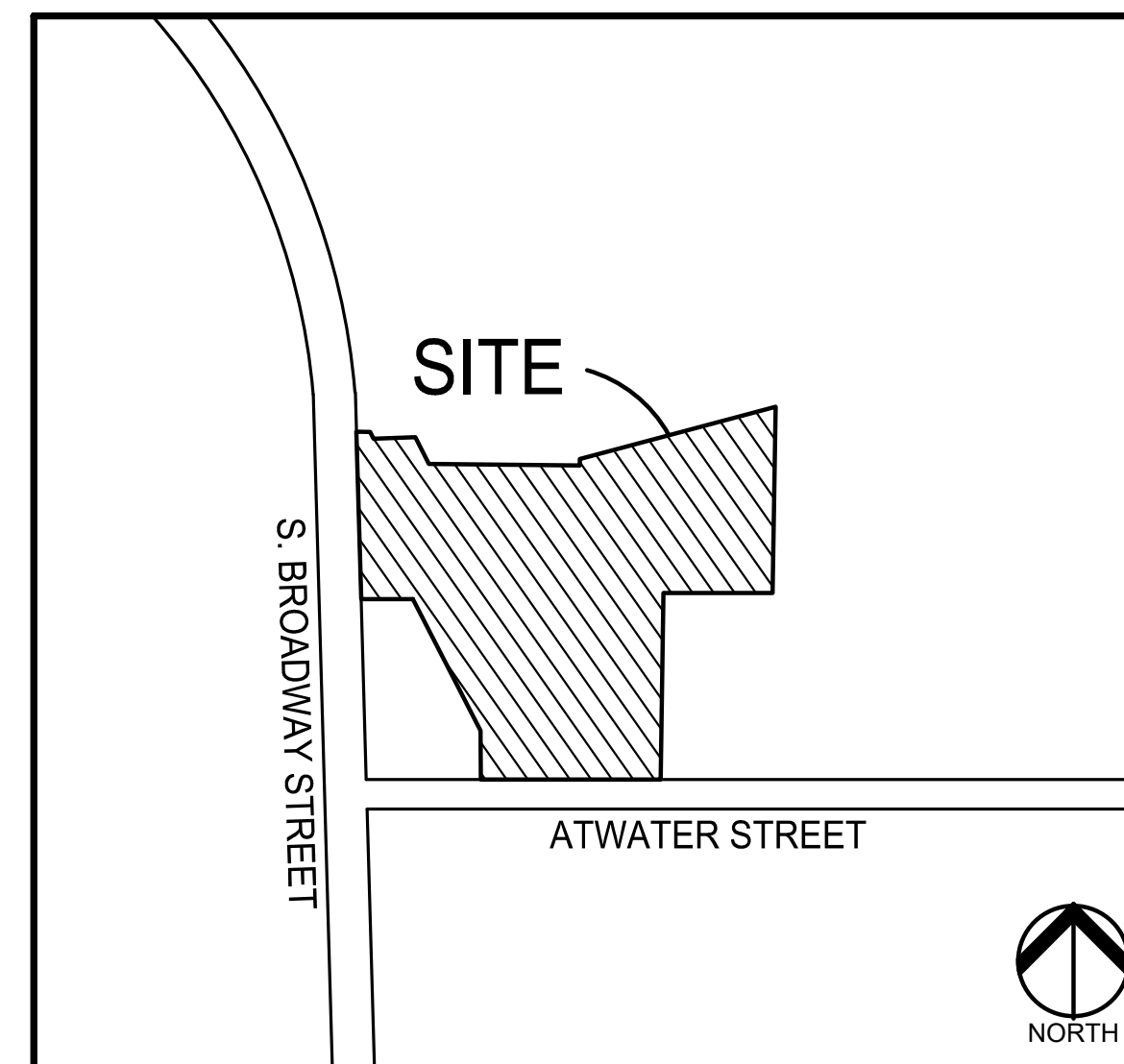
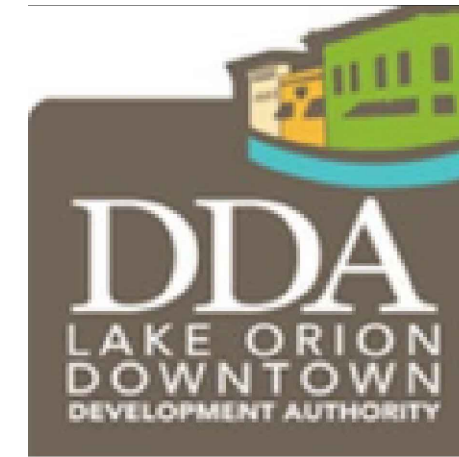


PRELIMINARY SITE PLANS

# LAKE ORION LUMBER

215 SOUTH BROADWAY STREET  
LAKE ORION, MICHIGAN



LOCATION MAP  
NO SCALE

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
C-1.0	TOPOGRAPHIC SURVEY
C-2.0	DEMOLITION PLAN
C-3.0	PRELIMINARY SITE PLAN
C-3.1	TRAFFIC CIRCULATION PLAN
C-4.0	PRELIMINARY GRADING PLAN
C-6.0	PRELIMINARY UTILITY PLAN
C-9.0	NOTES AND DETAILS
C-9.1	DETAILS
C-9.2	DETAILS
L-1.0	PRELIMINARY LANDSCAPE PLAN
	ARCHITECT PLANS
	MAIN BARN AND ANNEX
A000	COVER SHEET
A100	FLOOR PLANS
A300	BUILDING ELEVATIONS
A301	BUILDING ELEVATIONS
	THE BAKERY BUILDING
A000	COVER SHEET
A101	THE BAKERY BUILDING FLOOR PLAN
A102	THE BAKERY BUILDING BASEMENT PLAN
A300	THE BAKERY BUILDING ELEVATIONS
A301	THE BAKERY BUILDING ELEVATIONS
	RANCH HOUSE 2
A-003	3D EXTERIOR VIEWS
A-004	3D INTERIOR VIEWS
A-101	MAIN LEVEL
A-102	UPPER LEVEL
A-201	ELEVATIONS
A-202	ELEVATIONS
	LAKE ORION DDA BIKE SHOP
A-001	TITLE SHEET
A-002	3D VIEWS EXTERIOR
A-003	3D VIEWS INTERIOR
A-101	MAIN LEVEL
A-102	UPPER LEVEL
A-103	ROOF PLAN
A-201	ELEVATIONS
A-202	ELEVATIONS
	LAKE ORION DDA STILLWATER
A-001	TITLE SHEET & GENERAL NOTES
A-002	3D EXTERIOR VIEWS
A-003	3D INTERIOR VIEWS
A-101	MAIN LEVEL FLOOR PLAN
A-102	ROOF PLAN
A-201	ELEVATIONS
WL-1	FLOOR PLAN, EXTERIOR ELEVATION AND ELECTRICAL PLAN
	WRC STANDARD DETAILS
1 OF 2	SANITARY SEWER DETAILS AND NOTES
2 OF 2	SANITARY SEWER DETAILS AND NOTES
1 OF 1	STORM DRAIN NOTES
1 OF 7	WATER MAIN STANDARD DETAILS
2 OF 7	WATER MAIN STANDARD DETAILS
3 OF 7	WATER MAIN STANDARD DETAILS
1 OF 1	SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

DESIGN TEAM

OWNER/APPLICANT/DEVELOPER	CIVIL ENGINEER
LAKE ORION DOWNTOWN AUTHORITY 118 N. BROADWAY ST. LAKE ORION, MI 48362 CONTACT: MATHEW GIBB PHONE: 248-464-0307 EMAIL: GIBB@DOWNTOWNLAKEORION.COM	PEA GROUP 1849 POND RUN AUBURN HILLS, MI 48326 CONTACT: JAMES P. BUTLER, PE PHONE: 844.813.2949 EMAIL: JBUTLER@PEAGROUP.COM

ARCHITECT	LANDSCAPE ARCHITECT
DAVIS&DAVIS 30500 NORTHWESTERN HWY, SUITE 311 FARMINGTON HILLS, MI 48334 CONTACT: JEREMIAH DOORNBOS PHONE: 248-855-7040 EMAIL: DAVISINTERIORDSIGN.COM	PEA GROUP 7927 NEMCO WAY, STE. 115 BRIGHTON, MI 48116 CONTACT: JANET EVANS, PLA PHONE: 844.813.2949 EMAIL: JEVANS@PEAGROUP.COM



REVISIONS	
DESCRIPTION	DATE
ORIGINAL ISSUE DATE	

NOT FOR CONSTRUCTION









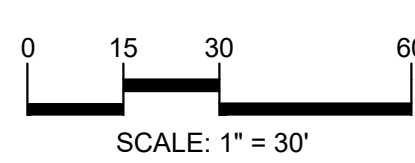
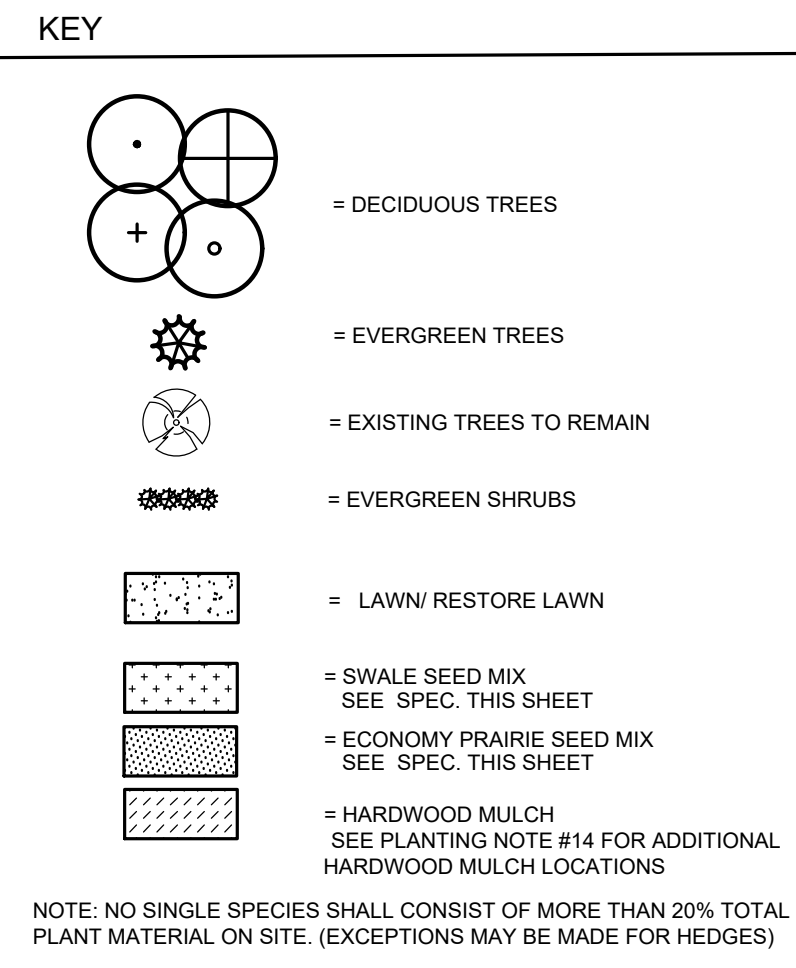
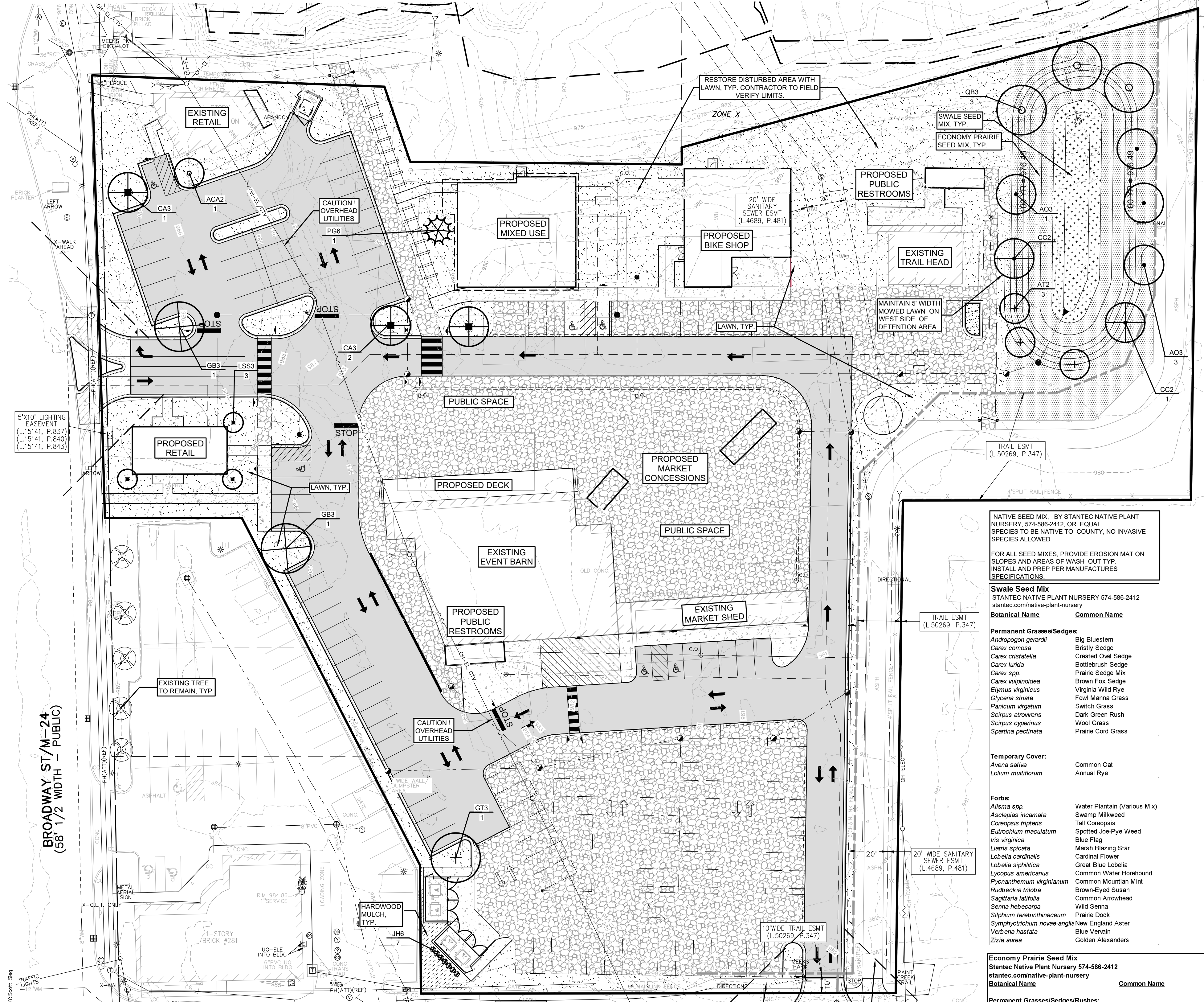












**CAUTION!!**  
 THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

**LANDSCAPE CALCULATIONS:**  
 PER VILLAGE OF LAKE ORION DC DOWNTOWN

\$15.02 C.1.  
 REQUIRED: TREES SHALL BE PROVIDED AT THE ENTRANCE OF THE BUILDING WHERE DEEMED APPROPRIATE BY THE PLANNING COMMISSION

PROVIDED:  
 TREES PROVIDED PER ABOVE AND WITHIN PARKING LOT: 11 PROPOSED TREES

\$15.02 C.2.  
 REQUIRED: PLANTER BOXES OR OTHER LANDSCAPE FEATURES SHALL BE INCORPORATED WHERE APPROPRIATE

PROVIDED:  
 EXISTING PLANTER BOX BY OWNER

\$15.02 C.3.  
 REQUIRED: OUTDOOR UTILITY EQUIPMENT SHALL BE SCREENED TO THE GREATEST EXTENT POSSIBLE BY FENCES, WALLS PLANTER BOXES OR OTHER LANDSCAPE FEATURES.

PROVIDED:  
 UPRIGHT EVG HEDGE AT TRASH

\$15.02 G.1.2.3.  
**BASIN LANDSCAPE**

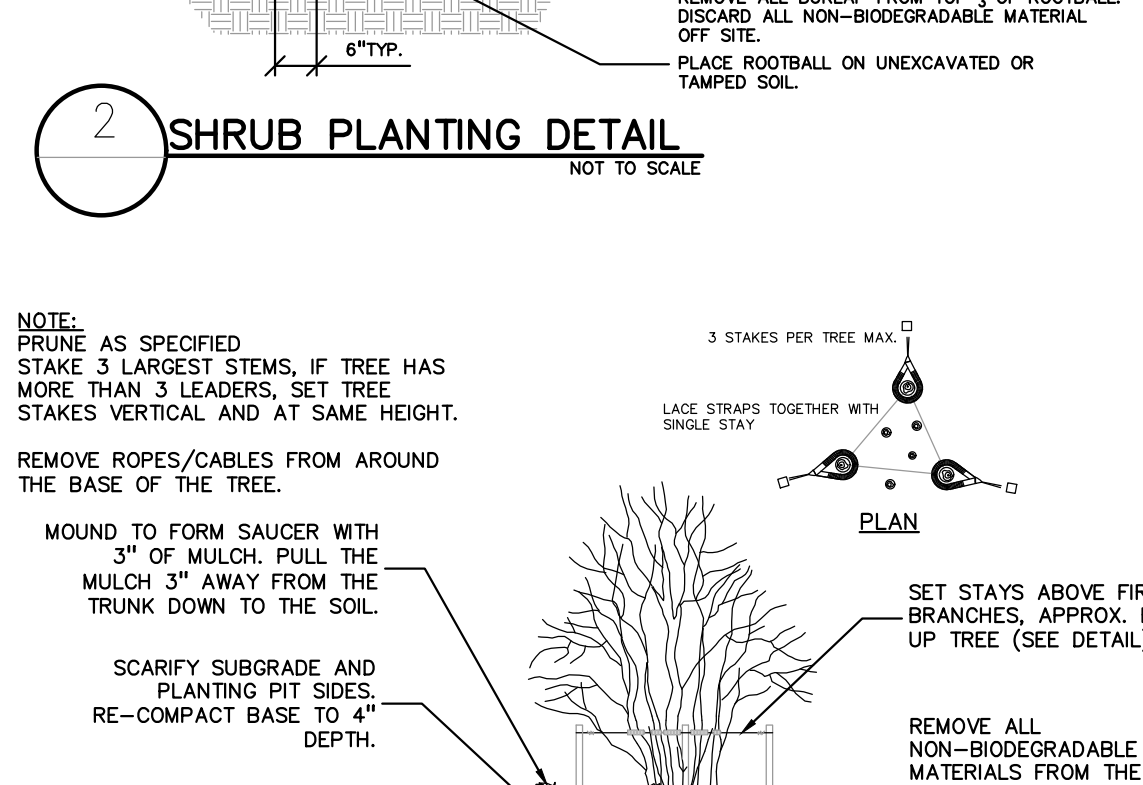
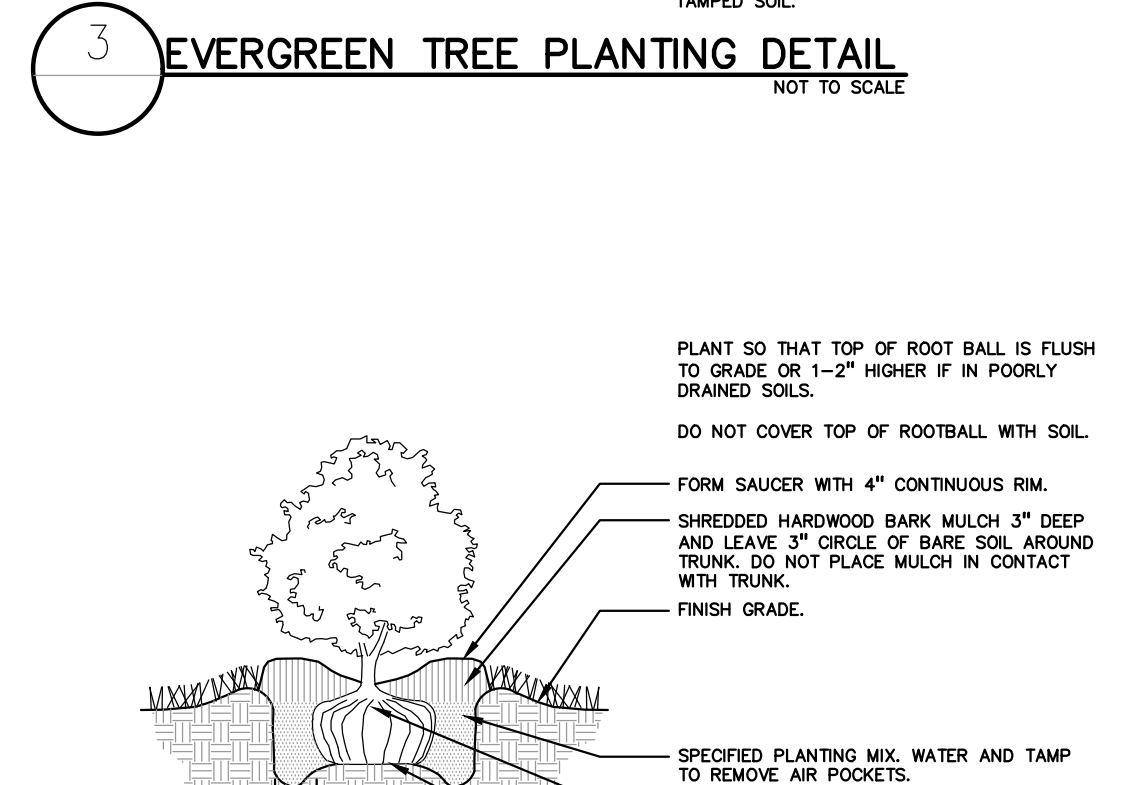
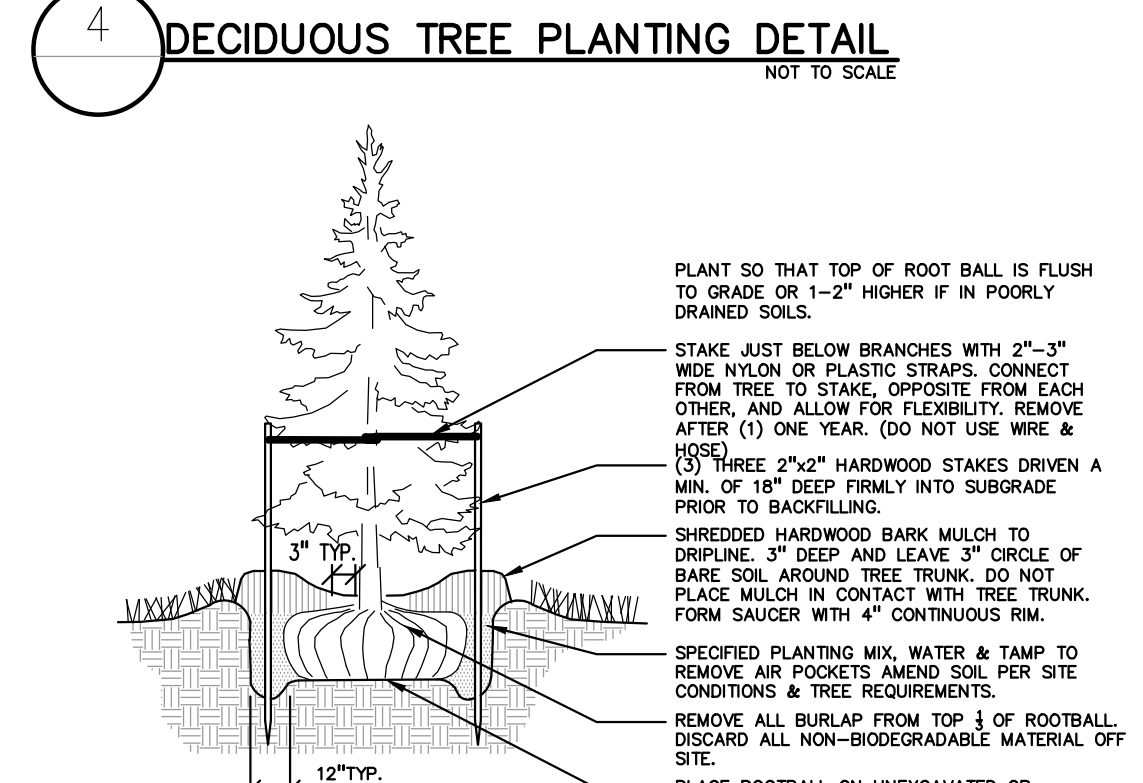
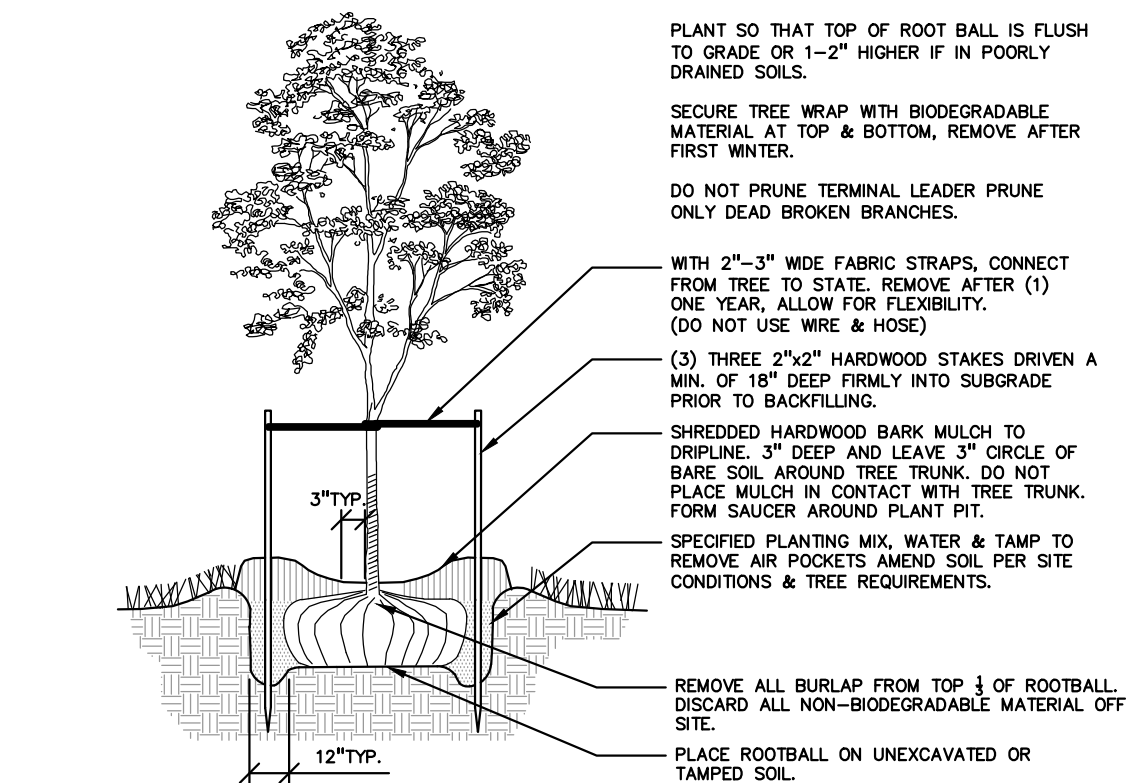
REQUIRED:  
 1 DEC TREE / 50' OF POND PERIMETER AND 1 ORN / 75' OF POND PERIMETER. TREES SHALL BE PLANTED ABOVE THE FREEBOARD. ANY PLANT MATERIALS PLANTED BELOW THE FREEBOARD WILL BE SUITABLE FOR INUNDATION.

366 LF POND PERIMETER / 50 = 7.2 DEC TREES AND 366 / 75 = 4.88 ORN TREES

PROVIDED:  
 7 PROPOSED DECIDUOUS AND 5 PROPOSED ORNAMENTAL TREES

**GENERAL PLANTING NOTES:**

- LANDSCAPE CONTRACTOR SHALL VISIT SITE, INSPECT EXISTING SITE CONDITIONS AND REVIEW PROPOSED PLANTING AND RELATED WORK. IN CASE OF DISCREPANCY BETWEEN PLAN AND PLANT LIST, PLAN SHALL GOVERN QUANTITIES. CONTACT LANDSCAPE ARCHITECT WITH ANY CONCERNS.
- CONTRACTOR SHALL VERIFY LOCATIONS OF ALL ON SITE UTILITIES PRIOR TO BEGINNING CONSTRUCTION ON HIGHER PHASE OF WORK. ELECTRIC, GAS, TELEPHONE, CABLE TELEVISION MAY BE LOCATED BY CALLING MISS DIG 1-800-482-7171. ANY DAMAGE OR INTERRUPTION OF SERVICES SHALL BE THE RESPONSIBILITY OF CONTRACTOR. CONTRACTOR SHALL COORDINATE ALL RELATED ACTIVITIES WITH OTHER TRADES ON THE JOB AND SHALL REPORT ANY UNACCEPTABLE JOB CONDITIONS TO OWNER'S REPRESENTATIVE PRIOR TO COMMENCING.
- ALL PLANT MATERIAL TO BE PREMIUM GRADE NURSERY STOCK AND SHALL SATISFY AMERICAN ASSOCIATION OF NURSERYMEN STANDARD FOR NURSERY STOCK. ALL LANDSCAPE MATERIAL SHALL BE NORTHERN GROWN, NO. 1 GRADE.
- CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON LANDSCAPE PLAN PRIOR TO PRICING THE WORK.
- THE OWNER'S REPRESENTATIVE RESERVES THE RIGHT TO REJECT ANY PLANT MATERIAL NOT MEETING SPECIFICATIONS.
- ALL SINGLE STEM SHADE TREES TO HAVE STRAIGHT TRUNKS AND SYMMETRICAL CROWNS.
- ALL SINGLE TRUNK SHADE TREES TO HAVE A CENTRAL LEADER; TREES WITH FORKED OR IRREGULAR TRUNKS WILL NOT BE ACCEPTED.
- ALL MULTI STEM TREES SHALL BE HEAVILY BRANCHED AND HAVE SYMMETRICAL CROWNS. ONE-SIDED TREES OR THOSE WITH THIN OR OPEN CROWNS SHALL NOT BE ACCEPTED.
- ALL EVERGREEN TREES SHALL BE HEAVILY BRANCHED AND FULL TO THE GROUND, SYMMETRICAL IN SHAPE AND NOT SHEARED FOR THE LAST FIVE GROWING SEASONS.
- ALL TREES TO HAVE CLAY OR PLY LOAM BALLS. TREES WITH SAND BALLS WILL BE REJECTED.
- NO MACHINERY IS TO BE USED WITHIN THE DRIP LINE OF EXISTING TREES; HAND GRADE ALL LAWN AREAS WITHIN THE DRIP LINE OF EXISTING TREES.
- ALL TREE LOCATIONS SHALL BE STAKED BY LANDSCAPE CONTRACTOR AND ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION OF THE PLANT MATERIAL.
- IT IS MANDATORY THAT POSITIVE DRAINAGE IS PROVIDED AWAY FROM ALL BUILDINGS.
- ALL PLANTING BEDS SHALL RECEIVE 3" SHREDDED HARDWOOD BARK MULCH WITH PREYEMULCH. SEE SPECIFICATIONS. SHREDDED PALLETTE AND DRY MULCH WILL NOT BE ACCEPTED.
- ALL LANDSCAPED AREAS SHALL RECEIVE 3" COMPACTED TOPSOIL.
- SEE SPECIFICATIONS FOR ADDITIONAL COMMENTS, REQUIREMENTS, PLANTING PROCEDURES AND WARRANTY STANDARDS.
- FOR NON-LAWN SEED MIX AREAS, AS NOTED ON PLAN, BRUSH MOW ONCE SEASONALLY FOR INVASIVE SPECIES CONTROL.
- CONTRACTOR SHALL NOT INSTALL PLANTS UNDER BUILDING OVERHANG AND SHALL NOTIFY LANDSCAPE ARCHITECT IF DRAWINGS CONFLICT WITH BUILDING OVERHANGS.
- TREES SHALL NOT CONFLICT/ BLOCK PROPOSED REGULATORY/ DIRECTION SIGNAGE, MONUMENT SIGNS, ADDRESS OR LIGHT POLES. SHIFT TREES AS NECESSARY TYP.



**NATIVE SEED MIX.** BY STANTEC NATIVE PLANT NURSERY 574-586-2412 OR EQUAL SPECIES TO BE NATIVE TO COUNTY, NO INVASIVE SPECIES ALLOWED

FOR ALL SEED MIXES, PROVIDE EROSION MAT ON SLOPES AND AREAS OF WASH OUT TYP. INSTALL AND PREP PER MANUFACTURER'S SPECIFICATIONS.

**Swale Seed Mix**  
 Stantec Native Plant Nursery 574-586-2412  
 stantec.com/native-plant-nursery

Botanical Name	Common Name
<i>Andropogon gerardi</i>	Big Bluestem
<i>Carex comosa</i>	Bistly Sedge
<i>Carex cristata</i>	Crested Owl Sedge
<i>Carex lasiocarpa</i>	Bottlebrush Sedge
<i>Carex spp.</i>	Prairie Sedge Mix
<i>Carex vulpinoidea</i>	Brown Fox Sedge
<i>Elymus virginicus</i>	Virginia Wild Rye
<i>Glyceria striata</i>	Fowl Manna Grass
<i>Panicum virgatum</i>	Switch Grass
<i>Scirpus atrovirens</i>	Dark Green Rush
<i>Spartina cynosuroides</i>	Wool Grass
<i>Spartina pectinata</i>	Prairie Cord Grass

**Temporary Cover:**

Botanical Name	Common Name
<i>Avena sativa</i>	Common oat
<i>Lolium multiflorum</i>	Annual Rye

**Forbs:**

Botanical Name	Common Name
<i>Alisma spp.</i>	Water Plantain (Various Mix)
<i>Asclepias incarnata</i>	Swamp Milkweed
<i>Coeocephalus tripters</i>	Tall Coreopsis
<i>Eudrochium maculatum</i>	Spotted Joe-Pye Weed
<i>Iris virginica</i>	Blue Flag
<i>Liatris spicata</i>	Marsh Blazing Star
<i>Lobelia cardinalis</i>	Cardinal Flower
<i>Lobelia sp.</i>	Great Blue Lobelia
<i>Lycopus americanus</i>	Common Water horehound
<i>Pycnanthemum virginicum</i>	Common Mountain Mint
<i>Rudbeckia triloba</i>	Brown-Eyed Susan
<i>Sagittaria latifolia</i>	Common Arrowhead
<i>Senna hebecarpa</i>	Wild Senna
<i>Silphium terebinthinaceum</i>	Prairie Dock
<i>Symphoricarpos novae-angliae</i>	New England Aster
<i>Verbena hastata</i>	Blue Vervain
<i>Zizia aurea</i>	Golden Alexanders

**Economy Prairie Seed Mix**  
 Stantec Native Plant Nursery 574-586-2412  
 stantec.com/native-plant-nursery

Botanical Name	Common Name
<i>Andropogon gerardi</i>	Big Bluestem
<i>Bouteloua curtipendula</i>	Side Oats Grama
<i>Carex spp.</i>	Prairie Sedge Mix
<i>Elymus canadensis</i>	Canada Wild Rye
<i>Panicum virgatum</i>	Switch Grass
<i>Schizachyrium scoparium</i>	Little Bluestem
<i>Sorghastrum nutans</i>	Indian Grass

**Temporary Cover:**

Botanical Name	Common Name
<i>Avena sativa</i>	Common oat
<i>Lolium multiflorum</i>	Annual Rye

**Forbs & Shrubs:**

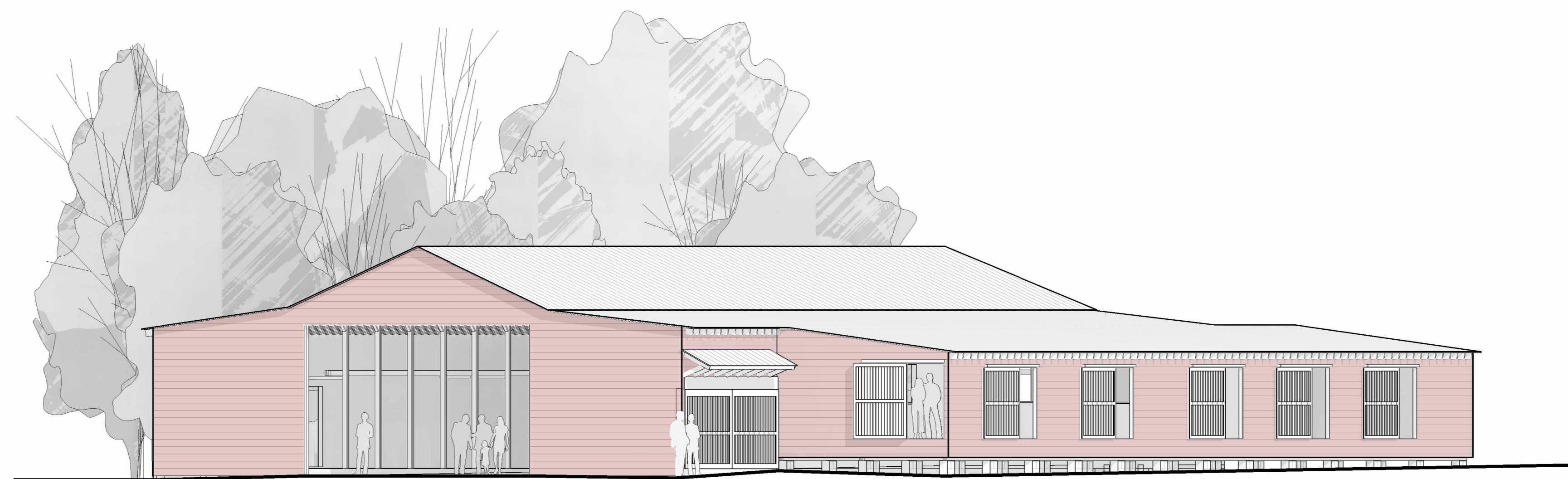
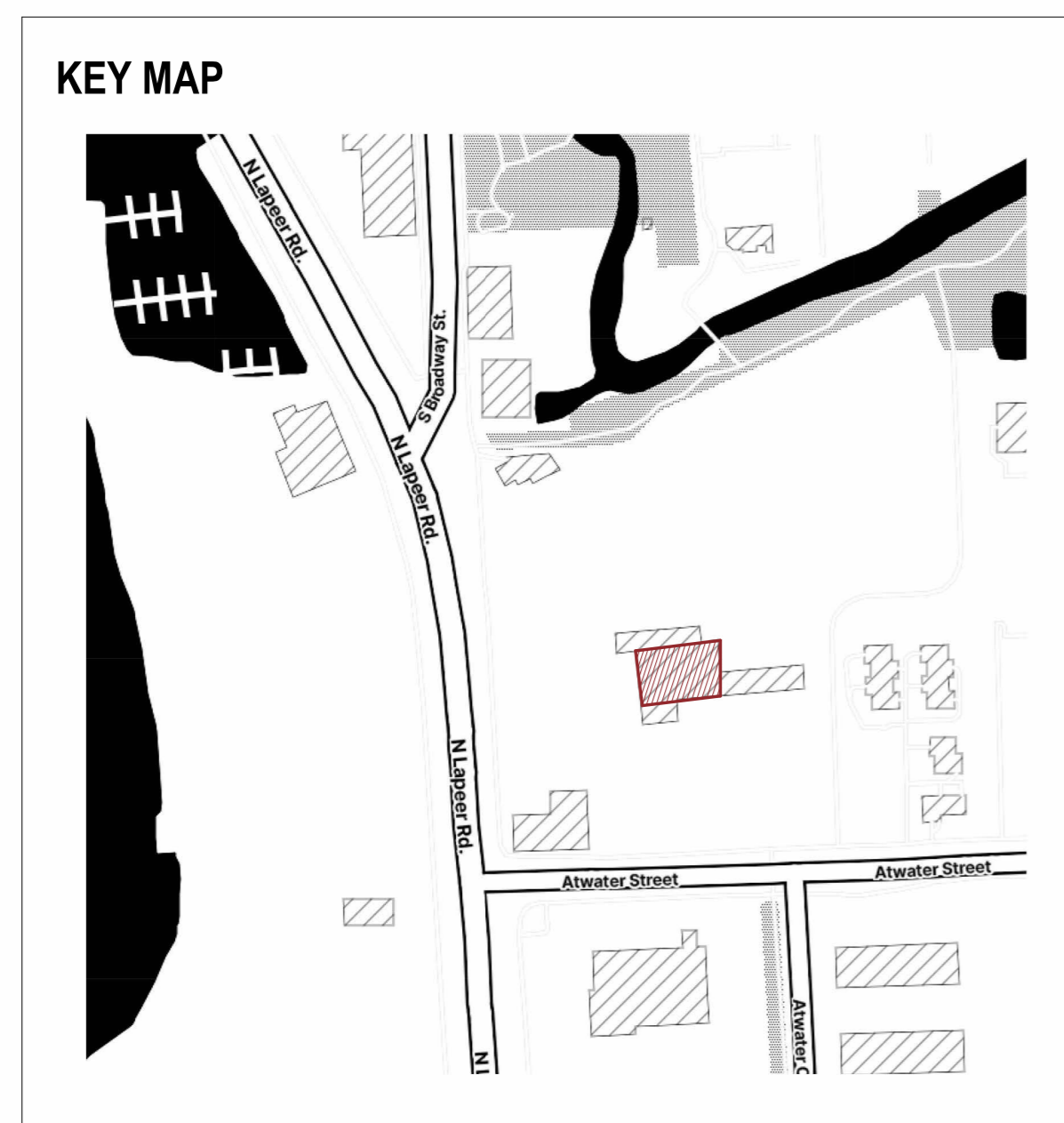
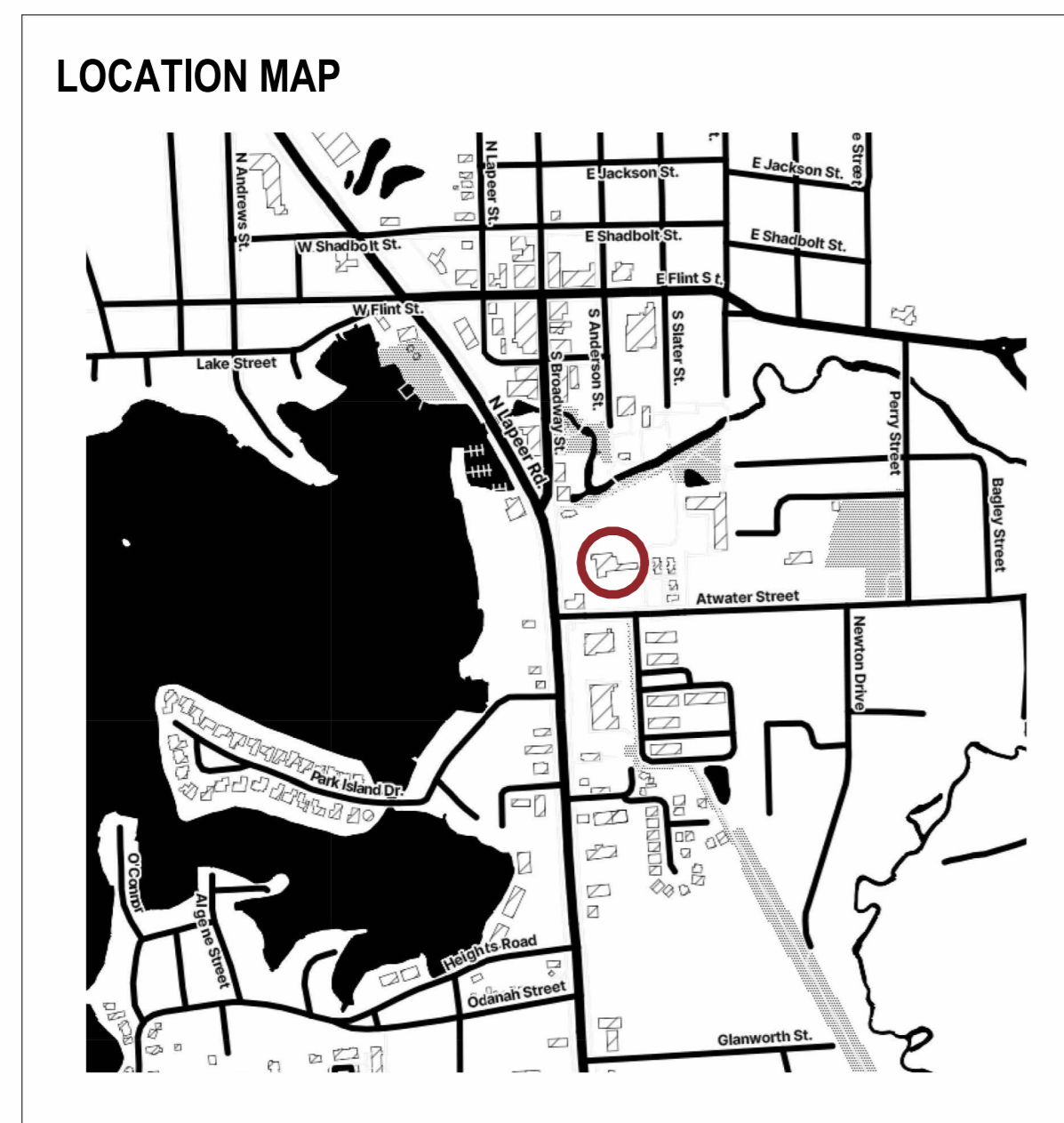
Botanical Name	Common Name
<i>Asclepias syriaca</i>	Common Milkweed
<i>Asclepias tuberosa</i>	Butterfly Weed
<i>Chamaecrista fasciculata</i>	Partridge Pea
<i>Coeocephalus lanceolata</i>	Sand Coreopsis
<i>Coreopsis grandiflora</i>	Broad-leaved Purple Coneflower
<i>Helianthus annuus</i>	False Sunflower
<i>Lupinus perennis</i>	Wild Lupine
<i>Monarda fistulosa</i>	Wild Bergamot
<i>Penstemon digitalis</i>	Fogwelve Beard Tongue
<i>Pycnanthemum virginicum</i>	Common Mountain Mint
<i>Ratibida pinnata</i>	Yellow Coneflower
<i>Rudbeckia hirta</i>	Black-Eyed Susan
<i>Solidago speciosa</i>	Showy Goldenrod
<i>Symphoricarpos laeve</i>	Smoother Blue Aster
<i>Symphoricarpos novae-angliae</i>	New England Aster

PLANT SCHEDULE	QTY	UNIT	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER	SPACING	DESIGNATION	REMARKS	%	GENUS (%)
<b>DECIDUOUS TREES</b>											
A03	4	ea	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3" CAL	B&B	PER PLAN	NATIVE		17.4%	17.4%
CA3	3	ea	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	3" CAL	B&B	PER PLAN	NATIVE		13.0%	13.0%
GB3	2	ea	GINKGO BILOBA	MAIDENHAIR TREE	3" CAL	B&B	PER PLAN	NON-NATIVE	MALE ONLY	8.7%	8.7%
GT3	1	ea	GLEDITSIA TRIACANTHOS NERMIS 'SKYCOLE'	SKYLINE HONEY LOCUST	3" CAL	B&B	PER PLAN	NATIVE	THORNLESS	4.3%	4.3%
LSS3	3	ea	LIQUIDAMBAR STYRACIFLUA 'SLENDER SILHOUETTE'	SLENDER SILHOUETTE SWEET GUM	3" CAL	B&B	PER PLAN	NON-NATIVE		13.0%	13.0%
GB3	3	ea	QUERCUS BICOLOR	SWAMP WHITE OAK	3" CAL	B&B	PER PLAN	NATIVE		13.0%	13.0%
<b>SUBTOTAL:</b>	<b>16</b>										
<b>EVERGREEN TREES</b>											
PG6	1	ea	PICEA GLAUCA	WHITE SPRUCE	6" HT.	B&B	PER PLAN	NATIVE		4.3%	4.3%
<b>SUBTOTAL:</b>	<b>1</b>										
<b>ORNAMENTAL TREES</b>											
ACA2	1	ea	AMELANCHIER CANADENSIS	SHADBLow SERVICEBERRY	2" CAL	B&B	PER PLAN	NATIVE		4.3%	4.3%
AT2	3	ea	ASIMINA TRILOBA	PAWPAW	2" CAL	B&B	PER PLAN	NATIVE		13.0%	13.0%
CC2	2	ea	CERCIS CANADENSIS	EASTERN REDBUD	2" CAL	B&B	PER PLAN	NATIVE		8.7%	8.7%
<b>SUBTOTAL:</b>	<b>6</b>										
<b>SHRUBS</b>											
JH6	7	ea	JUNIPERUS CHINENSIS 'HETZI COLUMNARIS'	HETZI COLUMN JUNPER	6" HT.	B&B	36" O.C.	NON-NATIVE		100.0%	100.0%
<b>ALL TREES: 78.3% NATIVE, 0.0% ADAPTED NATIVE, 21.7% NON-NATIVE</b>											

S:\PROJECTS\2020\004-LAKE ORION LUMBER-FEEDING SITE PLANS\1-10 LANDSCAPE-3000\4666\_PLOT DATE: 4/29/2020 BY: Scott Sney

# PUD SUBMITTAL: LUMBER YARD AT PAINT CREEK MAIN BARN & ANNEX

215 S. BROADWAY ST.  
LAKE ORION, MI 48362



**BUILDING MANAGED BY:**  
LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY  
CONTACT: MATTHEW GIBB  
EMAIL: GIBB@DOWNTOWNLAKEORION.ORG  
PHONE: (248) 646-0307

**PROJECT TEAM**  
**INTERIOR DESIGNER & ARCHITECT:**  
DAVIS & DAVIS  
30500 NORTHWESTERN HWY, SUITE 311  
FARMINGTON HILLS, MI 48334  
  
PHONE: (248) 855-7040  
  
JEREMIAH DOORBOS  
JEREMIAH@DAVISINTERIORDESIGN.COM  
  
CHANCE LAPRATT  
CHANCE@DAVISINTERIORDESIGN.COM

**NOT FOR CONSTRUCTION**  
  
THESE "PUD" DRAWINGS ARE INTENDED TO DOCUMENT EXISTING CONDITIONS AS OBSERVED AT THE TIME OF SURVEY OR INVESTIGATION. THEY REFLECT FIELD OBSERVATIONS TO THE BEST EXTENT POSSIBLE.  
  
THESE DOCUMENTS ARE PROVIDED FOR RECORD AND REFERENCE PURPOSES ONLY. THEY ARE NOT INTENDED FOR PERMITTING OR FUTURE DESIGN WITHOUT FURTHER VERIFICATION. ALL DIMENSIONS, LOCATIONS, AND CONDITIONS SHOWN SHOULD BE FIELD-VERIFIED BY OTHERS PRIOR TO ANY FUTURE WORK OR DESIGN ASSUMPTIONS.

**ALTERNATES AND SEPARATE PRICING**  
  
PRICING TO BE PROVIDED FOR SPECIFIED ALTERNATE

DRAWING INDEX		
NO.	DRAWING NAME	ISSUANCE
		PUD 04.24.26
ARCHITECTURAL		
A000	COVER SHEET	•
A100	FLOOR PLANS	•
A300	BUILDING ELEVATIONS	•
A301	BUILDING ELEVATIONS	•

ARCHITECT  
**DAVIS & DAVIS**  
30500 NORTHWESTERN HWY, SUITE 311  
FARMINGTON HILLS, MICHIGAN 48334  
T. 248.855.7040  
WWW.DAVISINTERIORDESIGN.COM

CONSULTANTS

SEAL

DEPARTMENT OF BUILDINGS SCAN



**LUMBER YARD AT  
PAINT CREEK  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362**

**ISSUE**  
Rev. Issued for Date  
1 PUD 04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

**PROJECT NUMBER**  
**25121**

**SHEET TITLE**  
**COVER SHEET**

**SHEET NUMBER**  
**A000**



**LUMBER YARD AT  
PAINT CREEK**  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362

Rev. Issued for  
1 PUD

Date  
04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

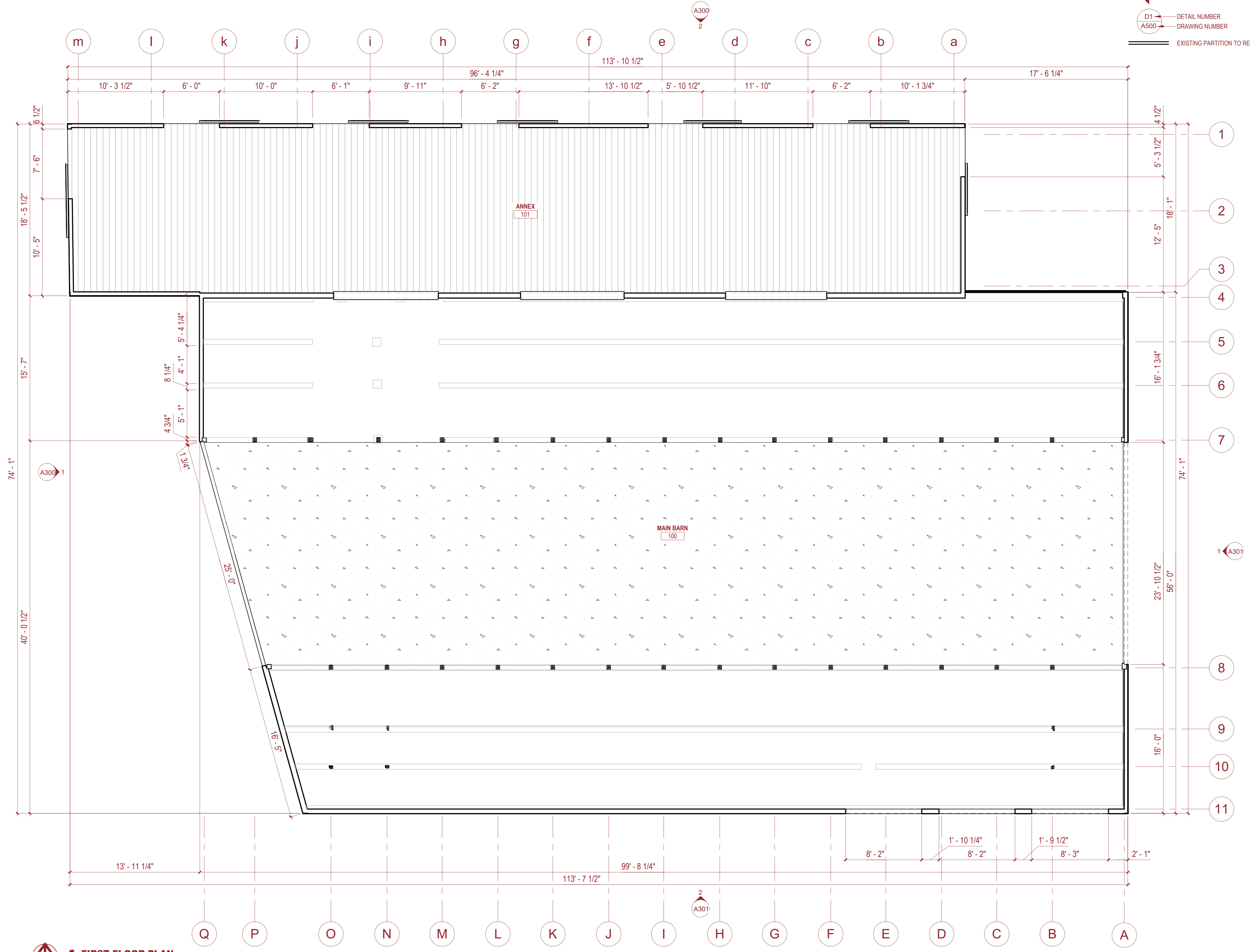
**25121**

**FLOOR PLANS**

**A100**

**CONSTRUCTION LEGEND**

- AREA NOT IN CONTRACT
- REFERENCE NOTES
- INDICATES ROOM OR AREA NAME
- INDICATES ROOM OR AREA NUMBER
- ELEVATION NUMBER
- DRAWING NUMBER
- DETAIL NUMBER
- DRAWING NUMBER
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR & FRAME TO REMAIN. PROTECT DURING CONSTRUCTION.
- INDICATES ALIGNMENT OF FINISHED SURFACES
- INDICATES PARTITION TYPE (SEE DRAWING A-601 FOR SPECIFICATIONS AND DETAILS)
- GLASS (DEMOUNTABLE) PARTITION
- INDICATES DOOR NUMBER
- NEW DOOR AND FRAME
- INDICATES MILLWORK (SEE ELEVATIONS AND DETAILS)



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



**LUMBER YARD AT  
PAINT CREEK  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362**

Rev. Issued for  
1 PUD

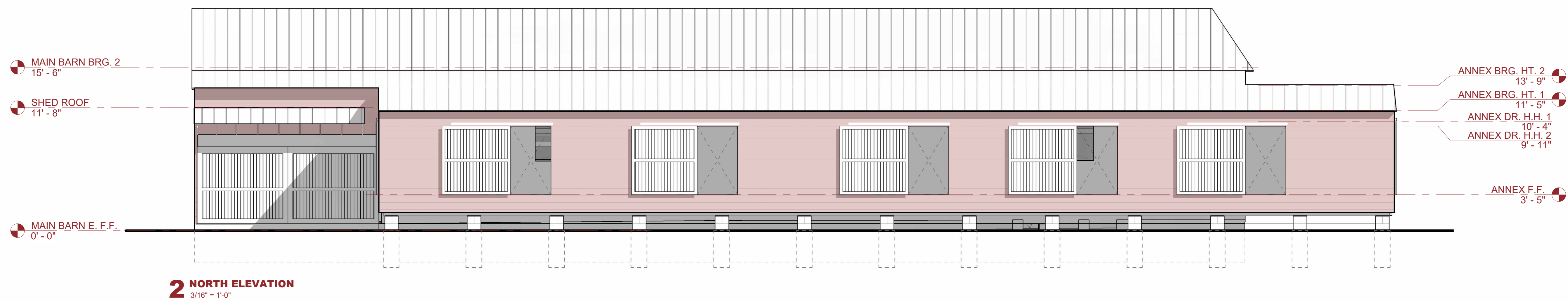
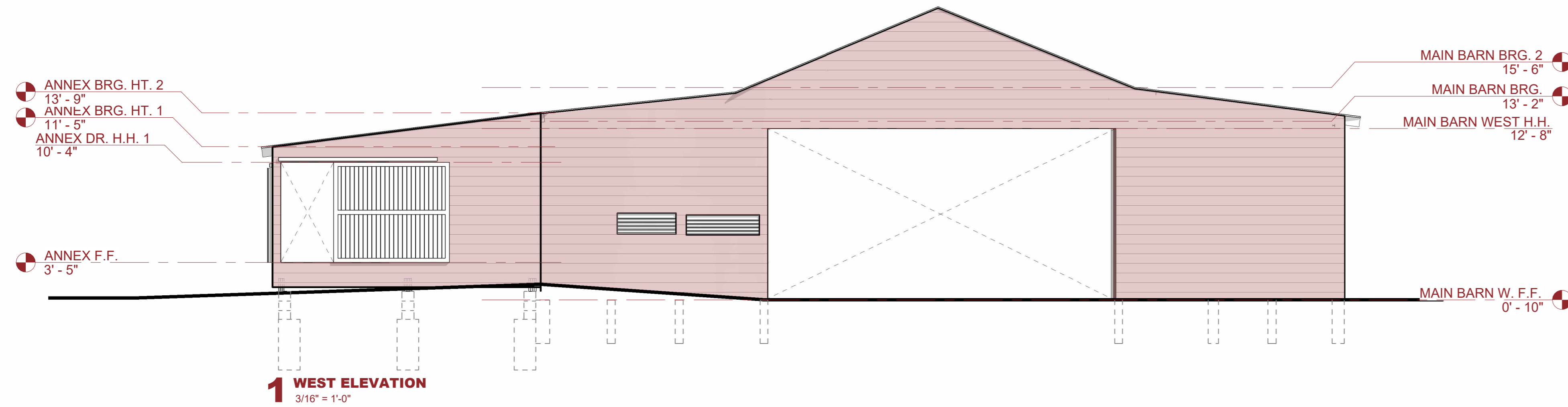
Date  
04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

**25121**

**BUILDING ELEVATIONS**

**A300**





**LUMBER YARD AT  
PAINT CREEK**  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362

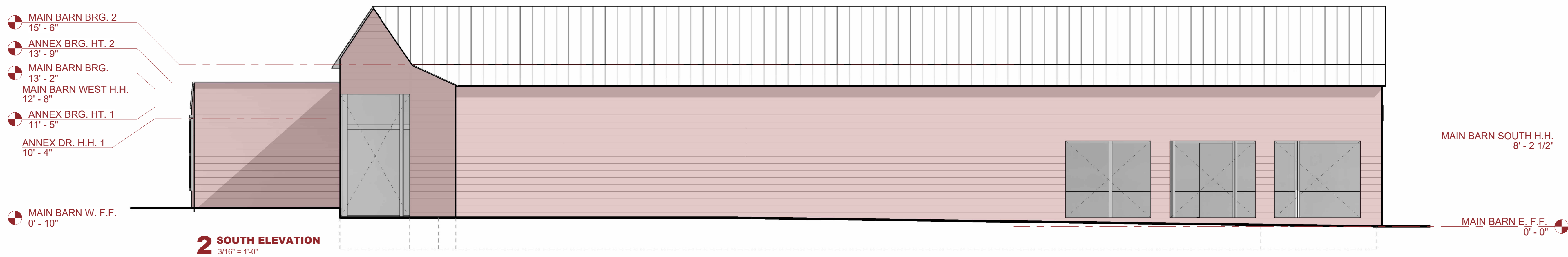
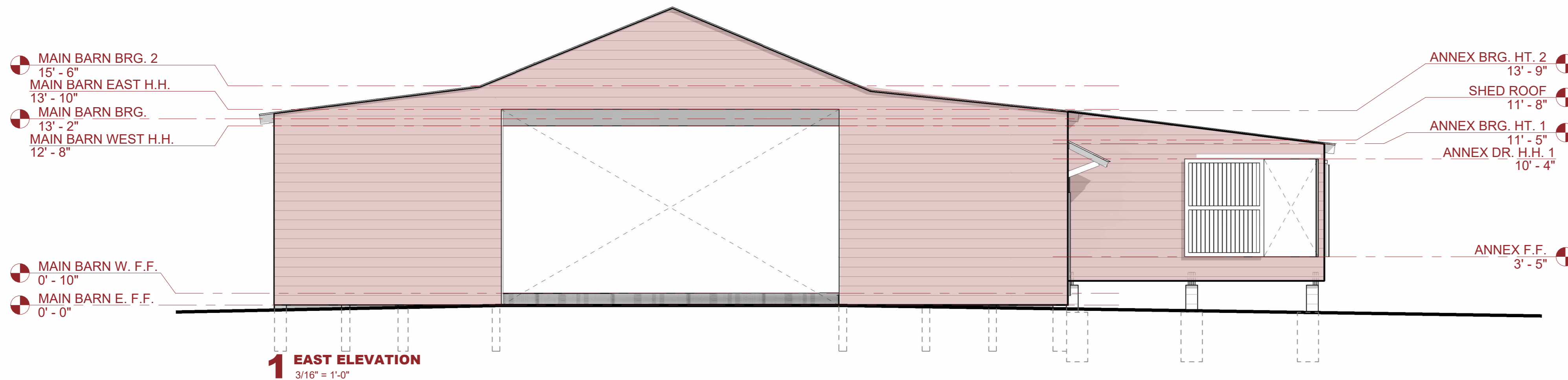
Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

**25121**

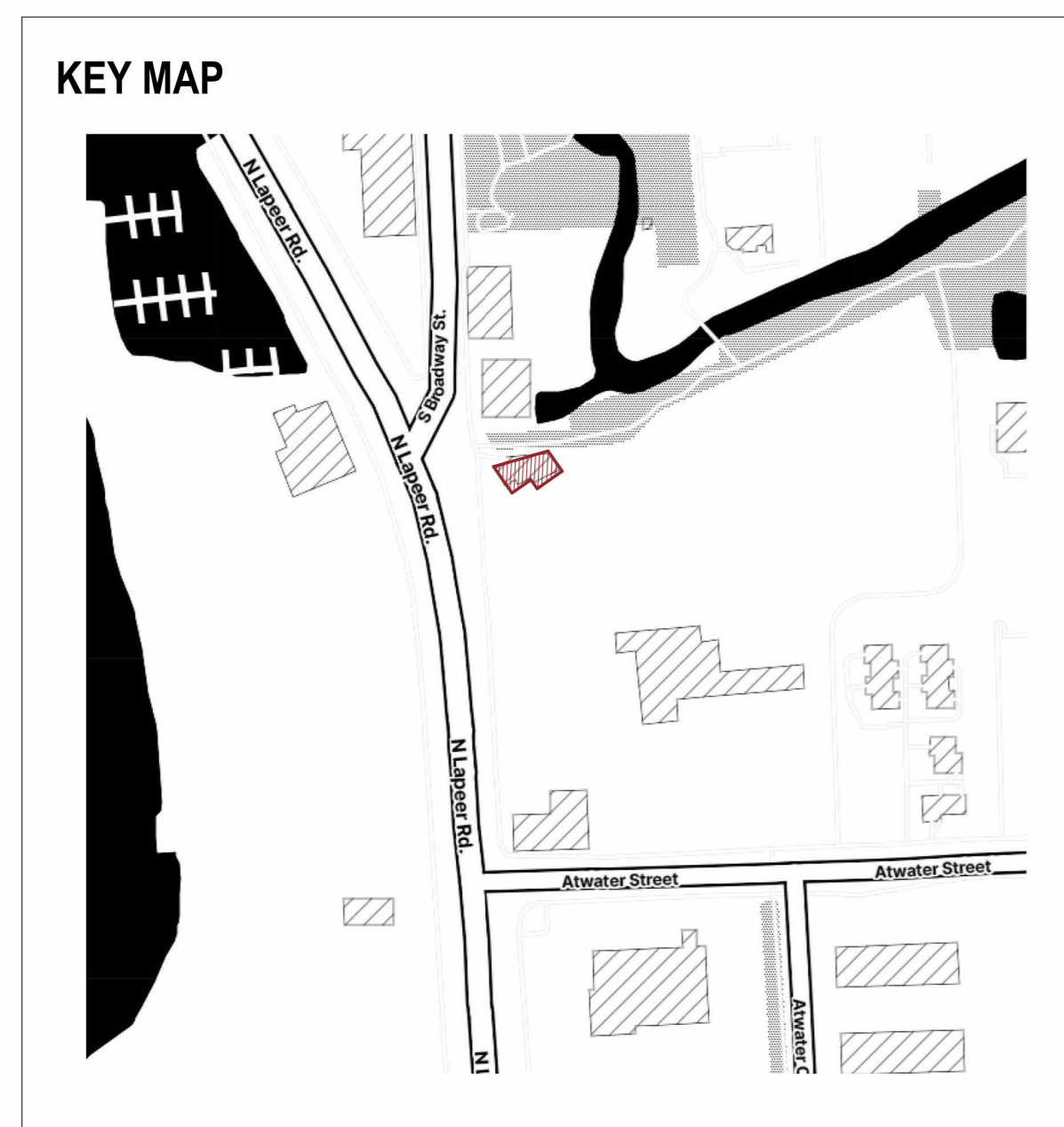
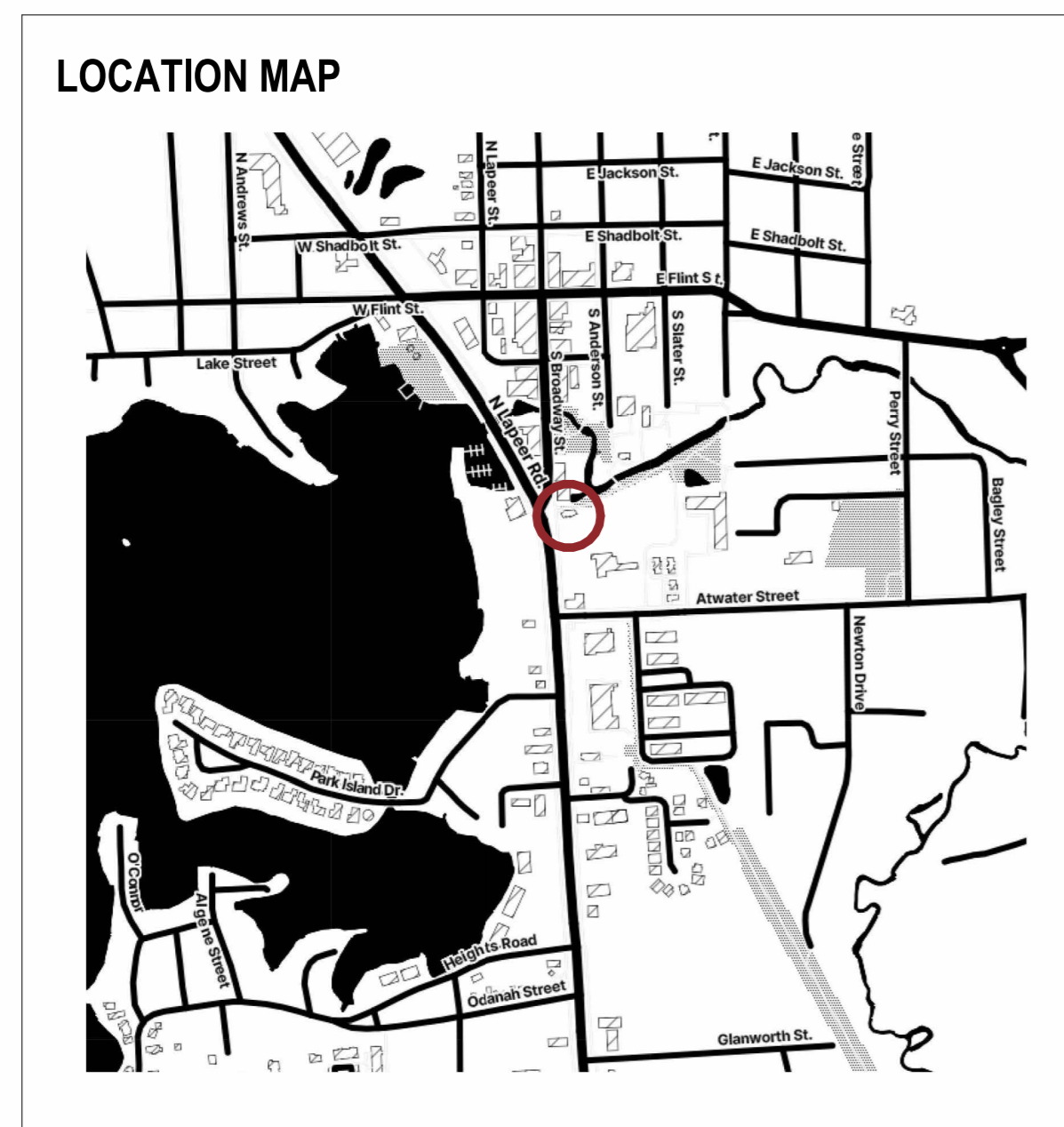
**BUILDING ELEVATIONS**

**A301**



# PUD SUBMITTAL: LUMBER YARD AT PAINT CREEK THE BAKERY BUILDING

215 S. BROADWAY ST.  
LAKE ORION, MI 48362



**BUILDING MANAGED BY:**  
LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY  
CONTACT: MATTHEW GIBB  
EMAIL: GIBB@DOWNTOWNLAKEORION.ORG  
PHONE: (248) 646-0307

**PROJECT TEAM**  
**INTERIOR DESIGNER & ARCHITECT:**  
DAVIS & DAVIS  
30500 NORTHWESTERN HWY, SUITE 311  
FARMINGTON HILLS, MI 48334  
  
PHONE: (248) 855-7040  
  
JEREMIAH DOORNBOS  
JEREMIAH@DAVISINTERIORDESIGN.COM  
  
CHANCE LAPRATT  
CHANCE@DAVISINTERIORDESIGN.COM

**NOT FOR CONSTRUCTION**  
  
THESE "PUD" DRAWINGS ARE INTENDED TO DOCUMENT EXISTING CONDITIONS AS OBSERVED AT THE TIME OF SURVEY OR INVESTIGATION. THEY REFLECT FIELD OBSERVATIONS TO THE BEST EXTENT POSSIBLE.  
  
THESE DOCUMENTS ARE PROVIDED FOR RECORD AND REFERENCE PURPOSES ONLY. THEY ARE NOT INTENDED FOR PERMITTING OR FUTURE DESIGN WITHOUT FURTHER VERIFICATION. ALL DIMENSIONS, LOCATIONS, AND CONDITIONS SHOWN SHOULD BE FIELD-VERIFIED BY OTHERS PRIOR TO ANY FUTURE WORK OR DESIGN ASSUMPTIONS.

**ALTERNATES AND SEPARATE PRICING**  
  
PRICING TO BE PROVIDED FOR SPECIFIED ALTERNATE

DRAWING INDEX		
NO.	DRAWING NAME	ISSUANCE
		PUD 04.24.26
ARCHITECTURAL		
A000	COVER SHEET	•
A101	THE BAKERY BUILDING FLOOR PLAN	•
A102	THE BAKERY BUILDING BASEMENT PLAN	•
A300	THE BAKERY BUILDING ELEVATIONS	•
A301	THE BAKERY BUILDING ELEVATIONS	•

ARCHITECT  
**DAVIS & DAVIS**  
30500 NORTHWESTERN HWY, SUITE 311  
FARMINGTON HILLS, MICHIGAN 48334  
T. 248.855.7040  
WWW.DAVISINTERIORDESIGN.COM

CONSULTANTS

SEAL

DEPARTMENT OF BUILDINGS SCAN

PROJECT



LUMBER YARD AT  
PAINT CREEK  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362

**ISSUE**  
Rev. Issued for Date  
1 PUD 04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

**PROJECT NUMBER**  
**25121**

**SHEET TITLE**  
**COVER SHEET**

**SHEET NUMBER**  
**A000**



**LUMBER YARD AT  
 PAINT CREEK  
 215 S. BROADWAY ST.  
 LAKE ORION, MI 48362**

ISSUE

Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL  
 CHECKED BY: JD

PROJECT NUMBER

**25121**

SHEET TITLE

**THE BAKERY BUILDING  
 FLOOR PLAN**

SHEET NUMBER

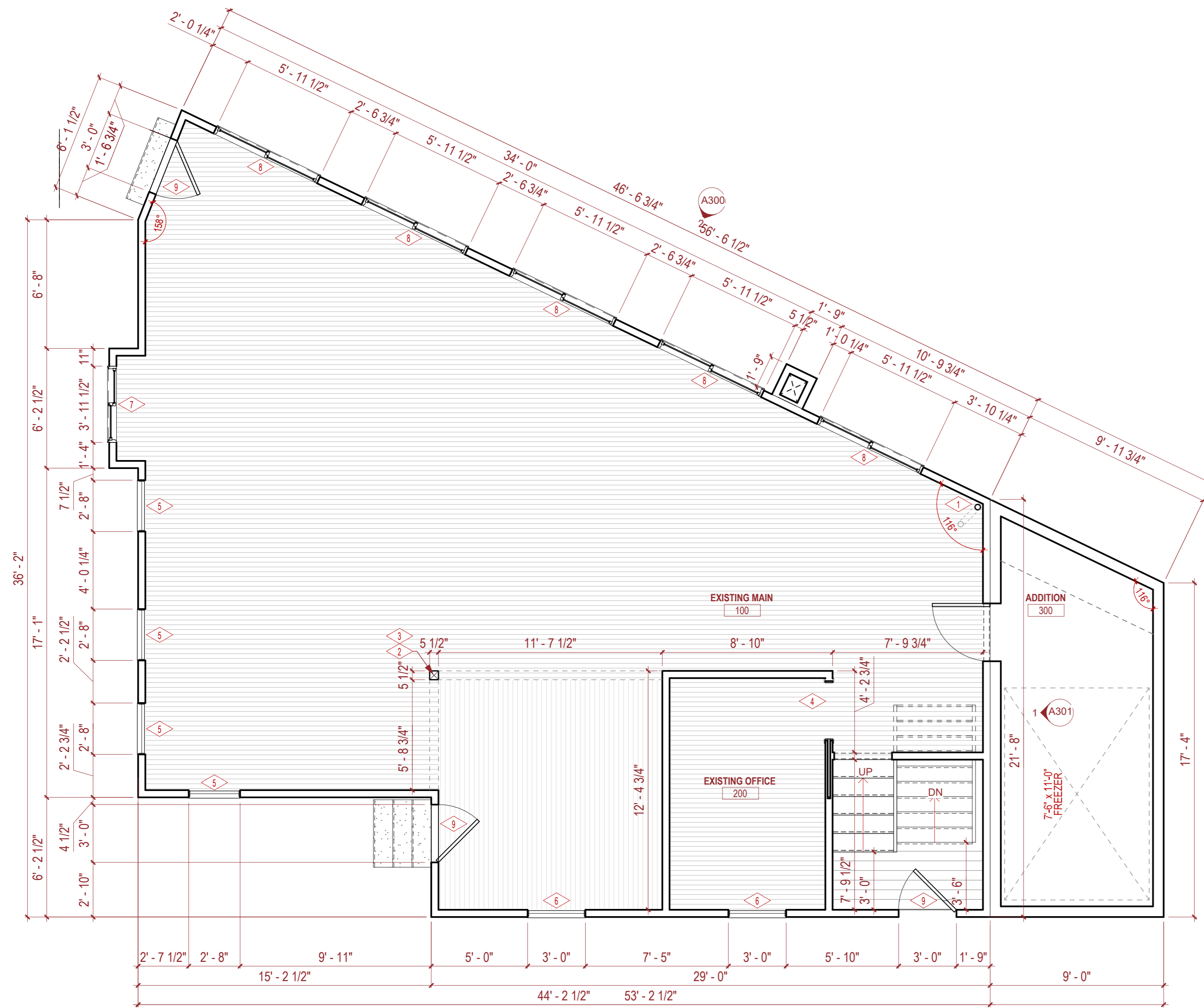
**A101**

**CONSTRUCTION LEGEND**

- AREA NOT IN CONTRACT
- REFERENCE NOTES
- NAME - INDICATES ROOM OR AREA NAME
- X.XX - INDICATES ROOM OR AREA NUMBER
- D1 - ELEVATION NUMBER  
A500 - DRAWING NUMBER
- D1 - DETAIL NUMBER  
A500 - DRAWING NUMBER
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR & FRAME TO REMAIN. PROTECT DURING CONSTRUCTION.
- INDICATES ALIGNMENT OF FINISHED SURFACES
- INDICATES PARTITION TYPE (SEE DRAWING A-601 FOR SPECIFICATIONS AND DETAILS)
- GLASS (DEMOUNTABLE) PARTITION
- INDICATES DOOR NUMBER  
NEW DOOR AND FRAME
- INDICATES MILLWORK (SEE ELEVATIONS AND DETAILS)

**AS-BUILT REFERENCE NOTES**

- EXISTING WASTE STACK
- EXISTING "6 x 6" POST/COLUMN
- EXISTING "6 x 12" HEADER
- EXISTING OFFICE POCKET DOOR
- EXISTING 2'-8" x 5'-0" SINGLE-HUNG WINDOW
- EXISTING 3'-0" x 5'-0" SINGLE-HUNG WINDOW
- EXISTING 4'-0" x 2'-3" SLIDING WINDOW
- EXISTING 6'-0" x 4'-8" SLIDING WINDOW
- EXISTING 3'-0" x 6'-8" DOOR



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



**LUMBER YARD AT  
 PAINT CREEK  
 215 S. BROADWAY ST.  
 LAKE ORION, MI 48362**

Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL  
 CHECKED BY: JD

**25121**

**THE BAKERY BUILDING  
 BASEMENT PLAN**

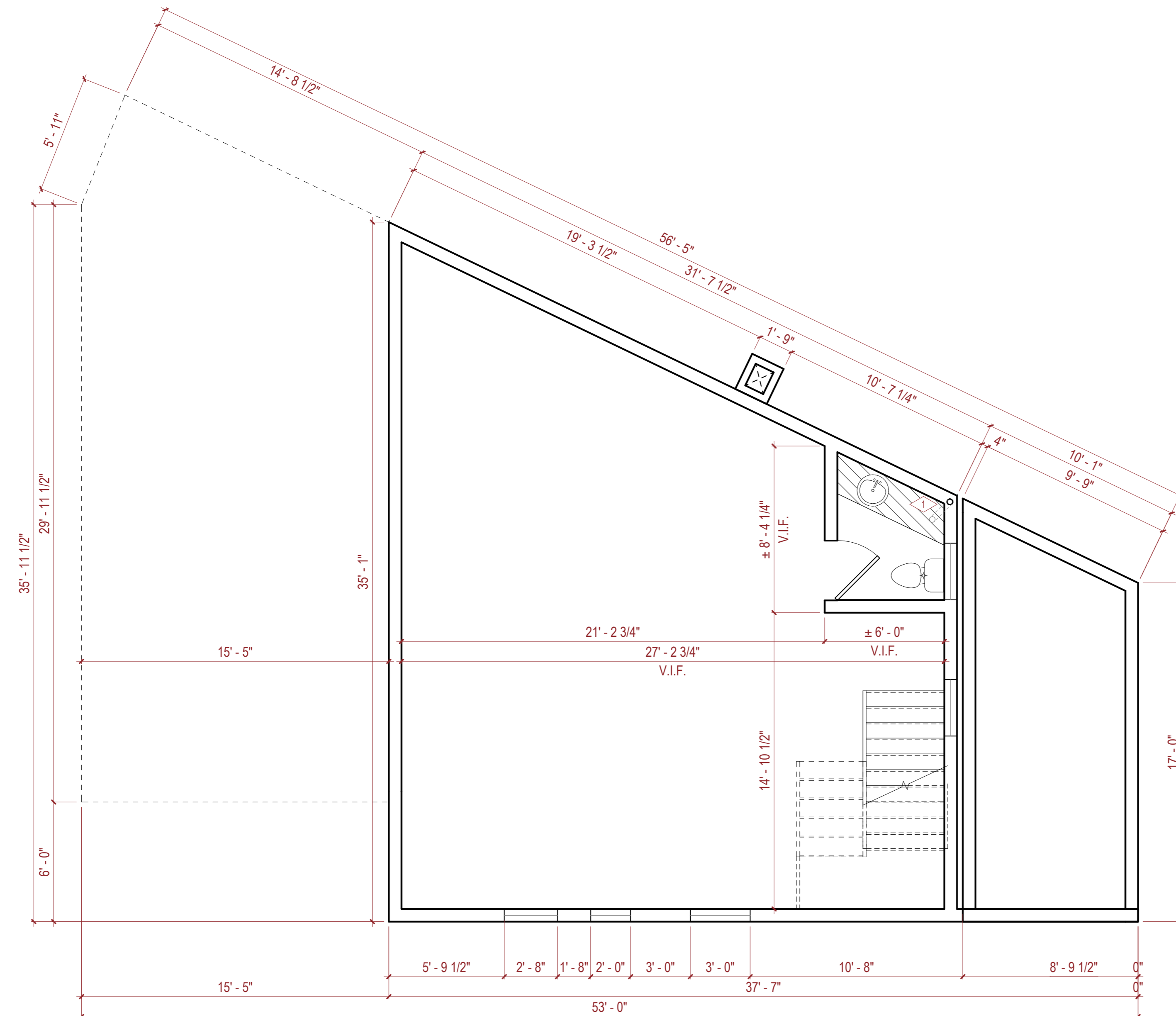
**A102**

**CONSTRUCTION LEGEND**

- AREA NOT IN CONTRACT
- REFERENCE NOTES
- NAME INDICATES ROOM OR AREA NAME
- X.XX INDICATES ROOM OR AREA NUMBER
- D1 ELEVATION NUMBER
- A500 DRAWING NUMBER
- D1 DETAIL NUMBER
- A500 DRAWING NUMBER
- EXISTING PARTITION TO REMAIN
- EXISTING DOOR & FRAME TO REMAIN. PROTECT DURING CONSTRUCTION.
- INDICATES ALIGNMENT OF FINISHED SURFACES
- INDICATES PARTITION TYPE (SEE DRAWING A-601 FOR SPECIFICATIONS AND DETAILS)
- GLASS (DEMOUNTABLE) PARTITION
- INDICATES DOOR NUMBER
- NEW DOOR AND FRAME
- INDICATES MILLWORK (SEE ELEVATIONS AND DETAILS)

**AS-BUILT REFERENCE NOTES**

- EXISTING WASTE STACK
- EXISTING "6 x 6" POST/COLUMN
- EXISTING "6 x 12" HEADER
- EXISTING OFFICE POCKET DOOR
- EXISTING 2'-8" x 5'-0" SINGLE-HUNG WINDOW
- EXISTING 3'-0" x 5'-0" SINGLE-HUNG WINDOW
- EXISTING 4'-0" x 2'-3" SLIDING WINDOW
- EXISTING 6'-0" x 4'-8" SLIDING WINDOW
- EXISTING 3'-0" x 6'-8" DOOR



**1 BASEMENT PLAN**  
 1/4" = 1'-0"



**LUMBER YARD AT  
PAINT CREEK  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362**

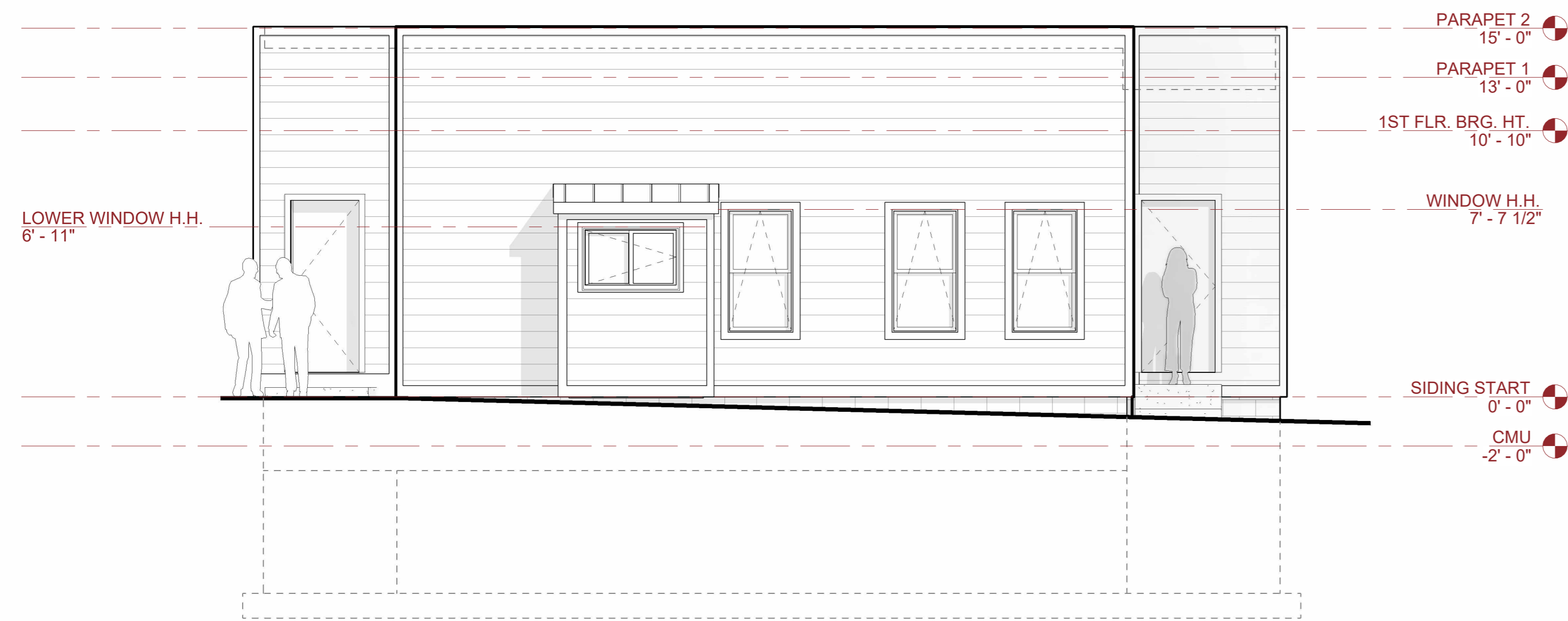
Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

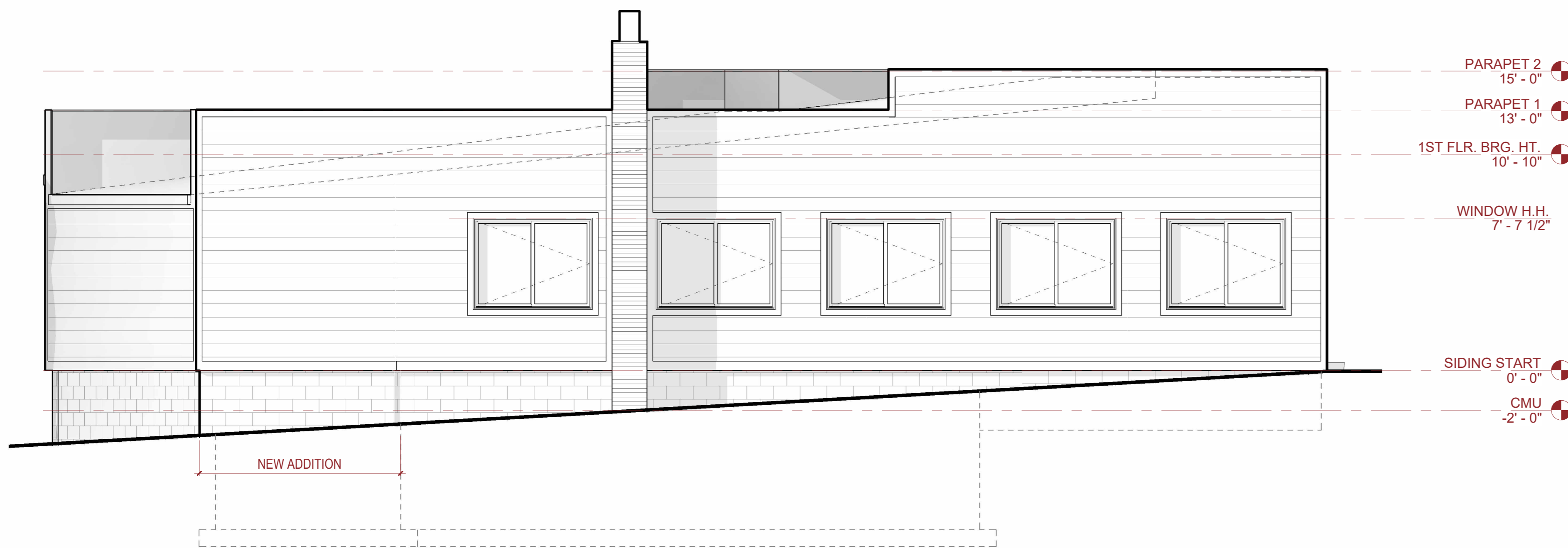
**25121**

**THE BAKERY BUILDING  
ELEVATIONS**

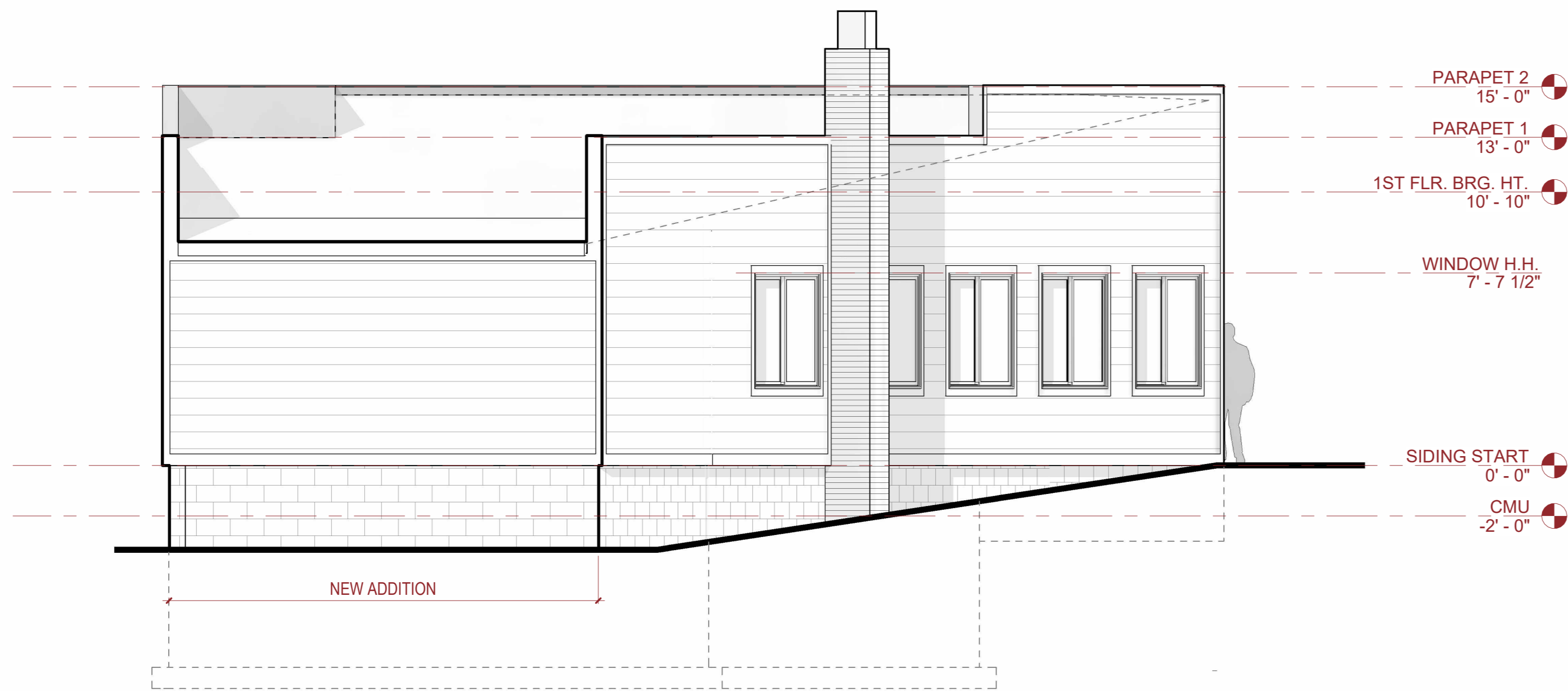
**A300**



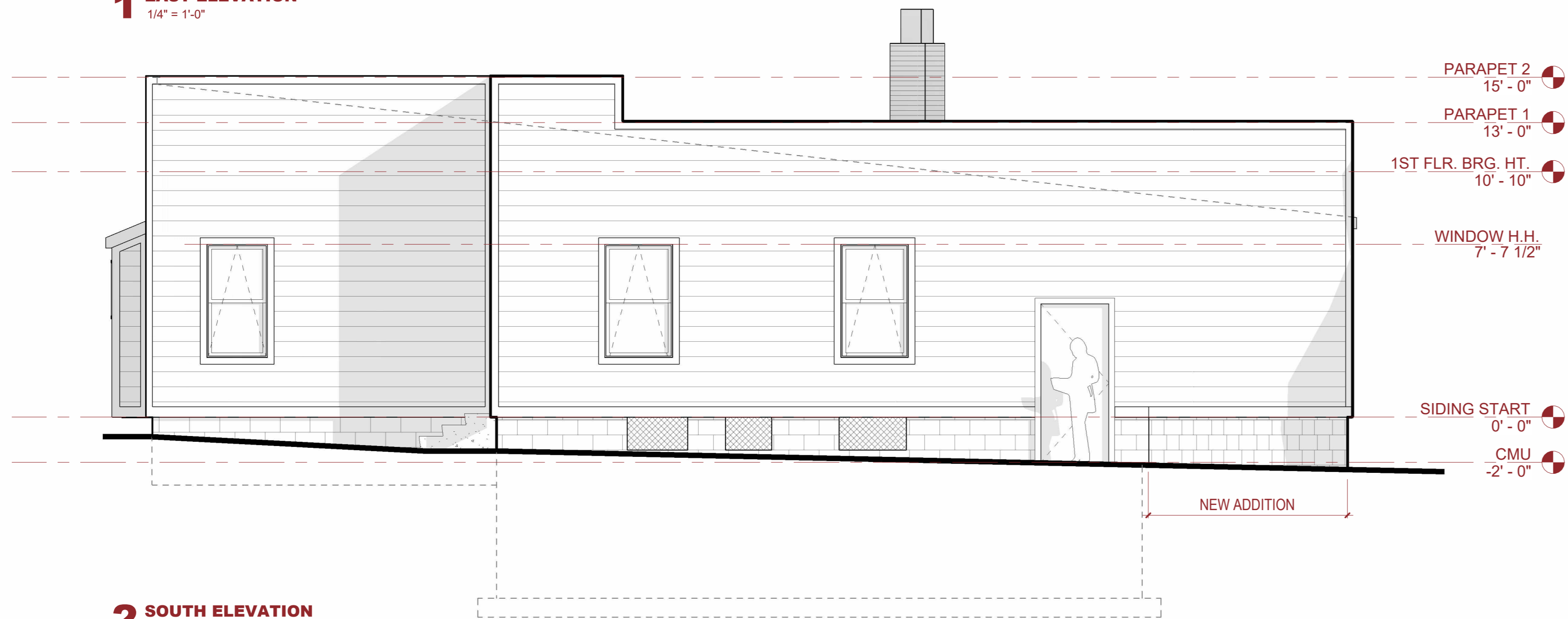
**1 WEST ELEVATION**  
1/4" = 1'-0"



**2 NORTH ELEVATION**  
1/4" = 1'-0"



**1 EAST ELEVATION**  
1/4" = 1'-0"



**2 SOUTH ELEVATION**  
1/4" = 1'-0"

ARCHITECT

**DAVIS & DAVIS**

30500 NORTHWESTERN HWY, SUITE 311  
FARMINGTON HILLS, MICHIGAN 48334  
T. 248.855.7040  
WWW.DAVISINTERIORDSIGN.COM

CONSULTANTS

SEAL

DEPARTMENT OF BUILDINGS SCAN

PROJECT



**LUMBER YARD AT  
PAINT CREEK  
215 S. BROADWAY ST.  
LAKE ORION, MI 48362**

ISSUE

Rev.	Issued for	Date
1	PUD	04/24/26

DRAWN BY: CWL  
CHECKED BY: JD

PROJECT NUMBER

**25121**

SHEET TITLE

**THE BAKERY BUILDING  
ELEVATIONS**

SHEET NUMBER

**A301**

DISCLAIMER:  
 ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. 2D DRAWINGS SHALL SUPERCEDE ALL ITEMS SHOWN ON 3D IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS NOT FOR CONSTRUCTION

NOT FOR  
 CONSTRUCTION



11251 SE 232nd AVE  
 DAMASCUS, OR 97089

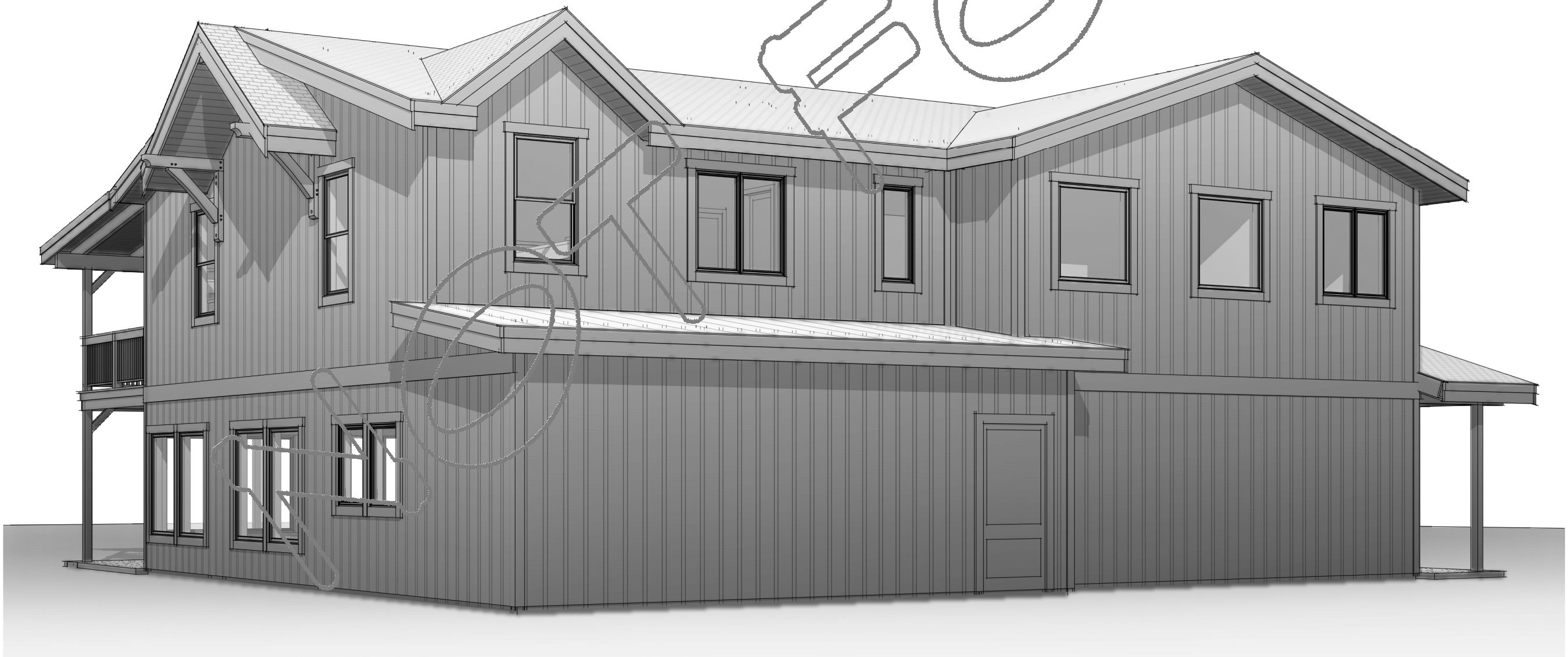
OWNERSHIP & USE OF DOCUMENTS:  
 THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.



1 3D EXTERIOR VIEW 1



2 3D EXTERIOR VIEW 2



3 3D EXTERIOR VIEW 3



4 3D EXTERIOR VIEW 4

Drawing Index

No.	Date	Description

RANCH  
 HOUSE 2

3D  
 EXTERIOR  
 VIEWS

A-003

DRAWN BY  
 CTR  
 18-10-2024 15:34:17

18-10-2024 15:34:17



OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index  
No. Date Description

RANCH HOUSE 2

3D INTERIOR VIEWS

A-004



1 3D INTERIOR VIEW - BAR 1



2 3D INTERIOR VIEW - BAR 2



3 3D INTERIOR VIEW - KITCHEN



4 3D INTERIOR VIEW - LOUNGE



5 3D INTERIOR VIEW - HALL

6 3D INTERIOR VIEW - BUNK ROOM



7 3D INTERIOR VIEW - BEDROOM

DISCLAIMER:  
ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. 2D DRAWINGS SHALL SUPERSEDE ALL ITEMS SHOWN ON 3D IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS NOT FOR CONSTRUCTION



NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description

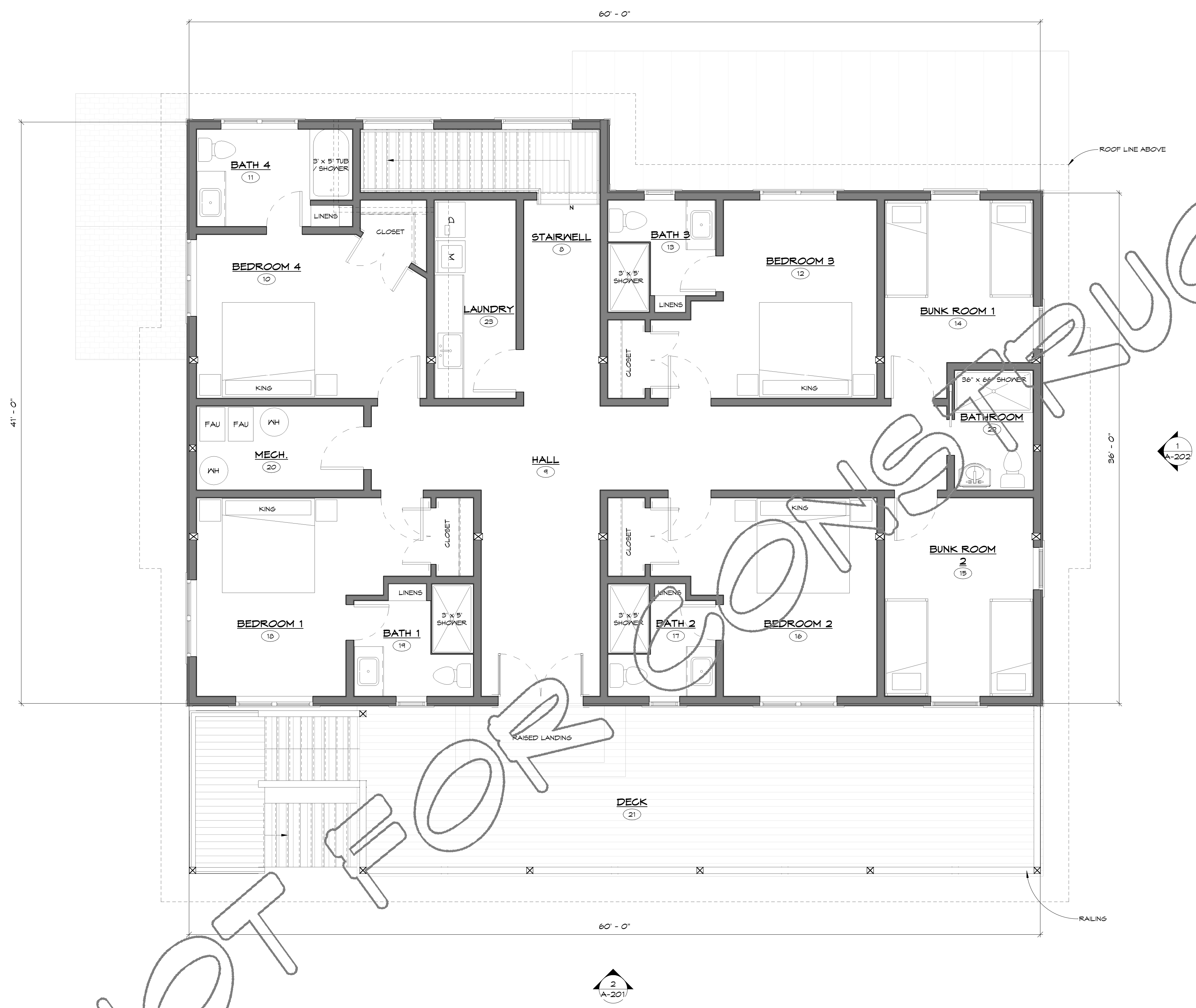
RANCH HOUSE 2

UPPER LEVEL

A-102

DRAWN BY  
CTR  
18-10-2024 1534-41

AREA - CONDITIONED SPACE	
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48".	
CONDITIONED	
MAIN LEVEL LIVING	2599 SF CONDITIONED
UPPER LEVEL LIVING	2211 SF CONDITIONED
	4710 SF
UNCONDITIONED	
DECK	576 SF UNCONDITIONED
PATIO	120 SF UNCONDITIONED
	1246 SF
GRAND TOTAL	6065 SF



1 UPPER LEVEL  
1/4" = 1'-0"

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

No. Date Description

RANCH HOUSE 2

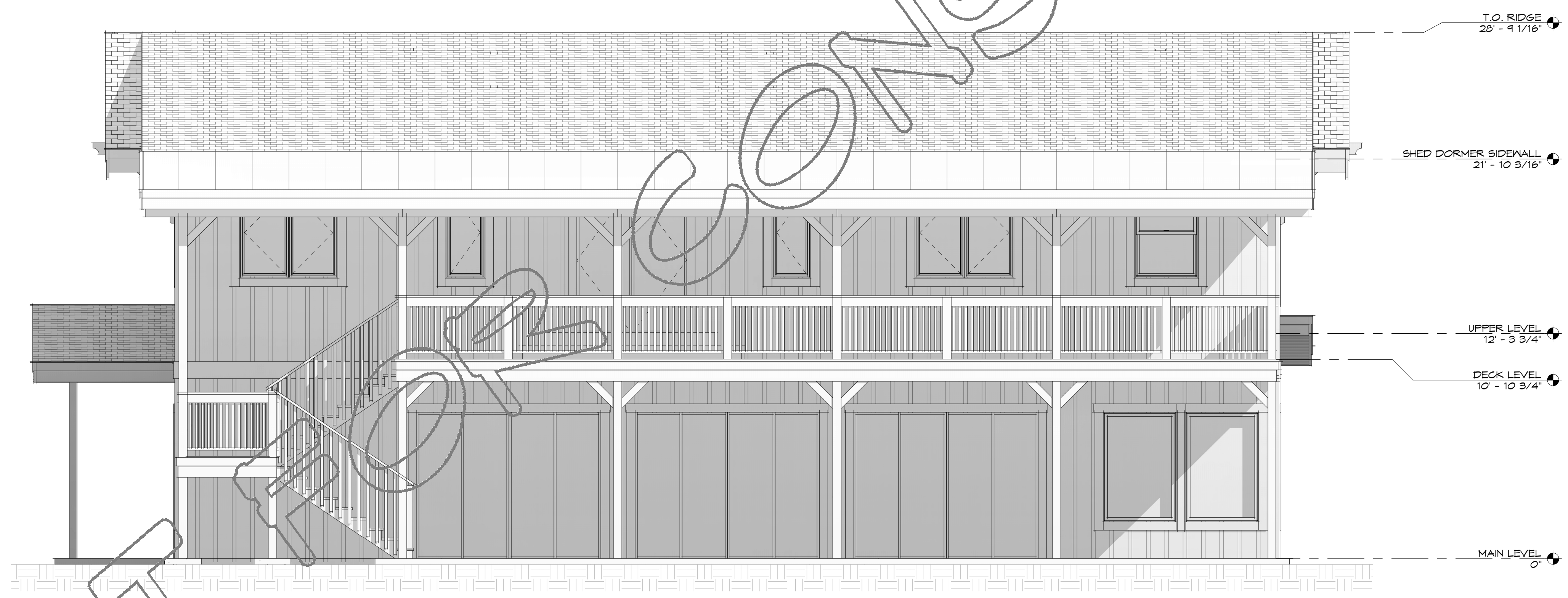
ELEVATIONS

A-201

DRAWN BY  
CTR  
18-10-2024 15:34:50



1 FRONT  
1/4" = 1'-0"



2 RIGHT  
1/4" = 1'-0"

NOT FOR CONSTRUCTION

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

No. Date Description

RANCH HOUSE 2

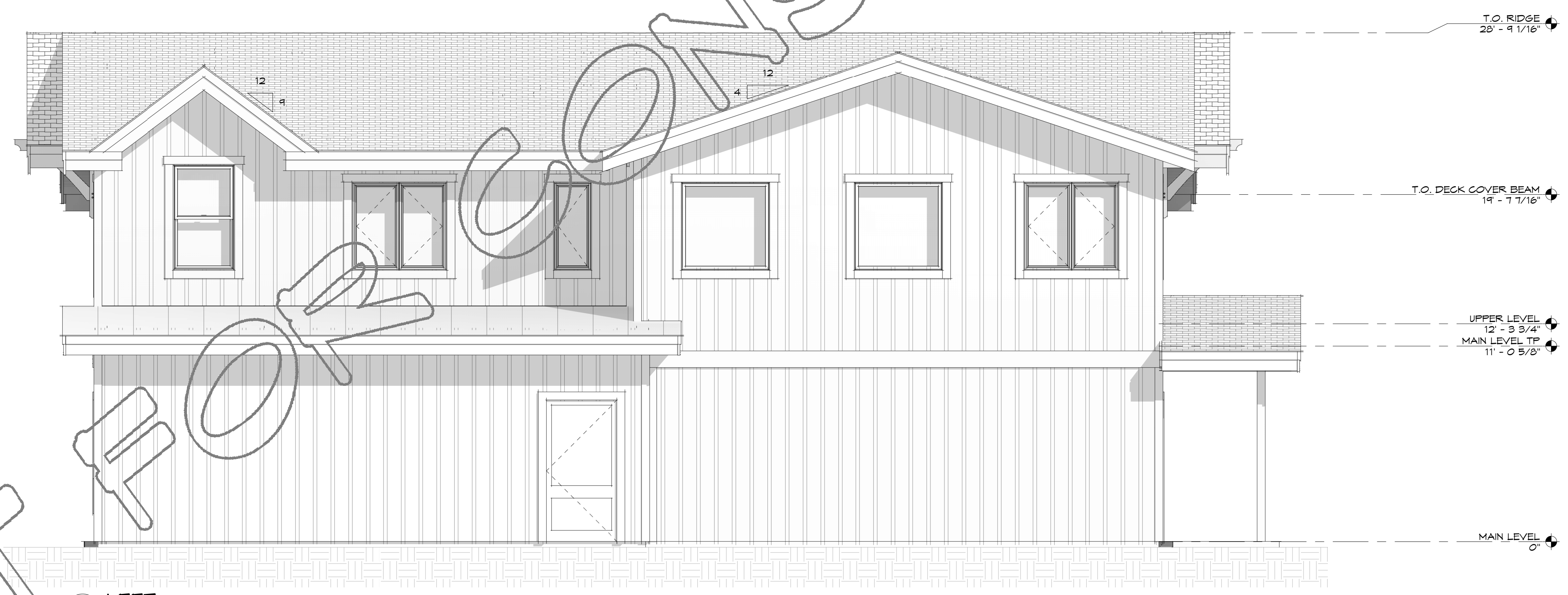
ELEVATIONS

A-202

DRAWN BY  
CTR  
18-10-2024 153456



1 REAR  
1/4" = 1'-0"



2 LEFT  
1/4" = 1'-0"

NOT FOR CONSTRUCTION

# GENERAL NOTES

- CONTACT EACH MUNICIPAL, GOVERNMENTAL, OR PRIVATE UTILITY COMPANIES TO DETERMINE THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
- SCHEDULE AND COORDINATE ALL SHUT DOWNS OF EXISTING UTILITIES WITH THE OWNER IN ADVANCE A MINIMUM OF SEVEN (7) DAYS PRIOR TO SHUT DOWN.
- PROVIDE ALL REQUIRED EROSION CONTROL MEASURES PRIOR TO ANY EXCAVATION.
- A CHEMICAL TOILET IS REQUIRED ON-SITE DURING CONSTRUCTION.
- OTHER WORK MAY BE PERFORMED UNDER A SEPARATE CONTRACT AT THE CLIENT'S PROPERTY. COORDINATE WITH ALL OTHER CONTRACTED TRADES SO AS TO NOT INTERFERE WITH THEIR WORK.
- ALL FASTENERS IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED.
- REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL REQUIREMENTS, SIZE, SPACING AND LOCATION OF ALL STRUCTURAL MEMBERS.
- STRICTLY FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS WHEN USING OR INSTALLING PRODUCTS.
- ALL DOOR AND WINDOW DIMENSIONS ARE APPROXIMATE. VERIFY MANUFACTURER SPECIFICATIONS FOR EXACT SIZE.
- USE 5/8" TYPE X GYPSUM WALL BOARD THROUGHOUT. PROVIDE WATER RESISTANT GYPSUM WALL BOARD IN RESTROOMS WITH SHOWERS. PROVIDE FRAMING AT 16" O.C. MAX AT CEILINGS WHERE WATER RESISTANT GYPSUM WALL BOARD IS INSTALLED.
- FIRE BLOCKING SHALL BE PROVIDED IN STUD CAVITIES OVER 10' IN HEIGHT.
- CONTACT DESIGNER OR ENGINEER OF RECORD TO CONFIRM DIMENSIONS IF NOT LISTED.

# APPLICABLE CODES

2015	(MICHIGAN RESIDENTIAL CODE)
2021	(MICHIGAN BUILDING CODE)
2021	(MICHIGAN PLUMBING CODE)
2021	(MICHIGAN MECHANICAL CODE)
2023	(MICHIGAN ELECTRICAL CODE)

# MATERIALS

	CONCRETE		METAL		RIGID INSULATION
	EARTH		PLYWOOD		WOOD
	GYPSUM WALL BOARD		STONE		
	BATT INSULATION		GRAVEL		

# REFERENCE SYMBOLS

	LEVEL		SHEAR WALL TAG
	LEVEL OR SPOT ELEVATION		WALL TAG
	DETAIL CALLOUT		PROPERTY LINE
	DETAIL NUMBER		REVISION
	SHEET WHERE DETAIL IS DRAWN		CLOUD AROUND REVISION
	ELEVATION SECTION & DETAIL CALLOUT		KEYNOTE TAG
	DETAIL NUMBER		
	SHEET NUMBER		
	DIRECTION OF VIEW		
	DOOR TAG		
	WINDOW TAG		
	EQUIPMENT TAG		
	SEE EQUIPMENT SCHEDULE ON SHEET A-104		

# ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	FC	FRAMING CLIP	NIC	NOT IN CONTRACT	TEL	TELEPHONE
ADJ	ADJACENT	FRP	FIBER REINFORCED PLASTIC	NTS	NOT TO SCALE	TV	TELEVISION
AGG	AGGREGATE	FFL	FINISHED FLOOR LINE	OC	ON CENTER (S)	TEMP	TEMPERED GLAZING
A/C	AIR CONDITIONING	FE	FIRE EXTINGUISHER	OD	OUTSIDE DIAMETER	THK	THICK (NESS)
ALT	ALTERNATE	FD	FLOOR DRAIN	OVN	OVEN	TFD	TOILET PAPER DISPENSER
ALUM	ALUMINUM	FTG	FOOTING	OY		T&G	TONGUE AND GROOVE
AB	ANCHOR BOLT	FND	FOUNDATION	FEN	PENETRATION	T.O.	TOP OF
ABV	ABOVE			FT	PRESSURE TREATED	TP	TOYEL BAR
ARCH.	ARCHITECT (J-RAL)	SA	GAUGE	FTD	PAPER TOYEL DISPENSER	TYP	TYPICAL
ASPH	ASPHALT	GALV	GALVANIZED	FLAM	PLASTIC LAMINATE	UNO	UNLESS NOTED OTHERWISE
BLK	BLOCK	GB	GRAB BAR	PL	PLATE, PROPERTY LINE	VPB	VAPOR BARRIER
BLKG	BLOCKING	GLB	GULLY/RAIN BEAM	PLYWD	PLYWOOD	VF	VERIFY IN FIELD
BD	BOARD	GSN	GENERAL STRUCTURAL NOTES	PVC	POLY-VINYL CHLORIDE	VERT	VERTICAL
BLDG	BUILDING	GWB	GYPSUM WALL BOARD	PSF	POUNDS PER SQUARE FOOT	VB	VINYL BASE
		HND	HARDWOOD	PSI	POUNDS PER SQUARE INCH	VCT	VINYL COMPOSITION TILE
CAB.	CABINET	HYAC	HEATING/VENTILATING/A/C	QT	QUARRY TILE	VF	VINYL FABRIC
CPT	CARPET (ED)	HSS	HOLLOW STRUCTURAL STEEL			VT	VINYL TILE
CLS	CEILING	HB	HOSE BIBB	RCA	RAISED CENTER AISLE	VVC	VINYL WALL COVERING
CL	CENTERLINE	ID	INSIDE DIAMETER	REF	REFRIGERATOR	WC	WATER CLOSET
CT	CERAMIC TILE	INSUL	INSULATE (D), (IG), (INS)	REIN	REINFORCE (D), (NS)	WRB	WATER RESISTANT BARRIER
CO	CLEANOUT	INT	INTERIOR INVERT	REQD	REQUIRED	WH	WATER HEATER
COL	COLUINN	KIT.	KITCHEN	ROA	RIGHT OF WAY	WP	WATERPROOFING
CONC	CONCRETE	LAB	LABORATORY	RM	ROOM	WAF	WELDED WIRE FABRIC
CMU	CONCRETE MASONRY UNIT	LAM.	LAMINATE (D)	RBT	RUBBER TILE	W	WEST, WIDTH, WIDE
CJ	CONTROL JOINT	LAV	LAVATORY	SCH	SCHEDULE	W/O	WITHOUT
CONT	CONTINUOUS OR CONTINUE	LH	LEFT HAND	SECT	SECTION	WB	WOOD BASE
CF	CUBIC FOOT	LF	LINEAR FEET	SHT	SHEET	WD	WOOD
CY	CUBIC YARD	LVL	LAMINATED VENEER LUMBER	SHT	SHEET VINYL	WP	WORKING POINT
		LSL	LAMINATED STRAND LUMBER	SM	SIMILAR		
DEMO	DEMOLISH	MH	MANHOLE	SPEC.	SPECIFICATION (S)		
DET	DETAIL	MFR	MANUFACTURE (ER)	SF	SQUARE FEET		
DIA	DIAMETER	MAT.	MATERIAL (S)	SQ	SQUARE		
DN	DOWN	MAX.	MAXIMUM	SS	STAINLESS STEEL		
DS	DOWNSPOUT	MECH	MECHANICAL (-LY)	STD	STANDARD		
DW	DISHWASHER	MTL	METAL	STL	STEEL		
		MM	MILLIMETER (S)	SD	STORM DRAIN		
ELEC	ELECTRIC (AL)	MIN.	MINIMUM	SUSP	SUSPENDED		
EQ	EQUAL	MISC	MISCELLANEOUS	SW	SHEAR WALL		
EQUIP	EQUIPMENT			SW	STEP IN WALL		
EN	EDGE NAIL						
EX	EXISTING						

### AREA - CONDITIONED SPACE

NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"

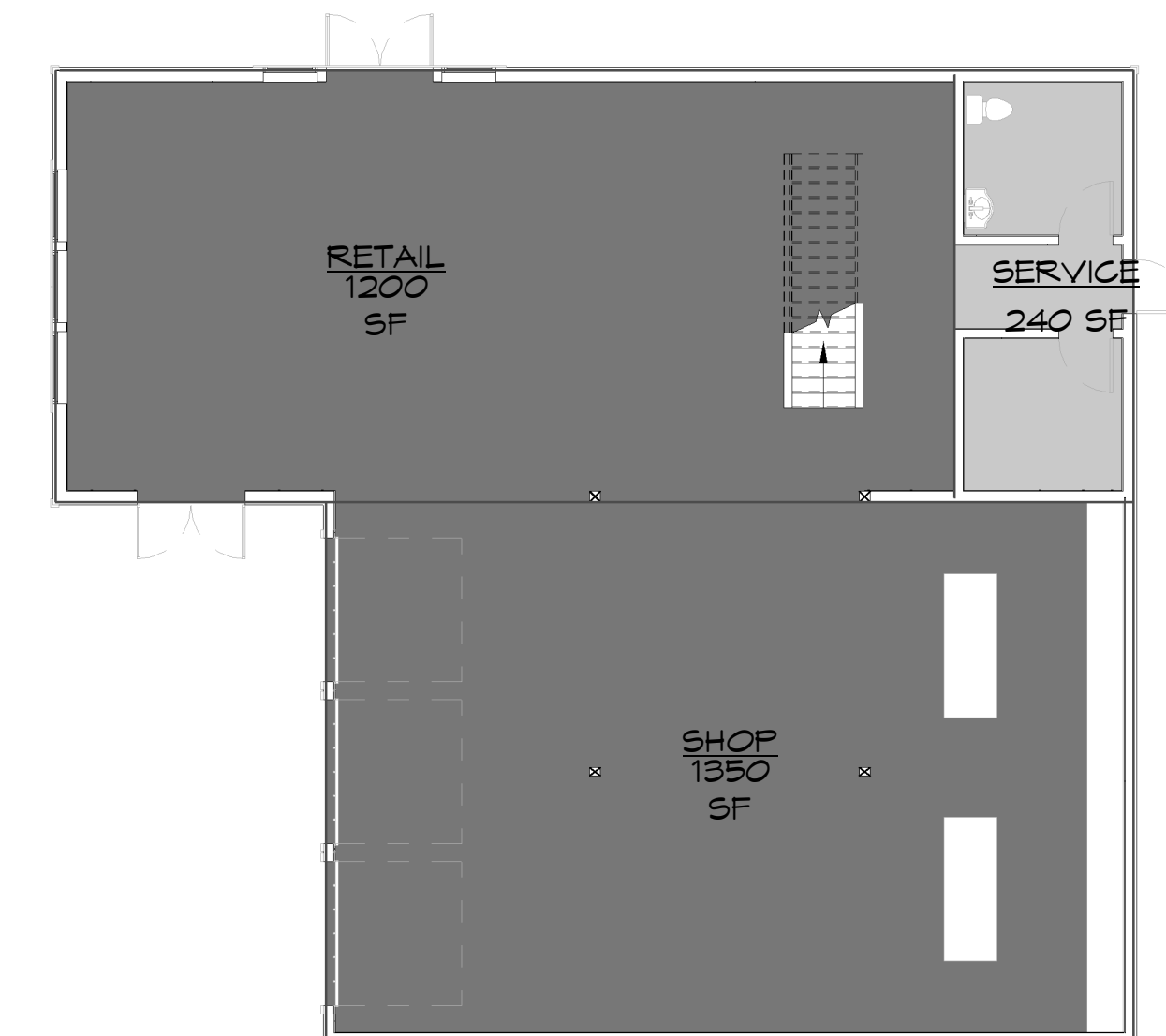
LOFT	381 SF	CONDITIONED
RETAIL	1200 SF	CONDITIONED
SERVICE	240 SF	CONDITIONED
SHOP	1350 SF	CONDITIONED
GRAND TOTAL	3171 SF	

### SHEET INDEX

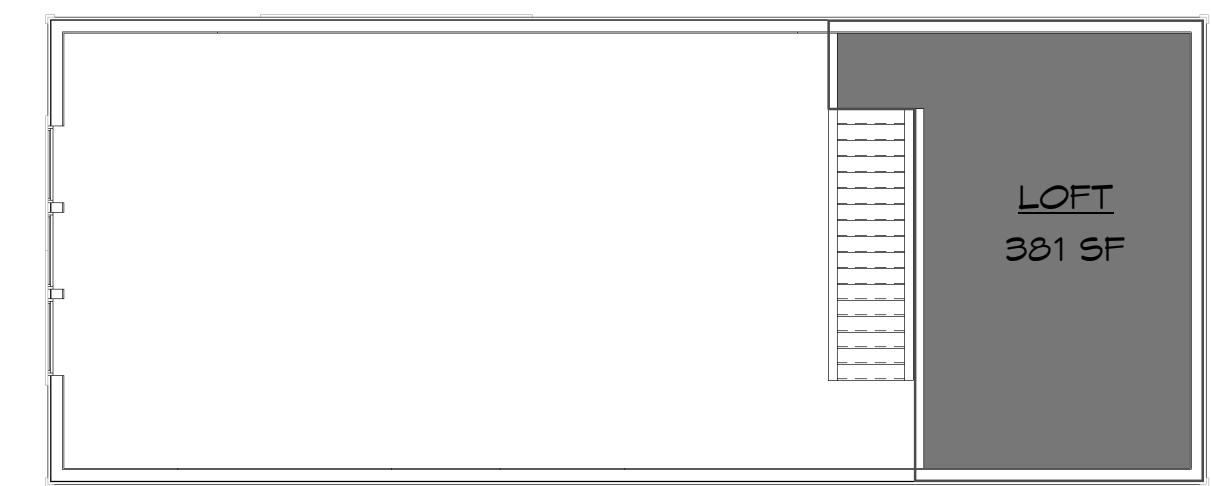
A-001	TITLE SHEET
A-002	3D VIEWS EXTERIOR
A-003	3D VIEWS INTERIOR
A-101	MAIN LEVEL
A-102	UPPER LEVEL
A-103	ROOF PLAN
A-104	SCHEDULES
A-201	ELEVATIONS
A-202	ELEVATIONS
A-301	SECTIONS

# LAKE ORION DDA BIKE SHOP

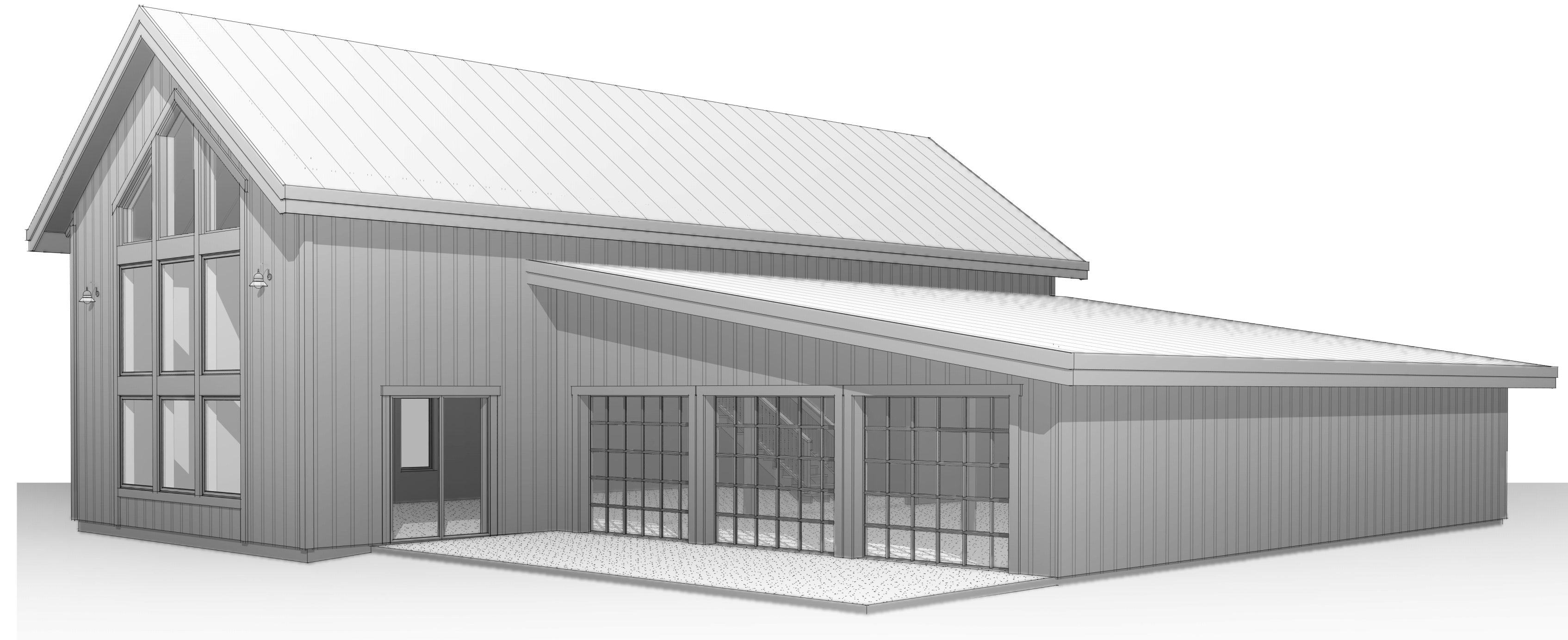
215 SOUTH BROADWAY  
LAKE ORION, MI



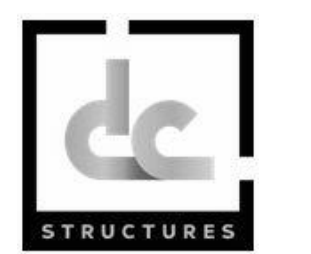
1 MAIN LEVEL - AREA PLAN  
1" = 10'-0"



3 UPPER LEVEL - AREA PLAN  
1" = 10'-0"



NOT FOR CONSTRUCTION



11251 SE 292nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description

LAKE ORION  
DDA BIKE  
SHOP

215 SOUTH  
BROADWAY  
LAKE ORION, MI

TITLE SHEET

A-001

DISCLAIMER:  
ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. 2D DRAWINGS SHALL SUPERCEDE ALL ITEMS SHOWN ON 3D IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS NOT FOR CONSTRUCTION.

DRAWN BY  
104  
4/14/2026 4:05:16 PM

4/14/2026 4:05:16 PM

DISCLAIMER:  
 ALL 3D IMAGES ARE APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. 2D DRAWINGS SHALL SUPERCEDE ALL ITEMS SHOWN ON 3D IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS "NOT FOR CONSTRUCTION"

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
 DAMASCUS, OR 97089

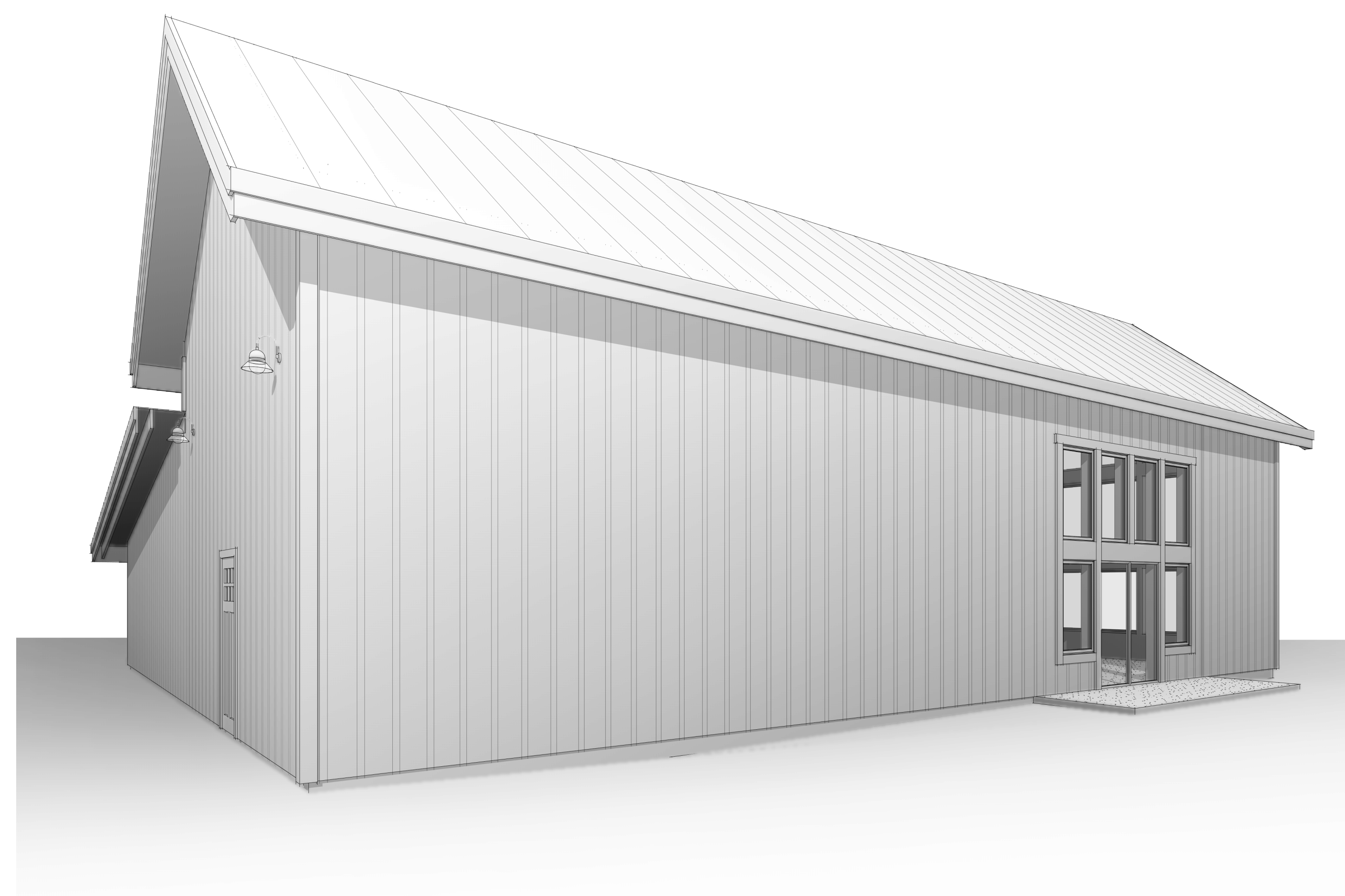
OWNERSHIP & USE OF DOCUMENTS:  
 THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.



1 3D EXTERIOR VIEW A



3 3D EXTERIOR VIEW B



4 3D EXTERIOR VIEW C



2 3D EXTERIOR VIEW D

Drawing Index

No.	Date	Description

LAKE ORION  
 DDA BIKE  
 SHOP

215 SOUTH  
 BROADWAY  
 LAKE ORION, MI

3D VIEWS  
 EXTERIOR

A-002

DRAWN BY  
 KM  
 4/14/2026 4:05:31 PM

4/14/2026 4:05:31 PM

DISCLAIMER:  
 ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR  
 ILLUSTRATION PURPOSES ONLY. 2D DRAWINGS SHALL SUPERCEDE ALL ITEMS SHOWN ON 3D  
 IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS "NOT FOR CONSTRUCTION"

NOT FOR  
 CONSTRUCTION



11251 SE 232nd AVE  
 DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
 THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS  
 OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE  
 DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE  
 WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description
1	DD MMM 14	PERMIT SET

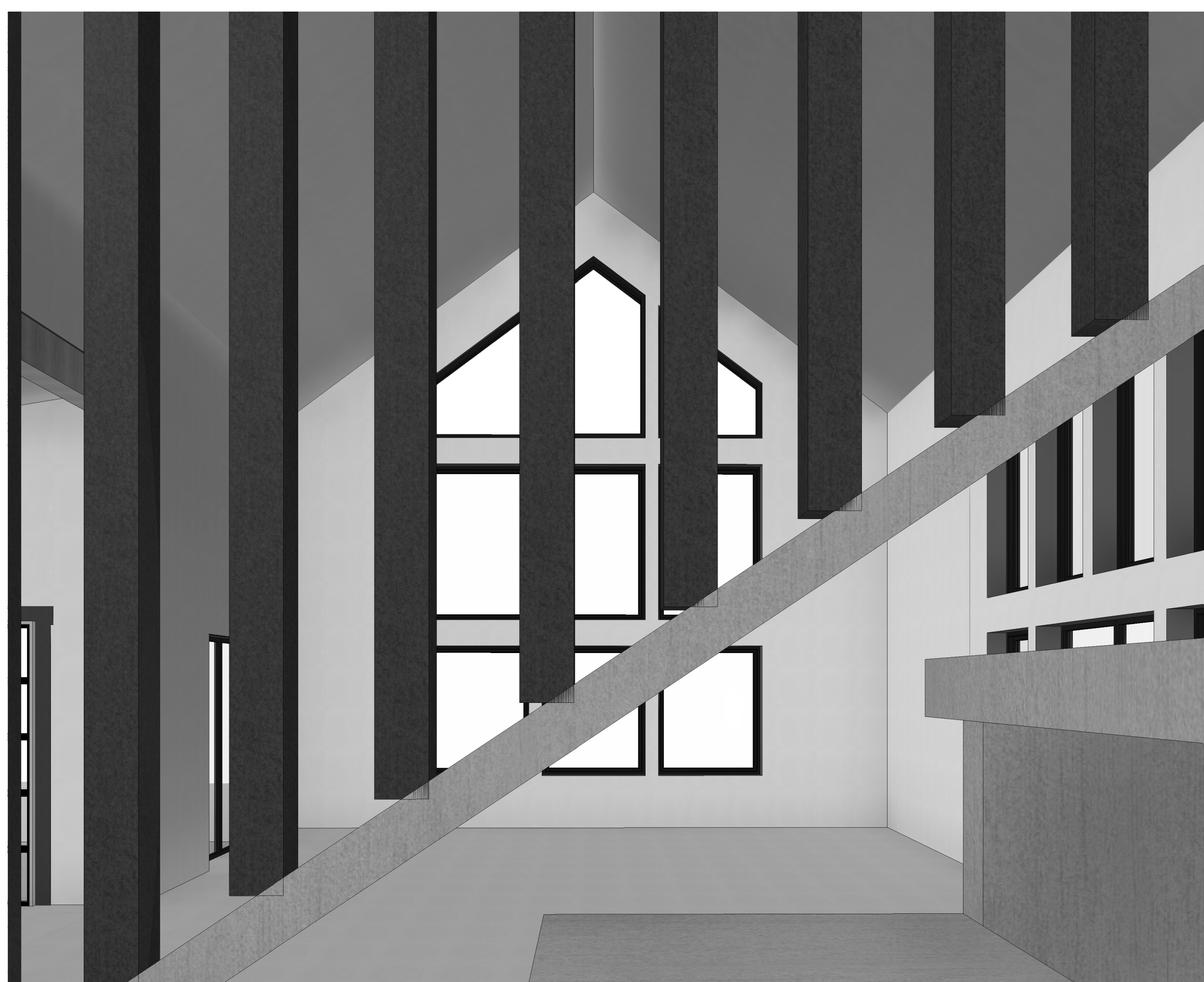
LAKE ORION  
 DDA BIKE  
 SHOP

215 SOUTH  
 BROADWAY  
 LAKE ORION, MI

3D VIEWS  
 INTERIOR

A-003

DRAWN BY  
 KM  
 4/14/2026 4:05:54 PM



1 3D INTERIOR VIEW @ MAIN FLOOR - A



2 3D INTERIOR VIEW @ MAIN FLOOR - B

4/14/2026 4:05:54 PM

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index  
No. Date Description

LAKE ORION  
DDA BIKE  
SHOP

MAIN LEVEL

A-101

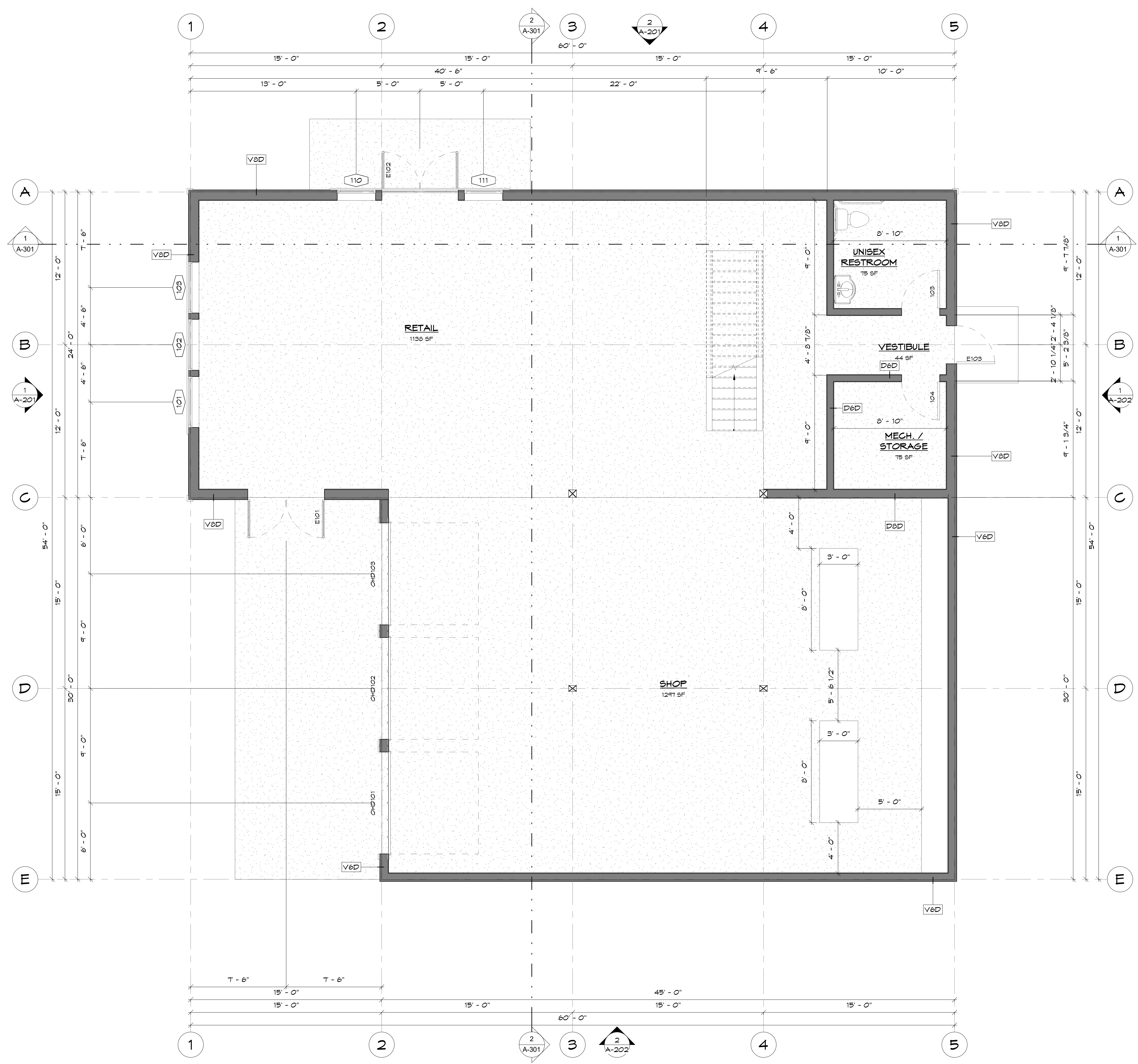
DRAWN BY  
104  
4/14/2026 4:06:08 PM

AREA - CONDITIONED SPACE	
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING 4 HEAD CLEARANCE ABOVE 48"	
CONDITIONED	381 SF CONDITIONED
LOFT	1200 SF CONDITIONED
RETAIL	240 SF CONDITIONED
SERVICE	1950 SF CONDITIONED
SHOP	3111 SF
GRAND TOTAL	3111 SF

Room Schedule - Level							
NOTE: ROOM AREA MEASURED FROM INTERIOR OF STUD WALL OR USEABLE SPACE.							
Number	Name	Area	Floor Finish	Wall Finish	Ceiling		Comments
					Material	Height	
101	RETAIL	1190 SF	CONCRETE	GWB	GWB	VARIES	
102	VESTIBULE	44 SF	CONCRETE	GWB	GWB	8' - 11"	
103	UNISEX RESTROOM	75 SF	CONCRETE	GWB	GWB	8' - 11"	
104	MECH. / STORAGE	75 SF	CONCRETE	GWB	GWB	8' - 11"	
105	SHOP	1291 SF	CONCRETE	GWB	GWB	VARIES	
		2628 SF					

Door Schedule - Level						
SEE SCHEDULES SHEET FOR DOOR TYPES AND COMPLETE SCHEDULE						
Mark	Type	Width	Height	Operation	Comments	
GROUND LEVEL						
EXTERIOR						
E101	C	6' - 0"	T - 0"	DOUBLE SWING		
E102	C	6' - 0"	T - 0"	DOUBLE SWING		
E103	B	3' - 0"	6' - 8"	SWING		
OHDI01	D	8' - 0"	T - 0"	OVERHEAD - GLASS		
OHDI02	D	8' - 0"	T - 0"	OVERHEAD - GLASS		
OHDI03	D	8' - 0"	T - 0"	OVERHEAD - GLASS		
INTERIOR						
I03	A	3' - 0"	6' - 8"	SWING		
I04	A	3' - 0"	6' - 8"	SWING		

Window Schedule - Level							
SEE SCHEDULES SHEET FOR WINDOW TYPES AND COMPLETE SCHEDULE							
Mark	Type	Width	Height	Head Height (BTM OF HDR)	Sill Height (TOP OF SILL)	Operation	Comments
GROUND LEVEL							
I01	A	4' - 0"	5' - 0"	T - 0"	2' - 0"	PICTURE	
I02	A	4' - 0"	5' - 0"	T - 0"	2' - 0"	PICTURE	
I03	A	4' - 0"	5' - 0"	T - 0"	2' - 0"	PICTURE	
I04	A	4' - 0"	6' - 0"	14' - 0"	8' - 0"	PICTURE	
I05	A	4' - 0"	6' - 0"	14' - 0"	8' - 0"	PICTURE	
I06	A	4' - 0"	6' - 0"	14' - 0"	8' - 0"	PICTURE	
I10	A	3' - 0"	5' - 0"	T - 0"	2' - 0"	PICTURE	TEMPERED
I11	A	3' - 0"	5' - 0"	T - 0"	2' - 0"	PICTURE	TEMPERED
I12	A	3' - 0"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED
I13	A	2' - 4"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED
I14	A	2' - 4"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED
I15	A	3' - 0"	5' - 0"	13' - 0"	8' - 0"	PICTURE	TEMPERED



1 MAIN LEVEL - FLOOR PLAN  
1/4" = 1'-0"

KEYNOTES

FLOOR PLAN GENERAL NOTES

- NOTES APPLY TO SHEETS A-101 & A-102 ONLY.
- 1. REFERENCE SHEET A-104 FOR COMPLETE WINDOW & DOOR SCHEDULES.
- 2. REFERENCE SHEET A-401 FOR WALL TYPES AND DETAILS.

4/14/2026 4:06:08 PM

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description

LAKE ORION  
DDA BIKE  
SHOP

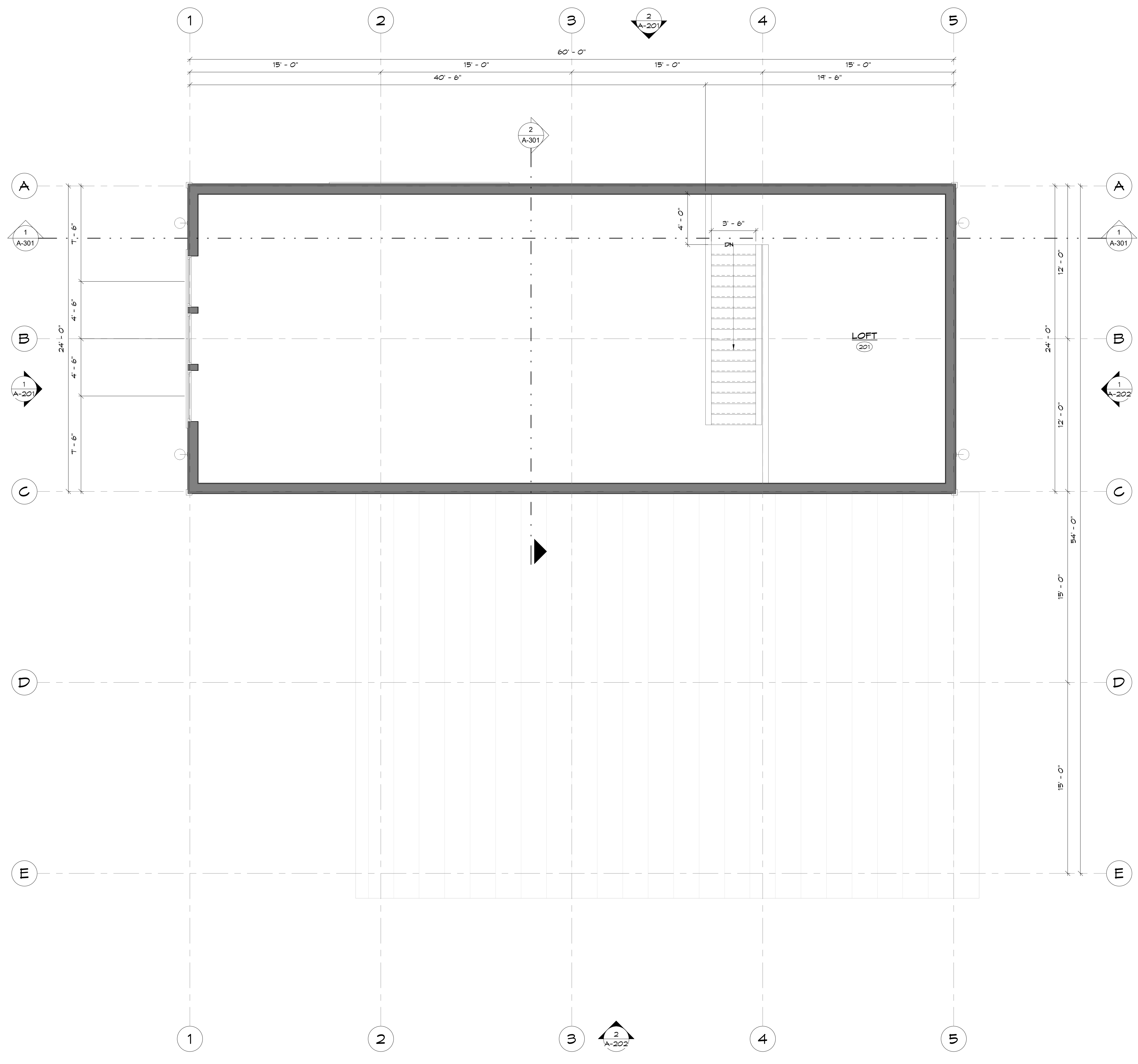
UPPER  
LEVEL

A-102

DRAWN BY  
KIM  
4/14/2026 4:06:18 PM

AREA - CONDITIONED SPACE	
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"	
CONDITIONED	
LOFT	381 SF   CONDITIONED
RETAIL	1200 SF   CONDITIONED
SERVICE	240 SF   CONDITIONED
SHOP	1590 SF   CONDITIONED
GRAND TOTAL	3111 SF

Room Schedule - Level							
NOTE: ROOM AREA MEASURED FROM INTERIOR OF STUD WALL OR USEABLE SPACE.							
Number	Name	Area	Floor Finish	Wall Finish	Ceiling		Comments
					Material	Height	
UPPER LEVEL							
201	LOFT	343 SF	FINISH G/ SHEATHING	GXB	GXB	VARIES	
		343 SF					



1 UPPER LEVEL - FLOOR PLAN  
1/4" = 1'-0"

KEYNOTES

FLOOR PLAN GENERAL NOTES

- NOTES APPLY TO SHEETS A-101 & A-102 ONLY.
- REFERENCE SHEET A-104 FOR COMPLETE WINDOW & DOOR SCHEDULES.
  - REFERENCE SHEET A-401 FOR WALL TYPES AND DETAILS.

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

No.	Date	Description

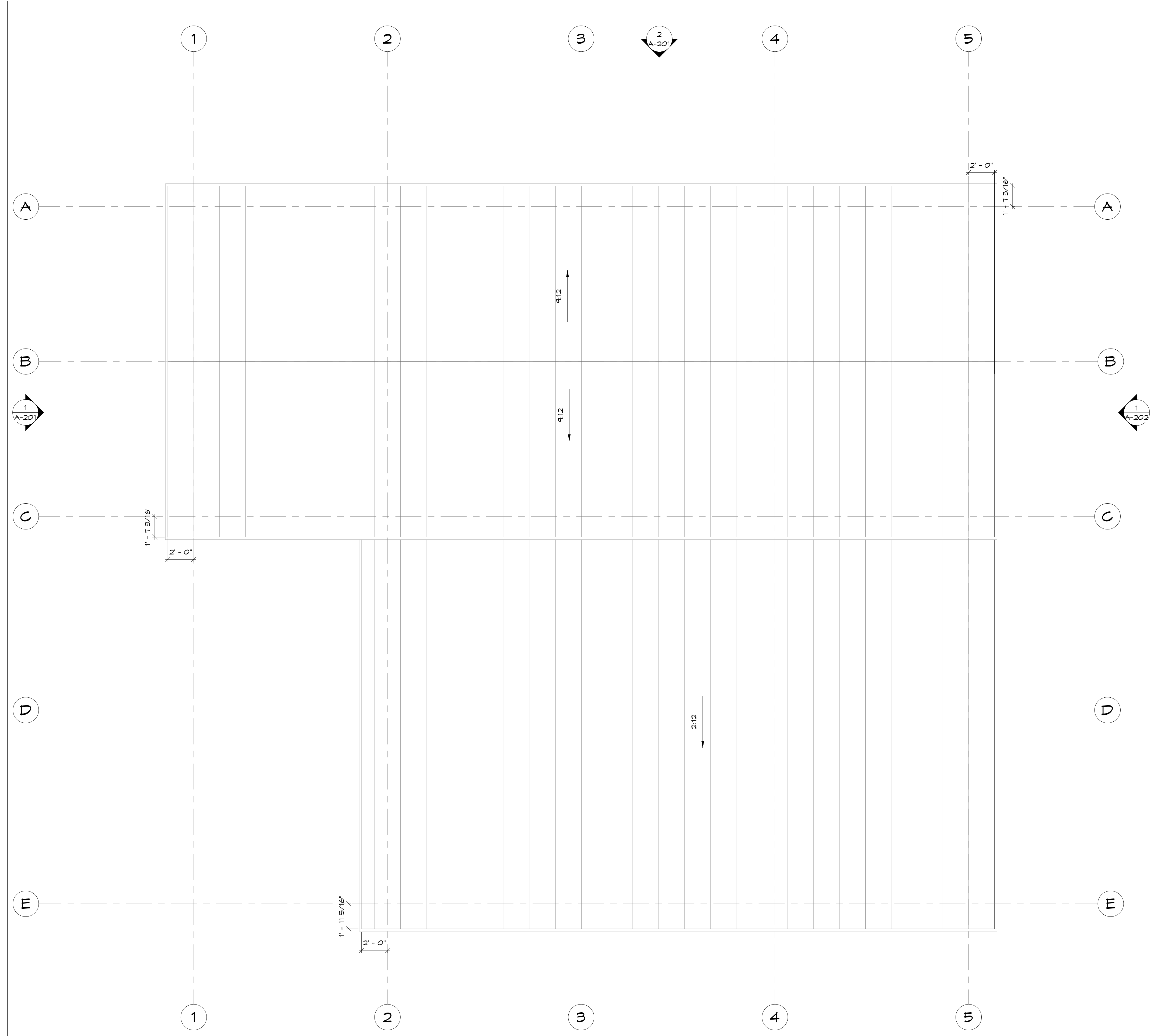
LAKE ORION  
DDA BIKE  
SHOP

ROOF PLAN

A-103

DRAWN BY  
JCM  
4/14/2026 4:06:21 PM

KEYNOTES



1 ROOF PLAN  
1/4" = 1'-0"

4/14/2026 4:06:21 PM

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

No. Date Description

LAKE ORION  
DDA BIKE  
SHOP

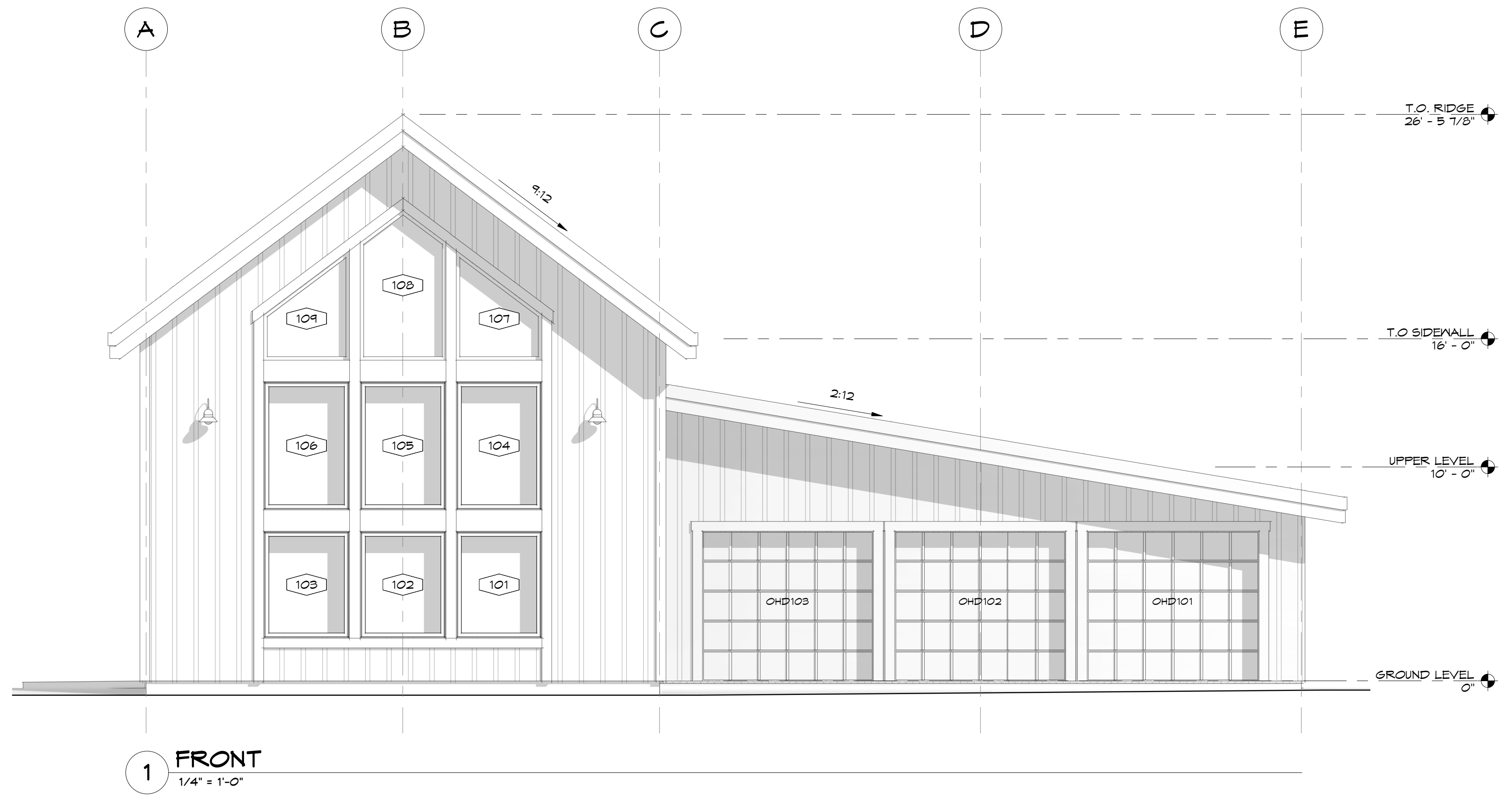
215 SOUTH  
BROADWAY  
LAKE ORION, MI

ELEVATIONS

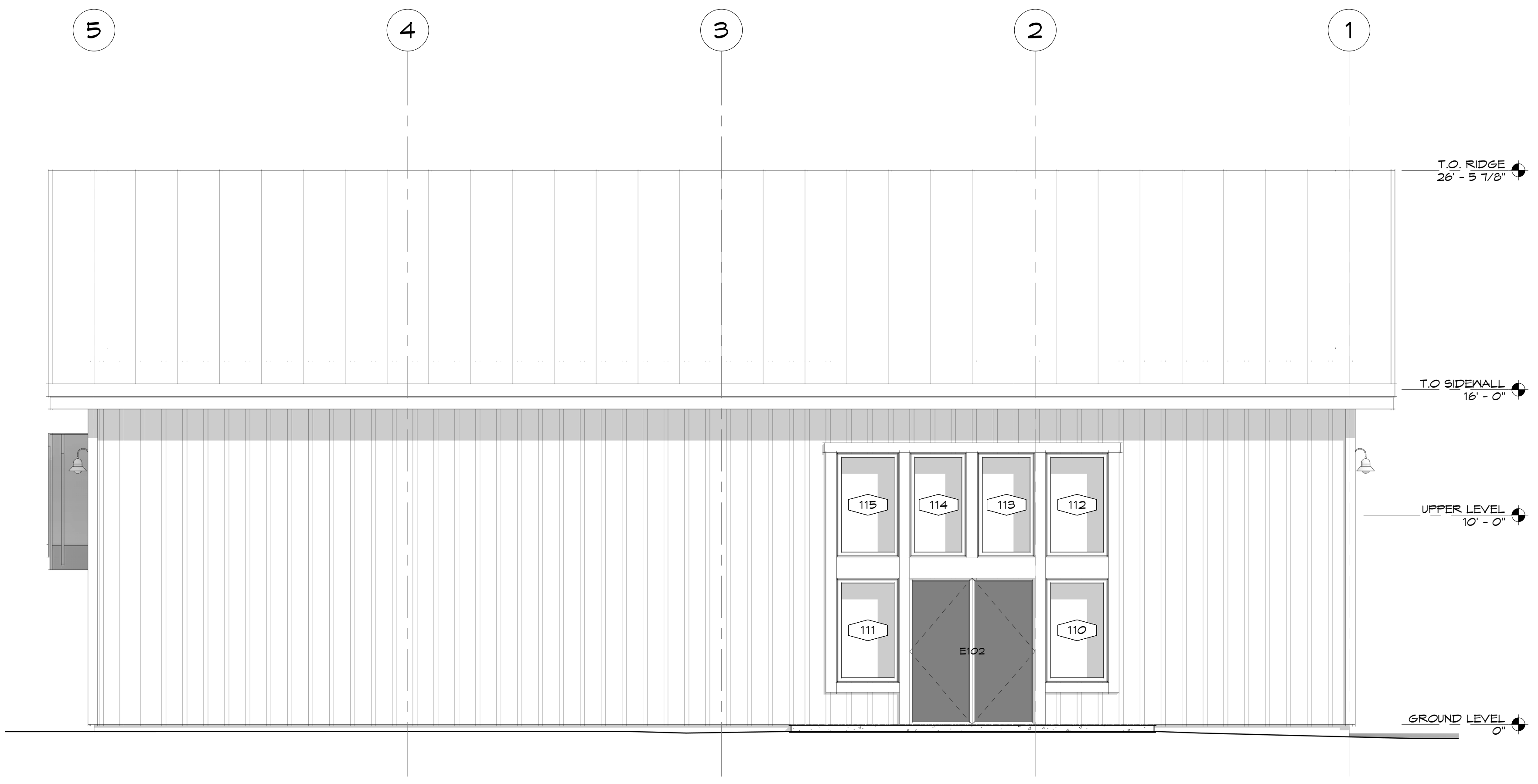
A-201

DRAWN BY  
JCM  
4/14/2026 4:06:42 PM

KEYNOTES



1 FRONT  
1/4" = 1'-0"



2 LEFT  
1/4" = 1'-0"

ELEVATION GENERAL NOTES  
NOTES APPLY TO SHEETS A-201 & A-202 ONLY.

4/14/2026 4:06:42 PM

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

No. Date Description

LAKE ORION  
DDA BIKE  
SHOP

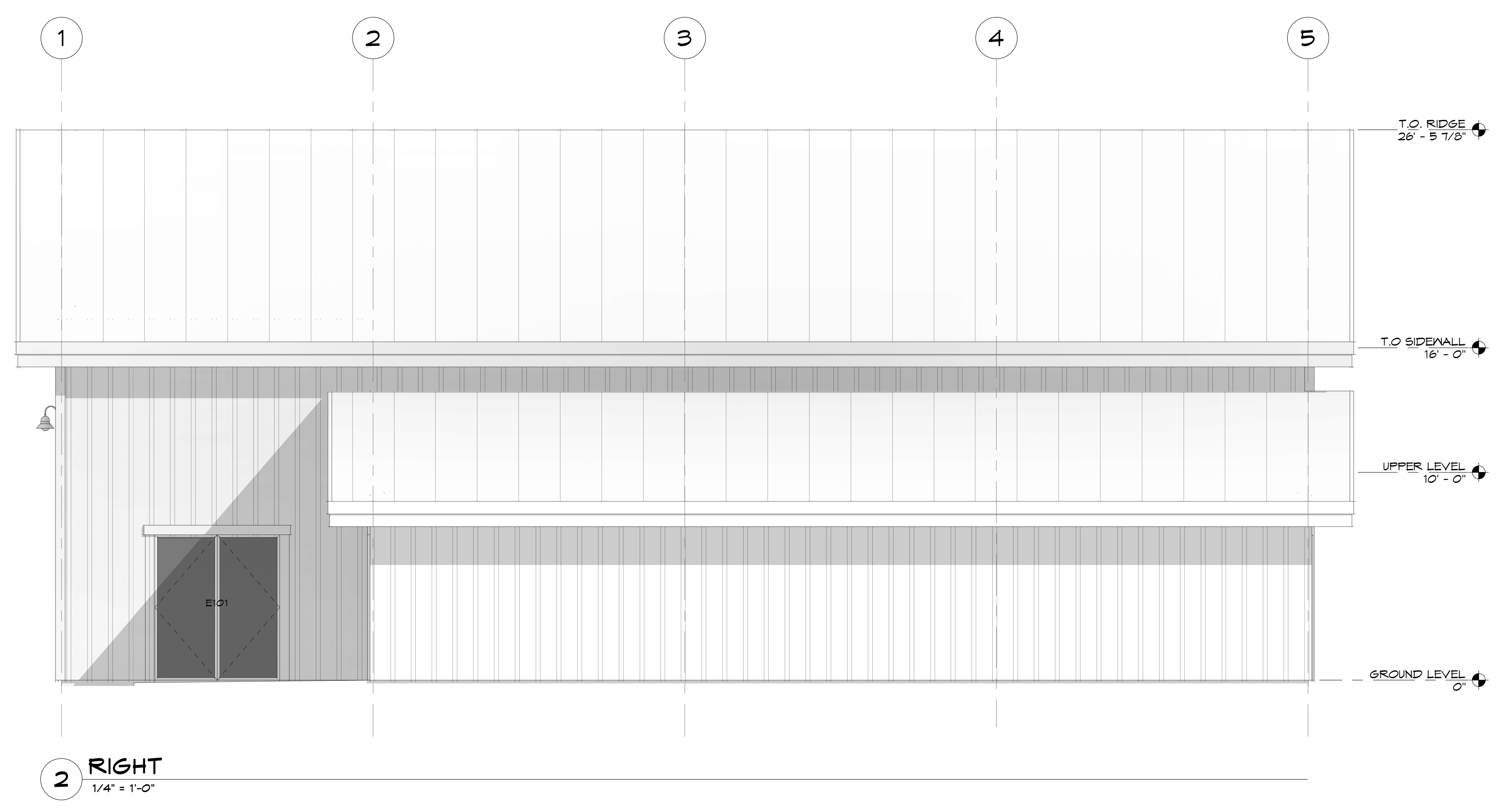
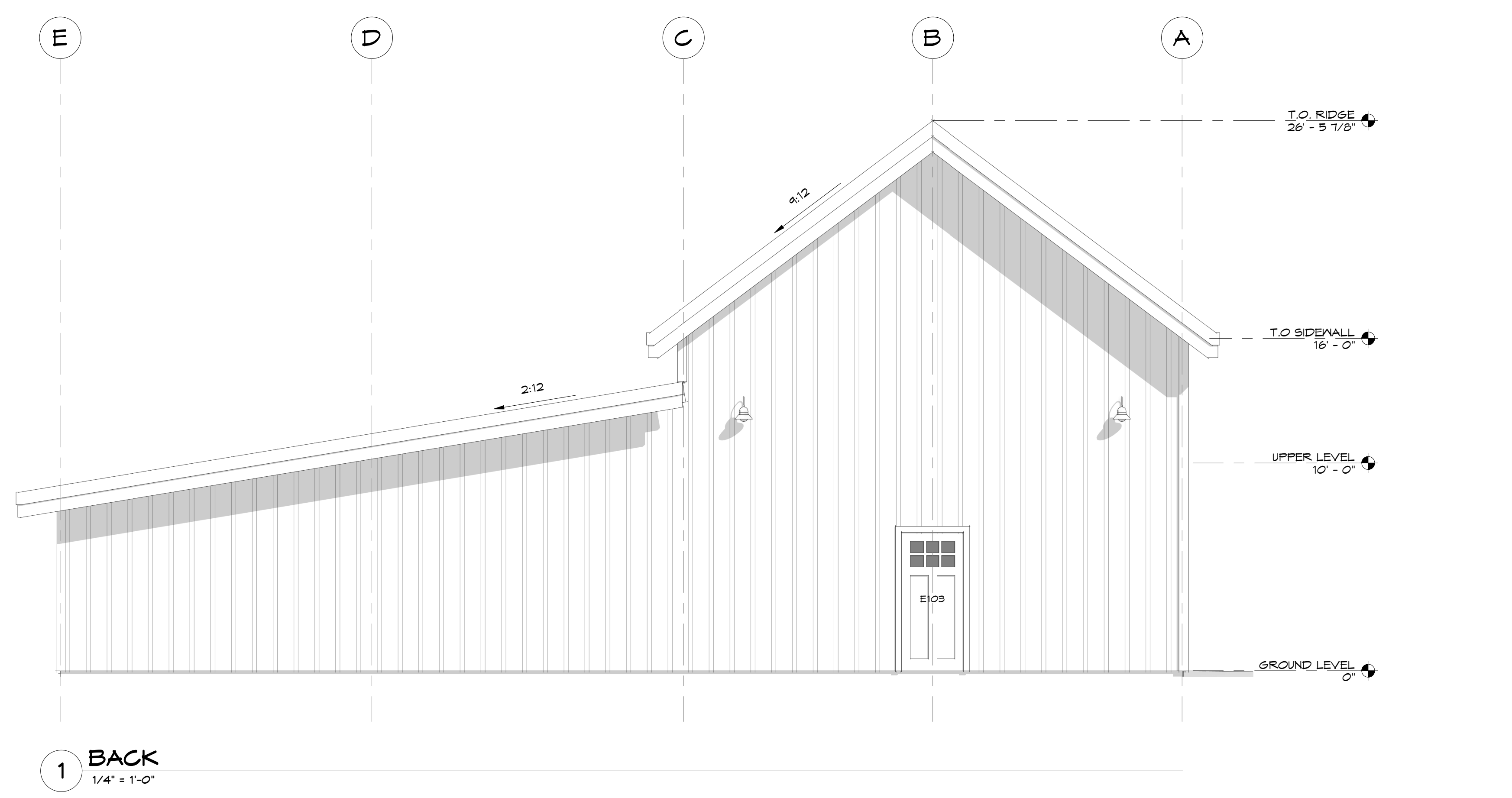
215 SOUTH  
BROADWAY  
LAKE ORION, MI

ELEVATIONS

A-202

DRAWN BY  
JM  
4/14/2026 4:06:55 PM

KEYNOTES



ELEVATION GENERAL NOTES  
NOTES APPLY TO SHEETS A-201 & A-202 ONLY.

4/14/2026 4:06:55 PM

# GENERAL NOTES

- CONTACT EACH MUNICIPAL, GOVERNMENTAL, OR PRIVATE UTILITY COMPANIES TO DETERMINE THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
- SCHEDULE AND COORDINATE ALL SHUT DOWNS OF EXISTING UTILITIES WITH THE OWNER IN ADVANCE A MINIMUM OF SEVEN (7) DAYS PRIOR TO SHUT DOWN.
- PROVIDE ALL REQUIRED EROSION CONTROL MEASURES PRIOR TO ANY EXCAVATION.
- A CHEMICAL TOILET IS REQUIRED ON-SITE DURING CONSTRUCTION.
- OTHER WORK MAY BE PERFORMED UNDER A SEPARATE CONTRACT AT THE CLIENT'S PROPERTY. COORDINATE WITH ALL OTHER CONTRACTED TRADES SO AS TO NOT INTERFERE WITH THEIR WORK.
- ALL FASTENERS IN CONTACT WITH PRESERVATIVE TREATED WOOD SHALL BE HOT DIPPED GALVANIZED.
- REFER TO STRUCTURAL DRAWINGS FOR STRUCTURAL REQUIREMENTS, SIZE, SPACING AND LOCATION OF ALL STRUCTURAL MEMBERS.
- STRICTLY FOLLOW ALL MANUFACTURER'S INSTALLATION INSTRUCTIONS WHEN USING OR INSTALLING PRODUCTS.
- ALL DOOR AND WINDOW DIMENSIONS ARE APPROXIMATE. VERIFY MANUFACTURER SPECIFICATIONS FOR EXACT SIZE.
- USE 5/8" TYPE X GYPSUM WALL BOARD THROUGHOUT. PROVIDE WATER RESISTANT GYPSUM WALL BOARD IN RESTROOMS WITH SHOWERS. PROVIDE FRAMING AT 16" O.C. MAX AT CEILINGS WHERE WATER RESISTANT GYPSUM WALL BOARD IS INSTALLED.
- FIRE BLOCKING SHALL BE PROVIDED IN STUD CAVITIES OVER 10' IN HEIGHT.
- CONTACT DESIGNER OR ENGINEER OF RECORD TO CONFIRM DIMENSIONS IF NOT LISTED.

# APPLICABLE CODES

2015	(MICHIGAN RESIDENTIAL CODE)
2021	(MICHIGAN BUILDING CODE)
2021	(MICHIGAN PLUMBING CODE)
2021	(MICHIGAN MECHANICAL CODE)
2023	(MICHIGAN ELECTRICAL CODE)

# MATERIALS

	CONCRETE		METAL		RIGID INSULATION
	EARTH		PLYWOOD		WOOD
	GYPSUM WALL BOARD		STONE		
	BATT INSULATION		GRAVEL		

# REFERENCE SYMBOLS

	LEVEL LEVEL OR SPOT ELEVATION		SHEARWALL TAG SHEARWALL TYPE. SEE SCHEDULE ON S-001 FOR NAILING AND ANCHOR BOLT SPACING
	DETAIL CALLOUT DETAIL NUMBER		WALL TAG WALL TYPE. SEE ARCH'L DETAILS ON SHEET A-401
	ELEVATION SECTION & DETAIL CALLOUT DETAIL NUMBER		PROPERTY LINE
	DOOR TAG		REVISION CLOUD AROUND REVISION
	WINDOW TAG		KEYNOTE TAG

# ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	FC	FRAMING CLIP	NIC	NOT IN CONTRACT	TEL	TELEPHONE
ADJ	ADJACENT	FRP	FIBER REINFORCED PLASTIC	NTS	NOT TO SCALE	TV	TELEVISION
AGG	AGGREGATE	FFL	FINISHED FLOOR LINE	OC	ON CENTER (S)	TEMP	TEMPERED GLAZING
A/C	AIR CONDITIONING	FE	FIRE EXTINGUISHER	OD	OUTSIDE DIAMETER	THK	THICK (NESS)
ALT	ALTERNATE	FD	FLOOR DRAIN	OV	OVEN	TFD	TOILET PAPER DISPENSER
ALUM	ALUMINUM	FTG	FOOTING	OV	OVEN	T&G	TONGUE AND GROOVE
AB	ANCHOR BOLT	FND	FOUNDATION	FEN	PENETRATION	T.O.	TOP OF
ABV	ABOVE	SA	GAUGE	FT	PRESSURE TREATED	TP	TOILET BAR
ARCH.	ARCHITECT (J-RAL)	GALV	GALVANIZED	FTD	PAPER TOWEL DISPENSER	TYP	TYPICAL
ASPH	ASPHALT	GB	GRAB BAR	FLAM	PLASTIC LAMINATE	UNO	UNLESS NOTED OTHERWISE
BLK	BLOCK	GLB	GULLYWASH BEAM	PL	PLATE, PROPERTY LINE	VPB	VAPOR BARRIER
BLKG	BLOCKING	GSN	GENERAL STRUCTURAL NOTES	PLYWD	PLYWOOD	VF	VERIFY IN FIELD
BD	BOARD	GWB	GYPSUM WALL BOARD	PVC	POLYVINYL CHLORIDE	VERT	VERTICAL
BLDG	BUILDING	HND	HARDWOOD	PSF	POUNDS PER SQUARE FOOT	VB	VINYL BASE
CAB.	CABINET	HVAC	HEATING/VENTILATING/A/C	PSI	POUNDS PER SQUARE INCH	VCT	VINYL COMPOSITION TILE
CPT	CARPET (ED)	HSS	HOLLOW STRUCTURAL STEEL	QT	QUARRY TILE	VF	VINYL FABRIC
CLS	CEILING	HB	HOSE BIBB	RC	RAISED CENTER AISLE	VT	VINYL TILE
CL	CENTERLINE	ID	INSIDE DIAMETER	REF	REFRIGERATOR	VNC	VINYL WALL COVERING
CT	CERAMIC TILE	INSUL	INSULATE (D), (IG)	REIN	REINFORCEMENT	WC	WATER CLOSET
CO	CLEANOUT	INT	INTERIOR INVERT	REQD	REQUIRED	WRB	WATER RESISTANT BARRIER
COL	COLUMN	KIT.	KITCHEN	RM	RIGHT OF WAY	WH	WATER HEATER
CONC	CONCRETE	LAM.	LAMINATE (D)	RBT	RUBBER BASE	WP	WATERPROOFING
CMU	CONCRETE MASONRY UNIT	LAV	LAVATORY	SB	SCHEDULE	WAF	WELDED WIRE FABRIC
CJ	CONTROL JOINT	LH	LEFT HAND	SECT	SECTION	W	WATER
CONT	CONTINUOUS OR CONTINUE	LF	LINEAR FEET	SHT	SHEET	W	WATER
CF	CUBIC FOOT	LVL	LAMINATED VENEER LUMBER	SH	SHEAR	W	WATER
CY	CUBIC YARD	LSL	LAMINATED STRAND LUMBER	SH	SHEAR	W	WATER
DEMO	DEMOLISH	MH	MANHOLE	SHT	SHEET	W	WATER
DET	DETAIL	MFR	MANUFACTURE (ER)	SH	SHEAR	W	WATER
DIA	DIAMETER	MAT.	MATERIAL (S)	SP	SCHEDULE	W	WATER
DN	DOWN	MAX.	MAXIMUM	SF	SQUARE FEET	W	WATER
DS	DOWNSPOUT	MECH	MECHANICAL (-LY)	SQ	SQUARE	W	WATER
DN	DISHWASHER	MTL	METAL	SS	STAINLESS STEEL	W	WATER
ELEC	ELECTRIC (AL)	MM	MILLIMETER (S)	STD	STANDARD	W	WATER
EQ	EQUAL	MIN.	MINIMUM	STL	STEEL	W	WATER
EQUIP	EQUIPMENT	MISC	MISCELLANEOUS	SD	STORM DRAIN	W	WATER
EN	EDGE NAIL			SUSP	SUSPENDED	W	WATER
EX	EXISTING			SW	SHEAR WALL	W	WATER
				SW	STEP IN WALL		

AREA - CONDITIONED SPACE	
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"	
CONDITIONED	960 SF
RETAIL	192 SF
SERVICE	1152 SF
GRAND TOTAL	1152 SF

# SHEET INDEX

A-001	TITLE SHEET & GENERAL NOTES
A-002	3D EXTERIOR VIEWS
A-003	3D INTERIOR VIEWS
A-101	MAIN LEVEL FLOOR PLAN
A-102	ROOF PLAN
A-103	SCHEDULES
A-201	ELEVATIONS
A-301	SECTIONS

# PROJECT DESCRIPTION

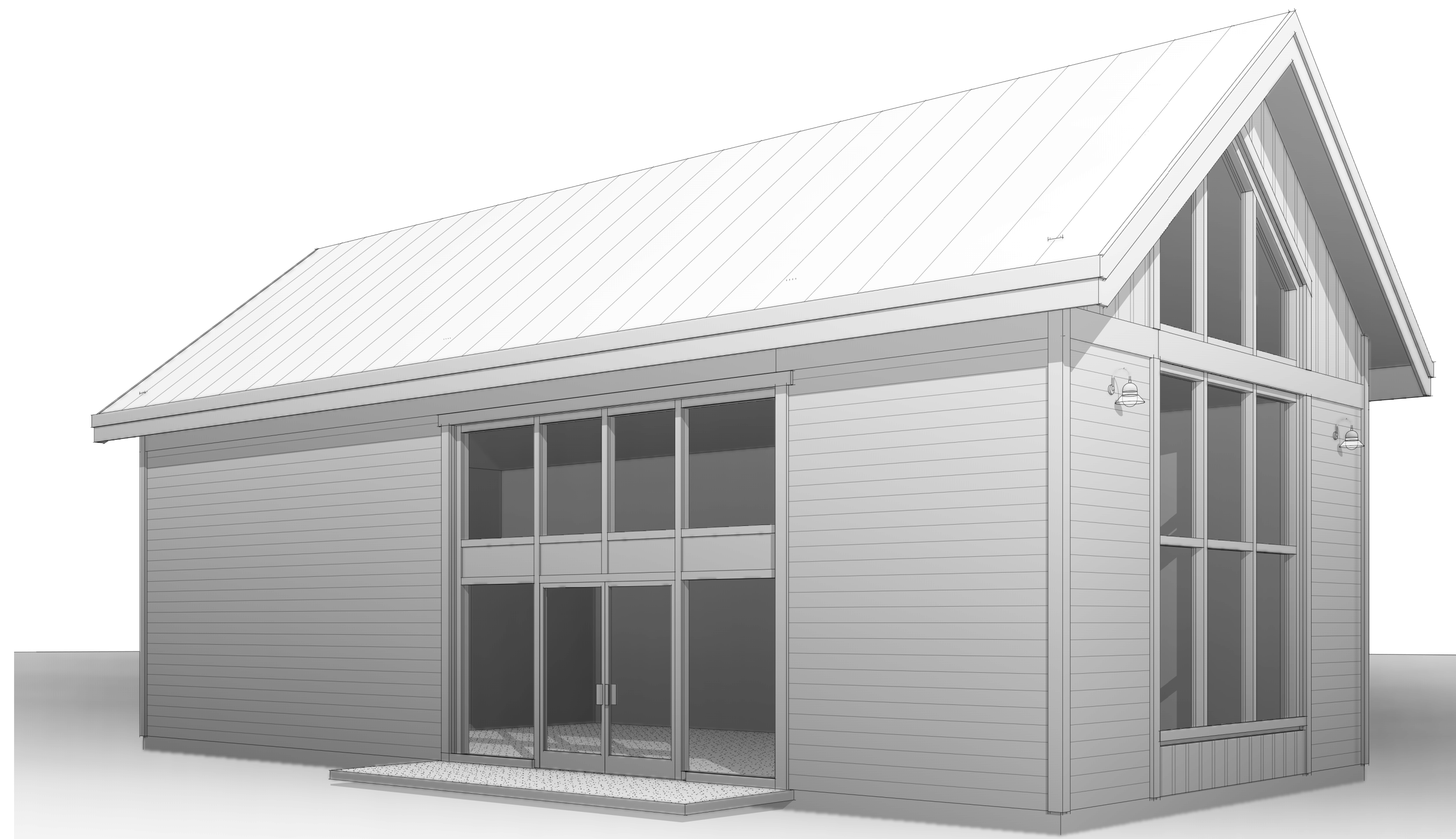
EXAMPLE PROJECT DESCRIPTION

# PROJECT DIRECTORY

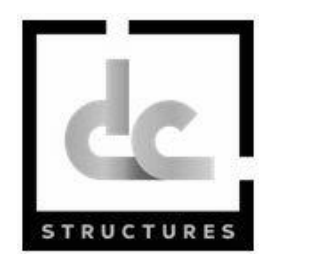
<b>OWNER</b>	LAKE ORION DOWNTOWN DEVELOPMENT AUTHORITY CONTACT: MATT GIBB E: GIBB@DOWNTOWNLAKEORION.ORG
<b>CONTRACTOR</b>	
<b>REGISTERED DESIGN PROFESSIONAL</b>	GUSHING TERRELL 2140 SW JEFFERSON ST., SUITE 200 PORTLAND, OR 97201 CONTACT: JACOB BAGLIEN, P.E. 503.948.1224 JACOB.BAGLIEN@GUSHINGTERRELL.COM

# LAKE ORION DDA STILLWATER

215 SOUTH BROADWAY  
LAKE ORION, MI



NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description

LAKE ORION  
DDA  
STILLWATER

215 SOUTH  
BROADWAY  
LAKE ORION, MI

TITLE SHEET  
& GENERAL  
NOTES

A-001

DISCLAIMER:  
ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR ILLUSTRATION PURPOSES ONLY. 2D DRAWINGS SHALL SUPERCEDE ALL ITEMS SHOWN ON 3D IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS NOT FOR CONSTRUCTION.

DRAWN BY  
104  
4/14/2026 5:26:53 PM

DISCLAIMER:  
 ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR  
 ILLUSTRATION PURPOSES ONLY. 3D DRAWINGS SHALL SUPERSEDE ALL ITEMS SHOWN ON 3D  
 IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS "NOT FOR CONSTRUCTION"

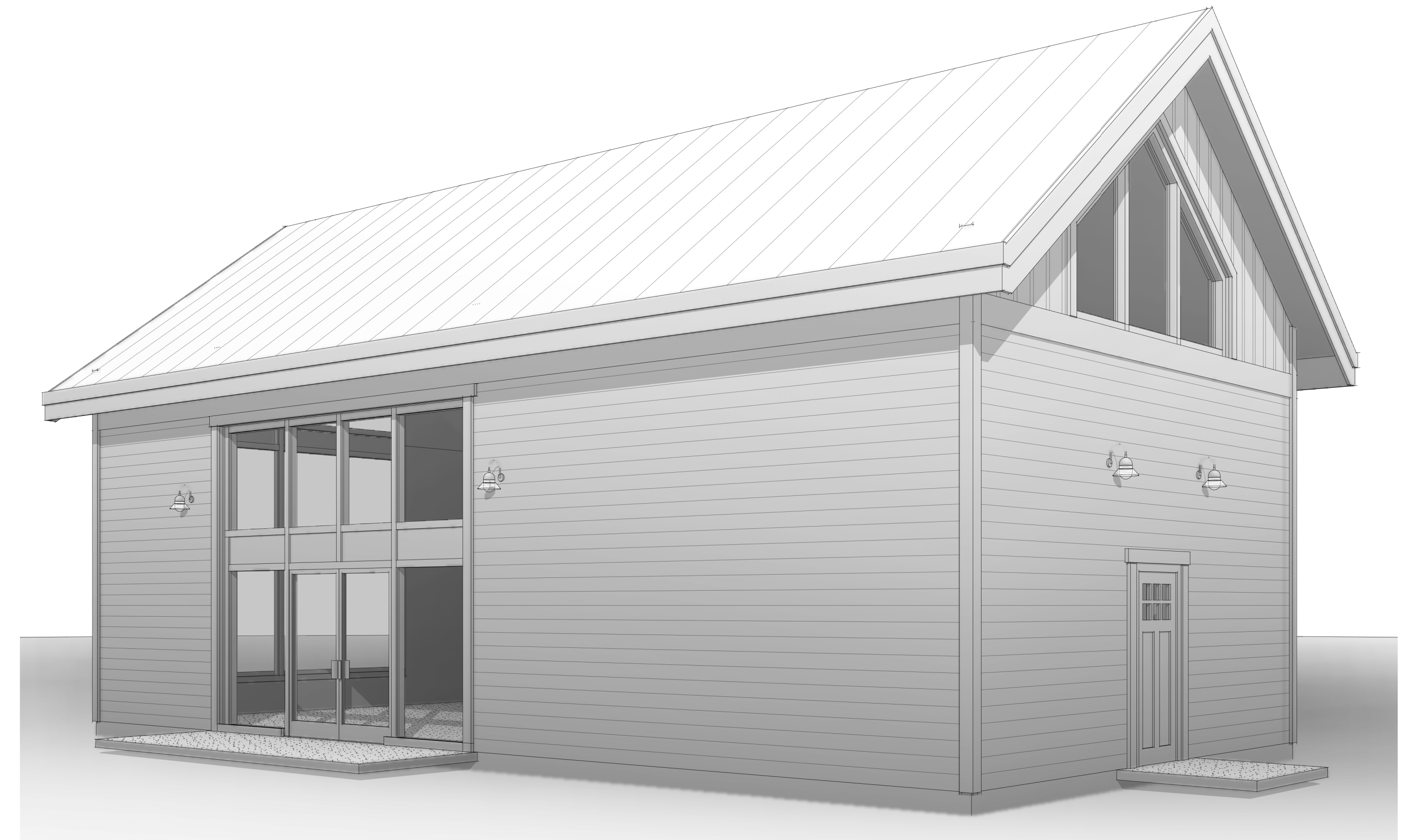
NOT FOR  
 CONSTRUCTION



11251 SE 232nd AVE  
 DAMASCUS, OR 97089



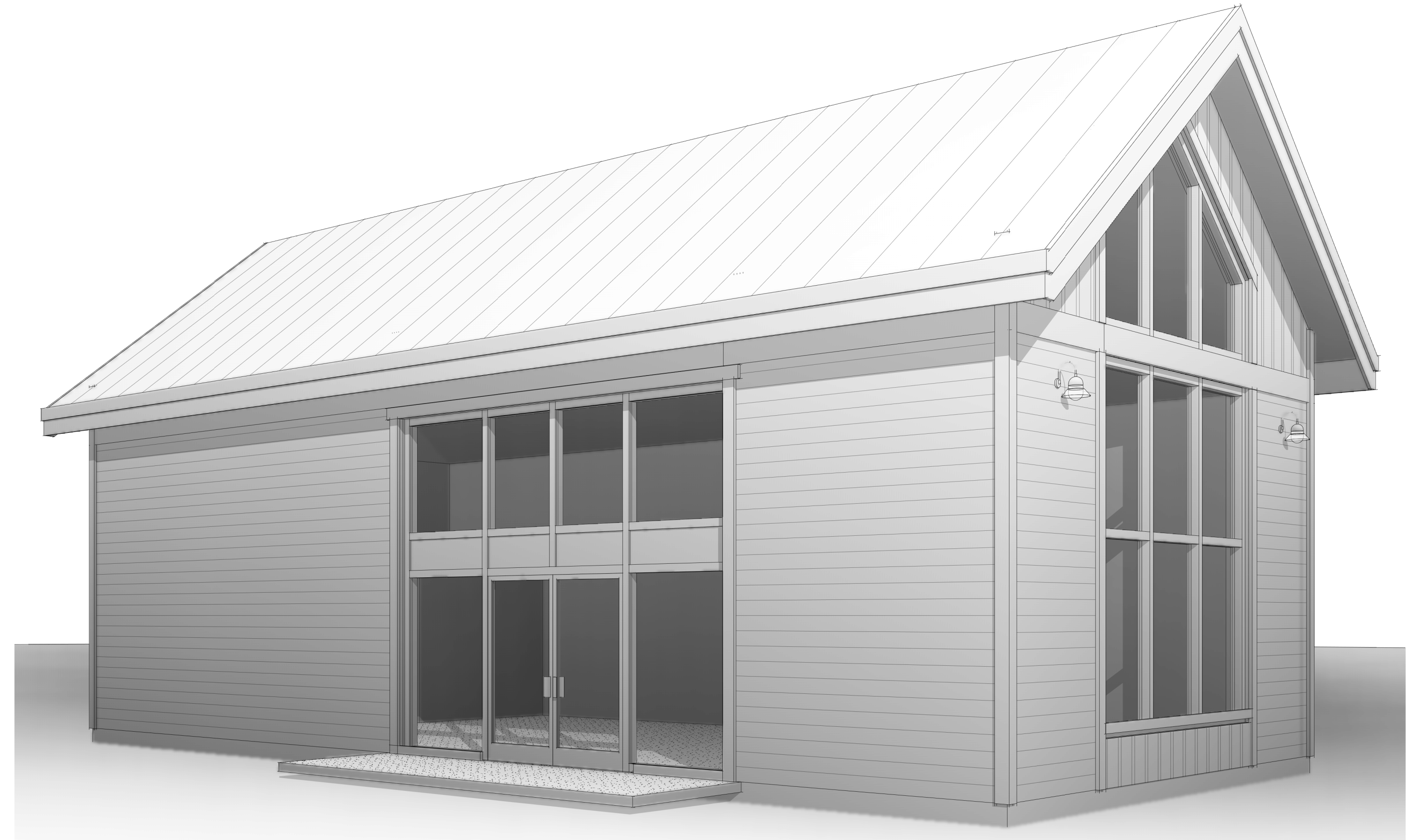
1 3D EXTERIOR VIEW A



2 3D EXTERIOR VIEW B



3 3D EXTERIOR VIEW C



4 3D EXTERIOR VIEW D

OWNERSHIP & USE OF DOCUMENTS:  
 THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS  
 OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE  
 DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE  
 WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

No.	Date	Description

LAKE ORION  
 DDA  
 STILLWATER

215 SOUTH  
 BROADWAY  
 LAKE ORION, MI

3D  
 EXTERIOR  
 VIEWS

A-002

DRAWN BY  
 KM  
 4/14/2026 5:21:01 PM

4/14/2026 5:21:01 PM

DISCLAIMER:  
 ALL 3D IMAGES ARE AN APPROXIMATE ONLY. ALL 3D IMAGES ARE SHOWN FOR  
 ILLUSTRATION PURPOSES ONLY. 3D DRAWINGS SHALL SUPERCEDE ALL ITEMS SHOWN ON 3D  
 IMAGES. THIS SHEET IS PROVIDED AS A REPRESENTATION AND IS "NOT FOR CONSTRUCTION"

NOT FOR  
 CONSTRUCTION



11251 SE 232nd AVE  
 DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
 THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS  
 OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE  
 DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE  
 WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.



1 3D INTERIOR VIEW 1



2 3D INTERIOR VIEW 2



3 3D INTERIOR VIEW 3



4 3D INTERIOR VIEW 4

Drawing Index

No.	Date	Description

LAKE ORION  
 DDA  
 STILLWATER

215 SOUTH  
 BROADWAY  
 LAKE ORION, MI

3D INTERIOR  
 VIEWS

A-003

DRAWN BY  
 KJM  
 4/14/2026 5:21:24 PM

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description

LAKE ORION  
DDA  
STILLWATER

215 SOUTH  
BROADWAY  
LAKE ORION, MI

MAIN LEVEL  
FLOOR PLAN

A-101

DRAWN BY  
101  
4/14/2026 5:27:31 PM

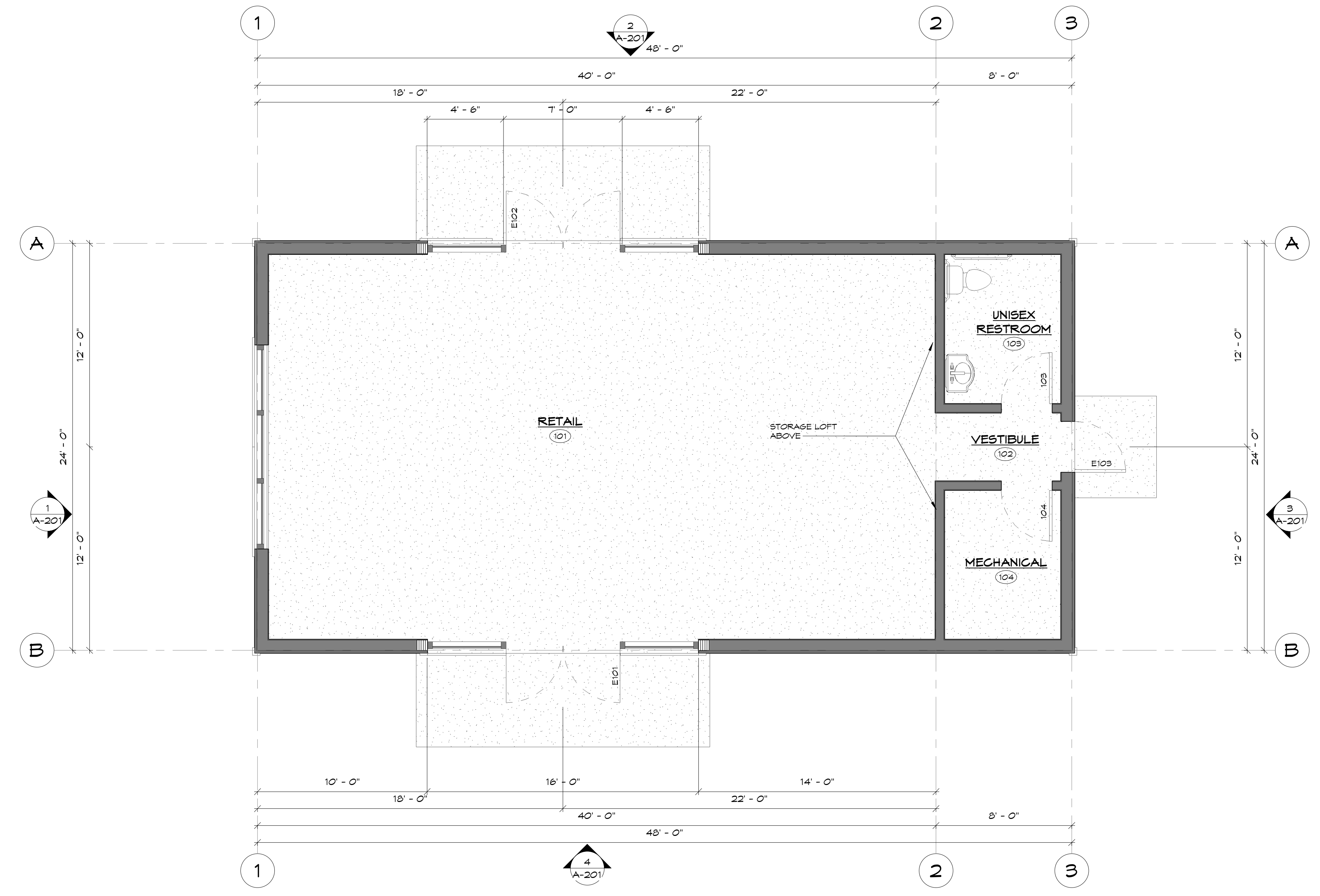
AREA - CONDITIONED SPACE	
NOTE: CONDITIONED SPACE MEASURED FROM EXTERIOR SURFACES OF EXTERIOR FRAMING & HEAD CLEARANCE ABOVE 48"	
CONDITIONED	960 SF CONDITIONED
RETAIL	192 SF CONDITIONED
SERVICE	1152 SF
GRAND TOTAL	1152 SF

Room Schedule - Level							
NOTE: ROOM AREA MEASURED FROM INTERIOR OF STUD WALL OR USEABLE SPACE.							
Number	Name	Area	Floor Finish	Wall Finish	Material	Height	Comments
GROUND LEVEL							
101	RETAIL	903 SF	CONCRETE	GNB	GNB	VARIES	
102	VESTIBULE	24 SF	CONCRETE	GNB	GNB	8' - 4 1/8"	
103	UNISEX RESTROOM	60 SF	CONCRETE	GNB	GNB	8' - 4 1/8"	
104	MECHANICAL	60 SF	CONCRETE	GNB	GNB	8' - 4 1/8"	
		1052 SF					

Window Schedule - Level							
SEE SCHEDULES SHEET FOR WINDOW TYPES AND COMPLETE SCHEDULE							
Mark	Type	Width	Height	Head Height (BTM of HDR)	Sill Height (TOP of SILL)	Operation	Comments
GROUND LEVEL							

Door Schedule - Level							
SEE SCHEDULES SHEET FOR DOOR TYPES AND COMPLETE SCHEDULE							
Mark	Type	Width	Height	Operation	Comments		
GROUND LEVEL							
103	A	3' - 0"	6' - 8"				
104	A	3' - 0"	6' - 8"				
E101	E	6' - 3 1/2"	7' - 0"				
E102	E	6' - 3 1/2"	7' - 0"				
E103	C	3' - 0"	6' - 8"				

KEYNOTES



1 MAIN LEVEL  
1/4" = 1'-0"

FLOOR PLAN GENERAL NOTES

- NOTES APPLY TO SHEET A-101 ONLY.
- REFERENCE SHEET A-103 FOR COMPLETE WINDOW & DOOR SCHEDULES.
  - REFERENCE SHEET A-101 FOR WALL TYPES AND DETAILS.



OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index

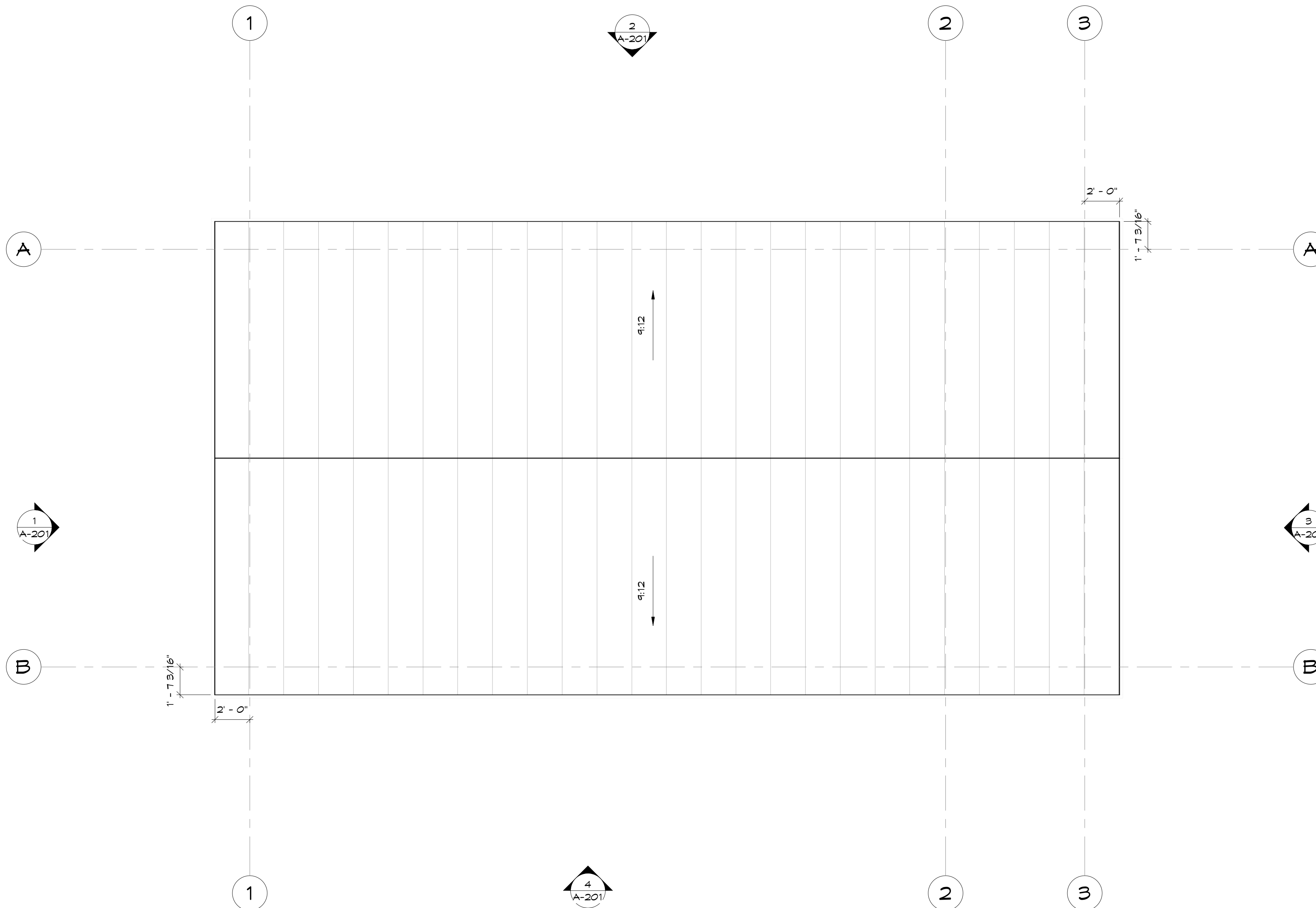
No.	Date	Description

LAKE ORION  
DDA  
STILLWATER

215 SOUTH  
BROADWAY  
LAKE ORION, MI

ROOF PLAN

A-102



1 ROOF PLAN  
1/4" = 1'-0"

NOT FOR CONSTRUCTION



11251 SE 232nd AVE  
DAMASCUS, OR 97089

OWNERSHIP & USE OF DOCUMENTS:  
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF DC STRUCTURES. AS INSTRUMENTS OF PROFESSIONAL SERVICE ARE AND SHALL REMAIN THE PROPERTY OF DC STRUCTURES. THESE DOCUMENTS ARE NOT TO BE USED IN WHOLE OR IN PART FOR ANY PROJECT OR PURPOSE WHATSOEVER, WITHOUT THE PRIOR SPECIFIC WRITTEN AUTHORIZATION OF DC STRUCTURES.

Drawing Index		
No.	Date	Description

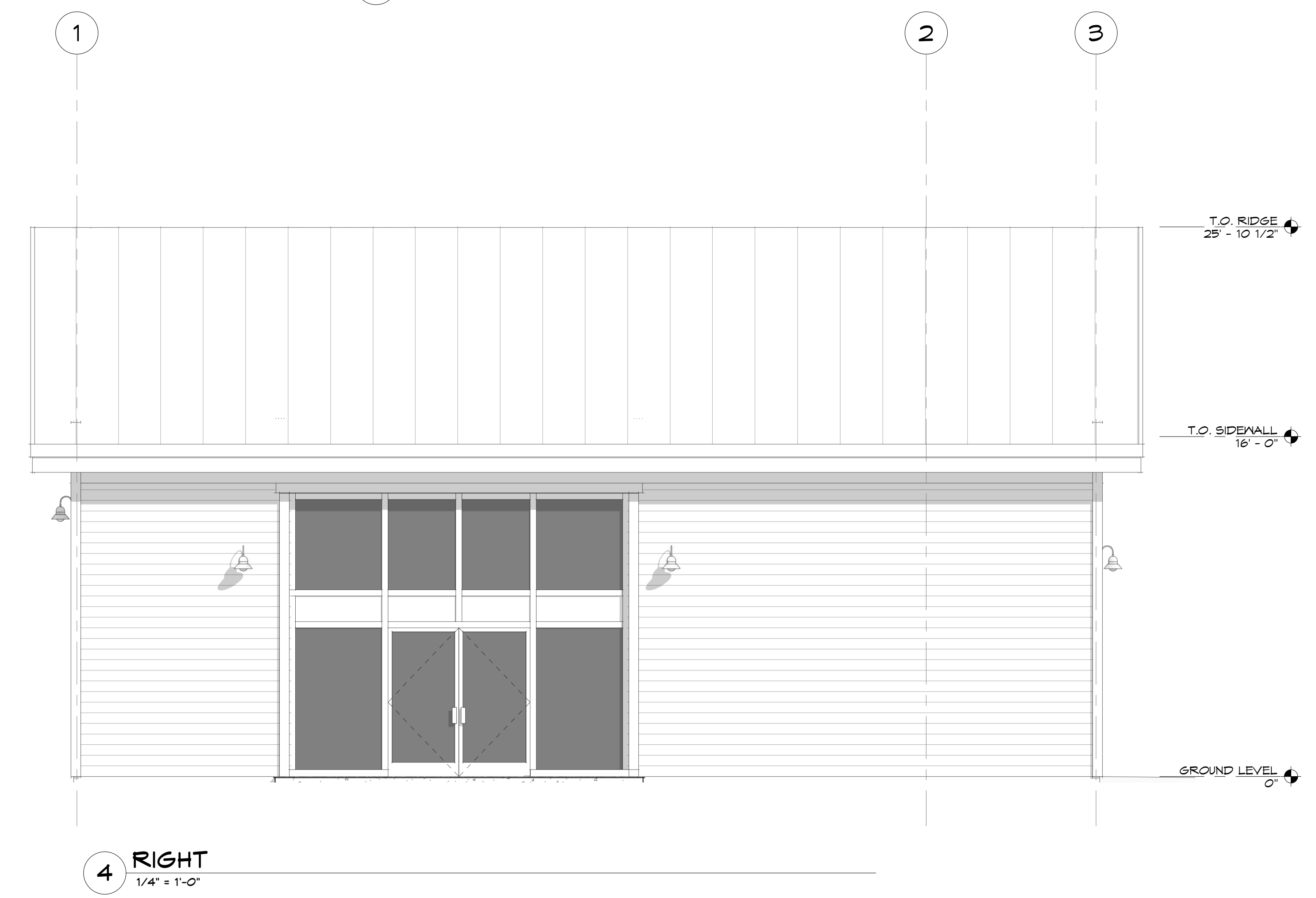
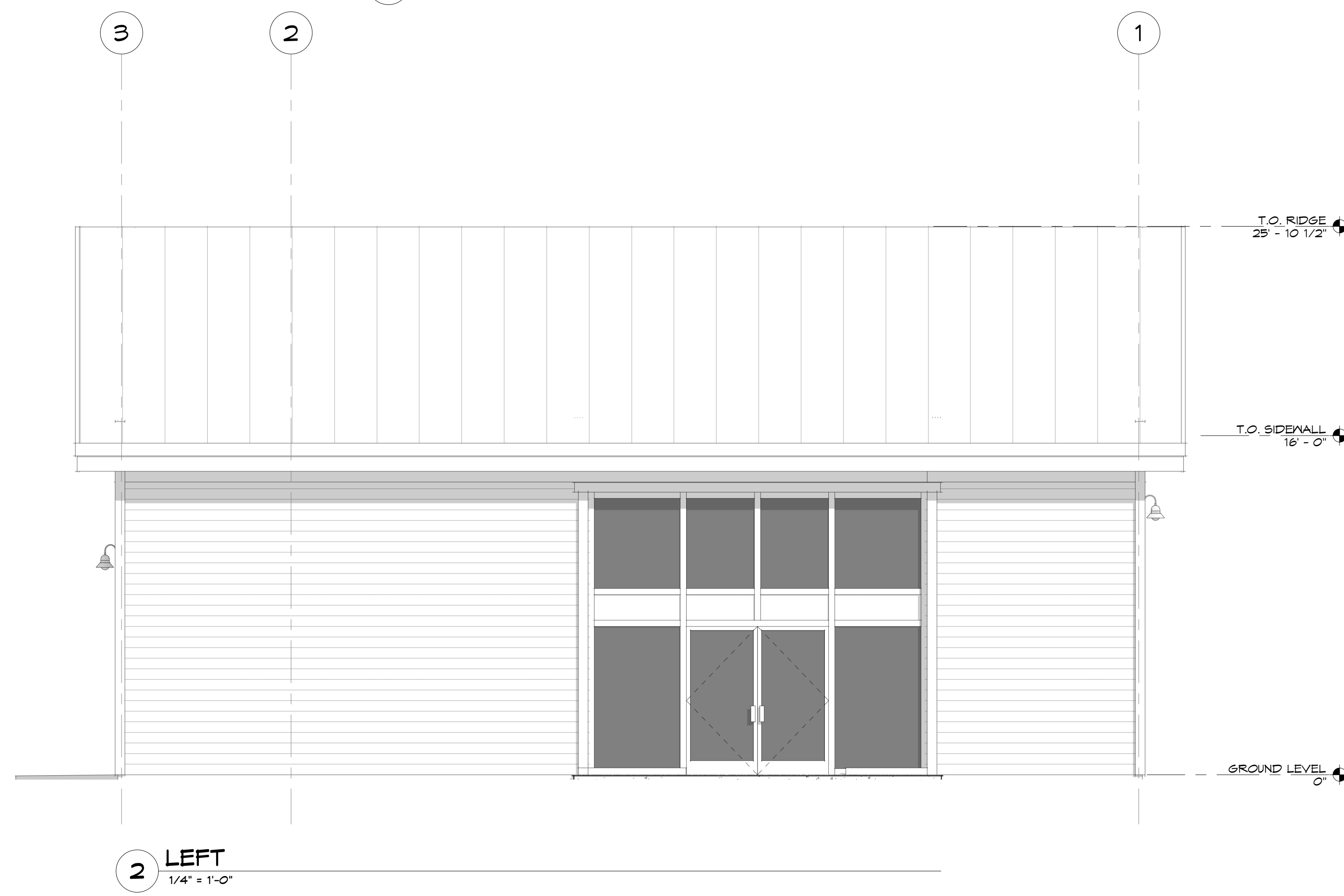
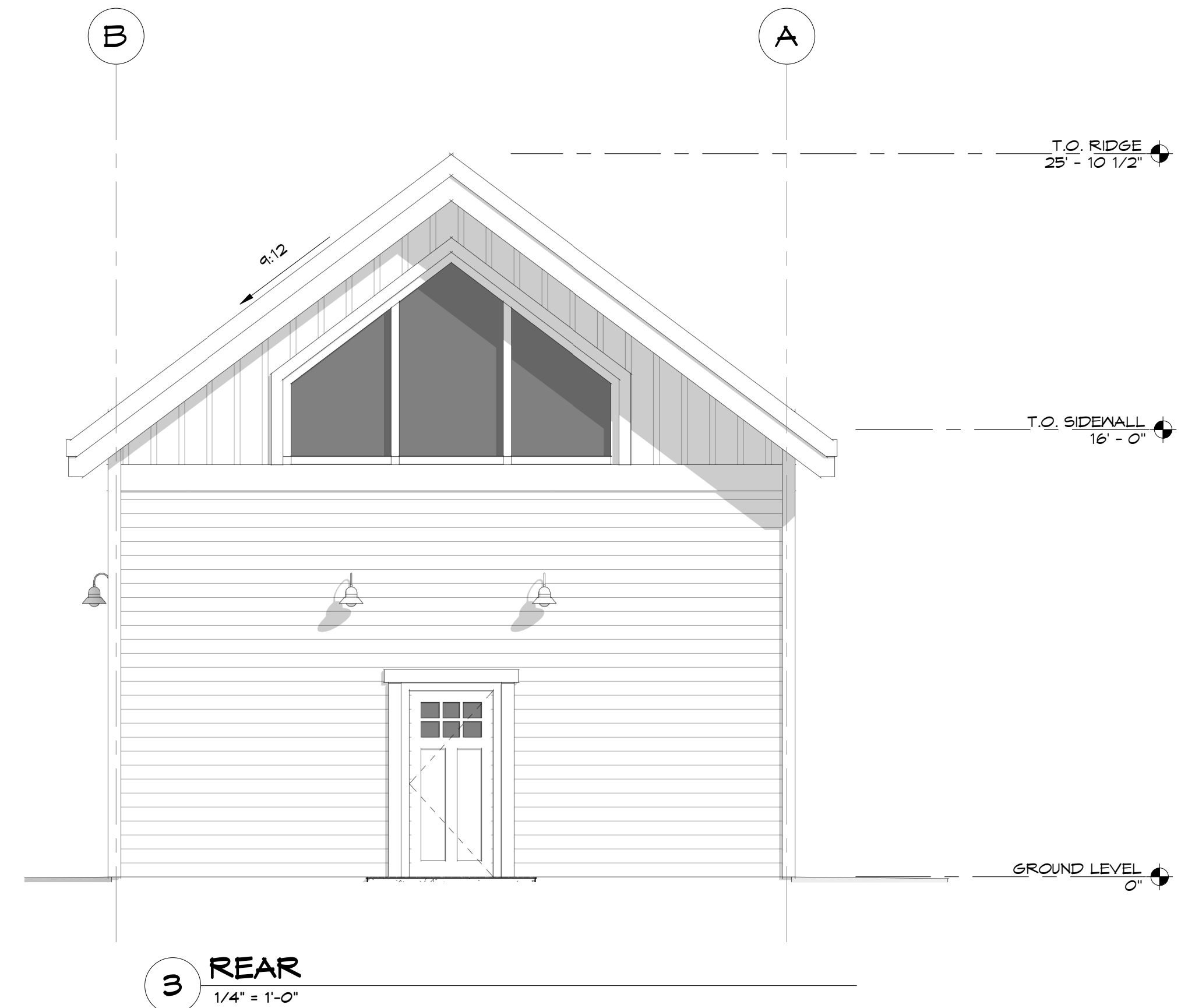
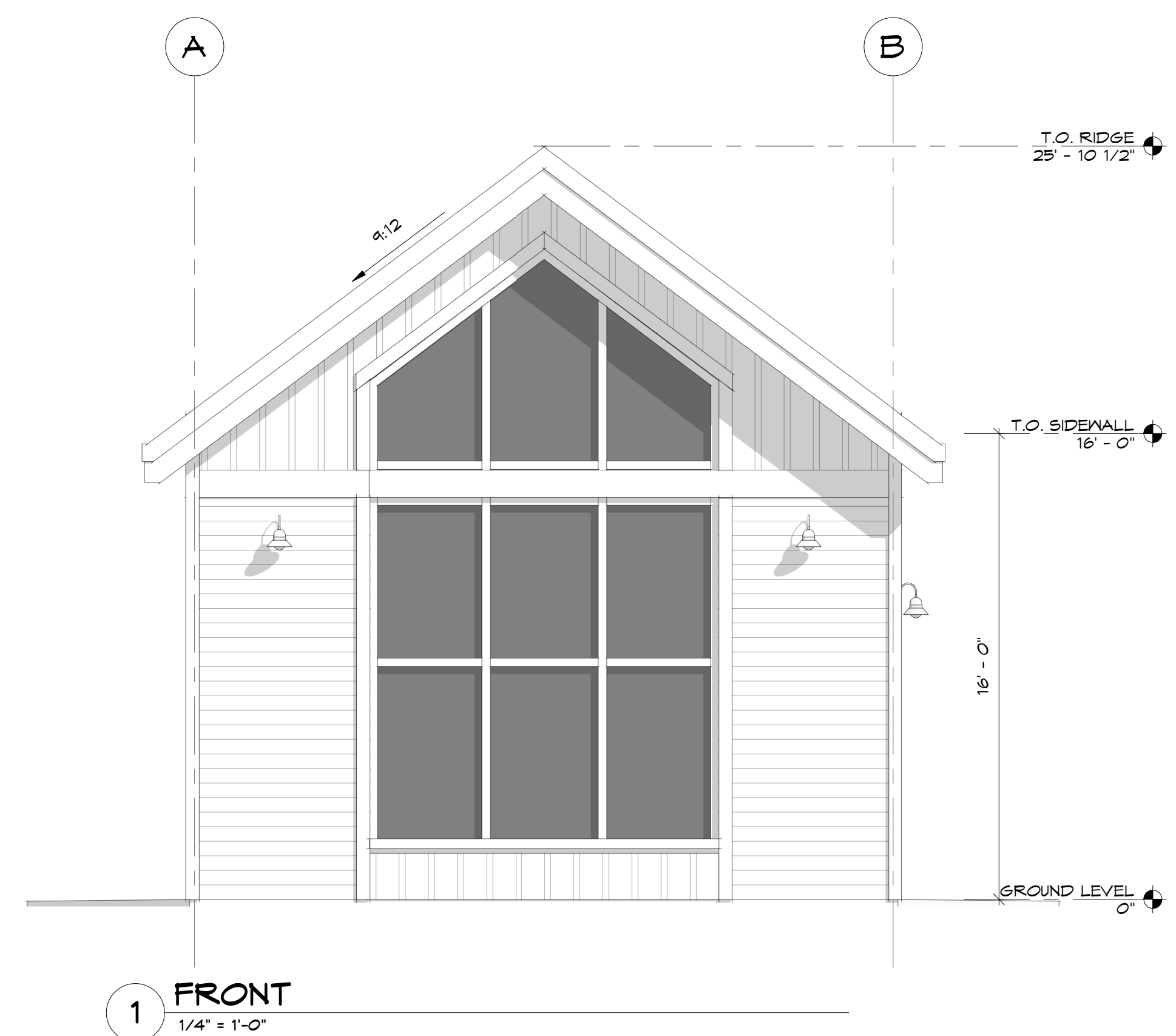
LAKE ORION  
DDA  
STILLWATER

215 SOUTH  
BROADWAY  
LAKE ORION, MI

ELEVATIONS

A-201

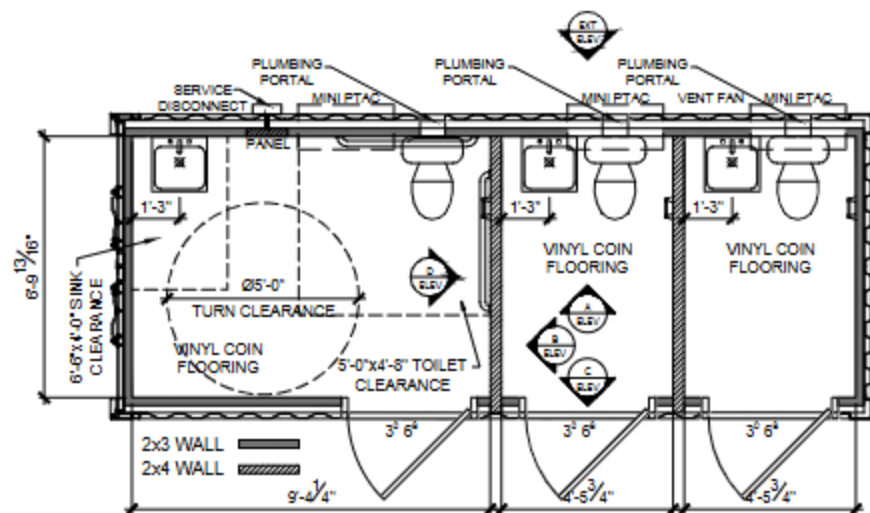
DRAWN BY  
KIM  
4/14/2026 5:27:44 PM



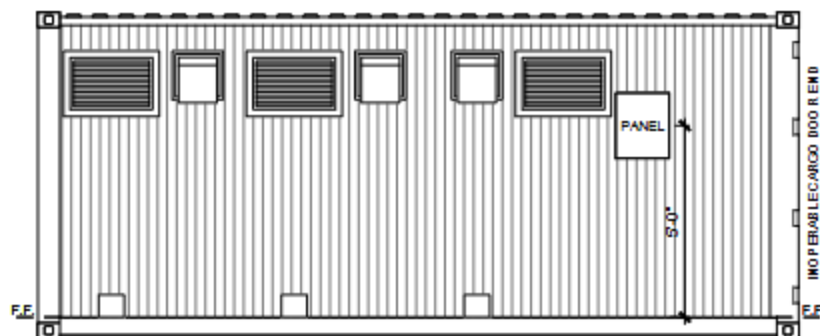
KEYNOTES

ELEVATION GENERAL NOTES  
NOTES APPLY TO SHEET(S) A-201 ONLY.

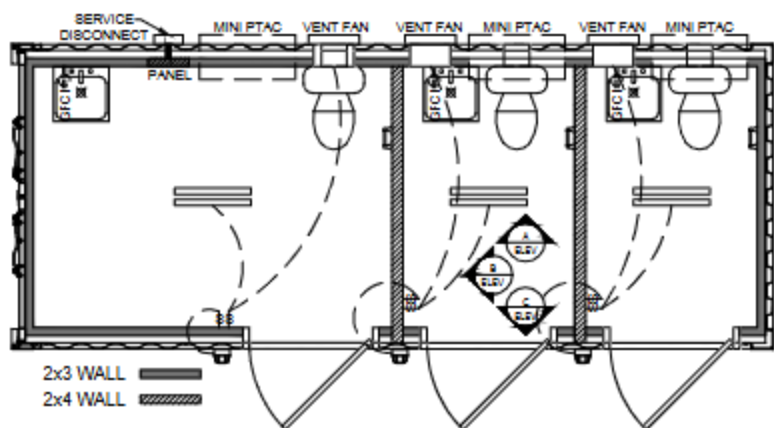
4/14/2026 5:27:44 PM



**FLOOR PLAN**



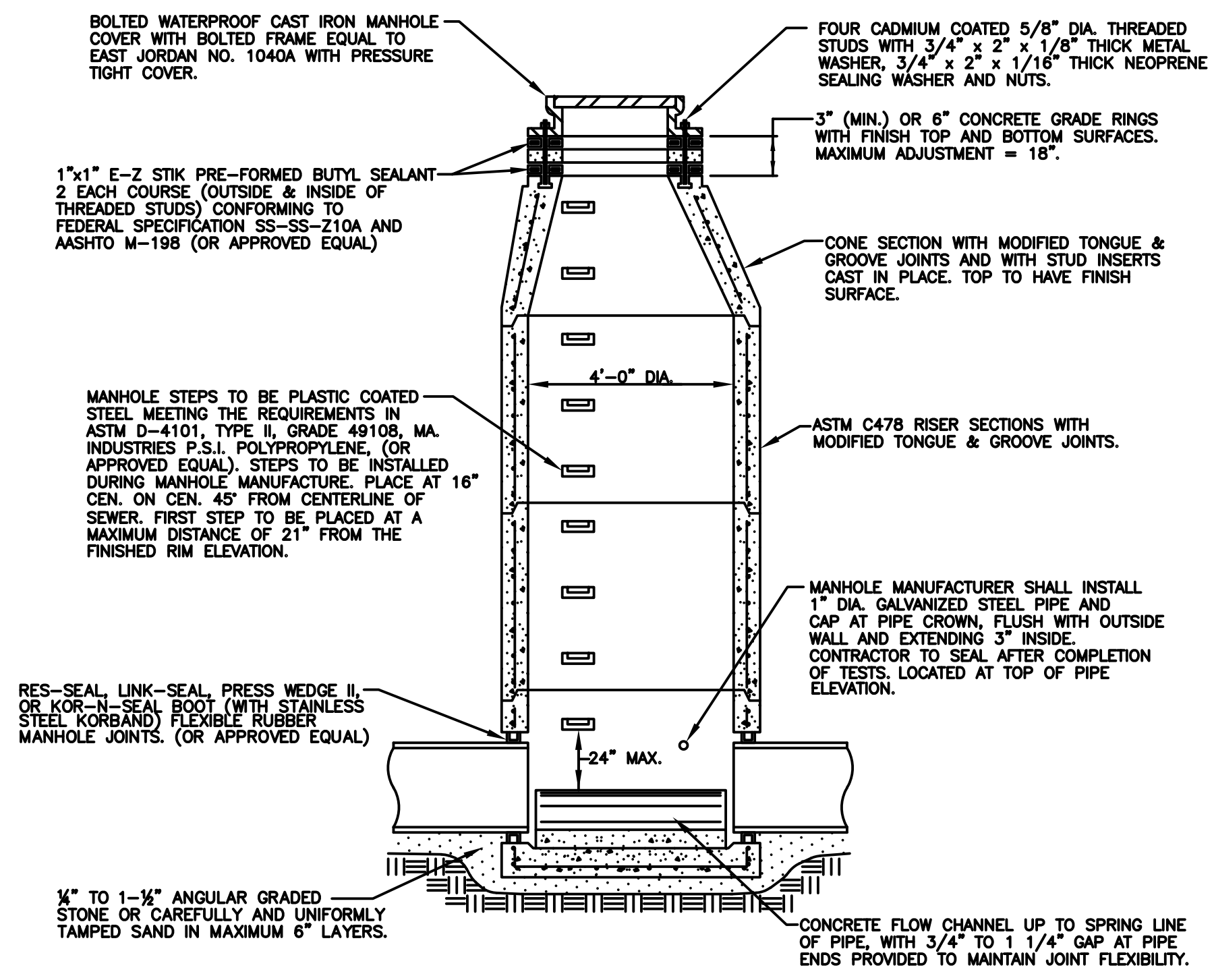
**EXTERIOR ELEVATION**



**ELECTRICAL PLAN**

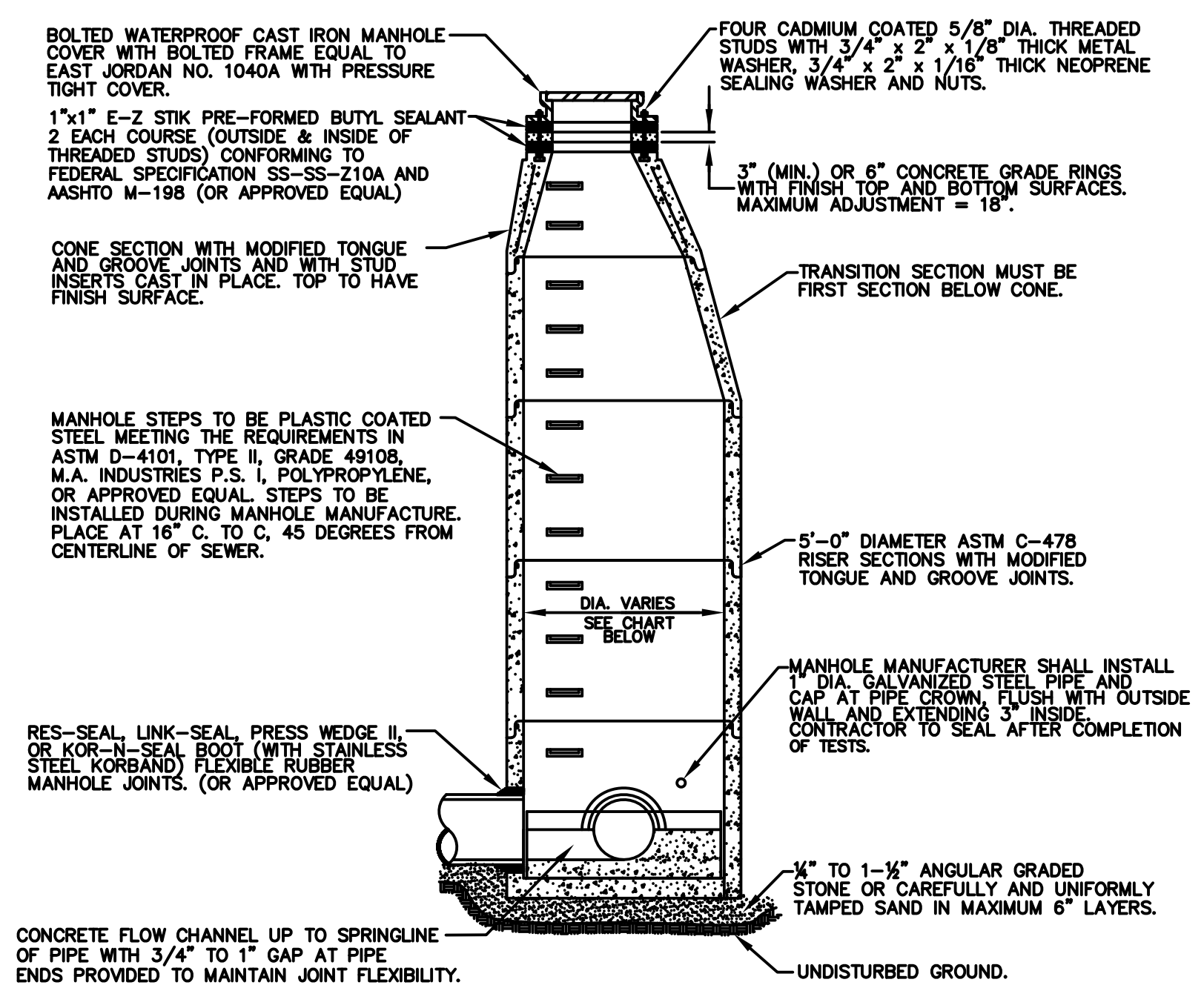
**SANITARY SEWER CONSTRUCTION NOTES**

- ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL UNIT OF GOVERNMENT AND THE WATER RESOURCES COMMISSIONER (WRC). ALL SANITARY SEWER CONSTRUCTION SHALL HAVE FULL-TIME INSPECTION SUPERVISED BY A STATE OF MICHIGAN LICENSED PROFESSIONAL ENGINEER PROVIDED BY, OR CAUSED TO BE PROVIDED BY, THE LOCAL UNIT OF GOVERNMENT.
- AT ALL CONNECTIONS TO WRC SEWERS OF EXTENSIONS, AND BEFORE START OF CONSTRUCTION, THE CONTRACTOR MUST OBTAIN A SEWER INSPECTION PERMIT ISSUED BY WRC. GRAVITY SEWER PERMIT CHARGES ARE \$250 FOR EACH CONNECTION PLUS \$25 FOR EACH MANHOLE CONSTRUCTED. PRESSURE SEWER PERMIT CHARGES ARE \$250 PER 2,460 L.F. OF FORCE MAIN WITH A MINIMUM PERMIT FEE OF \$250. FAILURE TO PASS ANY TEST SEGMENT WILL RESULT IN AN ADDITIONAL CHARGE TO THE CONTRACTOR FOR EACH RETEST. IN ACCORDANCE WITH THE ABOVE PRICE SCHEDULE, THE CONTRACTOR SHALL ALSO HAVE POSTED WITH WRC A \$5,000 SURETY BOND AND \$500 CASH DEPOSIT. THE CONTRACTOR SHALL NOTIFY THE LOCAL UNIT OF GOVERNMENT AND WRC (248-858-1105) 24 HOURS PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. FINAL ACCEPTANCE TESTS MUST BE WITNESSED BY COUNTY PERSONNEL AND MUST BE SCHEDULED BY MUNICIPALITY OR ITS CONSULTANT IN ADVANCE WITH 24 HOUR NOTICE AT 248-858-1105.
- NO SEWER INSTALLATION SHALL HAVE AN INFILTRATION EXCEEDING 100 GALLONS PER INCH DIAMETER PER MILE OF PIPE IN A 24 HOUR PERIOD, AND NO SINGLE RUN OF SEWER BETWEEN MANHOLES SHALL EXCEED 100 GALLONS PER INCH DIAMETER PER MILE. AIR TESTS IN LIEU OF INFILTRATION TESTS SHALL BE AS SPECIFIED IN THE WATER RESOURCES COMMISSIONER STANDARDS. ONLY PIPE AND PIPE JOINTS APPROVED BY WRC MAY BE USED FOR SANITARY SEWER CONSTRUCTION.
- LOCATED IN THE FIRST MANHOLE UPSTREAM FROM THE POINT OF ALL CONNECTIONS TO AN EXISTING WRC SEWER, OR EXTENSION THERETO, A TEMPORARY 12-INCH DEEP SUMP SHALL BE PROVIDED IN THE FIRST MANHOLE ABOVE THE CONNECTION WHICH WILL BE FILLED IN AFTER SUCCESSFUL COMPLETION OF ANY ACCEPTANCE TEST UP TO THE STANDARD FILLET PROVIDED FOR THE FLOW CHANNEL. A WATERTIGHT BULKHEAD SHALL BE PROVIDED ON THE DOWNSTREAM SIDE OF THE SUMP MANHOLE.
- AT ALL TIMES WHEN LAYING OF NEW PIPE IS NOT ACTUALLY IN PROGRESS, THE UPSTREAM OPEN END OF THE PIPE SHALL BE CLOSED BY TEMPORARY WATERTIGHT PLUGS OR BY OTHER APPROVED MEANS. IF WATER IS IN THE TRENCH WHEN WORK IS RESUMED, THE PLUG SHALL NOT BE REMOVED UNTIL THE DANGER OF WATER ENTERING THE PIPE HAS PASSED.
- ALL BUILDING LEADS AND RISERS SHALL BE SIX INCH SDR 23.5 ABS PIPE WITH CHEMICALLY FUSED JOINTS OR AN APPROVED EQUAL PIPE AND JOINT. BUILDING LEADS TO BE FURNISHED WITH REMOVABLE AIRTIGHT AND WATERTIGHT STOPPERS.
- ALL RIGID SEWER PIPE SHALL BE INSTALLED IN CLASS "B" BEDDING OR BETTER. ALL FLEXIBLE, SEMI-FLEXIBLE, OR COMPOSITE SEWER PIPE SHALL BE INSTALLED IN CONFORMANCE TO WRC SPECIFICATIONS.
- ALL NEW MANHOLES SHALL HAVE WRC APPROVED FLEXIBLE, WATERTIGHT SEALS WHERE PIPES PASS THROUGH WALLS. MANHOLES SHALL BE OF PRE CAST SECTIONS WITH MODIFIED GROOVE TONGUE AND RUBBER GASKET TYPE JOINTS. PRE CAST MANHOLE CONE SECTIONS SHALL BE WRC APPROVED MODIFIED ECCENTRIC CONE TYPE. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS.
- AT ALL CONNECTIONS TO MANHOLES ON WRC SEWERS, OR EXTENSIONS THERETO, DROP CONNECTIONS WILL BE REQUIRED WHEN THE DIFFERENCE IN INVERT ELEVATIONS EXCEEDS 18 INCHES.
- TAPS TO EXISTING MANHOLES SHALL BE MADE BY CORING. THE CONTRACTOR SHALL PLACE A KOR-N-SEAL BOOT (OR WRC APPROVED EQUAL) AFTER CORING IS COMPLETED. BLIND DRILLING WILL ONLY BE PERMITTED IN LIEU OF CORING WITH PRIOR WRC APPROVAL.
- MANHOLES CONSTRUCTED DIRECTLY ON WRC SEWERS SHALL BE PROVIDED WITH COVERS READING "WATER RESOURCES COMMISSIONER-SANITARY" IN RAISED LETTERS.
- NO GROUND WATER, STORM WATER, CONSTRUCTION WATER, DOWN SPOUT DRAINAGE OR WEEP TILE DRAINAGE SHALL BE ALLOWED TO ENTER ANY SANITARY SEWER INSTALLATION.
- PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL TELEPHONE MISS DIG (800-482-7171) FOR THE LOCATION OF UNDERGROUND PIPELINE AND CABLE FACILITIES AND SHALL ALSO NOTIFY REPRESENTATIVES OF OTHER UTILITIES LOCATED IN THE VICINITY OF THE WORK.
- AN 18 INCH MINIMUM VERTICAL SEPARATION AND A 10 FOOT MINIMUM HORIZONTAL SEPARATION MUST BE MAINTAINED BETWEEN SANITARY SEWER AND WATER MAIN.
- NEW MANHOLES BUILT OVER AN EXISTING SANITARY SEWER SHALL HAVE MONOLITHIC POURED BOTTOMS.
- IF THE STRUCTURE FALLS WITHIN THE ROADBED OF A GRAVEL ROAD OR WITHIN THE UNPAVED SHOULDER OF A PAVED ROAD, THE COVER SHALL BE SIX (6") INCHES BELOW THE FINISHED GRAVEL SURFACE.



**STANDARD MANHOLE**

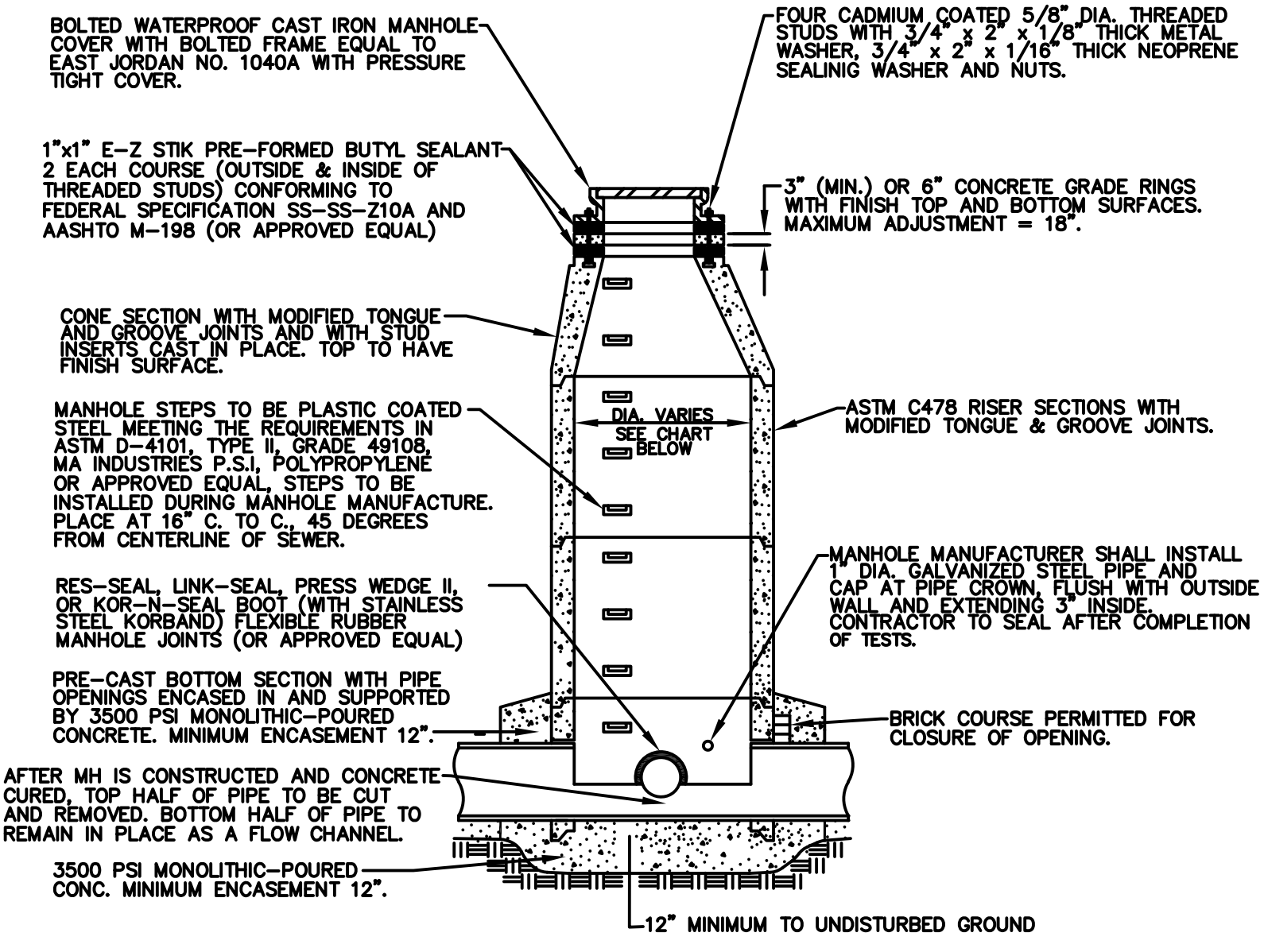
MAX. PIPE SIZE FOR STRAIGHT THRU INSTALLATION	MAX. PIPE SIZE FOR RIGHT ANGLE INSTALLATION
24"	18"



**STANDARD OVERSIZED MANHOLE**

MANHOLE SIZING CHART

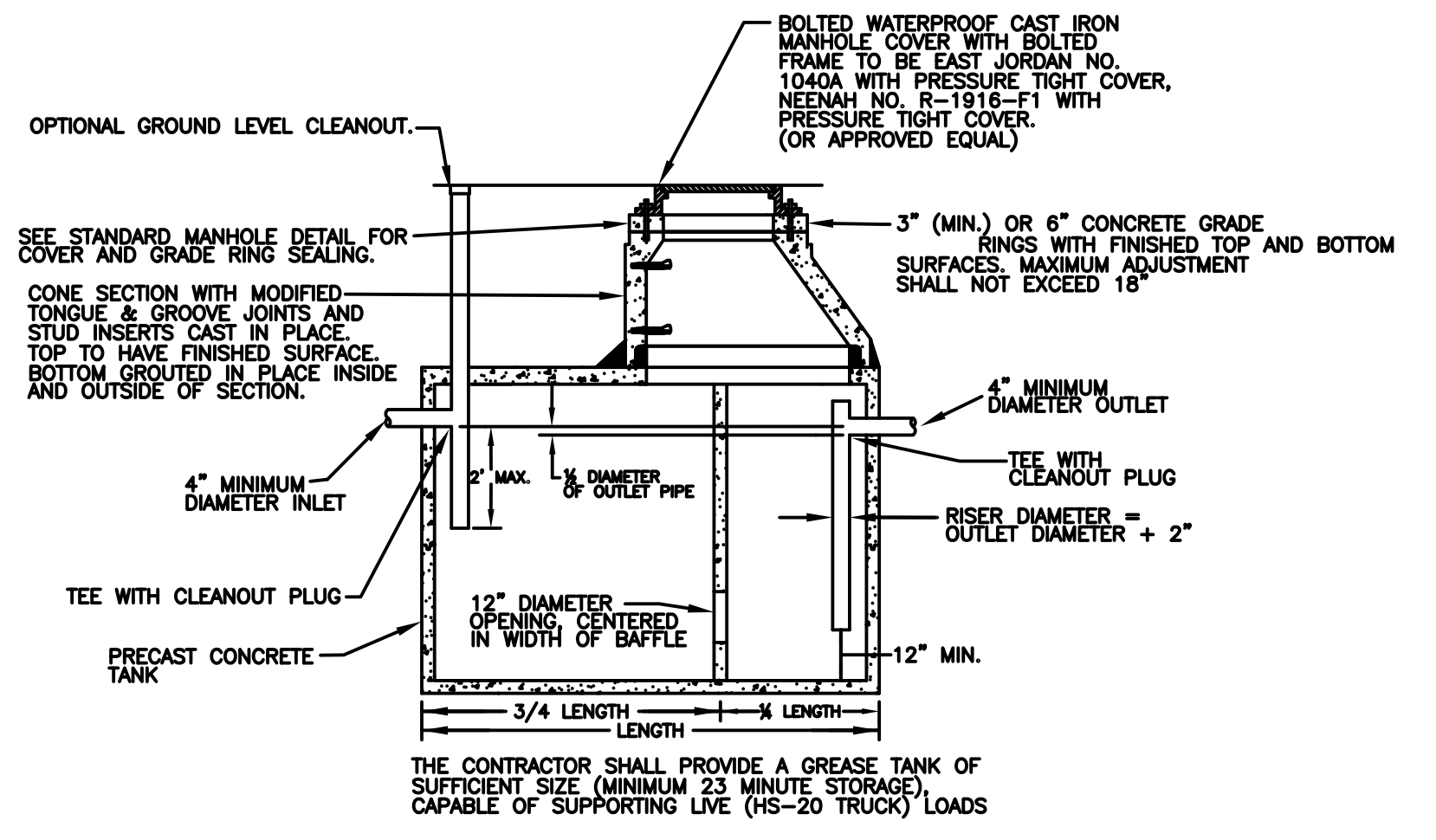
MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.	MAX. PIPE SIZE FOR RIGHT ANGLE INST.
5'	36"	24"
6'	42"	36"
7'	60"	42"



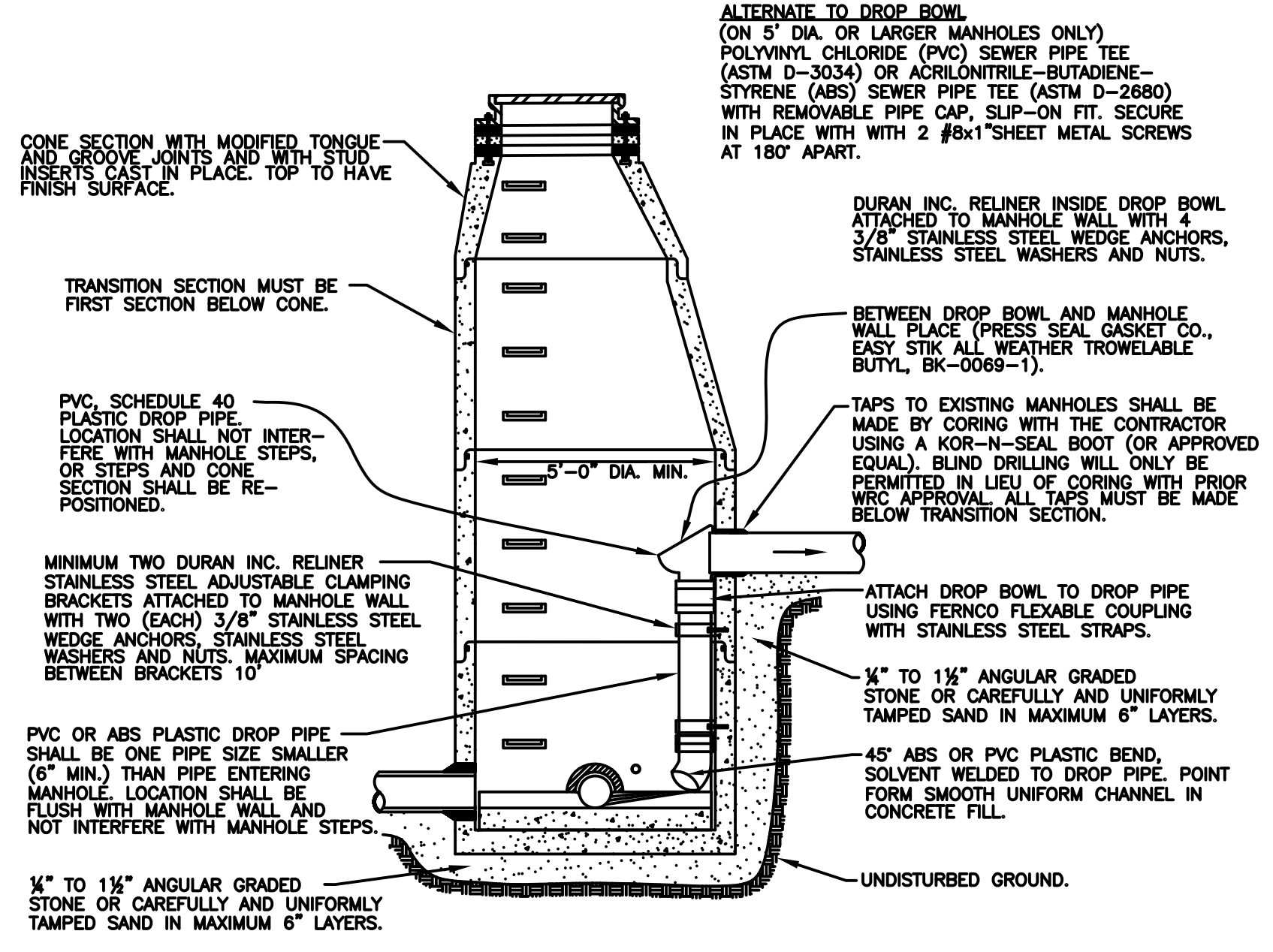
**MANHOLE CONSTRUCTED OVER EXISTING SEWER**

MANHOLE SIZING CHART

MANHOLE DIAMETER	MAX. PIPE SIZE FOR STRAIGHT THRU INST.
4'	24"
5'	36"
6'	42"
7'	60"



**DOUBLE-COMPARTMENT GREASE INTERCEPTOR TANK FOR OUTLET PIPE BURIAL 42" AND DEEPER**



**INTERIOR DROP CONNECTION**

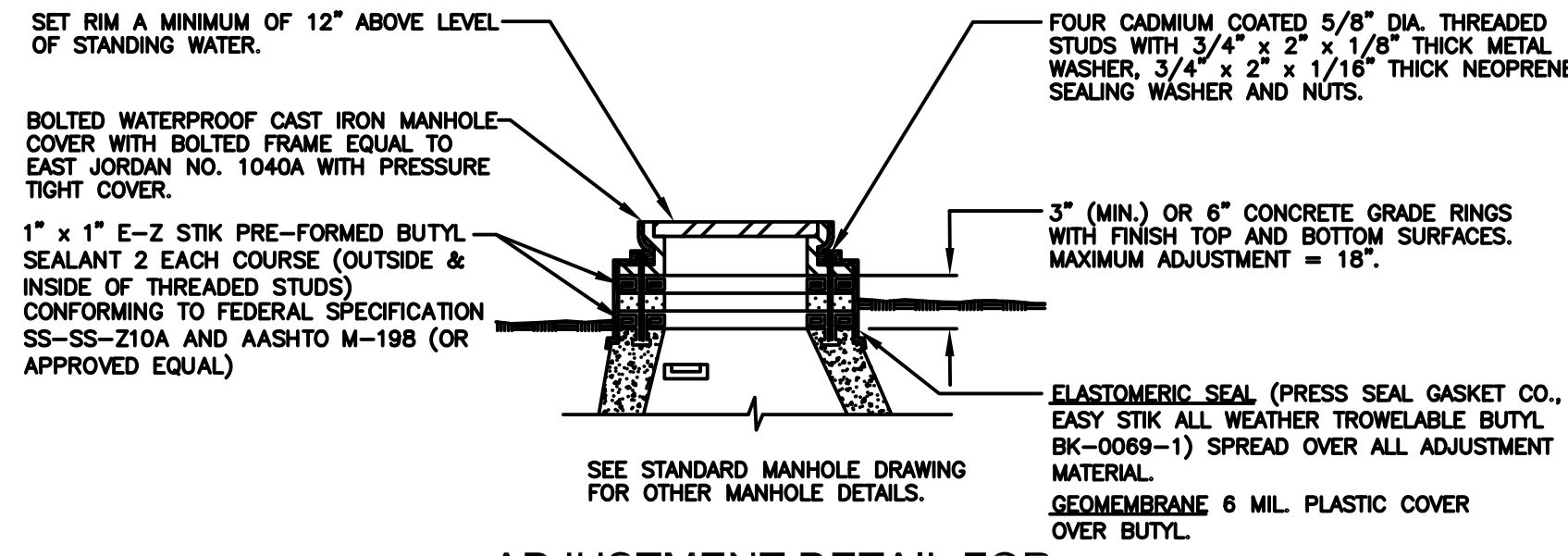
REVISION BLOCK

Rev. No.	By:	Rev. Date:	Description:
1	DS	3-23-11	REMOVED STANDARD MONITORING MANHOLE
2	KB	6-21-16	ADDED NOTE "REQUIRES ADVANCED APPROVAL BY WRC" AND UPDATE PHONE # IN NOTE #2
3	KB	7-22-20	UPDATED M1 STEPS TO ASTM D4101
4	KB	9-27-23	REMOVED EXTERIOR DROP CONNECTION DETAIL

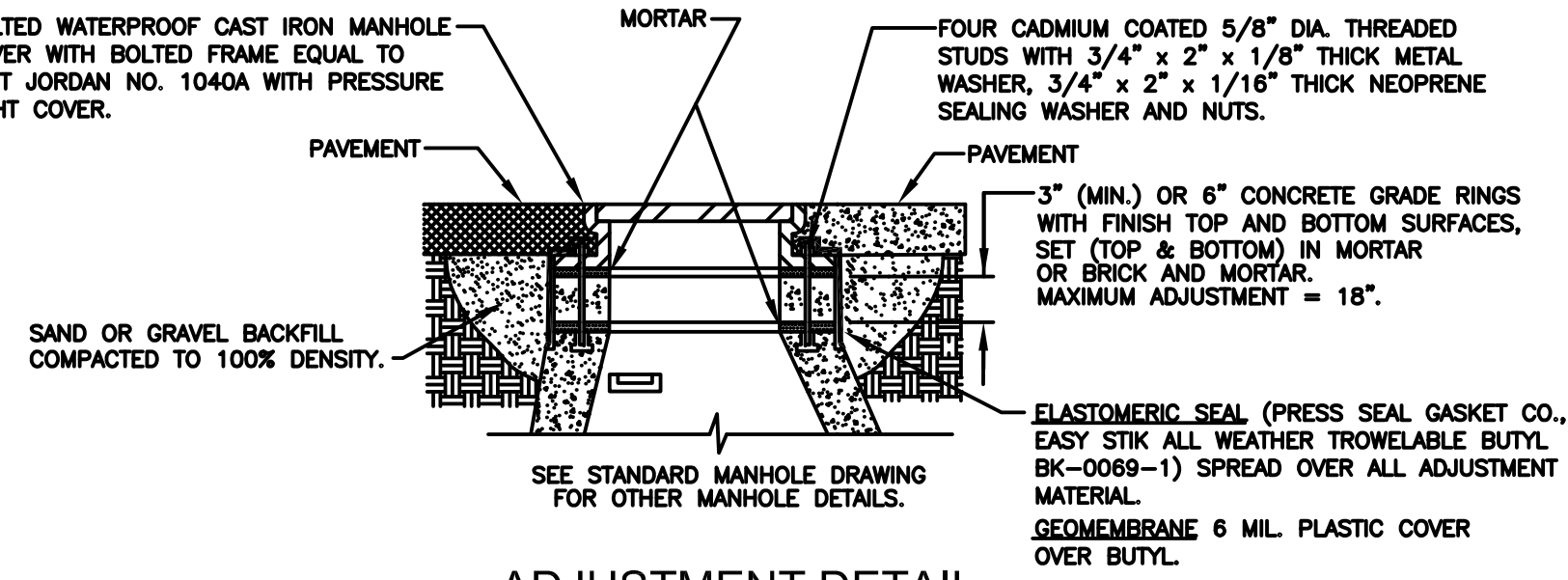
**SANITARY SEWER DETAILS AND NOTES**

ORIG. DATE:	08/21/02	<p>WATER RESOURCES COMMISSIONER Jim Nash</p>	ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907	
SCALE:	NO SCALE		SHEET NO.:	1 of 2
DESIGNED BY:	WRC			
DRAWN BY:	WRC Mapping			

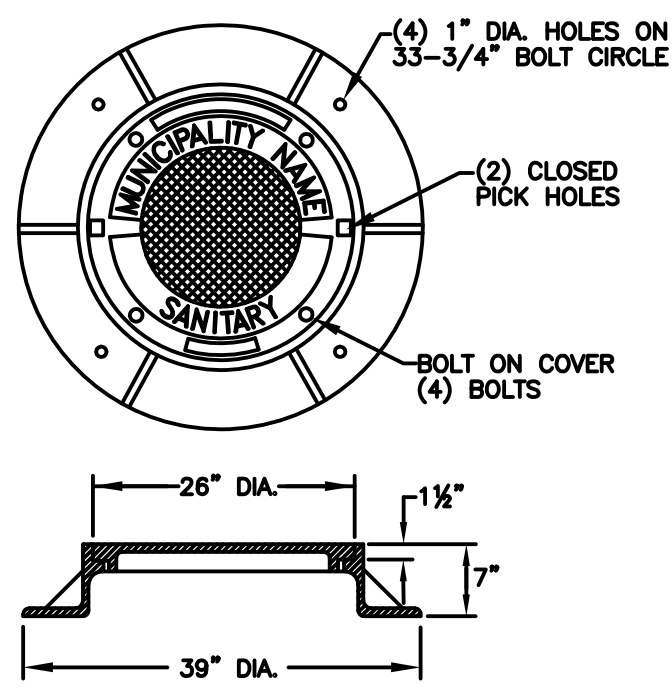
MANHOLE RIM ADJUSTMENT CHART	
MANHOLE LOCATION	SET RIM ELEVATION
DITCH	12" ABOVE FINISH GRADE
FLOOD PLAIN	12" ABOVE STANDING WATER
GRAVEL ROAD / SHOULDER	6" BELOW FINISH GRADE
PAVEMENT / GREENBELT	FLUSH WITH FINISH GRADE



ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN FLOOD PRONE AREAS

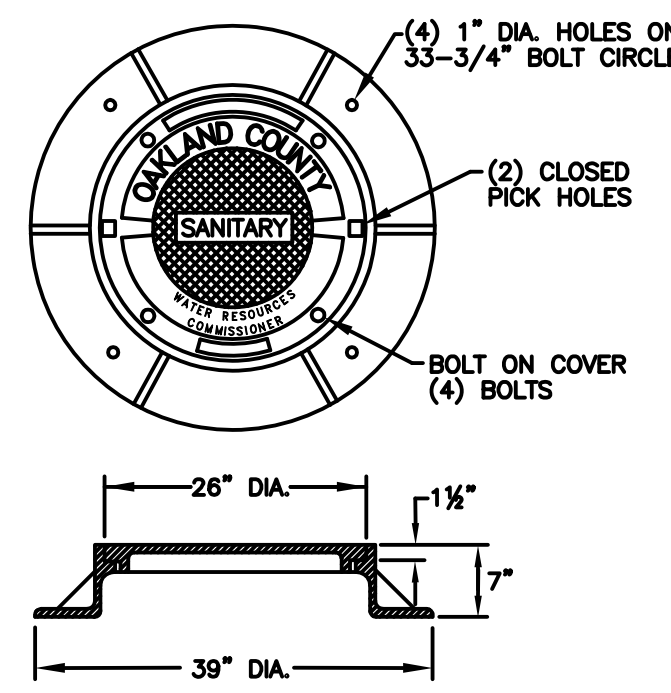


ADJUSTMENT DETAIL FOR MANHOLE TOPS WITHIN PAVEMENT AREAS



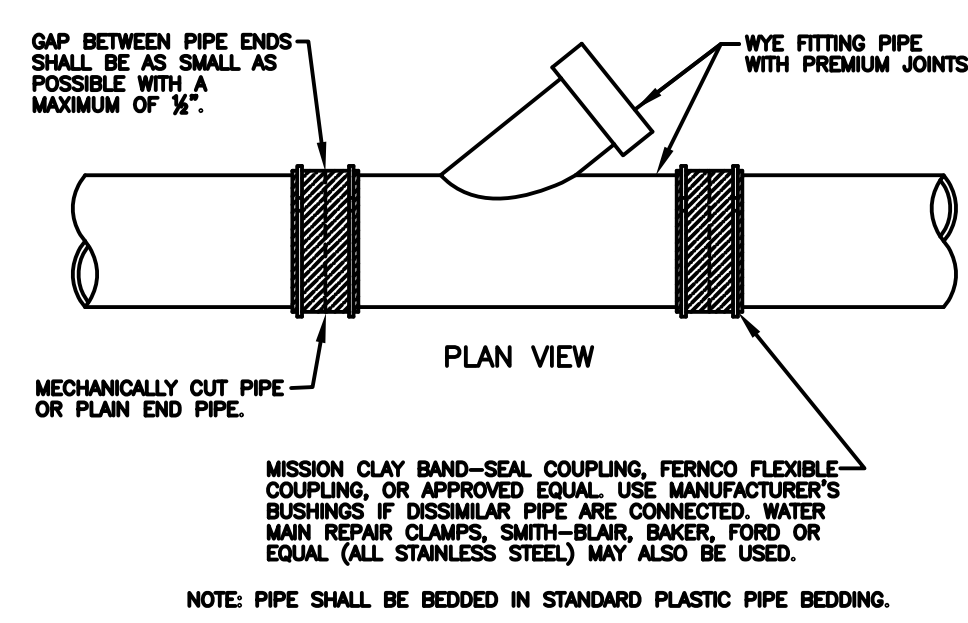
EAST JORDAN IRON WORKS  
HEAVY DUTY MATERIAL ASTM A48 CL.35  
COVER WT. 150 LBS., CATALOG NO. 1040A  
PATTERN NO. 1040A, PRODUCT NO. 1040XX OAKCOSTD.  
2" RAISED LETTERS, 1" RAISED LETTERS  
ALL RECESSED FLUSH.

LOCAL MUNICIPALITIES MANHOLE COVER



EAST JORDAN IRON WORKS  
HEAVY DUTY MATERIAL ASTM A48 CL.35  
COVER WT. 150 LBS., CATALOG NO. 1040APT  
PATTERN NO. 1040A, PRODUCT NO. NCR09-1280 C  
2" RAISED LETTERS, 1" RAISED LETTERS, 3/4" RAISED LETTERS  
ALL RECESSED FLUSH.

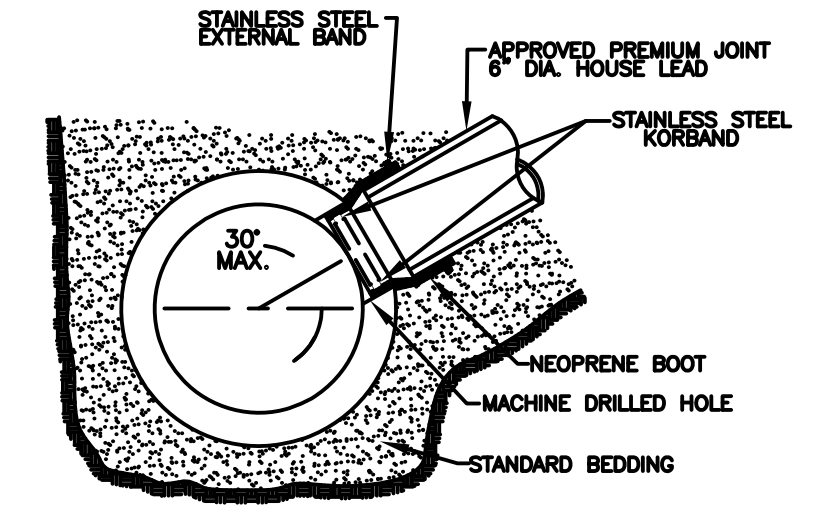
W.R.C. LETTERED MANHOLE COVER



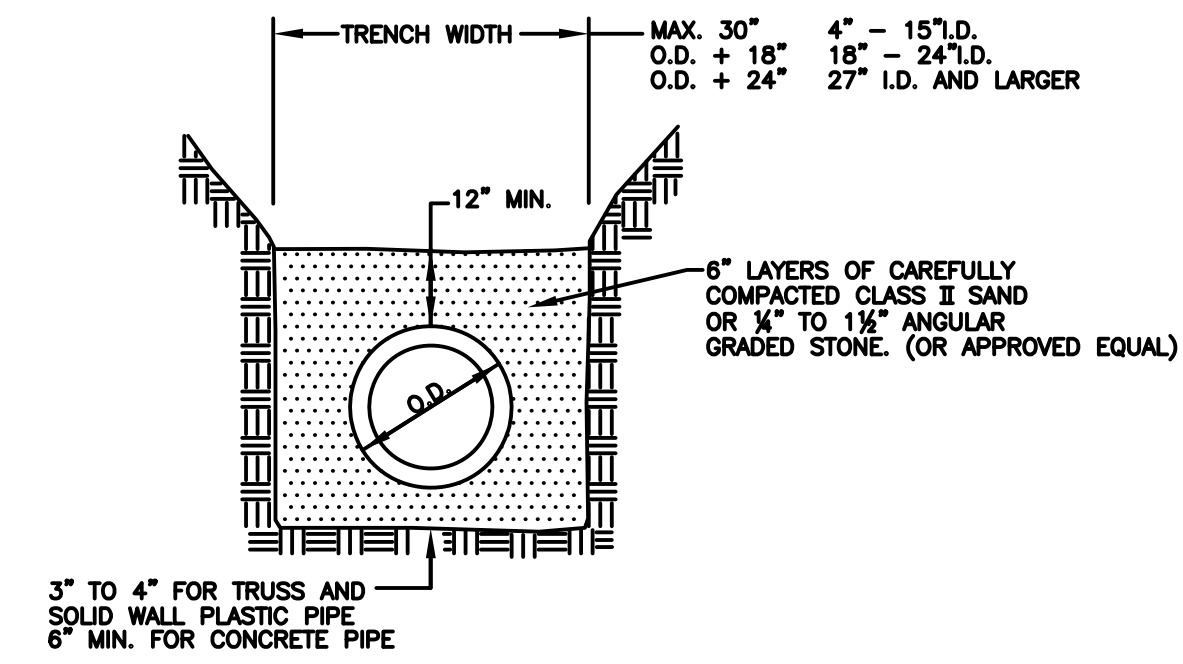
WYE PIPE INSERTION WITH FLEXIBLE COUPLINGS (RIGID PIPE)

WATER RESOURCES COMMISSIONER  
GRAVITY BUILDING LEAD REQUIREMENTS AND DETAILS

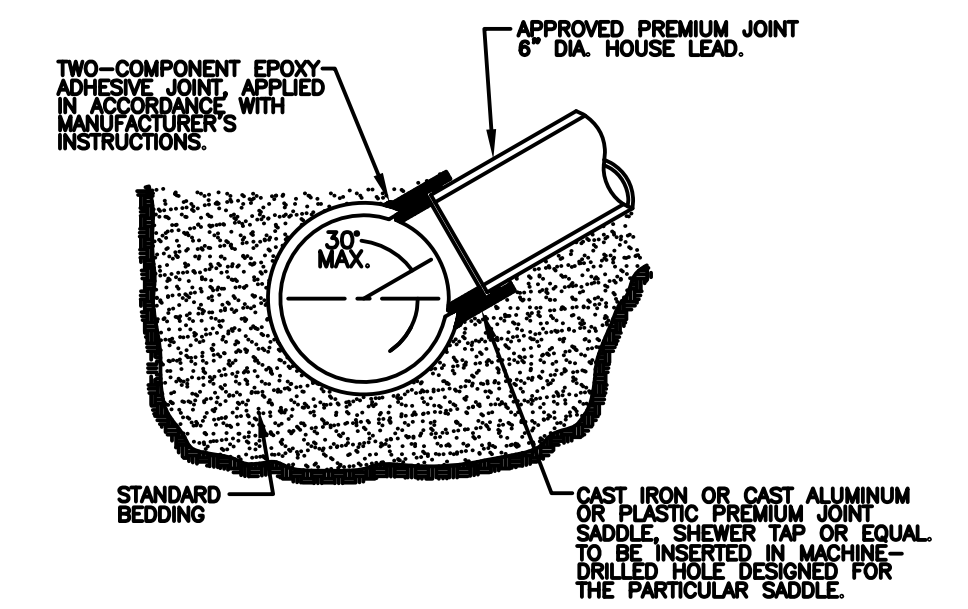
- ALL BUILDING LEAD WORK MUST BE PERFORMED UNDER WATER RESOURCES COMMISSIONER (WRC) AND/OR LOCAL UNIT OF GOVERNMENT INSPECTION.
- FOR ALL WRC-OPERATED SYSTEMS, CALL 248-858-1110 24-HOURS IN ADVANCE OR WORK TO SCHEDULE INSPECTION.
- NO SANITARY SEWER MAY BE USED AS A CLEANOUT OF DEWATERING OUTLET.
- WHERE AN EXISTING BUILDING LEAD IS BEING EXTENDED, DISSIMILAR TYPES AND SIZES OF PIPE SHALL BE JOINED USING AN WRC APPROVED ADAPTER.
- APPROVED BUILDING LEAD PIPE FOR GRAVITY SEWER LEADS:
  - ABS PLASTIC, ASTM D2751, SDR 23.5.
  - PVC PLASTIC, ASTM D3034, SDR 23.5 OR ASTM D2685, SCHEDULE 40.
  - DUCTILE IRON PIPE, AMERICAN WATER WORKS ASSOCIATION (AWWA) C-104/A21.4, CLASS 54. JOINTS SHALL BE SUPER BEL TITE, TYTON, TY-SEAL, MULTI-TITE, DUAL-TITE, OR VERI-TITE.
  - ANY DEVIATIONS FROM SPECIFIED ABOVE REQUIRE APPROVAL BY WRC.
- ALLOWABLE TYPES OF SEWER PIPE ADAPTERS:
  - FERNCO ADAPTER/REDUCER DONUTS.
  - FERNCO FLEXIBLE COUPLING.
  - MISSION CLAY BAND-SEAL COUPLING.
  - SMITH-BLAIR STAINLESS STEEL REPAIR CLAMP.
  - HURON-CLINTON O-RING ADAPTER.
  - HAMILTON-KENT GEAR GRIP ADAPTER.
  - PLANT FABRICATED JOINT CONVERSION PIPE.



KOR-N-TEE TAP FOR CONCRETE PIPE

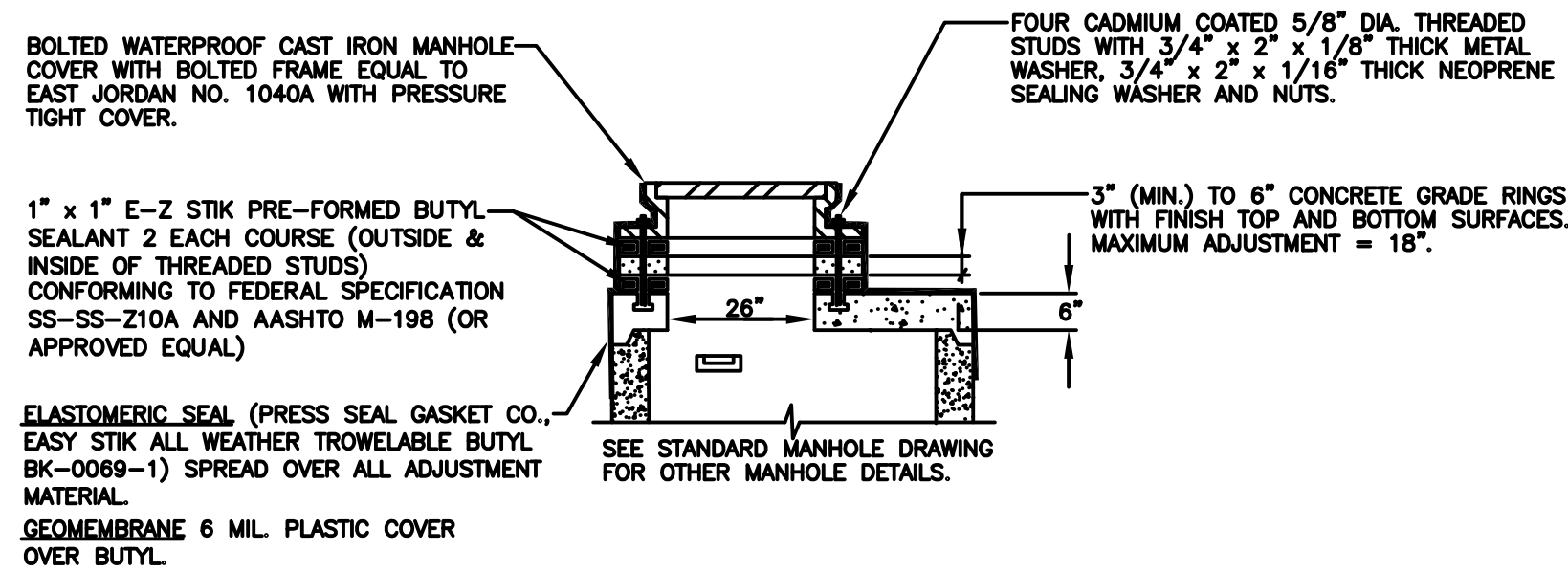


STANDARD BEDDING (CLASS B)

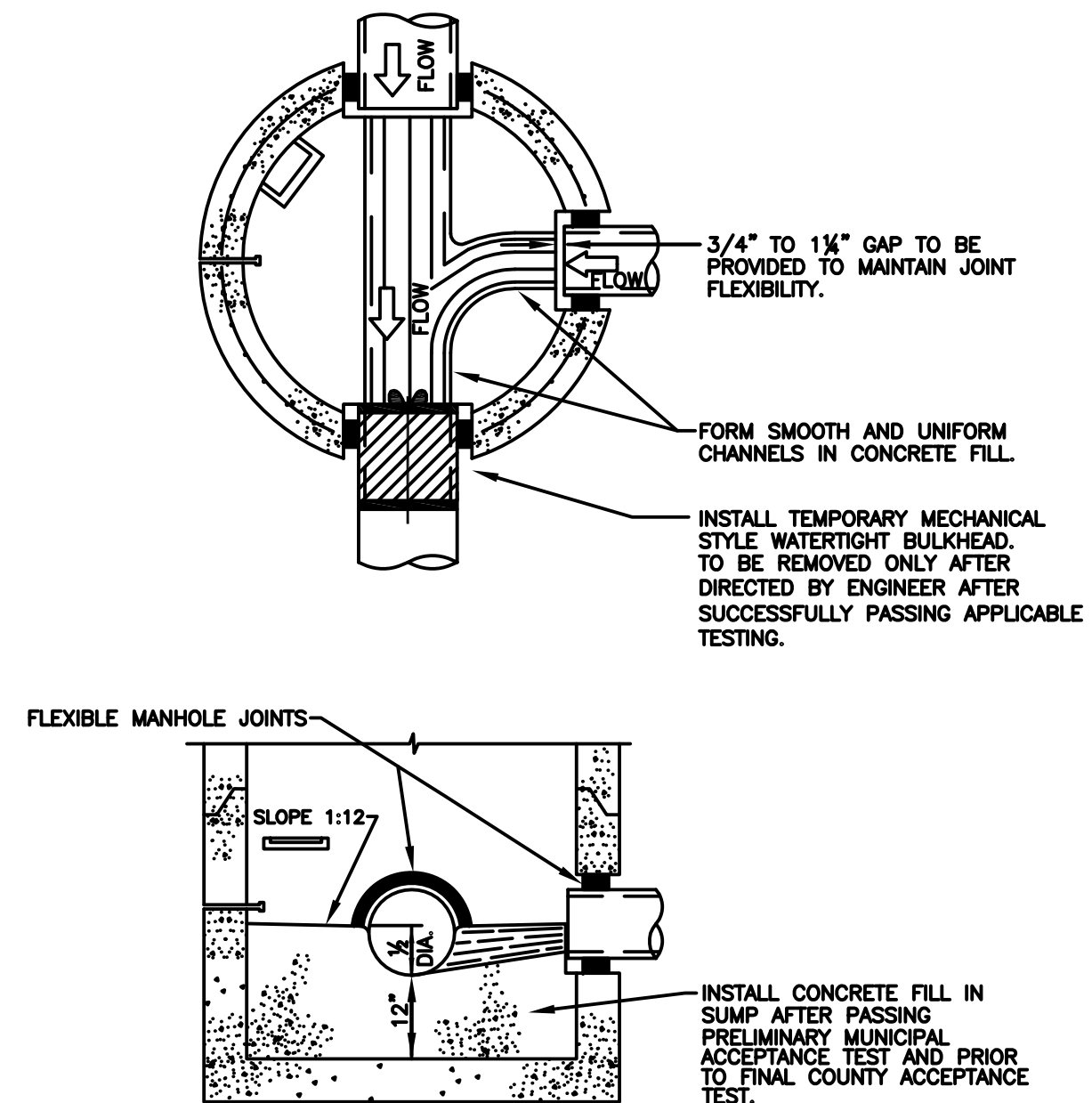


NOTE: SURFACE OF MAIN SEWER SHALL BE CLEANED WITH AN ABRASIVE GRINDER PRIOR TO EPOXY APPLICATION, DUE TO VARIATION OF SET-UP TIME OF EPOXY ADHESIVE WITH TEMPERATURE. ANCHOR STRAPS SHALL BE USED TO SECURE SADDLE IN POSITION IN COLD WEATHER OR WHENEVER WORK IS TO PROCEED PRIOR TO COMPLETE CURE OF EPOXY.

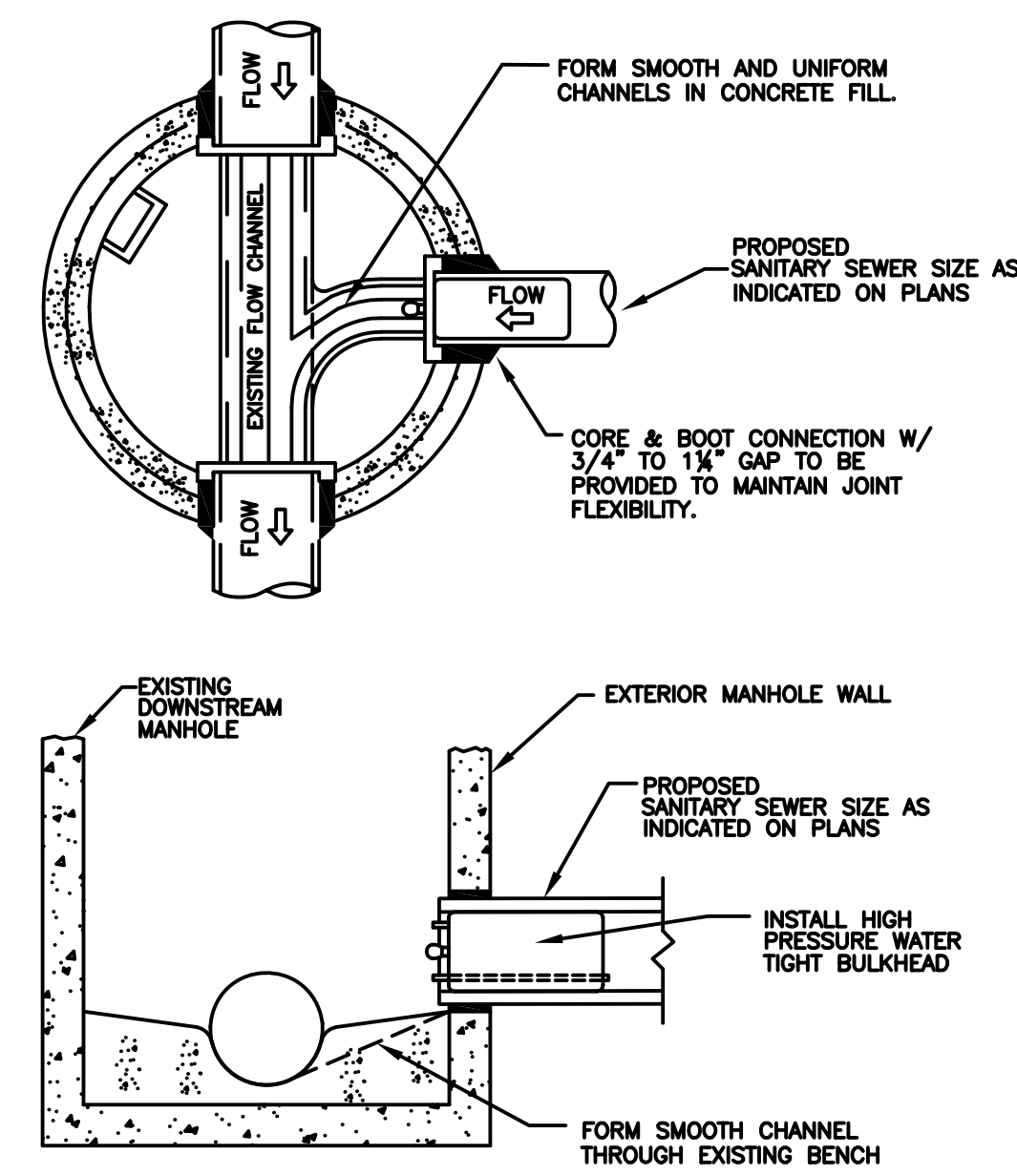
SEWER TAP-ALL SIZES OF MAIN SEWER PIPES VITRIFIED CLAY



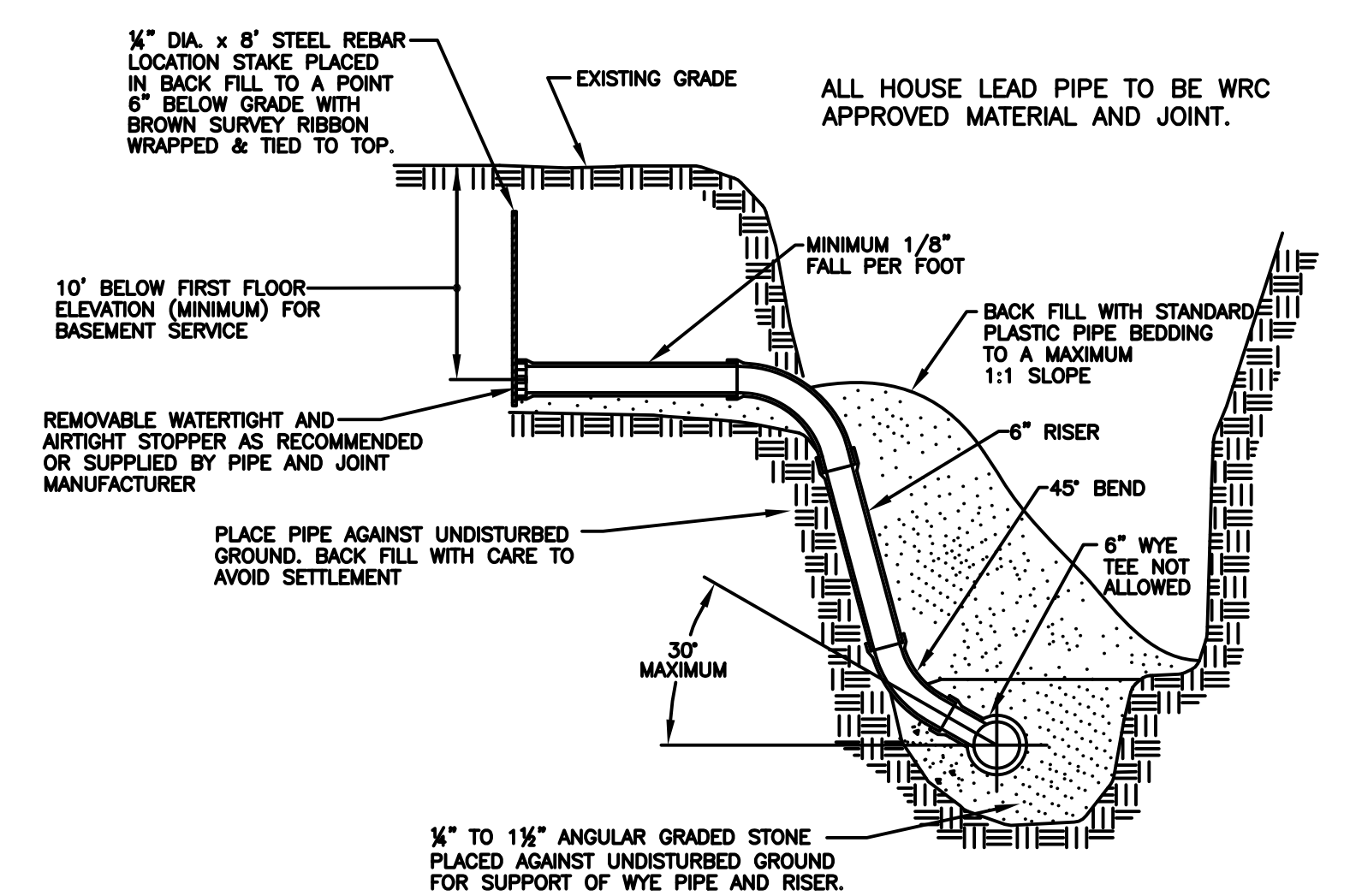
FLAT TOP MANHOLE



SUMP MANHOLE FOR TESTING, CLEANING AND DEWATERING



TESTING BULKHEAD WITH PIPE TAP

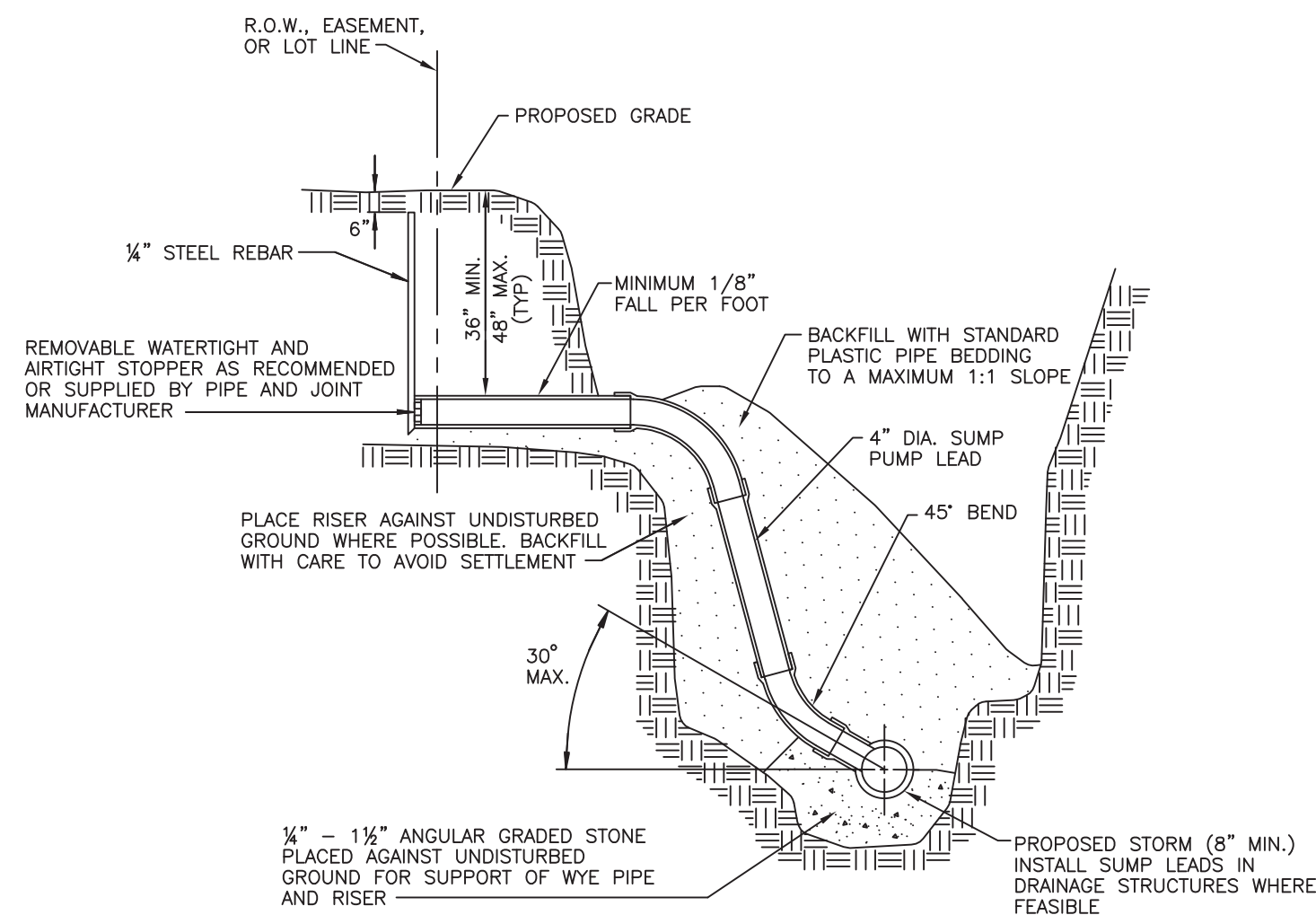


HOUSE LEAD DETAIL

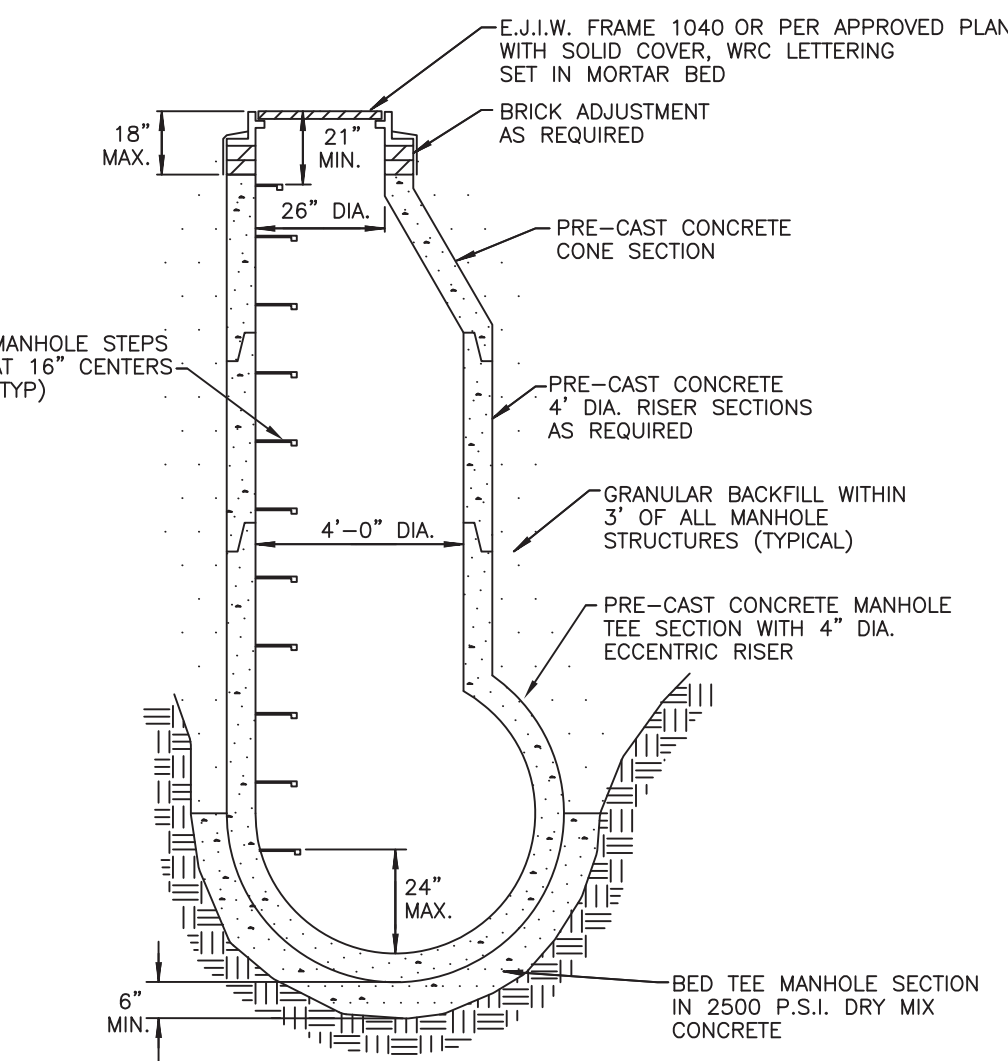
REVISION BLOCK			
Rev. No.	By	Date	Description
1	DS	05/28/06	ADDED TESTING BULKHEAD WITH PIPE TAP DETAIL
2	lz	05/28/09	MOVED DETAILS FROM SHEET 1 ONTO SHEET 2
3	lz	07/14/09	STANDARDS COMMITTEE APPROVAL FOR DETAIL CHANGES
4	DS	02/03/14	REPLACE/UPDATE LOGO WITH WRC FOR THE MANHOLE COVER DETAIL

SANITARY SEWER DETAILS AND NOTES

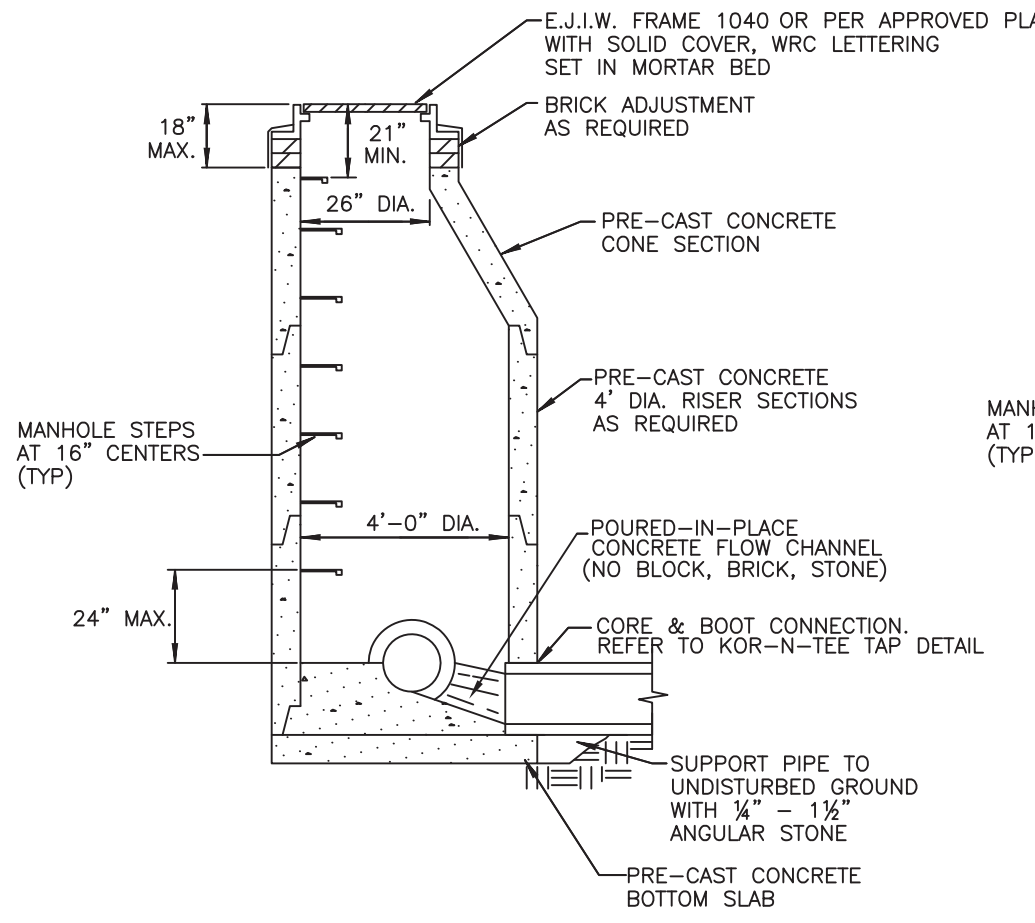
ORIG. DATE:	05-09-03		ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907
SCALE:	NO SCALE		SHEET NO.:
DESIGNED BY:	MWD	WATER RESOURCES COMMISSIONER	
DRAWN BY:	Mapping Staff	Jim Nash	



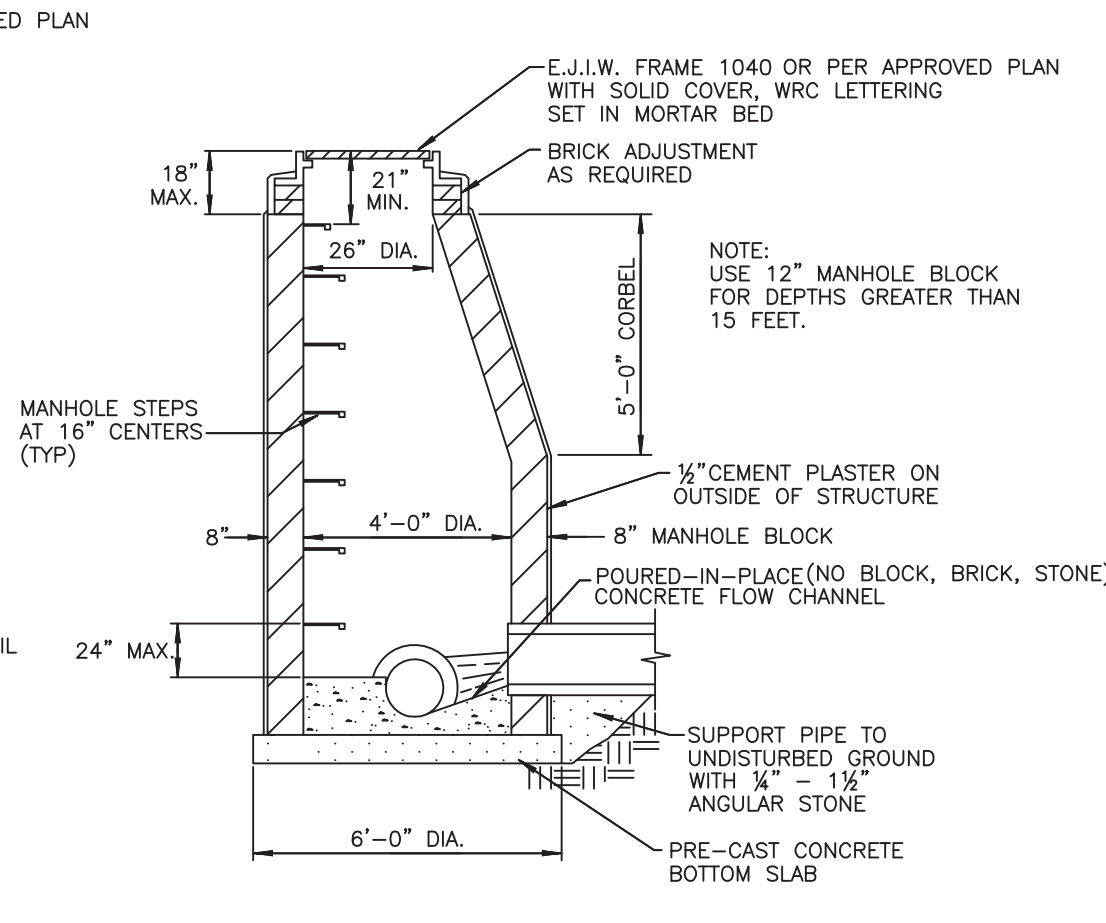
HOUSE LEAD DETAIL FOR 4" DIA. PLASTIC SUMP PUMP LEADS  
NO SCALE



PRE-CAST TEE MANHOLE DETAIL  
NO SCALE

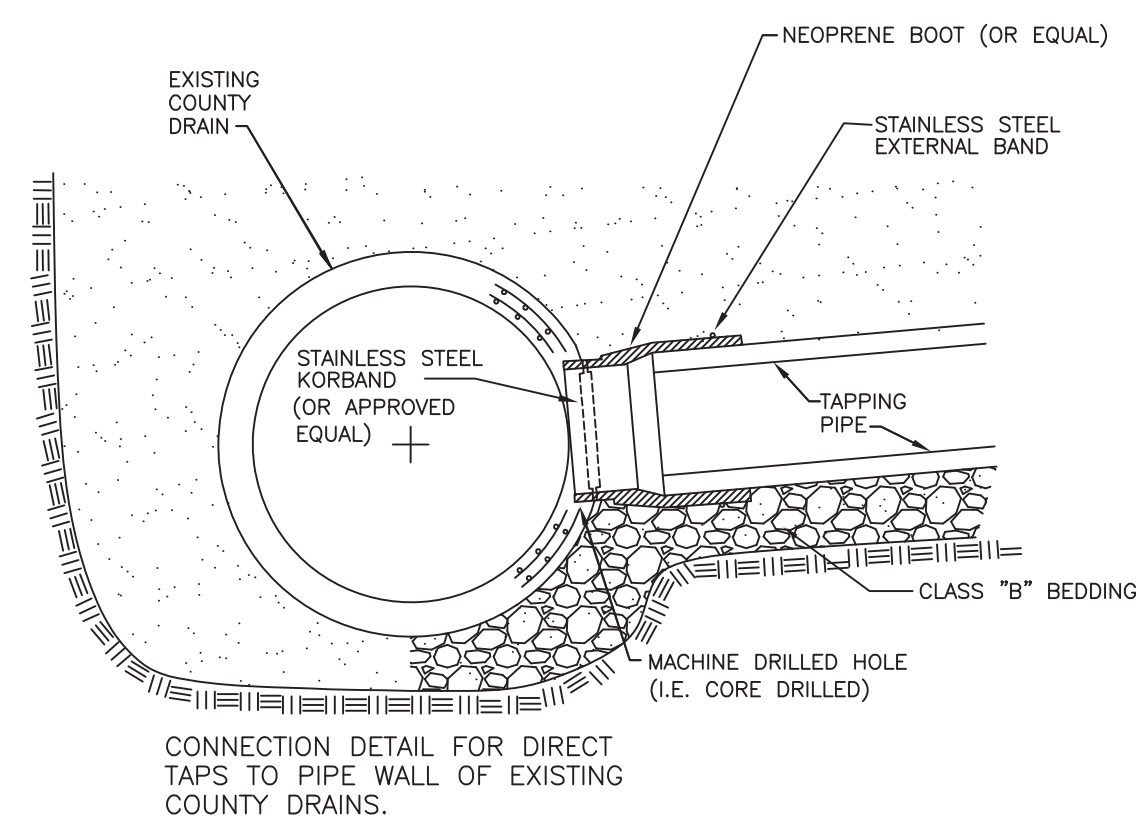


PRE-CAST MANHOLE



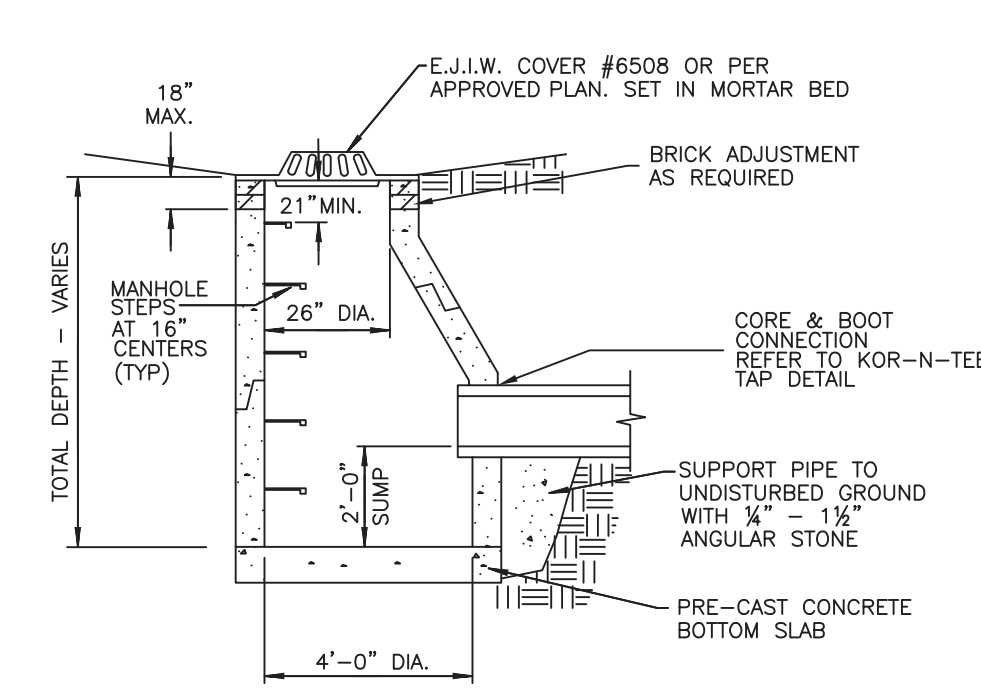
BLOCK MANHOLE (PRIOR APPROVAL ONLY)

STANDARD MANHOLE DETAILS  
NO SCALE

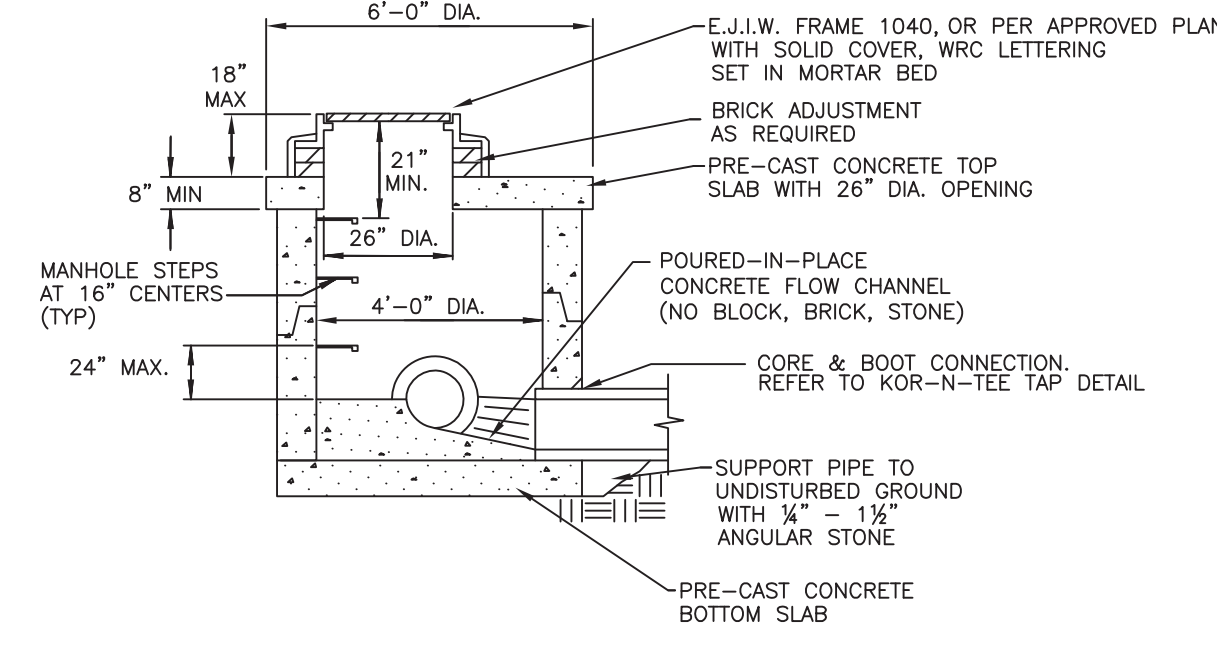


KOR-N-TEE TAP (OR APPROVED EQUAL)  
NO SCALE

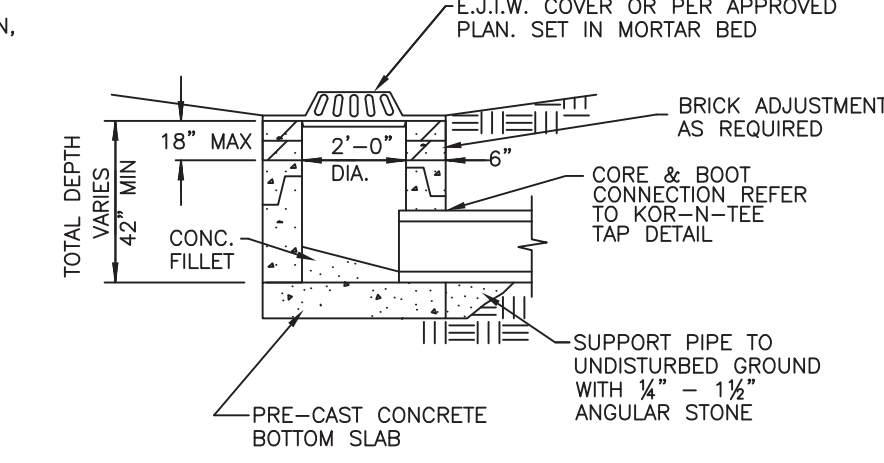
\* For non-concrete to concrete taps.  
\* Use link-seal, A-lock or approved equal for concrete to concrete taps.



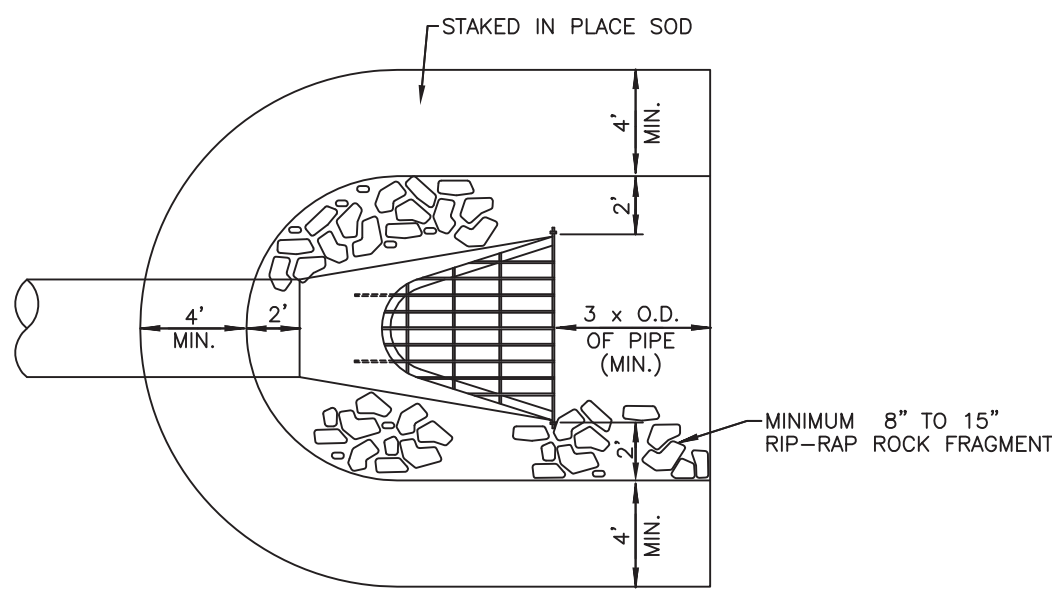
PRE-CAST CATCH BASIN DETAIL  
NO SCALE



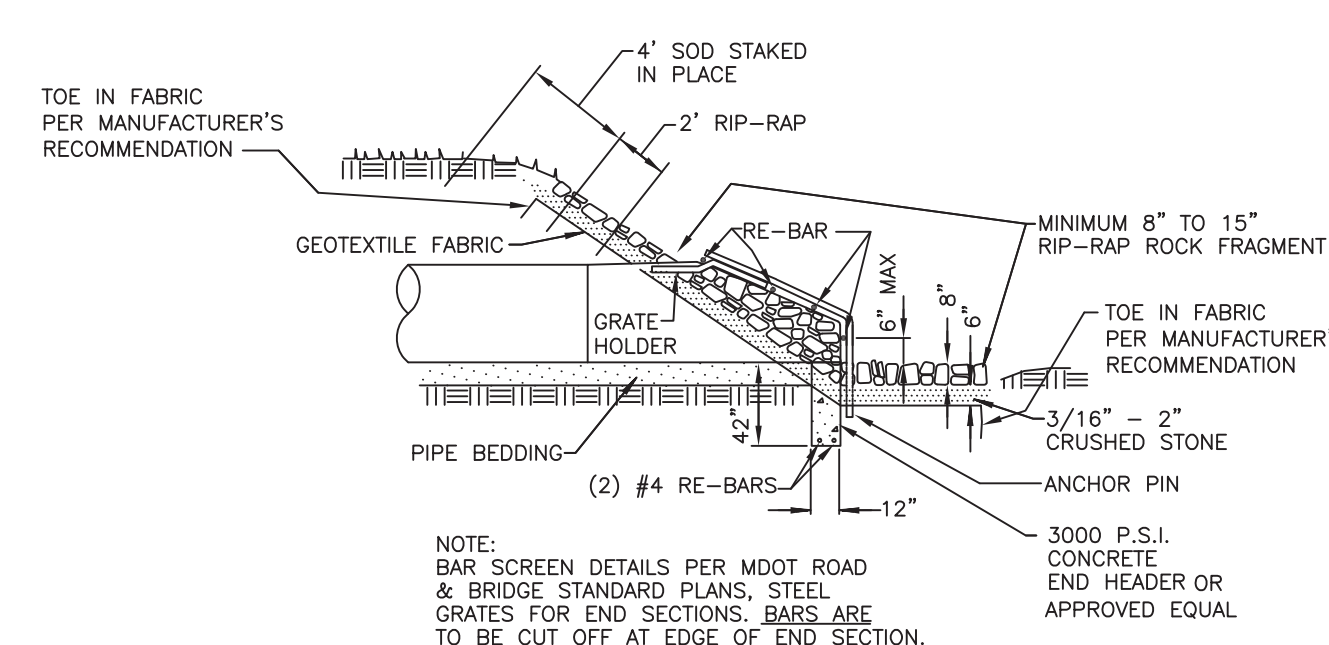
PRE-CAST LOW HEAD MANHOLE DETAIL  
NO SCALE (PRIOR APPROVAL ONLY)



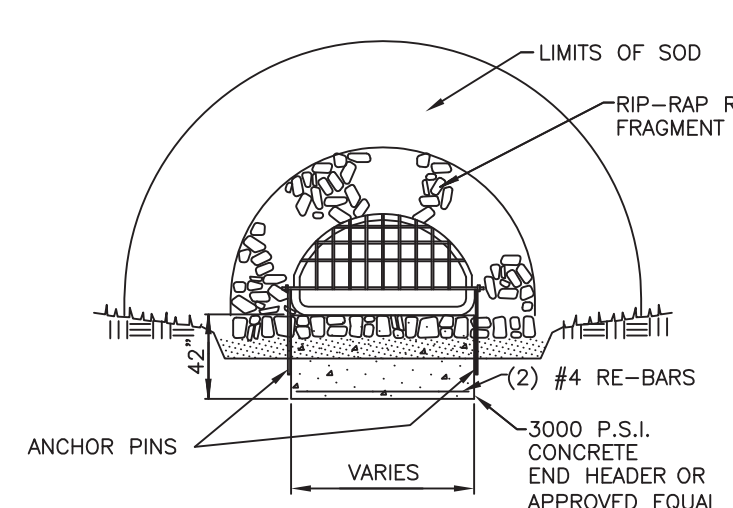
PRE-CAST INLET DETAIL  
NO SCALE



PLAN VIEW

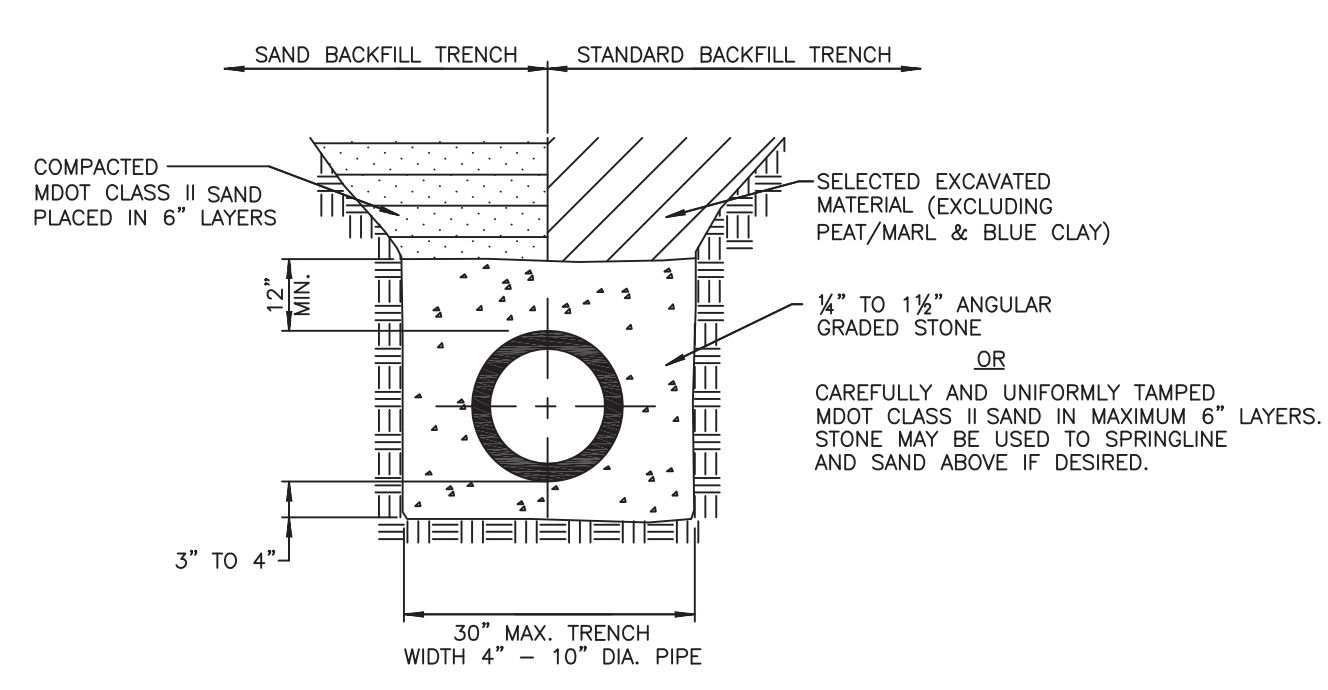


PROFILE VIEW

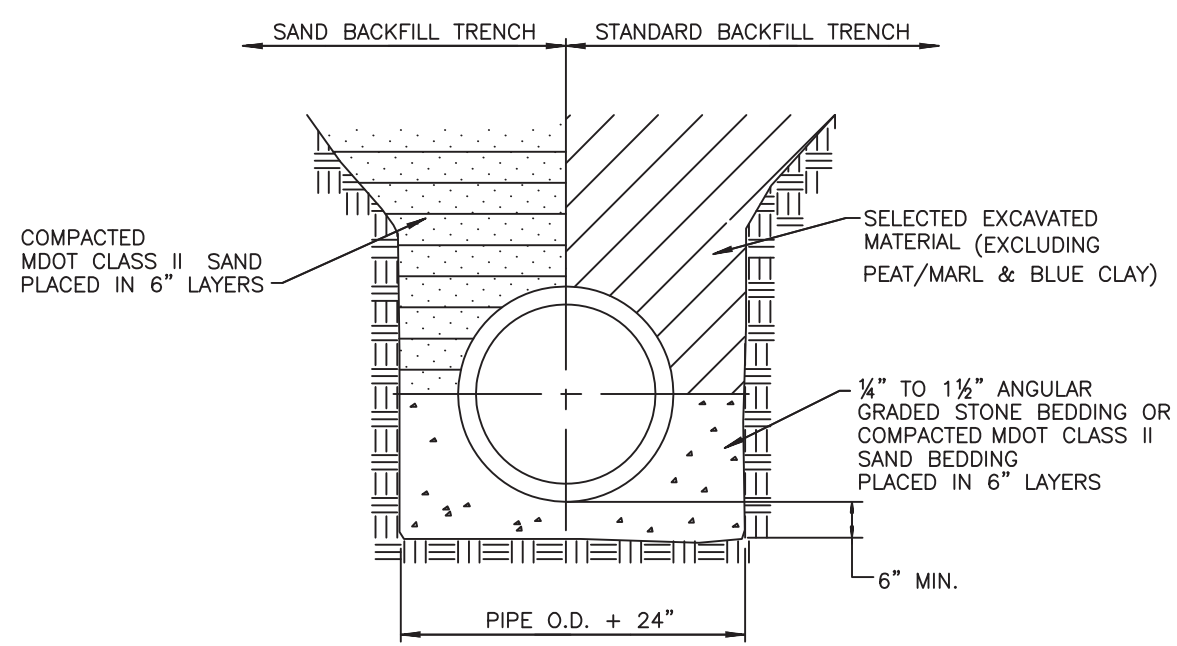


END VIEW

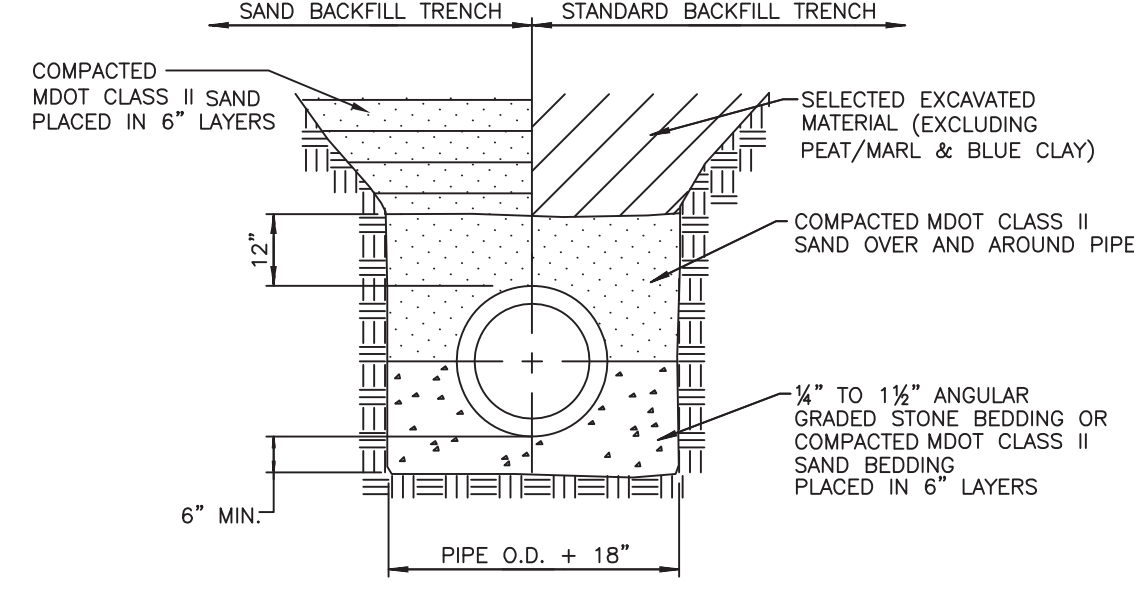
END SECTION AND BAR SCREEN DETAIL  
NO SCALE



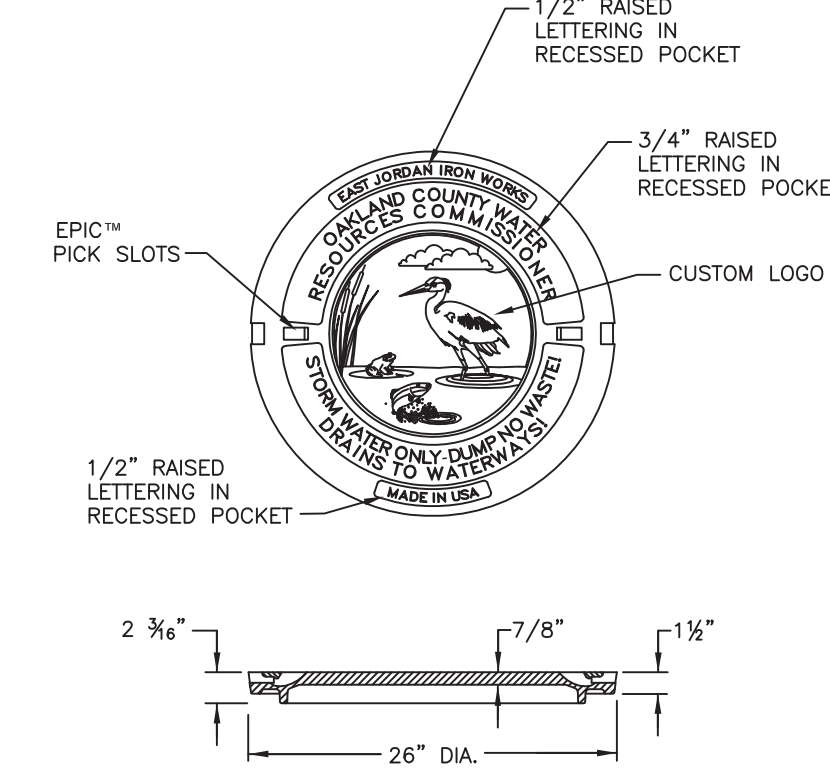
CLASS "B" BEDDING TRENCH DETAIL FOR 27" DIAMETER AND LARGER CONCRETE PIPE  
NO SCALE



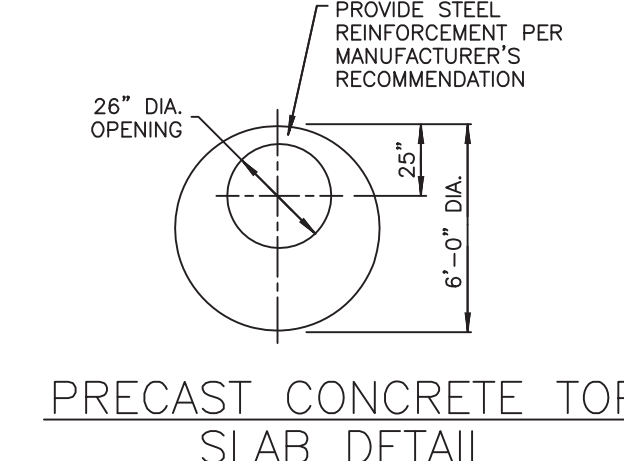
CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER CONCRETE PIPE  
NO SCALE



CLASS "B" BEDDING TRENCH DETAIL FOR 24" DIAMETER AND SMALLER CONCRETE PIPE  
NO SCALE



LETTERED MANHOLE COVER FOR WRC  
NO SCALE



PRECAST CONCRETE TOP SLAB DETAIL

GENERAL NOTES

- Type and class of pipe shall be as specified on plans.
- Class "B" bedding shall be used throughout, unless otherwise specified on the plan.
- All end sections 18" and larger shall be provided with a bar screen unless otherwise approved.
- Standard rip-rap shall be 8"-15" fragmented rock, heavy rip-rap shall be 16"-24" fragmented rock. (No Broken Concrete)
- MANHOLE REQUIREMENTS:
  - All new catch basins, inlets, and manholes are to be manufactured to ASTM C-478 specifications.
  - All new catch basins, inlets, and manholes shall have WRC approved flexible, watertight seals where pipes pass through walls. Manholes shall be of precast sections with modified groove tongue and rubber gasket type joints. Pre cast manhole cone sections shall be WRC approved modified eccentric cone type.
  - Taps through manhole joints or cone sections are prohibited unless otherwise approved.
  - Manhole steps to be plastic coated steel meeting the requirements in ASTM D 2146, Type II, Grade 49108, MA. Industries P.S.I. Polypropylene, (or approved equal). Steps to be installed during manhole manufacture. Place at 16" centers 45" from centerline of sewer.
  - Cone section with modified groove tongue joints and with stud inserts cast in place. Top to have flush surface.
  - ASTM C-478 riser section with modified groove tongue joints.
  - Res-seal, link-seal, press wedge II, or kor-n-seal boot (with stainless steel korband) flexible rubber manhole joints. (or approved equal).
  - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
- CONCRETE PIPE REQUIREMENTS:
  - Concrete pipe to be per ASTM C76 standards.
  - It will be required to TV all pipe 30 days after installation
  - The contractor shall provide reinforced concrete pipe as specified on the plans.
  - All reinforced concrete pipe shall have modified grooved tongue joints with o-ring type rubber gasket, per A.S.T.M. specifications C443.
  - The inside joints of manholes, catch basins, and pipe sizes over 42" and larger in diameter shall be pointed up with mortar upon completion of backfilling.
- SUMP PUMP LEAD REQUIREMENTS:
  - All sump pump leads connected to a County Drain pipe shall be pre-manufactured.
  - Sump pump leads connected to a manhole shall be cored and booted. Refer to Kor-N-Tee Tap Detail.
  - Sump pump mains and leads shall be ADS (truss and solid wall), PVC (truss, solid wall, A2000), ADS N-12 WT with premium joints.
  - Ends of all 4" sump pump leads shall be temporarily capped and their location staked, witnessed and recorded.
  - All sump pump leads to be taken to the property line, easement line or as indicated on the plan.
  - Sump pump mains must have a cleanout with a minimum inside diameter of 24" and be constructed at changes of alignment, ends of sump pump mains or as indicated on the plan.
- RESTORATION REQUIREMENTS:
  - All disturbed area within the County Drain right-of-way shall be restored as follows:
    - Under roads, sidewalks, driveways and parking areas, backfill material shall be placed loosely into trenches in six (6) inch layers with each layer compacted to not less than 95% of maximum dry density as determined by the ASTM D 1557 Compaction Standard (modified proctor compaction test). All other areas shall have each layer compacted to not less than 90% of maximum dry density.
    - Finish subgrade
    - Place 3" thickness clean topsoil acceptable to the engineer to attain finished grade. Topsoil must not be contaminated and may not be a mixture of natural underlying soils, subbase materials, or other materials. It must consist of natural loam, sandy loam, silty loam or clay loam humus-bearing soil adapted to the sustenance of plant life. Topsoil must be neither excessively acidic nor excessively alkaline. It must be of mineral origin, exclusive of any peat or muck.
    - Apply seed and fertilizer as follows:
 

Location	Seeding Requirements	Fertilizer Requirement
Slopes and Ditch Banks, Etc.	M.D.O.T. "Roadside Mix" Turf Seed Mixture TGM (10% Kentucky Blue, 20% Perennial Rye, 30% Hard Fescue, 40% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
Other Areas	M.D.O.T. "Roadside Mix" Turf Seed Mixture THM (30% Kentucky Blue, 20% Perennial Rye, 50% Creeping Red Fescue) applied at 220 lb/acre	M.D.O.T. Seeding and Sodding Fertilizers, Class A
  - Sod is required in maintained lawn areas. Refer to WRC General Specifications for additional requirements and information.
    - apply straw or marsh hay mulch in an air-dry condition to all seeded areas over the surface to a uniform thickness at 2 tons/acre.
    - mulch shall be anchored in place with biodegradable netting, not larger than 1 1/2" by 2" nor smaller than 1/2" by 1/2"
    - the contractor shall be responsible to insure the growth of all seeded areas, and shall re-seed as necessary to accomplish this.
- The Storm Drain Notes and Details Sheet shall be a supplement to WRC Standards and Specifications, which are available on the WRC website ([www.oakgov.com/water](http://www.oakgov.com/water)).

STORM DRAIN NOTES AND DETAILS

REVISION BLOCK			
Rev.	By	Date	Description
1	EL	3/17/09	PROPOSED DETAIL CHANGES NEW LOGO
2	EL	06/12/09	APPROVAL PER STAKEHOLDER COMMITTEE
3	EL	02/28/10	REVISED MH COVER DETAIL
4	DS	04/27/10	REVISED GENERAL NOTES

ORIG. DATE: 05/05/97  
SCALE: NONE  
DESIGNED BY: WRC  
DRAWN BY: Mapping

WATER RESOURCES COMMISSIONER  
Jim Nash

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907  
SHEET NO.: 1 of 1

## GENERAL NOTES

- ALL CONSTRUCTION PROCEDURES AND MATERIALS SHALL CONFORM TO THE CURRENT STANDARDS AND SPECIFICATIONS OF THE WATER RESOURCES COMMISSIONER'S OFFICE AND/OR THE LOCAL MUNICIPALITY.
- THE CONTRACTOR SHALL OBTAIN AN WATER RESOURCES COMMISSIONER'S OFFICE WATER INSPECTION PERMIT PRIOR TO THE START OF CONSTRUCTION. SEE CORRESPONDING WATER MAIN CONSTRUCTION PERMIT REQUEST LETTER FOR COST OF THE PERMIT.
- A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION AND SHALL BE SCHEDULED BY THE LOCAL MUNICIPAL ENGINEER. THOSE IN ATTENDANCE SHALL INCLUDE 1) LOCAL MUNICIPAL ENGINEER, 2) DESIGN ENGINEER, 3) OWNER/DEVELOPER, 4) ROAD COMMISSION FOR OAKLAND COUNTY, 5) OAKLAND COUNTY WATER RESOURCES COMMISSIONER'S OFFICE (WATER, SEWER AND STORM DIVISIONS) AND 6) ALL UTILITY COMPANIES. CONTRACTOR SHALL PROVIDE MATERIALS LISTING FOR APPROVAL BY MUNICIPAL ENGINEER AND OCWRC.
- CONTRACTOR MUST CONTACT MISS DIG (1-800-482-7171) THREE WORKING DAYS BEFORE THE START OF CONSTRUCTION FOR UNDERGROUND UTILITY LOCATIONS. ALL UTILITIES SHALL BE STAKED BEFORE CONSTRUCTION STARTS.
- ALL NECESSARY EASEMENTS FOR WATER MAINS SHALL BE PROVIDED IN THE NAME OF THE OWNER OF THE WATER MAIN PRIOR TO CONSTRUCTION AND ACCEPTANCE OF THE WATER DISTRIBUTION SYSTEM FOR OPERATION.
- ALL WATER MAINS SHALL BE CONSTRUCTED WITH A MINIMUM COVER OF FIVE AND ONE-HALF (5-1/2) FEET BELOW FINISHED GRADES INCLUDING OPEN DRAINAGE COURSES.
- ALL TRENCHES UNDER OR WITHIN A 1:1 RATIO OF EXISTING OR PROPOSED PAVEMENT OR DRIVEWAYS SHALL BE BACKFILLED WITH THOROUGHLY COMPACTED CLASS II SAND TO GRADE AT NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT
- WHERE TWO UTILITIES CROSS, PROVIDE CLASS II BACKFILL MATERIAL IN TWELVE (12) INCH COMPACTED LAYERS TO THE UNDERSIDE OF THE HIGHER UTILITY.
- WHERE WATER MAINS MUST DIP TO PASS UNDER OTHER UTILITIES, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH AND SHALL BE CONSTRUCTED WITH ELEVEN AND ONE-QUARTER (11-1/4) DEGREE VERTICAL BENDS, PROPERLY ANCHORED. BENDS GREATER THAN 11-1/4° MUST HAVE ROD RESTRAINTS.
- ALL PRECAST CONCRETE GATE WELL SECTIONS SHALL BE MANUFACTURED TO CONFORM WITH A.S.T.M. C478, STANDARD SPECIFICATIONS FOR PRECAST REINFORCED CONCRETE MANHOLE SECTIONS, EXCEPT WALL THICKNESS SHALL BE AS SHOWN ON THESE DETAILS. ALL JOINTS FOR PRECAST CONCRETE GATE WELL SECTIONS SHALL BE "MODIFIED GROOVE TONGUE" WITH GASKET MANUFACTURED TO CONFORM WITH A.S.T.M. C 443, STANDARD SPECIFICATION FOR JOINTS FOR CIRCULAR CONCRETE SEWER AND CULVERT PIPE USING RUBBER GASKETS.
- CONTRACTOR SHALL INSTALL VALVES, TAPPING SLEEVES AND GATE WELL STRUCTURES IN STRICT COMPLIANCE WITH MEASUREMENTS PROVIDED ON SHEET 2 (i.e. 2"-0" BETWEEN GATE WELL WALL & CENTERLINE OF OPERATING NUT) TO ALLOW PROPER OPERATION OF VALVE THROUGH GATEWELL OPENING. FAILURE TO DO SO WILL REQUIRE CONTRACTOR TO CORRECT AT HIS EXPENSE.
- ALL CROSS-CONNECTION CONTROL DEVICES SHALL BE INSTALLED AS REQUIRED BY THE LOCAL PLUMBING INSPECTOR AND IN ACCORDANCE WITH THE STANDARDS OF THE WATER RESOURCES COMMISSIONER'S OFFICE OPERATION AND MAINTENANCE DIVISION AND THE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY, DIVISION OF DRINKING WATER AND ENVIRONMENTAL HEALTH DIVISION
- ALL WATER SERVICE CONNECTIONS TWO (2) INCHES AND SMALLER SHALL BE MADE BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION AFTER WATER MAIN ACCEPTANCE AND APPLICABLE TAP PERMITS ARE OBTAINED.
- ALL FITTINGS AND BENDS SHOULD BE BLOCKED IN ACCORDANCE WITH THRUST BLOCK DETAILS, UNLESS ALTERNATE THRUST RESTRAINT SYSTEM, AS INDICATED IN PLANS AND SPECIFICATIONS, IS APPROVED BY WATER RESOURCES COMMISSIONER'S OFFICE AND THE LOCAL MUNICIPALITY.
- ALL STEEL AND IRON MATERIAL AND PRODUCTS FOR PERMANENT INCORPORATION INTO THE WORK SHALL MEET BUY AMERICA REQUIREMENT, FEDERAL CODE OF REGULATIONS SECTION 635.410

## WATER MAIN MATERIALS NOTES

- WATER SUPPLY SYSTEM PIPING (3-INCH & LARGER) SHALL BE DUCTILE IRON OR HIGH DENSITY POLYETHYLENE (HDPE) UNLESS OTHERWISE APPROVED BY THE LOCAL COMMUNITY.
- DUCTILE IRON PIPE SHALL BE CLASS 54 FOR SIZES THREE (3) INCH THROUGH EIGHTEEN (18) INCH, CLASS 55 FOR TWENTY (20) INCH, AND CLASS 56 FOR TWENTY-FOUR (24) INCH AND LARGER. (ABBREVIATED "D.I." IN DETAILS AND ON THIS SHEET).
- PIPES OF SIZES LARGER THAN TWENTY-FOUR (24) INCHES IN NOMINAL DIAMETER SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C100 FOR DUCTILE IRON WATER PIPE.
- THE DUCTILE IRON PIPE TO BE FURNISHED AND DELIVERED UNDER THIS SPECIFICATION SHALL MEET ALL THE REQUIREMENTS OF THE CURRENT AWWA C151 (ANSI A21.5), EXCEPT AS OTHERWISE SPECIFIED HEREIN. PIPE SHALL BE DOUBLE CEMENT-LINED AND SEAL COATED WITH AN APPROVED BITUMINOUS SEAL COAT IN ACCORDANCE WITH AWWA C104 (ANSI A21.4).
- REFER TO SHEET 5 FOR HDPE MATERIAL REQUIREMENTS.
- MECHANICAL AND SLIP-ON JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C111 (ANSI A21.11).
- FLANGE JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE IN ACCORDANCE WITH AWWA C110 (ANSI A21.10).
- FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON OR CAST IRON AND SHALL MEET REQUIREMENTS OF AWWA C110 (ANSI A21.10) OR AWWA C153 (ANSI A21.53). DUCTILE IRON FITTINGS SHALL BE RATED FOR 350 PSI, PIPE SIZES TWENTY-FOUR (24) INCH DIAMETER AND LESS AND 250 PSI FOR PIPE SIZES OVER TWENTY-FOUR (24) INCH DIAMETER. DUCTILE IRON FLANGE FITTINGS SHALL BE RATED FOR 250 PSI FOR ALL PIPE DIAMETERS.
- INSTALL BRASS WEDGES AT ALL PUSH ON JOINTS IN DUCTILE IRON PIPE INSTALLATIONS. TWO (2) WEDGES PER JOINT FOR PIPES 12 INCH IN DIAMETER AND LESS, FOUR WEDGES PER JOINT FOR PIPES GREATER THAN 12 INCHES IN DIAMETER.
- ALL WATER MAINS SHALL BE DESIGNED FOR 150 PSI MINIMUM WORKING PRESSURE.
- ALL BURIED BOLTS, NUTS, AND WASHERS SHALL BE AWWA C111 LOW ALLOY STEEL COATED WITH A MINIMUM OF TWO (2) COATS OF FLUOROPOLYMER EPOXY COATING AND HEAT CURED (COR-BLUE OR APPROVED EQUAL) AND POLY-WRAPPED WHEN SPECIFIED.
- ALL BURIED BOLTS, NUTS, AND WASHERS FOR ALL FLANGED CONNECTIONS SHALL BE STAINLESS STEEL (ASTM A320, GRADE B8M) AND HAVE A NEVER SEIZE TYPE COMPOUND APPLIED TO THE THREADS PRIOR TO INSTALLATION.
- CORPORATION STOPS USED FOR INSERTION INTO MAINS SHALL BE MUELLER TYPE H-15000, FORD METER BOX FB-1000-X-Q-NL OR FORD METER BOX FB1000-4-Q-NL. ALL STOPS SHALL HAVE BRONZE CAST BODIES, KEYS, STEM WASHERS AND NUTS. INLET THREADS SHALL CONFORM TO THE LATEST VERSION OF AWWA C800.
- TEMPORARY CONNECTIONS, WHICH MAY BE MADE FOR CHLORINATING AND FLUSHING PURPOSES, SHALL INCLUDE A TESTABLE REDUCE PRESSURE ZONE (RPZ) VALVE WITH CURRENT CERTIFICATION.

## VALVE AND SLEEVE NOTES

- GATE VALVES, SIZES THREE (3) INCH THROUGH SIXTEEN (16) INCH AND TAPPING VALVES SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED WITH NON-RISING STEM.
- ALL IN LINE GATE VALVES THREE (3) INCH AND LARGER SHALL BE IN WELLS AS DETAILED. SPECIFICATIONS SHALL INCLUDE THE DIRECTION OF OPERATION OF ALL VALVES.
- ALL GATE WELL COVERS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED.
- ALL GATE VALVES WITH OPERATING NUTS AT A DISTANCE GREATER THAN FIVE (5) FEET BELOW GROUND SURFACE SHALL BE PROVIDED WITH A STAINLESS STEEL EXTENSION STEM. THE LENGTH OF THE EXTENSION STEM SHALL REACH WITHIN FIVE (5) FEET FROM THE GROUND SURFACE. WHEN AN EXTENSION STEM IS USED, IT SHALL BE HELD IN PLACE BY A STAINLESS STEEL EXTENSION STEM GUIDE SUITABLY FASTENED TO THE WALL OF THE GATE WELL. THE EXTENSION STEM SHALL BE MECHANICALLY ATTACHED TO THE OPERATING NUT. DETAILS OF THE EXTENSION SYSTEM AND THE METHOD OF INSTALLATION SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION.
- TAPPING VALVES SHALL BE AWWA C515 FL X MJ AS MANUFACTURED BY EJ WITH RESILIENT SEATED GATE VALVES AS APPROVED BY LOCAL MUNICIPALITY.
- TAPPING SLEEVES SHALL BE ALL STAINLESS STEEL (BODY, FLANGE AND HARDWARE), MANUFACTURED BY ROMAC INDUSTRIES SST; JCM 432; SMITH-BLAIR 663/665 OR APPROVED EQUAL BY THE WATER RESOURCES COMMISSIONER'S OFFICE.

## HYDRANT REQUIREMENTS

- ALL HYDRANTS SHALL BE CONSTRUCTED WITH A SIX (6) INCH COMPANION GATE VALVE IN A THREE (3) PIECE, ADJUSTABLE DUCTILE IRON VALVE BOX, WHICH SHALL INCLUDE A FIVE AND ONE-QUARTER (5-1/4) INCH SCREW SHAFT. VALVE BOXES SHALL BE SERIES 6860 AS MANUFACTURED BY TYLER PIPE, EJ VALVE BOX NO. 8560 OR APPROVED EQUAL.
- ALL HYDRANTS SHALL BE EJ 5BR250 TRAFFIC MODEL, OR APPROVED EQUAL WITH A MINIMUM OF 6'-0" DEPTH OF BURY UNLESS OTHERWISE INDICATED. SELF-DRAINING HYDRANTS SHALL NOT BE USED. ALL HYDRANTS SHALL BE LOCAL MUNICIPAL STANDARD AS DETAILED. HYDRANTS SHALL HAVE BREAKAWAY FLANGE.
- ALL HYDRANTS SHALL BE PAINTED RED ABOVE GROUND AND BLACK BELOW GROUND WITH A FINISH COAT OF GLAMORTEX 501 ENAMEL, COLOR 314 VERMILLION OR APPROVED EQUAL. HYDRANT CAP SHALL BE PAINTED SAME COLOR AS THE HYDRANT. FOR PONTIAC: YELLOW RUST-OLEUM #7543 SAFETY YELLOW.

## ACCEPTANCE OF NEW WATER MAINS

- PRIOR TO WATER MAIN ACCEPTANCE THE FOLLOWING CONDITIONS MUST BE MET:
  - PRESSURE TESTING AND BACTERIA TESTING MUST BE COMPLETED IN ACCORDANCE WITH THE WATER RESOURCES COMMISSIONER'S OFFICE REQUIREMENTS
  - ALL EASEMENT AND RIGHT-OF-WAY ACQUISITION MUST BE ACCEPTED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, RIGHT-OF-WAY DIVISION
  - THE LOCAL MUNICIPALITY MUST BE PROVIDED WITH THE BILL OF SALE
  - ALL "RECORD DRAWINGS" MUST BE ACCEPTED AND APPROVED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION. THE WATER RESOURCES COMMISSIONER'S OFFICE AND LOCAL ENGINEER MUST WITNESS THE CONNECTION OF THE WATER MAIN TO THE EXISTING WATER MAIN, AFTER WHICH RESIDENTIAL AND COMMERCIAL TAPS WILL BE ALLOWED.
- THE CONTRACTOR SHALL NOTIFY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION THROUGH THE LOCAL ENGINEER FOR NEW CONSTRUCTION TAP, PRESSURE TESTING, BACTERIOLOGICAL SAMPLING, CONNECTIONS TO EXISTING WATER MAIN AND FINAL FIELD REVIEW. A SEVENTY-TWO (72) HOUR ADVANCE NOTICE IS REQUIRED.
- THE CONTRACTOR SHALL DISINFECT AND PRESSURE TEST ALL NEW WATER MAIN CONSTRUCTION PURSUANT TO THE CURRENT STANDARDS SPECIFIED BY THE WATER RESOURCES COMMISSIONER'S OFFICE.
- HYDROSTATIC TESTING FOR DUCTILE IRON WATER MAIN SHALL BE COMPLETED IN ACCORDANCE WITH ANSI/AWWA C600, SEC 5.2. THE SPECIFIED TEST PRESSURE IS 150 PSI OR 1.5 TIMES THE MAXIMUM ALLOWABLE OPERATING PRESSURE (MAOP) OF THE TEST SECTION, WHICHEVER IS GREATER. THE TEST METHOD IS GENERALLY SUMMARIZED AS FOLLOWS:
  - SLOWLY FILL PIPELINE WITH WATER, VENTING ENTRAPPED AIR AS NECESSARY.
  - REPAIR ANY VISIBLE LEAKS THAT OCCUR DURING FILLING OR AT ANY POINT DURING THE TEST.
  - GRADUALLY APPLY PRESSURE UP TO THE SPECIFIED WORKING PRESSURE USING A SUITABLE PUMP CONNECTED TO THE PIPELINE, BLEEDING TRAPPED AIR, AND ADDING WATER AS NECESSARY UNTIL A STABLE PRESSURE IS HELD.
  - HYDROSTATIC TEST BEGINS AFTER THE PIPELINE IS STABILIZED AT THE WORKING PRESSURE BY INCREASING THE PRESSURE UP TO THE SPECIFIED TEST PRESSURE AND HOLD IT WITHIN PLUS/MINUS 5 PSI FOR THE DURATION OF THE TEST, OR A MINIMUM OF TWO HOURS.
  - CAREFULLY RECORD THE AMOUNT OF MAKEUP WATER ADDED DURING THE TEST. THE HYDROSTATIC TEST PASSES IF THE AMOUNT OF MAKEUP WATER DOES NOT EXCEED THE TESTING ALLOWANCE.
  - IF THE TESTING ALLOWANCE IS EXCEEDED, LOCATE AND REPAIR ANY LEAKS AND REPEAT TEST.
- REFER TO SHEET 5 FOR HYDROSTATIC TESTING REQUIREMENTS FOR HDPE PIPE.
- PRESSURE TESTING AGAINST VALVES PHYSICALLY CONNECTED TO AN EXISTING WATER SUPPLY SYSTEM IS STRICTLY PROHIBITED.
- WHERE CONTRACTOR SUPPLIED GAUGES ARE REQUIRED, MINIMUM SIZE SHALL BE 3/4" DIAMETER OR LARGER GRADUATED IN ONE (1) OR TWO (2) POUND INCREMENTS FROM 1 TO 160 P.S.I. OR HIGHER.
- PRESSURE TESTING AND BACTERIA TESTING MUST BE SUCCESSFULLY COMPLETED PRIOR TO CONNECTING TO THE EXISTING WATER SUPPLY SYSTEM.

## WATER RESOURCES COMMISSIONER WATER SYSTEM STANDARDS – GATE VALVES

COMMUNITY	DIRECTION TO OPEN	VALVE TYPE	
		STD. GATE VALVE	TAPPING VALVE
BINGHAM FARMS	RIGHT	C515	C515
BLOOMFIELD HILLS	RIGHT	C515	C515
COMMERCE TOWNSHIP	LEFT	C515	C515
FARMINGTON HILLS	RIGHT	C515	C515
HIGHLAND TOWNSHIP	LEFT	C515	C515
KEEGO HARBOR	RIGHT	C515	C515
OAKLAND TOWNSHIP	LEFT	C515	C515
ORCHARD LAKE VILLAGE	LEFT	C515	C515
OXFORD TOWNSHIP	LEFT	C515	C515
PLEASANT RIDGE	RIGHT	C515	C515
PONTIAC	LEFT	C515	C515
ROYAL OAK TOWNSHIP	RIGHT	C515	C515
SPRINGFIELD TOWNSHIP	LEFT	C515	C515
SYLVAN LAKE	RIGHT	C515	C515
WALLED LAKE	LEFT	C515	C515

1) C515 RESILIENT SEATED GATE VALVE – MANUFACTURED BY U.S. PIPE, MUELLER, EAST JORDAN IRON WORKS, AMERICAN FLOW CONTROL OR APPROVED EQUAL.

## FIRE HYDRANT NOZZLE SIZE AND THREAD SPECIFICATIONS

CVT	PUMPER NOZZLE	HOSE NOZZLE	OPERATING NUT	DEPTH OF BURY	STYLE	MODEL #
BINGHAM FARMS	(1) – 4"–STORZ	(2) – 2-1/2"–DFD	1-1/2"	5'-6"	5BR250	54831D
BLOOMFIELD HILLS	(1) – 3-3/4"–DFD	(2) – 2-1/2"–DFD	1-1/8"	6'-0"	5BR250	55825D
COMMERCE TWP/ WOLVERINE LAKE	(1) – 5"–STORZ	(2) – 2-1/2"–NST	1-1/2"	5'-6"	5BR250	54913D
FARMINGTON HILLS	(1) – 3-3/4"–DFD	(2) – 2-1/2"–NST	1-1/8"	5'-6"	5BR250	54329D
HIGHLAND TWP	(1) – 5"–STORZ	(2) – 2-1/2"–NST	1-1/2"	5'-6"	5BR250	54913D
KEEGO HARBOR	(1) – 3-3/4"–DFD	(2) – 2-1/2"–DFD	1-1/8"	5'-6"	5BR250	54826D
OAKLAND TWP	(1) – 4"–STORZ	(2) – 2-1/2"–DFD	1-1/2"	5'-6"	5BR250	54831D
ORCHARD LAKE	(1) – 3-3/4"–DFD	(2) – 2-1/2"–DFD	1-1/8"	6'-0"	5BR250	55825D
OXFORD TWP	(1) – 5"–STORZ (1) – 4-1/2"–NST		1-1/2"	6'-0"	5BR250	55601D
PLEASANT RIDGE	(1) – 3-3/4"–DFD (1) – 5"–STORZ		1-1/8"	5'-6"	5BR250	54949D
PONTIAC	(1) – 3-3/4"–DFD	(2) – 2-1/2"–DFD	1-1/2"	6'-0"	5BR250	55822D
ROYAL OAK TWP	(1) – 3-3/4"–DFD	(2) – 2-1/2"–DFD	1-1/8"	5'-6"	5BR250	54826D
SPRINGFIELD TWP	(1) – 5"–STORZ	(2) – 2-1/2"–NST	1-1/2"	5'-6"	5BR250	54913D
SYLVAN LAKE	(1) – 3-3/4"–DFD	(2) – 2-1/2"–NST	1-1/2"	6'-0"	5BR250	55827D
WALLED LAKE	(1) – 4-1/2"–NST	(2) – 2-1/2"–NST	1-1/8"	5'-6"	5BR250	54534D

- D.F.D. – DETROIT FIRE DEPARTMENT THREAD
- N.S.T. – NATIONAL STANDARD THREAD
- STORZ NOZZLES SHALL BE COMPATIBLE WITH STORZ COUPLED LARGE DIAMETER FIRE HOSE. NOZZLES SHOULD BE MADE OF "LEAD FREE" BRASS OR ALUMINUM, AS APPROVED BY LOCAL CITY, VILLAGE OR TOWNSHIP. THE NOZZLE SHALL BE AN INTEGRAL PART OF THE HYDRANT, RESISTANT TO TAMPER AND REMOVAL. ENGAGEMENT LUGS SHALL BE ON THE NOZZLE AND CAP TO PREVENT FAILURE UNDER HIGH PRESSURE. NOZZLE AND CAP SHALL MEET AWWA C502 SPECIFICATIONS. NOZZLE SHALL BE COMPATIBLE WITH HOSE LOCK TO PREVENT HOSE FROM DISCONNECTING WHILE IN USE.

## WATER RESOURCES COMMISSIONER'S OFFICE WATER SYSTEMS OPERATIONS AND MAINTENANCE DIVISION RECORD DRAWING SPECIFICATIONS

IN AREAS WHERE WATER SYSTEMS ARE OPERATED AND MAINTAINED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION, FINAL ACCEPTANCE OF THE WATER SYSTEM MUST BE RENDERED BY THE WATER RESOURCES COMMISSIONER'S OFFICE, OPERATIONS AND MAINTENANCE DIVISION, BEFORE THE SYSTEM CAN BE USED FOR THE SERVICE INTENDED.

ONE ITEM REQUIRED FOR FINAL ACCEPTANCE SHALL BE THE SUBMISSION OF RECORD DRAWINGS TO THE WATER RESOURCES COMMISSIONER, OPERATIONS AND MAINTENANCE DIVISION, BY THE DESIGN ENGINEER. RECORD DRAWINGS SHALL BE DEFINED AS AND CONTAIN THE FOLLOWING INFORMATION:

- THE DESIGN ENGINEER SHALL FURNISH "RECORD DRAWINGS" WATER MAIN PLANS UPON JOB COMPLETION. "RECORD DRAWINGS" SHALL BE FORWARDED TO THE WATER RESOURCES COMMISSIONER BY THE LOCAL MUNICIPAL ENGINEER AFTER THEIR REVIEW AND APPROVAL.
- THE COVER SHEET SHALL BE SIGNED AND SEALED BY THE PROJECT DESIGN ENGINEER AND INCLUDE THE FOLLOWING CERTIFICATION STATEMENT:

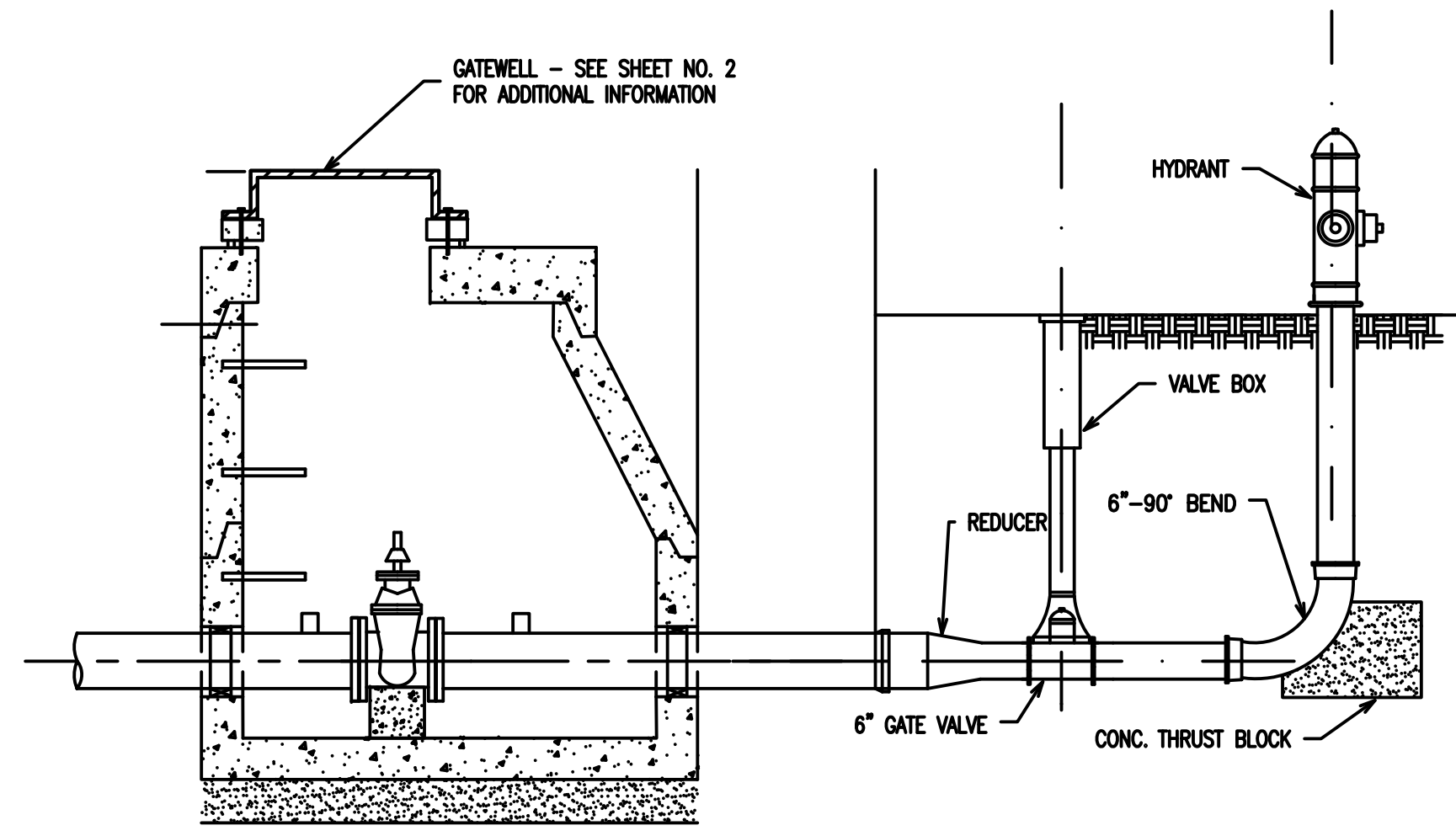
I HEREBY CERTIFY THAT OUR FIRM HAS PREPARED THESE RECORD DRAWINGS OF THE IMPROVEMENTS AS CONSTRUCTED, AND THAT TO THE BEST OF MY KNOWLEDGE THOSE IMPROVEMENTS NOTED AS "RECORD DRAWINGS" WERE CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE APPROVED CONSTRUCTION PLANS; AND ALSO THAT THE WATER MAIN AND STRUCTURES, AS CONSTRUCTED, LIE WITHIN THE EASEMENT DESCRIPTIONS REQUIRED BY THE WATER RESOURCES COMMISSIONER'S OFFICE.	
_____	(COMPANY NAME)
_____	(ENGINEER'S SIGNATURE)
PROFESSIONAL ENGINEER NO. _____	_____
	ENGINEER SEAL

- THE MINIMUM SCALE SHALL BE ONE (1) INCH EQUALS FIFTY (50) FEET.
- THE SIZE, LENGTH, CLASS AND MANUFACTURER OF PIPE INSTALLED SHALL BE INDICATED.
- THE SIZE, BRAND AND MODEL NUMBERS OF ALL VALVES AND HYDRANTS INSTALLED SHALL BE INDICATED.
- A TOTAL RECORD DRAWING QUANTITY LIST SHALL BE INCLUDED, AS WELL AS A RECORD DRAWING QUANTITY LIST ON EACH INDIVIDUAL SHEET.
- THE LOCATIONS SHALL BE SHOWN ON THE PLANS WITH AN ACCURACY OF ONE (1) FOOT.
- THE OFFSET OF THE WATER MAIN FROM PROPERTY LINES SHALL BE INDICATED.
- ALL GATE VALVE WELLS, HYDRANTS AND ALL WATER SYSTEM APPURTENANCES SHALL BE LOCATED FROM THE NEAREST PROPERTY CORNER.
- ALL UNDERGROUND APPURTENANCES, SUCH AS GATE VALVE WELLS, METER PITS, PRESSURE REDUCING VALVE PITS, ETC. SHALL BE LOCATED FROM THE NEAREST HYDRANT THAT IS CONNECTED TO THE SAME WATER MAIN AS THE APPURTENANCE.
- THE LOCATION, SIZE, BRAND AND MODEL NUMBER OF EVERY RESTRAINED JOINT SHALL BE NOTED.
- THE ACCURATE LOCATION OF ALL UTILITY CROSSINGS WHERE THE RECOMMENDED SEPARATION, VERTICALLY OR HORIZONTALLY, IS LESS THAN THE TEN STATE STANDARDS SHALL BE NOTED.
- WATER MAINS 12" AND LARGER IN DIAMETER SHALL BE DRAWN IN PROFILE VIEW IN ADDITION TO PLAN VIEW ON THE CONSTRUCTION PLANS.

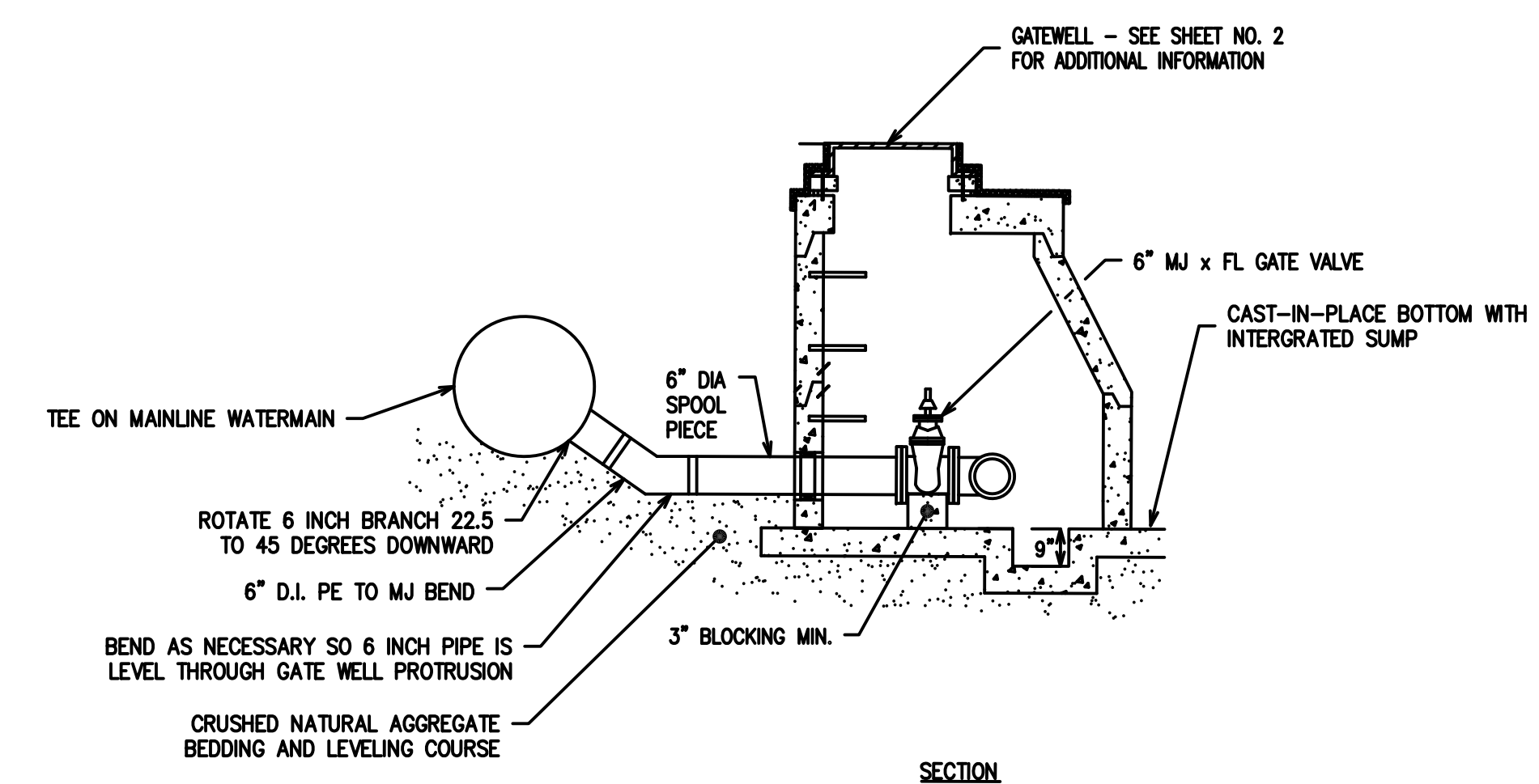
## WATER MAIN STANDARD DETAILS

REVISION BLOCK		Data Source / Source Date: N/A	
Rev. No.	Rev. Date	Rev. Date	Description
1	HTC	08/01/00	GENERAL UPDATE
2	HTC	03/29/03	ADD P&C AND S&C INFO TO TABLES
3	HTC	05/09/03	UPDATE B&V HYDRANT SPEC
4	HTC	07/11/04	UPDATE B&V HYDRANT SPEC
ORIG. DATE: 01/01/01		ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907	
SCALE: NONE		SHEET NO. 1 of 7	
DESIGNED BY: WRC		WATER RESOURCES COMMISSIONER	
DRAWN BY: WRC Mapping		Jim Nash	

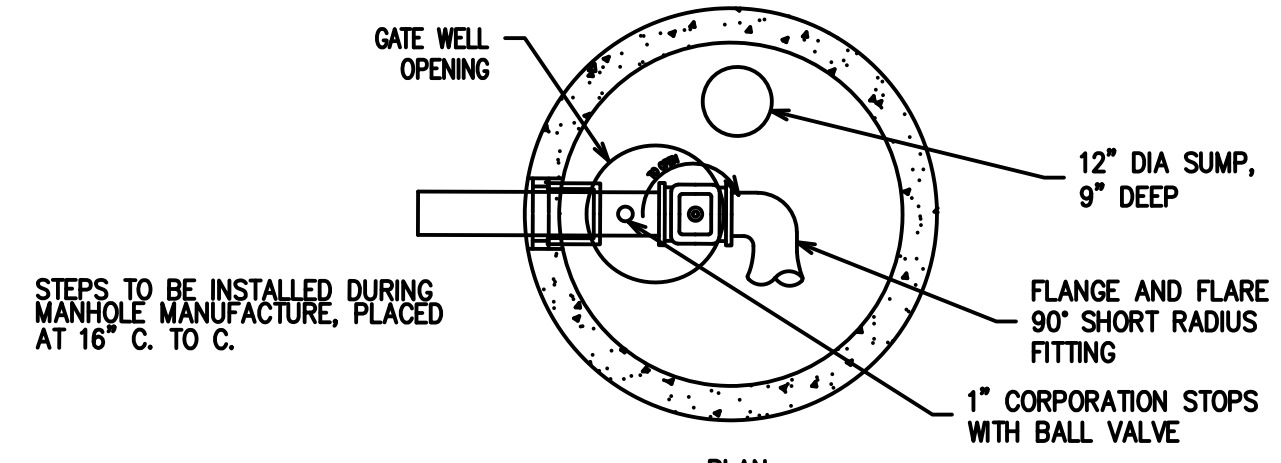




DEAD END BLOWOFF CONNECTION



SECTION



PLAN

BLOW-OFF VALVE AND WELL

THRUST BLOCK DETAILS

NOTE: 3000 PSI CONCRETE TO BE USED. THRUST BLOCK TO ABUT & REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 95% MODIFIED PROCTER.

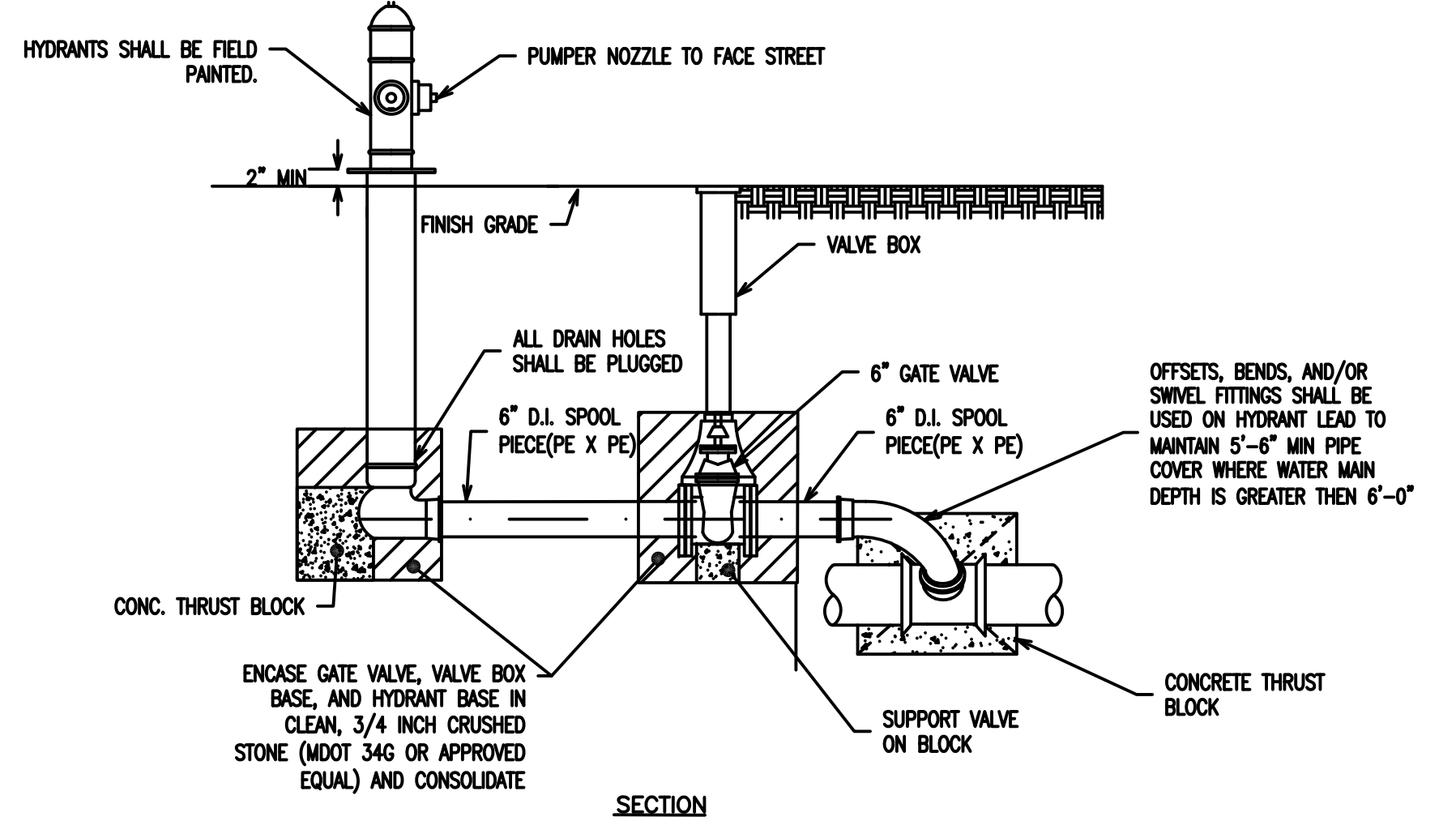
FOR 90° BENDS OR SMALLER				
D	A	B	C	E MIN.
20"	8"	6.5"	3.5"	2.5"
16"	6"	4"	2.5"	2"
12"	4"	3"	2"	1.75"
10"	3"	3"	2"	1.75"
8"	3"	2"	2"	1.5"
6"	2"	1.5"	2"	1.25"

FOR PLUGS				
D	A	B	C	MIN.
20"	7"	5"	2.5"	
16"	4"-10"	4"-10"	2"	
12"	4"-4"	3"	1"-9"	
10"	3"	2"	1"-6"	
8"	2"-10"	2"-6"	1"-6"	
6"	1"-6"	1"-6"	3"	

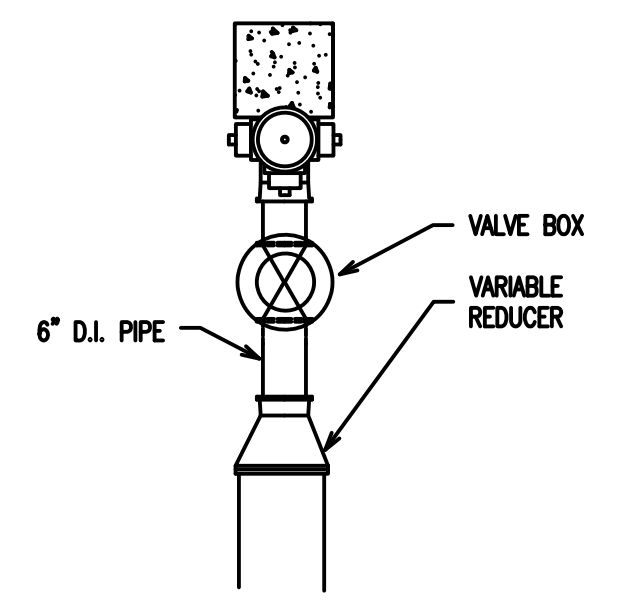
FOR TEES				
D	A	B	C	E MIN.
20"	6.5"	4.5"	3.5"	3"
16"	4"-8"	4"-8"	2.5"	2.75"
12"	4"	3"	2.5"	2.5"
10"	3"	2"	2"	2.25"
8"	2"-6"	2"	2"	2.25"
6"	2"	2"	2"	2.25"

THRUST BLOCK DETAILS

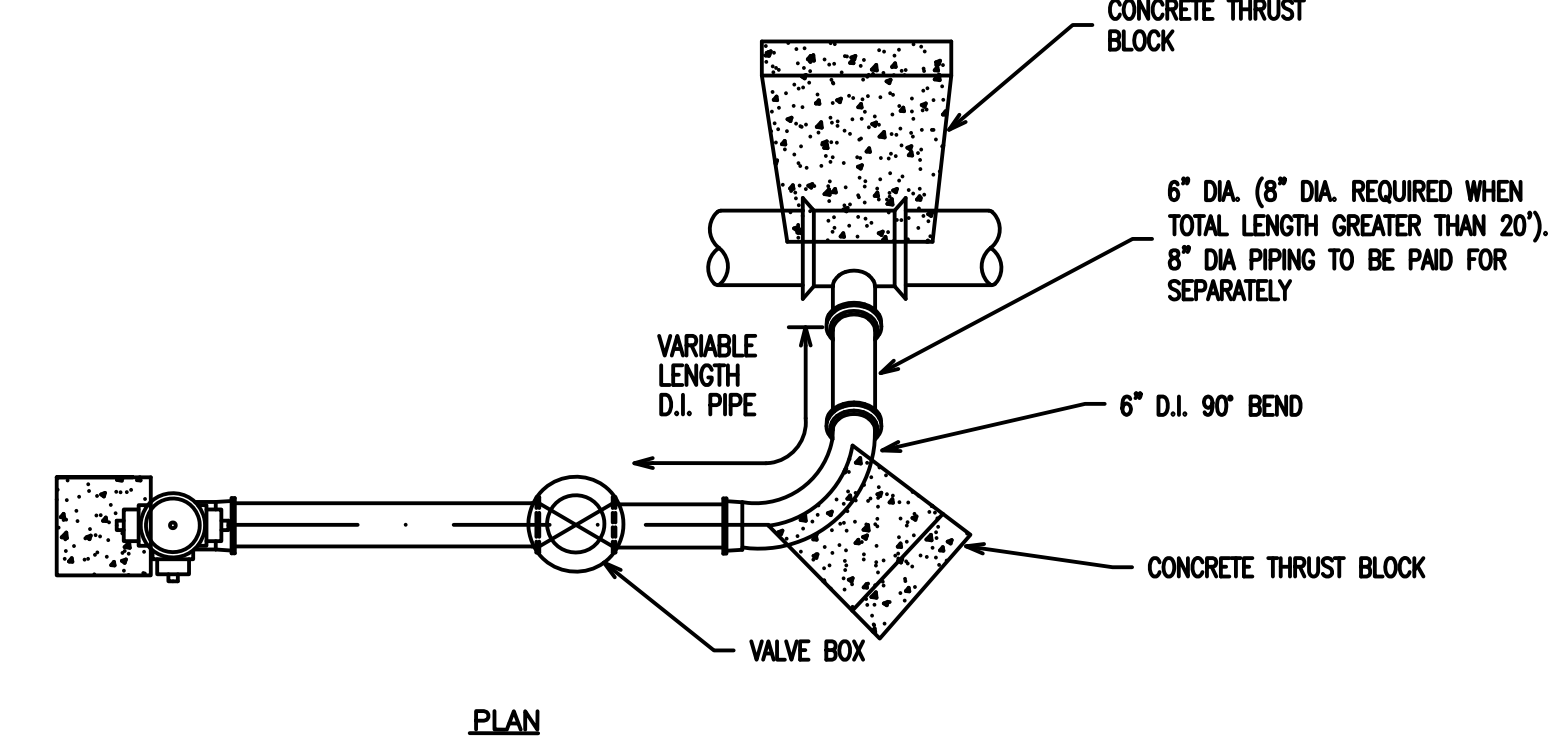
NOTE: 3000 PSI CONCRETE TO BE USED. THRUST BLOCK TO ABUT & REST AGAINST UNDISTURBED SOIL OR EARTH COMPACTED TO 95% MODIFIED PROCTER.



SECTION



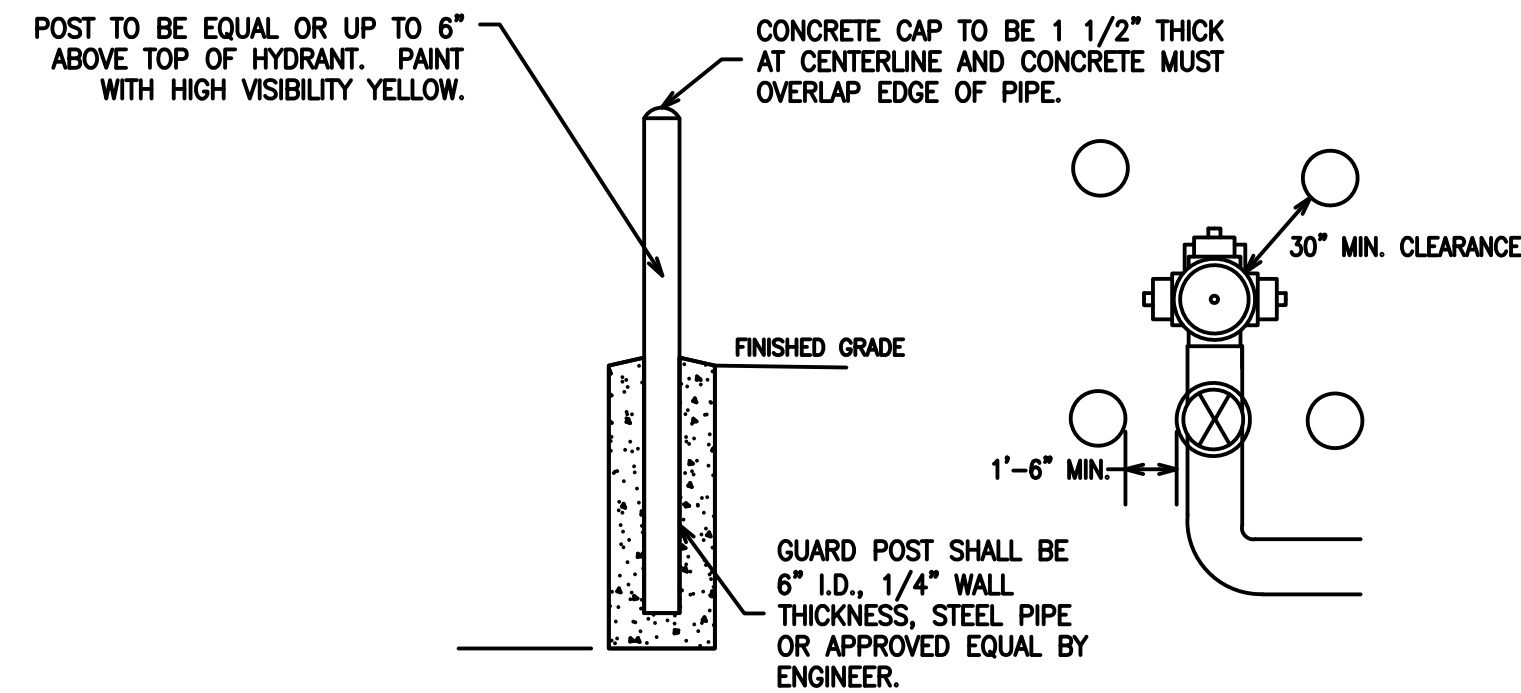
PLAN 6" HYDRANT WATER MAIN END



PLAN

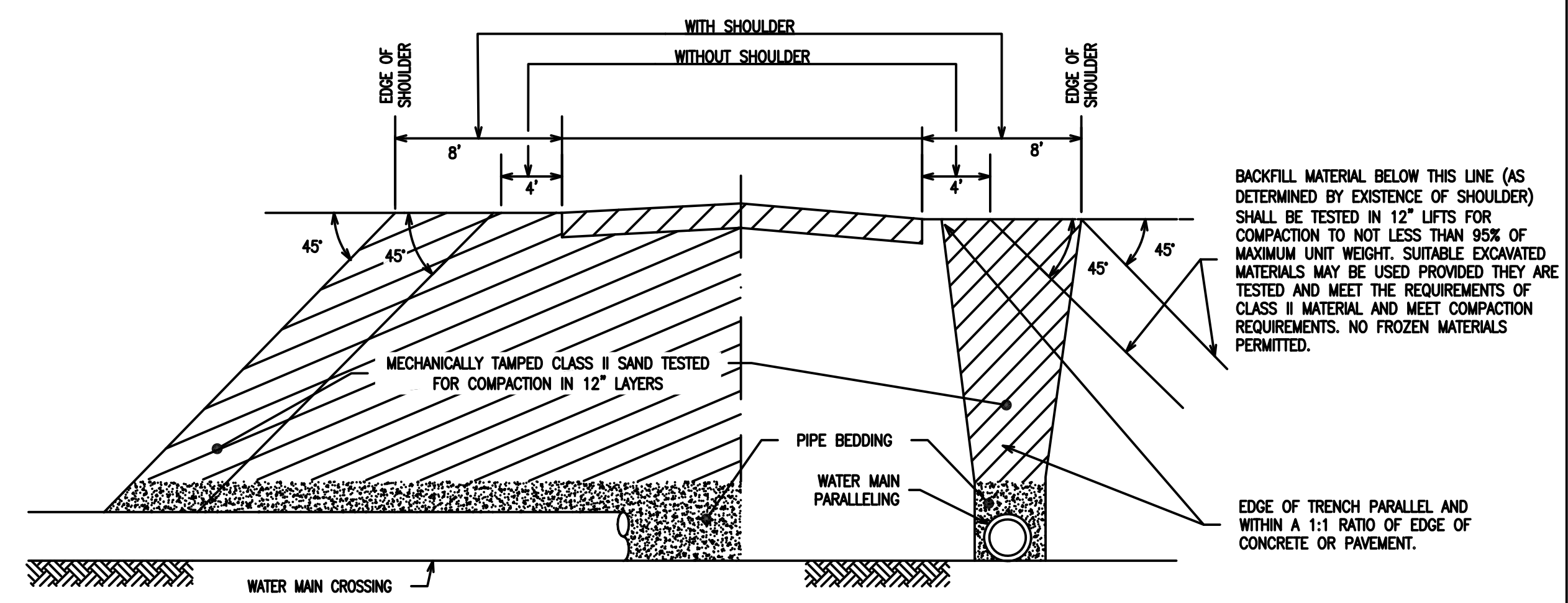
6" HYDRANT SIDE OUTLET

- NOTES:
- HYDRANT EXTENSIONS BETWEEN THE STANDPIPE LOWER SECTION & STANDPIPE UPPER ARE LIMITED TO 18 INCHES
  - ALL HYDRANTS COMPANION VALVES, BENDS, AND TEES TO BE FULLY RESTRAINED BY MECHANICAL JOINT RESTRAINT SYSTEM FITTINGS (MEGA-LUG OR APPROVED EQUAL).
  - THRUST BLOCKS ARE REQUIRED AT ALL TEES, BENDS AND ENDS.
  - ALL HARDWARE (BOLTS, NUTS, WASHERS, ETC.) FOR HYDRANT ASSEMBLIES SHALL BE COR-BLUE OR APPROVED EQUAL.



GUARD POST

- NOTES:
- GUARD POST SHALL NOT INTERFERE WITH HYDRANT OPERATION
  - TO BE INSTALLED IN ALL PAVED AREAS PARKING LOTS, PARKS, PLAZAS, ETC. (NOT RIGHT-OF-WAYS) SPACE WHERE VEHICLE EQUIPMENT DAMAGE TO HYDRANT IS POSSIBLE.



MINIMUM BACKFILL UNDER OR NEAR PAVEMENT

MAXIMUM PARTICLE SIZE VS. PIPE SIZE	
NOMINAL PIPE SIZE (IN)	MAXIMUM PARTICLE SIZE (IN)
6 +	1 1/2

MINIMUM TRENCH WIDTH TABLE (IN.)	
NOMINAL PIPE SIZE (IN)	TRENCH WIDTH, W
6 +	D <sub>0</sub> + 24

DUCTILE IRON PIPE TRENCH DETAIL

- NOTES:
- DUCTILE IRON PIPE IS CONSIDERED A FLEXIBLE PIPE THAT WHEN INSTALLED UNDERGROUND IS DESIGNED TO DEFLECT UNDER LOAD.
  - DO NOT COMPACT INNER BEDDING OF INITIAL BEDDING LAYER.
  - CAREFULLY EXCAVATE BELL OR COUPLING HOLES FROM THE INITIAL BEDDING LAYER.
  - SHOVEL SLICE BEDDING MATERIAL IN THE HAUNCH AREA ALONG THE BOTTOM CIRCUMFERENCE OF THE PIPE TO CONSOLIDATE BEDDING AND UNIFORMLY SUPPORT THE PIPE BARREL.
  - COMPACT INITIAL BACKFILL MATERIALS IN LIFTS NOT EXCEEDING 6 INCHES BY HAND TAMPING AROUND AND DIRECTLY ABOVE PIPE TO MINIMIZE VOIDS.
  - DO NOT USE MECHANICAL COMPACTION EQUIPMENT DURING INITIAL BACKFILL OPERATIONS UNTIL MATERIAL HAS BEEN BROUGHT TO 12 INCHES ABOVE THE TOP OF PIPE BARREL.
  - COMPACT SAND BACKFILL AND STANDARD TRENCHES OUTSIDE OF PIPE ZONE TO NOT LESS THAN 95% OF THE MAXIMUM UNIT WEIGHT IN LIFTS NOT EXCEEDING 12 INCHES.
  - FOR MINIMUM TRENCH WIDTHS, REFER TO TABLE 2, MAXIMUM TRENCH WIDTH = D<sub>0</sub> + 2D<sub>0</sub> UNLESS MINIMUM TRENCH WIDTH IS GREATER.
  - IF THE PIPE IS LOCATED BENEATH THE GROUND WATER TABLE, THE PIPE ZONE SHALL BE WRAPPED IN A GEOTEXTILE SEPARATOR TO MINIMIZE MIGRATION OF SOIL INTO THE PIPE ZONE.

WATER MAIN STANDARD DETAILS

REVISION BLOCK	
Rev. No.	Rev. Date
1	01/01/01
2	03/23/14
3	02/14/18
4	01/01/20

ORIG. DATE: 01/01/01

SCALE: NONE

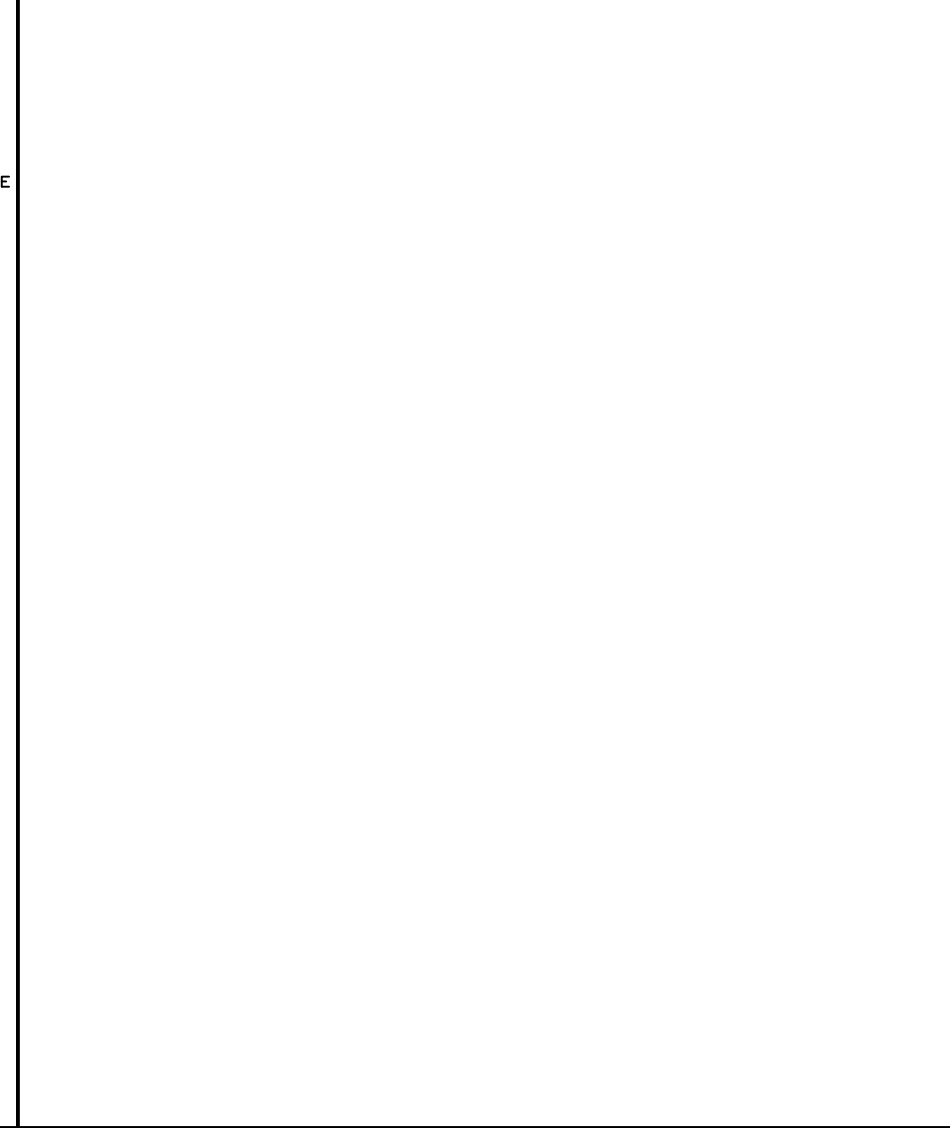
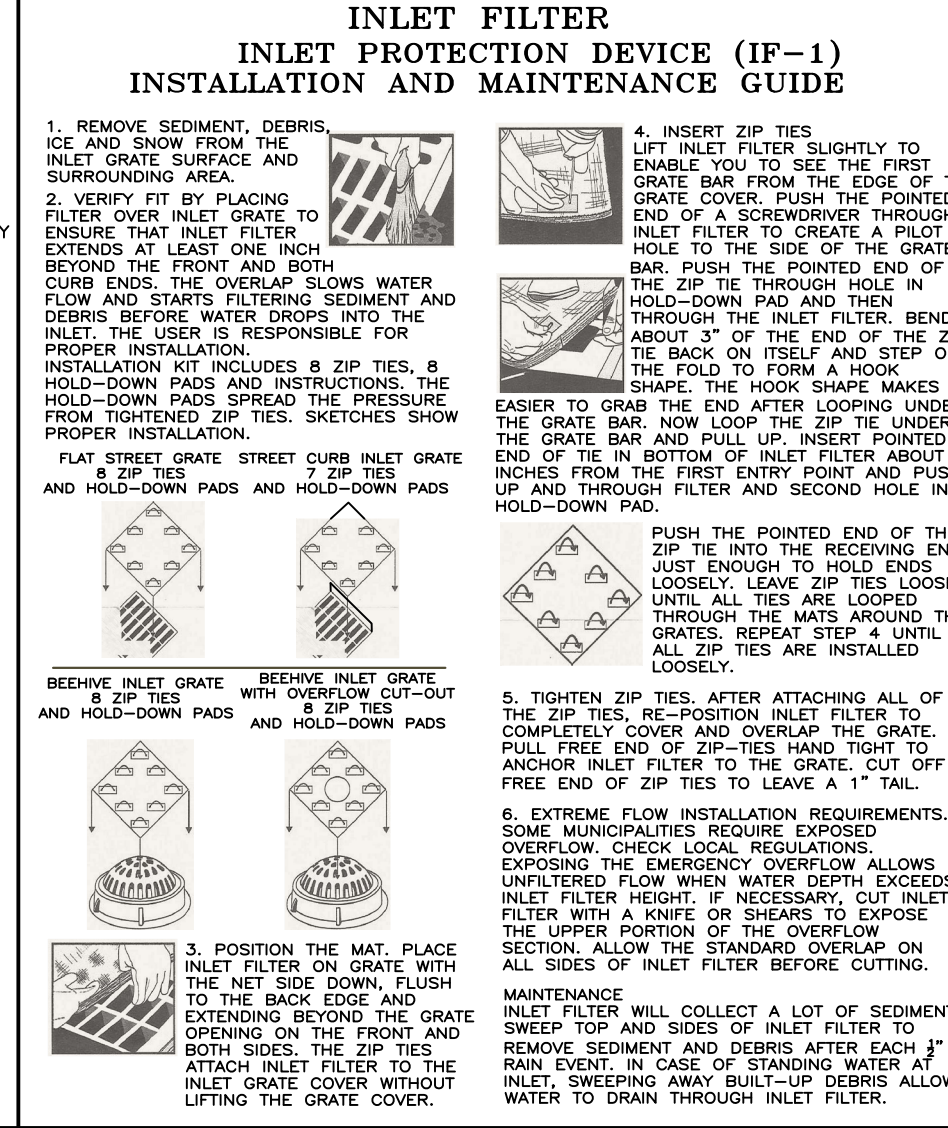
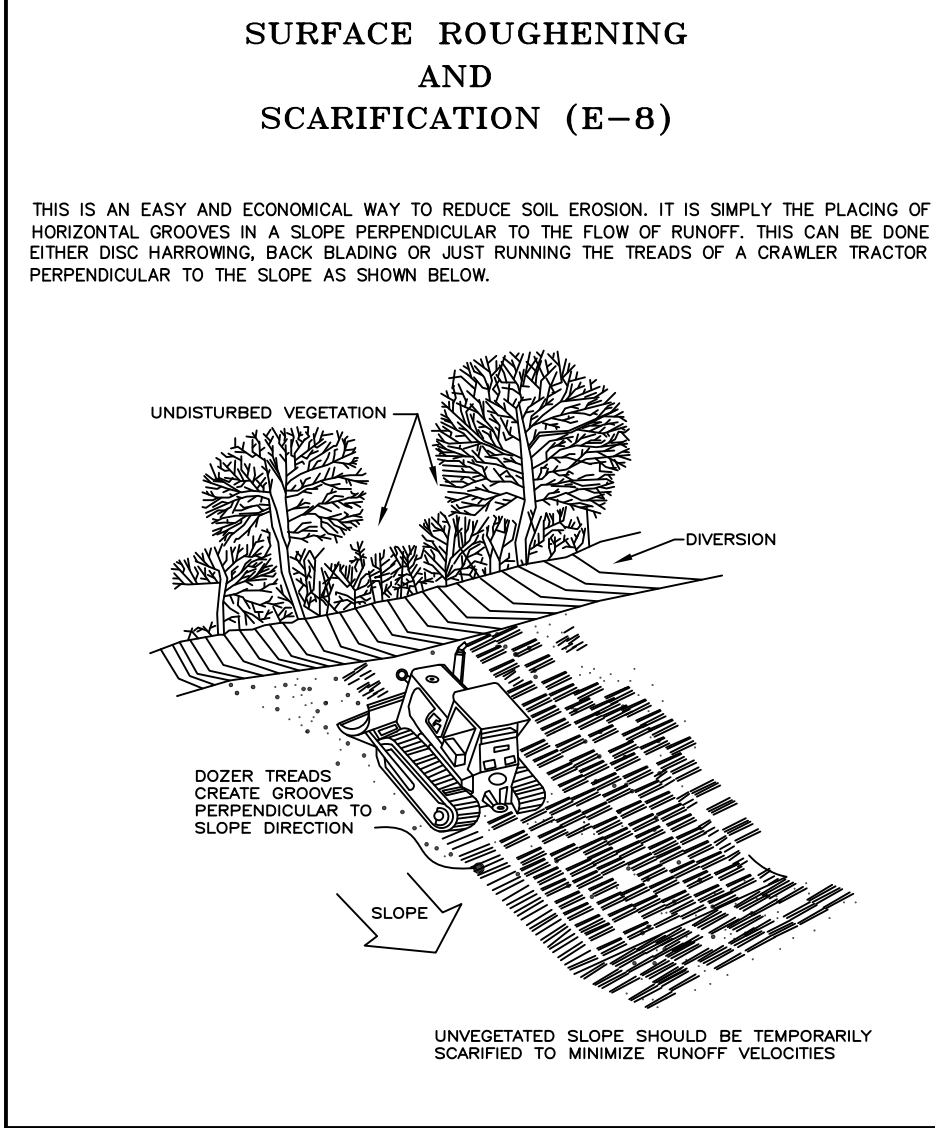
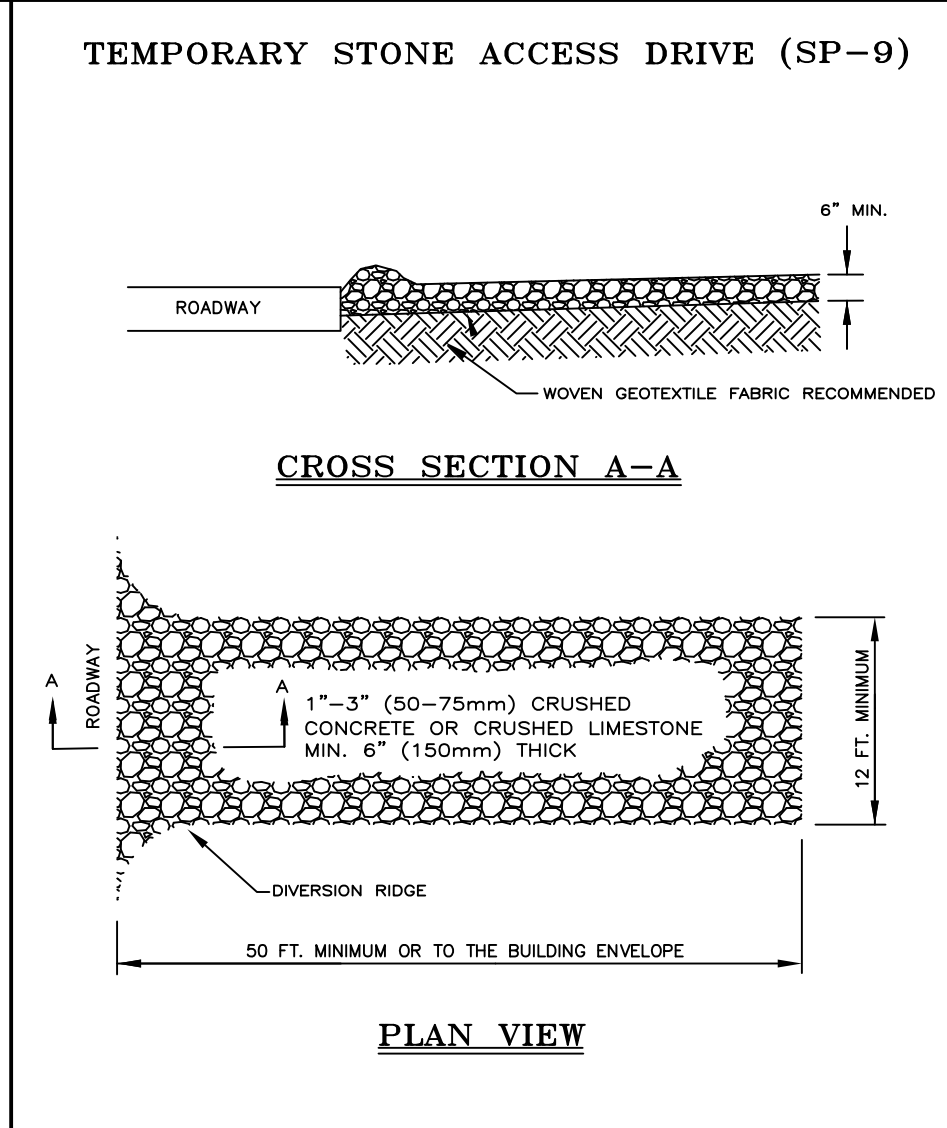
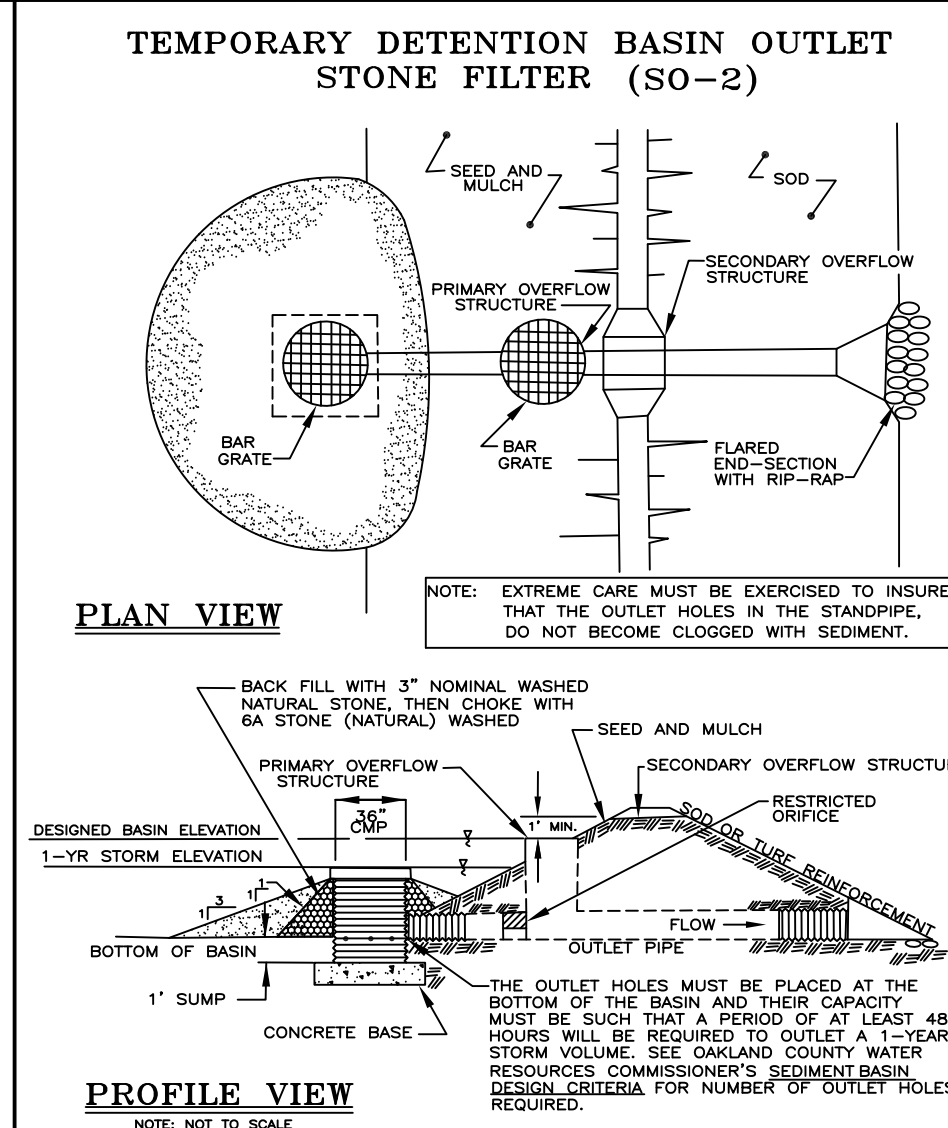
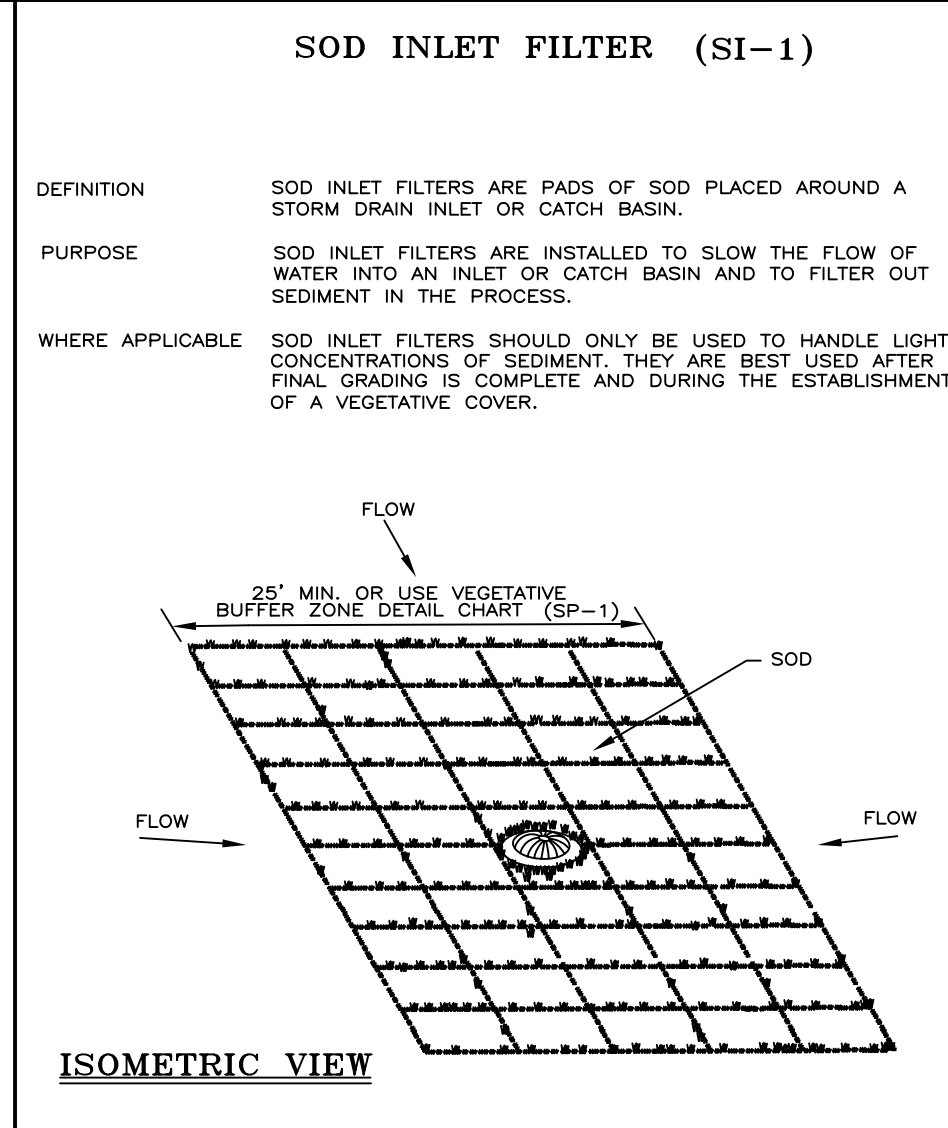
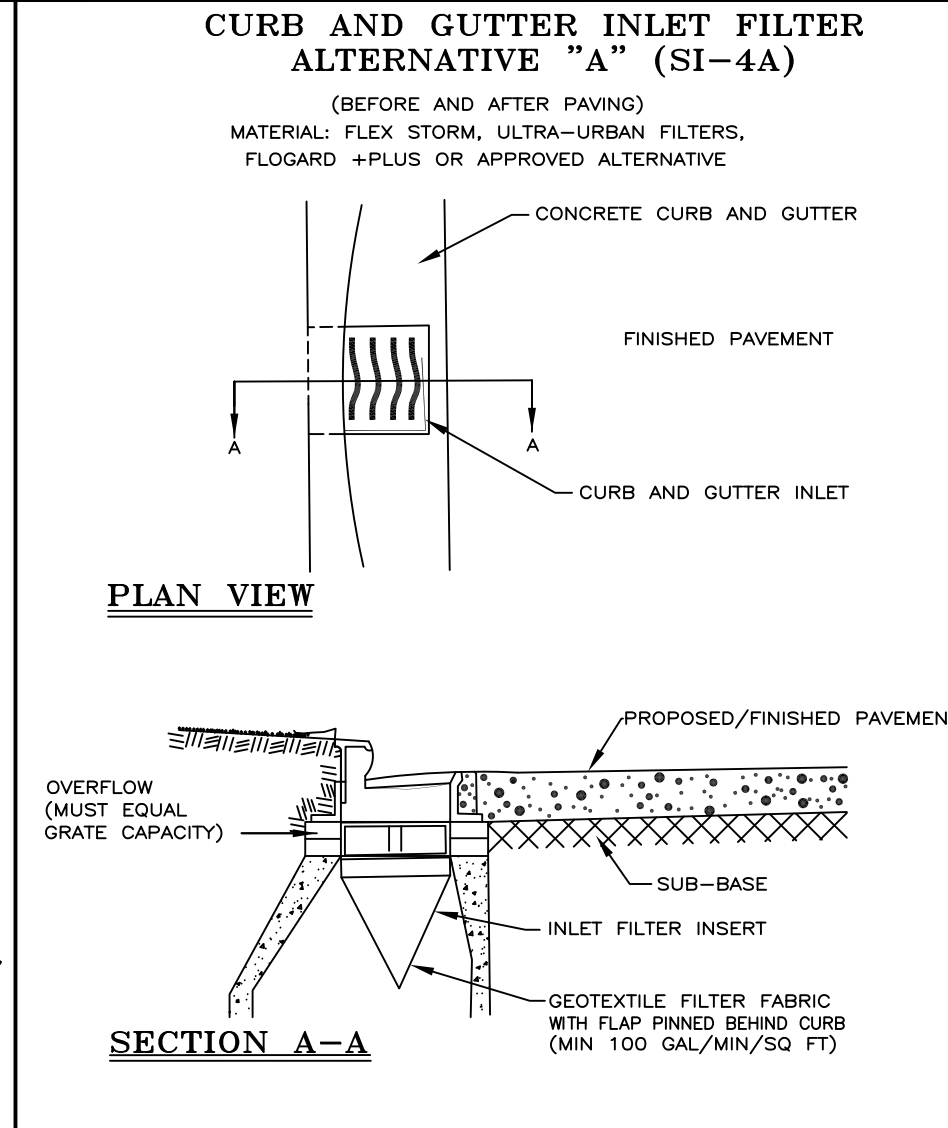
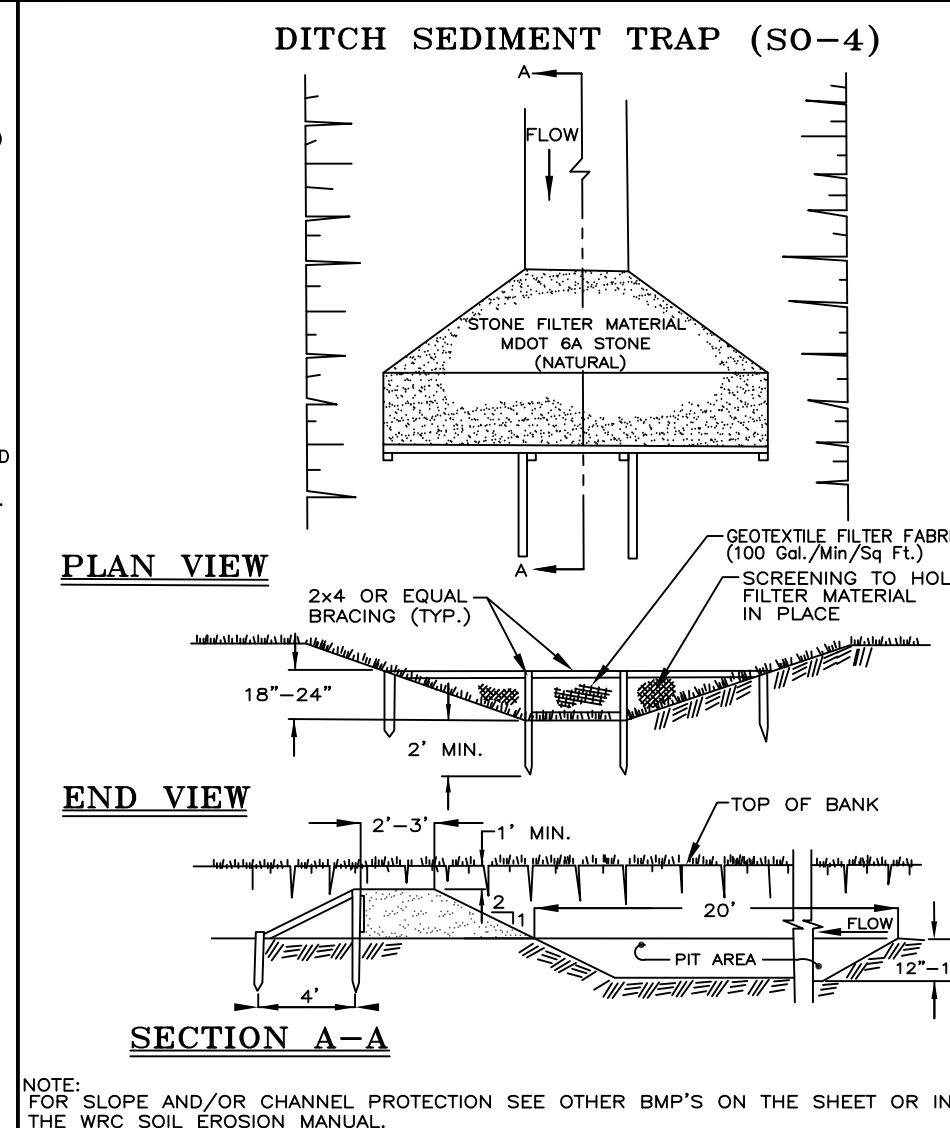
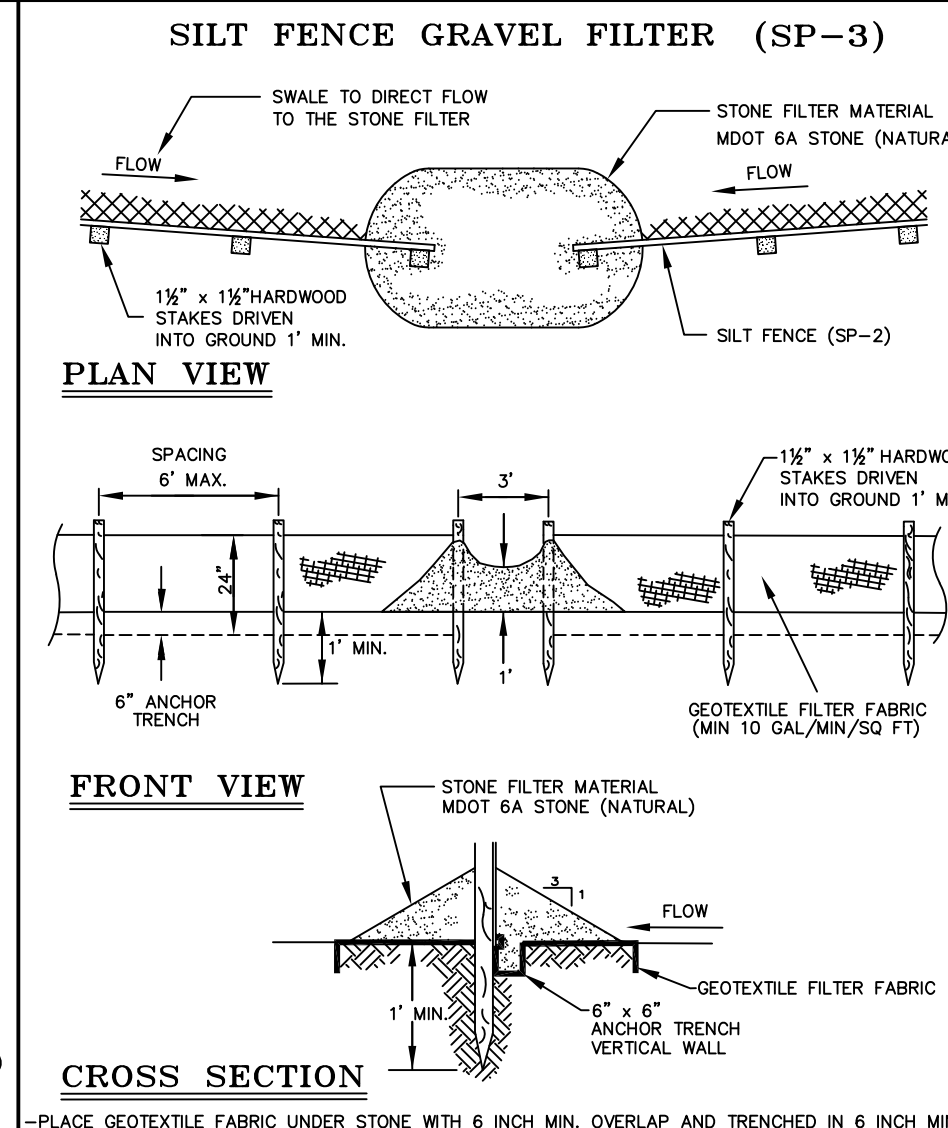
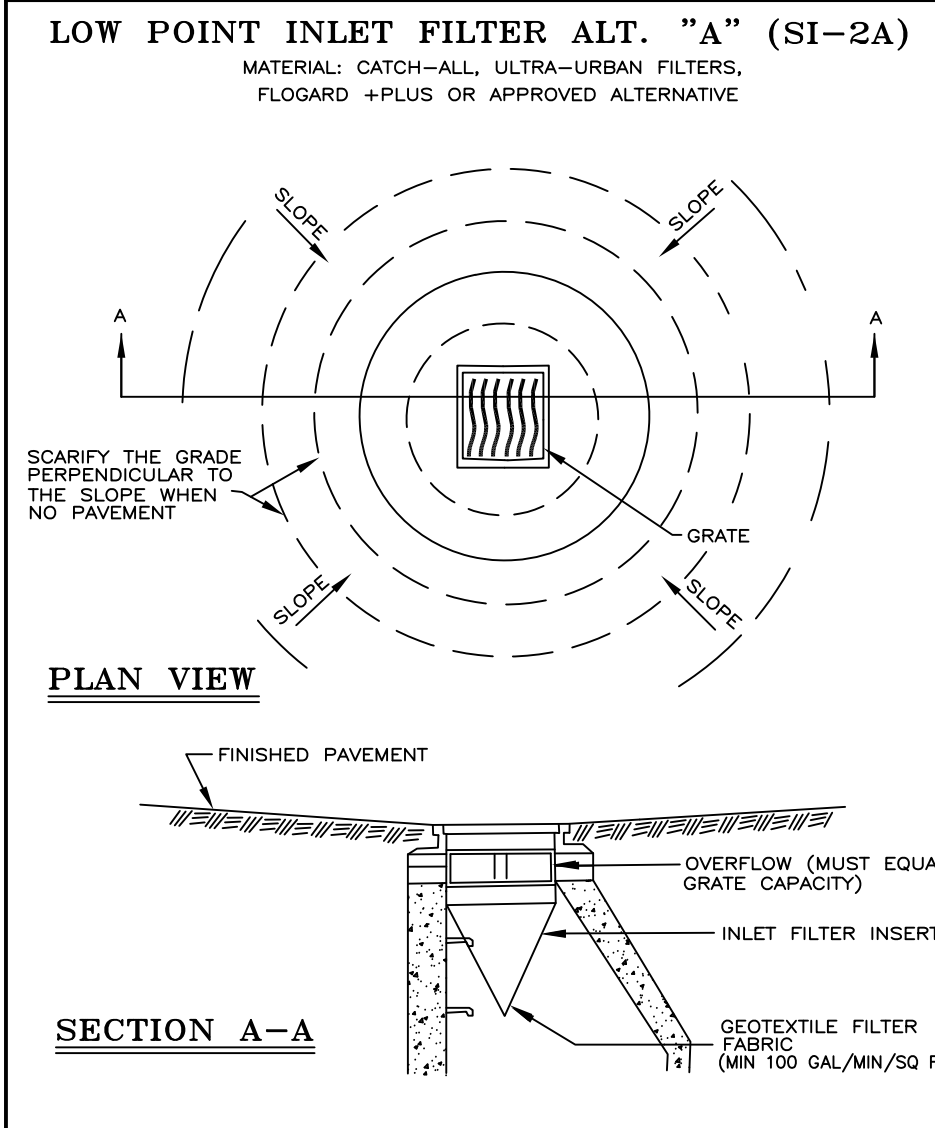
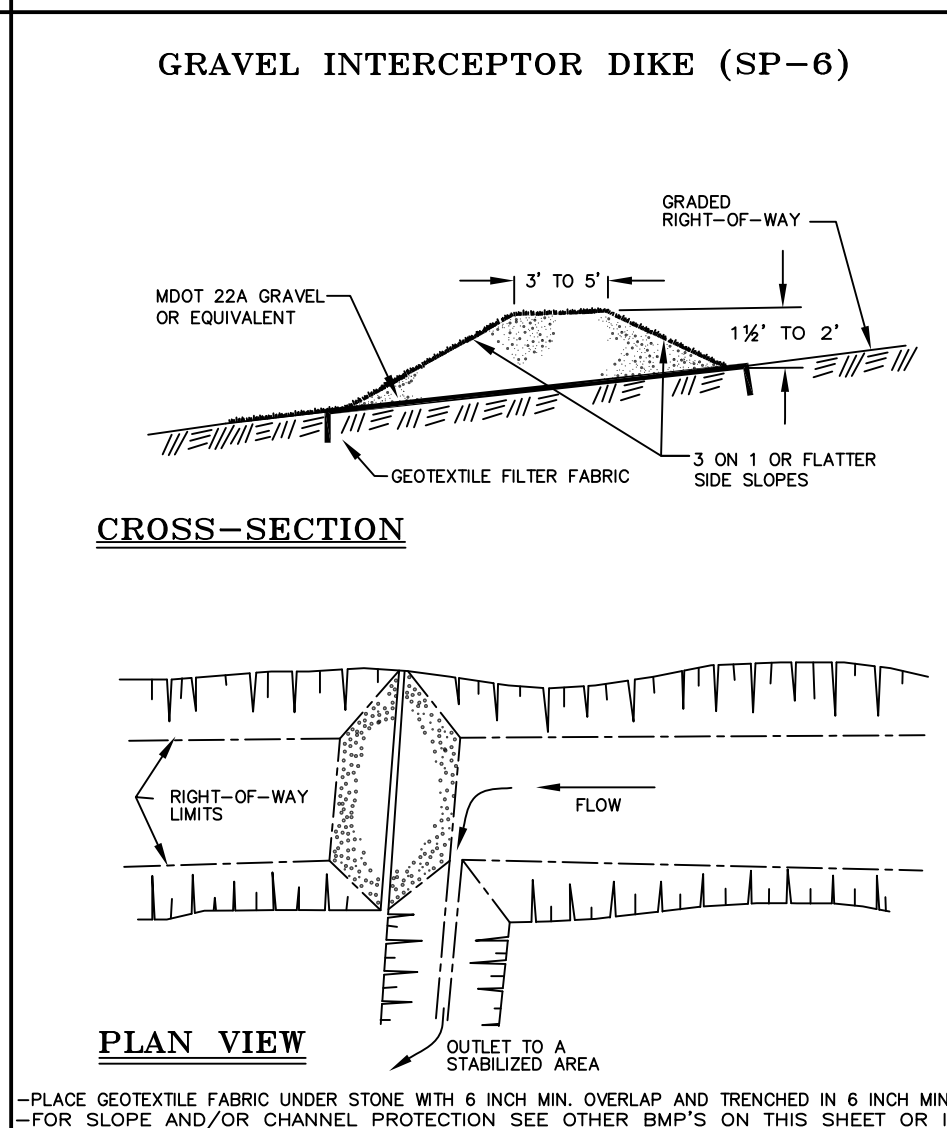
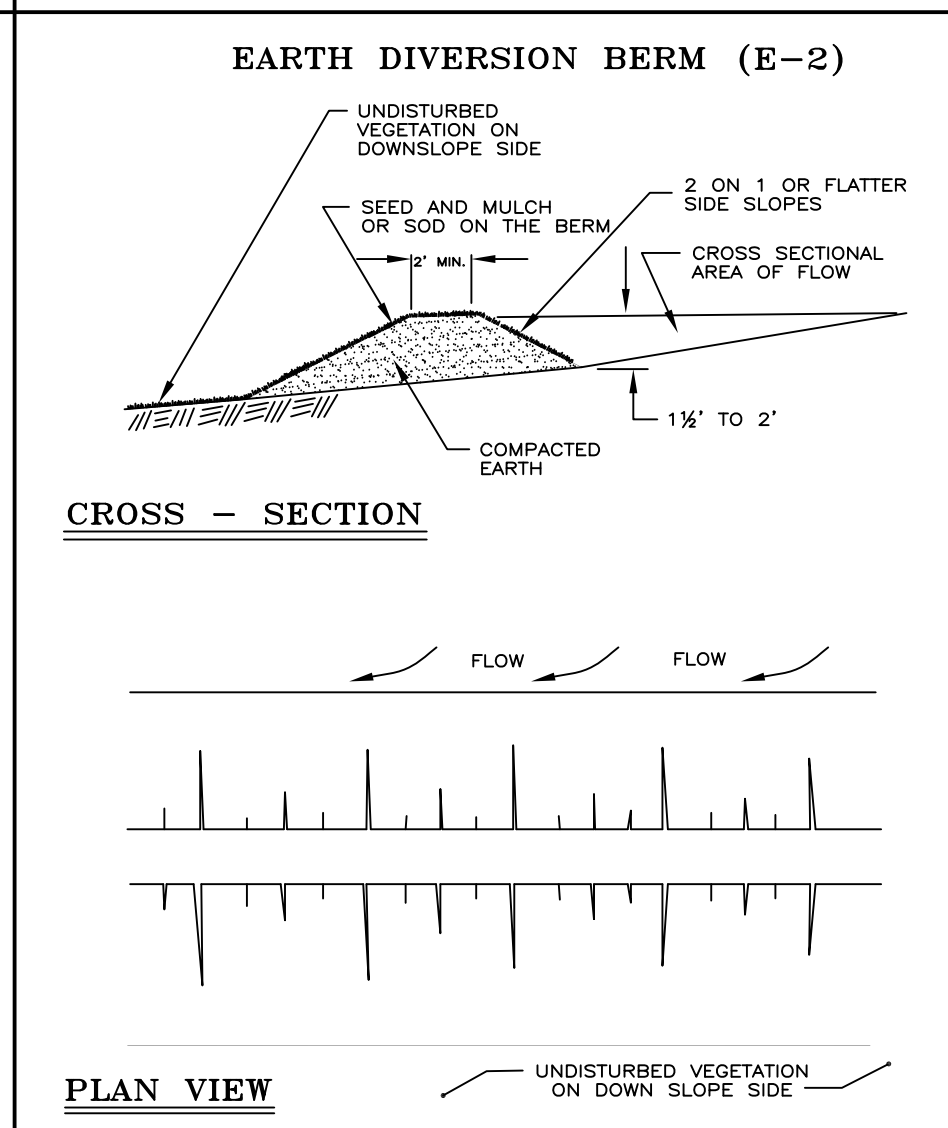
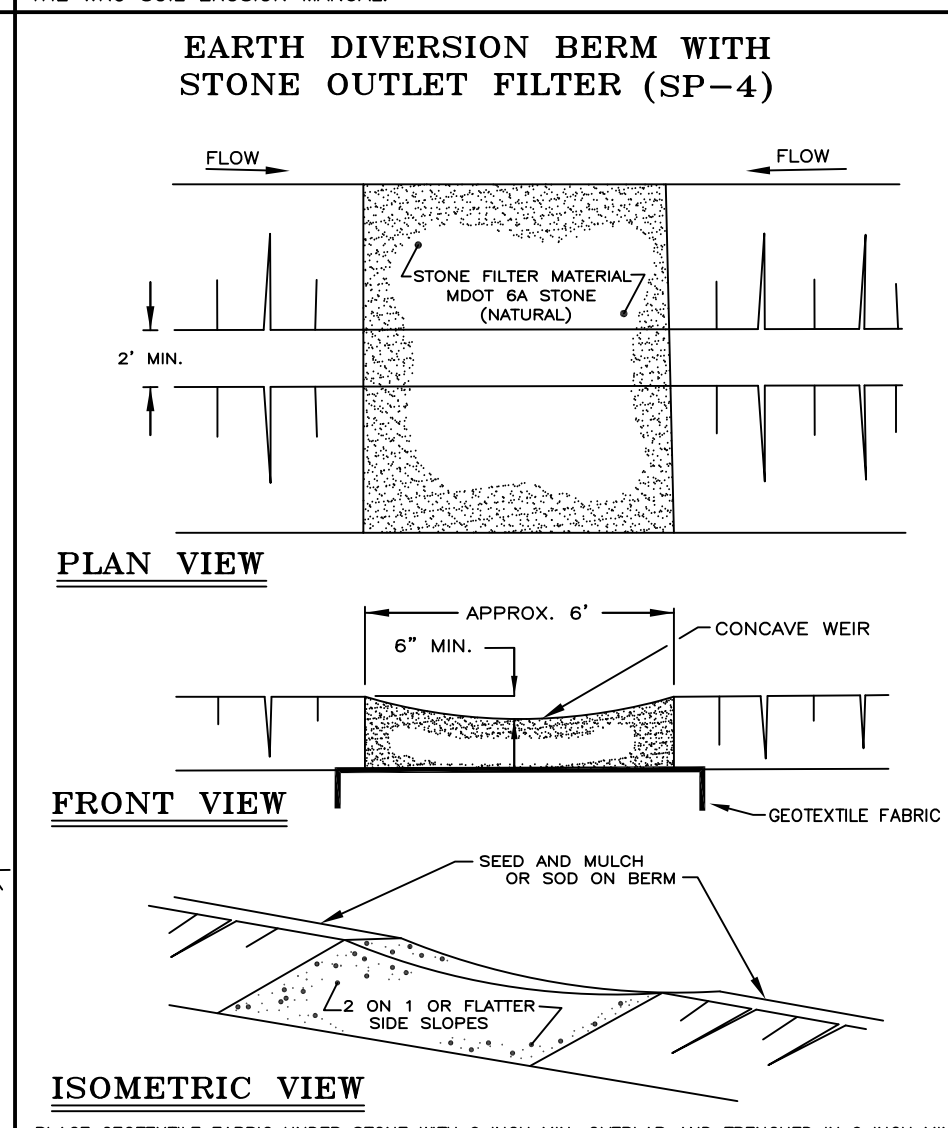
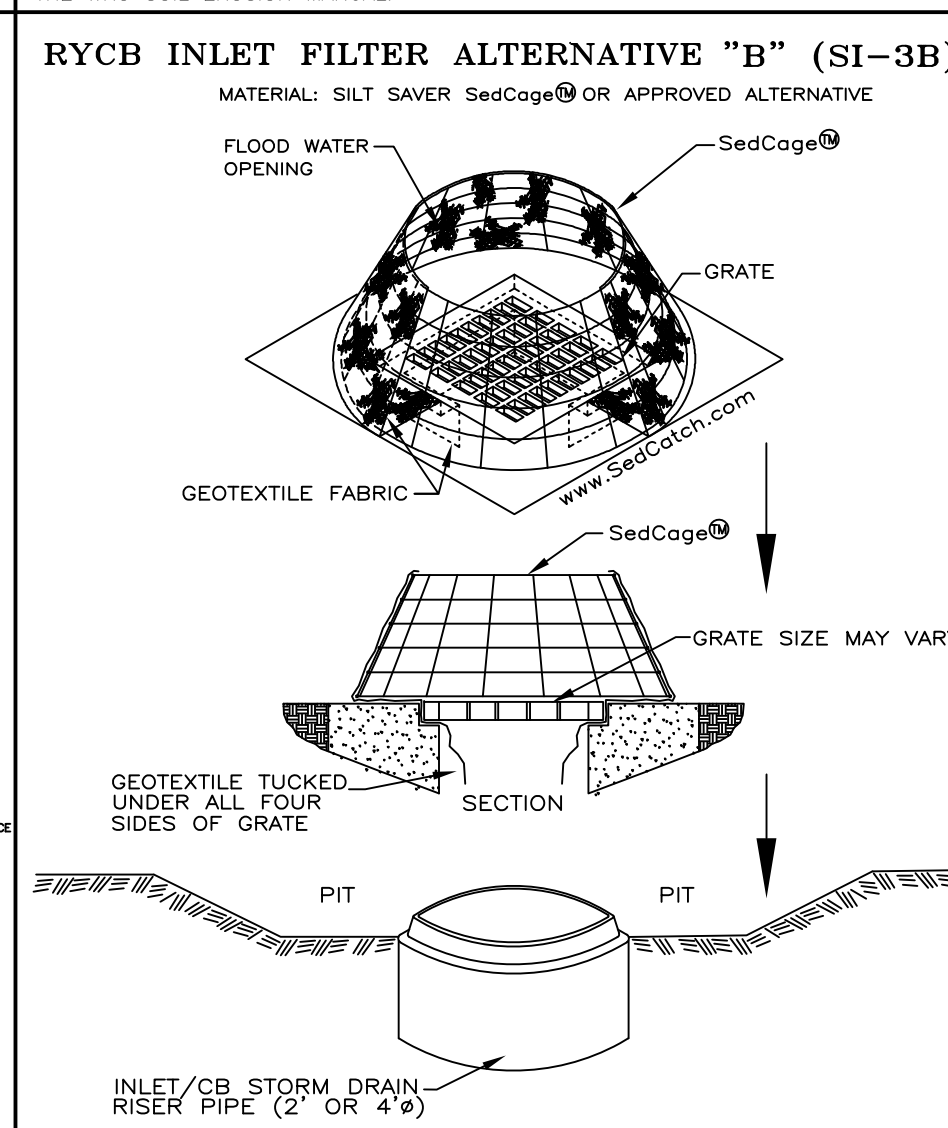
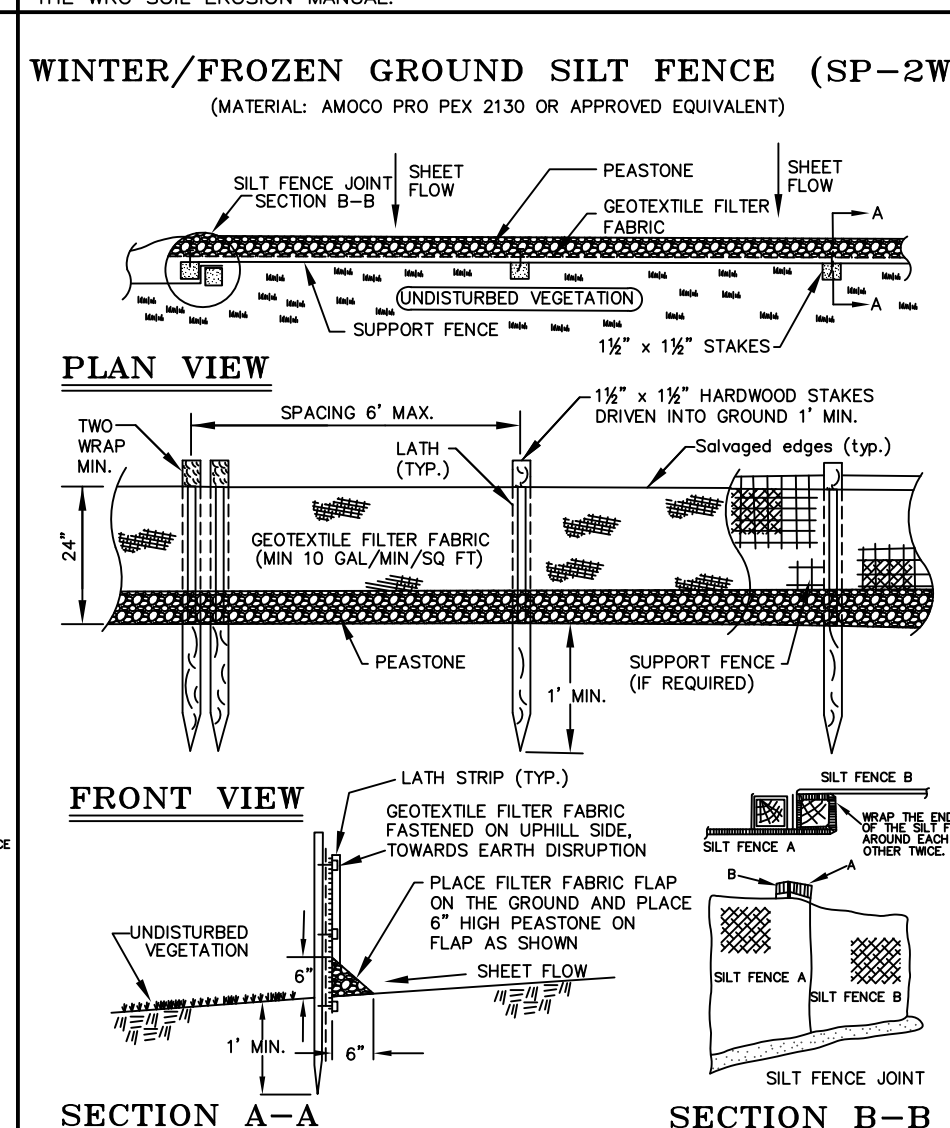
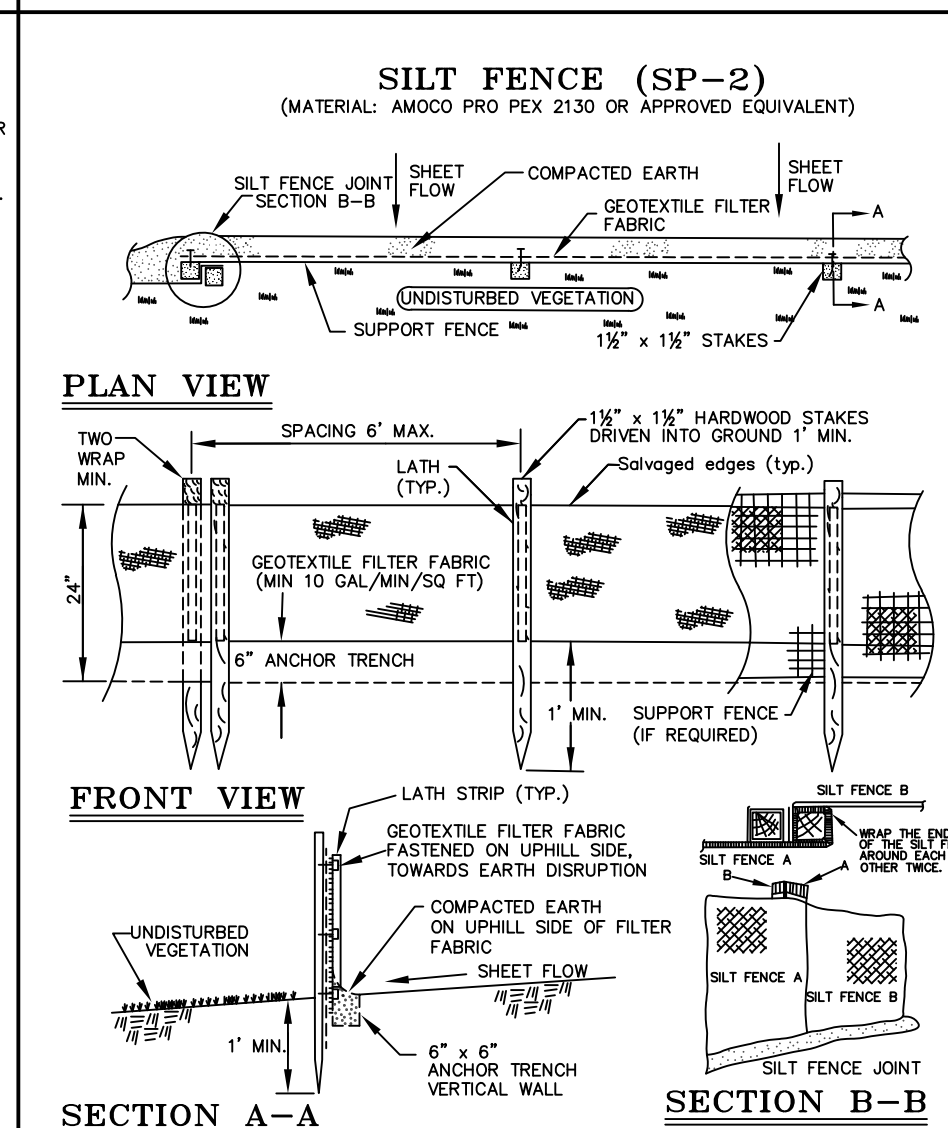
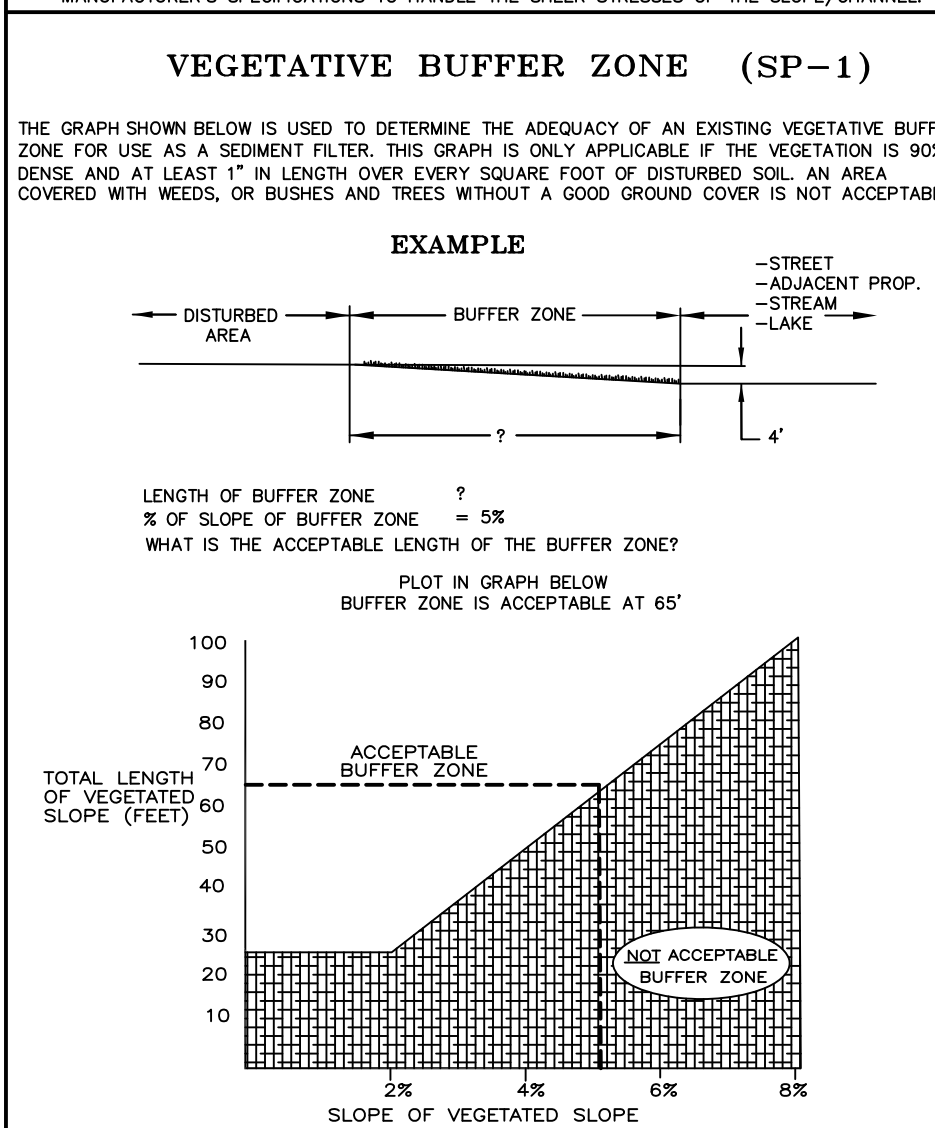
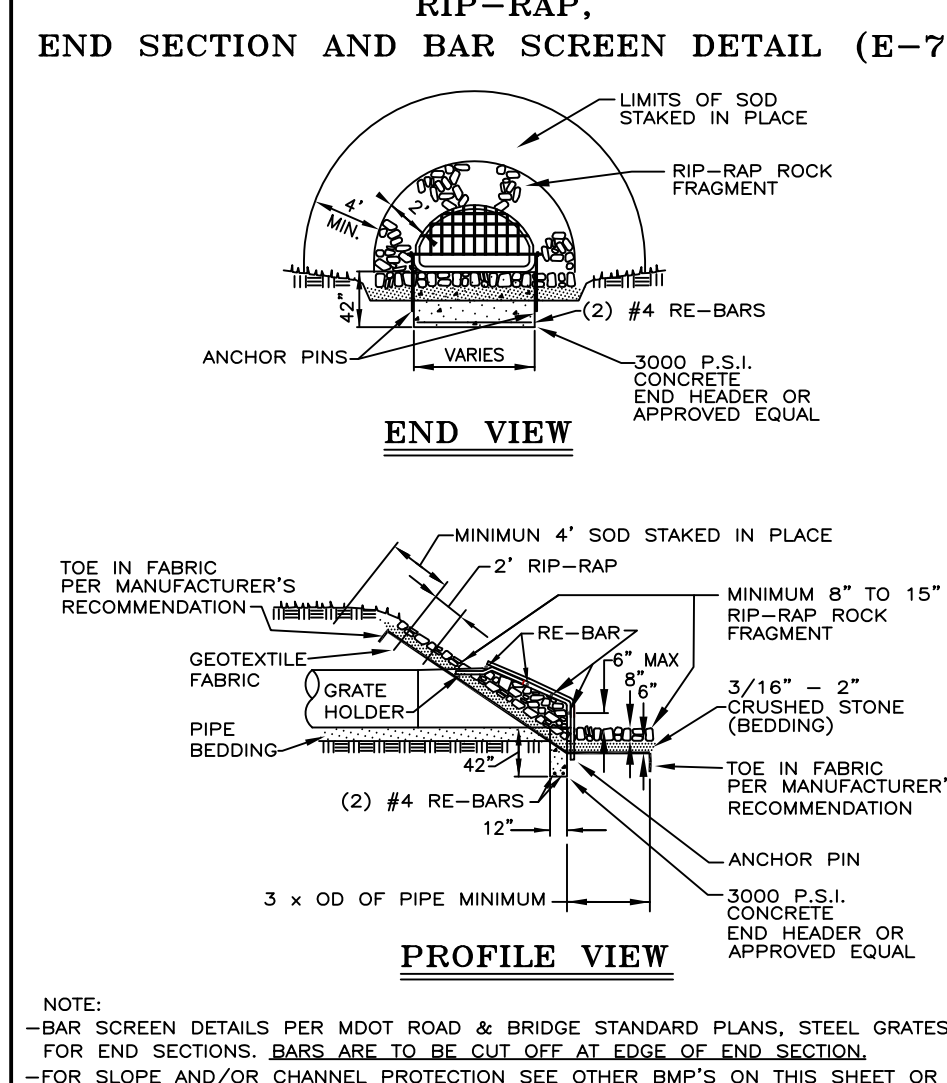
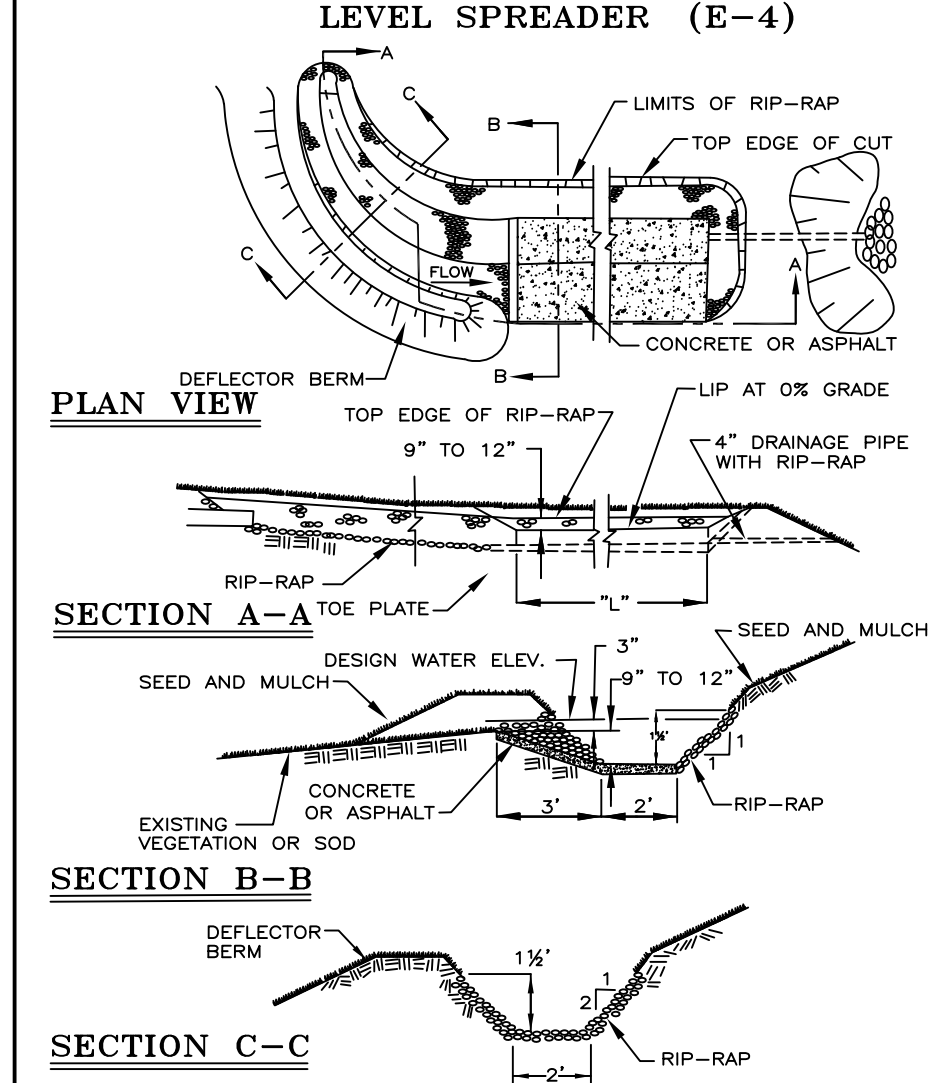
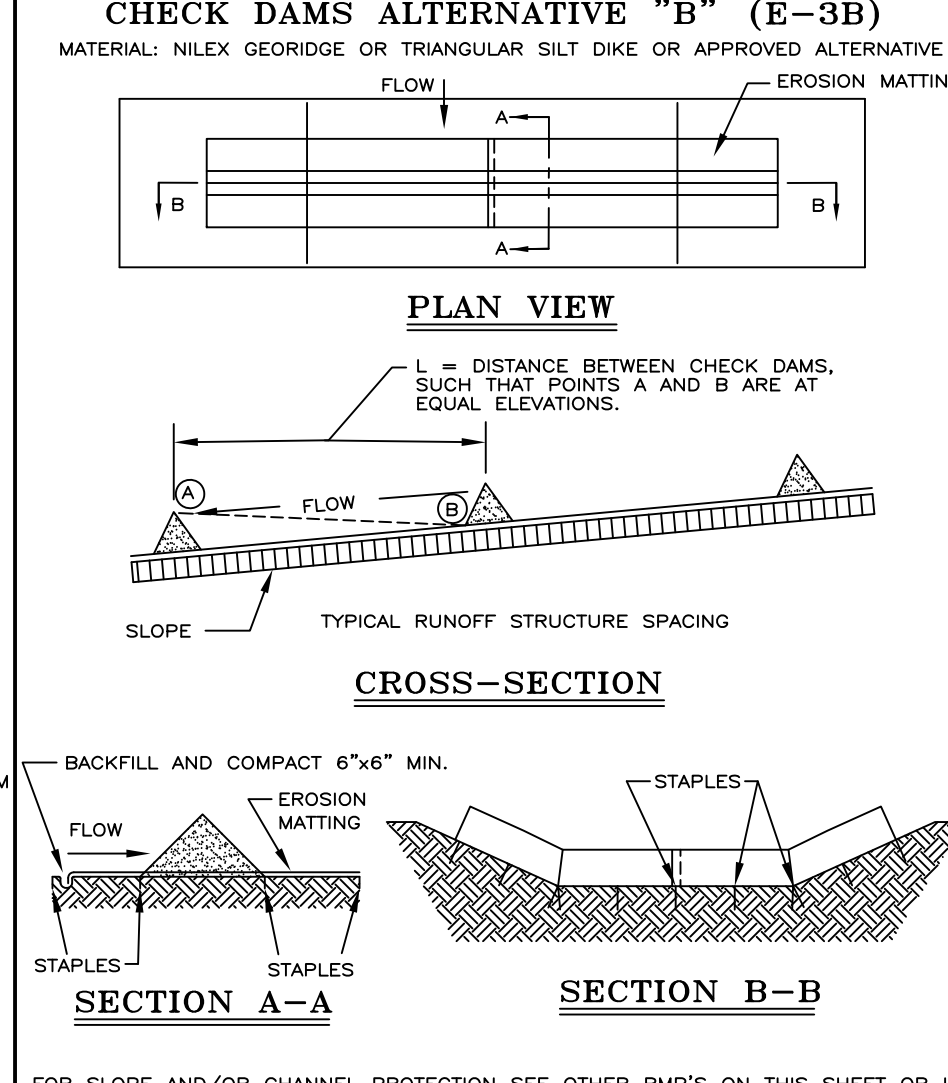
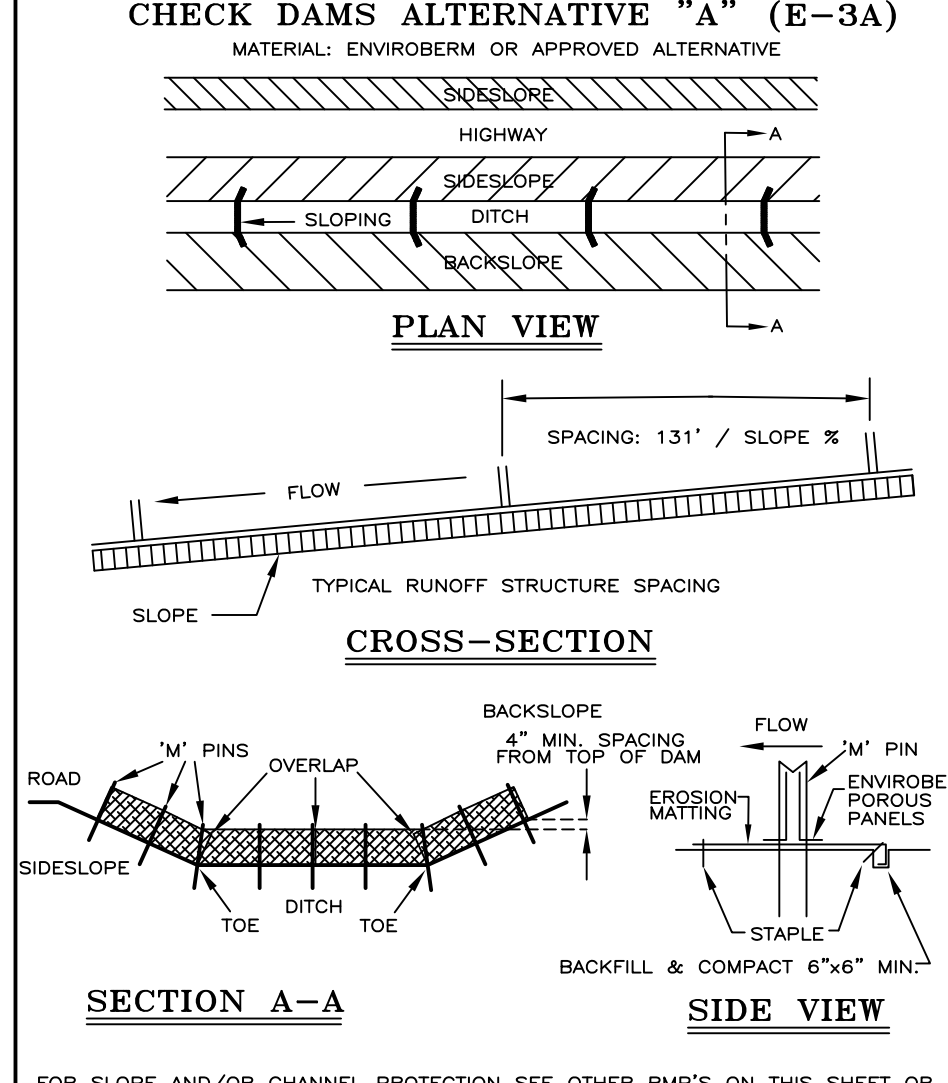
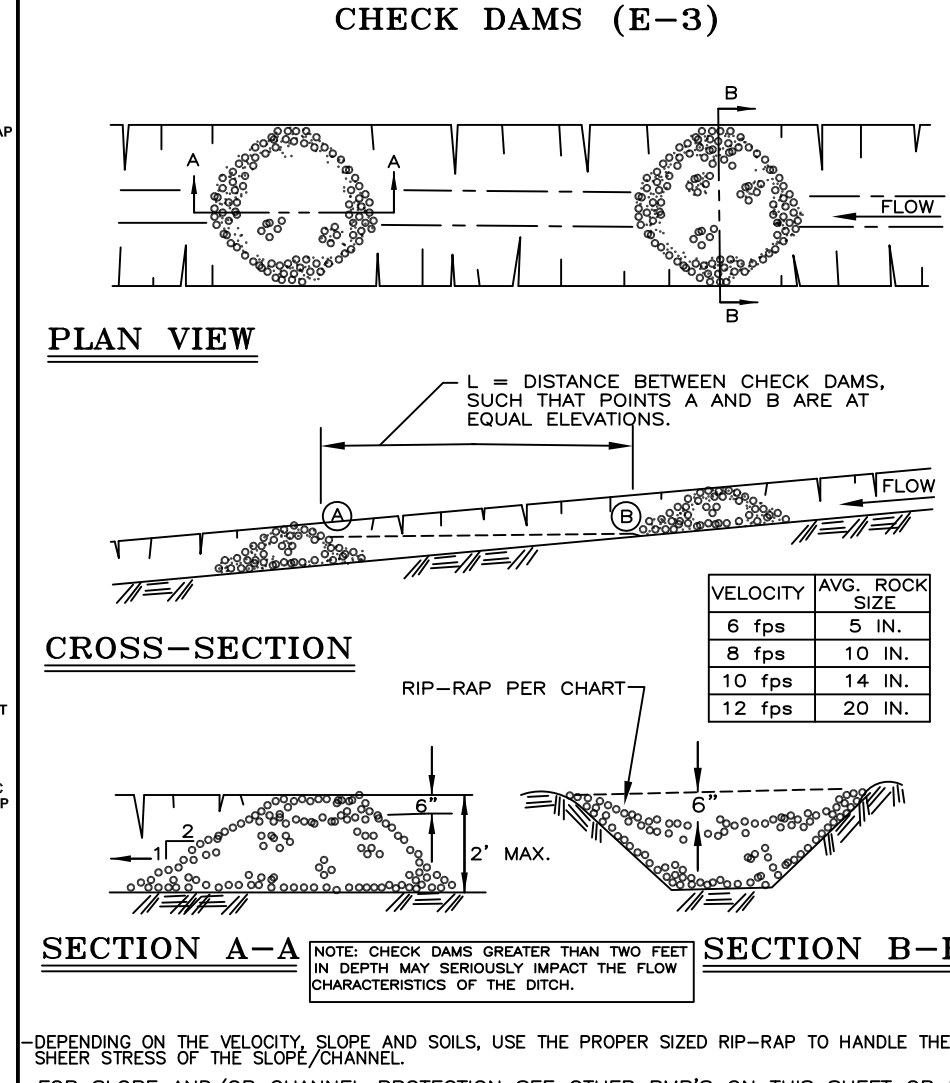
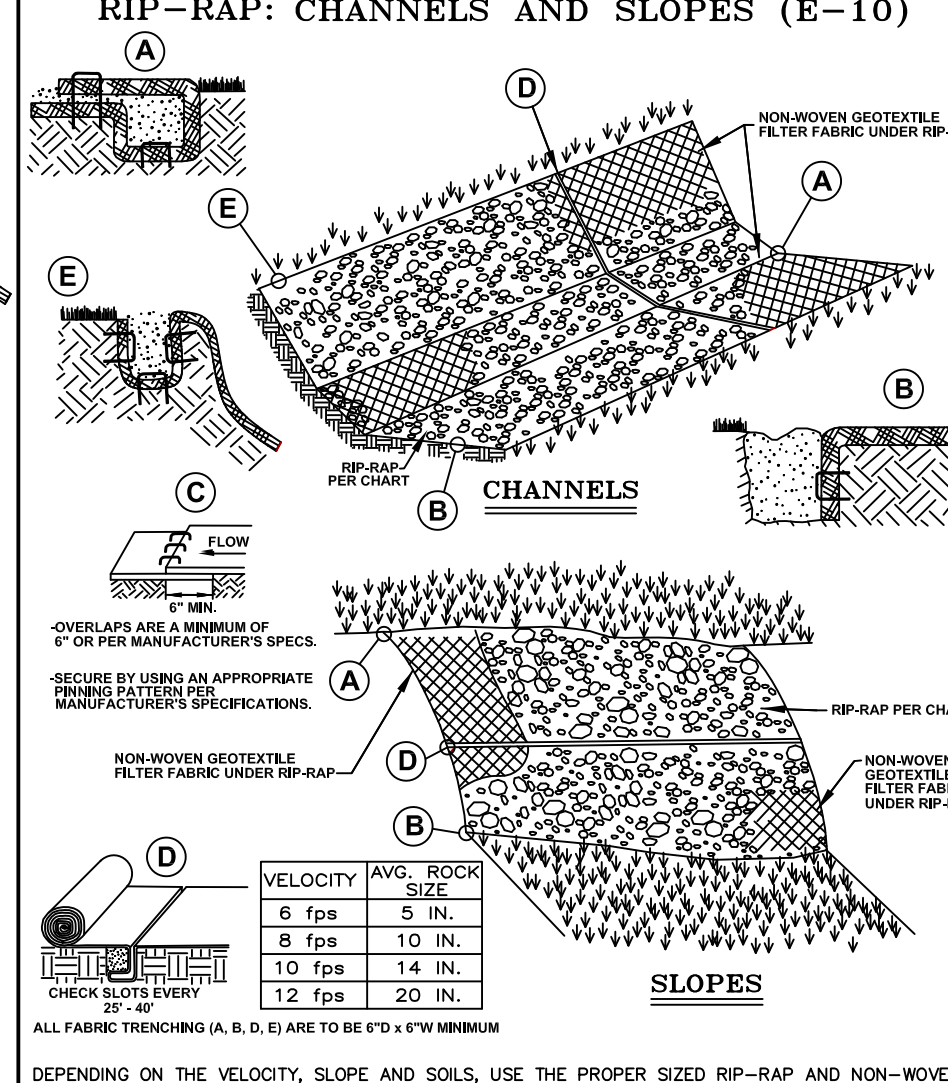
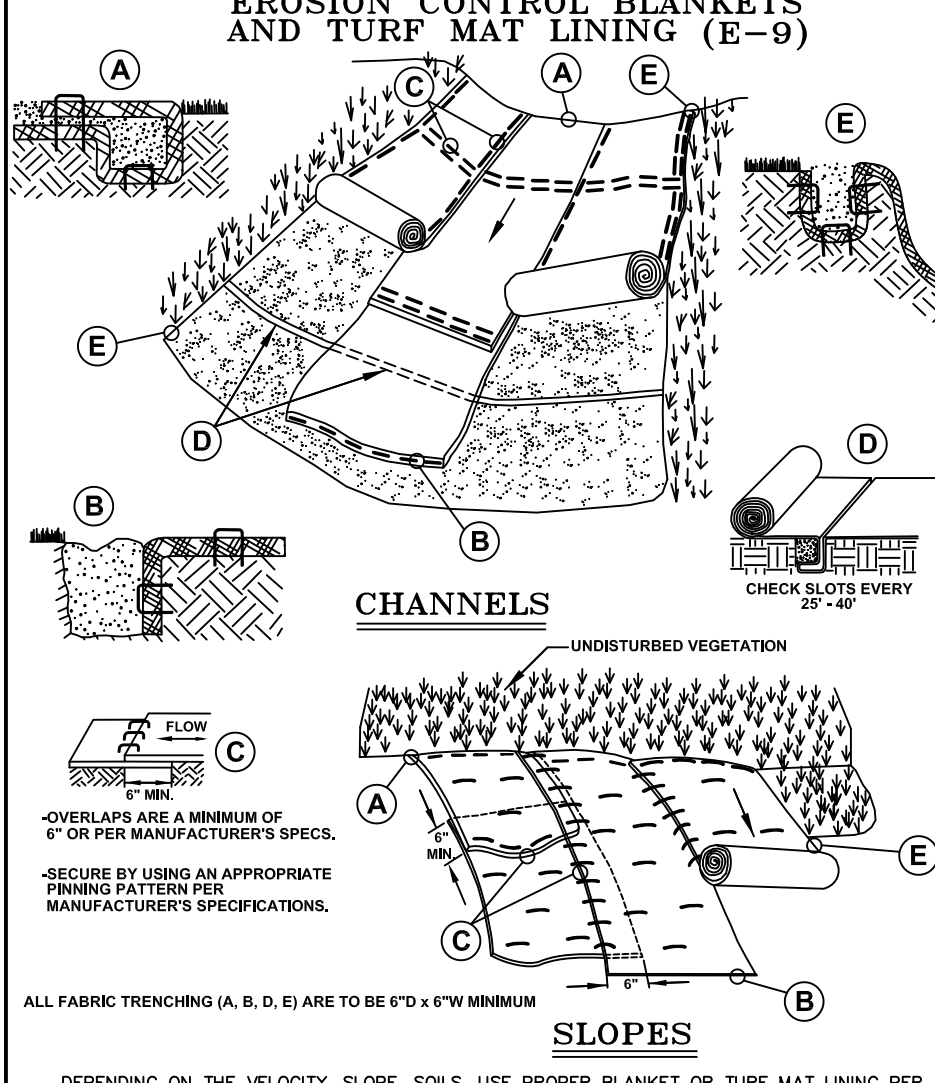
DESIGNED BY: WRC

DRAWN BY: WRC Mapping

ONE PUBLIC WORKS DRIVE, BLDG 95 WEST WATERFORD, MICHIGAN 48328-1907

WATER RESOURCES COMMISSIONER

SHEET NO.: 3 of 7



NOTE: The Oakland County Water Resources Soil Erosion and Sedimentation Control standard details cannot be modified, reduced, edited, or changed in any way. Any deviation from these standard details must be approved in writing by the Oakland County Water Resources Commissioner. Changes otherwise made are in violation of Part 91 of Act 451 of 1994, the Natural Resources and Environmental Protection Act.

### SOIL EROSION AND SEDIMENTATION CONTROL DETAILS

REVISION BLOCK

NO.	DATE	DESCRIPTION
1	01/10/10	ISSUED
2	01/10/10	ISSUED
3	01/10/10	ISSUED
4	01/10/10	ISSUED

ORIG. DATE: 01/10/10

SCALE: NONE

DESIGNED BY: WRC

DRAWN BY: MapInfo

WRC WATER RESOURCES COMMISSIONER

ONE PUBLIC WORKS DRIVE, BLDG 90 WEST WATERFORD, MICHIGAN 48382-1007

SHEET NO.: 1 OF 1