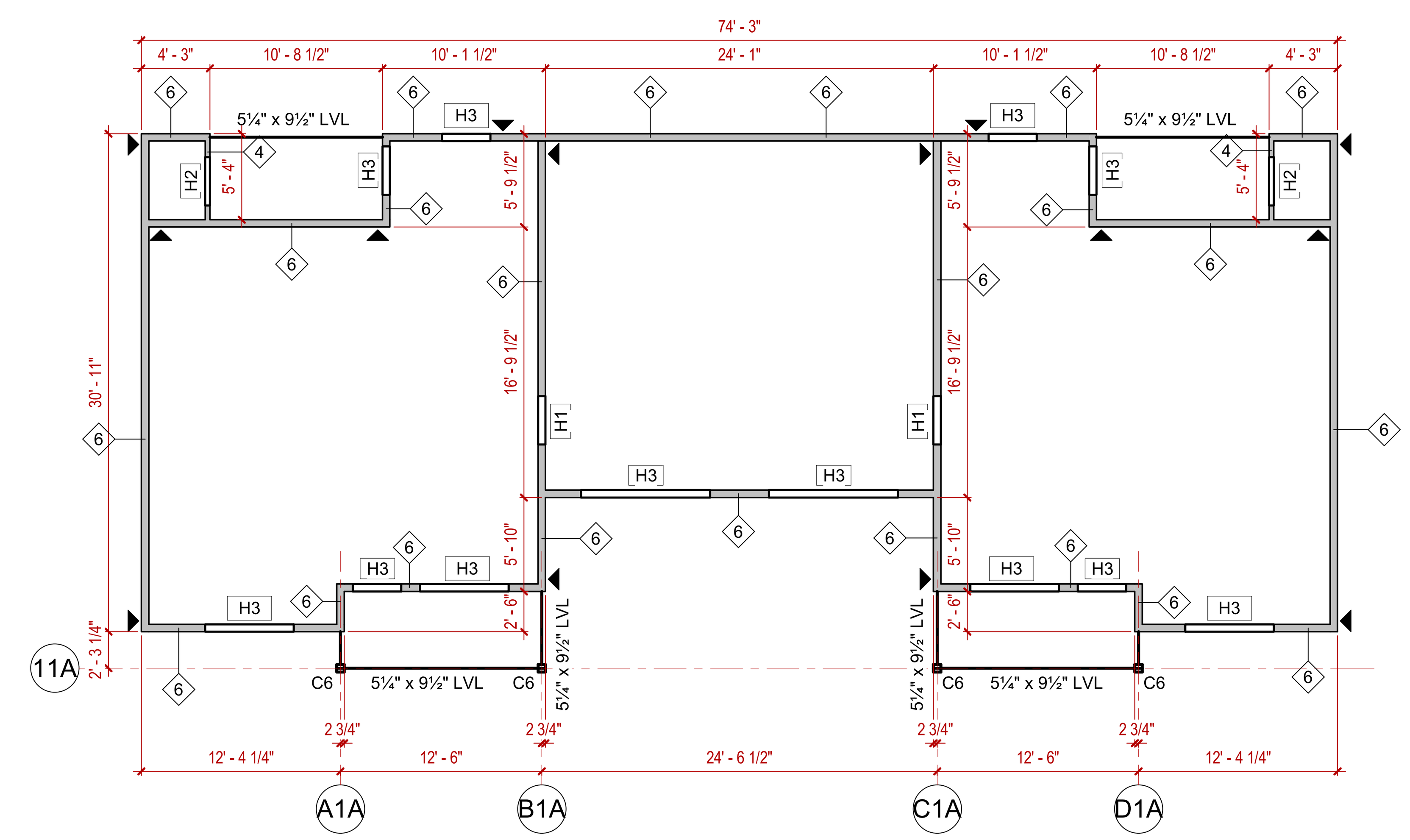
FTG MARK	WIDTH	THICKNESS	REINFORCEMENT
CF24	2' - 0"	1' - 0"	(3) #4'S CONT. & #4 TIES @ 12" O.C.
CF36	3' - 0"	1' - 0"	(4) #4'S CONT. & #4 TIES @ 12" O.C.

1 BLDG. 1A FOUNDATION PLAN
1/8" = 1'-0"



PLAN NOTES:
1. ENGINEERED WOOD TRUSSES TO BE SPACED @ 24" O.C. MAX.
2. PROVIDE SIMPSON H1 TIE @ EACH ENGINEERED WOOD TRUSS BEARING.
3. PROVIDE ROOF DECK PER WOOD NOTES.
4. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ALL EAVE DETAILS.

4 BLDG. 1A ROOF FRAMING PLAN
1/8" = 1'-0"



4 INDICATES 2x4 STUDS @ 16" O.C.
6 INDICATES 2x6 STUDS @ 16" O.C.
8 INDICATES 8" CMU REINFORCED W/ #5'S VERT. @ 16" O.C. GROUT FILL ALL CELLS.
▲ INDICATES HOLDOWN LOCATION (SEE DETAIL)

PLAN NOTES:
1. SHADED WALLS SHOWN ON THIS PLAN ARE LOAD BEARING SHEAR WALLS.
2. PROVIDE WALL SHEATHING & ATTACHMENT PER WOOD NOTES.
3. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
4. COORDINATE ALL DIMENSIONS AND LOCATIONS OF DOOR & WINDOW OPENINGS WITH ARCHITECTURAL DRAWINGS.

COLUMN SCHEDULE

COL MARK	SIZE
C6	6x6 WD POST

3 BLDG. 1A WALL PLAN
1/8" = 1'-0"

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ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
JASON R MYERS
01/29/2021

THEIL ROAD PROPERTIES, LP
RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

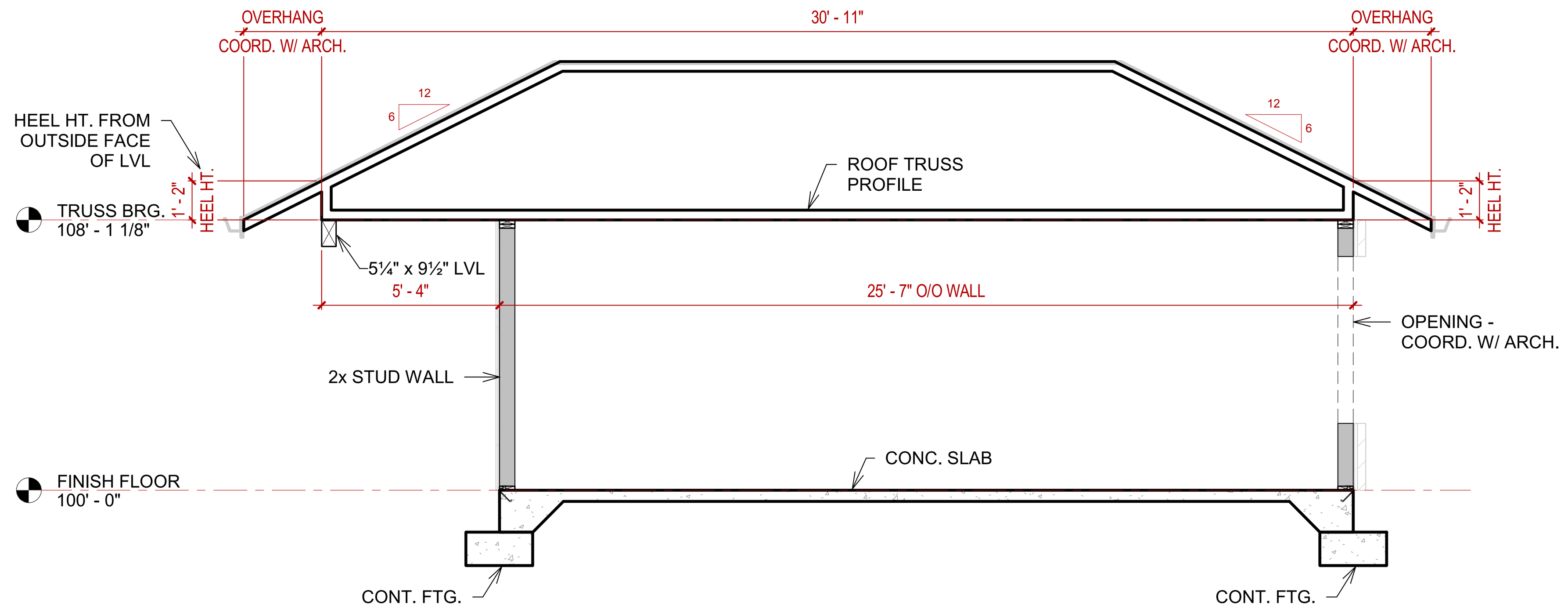
REVISIONS

MARK	DATE	DESCRIPTION

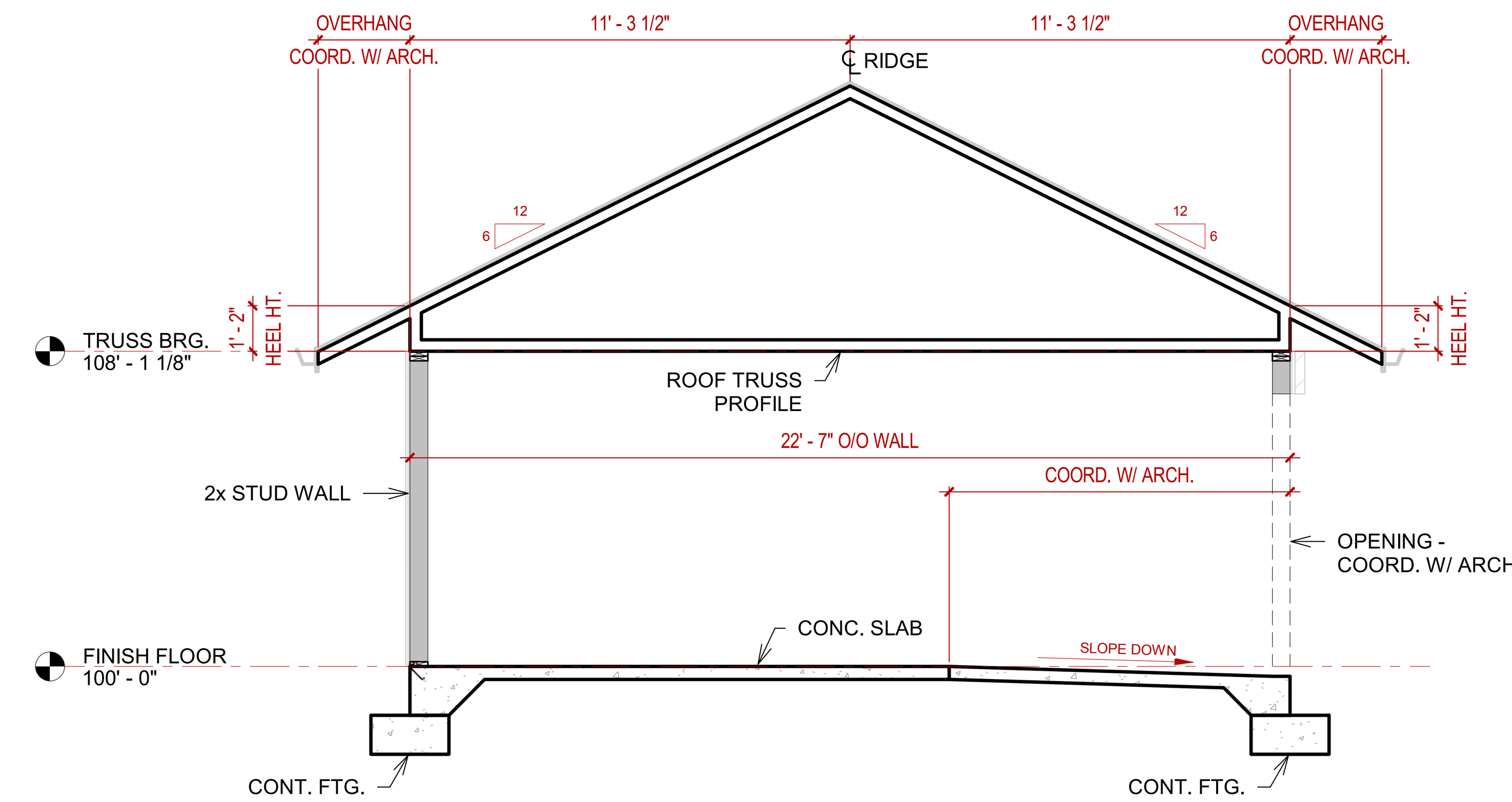
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BLDG. '1A' BUILDING PLANS

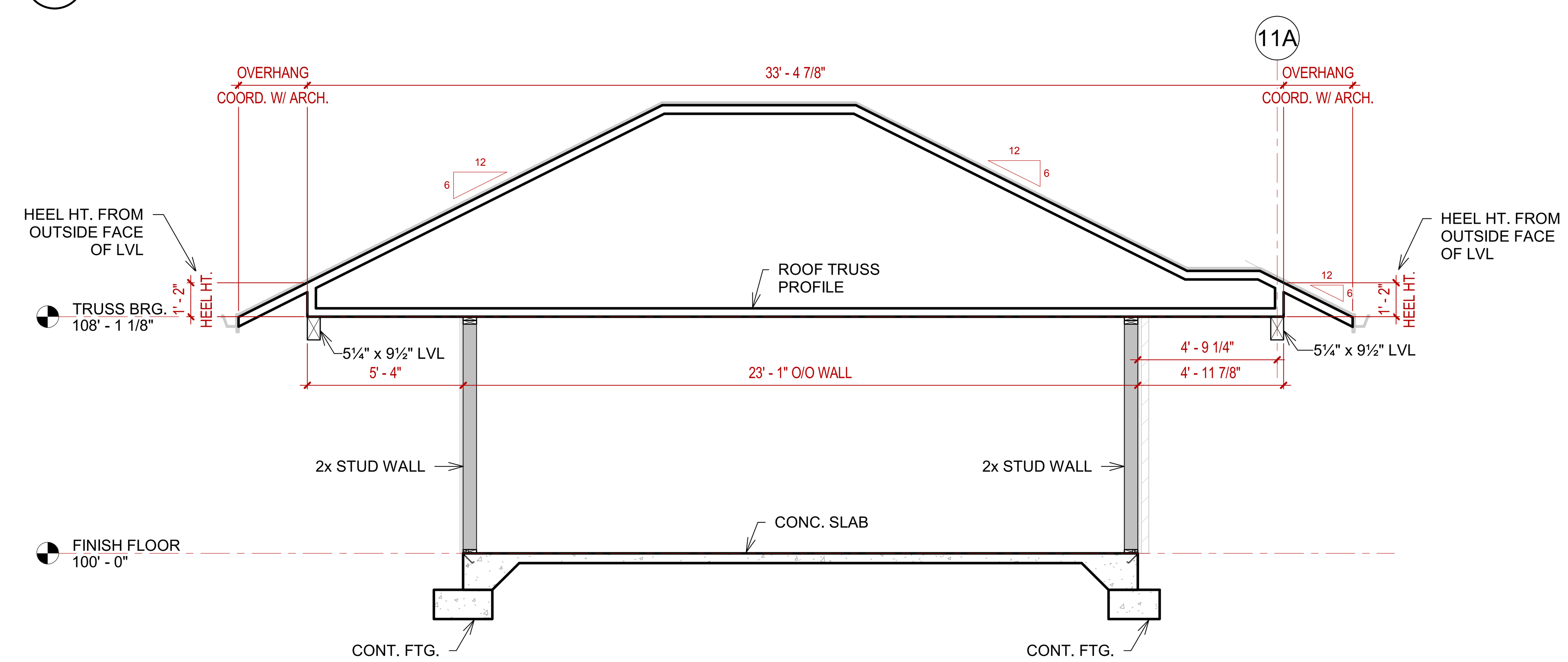
DISCIPLINE - SHEET NUMBER
S1A1.1



2 BLDG. 1A BUILDING SECTION
1/4" = 1'-0"



1 BLDG. 1A BUILDING SECTION
1/4" = 1'-0"



3 BLDG. 1A BUILDING SECTION
1/4" = 1'-0"

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2002 RECTOR ROAD
PARAGOULD, ARKANSAS

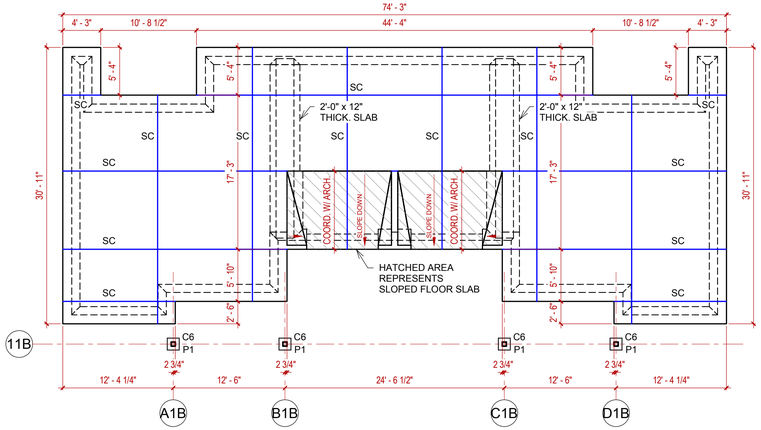
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 16445
JASON R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BLDG. '1A' BUILDING SECTIONS

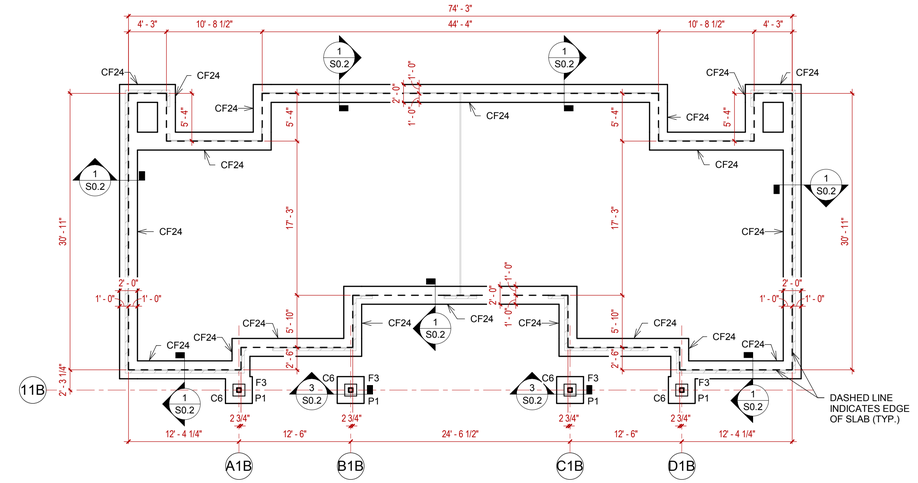
DISCIPLINE - SHEET NUMBER
S1A1.2



PLAN NOTES:
1. FINISH FLOOR ELEVATION (FFE) = 100.00' (ASSUMED), U.N.O.
2. SLAB TO BE 4" CONCRETE WITH 6x6-W1.4xW1.4 W.W.F.
3. SLAB TO BE UNDERLAIN WITH 15 MIL VAPOR BARRIER ON 4" DRAINAGE FILL.
4. ALL DIMENSIONS ARE TO EDGE OF SLAB OR TO GRIDLINES, U.N.O.
5. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

COLUMN SCHEDULE	
COL MARK	SIZE
C6	6x6 WD POST

2 BLDG. 1B SLAB PLAN
1/8" = 1'-0"



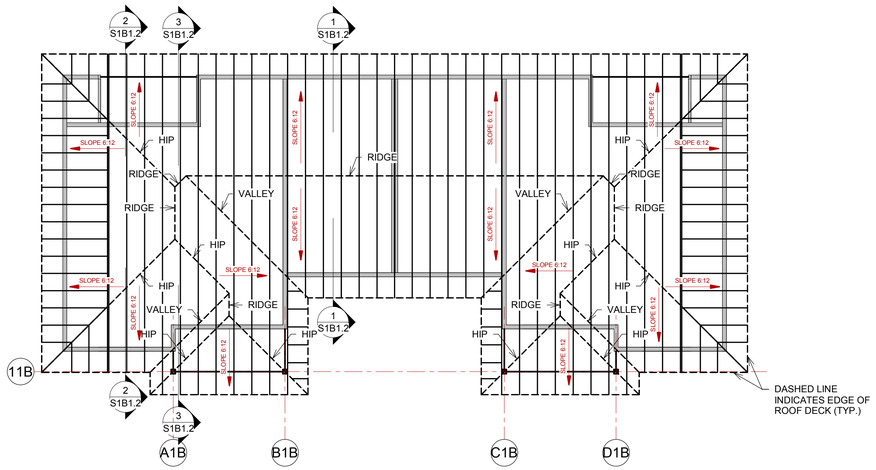
PLAN NOTES:
1. FINISH FLOOR ELEVATION (FFE) = 100.00' (ASSUMED), U.N.O.
2. TOP OF FOOTING (TF) ELEVATION = 98.75', U.N.O.
3. TOP OF PEDESTAL (TP) ELEVATION = 100.00', U.N.O.
4. ALL WOOD POSTS ARE TO BEAR @ TOP OF PEDESTAL ELEVATION, U.N.O.
5. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
6. COORDINATE NORTH WITH SITE.

SPREAD FOOTING SCHEDULE				
FTG MARK	LENGTH	WIDTH	THICKNESS	REINFORCEMENT
F3	3' - 0"	3' - 0"	1' - 0"	(4) #5'S EACH WAY

CONTINUOUS FOOTING SCHEDULE			
FTG MARK	WIDTH	THICKNESS	REINFORCEMENT
CF24	2' - 0"	1' - 0"	(4) #4'S CONT. & #4 TIES @ 12" O.C.
CF36	3' - 0"	1' - 0"	(4) #4'S CONT. & #4 TIES @ 12" O.C.

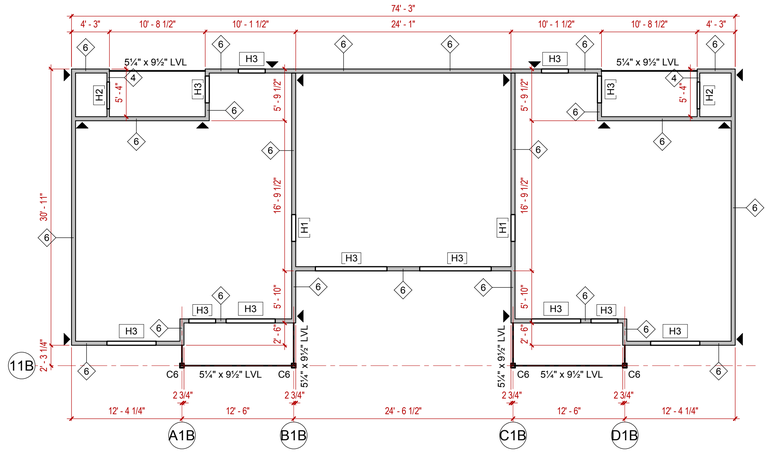
COLUMN SCHEDULE	
COL MARK	SIZE
C6	6x6 WD POST

1 BLDG. 1B FOUNDATION PLAN
1/8" = 1'-0"



PLAN NOTES:
1. ENGINEERED WOOD TRUSSES TO BE SPACED @ 24" O.C. MAX.
2. PROVIDE SIMPSON H1 TIE @ EACH ENGINEERED WOOD TRUSS BEARING.
3. PROVIDE ROOF DECK PER WOOD NOTES.
4. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR ALL EAVE DETAILS.

4 BLDG. 1B ROOF FRAMING PLAN
1/8" = 1'-0"



PLAN NOTES:
1. SHADED WALLS SHOWN ON THIS PLAN ARE LOAD BEARING SHEAR WALLS.
2. PROVIDE WALL SHEATHING & ATTACHMENT PER WOOD NOTES.
3. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
4. COORDINATE ALL DIMENSIONS AND LOCATIONS OF DOOR & WINDOW OPENINGS WITH ARCHITECTURAL DRAWINGS.

COLUMN SCHEDULE	
COL MARK	SIZE
C6	6x6 WD POST

4 INDICATES 2x4 STUDS @ 16" O.C.
6 INDICATES 2x6 STUDS @ 16" O.C.
8 INDICATES 8" CMU REINFORCED W/ #5'S VERT. @ 16" O.C. GROUT FILL ALL CELLS.
INDICATES HOLDOWN LOCATION (SEE DETAIL)

3 BLDG. 1B WALL PLAN
1/8" = 1'-0"

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No. 972
ARKANSAS ENGINEER

THEIL ROAD PROPERTIES, LP

RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

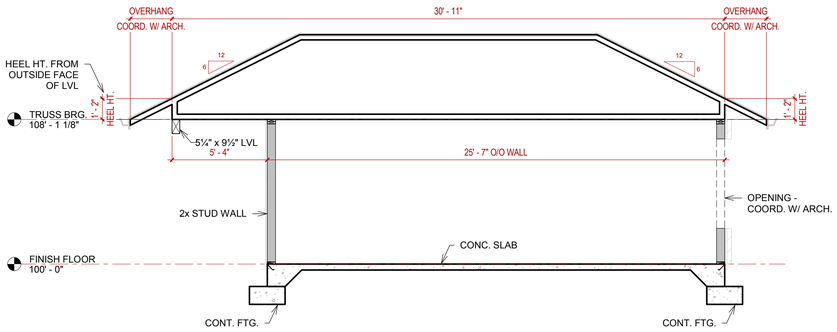
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19445
LOGAN R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

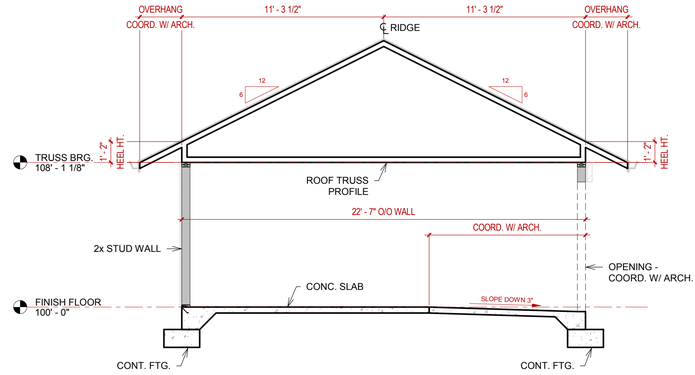
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BLDG. '1B' BUILDING PLANS

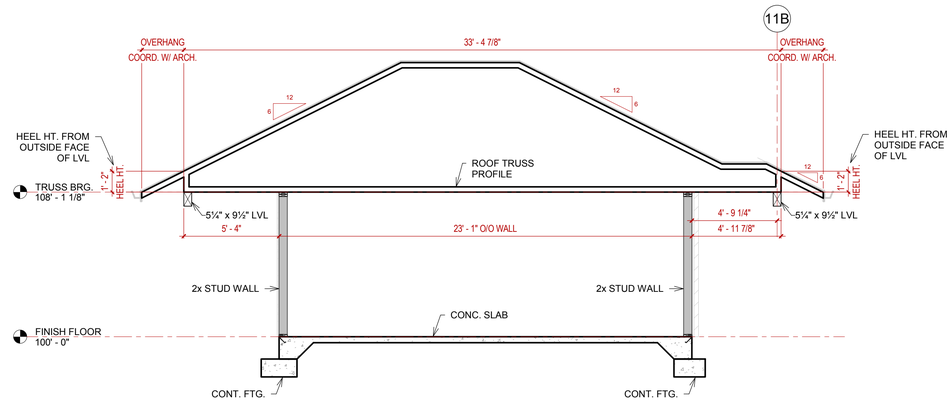
DISCIPLINE - SHEET NUMBER
S1B1.1



2 BUILDING 1B BUILDING SECTION
1/4" = 1'-0"



1 BUILDING 1B BUILDING SECTION
1/4" = 1'-0"



3 BUILDING 1B BUILDING SECTION
1/4" = 1'-0"

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2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
10445
LEIGH R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

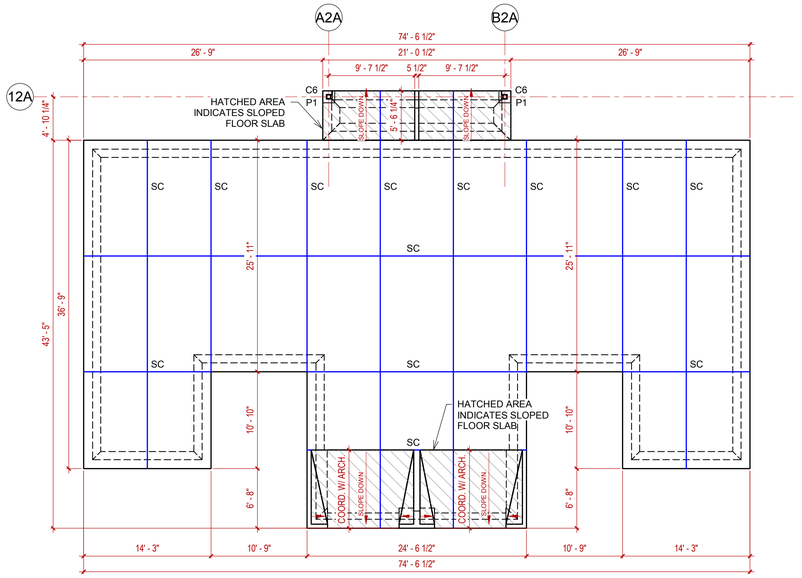
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE

BLDG. '1B' BUILDING SECTIONS

DISCIPLINE - SHEET NUMBER

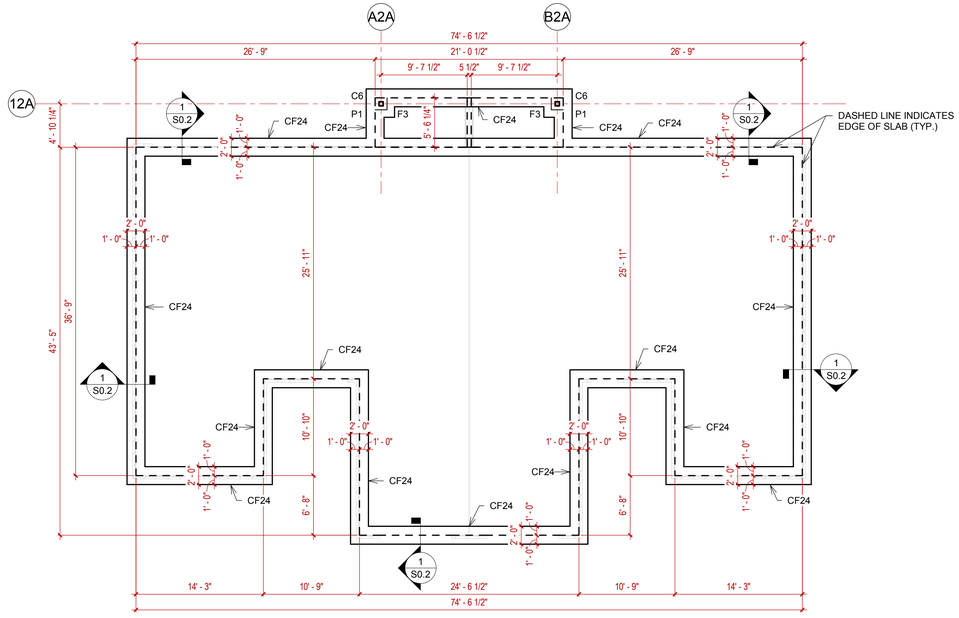
S1B1.2



PLAN NOTES:
1. FINISH FLOOR ELEVATION (FFE) = 100.00' (ASSUMED), U.N.O.
2. SLAB TO BE 4" CONCRETE WITH 6x6-W1.4xW1.4 W.W.F.
3. SLAB TO BE UNDERLAIN WITH 15 MIL VAPOR BARRIER ON 4" DRAINAGE FILL.
4. ALL DIMENSIONS ARE TO EDGE OF SLAB OR TO GRIDLINES, U.N.O.
5. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.

COLUMN SCHEDULE	
COL MARK	SIZE
C6	6x6 WD POST

2 BLDG. 2A SLAB PLAN
1/8" = 1'-0"



PLAN NOTES:
1. FINISH FLOOR ELEVATION (FFE) = 100.00' (ASSUMED), U.N.O.
2. TOP OF FOOTING (TF) ELEVATION = 98.75', U.N.O.
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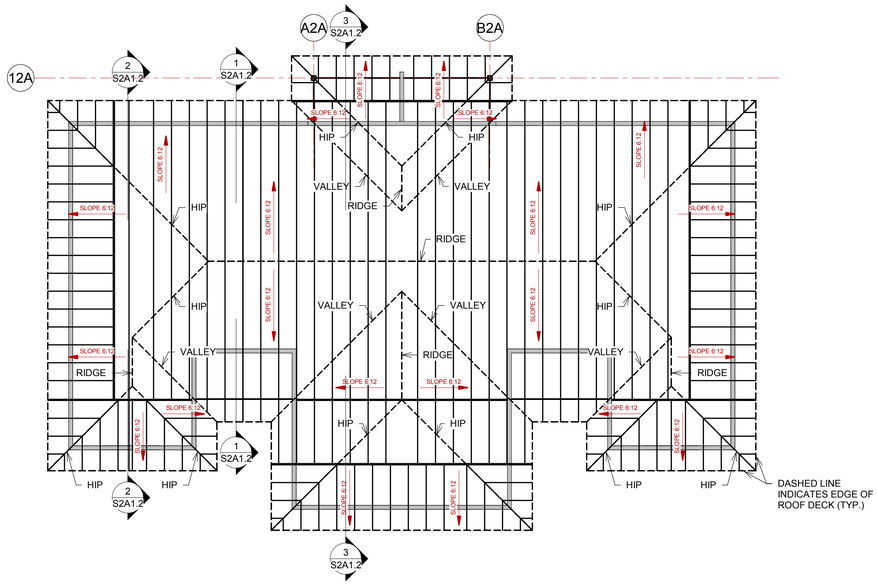
4. ALL WOOD POSTS ARE TO BEAR @ TOP OF PEDESTAL ELEVATION, U.N.O.
5. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
6. COORDINATE NORTH WITH SITE.

SPREAD FOOTING SCHEDULE				
FTG MARK	LENGTH	WIDTH	THICKNESS	REINFORCEMENT
F3	3' - 0"	3' - 0"	1' - 0"	(4) #5'S EACH WAY

COLUMN SCHEDULE	
COL MARK	SIZE
C6	6x6 WD POST

CONTINUOUS FOOTING SCHEDULE			
FTG MARK	WIDTH	THICKNESS	REINFORCEMENT
CF24	2' - 0"	1' - 0"	(3) #4'S CONT. & #4 TIES @ 12" O.C.
CF36	3' - 0"	1' - 0"	(4) #4'S CONT. & #4 TIES @ 12" O.C.

1 BLDG. 2A FOUNDATION PLAN
1/8" = 1'-0"



PLAN NOTES:
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2. PROVIDE SIMPSON H1 TIE @ EACH ENGINEERED WOOD TRUSS BEARING.
3. PROVIDE ROOF DECK PER WOOD NOTES.
4. COORDINATE ALL DIMENSIONS WITH ARCHITECTURAL DRAWINGS.
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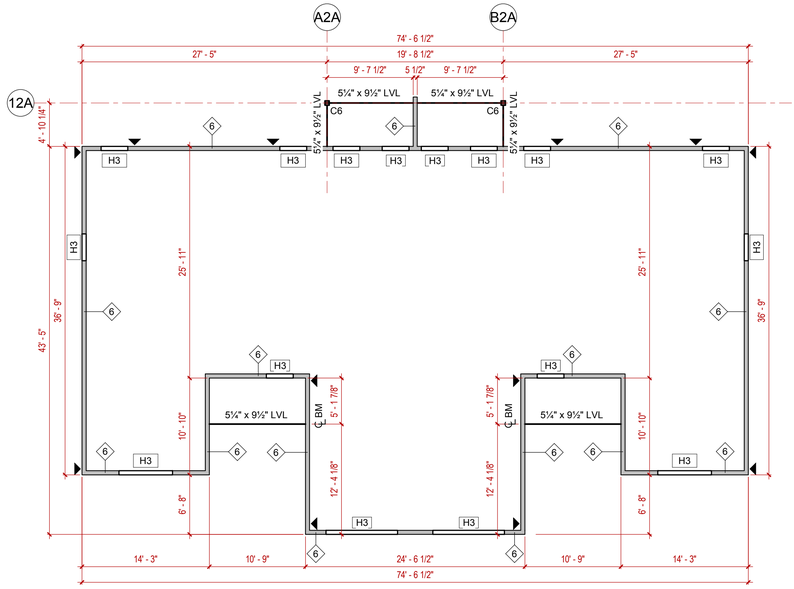
4 BLDG. 2A ROOF FRAMING PLAN
1/8" = 1'-0"



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▲ INDICATES HOLDOWN LOCATION (SEE DETAIL)

PLAN NOTES:
1. SHADED WALLS SHOWN ON THIS PLAN ARE LOAD BEARING SHEAR WALLS.
2. PROVIDE WALL SHEATHING & ATTACHMENT PER WOOD NOTES.
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COLUMN SCHEDULE	
COL MARK	SIZE
C6	6x6 WD POST

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1/8" = 1'-0"

STUDIO 6 ARCHITECTS EST. 1919
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No. 972
ARKANSAS ENGINEER

THEIL ROAD PROPERTIES, LP

RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

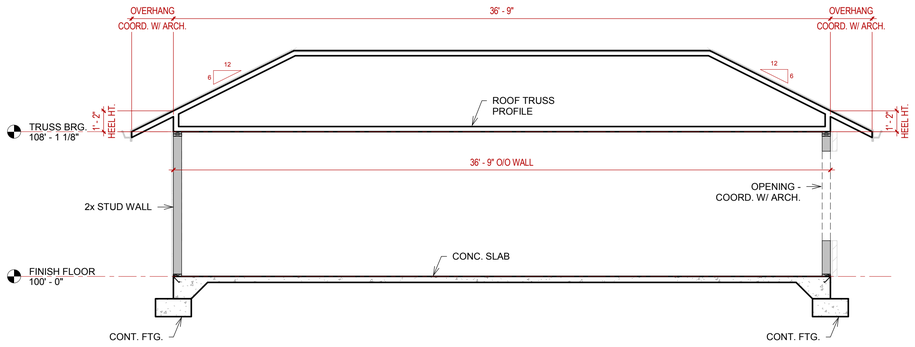
STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
JASON R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

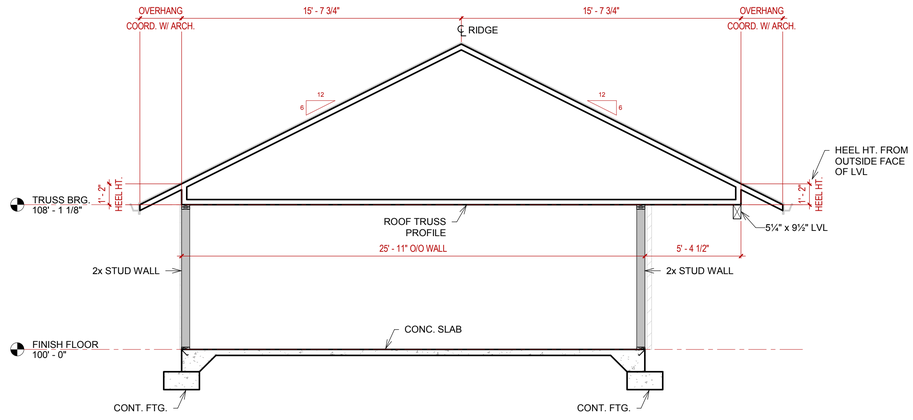
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BLDG. '2A' BUILDING PLANS

DISCIPLINE - SHEET NUMBER
S2A1.1



2 BLDG. 2A BUILDING SECTION
1/4" = 1'-0"



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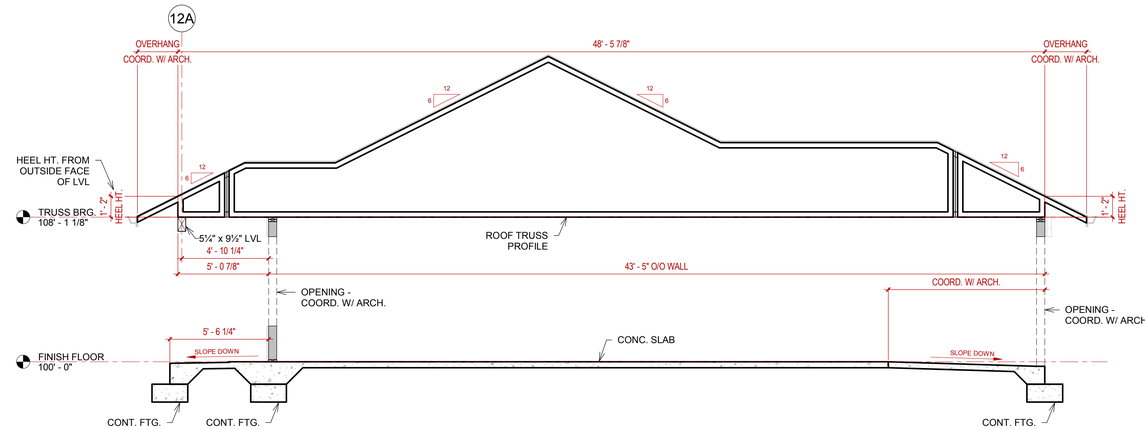

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19445
LOGAN R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

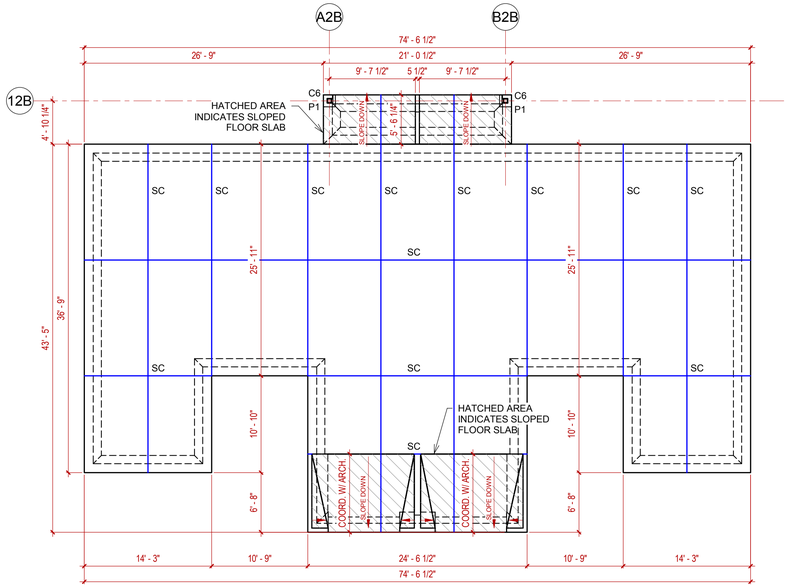
PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE

BLDG. '2A' BUILDING SECTIONS

DISCIPLINE - SHEET NUMBER

S2A1.2



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2. SLAB TO BE 4" CONCRETE WITH 6x6-W1.4xW1.4 W.W.F.
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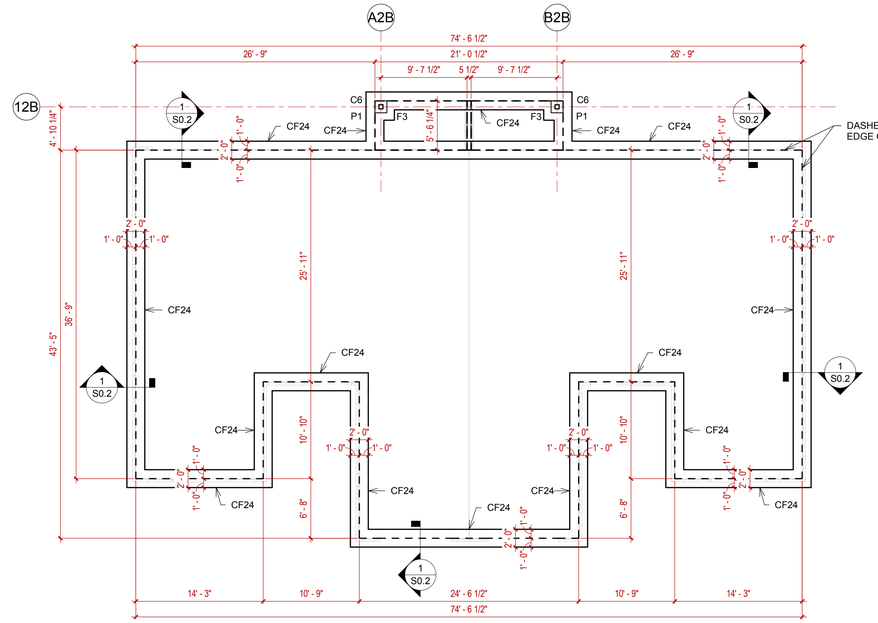

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SPREAD FOOTING SCHEDULE				
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CONTINUOUS FOOTING SCHEDULE			
FTG MARK	WIDTH	THICKNESS	REINFORCEMENT
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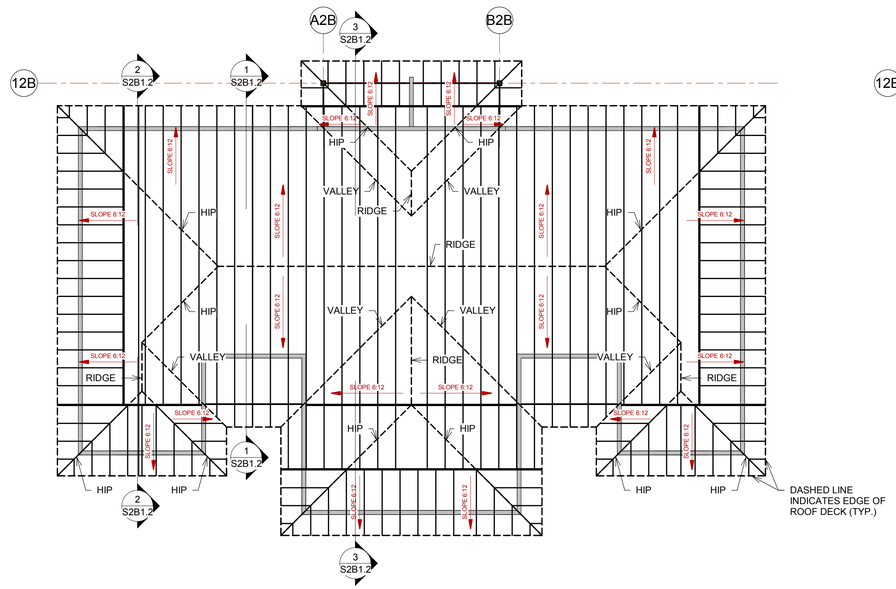

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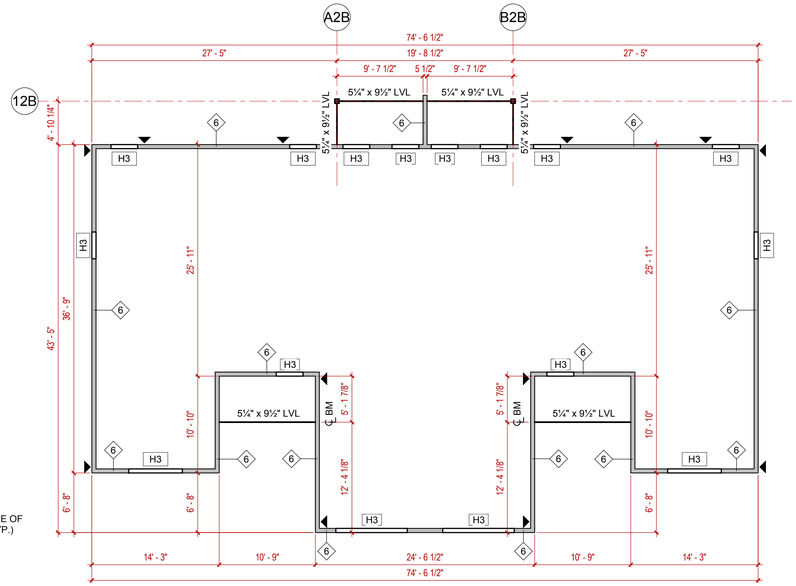

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER JASON R MYERS 01/29/2021

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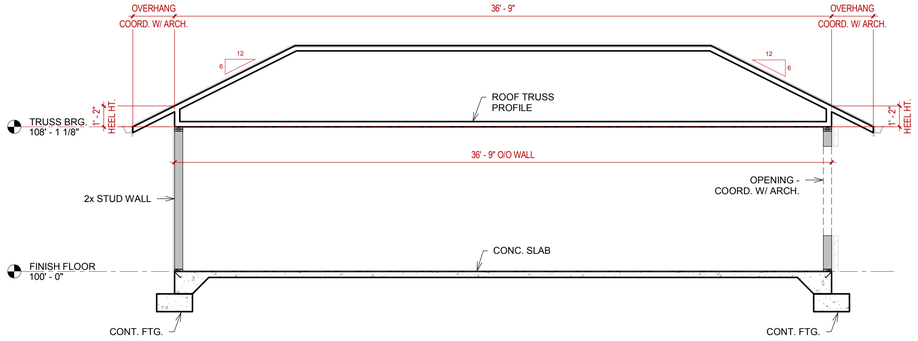
SHEET TITLE
BLDG. '2B' BUILDING PLANS

DISCIPLINE - SHEET NUMBER
S2B1.1



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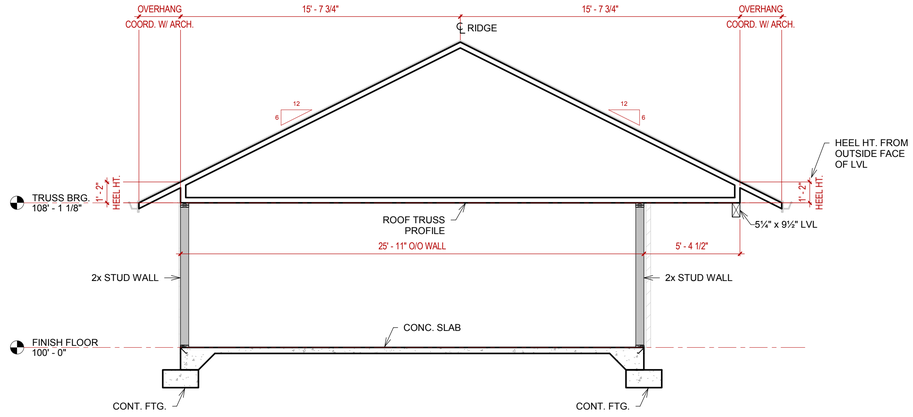

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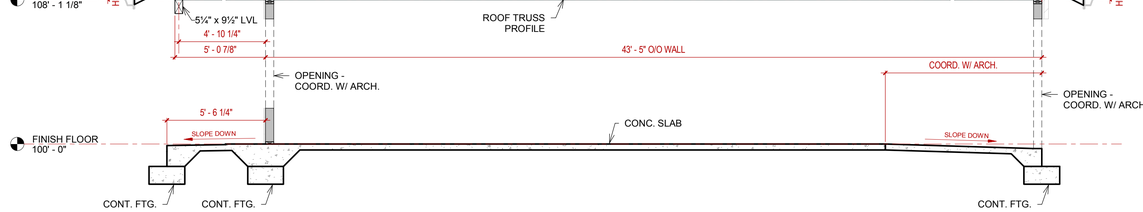

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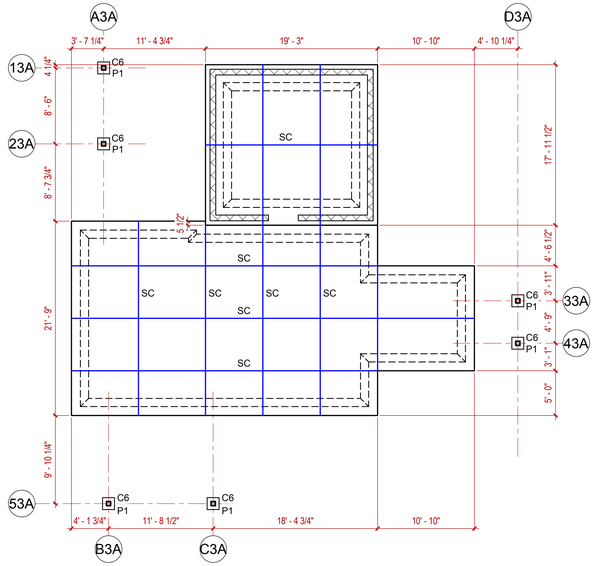

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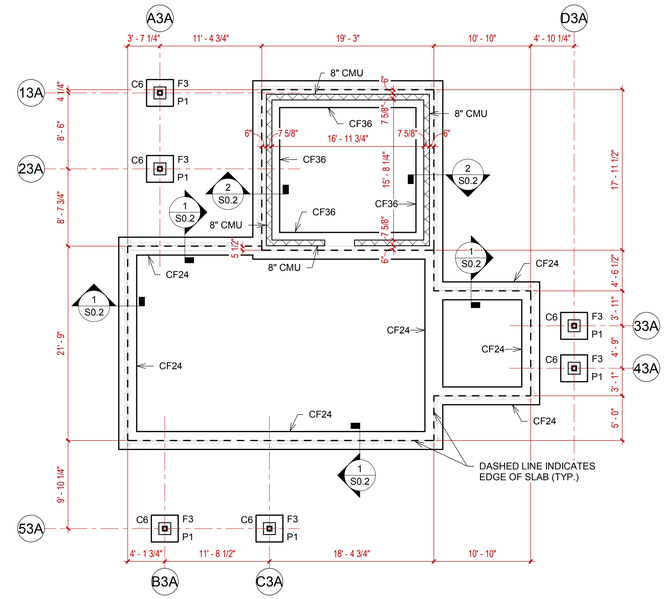

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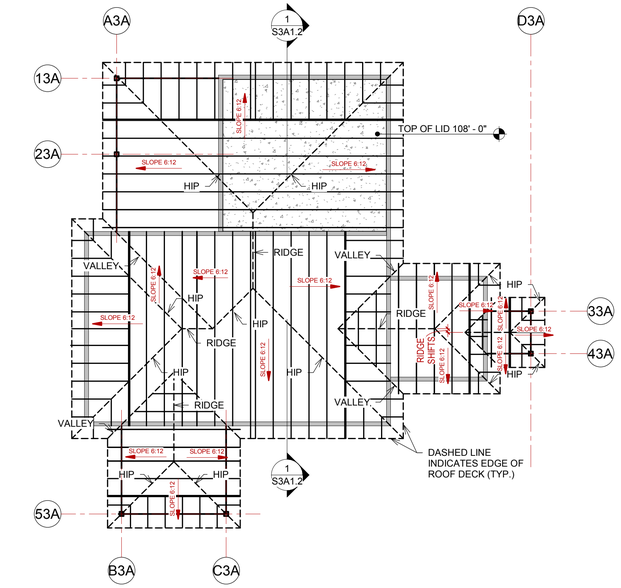

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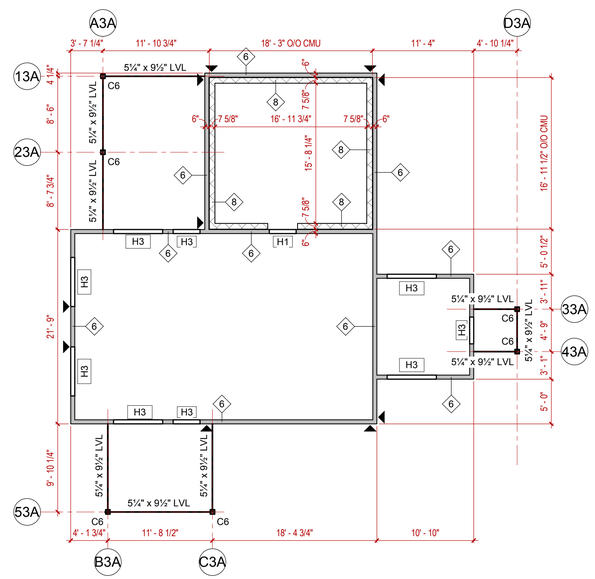

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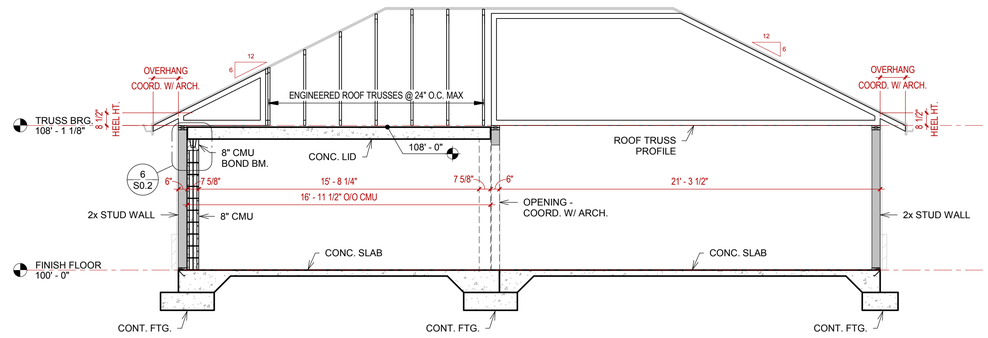
No. 18441
JASON R MYERS
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT NO: 20-003
DATE: 01/29/2021
ISSUED

SHEET TITLE
BLDG. '3A' BUILDING PLANS

DISCIPLINE - SHEET NUMBER
S3A1.1



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BLDG. '3A' BUILDING SECTIONS

DISCIPLINE - SHEET NUMBER

S3A1.2

GENERAL PLUMBING NOTES

1	THE ENTIRE PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL/ARKANSAS PLUMBING CODE REGULATIONS AND LOCAL PLUMBING INSPECTOR.
2	IT IS THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO CORRDINATE WITH THE SITE CONTRACTOR TO CONFIRM THAT THE INVERT AND LOCATION OF THE SANITARY SERVICE IS COMPATIBLE WITH THE SITE UTILITIES PRIOR TO BEGINNING WORK.
3	THE PIPING INDICATED ON THESE PLANS ARE DIAGRAMMATICAL. ALL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES PRIOR TO INSTALLATION. CONTRACTOR SHALL COORDINATE ROUTING OF ALL PIPING WITH EXISTING CONDITIONS AND SHALL PROVIDE ANY NECESSARY OFFSETS, REROUTING, TEES, ELBOWS, ETC. REQUIRED FOR A COMPLETE AND COORDINATED INSTALLATION.
4	THE CONTRACTOR SHALL OBTAIN AND PAY ALL FEES RELATED TO PERMITTING, INSPECTIONS, TAP-ON FEES, ETC.
5	THE CONTRACTOR SHALL COORDINATE ANY PLUMBING OR PIPING SYSTEM SHUTDOWN WITH THE OWNER 48 HOURS IN ADVANCE.
6	CONTRACTOR SHALL COORDINATE AND PROVIDE ALL NECESSARY PIPING & PLUMBING FITTINGS, PIPING, MISCELLANEOUS ITEMS REQUIRED FOR A COMPLETE INSTALLATION OF ALL PLUMBING RELATED ITEMS.
7	DOMESTIC WATER AND SEWER LOCATED OUTSIDE OF FOOTING SHALL MAINTAIN A MINIMUM OF 10' SEPARATION UNLESS WRITTEN PERMISSION IS OBTAINED FROM LOCAL AUTHORITIES AND/OR PROPER CONTAMINATION PROVISIONS PER LOCAL CODE HAVE BEEN MET.
8	ALL DOMESTIC WATER, NATURAL GAS, DEIONIZED WATER, CARBON DIOXIDE, COMPRESSED AIR, AND NITROGEN PIPING SHOWN IS ABOVE CEILING, EXPOSED OVERHEAD, AND WITHIN WALLS UNLESS OTHERWISE NOTED. WATER HAMMER ARRESTORS SHALL BE INSTALLED AT DISHWASHERS, WASHING MACHINES, SUPPLY BOXES, AND QUICK CLOSING VALVES NOT LISTED. INSTALL WHA-1 AS CLOSE TO QUICK CLOSING VALVE AS POSSIBLE PER MANUFACTURER'S RECOMMENDATIONS. ISOLATION VALVES SHALL BE INSTALLED ON ALL SUPPLY FIXTURE GROUPS AND HOT WATER BALANCING VALVES.
9	ALL SANITARY, GREASE, LAB, AND ACID WASTE PIPING SHOWN IS BELOW SLAB, BELOW FLOOR, OR WITHIN WALLS UNLESS OTHERWISE NOTED. ALL SANITARY VENT PIPING SHOWN IS ABOVE CEILING, EXPOSED OVERHEAD, OR WITHIN WALLS UNLESS OTHERWISE NOTED.
10	FROST PROOF HOSE BIBBS AND SUPPLY PIPING SHALL BE INSTALLED ON THE INSIDE OF THE INSULATION. SEAL SHEATHING PENETRATION TO PREVENT AIR FROM REACHING THE VALVE.
11	FLOOR DRAIN CONNECTION SIZE TO BE THE SAME SIZE AS THE DRAIN LINE IT CONNECTS UNLESS NOTED OTHERWISE. IF SIZE IS NOT INDICATED ON DRAWINGS REFER TO PLUMBING ROUGH-IN SCHEDULE FOR PROPER SIZE.
12	FLUSH CONTROLS FOR HANDICAPPED WATER CLOSETS ARE TO BE MOUNTED TO THE OPEN SIDE OF THE TOILET AREAS.
13	THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL UNDER SLAB PIPING WITH EXISTING STRUCTURAL FOUNDATIONS. UNDERGROUND UTILITY LOCATIONS SHALL BE VERIFIED PRIOR TO ANY WORK BEING PERFORMED. CONTRACTOR SHALL REPAIR OR REPLACE ALL PIPING NOT IN PROPER WORKING ORDER OR DAMAGED DURING INSTALLATION OF THE NEW UNDERGROUND PIPING.
14	ALL PIPING PENETRATIONS THROUGH NEW, EXISTING WALL, OR FLOOR SHALL BE SEALED TO EQUAL THE RATING OF THE NEW, EXISTING WALL OR FLOOR.
15	THE PLUMBING SYSTEM SHALL BE TESTED AS REQUIRED BY LOCAL CODE OR BY THE REQUIREMENTS OF THE LOCAL PLUMBING INSPECTOR.
16	THE ENTIRE DOMESTIC WATER SYSTEM (EXISTING/NEW) SHALL BE DISINFECTED IN ACCORDANCE TO THE LOCAL CODE & HEALTH DEPARTMENT REQUIREMENTS.
17	FINISHED FLOOR ELEVATION (F.F.E.) SHALL BE 0.00' FOR CALCULATION PURPOSES ONLY, UNLESS NOTED OTHERWISE.
18	THE BACKFLOW PREVENTION DEVICE SHALL BE INSTALLED PER LOCAL CODE & PER AUTHORITY HAVING JURISDICTION REQUIREMENTS. NON-LEAD TYPE ONLY.
21	ALL VENT THRU ROOF (VTR'S) PENETRATIONS INDICATED ON PLANS ARE PRELIMINARY. FINAL LOCATIONS SHALL BE COORDINATED WITH ALL TRADES. ALL VTR'S SHALL BE A MINIMUM OF 10'-0" FROM ALL FRESH AIR INTAKE OPENINGS.
22	ANY PVC PIPE PENETRATING A FIRE RATED ASSEMBLY SHALL BE EXTERNALLY SLEEVED WITH STEEL, FERROUS, OR COPPER MATERIALS, SECURELY FASTENED TO THE FIRE RATED ASSEMBLY. ANY SPACE BETWEEN THE SLEEVE AND THE FIRE RATED ASSEMBLY PENETRATED SHALL BE PROTECTED USING MATERIAL THAT CONFORMS TO ASTM E 814 OR UL 1479, SUCH AS FIRE STOP FS-1900 OR FLAME STOPPER 5000.
23	CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS FOR DISHWASHER, WASHING MACHINE, REFRIGERATOR, ETC.
24	PROVIDE SHUT-OFF VALVES FOR PROPER OPERATION AND SERVICING OF DOMESTIC WATER DISTRIBUTION SYSTEM. LOCATION SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: AT EACH FIXTURE GROUP, AT EACH BRANCH TAKE-OFF FROM MAINS AND AT THE BASE OF EACH RISER. COORDINATE WITH ARCHITECTURAL PLAN FOR ACCESS DOOR LOCATIONS.
25	TEMPERED WATER, NOT EXCEEDING A MAXIMUM OF 110° F, SHALL BE DELIVERED FROM PUBLIC HANDWASHING FACILITIES THROUGH AN APPROVED WATER TEMPERATURE LIMITING DEVICE THAT CONFORMS TO ASSE 1070.
26	VALVES SHALL BE LOCATED 6" ABOVE ACCESSIBLE CEILING WHEN AT ALL POSSIBLE AND SHALL BE CLEAR OF ANY OBSTRUCTIONS FROM OTHER TRADES. MAINTENANCE SHALL BE ABLE TO ACCESS VALVES WITH STANDARD LADDER. SHOULD LOCATION NOT BE APPLICABLE CONTRACTOR SHALL PROVIDE A CONTROL CHAIN AND/OR ARM.
28	REGULATORS INSTALLED ON THE INTERIOR OF THE BUILDING SHALL BE VENTED TO THE EXTERIOR PER LOCAL AND STATE CODES.
29	IT IS THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE SITE CONTRACTOR TO CONFIRM THAT THE INVERTS AND LOCATIONS OF THE BUILDING UTILITIES ARE COMPATABLE WITH THE SITE UTILITIES PRIOR TO BEGINNING WORK.
31	PROVIDE BALANCING VALVES FOR PROPER OPERATION AND PRESSURE OF DOMESTIC WATER DISTRIBUTION SYSTEM. LOCATION SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING: AT EACH FIXTURE GROUP, AT EACH BRANCH TAKE-OFF FROM MAINS AND AT THE EACH RISER. INSTALL PER MANUFACTURE'S REQUIREMENTS.
33	PROVIDE DRAIN PANS FOR ALL WATER LINES CROSSING OVER "IT" CLOSET/ROOM. ROUTE DRAIN PAN(S) TO NEAREST APPROVED WASTE RECEPTICAL.
34	PROVIDE DRAIN PANS FOR ALL OVER HEAD DRAIN PIPING CROSSING OVER KITCHEN. ROUTE DRAIN PAN(S) TO NEAREST APPROVED WASTE RECEPTICAL.
35	ANY LINE VOLTAGE WIRING THAT IS RUN BY THE PLUMBING CONTRACTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL PLANS, NOTES, AND SPECIFICATIONS.
36	INSULATION JACKET SHALL BE PROVIDED WHEN PIPING INSULATION IS EXPOSED.
37	THE PLUMBING CONTRACTOR SHALL INSPECT EXISTING CONDITIONS PRIOR TO BEGINNING WORK. FIELD VERIFY SIZE AND LOCATION OF ALL EXISTING SERVICES TO BE TIED INTO.
38	CAMERA SURVEY ALL EXISTING SANITARY SEWER LOCATIONS AND INVERTS BELOW SLAB OR GRADE. NOTIFY GENERAL CONTRACTOR OF ANY POTENTIAL CONFLICTS WITH WORK PRIOR TO BEGINNING CONSTRUCTION.

PIPING MATERIAL SCHEDULE

DESCRIPTION	MATERIAL
ABOVE GROUND SANITARY SEWER AND VENT	PVC SCHEDULE 40 PIPE AND FITTINGS EXCEPT IN PLENUM RETURN AREAS. IN PLENUM RETURN AREAS WRAP PVC WITH 1" FIRE WRAP.
UNDERGROUND SANITARY SEWER AND VENT PIPING INSIDE BUILDING AND OUTSIDE BUILDING	PVC SCHEDULE 40 PIPE AND FITTINGS.
WATER DISTRIBUTION PIPE	WATER DISTRIBUTION PIPE SHALL CONFORM TO NSF 61 AND SHALL BE COPPER AND CONFORM TO THE STANDARDS LISTED IN TABLE 605.4 OF THE I.P.C. REFER TO COPPER TO PEX SIZING CHART.
WATER SERVICE PIPE	WATER SERVICE PIPE SHALL CONFORM TO NSF 61 AND SHALL BE COPPER AND CONFORM TO THE STANDARDS LISTED IN TABLE 605.3 OF THE I.P.C

PLUMBING PIPING INSULATION SCHEDULE

		INSULATION THICKNESS NOMINAL PIPE SIZE				
DESCRIPTION	INSULATION TYPE	<1	1 TO <1-1/2	1-1/2 TO <4	4 TO <8	≥8
DOMESTIC COLD WATER PIPING BELOW GRADE	PVC OR HDPE JACKET ONLY, NO INSULATION	1	1	1.5	1.5	1.5
CONDENSATE PIPING ABOVE GRADE	ELASTOMERIC, ADD ASTM E84 COMPLIANT JACKET IN AIR PLENUM SPACES	0.5	1	1	1	1.5
PVC WASTE VENT AND WASTE DRAIN IN AIR PLENUM SPACE	COMPRESSED FIBERGLASS OR ELASTOMERIC WITH ASTM E84 COMPLIANT JACKET	0.5	0.5	0.5	0.5	0.5
WATER COOLER TRAPS, ALL EXPOSED LAVATORY AND SINK TRAPS, TAILPIECES, HOT AND COLD WATER SUPPLY LINES/ANGLE VALVES TO THESE DEVICES	EQUIVALENT TO TRUEBRO 102 E-Z PIPE COVER	0.125	0.125	0.125	0.125	0.125
DOMESTIC COLD WATER, HOT WATER, AND HOT WATER RETURN PIPING ABOVE GRADE	ELASTOMERIC, ADD ASTM E84 COMPLIANT JACKET IN AIR PLENUM SPACES	1	1	1.5	1.5	1.5

ROUGH-IN AND MOUNTING HEIGHT SCHEDULE

NOTES:
1. ALL VENT LINE SIZES SHOWN ARE MINIMUM UNLESS SHOWN LARGER ON RISER DIAGRAMS.
2. SIZES SHOWN FOR WASTE ARE FOR RISERS ONLY.
3. ALL DRAIN AND VENT LINES BELOW SLAB SHALL BE 2" OR LARGER.
4. VENT LINES SHALL RISE 6" ABOVE FLOOD LEVEL RIM BEFORE OFFSETTING HORIZONTALLY, EXCEPT FOR INTERCEPTORS LOCATED OUTDOORS.
5. SIZES SHOWN APPLY UNLESS NOTED DIFFERENTLY ON PLANS.

FIXTURE	WASTE	VENT	COLD WATER	HOT WATER	HEIGHT OF INSTALLATION
BATHTUB	2"	1-1/2"	1/2"	1/2"	
FLOOR DRAINS/SINKS	2"	1-1/2"			
HOSE BIBB			3/4"		18" ABOVE GRADE OUTSIDE, 18" A.F.F. INSIDE
JANITOR'S SINK	3"	1-1/2"	1/2"	1/2"	
LAVATORIES AND SINKS, COUNTER MOUNTED	1-1/2"	1-1/4"	1/2"	1/2"	
LAVATORIES AND SINKS, WALL MOUNTED	1-1/2"	1-1/4"	1/2"	1/2"	NON-ADA 31" TO TOP OF RIM ADA 34" TO TOP OF RIM
SUPPLY BOX			1/2"		12" TO BOTTOM OF BOX
UTILITY BOX	2"	1-1/2"	1/2"	1/2"	36" TO BOTTOM OF BOX
WATER CLOSET FLUSH TANK FLOOR MOUNTED	3"	1-1/2"	1/2"		

PLUMBING EQUIPMENT SCHEDULE

FIXTURE TAG	DESCRIPTION	MANUFACTURER	TRIM	ELECTRICAL REQUIREMENTS
BV-1	BALL VALVE	HYDRAPRO F1960	LEAD FREE BALL VALVE, FULL PORT, BLOWOUT-PROOF, PRESSURE RETAINING, ADJUSTABLE STEM PACKING NUT	
COTG-1	CLEANOUT TO GRADE, SPEEDI-SET OUTLET	SIOUX CHIEF 852	UNFINISHED FLOOR CLEANOUT WITH ADJUSTABLE ROUND CAST IRON TRACTOR COVER TOP, DUCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORIATED SECURED CAST IRON TOP, TAPERED THREAD BRONZE PLUG, REFER TO PLANS FOR SIZES	
ET-1	EXPANSION TANK	WATTS PLT-5	BRASS CONNECTION, WELDED STEEL CONSTRUCTION, POLYPROPYLENE LINER, BUTYL DIAPHRAGM, GROOVED DIAPHRAGM HOOP RING, WELDED AIR CHARGE FITTING	
EWH-1	ELECTRIC WATER HEATER, 38 GALLON	BRADFORD WHITE RE240L6	BRASS DRAIN VALVE, ANODE ROD, AUTOMATIC THERMOSTAT, HEAT TRAP, EXPANSION TANK (ET-1), CATCH PAN & DRAIN, MIXING VALVE	240V, 3KW, 1PH
EWH-2	ELECTRIC WATER HEATER, 119 GALLON	BRADFORD WHITE E32-120R-3	BRASS DRAIN VALVE, ANODE ROD, AUTOMATIC THERMOSTAT, HEAT TRAP, EXPANSION TANK (ET-1), CATCH PAN & DRAIN, MIXING VALVE	240V, 18KW, 1PH
FD-1	FLOOR DRAIN-ROUND	SIOUX CHIEF 832	NICKEL-BRONZE STRAINER, ABS HEAD ADAPTER, ABS CORING SLEEVE, HIGH-IMPACT POLYMER CORING PLUG, PVC BASE ADAPTER, PROSET TRAP GUARD, GREEN DRAIN WATERLESS TRAP SEAL, REFER TO PLANS FOR SIZES.	
FPHB-1	FROST PROOF HOSE BIBB - RESIDENTIAL	LEGEND T-550NL	ANTI-SIPHON, AUTOMATIC DRAINING FREEZE PROOF, PROVIDE SHUTOFF VALVE FOR SUPPLY LINE IN AN ACCESSIBLE LOCATION, INTERGRAL BACKFLOW PROTECTION DEVICE	
GD-1	GARBAGE DISPOSAL - RESIDENTIAL	EVERGRIND E101	1/3 HORSEPOWER HEAVY DUTY MOTOR, RUGGED GALVANIZED STEEL CONSTRUCTION, INSTALL PER MANUFACTURER'S INSTRUCTIONS	120V, 60HZ, 1/3HP
HL-1	HANDICAPPED LAVATORY, COUNTER MOUNT, VITREOUS CHINA	CMI OAK LAWN 006-623	WINDMERE B2596LF-OB TWO HANDLE CENTERSET BATHROOM FAUCET, TMV-1, JONES STEPHENS COMMERCIAL LAV DRAIN D70-100, PROFLO PF394008 SERIES P-TRAP, HYDRAPRO F1960 SERIES STOP WITH AQUAFLO MIGHTYFLEX STAINLESS STEEL FLEXIBLE SUPPLIES, TRUEBRO 82525 ADA TRAP, STOP AND SUPPLY PROTECTOR PVC TYPE INSULATION AROUND "P" TRAP & IPS CONNECTIONS, THREE HOLES ON DECK 4" CENTERS.	
HL-2	HANDICAPPED LAVATORY, WALL MOUNT, VITREOUS CHINA	PROFLO PF5514WH	PRICE PFISTER 143-6100 4" CENTERSET DUAL LEVER FAUCET, TMV-1, JONES STEPHENS COMMERCIAL LAV DRAIN D70-100, PROFLO PF39400B SERIES P-TRAP, HYDRAPRO F1960 SERIES STOP WITH AQUAFLO MIGHTYFLEX STAINLESS STEEL FLEXIBLE SUPPLIES, TRUEBRO 82525 ADA TRAP, STOP AND SUPPLY PROTECTOR PVC TYPE INSULATION AROUND "P" TRAP & IPS CONNECTIONS, THREE HOLES ON DECK 4" CENTERS.	
HSH-1	HANDICAPPED ROLL-IN SHOWER, 62"x 32"	AQUARIUS G 6233 BF-F .75	WHITE, POWDER-COATED WHITE GRAB BARS, CUSHIONED WHITE FOLD-UP SEAT, STAINLESS STEEL DRAIN BODY STRAINER, DELTA WINDEMERE MONITOR 14 SERIES SHOWER TRIM 142996-OB, DELTA H2OKINETIC 5-SETTING SLIDE BAR HAND SHOWER 51559-BL.	
HWC-1	HANDICAPPED WATER CLOSET, VITREOUS CHINA, FLUSH TANK, FLOOR MOUNTED, ELONGATED RIM, 12" ROUGH-IN, CLOSE COUPLED, SIPHON VORTEX BOWL	PROFLO PF1503WH	PROFLO PFTSE2000WH PLASTIC TOILET SEAT, HYDRAPRO F1960 SERIES STOP VALVES WITH AQUAFLO MIGHTFLEX STAINLESS STEEL FLEXIBLE SUPPLIES.	
JS-1	JANITOR'S SINK, FLOOR MOUNTED 24"x 24", ONE PIECE MOLDED CONSTRUCTION OF NATURAL CRUSHED STONE AND POLYESTER RESIN	PROFLO PFMB2424	PROVIDE SERVICE FAUCET #PF1118 POLISHED CHROME PLATED BRASS ON 8" CENTER W/ VACUUM BREAKER AND INTEGRAL STOPS, SERVICE HOSE PFSSHE AND GRACKET PF296, MOP HANGER PF245, BUMPER GUARDS PFBG24V, WALL GUARDS 2 PANEL & 1 BRACKET PFWG24S, SUPPLIED W/INTEGRAL MOLDED DRAIN, PROVIDE CHECK VALVES ON HOT AND COLD WATER LINES IN AN ACCESSIBLE LOCATION.	
RPZ-1	REDUCE PRESSURE PRINCIPLE BACKFLOW PREVENTER, FOR DOMESTIC WATER	WATTS LF009M2 QT	PROVIDE SAME SIZE AS WATER LINE FROM METER, WATTS BALL VALVES AND "Y" STRAINER, SHALL MEET APPROVAL BY FOUNDATION FOR CROSS CONNECTION CONTROL AND HYDRAULIC RESEARCH AT THE UNIVERSITY OF SOUTHERN CALIFORNIA	
S-1	SINK DOUBLE COMPARTMENT, COUNTER MOUNT	HYDRAPRO SSS33224624	DELTA WINDEMERE 21996LF-OB TWO HANDLE KITCHEN FAUCET, 11" HIGH SWING SPOUT, 8" REACH, 1.5 GPM AERATOR, 3-1/2" DRAIN OPENING. PROFLO STAINLESS STEEL BASKET STRAINER. PROFLO PF39000B P-TRAP, GYDRAPRO F1960 SUPPLY STOP VALVE, AQUAFLO MIGHTYFLEX STAINLESS STEEL CONNECTORS, 4 HOLE 8 IN INSTALLATION.	
S-2	ADA SINK DOUBLE COMPARTMENT, COUNTER MOUNT	DAYTON GE233224	DELTA WINDEMERE 21996LF-OB TWO HANDLE KITCHEN FAUCET, 11" HIGH SWING SPOUT, 8" REACH, 1.5 GPM AERATOR, 3-1/2" DRAIN OPENING. PROFLO STAINLESS STEEL BASKET STRAINER. PROFLO PF39000B P-TRAP, GYDRAPRO F1960 SUPPLY STOP VALVE, AQUAFLO MIGHTYFLEX STAINLESS STEEL CONNECTORS, 4 HOLE 8 IN INSTALLATION.	
SB-1	SUPPLY BOX	IPS CORPORATION WATER-TITE 87973	(1) 1/2" SUPPLY, PROVIDE WHA-1 (WATER HAMMER ARRESTOR)	
T-1	TUB ONE PIECE, 60"x 32"	AQUARIUS G6004TS	PROVIDE BLOCKING FOR SUPPORT AND INSTALL PER MANUFACTURER'S INSTRUCTIONS, DELTA 144996-OB TUB AND SHOWER TRIM, DEARBORN P8227AB BRASS BATH WASTE AND OVERFLOW KIT CONFIRM RIGHT OR LEFT PRIOR TO ORDERINGCONFIRM RIGHT OR LEFT PRIOR TO ORDERING	
TMV-1	THERMOSTATIC MIXING VALVE - POINT OF USE	LEONARD 270-LF	LEAD FREE, INTEGRAL CHECK VALVE AND STRAINER, PROVIDE, TEMPERATURE CONTROL SET AT 110°	
TWCO-1	TWO WAY CLEANOUT, SPEEDI-SET OUTLET	SIOUX CHIEF 852	UNFINISHED FLOOR DUCO CAST IRON CLEANOUT WITH ROUND ADJUSTABLE SCORIATED SECURED CAST IRON TOP, TAPERED THREAD BRONZE PLUG, REFER TO PLANS FOR SIZES	
UB-1	UTILITY BOX, WASTE, AND SUPPLY	IPS CORPORATION 82003	(2) 1/2" SUPPLY VALVES, 2" DRAIN CONNECTION, 1/4" TURN VALVE, PROVIDE WHA-1 (WATER HAMMER ARRESTOR)	
WC-1	WATER CLOSET, VITREOUS CHINA, FLUSH TANK, FLOOR MOUNTED, ELONGATED RIM, 1.28 GPF	PROFLO PF1503WH	PROFLO PFTSEE2000W PLASTIC TOILET SEAT, McGUIRE 172LK CHROME PLATED BRASS CLOSET SUPPLY W/ 5" CHROME PLATED COPPER EXTENSION TUBE, Z5972-COMB CLOSET BOLT AND WAX RING KIT	
WCO-1	WALL CLEANOUT	PROFLO PFC51	DUCO CAST IRON CLEANOUT TEE, BRONZE PLUG, REMOVABLE STAINLESS STEEL COVER. REFER TO PLANS FOR SIZE, PROVIDE ROUND OR SQUARE FRAME AND COVER AS REQUIRED, REFER TO ARCHITECT	
WHA-1	WATER HAMMER ARRESTOR	SIOUX CHIEF 650&660 HYDRARESTER	VACURESTER VACUUM BREAKER ARRESTER, TYPE L COPPER CONSTRUCTION, IF AN ACCESS DOOR IS NEEDED CONTACT THE ARCHITECT	

COLD WATER
CONDENSATE
FIRE
FORCED MAIN
HOT WATER
SANITARY SEWER
VENT
CONNECT TO EXISTING
WATER/GAS METER
REGULATOR
LINE CAP
PRESSURE REDUCING VALVE
DISCONNECT
UNION
BALL VALVE
MIXING VALVE
CALIBRATED MIXING VALVE
UB-1/ SB-1 — UTILITY BOX/ SUPPLY BOX
CIRCULATION PUMP
FROST PROOF HOSE BIBB (FPHB-1)
HOSE BIBB (HB-1)
ROOF DRAIN
ROOF OVERFLOW DRAIN
DOWNSPOUT NOZZLE
FD-1 — FLOOR DRAIN
SWD-1 — SAFE WASTE DRAIN
FLOOR SINK
WCO-1/ SCO-1 — WALL CLEAN OUT/ STACK CLEAN OUT
FCO — FLOOR CLEANOUT
COTG-1/ TWCO-1 — CLEAN OUT TO GRADE/ TWO-WAY CLEAN OUT
INDICATES DETAIL NUMBER
INDICATES SHEET NUMBER
HOR. OR VERT. — BACKFLOW PREVENTER (RPZ-1)

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OWNER THEIL ROAD PROPERTIES, LP
PROJECT 48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION 2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER ZACHARY E. ARCHER No. 19283
01-29-2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

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PLUMBING LEGENDS, NOTES AND SCHEDULES

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LOCATION
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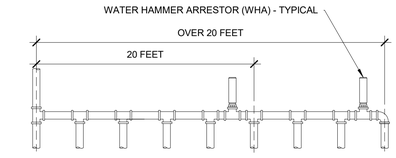


GENERAL WHA NOTES:

LOCATE THE WHA IN A MULTIPLE FIXTURE SYSTEM AT THE END OF THE BRANCH LINE BETWEEN THE LAST TWO FIXTURES SERVED.

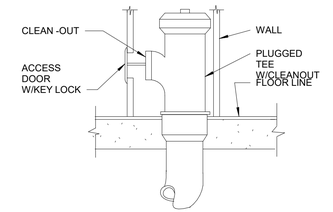
FOR REMOTE INSTALLATIONS THE WHA SHOULD BE PLACED AS CLOSE TO THE POINT OF VALVE CLOSURE AS POSSIBLE.

INSTALL WHA's APPROVED FOR SEALED-WALL INSTALLATION ON WATER LINES CONNECTED TO SOLENOID VALVES OR FLUSH VALVES. SIZE, LOCATE, AND INSTALL IN ACCORDANCE WITH PDI STANDARD WH 201.

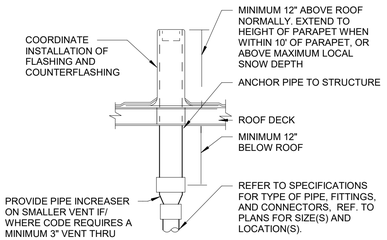
IDEALLY THE FLOW PRESSURE IN BRANCH LINES SERVING FIXTURES SHOULD NEVER EXCEED 55 P.S.I.G.

PROVIDE ACCESS PANEL AT EACH LOCATION WHERE THERE IS NOT AN ACCESSIBLE CEILING. MINIMUM SIZE OF 8" x 8".

11 WATER HAMMER ARRESTOR INSTALLATION DETAIL
SCALE: N.T.S.

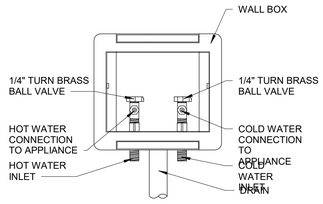


10 WALL AND STACK CLEANOUT
N.T.S.

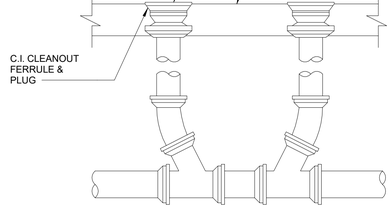


LOCATE VTR MINIMUM THREE FEET FROM PROPERTY LINE. REFER TO LOCAL CODES FOR OTHER VENT TERMINATION REQUIREMENTS. INSULATE LAST SIX FEET OF VENT PIPE INSIDE BUILDING PER SPECIFICATIONS.

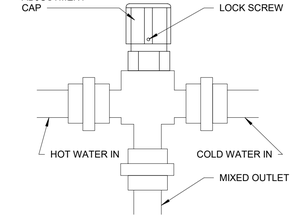
9 VENT THRU ROOF ("VTR")
N.T.S.



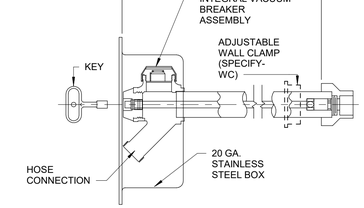
8 UTILITY BOX
N.T.S.



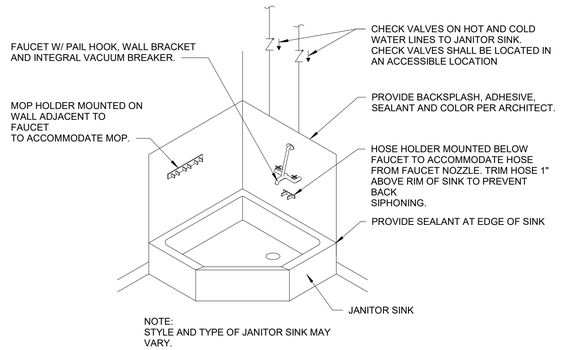
7 TWO WAY CLEANOUT
N.T.S.



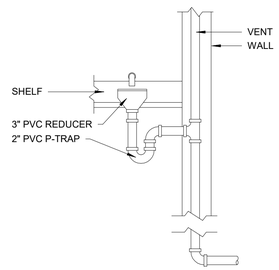
6 POINT OF USE - THERMOSTATIC MIXING VALVE
N.T.S.



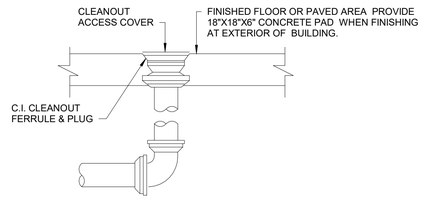
5 NON-FREEZE WALL HYDRANT
N.T.S.



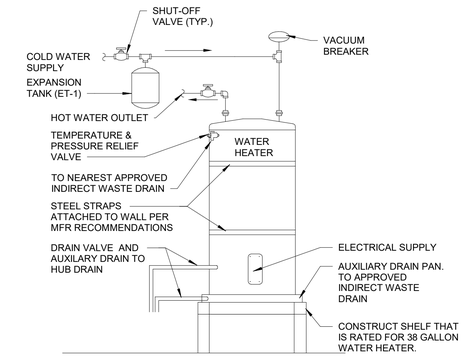
4 JANITOR'S SINK - ANGLED
N.T.S.



3 OPEN HUB DRAIN - AT WATER HEATER SHELF
N.T.S.



2 CLEANOUT TO GRADE
N.T.S.



NOTE: ALL PIPING SHOWN IS DIAGRAMMATIC ONLY. ALL PIPING SHALL BE ROUTED IN FIELD TO MEET ACTUAL CONDITIONS.

1 ELECRIC WATER HEATER STAND
N.T.S.

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PLUMBING DETAILS

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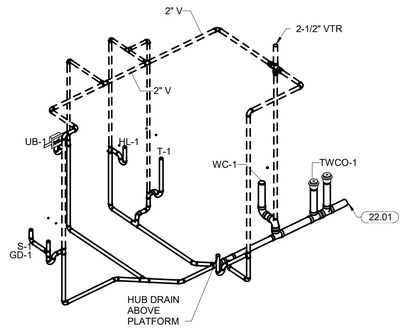
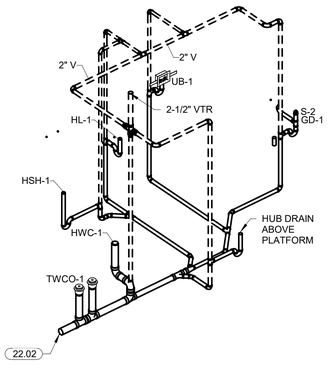
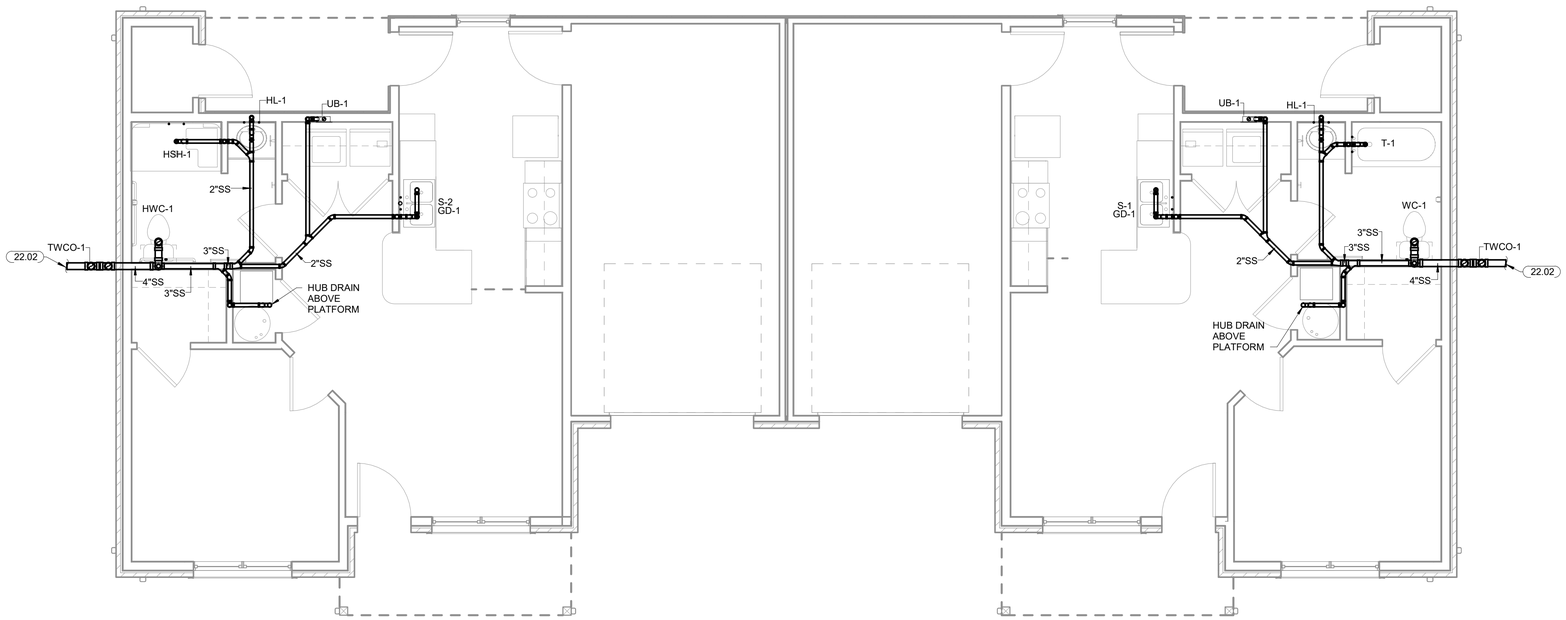
KEYNOTES

22.01	REFER TO CIVIL FOR DOMESTIC WATER CONTINUATION TO METER.
22.02	REFER TO CIVIL FOR SANITARY SEWER CONTINUATION.





2 SANITARY SEWER ISOMTRIC - 1 BEDROOM DUPLEX - TYPE 1A
N.T.S.



1 SANITARY SEWER PLAN - 1 BEDROOM DUPLEX - TYPE 1A
1/4" = 1'-0"

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ISSUE	

SHEET

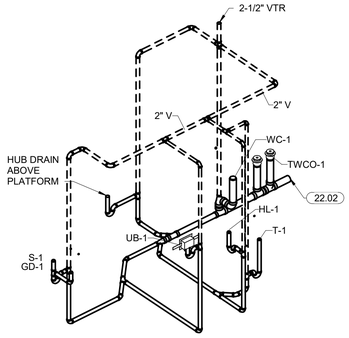
SANITARY SEWER PLAN AND ISOMETRIC - 1 BEDROOM DUPLEX - TYPE 1A

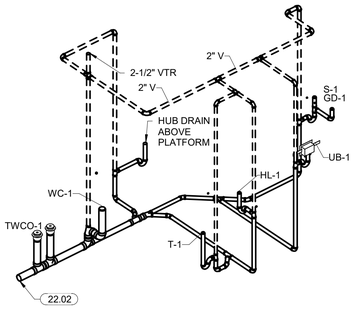
DISCIPLINE - SHEET

P2.0

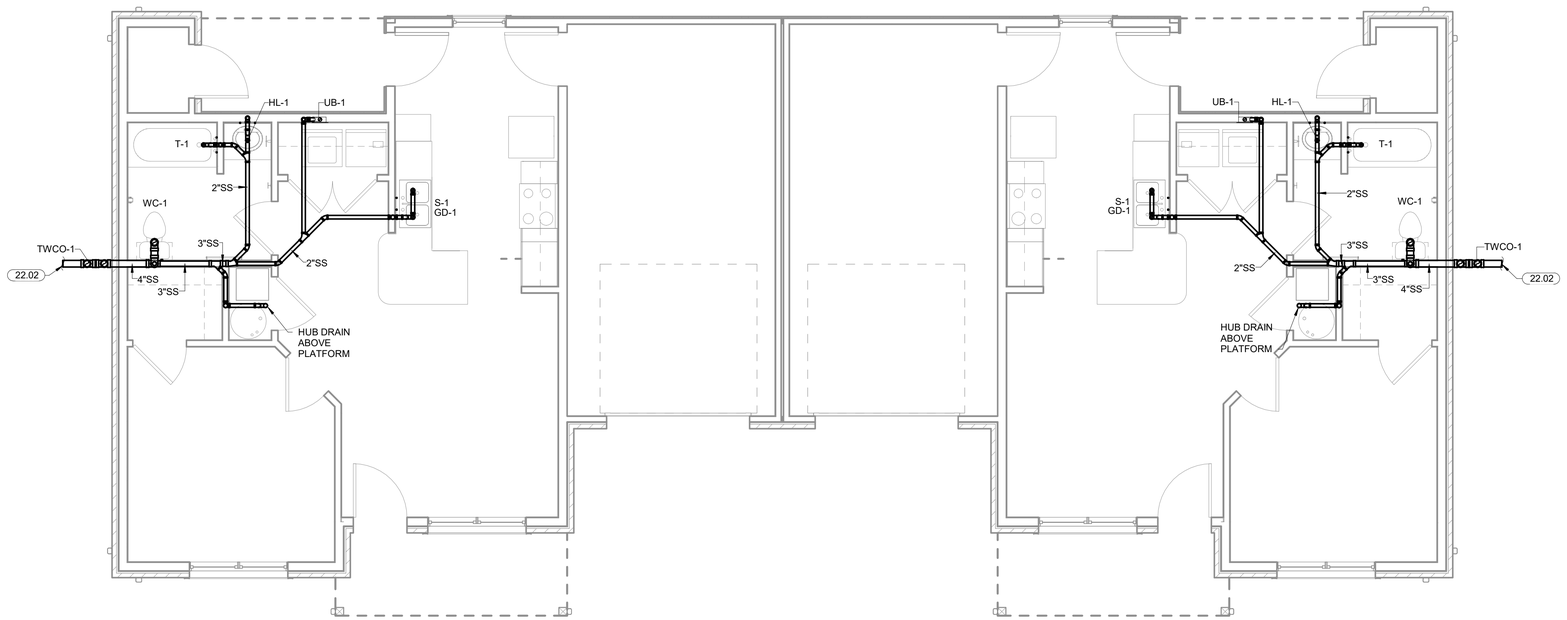
KEYNOTES

22.02	REFER TO CIVIL FOR SANITARY SEWER CONTINUATION.





2 SANITARY SEWER ISOMTRIC - 1 BEDROOM DUPLEX - TYPE 1B
N.T.S.



1 SANITARY SEWER PLAN - 1 BEDROOM DUPLEX - TYPE 1B
1/4" = 1'-0"

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PROJECT
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LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 19283 ZACHARY E. ARCHER
01-29-2021

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MARK	DATE	DESCRIPTION

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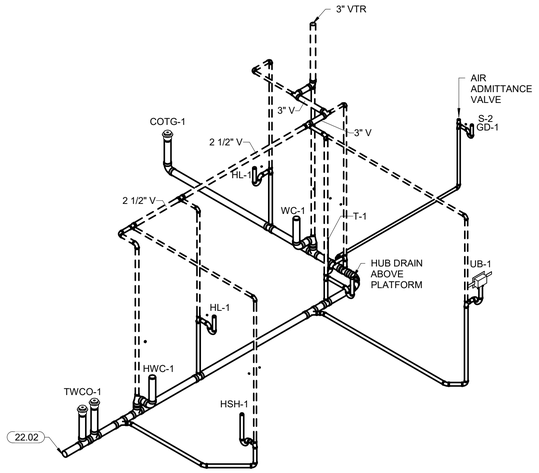
SANITARY SEWER PLAN AND ISOMETRIC - 1 BEDROOM DUPLEX - TYPE 1B

DISCIPLINE - SHEET

P2.1

KEYNOTES

22.02	REFER TO CIVIL FOR SANITARY SEWER CONTINUATION.



2 SANITARY SEWER ISOMTRIC - 2 BEDROOM DUPLEX - TYPE 2A
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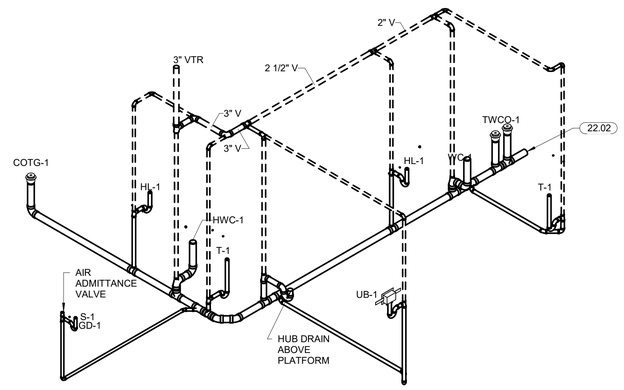

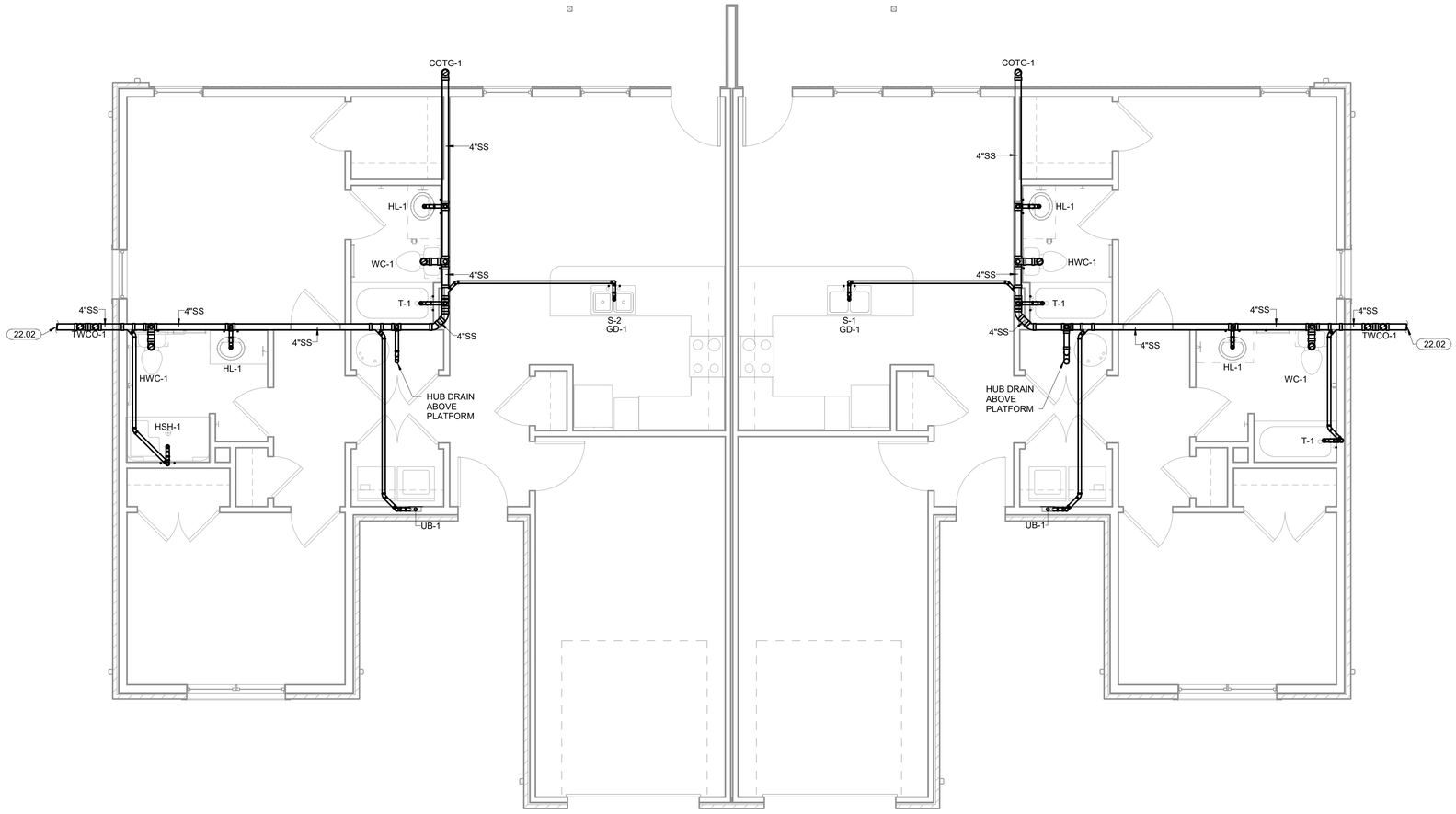

1 SANITARY SEWER PLAN - 2 BEDROOM DUPLEX - TYPE 2A
1/4" = 1'-0"

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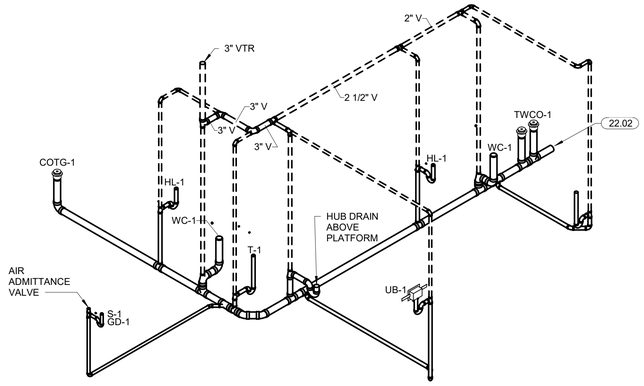
SANITARY SEWER PLAN AND ISOMETRIC - 2 BEDROOM DUPLEX - TYPE 2A

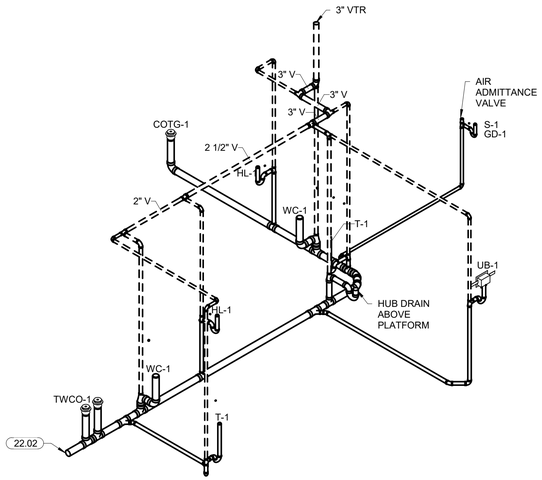
DISCIPLINE - SHEET

P2.2

KEYNOTES

22.02	REFER TO CIVIL FOR SANITARY SEWER CONTINUATION.





2 SANITARY SEWER ISOMTRIC - 2 BEDROOM DUPLEX - TYPE 2B
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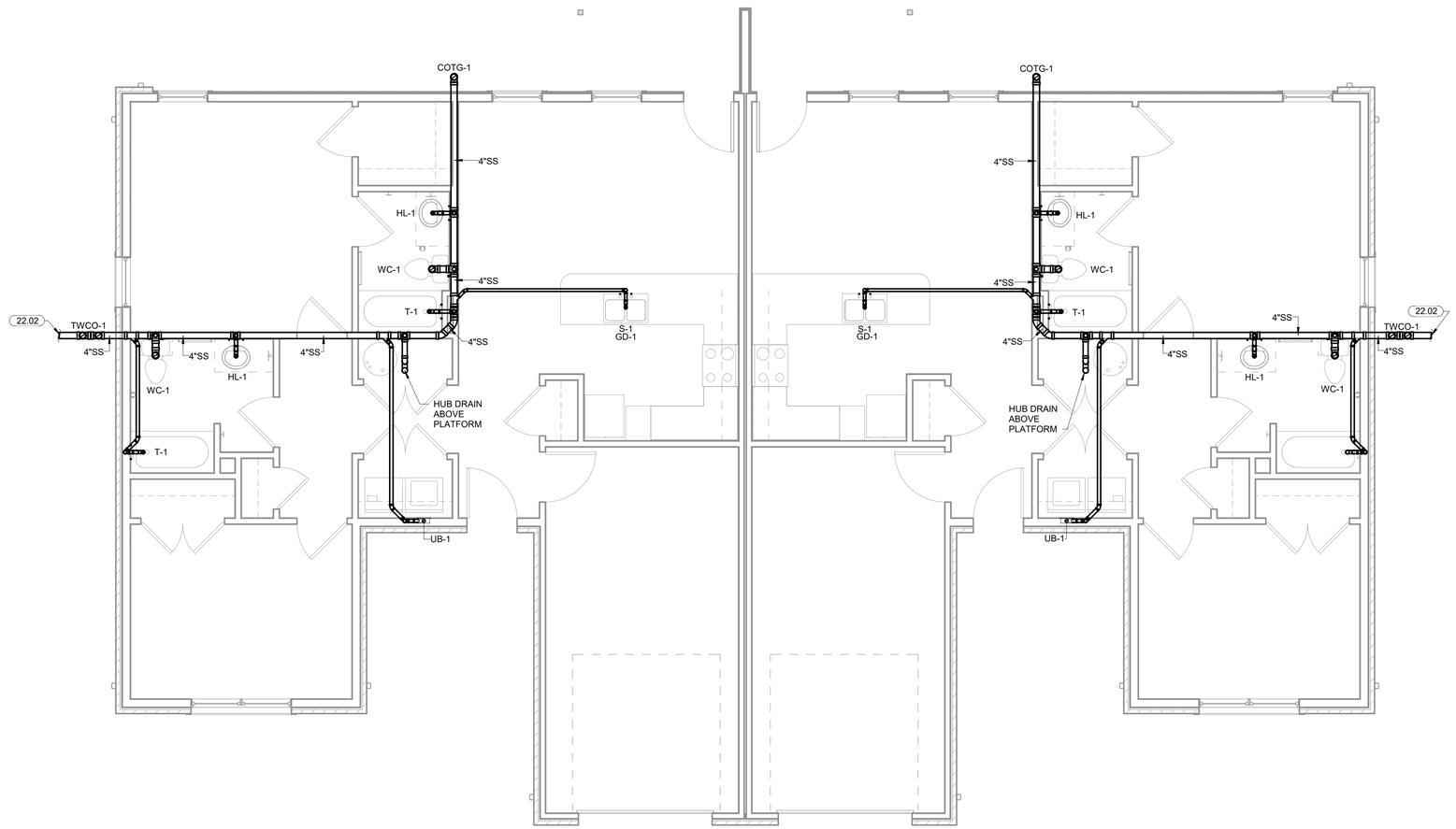

1 SANITARY SEWER PLAN - 2 BEDROOM DUPLEX - TYPE 2B
1/4" = 1'-0"

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LOCATION **2002 RECTOR ROAD PARAGOULD, ARKANSAS**

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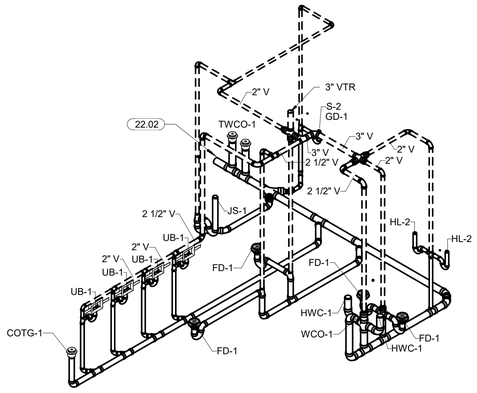
SANITARY SEWER PLAN AND ISOMETRIC - 2 BEDROOM DUPLEX - TYPE 2B

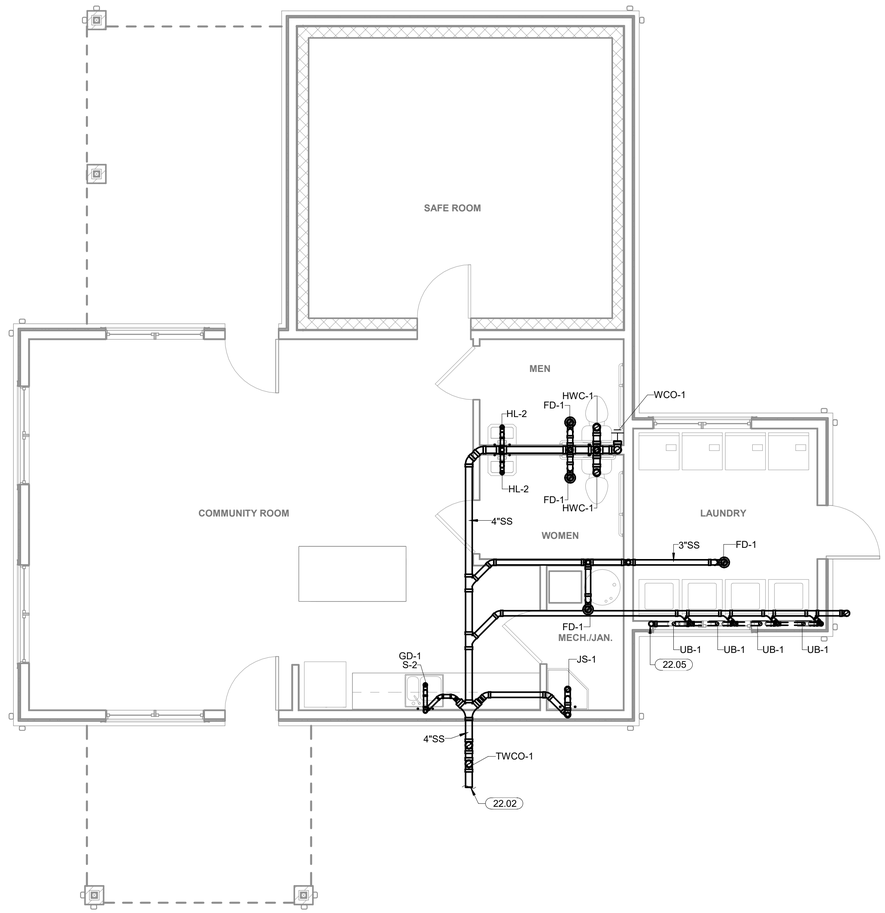
DISCIPLINE - SHEET

P2.3

KEYNOTES	
22.02	REFER TO CIVIL FOR SANITARY SEWER CONTINUATION.
22.05	ROUTE VENT LINE TO ABOVE CEILING.



2 SANITARY SEWER ISOMTRIC - COMMUNITY BUILDING - TYPE 3A
N.T.S.



1 SANITARY SEWER PLAN - COMMUNITY BUILDING
1/4" = 1'-0"

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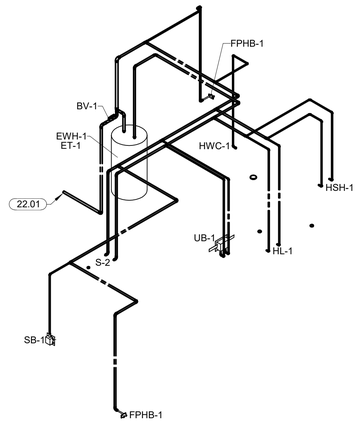
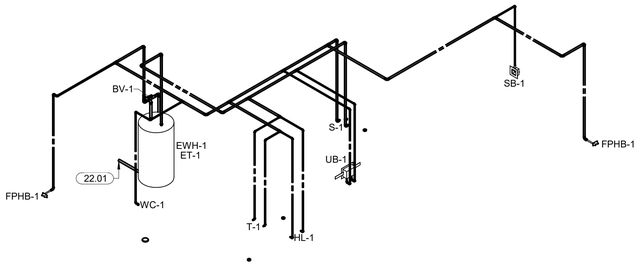
SANITARY SEWER PLAN AND ISOMETRIC - COMMUNITY BUILDING - TYPE 3A

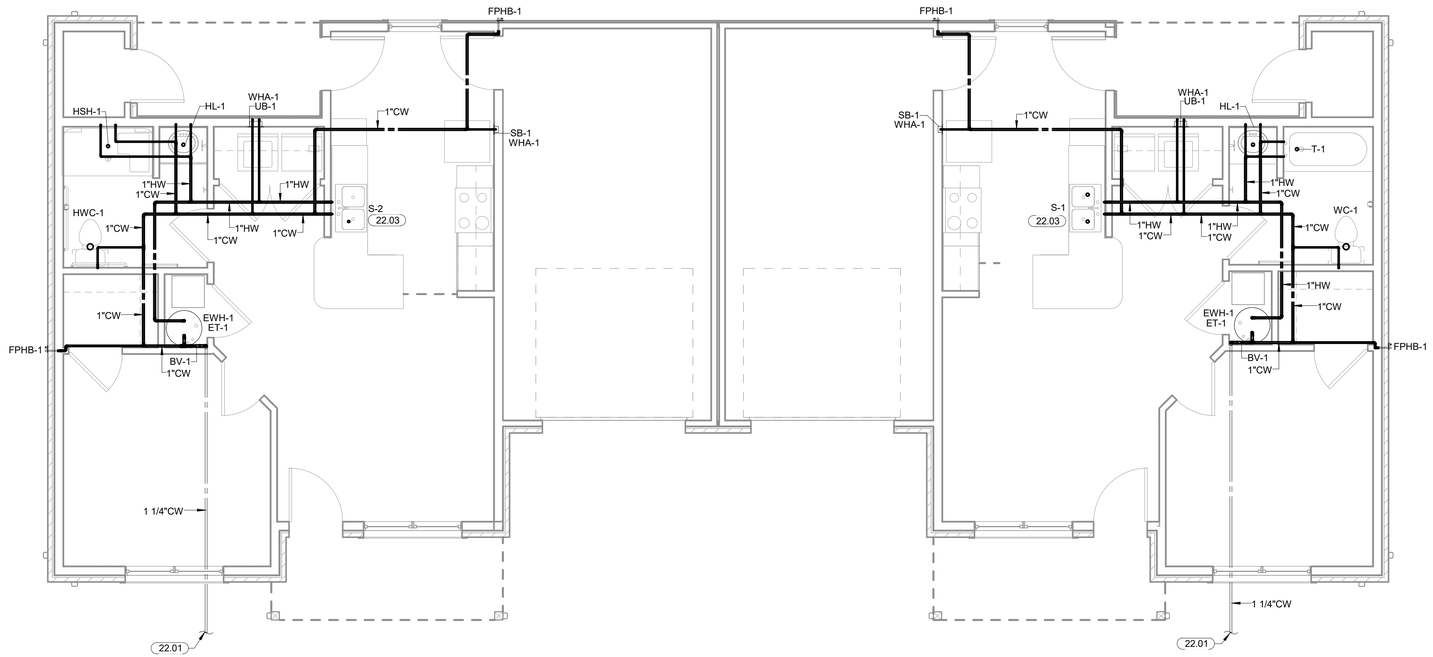
DISCIPLINE - SHEET

P2.4





2 DOMESTIC WATER ISOMETRIC - 1 BEDROOM DUPLEX - TYPE 1A
N.T.S.



1 DOMESTIC WATER PLAN - 1 BEDROOM DUPLEX - TYPE 1A
1/4" = 1'-0"

KEYNOTES

22.01	REFER TO CIVIL FOR DOMESTIC WATER CONTINUATION TO METER.
22.03	DISHWASHER CONNECTION.

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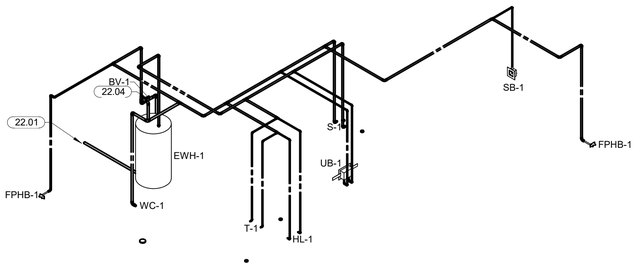
DOMESTIC WATER PLAN AND ISOMETRIC - 1 BEDROOM DUPLEX - TYPE 1A

DISCIPLINE - SHEET

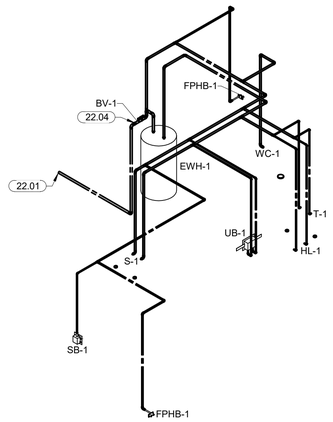
P3.0

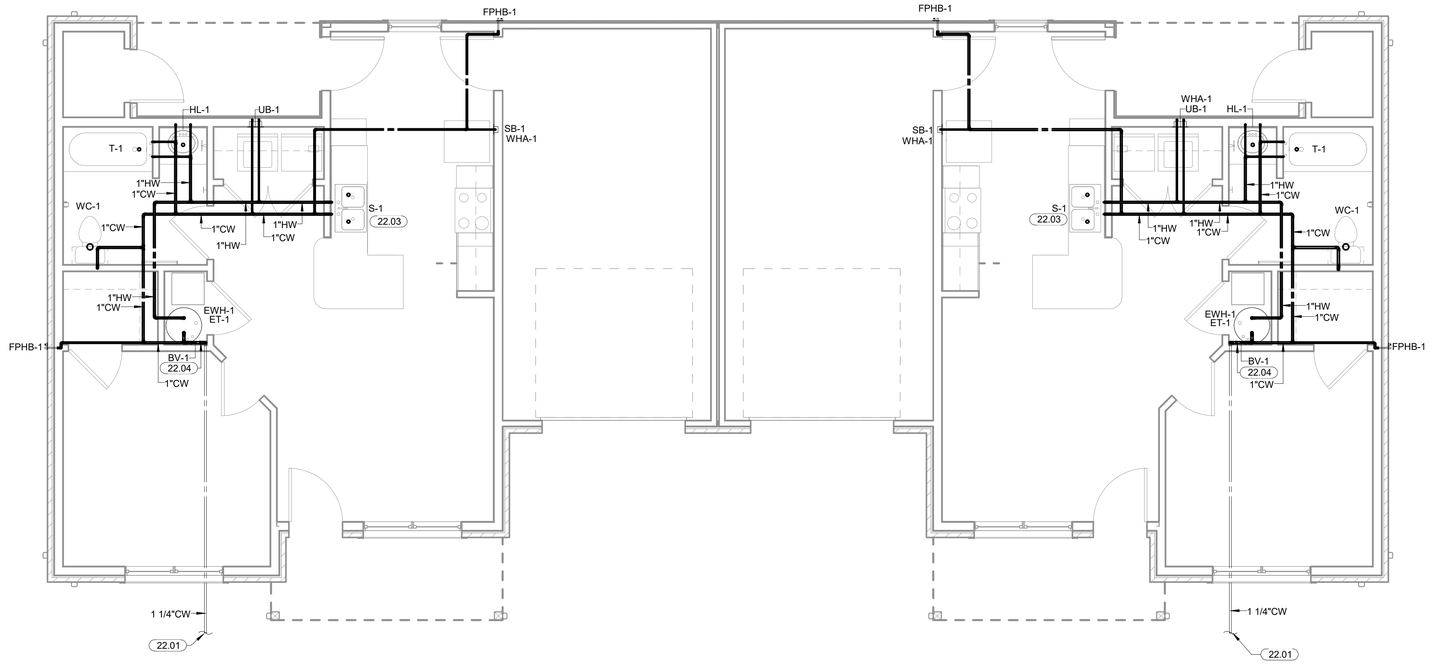
KEYNOTES

22.01	REFER TO CIVIL FOR DOMESTIC WATER CONTINUATION TO METER.
22.03	DISHWASHER CONNECTION.
22.04	ROUTE METAL PIPE FROM DOMESTIC WATER SERVICE TO BALL VALVE. CONTINUE WITH PEX THROUGHOUT THE BUILDING.



2 DOMESTIC WATER ISOMETRIC - 1 BEDROOM DUPLEX - TYPE 1B
N.T.S.





1 DOMESTIC WATER PLAN - 1 BEDROOM DUPLEX - TYPE 1B
1/4" = 1'-0"

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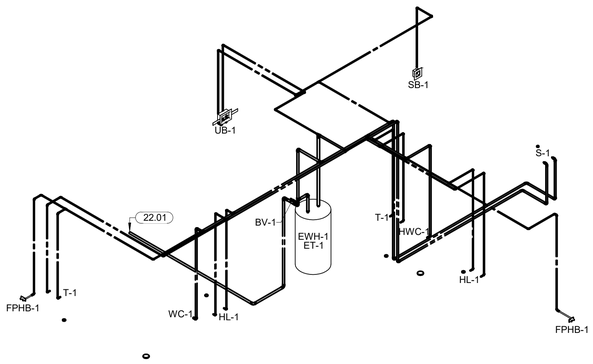
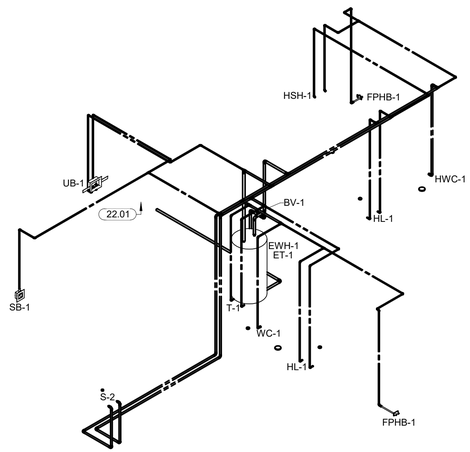
DOMESTIC WATER PLAN AND ISOMETRIC - 1 BEDROOM DUPLEX - TYPE 1B

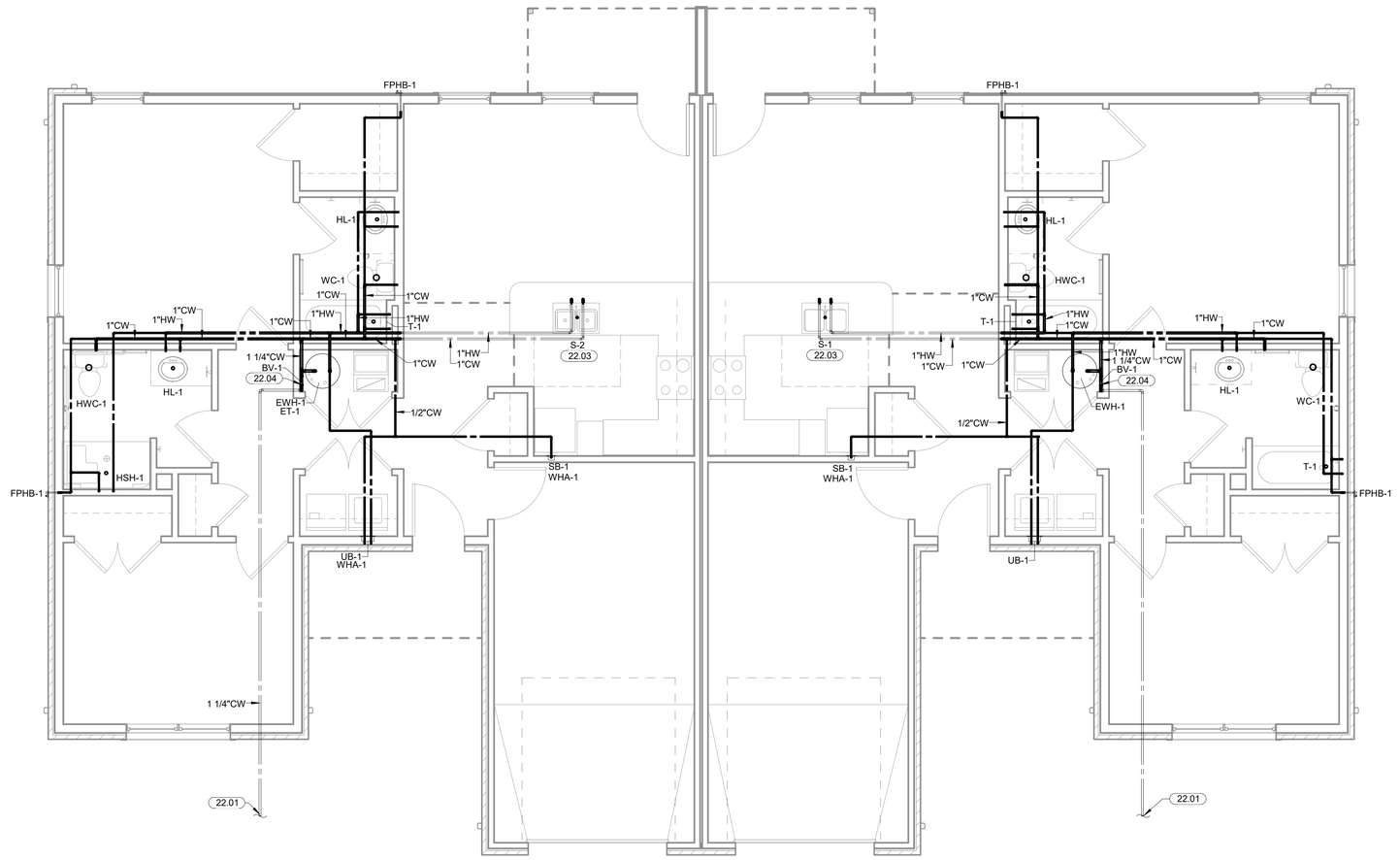
DISCIPLINE - SHEET

P3.1





2 DOMESTIC WATER ISOMETRIC - 2 BEDROOM DUPLEX - TYPE 2A
N.T.S.



1 DOMESTIC WATER PLAN - 2 BEDROOM DUPLEX - TYPE 2A
1/4" = 1'-0"

KEYNOTES

22.01	REFER TO CIVIL FOR DOMESTIC WATER CONTINUATION TO METER.
22.03	DISHWASHER CONNECTION.
22.04	ROUTE METAL PIPE FROM DOMESTIC WATER SERVICE TO BALL VALVE. CONTINUE WITH PEX THROUGHOUT THE BUILDING.

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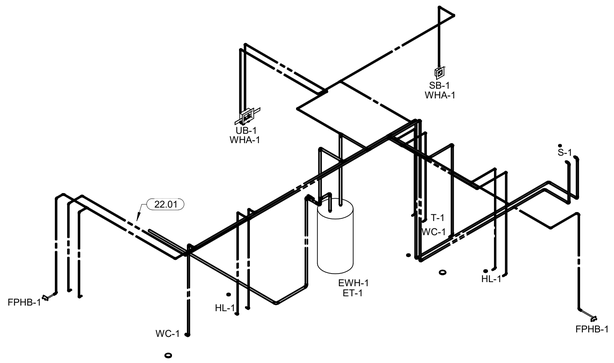
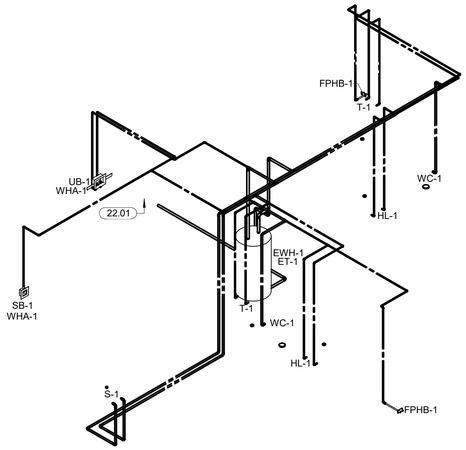
DOMESTIC WATER PLAN AND ISOMETRIC - 2 BEDROOM DUPLEX - TYPE 2A

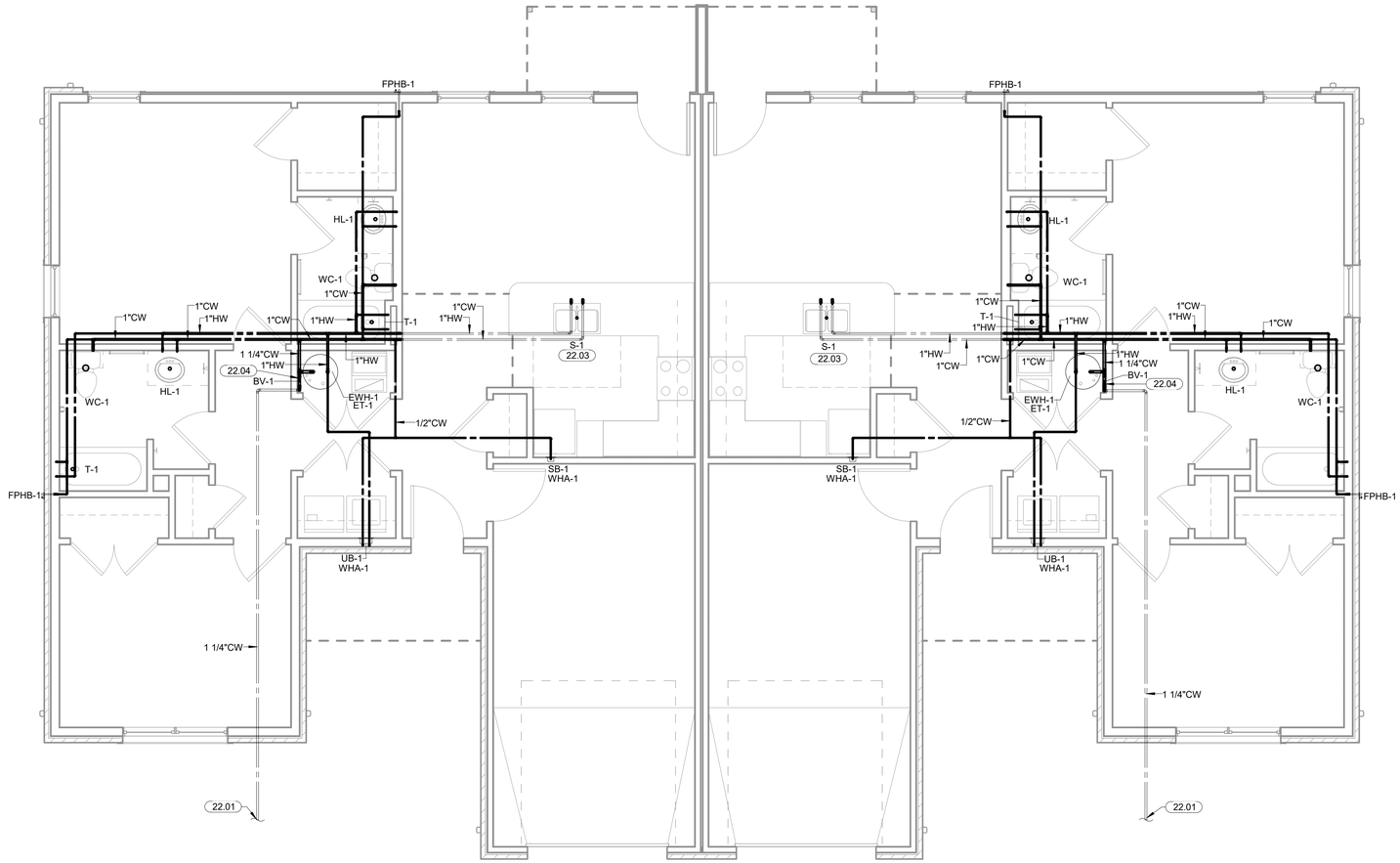
DISCIPLINE - SHEET

P3.2



2 DOMESTIC WATER ISOMETRIC - 2 BEDROOM DUPLEX - TYPE 2B
N.T.S.





1 DOMESTIC WATER PLAN - 2 BEDROOM DUPLEX - TYPE 2B
1/4" = 1'-0"

KEYNOTES

22.01	REFER TO CIVIL FOR DOMESTIC WATER CONTINUATION TO METER.
22.03	DISHWASHER CONNECTION.
22.04	ROUTE METAL PIPE FROM DOMESTIC WATER SERVICE TO BALL VALVE. CONTINUE WITH PEX THROUGHOUT THE BUILDING.

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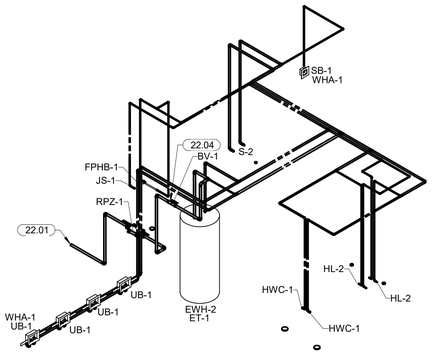
DOMESTIC WATER PLAN AND ISOMETRIC - 2 BEDROOM DUPLEX - TYPE 2B

DISCIPLINE - SHEET

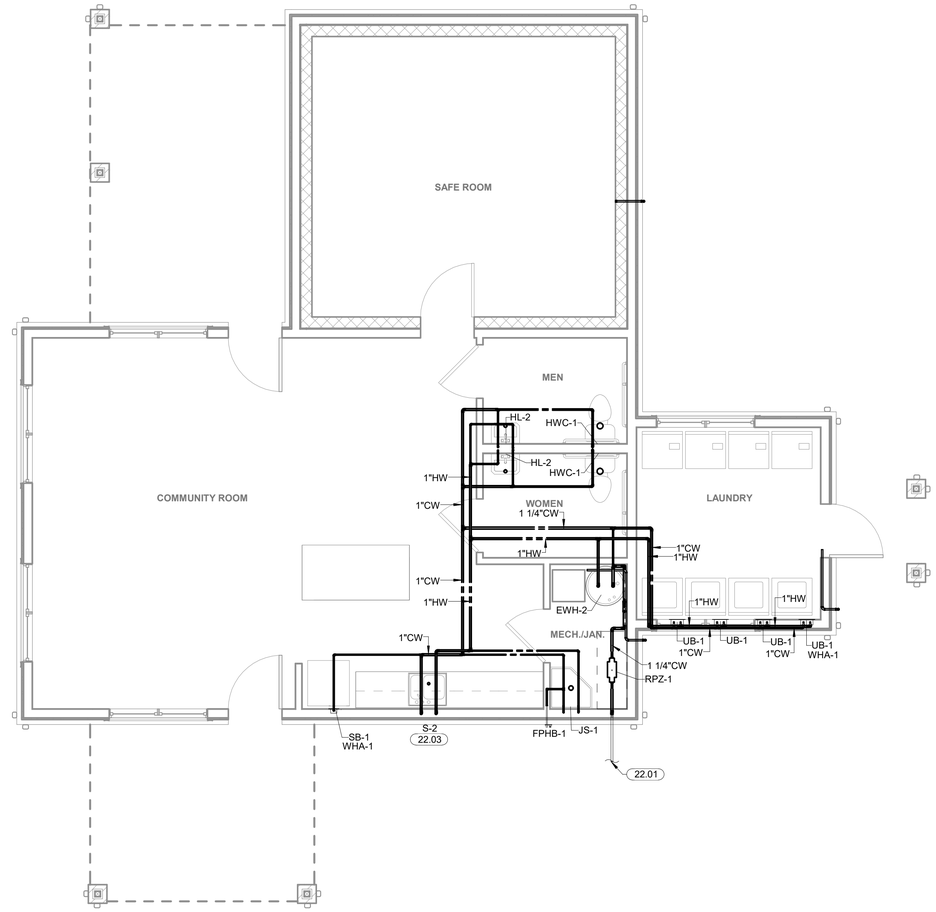
P3.3

KEYNOTES

22.01	REFER TO CIVIL FOR DOMESTIC WATER CONTINUATION TO METER.
22.03	DISHWASHER CONNECTION.
22.04	ROUTE METAL PIPE FROM DOMESTIC WATER SERVICE TO BALL VALVE. CONTINUE WITH PEX THROUGHOUT THE BUILDING.



2 DOMESTIC WATER ISOMETRIC - COMMUNTIY BUILDING - TYPE 3A
N.T.S.



1 DOMESTIC WATER PLAN - COMMUNITY BUILDING
1/4" = 1'-0"

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DOMESTIC WATER PLAN AND ISOMETRIC - COMMUNITY BUILDING - TYPE 3A

DISCIPLINE - SHEET

P3.4

22A PLUMBING
rev – 20150529

22A 1 GENERAL INSTRUCTIONS

22A 1-1 GENERAL REQUIREMENTS

Requirements under Division 1 and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 1, this section and division take precedence. Become thoroughly familiar with all their contents as to requirements that affect this division, section or both. The work required under this section includes material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate each system's functioning as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and portions of the work described in one, shall be provided as if described in both. In the event of discrepancies, notify the engineer and request clarification prior to proceeding with the work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They also convey the scope of work, indicating the intended general arrangement of the equipment and other materials without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which, when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory and properly operating system. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing all contract documents. Correct errors that could have been avoided by proper checking and inspection, at no additional cost to the owner.

Specifications define the qualitative requirements for products, materials, and workmanship upon which the contract is based.

22A 1-2 DEFINITIONS

Whenever used in these specifications or drawings, the following terms shall have the indicated meanings:

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembling, installing, and similar operations."

Install: "to perform all operations at the project site, including, but not limited to, and as required: unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use."

Provide: "to furnish and install complete, and ready for the intended use."

Furnished by owner (or owner-furnished) or furnished by others: "an item furnished by the owner or under other divisions or contracts, and installed under the requirements of this division, complete, and ready for the intended use, including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division.

Engineer: where referenced in this division, "engineer" is the engineer of record and the design professional for the work under this division, and is a consultant to, and an authorized representative of, the architect, as defined in the general and/or supplementary conditions. When used in this division, it means increased involvement by, and obligations to, the engineer, in addition to involvement by, and obligations to, the "architect".

AHJ: the local code and/or inspection agency (authority) having jurisdiction over the work.

NRTL: nationally recognized testing laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project.

The terms "equivalent", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, certified, or all three, by an NRTL, and acceptable to the AHJ over this project.

22A 1-3 PRE-BID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

22A 1-4 MATERIAL AND WORKMANSHIP

Provide all material and equipment new and in first class condition. Provide markings or a nameplate for all material and equipment identifying the manufacturer and providing sufficient reference to establish quality, size and capacity. In general, provide the following quality grade(s) for all materials and equipment:

Light Duty and Residential Grade

Pipe, pipe fittings, pipe specialties and valves shall be manufactured in plants located in the United States.

Work performed under this contract shall provide a neat and "workmanlike" appearance when completed, to the satisfaction of the architect and engineer. Workmanship shall be the finest possible by experienced mechanics of the proper trade.

The complete installation shall function as designed and intended with respect to efficiency, capacity, noise level, etc. Abnormal or excessive noise from equipment, devices or other system components will not be acceptable.

Remove from the premises waste material present as a result of work. Clean equipment installed under this contract to present a neat and clean installation at the termination of the work.

Repair or replace public and private property damaged as a result of work performed under this contract to the satisfaction of authorities and regulations having jurisdiction.

22A 1-5 MANUFACTURERS

In other articles where lists of manufacturers are introduced, subject to compliance with requirements, provide products by one of the manufacturers specified.

Where a list is provided, manufacturers listed are not in accordance with any ranking or preference.

Where manufacturers are not listed, provide products subject to compliance with requirements from manufacturers that have been actively involved in manufacturing the specified product for no less than 5 years.

22A 1-6 COORDINATION

Coordinate all work with other divisions and trades so that the various components of the systems will be installed at the proper time, fit the available space, and will allow proper service access to those items requiring maintenance. Refer to all other division's drawings, and to relevant equipment submittals and shop drawings to determine the extent of clear spaces. Components which are installed without regard to the above shall be relocated at no additional cost to the owner.

Unless otherwise indicated, the general contractor will provide chases and openings in building construction required for installation of the systems specified herein. Contractor shall furnish the general contractor with information where chases and openings are required. Make all offsets required to clear equipment, beams and other structural members, and to facilitate concealing system components in the manner anticipated in the design. Keep informed as to the work of other trades engaged in the construction of the project, and execute work in a manner as to not interfere with or delay the work of other trades.

Figured dimensions shall be taken in preference to scale dimensions. Contractor shall take his own measurements at the building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by proper checking and inspection

Provide materials with trim that will properly fit the types of ceiling, wall, or floor finishes actually installed. Model numbers listed in the construction documents are not necessarily intended to designate the required trim.

22A 1-7 ORDINANCES, CODES, AND STANDARDS

Work performed under this contract shall, at a minimum, be in conformance with applicable national, state and local codes having jurisdiction. Equipment furnished and associated installation work performed under this contract shall be in strict compliance with current applicable codes adopted by the local AHJ including any amendments and standards as set forth by the National Fire Protection Association (NFPA), Underwriters Laboratories (UL), Occupational Safety and Health Administration (OSHA), American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), American National Standards Institute (ANSI), American Society of Testing Materials (ASTM) and other national standards and codes where applicable. Additionally, comply with rules and regulations of public utilities and municipal departments affected by connection of services.
Where the contract documents exceed the requirements of the referenced codes, standards, etc., the contract documents shall take precedence.

Promptly bring all conflicts observed between codes, ordinances, rules, regulations, referenced standards, and these documents to the engineer's attention for final resolution. Contractor will be held responsible for any violation of the law.

Procure and pay for permits and licenses required for the accomplishment of the work herein described. Where required, obtain, pay for and furnish certificates of inspection to owner. Contractor will be held responsible for violations of the law.

22A 1-8 PROTECTION OF EQUIPMENT AND MATERIAL

Store and protect from damage equipment and materials delivered to job site, in accordance with manufacturers' recommendations. For materials and equipment susceptible to changing weather conditions, dampness, or temperature variations, store inside in conditioned spaces. For materials and equipment not susceptible to these conditions, cover with waterproof, tear-resistant, heavy tarp or polyethylene plastic as required to protect from plaster, dirt, paint, water, or physical damage. Equipment and material that has been damaged by construction activities will be rejected, and contractor shall furnish new equipment and material as required at no additional cost to the owner.

Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. shall have a neat and clean appearance at the termination of the work.

Plug or cap open ends of piping systems while stored and installed during construction when not in use to prevent the entrance of debris into the systems. Keep the manufacturer-provided protective coverings on floor drains, floor sinks and trench drains during construction. Remove coverings at the termination of the work and polish exposed surfaces

22A 1-9 SUBSTITUTIONS

Include in the base bid the products specifically named in these specifications or on the drawings. Submit, in the form of alternates, with bid, products of any other manufacturers for similar use, provided the differences in cost, if any, are included for each proposed alternate.

No substitutions will be considered with receipt of Bids, unless the Architect and Engineer have received from the Bidder a written request for approval to bid a substitution at least ten calendar days prior to the date for receipt of Bids, and have approved the substitution request. Include, with each such request, the name of the material or equipment for which substitution is being requested, and a complete description of the proposed substitution, including drawings, cut sheets, performance and test data, and all other information necessary for an evaluation. Include also a statement setting forth changes in other materials, equipment or other work that would be required to incorporate the substitution. The burden of proof of the merit of the proposed substitute is upon the proposer. The proposer of any substitutions shall compensate the Engineer at a rate of $150.00 per hour for time spent evaluating proposed substitutions and or the subsequent revisions to the design required to utilize the substitution.

The Architect's or Engineer's decision to approve or disapprove a substitution in a Bid is final.

If the proposed substitution is approved prior to receipt of Bids, such approval will be stated in an Addendum. Bidders shall not rely upon approvals made in any other manner, including verbal.

No substitutions will be considered after receipt of Bids and before award of the Contract.

No substitutions will be considered after the Contract is awarded unless specifically provided in the Contract Documents.

22A 1-10 SUBMITTALS

Assemble and submit to the architect, for engineer's review, manufacturers' product literature for material and equipment to be furnished, installed, or both, under this division, including shop drawings, manufacturers' product data and performance sheets, samples, and other submittals required by this division. Highlight, mark, list or indicate the materials, performance criteria and accessories that are being proposed. Provide the number of submittals required by division 1; however, at a minimum, submit two (2) sets. Before submitting, verify that all materials and equipment submitted are mutually compatible and suitable for the intended use, fit the available spaces, and allow ample and code-required room for access and maintenance. Submittals shall contain the following information. Submittals not so identified will be returned to the contractor without action:

The project name.
The applicable specification section and paragraph.
The submittal date.
The contractor's stamp, which shall certify that the stamped drawings have been checked by the contractor, comply with the drawings and specifications, and have been coordinated with other trades.

Submittals and shop drawings shall not contain HP Engineering's firm name or logo, nor shall it contain the HP Engineering's engineers' seal and signature. They shall not be copies of HP Engineering's work product.

Transmit submittals as early as required to support the project schedule. Allow for two weeks engineer review time, plus mailing time, plus a duplication of this time for re-submittals, if required. The engineer's submittal reviews will not relieve the contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items with actual building conditions.

Refer to division 1 for acceptance of electronic submittals for this project. For electronic submittals, contractor shall submit the documents in accordance with the procedures specified in division 1. Contractor shall notify the architect and engineer that the shop drawings have been posted. If electronic submittal procedures are not defined in division 1, contractor shall include the website, user name and password information needed to access the submittals. For submittals sent by e-mail, contractor shall copy the architect and engineer's designated representatives. Contractor shall allow the engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the electronic submittal and shall clearly indicate the materials, performance criteria and accessories being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without review.

22A 1-11 ELECTRONIC DRAWINGS

In preparation of shop drawings or record drawings, contractor may, as an option, obtain electronic drawing files in Revit, AutoCAD, or DXF format from the engineer for a fee of $200 for the first sheet and $100 per sheet for each additional sheet. Contact the architect for written authorization; and, contact the engineer to obtain the necessary release agreement form and to indicate the desired shipping method and drawing format. In addition to payment, architect's written authorization and engineer's release agreement form must be received before electronic drawing files will be sent.

22A 1-12 OPERATION AND MAINTENANCE INSTRUCTIONS

Submit to the architect, for engineer's review, copies each of operations and maintenance instruction manuals, appropriately bound into manual form including approved copies of the following, revised if necessary to show system and equipment as actually installed. Paper clips, staples, rubber bands, and mailing envelopes are not considered approved binders. Provide the number of submittals required by Division 1; however, at a minimum, submit two (2) sets, and include, at a minimum, the following information:

Cover sheet that lists the project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, and an index of contents.
Manufacturers' catalogs and product data sheets
Wiring diagrams
Operation and Maintenance instructions
Parts lists
Approved shop drawings
Test reports as defined for the systems and equipment provided or furnished or installed under this contract.
Names, addresses, telephone numbers, and e-mail addresses of local contacts for warranty services and spare parts.

Submit manuals prior to requesting the final punch list and before any requests for substantial completion. Final approval of this division's systems installed under this contract will be withheld until this equipment brochure is received and deemed complete by the architect and engineer.

Provide "as-built" drawings (see Division 1 and general conditions).

22A 1-14 WARRANTIES

Warrant each system and each element thereof against all defects due to faulty workmanship, design or material for a period of 12 months from date of substantial completion, unless specific items are noted to carry a longer warranty in the construction documents or manufacturer's standard warranty exceeds this duration. Warranties shall include labor and material. Remedy all defects, occurring within the warranty period(s), as stated in the general conditions and Division 1 without any additional costs to the owner.

Perform any required remedial work promptly, upon written notice from the engineer or owner.

At the time of substantial completion, deliver to the owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the required period, each warranty instrument being addressed to the owner and stating the commencement date and term.

22A 1-15 EXCAVATION AND BACKFILLING

Perform excavation and backfill required for installation of underground work under this contract. Trenches shall be of sufficient width. Crib or brace trenches to prevent cave-in or settlement. Do not excavate trenches close to columns and walls of building without prior consultation with the architect. Use pumping equipment if required to keep trenches free of water. Backfill trenches in maximum 6" layers of well-tamped dry earth in a manner to prevent future settlement.

Excavation as herein specified shall be classified as common excavation. Common excavation shall comprise the satisfactory removal and disposition of material of whatever substances and of every description encountered, including rock, if any, within the limits of the work as specified and shown on the drawings. Excavation shall be performed to the lines and grades indicated on the drawings. Excavated materials which are considered unsuitable for backfill, and surplus of excavated material which is not required for backfill, shall be disposed of by the contractor at his own expense and responsibility, and to the satisfaction of the architect.

22A 1-16 COINCIDENTAL DAMAGE

Repair all streets, sidewalks, drives, paving, walls, finishes, and other facilities damaged in the course of this work. Repair materials shall match existing construction. All backfilling and repairing shall meet all requirements of the owner, city and others having jurisdiction. Repair work shall be thoroughly first class. Conform to all requirements of Division 2 of these specifications.

22A 1-17 CUTTING AND PATCHING

Following the requirements in Division 1, cut walls, floors, ceilings, and other portions of the facility as required to perform work under this division. Obtain permission of the architect, owner, or both, before doing any cutting. Cut all holes as small as possible. Patch walls, floors, and other portions of the facility as required by work under this division. All patching shall be thoroughly first class and shall match the original material and construction, including fire ratings if applicable in a manner satisfactory to the architect.

22A 1-18 ROUGH-IN

Coordinate without delay all roughing-in with other divisions. Conceal all piping and rough-in except in unfinished areas and where otherwise indicated in the construction documents.

22A 1-19 CONCRETE BASES

Provide concrete bases for equipment where indicated on the drawings. Concrete bases shall have chamfered edges. Size of pad shall be a minimum of 4" greater than the footprint of the equipment that it is supporting.

Construct equipment bases and housekeeping pads of a minimum 28 day, 4000 psi concrete conforming to American Concrete Institute standard building code for reinforced concrete (ACI 318-99) and the latest applicable recommendations of the ACI standard practice manual. Concrete shall be composed of cement conforming to ASTM C 150 Type I, aggregate conforming to ASTM C33, and potable water. Exposed exterior concrete shall contain 5 to 7 percent air entrainment.

Unless otherwise specified or shown on the structural drawings, reinforce equipment bases and housekeeping pads with No. 4 reinforcing bars conforming to ASTM A 615 or 6x6 – W2.9 x W2.9 welded wire mesh conforming to ASTM A185. Place reinforcing bars 24" on center with a minimum of two bars each direction.

Provide galvanized anchor bolts for equipment placed on concrete equipment bases and housekeeping pads or on concrete slabs. Anchor bolts size, number and placement shall be as recommended by the manufacturer of the equipment.

Concrete equipment bases shall have minimum heights in accordance with the following: for water heaters, water softeners and other equipment not listed, minimum height is 4". For water heaters over 200 gallons capacity and domestic water booster pumps, minimum height is 6". Height of equipment bases applies to equipment installed on slab-on-grade. For equipment installed on floors above grade and on the roof, refer to the drawings.

22A 1-21 ACCESS DOORS

Provide access doors in ceilings and walls where indicated or required for access to concealed valves and equipment installed under this section. Provide concealed hinges, screwdriver-type lock, anchor straps; manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size, location, and color before ordering.

22A 1-22 PENETRATIONS

Provide sleeves for pipes passing through above grade concrete or masonry walls, concrete floor or roof slabs. Sleeves are not required for core drilled holes in existing masonry walls, concrete floors or roofs. Provide 10 gauge galvanized steel sleeves for sleeves 6" and smaller. Provide galvanized sheet metal sleeves for larger than 6". Schedule 40 PVC sleeves are acceptable for installation in areas without return air plenums.

Seal elevated floor, exterior wall and roof penetrations watertight and weathertight with non-shrink, non-hardening commercial sealant. Pack with mineral wool and seal both ends with minimum of ½" of sealant.

Seal around penetrations of fire rated assemblies. Coordinate fire ratings and locations with the architectural drawings. Refer to architectural specifications for fire stoppings. Provide a product schedule for UL listing, location, wall or floor rating and installation drawing for each penetration fire stop system.

Extend pipe insulation for insulated pipe through floor, wall and roof penetrations, including fire rated walls and floors. The vapor barrier shall be maintained. Size sleeve for a minimum of 1" annular clear space between inside of sleeve and outside of insulation.

Seal concrete or masonry exterior wall penetrations below grade with "wall pipes" and mechanical sleeve seals. Provide cast iron "wall pipes" with integral waterstop ring manufactured by Josam, Jay R. Smith, Wade, Watts or Zurn. Provide modular mechanical sleeve seals, manufactured by Thunderline / Link Seal, Calpico, Inc., and Metraflex.

Seal elevated concrete slab with water proof membrane penetrations with "wall pipes" and water proof sealant. Secure waterproof membrane flashing between "wall pipe" clamping flange and clamping ring. Provide cast iron "wall pipes" with integral waterstop ring manufactured by Josam, Jay R. Smith, Wade, Watts or Zurn.

Provide sleeves for horizontal pipe passing through or under foundation. Sleeves shall be cast iron soil pipe two nominal pipe sizes larger than the pipe served.

Provide Schedule 40 PVC pipe sleeves for vertical pressure pipe passing through concrete slab on grade. Sleeves shall be one nominal pipe size larger than the pipe served and two pipe sizes larger than pipe served for ductile iron pipes with restraining rods. Seal water-tight with silicone caulk.

Provide 1/2" thick cellular foam insulation around perimeter of non-pressure pipe passing thru concrete slab on grade. Insulation shall extend to 2" above and below the concrete slab.

22A 1-24 ELECTRICAL WIRING

Line Voltage control and interlock wiring shall be provided by the Division 26 contractor. Low Voltage control wiring shall be provided by the Division 23 contractor. Required conduit and rough-ins for low Voltage control wiring shall be provided by the Division 26 contractor. Furnish wiring diagrams to the Division 26 contractor as required for proper equipment hookup. Coordinate with the Division 26 contractor the actual wire sizing amps for the equipment (from the equipment nameplate) to ensure proper installation.

22A 1-25 EQUIPMENT FURNISHED BY OTHERS

Furnish and install roughed-in wastes, vents and water services. Provide final connection to kitchen equipment, furnished by others, in locations as indicated on the drawings. Provide accessory items that are required but not furnished with the equipment, including traps, stop valves, PRV's, indirect drain from equipment to floor drains, and accessory items indicated or required for the proper operation of the complete system at the termination of the work.

Contractor shall be responsible for correct rough-in dimensions, and shall verify same with architect and/or equipment supplier prior to service installations.

22A 1-26 ALTERNATES

Refer to the architectural portion of the specification for list of alternates. Applicable sections of the base specifications shall apply to all work required by the alternate unless otherwise specified. Determine whether or not and how each alternate affects work. Include labor, materials, equipment and transportation services necessary for and incidental to the completion of work under each particular alternate. Furnish separate bid for each alternate applicable to work, stating the amount to be added or deducted from the base bid.

22A 1-27 EXTERIOR UTILITY CONNECTIONS
Terminate domestic water, storm, and sewer lines at a point approximately five feet from the building wall, or as shown on the drawings. Make connection to the various services provided by others and coordinate connection requirements with civil engineer. Verify that installation will tie into the various services provided by others at the indicated invert elevation point prior to installation. If the installation will not tie into the indicated invert elevation point while maintaining proper fall, notify architect and civil engineer so that an alternative may be determined.

Provide service piping and accessories required to complete utility connections that are not furnished by the serving utility.

22A 1-30 SYSTEM TESTING AND ADJUSTING

Upon completion of each phase of the installation, test each system in conformance with local code requirements and as noted below. Furnish labor and equipment required to test plumbing work installed under this contract, and assume costs involved in making the tests, and repairing and/or replacing damage resulting therefrom.

Notify the architect and the authority having jurisdiction, three (3) working days prior to making plumbing system tests. Leave concealed work uncovered until the required tests have been completed, but if necessary due to construction procedure, tests on portions of the work may be made, and when satisfactory, the work may be concealed. Test piping before insulation is installed, and before backfill. Pipes, joints, flanges, valve stems, etc., shall be leak tight. Repair or replace system defects with new materials. Caulking of defective joints, cracks or holes will not be permitted. Repeat tests after defects have been eliminated. Make tests in the presence of the administrative authority and/or the owner's authorized representative.

Upon completion of the systems installation, and prior to acceptance by the architect and engineer, make general operating tests to demonstrate that equipment and systems are in proper working order, and are functioning in conformance with the intent of the drawings and specifications. As a part of these tests, open every water outlet to ensure complete system flushing, remove and clean faucet aerators, clean strainers, light pilot lights, and operate every piece of equipment furnished under this contract to demonstrate proper functioning.

Test the drainage and vent system by plugging openings with test plugs, except those at the top of the stacks. Fill the system with water; test results will be satisfactory if the water level remains stationary for not less than one (1) hour. Subject the drainage and vent system to a pressure of at least ten (10) feet of water. If leaks develop, repair them and repeat the test.

Test the domestic water system by filling it with water and then isolating the system from its source. Keep the system closed for a period of twenty-four hours, with no fixture being used. The pressure differential for this test period shall not exceed 10 psig. Test water piping to a 125 psi hydrostatic pressure.

For low pressure natural gas systems, subject the pipe to 10 psig air pressure for a period of one hour. The resultant pressure differential for this period shall be 0 psig. Test per gas company requirements where required.

22A 2 PLUMBING PIPING

22A 2-1 PIPING MATERIALS

Materials specified or noted on the drawings are subject to the approval of local code authorities. Verify approval before installing any material or joining method.

Domestic Water (cold, hot and hot water recirculation): Domestic water piping installed above the floor slab inside the building shall be silane cross-linked plyethylene PEX piping certified and listed to ASNI/NSF 14, ASTM F876, ASTM F2023,, ASTM F877, UL 1821, ASTM E84, and AWWA C904.

Underground domestic water piping 2" and smaller shall be type "K" soft temper copper tubing with flared copper alloy fittings and connections, or type "K" hard temper copper tubing with conventional wrought copper fittings and silver solder (Silfos) joints. Install as few underground copper piping joints as possible. At building service entrance, no joints shall be installed under or within 5 feet of the building. Install domestic water piping below grade outside building at adequate depth to prevent freezing.

Underground domestic water piping 3" and larger shall be Class 52 ductile iron meeting the requirements of ANSI / AWWA Standard C151/A21.51. Piping shall be double cement lined in accordance with ANSI / AWWA Standard C104/A21.4. Fittings shall have mechanical joints. At contractor's option, pipe joints in straight runs (not at fittings) and not installed under or within 5 feet of the building slab may be push-on joints. Joints shall conform to the requirements of ANSI 21.11.

Interior Waste and Vent Below Slab: Waste and vent pipe below slab inside building shall be service weight cast iron soil pipe with hub and spigot fittings with neoprene gasket joints, meeting ASTM A74, manufactured by AB & I Foundry, Charlotte or Tyler Pipe and bearing the trademark of the CISPI and NSF. Hubless waste and vent pipe is not permitted below base slab. PVC Schedule 40 DWV ASTM D2665 pipe with PVC meeting ASTM B1784, "solid wall" cell Class 12454-B with ASTM 2665 socket fittings with solvent weld joints is also permitted where approved by code.

Interior Waste and Vent Above Slab: Waste and vent pipe above slab inside building shall be hubless cast iron soil pipe and fittings, meeting ASTM A888 and CISPI 301, manufactured by AB & I Foundry, Charlotte or Tyler Pipe and bearing the trademark of the CISPI and NSF. PVC Schedule 40 DWV ASTM D2665 pipe with PVC meeting ASTM B1784, "solid wall" cell class 12454-B with ASTM 2665 socket fittings with solvent weld joints is also permitted where approved by code,

(Note: PVC piping is not allowed in ceiling return air plenums)

Connections To Plumbing Fixtures And Equipment: 1-1/4" and larger waste connections from fixture traps to cast iron pipe shall be "DWV" copper with wrought copper drainage pattern fittings with copper sweat or compression joints at fixture trap connections and threaded joints at connections to cast iron pipe.

Indirect and Condensate Drain Inside Building: Indirect and condensate drain pipe installed inside the building shall be Type "M" hard copper with wrought copper fittings for 1" and smaller and "DWV" copper with wrought copper drainage pattern fittings for 1-1/4" and larger Install cleanouts at elbows greater than 45 degrees.

Indirect and Condensate Drain Outside Building: Indirect and condensate drain pipe installed outside the building above ground shall be Type "M" for 1" and smaller and "DWV" for 1-1/4" and larger Terminate at nearest roof drain, gutter or other location as shown drawings. Install cleanouts at elbows greater than 45 degrees.

HP ENGINEERING

PROJECT NO. 202801R
100 % COMPLETE

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CONSULTANT

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HP ENGINEERING, INC.
#1653
ARKANSAS - ENGINEER

OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19283
ZACHARY E. ARCHER
01-29-2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET

PLUMBING SPECIFICATIONS

DISCIPLINE - SHEET

P4.0

22A 2-2 PIPING AND EQUIPMENT INSULATION

Domestic cold water, hot water, indirect and condensate drain pipe (within building)

Refer to pipe insulation schedule on drawings for insulation details. Provide with self-sealing lap to provide a continuous vapor barrier by Certainteed, Owens-Corning or Armstrong. For hot piping, provide pipe hangers and riser clamps sized for the outside diameter of piping. Butt insulation to hanger or riser clamp for vertical pipe. Seal exposed insulation with insulation sealer. Exception for vertical piping: provide clamps sized for the outside diameter of the vertical pipe and extend clamp through insulation. Seal penetrations of insulation and vapor barrier with wet coat of vapor barrier lap cement. For cold piping at hangers provide 8" long sections of high density, high temperature calcium silicate by Johns-Manville, fiberglass by Knauf, or 8" long styrofoam billets by Dow or flexible unicellular piping insulation meeting ASTM C 534-01, Type I with integral high density pipe supports and encased in steel insulation shield by Cooper B-Line / Armacell or equivalent. Insulation shall be continuous along the pipe surface, except at valves, unions, and where piping is exposed at fixtures. Provide insulation on vent piping within six feet of vent through the roof. Provide insulation on domestic cold and hot water pipes installed in walls and chases.

Provide insulation protection shield at each hanger for insulated piping.

Cover fittings with Zeston, Knauf, or equal one-piece PVC pre-molded insulating covers. Fitting covers, jackets and adhesives shall not exceed flame spread rating of 25 and smoke development rating of 50 per ASTM E84. At all elbows and tees, fill voids between covers and piping with fiberglass insulation and tape joints. Install pipe insulation in compliance with manufacturer's recommendations. Where pre-molded insulating fittings are not approved by local authorities, miter insulation at fittings.

Provide 2" fiberglass thick insulation for water, sanitary, waste or grease waste piping in unheated spaces where indicated on the drawings.

22A 2-3 PIPING JOINTS

Copper Tubing: Joints in hard temper tubing shall be soldered joints using lead-free 95/5 solder except where tubing is installed below grade or below the base slab, in which case joints shall be soldered with silver solder (Silfos). Joints in soft temper copper tubing shall be of the flared type installed in compliance with the fitting manufacturer's recommendations.

PVC Pipe: Clean joints free from debris and moisture. Apply PVC primer meeting ASTM F656 to each joint. Apply solvent cement meeting ASTM D2564 and make joint while wet and in accordance with ASTM D2855.

Pipe Adapters: Make connection of new waste pipe to new or existing dissimilar waste pipe using adapter couplings. Provide Fernco, Proflex 3000 series or Mission Flexseal MR56 series with neoprene adapter gasket with stainless steel shield and hose clamps for connecting dissimilar pipes above grade. Provide Fernco, 1056 series or Mission sewer couplings with neoprene adapter gasket and hose clamps for connecting dissimilar pipes below grade and coat stainless steel bands with mastic

22A 2-4 PIPING INSTALLATION

General: Clean pipe thoroughly prior to installation. Ream ends of pipe to remove burrs. Cut pipe accurately to measurements taken on the job. Install with adequate clearance for installation of coverings where required. Pipe shall not be sprung or bent. Neatly align pipe, connect it securely, and support it from the building structure with hangers as specified below. Provide chrome-plated escutcheons on pipes passing through ceilings, floors or walls of finished spaces. Run pipes freely through floor and wall penetrations using pipe sleeves. Do not grout in place unless required for structural fire integrity. Install pipe concealed in finished spaces wherever possible. Use a dielectric union where ferrous and copper pipe connect. Dielectric union shall have a zinc-plated steel body, a threaded nylon insert, and insulating pressure gasket. No ferrous metal-to-copper connection made without insulating unions will be allowed.

Copper Tube: Adjustable band hangers for bare copper tube 3" and smaller shall be B-Line #B3170 CT copper plated adjustable band swivel ring type. Adjustable band hangers for insulated copper tube and 3" smaller shall be B-Line #B3170 NF adjustable band swivel ring type. Clevis hangers for insulated copper tube 4" and larger shall be B-Line #B3100 galvanized steel clevis type. Support exposed copper tube 2" and smaller to walls or in chases with B-Line #B3198 RCT copper coated extension split ring pipe clamps, 3/8" threaded rod and B-Line #B3199 CT ceiling flanges. Support copper tube in chases and walls at plumbing fixtures with plastic or copper brackets secured to structure and u-bolts sized to bare on the pipe. Riser clamps to support vertical copper tube shall be B-Line #B3373 CT copper coated steel, cut insulation, seal vapor barrier, and attach to bare tube.

PVC Pipe: Adjustable band hangers for 3" and smaller shall be B-Line #B3170 NF adjustable band swivel ring type. Clevis hangers for 4" and larger shall be B-Line #B3100 galvanized steel clevis type. Riser clamps to support vertical pipe shall be B-Line #B3373 galvanized steel.

Insulation Protection Shields: B-Line #B3151 of 18 gauge galvanized sheet metal. Shield shall cover half of the circumference of the pipe and shall be of length indicated by manufacturer for pipe size and thickness of insulation.

Hanger Spacing, Rod Sizes & Connectors: Connect rods to steel beams or joists with B-Line #B3031 or #B3033 beam clamps as required. Connect rods to concrete with B-Line #B3014 malleable iron single type inserts with malleable iron nut. Connect rods in wood construction with B-Line #B3058 side beam connectors. Hang and support piping with spacing and rod sizes as follows:

Copper Tube: 1-1/2" and smaller - every 6' with 3/8"hanger rods; 2" every 10' with 3/8"hanger rods; 2-1/2" every 10' with 3/8" hanger rods; 3" every 10' with ½" rods; 4" every 10' with 5/8" hanger rods. Support vertical copper tube every 10'.

PVC Pipe: Support all pipes sizes every 4'. 1-1/2" and smaller with 3/8" hanger rods; 2" with 1/2"hanger rods; 2-1/2" and 3" with 1/2" hanger rods; 4" and larger with 5/8" hanger rods. Support vertical PVC pipe every 4'.

Supports On Floor: Support piping from the floor where required for ferrous pipe or insulated copper tube, shall be B-Line #B3093 galvanized steel with pipe saddle, threaded shank for height adjustment and floor stand secured to the floor.

Below Ground Installation For Soil, Waste And Storm: Install soil and waste piping to a uniform slope of not less than 1/8" per foot for piping 3" or larger, and not less than 1/4" per foot for piping 2-1/2" or smaller.

Above Ground Installation For Soil, Waste And Storm: Install piping to a uniform slope of not less than 1/8" per foot for piping 3" or larger, and not less than 1/4" per foot for piping 2-1/2" or smaller. Lay pipe at uniform slope free from sags. Support pipe within 12" of each joint. Make changes in direction from horizontal to vertical, at fixture branches and other branch connections with sanitary "tees" or short sweep "ells". Make changes in direction from vertical to horizontal or horizontal to horizontal with long radius fittings, long sweeping "ells", combination "y and 1/8 bend" fittings, or 45 degree "ells" (1/8 bend fittings), 1/6 bend or 1/16 bend and "y" fittings. Provide a smooth and uniform invert in the system. Drilling or tapping of soil and waste lines, and saddle hubs and bands are not permitted. Locate and install soil and waste lines as indicated on the drawings. Determine exact locations in such a manner as to maintain proper clearance.

PLUMBING VENT: Connect plumbing vent pipes to fixture drain pipes as indicated on the drawings or as required by the installation practices adopted and enforced by local codes official, and extend vent pipes full size through the roof line. Grade pipe to a uniform slope so as to drain back by gravity to the drainage piping system. Vents passing through the roof shall be minimum 3" size except in tropical climates, per local codes. Turn flashing down into stacks at least 2", and extend flashing 24" in all directions from the pipe at the roof line. Apply white lead pipe dope on male steel pipe threads. Vent lines shall be air and water tight. Vent floor drains individually or connect them to a horizontally vented line as shown on the drawings.

DOMESTIC WATER: Arrange cold, hot, and hot water recirculation piping to drain at the lowest point in each system. Install at least one pipe union adjacent to all shutoff valves, at connection points of each piece of equipment, and elsewhere in the system where required to allow proper maintenance. Provide unions of the ground joint type. Make allowance for expansion and contraction where required by the installation. Where water piping occurs in exterior walls, hold pipe as close as possible to the interior face of wall and install insulation batt or other insulation (minimum R-8) between piping and the exterior wall face.

22A 2-5 PIPING SANITIZATION

Sanitize the entire domestic water piping system (cold, hot, and hot water return) with a solution containing not less than 50 ppm available chlorine. Keep solution in the system for a minimum of 24 hours, with each valve being operated several times during the period. After completion, flush system with city water until chlorine residual is lowered to incoming city water level.

22A 2-6 PIPE AND VALVE MARKERS

Provide manufacturer's standard pre-printed, semi-rigid snap-on or permanent adhesive, pressure-sensitive vinyl pipe markers. Pipe markers shall be color-coded complying with ANSI A13.1.

Install pipe markers on each plumbing piping system and include arrows to show normal direction of flow.

Locate pipe markers and color bands wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums) and exterior non-concealed locations.

Provide plastic laminate or brass valve tag on every valve, cock and control device in each plumbing piping system; exclude check valves, valves within factory-fabricated equipment units, plumbing fixture faucets, convenience and lawn-watering hose bibbs, and shut-off valves at plumbing fixtures and similar rough-in connections of end-use fixtures and units.

22A 2-9 AIR ADMITTANCE VALVES

Provide air admittance valves where indicated on drawings. Air admittance valves shall meet ASSE 1050 or 1051 where applicable by Studor or equal, by Oatey, Proset, or Rectorseal. Install per code and manufacturer requirements.

22A 3 PLUMBING SPECIALTIES

22A 3-1 WATER HAMMER ARRESTORS, AND TRAPSProvide water hammer arrestors at valves or batteries of fixtures as indicated on the drawings to prevent water hammer. Arrestors shall be Josam, Jay R. Smith, Precision Plumbing Products, Proflo, Sioux Chief, Wade, Watts, or Zurn, stainless steel bellows type, or o-ring sealed and lubricated acetal piston. Install water hammer arrestors per the Plumbing and Drainage Institute PDI WH-201 installation instructions. Installation of arrestors at batteries of fixtures precludes the requirement for individual air chambers at each battery fixture. Air chambers are not acceptable as a substitute for water hammer arrestors.

Provide conventional "p" type trap, water-sealed self-cleaning design. Full "s" traps or trap standards shall be used only where specifically called for on the drawings or elsewhere in this specification. Trap water seals shall not be less than 2", and deep seal traps shall be provided where specified or indicated. Each trap not integral with the fixture or floor drain or installed below the base slab shall be provided with an accessible cleanout of adequate size. Provide trap primers where required by code and where indicated on the drawings.

22A 3-2 CLEANOUTS, FLOOR DRAINS AND ROOF DRAINS

Cleanouts, floor drains and roof drains shall be by one manufacturer if possible. Acceptable manufacturers are Josam, Jay R. Smith, Wade, Watts, Mifab, and Zurn.

Provide long sweep fittings for cleanout extensions; short sweeps at start of runs or change in direction and combination wye and eighth bend fittings in horizontal runs. Install cleanouts with a minimum of 18" clear all around, consult local codes for other requirements, for easy system maintenance. Install plug with teflon joint compound.

EXTERIOR CLEANOUTS: Shall be as scheduled on the drawings. Install cleanouts at points as noted on the drawings, at the building exit; at a minimum of every 100 feet in horizontal soil, waste and storm service lines. Embed each exterior cleanout in a block of concrete, flush with finished grade. Coordinate size of block with construction documents.

WALL CLEANOUTS: Shall be as scheduled on the drawings. Install wall cleanouts at points as noted on the drawings; at the foot of each soil, waste or interior downspout stack; at horizontal soil and waste branches longer than five feet not served by a floor cleanout; consult local codes for installation at specific fixture types. Install wall cleanouts above the flood rim of the fixture served within four feet of the floor and install extensions from the cleanout tee to the wall to locate the plug within 2" of the wall where required. Install cleanouts on urinals and sinks where required by code.

22A 3-3 VALVES, STRAINERS, HOSE BIBBS, AND UNIONS

Plumbing system valves shall be Crane Company or Nibco of models herein specified, or equivalent by Hammond, Milwaukee, Stockham or Mueller Valves. Valves shall be of the best quality, designed for 125 psi steam working pressure. Install valves on the hot and cold water lines at the water heater connections and other items of equipment, at branches from mains serving groups of fixtures, and at other places indicated or required by the installation to allow ease of future maintenance

GATE VALVES: Class 125, size 2" and smaller shall be Nibco #S-113-LF non-rising stem, soldered lead free bronze body and parts, with wedge disc. Gate valves 2-1/2" and larger shall be Crane #465-1/2 or Nibco #617-0, OS&Y, iron body flanged wedge gate with brass seats and stem.

BALL VALVES (may be used in lieu of gate valves up to 2"): 2" and smaller, Nibco #S-685-80-LF; two piece lead free bronze body, with soldered ends, chrome plated bronze ball with conventional port, 600 psi, blow-out proof stem.

CHECK VALVES: Check valves shall be Class 125. Check valves for installation in horizontal pipe runs shall be of the "swing disc" design. Horizontal check valves 2" and smaller shall be Milwaukee #UP1509 or Nibco #S-413-Y-LF with soldered lead free bronze body and bronze disc. Horizontal check valves 2-1/2" and larger shall be Crane #373 or Nibco F-918 iron body flanged valve with brass trim. Check valves for installation in vertical pipe runs shall be of the "vertical lift" spring loaded design. Vertical check valves 2" and smaller shall be Milwaukee #UP1548T or Nibco #S-480-Y-LF with soldered lead free bronze body and bronze disc. Vertical check valves 3" and larger shall be center guided.

THERMOSTATIC MIXING VALVES: Thermostatic mixing valves shall be Powers as described on the drawings or equal Armstrong, Bradley, Leonard, Lawler, Symmons or Watts meeting ASSE 1070 with brass body, non-corrosive internal parts, tamper resistant temperature adjustment, union inlets and check stops with strainers. Set temperature at 110 deg. F for hand washing.

WALL HYDRANTS: Jay R. Smith #5609-QT "non-freeze" surface type with cast bronze satin nickel plated face, with integral vacuum breaker, 3/4" hose connection, adjustable wall clamp, removable key handle operator; or equal by Woodford, Josam, Prier, Wade, Watts or Zurn. Provide accessible shut off valve and water hammer arrestor inside building.

MILD CLIMATE WALL HYDRANTS: Mifab #MY-25 surface type with top or bottom feed close coupled connection for installation in a 4" nominal wall, cast bronze satin nickel plated face, with integral vacuum breaker, 3/4" hose connection, adjustable wall clamp, removable key handle operator; or equal by Woodford, Josam, or Zurn. Provide accessible stop valve and water hammer arrestor inside building.

UNIONS: Ferrous unions shall be Crane or equal, combination iron and brass, ground joint with screwed ends. Copper unions shall be Streamline or equal, cast bronze sweat type with ground joint. Ferrous to copper unions shall be Universal Controls or equal, dielectric type with threaded nylon insert.

FLOW CONTROL VALVES: For installation in hot water recirculation lines, shall be Bell & Gossett #RF-1/2S "circuit setter" or equal by Armstrong or Nibco with bronze body, brass ball, TFE seat rings, calibrated orifice, memory stop, readout valves with internal check valves, drain port and sweat connections. Provide ball valve, strainer and check valve upstream and union and ball valve downstream of each flow control valve. Set the flow control valves to the flows as indicated on the drawings.

22A 3-6 SYSTEM ACCESSORIES

Thermometers shall be American 3" bi-metal dial type with separable socket, and shall be installed where indicated or required.

Pressure gauges shall be Ashcroft 3" dial type with shut-off cock, and shall be installed where indicated or required.

Ice maker connection boxes shall be as specified on the drawings, Guy Gray #BIM875 or equivalent, with 20 gauge steel body, wall flange and water connection.

Trap guards shall be by Proset Systems of molded PVC elastomer that allows the flow of waste water and closes upon termination of flow. Install per manufacturer's installation instructions. Do not touch elastomeric plug or allow contact with primer or solvent cement.

22A 4 PLUMBING FIXTURES AND EQUIPMENT

22A 4-1 PLUMBING FIXTURES

Provide china fixtures as scheduled by American-Standard or equivalent by Crane, Eljer, Gerber, Kohler, Toto-kiki or Zurn. Provide stainless steel sinks as scheduled by Elkay or equal by Just. Provide electric water coolers as scheduled by Elkay or equivalent by Acorn / Aqua, Halsey Taylor or Haws. Provide mop sinks as scheduled by Stern-Williams or equal by Acorn Engineering Co., Fiat or Florestone. Provide fixtures of same manufacturer where possible.

Fixtures shown on the drawings or specified herein shall be furnished and installed, set firm and true, connected to required piping services, thoroughly cleaned, left clean and ready for use. Exposed fittings and piping at the fixtures shall be chrome-plated, and water supply piping shall be valved at each fixture.

Vitreous china fixtures shall be of the best grade vitreous ware, without pit holes or blemishes, and the outlines shall be generally true. The engineer reserves the right to reject any pieces which, in his opinion, are faulty. Fixtures set against walls shall have ground backs and shall be caulked with silicone sealant of a matching color.

22A 4-2 PLUMBING FIXTURE TRIM

Faucets and trim in contact with drinking water shall meet or exceed the safe water drinking act (SWDA) lead-free standards of ANSI/NSF Standard 61, Section 9.

Provide faucets as scheduled on drawings.

Provide single lever handle faucets as scheduled on drawings.

Fixture p-traps shall be 17 gauge brass body with cleanout, 17 gauge seamless tubular wall bend with cast brass slip nut, shallow steel flange, all chrome plated.

Lavatory, sink and water closet supplies shall be solid brass angle or straight type with full turn brass stem, wheel handle or loose key types as noted on drawings, shallow steel flange, 3/8" copper riser flange, all chrome plated, final connection as required.

Lavatory drains shall be grid type chrome plated 17 gauge brass open grid with 1-1/4" x 6" long seamless brass tailpiece and brass locknut with heavy rubber basin washer and fiber friction washer.

Provide shower valves as scheduled on drawings.

Sink drains shall be basket type with chrome plated forged brass basket strainer and strainer body with 1-1/2" x 4" long seamless brass tailpiece and cast brass lock and coupling nuts.

Provide handicap insulation kits for lavatories and sinks on exposed water and waste pipes and fittings, including offset drain and continuous waste covers where required.

Furnish to the owner, with receipt, the spare parts to include faucet washers and o-rings, flushometer repair kits and water closet tank repair kits for the fixtures furnished under the construction documents for this project.

22A 4-3 WATER HEATER

Water heater shall be by A.O. Smith, Bradford-White, Lochinvar, State, Rheem, Ruud, or equivalent with capacity as scheduled on the drawings. Unit shall be electric glasslined tank type complete with steel jacket, fiberglass insulation, magnesium anode, integral thermostats and controls, and temperature & pressure relief valve. Water heater shall be UL listed and meet ASHRAE 90.1B standards for thermal efficiency and standby heat loss.

Relief valve: Water heater relief valve shall be of the test lever type, with automatic reset, combination temperature and pressure relief, and shall be ASME and AGA stamped and approved. It shall be installed directly on the heater tank, or in the hot water outlet, not more than 3" from the tank. The temperature shall be normally set to relieve at 210 deg. F and the pressure relief shall be at 125 psi. The relief valve discharge line shall be piped down and terminate 6" above a floor drain.

Vacuum relief valve: Watts #N36 or Wilkins #VR-10 with bronze body and silicon disc. Valve shall open at 0.5" Hg vacuum and be rated for 200 psig working pressure and 250 deg. F temperature. Install in cold water supply to each water heater downstream of the shutoff and check valves.

Expansion tank: Expansion tank shall be Amtrol "Therm-X-Trol" as scheduled on the drawings or equal by Armstrong, Bell & Gossett, Proflo, Taco, or Watts. Unit shall be constructed of welded carbon steel listed for ASME labeled for 125 psig working pressure, with a FDA approved butyl rubber diaphragm, taps for pressure gage, air charging fitting, and drain fitting. Support as detailed on the drawings. Charge tank with air pressure equal to the static water pressure.

END OF SECTION 22A

HP ENGINEERING

PROJECT NO. 202801R
100 % COMPLETE

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ARKANSAS - ENGINEER

OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19283
ZACHARY E. ARCHER
01-29-2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET

PLUMBING SPECIFICATIONS

DISCIPLINE - SHEET

P4.1

GENERAL NOTE:
DUCT DIMENSIONS LISTED ON DRAWINGS REPRESENT THE AIRFLOW FREE AREAS AND DO NOT HAVE ALLOWANCES FOR INSULATION LINER, WHERE APPLICABLE, INSIDE THE DUCTS, OR DUAL WALL DIMENSIONS. DUCTS SHALL BE CONSTRUCTED TO INCLUDE INSULATION REQUIREMENTS AND MAINTAIN AIRFLOW DIMENSIONS INDICATED ON PLANS.

NOTE: NO LINED DUCT IN KITCHEN

MECHANICAL DUCTWORK & INSULATION SCHEDULE

SERVICE	DUCT TYPE	INSULATION TYPE	INSULATION THICKNESS
ALL LOW PRESSURE CONSTANT VOLUME SUPPLY AIR DUCT FROM AIR HANDLER OR PACKAGED UNIT	ROUND OR RECTANGULAR, AS INDICATED ON PLANS.	FIBERGLASS WRAP	2" WRAP, R VALUE=6.0
ALL SUPPLY AIR DIFFUSERS (BACKSIDE, NOT EXPOSED TO SPACE)	N/A	FIBERGLASS WRAP	2" WRAP, R VALUE=6.0
RESTROOM EXHAUST DUCT	ROUND OR RECTANGULAR, AS INDICATED ON PLANS.	FIBERGLASS WRAP OR MATTE FACED FIBERGLASS LINER, AS INDICATED ON PLANS	2" WRAP OR 1-1/2" LINER, R VALUE=6.0

MECHANICAL PIPING & INSULATION SCHEDULE

NOTE: ALL EXTERIOR INSULATED PIPING TO BE PROVIDED WITH ALUMINUM JACKET.

			INSULATION THICKNESS NOMINAL PIPE SIZE				
SERVICE	PIPING TYPE	INSULATION TYPE	<1	1 TO <1-1/2	1-1/2 TO <4	4 TO <8	≥8
EQUIPMENT DRAINS, COOLING CONDENSATE LINES, AND OVERFLOWS	TYPE "L" HARD COPPER	ELASTOMERIC	0.5	0.5	1.0	1.0	1.0
REFRIGERANT PIPING	COPPER REFRIGERANT PIPING	ELASTOMERIC	0.5	1.0	1.0	1.0	1.5
ALL OUTDOOR INSULATED PIPING	PROVIDE WITH EMBOSSED ALUMINUM JACKET OVER SCHEDULED INSULATION	PER SCHEDULE					

EXHAUST FAN SCHEDULE

TAG	MARK	DESCRIPTION	MFR	MODEL	DRIVE	FLOW	ESP	RPM	VOLTS	PH	POWER	SONES	CONTROL TYPE	NOTES
EF-	1	CEILING MOUNTED EXHAUST FAN	GREENHECK	SP-B80	DIRECT	50	0.25	815	115 V	1	13 W	1.1	SWITCH	A, B, C
EF-	2	CEILING MOUNTED EXHAUST FAN	GREENHECK	SP-A125	DIRECT	100	0.25	1054	115 V	1	18 W	0.6	SWITCH W/ LIGHTS	A, B, C

GENERAL NOTES APPLICABLE TO ALL UNITS:
1. PROVIDE PRE-WIRED FACTORY MOUNTED INTEGRAL DISCONNECT DEVICE.
2. PROVIDE VARIABLE SPEED CONTROLLER (FACTORY INSTALLED IF AVAILABLE) ON ALL DIRECT DRIVE FANS FOR FAN BALANCING.
3. MOUNT FAN SPEED CONTROLLER IN ACCESSIBLE LOCATION ABOVE CEILING UNLESS OTHERWISE NOTED.

NOTES
A PROVIDE BACKDRAFT DAMPER.
B PROVIDE ISOLATOR KIT.
C PROVIDE MANUFACTURER'S SPUN ALUMINUM ROOF CAP.

AIR DEVICE SCHEDULE

TAG	DESCRIPTION	MFR	MODEL	FACE SIZE	FRAME SIZE	NECK SIZE	MATERIAL	NOTES
CD-1s	CEILING DIFFUSER, LOUVERED FACE, ADJUSTABLE	PRICE	AMDA	9x9	12x12	6	ALUMINUM	A, B
CD-2	CEILING DIFFUSER, LOUVERED FACE, ADJUSTABLE	PRICE	AMDA	18x18	24x24	8	ALUMINUM	A, B
CG-1	RESIDENTIAL SUPPLY GRILLE - SPLIT FACE	PRICE	540S	8x6	10x8	N/A	STEEL	A, B
RG-1	RETURN FILTER GRILLE; 3/4" BLADE SPACING, 45° DEFLECTION	PRICE	535FF	14x12	16x14	N/A	STEEL	B

NOTES
A WITH FACE-OPERABLE DAMPER
B COLOR: FACTORY FINISH-WHITE

GENERAL MECHANICAL NOTES

1	SUBMISSION OF PROPOSAL IN CONNECTION WITH THIS WORK SHALL IMPLY THAT THE BIDDER HAS EXAMINED THE JOB SITE UNDER WHICH HE WILL BE OBLIGATED TO OPERATE SHOULD HE BE AWARDED THE WORK UNDER THIS CONTRACT. NO EXTRA CHARGE WILL BE ALLOWED FOR FAILURE OF ANY BIDDER TO EXAMINE THE SITE PRIOR TO BID.
2	DUCT DIMENSIONS LISTED ON DRAWINGS REPRESENT THE AIRFLOW FREE AREAS AND DO NOT HAVE ALLOWANCES FOR INSULATION LINER, WHERE APPLICABLE, INSIDE THE DUCTS, OR DUAL WALL DIMENSIONS. DUCTS SHALL BE CONSTRUCTED TO INCLUDE INSULATION REQUIREMENTS AND MAINTAIN AIRFLOW DIMENSIONS INDICATED ON PLANS. FOR CLASH COORDINATION INCLUDE INSULATION THICKNESS PER SCHEDULE.
3	ALL WORK SHALL CONFORM TO STATE AND LOCAL CODES, RULES, REGULATIONS, AND ORDINANCES WHICH SHALL TAKE PRECEDENCE OVER THE PLANS IF CONFLICTS EXIST BETWEEN THEM.
4	THE DRAWINGS INDICATE THE GENERAL LAYOUT REQUIREMENTS FOR EQUIPMENT, FIXTURES, PIPING, DUCTWORK, ETC. FINAL LAYOUT SHALL BE MODIFIED TO FIT ACTUAL SITE CONDITIONS. ALL REQUIRED REVISIONS SHALL BE RECORDED ON A DESIGNATED HARD COPY SET OF REDLINE PLANS TO BE KEPT CURRENT TO JOBSITE PROGRESS. AT MINIMUM, THIS DOCUMENT SHALL BE UPDATED WEEKLY AND REDILY AVAILABLE FOR REVIEW AND REFERENCE.
5	COORDINATE ALL WORK WITH THE OWNER AND ALL OTHER CONTRACTORS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RIGGING, HANDLING, AND PROTECTION OF MATERIALS. PROVIDE LABOR TO RECEIVE UNLOAD, STORE, PROTECT, AND TRANSFER TO POINT OF INSTALLATION OF ANY OWNER-FURNISHED ITEMS.
6	IN CASES OF EQUIPMENT SUBSTITUTION, CONTRACTOR IS RESPONSIBLE FOR VERIFYING THAT ALL SYSTEMS AND COMPONENTS WILL FIT PROPERLY PRIOR TO FABRICATION OR ORDERING. INSTALLED DUCTS MAY BE RESIZED BY THE CONTRACTOR TO FIT FIELD CONDITIONS AS LONG AS THE INSTALLED DUCTS SHALL HAVE EQUAL FRICTION LOSS TO THOSE SHOWN. RECTANGULAR DUCTS SHALL NOT BE CHANGED TO ROUND DUCTS. PROVIDE COMPLETE SHEET METAL SHOP DRAWINGS TO ENGINEER SHOWING ACTUAL DUCT SIZES, ARRANGEMENTS, AND UNIT LOCATIONS TO BE INSTALLED. THIS SHALL BE DONE PRIOR TO FABRICATION OR INSTALLATION.
7	INSTALL ACOUSTIC TURNING VANES IN ELBOWS IN RECTANGULAR DUCTS 20" AND LARGER. INSTALL RADIUS TYPE ELBOWS IN RECTANGULAR DUCTS SMALLER THAN 20".
8	USE 45 DEGREE TAKE-OFF FITTINGS AT ALL ROUND SUPPLY BRANCH TAKEOFFS. PROVIDE BALANCE DAMPERS AT ALL SUPPLY DUCT RUNOUTS TO GRILLES. LOCATE AS FAR AS POSSIBLE FROM GRILLES IN AN ACCESSIBLE LOCATION. PROVIDE ACCESS PANELS IN SOLID WALLS AND CEILINGS FOR BALANCING DAMPERS.
9	USE FLEX DUCTS FOR FINAL CONNECTION TO ALL CEILING DIFFUSERS, AND WHERE NECESSARY, SIDEWALL DIFFUSERS, AND LIMIT TO 6' MAX. LENGTHS.
10	PROVIDE A COMPLETE AND OPERATING MECHANICAL SYSTEM, INCLUDING ALL INCIDENTAL ITEMS AND CONNECTIONS NECESSARY FOR PROPER OPERATION OR CUSTOMARILY INCLUDED, EVEN THOUGH EACH AND EVERY ITEM MAY NOT BE INDICATED.
11	THE MECHANICAL INSTALLATION SHALL BE SAFE, RELIABLE, ENERGY EFFICIENT AND EASILY MAINTAINED WITH ADEQUATE PROVISIONS ALLOWED FOR ACCESS TO EQUIPMENT.
12	THE MECHANICAL SYSTEM SHALL OPERATE QUIETLY WITH NOISE LEVELS BELOW THE CRITERIA RECOMMENDED FOR THE APPLICATION BY ASHRAE. PROVIDE CORRECTIVE ACTION AS REQUIRED TO REDUCE OBJECTIONABLE NOISE OR VIBRATION.
13	UNDERCUT DOORS 3/4 INCH WHERE NO RETURN NOR EXHAUST GRILLE IS SHOWN TO ALLOW FOR AIR TRANSFER (DO NOT UNDERCUT FIREDOORS.)
14	REFER TO ARCH. PLANS AND DETAILS FOR EXACT LOCATION OF ALL WALL AND CEILING MOUNTED DEVICES. ADJUST LOCATION OF SIDEWALL DEVICES AS NECESSARY TO AVOID INTERFERENCE WITH MOLDING OR OTHER ELECTRICAL DEVICES.
15	WHERE CONDUIT, CABLES, DUCTWORK OR PIPING PASSES THROUGH FIRE-RATED FLOORS OR WALLS, THE SLEEVES SHALL BE COMPLETELY SEALED WITH A FIRE STOP MATERIAL THAT IS UL LISTED AND ACCEPTED BY LOCAL AUTHORITIES HAVING JURISDICTION (AHJ) AS BEING SUITABLE FOR THIS SERVICE SUCH AS DOWN CORNING CORP "SILICONE ELASTOMER, RTV FOAM, OR SIMILAR MATERIAL TO MAINTAIN FIRE RATING OF THE WALL OR FLOOR.
16	CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CORING AND BEAM PENETRATIONS AS IT RELATES TO HIS WORK.
17	CONTRACTOR SHALL NOT INSTALL ANY MAINTENANCE ITEMS ABOVE HARD CEILINGS. THIS SHALL INCLUDE VALVES, DAMPERS, OR ANY OTHER ITEMS THAT REQUIRE ACCESS AFTER CONSTRUCTION IS COMPLETED. IF INSTALLATION ABOVE A HARD CEILING OF THESE ITEMS CANNOT BE AVOIDED, THEN PROVIDE CEILING ACCESS DOORS EQUAL TO ACUDOR MODEL FW-505 WHERE REQUIRED. AT FIRE-RATED WALLS, USE EQUIVALENT OF ACUDOR MODEL FB-5060. MINIMUM SIZE SHALL BE 12"x12". USE 18"x18" WHEN PERSONNEL ACCESS IS REQUIRED.
18	PROVIDE AN INSULATED BACK ON ALL THERMOSTATS AND TEMPERATURE SENSORS THAT ARE MOUNTED ON CMU OR HOLLOW WALLS. PROVIDE SHALLOW DEVICE EXTENSION BOX BEHIND T-STATS AND SENSORS ON MASONRY WALLS IN COMMERCIAL / RETAIL SPACES.
19	PROVIDE FIRE DAMPERS AT ALL FIRE-RATED WALLS AND FLOOR PENETRATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR FIRE BARRIER WALLS AND CEILINGS.
20	AT PENETRATIONS THROUGH FIRE WALLS: ANY NON-METALLIC PIPE OR DUCT SHOULD BE EXTERNALLY SLEEVED WITH STEEL, FERROUS, OR COPPER MATERIALS, SECURELY FASTENED TO THE FIRE RATED ASSEMBLY, AND ANY SPACE BETWEEN THE SLEEVE AND THE ASSEMBLY PENETRATED SHALL BE PROTECTED USING MATERIAL THAT CONFORMS TO ASTM E 814 OR UL 1479, SUCH AS FIRE STOP FS-1900, OR FLAME STOPPER 5000.
21	SEISMIC PROTECTION FOR CONCERNS OF ALL BUILDING SYSTEMS INCLUDING BUT NOT LIMITED TO MECHANICAL, PLUMBING, AND ELECTRICAL MUST MEET MINIMUM REQUIREMENTS OF ALL APPLICABLE CODES FOR BUILDINGS' CLASSIFIED SEISMIC PROTECTION MEASURES TO BE APPLIED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AND WITH MANUFACTURERS'S REQUIREMENTS, THE MOST STRINGENT SHALL APPLY
22	ANY LINE VOLTAGE WIRING THAT IS RUN BY THE MECHANICAL CONTRACTOR SHALL BE INSTALLED IN ACCORDANCE WITH THE ELECTRICAL PLANS, NOTES, AND SPECIFICATIONS.
23	WHERE DUCTS PASS THROUGH FIRE RATED WALLS AND NO FIRE DAMPER IS REQUIRED, PROVIDE A STEEL SLEEVE (MIN. 12" LONG BY 0.60" THICK) IN EACH DUCT OPENING PER IBC 714.

AIR HANDLING UNIT WITH ELECTRIC HEAT SCHEDULE

TAG	MARK	DESCRIPTION	MFR	MODEL	NOM. TONS	DESIGN COOLING AIRFLOW	ESP	HEAT (kW)	# OF CKTS	FAN HP	VOLTS	PH	MCA	MOCP	DISCONNECT	CONTROL TYPE	NOTES
AH-	1	UPFLOW AIR HANDLING UNIT	LENNOX	CBA25UH-018	1.5	600 CFM	0.5	5	1	0.5	208 V	1	23 A	25 A	E.C. TO PROVIDE DISCONNECT	PROGRAMMABLE T-STAT	PROVIDE CONDENSATE PUMP EQUAL TO ASPEN PUMPS MODEL 'M4 TANK PUMP'
AH-	2	UPFLOW AIR HANDLING UNIT	LENNOX	CBA25UH-030	2.5	1000 CFM	0.5	8	1	0.5	208 V	1	37 A	40 A	E.C. TO PROVIDE DISCONNECT	PROGRAMMABLE T-STAT	PROVIDE CONDENSATE PUMP EQUAL TO ASPEN PUMPS MODEL 'M4 TANK PUMP'

AIR TO AIR HEAT PUMP SCHEDULE

TAG	MARK	DESCRIPTION	MFR	MODEL	NOM. TONS	SEER	COMPRESSOR STAGES	VOLTS	PH	DISCONNECT	MCA	MOCP	WEIGHT (lbs.)	NOTES
HP-	1	HEAT PUMP	LENNOX	ML14XP1-018-230	1.5	14	1	208 V	1	E.C. TO PROVIDE DISCONNECT	12 A	20 A	213	
HP-	2	HEAT PUMP	LENNOX	ML14XP1-030-230	2.5	14	1	208 V	1	E.C. TO PROVIDE DISCONNECT	17 A	25 A	213	

GENERAL NOTES APPLICABLE TO ALL UNITS:
1. PROVIDE ANIT-RECYCLE TIMERS, LOW AMBIENT CONTROLS, TXV, AND COIL HAIL GUARDS.
2. PROVIDE CONCRETE PAD. REF SPECIFICATIONS FOR DETAILS.

MINI SPLIT AIR CONDITIONER SCHEDULE

TAG	DESCRIPTION	MANUFACTURER	MODEL	CFM	SEER	COOLING CAPACITY	HEATING CAPACITY	VOLTS / PH	MCA	MOCP	NOTES
MAC-1	WALL MOUNTED INDOOR UNIT	DAIKIN	FTXB24AXVJU	555	---	---	---	---			
MHP-1	OUTDOOR HEAT PUMP	DAIKIN	RXB24AXVJU	---	17	21,200 BTUH	21,200 BTUH	230 / 1	16 A	20 A	

GENERAL NOTES APPLICABLE TO ALL UNITS:
1. MAC & MHP COMPRISE A SINGLE HEAT PUMP SPLIT SYSTEM AND INCLUDE MICROPROCESSOR CONTROLS.
2. PROVIDE WALL MOUNT FOR WIRELESS REMOTE.
3. WASHABLE AIR FILTER.
4. PROVIDE 7-DAY PROGRAMMABLE THERMOSTAT WITH AUTO-CHANGEOVER FUNCTION.

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CONTRACTOR TO COORDINATE EQUPMENT SIZE AND ORIENTATION WITH SPACE REQUIREMENTS PRIOR TO ORDERING EQUIPMENT.

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48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
ZACHARY E. ARCHER
No. 19283
01-29-2021

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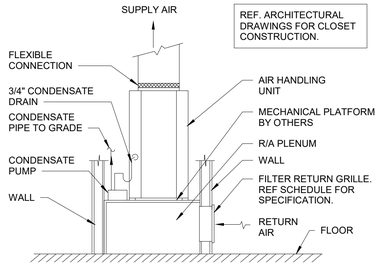
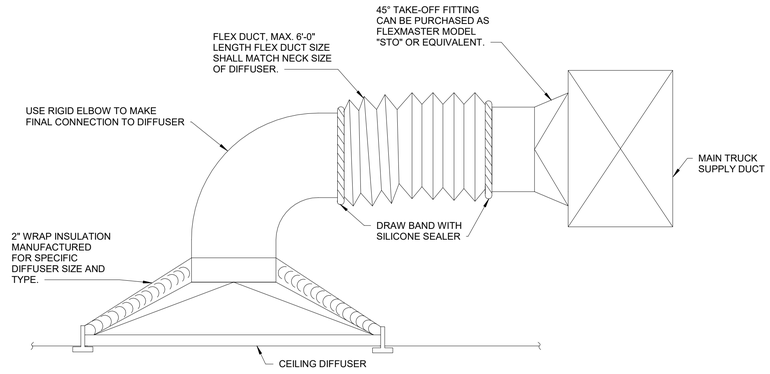
SHEET
MECHANICAL SCHEDULES AND NOTES

DISCIPLINE - SHEET
M1.0



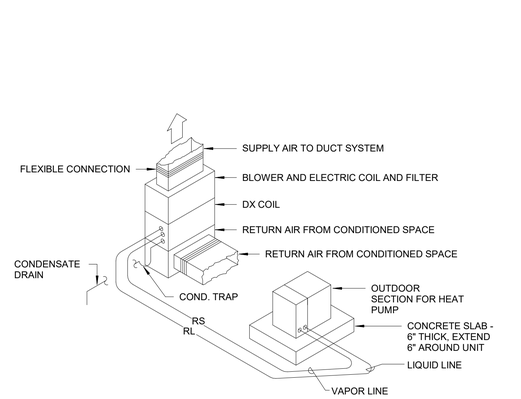
8 AIR HANDLING UNIT DETAIL
N.T.S.



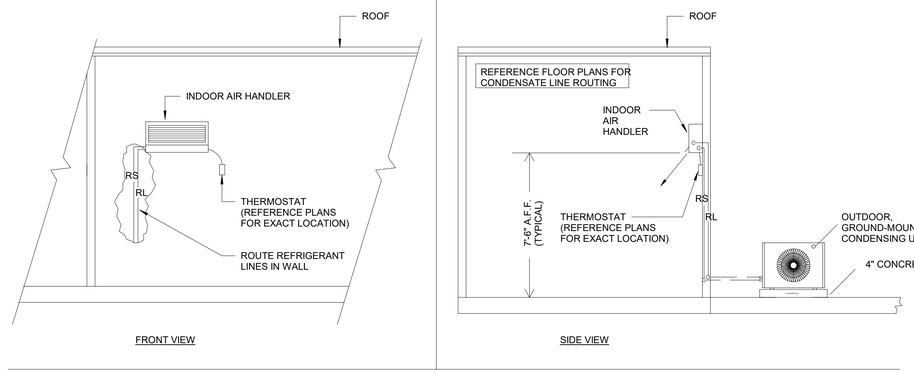
7 TYPICAL DIFFUSER CONNECTION WITH INSULATION
SCALE: N.T.S.

MECHANICAL LEGEND

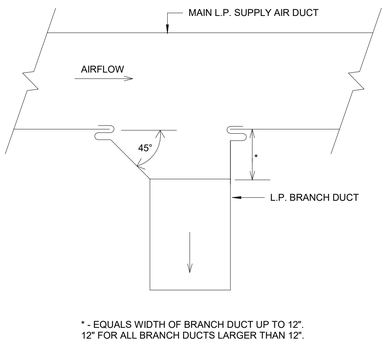
T	THERMOSTAT (MOUNTED AT 48" A.F.F)		EXHAUST GRILLE (CEILING MOUNTED)
S	TEMPERATURE SENSOR (MOUNTED AT 48" A.F.F)		SUPPLY DIFFUSER (CEILING MOUNTED)
F	REMOTE MANUAL PULL STATION (MOUNTED AT 48" A.F.F)		RETURN GRILLE (CEILING MOUNTED)
CO2	CARBON DIOXIDE DETECTOR (MOUNTED AT A.F.F)	CD-2 225 CFM	DIFFUSER CALLOUT TAG
D	DUCT MOUNTED SMOKE DETECTOR		MANUAL BALANCE DAMPER
UCD	WHERE SHOWN, UNDERCUT DOOR 1/2"		VERTICAL DUCT TAKE-OFF WITH BALANCE DAMPER
AHU-1	EQUIPMENT OR DEVICE TAG		SIDEWALL AIR DEVICE
CFM	STANDARD CUBIC FEET PER MINUTE	M	MOTORIZED 3-POSITION ACTUATOR EQUAL TO BELIMO MODEL 'LF24-SR-E'
FD	FIRE DAMPER	24x12	RECTANGULAR DUCT (FIRST DIMENSION, SIDE SHOWN)
FSD	COMBINATION FIRE/SMOKE DAMPER	16"	ROUND DUCT
B.O.D.	BOTTOM OF DUCT		INTERNALLY LINED DUCT
B.O.B.	BOTTOM OF BEAM		AIR FLOW ARROW
A.F.F.	ABOVE FINISHED FLOOR	(ROUND) (RECTANGULAR)	DUCT CONTINUATION SYMBOLS
	CONNECT TO EXISTING	C	CONDENSATE PIPE
		R	REFRIGERANT PIPE



6 SPLIT SYSTEM HEAT PUMP DETAIL
SCALE: N.T.S.

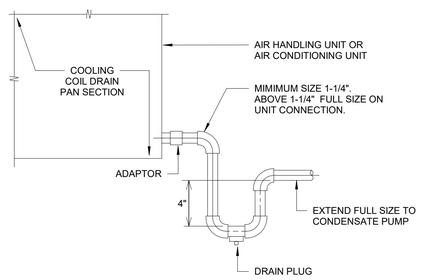


5 DUCTLESS SLIT SYSTEM WITH GROUND-MOUNTED CONDENSING UNIT
SCALE: N.T.S.

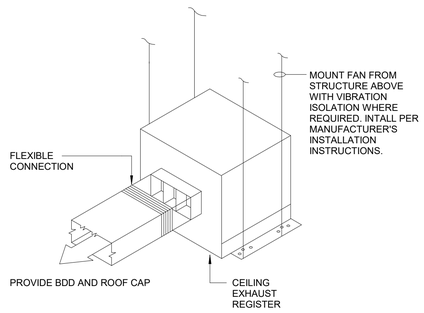


* - EQUALS WIDTH OF BRANCH DUCT UP TO 12".
12" FOR ALL BRANCH DUCTS LARGER THAN 12".

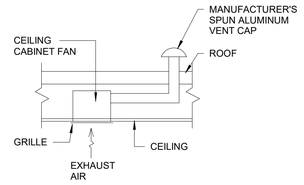
4 TYPICAL SUPPLY AIR BRANCH DUCT TAKE-OFF
SCALE: N.T.S.



3 CONDENSATE DRAIN TO CONDENSATE PUMP DETAIL
SCALE: N.T.S.



2 CEILING EXHAUST FAN DETAIL
SCALE: N.T.S.



1 BATHROOM EXHAUST FAN DETAIL - ROOF DISCHARGE
SCALE: N.T.S.

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STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 19283 ZACHARY E. ARCHER
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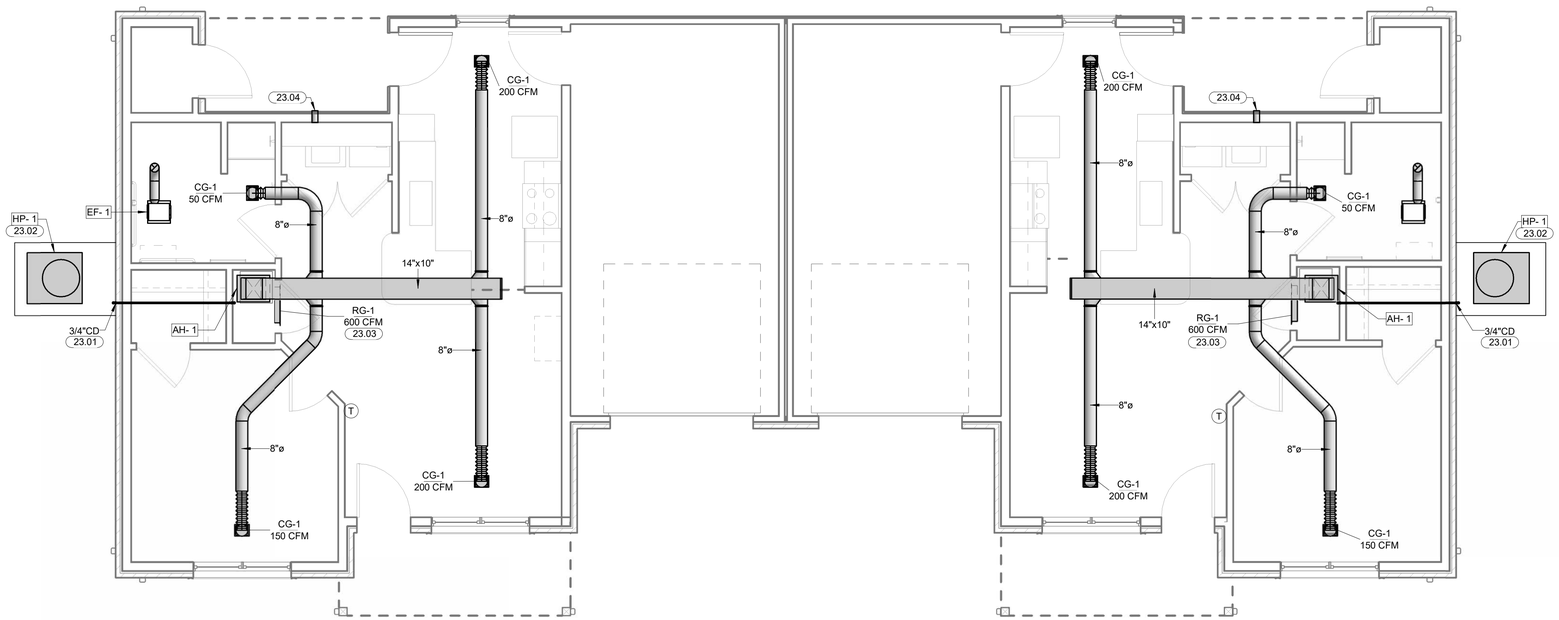
SHEET
MECHANICAL LEGEND AND DETAILS

DISCIPLINE - SHEET
M1.1

NOTES:
1. REFRIGERANT LINES SHALL BE ROUTED FROM INDOOR COOLING COIL TO CORRESPONDING OUTDOOR CONDENSING UNIT ABOVE CEILING AND THRU WALLS SO THAT THEY ARE NOT VISIBLE TO OCCUPANT.
2. REFRIGERANT LINES SHALL BE SIZED PER MANUFACTURER'S RECOMMENDATIONS FOR TONNAGE AND NOMINAL LENGTH OF REFRIGERANT LINES.
3. 1" CONDENSATE LINES SHALL BE ROUTED FROM INDOOR COOLING COILS DOWN EXTERIOR WALL TO 12" AFG AND DISCHARGE TO GRADE.

KEYNOTES

23.01	ROUTE ¾" CONDENSATE DRAIN LINE TO EXTERIOR WALL AND TERMINATE WITH AHJ APPROVED AIR GAP. MAINTIAN 1/8" PER FOOT SLOPE ON ALL HORIZONTAL RUNS.
23.02	PROVIDE CONCRETE HOUSEKEEPING PAD BENEATH CONDENSING UNIT AS SHOWN. EXTEND PAD 6" BEYOND EQUIPMENT AND TO BUILDING EXTERIOR WALL FOR EASE OF MAINTENANCE. VERIFY WITH EQUIPMENT MANUFACTURER REQUIREMENTS. PROVIDE 4" THICK 3500PSI CONCRETE WITH 6X6-W1.4XW.14 WWF OVER 4" GRAVEL BASE OVER COMPACTED SUBBASE. PROVIDE LIGHT BROOM FINISH WITH TOOLED EDGES.
23.03	CENTER RETURN GRILLE IN WALL BELOW MECHANICAL CLOSET ACCESS DOOR.
23.04	PROVIDE 4" DRYER CONNECTION BOX ON INTERIOR OF WALL. TERMINATE VENT AT EXTERIOR WALL WITH ANGLED VENT HOOD.



1 MECHANICAL PLAN - 1A
1/4" = 1'-0"

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MECHANICAL PLAN - 1
BEDROOM DUPLEX - TYPE 1A

DISCIPLINE - SHEET

M2.0

NOTES:
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3. 1" CONDENSATE LINES SHALL BE ROUTED FROM INDOOR COOLING COILS DOWN EXTERIOR WALL TO 12" AFG AND DISCHARGE TO GRADE.

KEYNOTES

23.01	ROUTE ¾" CONDENSATE DRAIN LINE TO EXTERIOR WALL AND TERMINATE WITH AHJ APPROVED AIR GAP. MAINTIAN 1/8" PER FOOT SLOPE ON ALL HORIZONTAL RUNS.
23.02	PROVIDE CONCRETE HOUSEKEEPING PAD BENEATH CONDENSING UNIT AS SHOWN. EXTEND PAD 6" BEYOND EQUIPMENT AND TO BUILDING EXTERIOR WALL FOR EASE OF MAINTENANCE. VERIFY WITH EQUIPMENT MANUFACTURER REQUIREMENTS. PROVIDE 4" THICK 3500PSI CONCRETE WITH 6X6-W1.4XW.14 WWF OVER 4" GRAVEL BASE OVER COMPACTED SUBBASE. PROVIDE LIGHT BROOM FINISH WITH TOOLED EDGES.
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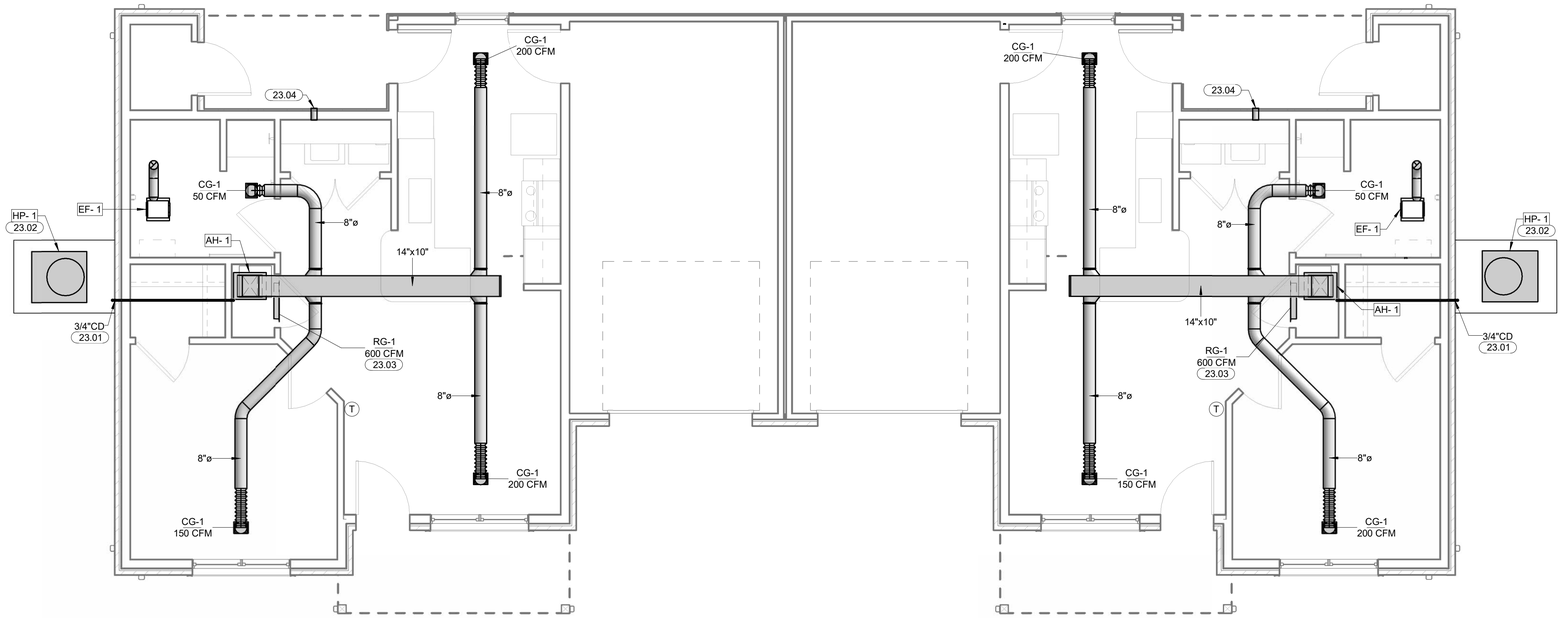
23.04	PROVIDE 4" DRYER CONNECTION BOX ON INTERIOR OF WALL. TERMINATE VENT AT EXTERIOR WALL WITH ANGLED VENT HOOD.



1 MECHANICAL PLAN - 1B
1/4" = 1'-0"

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MECHANICAL PLAN - 1
BEDROOM DUPLEX - TYPE 1B

DISCIPLINE - SHEET

M2.1

NOTES:
1. REFRIGERANT LINES SHALL BE ROUTED FROM INDOOR COOLING COIL TO CORRESPONDING OUTDOOR CONDENSING UNIT ABOVE CEILING AND THRU WALLS SO THAT THEY ARE NOT VISIBLE TO OCCUPANT.
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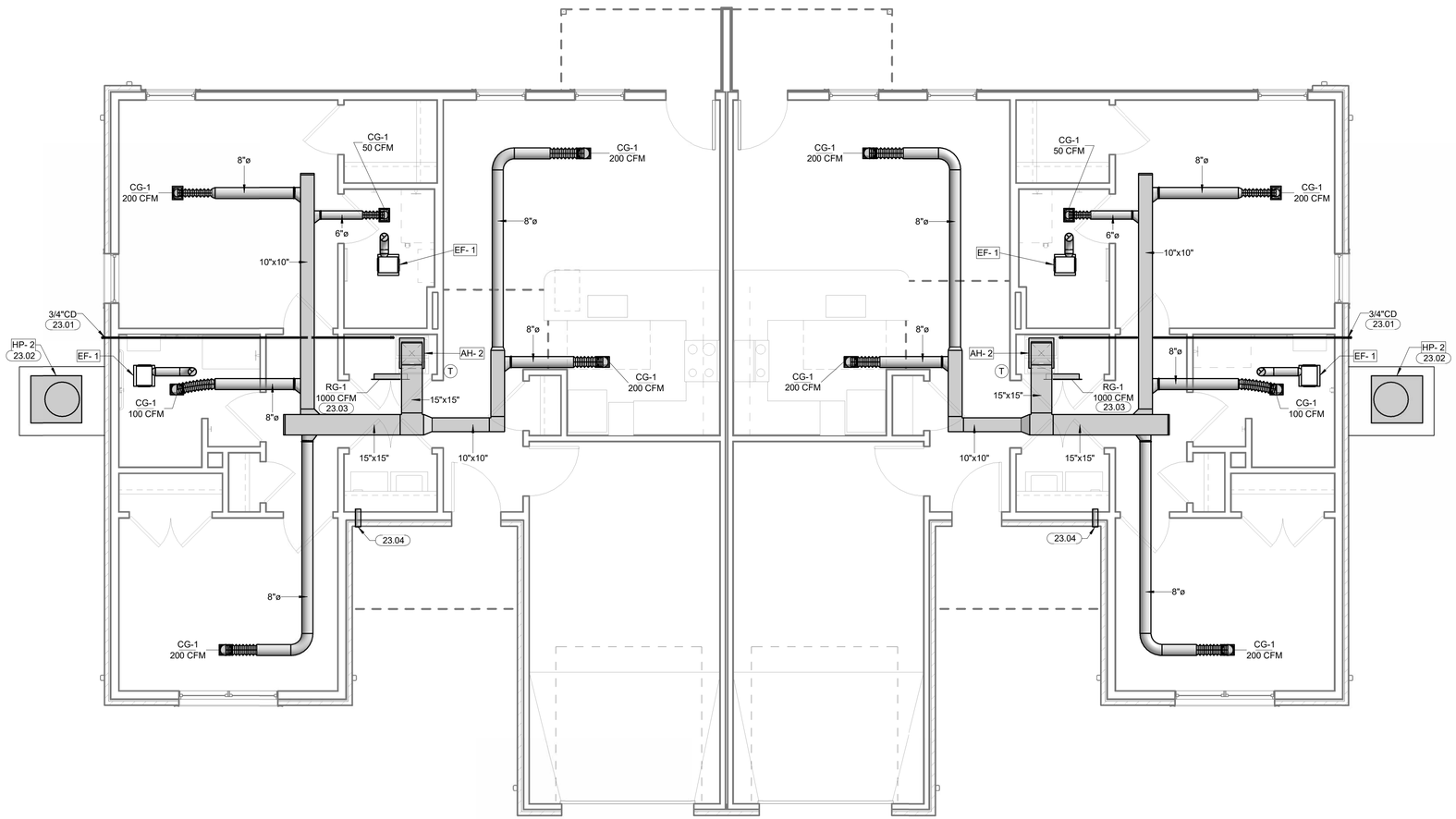
3. 1" CONDENSATE LINES SHALL BE ROUTED FROM INDOOR COOLING COILS DOWN EXTERIOR WALL TO 12" AFG AND DISCHARGE TO GRADE.

KEYNOTES

23.01	ROUTE ¾" CONDENSATE DRAIN LINE TO EXTERIOR WALL AND TERMINATE WITH AHJ APPROVED AIR GAP. MAINTIAN 1/8" PER FOOT SLOPE ON ALL HORIZONTAL RUNS.
23.02	PROVIDE CONCRETE HOUSEKEEPING PAD BENEATH CONDENSING UNIT AS SHOWN. EXTEND PAD 6" BEYOND EQUIPMENT AND TO BUILDING EXTERIOR WALL FOR EASE OF MAINTENANCE. VERIFY WITH EQUIPMENT MANUFACTURER REQUIREMENTS. PROVIDE 4" THICK 3500PSI CONCRETE WITH 6X6-W1.4XW.14 WWF OVER 4" GRAVEL BASE OVER COMPACTED SUBBASE. PROVIDE LIGHT BROOM FINISH WITH TOOLED EDGES.
23.03	CENTER RETURN GRILLE IN WALL BELOW MECHANICAL CLOSET ACCESS DOOR.
23.04	PROVIDE 4" DRYER CONNECTION BOX ON INTERIOR OF WALL. TERMINATE VENT AT EXTERIOR WALL WITH ANGLED VENT HOOD.



1 MECHANICAL PLAN - 2A
1/4" = 1'-0"

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MECHANICAL PLAN - 2
BEDROOM DUPLEX - TYPE 2A

DISCIPLINE - SHEET

M2.2

NOTES:
1. REFRIGERANT LINES SHALL BE ROUTED FROM INDOOR COOLING COIL TO CORRESPONDING OUTDOOR CONDENSING UNIT ABOVE CEILING AND THRU WALLS SO THAT THEY ARE NOT VISIBLE TO OCCUPANT.
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3. 1" CONDENSATE LINES SHALL BE ROUTED FROM INDOOR COOLING COILS DOWN EXTERIOR WALL TO 12" AFG AND DISCHARGE TO GRADE.

KEYNOTES

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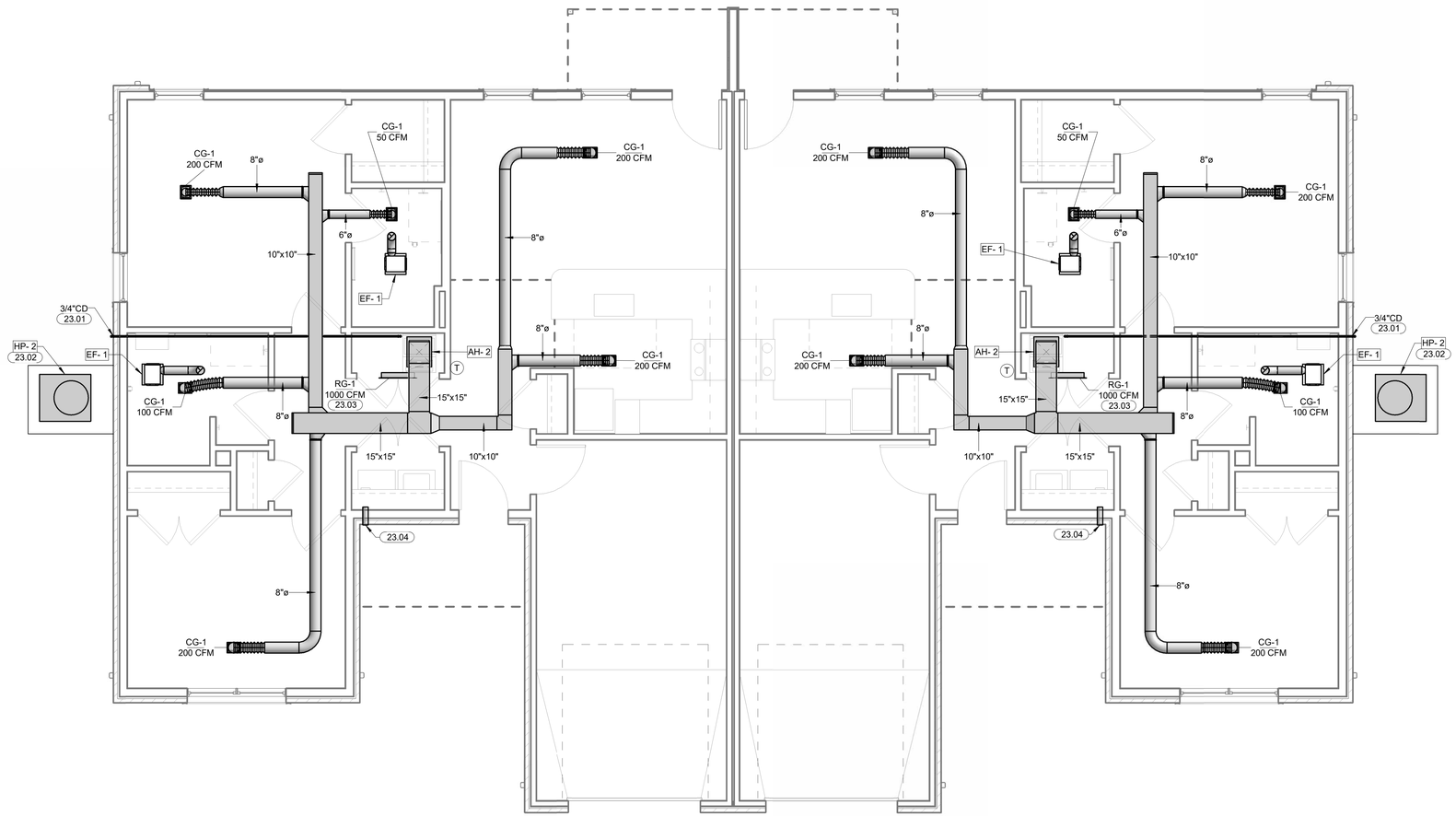

1 MECHANICAL PLAN - 2B
1/4" = 1'-0"

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MECHANICAL PLAN - 2
BEDROOM DUPLEX - TYPE 2B

DISCIPLINE - SHEET

M2.3

NOTES:
1. REFRIGERANT LINES SHALL BE ROUTED FROM INDOOR COOLING COIL TO CORRESPONDING OUTDOOR CONDENSING UNIT ABOVE CEILING AND THRU WALLS SO THAT THEY ARE NOT VISIBLE TO OCCUPANT.
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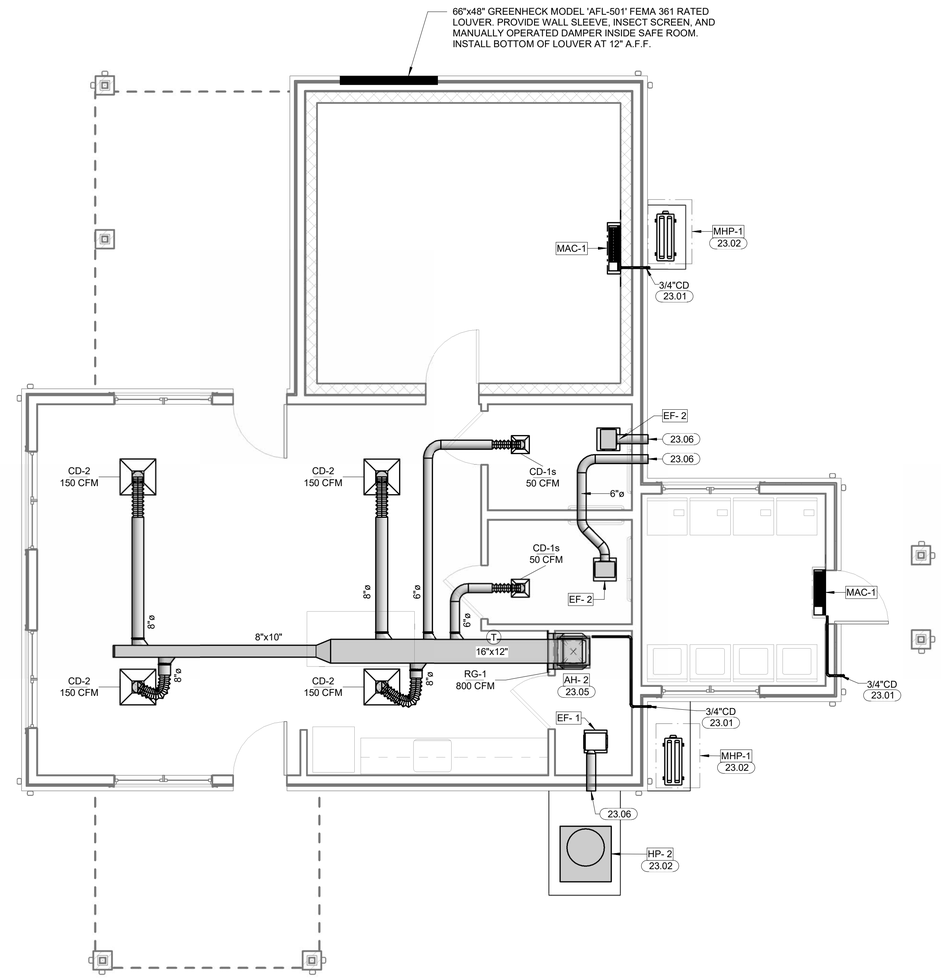
23.05	PROVIDE PLENUM BOX BENEATH AIR HANDLER WITH CONNECTION TO RETURN GRILLE IN WALL. COORDINATE WEIGHT REQUIREMENTS WITH AIR HANDLER MANUFACTURER.
23.06	TERMINATE VENT AT MANUFACTURER'S WALL CAP.



1 MECHANICAL PLAN - 3A
1/4" = 1'-0"

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MECHANICAL PLAN - COMMUNITY BUILDING - TYPE 3A

DISCIPLINE - SHEET

M2.4

23A HEATING, VENTILATING, AND AIR CONDITIONING
rev – 20150529

23A 1 GENERAL INSTRUCTIONS

23A 1-1 GENERAL REQUIREMENTS

Requirements under Division 1 and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 1, this section and division take precedence. Become thoroughly familiar with all their contents as to requirements that affect this division, section or both. The work required under this section includes material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate each system's functioning as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and portions of the work described in one, shall be provided as if described in both. In the event of discrepancies, notify the engineer and request clarification prior to proceeding with the work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They also convey the scope of work, indicating the intended general arrangement of the equipment and other materials without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which, when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory and properly operating system. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing all contract documents. Correct errors that could have been avoided by proper checking and inspection, at no additional cost to the owner.

Specifications define the qualitative requirements for products, materials, and workmanship upon which the contract is based.

23A 1-2 DEFINITIONS

Whenever used in these specifications or drawings, the following terms shall have the indicated meanings:

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembling, installing, and similar operations."

Install: "to perform all operations at the project site, including, but not limited to, and as required: unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use."

Provide: "to furnish and install complete, and ready for the intended use."

Furnished by owner (or owner-furnished) or furnished by others: "an item furnished by the owner or under other divisions or contracts, and installed under the requirements of this division, complete, and ready for the intended use, including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division.

Engineer: where referenced in this division, "engineer" is the engineer of record and the design professional for the work under this division, and is a consultant to, and an authorized representative of, the architect, as defined in the general and/or supplementary conditions. When used in this division, it means increased involvement by, and obligations to, the engineer, in addition to involvement by, and obligations to, the "architect".

AHJ: the local code and/or inspection agency (authority) having jurisdiction over the work.

NRTL: nationally recognized testing laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project.

The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, certified, or all three, by an NRTL, and acceptable to the AHJ over this project.

23A 1-3 PRE-BID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

23A 1-4 MATERIAL AND WORKMANSHIP

Provide all material and equipment new and in first class condition. Provide markings or a nameplate for all material and equipment identifying the manufacturer and providing sufficient reference to establish quality, size and capacity. In general, provide the following quality grade(s) for all materials and equipment:

Commercial Specification Grade
Light Duty and Residential Grade
Pipe, pipe fittings, pipe specialties and valves shall be manufactured in plants located in the United States.

Work performed under this contract shall provide a neat and "workmanlike" appearance when completed, to the satisfaction of the architect and engineer. Workmanship shall be the finest possible by experienced mechanics of the proper trade.

The complete installation shall function as designed and intended with respect to efficiency, capacity, noise level, etc. Abnormal or excessive noise from equipment, devices or other system components will not be acceptable.

Remove from the premises waste material present as a result of work. Clean equipment installed under this contract to present a neat and clean installation at the termination of the work.

Repair or replace public and private property damaged as a result of work performed under this contract to the satisfaction of authorities and regulations having jurisdiction.

23A 1-5 MANUFACTURERS

In other articles where lists of manufacturers are introduced, subject to compliance with requirements, provide products by one of the manufacturers specified.

Where a list is provided, manufacturers listed are not in accordance with any ranking or preference.

Where manufacturers are not listed, provide products subject to compliance with requirements from manufacturers that have been actively involved in manufacturing the specified product for no less than 5 years.

23A 1-6 COORDINATION

Coordinate all work with other divisions and trades so that the various components of the systems will be installed at the proper time, fit the available space, and will allow proper service access to those items requiring maintenance. Refer to all other division's drawings, and to relevant equipment submittals and shop drawings to determine the extent of clear spaces. Components which are installed without regard to the above shall be relocated at no additional cost to the owner.

Unless otherwise indicated, the general contractor will provide chases and openings in building construction required for installation of the systems specified herein. Contractor shall furnish the general contractor with information where chases and openings are required. Make all offsets required to clear equipment, beams and other structural members, and to facilitate concealing system components in the manner anticipated in the design. Keep informed as to the work of other trades engaged in the construction of the project, and execute work in a manner as to not interfere with or delay the work of other trades.

Figured dimensions shall be taken in preference to scale dimensions. Contractor shall take his own measurements at the building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by proper checking and inspection

Provide materials with trim that will properly fit the types of ceiling, wall, or floor finishes actually installed. Model numbers listed in the construction documents are not necessarily intended to designate the required trim.

23A 1-7 ORDINANCES, CODES, AND STANDARDS

Work performed under this contract shall, at a minimum, be in conformance with applicable national, state and local codes having jurisdiction. Equipment furnished and associated installation work performed under this contract shall be in strict compliance with current applicable codes adopted by the local AHJ including any amendments and standards as set forth by the National Fire Protection Association (NFPA), Underwriters Laboratories (UL), Occupational Safety and Health Administration (OSHA), American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), American National Standards Institute (ANSI), American Society of Testing Materials (ASTM) and other national standards and codes where applicable. Additionally, comply with rules and regulations of public utilities and municipal departments affected by connection of services.
Where the contract documents exceed the requirements of the referenced codes, standards, etc., the contract documents shall take precedence.

Promptly bring all conflicts observed between codes, ordinances, rules, regulations, referenced standards, and these documents to the engineer's attention for final resolution. Contractor will be held responsible for any violation of the law.

Procure and pay for permits and licenses required for the accomplishment of the work herein described. Where required, obtain, pay for and furnish certificates of inspection to owner. Contractor will be held responsible for violations of the law.

23A 1-8 PROTECTION OF EQUIPMENT AND MATERIALS

Store and protect from damage equipment and materials delivered to job site, in accordance with manufacturers' recommendations. For materials and equipment susceptible to changing weather conditions, dampness, or temperature variations, store inside in conditioned spaces. For materials and equipment not susceptible to these conditions, cover with waterproof, tear-resistant, heavy tarp or polyethylene plastic as required to protect from plaster, dirt, paint, water, or physical damage. Equipment and material that has been damaged by construction activities will be rejected, and contractor shall furnish new equipment and material as required at no additional cost to the owner.

Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. shall have a neat and clean appearance at the termination of the work.

Plug or cap open ends of ductwork and piping systems while stored and installed during construction when not in use to prevent the entrance of debris into the systems.

23A 1-9 SUBSTITUTIONS

Include in the base bid the products specifically named in these specifications or on the drawings. Submit, in the form of alternates, with bid, products of any other manufacturers for similar use, provided the differences in cost, if any, are included for each proposed alternate.

No substitutions will be considered with receipt of Bids, unless the Architect and Engineer have received from the Bidder a written request for approval to bid a substitution at least ten calendar days prior to the date for receipt of Bids, and have approved the substitution request. Include, with each such request, the name of the material or equipment for which substitution is being requested, and a complete description of the proposed substitution, including drawings, cut sheets, performance and test data, and all other information necessary for an evaluation. Include also a statement setting forth changes in other materials, equipment or other work that would be required to incorporate the substitution. The burden of proof of the merit of the proposed substitute is upon the proposer. The proposer of any substitutions shall compensate the Engineer at a rate of $150.00 per hour for time spent evaluating proposed substitutions and or the subsequent revisions to the design required to utilize the substitution.

The Architect's or Engineer's decision to approve or disapprove a substitution in a Bid is final.

If the proposed substitution is approved prior to receipt of Bids, such approval will be stated in an Addendum. Bidders shall not rely upon approvals made in any other manner, including verbal.

No substitutions will be considered after receipt of Bids and before award of the Contract.

No substitutions will be considered after the Contract is awarded unless specifically provided in the Contract Documents.

23A 1-10 SUBMITTALS

Assemble and submit to the architect, for engineer's review, manufacturers' product literature for material and equipment to be furnished, installed, or both, under this division, including shop drawings, manufacturers' product data and performance sheets, samples, and other submittals required by this division. Highlight, mark, list or indicate the materials, performance criteria and accessories that are being proposed. Provide the number of submittals required by division 1; however, at a minimum, submit two (2) sets. Before submitting, verify that all materials and equipment submitted are mutually compatible and suitable for the intended use, fit the available spaces, and allow ample and code-required room for access and maintenance. Submittals shall contain the following information. Submittals not so identified will be returned to the contractor without action:

The project name.
The applicable specification section and paragraph.
The submittal date.
The contractor's stamp, which shall certify that the stamped drawings have been checked by the contractor, comply with the drawings and specifications, and have been coordinated with other trades.

Submittals and shop drawings shall not contain HP Engineering's firm name or logo, nor shall it contain the HP Engineering's engineers' seal and signature. They shall not be copies of HP Engineering's work product.

Transmit submittals as early as required to support the project schedule. Allow for two weeks engineer review time, plus mailing time, plus a duplication of this time for re-submittals, if required. The engineer's submittal reviews will not relieve the contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items with actual building conditions.

Refer to division 1 for acceptance of electronic submittals for this project. For electronic submittals, contractor shall submit the documents in accordance with the procedures specified in division 1. Contractor shall notify the architect and engineer that the shop drawings have been posted. If electronic submittal procedures are not defined in division 1, contractor shall include the website, user name and password information needed to access the submittals. For submittals sent by e-mail, contractor shall copy the architect and engineer's designated representatives. Contractor shall allow the engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the electronic submittal and shall clearly indicate the materials, performance criteria and accessories being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without review.

23A 1-11 ELECTRONIC DRAWING FILES

In preparation of shop drawings or record drawings, contractor may, as an option, obtain electronic drawing files in Revit, AutoCAD, or DXF format from the engineer for a fee of $200 for the first sheet and $100 per sheet for each additional sheet. Contact the architect for written authorization; and, contact the engineer to obtain the necessary release agreement form and to indicate the desired shipping method and drawing format. In addition to payment, architect's written authorization and engineer's release agreement form must be received before electronic drawing files will be sent.

23A 1-12 OPERATION AND MAINTENANCE MANUALS

Submit to the architect, for engineer's review, copies each of operations and maintenance instruction manuals, appropriately bound into manual form including approved copies of the following, revised if necessary to show system and equipment as actually installed. Paper clips, staples, rubber bands, and mailing envelopes are not considered approved binders. Provide the number of submittals required by Division 1; however, at a minimum, submit two (2) sets, and include, at a minimum, the following information:

Cover sheet that lists the project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, and an index of contents.
Manufacturers' catalogs and product data sheets
Wiring diagrams
Operation and Maintenance instructions
Parts lists
Approved shop drawings
Test reports as defined for the systems and equipment provided or furnished or installed under this contract.
Names, addresses, telephone numbers, and e-mail addresses of local contacts for warranty services and spare parts.

Submit manuals prior to requesting the final punch list and before any requests for substantial completion. Final approval of this division's systems installed under this contract will be withheld until this equipment brochure is received and deemed complete by the architect and engineer.

Provide "as-built" drawings (see Division 1 and general conditions).

23A 1-13 TRAINING

At a time mutually agreed upon between the owner and contractor, provide the services of a factory trained and authorized representative to train owner's designated personnel on the operation and maintenance of the equipment provided for this project.

Provide training to include but not be limited to an overview of the system and/or equipment as it relates to the facility as a whole; operation and maintenance procedures and schedules related to startup and shutdown, troubleshooting, servicing, preventive maintenance and appropriate operator intervention; and review of data included in the operation and maintenance manuals.

Submit a certification letter to the architect stating that the owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees and subject of training. The contractor and the owner's representative shall sign the certification letter indicating agreement that the training has been provided.

Schedule owner training with at least 7 days' advance notice.

23A 1-14 WARRANTIES

Warrant each system and each element thereof against all defects due to faulty workmanship, design or material for a period of 12 months from date of substantial completion, unless specific items are noted to carry a longer warranty in the construction documents or manufacturer's standard warranty exceeds this duration. Warranties shall include labor and material. Remedy all defects, occurring within the warranty period(s), as stated in the general conditions and Division 1 without any additional costs to the owner.

Perform any required remedial work promptly, upon written notice from the engineer or owner.

At the time of substantial completion, deliver to the owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the required period, each warranty instrument being addressed to the owner and stating the commencement date and term.

23A 1-15 CUTTING AND PATCHING

Perform cutting of walls, floors, ceilings, etc. as required to install work under this section. Obtain permission from the architect prior to cutting. Do not cut or disturb structural members without prior approval from the architect. Cut holes as small as possible. General contractor shall patch walls, floors, etc. as required by work under this section. Patching shall match the original material and construction. Repair and refinish areas disturbed by work to the condition of adjoining surfaces in a manner satisfactory to the architect.

23A 1-16 ROUGH-IN

Coordinate without delay roughing-in with general construction. Conceal piping and conduit rough-in except in unfinished areas and where otherwise shown.

23A 1-17 CONCRETE BASES

Provide concrete bases for equipment where indicated on the drawings and as specified herein. Concrete bases shall have chamfered edges. Size of pad shall be a minimum of 4" greater than the footprint of the equipment that it is supporting and shall have a minimum height of 3-1/2".

Construct equipment bases and housekeeping pads shall be of a minimum 28 day, 4000 psi concrete conforming to American Concrete Institute standard building code for reinforced concrete (ACI 318-99) and the latest applicable recommendations of the ACI standard practice manual. Concrete shall be composed of cement conforming to ASTM C 150 Type I, aggregate conforming to ASTM C33, and potable water. Exposed exterior concrete shall contain 5 to 7 percent air entrainment.

Unless otherwise specified or shown on the structural drawings, reinforce equipment bases and housekeeping pads with No. 4 reinforcing bars conforming to ASTM A 615 or 6x6 - W2.9 x W2.9 welded wire mesh conforming to ASTM A185. Place reinforcing bars 24" on center with a minimum of two bars each direction.

Provide galvanized anchor bolts for equipment placed on concrete equipment bases and housekeeping pads or on concrete slabs. Anchor bolts size, number and placement shall be as recommended by the manufacturer of the equipment.

23A 1-18 STRUCTURAL STEEL

Structural steel used for support of equipment, ductwork and piping shall be new, clean, and conform to ASTM designation A-36.

Support mechanical components from the building structure. Do not support mechanical components from ceilings, other mechanical or electrical components, and other non-structural elements.

23A 1-19 ACCESS DOORS

Provide access doors in ceilings, walls, etc. where indicated or required for access or maintenance to concealed valves and equipment installed under this section. Provide concealed hinges, screwdriver-type lock, anchor straps; manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size, location and color before ordering.

23A 1-20 PENETRATIONS

Provide sleeves for pipes passing through above grade concrete or masonry walls, concrete floor or roof slabs. Sleeves are not required for core drilled holes in existing masonry walls, concrete floors or roofs. Provide 10 gauge galvanized steel sleeves for sleeves 6" and smaller. Provide galvanized sheet metal sleeves for larger than 6". Schedule 40 PVC sleeves are acceptable for installation in areas without return air plenums.

Seal elevated floor, exterior wall and roof penetrations watertight and weathertight with non-shrink, non-hardening commercial sealant. Pack with mineral wool and seal both ends with minimum of 1/2" of sealant.

Seal around penetrations of fire rated assemblies. Coordinate fire ratings and locations with the architectural drawings. Refer to architectural specifications for fire stoppings. Provide a product schedule for UL listing, location, wall or floor rating and installation drawing for each penetration fire stop system.

Extend pipe insulation for insulated pipe through floor, wall and roof penetrations, including fire rated walls and floors. The vapor barrier shall be maintained. Size sleeve for a minimum of 1" annular clear space between inside of sleeve and outside of insulation.

Provide prefabricated roof curbs manufactured by Custom Curb, Inc., Pate Company, Thycurb or approved equal. Provide roof curb with factory installed wood nailer; welded, 18 gauge galvanized steel shell, base plate and flashing; 1-1/2" thick, 3 pound rigid insulation; fully mitered 3-inch raised cant; cover of weather-resistant, weather-proof material and pipe collar of weather-resistant material with stainless steel pipe clamps.

Provide box frames for rectangular openings welded 12 gauge galvanized steel attached to forms and of a maximum dimension established by the architect. Notify the general contractor or architect before installing any box openings not shown on the architectural or structural drawings.

Seal concrete or masonry exterior wall penetrations below grade with "wall pipes" and mechanical sleeve seals. Provide cast iron "wall pipes" with integral waterstop ring manufactured by Josam, Jay R. Smith, Wade, Watts or Zurn. Provide modular mechanical sleeve seals, manufactured by Thunderline / Link Seal, Calpico, Inc. and Metraflex.

Seal elevated concrete slab with water proof membrane penetrations with "wall pipes" and water proof sealant. Secure waterproof membrane flashing between "wall pipe" clamping flange and clamping ring. Provide cast iron "wall pipes" with integral waterstop ring manufactured by Josam, Jay R. Smith, Wade, Watts or Zurn.

Provide sleeves for horizontal pipe passing through or under foundation. Sleeves shall be cast iron soil pipe two nominal pipe sizes larger than the pipe served.

Provide Schedule 40 PVC pipe sleeves for vertical pressure pipe passing through concrete slab on grade. Sleeves shall be one nominal pipe size larger than the pipe served and two pipe sizes larger than pipe served for ductile iron pipes with restraining rods. Seal water-tight with silicone caulk.

Provide 1/2" thick cellular foam insulation around perimeter of non-pressure pipe passing thru concrete slab on grade. Insulation shall extend to 2" above and below the concrete slab.

23A 1-21 AIR FILTERS

Provide MERV 8 pleated, throwaway type filters, unless otherwise indicated. Air units shall have new filters installed when they are operated before final acceptance. Filters shall be manufactured by American Air Filter, Farr, Flanders, or approved equal.

If HVAC equipment is used during the construction period, contractor shall provide one set of filters when the unit is started and replace filters when needed, but not less than every month. Install new filters prior to testing, adjusting, and balancing work. On the day of substantial completion, the contractor shall clean the unit and provide a new set of filters in the unit before turning system over to owner.

Furnish to owner, with receipt, One set of spare filters of each type required for each unit.

23A 1-22 MOTORS AND STARTERS

Provide motors and starting equipment where not furnished with the equipment package. Motors shall have copper windings, Class B insulation, and be standard squirrel cage with starting torque characteristics suitable for the equipment served. Motors for air handling equipment shall be selected for quiet operation. Each motor shall be checked for proper rotation after electrical connection has been completed. Provide drip-proof enclosure for locations protected from weather and not in air stream of fan; and totally enclosed fan cooled enclosure for motors exposed to weather. Motors shall be manufactured by Century, General Electric, Westinghouse, Louis Allis, or approved equal.

Furnish to owner, with receipt, one complete set of belts for each relative motor utilizing a belt drive.

Provide every motor, except fractional horsepower single phase motors with an approved type of "built-in" thermal overload protection, with a motor starter. Each starter shall be provided with overload heaters sized to the motor rating, and every three phase motor starter shall have overload heaters in each phase. Ambient compensated heaters shall be installed wherever necessary. Unless noted otherwise, motor starters shall be furnished by this Divisions contractor for installation and connection by the Division 26 contractor. Starters shall be Allen-Bradley, Clark, Furnas, Square D, or approved equal.

23A 1-23 ELECTRICAL WIRING

Line Voltage control and interlock wiring shall be provided by the Division 26 contractor. Low Voltage control wiring shall be provided by the Division 23 contractor. Required conduit and rough-ins for low Voltage control wiring shall be provided by the Division 26 contractor. Furnish wiring diagrams to the Division 26 contractor as required for proper equipment hookup. Coordinate with the Division 26 contractor the actual wire sizing amps for the equipment (from the equipment nameplate) to ensure proper installation.

23A 1-24 REFRIGERANT AND OIL

Provide full refrigerant and oil charge in new air conditioning refrigeration systems, and maintain it for full term of the guarantee.

23A 1-25 FINAL TESTING AND ADJUSTMENTS

Final system testing, balancing and adjustments shall be performed by a contractor certified by the National Environmental Balancing Bureau (NEBB), Associated Air Balance Council (AABC) or other approved agency.

Perform test readings on fans, units, coils, etc. and adjust equipment to deliver specified amounts of air.

Prepare testing and balancing report log showing air supply quantities, air entering and leaving temperatures and pressures, fan and unit test readings, motor voltage and amp draws, etc., and submit six copies of the final compilation of data to the architect for evaluation and approval before final inspection of the project. Balance air systems to within plus or minus 10 percent for terminal devices and branch lines and plus or minus 5 percent for main ducts and air handling equipment of the amount of air shown on the drawings. Further adjustments shall be made to obtain uniform temperature in spaces.

Adjust equipment to operate as intended by the specification. Align bearings and replace bearings that have dirt or foreign material in them with new bearings without additional cost to the owner. Balance contractor shall include in the report any improperly installed or missing balancing devices that would negatively impact the system operation.

Adjust thermostats and control devices to operate as intended. Adjust burners, pumps, fans, etc. for proper and efficient operation. Certify to architect that adjustments have been made and that system is operating satisfactorily. Further adjustments shall be made to obtain uniform temperature in spaces. Calibrate, set, and adjust automatic temperature controls. Check proper sequencing of interlock systems, and operation of safety controls.

23A 1-26 EQUIPMENT FURNISHED BY OTHERS

Provide necessary equipment and accessories that are not provided by the equipment supplier or owner to complete installation of cooking equipment, washing equipment, etc., furnished by others, in locations as indicated on the drawings and/or described in the general notes to this contractor. Equipment and accessories not provided by the equipment supplier may include flues, vents, intakes, associated roof jacks and caps to outdoors, dampers, in-line fans, roof fans, control interlocks, etc. as required for proper operation of the complete system in accordance with the manufacturer's instructions.

Contractor shall be responsible for correct rough-in dimensions, and shall verify same with architect and/or equipment supplier prior to service installations.

23A 1-28 BUILDING OPERATION

Comply with the schedule of operations as outlined in the architectural portions of this specification. Building shall be in continuous operation. Accomplish work requiring interruption of building operation at a time when the building is not in operation, and only with written approval of building owner and/or tenant. Coordinate interruption of building operation with the owner and/or tenant a minimum of seven days in advance of work.

23A 1-29 VIBRATION ISOLATION

Manufacturers: Provide vibration isolation equipment and materials by a single manufacturer. Approved manufacturers provided their systems are in compliance with the specified design and performance requirements include Amber Booth, Kinetics Noise Control, Mason Industries, Inc., Vibration Eliminator Co., Inc., and Vibration Mounting and Controls.

General requirements: Select vibration isolators by the weight distribution to produce uniform deflection. Vibration isolators shall have either known un-deflected heights or calibration markings so that, after adjustment, the static deflection can be verified, thus determining that the load is within the proper range of the isolator. Isolators shall operate in the linear portion of their load versus deflection curves. Spring isolators shall have 50 percent excess capacity without becoming coil bound. Coat vibration isolators with factory-applied paint. Coat vibration isolators exposed to weather and other corrosive environments with factory-applied corrosion resistance protection. Install and adjust vibration isolators in accordance with manufacturers written instructions.

Pipe connections: Provide flexible connectors for piping system connections on equipment side of shutoff valves for all pumps, mechanical equipment supported or suspended by spring isolators, and where indicated on drawings. Fabricate flexible piping connectors from stainless steel, bronze or rubber materials as suitable for system fluid. Flexible piping connectors shall be bellows, spherical or braided hose type as recommended by the manufacturer for the application.

Isolator types:

Type WP (waffle pads): Provide 5/16" thick neoprene pads ribbed or waffled on both sides. Manufacture pads with bridge bearing quality neoprene, and select for a maximum durometer of 50 and designed for 15 percent strain. Incorporate steel load-spreading plates where required between the equipment and the neoprene pad. If the isolator is bolted to the structure, install a neoprene vibration isolation washer and sleeve (Unioyal Type 620/660 or as approved) shall be installed under the bolt head between the steel washer and the base plate. Provide Mason Industries Type W or equal.

Type SPNH (spring and neoprene hangers): Provide a steel spring in series with a neoprene isolating element. The spring shall have a minimum additional travel to solid equal to 50 percent of the specified deflection. The neoprene element shall have a static deflection of not less than 0.3" with a strain not exceeding 15 percent. Unless otherwise specified, the static deflection of SPNH hangers shall be 2". Spring diameter and hanger box hole size shall be large enough to permit the hanger rod to swing through a 30 degree arc. Provide neoprene sleeve where the lower hanger rod passes through the steel hanger box, such that the hanger rod cannot contact the steel hanger. The diameter of the clear hole in the hanger box shall be at least 3/4 inch larger than the diameter of the hanger rod. When installed, do not cock the spring element and do not allow the hanger box to rotate through a full 360 degree arc without encountering obstructions. Provide Mason Industries Type 30N or equal.

Type SPNM (spring and neoprene mounts): Provide free-standing and laterally stable steel spring without a housing. Design springs so the ratio of the horizontal to vertical spring constant is between one and two. The spring diameter shall be not less than 80% of the compressed height of the spring at rated load. Loaded springs shall have a minimum additional travel to solid equal to 50% of the specified static deflection. Unless otherwise specified, the minimum static deflection of SPNM isolators for equipment mounted on grade slabs shall be 1", and the minimum static deflection for equipment mounted above grade level shall be 2". Bond two Type WP isolation pads sandwiching a 16 gauge stainless or galvanized steel separator plate to the isolator baseplate. Unless otherwise specified, isolators need not be bolted to the floor for indoor installations. If the base plates are bolted to the structure, install a neoprene vibration isolation washer and sleeve (Unioyal Type 620/660 or as approved) under the bolt head between the steel washer and the base plate. Provide Mason Industries Type SLFH or equal.

Type CMB (curb mounted base): Curb mounted base for roof-mounted equipment shall be a structural steel base mounted directly to the structure with an upper floating section on adjustable steel springs. The upper frame shall provide continuous support for the equipment. Steel springs shall rest on 1/4" min. thickness neoprene pads and shall have a minimum static deflection of 2" unless otherwise specified. All-directional snubber bushings shall be 1/4" minimum thickness neoprene. All hardware shall be cadmium or zinc electroplated to provide a rust resistant finish. Weather proofing shall consist of a continuous galvanized flexible counterflashing nailed over the lower curb's waterproofing and joined at the corners by EPDM bellows. All spring locations shall have access ports with removable waterproof covers to allow for adjustment or replacement of springs. Lower curbs shall have provision for 2" insulation. Duct connections shall be made using a length of flexible duct dimensioned to match the equipment opening, using a foam rubber gasket to seal against the unit bottom. Provide Mason Industries Type RSC or equal.

23A 1-30 MECHANICAL IDENTIFICATION

Provide manufacturer's standard pre-printed, semi-rigid snap-on or permanent adhesive, pressure-sensitive vinyl pipe markers. Color code pipe markers to comply with ANSI A13.1.

Install pipe markers on each HVAC piping system and include arrows to show normal direction of flow.

Locate pipe markers and color bands wherever piping is exposed to view in occupied spaces, machine rooms, accessible maintenance spaces (shafts, tunnels, plenums) and exterior non-concealed locations.

Provide plastic laminate or brass valve tag on every valve, cock and control device in each HVAC piping system; exclude check valves, valves within factory fabricated equipment units, and shut-off valves at HVAC terminal devices and similar rough-in connections of end-use fixtures and units.

Provide manufacturer's standard laminated plastic, color coded equipment markers. Conform to the following color code: green for cooling; yellow for heating; yellow/green for combination cooling and heating; brown for energy reclamation; blue for other equipment types. Conform to ANSI A13.1 for hazardous equipment.

Provide stenciled signs for equipment identification at contractor's option or where distance of required identification requires lettering larger than 1" height. Stencil paint shall be exterior type, oil-based, alkyd enamel, minimum 1-1/4" height or greater as required for long distance identification, white or black color for best contrast.

Provide duct markers or provide stenciled signs and arrows indicating ductwork service and flow direction in black or white lettering for best contrast with duct or insulation color. Locate markers maximum 50 feet along each duct side and within 5 feet of all control and balancing dampers or branch ducts more than 25 feet length and within 5 feet on each side of wall, floor, and ceiling penetrations. Provide additional markers in congested areas or at multiple duct runs as required for clarity.

23A 2 INSULATION AND SHEET METAL WORK

23A 2-1 DUCT INSULATION

Cover concealed rigid round supply and return air ductwork, round and rectangular outside air ductwork, and round and rectangular exhaust and relief air ductwork in unconditioned spaces and within 10 feet of exterior discharge outlets with 2 1/4" thick, 3/4 pound density, minimum R-6.0 duct wrap, Certainteed or equivalent Owens-Corning or Knauf with heavy-duty foil-scrim-kraft facing, and with joints taped with 3" wide foil tape.
Where contractor has the option to provide duct liner, in lieu of duct wrap, in rectangular supply and return air ductwork. Liner shall be 2-pound density fiberglass, minimum R-6.0 CertainTeed Corp. "ToughGard" or equivalent Owens-Corning or Knauf long textile fiber duct liner. Liner surface shall serve as a barrier against infiltration of dust and dirt, shall meet ASTM C 1338 for fungi resistance and shall be cleanable using duct cleaning methods and equipment outlined by North American Insulation Manufacturers Association (NAIMA) duct cleaning guide. Install with liner adhesive and mechanical fasteners in accordance with manufacturer's instructions and recommendations. Duct dimensions listed on drawings represent the airflow free areas and do not have allowances for insulation liner, where applicable, inside the ducts, or dual wall dimensions. Ducts shall be constructed to include insulation requirements and maintain airflow dimensions indicated on plans.

Insulating materials, adhesives, coatings, etc., shall not exceed flame spread rating of 25 and smoke developed rating of 50 per ASTM E 84. Containers for mastics and adhesives shall have UL label.

For ductwork that is located exterior to the building, insulate with 2" (minimum R-8.0) thick fibrous board insulation and provide minimum 20 gauge aluminum jacket sealed with approved weatherproof sealant.
Insulating materials, adhesives, coatings, etc., shall not exceed flame spread rating of 25 and smoke developed rating of 50 per ASTM E 84. Containers for mastics and adhesives shall have UL label.

For ductwork that is located exterior to the building, insulate with 2" (minimum R-8.0) thick fibrous board insulation and provide minimum 20 gauge aluminum jacket sealed with approved weatherproof sealant.

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PROJECT NO. 202801R
100 % COMPLETE

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OWNER
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PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19283
ZACHARY E. ARCHER
01-29-2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

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MECHANICAL SPECIFICATIONS

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M3.0

23A 2-2 DUCTWORK

Provide galvanized steel ductwork and housings as shown on drawings. Construct ductwork including fittings and transitions in conformance with current SMACNA standards relative to gauge, bracing, joints, etc. Minimum thickness of duct shall be 26-gauge sheet metal. Reinforce housings and ductwork over 30" with 1-1/4" angles not less than 5'-6" on centers, and closer if required for sufficient rigidity to prevent vibration. Support horizontal runs of duct from strap iron hangers on centers not to exceed 8'-0". Do not support ceiling grid, conduits, pipes, equipment, etc. from ductwork. Coordinate routing of ductwork with other contractors such that piping, electrical conduit, and associated supports are not routed through the ductwork.

Construct supply ducts to meet SMACNA positive pressure of 2" w.g. Construct return, outdoor and exhaust ductwork upstream of fans to meet SMACNA negative pressure of 1" w.g. Construct exhaust ductwork downstream of fans to meet SMACNA positive pressure of 1" w.g.

Provide mill phosphatized or galvanealed finish for exposed ductwork to be field painted. Shop treated sheet metal shall have galvanized metal primer applied in the shop after fabrication and prior to shipping.

Ductwork above roof or otherwise exterior to building shall be minimum #18 gauge with longitudinal and transverse joints welded.

Seal ductwork with heavy liquid sealant, Hardcast Irongrip 601, Design Polymer DP 1010, United McGill duct sealer or approved equal, applied according to sealant manufacturer's instructions. For ducts with pressure classification of 2" w.g. and greater seal longitudinal and transverse ductwork joints airtight to meet SMACNA Class B. For ducts with pressure classification less than 2" w.g. seal transverse joints airtight to meet SMACNA Class C. Tapes and mastics shall be listed and labeled in accordance with UL 181A.

Provide radius elbows, turns, and offsets with a minimum centerline radius of 1-1/2 times the duct width. Where space does not permit full radius elbows, provide short radius elbows with a minimum of two continuous splitter vanes. Vanes shall be the entire length of the bend. Provide mitered elbows where space does not permit radius elbows, where shown on the drawings, or at the option of the contractor with the engineer's approval. Mitered elbows less than 45 degrees shall not require turning vanes. Mitered elbows 45-degrees and greater shall have single thickness turning vanes of same gauge as ductwork, rigidly fastened with guide strips in ductwork. Vanes for mitered elbows shall be provided in all supply and exhaust ductwork and in return and outside air ductwork that has an air velocity exceeding 1000 fpm. Do not install vanes in grease ductwork.

Ducts shall be connected to fans, fan casings and fan plenums by means of flexible connectors. Flexible connectors shall be neoprene coated glass cloth canvas connections, Duro-Dyne, Elgen, Ventfabric or equal. Flexible connectors shall have a flame spread of 25 or less and smoke developed rating not higher than 50. Make airtight joints and install with minimum 1-1/2" slack.

Provide balancing dampers, manufactured by Ruskin, Greenheck, Nailor Industries, Cesco, Louvers & Dampers, Pottorff or approved equal, where shown on drawings and wherever necessary for complete control of air flow. Splitter dampers shall be controlled by locking quadrants; provide Young's Regulator or Ventlok end bearings for the damper rod. Rectangular volume dampers shall be opposed blade interlocking type. Round volume dampers shall be butterfly type consisting of circular blade mounted to a solid shaft. Damper leakage for outside air dampers shall not exceed 6.5 cfm/square foot in full closed position at 4" wg pressure differential across damper. Reference manufacturer and model number for outside air dampers is Ruskin model CD-50.

Provide Flexmaster model STO or equal 45 degree rectangular/round side takeoff fitting with model SLBO double bearing damper with insulation build out for round ductwork branch takeoffs to individual air devices. Omit damper at takeoff fitting when damper is located downstream of takeoff.

Where access to dampers through a hard ceiling is required, provide a Metropolitan Air Technology model RT-250 or equal by Young's Regulator concealed, cable operated volume damper with remote operator. Damper shall be adjustable through the diffuser face or frame with standard 1/4" nutdriver or flat screwdriver. Cable assembly shall attach to damper as one piece with no linkage adjustment. Positive, direct, two-way damper control shall be provided with no sleeves, springs or screw adjustments to come loose after installation. Support cable assembly to avoid bends and kinks in cable.

Round or oval ductwork shall be Semco, United, Wesco or equal, sheetmetal, with smooth interior surface, with low pressure (duct pressure class up to and including 2" w.g.) round ductwork gauges per the following table (reference SMACNA HVAC duct construction standards for gauges when pressures exceed 2" w.g.):

Size	Duct gauge	Fitting gauge
14" & under	26	24
15" thru 26"	24	22
28" thru 36"	22	20
38" thru 50"	20	20
52" thru 60"	18	18

Lindab Spirosafe, Lewis & Lambert or approved equal factory manufactured round ductwork and fittings may be substituted for specified round branch ductwork, at contractor's option. Heavy liquid joint sealant may be omitted on factory-manufactured round ductwork.

Low pressure (duct pressure class up to and including 2" w.g.) fittings 24" in diameter and less shall be prefabricated, spotwelded and internally sealed. Continuously weld fittings larger than 24" in diameter. Fitting gauge shall be 22 gauge for 36" fittings and under, 20 gauge for larger sizes. 90 degree tee's shall be conical type. Seal longitudinal and transverse ductwork joints airtight with heavy liquid sealant applied according to manufacturer's instructions. Provide gauge thickness in medium pressure (duct pressure class 3" to 6" w.g.) Ductwork as recommended by SMACNA.

At contractor's option, provide Ductmate, Gripple, or approved equal wire rope duct hanging system. Provide Ductmate WR10 through WR40 or gripple No. 1 through No. 5 wire rope using 7x7 or 7x19 aircraft quality zinc coated cable or galvanized steel wire rope. Secure wire rope to duct using Ductmate Clutcher or Gripple Hang Fast adjustable rope attachment. Where applicable for upper attachment, provide Ductmate EZ-Lock wire rope beam clamp with locking nut adjustment or Gripple ceiling, beam, or purlin clips. Wire rope, adjustable duct attachment, and upper attachment to structure shall each have minimum 5 to 1 load safety factor.

23A 2-3 FLEXIBLE DUCT

Low pressure (duct pressure class up to and including 2" w.g.) and medium pressure (duct pressure class 3" to 6" w.g.) flexible duct shall be Flexmaster Type 8B, Thermaflex Type G-KM, M-KE, or equal (fire retardant polyethylene) protective vapor barrier, UL181 Class 1,

acoustical insulated duct, R-6.0 fiberglass insulation. Provide CPE liner with steel wire helix mechanically locked or permanently bonded to the liner.

23A 2-7 AIR DEVICES

Provide air devices as scheduled on drawings, manufactured by Carnes, Price, Krueger, Nailor Industries, Titus, or Tuttle & Bailey. Select air devices to limit room noise level to no higher than NC-30 unless otherwise shown. Provide devices with a soft plastic gasket to make an airtight seal against the mounting surface. Coordinate final location, frame, and mounting type of air devices with architectural reflected ceiling plans.

Submit complete shop drawings including information on noise level, pressure drop, throw, cfm for each air device, styles, borders, etc. clearly marked with specified equipment number. Submit samples of each air device as requested by the engineer.

Provide wall supply air registers with double deflection blades and opposed blade dampers unless indicated otherwise. Provide wall return air grilles and exhaust air registers with horizontal 35 or 45 degree angle vision-proof bars. Provide concealed fasteners for wall mounted registers and grilles.

Provide ceiling supply air registers of aluminum curved blade type with blades parallel to long dimension and with throw pattern as indicated on drawings.

Provide factory primed and painted diffusers, color as selected by the architect.

23A 2-10 LOUVERS, PLENUMS, SCREENS

Provide intake and exhaust air louvers by Ruskin model ELF375DX or equal Greenheck, American Warming & Ventilating, Cesco, Industrial Louvers or Louvers & Dampers as scheduled on the drawings. Coordinate exact size and location with architectural drawings. Louvers shall be stationary, with mill finish. Louvers shall have extruded aluminum blades, 0.080" wall thickness, 45 degree blade angle, blades on 5" centers; frame shall be extruded aluminum, 0.080" wall thickness; with expanded flattened aluminum insect screen. Provide louvers with a minimum free area of 45 percent, with a maximum air pressure drop of 0.1" at scheduled airflow.

Construct plenums with galvanized steel framing members and galvanized sheetmetal, braced with galvanized angles. Gauges and bracing shall conform to SMACNA recommendations for ductwork of like sizes. Where access doors are shown, provide hinged doors with #202 Ventlok latch. Make watertight connections to louvers, sloping bottom of plenum to drain water to weepholes in bottom of louver.

Provide screens on louvers, ducts, hoods, fans, and openings to the outdoors as scheduled and/or noted on the drawings. Insect screens shall be 0.009 thickness, 1/4" mesh, stainless steel wire. Bird screens shall be 0.047-inch, 1/2" mesh stainless steel wire.

23A 2-12 ROOF MOUNTED INTAKE AIR AND RELIEF AIR HOODS

Provide air intake and relief hoods as scheduled on drawings. Hoods shall be low silhouette, aluminum, square curb cap, with birdscreen, roof curb, and barometric or motorized backdraft damper as scheduled. Manufactured by Cook, Greenheck, Acme, Carnes, Cesco or equal.

23A 2-13 EXHAUST AIR SYSTEMS

Provide roof mounted exhaust fans as scheduled on the drawings, or equal manufactured by Cook, Greenheck, Carnes, Twin City Fans, Acme or Penn-Barry complete with aluminum housing, aluminum centrifugal wheel, motor with integral thermal overload protection, disconnect switch mounted inside the housing, birdscreen, backdraft damper, and pate prefabricated roof curb with minimum height of 12" inches for roofs with no insulation, 15" for roofs with insulation or as scheduled on the drawings. Three phase fans shall be furnished with magnetic starters with push button station.

Provide roof mounted upblast exhaust fans as scheduled on the drawings, or equal manufactured by Cook, Greenheck, Carnes, Twin City Fans, Acme or Penn-Barry complete with aluminum housing, aluminum centrifugal wheel, motor with integral thermal overload protection, disconnect switch mounted inside the housing, drain trough, birdscreen and pate prefabricated roof curb with minimum height of 12" inches for roofs with no insulation, 15" for roofs with insulation or as scheduled on the drawings. Exhaust fans serving Type I kitchen exhaust hoods shall discharge a minimum of 40" above the roof surface, shall have hinged access including access for blade inspection and cleaning per NFPA 96, grease drain trough with cup and insulated curb, and shall be installed in accordance with NFPA 96 and local codes.

Provide wall mounted exhaust fans as scheduled on the drawings, or equal manufactured by Cook, Greenheck, Carnes, Twin City Fans, Acme or Penn-Barry heavy-duty wall-mounted propeller fans, complete with belt drive with minimum of two belts, ball bearing supported fan shaft, ball bearing motor, magnetic starter, inlet screen, and motor-operated shutter. Inlet louvers shall be Ruskin ELF81 with heavy duty motor operated damper, Ruskin CD35 with parallel blades and Honeywell M-445 damper motor. Provide transformer for damper motors if different voltage.

Provide ceiling mounted exhaust fans as scheduled on the drawings, or equal manufactured by Cook, Greenheck, Carnes, Twin City Fans, Acme or Penn-Barry complete with isolated blower unit and ceiling grille. Provide disconnect switch, backdraft damper, discharge duct,

wall louver, and neoprene vibration isolators with all-thread hanging rods.

Provide in-line (duct) mounted exhaust fans as scheduled on the drawings, or equal manufactured by Cook, Greenheck, Carnes, Twin City Fans, Acme or Penn-Barry complete with isolated blower unit and ceiling grille. Provide backdraft damper, discharge duct,

wall louver, and vibration isolation as scheduled or shown on the drawings.

23A 3 HVAC EQUIPMENT

23A 3-4 CONDENSING UNITS 1.5-6 TONS

Provide split system, air cooled condensing units as scheduled on the drawings, manufactured by Trane, Carrier, McQuay, Lennox or York, complete with factory installed hermetic or semi-hermetic motor/compressor assembly with internal spring vibration isolation, built-in thermal overload protection, and crankcase heater; top discharge condenser fan and motor low ambient controls for operation to

40 degrees Fahrenheit; anti-short cycle timers; time delay relays; factory installed liquid line drier and low pressure switch; full refrigerant holding charge; and weathertight housing constructed of zinc coated, heavy gauge, galvanized steel with weather-resistant baked enamel finish and factory installed condenser coil guards. Unit shall carry a five year guarantee on the compressor and refrigerant circuit, and a one year guarantee on the remaining components. Provide refrigerant piping sized as recommended by equipment manufacturer with foamed plastic insulation on the suction line as specified in this section.

For heat pump units provide reversing valve, suction line accumulator, flow control check valve, and solid state defrost/timed-off control.

Provide 3-1/2" thick concrete slabs for condensing units located on grade.

23A 3-17 AIR HANDLING UNITS

Provide modular air handling unit manufactured by Trane, Carrier, York or McQuay as scheduled on the drawings, complete with 1", 1.5 PCF insulated heavy gauge steel housing, centrifugal fan section with double wall access door, motor and v-belt drive assembly, dx coil section (staggered coils not acceptable), drain pan, combination filter and mixing damper section with double wall access door and Ruskin CD60 or equal airfoil low leakage dampers, belt guard, magnetic starter, and 2" internal spring type vibration isolators. Provide 2" thick throwaway type filters, Farr 30/30 or equal.

Construct cabinet of formed and reinforced galvanized steel panels, fabricated to allow removal for access to internal parts and components, with joints between sections sealed. Provide access panels and doors of same materials and finishes as cabinet complete with hinges, latches, handles, and gaskets. Provide full height double wall access doors located to allow periodic maintenance and inspections of fan and filter sections. Provide base rail to support sections of unit if mounting configuration requires it.

Provide double-wall drain pan sections constructed of minimum 18 gauge galvanized sheet steel. Fabricate pans in sizes and shapes to collect condensate from cooling coils (including coil piping connections and return bends) when units are operating at the maximum cataloged face velocity across the cooling coil. Fill space between double-wall construction with foam insulation and seal moisture tight. For units with stacked coils, provide an intermediate drain pan or a drain trough to collect condensate from top coil.

Equip fan section with a formed steel channel base for integral mounting of fan, motor, and casing panels. Mount the fan scroll, wheel, shaft, bearings, and motor on a structural steel frame with frame mounted base with internal vibration isolators. Statically and dynamically balance fans and shafts and design units for continuous operation at the maximum rated fan speed and motor horsepower. Provide double-width, double-inlet type fan wheel with forward-curved blades or backward-curved airfoil section blades as indicated. Fabricate forward-curved blade wheels with galvanized steel or bonderized steel painted with baked-enamel finish. Paint steel airfoil wheels with zinc chromate primer and an enamel finish coat. Fan shaft shall be solid steel, turned, ground, and polished. Key fan wheels to the shaft. Provide shaft bearings of grease-lubricated ball bearings selected for 200,000 hours' average life, with grease fittings extended to an accessible location outside the fan section. Design fan drives for a 1.4 service factor and factory mount with final alignment and belt adjustment made after installation. Provide belt drive motors and fan wheel pulleys with adjustable pitch for use with motors up to and including 15 hp and fixed pitch for use with motors larger than 15 hp.

Provide motors of sufficient size to accelerate the driven loads satisfactorily. Minimum motor sizes are as indicated. If not indicated, provide motors large enough so that the driven load will not require the motor to operate in the service factor range. Provide motors with a maximum temperature rating of 50 degrees Celsius temperature rise at 40 degrees Celsius ambient for continuous duty at full load (Class A insulation). Rate motors for a service factor of 1.15 for polyphase motors and 1.35 for single-phase motors. Motor construction shall be NEMA standard MG 1, general purpose, continuous duty, energy-efficient, design B with adjustable bases, ball or roller bearings with inner and outer shaft seals, grease lubricated, and designed to resist thrust loading where belt drives or other drives produce lateral or axial thrust in motor. Provide open drip-proof motors where satisfactorily housed or remotely located during operation or guarded drip-proof motors where exposed to contact by employees or building occupants. Provide built-in, automatic reset, thermal overload protection for all motors.

Provide coil sections of common or individual insulated, galvanized steel casings for heating and cooling coils. Design and construct coil sections to facilitate removal of coil for maintenance and replacement and to assure full air flow through coils. Provide double gaskets between sections and coil connection penetrations through casing sealed to minimize leakage on medium and high pressure units. Provide drainable coils, rigidly supported across the full face of the coil, and pitched to allow drainage. Staggered coils are not acceptable. Provide fins of aluminum or copper, constructed from flat plate with belled collars for tubes. Bond fins to tubes by mechanically expanding copper tubes. Provide seamless copper tubes. Provide coil casing of galvanized steel. Provide headers for steam and water coils of steel or cast iron, with connections for drain valve and air vent and threaded piping connections. Provide bronze, spring-type water coil turbulators.

Steam coils: Steam-distributing type. Support the distributing tube concentrically inside condensing tube with corrosion-resistant clips.

Design and fabricate direct expansion refrigerant coils to be in compliance with ASHRAE Standard 15, "Safety Code for Mechanical Refrigeration." Provide coils with seamless copper suction headers and distributor tubes. Venturi-type refrigerant distributor, designed for low pressure drop, arranged for down feed with solder connections, and having a maximum of 12 circuits for each distributor. Provide two distributors for coils with more than 12 circuits and for split circuit coils.

Provide electric resistance coils of finned-tubular construction with 80 percent nickel, 20 percent chromium. Mount elements in a copper-plated steel tube and surround by compacted magnesium-oxide powder. Tubes shall be spirally wound with copper-plated steel fins that are continuously brazed to tubes. Mount coils in an aluminized or galvanized steel frame. Provide NEMA 1 control panel enclosure, complete with thermal cutouts, primary and secondary controls, backup contactors, subcircuit fusing, airflow switch, and a fused control transformer. Provide integral primary automatic and secondary manual reset thermal protection devices and static-pressure-type airflow switches to prevent energizing coil when airflow is inadequate.

Damper leakage rate, when tested in accordance with AMCA Standard 500 - Test Method for Leakage of Louvers, Dampers and Shutters shall not exceed 8 cfm/sf at 1" w.g. and 12 cfm/sf at 4" w.g. Provide Ruskin CD60 double skin airfoil dampers or equivalent. Provide damper operators as shown on drawings or specified elsewhere in specifications.

Provide air filters to comply with NFPA Standard 90a "Standard for the Installation of Air Conditioning and Ventilating Systems." Match the filter section cabinet material and finish with the air handling unit cabinet. Arrange filter media holding frames for flat or angular orientation. Provide access doors on both sides of the unit. Provide 2" thick disposable air filters, consisting of viscous coated fibers with filtering media encased in fiberboard cell sides having perforated metal grids on each face to provide media support. Airflow resistance with clean media shall not exceed 0.10" w.g. at face velocity of 300 fpm, and filter arrestance efficiency of 70 to 82 percent based on ASHRAE test Standard 52.

Support floor-mounted units on concrete equipment bases. Secure units to anchor bolts installed in concrete equipment base. Support suspended units from structural steel support frame using threaded steel rods and base rails. Arrange installation of units to provide access space around air-handling units for service and maintenance.

Provide an auxiliary drain pan for suspended units with auxiliary condensate drain provided by plumbing contractor.

float switch to shut off unit when water is detected in auxiliary drain pan. Float switch shall be Aquahub #FLT231 or equal by Cole-Palmer, Flowline, Omega or SMD Micro float switch with polypropylene body and float with 1/2" NPT pipe connection and normally closed contact. Contact shall close when float raises due to water present in drain pan minimum 1" above bottom of pan.

Install in 1/2" coupling welded to drain pan with centerline 1" above bottom of pan.

23A 3-19 SPLIT DUCTLESS AIR-CONDITIONING SYSTEMS

Provide split ductless system consisting of evaporator section for wall or ceiling mounting as indicated and remote condensing section similar to Mitsubishi, Fujitsu, Friedrich, or Daikin. Evaporator cabinet shall be factory assembled pre-wired consisting of furniture-grade steel with baked-enamel finish, front access, with direct-drive centrifugal fans, 2-speed motor, and cleanable foam filter. Evaporator coil shall be direct expansion cooling coil of seamless copper tubes expanded into aluminum fins, with thermal-expansion valve with external equalizer. Air-cooled condenser shall be of corrosion-resistant cabinet containing compressor, copper-tube aluminum-fin coils, direct-drive propeller fans with motors with internal overload protection; capacity control to 0 degrees Fahrenheit.

Provide refrigerant piping sized as recommended by equipment manufacturer with foamed plastic insulation on the suction line as specified in this section.

Control system: Unit-mounted panel with contactors, control transformer with circuit breaker, solid-state temperature- and humidity-control modules. Provide solid-state, unit-mounted control panel with start-stop switch, adjustable humidity set point, and adjustable temperature set point. Refer to sequence of operation.

23A 3-20 REFRIGERANT PIPING AND INSULATION

Provide ASTM B 88, Type I or ASTM B 280, Type ACR hard drawn copper refrigerant piping, cleaned and sealed at the factory, and specifically designed for refrigerant. Fittings shall be hard drawn and have long radius turns. Solder joints with "silfos" (15 percent silver, 5 percent phosphorus, 80 percent copper, 1300 degrees Fahrenheit flow temperature). Solder joints with a slow stream of dry nitrogen passing through the piping.

Insulate suction lines with foamed plastic insulation, Armaflex or equal. Piping insulation shall have a flame spread of 25 or less, and a smoke developed rating of 50 or less when tested in accordance with ASTM E84. Coat insulation that is exposed to the elements with a protective sealer. Install and support piping to keep noise and vibration to a minimum. Support and secure piping to Unistrut type supports so that no vibration passes to the building structure. Pipe attachments shall be copper-plated or have nonmetallic coating for electrolytic protection where attachments are in direct contact with copper tubing. Install a support within one foot of each change of direction. Mount pipe hangers around the outside of the insulation with saddles to prevent hangers from rupturing the insulation. Replace insulation that is cut or broken by the hangers.

Run refrigerant lines parallel and perpendicular to wall and floor lines and to appear straight and in good order. Pitch suction lines down slightly (1" in 20') towards the compressor. Provide oil traps at the base of vertical suction risers over 6 feet high.

Install liquid line sight glasses in liquid lines nearest the expansion valve. Factory mount expansion valves with the sensing bulbs shipped loose. Field mount expansion valve bulb after refrigerant piping is complete (damage may occur if bulbs come in contact with heat).

For systems of 5 ton capacity and smaller, the contractor shall have the option to provide copper refrigerant tubing line set sized as recommended by equipment manufacturer and of length as required for the installation.

Provide foamed plastic insulation, Armaflex or equal, on the suction line. Provide quick-connect flare tubing compression fittings or solder connections as required to match the connections of the condensing unit and evaporator coil.

23A 3-21 SYSTEM EVACUATION AND CHARGING

Blow out refrigeration lines with dry nitrogen at a suitable pressure before making final connection at the condensing unit or coil to ensure against dirt, scale, or other foreign material being in the lines. Draw a vacuum to 29" of mercury. Break this vacuum by charging dry refrigerant gas into the system, raising the pressure to 0 psig. Repeat the latter two steps for a triple evacuation before the final evacuation is started. Make final evacuation by reducing the system absolute pressure to a maximum of 0.5 millimeters (500 microns) and allowing the pump to run at this pressure for a minimum of two hours.

Repeat with the proper amount of refrigerant charge per the manufacturer's recommendations. Record the amount of refrigerant by weight charged into the system for each circuit recorded to the nearest 1/4 pound on tags and attach tags to the liquid line near the condensing unit. Refrigerant shall be supplied by the HVAC contractor.

END OF SECTION 23A

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PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19283
ZACHARY E. ARCHER
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GENERAL POWER NOTES

1	ALL RECEPTACLES SHALL BE GROUNDING TYPE.
2	ALL RECEPTACLES INSTALLED IN BATHROOMS, OUTDOORS AND KITCHENS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION AS REQUIRED BY THE NATIONAL ELECTRIC CODE.
3	COORDINATE MECHANICAL EQUIPMENT CONNECTION REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE FEEDERS, DISCONNECTS AND MAINTENANCE RECEPTACLES SO THAT THEY WILL NOT INTERFERE WITH OPERATION OR MAINTENANCE OF MECHANICAL EQUIPMENT.
4	PROVIDE POWER TO MECHANICAL, PLUMBING, AND ALL OTHER EQUIPMENT AS REQUIRED FOR PROPER OPERATION, COORDINATE AND VERIFY EACH PIECE OF EQUIPMENTS POWER/CONTROL REQUIRMENTS PRIOR TO ORDERING RELATED ELECTRICAL EQUIPMENT. REFER TO RELATED MECHANICAL, PLUMBING, AND OTHER RELATED DOCUMENTS FOR LOCATIONS OF EQUIPMENT AND REQUIRED CLEARANCES AROUND EQUIPMENT.
5	COORDINATE EXACT MOUNTING HEIGHT OF EACH ABOVE COUNTER RECEPTACLE WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN.
6	ALL OUTLETS LOCATED IN AREAS REQUIRING GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION PER NEC-210 SHALL CONSIST OF A GFCI PROTECTED DEVICE, EVEN IF NOT SPECIFICALLY INDICATED IN THE DRAWINGS. THE GROUND-FAULT CIRCUIT INTERRUPTER SHALL BE INSTALLED IN A READILY ACCESSIBLE LOCATION AS DEFINED IN THE NEC. ALL RECEPTACLES SUPPLIED THROUGH A GROUND-FAULT CIRCUIT INTERRUPTER SHALL BE MARKED "GFCI PROTECTED."
7	PROVIDE TAMPER RESISTANT RECEPTACLES AS REQUIRED BY THE 2014 NEC. PROVIDE AFCI PROTECTION AND COMBINATION-TYPE ARC/GFI PROTECTION AS REQUIRED BY 2014 NEC INCLUDING KITCHEN AND LAUNDRY AREAS.

GENERAL LIGHTING NOTES

1	PROVIDE ALL MOUNTING AND SUPPORT HARDWARE FOR LIGHT FIXTURES TO MEET SPECIFIED MOUNTING HEIGHTS, REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS OF FIXTURES.
2	COORDINATE ALL DEVICES AND WALL-MOUNTED LIGHT FIXTURE LOCATIONS WITH THE ARCHITECTURAL WALL FINISHES AND ELEVATIONS. SPECIAL ATTENTION AND COORDINATION OF WALL TYPES AND FINISHES IS REQUIRED PRIOR TO ROUGH-IN. EXACT LOCATION OF DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO ROUGH-IN TO AVOID INSTALLATION ON SPECIAL ARCHITCTURAL WALL FINISHES. DEVICES NOT PROPERLY COORDINATED WITH THE SPECIAL WALL FINISHES INDICATED IN THE CONSTRUCTION DOCUMENTS PRIOR TO ROUGH-IN SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.
3	CONNECT "UN-SWITCHED" HOT CONDUCTOR FROM CIRCUIT SERVING SPACE LIGHTING TO EACH EXIT SIGN, EMERGENCY LIGHT, AND ANY FIXTURE DESIGNATED AS NIGHT LIGHT SERVING THE SPACE.
4	FOR BATTERY FED EMERGENCY LIGHTS: PROVIDE EMERGENCY BALLAST. PROVIDE "HOT" WIRE TO EMERGENCY BALLAST. SWITCH FIXTURE AS INDICATED ON PLANS.

GENERAL LOW VOLTAGE NOTES

1	PROVIDE ROUGH-IN OF ALL BACK BOXES, CONDUITS (WITH BUSHINGS AND PULL STRINGS) AND OTHER WIRE WAYS AS REQUIRED FOR LOW VOLTAGE SYSTEMS, COORDINATE ALL REQUIRED LOCATIONS WITH OWNER AND RESPONSIBLE CONTRACTOR(S).
2	FURNISH AND INSTALL A TELEPHONE SERVICE PER TELEPHONE SERVICE PROVIDER SPECIFICATIONS. STUB UP AT DESIGNATED LOCATION.
3	FURNISH AND INSTALL A CABLE TV SERVICE PER CABLE TV PROVIDER SPECIFICATIONS. STUB UP AT DESIGNATED LOCATION.
4	REFER TO SITE UTILITIES PLAN AND COORDINATE ENTIRE INSTALLATION WITH CABLE TV SERVICE PROVIDER.
5	REFER TO SITE UTILITIES PLAN AND COORDINATE ENTIRE INSTALLATION WITH PHONE SERVICE PROVIDER.

GENERAL ELECTRICAL NOTES

1	DRAWINGS ARE DIAGRAMMATIC ONLY AND REFRESENT THE GENERAL SCOPE OF THE WORK. REVIEW ALL GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS.
2	SPECIAL ATTENTION SHALL BE GIVEN TO ALL RACEWAYS WITHIN FINISHED AREAS WITHOUT CEILINGS AND EXPOSED TO STRUCTURE. IN GENERAL, ALL RACEWAYS SHALL BE CONCEALED WITHIN WALLS, ABOVE STRUCTURE FINISH, OR BELOW FLOOR SLABS WHEN SPECIFIED. WHERE EXPOSED CONDITIONS ARE NECESSARY OR UNAVOIDABLE DUE TO OTHER CONDITIONS, THE BID SHALL INCLUDE ANY REASONABLE MEANS TO MINIMIZE THE AMOUNT OF SURFACE MOUNTED EQUIPMENT. PRIOR TO ROUGH-IN, COORDINATE ALL EXPOSED RACEWAY AND BOX CONDITIONS WITH ARCHITECT PRIOR TO CONSTRUCTION OF WALLS, ROOF DECK, OR FLOOR SLABS. ATTACHMENT TO ROOF DECK OR JOIST WEBBINGS IS NOT ALLOWED, MAINTAIN A MINIMUM SPACING OF 1-1/2" FROM CONDUIT TO ROOF DECK. IN AREAS WHERE EXPOSED RACEWAYS ARE REQUIRED, INSTALL SYSTEMS SQUARE AND TIGHT TO STRUCTURE AND PAINT TO MATCH THE STRUCTURE PER ARCHITECT AND/OR OWNER SPECIFICATIONS. FAILURE TO PROPERLY COORDINATE THE ROUTING OF EXPOSED RACEWAYS MAY RESULT IN RELOCATION OF SUCH RACEWAYS AT NO ADDITIONAL COST TO THE OWNER.
3	OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE-RESISTANT-RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING. PROVIDE PENETRATION FIRE STOPPING WITH RATINGS DETERMINED PER ASTM E 814 OR UL 1479. FIRE STOPPING SHALL NOT BE LESS THAN FIRE RESISTANCE RATING OF CONSTRUCTED PENETRATIONS.
4	FIELD MOUNTED DEVICES SUCH AS SWITCHES, MOTOR STARTERS, RECEPTACLES, ETC., ARE SHOWN IN THEIR APPROXIMATE LOCATION. SWITCH MOUNTING HEIGHT SHALL BE 48" ABOVE FINISHED FLOOR AND RECEPTACLE MOUNTING HEIGHT SHALL BE 18" ABOVE FINISHED FLOOR UON. REFER TO THE TYPICAL MOUNTING HEIGHT DETAIL.
5	INSTALL EQUIPMENT IN A MANNER TO REMAIN ACCESSIBLE WITH REASONABLE MEANS BY THE OWNER FOLLOWING COMPLETION OF WORK. SPECIAL ATTENTION AND ADDITIONAL COORDINATION IS EXPECTED IN AREAS OF THE BUILDING WHERE THE CEILING AND STRUCTURE HEIGHTS HAVE SIGNIFICANT DIFFERENT ELEVATIONS. EQUIPMENT REQUIRING POSSIBLE FUTURE ACCESS SHALL BE INSTALLED SUCH THAT IT MAY BE SAFELY ACCESSED FROM A STANDARD STEP LADDER OR PERSONNEL LIFT SUITABLE FOR THE LOCATION AND CEILING HEIGHT, WITHOUT REMOVING OR DAMAGING THE CEILING GRID STRUCTURE.
6	ROOM NAMES/NUMBERS SHOWN IN PANELBOARD SCHEDULES ARE PER ARCHITECTURAL FLOOR PLANS. CONTRACTOR SHALL PROVIDE FINALIZED PANELBOARD SCHEDULES AT COMPLETION OF PROJECT WITH OWNER PROVIDED ROOM NAMES/NUMBERS.
7	PROVIDE A MINIMUM OF (3) SPARE 1" CONDUITS FROM RECESSED PANELBOARD, UP TO ACCESSIBLE CEILING SPACE.
8	ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE, STATE LAWS, ALL AUTHORITIES HAVING JUISDICTION, AND ALL OTHER REGULATIONS GOVERNING WORK OF THIS NATURE.
9	THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIAL, AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
10	THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SYSTEMS (AS REQUIRED) IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
11	ALL ELECTRIC MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY LISTED.
12	CONTRACTOR TO CONFIRM EXACT LOCATION OF EXISTING AND NEW EQUIPMENT.
13	THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED,
14	THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND QUALIFIED PERSONNEL OR FIRM TO PERFORM ALL REQUIRED TESTS.
15	NO EQUIPMENT SHALL BE ENERGIZED UNTIL ALL TEST AND ADJUSTMENTS HAVE BEEN MADE. THREE COPIES OF ALL TEST RESULTS SHALL BE DELIVERED TO THE OWNER
16	ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE MECHANICAL WORK AS CALLED FOR IN MECHANICAL SPECIFICATIONS AND PLANS.
17	COORDINATE ALL CEILING MOUNTED ELECTRICAL ITEMS WITH OTHER DISCIPLINES, WITH CEILING, AND STRUCTURE. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.

GENERAL ELECTRICAL NOTES

18	FIELD VERIFY LOCATIONS OF EXISTING ELECTRICAL EQUIPMENT, INCLUDING POWER POLES, TELEPHONE PEDESTALS, OVERHEAD AND UNDERGROUND FEEDERS, METERS, PANELS, DEVICES, ETC. PROVIDE FOR COORDINATION WITH EXISTING EQUIPMENT.
19	CONDUCTORS FOR BRANCH CIRCUITS AS DEFINED IN ARTICLE 100, SHALL BE SIZED TO PREVENT A VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST LOAD, AND WHERE THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST LOAD DOES NOT EXCEED 5%.
20	JUNCTION BOXES LOCATED ABOVE GRID CEILINGS SHALL BE LOCATED NO GREATER THAN 4-FEET ABOVE THE CEILING IN A LOCATION ACCESSIBLE VIA A LADDER FROM THE ROOM BELOW.
21	ALL WIRING DEVICE COVERPLATES SHALL INDICATE PANELBOARD AND CIRCUIT SERVING THE DEVICE. UTILIZE CLEAR VINYL (BLACK LETTERING) IDENTIFICATION LABLES MANUFACTURED BY 3M COMPANY (OR APPROVED EQUIVALENT).
21	UNDERGROUND UTILITIES/FEEDERS/BRANCH CIRCUITS/ETC. SHALL NOT BE ROUTED THROUGH OR WITHIN 25 FEET OF ANY AREAS DEDICATED FOR FUTURE BUILDING ADDITION.
22	UNLESS NOTED OTHERWISE PROVIDE MINIMUM #8 AWG CONDUCTORS IN 1" CONDUIT(S) FOR ALL UNDERGROUND SITE POWER AND LIGHTING CIRCUITS. INCREASE CONDUCTOR AND RELATED CONDUIT SIZE AS NOTED OR OTHERWISE REQUIRED TO LIMIT VOLTAGE DROP TO LESS THAN 5% FOR THE ENTIRE LENGTH OF SYSTEM.
23	THE TYPE OF CONDUIT SHALL BE AS FOLLOWS FOR ALL FEEDERS AND DISTRIBUTION CIRCUITS, UNLESS OTHERWISE SPECIFIED. APPLICATION - TYPE OF CONDUIT BURIED IN CONCRETE OR OUTDOORS - PVC WITH RIGID GALVANIZED STEEL ELBOWS SERVICE ENTRANCE - GALVANIZED RIGID STEEL OR SERVICE UTILITY SPECIFICATIONS.
24	POWER WIRING: BRANCH CIRCUIT WIRING SHALL BE TYPE NM CABLE UON. LIGHTING AND POWER BRANCH CIRCUIT WIRING SHALL BE #12 AWG UNLESS OTHERWISE NOTED ON DRAWINGS OR SCHEDULES. FEEDER CIRCUIT WIRING SHALL BE TYPE SE CABLE UON.
25	SEISMIC PROTECTION FOR SEISMIC CONCERNS OF ALL BUILDING SYSTEMS INCLUDING BUT NOT LIMITED TO MECHANICAL, PLUMBING, AND ELECTRICAL MUST MEET MINIMUM REQUIREMENTS OF ALL APPLICABLE CODES FOR BUILDINGS' CLASSIFIED SEISMIC USE GROUP AND SEISMIC DESIGN CATEGORY. ANY REQUIREMENTS FOR SEISMIC PROTECTION MEASURES TO BE APPLIED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AND WITH MANUFACTURER'S REQUIREMENTS, THE MOST STRINGENT SHALL APPLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TYPE AND LOCATION OF SEISMIC RESTRAINTS REQUIRED FOR THE VARIOUS SYSTEM'S ELEMENTS CONTAINED IN THE CONSTRUCTION DOCUMESMICS BASED ON THE RELATED SEISMIC CODE CRITERIA, THE SIZE AND WEIGHT OF THE SUPPORTED ELEMENT AND THE DISTANCE FROM STRUCTURE THAT THE ELEMENT WILL BE INSTALLED. IF REQUIRED BY LOCAL, STATE, FEDERAL CODES AND/OR OTHER AUTHORITY HAVING JURISDICTION (AHJ) THE CONTRACTOR SHALL SUBMIT DESCRIPTIVE CATALOG DATA OF SEISMIC RESTRAINTS, SHOP DRAWINGS SHOWING THE TYPES, LOCATIONS AND INSTALLATION DETAILS OF SEISMIC RESTRAINTS AND CALCULATIONS SHOWING THAT THE SEISMIC RESTRAINTS MEET THE SEISMIC REQUIREMENTS TO THE LOCAL AHJ FOR REVIEW AND APPROVAL. CALCULATIONS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF THE PROJECT LOCATION AND EMPLOYED BY THE MANUFACTURER OF THE SEISMIC RESTRAINT PRODUCTS. CALCULATIONS SHALL INCLUDE DEAD LOADS, STATIC SEISMIC LOADS AND CAPACITY OF MATERIALS UTILIZED FOR CONNECTIONS TO EQUIPMENT AND STRUCTURE.
26	DESIGNATED SPARE CIRCUIT BREAKERS SHALL BE PLACED IN THE OFF POSITION
27	PROVIDE SPD AS REQUIRED FOR OWNER PROVIDED EQUIPMENT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: ACCESS CONTROL SYSTEM, COMMUNICATION SYSTEM, DATA SYSTEM, SECURITY SYSTEM.
28	SUBMIT TO THE OWNER CERTIFICATES OF INSPECTIONS IN DUPLICATE FROM AN APPROVED INSPECTION AGENCY UPON COMPLETION.

ABBREVIATIONS

AC	ABOVE COUNTER	IG	ISOLATED GROUND
AFF	ABOVE FINISHED FLOOR	MCC	MOTOR CONTROL CENTER
CB	CIRCUIT BREAKER	NEC	NATIONAL ELECTRICAL CODE
E	EXISTING	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
EC	ELECTRICAL CONTRACTOR	NIC	NOT IN CONTRACT
EP	EXPLOSION PROOF	NL	NIGHT LIGHT
GFI	GROUND FAULT CIRCUIT INTERRUPTER	UG	UNDERGROUND
GR	GROUND	UON	UNLESS OTHERWISE NOTED
HP	HORSE POWER	WP	WEATHERPROOF
		WR	WEATHER RESISTANT

WIRING

- WIRING CONCEALED IN CEILING OR WALLS UON. ALL WIRE IS NUMBER #12 AWG MINIMUM.
- EXPOSED RACEWAY.
- UNDERGROUND RACEWAY; TYPE, SIZE, CONDUCTORS, AND ARRANGEMENT BY NOTATION OR SCHEDULE.

SWITCHES

$* SWITCH MOUNTED AT +48"; SINGLE POLE UON, LOWER CASE LETTER, WHEN PRESENT, INDICATES FIXTURES CONTROLLED.

* ABBREVIATIONS FOR SWITCH
- 2 DOUBLE POLE SWITCH
- 3 3-WAY SWITCH
- 4 4-WAY SWITCH
- D DIMMER SWITCH (SHALL BE COMPATABLE WITH FIXTURE BEING DIMMED)
- F FAN SWITCH: DUAL OPERATION WITH DIMMER
- K KEYED SWITCH
- OS DUAL TECHNOLOGY OCCUPANCY SENSOR
- V VOLUME CONTROL SWITCH

◇OS CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH SPARE DRY CONTACTS. HUBBELL OMNIDIARP SERIES

RECEPTACLES

- DUPLEX RECEPTACLE (NEMA 5-15R)
- DUPLEX RECEPTACLE (NEMA 5-15R); MOUNTED 8" ABOVE COUNTERTOP.
- GFI DUPLEX RECEPTACLE (NEMA 5-15R), SELF-TEST TYPE
- GFI DUPLEX RECEPTACLE (NEMA 5-15R), SELF-TEST TYPE; MOUNTED 8" ABOVE COUNTERTOP.
- QUADRUPLEX RECEPTACLE (TWO NEMA 5-15R)
- SPECIAL RECEPTACLE: VERIFY NEMA TYPE WITH MANUFACTURER
- SINGLE RECEPTACLE (NEMA 5-15R)
- SPLIT WIRED DUPLEX RECEPTACLE (NEMA 5-15R)
- DIRECT EQUIPMENT CONNECTION: VERIFY CONNECTION DETAILS WITH MANUFACTURER
- FLOOR MOUNTED RECEPTACLE (NEMA 5-15R)
- CEILING MOUNTED RECEPTACLE(NEMA 5-20R)

PANELS AND MISC.

- LIGHT OR POWER PANEL
- J JUNCTION BOX.
- EQUIPMENT DISCONNECT: INTERIOR DISCONNECTS SHALL BE NEMA 1 TYPE. EXTERIOR DISCONNECTS SHALL BE NEMA 3R TYPE. SIZE VARIES WITH EQUIPMENT.
- PHONE/DATA: AT 8" ABOVE COUNTER UON
- PHONE/DATA: +18" AFF UON
- TV A/V CABLE OUTLET

FIRE ALARM LEGEND

(2)	SMOKE DETECTOR W/ INTEGRATED STROBE LIGHT. FIRST ALERT: 7020BSL

HP ENGINEERING

PROJECT NO. 202801R

100 % COMPLETE

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CONSULTANT

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#1653
ARKANSAS - ENGINEER

OWNER
THEIL ROAD PROPERTIES, LP

PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR

LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9700
MICHAEL LEE WRIGHT

01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

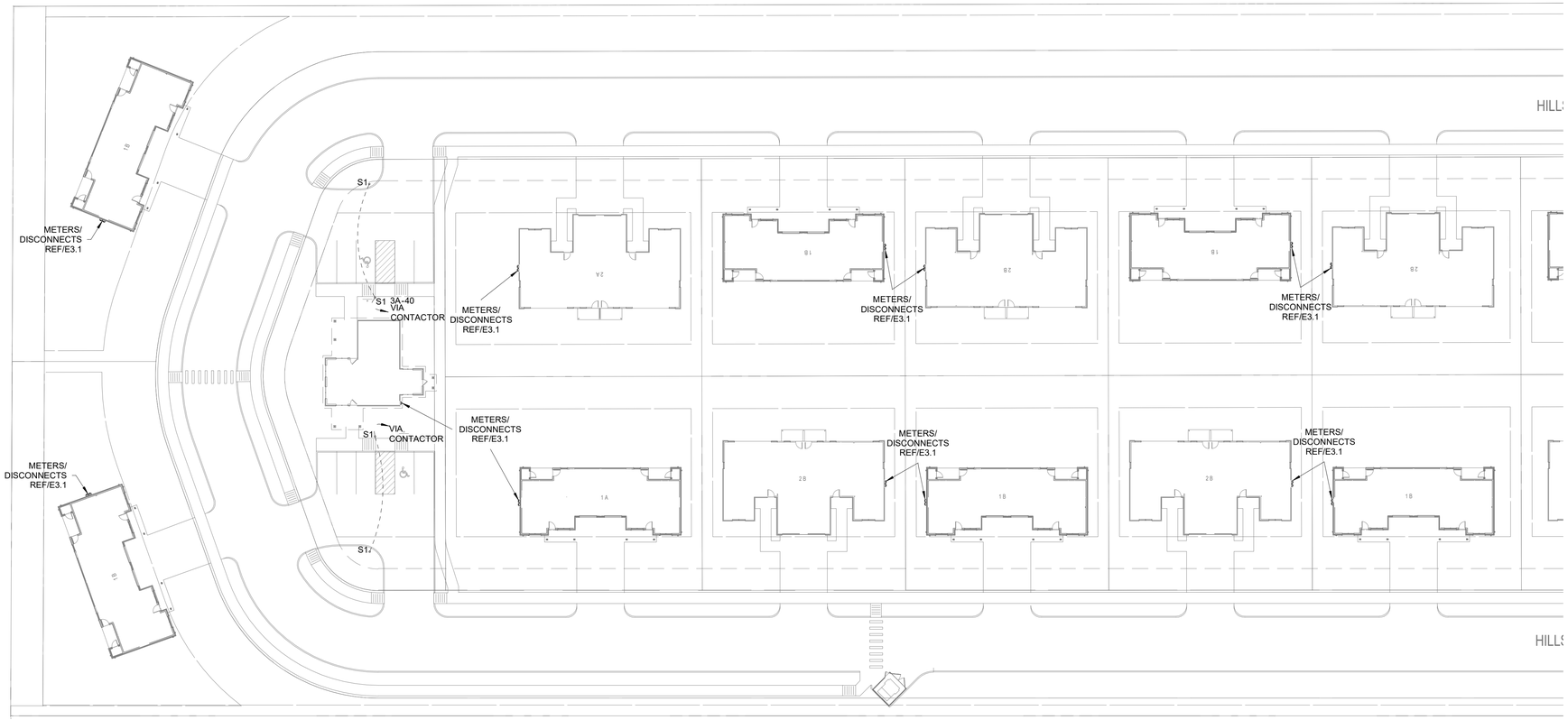
SHEET

ELECTRICAL NOTES AND LEGEND

DISCIPLINE - SHEET

E1.0

REFER TO CIVIL PLANS FOR UTILITY TRANSFORMER, METER, AND FIBER SERVICE LOCATIONS. COORDINATE WITH CIVIL PLANS AND UTILITY FOR ADDITIONAL INFORMATION.



1 ELECTRICAL SITE PLAN - WEST SIDE
1" = 30'-0"

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2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER MICHAEL LEE WRIGHT No. 9700
01/29/2021

REVISIONS		
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DAT	01.29.2021
ISSUE	

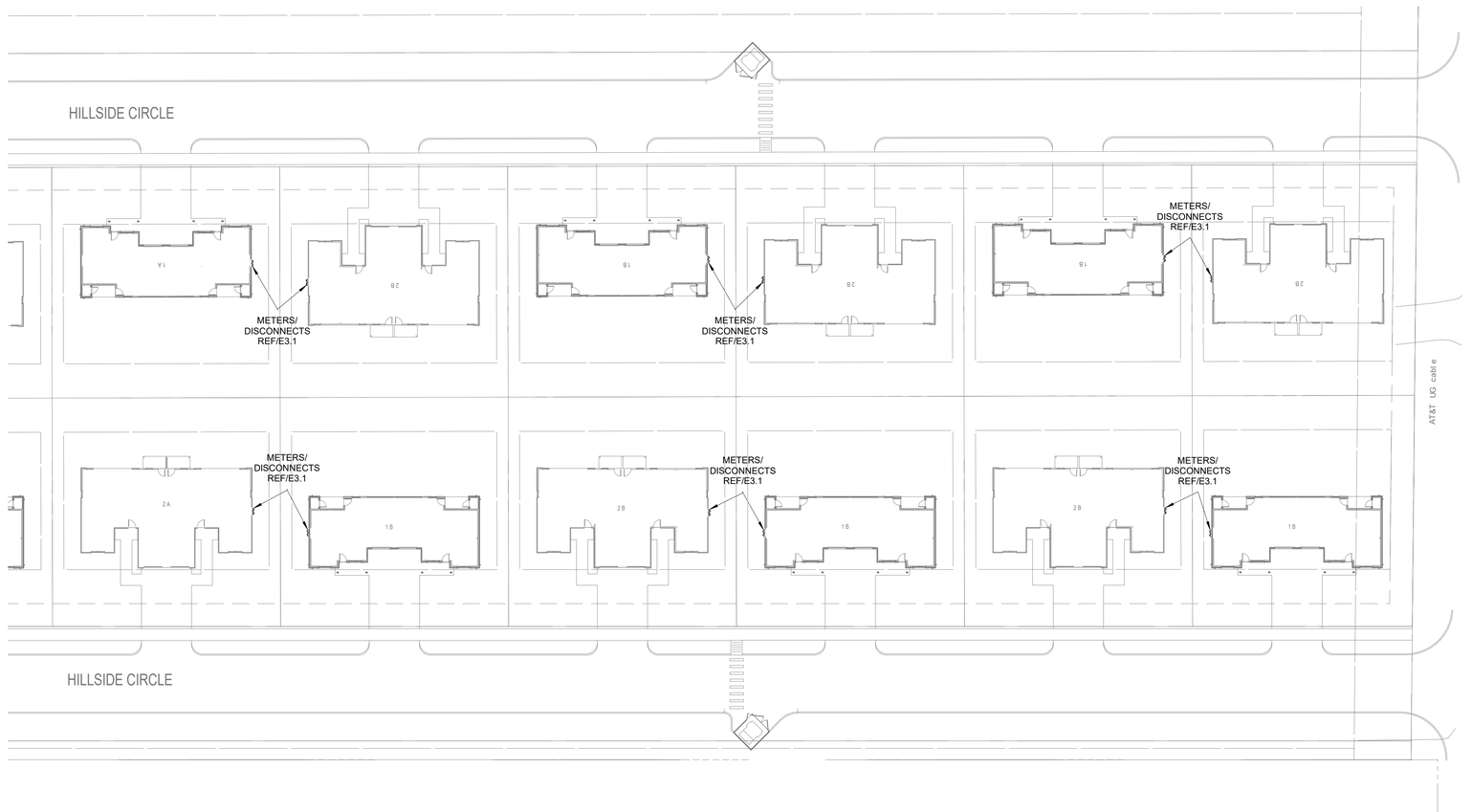
SHEET

ELECTRICAL SITE PLAN - WEST SIDE

DISCIPLINE - SHEET

E1.1

REFER TO CIVIL PLANS FOR ACTUAL TRANSFORMER, METER, AND FIBER SERVICE LOCATIONS. COORDINATE WITH CIVIL PLANS AND UTILITY FOR ADDITIONAL INFORMATION.



N TRUE N PLAN 1 ELECTRICAL SITE PLAN - EAST SIDE
1" = 30'-0"

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48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9708 MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET

ELECTRICAL SITE PLAN - EAST SIDE

DISCIPLINE - SHEET

E1.2

Load Center: 1A1 — NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/240 Single
Phases: 1
Wires: 3
A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	LIVING ROOM	20	1		1020	771				1	20	EXTERIOR	2
3	BEDROOM	20	1				1332	444		1	20	KITCHEN	4
5	DISH WASHER (4)	20	1		1500	358				1	20	RESTROOM	6
7	REFRIGERATOR (4)	20	1				1000	1000		1	20	GARBAGE DISPOSAL (4)	8
9	MICROWAVE/HOOD (4)	20	1		1000	540				1	20	KITCHEN RECEPTACLES	10
11	WASHING MACHINE	20	1				1000	722		1	20	GARAGE	12
13	RANGE	50	2	#6	4000	2500			#10	2	30	DRYER	14
15							4000	2500					16
17	HP-1	20	2		1248	2760			#10	2	25	AH-1	18
19							1248	2760					20
21	EWH-1	20	2		1500	360				1	20	RESTROOM EMERGENCY CALL SYSTEM	22
23							1500	0	--	1	20	SPARE	24
25	SPARE	20	1	--	0	0			--	1	20	SPARE	26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPACE	--	--	--	0	0			--	--	--	SPACE	30
				Total Load:	17557 VA		17506 VA						
				Total Amps:	146 A		146 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	54 VA	100.00%	54 VA		
Lighting	673 VA	125.00%	841 VA	**Total Conn. Load:**	35063 VA
Power	2856 VA	100.00%	2856 VA	**Total Est. Demand:**	24491 VA
Receptacle	31480 VA	65.88%	20740 VA	**Total Conn. Current:**	146 A
				Total Est. Demand...	102 A

Load Center: 1A2 — NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1
Volts: 120/240 Single
Phases: 1
Wires: 3
A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	LIVING ROOM	20	1		960	1131				1	20	EXTERIOR	2
3	BEDROOM	20	1				1332	444		1	20	KITCHEN	4
5	DISH WASHER (4)	20	1		1500	358				1	20	RESTROOM	6
7	REFRIGERATOR (4)	20	1				1000	1000		1	20	GARBAGE DISPOSAL (4)	8
9	MICROWAVE/HOOD (4)	20	1		1000	540				1	20	KITCHEN RECEPTACLES	10
11	WASHING MACHINE	20	1				1000	722		1	20	GARAGE	12
13	RANGE	50	2	#6	4000	2500			#10	2	30	DRYER	14
15							4000	2500					16
17	HP-1	20	2		1248	2760			#10	2	25	AH-1	18
19							1248	2760					20
21	EWH-1	20	2		1500	360				1	20	RESTROOM EMERGENCY CALL SYSTEM	22
23							1500	0	--	1	20	SPARE	24
25	SPARE	20	1	--	0	0			--	1	20	SPARE	26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPACE	--	--	--	0	0			--	--	--	SPACE	30
				Total Load:	17857 VA		17506 VA						
				Total Amps:	149 A		146 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	54 VA	100.00%	54 VA		
Lighting	613 VA	125.00%	766 VA	**Total Conn. Load:**	35363 VA
Power	2856 VA	100.00%	2856 VA	**Total Est. Demand:**	24596 VA
Receptacle	31840 VA	65.70%	20920 VA	**Total Conn. Current:**	147 A
				Total Est. Demand...	102 A

ALL SMOKE DETECTORS SHALL BE HARDWIRED AND HAVE BATTERY BACK-UP

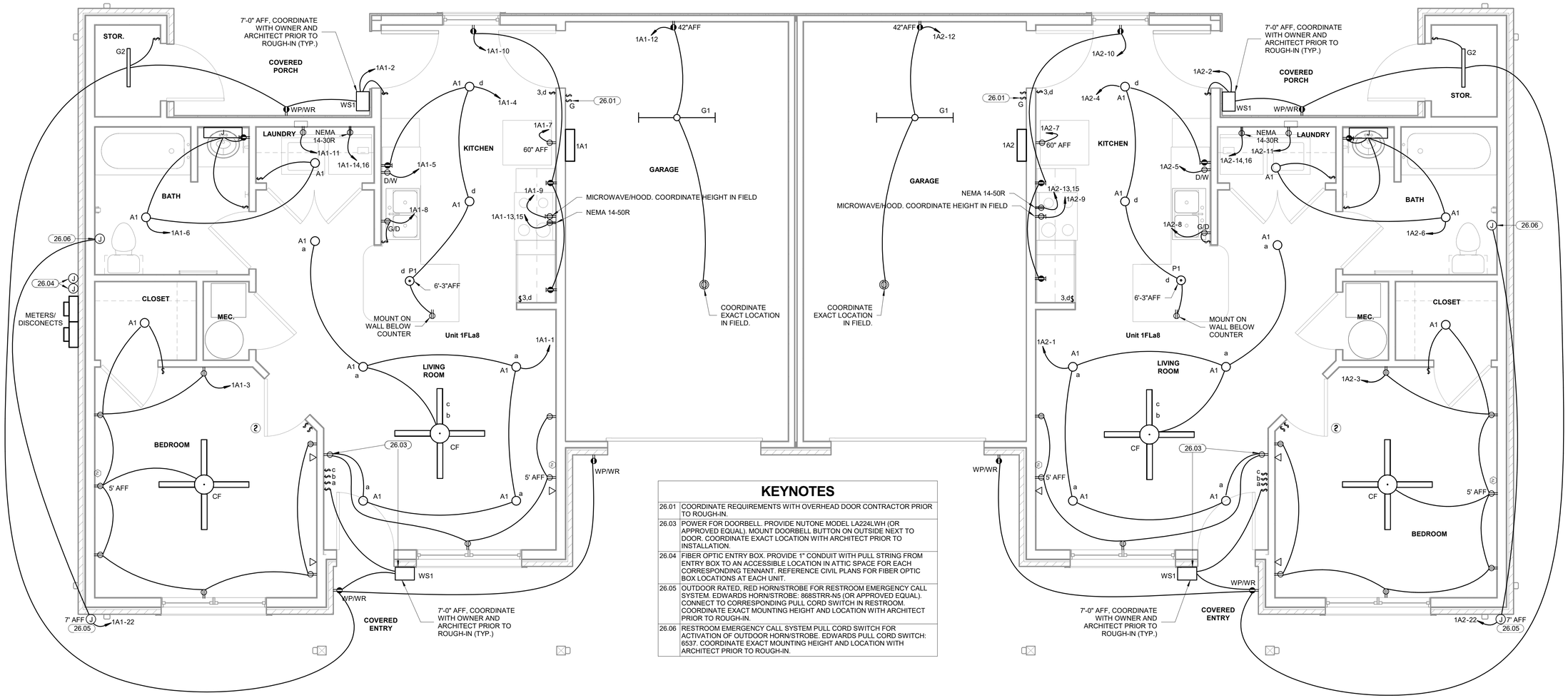
POWER PLAN NOTES

PROVIDE TAMPER-RESISTANT RECEPTACLES AND AFCI BREAKERS AS REQUIRED BY THE NEC.

COORDINATE MOUNTING HEIGHTS FOR POWER ASSOCIATED WITH TV OUTLETS WITH ARCHITECT PRIOR TO ROUGH-IN.

LIGHTING PLAN NOTES

VERIFY MOUNTING HEIGHT OF ALL PENDANT FIXTURES PRIOR TO ROUGH-IN.



KEYNOTES

26.01	COORDINATE REQUIREMENTS WITH OVERHEAD DOOR CONTRACTOR PRIOR TO ROUGH-IN.
26.03	POWER FOR DOORBELL. PROVIDE NUTONE MODEL LA224LWH (OR APPROVED EQUAL). MOUNT DOORBELL BUTTON ON OUTSIDE NEXT TO DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
26.04	FIBER OPTIC ENTRY BOX. PROVIDE 1" CONDUIT WITH PULL STRING FROM ENTRY BOX TO AN ACCESSIBLE LOCATION IN ATTIC SPACE FOR EACH CORRESPONDING TENNANT. REFERENCE CIVIL PLANS FOR FIBER OPTIC BOX LOCATIONS AT EACH UNIT.
26.05	OUTDOOR RATED, RED HORN/STROBE FOR RESTROOM EMERGENCY CALL SYSTEM. EDWARDS HORN/STROBE: 868STRR-N5 (OR APPROVED EQUAL). CONNECT TO CORRESPONDING PULL CORD SWITCH IN RESTROOM. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
26.06	RESTROOM EMERGENCY CALL SYSTEM PULL CORD SWITCH FOR ACTIVATION OF OUTDOOR HORN/STROBE. EDWARDS PULL CORD SWITCH: 6537. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

1 POWER PLAN - 1 BEDROOM DUPLEX FLOOR PLAN - TYPE 1A
3/8" = 1'-0"

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LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER MICHAEL LEE WRIGHT No. 9700
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
POWER PLAN - 1 BEDROOM DUPLEX - TYPE 1A

DISCIPLINE - SHEET
E2.1

Load Center: 1B1 — NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	EXTERIOR	20	1		951	1020				1	20	LIVING ROOM	2
3	BEDROOM	20	1				1332	444		1	20	KITCHEN	4
5	KITCHEN RECEPTACLES	20	1		540	1000				1	20	REFRIGERATOR (4)	6
7	HOOD (4)	20	1				1000	722		1	20	GARAGE	8
9	DISH WASHER (4)	20	1		1500	358				1	20	BATHROOM	10
11	GARBAGE DISPOSAL (4)	20	1				1000	1000		1	20	WASHER	12
13	RANGE	50	2	#6	4000	2500							14
15							4000	2500	#10	2	30	DRYER	16
17	HP-1	20	2		1248	2760							18
19							1248	2760	#10	2	25	AH-1	20
21	EWH-1	20	2		1500	180				1	20	RESTROOM EMERGENCY CALL SYSTEM	22
23							1500	0	--	1	20	SPARE	24
25	SPARE	20	1	--	0	0			--	1	20	SPARE	26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPACE	--	--	--	0	0			--	--	--	SPACE	30
				Total Load:	17557 VA		17506 VA						
				Total Amps:	146 A		146 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	54 VA	100.00%	54 VA		
Lighting	673 VA	125.00%	841 VA	**Total Conn. Load:**	35063 VA
Power	2676 VA	100.00%	2676 VA	**Total Est. Demand:**	24401 VA
Receptacle	31660 VA	65.79%	20830 VA	**Total Conn. Current:**	146 A
				Total Est. Demand...	102 A

Load Center: 1B2 — NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

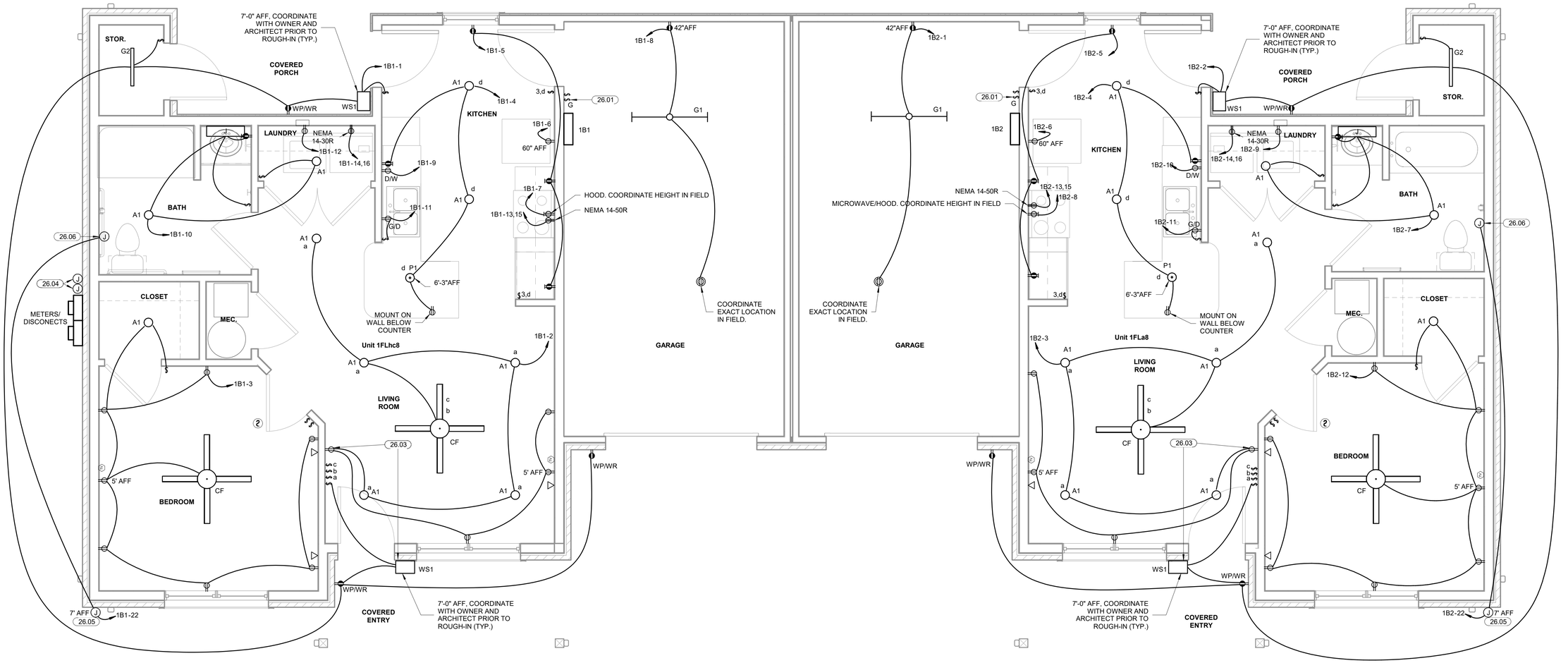
A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	GARAGE	20	1		722	951				1	20	EXTERIOR	2
3	LIVING ROOM	20	1				1020	444		1	20	KITCHEN	4
5	KITCHEN RECEPTACLES	20	1		540	1000				1	20	REFRIGERATOR (4)	6
7	BATHROOM	20	1				358	1000		1	20	MICROWAVE/HOOD (4)	8
9	WASHER	20	1		1000	1500				1	20	DISH WASHER (4)	10
11	GARBAGE DISPOSAL (4)	20	1				1000	1332		1	20	BEDROOM	12
13	RANGE	50	2	#6	4000	2500							14
15							4000	2500	#10	2	30	DRYER	16
17	HP-1	20	2		1248	2760							18
19							1248	2760	#10	2	25	AH-1	20
21	EWH-1	20	2		1500	180				1	20	RESTROOM EMERGENCY CALL SYSTEM	22
23							1500	0	--	1	20	SPARE	24
25	SPARE	20	1	--	0	0			--	1	20	SPARE	26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPACE	--	--	--	0	0			--	--	--	SPACE	30
				Total Load:	17901 VA		17162 VA						
				Total Amps:	149 A		143 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	54 VA	100.00%	54 VA		
Lighting	673 VA	125.00%	841 VA	**Total Conn. Load:**	35063 VA
Power	2676 VA	100.00%	2676 VA	**Total Est. Demand:**	24401 VA
Receptacle	31660 VA	65.79%	20830 VA	**Total Conn. Current:**	146 A
				Total Est. Demand...	102 A

ALL SMOKE DETECTORS SHALL BE HARDWIRED AND HAVE BATTERY BACK-UP



1 POWER PLAN - 1 BEDROOM DUPLEX FLOOR PLAN - TYPE 1B
3/8" = 1'-0"

KEYNOTES

26.01	COORDINATE REQUIREMENTS WITH OVERHEAD DOOR CONTRACTOR PRIOR TO ROUGH-IN.
26.03	POWER FOR DOORBELL. PROVIDE NUTONE MODEL LA224LWH (OR APPROVED EQUAL). MOUNT DOORBELL BUTTON ON OUTSIDE NEXT TO DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
26.04	FIBER OPTIC ENTRY BOX. PROVIDE 1" CONDUIT WITH PULL STRING FROM ENTRY BOX TO AN ACCESSIBLE LOCATION IN ATTIC SPACE FOR EACH CORRESPONDING TENNANT. REFERENCE CIVIL PLANS FOR FIBER OPTIC BOX LOCATIONS AT EACH UNIT.
26.05	OUTDOOR RATED, RED HORN/STROBE FOR RESTROOM EMERGENCY CALL SYSTEM. EDWARDS HORN/STROBE: 868STRR-N5 (OR APPROVED EQUAL). CONNECT TO CORRESPONDING PULL CORD SWITCH IN RESTROOM. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
26.06	RESTROOM EMERGENCY CALL SYSTEM PULL CORD SWITCH FOR ACTIVATION OF OUTDOOR HORN/STROBE. EDWARDS PULL CORD SWITCH: 6537. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

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CERTIFICATE OF AUTH. HP ENGINEERING, INC. #1653 ARKANSAS - ENGINEER

OWNER
THEIL ROAD PROPERTIES, LP
PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

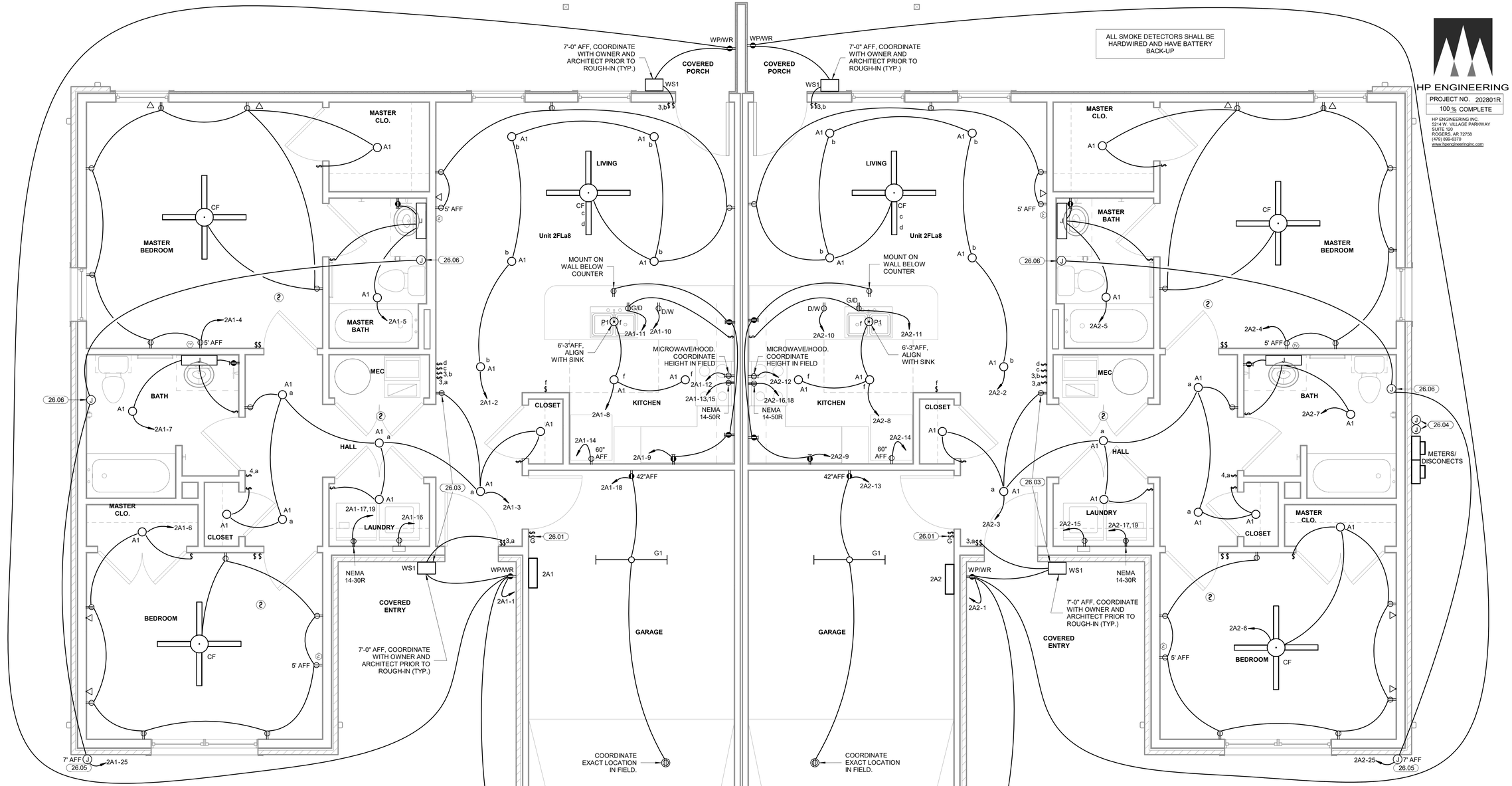
STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9700 MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
POWER PLAN - 1 BEDROOM DUPLEX - TYPE 1B

DISCIPLINE - SHEET
E2.2



1 POWER PLAN - 2 BEDROOM DUPLEX FLOOR PLAN - TYPE 2A
3/8" = 1'-0"

Load Center: 2A1

NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	EXTERIOR	20	1		920	840				1	20	LIVING ROOM	2
3	HALL	20	1				624	1332		1	20	MASTER BEDROOM	4
5	MASTER BATHROOM	20	1		346	1332				1	20	BEDROOM	6
7	BATHROOM	20	1				346	84		1	20	KITCHEN	8
9	KITCHEN RECEPTACLES	20	1		720	1500				1	20	DISH WASHER (4)	10
11	GARBAGE DISPOSAL (4)	20	1				1000	1000		1	20	MICROWAVE/HOOD (4)	12
13	RANGE	50	2	#6	4000	1000				1	20	REFRIGERATOR (4)	14
15							4000	1000		1	20	WASHER	16
17	DRYER	30	2	#10	2500	722				1	20	GARAGE	18
19							2500	1768	#10	2	25	HP-2	20
21	AH-2	40	2	#8	3848	1768							22
23							3848	1500		2	20	EWH-1	24
25	RESTROOM EMERGENCY CALL SYSTEM	20	1		540	1500							26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPARE	20	1	--	0	0			--	--	--	SPACE	30
				Total Load:	21536 VA		19002 VA						
				Total Amps:	179 A		158 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	108 VA	100.00%	108 VA		
Lighting	898 VA	125.00%	1123 VA	**Total Conn. Load:**	40538 VA
Power	11772 VA	100.00%	11772 VA	**Total Est. Demand:**	31883 VA
Receptacle	27760 VA	68.01%	18880 VA	**Total Conn. Current:**	169 A
				Total Est. Demand...	133 A

KEYNOTES

26.01	COORDINATE REQUIREMENTS WITH OVERHEAD DOOR CONTRACTOR PRIOR TO ROUGH-IN.
26.03	POWER FOR DOORBELL. PROVIDE NUTONE MODEL LA224LWH (OR APPROVED EQUAL). MOUNT DOORBELL BUTTON ON OUTSIDE NEXT TO DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
26.04	FIBER OPTIC ENTRY BOX. PROVIDE 1" CONDUIT WITH PULL STRING FROM ENTRY BOX TO AN ACCESSIBLE LOCATION IN ATTIC SPACE FOR EACH CORRESPONDING TENNANT. REFERENCE CIVIL PLANS FOR FIBER OPTIC BOX LOCATIONS AT EACH UNIT.
26.05	OUTDOOR RATED, RED HORN/STROBE FOR RESTROOM EMERGENCY CALL SYSTEM. EDWARDS HORN/STROBE: 868STRR-NS (OR APPROVED EQUAL). CONNECT TO CORRESPONDING PULL CORD SWITCH IN RESTROOM. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
26.06	RESTROOM EMERGENCY CALL SYSTEM PULL CORD SWITCH FOR ACTIVATION OF OUTDOOR HORN/STROBE. EDWARDS PULL CORD SWITCH: 6537. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

Load Center: 2A2

NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	EXTERIOR	20	1		920	840				1	20	LIVING ROOM	2
3	HALL	20	1				612	1332		1	20	MASTER BEDROOM	4
5	MASTER BATHROOM	20	1		346	1332				1	20	BEDROOM	6
7	BATHROOM	20	1				346	84		1	20	KITCHEN	8
9	KITCHEN RECEPTACLES	20	1		720	1500				1	20	DISH WASHER (4)	10
11	GARBAGE DISPOSAL (4)	20	1				1000	1000		1	20	MICROWAVE/HOOD (4)	12
13	GARAGE	20	1		722	1000				1	20	REFRIGERATOR (4)	14
15	WASHER	20	1				1000	4000	#6	2	50	RANGE	16
17	DRYER	30	2	#10	2500	4000							18
19							2500	1768	#10	2	25	HP-2	20
21	AH-2	40	2	#8	3848	1768							22
23							3848	1500		2	20	EWH-1	24
25	RESTROOM EMERGENCY CALL SYSTEM	20	1		540	1500							26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPARE	20	1	--	0	0			--	--	--	SPACE	30
				Total Load:	21536 VA		18990 VA						
				Total Amps:	179 A		158 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	108 VA	100.00%	108 VA		
Lighting	886 VA	125.00%	1108 VA	**Total Conn. Load:**	40526 VA
Power	11772 VA	100.00%	11772 VA	**Total Est. Demand:**	31868 VA
Receptacle	27760 VA	68.01%	18880 VA	**Total Conn. Current:**	169 A
				Total Est. Demand...	133 A

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2002 RECTOR ROAD
PARAGOULD, ARKANSAS

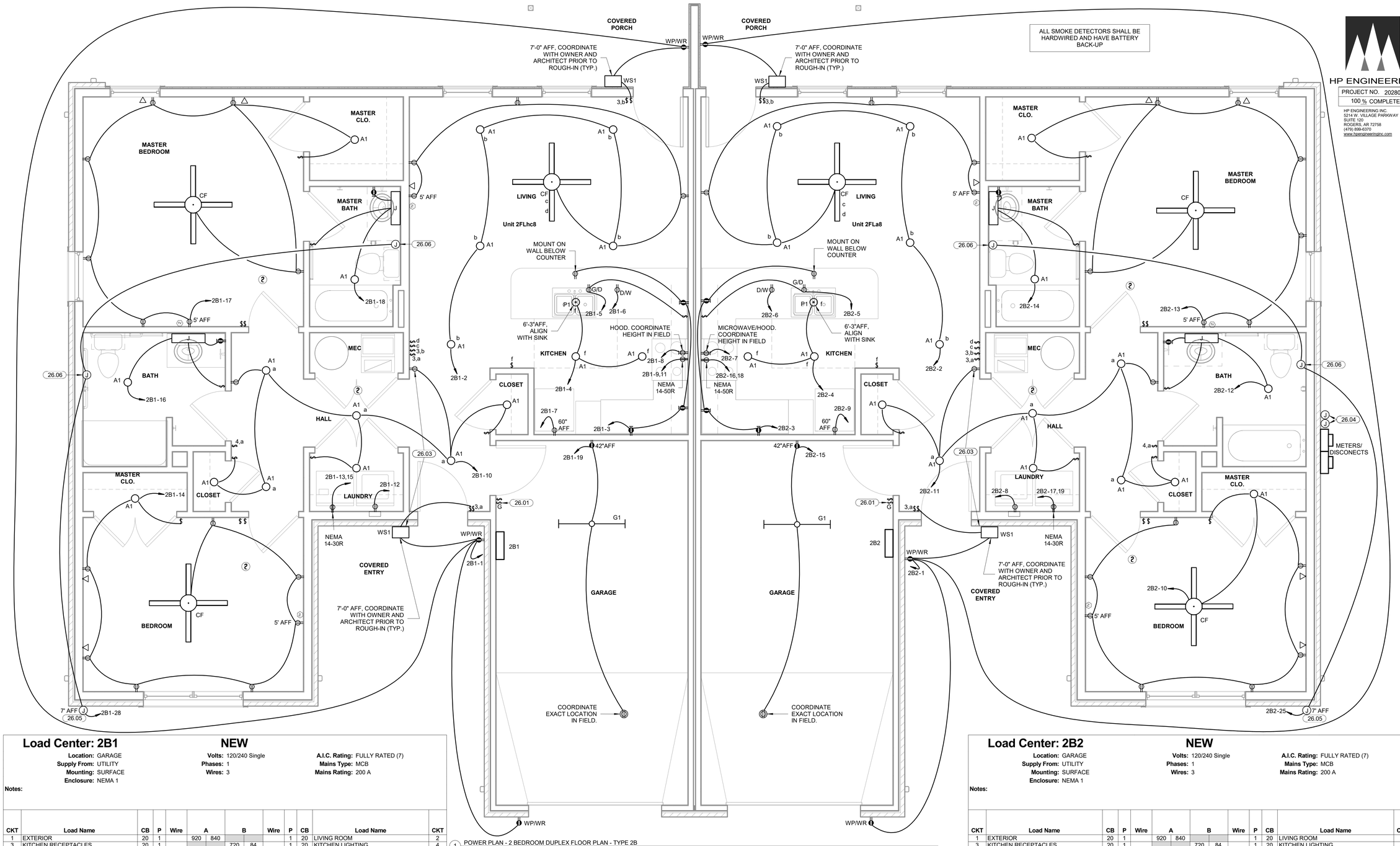
STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9700
MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
POWER PLAN - 2 BEDROOM DUPLEX - TYPE 2A

DISCIPLINE - SHEET
E2.3



1 POWER PLAN - 2 BEDROOM DUPLEX FLOOR PLAN - TYPE 2B
3/8" = 1'-0"

Load Center: 2B1 — NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	EXTERIOR	20	1		920	840				1	20	LIVING ROOM	2
3	KITCHEN RECEPTACLES	20	1				720	84		1	20	KITCHEN LIGHTING	4
5	GARBAGE DISPOSAL (4)	20	1		1000	1500				1	20	DISH WASHER (4)	6
7	REFRIGERATOR (4)	20	1				1000	1000		1	20	HOOD (4)	8
9	RANGE	50	2	#6	4000	624				1	20	HALL	10
11							4000	1000		1	20	WASHER	12
13	DRYER	30	2	#10	2500	1332				1	20	BEDROOM	14
15							2500	346		1	20	BATHROOM	16
17	MASTER BEDROOM	20	1		1332	346				1	20	MASTER BATHROOM	18
19	GARAGE	20	1				722	1768	#10	2	25	HP-2	20
21	MICROWAVE	20	1		1000	1768							22
23	AH-2	40	2	#8			3848	1500		2	20	EWH-1	24
25					3848	1500							26
27	SPARE	20	1	--			0	540		1	20	RESTROOM EMERGENCY CALL SYSTEM	28
29	SPARE	20	1	--	0	0			--	--	--	SPACE	30
					Total Load:		22510 VA		19028 VA				
					Total Amps:		188 A		159 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	108 VA	100.00%	108 VA		
Lighting	898 VA	125.00%	1123 VA	**Total Conn. Load:**	41538 VA
Power	11772 VA	100.00%	11772 VA	**Total Est. Demand:**	32383 VA
Receptacle	28760 VA	67.39%	19380 VA	**Total Conn. Current:**	173 A
				Total Est. Demand...	135 A

KEYNOTES

26.01	COORDINATE REQUIREMENTS WITH OVERHEAD DOOR CONTRACTOR PRIOR TO ROUGH-IN.
26.03	POWER FOR DOORBELL. PROVIDE NUTONE MODEL LA224LWH (OR APPROVED EQUAL). MOUNT DOORBELL BUTTON ON OUTSIDE NEXT TO DOOR. COORDINATE EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.
26.04	FIBER OPTIC ENTRY BOX. PROVIDE 1" CONDUIT WITH PULL STRING FROM ENTRY BOX TO AN ACCESSIBLE LOCATION IN ATTIC SPACE FOR EACH CORRESPONDING TENNANT. REFERENCE CIVIL PLANS FOR FIBER OPTIC BOX LOCATIONS AT EACH UNIT.
26.05	OUTDOOR RATED, RED HORN/STROBE FOR RESTROOM EMERGENCY CALL SYSTEM. EDWARDS HORN/STROBE: 868STRR-N5 (OR APPROVED EQUAL). CONNECT TO CORRESPONDING PULL CORD SWITCH IN RESTROOM. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.
26.06	RESTROOM EMERGENCY CALL SYSTEM PULL CORD SWITCH FOR ACTIVATION OF OUTDOOR HORN/STROBE. EDWARDS PULL CORD SWITCH: 6537. COORDINATE EXACT MOUNTING HEIGHT AND LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN.

Load Center: 2B2 — NEW

Location: GARAGE
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 200 A

Notes:

CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	EXTERIOR	20	1		920	840				1	20	LIVING ROOM	2
3	KITCHEN RECEPTACLES	20	1				720	84		1	20	KITCHEN LIGHTING	4
5	GARBAGE DISPOSAL (4)	20	1		1000	1500				1	20	DISH WASHER (4)	6
7	MICROWAVE/HOOD (4)	20	1				1000	1000		1	20	WASHER	8
9	REFRIGERATOR (4)	20	1		1000	1332				1	20	BEDROOM	10
11	HALL	20	1				624	346		1	20	BATHROOM	12
13	MASTER BEDROOM	20	1		1332	346				1	20	MASTER BATHROOM	14
15	GARAGE	20	1				722	4000	#6	2	50	RANGE	16
17	DRYER	30	2	#10	2500	4000							18
19							2500	1768	#10	2	25	HP-2	20
21	AH-2	40	2	#8	3848	1768							22
23							3848	1500		2	20	EWH-1	24
25	RESTROOM EMERGENCY CALL SYSTEM	20	1		540	1500							26
27	SPARE	20	1	--			0	0	--	1	20	SPARE	28
29	SPARE	20	1	--	0	0			--	--	--	SPACE	30
					Total Load:		22426 VA		18112 VA				
					Total Amps:		187 A		151 A				

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	108 VA	100.00%	108 VA		
Lighting	898 VA	125.00%	1123 VA	**Total Conn. Load:**	40538 VA
Power	11772 VA	100.00%	11772 VA	**Total Est. Demand:**	31883 VA
Receptacle	27760 VA	68.01%	18880 VA	**Total Conn. Current:**	169 A
				Total Est. Demand...	133 A

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OWNER
THEIL ROAD PROPERTIES, LP
PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9700 MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
POWER PLAN - 2 BEDROOM DUPLEX - TYPE 2B

DISCIPLINE - SHEET
E2.4

Panelboard: 3A

NEW

Location: COMMUNITY ROOM
Supply From: UTILITY
Mounting: SURFACE
Enclosure: NEMA 1

Volts: 120/240 Single
Phases: 1
Wires: 3

A.I.C. Rating: FULLY RATED (7)
Mains Type: MCB
Mains Rating: 400 A

Notes:

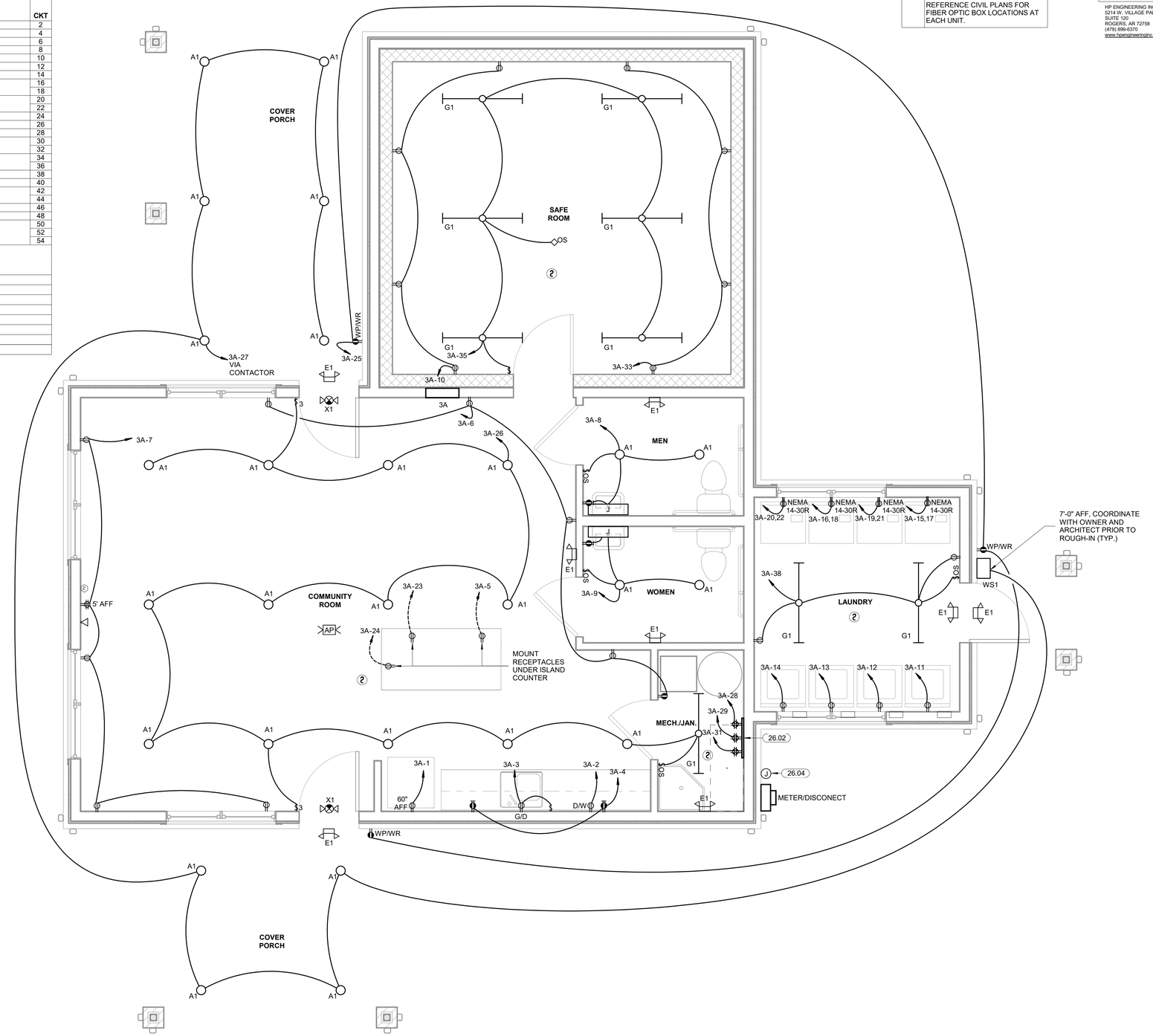
CKT	Load Name	CB	P	Wire	A		B		Wire	P	CB	Load Name	CKT
1	REFRIGERATOR (4)	20	1		1000	1500				1	20	DISH WASHER (4)	2
3	GARBAGE DISPOSAL (4)	20	1				1000	360		1	20	CONVENIENCE RECEPTACLES	4
5	ISLAND RECEPTACLE	20	1		1000	720				1	20	CONVENIENCE RECEPTACLES	6
7	CONVENIENCE RECEPTACLES	20	1				1080	357		1	20	MEN'S RESTROOM	8
9	WOMEN'S RESTROOM	20	1		357	720				1	20	SAFE ROOM RECEPTS	10
11	WASHER	20	1				1000	1000		1	20	WASHER	12
13	WASHER	20	1		1000	1000				1	20	WASHER	14
15							2500	2500					16
17	DRYER	30	2	#10	2500	2500			#10	2	30	DRYER	18
19							2500	2500					20
21	DRYER	30	2	#10	2500	2500			#10	2	30	DRYER	22
23	ISLAND RECEPTACLE	20	1				1000	1000		1	20	ISLAND RECEPTACLE	24
25	EXTERIOR RECEPTACLES	20	1		900	252				1	20	COMMUNITY ROOM LIGHTING	26
27	EXTERIOR LIGHTING (10)	20	1				220	360		1	20	AV	28
29	PHONE/DATA	20	1		360	9000			#2	2	100	EWH-2	30
31	LIGHTING CONTROL	20	1				360	9000					32
33	SAFE ROOM RECEPTS	20	1		720	3848			#8	2	40	AH-2	34
35	SAFE ROOM LIGHTING	20	1				252	3848					36
37					1768	444				1	20	LAUNDRY	38
39	HP-2	25	2	#10			1768	267		1	20	PARKING LOT LIGHTING	40
41					1920	1920							42
43	MHP-1, MAC-1	20	2				1920	1920		2	20	MHP-1, MAC-1	44
45	SPARE	20	1	--	0	0			--	1	20	SPARE	46
47	SPARE	20	1	--			0	0	--	1	20	SPARE	48
49	SPACE	--	--	--	0	0							50
51	SPACE	--	--	--			0	0	--	3	100	SPD	52
53	SPACE	--	--	--	0	0							54
				Total Load:	38429 VA		36712 VA						
				Total Amps:	320 A		306 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Hvac	160 VA	100.00%	160 VA		
Lighting	1269 VA	125.00%	1587 VA	**Total Conn. Load:**	75141 VA
Power	36912 VA	100.00%	36912 VA	**Total Est. Demand:**	62059 VA
Receptacle	36800 VA	63.59%	23400 VA	**Total Conn. Current:**	313 A
				Total Est. Demand...	259 A

ALL SMOKE DETECTORS SHALL BE HARDWIRED AND HAVE BATTERY BACK-UP

KEYNOTES

26.02	PROVIDE BACKBOARD WITH DEDICATED CIRCUITS FOR PHONE/DATA, A/V AND LIGHTING CONTROLLER.
26.04	FIBER OPTIC ENTRY BOX. PROVIDE 1" CONDUIT WITH PULL STRING FROM ENTRY BOX TO AN ACCESSIBLE LOCATION IN ATTIC SPACE FOR EACH CORRESPONDING TENANT. REFERENCE CIVIL PLANS FOR FIBER OPTIC BOX LOCATIONS AT EACH UNIT.



1 POWER PLAN - COMMUNITY BUILDING - TYPE 3A
3/8" = 1'-0"

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01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
POWER PLAN - COMMUNITY BUILDING - TYPE 3A

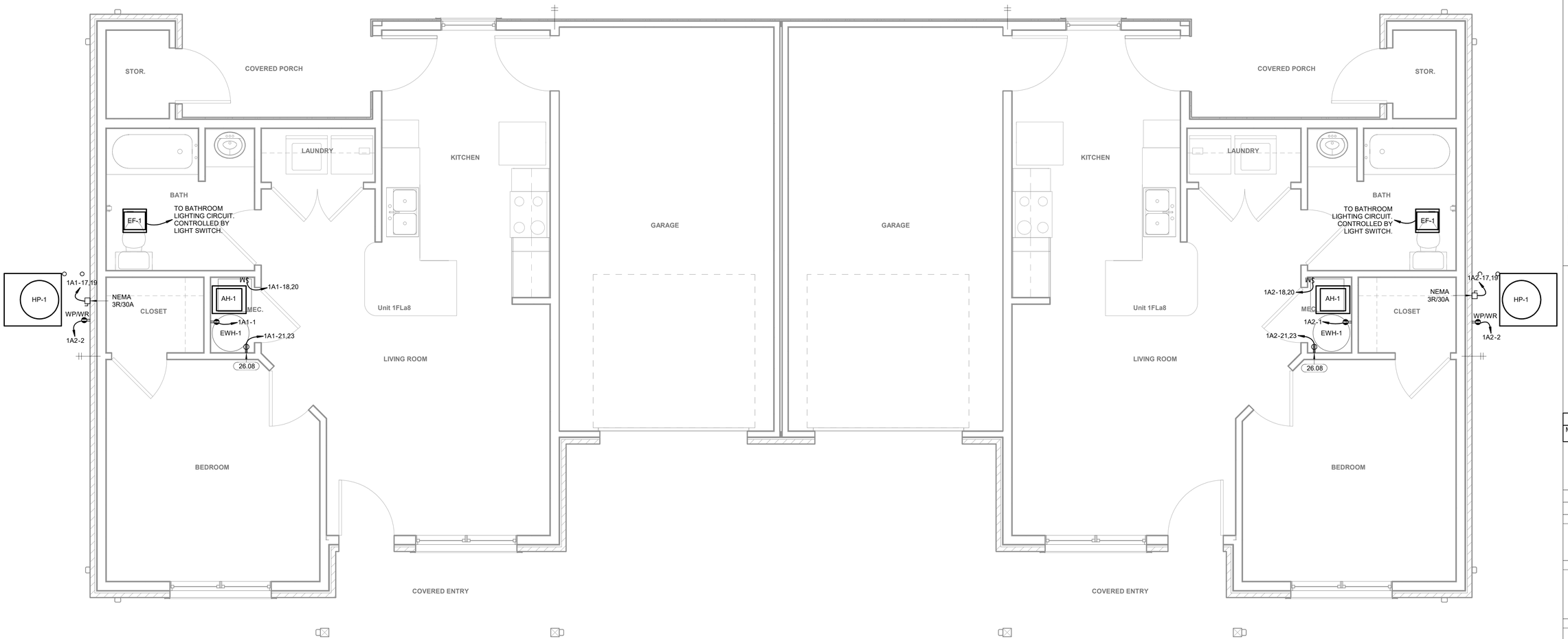
DISCIPLINE - SHEET
E2.5

MECHANICAL POWER PLAN NOTES

EXHAUST FANS SHALL BE CIRCUITED WITH LIGHTS UNLESS SHOWN OTHERWISE. REFER TO MECHANICAL PLANS FOR CONTROLS OF EXHAUST FANS.

KEYNOTES

26.08	COORDINATE WITH WATER HEATER INSTALLER AND PROVIDE A RECEPTACLE WITH A NEMA CONFIGURATION AND MATCHING CORD AND PLUG THAT IS CAPABLE OF POWERING THE WATER HEATER. INSTALL IN A MANNER THAT IS IN COMPLIANCE WITH THE CLEARANCE AND ACCESSABILITY REQUIREMENTS OF THE NEC.



1 MECHANICAL POWER PLAN - 1 BEDROOM DUPLEX - TYPE 1A
3/8" = 1'-0"

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OWNER
THEIL ROAD PROPERTIES, LP
PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION
2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9700 MICHAEL LEE WRIGHT
01/29/2021

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MARK	DATE	DESCRIPTION

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DAT	01.29.2021
ISSUE	

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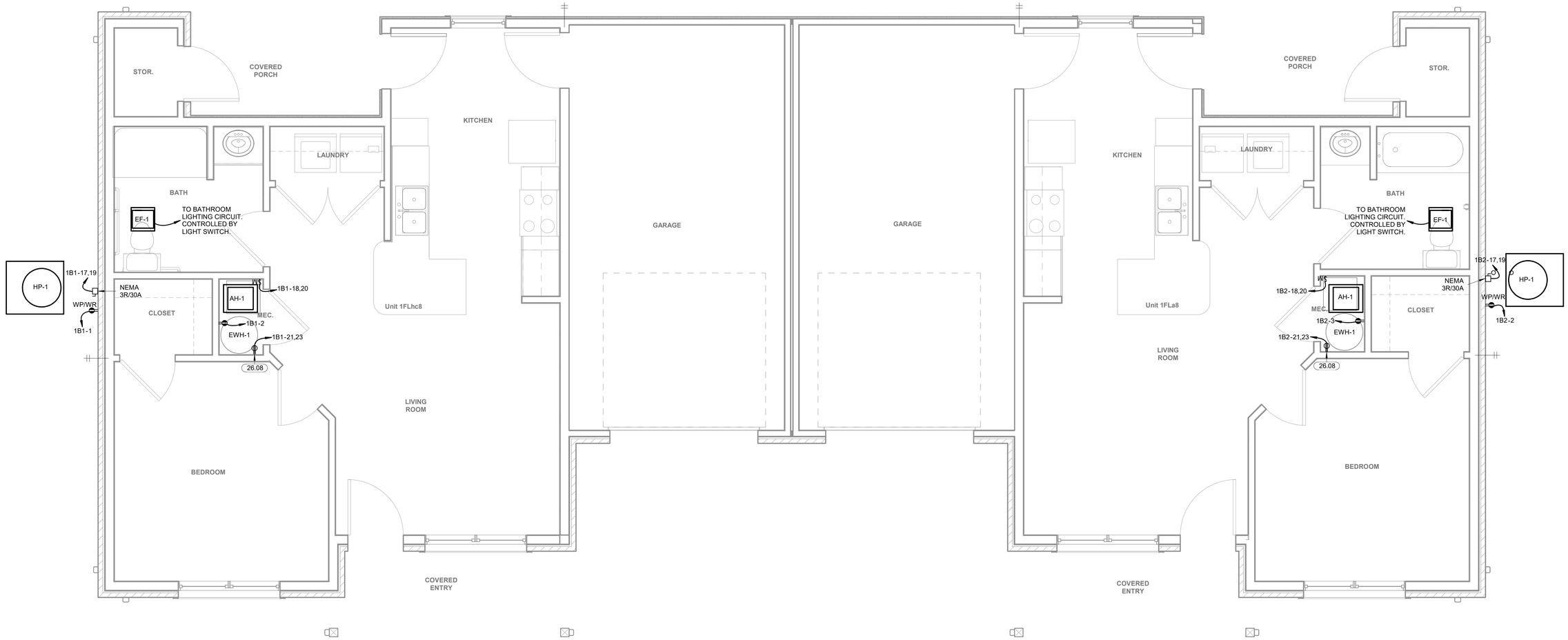
MECHANICAL POWER PLAN - 1 BEDROOM DUPLEX - TYPE 1A

DISCIPLINE - SHEET

E2.6

KEYNOTES

26.08	COORDINATE WITH WATER HEATER INSTALLER AND PROVIDE A RECEPTACLE WITH A NEMA CONFIGURATION AND MATCHING CORD AND PLUG THAT IS CAPABLE OF POWERING THE WATER HEATER. INSTALL IN A MANNER THAT IS IN COMPLIANCE WITH THE CLEARANCE AND ACCESSABILITY REQUIREMENTS OF THE NEC.



1 MECHANICAL POWER PLAN - 1 BEDROOM DUPLEX - TYPE 1B
3/8" = 1'-0"

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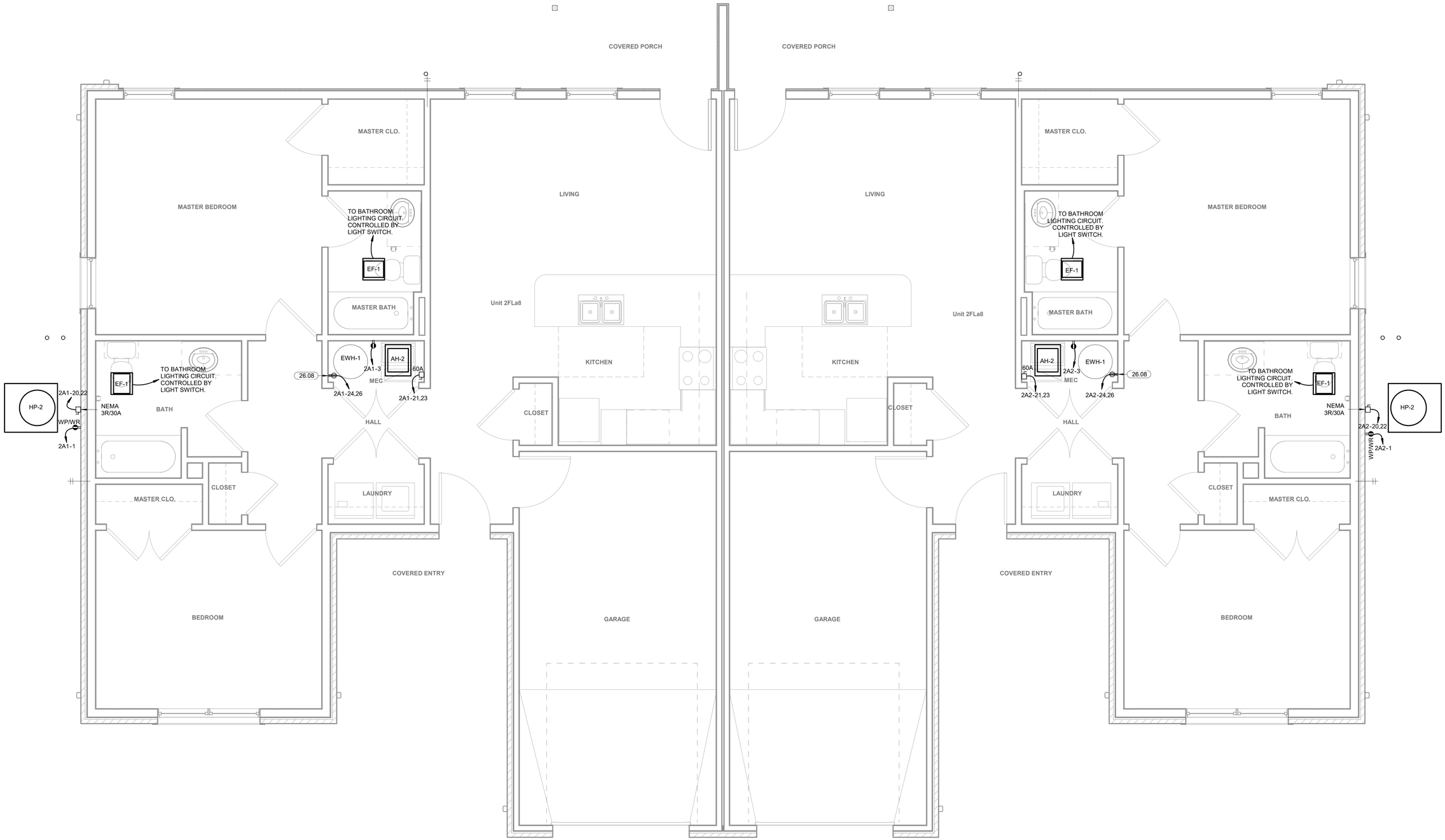
MECHANICAL POWER PLAN - 1 BEDROOM DUPLEX - TYPE 1B

DISCIPLINE - SHEET

E2.7

KEYNOTES

26.08	COORDINATE WITH WATER HEATER INSTALLER AND PROVIDE A RECEPTACLE WITH A NEMA CONFIGURATION AND MATCHING CORD AND PLUG THAT IS CAPABLE OF POWERING THE WATER HEATER. INSTALL IN A MANNER THAT IS IN COMPLIANCE WITH THE CLEARANCE AND ACCESSABILITY REQUIREMENTS OF THE NEC.



1 MECHANICAL POWER PLAN - 2 BEDROOM DUPLEX - TYPE 2A
3/8" = 1'-0"

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MECHANICAL POWER PLAN - 2 BEDROOM DUPLEX - TYPE 2A

DISCIPLINE - SHEET

E2.8

KEYNOTES

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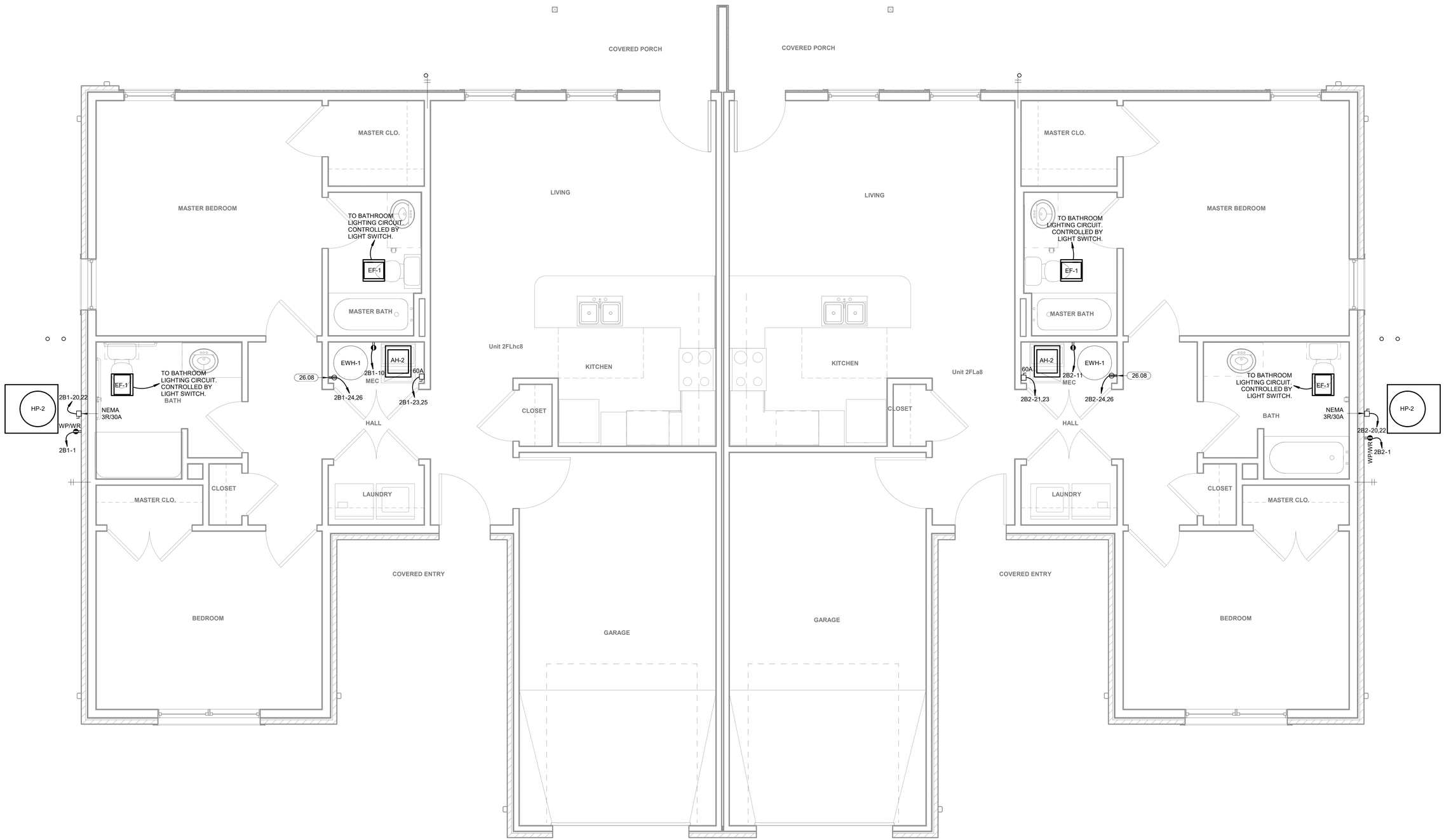

1 MECHANICAL POWER PLAN - 2 BEDROOM DUPLEX - TYPE 2B
3/8" = 1'-0"

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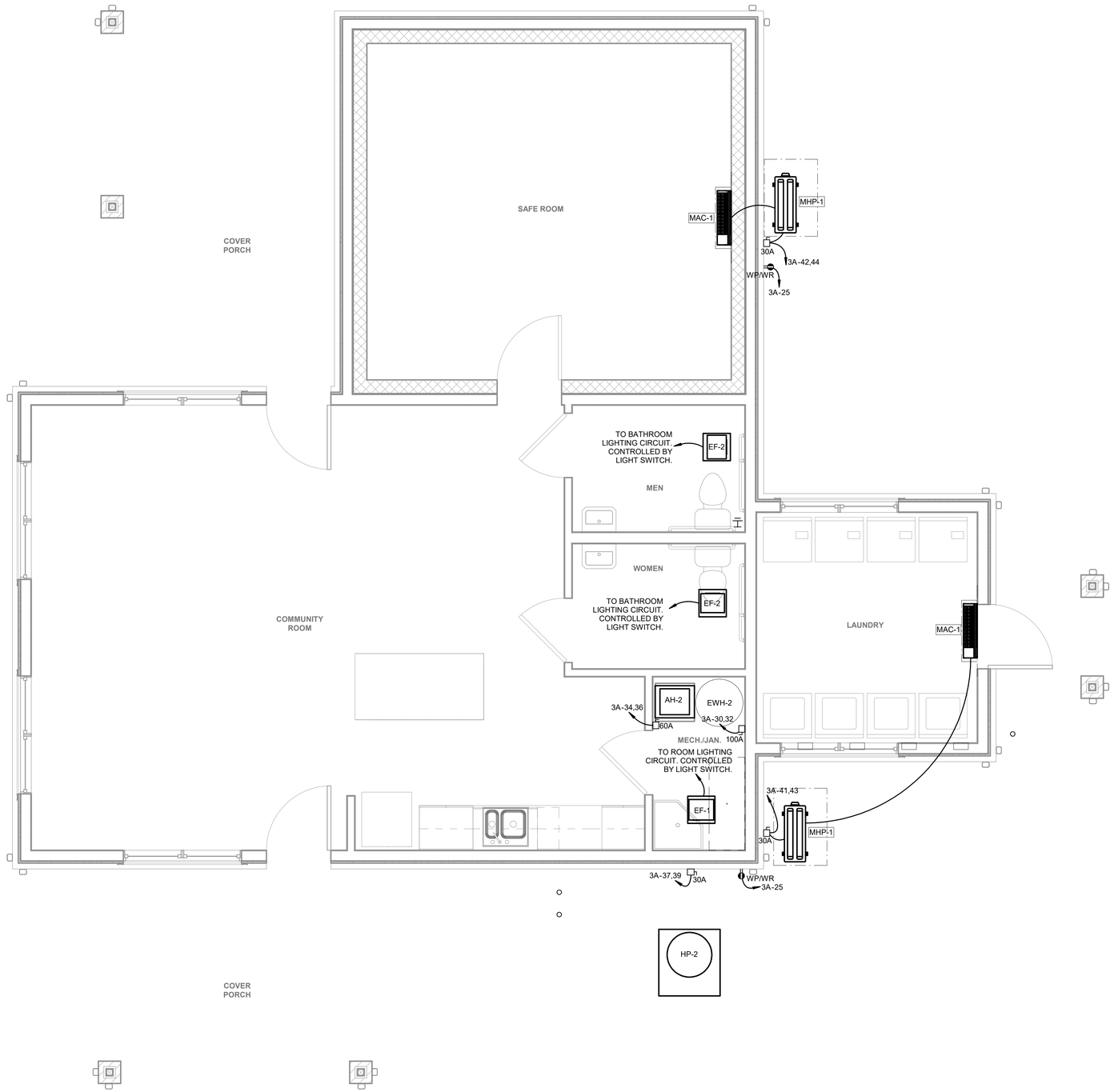
MECHANICAL POWER PLAN - 2 BEDROOM DUPLEX - TYPE 2B

DISCIPLINE - SHEET

E2.9



1 MECHANICAL POWER PLAN - COMMUNITY BUILDING - TYPE 3A
3/8" = 1'-0"

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MECHANICAL POWER PLAN - COMMUNITY BUILDING - TYPE 3A

DISCIPLINE - SHEET

E2.10

LUMINAIRE SCHEDULE

NOTES:
1. EC SHALL PROVIDE A SUBMITTAL PACKAGE INCLUDING CUTSHEETS FOR EACH FIXTURE.
2. EC SHALL PROVIDE ALL ACCESSORIES FOR A COMPLETE ASSEMBLY INCLUDING MOUNTING HARDWARE.
3. THE MOUNTING TYPE OF EACH FIXTURE SHALL BE COMPATIBLE WITH INSTALLATION SURFACE OF EACH FIXTURE.
4. ALL FINISHES SHALL BE COORDINATED WITH ARCHITECT AND DOCUMENTED ON SUBMITTALS.

TYPE	LAMP	DIMMING	COLOR TEMPERATURE	LUMENS	VOLTS	WATTS	CRI	DESCRIPTION	MANUFACTURER
A1	LED	NA	3000K	660	120	12 W	90	5.5" FLUSH MOUNT DISK LIGHT, WP, WHITE, 90 CRI	CANARM - LED-SM55DL-WT-C
CF	(3) E26 A19 LED	NA	NA	NA	120	60 W	NA	CEILING FAN WITH LIGHT, ANTIQUE BRONZE	CANARM - CF42RUE5RA
E1	(2) LED	NA	NA	NA	120/277	10 W	NA	EMERGENCY LIGHT, BUGEYE, SELF DIAGNOSTIC, BLACK	SURE LITES - APEL
G1	LED	NA	3500K	5000	120/277	42 W	80	4' SURFACE STRIP, WHITE, 80CRI	LITHONIA - ZL1N
G2	LED	0-10V	3500K	3500	120/277	31 W	80	2' SURFACE STRIP, WHITE, 80CRI	LITHONIA - ZL1N
J	LED	0-10V	3000K	4800	120/277	100 W	NA	3 LAMP VANITY LIGHT.	CANARM - IVL587A03RA
P1	(1) 60W A	NA	3000K	400	120	60 W	NA	ISLAND PENDANT, RUBED ANTIQUE BRONZE	CANARM - IPL587A01RA
S1	LED	0-10V	3500K	6000	120/277	67 W	80	DECORATIVE POST TOP LUMINAIRE, FROST FLAT LENS, BLACK. MOUNT TO 10' POLE WITH MATCHING FINISH.	WAVE LIGHTING - C40T
WS1	(1) 13W LED A19	NA	3500K	1100	120	100 W	NA	OUTDOOR WALL PACK, WP, BLACK, CLEAR GLASS. PART #: IOL315BK	CANARM - TREEHOUSE
X1	LED	NA	NA	NA	120/277	15 W	NA	EXIT/EMERGENCY COMBO, SELF DIAGNOSTIC, RED LETTERS, WHITE	SURE LITES - APX7R

PANELBOARD NOTES (#)

1. TERMINATE GROUND ON ISOLATED GROUND BUS.
2. INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-OFF FOR MAINTENANCE).
3. INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-ON FOR CRITICAL LOAD).
4. GFI BREAKER FOR PERSONNEL PROTECTION (5mA).
5. GFI BREAKER FOR EQUIPMENT PROTECTION (30mA).
6. CONDUCTOR SIZE SHOWN IN PANEL SCHEDULE HAS BEEN INCREASED FOR VOLTAGE DROP. SIZE EQUIPMENT GROUND PROPORTIONALLY PER NEC. REFERENCE GROUND WIRE SIZING CHART.
7. REFER TO FAULT CURRENT SCHEDULE FOR AVAILABLE FAULT CURRENT FOR INTERRUPT RATINGS.
8. REFER TO ONE-LINE DIAGRAM FOR WIRE SIZES.
9. FACTORY WIRED TO LOAD.
10. THRU CONTROLLER. REFER TO LIGHTING CONTROLLER DETAIL.

EQUIPMENT GROUNDING CONDUCTOR SIZING CHART

BRKR AMPS		WIRE SIZE				
15-20	PHASE	12	10	8	6	4
	GROUND	12	10	8	6	4
25-30	PHASE	10	8	6	4	3
	GROUND	10	8	6	4	3
35-50	PHASE	8	6	4	3	2
	GROUND	10	8	4	4	4
60	PHASE	6	4	3	2	1
	GROUND	10	6	6	4	4
70	PHASE	6	4	3	2	1
	GROUND	8	4	4	3	2
80-90	PHASE	4	3	2	1	1/0
	GROUND	8	6	4	4	3
100	PHASE	3	2	1	1/0	2/0
	GROUND	8	6	4	4	3

PER NEC 250.122(B)

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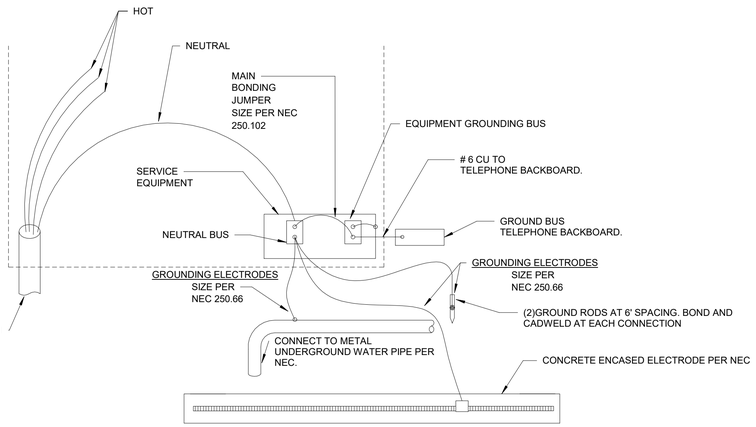


2 TYPICAL GROUNDING DETAIL
N.T.S.

ELECTRICAL SERVICE NOTES

1	THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL SERVICE AND METERING REQUIREMENTS WITH THE UTILTY COMPANY PRIOR TO BID AND SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AS REQUIRED BY THE SERVING UTILITY AS WELL AS COST INCURRED BY SERVING UTILITY.
2	THE ELECTRICAL CONTRACTOR SHALL VERIFY THE FAULT CURRENT AT THE SECONDARY OF THE TRANSFORMER WITH THE UTILITY COMPANY AND ADJUST THE ELECTRICAL PANEL AIC RATINGS TO THE NEXT HIGHER STANDARD RATING.
3	ALUMINUM SERVICE CONDUCTORS ARE NOT RECOMMENDED AND SHOULD ONLY BE USED WHERE ABSOLUTELY NECESSARY OR REQUIRED BY THE OWNER. CONTRACTOR TO CONTACT ENGINEER FOR SIZING. WHERE ALUMINUM CONDUCTORS ARE USED, THE OWNER SHALL PROVIDE ANNUAL MAINTENANCE OF ALL TERMINATIONS TO ENSURE SECURE CONNECTIONS. ALUMINUM WIRE WILL EXPAND AND CONTRACT AND OVER TIME MAY BECOME BRITTLE. THE OWNER SHALL ASSUME RESPONSIBILITY FOR USING ALUMINUM CONDUCTORS WITHOUT PROPER INSTALLATION, CARE, AND MAINTENANCE.
4	COORDINATE ALL SERVICE AND METERING DETAILS INCLUDING ANY RELOCATION OF EXISTING UTILITY LINES WITH POWER COMPANY.
5	CONTRACTOR TO CONFIRM EXACT LOCATION OF METERS WITH ELECTRIC UTILITY.
6	PAY ANY POWER COMPANY FEES CHARGED TO OWNER FOR SERVICE AND UTILITY LINE WORK ASSOCIATED WITH THIS PROJECT. THESE COSTS SHALL BE INCLUDED IN BIDS.
7	FURNISH AND INSTALL MATERIALS FOR A TEMPORARY CONSTRUCTION SERVICE AS REQUIRED.
8	FURNISH AND/OR INSTALL ALL REQUIRED MATERIAL AND LABOR IN COMPLIANCE WITH POWER COMPANY REQUIREMENTS TO PROVIDE A COMPLETE ELECTRICAL SERVICE, INCLUDING TRENCHING AND BACK FILLING, PRIMARY CONDUIT, CONCRETE TRANSFORMER PAD, SECONDARY CONDUITS AND CABLES, C.T. CABINET, METERING AND GROUNDING SYSTEM.

THE AVAILABLE FAULT CURRENT AT THE SECONDARY OF THE TRANSFORMER WAS NOT AVAILABLE AT THE TIME OF ISSUANCE OF CONSTRUCTION DOCUMENTS, AND THEREFORE ASSUMED TO BE 65,000 AMPS. PRIOR TO BID, ELECTRICAL CONTRACTOR SHALL CONFIRM THE AVAILABLE FAULT CURRENT WITH THE UTILITY COMPANY. ELECTRICAL CONTRACTOR SHALL ADJUST EQUIPMENT AIC RATINGS AS REQUIRED FOR ACTUAL AVAILABLE FAULT CURRENT. ELECTRICAL CONTRACTOR SHALL CONTACT THE EOR IF AVAILABLE FAULT CURRENT IS GREATER THAN 65,000 AMPS.

1. CONDUIT SIZED BASED ON CONDUCTOR PROPERTIES LISTED IN THE CURRENT NEC EDITION, CHAPTER, 9, TABLES 5 AND 5A, AND CONDUIT AREAS LISTED CHAPTER 9, TABLE 4 FOR EMT WITH 40% FILL. OTHER CONDITIONS MAY REQUIRE A LARGER CONDUIT, SUCH AS UNDERGROUND PVC, SIZED FOR NEC.
2. GROUND SIZES: EQUIPMENT GROUNDING CONDUCTOR BASED ON NEC TABLE 250.122 - COPPER / GROUNDING ELECTRODE CONDUCTOR BASED ON NEC TABLE 250.66 - COPPER
3. CONDUCTOR SIZES BASED ON NEC TABLE 310.15 - COPPER 75°C.

ELECTRICAL FEEDER KEYNOTES

200-3	2"C,3#3/0,1#6 GR
400-3	2 - 2"C,3#3/0,1#3 GR EACH

EQUIPMENT LABELS

ALL SWITCHBOARDS AND PANELBOARDS SHALL HAVE A LABEL APPLIED TO WARN OF POTENTIAL ARC FLASH HAZARDS

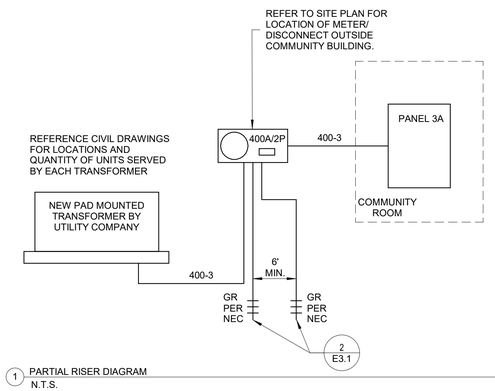
WARNING

ARC FLASH AND SHOCK HAZARD. APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED.

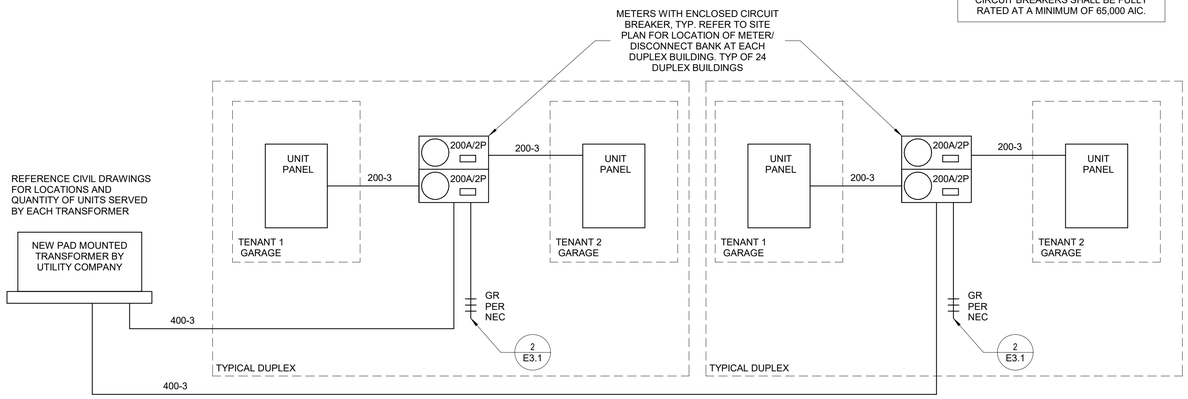
NOTES:

A. ALL SWITCHBOARDS AND PANELBOARDS SHALL HAVE A COMMERCIALLY PRODUCED PERMANENT LABEL APPLIED, SIMILAR TO THE ABOVE, TO WARN OF POTENTIAL ARC FLASH HAZARDS, IN ACCORDANCE WITH NEC 110.16 AND NFPA 70E.

B. LABELING MAY BE COMPLETED BY EQUIPMENT MANUFACTURER, EQUIPMENT VENDOR/SUPPLIER, OR THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THAT ALL SWITCHBOARDS AND PANELBOARDS ARE PROPERLY LABELED IN THE FIELD.



1 PARTIAL RISER DIAGRAM
N.T.S.



ALL EQUIPMENT SHOWN INCLUDING CIRCUIT BREAKERS SHALL BE FULLY RATED AT A MINIMUM OF 65,000 AIC.

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ELECTRICAL SCHEDULES AND RISER

DISCIPLINE - SHEET
E3.1

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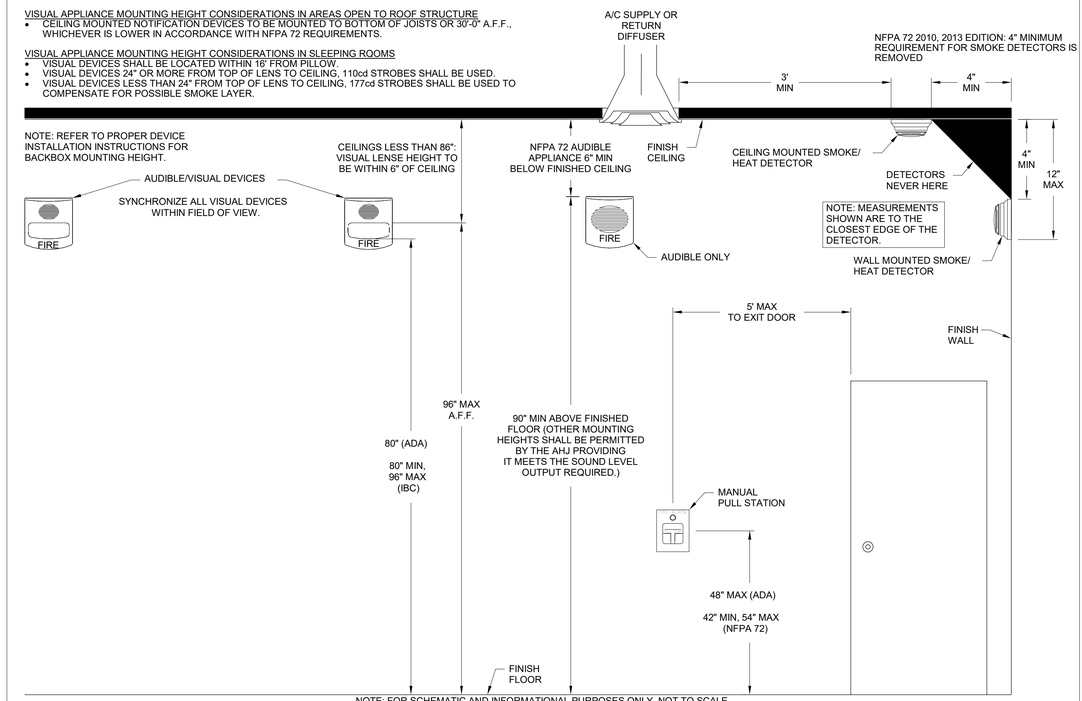
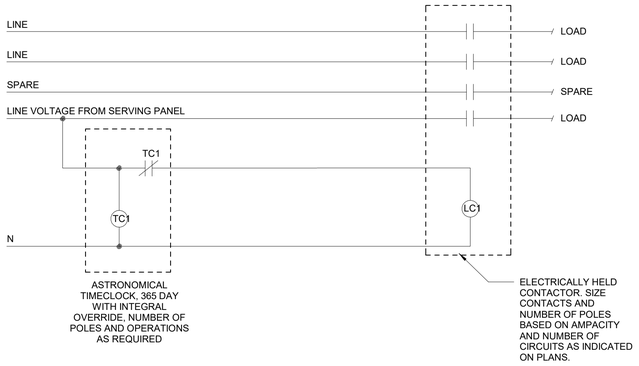
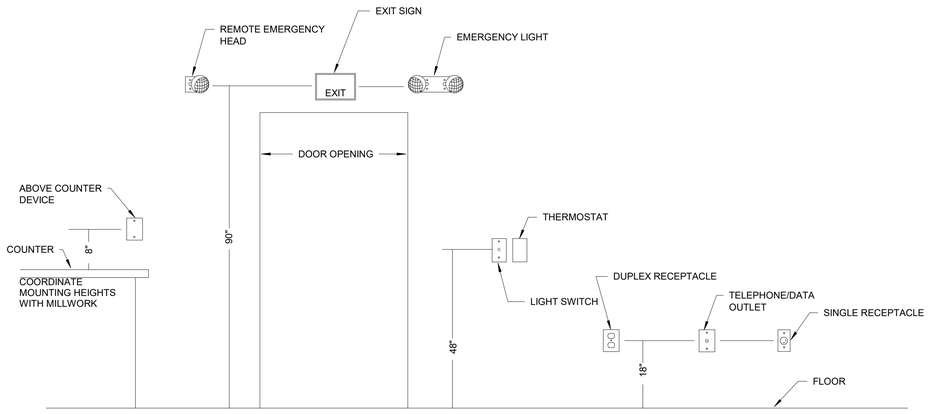
FIRE ALARM DEVICE MOUNTING HEIGHTS (PER NFPA 72)



3 FIRE ALARM MOUNTING HEIGHTS
N.T.S.



2 TYPICAL LIGHTING CONTACTOR
N.T.S.



1 TYPICAL MOUNTING HEIGHT
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ELECTRICAL DETAILS

DISCIPLINE - SHEET
E3.2

SECTION 26A GENERAL ELECTRICAL REQUIREMENTS
Rev - 20150422

26A 1 GENERAL INSTRUCTIONS

26A 1-1 GENERAL REQUIREMENTS
Requirements under Division 1 and the general and supplementary conditions of these specifications apply to this section and division. Where the requirements of this section and division exceed those of Division 1, this section and division take precedence. Become thoroughly familiar with all their contents as to requirements that affect this division, section or both. The work required under this section includes material, equipment, appliances, transportation, services, and labor required to complete the entire system as required by the drawings and specifications, or reasonably inferred to be necessary to facilitate each system's functioning as implied by the design and the equipment specified.

The specifications and drawings for the project are complementary, and portions of the work described in one, shall be provided as if described in both. In the event of discrepancies, notify the engineer and request clarification prior to proceeding with the work involved.

Drawings are graphic representations of the work upon which the contract is based. They show the materials and their relationship to one another, including sizes, shapes, locations, and connections. They also convey the scope of work, indicating the intended general arrangement of the equipment and other materials without showing all of the exact details as to elevations, offsets, control lines, and other installation requirements. Use the drawings as a guide when laying out the work and to verify that materials and equipment will fit into the designated spaces, and which, when installed per manufacturers' requirements, will ensure a complete, coordinated, satisfactory and properly operating system. Determine exact locations by job measurements, by checking the requirements of other trades, and by reviewing all contract documents. Correct errors that could have been avoided by proper checking and inspection, at no additional cost to the owner.

Specifications define the qualitative requirements for products, materials, and workmanship upon which the contract is based.

26A 1-2 DEFINITIONS

Whenever used in these specifications or drawings, the following terms shall have the indicated meanings:

Furnish: "to supply and deliver to the project site, ready for unloading, unpacking, assembling, installing, and similar operations."

Install: "to perform all operations at the project site, including, but not limited to, and as required: unloading, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, testing, commissioning, starting up and similar operations, complete, and ready for the intended use."

Provide: "to furnish and install complete, and ready for the intended use."

Furnished by owner (or owner-furnished) or furnished by others: "an item furnished by the owner or under other divisions or contracts, and installed under the requirements of this division, complete, and ready for the intended use, including all items and services incidental to the work necessary for proper installation and operation. Include the installation under the warranty required by this division.

Engineer: where referenced in this division, "engineer" is the engineer of record and the design professional for the work under this division, and is a consultant to, and an authorized representative of, the architect, as defined in the general and/or supplementary conditions. When used in this division, it means increased involvement by, and obligations to, the engineer, in addition to involvement by, and obligations to, the "architect".

AHJ: the local code and/or inspection agency (authority) having jurisdiction over the work.

NRTL: nationally recognized testing laboratory, as defined and listed by OSHA in 29 CFR 1910.7 (e.g., UL, ETL, CSA), and acceptable to the AHJ over this project.

The terms "approved equal", "equivalent", or "equal" are used synonymously and shall mean "accepted by or acceptable to the engineer as equivalent to the item or manufacturer specified". The term "approved" shall mean labeled, listed, certified, or all three, by an NRTL, and acceptable to the AHJ over this project.

26A 1-3 PRE-BID SITE VISIT

Prior to submitting bid, visit the site of the proposed work and become fully informed as to the conditions under which the work is to be done. Failure to do so will not be considered sufficient justification to request or obtain extra compensation over and above the contract price.

26A 1-4 MATERIAL AND WORKMANSHIP

Provide all material and equipment new and in first class condition. Provide markings or a nameplate for all material and equipment identifying the manufacturer and providing sufficient reference to establish quality, size and capacity. In general, provide the following quality grade(s) for all materials and equipment:

Light Duty and Residential Grade

Work performed under this contract shall provide a neat and "workmanlike" appearance when completed, to the satisfaction of the architect and engineer. Workmanship shall be the finest possible by experienced mechanics of the proper trade

The complete installation shall function as designed and intended with respect to efficiency, capacity, noise level, etc. Abnormal or excessive noise from equipment, devices or other system components will not be acceptable.

Remove from the premises waste material present as a result of work. Clean equipment installed under this contract to present a neat and clean installation at the termination of the work.

Repair or replace public and private property damaged as a result of work performed under this contract to the satisfaction of authorities and regulations having jurisdiction.

26A 1-5 MANUFACTURERS

In other articles where lists of manufacturers are introduced, subject to compliance with requirements, provide products by one of the manufacturers specified.

Where a list is provided, manufacturers listed are not in accordance with any ranking or preference.

Where manufacturers are not listed, provide products subject to compliance with requirements from manufacturers that have been actively involved in manufacturing the specified product for no less than 5 years.

26A 1-6 COORDINATION

Coordinate all work with other divisions and trades so that the various components of the systems will be installed at the proper time, fit the available space, and will allow proper service access to those items requiring maintenance. Refer to all other division's drawings, and to relevant equipment submittals and shop drawings to determine the extent of clear spaces. Components which are installed without regard to the above shall be relocated at no additional cost to the owner.

Unless otherwise indicated, the general contractor will provide chases and openings in building construction required for installation of the systems specified herein. Contractor shall furnish the general contractor with information where chases and openings are required. Make all offsets required to clear equipment, beams and other structural members, and to facilitate concealing system components in the manner anticipated in the design. Keep informed as to the work of other trades engaged in the construction of the project, and execute work in a manner as to not interfere with or delay the work of other trades.

Figured dimensions shall be taken in preference to scale dimensions. Contractor shall take his own measurements at the building, as variations may occur. Contractor will be held responsible for errors that could have been avoided by proper checking and inspection

Provide materials with trim that will properly fit the types of ceiling, wall, or floor finishes actually installed. Model numbers listed in the construction documents are not necessarily intended to designate the required trim.

26A 1-7 ORDINANCES, CODES, AND STANDARDS

Work performed under this contract shall, at a minimum, be in conformance with applicable national, state and local codes having jurisdiction. Equipment furnished and associated installation work performed under this contract shall be in strict compliance with current applicable codes adopted by the local AHJ including any amendments and standards as set forth by the National Fire Protection Association (NFPA), Underwriters Laboratories (UL), Occupational Safety and Health Administration (OSHA), American Society of Mechanical Engineers (ASME), American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE), American National Standards Institute (ANSI), American Society of Testing Materials (ASTM) and other national standards and codes where applicable. Additionally, comply with rules and regulations of public utilities and municipal departments affected by connection of services.
Where the contract documents exceed the requirements of the referenced codes, standards, etc., the contract documents shall take precedence.

Promptly bring all conflicts observed between codes, ordinances, rules, regulations, referenced standards, and these documents to the engineer's attention for final resolution. Contractor will be held responsible for any violation of the law.

Procure and pay for permits and licenses required for the accomplishment of the work herein described. Where required, obtain, pay for and furnish certificates of inspection to owner. Contractor will be held responsible for violations of the law.

26A 1-8 PROTECTION OF EQUIPMENT AND MATERIALS

Store and protect from damage equipment and materials delivered to job site, in accordance with manufacturers' recommendations. For materials and equipment susceptible to changing weather conditions, dampness, or temperature variations, store inside in conditioned spaces. For materials and equipment not susceptible to these conditions, cover with waterproof, tear-resistant, heavy tarp or polyethylene plastic as required to protect from plaster, dirt, paint, water, or physical damage. Equipment and material that has been damaged by construction activities will be rejected, and contractor shall furnish new equipment and material as required at no additional cost to the owner.

Keep premises broom clean from foreign material created during work performed under this contract. Piping, equipment, etc. shall have a neat and clean appearance at the termination of the work.

Plug or cap open ends of conduits while stored and installed during construction when not in use to prevent the entrance of debris into the systems.

26A 1-9 SUBSTITUTIONS

Include in the base bid the products specifically named in these specifications or on the drawings. Submit, in the form of alternates, with bid, products of any other manufacturers for similar use, provided the differences in cost, if any, are included for each proposed alternate.

No substitutions will be considered with receipt of Bids, unless the Architect and Engineer have received from the Bidder a written request for approval to bid a substitution at least ten calendar days prior to the date for receipt of Bids, and have approved the substitution request. Include, with each such request, the name of the material or equipment for which substitution is being requested, and a complete description of the proposed substitution, including drawings, cut sheets, performance and test data, and all other information necessary for an evaluation. Include also a statement setting forth changes in other materials, equipment or other work that would be required to incorporate the substitution. The burden of proof of the merit of the proposed substitute is upon the proposer. The proposer of any substitutions shall compensate the Engineer at a rate of $150.00 per hour for time spent evaluating proposed substitutions and or the subsequent revisions to the design required to utilize the substitution.

The Architect's or Engineer's decision to approve or disapprove a substitution in a Bid is final.

If the proposed substitution is approved prior to receipt of Bids, such approval will be stated in an Addendum. Bidders shall not rely upon approvals made in any other manner, including verbal.

No substitutions will be considered after receipt of Bids and before award of the Contract.

No substitutions will be considered after the Contract is awarded unless specifically provided in the Contract Documents.

26A 1-10 SUBMITTALS

Assemble and submit to the architect, for engineer's review, manufacturers' product literature for material and equipment to be furnished, installed, or both, under this division, including shop drawings, manufacturers' product data and performance sheets, samples, and other submittals required by this division. Highlight, mark, list or indicate the materials, performance criteria and accessories that are being proposed. Provide the number of submittals required by division 1; however, at a minimum, submit two (2) sets. Before submitting, verify that all materials and equipment submitted are mutually compatible and suitable for the intended use, fit the available spaces, and allow ample and code-required room for access and maintenance. Submittals shall contain the following information. Submittals not so identified will be returned to the contractor without action:

The project name.
The applicable specification section and paragraph.
The submittal date.
The contractor's stamp, which shall certify that the stamped drawings have been checked by the contractor, comply with the drawings and specifications, and have been coordinated with other trades.

Submittals and shop drawings shall not contain HP Engineering's firm name or logo, nor shall it contain the HP Engineering's engineers' seal and signature. They shall not be copies of HP Engineering's work product.

Transmit submittals as early as required to support the project schedule. Allow for two weeks engineer review time, plus mailing time, plus a duplication of this time for re-submittals, if required. The engineer's submittal reviews will not relieve the contractor from responsibility for errors in dimensions, details, size of members, or quantities; or for omitting components or fittings; or for not coordinating items with actual building conditions.

Refer to division 1 for acceptance of electronic submittals for this project. For electronic submittals, contractor shall submit the documents in accordance with the procedures specified in division 1. Contractor shall notify the architect and engineer that the shop drawings have been posted. If electronic submittal procedures are not defined in division 1, contractor shall include the website, user name and password information needed to access the submittals. For submittals sent by e-mail, contractor shall copy the architect and engineer's designated representatives. Contractor shall allow the engineer review time as specified above in the construction schedule. Contractor shall submit only the documents required to purchase the materials and/or equipment in the electronic submittal and shall clearly indicate the materials, performance criteria and accessories being proposed. General product catalog data not specifically noted to be part of the specified product will be rejected and returned without review.

26A 1-11 ELECTRONIC DRAWING FILES

In preparation of shop drawings or record drawings, contractor may, as an option, obtain electronic drawing files in Revit, AutoCAD, or DXF format from the engineer for a fee of $200 for the first sheet and $100 per sheet for each additional sheet. Contact the architect for written authorization; and, contact the engineer to obtain the necessary release agreement form and to indicate the desired shipping method and drawing format. In addition to payment, architect's written authorization and engineer's release agreement form must be received before electronic drawing files will be sent.

26A 1-12 OPERATION AND MAINTENANCE MANUALS

Submit to the architect, for engineer's review, copies each of operations and maintenance instruction manuals, appropriately bound into manual form including approved copies of the following, revised if necessary to show system and equipment as actually installed. Paper clips, staples, rubber bands, and mailing envelopes are not considered approved binders. Provide the number of submittals required by Division 1; however, at a minimum, submit two (2) sets, and include, at a minimum, the following information:

Cover sheet that lists the project name, date, owner, architect, consulting engineer, general contractor, sub-contractor, and an index of contents.
Manufacturers' catalogs and product data sheets
Wiring diagrams
Operation and Maintenance instructions
Parts lists
Approved shop drawings
Test reports as defined in NETA ATS for the systems and equipment provided or furnished or installed under this contract. Names, addresses, telephone numbers, and e-mail addresses of local contacts for warranty services and spare parts.

Submit manuals prior to requesting the final punch list and before any requests for substantial completion. Final approval of this division's systems installed under this contract will be withheld until this equipment brochure is received and deemed complete by the architect and engineer.

Provide "as-built" drawings (see Division 1 and general conditions).

26A 1-13 TRAINING

At a time mutually agreed upon between the owner and contractor, provide the services of a factory trained and authorized representative to train owner's designated personnel on the operation and maintenance of the equipment provided for this project.

Provide training to include but not be limited to an overview of the system and/or equipment as it relates to the facility as a whole; operation and maintenance procedures and schedules related to startup and shutdown, troubleshooting, servicing, preventive maintenance and appropriate operator intervention; and review of data included in the operation and maintenance manuals.

Submit a certification letter to the architect stating that the owner's designated representative has been trained as specified herein. Letter shall include date, time, attendees and subject of training. The contractor and the owner's representative shall sign the certification letter indicating agreement that the training has been provided.

Schedule training with owner with at least 7 days advance notice.

26A 1-14 WARRANTIES
Warrant each system and each element thereof against all defects due to faulty workmanship, design or material for a period of 12 months from date of substantial completion, unless specific items are noted to carry a longer warranty in the construction documents or manufacturer's standard warranty exceeds this duration. Warranties shall include labor and material. Remedy all defects, occurring within the warranty period(s), as stated in the general conditions and Division 1 without any additional costs to the owner.

Perform any required remedial work promptly, upon written notice from the engineer or owner.

At the time of substantial completion, deliver to the owner all warranties, in writing and properly executed, including term limits for warranties extending beyond the required period, each warranty instrument being addressed to the owner and stating the commencement date and term.

26A 2 ELECTRICAL WORK

26A 2-1 BUILDING OPERATION

Comply with the schedule of operations as outlined in the architectural portions of this specification. Building shall be in continuous operation. Accomplish work that requires interruption of building operation at a time when the building is not in operation, and only with written approval of building owner and/or tenant. Coordinate interruption of building operation with the owner and/or tenant a minimum of 7 days in advance of work.

26A 2-2 EXCAVATION AND BACKFILLING
Perform excavation and backfill required for installation of underground work under this contract. Trenches shall be of sufficient width. Crib or brace trenches to prevent cave-in or settlement. Do not excavate trenches close to columns and walls of building without prior consultation with the architect. Use pumping equipment if required to keep trenches free of water. Backfill trenches in maximum 6" layers of well-tamped dry earth in a manner to prevent future settlement.

Excavation as herein specified shall be classified as common excavation. Common excavation shall comprise the satisfactory removal and disposition of material of whatever substances and of every description encountered, including rock, if any, within the limits of the work as specified and shown on the drawings. Excavation shall be performed to the lines and grades indicated on the drawings. Excavated materials which are considered unsuitable for backfill, and surplus of excavated material which is not required for backfill, shall be disposed of by the contractor at his own expense and responsibility, and to the satisfaction of the architect.

26A 2-3 COINCIDENTAL DAMAGE

Repair all streets, sidewalks, drives, paving, walls, finishes, and other facilities damaged in the course of this work. Repair materials shall match existing construction and or conform to all requirement identified in other divisions. All backfilling and repairing shall meet all requirements of the owner, city and others having jurisdiction. Repair work shall be thoroughly first class.

26A 2-4 CUTTING AND PATCHING

Following the requirements in Division 1, cut walls, floors, ceilings, and other portions of the facility as required to perform work under this division. Obtain permission of the architect, owner, or both, before doing any cutting. Cut all holes as small as possible. Patch walls, floors, and other portions of the facility as required by work under this division. All patching shall be thoroughly first class and shall match the original material and construction, including fire ratings if applicable in a manner satisfactory to the architect.

26A 2-5 ROUGH-IN

Coordinate without delay all roughing-in with other divisions. Conceal all piping and rough-in except in unfinished areas and where otherwise indicated in the construction documents.

26A 2-6 SUPPORT SYSTEMS

1.Steel slotted support systems (slotted channel): comply with MFMA-3, factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch; Cooper B-Line, Erico International Corporation, Hilti, Inc., Power-Strut, Thomas & Betts Corporation, Unistrut.

Finishes:

A.Metallic coatings: hot-dip galvanized after fabrication and applied according to MFMA-3
B.Nonmetallic coatings: manufacturer's standard PVC, polyurethane or polyester coating applied according to MFMA-3.
C.Painted coatings: manufacturer's standard painted coating applied according to MFMA-3.
D. Stainless steel: type 304, per ASTM A240.
2.Aluminum slotted support systems (slotted channel): comply with MFMA-3, type 6063-T6, per ASTM B221; factory-fabricated components for field assembly; 12-gauge, 1-5/8-inch by 1-5/8-inch; Cooper B-Line, Erico International Corporation, Hilti, Inc., Power-Strut, Thomas & Betts Corporation, Unistrut.

Field Fabrication:

Where field cutting of standard lengths of channel are required, make cuts straight and perpendicular to manufactured surfaces.

For field-cut or damaged surfaces of coated channels, dress cut ends, damaged surfaces, or both, with an abrasive material (e.g., file, grinding stone, or similar) and cleanser to remove oils, rust, sharp edges and shards.

For channel with a factory-applied coating, re-finish cut edges with a coating compatible with the factory finish and as recommended by the manufacturer (e.g., manufacturer's touch-up paint or zinc-rich cold-galvanizing compound, as applicable).

26A 2-7 PENETRATIONS

Coordinate sleeve selection and application with selection and application of fire-stopping specified in Division 7 section "through-penetration firestop systems."

Roofs:

Coordinate all roof penetrations with engineer, owner, and as applicable, the roofing contractor providing a roof warranty.

Keep all raceway penetrations within mechanical equipment curbs wherever possible. Coordinate with all other applicable Division's work.

Flash and counterflash all openings through roof, and/or provide pre-fabricated molded seals compatible with the roof construction installed, or as required by the engineer, owner, or roofing contractor. All roof penetrations shall be leak-tight at the termination of the work and shall not void any new or existing roof warranties.

Walls and Floors:

Sleeves for raceways and cables

Steel pipe sleeves: ASTM A 53/A 53M, type E, grade B, schedule 40, galvanized steel, plain ends and drip rings.
Cast-iron pipe sleeves: cast or fabricated "wall pipe," equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

Sleeves for rectangular openings: galvanized sheet steel with minimum 0.138 inch thickness and of width and length to suit application.

26A 2-8 FIRE-STOPPING THROUGH PENETRATIONS

Fire-resistant through penetration sealants: two-part, foamed-in-place, silicone sealant formulated for use in through-penetration fire-stopping around cables, raceways, and cable tray penetrations through fire-rated walls and floors. Sealants and accessories shall have fire-resistance ratings indicated, as established by testing identical assemblies in accordance with ASTM E 814, by underwriters' laboratories, inc., or other NRTL acceptable to AHJ.

Acceptable manufacturers:

Hilti, Inc.
3m Corp.
Rectorseal.
Specify Technology Inc.
United States Gypsum Company.

Submittals

Submit product data, manufacturer's specifications and technical data for each material including the composition and limitations, documentation of UL firestop systems to be used and manufacturer's installation instructions to comply with Division 1.

Manufacturer's engineering judgment identification number and drawing details when no UL system is available for an application. Engineering judgment shall include both project name and contractor's name who will install firestop system as described in drawings.

Submit material safety data sheets provided with product delivered to job-site.

26A 2-9 CONCRETE BASES

Provide concrete bases (e.g., housekeeping pads) for equipment where indicated on the drawings and as specified herein. Concrete bases shall have chamfered edges. Size of base shall be a minimum of 2 inches greater than the footprint of the equipment that it is supporting.

Construct equipment bases of a minimum 28-day, 4000-psi concrete conforming to American Concrete Institute standard building code for reinforced concrete (ACI 318-99) and the latest applicable recommendations of the ACI standard practice manual. Concrete shall be composed of cement conforming to ASTM C 150 type I, aggregate conforming to ASTM C33, and potable water. Exposed exterior concrete shall contain 5 to 7 percent air entrainment.

Unless otherwise specified or shown on the structural drawings, reinforce equipment bases with no. 4 reinforcing bars conforming to ASTM A 615 or 6x6 – w2.9 x w2.9 welded wire mesh conforming to ASTM A185. Place reinforcing bars 24 inches on center with a minimum of two bars each direction.

Provide galvanized anchor bolts for equipment placed on concrete bases or on concrete slabs. Anchor bolts size, number and placement shall be as recommended by the manufacturer of the equipment.

Concrete equipment bases shall have a minimum height of 4 inches and shall be poured-in-place.

26A 2-10 ACCESS DOORS

Provide access doors in ceilings and walls, where indicated or required for access or maintenance to concealed equipment installed under this section. Provide concealed hinges, screwdriver-type lock, and anchor straps.

Manufactured by Milcor, Zurn, Titus, or equal. Obtain architect's approval of type, size, location and color before ordering.

26A 2-11 EQUIPMENT FURNISHED BY OTHERS

Provide necessary equipment and accessories that are not provided by the equipment supplier or owner to complete installation of equipment furnished by others, in locations as indicated on the drawings, specified herein, or both. Equipment and accessories not provided by the equipment supplier may include such items as flexible cords and plugs, as required for proper operation of the complete system, in accordance with the manufacturers' instructions.

Be responsible for correct rough-in dimensions, and verify them with engineer, owner's representative, equipment supplier, or all three, prior to rough-in and service installations.

26A 2-12 CLEANING

In addition to the requirements of Division 1, remove from the premises dirt and refuse resulting from the performance of the electrical work, as required, to prevent accumulation. Cooperate in maintaining reasonably clean premises at all times. Immediately prior to final inspection, make a final cleanup of dirt and refuse resulting from the work. Clean all material and equipment installed under this division. Remove dirt, dust, plaster, stains and foreign matter from all surfaces. Touch up and restore all damaged finishes to their original condition.

26A 2-13 ADJUSTING, ALIGNING AND TESTING

Adjust, align, and test all electrical equipment on this project provided under this division and all electrical equipment furnished by others for installation or wiring under this division, for proper operation.

Test all systems and equipment according to the requirements in NETA ATS (latest edition) and all additional requirements specified in following sections.

Maintain the following on the project premises at all times: a true RMS reading voltmeter, a true RMS reading ammeter, and a megohmmeter insulation resistance tester. Provide test data readings as requested or as required by the engineer.

26A 2-14 EQUIPMENT IDENTIFICATION

Provide equipment identification nameplates:

-On all panelboards, switches, starters, dimmers, switches in distribution panelboards and switchboards as well as where indicated elsewhere in the construction documents.

Nameplates:

Engraved, contrasting color, three-layer, laminated plastic indicating the name of the equipment, load, or circuit as designated on the drawings and in the specifications:

-Field-applied permanent epoxy adhesive, compatible with the equipment finish.
-Attachment method shall be acceptable to the manufacturers of the equipment to which the nameplates are being applied.
Color: black background with white letters for normal power; red background with white letters for emergency power. Letter height: ½ -inch minimum.

26A 2-15 SYSTEM START UP

Prior to starting up the electrical systems:

Check all components and devices.

Lubricate items accordingly.

Tighten screws and bolts for connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486a and UL 486b.

Adjust taps on each transformer for rated secondary voltage when the transformer is at minimum load.

Check and record building's service entrance voltage, grounding conditions, grounding resistance, and proper phasing.

Replace all burned-out lamps and lamps used for temporary construction lighting in permanent light fixtures.

After all systems have been inspected and adjusted, confirm all operating features required by the drawings and specifications and make final adjustments as necessary.

26A 4 ALTERNATES

Provide all work contemplated under the different alternates to include labor, materials, equipment and services necessary for and incidental to the completion of work under each particular alternate. Furnish separate bids for each alternate applicable to contractor's proposal, stating the amount to be added or deducted from the base bid in case the alternate is accepted. Comply with applicable sections of the base specifications for work required by the alternate unless otherwise specified. Refer to the architectural portion of the specification.

END OF SECTION 26A

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OWNER THEIL ROAD PROPERTIES, LP
PROJECT 48 UNIT RESIDENTIAL DEVELOPMENT for HILLSIDE MANOR
LOCATION 2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9700
MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET

ELECTRICAL SPECIFICATIONS

DISCIPLINE - SHEET

E4.1

26B BASIC ELECTRICAL MATERIALS AND METHODS
rev - 20150520

26B 1 METHODS

26B 1-1 RACEWAYS

Metallic Conduit And Tubing:

Electrical Metallic Tubing and fittings (EMT): ANSI C80.3, UL 797.

Reduced wall EMT is not allowed.

Flexible Metal Conduit (FMC): zinc-coated steel or aluminum, UL 1.

Reduced-wall FMC is not allowed.

Intermediate Metal Conduit (IMC): hot-dip galvanized rigid steel conduit: ANSI C80.6, UL 1242.

Liquidtight Flexible Metal Conduit (LFMC): flexible steel conduit with PVC jacket: UL 360

Rigid Metal Conduit (RMC): hot-dip Galvanized Rigid Steel conduit (GRS): ANSI C80.1, UL 6.

Plastic-coated IMC, RMC, and fittings: NEMA RN 1, UL listed.

IMC and RMC fittings: NEMA FB 1; compatible with conduit type and material, UL listed

Non-Metallic Conduit And Tubing:

Rigid Nonmetallic Conduit (RNC): schedule 40 PVC, 90 deg C rated, NEMA TC-2, UL 651; fittings: NEMA TC 3, TC 6; UL 514, compatible with conduit/tubing type and material, UL listed.

Electrical Nonmetallic Tubing (ENT): NEMA TC 13, UL listed.

Liquidtight Flexible Nonmetallic Conduit (LFNC): UL 1660.

ENT and LFNC fittings: Compatible with conduit/tubing type and material, UL listed.

26B 1-2 RACEWAY INSTALLATION

Above Ground Use:
Install all circular raceways concealed above suspended ceilings or concealed in walls or floors wherever possible except where otherwise indicated.

Provide GRS for all conduits run exposed to weather, or exposed to other hazardous conditions.

All other raceway may be EMT where approved by local code. Use compression type fittings for EMT, with all fittings UL listed for the environment in which they are used.

Underground use:

Provide GRS installed below grade with a corrosion resistant bonded-plastic or approved mastic coating. This shall include the 90-degree elbow below grade and the entire vertical transition to above grade.

RNC conduit may be used underground where permitted by local code and where not specifically restricted by these documents. When used, provide coated GRS, as specified above, for all bends greater than 30 degrees, including the 90-degree elbows below grade and the entire vertical risers for transitions from below to above grade or above-slab.

Equipment Connections:
Use FMC for final connection to each motor and transformer, and to any device that would otherwise transmit motion, vibration, or noise. Use LFMC where exposed to liquids, vapors or sunlight, and to connect to kitchen and food service equipment.
Provide all FMC and LFMC with an insulated bonding conductor.

Use only metal raceways for all power wiring from the output of variable frequency drives to their respective motors. All feeders to variable frequency drives (VFDs) shall be in EMT or other metallic conduit. PVC or fiberglass is not allowed for feeders to VFDs.

General Raceway Installation Requirements:
Install raceways parallel and perpendicular to building lines.

Install raceways to requirements of structure and to requirements of all other work on the project; to clear all openings, depressions, pipes, ducts, reinforcing steel, and other immovable obstacles.

Install raceways set in forms for concrete structure in such a manner that installation will not affect the strength of the structure.

Except where approved in writing by the engineer, install no raceway in a slab-on-grade. Locate raceway in granular fill below slabs-on-grade.

Install raceways continuous between connections to outlets, boxes and cabinets with a minimum possible number of bends and not more than the equivalent of four 90-degree bends between connections. Use manufactured elbows for all 45- and 90-degree bends, unless approved by the engineer in advance. Make other bends smooth and even and without flattening raceway or flaking galvanizing or enamel. Radii of bends shall be as long as possible and never shorter than the corresponding trade elbow.

Use long radius elbows for all underground installations, where necessary or indicated.

Securely fasten raceways in place with approved straps, hangers and steel supports as required. Attach raceway supports to the building structure. Hang single raceways for feeders with malleable split ring hangers with rod and turnbuckle suspension from inserts spaced not over 10 feet apart in construction above. Clamp groups of horizontal feeder raceways to steel channels that are suspended from inserts spaced not over 10 feet apart in construction above. Securely clamp vertical feeder raceways to structural steel members attached to structure. Install cable clamps for support of vertical feeders where required. Add raceway supports within 12 inches of all bends, on both sides of the bends. Do not support raceways from suspended ceiling components.

Ream raceway ends, thoroughly clean raceways before installation, and keep clean after installation. Plug or cover openings and boxes as required to keep raceways clean during construction and fish all raceways clear of obstructions before pulling conductors. Provide raceways of ample size for pulling of wire and not smaller than code requirements and not less than 1/2-inch in size, unless indicated otherwise on drawings.

Protect all raceway installations against damage during construction. Repair all raceways damaged or moved out of line after roughing-in to meet engineer's approval without additional cost to the owner.

Align and install true and plumb all raceway terminations at panelboards, switchboards, motor control equipment and junction boxes.

Install approved expansion/deflection fittings where raceways pass through (if embedded) or across (if exposed) expansion joints. Also when using RNC or RAC in exposed environments in accordance with the NEC and expansion/contraction properties of RNC or RAC.

Install a pull wire in each empty raceway that is left for installation of conductors or cables under other divisions or contracts. Use polypropylene or monofilament plastic line with not less than 200-lb tensile strength. Leave at least 24 inches of slack at each end of pull wire.

Make all joints and connections in a manner that will ensure mechanical strength and electrical continuity.

26B 1-3 BUSHINGS AND LOCKNUTS

Rigidly terminate conduits entering sheet metal enclosures to the enclosure with a bushing and locknut on the inside and a locknut or an approved hub on the outside. Conduit shall enter the enclosure squarely.

Provide bushings and locknuts made of galvanized malleable iron with sharp, clean-cut threads.

Where EMT enters a box, provide approved EMT compression connectors.

Use insulated, grounding, or combination, bushings wherever connection is subject to vibration or moisture, when required by NFPA 70, or both.

26B 1-4 CONDUCTORS AND CABLES

Conductor Material:
Annealed (soft) copper complying with ICEA S-95-658/NEMA WC70;
Conductor insulation types: 90-degree C-rated, type THHN/THWN-2 or XHHW-2 complying with ICEA S-95-658/NEMA WC70.

Sizes of conductors and cables indicated or specified are in American Wire Gage (AWG - brown and sharpe).

All feeder and branch circuit conductors no. 8 AWG and larger: stranded.

All conductors, no. 10 AWG and smaller: solid copper

All branch circuit wiring: not smaller than no. 12 AWG. If no conductor size is indicated on the drawings for a branch circuit, provide conductors and conduit sized per NFPA 70 and based on the indicated branch circuit overcurrent protective device (OCPD) rating and number of poles. Where no circuit size (i.e., conductors and OCPD) is indicated on the drawings for a branch circuit, provide three no. 12 AWG conductors, in 1/2-inch raceway, and a 20a circuit breaker.

Control wiring: stranded copper conductors, 600v insulation, of the proper type, size and number as required to accomplish specified function. Minimum size: no. 14 AWG, unless noted otherwise.

Stranded for all flexible cords and cables, or as otherwise indicated.

Unless indicated otherwise, special purpose conductors and cables, such as low voltage control and shielded instrument wiring, shall be as recommended by the system equipment manufacturer.

Direct-buried service lateral cable: type use, 600v, THHN- or XHHW-insulated conductors (2 or 3 as indicated on drawings or as required); cable assembly, plus a concentrically applied full-size un-insulated (neutral) conductor and reinforcement tape, jacketed with sunlight resistant gray polyvinyl chloride (PVC); UL standards 44 or 83 (as applicable), and 854, NFPA 70 article 338.

Type MC cable: 600v, unjacketed; ANSI E119 and E814, UL standards 44 or 83 (as applicable), and 1569, NFPA 70 article 330; aluminum or galvanized steel interlocked armor; THHN- or XHHW-insulated conductors; color code: ICEA method 1, with green insulated grounding conductor

26B 1-5 INSTALLATION OF CONDUCTORS AND CABLES

Install all wiring in approved raceway and enclosures

, except where specified or indicated, for low-voltage wiring or direct-buried cables; or, where type MC cable is indicated, specified as acceptable, or both.

Support all conductors and cables in vertical installations, as required by NFPA 70, by installing cable supports or plug-type conduit riser supports, or wire-mesh safety grips.

Install all conductors and cable in raceways continuous without taps or splices. Splice or tap only in approved boxes and enclosures with approved solderless connectors, or crimp connectors and terminal blocks for control wiring, and keep to the minimum required. Insulate all splices, taps, and joints as required by codes.

All materials used to terminate, splice or tap conductors: designed for, properly sized for, and UL listed for the specific application and conductors involved, and installed in strict accordance with the manufacturer's recommendations, using the manufacturer's recommended tools.

Where wiring is indicated as installed, but the connection is indicated "future" or "by other division, trades, or contracts", leave a minimum 3-foot "pigtail" at the box, tape the ends of the conductors, and cover the box.

The number of conductors in a specific raceway "home run" is typically indicated with cross lines (tick marks) on each "circuit run" on the drawings. In general, the direction of branch circuit "home run" routing is indicated on the drawings, complete with circuit numbers and panelboard designation. Continue all such "home run" wiring to the designated panelboard, as though "circuit runs" were indicated in their entirety.

Multi-wire branch circuits (i.e., shared neutral) shall be provided with a means that will simultaneously disconnect all ungrounded conductors at the point the branch circuit originates. Multi-pole breakers or 3 single pole breakers with a handle tie are two examples.

When multiple home runs are combined into a single raceway such that the number of conductors exceeds four (conductor count is made up of any combination of phase and neutral conductors), the following restrictions apply, which are in addition to those in NFPA 70:

NORMAL or NON-ESSENTIAL CIRCUITS:

Maximum of 16 conductors in a single raceway. For up to eight conductors in a raceway, minimum raceway size: 3/4-inch. For greater than eight conductors, minimum raceway size: 1-inch. Do not install any other type of circuit in this raceway.

The minimum wire size for all conductors in this raceway: no. 10 AWG.

Only 15a and 20a branch circuit homeruns may be combined into one raceway.

ISOLATED GROUND (IG) CIRCUITS:

The Isolated Ground conductor of each IG circuit shall be continuous (no splices) the entire length of the circuit.

IG circuits shall be provided with dedicated neutrals, equipment grounds, and isolated grounds and routed in separate conduits from other circuits.

GFCI CIRCUITS:

Do not use multi-conductor circuits, with a shared neutral, for any GFCI circuit breaker or receptacle circuit.

For branch circuits fed from GFCI circuit breakers, limit the one-way conductor length to 100 feet between the panelboard and the most remote receptacle or load on the GFCI circuit

Properly identify all terminal blocks and wire terminals for control wiring with vinyl stick-on markers or equivalent. Provide engineer with a list of proposed identifying numbers for review prior to installing markers.

Provide an equipment-grounding conductor, or bonding jumper, as applicable, in all feeders and branch circuits, sized in accordance with NFPA 70 tables 250.66 or 250.122, as applicable, unless indicated as larger on the drawings.

Voltage drop in branch circuits shall not exceed 3 percent.

Wiring shall have insulation of the proper color to match color code system in the table below unless there is a color system currently in use by the facility, in which case the colors are to match the existing system. In larger sizes, where properly colored insulation is not available, use vinyl plastic electrical tape of the appropriate color around each conductor at all termination points, junction and pull boxes

System Voltage
240v and under – 208y/120, 120/240, 120/208, 240d/120
Phase A – black, phase B – red, phase C – blue, neutral – white, equipment ground green, isolated ground – green w/yellow stripe.

Use of MC Cable, May Only Be Used:

In lieu of flexible conduit and wiring from light fixtures in accessible ceilings to junction boxes (attached to building structure) above the ceiling. Provide cable whips of sufficient lengths to allow for relocating each light fixture within a 5-foot radius of its installed location, but not exceeding 6 feet in unsupported lengths.

For vertical drops in stud walls.

In lieu of EMT, only for 15a and 20a branch circuits (with up to four (4) conductors, not including ground conductor), and only in dry concealed locations above grade, except where specifically not permitted by NFPA 70.

Do Not Use MC Cable For The Following:

Homeruns to panelboards.

Where exposed to view.

Where exposed to damage.

Hazardous locations.

Wet locations.

When restricted otherwise above, and when specifically disallowed by the local AHJ, landlord, or both.

Circuits that can be supplied by an emergency or standby power source.

26B 1-6 JUNCTION BOXES, PULL BOXES, CABINETS AND WIREWAYS

Provide junction boxes, pull boxes, cabinets and wireways wherever necessary for proper installation of various electrical systems according to NFPA 70 and where indicated on the drawings. Size as required for the specific function or as required by NFPA 70, whichever is larger. Construction shall be of a NEMA design suitable for the environment installed.

Junction boxes installed behind wall cases, and in or on other display fixtures, except where otherwise specified, shall be 4-inch square or larger, with galvanized covers.

26B 1-7 OUTLET BOXES

All outlets including light fixture, switch, receptacle, and similar outlets: National Electrical, Appleton, Steel City, Raco, or approved equal, galvanized steel knockout boxes, suitable in design to the purpose they serve and the space they occupy. Size as required for the specific function or as required by NFPA 70, whichever is larger. Set all outlet boxes in walls, columns, floors, or ceilings so they are flush with the finished surface, accurately set, and rigidly secured in position. Provide plaster rings, extension rings and/or masonry rings as required for flush mounting. Provide approved cast outlet boxes, with hubs and weatherproof covers, in all areas subject to damp, wet, or harsh conditions.

26B 1-8 OUTLET LOCATIONS

Coordinate locations of outlet boxes. Outlets are only approximately located on the small scale drawings. Use great care in the actual location by consulting the various large scale detailed drawings used by other division trades, and by securing definite locations from the architect and/or engineer.

26B 1-9 MOUNTING HEIGHTS

Unless noted otherwise, install wiring devices as indicated below (note: all dimensions are to the bottom of the outlet box unless noted otherwise):

Receptacles:
Vertically aligned with the ground slot mounted at the bottom: 16 inches above finished floor.
Horizontally aligned, with neutral slot mounted at the top: 16 inches above finished floor.
For above counters: 6 inches above top of counter or as specified by others.
Mechanical and electrical equipment rooms and janitors closets: 44 inches above finished floor, vertically aligned.
Garages: 24 inches above finished floor, vertically aligned
Weatherproof exterior receptacles: 24 inches above finished grade or as indicated on drawings, vertically aligned.
GFCI receptacles: same as general receptacles

Isolated ground receptacles: same as general receptacles

SPD receptacles: same as general receptacles
Clock receptacles: 84 inches above finished floor or as specified by others.
Concrete block walls: dimensions above may be adjusted slightly, as required to compensate for variable joint dimensions, such that bottom or top of boxes, as applicable, are at block joints.

Switches:
General: 46 inches above finished floor.
Above counters: same as for receptacles.
Concrete block walls: 40 inches above finished floor (dimension may be adjusted slightly, as required to compensate for variable joint dimensions, such that bottom of boxes are at block joints).
Walls with wainscoting: 6 inches minimum above wainscoting, but not exceeding 48 inches above finished floor.

Telephone/Data Outlet Boxes:

General: match mounting height of adjacent wiring device listed above.

Wall-mounted telephone: 40 inches above finished floor.

For other than wiring devices, refer to paragraphs, articles, sections, divisions, or drawings to obtain mounting heights for specific equipment or systems.

26B 1-10 WIRING DEVICES

Unless noted otherwise on the drawings wiring devices are 20a rated devices. Where 15a rated devices are indicated on the drawings or required for circuit rating limitations, provide wiring devices equivalent to those specified for 20a, but rated for 15a.

Provide the following wiring devices where shown on drawings or required. Minor changes relative to the location of electrical equipment may be made to comply with structural and building requirements as determined in the course of construction.
Provide all wiring devices of the same manufacturer and not mixed on the project, to the maximum extent possible. Provide color of toggles and receptacles as requested by the engineer:

Duplex convenience receptacles: Specification grade, NEMA 5-20R, 125V, 20A, grounding type, UL listed and labeled, nylon face, side and back wired, self grounding, manufactured by Leviton or approved equivalent.
Hospital Grade straight blade receptacles: NEMA 5-20R, 125V, 20A, grounding type, UL listed and labeled, nylon face, side and back wired, self-grounding, manufactured by Leviton or approved equivalent.
Hospital Grade straight blade safety type, tamper-resistant receptacles: NEMA 5-20R, 125V, 20A, grounding type, UL listed and labeled, nylon face, side and back wired, self-grounding, manufactured by Leviton or approved equivalent.
Twist-Locking type receptacles: NEMA L5-20R, 125V, 20A, grounding type, UL listed and labeled, nylon face, side and back wired, self-grounding, Levlton 2310 or approved equivalent.

Ground fault circuit interrupter type receptacles: Specification Grade, Self-Test type
UL listed and labeled complying with UL 943, Class A and NEMA WD-1-1.10, 125V, 20A, trip at 4-6mA within 0.25 second, and feed-thru type with integral heavy duty NEMA 5-20R receptacle arranged to protect receptacles downstream on the same circuit, manufactured by Leviton or approved equivalent
125V, 20A, grounding type, UL listed and labeled, nylon face, side and back wired, furnished with a green pigtail connected to the grounding contact, and grounding contacts electrically isolated from the mounting strap, manufactured by Leviton or approved equivalent.
TVSS receptacles Specification Grade for 125V (150V maximum continuous operating
voltage) service: NEMA 5-20R, 125V, 20A, self-grounding type, RFI/EMI noise filtering, UL listed 1449 Second Edition (1998) & 489; equipped with LED indicator(s) and audible alarm, manufactured by Leviton or approved equivalent.
Suppression module shall protect normal and common modes, with the following mode characteristics, and be suitable for ANSI/IEEE C62.41-1991 A, B installations:
Peak Energy 240 joules minimum
Peak Current 13,000A minimum
UL 3000A Test 400V minimum
Response Time 5 nano-seconds
Special Warranty: Manufacturer agrees to repair or replace TVSS receptacles, or replaceable surge modules (if removable),
that fail in materials or workmanship within 5 years from date of Substantial Completion.
Special purpose receptacles: Grounding type, UL listed with NEMA configurations as implied on the Drawings, manufactured by Leviton or approved equivalent.
Switches: Specification grade, rated for 120/277V, 20A, back and side wired, and UL listed and labeled, manufactured by Leviton or approved equivalent.

Pilot Light switches: 20A, 1-pole, 2-pole, 3-way switch with red neon lighted handle. Toggle shall be illuminated when the switch is in the "ON" position, manufactured by Leviton or approved equivalent.
Lighted Handle switches: 20A, 1-pole, 3-way switch with clear neon lighted handle. Toggle shall be illuminated when the switch is in the "OFF" position. Manufactured by Leviton or approved equivalent.
Key operated light switches: Same as standard light switches except toggle handle shall be operated by a factory provided key, manufactured by Leviton or approved equivalent.

Switches for use with mechanically-held, electrically-operated lighting contactors: Single pole, double throw, momentary, center off switch, rated for 120/277V, and UL listed and labeled, manufactured by Leviton or approved equivalent.

Wall box dimmers: Specification grade slider type wall box dimmers, UL listed and labeled, with Radio Frequency Interference (RFI) filters to avoid interference with electronic equipment, and a minimum wattage as indicated on the Drawings or as required for the load, manufactured by Leviton or approved equivalent.

Dual Voltage Switch Relay; A normally-open, electrically-held relay that allows a single-pole switch to control loads operating at two different voltages (e.g., 120V and 277V); listed to UL Standard 916; installed in a 2-gang outlet box, with a voltage-separating barrier and plaster ring manufactured by Lighting Controls and Designs (GR 2001 DV) or approved equivalent.

Wall switch occupancy sensors: Passive Infrared type, wall box switch, 120/277V, up to 20-minute time delay, light level sensor, 180-degree field of view, square-foot coverage as required for minimum coverage of the space per the manufacturer, UL listed and labeled, and conforms to California Title 24 Energy Code, manufactured by Leviton or approved equivalent.

Wall switch occupancy sensors: Adaptive technology type, wall box switch, 120/277V, up to 20-minute time delay, light level sensor, 180-degree field of view, square-foot coverage as required for minimum coverage of the space per the manufacturer, UL listed and labeled, and conforms to California Title 24 Energy Code, manufactured by Leviton or approved equivalent.

Ceiling mounted occupancy sensors: Passive Infrared type, 120/277V, up to 20-minute time delay, light level sensor, 360-degree field of view, square-foot coverage as required for minimum coverage of the space per the manufacturer, UL listed and labeled, and conforms to California Title 24 Energy Code, manufactured by Leviton or approved equivalent.

Ceiling mounted occupancy sensors: Dual technology type, 120/277V, up to 20-minute time delay, light level sensor, 360-degree field of view, square-foot coverage as required for minimum coverage of the space per the manufacturer, UL listed and labeled, and conforms to California Title 24 Energy Code, manufactured by Leviton or approved equivalent.

26B 1-11 SWITCH AND OUTLET COVER PLATES

Switch and outlet plates: colored, smooth nylon; by the same manufacturer as the wiring devices, wherever possible. Verify desired materials and colors with architect and/or engineer before installation. Switch plates in unfinished rooms and spaces: stamped steel, cadmium plated. Install groups of switches under one ganged-plate, usually horizontally; or, where required by details, vertically. Set all cover plates plumb, parallel, and finished flush with the wall.

26B 1-12 WEATHERPROOF COVER PLATES

For exterior unattended, wet locations or other locations as indicated: in-use NEMA 3R recessed or flush mount, UL-labeled plates molded from a clear high impact ultraviolet stabilized polycarbonate material for easy verification that cords are plugged in and that the GFCI is functioning. Back box must be suitable for conduit connecting. Coordinate back box with wall depth. Intermatic WP1000RC/HRC or equal.

For attended wet or damp locations: weatherproof cover plates, UL-listed for wet locations with cover(s) closed; die-cast aluminum or type 302 stainless steel; single-cover for switches and vertically mounted receptacles; double-cover for horizontally mounted receptacles; self-closing covers.

Cover plates: by the same manufacturer as the wiring devices; complying with NFPA 70 406.8 (A) or (B) requirements for attended or unattended use as applicable.

26B 2 ELECTRICAL SERVICE AND GROUNDING

26B 2-1 ELECTRICAL SERVICE

See drawings for type, size, voltage, phase, and other requirements.

Provide, or arrange with the serving utility for installation to provide, a recording voltmeter at the service point, on the first day the facility is open for business, for a 24-hour voltage test. If voltage and regulation are not within acceptable limits, arrange with the utility for proper voltage. Submit to the owner a report of maximum and minimum voltage and a copy of the recording voltmeter chart.

26B 2-2 CONNECTION TO SERVING UTILITIES

Provide raceways, terminations, metering provisions, and miscellaneous equipment, as required, for electrical and telephone services for connection by the serving utility, in strict compliance with the requirements of all applicable codes and of the serving utility involved. Verify all service terminations and connection points in the field and work in conjunction with the utility involved in the installation of all services. Provide all materials and equipment required for complete utility connection but not furnished by the serving utility. Notify the utility companies involved within two weeks after notice to proceed, of all required information necessary for the utility to supply the project without delay. Pay all charges of the serving utility for the electrical service(s).

26B 2-3 GROUNDING

Permanently and effectively ground and bond the electrical installation in a thorough and efficient manner, and in conformance, at a minimum, with NFPA 70, or these documents, where they exceed code requirements. Use bare or insulated conductors, as specified herein, and other materials indicated on the drawings.

26B 3 DISTRIBUTION AND CONTROL EQUIPMENT

26B 3-3 SERVICE ENTRANCE CIRCUIT BREAKER – ENCLOSED, 100A – 6000A

Enclosed circuit breaker: Square D micro-logic and thermal magnetic type or equal by Siemens, Cutler-Hammer, or General Electric; rated at 100% of the ampere size indicated, number of phases and other ratings as indicated on the drawings; permanently labeled as suitable for use as service entrance equipment; integral ground fault relay and operator where indicated or required by NFPA 70; interlocked cover and an engraved nameplate for identification. Provide with integral and separate neutral and ground assemblies, suitable for the sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor. Enclosure: NEMA design suitable for the environment in which installed or as indicated.

26B 3-5 POWER DISTRIBUTION PANELBOARDS - CIRCUIT BREAKER, 1200A BUS OR SMALLER

Panelboards: Square D type I-Line, Siemens types S4 or S5, Cutler-Hammer type Pow-R-Line 4, or General Electric types CCB or AV-1; dead front distribution panelboards with number and sizes of circuit breakers as indicated on the drawings; where installed as service entrance equipment, permanently label as suitable for use as service entrance equipment; fully-rated for the available fault current as required unless specifically indicated otherwise on the drawings; hinged, lockable front door that covers the circuit breaker handles. Circuit breakers: quick-make, quick-break, indicating type; engraved nameplates for circuit identification of each circuit breaker. Any feeder circuit breakers 800 amps and larger and all main circuit breaker(s) shall be rated at 100% of the ampere size indicated. Provide a typewritten card directory indicating exactly what each circuit breaker controls on the inside face of the door for circuit identification.

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26B 3-6 MODULAR METER CENTERS

Modular meter centers: Square D type EZ Meter-Pak, or approved equal by Siemens, Cutler-Hammer, or General Electric, complete with integral bus, individual current limiting circuit breaker for each module, meter sockets compatible with utility company meters, NEMA rated construction, and main lugs or disconnect as indicated on the drawings. Provide centers fully-rated for the available fault current as required unless specifically indicated otherwise on the drawings. All main circuit breaker(s) shall be rated at 100% of the ampere size indicated.

26B 3-7 GENERAL PURPOSE PANELBOARDS

Panelboards: Square D type NQOD or NF, as applicable, based on voltage and ampere ratings and required short-circuit interrupting ratings as required unless otherwise indicated on the drawings, or approved equal by Siemens, Cutler Hammer, or General Electric; complete with bolt-on thermal magnetic, molded case circuit breakers assembled in a dead-front finished cabinet containing a typewritten card directory indicating exactly what each circuit breaker controls; main circuit breaker shall be rated at 100% of the ampere size indicated, fully-rated and with the integrated short circuit current ratings as required. Plug-in type breakers will not be acceptable. All two and three pole breakers: common trip type. Breakers used as switches for 120v or 277v lighting circuits: approved for the purpose and marked "SWD". Breakers used for the protection of HVAC and refrigeration equipment: HACR type.

26B 3-11 DISCONNECT (SAFETY) SWITCHES

Disconnect (safety) switches: Square D, Siemens, Cutler Hammer, or General Electric fused or non-fused (as indicated on drawings or required) NEMA KS1, heavy duty, externally operated, visible-blade safety switches; NEMA enclosure type indicated on the drawings or suitable for the environment in which installed. Based on fusible switch and fuse sizes indicated, include class R, J, or I fuse provisions as applicable.

Where indicated, provide fusible switches permanently labeled as suitable for use as service entrance equipment, with integral and separate neutral and ground assemblies, suitable for the sizes of conductors indicated. Do not double-lug any terminations not specifically listed as suitable for more than one conductor.

Provide switches where not furnished with the starting equipment, at all other points required by NFPA 70, and where indicated on the drawings.

26B 3-12 SURGE-PROTECTIVE DEVICES (SPD)

Provide SPD labeled in accordance with the latest editions of UL 1283 and 1449, including the highest fault current of section 37.3 (UL recognized for integral).

SPD shall meet or exceed the following criteria:

UL 1449 ratings: the system performance ratings shall be based on the UL 1449 listing ratings for IEEE C62.41 category C3 impulse waveforms of 6kv 1.2 x 50 microseconds, 3ka, 8 x 20 microsecond waveshapes. The maximum UL 1449 listed surge rating for each and/or all of the specified protection modes shall not be exceeded.

Maximum surge current capability (single pulse rated) per phase shall be:

Service entrance switchboards, switchgear: 240ka.

Distribution panelboards, panelboards used for service entrance & MCC: 120ka.

Branch panelboards: 80ka (non-modular is acceptable).

UL 1449 listed and recognized component suppression voltage ratings shall not exceed the following:

VOLTAGE	L-N	L-G	N-G
208y/120	330v	330v	330v
480y/277	700v	700v	700v

SPD shall have a minimum EMI/RFI filtering of –50db at 100khz.

Indicators: the SPD shall use LED indicators that provide indication of suppression component failure in all protection modes including N-G, as well as optically isolated N/C dry contacts for remote monitoring.

Transient counter: a transient voltage surge counter shall be included to totalize transient voltage surges which deviate from the sine wave envelope by more than 125v. The readout shall be at least a six digit LCD located on the unit's hinged front cover. The counter shall be equipped with a battery back-up to retain memory when power is not present. A push-button switch on the display's face-plate shall be provided for manual counter reset.

Manufacturers: Cutler hammer, General Electric, Siemens, Square D, APT, Surge Suppression Incorporated.

Switchboard, switchgear, panelboard and MCC internally mounted SPD: factory installed, UL- labeled by, and at the facility of the electrical distribution equipment manufacturer.

Externally mounted SPD (only allowed where noted on the construction documents): install with conductors as short and straight as possible. Twist the SPD input conductors together to reduce input conductor inductance. Follow the SPD manufacturer's recommended installation practices and comply with all applicable codes.

Warranty: the manufacturer shall provide a minimum full five year parts, labor, travel warranty from date of substantial completion against any part failure, excluding breakers, when installed in compliance with manufacturer's written instructions, UL listing requirements, and all applicable national or local electrical codes. Manufacturer shall make available local, national field engineering service support. Where direct factory employed service engineers are not locally available, travel time from the factory or nearest dispatch center shall be stated.

Thoroughly factory test the specified system before shipment. Testing of each system shall include, but shall not be limited to, quality control checks, dielectric voltage withstand tests at twice rated voltage plus 1000v per UL requirements, and operational and calibration tests.

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LOCATION 2002 RECTOR ROAD PARAGOULD, ARKANSAS

STATE OF ARKANSAS
LICENSED PROFESSIONAL ENGINEER
No. 9700
MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
ELECTRICAL SPECIFICATIONS

DISCIPLINE - SHEET
E4.2

26B 4 LIGHT FIXTURES, LAMPS AND BALLASTS

26B 4-1 LIGHT FIXTURE LOCATIONS

Light fixtures shown on the electrical drawings represent general arrangements only. Refer to architectural drawings for more exact locations. Coordinate location with all other trades before installation to avoid conflicts. Coordinate light fixture locations in mechanical rooms with final installed piping and ductwork layouts.

26B 4-2 LIGHT FIXTURES

Provide light fixtures as scheduled on drawings, including all lamps, all necessary accessories, material and labor to securely hang, clean, and make light fixtures completely ready for use. Provide: all hangers, supports, and miscellaneous hardware required to install light fixtures; proper trim to fit each ceiling condition actually encountered; additional tie wires connected to structure to conform to seismic requirements where required by the applicable building code.

Packaging of light fixtures will not be allowed. Only those luminares listed in the light fixture schedule, or approved in accordance with substitutions of these specifications, will be accepted. Where the light fixture schedule indicates an allowance for a specific light fixture, the price is a contractor price. Include all additional costs for freight, lamps, and installation of light fixture and lamps.

Install all linear light fixtures located in areas without ceilings immediately below the roof-framing members, or suspended from chain hangers suitable in length to provide the indicated mounting height.

Through wiring of recessed light fixtures, in suspended ceilings, is not permitted. Connect each light fixture by a whip to a junction box. Provide cable whips of sufficient lengths to allow for relocating each light fixture within a 5-foot radius of its installed location, but not exceeding 6 feet in unsupported lengths.

26B 4-3 EMERGENCY LIGHTING UNITS AND EXIT SIGNS

Description: self-contained units complying with UL 924.

Battery: sealed, maintenance-free, lead-acid type. The batteries shall be of suitable rating and capacity to supply and maintain at not less than 87 1/ 2 percent of the nominal battery voltage for the total lamp load associated with the unit for a period of at least 1 1/ 2 hours, or the unit equipment shall supply and maintain not less than 60 percent of the initial emergency illumination for a period of at least 1 1/ 2 hours.

Charger: fully automatic, solid-state type with sealed transfer relay.

Operation: relay automatically turns lamp on when power supply circuit voltage drops to 80 percent of nominal voltage or below. Lamp automatically disconnects from battery when voltage approaches deep-discharge level. When normal voltage is restored, relay disconnects lamps from battery, and battery is automatically recharged and floated on charger.
Test push button: push-to-test type, in unit housing, simulates loss of normal power and demonstrates unit operability.
LED indicator light: indicates normal power on. Normal glow indicates trickle charge; bright glow indicates charging at end of discharge cycle.

Integral time-delay relay: holds unit on for fixed interval of 15 minutes when power is restored after an outage
Integral self-test: factory-installed electronic device automatically initiates code-required test of unit emergency operation at required intervals. Test failure is annunciated by an integral audible alarm and flashing red LED.

26B 4-4 LAMPS

Provide lamps as indicated on the drawings for all light fixtures; or, if not indicated, as recommended by the light fixture manufacturer. In all cases, lamps shall be compatible with the specified light fixture. Acceptable lamp manufacturers: General Electric, Osram/Sylvania, Philips, or Venture.

All fluorescent lamps shall be minimum of 4100 degrees k, with a minimum color-rendering index of 80, unless noted or directed otherwise.

Incandescent lamps: type and wattage as shown on the drawings; rated 130v unless otherwise scheduled or specified.

26B 4-5 BALLASTS

Fluorescent ballasts: low heat type; thermally protected against overheating; ETL-CBM, class P to meet all requirements of section 410-73 (E) of the NFPA 70 as a minimum; comply with the national ballast energy law; 90-percent power factor or greater; sound levels not exceeding class A ambient noise levels. Ballasts in indoor locations shall have disconnecting means either internal or external to the luminaire.

Indoor Fluorescent Ballasts: electronic type suitable for operation of specified lamps; total harmonic distortion less than 20 percent; frequency of operation of 20 khz or greater with no visible flicker; line transient withstand ratings as defined in ANSI/IEEE C62.41, category A; manufacturers: Equal to Advance Rel/vel series.

Exterior and Low Temperature Fluorescent Ballasts: shall be electronic type suitable for operation of specified lamps; shall have a total harmonic distortion less than 20 percent; shall have a frequency of operation of 20 khz or greater and operate with no visible flicker; shall withstand line transients as defined in ANSI/IEEE C62.41, category A; shall have a minimum starting temperature of –20 degrees F; and shall be equal to Advance Rel/vel series.

Compact Fluorescent Ballasts: shall be thermally protected against overheating; shall be class P; shall have a minimum 90 percent power factor; sound levels shall not exceed class a ambient noise levels; and shall be low heat type. All ballasts shall be equal to those by Advance.

High-Intensity Discharge (HID) ballasts (includes High Pressure Sodium (HPS) and Metal Halide (MH)): shall have a power factor greater than 90 percent; comply with underwriters laboratory (UL) 1029; provide normal operation and light output with the input voltage is within 10 percent of nominal ballast rating (except HPS lamps smaller than 250w which must have the input voltage within +5 percent); shall have a minimum starting temperature of –20 degrees F. Provide encapsulated and remote types where indicated on the drawings.

Emergency Fluorescent Ballasts: shall be as noted on the fixture schedule or elsewhere on the drawings.

26B 4-6 PARKING LOT LIGHTING

Provide all components of the outdoor lighting system, including pole assemblies as detailed on the drawings and described below. All material furnished shall be of the best quality and workmanship, and the manufacturer may be required to furnish satisfactory evidence of the ability to supply the material in accordance with the drawings and specifications.

Poles and light fixtures shall be as noted on the drawings. If contractor desires to substitute other than the specified manufacturer(s), refer to article “substitutions” in this division, for requirements. No alternate manufacturers will be considered for approval without this prior submittal.

Furnish all poles with hand holes and no less than four high-strength steel anchor bolts for pole mounting. Each anchor bolt shall be threaded at the top, fitted with hexagon nuts, and shall have an "I" bend on the bottom of the bolt. All anchor bolts and nuts shall be hot-dip galvanized. All other small hardware required (bolts, nuts, washers, shims, etc.) Shall be galvanized. Provide pole finishes as noted on the drawings.

26B 5 MISCELLANEOUS ELECTRICAL

26B 5-1 WIRING OF EQUIPMENT

Provide all raceways and power wiring for all applicable Divisions equipment requiring electrical connections, including, but not limited to, pumps, water heaters, and HVAC equipment, and all line-voltage control and interlock wiring not provided under other Divisions. Connect per manufacturers’ wiring diagrams. Coordinate with applicable Divisions for disconnects furnished with equipment, and provide all disconnect switches as required. After installing wiring, verify that each motor load has the correct phase rotation.

Verify the actual “maximum overcurrent protection” (MOCP) device ratings and “minimum circuit ampacity” (MCA) conductor sizing for mechanical equipment from the equipment nameplate. Base electrical installations on actual required amperages, which may vary somewhat from the conductor and equipment sizes shown on the drawings; however, in no case, reduce the size of conductors indicated on the drawings without authorization from the engineer. Provide properly sized electrical wiring and equipment without extra cost to the owner. Notify the engineer of all changes required in the electrical installation due to equipment variances so that the effects on feeders, branch circuits, panelboards, fuses and circuit breakers can be checked prior to purchasing and installation. Be responsible for coordinating with applicable Divisions to verify the actual ampacities and correct sizes of all conductors and overcurrent protective devices for all equipment, and correct overload heaters for all motors, when starters are provided under Division 26.

26B 5-2 WIRING OF THERMOSTATS, TIME AND TEMPERATURE CONTROLS

Provide all raceways, power wiring, and line-voltage control and interlock wiring not provided under other Divisions, for all thermostats, temperature control devices, and controls, including, but not limited to, night-stats, water heater interlocks, time switches and override timers. See mechanical drawings for locations and temperature control diagrams. Low-voltage conductors for thermostats and temperature control system may be run exposed above finished accessible ceilings, if approved and listed for this purpose, but shall be installed in conduit within walls and where exposed in the work areas.

26B 5-3 TELEPHONE SYSTEM PROVISIONS

Provide incoming telephone service raceways as indicated on drawings or as required by the serving telephone company. Provide 3/4-inch thick plywood board, fire-retardant-treated and stamped FRT, securely anchored to the wall, at the location and of the size as indicated on the drawings.

Provide flush mounted telephone outlet boxes with ¾ -inch EMT stub-up concealed to accessible ceiling space at locations as indicated on the drawings.

26B 5-4 DATA SYSTEM PROVISIONS

Provide flush mounted data outlet boxes with ¾ -inch conduit stub-up concealed to accessible ceiling space at locations as indicated on the drawings.

26B 5-5 TIME SWITCHES

Time switches: electronic digital astronomical, type as indicated, with manual bypass switch, NEMA enclosure suitable for the environment installed; number and types of contacts, sequence, and voltage as indicated on the drawings, or as required, based on the time switch function and the number of branch circuits or contactors controlled. Provide wiring to photocells, contactors, relays or other control points as required. Manufacturers: Intermatic, Paragon or Tork.

26B 5-6 PHOTO CONTROL

The Photo Control Shall:

Provide automatic switching for lighting loads using a thermal design with built in delay to ensure that the controlled lighting does not switch off due to ambient light or lightning striking the photocell.

Have a rating based on UL testing at 50% power factor for ballast loads, be UL listed, and meet all applicable agency requirements

Be stem-mounting type with all necessary mounting hardware and instructions; have a housing constructed of high impact poly-carbonate; photo control components consisting of a metal film resistor, dual temperature compensating bi metal blades, snap action contact blades, chemically treated/polymer encapsulated cadmium sulfide photocell and silver alloy contacts to ensure reliable 5 year manufacturer warranted operation. Photo control shall be 100% factory tested for function within manufacturer's specified light levels.

Be from the same manufacturer of and totally compatible with the time switches specified above.

22,000a at 240v maximum
as indicated on the drawings
Enclosures: NEMA rated for environment installed in or as indicated on the drawings.
Coil voltage: 120v AC or as indicated on the drawings.
Mechanically-held type, control interface shall be 2-wire input module with 3-wire output or as indicated on the drawings; Square D class 8903 LX or equivalent of General Electric, Siemens, Cutler Hammer or Asco.

26B 5-9 MISCELLANEOUS EQUIPMENT AND CONNECTIONS

Provide all wiring and connections to equipment furnished by others, including, but not limited to, bakery equipment, deli equipment, meat room equipment, kitchen equipment, checkstand and scanners, exhaust hood fire extinguishing system, etc. Install scan system electronic communication cable in underfloor duct (cable provided by others).
Provide all raceways, wiring and related connections of devices to energy management system that are not the responsibility of Division 23.

All wiring and connections of exit door alarms.

END OF SECTION 26B

OWNER
THEIL ROAD PROPERTIES, LP
612 E. Canal Street, Paragould, Arkansas 72450 PHONE (870) 239-8084

(OWNER’S SIGNATURE) *(DATE)*

ARCHITECT
STUDIO 6 ARCHITECTS
1120 Garrison Avenue, Suite 1A, Fort Smith, Arkansas 72901 PHONE (479) 782-4085

(ARCHITECT’S SIGNATURE) *(DATE)*

GENERAL CONTRACTOR
CRAIG CUSTOM CONSTRUCTION, LLC
13200 W. Markham Street, Suite 104, Little Rock, Arkansas 72211 PHONE (501) 255-6688

(CONTRACTOR’S SIGNATURE) *(DATE)*

CONTRACTOR’S BONDING COMPANY
NORTH AMERICAN SPECIALTY INSURANCE COMPANY
1200 Main Street, Suite 800, Kansas City, Missouri 64105-2478

(CONTRACTOR’S BONDING COMPANYSIGNATURE) *(DATE)*

MORTGAGE COMPANY
PRUDENTIAL HUNTOON PAIGE
6805 Morrison Blvd, Suite 385, Charlotte, North Carolina 28211

(MORTGAGE COMPANY’S SIGNATURE) *(DATE)*

HP ENGINEERING
PROJECT NO. 202801R
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CONSULTANT

CERTIFICATE OF AUTH. HP ENGINEERING, INC. #1653 ARKANSAS - ENGINEER

OWNER
THEIL ROAD PROPERTIES, LP
PROJECT
48 UNIT RESIDENTIAL DEVELOPMENT
for HILLSIDE MANOR
LOCATION
2002 RECTOR ROAD
PARAGOULD, ARKANSAS

STATE OF ARKANSAS LICENSED PROFESSIONAL ENGINEER No. 9700 MICHAEL LEE WRIGHT
01/29/2021

REVISIONS		
MARK	DATE	DESCRIPTION

PROJECT	20-003
DAT	01.29.2021
ISSUE	

SHEET
ELECTRICAL SPECIFICATIONS

DISCIPLINE - SHEET
E4.3