ADDENDUM No. 1

ITB No. 4660

Argo Livery Restroom and Site Improvements

Due: March 23, 2021 by 2:00 PM (local time)

The information contained herein shall take precedence over the original documents and all previous addenda (if any) and is appended thereto. **This Addendum includes thirty-four (34) pages.**

Bidder is to acknowledge receipt of this Addendum No. 1, including all attachments (if any) in its Bid by so indicating on page ITB-1 of the Invitation to Bid Form. Bids submitted without acknowledgment of receipt of this addendum may be considered nonconforming.

The following forms provided within the ITB document must be included in submitted bids:

- **City of Ann Arbor Prevailing Wage Declaration of Compliance**
- **City of Ann Arbor Living Wage Ordinance Declaration of Compliance**
- **Vendor Conflict of Interest Disclosure Form**
- **City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance**

Bids that fail to provide these forms listed above upon bid opening may be rejected as non-responsive and may not be considered for award.

I. CORRECTIONS/ADDITIONS/DELETIONS

Changes to the ITB documents which are outlined below are referenced to a page or Section in which they appear conspicuously. Bidder are to take note in its review of the documents and include these changes as they may affect work or details in other areas not specifically referenced here.

Section/Page(s)	Change
Entire Plan Set	Replace all sheets as provided herein

Comment: The intent with this change is to include sheets that were missing from the original plan set, including architectural and MEP sheets. It also replaced sheet A1.1.

II. QUESTIONS AND ANSWERS

The following Questions have been received by the City. Responses are being provided in accordance with the terms of the ITB. Respondents are directed to take note in its review of the documents of the following questions and City responses as they affect work or details in other areas not specifically referenced here.

Question 1: I noticed that a few key drawings are missing. From what I can tell the following drawings are not, in the issued drawing according to the Title Sheet:

- T1.1 Architectural plans
- A2.1

- P1.1 Plumbing Plans
- P2.2
- M1.1 HVAC Plan
- E0.1 Electrical plans
- E1.2

Answer 1: The plan set has been updated to include all sheets as provided herein.

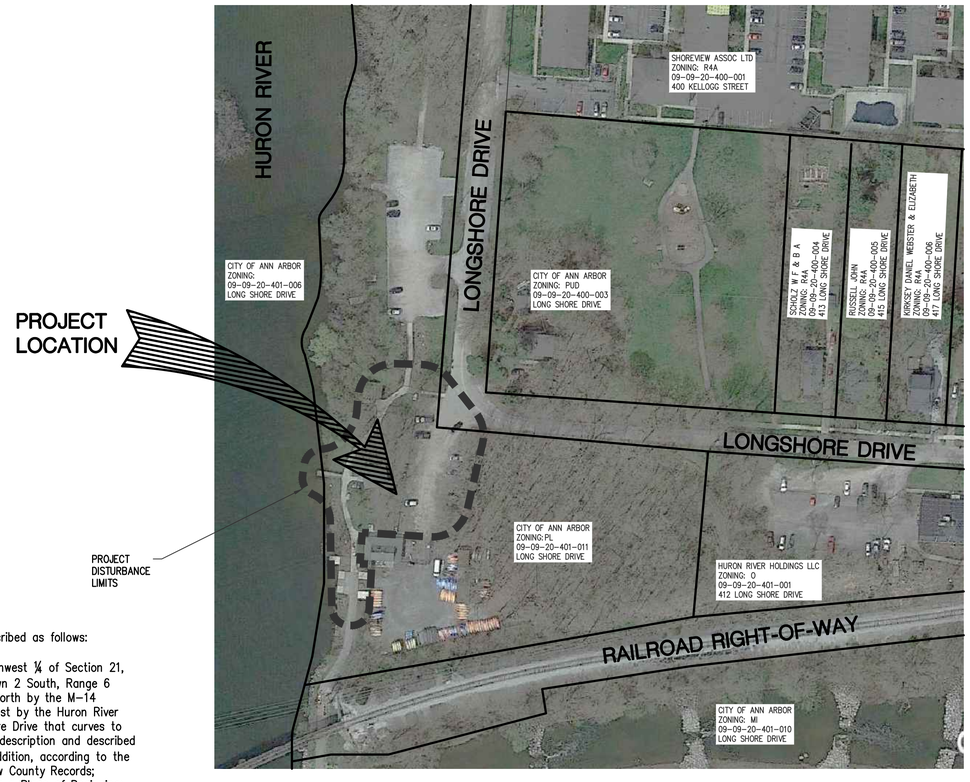
Question 2: Are we able to bid just the restroom renovation and exclude the Site work ?
Answer 2: No the city anticipates making a single award to a general contractor with one contract.

Bidders are responsible for any conclusions that they may draw from the information contained in the Addendum.

SITE PLAN SUBMITTAL FOR

CITY OF ANN ARBOR PARKS AND RECREATION
ARGO PARK LIVERY RESTROOM & SITE IMPROVEMENTS

CITY OF ANN ARBOR
WASHTENAW COUNTY, MICHIGAN



ARGO LIVERY - SITE VICINITY MAP

NOT TO SCALE

NOTE:

ZONING R4A:	MULTIPLE FAMILY DWELLING
ZONING O:	OFFICE
ZONING PUD:	PLANNED UNIT DEVELOPMENT
ZONING PL:	PUBLIC LAND

PROPERTY DESCRIPTION

ARGO NATURE AREA

Land owned by the City of Ann Arbor, known as Argo Nature Area, described as follows:

That part of the Northeast ¼ and Southeast ¼ of Section 20, the Northwest ¼ of Section 21, the Southwest ¼ of Section 16 and the Southeast ¼ of Section 17, Town 2 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan, bounded on the North by the M-14 bridge, on the South by the Ann Arbor Railroad right of way, on the West by the Huron River and on the East by Long Shore Drive including the section of Long Shore Drive that curves to the East at its most southerly extent along a parcel included with this description and described as: Beginning at the Northwest corner of Block 2, Brown and Fuller's Addition, according to the plat thereof as recorded in Liber D of Deeds, pages 3 and 4, Washtenaw County Records; thence Westerly along the Southerly line of Long Shore Drive 30 rods for a Place of Beginning; thence Westerly 18 rods; thence Southerly parallel to the West line of Block 2, Brown and Fuller's Addition, to the Ann Arbor Railroad right of way; thence Easterly along the Northerly line of said right of way to a line parallel to and 30 rods West of the West line of said Block 2; thence Northerly to the Place of Beginning, being part of Section 20, Town 2 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan.

Above land also described in the following deeds recorded at the Register of Deeds, Washtenaw County, Michigan: Liber 199, page 41, Liber 334, page 537, Liber 1043, page 285 – Parcels A-1 and A-2 only, Liber 1747, page 728 and Liber 2042, page 816.

Tax Parcel Nos.: 09-09-20-401-011 and 09-09-21-221-001

Part of Tax Parcel No. 09-09-20-101-011

TF19-0154 MNRTF GRANT: "UNIVERSAL ACCESS AND SITE IMPROVEMENTS AT ARGO NATURE AREA"

DEVELOPMENT PROGRAM SUMMARY

THE ARGO KAYAK LIVERY RECEIVED A GRANT BY THE MICHIGAN DEPARTMENT OF NATURAL RESOURCES TO PROVIDE INCREASED ACCESSIBILITY TO THE EXISTING DEVELOPED PARK SITE. THE PROJECT INCLUDES EXPANSION OF AN EXISTING RESTROOM, PAVING AN EXISTING GRAVEL PARKING LOT, REPLACING SIDEWALK, BOAT DOCKS AND EXISTING FISHING DOCK, ADDING AN ACCESSIBLE KAYAK LAUNCH, RAIN GARDEN, BIKE RACKS, BENCHES AND WAY FINDING SIGNAGE.

SHEET INDEX

SURVEY ENGINEER

ROWE PSC
540 S. SAGINAW ST.
SUITE 200
FLINT ,MI 48502
(810) 341-7500

ARCHITECT

MITCHELL AND MOUAT ARCHITECTS
113 S. FOURTH AVE.
ANN ARBOR, MI 48104
(734) 662-6070

PROPERTY ADDRESS

CITY OF ANN ARBOR
ARGO PARK
1055 LONGSHORE DRIVE
ANN ARBOR, MI 48105

OWNER INFORMATION

CITY OF ANN ARBOR PARKS AND RECREATION SERVICES AREA
301 E. HURON STREET
ANN ARBOR, MI 48104
ADAM FERCHO, PARK PLANNER & LANDSCAPE ARCHITECT,
AFercho@a2gov.org (517) 281-7810
HILLARY HANZEL, PARK PLANNER & LANDSCAPE ARCHITECT,
HHanzel@a2gov.org (810) 434-3180

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS

DATE	DESCRIPTION
2-22-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

ROWE PROFESSIONAL SERVICES COMPANY
The Rowe Building
540 S. Saginaw St., Suite 200
Flint, MI 48502
O: (810) 341-7500
F: (810) 341-7573
www.rowepsc.com

PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY
ANN ARBOR, WASHTENAW COUNTY, MICHIGAN
COVER SHEET

REV:

SHT# 1 OF 20

JOB No: 20C0027

PLOTTED: 2/23/2021 9:59 AM R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-C0V.dwg

GENERAL CONSTRUCTION NOTES

EMERGENCY CONTACTS
BEFORE BEGINNING WORK ON THE PROJECT, THE CONTRACTOR SHALL PROVIDE THE OWNER AND ENGINEER WITH THE NAMES AND TELEPHONE NUMBERS OF EMERGENCY CONTACTS. AT LEAST ONE PERSON REPRESENTING THE CONTRACTOR SHALL BE AVAILABLE TO RESPOND TO EMERGENCIES THROUGHOUT THE LIFE OF THE PROJECT, 24 HOURS A DAY, 7 DAYS A WEEK.

UNDERGROUND UTILITY IDENTIFICATION AND LOCATION
THE CONTRACTOR SHALL CALL MISS DIG (1-800-482-7171 OR 811) A MINIMUM OF THREE WORK DAYS IN ADVANCE OF BEGINNING EXCAVATION. THE CONTRACTOR IS RESPONSIBLE TO IDENTIFY AND NOTIFY UTILITY AGENCIES WITHIN THE PROJECT AREA WHICH DO NOT PARTICIPATE IN THE MISS DIG NOTIFICATION PROGRAM.

PUBLIC UTILITIES
EXISTING UTILITIES ARE SHOWN BASED UPON RECORDS AND LOCATIONS PROVIDED BY UTILITY AGENCIES AND OWNER. THE INFORMATION SHOWN IS CONSIDERED APPROXIMATE AND SHALL BE VERIFIED BY THE CONTRACTOR. UNLESS THE PLANS SPECIFICALLY SHOW THAT EXISTING UTILITIES ARE TO BE MOVED, THE CONTRACTOR IS RESPONSIBLE TO PROTECT AND MAINTAIN EXISTING UTILITIES.

VERIFICATION OF UNDERGROUND UTILITIES
THE CONTRACTOR SHALL EXCAVATE AND LOCATE ALL EXISTING UTILITIES IN THE PROJECT AREA IN ADVANCE OF CONSTRUCTION TO VERIFY THEIR ACTUAL LOCATION. POTENTIAL CONFLICTS SHALL BE REPORTED TO THE ENGINEER. THE CONTRACTOR SHALL MAKE SUCH CHANGES TO GRADE AND ALIGNMENT OF PROPOSED WORK AS DIRECTED BY THE ENGINEER TO AVOID CONFLICTS, AT NO INCREASE IN COST TO THE OWNER.

UTILITY SERVICE
UNLESS SPECIFICALLY PROVIDED OTHERWISE IN THE CONTRACT DOCUMENTS, ALL EXISTING UTILITIES ARE TO REMAIN IN SERVICE DURING THE PROJECT.

MAINTAINING TRAFFIC
LOCAL AND EMERGENCY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES WITHIN THE PROJECT AREA.

WHEN EXCAVATION, FRESH CONCRETE, OR OTHER CONSTRUCTION WORK WILL RESULT IN THE CLOSURE OF A STREET OR DRIVEWAY FOR A PERIOD OF TIME, THE CONTRACTOR IS RESPONSIBLE TO NOTIFY ALL AFFECTED RESIDENTS AND BUSINESSES IN ADVANCE.

THE CONTRACTOR SHALL NOTIFY EMERGENCY RESPONSE AGENCIES IN ADVANCE OF ROAD CLOSURES OR THE ESTABLISHMENT OF DETOURS.

SCHEDULE
THE CONTRACTOR SHALL COMPLETE ALL WORK IN AN EXPEDITIOUS MANNER AND SHALL NOT STOP WORK ON THE PROJECT ONCE BEGUN.

SURVEY CORNERS, BENCHMARKS, AND CONTROL POINTS
THE CONTRACTOR SHALL PRESERVE ALL GOVERNMENT CORNERS, PROPERTY CORNERS, BENCHMARKS, SURVEY CONTROL POINTS AND OTHER SURVEY POINTS WITHIN THE PROJECT AREA. WHERE CORNERS, BENCHMARKS, OR SURVEY POINTS ARE ENCOUNTERED WHICH WILL BE DISTURBED BY THE CONTRACTOR'S ACTIVITIES; A LICENSED SURVEYOR SHALL WITNESS THE POINT BEFORE DISTURBANCE AND SHALL RE-SET THE POINT FOLLOWING THE COMPLETION OF CONSTRUCTION ACTIVITIES. THE CONTRACTOR SHALL PAY THE SURVEYOR TO WITNESS AND TO RE-SET THE POINTS.

PROTECTION OF TREES, SHRUBS, AND LANDSCAPING
ALL TREES, SHRUBS, AND LANDSCAPING WITHIN THE CONSTRUCTION AREA WHICH ARE NOT SPECIFICALLY DESIGNATED FOR REMOVAL SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. DAMAGED TREES, SHRUBS, AND LANDSCAPING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

CONSTRUCTION SIGNING AND BARRICADING
THE CONTRACTOR SHALL PROTECT HAZARDOUS AREAS WITH BARRICADES. BARRICADES LEFT IN PLACE AFTER SUNSET SHALL BE LIGHTED.

THE CONTRACTOR SHALL PROVIDE SUITABLE SANDBAGS OR OTHER SUITABLE MEASURES FOR ANCHORING OF TEMPORARY SIGNS AND BARRICADES, TO PREVENT THEIR TIPPING OR DISPLACEMENT BY WIND OR AIR FLOW FROM VEHICLES.

THE CONTRACTOR SHALL PROVIDE SIGNING, BARRICADES, TRAFFIC REGULATORS, CONES, AND OTHER TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCY HAVING JURISDICTION OVER STREETS OR ROADS IN THE PROJECT AREA, THE CURRENT MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, AND THE PLANS AND SPECIFICATIONS.

THE CONTRACTOR SHALL COVER OR REMOVE TEMPORARY SIGNS DURING PERIODS WHEN THEY ARE NOT APPROPRIATE.

TURF ESTABLISHMENT
ALL DISTURBED AREAS WHICH ARE NOT TO BE SURFACED WITH PAVEMENT, AGGREGATE OR OTHER APPROVED SURFACES SHALL BE ESTABLISHED WITH TURF.

TURF AREAS SHALL BE GRADED TO PROVIDE POSITIVE DRAINAGE.

DISTURBED AREAS SHALL BE SURFACED WITH THREE INCHES OF SCREENED TOPSOIL.

THE CONTRACTOR IS RESPONSIBLE TO ESTABLISH TURF WHICH IS SUBSTANTIALLY FREE OF BARE SPOTS AND FREE OF WEEDS. THE GROUND SURFACE IN TURF AREAS SHALL BE SMOOTH AND PROVIDE A NATURAL TRANSITION TO ADJACENT, UNDISTURBED AREAS.

THE CONTRACTOR IS RESPONSIBLE TO PROVIDE WATERING, WEEDING, RESEEDING, AND REWORKING AS NECESSARY TO ESTABLISH TURF AREAS TO THE REQUIRED STANDARD.

ADA COMPLIANCE
ALL PROPOSED CONSTRUCTION SHALL COMPLY WITH THE PROVISIONS OF THE AMERICANS WITH DISABILITIES ACT (ADA), AND APPLICABLE GUIDELINES OR STANDARDS. WHERE EXISTING CONDITIONS AND/OR THE REQUIREMENTS OF THE PLANS WILL RESULT IN FINISHED CONDITIONS THAT DO NOT MEET THE ADA REQUIREMENTS, GUIDELINES, OR STANDARDS; THE CONTRACTOR SHALL NOTIFY THE ENGINEER BEFORE PROCEEDING WITH CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO REMOVE AND REPLACE WORK DETERMINED TO BE NOT IN ACCORDANCE WITH APPLICABLE REQUIREMENTS, GUIDELINES, OR STANDARDS.

EARTHWORK
THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION OF THE EARTHWORK QUANTITIES, AND BASE HIS BID ON HIS DETERMINATION OF THE QUANTITIES OF WORK REQUIRED.

IF ADDITIONAL FILL MATERIAL MUST BE PROVIDED TO ATTAIN THE FINISH GRADES SHOWN ON THE PLANS, THE CONTRACTOR SHALL PROVIDE THE REQUIRED FILL MATERIAL, UNLESS A SPECIFIC BORROW AREA IS IDENTIFIED ON THE PLANS.

THE CONTRACTOR SHALL COORDINATE WITH CITY FOR EXCESS SOILS RESULTING FROM EXCAVATION AND EARTHWORK. AN AREA(S) WILL BE DESIGNATED FOR STOCKPILING OR "BLENDING IN" THE EXCESS MATERIAL WITHIN THE PROJECT LIMITS.

BACKFILL AND EMBANKMENT
BACKFILL OF AN EXCAVATION UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE, SHALL BE SAND, MEETING THE REQUIREMENTS OF GRANULAR MATERIAL CLASS III AS DESCRIBED IN THE CURRENT MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION. THE SAND BACKFILL SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

BACKFILL OF AN EXCAVATION WHICH IS NOT UNDER OR WITHIN THE ONE ON ONE INFLUENCE OF AN EXISTING OR PROPOSED ROAD, SIDEWALK, DRIVEWAY, PAVEMENT, OR AGGREGATE SURFACE MAY BE SUITABLE EXCAVATED MATERIAL OR OTHER SOIL, WHICH IS FREE OF ORGANIC MATTER, STONES AND ROCKS, ROOTS, BROKEN CONCRETE, FROZEN MATERIAL, OR DEBRIS. THE BACKFILL SHALL BE COMPACTED TO AT LEAST 90% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL INDICATE THE SOURCE OF SAND USED FOR BACKFILL TO THE ENGINEER, AND PROVIDE THE ENGINEER WITH THE RESULTS OF A GRADATION TEST PERFORMED ON A SAMPLE OF THE SAND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ADVANCE OF USING SAND FROM OTHER SOURCES.

EMBANKMENT USED TO BUILD THE SUBGRADE TO REQUIRED ELEVATION SHALL BE SUITABLE SOIL EXCAVATED FROM THE PROJECT SITE, OR FURNISHED BY THE CONTRACTOR FROM OTHER SOURCES. SUITABLE SOIL IS FREE FROM ORGANIC MATTER, ROCKS AND STONES, FROZEN MATERIAL, BROKEN CONCRETE, AND DEBRIS.

EMBANKMENT CONSTRUCTED OF GRANULAR SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 12 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

EMBANKMENT CONSTRUCTED OF COHESIVE SOILS SHALL BE COMPACTED IN LIFTS NOT EXCEEDING 12 INCHES TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

DENSITY TESTING
THE MAXIMUM UNIT WEIGHT OF SAND AND OTHER GRANULAR SOILS WILL BE DETERMINED BY THE ONE POINT CONE TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

THE MAXIMUM UNIT WEIGHT OF COHESIVE SOILS WILL BE DETERMINED BY THE ONE POINT PROCTOR TEST, AS DESCRIBED IN THE MICHIGAN DEPARTMENT OF TRANSPORTATION'S DENSITY TESTING AND INSPECTION MANUAL, EXCEPT WHEN ANOTHER TEST METHOD IS SPECIFIED.

WORK HOURS
UNLESS PROVIDED OTHERWISE IN THE CONTRACT DOCUMENTS OR LIMITED BY LOCAL ORDINANCE, THE CONTRACTOR SHALL WORK WITHIN OF THE FOLLOWING TIMES, UNLESS OTHERWISE APPROVED BY THE OWNER: MONDAY THROUGH FRIDAY 7 A.M. TO 8 P.M.

THE CONTRACTOR SHALL NOT WORK ON SUNDAYS OR HOLIDAYS, UNLESS OTHERWISE APPROVED BY THE OWNER.

DRAINAGE
THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE PROJECT AREA AND ADJACENT AREAS. WHERE EXISTING DRAINAGE FACILITIES ARE DISTURBED OR BLOCKED BY CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TEMPORARY PROVISIONS FOR DRAINAGE.

WHERE CONSTRUCTION HAS DISTURBED EXISTING DITCHES, SWALES, OR OTHER DRAINAGE FACILITIES; THE CONTRACTOR SHALL RESTORE THEM TO THEIR GRADES AND DIMENSIONS WHICH EXISTED PRIOR TO THE BEGINNING OF CONSTRUCTION, UNLESS DIRECTED OTHERWISE.

DRAINAGE SHALL NOT BE REROUTED ONTO ADJACENT PROPERTIES NOR ALLOWED TO DRAIN ONTO ADJACENT PROPERTIES AT AN INCREASED RATE, AS A RESULT OF THE CONTRACTOR'S WORK.

SITE PROJECTS
SUBGRADE PREPARATION
TOPSOIL, PEAT, AND ORGANIC MATERIAL SHALL BE EXCAVATED AND REMOVED.

SOFT AND YIELDING SOILS SHALL BE REMOVED OR DRIED IF THE RESULT OF EXCESSIVE MOISTURE CONTENT.

PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENT ON A SUBGRADE; THE SUBGRADE SHALL BE PROOF-ROLLED TO DETERMINE THE SUITABILITY OF THE SUBGRADE. THE CONTRACTOR SHALL DRIVE A HEAVY PIECE OF WHEELED CONSTRUCTION EQUIPMENT OVER THE SUBGRADE WHILE THE ENGINEER IS OBSERVING. THE CONSTRUCTION OF FILLS, SUBBASE, OR PAVEMENTS SHALL NOT PROCEED UNTIL THE SUBGRADE HAS BEEN DEMONSTRATED TO BE FREE OF SOFT AREAS.

THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN THE MOISTURE CONTENT OF SUBGRADE SOILS WITHIN A SUITABLE RANGE TO ALLOW FOR COMPACTION TO THE REQUIRED DENSITY. WHEN THE SOIL IS TOO DRY, THE CONTRACTOR SHALL ADD WATER. WHEN THE SOIL IS TOO WET, THE CONTRACTOR SHALL PROVIDE DRAINAGE OR AERATE THE SOIL.

THE SURFACE OF THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT, PRIOR TO CONSTRUCTING FILLS, SUBBASE, OR PAVEMENTS.

HOT MIX ASPHALT (HMA) PAVING
PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE SHALL BE SWEPT TO REMOVE ALL DIRT AND DEBRIS.

A BITUMINOUS BOND COAT SHALL BE APPLIED TO PAVEMENTS WHICH ARE TO BE OVERLAID WITH A NEW PAVEMENT COURSE AND ALLOWED TO CURE PRIOR TO CONSTRUCTING THE NEW PAVEMENT COURSE.

HMA PAVEMENT SHALL NOT BE PLACED WHEN THE SURFACE BEING OVERLAID IS WET, OR WHEN PRECIPITATION IS FORECAST OR THREATENING.

SIDEWALK CONSTRUCTION
SIDEWALKS SHALL BE CONSTRUCTED TO PROVIDE POSITIVE DRAINAGE OF THE SIDEWALK AND ADJACENT SURFACES.

EXCEPT WHERE NECESSARY TO PROVIDE POSITIVE DRAINAGE OR MEET EXISTING SURFACES, SIDEWALK SHALL BE CONSTRUCTED WITH A CROSS SLOPE SLOPED TOWARD THE STREET.

SIDEWALK CROSS SLOPES SHALL NOT EXCEED 2%

IN TURF AREAS, THE SURFACE OF THE SIDEWALK SHALL BE ABOUT 1/4 INCH HIGHER THAN THE ADJACENT GROUND SURFACES, EXCEPT WHERE NECESSARY TO PROVIDE POSITIVE DRAINAGE OR MEET EXISTING SIDEWALKS, CURBS, OR PAVEMENTS.

SIDEWALK SHALL BE CONSTRUCTED ON A SAND BASE, COMPACTED TO AT LEAST 95% OF ITS MAXIMUM UNIT WEIGHT.

THE CONTRACTOR SHALL NOTIFY THE ENGINEER WHEN SIDEWALK FORMS HAVE BEEN SET AND THE SAND BASE PREPARED. CONCRETE SHALL NOT BE PLACED UNTIL THE ENGINEER HAS OBSERVED THE FORMS. CONCRETE DELIVERY SHALL BE SCHEDULED TO ALLOW SUFFICIENT TIME FOR ADJUSTMENT OF THE FORMS, IN THE EVENT THAT ADJUSTMENT IS NECESSARY.

THE CONTRACTOR SHALL PROTECT FRESH CONCRETE FROM DAMAGE BY THE WEATHER, TRAFFIC, OR VANDALISM. DAMAGED CONCRETE SHALL BE REPLACED BY THE CONTRACTOR'S EXPENSE.

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

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

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The Rowe Building
540 S. Saginaw St., Suite 200
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PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

NOTE SHEET

REV:

SHT# 2 OF 20

JOB No: 20C0027

PLOTTED: 2/23/2021 9:59 AM
R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-NT.dwg

STRUCTURE SYMBOLS

- EXISTING CATCH BASIN IN CURB LINE
- PROPOSED CATCH BASIN IN CURB LINE
- EXISTING CATCH BASIN IN GREEN SPACE
- PROPOSED CATCH BASIN IN GREEN SPACE
- EXISTING STORM MANHOLE
- PROPOSED STORM MANHOLE
- PROPOSED CULVERT END SECTION
- EXISTING HEADWALL
- PROPOSED HEADWALL
- EXISTING WATER SHUTOFF (SERVICE VALVE)
- EXISTING GATE VALVE AND BOX (STOP BOX)
- PROPOSED GATE VALVE AND BOX
- EXISTING GATE VALVE AND WELL
- PROPOSED GATE VALVE AND WELL
- EXISTING SPRINKLER HEAD
- EXISTING WATER WELL
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- PROPOSED WATER MAIN FITTINGS
- EXISTING CLEAN OUT
- EXISTING SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER MANHOLE
- EXISTING MONITORING WELL

EXISTING TOPOGRAPHICAL SYMBOLS

- SIGN
- STREET SIGN
- END OF PIPE
- SWAMP OR WETLAND
- DECIDUOUS TREE
- CONIFEROUS TREE
- TREE STUMP
- MAIL BOX
- SOIL BORING
- ROCK
- METAL POST
- BUMPER BLOCK

UTILITY SYMBOLS

- UTILITY POLE
- GUY ANCHOR CABLE
- LIGHT POLE / ORNAMENTAL LIGHT
- POWER LIGHT POLE
- TELEPHONE MANHOLE
- UNDERGROUND GAS LINE MARKER
- GAS RISER
- GAS VENT
- GAS VALVE
- RAILROAD SIGNAL
- METAL LIGHT POLE
- OUTLET
- CIRCUIT BREAKER PANEL
- ELECTRICAL TRANSFORMER PAD
- ELECTRICAL TRANSFORMER RISER
- ELECTRIC METER
- TELEPHONE PEDESTAL / RISER
- TRAFFIC SIGNAL ON POLE
- PHONE BOOTH / PAY PHONE

SURVEY SYMBOLS

- MONUMENT
- BENCHMARK
- TRAVERSE POINT
- SECTION CORNER
- FOUND SURVEY MONUMENTATION

MISCELLANEOUS SYMBOLS

- EX 1812 — EXISTING STORM SEWER STRUCTURE NUMBER
- EX 5236 — EXISTING SANITARY SEWER STRUCTURE NUMBER
- 1 — PROPOSED STORM SEWER STRUCTURE NUMBER
- A — PROPOSED SANITARY SEWER STRUCTURE NUMBER
- FLOW DIRECTION
- EXISTING RIP-RAP
- PROPOSED RIP-RAP

CAUTION SYMBOLS

- ●●CAUTION●● HAZARDOUS FLAMMABLE MATERIAL UNDERGROUND — USED WITH UNDERGROUND GAS & ELECTRICAL LINES
- ●●CAUTION●● FIBER OPTIC — USED WITH FIBER OPTICS LINES

PLAN VIEW LINE TYPES

- 12" STM — EXISTING STORM SEWER
- 12" CONC — EXISTING CULVERT
- PROPOSED STORM SEWER LESS THAN 24"
- PROPOSED STORM SEWER 24" AND GREATER
- 12" SAN — EXISTING SANITARY SEWER
- PROPOSED SANITARY SEWER
- 12" WM — EXISTING WATER MAIN
- PROPOSED WATER MAIN
- SECTION LINE
- 60' ROW — EXISTING RIGHT OF WAY
- 60' ROW — PROPOSED RIGHT OF WAY
- PROPOSED EASEMENT
- EXISTING CENTER LINE DITCH
- PROPOSED DITCH CENTERLINE
- EXISTING CENTER LINE ROADWAY
- PARCEL LINE / LOT LINE
- O/H — EXISTING OVERHEAD UTILITIES
- U/G ELEC — UNDERGROUND ELECTRICAL LINE
- 6" S-MP GAS - GAS LINE OR PETROLEUM PIPELINE
- U/G TEL — UNDERGROUND TELEPHONE LINE
- U/G CATV — UNDERGROUND CABLE TV LINE
- U/G FIBER OPTIC — UNDERGROUND FIBER OPTIC
- 11+00 — PROJECT CONTROL LINE
- TREE LINE
- BRUSH LINE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING GUARD RAIL
- PROPOSED SLOPE STAKE LINE
- PROPOSED SILT FENCE

TOPOGRAPHY

- 960 — EXISTING CONTOURS MAJOR
- 958 — EXISTING CONTOURS MINOR
- 960 — PROPOSED CONTOUR MAJOR
- 958 — PROPOSED CONTOURS MINOR

PARCEL INFORMATION

- 401-069 — PARCEL/TAX IDENTIFICATION NUMBER
- #5324 — ADDRESS/BUSINESS NAME

HATCHING LEGEND

- REMOVE PAVEMENT
- REMOVE SIDEWALK
- EXISTING GRAVEL SURFACE
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- EXISTING HMA PAVEMENT
- PROPOSED HMA PAVEMENT
- PROPOSED BEACH AGGREGATE

PROPOSED CALLOUTS

TOPO CALLOUTS	PLAN VIEW	
ADJ	(ADJ)	ADJUST STRUCTURE
ADJ-X	(ADJ-X)	ADJUST STRUCTURE W/ NEW COVER
ADJ-B/O	(ADJ-B/O)	ADJUST STRUCTURE BY OTHERS
REC	(REC)	RECONSTRUCT STRUCTURE
REL	(REL)	RELOCATE
REL-B/O	(REL-B/O)	RELOCATE BY OTHERS
REM	(R)	REMOVE
R&R	(R&R)	REMOVE AND REPLACE
SALV	(SALV)	SALVAGE
SAVE	(S)	SAVE
ABN	(A)	ABANDON
CLR	(C)	CLEARING
	(B)	BULKHEAD
	(SR-F)	SIDEWALK RAMP TYPE
	6	SOIL EROSION CONTROL MEASURE

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ARGO PARK LIVERY

LEGEND SHEET

REV:

SHT# 3 OF 20

JOB No: 20C0027

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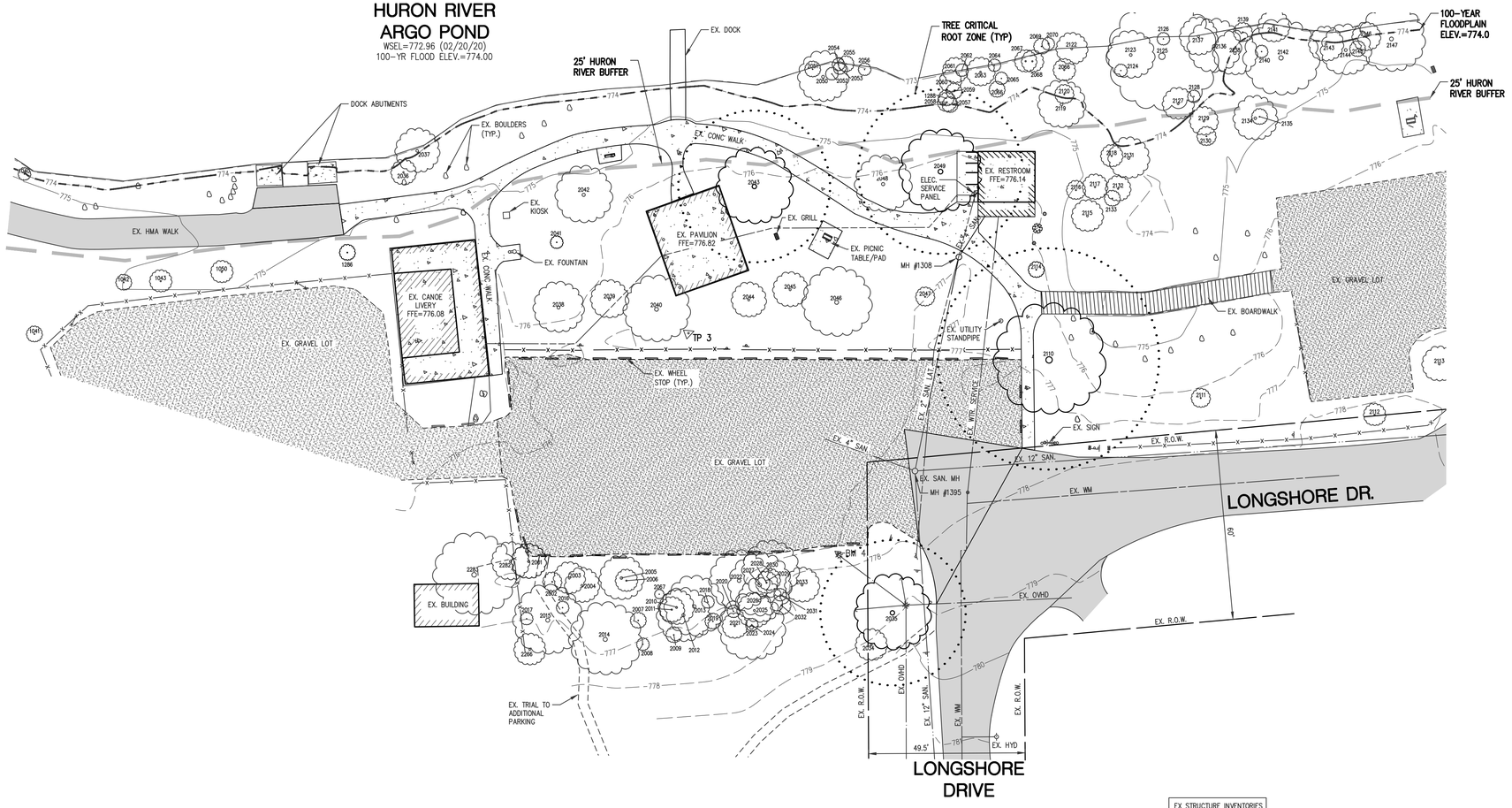

LEGEND

- EXISTING GRAVEL SURFACE
- EXISTING SIDEWALK
- EXISTING HMA PAVEMENT
- EXISTING FENCE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- HURON RIVER 25' BUFFER
- LANDMARK TREE (W/CRITICAL ROOT ZONE & INVENTORY NUMBER)

EX. STRUCTURE INVENTORIES
EX 1308 RIM = 776.48 4" N = 775.08 2" SE = 776.48 EX 1395 RIM = 777.31 4" SW = 774.71 12" N = 774.01 12" E = 773.94 2" W = 774.81

BENCHMARK DATA TABLE

NUMBER	NORTHING	EASTING	ELEVATION	DESCRIPTION
BM 2	289432	13291879	780.33	SET SPIKE IN SOUTHERLY FACE OF LIGHT POLE IN THE NORTHEAST QUADRANT OF GRAVEL PARKING LOT
BM 4	289152	13291828	778.40	SET SPIKE IN WEST FACE OF LIGHT POLE IN THE NORTHEAST CORNER OF THE GAZEBO PARKING LOT

TRAVERSE POINT DATA TABLE

NUMBER	NORTHING	EASTING	DESCRIPTION
TP 1	289425.4660	13291784.8590	SET ROD WITH ROWE TRAVERSE CAP, 7.5'± WEST OF WEST EDGE OF GRAVEL PARKING LOT & 45'± SOUTH OF CENTERLINE OF BOAT LAUNCH
TP 3	289132.5220	13291745.9080	SET ROD WITH ROWE TRAVERSE CAP, 8'± WEST OF WEST EDGE OF GRAVEL PARKING LOT AT GAZEBO & DUE EAST OF SOUTH FACE OF GAZEBO ROOF
TP 5	289418.8150	13291916.0900	SET ROD WITH ROWE TRAVERSE CAP, 3'± EAST OF EAST EDGE OF GRAVEL OF LONGSHORE DRIVE & 55'± NORTH OF CENTERLINE OF DRIVE TO GRAVEL PARKING LOT

LEGEND

- BENCHMARK
- TRAVERSE POINT

NOTES:

VERTICAL DATUM IS NAVD88

HORIZONTAL DATUM IS MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE NAD83 (2011)

UNITS ARE INTERNATIONAL FEET.

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

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: 1" = 20'

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EXISTING CONDITIONS PLAN SHEET

REV:

SHT# 4 OF 20

JOB No: 20C0027

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Argo Canoe Livery Site for the City of Ann Arbor Parks & Recreation Services					By: Blake Strozier, ROWE PSC 20C0027	Date:
	POINT #	TAG #	DIA INCHES	COMMON NAME	BOTANICAL NAME	CONDITION	NOTES
	1040	6544	4	Silver Birch	Betula pendula	Decent Condition; OK	
	1041	6545	2 - 5"	Silver Birch	Betula pendula	Good Condition; OK	Multi-Stemmed
	1042	6546	5	Silver Birch	Betula pendula	Decent Condition; OK	Has growth at base of the tree
	1043	6547	3 - 7"	Paper Birch	Betula papyrifera	Decent Condition; OK	Has undergrowth; multi-stemmed
	1050	6548	2 - 7"	Gray Birch	Betula populifolia	Good Condition; OK	Has growth around the base of the tree; multi-stemmed
R	1286	6556	3 - 5"	Gray Birch	Betula populifolia	Decent Condition; OK	Multi-Stemmed Tree
	1288	6535	5	Gray Birch	Betula populifolia	Decent Condition; OK	Near river edge; has some growth around base of tree
R	2001	6569	2 - 11"	River Birch	Betula nigra	Good Condition; OK	Near edge of parking lot; multi-stemmed
	2002	6570	6	River Birch	Betula nigra	Decent Condition; OK	Has vines growing on the bark up the tree
	2003	6571	10	Sugar Maple	Acer saccharum	Decent Condition; OK	
	2004	6572	2 - 11"	River Birch	Betula nigra	Decent Condition; OK	Gray color, has some signs of distress on the branches (broken at base)
	2005	6573	14	Silver Maple	Acer saccharinum	Good Condition; OK	Next to Birch Tree in area
	2006	6574	7	River Birch	Betula nigra	Decent Condition; OK	Has some suckers around the base of the tree
	2007	6575	5	River Birch	Betula nigra	Decent Condition; OK	Has some suckers around the base of the tree
	2008	6576	4	River Birch	Betula nigra	Decent Condition; OK	Next to dead tree;
	2009	6577	5	Black Locust	Robinia pseudocacia	OK Condition	Has some bark damange on base of tree
	2010	6578	11	Norway Maple	Acer platanoides	Good Condition; OK	Next to River Birch Tree in area
	2011	6579	8	River Birch	Betula nigra	Decent Condition; OK	
	2012	6581	17	Common Cottonwood	Populus deltoides	Decent Condition; OK	
	2013	6582	19	Common Cottonwood	Populus deltoides	Decent Condition; OK	
	2014	6564	23	Common Cottonwood	Populus deltoides	Good Condition; OK	
	2015	6567	22	Norway Maple	Acer platanoides	Decent Condition; OK	Has some suckers on tree limbs
	2016	6563	4	River Birch	Betula nigra	Decent Condition; OK	
	2017	6568	4	River Birch	Betula nigra	Good Condition; OK	
	2018	6584	4	River Birch	Betula nigra	OK Condition	No major growth at the base of the tree
	2019	6583	5	Black Locust	Robinia pseudocacia	Not Good Condition	Upper canopy of tree is decaying; signs of tree damage
	2020	6586	4	River Birch	Betula nigra	Decent Condition; OK	
	2021	6587	8	Common Cottonwood	Populus deltoides	Good Condition; OK	
	2022	6585	19	Black Walnut	Juglans nigra	Decent Condition; OK	Tree has some undergrowth at base
	2023	6588	21	Common Cottonwood	Populus deltoides	Decent Condition; OK	Has Birch Tree growing from the side of the tree
	2024	6589	4	River Birch	Betula nigra	Decent Condition; OK	Tree has some grayish/white marks on bark of the tree
	2025	6590	11	Common Cottonwood	Populus deltoides	Good Condition; OK	
	2026	6596	14	Common Cottonwood	Populus deltoides	Good Condition; OK	
	2027	6597	2 - 20"	Common Cottonwood	Populus deltoides	OK Condition	Multi-Stemmed
	2028	6598	7	Common Cottonwood	Populus deltoides	Decent Condition; OK	Next to Sugar Maple Tree
	2029	6599	7	Sugar Maple	Acer saccharum	Good Condition; OK	
G	2030	6600	18	Common Cottonwood	Populus deltoides	Decent Condition; OK	Has some growth at the base of the tree
	2031	6594	4	River Birch	Betula nigra	Decent Condition; OK	Has growth around the base of the tree
	2032	6595	6	River Birch	Betula nigra	Good Condition; OK	
	2033	6593	11	River Birch	Betula nigra	Decent Condition; OK	
	2034	6591	10	River Birch	Betula nigra	Decent Condition; OK	Has some suckers at base of tree
	2035	6592	24	Shagback Hickory	Carya ovata	Good Condition; OK	
	2036	6555	8	Yellow Birch	Betula alleghaniensis	OK Condition	Next to river; tree is in ok condition
	2037	6554	2 - 14"	River Birch	Betula nigra	Good Condition	Tree is on bank of the river
	2038	6551	16	Gray Birch	Betula populifolia	Decent Condition; OK	Tree is in good condition
	2039	6552	12	Gray Birch	Betula populifolia	Good Condition; OK	
	2040	6553	21	Silver Maple	Acer saccharinum	Decent Condition; OK	
R	2041	6550	4	River Birch	Betula nigra	Good Conditin; OK	
	2042	6549	18	Silver Maple	Acer saccharinum	Decent Condition; OK	Tree has some growth at base of tree but not a lot
G, LM	2043	6557	24	White Oak	Quercus alba	Decent Condition; OK	
	2044	6562	2 - 11"	Crabapple	Malus sp.	Decent Condition; OK	Multi-Stemmed Tree
	2045	6565	11	Crabapple	Malus sp.	Decent Condition; OK	
	2046	6561	22	White Oak	Quercus alba	Good Condition; OK	
	2047	6560	6	River Birch	Betula nigra	Good Condition; OK	
G	2048	6558	18	River Birch	Betula nigra	Good Condition; OK	Tree in decent condition; has some branches that have broken
G, LM	2049	6559	26	White Oak	Quercus alba	Decent Condition; OK	
	2050	6543	16	Gray Birch	Betula populifolia	Decent Condition; OK	
	2051	6532	3 - 5"	River Birch	Betula nigra	Decent Condition; OK	Has some undergrowth at base
	2052	6542	2 - 4"	River Birch	Betula nigra	Good Condition; OK	Small bark, multi-stemmed
	2053	6531	2 - 4"	River Birch	Betula nigra	Good Condition; OK	Multi-Stemmed Tree
	2054	6530	2 - 4"	Silver Birch	Betula pendula	Decent Condition; OK	
	2055	6533	2 - 5"	Yellow Birch	Betula alleghaniensis	Decent Condition; OK	
	2056	6534	2 - 4"	River Birch	Betula nigra	OK Condition	
	2057	6541	5	Gray Birch	Betula populifolia	Decent Condition; OK	
	2058	6540	2 - 6"	River Birch	Betula nigra	Decent Condition; OK	Multi-Stemmed
	2059	6539	5	River Birch	Betula nigra	Good Condition; OK	
	2060	6537	7	Silver Birch	Betula pendula	Decent Conditoin; OK	
	2061	6538	2 - 8"	Yellow Birch	Betula alleghaniensis	Good Condition; OK	Multi-Stemmed
	2062	6536	4	Silver Birch	Betula pendula	Good Condition; OK	
	2063	6606	2 - 9"	River Birch	Betula nigra	Good Condition; OK	Multi-Stemmed; near river's edge
	2064	6609	4	River Birch	Betula nigra	Good Condition; OK	Tree is located near edge of water
	2065	6608	4	Swamp White Oak	Quercus bicolor	Decent Condition; OK	
	2066	6607	5	Swamp White Oak	Quercus bicolor	Decent Condition; OK	No growth at the base of the tree
	2067	6610	3 - 7"	Swamp White Oak	Quercus bicolor	Decent Condition; OK	
	2068	6611	7	River Birch	Betula nigra	Good Condition; OK	
	2069	6612	5	River Birch	Betula nigra	OK Condition	Tree is located near edge of water; leaning over river
	2070	6613	4	River Birch	Betula nigra	Decent Condition; OK	
G, LM	2110	6640	35	American Elm	Ulmus americana	Decent Condition; OK	Good Condition; has some undergrowth - near park entrance
	2111	6641	6	Ornamental Pear	Pyrus calleryana	Good Condition; OK	Tree is in good condition
	2112	6642	7	Red Oak	Quercus rubra	Decent Condition; OK	
	2113	6643	11	Silver Maple	Acer saccarinum	Decent Condition; OK	In parking lot area; still has some leaves on the tree
R	2114	6639	5	Yellow Birch	Betula alleghaniensis	Decentn Condition	Has some undergrowth at the base of the tree
	2115	6638	7 - 10"	Swamp White Oak	Quercus bicolor	Bad Condition	ree has completely fallen over; has some smaller trees growing around i
	2116	6618	6	River Birch	Betula nigra	Decent Condition; OK	Has dead tree in front of tree
	2117	6619	8	River Birch	Betula nigra	Not in Good Condition	Tree appears to have grown under dead tree; physical signs of distress
	2118	6620	7	River Birch	Betula nigra	Decent Condition; O K	
	2119	6617	15	Norway Maple	Acer platanoides	Good Condition; OK	
	2120	6616	6	Norway Maple	Acer platanoides	Decent Condition; OK	Has fallen tree on north side of tree
	2121	6614	7	Swamp White Oak	Quercus bicolor	Decent Condition; OK	Has some growth around the base of the tree
	2122	6615	3 - 10"	River Birch	Betula nigra	OK Condition	Multi-Stemmed; has broken branches and trees at base of tree
	2123	6622	3 - 15"	River Birch	Betula nigra	Not in Good Condition	Lots of undergrowth; not in good condition
	2124	6621	4	River Birch	Betula nigra	Bad Condition	Has lots of growth around the base of the tree
	2125	6623	35	River Birch	Betula nigra	Bad Condition	Undergrowth and dead trees are at the base of the tree
	2126	6624	4	River Birch	Betula nigra	Decent Condition	On the bank of the river; has some growth at base of tree
	2127	6629	10	Bur Oak	Quercus macrocarpa	Good Condition; OK	Tree has dead branches and some dead tree material around base
	2128	6625	2 - 4"	River Birch	Betula nigra	Decent Condition	Multi-Stemmed
	2129	6630	9	River Birch	Betula nigra	OK Condition	Has fallen old trees and branches around the base of the tree
	2130	6631	6	Paper Birch	Betula papyrifera	Decent Condition; OK	Has lots of undergrowth and dead trees at base of tree
	2131	6635	13	Norway Maple	Acer platanoides	Good Condition; OK	Has suckers and fallen limbs around the tree
	2132	6636	8	Paper Birch	Betula papyrifera	Bad Condition	Has lots of suckers at the base of the tree
	2133	6637	5	Paper Birch	Betula papyrifera	Not in Good Condition	Tree is growing around larger tree that has been uprooted
	2134	6626	14	Sugar Maple	Acer saccharum	Decent Condition; OK	Tree is leaning to one side
	2135	6627	5	River Birch	Betula nigra	Good Condition; OK	
	2136	6628	17	White Oak	Quercus alba	Decent Condition; OK	
	2137	6605	12	River Birch	Betula nigra	Decent Condition; OK	
	2138	6603	3 - 14"	Gray Birch	Betula populifolia	Decent Condition; OK	Multi-Stemmed Tree
	2139	6604	2 - 6"	River Birch	Betula nigra	Good Condition; OK	Multi-Stemmed tree; on bark of tree there is minor growth
	2140	6602	4	River Birch	Betula nigra	Good Condition; OK	
	2141	6601	10	River Birch	Betula nigra	Good Condition; OK	
	2142	228	3 - 24"	Silver Maple	Acer saccharinum	Decent Condition; OK	Does has some growth around the base of the tree; multi-stemmed
	2143	247	11	Sugar Maple	Acer saccharum	Decent Condition	
	2144	297	16	Silver Maple	Acer saccharinum	Good Condition; OK	
	2145	298	5	Silver Birch	Betula pendula	Decent Condition	Has some growth at the base of the tree
	2146	299	9	Silver Maple	Acer saccharinum	Decent Conditoin; OK	Tree is leaning to one side; has some damage
	2147	300	21	Black Walnut	Juglans nigra	Not in Good Condition	Back of tree has been split; exposed - tree appears in distress
	2266	6566	10	Black Walnut	Juglans nigra	Decent Condition; OK	
	2267	6580	3	River Birch	Betula nigra	Good Condition; OK	

KEY
R – TREE SCHEDULED FOR REMOVAL
G – GRADING FOR PAVING INSIDE DRIP LINE
LM – LAND MARK TREE (NATURAL FEATURES SECTION OF THE CITY OF ANN ARBOR DEVELOPMENT STANDARDS)

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS

DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

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CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

NATURAL FEATURES DATA SHEET

REV:

SHT# 5 OF 20
JOB No: 20C0027

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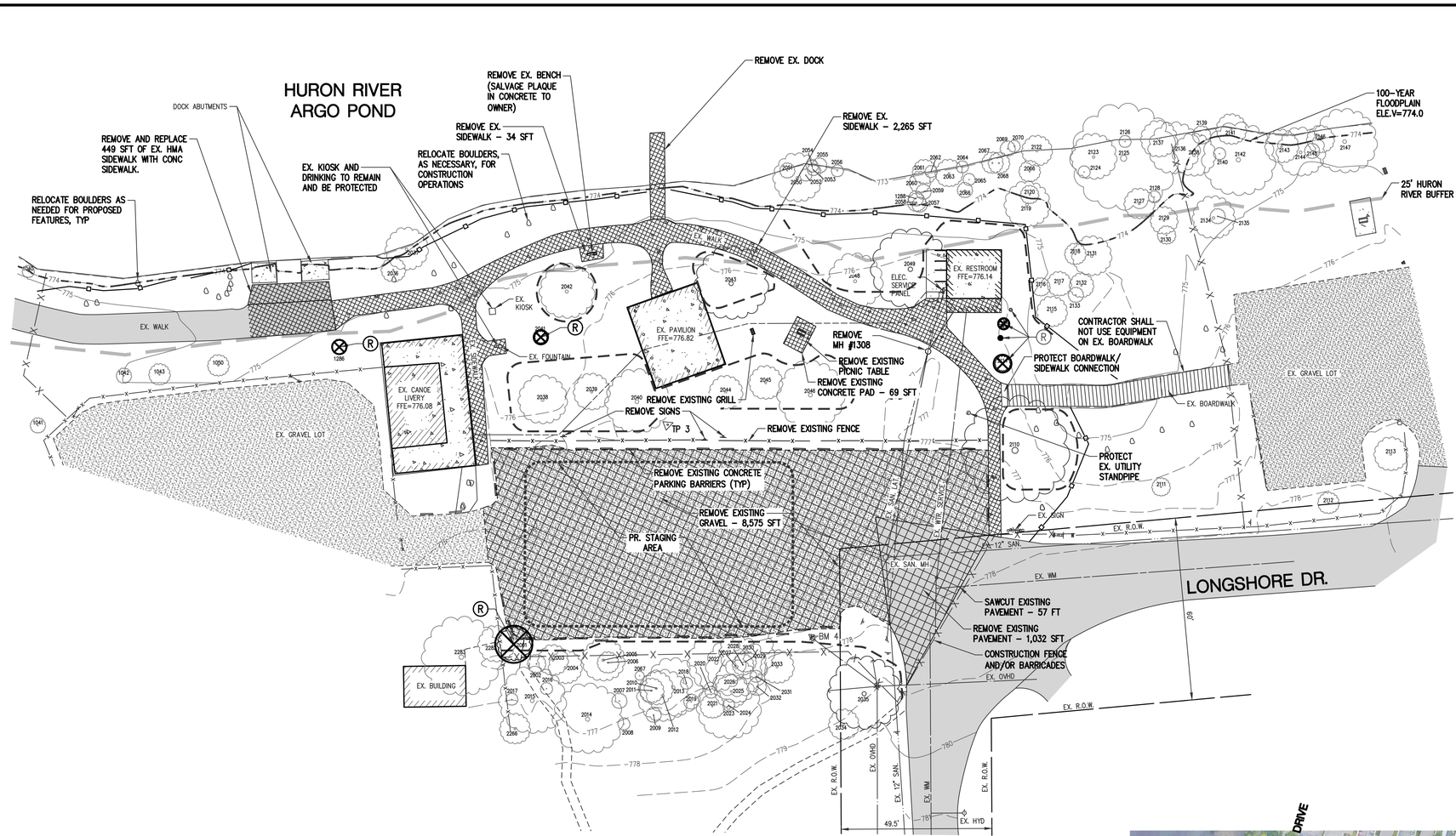
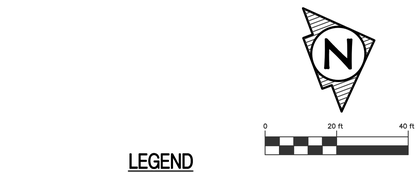




LEGEND

- REMOVE PAVEMENT
- REMOVE SIDEWALK
- EXISTING GRAVEL SURFACE
- EXISTING SIDEWALK
- EXISTING HMA PAVEMENT
- PROPOSED CONSTRUCTION FENCE
- EXISTING FENCE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED SILT FENCE
- PR. TREE PROTECTION FENCE
- REMOVE TREE
- HURON RIVER 25' BUFFER
- 100-YEAR FLOODPLAIN
- FEMA FLOODWAY
- LANDMARK TREE (W/CRITICAL ROOT ZONE & INVENTORY NUMBER)

REMOVAL NOTES:

1. TREES & ROOT ZONES SHALL BE PROTECTED WITH TREE PROTECTION FENCE BY CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL HAND DIG AND HAVE NO CONSTRUCTION TRAFFIC OF STORAGE OF MATERIALS UNDER TREE DRIPLINE UNLESS APPROVED BY ENGINEER.
2. GRAVEL SURFACES SCHEDULED FOR REMOVAL IN PROPOSED AREAS SHALL BE REMOVED TO AN ADEQUATE DEPTH TO ESTABLISH HMA PAVEMENT PROFILE, INCLUDING SUBBASE.
3. GRAVEL SURFACES SCHEDULED FOR REMOVAL IN PROPOSED TURF RESTORATION AREA SHALL BE REMOVED TO THE DEPTH OF NATIVE SOIL TO PROPERLY ESTABLISH TURF.
4. SEE NOTES SHEET (SHEET #2) FOR ADDITIONAL NOTES.

LEGEND **TRAFFIC CONTROL NOTES**

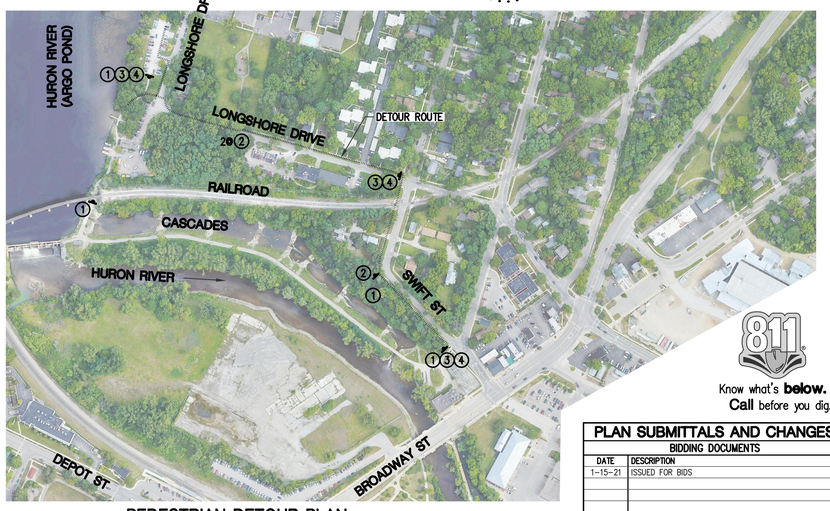
① PLACE TYPE III BARRICADES, "ARGO LIVERY PARK CONSTRUCTION" (R11-2) AND "SIDEWALK CLOSED" (R9-9). SEE DETAILED SPECIFICATION FOR MAINTENANCE OF TRAFFIC.

ALL SIGN LOCATIONS TO BE APPROVED BY ENGINEER/OWNER.

② M4-9A (STRAIGHT)

③ M4-9A (RIGHT)

④ M4-9A (LEFT)



PEDESTRIAN DETOUR PLAN

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

PLAN SUBMITTALS AND CHANGES

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REMOVAL PLAN SHEET

REV:

SHT# 6 OF 20
JOB No: 20C0027

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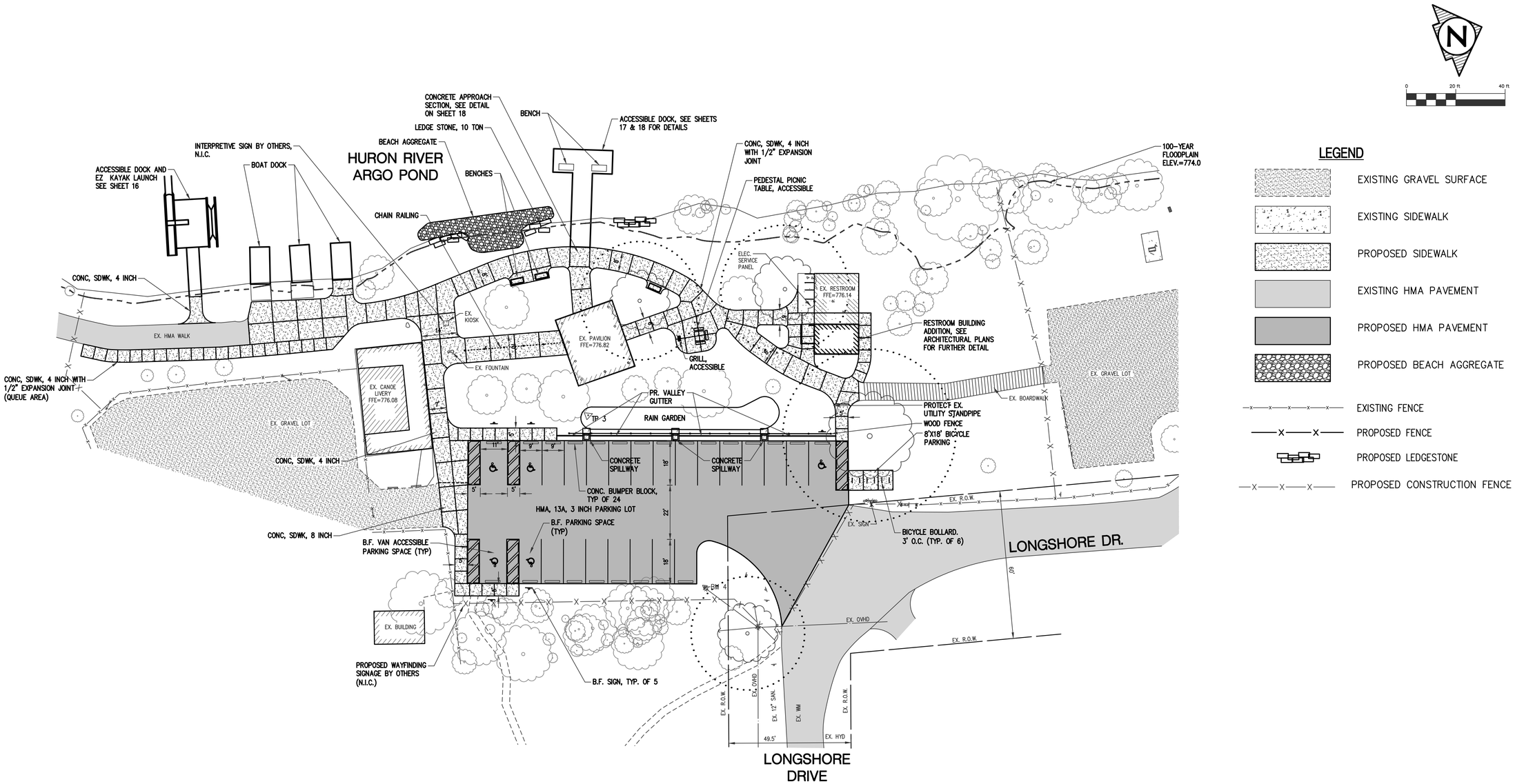

LEGEND

- EXISTING GRAVEL SURFACE
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- EXISTING HMA PAVEMENT
- PROPOSED HMA PAVEMENT
- PROPOSED BEACH AGGREGATE
- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED LEDGESTONE
- PROPOSED CONSTRUCTION FENCE

PLAN DATE: JANUARY 2021
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ARGO PARK LIVERY

SITE PLAN SHEET

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PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
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REV:

SHT# 7 OF 20

JOB No: 20C0027

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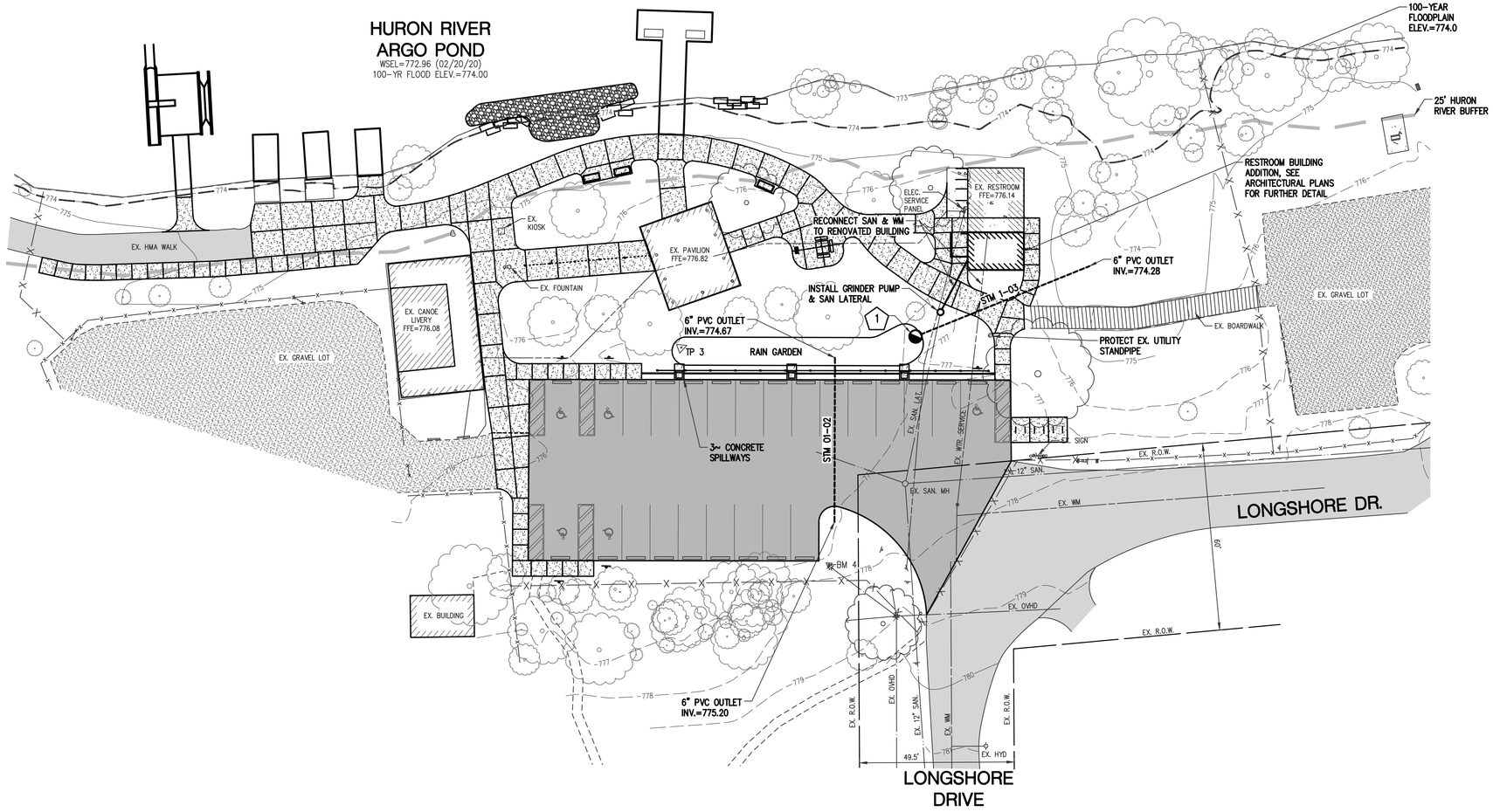

0 20 ft 40 ft

LEGEND

- EXISTING GRAVEL SURFACE
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED BEACH AGGREGATE
- EXISTING HMA PAVEMENT
- PROPOSED HMA PAVEMENT
- EXISTING SANITARY SEWER
- PROPOSED SANITARY LATERAL
- PROPOSED WATER SERVICE
- EXISTING FENCE
- PROPOSED FENCE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- HURON RIVER 25' BUFFER
- PROPOSED CONSTRUCTION FENCE

GRINDER STATION CONSTRUCTION NOTES

1. THE PROPOSED GRINDER STATION SHALL BE AN ENVIRONMENT ONE DUPLEX GRINDER PUMP STATION, MODEL DH152 (DEPTH TO BE DETERMINED), OR APPROVED EQUAL. THE STATION SHALL BE DESIGNED TO HANDLE ALL FLOW THE PROPOSED BATH HOUSE (SIX TOILETS AND SIX SINKS). THE STATION SHALL BE EQUIPPED WITH A DUPLEX PLUS ALARM PANEL BY ENVIRONMENT ONE.
2. THE CONTRACTOR SHALL INSTALL THE STATION IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR SHALL INSTALL A CONCRETE BALLAST AROUND THE STATION TO PREVENT FLOATING.
3. THE CONTROL PANEL SHALL BE AN ENVIRONMENT ONE PROTECT PLUS ALARM PANEL WITH A NEMA 4X ENCLOSURE.
4. THE CONTRACTOR SHALL PROVIDE A 240 VOLT SINGLE PHASE POWER SOURCE TO THE CONTROL PANEL. A MINIMUM OF A 30 AMP BREAKER WILL NEED TO BE PROVIDED. THE CONTROL PANEL SHALL BE MOUNTED IN A LOCATION THAT HAS A CLEAR LINE OF SIGHT TO THE PUMP STATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE WIRING CONFIGURATION REQUIRED BY THE MANUFACTURER.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING THE GRINDER PUMP STATION AND MAKING ALL REQUIRED CONNECTIONS.
6. THE MANUFACTURER'S REPRESENTATIVE IS JOE MOORE (DUBOIS COOPER ASSOCIATES, INC.). HIS PHONE NUMBER IS (734) 455-6700.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION / SIZING WITH THE MANUFACTURER. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF SHOP DRAWINGS FOR REVIEW / APPROVAL PRIOR TO RELEASING EQUIPMENT FOR FABRICATION.

PROPOSED STORM SEWER STRUCTURE TABLE

STRUCT NO.	DIA.	COVER TYPE	RIM ELEVATION	INVERT	NORTHING	EASTING
1	6"	G	RIM=775.25	6" 774.50 N (PR)	289203.93	13291768.87

PROPOSED STORM SEWER PIPE TABLE

PIPE NUMBER	DIAMETER	PAY ITEM	TOTAL LENGTH	SLOPE	TRENCH DETAIL A (T.D. A)	TRENCH DETAIL B (T.D. B)
STM 1-03	6"	Storm Sewer, Cl A, 6 inch, Tr Det __	60'	0.37%	30'	30'
STM 01-02	6"	Storm Sewer, Cl A, 6 inch, Tr Det __	53'	1.00%	0'	53'

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ARGO PARK LIVERY

UTILITY PLAN SHEET

REV:

SHT# 8 OF 20

JOB No: 20C0027

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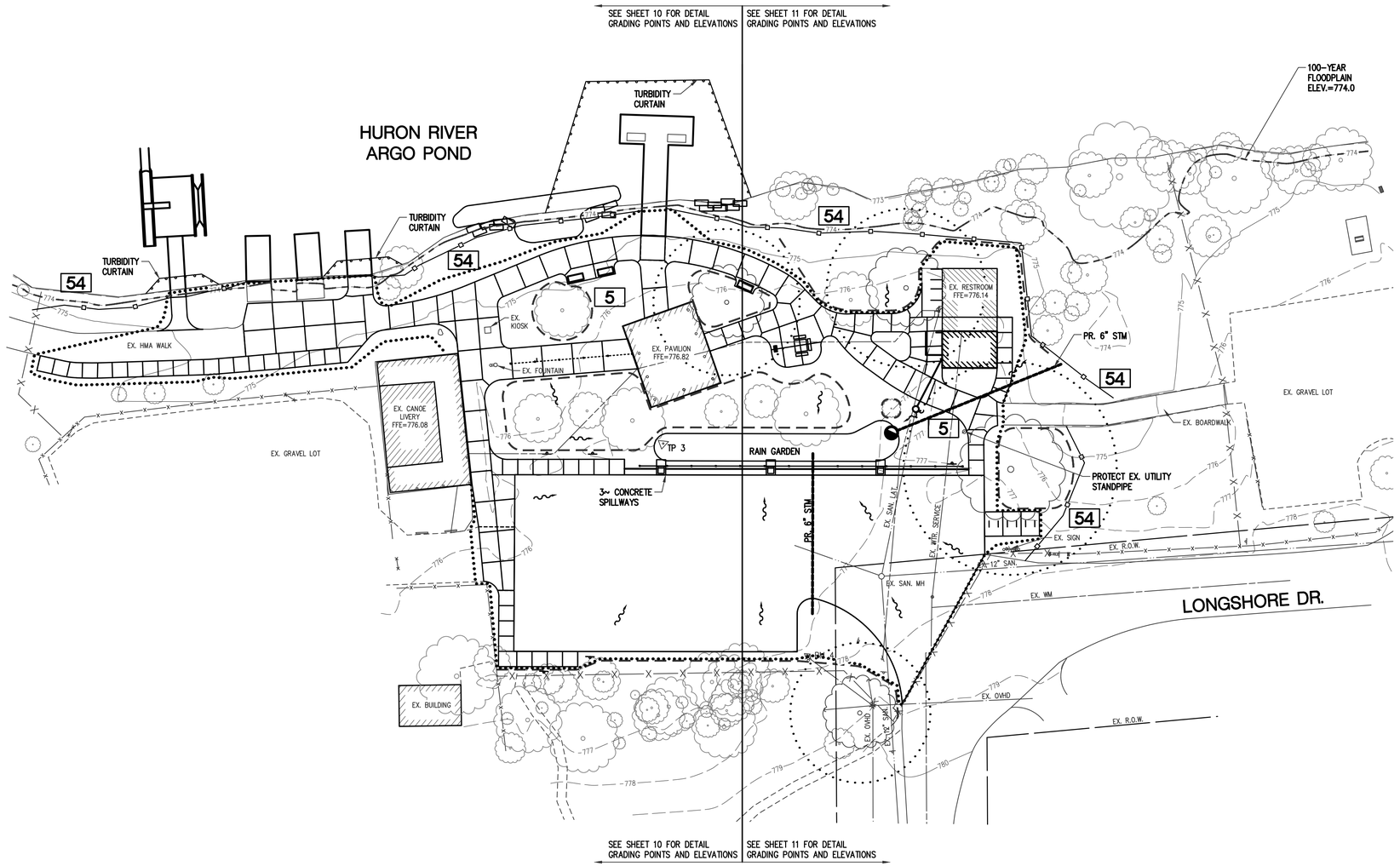
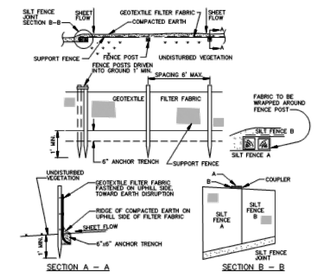
PLOTTED: 2/23/2021 10:00 AM



LEGEND

- PROPOSED STORM
- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED SILT FENCE
- PROPOSED TURBIDITY CURTAIN
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOUR
- PR. TREE PROTECTION FENCE
- LIMITS OF DISTURBANCE
- STORM TRIBUTARY AREA LIMITS
- DRAINAGE FLOW DIRECTION
- HURON RIVER 25' BUFFER
- LANDMARK TREE (W/CRITICAL ROOT ZONE & INVENTORY NUMBER)



SILT FENCE
NO SCALE

D. GRADING NOTES

1. TREES & ROOT ZONES SHALL BE PROTECTED BY CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL HAND DIG AND LIMIT CONSTRUCTION TRAFFIC WITHIN TREE DRIPLINE.
2. ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE AND PROPOSED LANDSCAPE AREAS SHALL BE RESTORED WITH A MINIMUM OF THREE (3) INCHES OF TOPSOIL AND THEN SOD OR SEED/FERTILIZE/MULCH PER THE PLAN. PROVIDE SOD OR SEED AND EROSION CONTROL BLANKETS ON ALL SLOPES 3:1 OR STEEPER.
3. SEE NOTES SHEET (SHEET #2) FOR ADDITIONAL NOTES.

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: 1" = 20'

ROWE PROFESSIONAL SERVICES COMPANY
The Rowe Building
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F: (810) 341-7573
www.rowepsc.com

PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

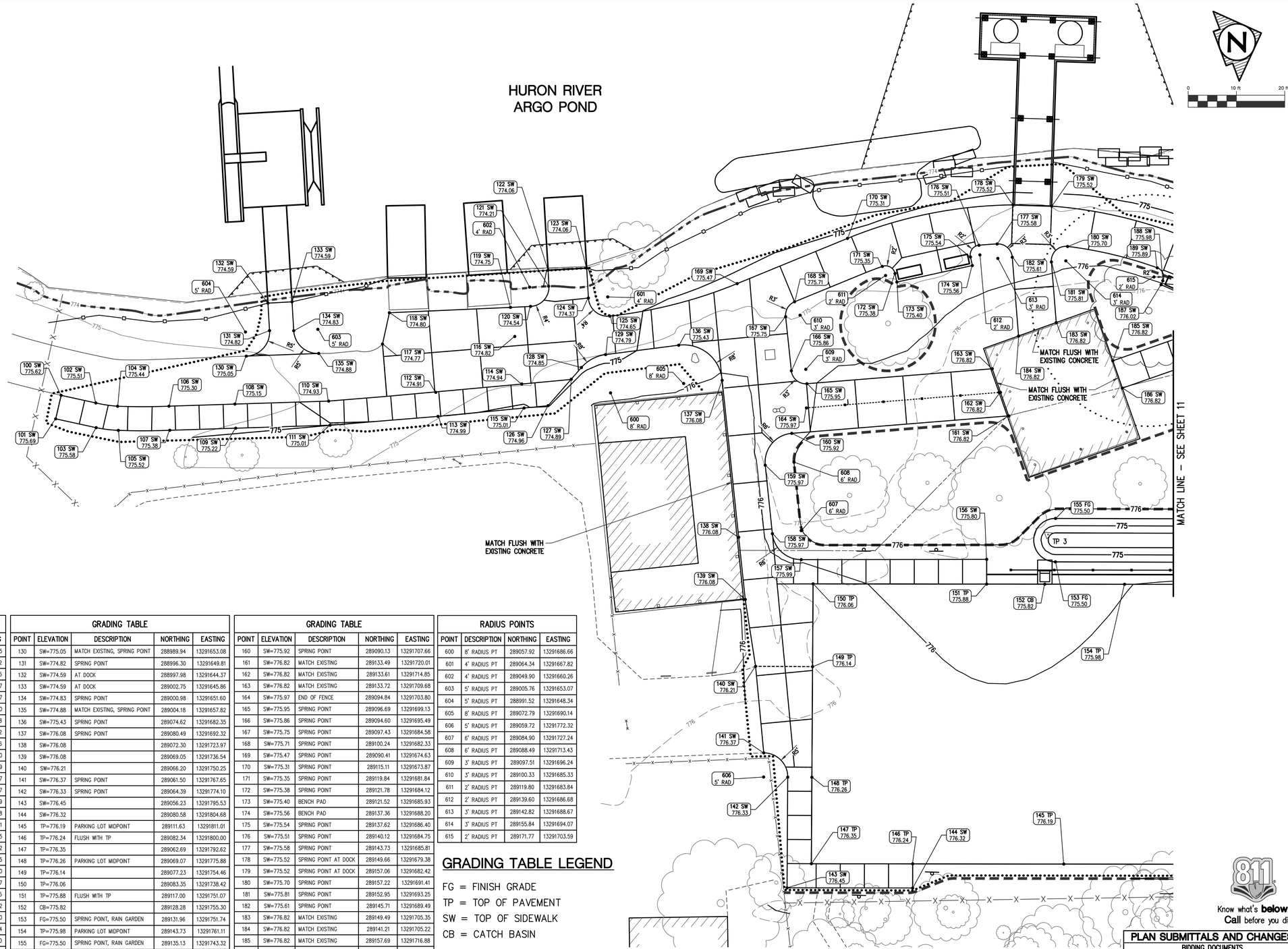
GRADING AND SESC PLAN SHEET

REV:

SHT# 9 OF 20

JOB No: 20C0027

R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-GRAD.dwg
PLOTTED: 2/23/2021 10:00 AM



GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
100	SW=775.62	MATCH EXISTING	288951.16	13291647.25
101	SW=775.69	MATCH EXISTING	288948.40	13291651.42
102	SW=775.51	MATCH EXISTING	288957.34	13291651.25
103	SW=775.58	SPRING POINT	288955.61	13291656.07
104	SW=775.44	MATCH EXISTING	288961.32	13291653.47
105	SW=775.52	SPRING POINT	288959.72	13291658.20
106	SW=775.30	MATCH EXISTING	288971.31	13291657.18
107	SW=775.38		288969.70	13291661.92
108	SW=775.15	MATCH EXISTING	288984.24	13291661.56
109	SW=775.22		288982.64	13291666.30
110	SW=774.93	MATCH EXISTING	289002.65	13291667.79
111	SW=775.01		289001.16	13291672.57
112	SW=774.91	MATCH EXISTING	289024.06	13291673.87
113	SW=774.99		289022.74	13291678.69
114	SW=774.94	MATCH EXISTING	289041.35	13291678.48
115	SW=775.01		289040.06	13291683.31
116	SW=774.82	MATCH EXISTING	289043.44	13291668.75
117	SW=774.77	MATCH EXISTING	289017.24	13291660.62
118	SW=774.80		289020.84	13291655.05
119	SW=774.75		289044.72	13291662.80
120	SW=774.54	SPRING POINT	289048.68	13291664.07
121	SW=774.21	SPRING POINT	289053.66	13291661.45
122	SW=774.06	AT DOCK	289054.72	13291658.32
123	SW=774.06	AT DOCK	289062.36	13291660.70
124	SW=774.37	SPRING POINT	289060.52	13291666.64
125	SW=774.65	SPRING POINT	289063.36	13291671.70
126	SW=774.96		289044.89	13291684.60
127	SW=774.89		289051.30	13291681.14
128	SW=774.85	SPRING POINT	289054.12	13291679.62
129	SW=774.79	SPRING POINT	289059.75	13291678.87

GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
130	SW=775.05	MATCH EXISTING, SPRING POINT	288989.94	13291653.08
131	SW=774.82	SPRING POINT	288996.30	13291649.81
132	SW=774.59	AT DOCK	288997.98	13291644.37
133	SW=774.59	AT DOCK	289002.75	13291645.86
134	SW=774.83	SPRING POINT	289000.98	13291651.60
135	SW=774.88	MATCH EXISTING, SPRING POINT	289004.18	13291657.82
136	SW=775.43	SPRING POINT	289074.62	13291682.35
137	SW=776.08	SPRING POINT	289080.49	13291692.32
138	SW=776.08		289072.30	13291723.97
139	SW=776.08		289069.05	13291736.54
140	SW=776.21		289066.20	13291750.25
141	SW=776.37	SPRING POINT	289061.50	13291767.65
142	SW=776.33	SPRING POINT	289064.39	13291774.10
143	SW=776.45		289056.23	13291795.53
144	SW=776.32		289080.58	13291804.68
145	TP=776.19	PARKING LOT MIDPOINT	289111.63	13291811.01
146	TP=776.24	FLUSH WITH TP	289082.34	13291800.00
147	TP=776.35		289062.69	13291792.62
148	TP=776.26	PARKING LOT MIDPOINT	289069.07	13291775.88
149	TP=776.14		289077.23	13291754.46
150	TP=776.06		289083.35	13291738.42
151	TP=775.88	FLUSH WITH TP	289117.00	13291751.07
152	CB=775.82		289128.28	13291755.30
153	FG=775.50	SPRING POINT, RAIN GARDEN	289131.96	13291751.74
154	TP=775.98	PARKING LOT MIDPOINT	289143.73	13291761.11
155	FG=775.50	SPRING POINT, RAIN GARDEN	289135.13	13291743.32
156	SW=775.80		289118.81	13291746.27
157	SW=775.99	SPRING POINT	289082.81	13291732.86
158	SW=775.97	SPRING POINT	289079.09	13291725.73
159	SW=775.97	SPRING POINT	289082.68	13291711.92

GRADING TABLE				
POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
160	SW=775.92	SPRING POINT	289090.13	13291707.66
161	SW=776.82	MATCH EXISTING	289133.49	13291720.01
162	SW=776.82	MATCH EXISTING	289133.61	13291714.85
163	SW=776.82	MATCH EXISTING	289133.72	13291709.68
164	SW=775.97	END OF FENCE	289094.84	13291703.80
165	SW=775.95	SPRING POINT	289096.69	13291699.13
166	SW=775.86	SPRING POINT	289094.60	13291695.49
167	SW=775.75	SPRING POINT	289097.43	13291684.58
168	SW=775.71	SPRING POINT	289100.24	13291682.33
169	SW=775.47	SPRING POINT	289090.41	13291674.63
170	SW=775.31	SPRING POINT	289115.11	13291673.87
171	SW=775.35	SPRING POINT	289119.84	13291681.84
172	SW=775.38	SPRING POINT	289121.78	13291684.12
173	SW=775.40	BENCH PAD	289121.52	13291685.93
174	SW=775.56	BENCH PAD	289137.36	13291688.20
175	SW=775.54	SPRING POINT	289137.62	13291686.40
176	SW=775.51	SPRING POINT	289140.12	13291684.75
177	SW=775.58	SPRING POINT	289143.73	13291685.81
178	SW=775.52	SPRING POINT AT DOCK	289149.66	13291679.38
179	SW=775.52	SPRING POINT AT DOCK	289157.06	13291682.42
180	SW=775.70	SPRING POINT	289157.22	13291691.41
181	SW=775.81	SPRING POINT	289152.95	13291693.25
182	SW=775.61	SPRING POINT	289145.71	13291689.49
183	SW=776.82	MATCH EXISTING	289149.49	13291705.35
184	SW=776.82	MATCH EXISTING	289141.21	13291705.22
185	SW=776.82	MATCH EXISTING	289157.69	13291716.88
186	SW=776.82	MATCH EXISTING	289157.56	13291722.88
187	SW=776.02	BENCH PAD	289172.58	13291705.63
188	SW=775.98	SPRING POINT	289173.21	13291704.98
189	SW=775.89	SPRING POINT	289173.06	13291702.07

RADIUS POINTS			
POINT	DESCRIPTION	NORTHING	EASTING
600	8' RADIUS PT	289057.92	13291686.66
601	4' RADIUS PT	289064.34	13291667.82
602	4' RADIUS PT	289049.90	13291660.26
603	5' RADIUS PT	289005.76	13291653.07
604	5' RADIUS PT	288991.52	13291648.34
605	8' RADIUS PT	289072.79	13291690.14
606	5' RADIUS PT	289059.72	13291772.32
607	6' RADIUS PT	289084.90	13291727.24
608	6' RADIUS PT	289088.49	13291713.43
609	3' RADIUS PT	289097.51	13291696.24
610	3' RADIUS PT	289100.33	13291685.33
611	2' RADIUS PT	289119.80	13291683.84
612	2' RADIUS PT	289139.60	13291686.68
613	3' RADIUS PT	289142.82	13291688.67
614	3' RADIUS PT	289155.84	13291694.07
615	2' RADIUS PT	289171.77	13291703.59

GRADING TABLE LEGEND

FG = FINISH GRADE
TP = TOP OF PAVEMENT
SW = TOP OF SIDEWALK
CB = CATCH BASIN

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

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

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PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
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SCALE: 1" = 10'

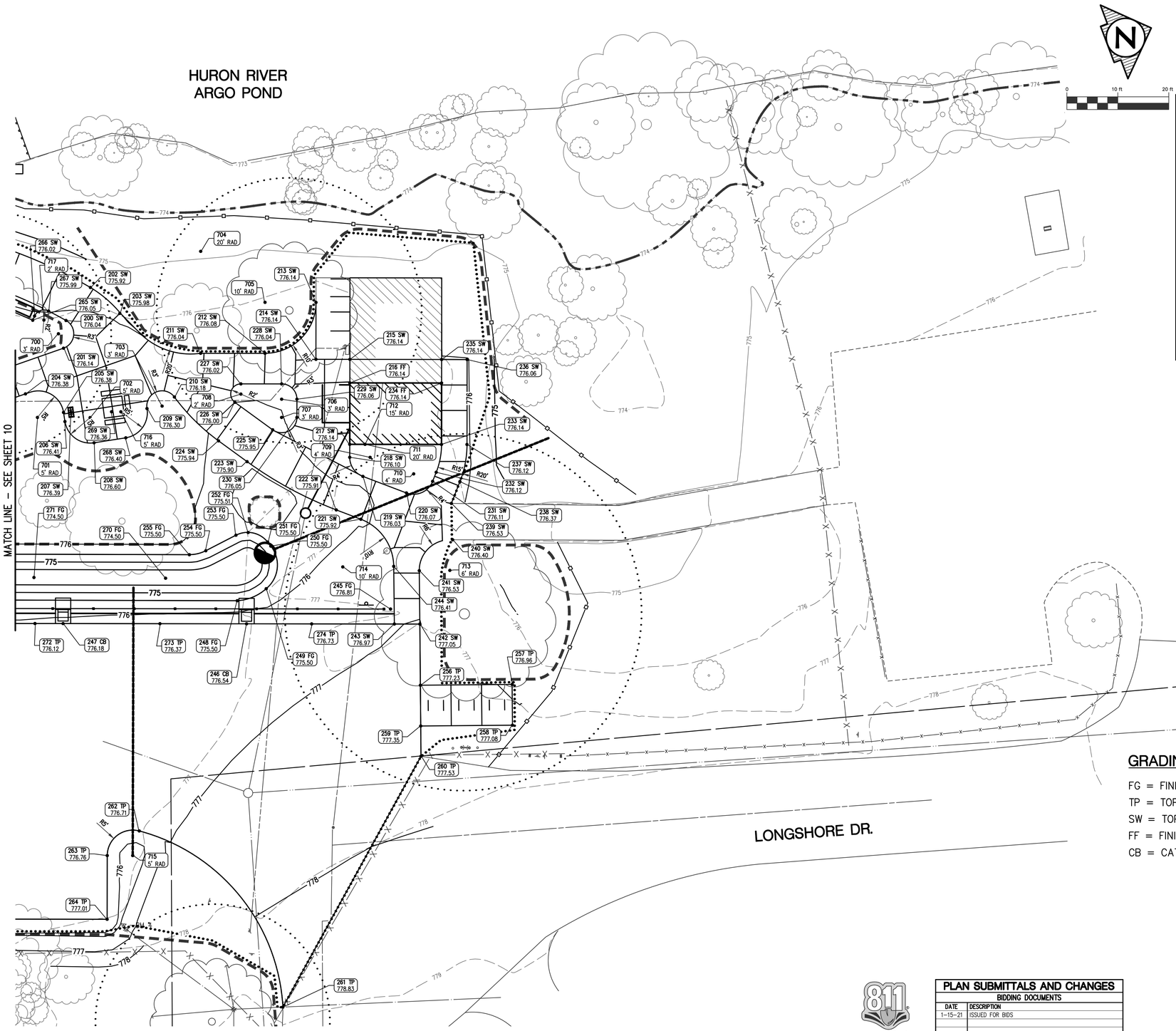
PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

DETAILED GRADING 1

REV:

SHT# 10 OF 20
JOB No: 20C0027

PLOTTED: 2/23/2021 10:00 AM
R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-GR40.dwg



GRADING TABLE LEGEND

FG = FINISH GRADE
TP = TOP OF PAVEMENT
SW = TOP OF SIDEWALK
FF = FINISH FLOOR
CB = CATCH BASIN

Know what's **below.**
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PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

RADIUS POINTS

POINT	DESCRIPTION	NORTHING	EASTING
700	3' RADIUS PT	289181.05	13291714.40
701	5' RADIUS PT	289171.44	13291728.33
702	5' RADIUS PT	289181.11	13291731.98
703	3' RADIUS PT	289195.13	13291734.81
704	20' RADIUS PT	289212.85	13291709.03
705	10' RADIUS PT	289221.18	13291722.83
706	3' RADIUS PT	289217.57	13291741.77
707	3' RADIUS PT	289216.31	13291745.11
708	2' RADIUS PT	289210.43	13291738.02
709	4' RADIUS PT	289229.83	13291758.53
710	4' RADIUS PT	289236.69	13291764.57
711	20' RADIUS PT	289229.79	13291755.79
712	15' RADIUS PT	289229.79	13291755.79
713	6' RADIUS PT	289236.71	13291784.78
714	10' RADIUS PT	289217.27	13291776.78
715	5' RADIUS PT	289158.83	13291815.38
716	5' RADIUS PT	289187.16	13291733.03
717	2' RADIUS PT	289179.32	13291710.89

GRADING TABLE

POINT	ELEVATION	DESCRIPTION	NORTHING	EASTING
200	SW=776.04	SPRING POINT	289183.36	13291712.48
201	SW=776.14	SPRING POINT	289180.99	13291717.40
202	SW=775.92	SPRING POINT	289190.11	13291708.09
203	SW=775.98	SPRING POINT	289193.73	13291714.88
204	SW=776.38	SPRING POINT	289170.86	13291723.17
205	SW=776.38	SPRING POINT	289176.58	13291729.20
206	SW=776.41	SPRING POINT	289176.21	13291730.98
207	SW=776.39	GRILL	289177.96	13291729.67
208	SW=776.60	SPRING POINT	289180.10	13291736.88
209	SW=776.30	SPRING POINT	289192.18	13291734.23
210	SW=776.18	SPRING POINT	289198.01	13291733.99
211	SW=776.04	SPRING POINT	289205.84	13291727.76
212	SW=776.08	SPRING POINT	289217.67	13291732.19
213	SW=776.14	SPRING POINT, MATCH EXISTING	289230.54	13291726.35
214	SW=776.14		289226.61	13291736.79
215	SW=776.14		289232.85	13291739.14
216	FF=776.14		289231.22	13291743.46
217	SW=776.14	AT BUILDING	289226.98	13291754.74
218	SW=776.10	SPRING POINT	289226.08	13291757.13
219	SW=776.03	SPRING POINT	289227.19	13291761.54
220	SW=776.07	SPRING POINT	289234.05	13291767.57
221	SW=775.92	SPRING POINT	289223.87	13291769.27
222	SW=775.91	SPRING POINT	289220.00	13291765.87
223	SW=775.90	SPRING POINT	289206.93	13291750.87
224	SW=775.94	SPRING POINT	289203.10	13291745.08
225	SW=775.95	SPRING POINT	289213.82	13291746.78
226	SW=776.00	SPRING POINT	289208.76	13291739.13
227	SW=776.02	SPRING POINT	289211.13	13291736.15
228	SW=776.04	SPRING POINT	289218.62	13291738.96
229	SW=776.06	SPRING POINT	289220.38	13291742.82
230	SW=776.05	SPRING POINT	289219.12	13291746.17
231	SW=776.11	SPRING POINT	289239.67	13291767.24
232	SW=776.12	SPRING POINT	289240.95	13291765.82
233	SW=776.14	SPRING POINT	289243.83	13291761.07
234	FF=776.14		289248.07	13291749.79
235	SW=776.14	AT BUILDING	289249.69	13291745.47
236	SW=776.06		289254.37	13291747.23
237	SW=776.12	SPRING POINT	289248.51	13291762.83
238	SW=776.37	SPRING POINT	289244.66	13291769.16
239	SW=776.53	SPRING POINT	289241.59	13291772.58
240	SW=776.40	SPRING POINT, MATCH EXISTING	289239.32	13291779.35
241	SW=776.53	SPRING POINT	289231.07	13291782.74
242	SW=777.05		289227.51	13291792.58
243	SW=776.97		289222.83	13291790.82
244	SW=776.41	SPRING POINT	289226.67	13291780.19
245	FG=776.81	END OF FENCE	289223.15	13291787.81
246	CB=776.54		289195.68	13291780.62
247	CB=776.18		289161.98	13291767.96
248	FG=775.50	SPRING POINT, RAIN GARDEN	289195.55	13291775.74
249	FG=775.50	SPRING POINT, RAIN GARDEN	289201.71	13291775.52
250	FG=775.50	SPRING POINT, RAIN GARDEN	289205.48	13291768.01
251	FG=775.50	SPRING POINT, RAIN GARDEN	289205.17	13291767.05
252	FG=775.51	SPRING POINT, RAIN GARDEN	289202.25	13291763.97
253	FG=775.50	SPRING POINT, RAIN GARDEN	289199.82	13291763.61
254	FG=775.50	SPRING POINT, RAIN GARDEN	289193.21	13291764.40
255	FG=775.50	SPRING POINT, RAIN GARDEN	289189.92	13291763.99
256	TP=777.23	BIKE PARKING PAD	289223.40	13291803.86
257	TP=776.96	BIKE PARKING PAD	289240.31	13291810.02
258	TP=777.08	BIKE PARKING PAD	289237.57	13291817.54
259	TP=777.35	BIKE PARKING PAD	289220.66	13291811.38
260	TP=777.53	SPRING POINT, MATCH EXISTING	289218.62	13291816.96
261	TP=778.83	SPRING POINT, MATCH EXISTING	289176.00	13291853.55
262	TP=776.71	SPRING POINT	289161.72	13291811.31
263	TP=776.76	SPRING POINT	289154.15	13291813.63
264	TP=777.01	PARKING LOT AT LONGSHORE	289149.75	13291825.33
265	SW=776.05	BENCH PAD	289177.26	13291710.14
266	SW=776.02	SPRING POINT	289177.88	13291709.50
267	SW=775.99	SPRING POINT	289180.80	13291709.54
268	SW=776.40	SPRING POINT	289186.27	13291738.15
269	SW=776.36	TABLE	289185.45	13291732.38
270	FG=774.50	RAIN GARDEN	289183.94	13291766.68
271	FG=774.50	RAIN GARDEN	289159.80	13291757.50
272	TP=776.12	EDGE OF PAVT AT CURB	289156.82	13291766.03
273	TP=776.37	EDGE OF PAVT AT CURB	289179.77	13291774.65
274	TP=776.73	EDGE OF PAVT AT CURB	289207.64	13291785.12

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PREPARED FOR
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ARGO PARK LIVERY

DETAILED GRADING 2

REV:

SHT# 11 OF 20

JOB No: 20C0027

PLOTTED: 7/23/2021 10:01 AM
R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-GR40.dwg

MICHIGAN UNIFIED KEYING SYSTEM
SOIL EROSION SEDIMENTATION CONTROL MEASURES

✱ INDICATES APPLICABILITY OF A SPECIFIC CONTROL MEASURE TO ONE OR MORE OF THE SEVEN PROBLEM AREAS

KEY	DETAIL	CHARACTERISTICS	SLOPES A	STREAMS AND WATERWAYS B	SURFACE DRAINAGEWAYS C	ENCLOSED DRAINAGE (Inlet & Outfall Control) D	LARGE FLAT SURFACE AREAS E	BORROW AND STOCKPILE AREAS F	ADJACENT PROPERTIES G
1	STRIPPING & STOCKPILING TOPSOIL	TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIVERSION. STOCKPILE SHOULD BE TEMPORARILY SEEDED.	✱				✱	✱	
2	SELECTIVE GRADING & SHAPING	WATER CAN BE DIVERTED TO MINIMIZE EROSION. FLATTER SLOPES EASE EROSION PROBLEMS.	✱				✱	✱	✱
3	GRUBBING OMITTED	SAVES COST OF GRUBBING, PROVIDES NEW SPROUTS, RETAINS EXISTING ROOT MAT SYSTEM, REDUCES WIND FALL AT NEW FOREST EDGE DISCOURAGES EQUIPMENT ENTRANCE	✱				✱		✱
4	VEGETATIVE STABILIZATION	MAY UTILIZE A VARIETY OF PLANT MATERIAL STABILIZES SOIL SLOWS RUNOFF VELOCITY FILTERS SEDIMENT FROM RUNOFF	✱	✱	✱		✱	✱	✱
5	SEEDING	INEXPENSIVE AND VERY EFFECTIVE STABILIZES SOIL, THUS MINIMIZING EROSION PERMITS RUNOFF TO INFILTRATE SOIL, REDUCING RUNOFF VOLUME SHOULD INCLUDE PREPARED TOPSOIL BED	✱		✱		✱	✱	✱
6	SEEDING WITH MULCH AND/OR MATTING	FACILITATES ESTABLISHMENT OF VEGETATIVE COVER EFFECTIVE FOR DRAINAGEWAYS WITH LOW VELOCITY EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL SHOULD INCLUDE PREPARED TOPSOIL BED	✱		✱			✱	✱
7	HYDRO-SEEDING	EFFECTIVE ON LARGE AREAS MULCH TACKING AGENT USED TO PROVIDE IMMEDIATE PROTECTION UNTIL GRASS IS ROOTED SHOULD INCLUDE PREPARED TOPSOIL BED	✱				✱	✱	✱
8	SODDING	PROVIDES IMMEDIATE PROTECTION CAN BE USED ON STEEP SLOPES WHERE SEED MAY BE DIFFICULT TO ESTABLISH EASY TO PLACE; MAY BE REPAIRED IF DAMAGED SHOULD INCLUDE PREPARED TOPSOIL BED	✱		✱		✱	✱	✱
9	VEGETATIVE BUFFER STRIP	SLOWS RUNOFF VELOCITY FILTERS SEDIMENT FROM RUNOFF REDUCES VOLUME OF RUNOFF ON SLOPES	✱	✱					✱
10	MULCHING	USED ALONE TO PROTECT EXPOSED AREAS FOR SHORT PERIODS PROTECTS SOIL FROM IMPACT OF FALLING RAIN PRESERVES SOIL MOISTURE AND PROTECTS GERMINATING SEED FROM TEMPERATURE EXTREMES	✱				✱	✱	
11	ROUGHENED SURFACE	REDUCES VELOCITY AND INCREASES INFILTRATION RATES COLLECTS SEDIMENT HOLDS WATER, SEED, AND MULCH BETTER THAN SMOOTH SURFACES	✱				✱		
12	COMPACTION	HELPS HOLD SOIL IN PLACE, MAKING EXPOSED AREAS LESS VULNERABLE TO EROSION	✱				✱		
17	BENCHES	REDUCES RUNOFF VELOCITY BY REDUCING EFFECTIVE SLOPE LENGTH COLLECTS SEDIMENT PROVIDES ACCESS TO SLOPES FOR SEEDING, MULCHING AND MAINTENANCE	✱					✱	
20	BERM & DITCH	DIVERTS WATER TO A PREPARED DRAINAGEWAY MAY BE USED AT INTERVALS ACROSS SLOPE FACE TO REDUCE EFFECTIVE SLOPE LENGTH	✱					✱	✱
21	FILTER BERM	CONSTRUCTED OF GRAVEL OR STONE INTERCEPTS AND DIVERTS RUNOFF TO STABILIZED AREAS OR PREPARED DRAINAGE SYSTEMS SLOWS RUNOFF AND COLLECTS SEDIMENT	✱	✱					✱
33	SEDIMENTATION TRAP	MAY BE CONSTRUCTED OF A VARIETY OF MATERIALS TRAPS SEDIMENT AND REDUCES VELOCITY OF FLOW CAN BE CLEANED AND EXPANDED AS NEEDED		✱	✱				
34	SEDIMENT BASIN	TRAPS SEDIMENT RELEASES RUNOFF AT NON-EROSIVE RATES CONTROLS RUNOFF AT SYSTEM OUTLETS CAN BE VISUAL AMENITIES		✱	✱	✱			
35	STORM SEWER C.B. C.B.	SYSTEM REMOVES COLLECTED RUNOFF FROM SITE, PARTICULARLY FROM PAVED AREAS CAN ACCEPT LARGE CONCENTRATIONS OF RUNOFF CONDUCTS RUNOFF TO MUNICIPAL SEWER SYSTEM OR STABILIZED OUTFALL LOCATION USE CATCH BASINS TO COLLECT SEDIMENT					✱		✱
36	CATCH BASIN, DRAIN INLET	COLLECTS HIGH VELOCITY CONCENTRATED RUNOFF MAY USE FILTER CLOTH OVER INLET					✱		✱
37	SOD FILTER	INEXPENSIVE AND EASY TO CONSTRUCT PROVIDES IMMEDIATE PROTECTION PROTECTS AREAS AROUND INLETS FROM EROSION				✱			
38	STRAW BALE FILTER	INEXPENSIVE AND EASY TO CONSTRUCT CAN BE LOCATED AS NECESSARY TO COLLECT SEDIMENT MAY BE USED IN CONJUNCTION WITH SNOW FENCE FOR ADDED STABILITY				✱			✱
39	ROCK FILTER	CAN UTILIZE MATERIAL FOUND ON SITE EASY TO CONSTRUCT FILTERS SEDIMENT FROM RUNOFF				✱			✱
40	INLET SEDIMENT TRAP	EASY TO SHAPE COLLECTS SEDIMENT MAY BE CLEANED AND EXPANDED AS NEEDED				✱			
43	CULVERT SEDIMENT TRAP	EASY TO INSTALL AT INLET KEEPS CULVERT CLEAN AND FREE FLOWING MAY BE CONSTRUCTED OF LUMBER OR LOGS		✱					✱
54	SILT FENCE	USES GEOTEXTILE FABRIC AND POSTS OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY.			✱				✱

SEEDING ZONES

PERMANENT SEEDING GUIDE

	APR	MAY	JUN	JUL	AUG	SEP	OCT	
IRRIGATED AND/OR MULCH								ZONE 1
WITHOUT IRRIGATION OR MULCH								
IRRIGATED AND/OR MULCHED								ZONE 2
WITHOUT IRRIGATION OR MULCH								
IRRIGATED AND/OR MULCHED								ZONE 3
WITHOUT IRRIGATION OR MULCH								

SOIL EROSION & SEDIMENTATION CONTROL

1. DEVELOPER/PROPERTY OWNER SHALL SUBMIT A DETAILED EROSION CONTROL PLAN AND OBTAIN A SOIL EROSION & SEDIMENTATION CONTROL PERMIT PRIOR TO ANY EARTH CHANGES.
2. CONSTRUCTION OPERATION SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING AND/OR GRADING OPERATIONS.
3. BORROW AND FILL DISPOSAL AREAS WILL BE SELECTED AND APPROVED AT TIME OF PLAN REVIEW.
4. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT SITUATIONS THAT PROMOTE EROSION.
5. CLEANUP WILL BE DONE IN A MANNER TO INSURE THAT EROSION CONTROL MEASURES ARE NOT DISTURBED.
6. THE PROJECT WILL CONTINUALLY BE INSPECTED FOR SOIL EROSION AND SEDIMENT CONTROL COMPLIANCE. DEFICIENCIES WILL BE CORRECTED BY THE DEVELOPER WITHIN 24 HOURS.
7. TEMPORARY EROSION CONTROL MEASURES SHALL BE COMPLETELY REMOVED BY THE DEVELOPER UPON ESTABLISHMENT OF PERMANENT CONTROL MEASURES.
8. ALL TEMPORARY SOIL EROSION CONTROL MEASURES MUST BE REMOVED FROM ROAD RIGHT-OF-WAY AREAS PRIOR TO ACCEPTANCE OF STREETS FOR ROUTINE MAINTENANCE.
9. VEGETATION MUST BE ACCEPTABLY ESTABLISHED PRIOR TO FINAL RELEASE OF THE CONSTRUCTION GUARANTEE BY THE DESIGNATED SOIL EROSION SEDIMENTATION CONTROL AGENT.

CONSTRUCTION SEQUENCE

1. EXCAVATION AND STOCKPILING OF SOIL.
2. IMPLEMENTATION OF TEMPORARY EROSION CONTROL MEASURES; SELECTIVE GRADING, DIVERSIONS AS REQUIRED IN FIELD, PROTECTION OF STORM SEWER FACILITIES.
3. PERIODIC MAINTENANCE OF AFFECTED EROSION CONTROL MEASURES.
4. PERMANENT MEASURES; FINAL GRADING, SEEDING AND MULCHING.

TEMPORARY SEEDING GUIDE

ZONE 1

TYPE OF SEED	APR	MAY	JUN	JUL	AUG	SEP	OCT
SPRING OATS/BARLEY OR DOMESTIC RYEGRASS					15TH		
SUDANGRASS							
RYE OR PERENNIAL RYE							15TH-15TH
WHEAT							

ZONE 2

TYPE OF SEED	APR	MAY	JUN	JUL	AUG	SEP	OCT
SPRING OATS/BARLEY OR DOMESTIC RYEGRASS							
SUDANGRASS							
RYE OR PERENNIAL RYE							15TH-15TH
WHEAT					10TH		

ZONE 3

TYPE OF SEED	APR	MAY	JUN	JUL	AUG	SEP	OCT
SPRING OATS/BARLEY OR DOMESTIC RYEGRASS							
SUDANGRASS							
RYE OR PERENNIAL RYE							
WHEAT							

SOIL EROSION/SEDIMENTATION CONTROL OPERATION TIME SCHEDULE

CONSTRUCTION SEQUENCE	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
STRIP & STOCKPILE TOPSOIL												
ROUGH GRADE SEDIMENT CONTROL												
TEMP. CONTROL MEASURES												
STORM FACILITIES												
TEMP. CONSTRUCTION ROADS												
SITE CONSTRUCTION												
PERM. CONTROL MEASURES												
FINISH GRADING												

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

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

REV:

SHT# 12 OF 20

JOB No: 20C0027

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

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Flint, MI 48502
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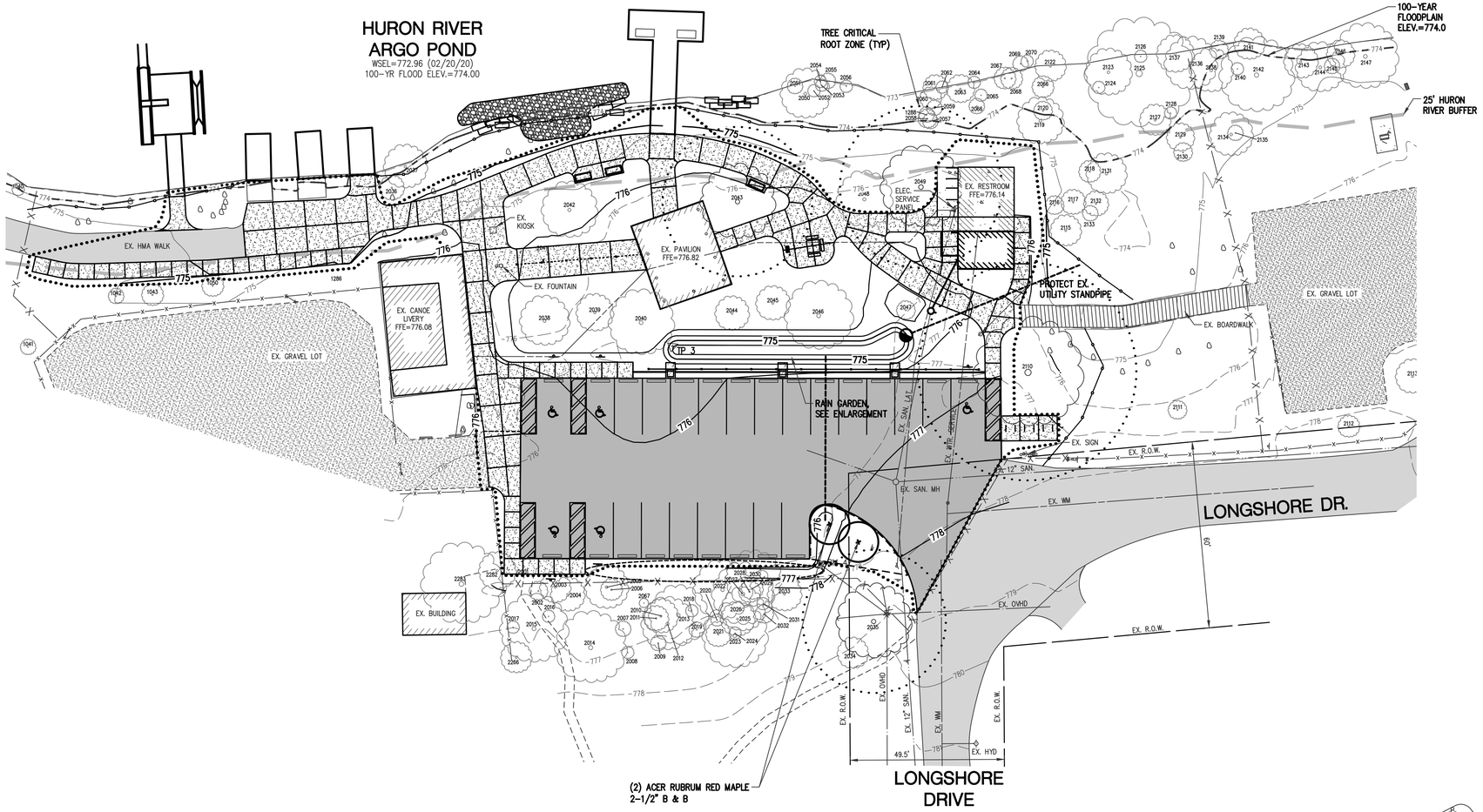
PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

SESC KEY SHEET

PLOTTED: 2/23/2021 10:01 AM R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-SOIL.dwg

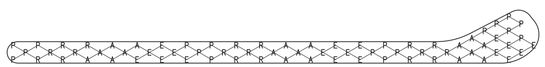


LEGEND

- EXISTING GRAVEL SURFACE
- EXISTING SIDEWALK
- PROPOSED SIDEWALK
- PROPOSED BEACH AGGREGATE
- EXISTING HMA PAVEMENT
- PROPOSED HMA PAVEMENT
- EXISTING FENCE
- PROPOSED FENCE
- PROPOSED SILT FENCE
- LIMITS OF DISTURBANCE
- EXISTING CONTOURS MAJOR
- EXISTING CONTOURS MINOR
- PROPOSED CONTOUR MAJOR
- PROPOSED CONTOURS MINOR
- HURON RIVER 25' BUFFER
- PROPOSED TREE ACER RUBRUM, RED MAPLE
- PROPOSED CONSTRUCTION FENCE

LANDSCAPE NOTES

1. TREES & ROOT ZONES SHALL BE PROTECTED BY CONTRACTOR THROUGHOUT CONSTRUCTION. CONTRACTOR SHALL HAND DIG AND LIMIT CONSTRUCTION TRAFFIC WITHIN TREE DRIPLINE.
2. ALL DISEASED, DAMAGED OR DEAD MATERIAL SHOWN ON THE SITE PLAN AS PROPOSED PLANTINGS SHALL BE REPLACED BY THE END OF THE FOLLOWING GROWING SEASON AS A CONTINUING OBLIGATION FOR THE DURATION OF THE SITE PLAN.
3. ALL DISTURBED AREAS WITHIN LIMITS OF DISTURBANCE AND PROPOSED LANDSCAPE AREAS SHALL BE RESTORED WITH A MINIMUM OF THREE (3) INCHES OF TOPSOIL AND THEN SOD OR SEED/FERTILIZE/MULCH PER THE PLAN. PROVIDE SEED AND EROSION CONTROL BLANKETS ON ALL SLOPES.
4. SEED MIXES AND FERTILIZER:
   - 4.1 LAWNS:
     - 15% RUGBY KENTUCKY BLUEGRASS
     - 10% PARK KENTUCKY BLUEGRASS
     - 40% RUBY CREEPING RED FESCUE
     - 15% PENNIFINE PERENNIAL RYEGRASS
     - 20% SCALDIS HARD FESCUE
5. SEE NOTES SHEET (SHEET #2) FOR ADDITIONAL NOTES.
6. PLANT MATERIALS SHALL BE INSTALLED AS DETAILED. TREES SHALL BE INSTALLED IN ACCORDANCE WITH STANDARDS ESTABLISHED BY THE CITY OF ANN ARBOR PARKS AND RECREATION DEPARTMENT AND AS SHOWN ON THE TREE PLANTING DETAIL.
7. APPLICATIONS OF FERTILIZER BEYOND THE INITIAL TOPSOIL AND SEEDING SHALL BE A FERTILIZER WITH NO PHOSPHORUS.
8. ANY TREE SPECIES DEVIATIONS FROM THE APPROVED SITE PLAN MUST FIRST BE APPROVED IN WRITING BY THE CITY OF ANN ARBOR PRIOR TO INSTALLATION.
9. ALL COMPACTED SUBGRADE SOILS IN PROPOSED LANDSCAPE AREA SHALL BE TILLED TO A MINIMUM 12-INCH DEPTH PRIOR TO PLACEMENT OF TOPSOIL, GEOTEXTILE FABRIC, OR OTHER PLANTING MEDIA AS SPECIFIED.



RAIN GARDEN PLANT LIST

BOTANICAL NAME	COMMON NAME	QUANTITY	SIZE
A – ASTERACEAE ASTER	ASTER SPP.	18	1-GAL.
E – ECHINACEA PURPUREA	PURPLE CONEFLOWER	18	1-GAL.
P – PANICUM VIRGATUM	SWITCH GRASS	18	1-GAL.
R – RUDBECKIA HIRTA	BLACK EYED SUSAN	18	1-GAL.

TRIANGULAR SPACING PATTERN
SPACING: 24" O.C.
PLANTING AREA: 250 SFT.
TOTAL PLANTS: 72

RAIN GARDEN PLANTING ENLARGEMENT

SCALE: 1" = 10'

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS

DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: 1" = 20'

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ARGO PARK LIVERY

LANDSCAPE PLAN SHEET

REV:

SHT# 13 OF 20

JOB No: 20C0027

PLOTTED: 2/23/2021 10:01 AM
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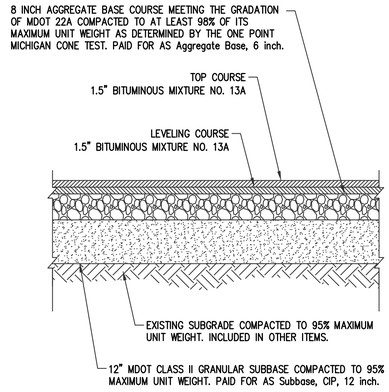
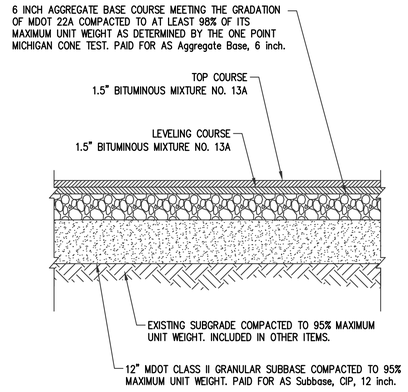


ASPHALT IN ROW - SECTION
NOT TO SCALE



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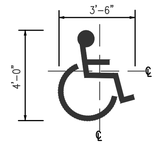
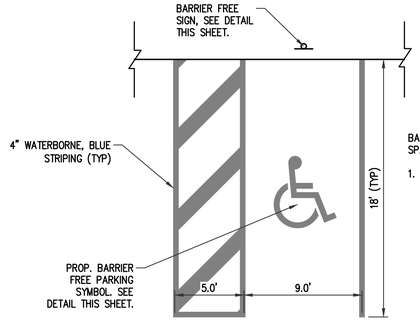


BARRIER FREE PARKING SYMBOL NOTES:

1. SYMBOL SHALL BE APPLIED AT A WIDTH OF 4"
2. MATERIAL SHALL BE BLUE WATERBORNE
3. CENTERLINE OF SYMBOL SHALL BE PARALLEL TO PARKING STALL STRIPE AND IN CENTER OF STALL.
4. PAVEMENT MARKING SYMBOL COST INCLUDED IN PAY ITEM Pavement Markings.

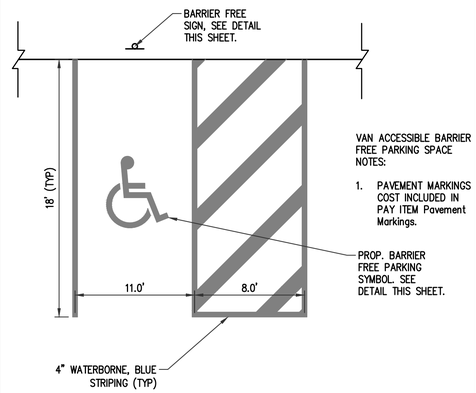
BARRIER FREE SYMBOL
NOT TO SCALE



BARRIER FREE PARKING SPACE NOTES:

1. PAVEMENT MARKINGS COST INCLUDED IN PAY ITEM Pavement Markings.

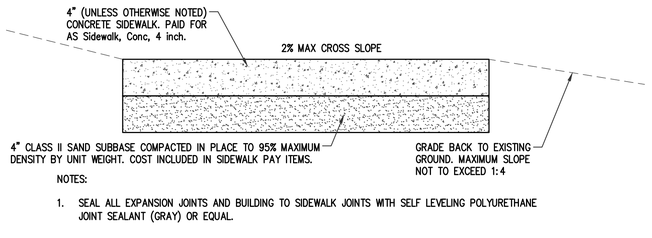
BARRIER FREE PARKING SPACE
NOT TO SCALE



VAN ACCESSIBLE BARRIER FREE PARKING SPACE NOTES:

1. PAVEMENT MARKINGS COST INCLUDED IN PAY ITEM Pavement Markings.

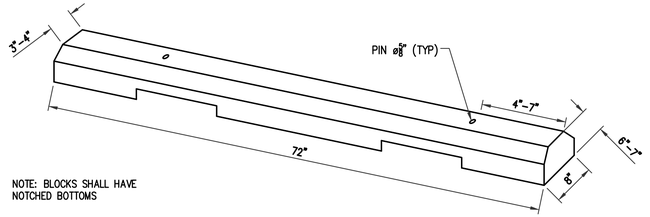
VAN ACCESSIBLE BARRIER FREE PARKING SPACE
NOT TO SCALE



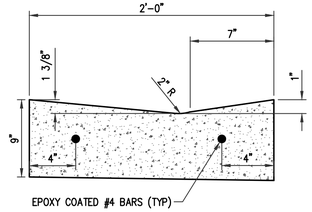
NOTES:

1. SEAL ALL EXPANSION JOINTS AND BUILDING TO SIDEWALK JOINTS WITH SELF LEVELING POLYURETHANE JOINT SEALANT (GRAY) OR EQUAL.

CONCRETE SIDEWALK - SECTION
NOT TO SCALE



CONCRETE BUMPER BLOCK
NOT TO SCALE

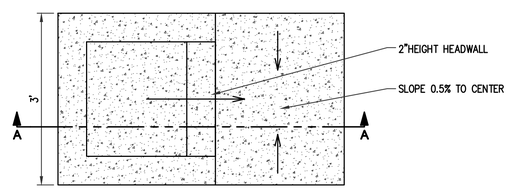


VALLEY CURB DETAIL
NOT TO SCALE

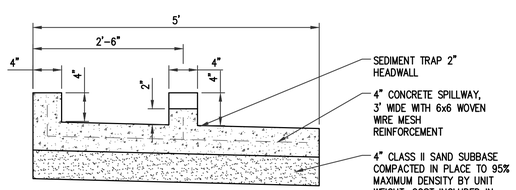
BARRIER FREE PARKING SIGNAGE NOTES:

1. ALL SIGNS SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, LATEST EDITION.
2. ALL BARRIER FREE PARKING SIGNS SHALL ON 3LB STEEL POST.
3. SIGNS COST INCLUDED IN PAY ITEM Permanent Traffic Signs.

BARRIER FREE SIGN
NOT TO SCALE

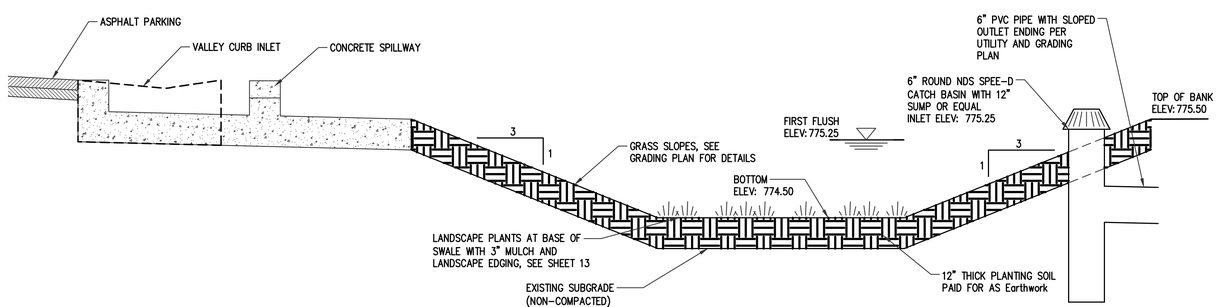


PLAN



SECTION A-A

CONCRETE SPILLWAY DETAIL
NOT TO SCALE



RAIN GARDEN DETAIL
NOT TO SCALE

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

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540 S. Saginaw St., Suite 200
Flint, MI 48502
O: (810) 341-7500
F: (810) 341-7573
www.rowepsc.com

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

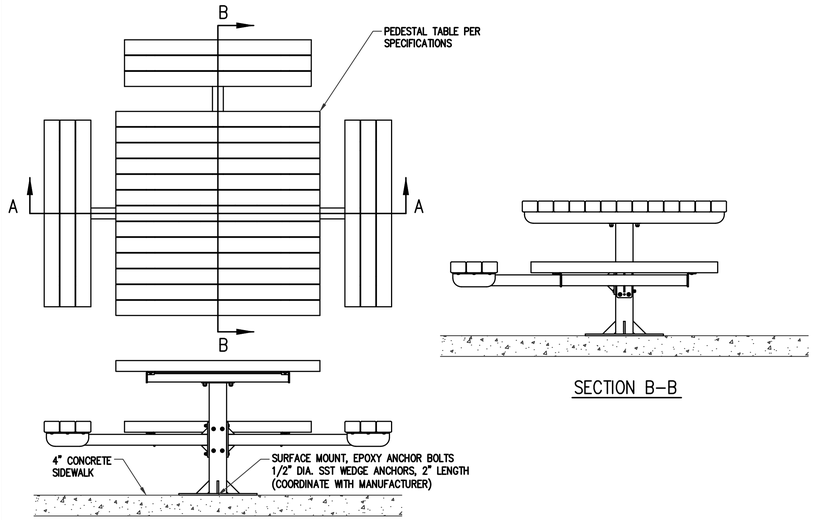
SITE DETAILS SHEET

REV:

SHT# 14 OF 20

JOB No: 20C0027

PLOTTED: 2/23/2021 10:01 AM R:\Projects\20C0027\Dwg\Construction Drawings\SHT-20C0027-DET.dwg



SECTION B–B

SECTION A–A

ACCESSIBLE TABLE

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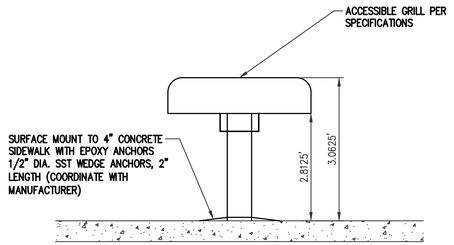
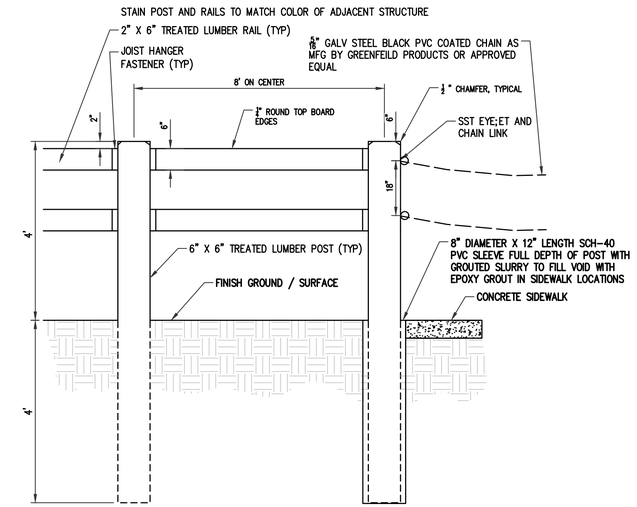


PROFILE

ACCESSIBLE GRILL

NOT TO SCALE

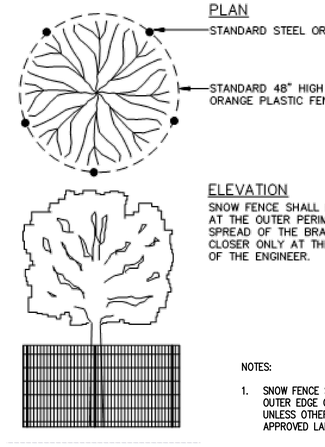


WOOD FENCE

NOT TO SCALE

CHAIN RAILING

NOT TO SCALE

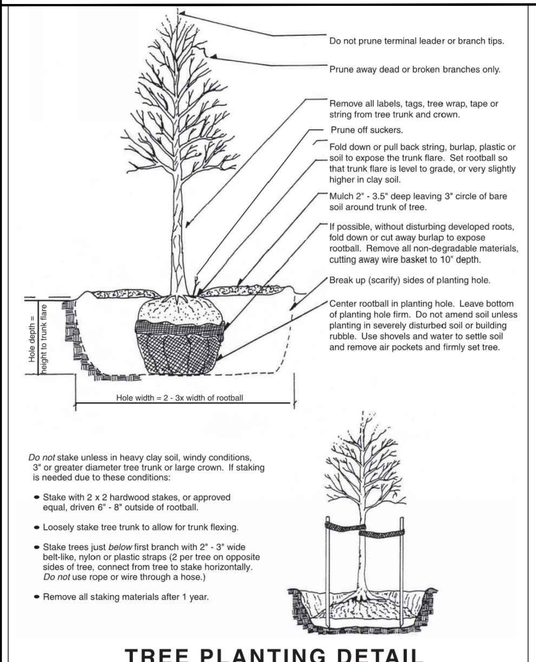


NOTES:

1. SNOW FENCE SHALL BE LOCATED AT THE OUTER EDGE OF THE CRITICAL ROOT ZONE UNLESS OTHERWISE CALLED OUT ON THE APPROVED LANDSCAPE PLAN.

TREE PROTECTION

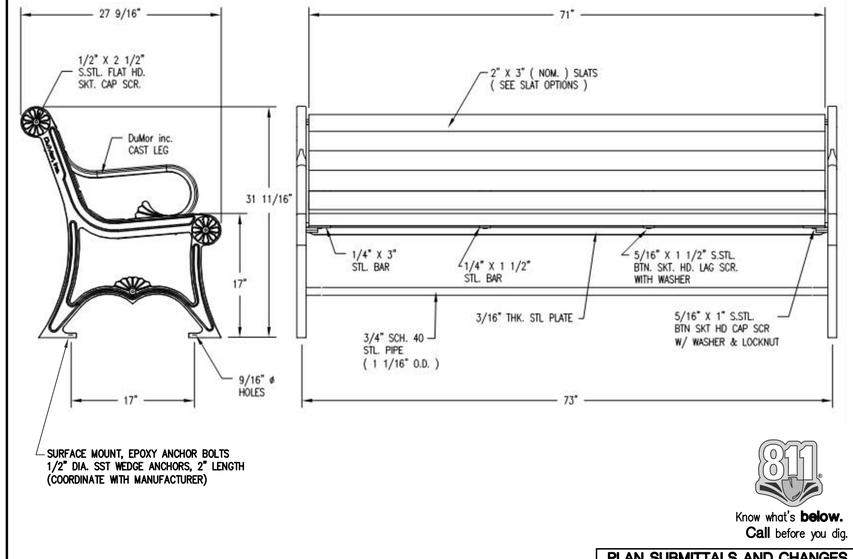
NOT TO SCALE



TREE PLANTING DETAIL

SCALE: NO SCALE

Original: Dr. Bonnie Appleton, Virginia Polytechnic Institute and State University, modified by the Michigan Department of Natural Resources, Forest Management Division, and the City of Ann Arbor.



BENCH

NOT TO SCALE

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PLAN SUBMITTALS AND CHANGES

PRELIMINARY PLANS – **NOT FOR CONSTRUCTION**

DATE	DESCRIPTION
12-2-20	90% REVIEW MDNR

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PLAN DATE: JANUARY 2021
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SCALE: NOT TO SCALE

PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

SITE DETAILS SHEET

REV:

SHT# 15 OF 20

JOB No: 20C0027

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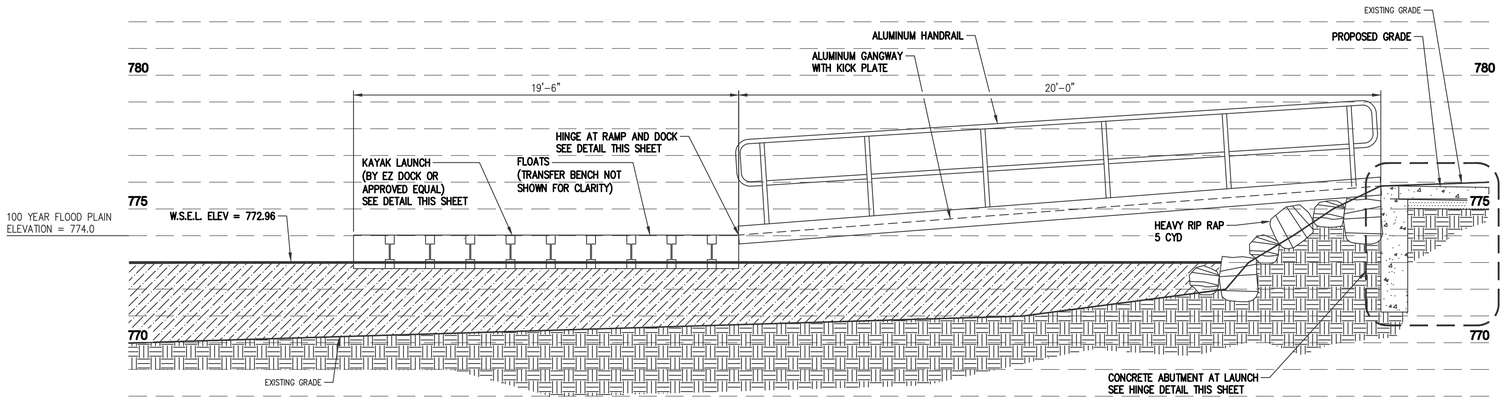
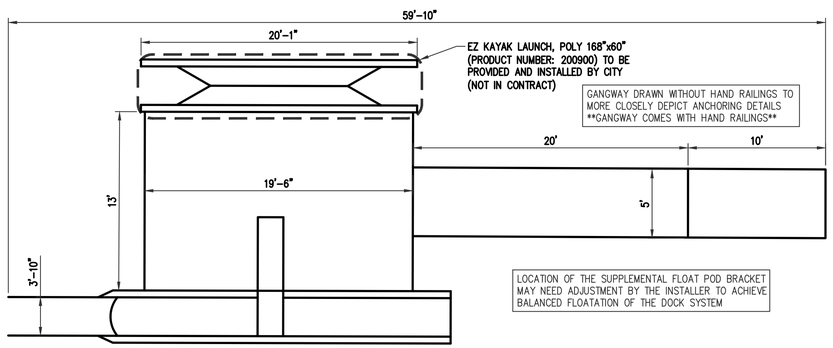
PLOTTED: 2/23/2021 10:01 AM



KAYAK LAUNCH SECTION

NOT TO SCALE

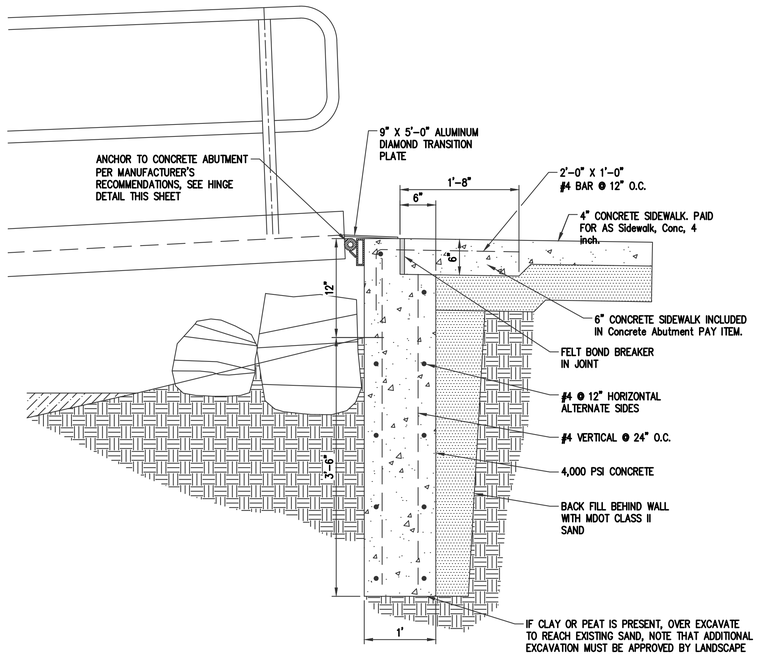
DOCK LIVE LOAD OF 62.5 LBS/SFT



PLAN

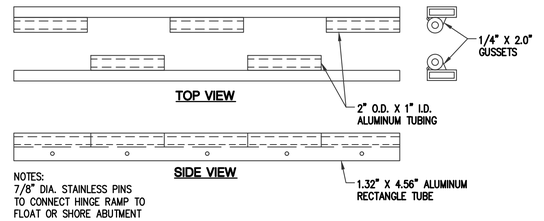
EZ LAUNCH

NOT TO SCALE



CONCRETE ABUTMENT AT LAUNCH

NOT TO SCALE



HINGE DETAIL

NOT TO SCALE

811
Know what's **below.**
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PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

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PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

KAYAK LAUNCH DETAILS SHEET

REV:

SHT# 16 OF 20

JOB No: 20C0027

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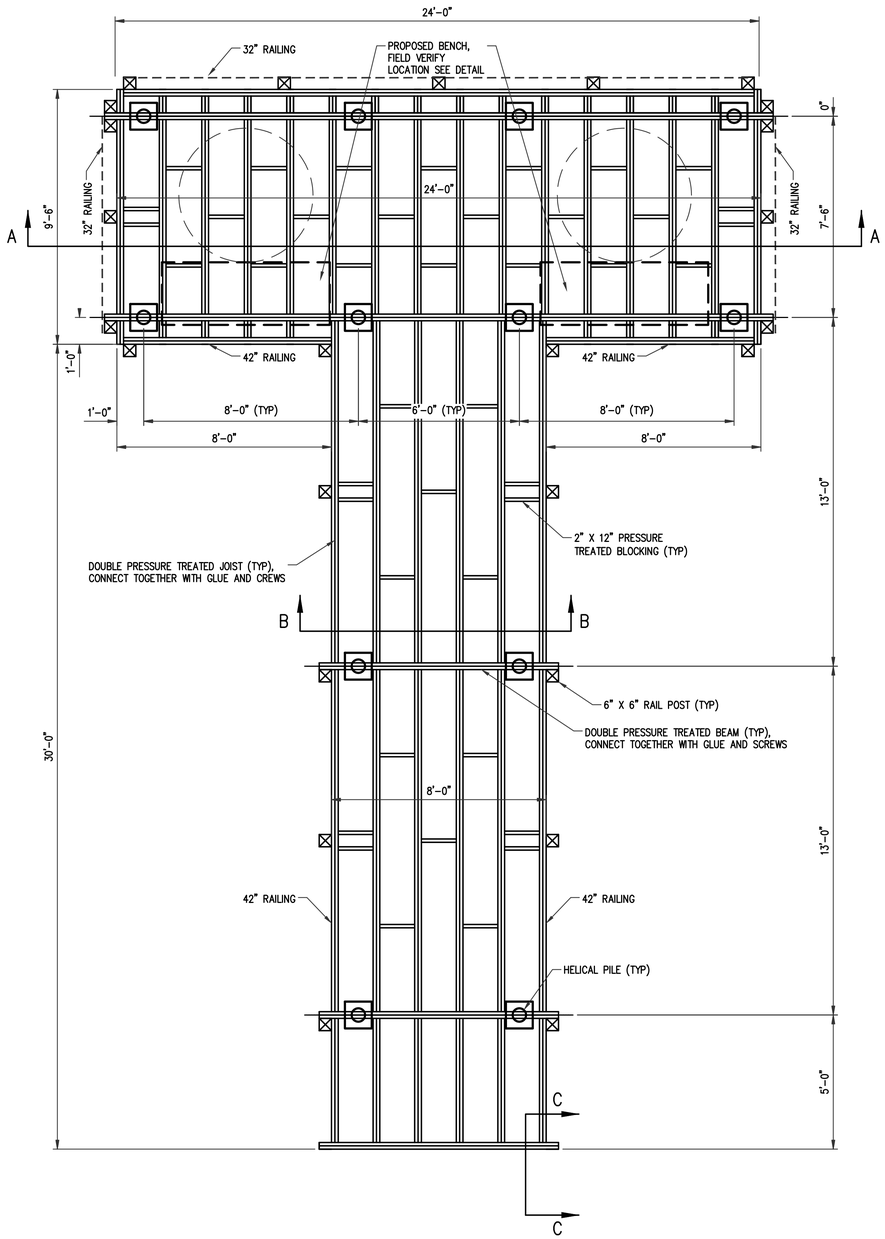
PLOTTED: 2/23/2021 10:01 AM



BOARDWALK FRAMING - PLAN

SCALE: 3/8" = 1'-0"

BOARDWALK NOTES:

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, PEDESTRIAN LOADING OF 90 PSF AND A MAINTENANCE VEHICLE H10 LOADING, NOT ACTING CONCURRENTLY.

ALL WORK AND MATERIALS REQUIRED TO INSTALL TIMBER BOARDWALK WILL BE PAID FOR AS Structure, Timber, Boardwalk.

ALL LUMBER MATERIALS SHALL BE PRESSURE TREATED WITH AN APPROVED PROCESS AND PRESERVATION IN ACCORDANCE WITH AMERICAN WOOD PROTECTION ASSOCIATION STANDARDS. SUITABLE FOR GROUND CONTACT.

ALL LUMBER SHALL BE IDENTIFIED BY THE GRADE MARK OF OR CERTIFICATE OF INSPECTING AGENCY.

ALL LUMBER SHALL BE SOUTHERN YELLOW PINE, GRADE OF LUMBER AS INDICATED IN THE SPECIAL PROVISIONS WITH PRESERVATION TREATMENT WITH RETENTION LEVEL OF 0.4 (LB/CU.FT.) OF ACQ-B.

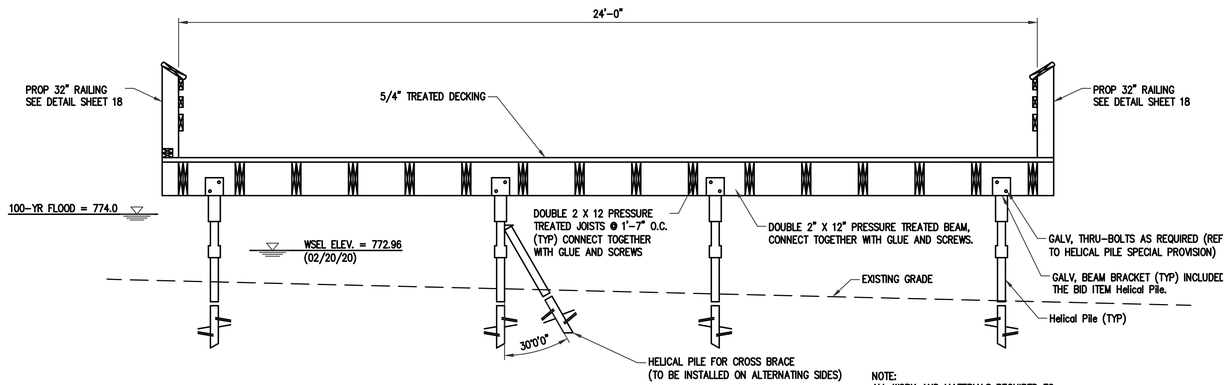
ALL SCREWS, BOLTS, AND NAILS SHALL BE HOT-DIPPED GALVANIZED STEEL.

ALL METAL HARDWARE INCLUDING JOIST HANGERS SHALL BE HOT-DIPPED GALVANIZED STEEL.

ALL NAILS SHALL MEET THE REQUIREMENTS OF ASTM F-1667.
WOOD SCREWS SHALL MEET THE REQUIREMENTS OF ANSI/ASME B18.2.1.
THREADED NAILS SHALL INCLUDE HELICAL (SPIRAL) AND ANNULAR (RING-SHRANK) NAILS.

VERTICAL HELICAL PILES SHALL BE INSTALLED TO A MINIMUM ULTIMATE PILE CAPACITY OF 22 KIPS.

DESIGN HELICAL PILE SYSTEM FOR A DESIGN LIFE OF 50 YEARS.



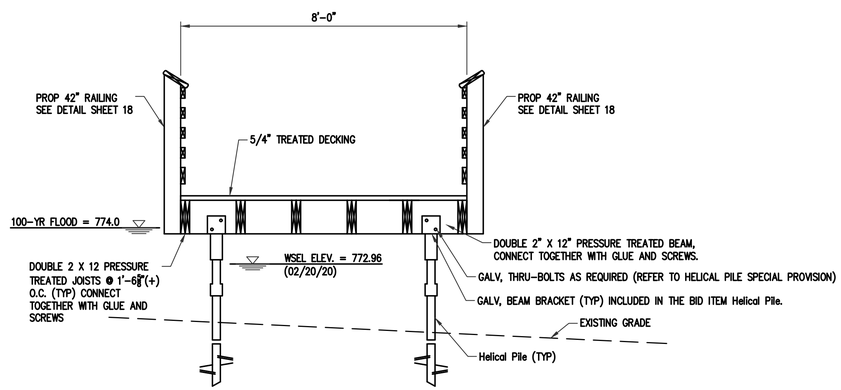
PROPOSED TYPICAL 24 FOOT BOARDWALK SECTION A-A

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

NOTE:
ALL WORK AND MATERIALS REQUIRED TO INSTALL BOARDWALK, AS SHOWN, EXCEPT Helical Pile, IS INCLUDED IN Structure, Timber, Boardwalk PAY ITEM BY THE FOOT AND NOT PAID FOR SEPARATE.

100-YR FLOOD =

WSEL ELEV. = 7



PROPOSED TYPICAL 8 FOOT BOARDWALK SECTION B-B

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

NOTE:
ALL WORK AND MATERIALS REQUIRED TO INSTALL BOARDWALK, AS SHOWN, EXCEPT Helical Pile, IS INCLUDED IN Structure, Timber, Boardwalk PAY ITEM BY THE FOOT AND NOT PAID FOR SEPARATE.

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

PLAN SUBMITTALS AND CHANGES	
BIDDING DOCUMENTS	
DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

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PREPARED FOR
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ARGO PARK LIVERY

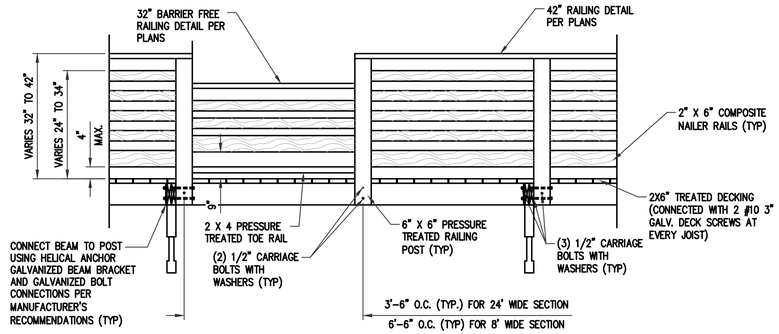
BOARDWALK DETAILS SHEET

REV:

SHT# 17 OF 20

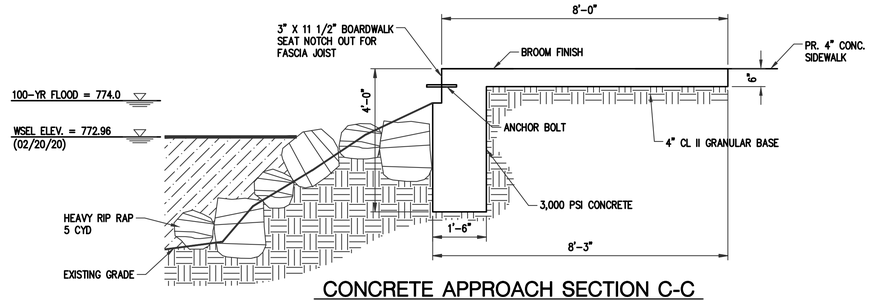
JOB No: 20C0027

PLOTTED: 2/23/2021 10:01 AM
R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-DET 2.dwg



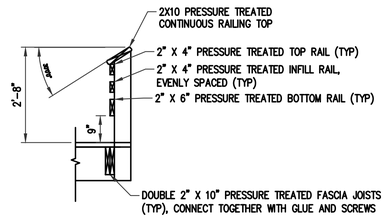
BOARDWALK RAILING ELEVATION

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



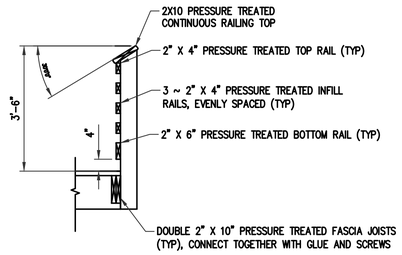
CONCRETE APPROACH SECTION C-C

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



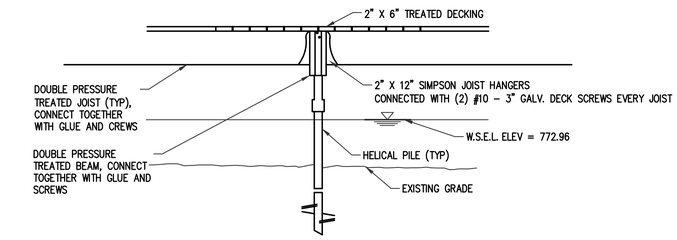
PROPOSED TYPICAL 32" RAILING DETAIL

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



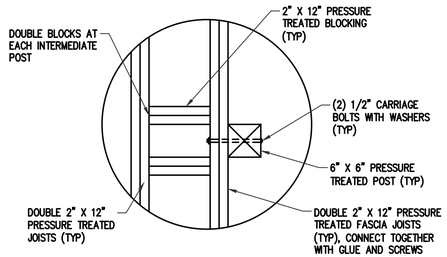
PROPOSED TYPICAL 42" RAILING DETAIL

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



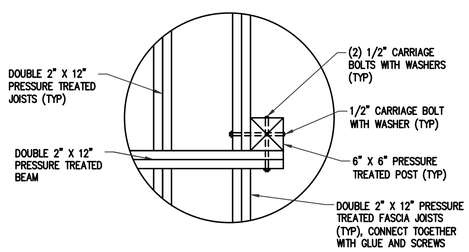
BOARDWALK FRAMING CONNECTION

NOT TO SCALE



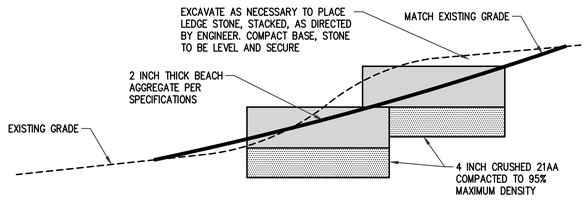
RAIL POST CONNECTION DETAIL

SCALE: 1" = 1'-0"



RAIL POST CONNECTION DETAIL - AT BEAM

SCALE: 1" = 1'-0"



LEDGE STONE / BEACH AGGREGATE SECTION DETAIL

NOT TO SCALE

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS

DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

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BOARDWALK DETAILS SHEET

REV:

SHT# 18 OF 20

JOB No: 20C0027

PLOTTED: 2/23/2021 10:01 AM R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-DET 2.dwg

BORING SB-01

DATE STARTED: 3/3/20 **DATE COMPLETED:** 3/3/20
COMPLETION DEPTH 5.0 ft
BENCHMARK: N/A
ELEVATION: 777 ft
LATITUDE:
LONGITUDE:
STATION: N/A **OFFSET:** N/A
REMARKS: None

DRILL COMPANY: PSI
DRILLER: J. Hurshman **LOGGED BY:** A. Alhowshabi
DRILL RIG: CME-55
DRILLING METHOD: 3 1/4" HSA
SAMPLING METHOD: SS
HAMMER TYPE: Automatic
EFFICIENCY N/A
REVIEWED BY: M. Nabil / T. Khalaff / P. Cook

Water		
▽	While Drilling	N/A
▼	Upon Completion	N/A
▼	Cave Depth	N/A

BORING LOCATION: See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ● Moisture ◪ PL ◆ LL (0–50) STRENGTH, tsf ▲ Qu ✳ Qp (0–4.0)	Additional Remarks
	0					6" CRUSHED STONE					
						Dark gray and brown medium SAND with Silt, trace Gravel, trace Clay, moist (FILL)			6	×	
775				1	16			8-6-12-10 N=18	15		
	5			2	13			5-5-6-5 N=11	8	×	
						Boring terminated approximately 5 feet below existing ground surface.					

intertek psi
Professional Service Industries, Inc.
3120 Sovereign Drive, Suite C
Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0406-522
PROJECT: Argo Park and Livery Improvements
LOCATION: 1055 Longshore Drive, Ann Arbor, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

Sheet 1 of 1

BORING SB-02

DATE STARTED: 3/3/20 **DATE COMPLETED:** 3/3/20
COMPLETION DEPTH 20.0 ft
BENCHMARK: N/A
ELEVATION: 777 ft
LATITUDE:
LONGITUDE:
STATION: N/A **OFFSET:** N/A
REMARKS: None

DRILL COMPANY: PSI
DRILLER: J. Hurshman **LOGGED BY:** A. Alhowshabi
DRILL RIG: CME-55
DRILLING METHOD: 3 1/4" HSA
SAMPLING METHOD: SS
HAMMER TYPE: Automatic
EFFICIENCY N/A
REVIEWED BY: M. Nabil / T. Khalaff / P. Cook

Water		
▽	While Drilling	4 feet
▼	Upon Completion	4 feet
▼	Cave Depth	4 feet

BORING LOCATION: See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ● Moisture ◪ PL ◆ LL (0–50) STRENGTH, tsf ▲ Qu ✳ Qp (0–4.0)	Additional Remarks
	0					4" CRUSHED STONE					
775				1	13	Dark brown CLAYEY SILT with Sand, trace Gravel, moist (FILL)		3-4-5 N=9	9	×	
	5			2	15	Brown SANDY GRAVEL with Silt, trace Clay, wet, medium dense	GPS	8-6-7 N=13	20	×	
770				3	10			16-12-13 N=25	15	×	
	10			4	16	Brown CLAYEY SAND with Silt, trace Gravel, wet, medium dense	SC	8-10-11 N=21	8	×	
765				5	10	Brown SANDY GRAVEL with Clay, trace Silt, wet, very dense	GPS	8-30-28 N=58	20		
	15								10	×	>>
760				6	12	Brown fine to medium SAND with Silt, trace Clay, trace Gravel, wet, extremely dense	SP	27-50/1.5"	26	×	>>
	20					Boring terminated approximately 20 feet below existing ground surface.					

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PROJECT NO.: 0406-522
PROJECT: Argo Park and Livery Improvements
LOCATION: 1055 Longshore Drive, Ann Arbor, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

Sheet 1 of 1

BORING SB-03

DATE STARTED: 3/3/20 **DATE COMPLETED:** 3/3/20
COMPLETION DEPTH 5.0 ft
BENCHMARK: N/A
ELEVATION: 777 ft
LATITUDE:
LONGITUDE:
STATION: N/A **OFFSET:** N/A
REMARKS: None

DRILL COMPANY: PSI
DRILLER: J. Hurshman **LOGGED BY:** A. Alhowshabi
DRILL RIG: CME-55
DRILLING METHOD: 3 1/4" HSA
SAMPLING METHOD: SS
HAMMER TYPE: Automatic
EFFICIENCY N/A
REVIEWED BY: M. Nabil / T. Khalaff / P. Cook

Water		
▽	While Drilling	N/A
▼	Upon Completion	N/A
▼	Cave Depth	N/A

BORING LOCATION: See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ● Moisture ◪ PL ◆ LL (0–50) STRENGTH, tsf ▲ Qu ✳ Qp (0–4.0)	Additional Remarks
	0					6" CRUSHED STONE					
						Dark gray SILTY CLAY with Sand, trace Gravel, moist (FILL)			5	×	
775				1	13			3-4-4-6 N=8	13	×	
						Gray fine to medium SAND with Silt, trace Gravel, trace Clay, moist (FILL)					
	5			2	15			3-4-5-4 N=9	14	×	
						Boring terminated approximately 5 feet below existing ground surface.					

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Lansing, MI 48911
Telephone: (517) 394-5700

PROJECT NO.: 0406-522
PROJECT: Argo Park and Livery Improvements
LOCATION: 1055 Longshore Drive, Ann Arbor, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

Sheet 1 of 1

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BORING LOCATION DIAGRAM
Argo Livery
1055 Longshore Drive
Ann Arbor, Michigan

FIGURE NO. 2
PSI Project No. 0406522
Prepared By: T.K.
Prepared On: 5-13-20

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS

DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

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Flint, MI 48502
O: (810) 341-7500
F: (810) 341-7573
www.rowepsc.com

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

SOIL BORINGS SHEET

REV:

SHT# 19 OF 20
JOB No: 20C0027

R: \Projects\20C0027\Dwg\Construction Drawings\SH-20C0027-NATURAL FEATURES.dwg
PLOTTED: 2/23/2021 10:01 AM

BORING SB-04

DATE STARTED:	3/3/20	**DRILL COMPANY:**	PSI
DATE COMPLETED:	3/3/20	**DRILLER:** J. Hurshman **LOGGED BY:**	Alhowshabi
COMPLETION DEPTH	5.0 ft	**DRILL RIG:**	CME-55
BENCHMARK:	N/A	**DRILLING METHOD:**	3 1/4" HSA
ELEVATION:	778 ft	**SAMPLING METHOD:**	SS
LATITUDE:		**HAMMER TYPE:**	Automatic
LONGITUDE:		**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	M. Nabil / T. Khalaff / P. Cook

REMARKS: None

Water		
▽	While Drilling	N/A
▼	Upon Completion	N/A
▼	Cave Depth	N/A

BORING LOCATION: See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ● × Moisture ◪ PL ◆ LL (0–30)	STRENGTH, tsf ▲ Qu ✱ Qp (0–4.0)	Additional Remarks
	0					6" CRUSHED STONE						
						Dark brown and gray SILTY CLAY with Sand, trace Gravel, moist (FILL)						
				1	13			3-3-4-6 N=7	6	×		
775									10	×		
				2	11			3-4-5-5 N=9	16	×		
	5					Boring terminated approximately 5 feet below existing ground surface.						

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Lansing, MI 48911
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PROJECT NO.: 0406-522
PROJECT: Argo Park and Livery Improvements
LOCATION: 1055 Longshore Drive, Ann Arbor, Michigan

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING SB-05

DATE STARTED:	3/3/20	**DRILL COMPANY:**	PSI
DATE COMPLETED:	3/3/20	**DRILLER:** J. Hurshman **LOGGED BY:**	Alhowshabi
COMPLETION DEPTH	20.0 ft	**DRILL RIG:**	CME-55
BENCHMARK:	N/A	**DRILLING METHOD:**	3 1/4" HSA
ELEVATION:	777 ft	**SAMPLING METHOD:**	SS
LATITUDE:		**HAMMER TYPE:**	Automatic
LONGITUDE:		**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	M. Nabil / T. Khalaff / P. Cook

REMARKS: None

Water		
▽	While Drilling	4 feet
▼	Upon Completion	4 feet
▼	Cave Depth	4 feet

BORING LOCATION: See Boring Location Diagram

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft × Moisture ◪ PL ◆ LL (0–30)	STRENGTH, tsf ▲ Qu ✱ Qp (0–4.0)	Additional Remarks
	0					4" CRUSHED STONE						
				1	13	Dark brown CLAYEY SILT with Sand, trace Gravel, moist (FILL)		3-4-5 N=9	9	×		
775									20	×		
	5			2	15	Brown SANDY GRAVEL with Silt, trace Clay, wet, medium dense	GPS	8-6-7 N=13	15			
770				3	10			16-12-13 N=25	8	×		
				4	16	Brown CLAYEY SAND with Silt, trace Gravel, wet, medium dense	SC	8-10-11 N=21	20			
765	10											
				5	10	Brown SANDY GRAVEL with Clay, trace Silt, wet, very dense	GPS	8-30-28 N=58	10		>>@	
760	15											
				6	12	Brown fine to medium SAND with Silt, trace Clay, trace Gravel, wet, extremely dense	SP	27-50/1.5"	26		>>@	
	20					Boring terminated approximately 20 feet below existing ground surface.						

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PROJECT NO.: 0406-522
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LOCATION: 1055 Longshore Drive, Ann Arbor, Michigan

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SOIL CLASSIFICATION CHART

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO .200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO .200 SIEVE SIZE	SILTS AND CLAYS — LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS — LIQUID LIMIT GREATER THAN 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

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GENERAL NOTES

SAMPLE IDENTIFICATION

The Unified Soil Classification System (USCS), AASHTO 1988 and ASTM designations D2487 and D-2488 are used to identify the encountered materials unless otherwise noted. Coarse-grained soils are defined as having more than 50% of their dry weight retained on a #200 sieve (0.075mm); they are described as: boulders, cobbles, gravel or sand. Fine-grained soils have less than 50% of their dry weight retained on a #200 sieve; they are defined as silts or clay depending on their Atterberg Limit attributes. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size.

DRILLING AND SAMPLING SYMBOLS

- SFA: Solid Flight Auger - typically 4" diameter flights, except where noted.
- HSA: Hollow Stem Auger - typically 3¼" or 4¼ I.D. openings, except where noted.
- M.R.: Mud Rotary - Uses a rotary head with Bentonite or Polymer Slurry
- R.C.: Diamond Bit Core Sampler
- H.A.: Hand Auger
- P.A.: Power Auger - Handheld motorized auger
- SS: Split-Spoon - 1 3/8" I.D., 2" O.D., except where noted.
- ST: Shelby Tube - 3" O.D., except where noted.
- RC: Rock Core
- TC: Texas Cone
- BS: Bulk Sample
- PM: Pressuremeter
- CPT-U: Cone Penetrometer Testing with Pore-Pressure Readings

SOIL PROPERTY SYMBOLS

- N: Standard "N" penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch O.D. Split-Spoon.
- N_{60}: A "N" penetration value corrected to an equivalent 60% hammer energy transfer efficiency (ETR)
- Q_u: Unconfined compressive strength, TSF
- Q_p: Pocket penetrometer value, unconfined compressive strength, TSF
- w%: Moisture/water content, %
- LL: Liquid Limit, %
- PL: Plastic Limit, %
- PI: Plasticity Index = (LL-PL),%
- DD: Dry unit weight, pcf
- ▼,▽,▼ Apparent groundwater level at time noted

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Relative Density	N - Blows/foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	50 - 80
Extremely Dense	80+

ANGULARITY OF COARSE-GRAINED PARTICLES

Description	Criteria
Angular:	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular:	Particles are similar to angular description, but have rounded edges
Subrounded:	Particles have nearly plane sides, but have well-rounded corners and edges
Rounded:	Particles have smoothly curved sides and no edges

GRAIN-SIZE TERMINOLOGY

Component	Size Range
Boulders:	Over 300 mm (>12 in.)
Cobbles:	75 mm to 300 mm (3 in. to 12 in.)
Coarse-Grained Gravel:	19 mm to 75 mm (¾ in. to 3 in.)
Fine-Grained Gravel:	4.75 mm to 19 mm (No.4 to ¾ in.)
Coarse-Grained Sand:	2 mm to 4.75 mm (No.10 to No.4)
Medium-Grained Sand:	0.42 mm to 2 mm (No.40 to No.10)
Fine-Grained Sand:	0.075 mm to 0.42 mm (No. 200 to No.40)
Silt:	0.005 mm to 0.075 mm
Clay:	<0.005 mm

PARTICLE SHAPE

Description	Criteria
Flat:	Particles with width/thickness ratio > 3
Elongated:	Particles with length/width ratio > 3
Flat & Elongated:	Particles meet criteria for both flat and elongated

RELATIVE PROPORTIONS OF FINES

Descriptive Term	% Dry Weight
Trace:	< 5%
With:	5% to 12%
Modifier:	>12%

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GENERAL NOTES

(Continued)

CONSISTENCY OF FINE-GRAINED SOILS

Q_u - TSF	N - Blows/foot	Consistency
0 - 0.25	0 - 2	Very Soft
0.25 - 0.50	2 - 4	Soft
0.50 - 1.00	4 - 8	Firm (Medium Stiff)
1.00 - 2.00	8 - 15	Stiff
2.00 - 4.00	15 - 30	Very Stiff
4.00 - 8.00	30 - 50	Hard
8.00+	50+	Very Hard

MOISTURE CONDITION DESCRIPTION

Description	Criteria
Dry:	Absence of moisture, dusty, dry to the touch
Moist:	Damp but no visible water
Wet:	Visible free water, usually soil is below water table

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term	% Dry Weight
Trace:	<15%
With:	15% to 30%
Modifier:	>30%

STRUCTURE DESCRIPTION

Description	Criteria
Stratified:	Alternating layers of varying material or color with layers at least ¼-inch (6 mm) thick
Laminated:	Alternating layers of varying material or color with layers less than ¼-inch (6 mm) thick
Fissured:	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided:	Fracture planes appear polished or glossy, sometimes striated
Blocky:	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed:	Inclusion of small pockets of different soils
Layer:	Inclusion greater than 3 inches thick (75 mm)
Seam:	Inclusion 1/8-inch to 3 inches (3 to 75 mm) thick extending through the sample
Parting:	Inclusion less than 1/8-inch (3 mm) thick

SCALE OF RELATIVE ROCK HARDNESS

Q_u - TSF	Consistency
2.5 - 10	Extremely Soft
10 - 50	Very Soft
50 - 250	Soft
250 - 525	Medium Hard
525 - 1,050	Moderately Hard
1,050 - 2,600	Hard
>2,600	Very Hard

ROCK BEDDING THICKNESSES

Description	Criteria
Very Thick Bedded	Greater than 3-foot (>1.0 m)
Thick Bedded	1-foot to 3-foot (0.3 m to 1.0 m)
Medium Bedded	4-inch to 1-foot (0.1 m to 0.3 m)
Thin Bedded	1¼-inch to 4-inch (30 mm to 100 mm)
Very Thin Bedded	½-inch to 1¼-inch (10 mm to 30 mm)
Thickly Laminated	1/8-inch to ½-inch (3 mm to 10 mm)
Thinly Laminated	1/8-inch or less "paper thin" (<3 mm)

ROCK VOIDS

Voids	Void Diameter
Pit	<6 mm (<0.25 in)
Vug	6 mm to 50 mm (0.25 in to 2 in)
Cavity	50 mm to 600 mm (2 in to 24 in)
Cave	>600 mm (>24 in)

GRAIN-SIZED TERMINOLOGY

(Typically Sedimentary Rock)

Component	Size Range
Very Coarse Grained	>4.76 mm
Coarse Grained	2.0 mm - 4.76 mm
Medium Grained	0.42 mm - 2.0 mm
Fine Grained	0.075 mm - 0.42 mm
Very Fine Grained	<0.075 mm

ROCK QUALITY DESCRIPTION

Rock Mass Description	RQD Value
Excellent	90 -100
Good	75 - 90
Fair	50 - 75
Poor	25 -50
Very Poor	Less than 25

DEGREE OF WEATHERING

- Slightly Weathered: Rock generally fresh, joints stained and discoloration extends into rock up to 25 mm (1 in), open joints may contain clay, core rings under hammer impact.
- Weathered: Rock mass is decomposed 50% or less, significant portions of the rock show discoloration and weathering effects, cores cannot be broken by hand or scraped by knife.
- Highly Weathered: Rock mass is more than 50% decomposed, complete discoloration of rock fabric, core may be extremely broken and gives clunk sound when struck by hammer, may be shaved with a knife.

Graphic Symbols for Materials and Rock Deposits

- CONCRETE — Portland Cement Concrete
- BITUMINOUS CONCRETE
- CLAYSTONE
- COAL — Coal, Anthracite Coal
- CONGLOMERATE/BRECCIA — Conglomerate, Breccia
- IGNEOUS ROCK — Anorthsite, Basalt, Metabasalt, Diabase (Gabbro), Gabbro, Granite/Granodionite, Homfels, Pegmatite, Rhyolite/Metarhyolite
- LIMESTONE — Limestone, Dolomite
- METAMORPHIC ROCK — Amphibolite, Gneiss, Marble, Phyllite, Quartzite, Schist, Serpentinite, Slate
- CHERT
- SANDSTONE — Sandstone, Orthoquarzite (Sandstone)
- SHALE
- SILTSTONE
- NO RECOVERY
- VOID

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

PLAN SUBMITTALS AND CHANGES

BIDDING DOCUMENTS

DATE	DESCRIPTION
1-15-21	ISSUED FOR BIDS

REV:

SHT# 20 OF 20

JOB No: 20C0027

ROWE PROFESSIONAL SERVICES COMPANY
The Rowe Building
540 S. Saginaw St., Suite 200
Flint, MI 48502
O: (810) 341-7500
F: (810) 341-7573
www.rowepsc.com

PLAN DATE: JANUARY 2021
PROJECT MGR: DRS
REVIEWER: AW
SCALE: NOT TO SCALE

PREPARED FOR
CITY OF ANN ARBOR PARKS & REC
ARGO PARK LIVERY

SOIL BORINGS SHEET

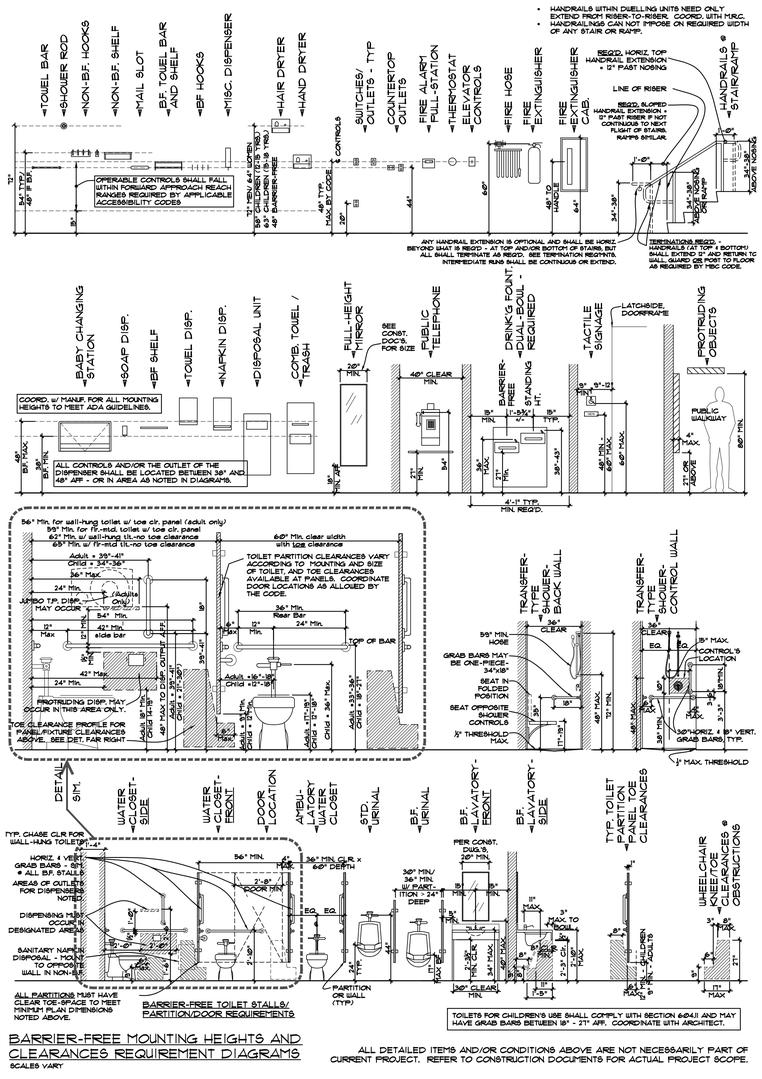
R:\Projects\20C0027\Dwg\Construction Drawings\SH-20C0027_-NATURAL FEATURES.dwg

PLOTTED: 2/23/2021 10:01 AM

Argo Park Toiletrooms Renovation

Issued For: for Construction

1055 Longshore Dr.
Ann Arbor, Michigan

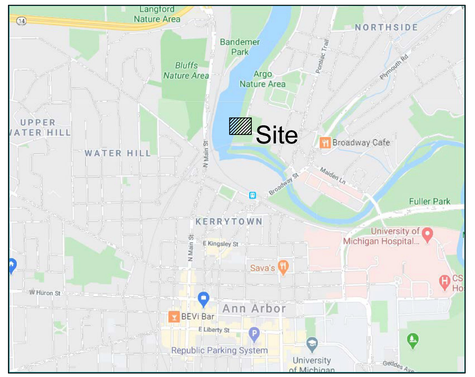


BARRIER-FREE MOUNTING HEIGHTS AND CLEARANCES REQUIREMENT DIAGRAMS

SCALES VARY

ALL DETAILED ITEMS AND/OR CONDITIONS ABOVE ARE NOT NECESSARILY PART OF CURRENT PROJECT. REFER TO CONSTRUCTION DOCUMENTS FOR ACTUAL PROJECT SCOPE.

Sheet Index



T1.1 Location Map
SCALE: none

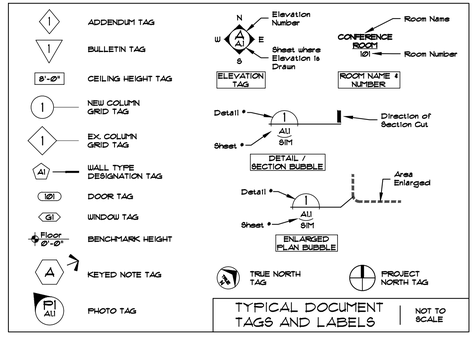
ARGO PARK RENOVATION -

Building Summary:

BUILDING FLOOR AREA:	370 S.F. EX. / 592 S.F. TOTAL
BUILDING FLOOR AREA RENOVATED:	222 S.F.
NON-SPRINKLERED BUILDING	
USE GROUP:	ASSEMBLY (A-2)
CONSTRUCTION TYPE:	IV (EXISTING)
DESIGN OCCUPANCY - EXISTING & UNAFFECTED	

Code References:

2015 MICHIGAN BUILDING CODE (MBC)
2015 MICHIGAN PLUMBING CODE
2015 MICHIGAN MECHANICAL CODE
2017 NATIONAL ELECTRIC CODE - PART 8-ELECTRICAL CODES RULES
BARRIER-FREE - ICC/ANSI A117.1-2009 by REFERENCE
2015 MICHIGAN UNIFORM ENERGY CODE w/ MI. AMENDMENTS - PART 10
2012 MICHIGAN REHABILITATION CODE FOR EXISTING BUILDINGS
ASME A17.1-2007 and A18.1-2008 MICHIGAN ELEVATOR RULE
2015 MICHIGAN RESIDENTIAL CODE w/ MI AMENDMENTS



Owners: City of Ann Arbor Parks & Rec. Dept.

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Date:	Issued For:
8/4/20	90% Owner's Review
1/4/21	99% Owner's Review
02/22/21	For Construction

AAPR Argo Park
1055 Longshore Dr
Ann arbor, MI
Project Number: 2002

Title Sheet

T1.1

CONCRETE

1. All concrete shall have a minimum 28-day compressive strength of 3000 psi.
2. Footings shall rest on undisturbed soil having a minimum bearing capacity of 2500 psf. This bearing capacity shall be verified after excavation and before placement of foundations. The Architect shall be promptly notified if adverse soil conditions are encountered during excavation. All foundations shall bear at the elevations shown on drawings, but in no case less than 42" below construction grade.
3. Reinforcing and concrete shall be detailed, fabricated, placed and cured in accordance with the requirements of the latest edition of ACI standards 301,302,306,315, and 318.
4. Concrete footings shall not be placed on frozen ground.
5. In cold weather construction, protect placed footings from freezing, using straw or other appropriate methods.
6. No admixtures shall be allowed in concrete without the written approval of the architect in advance.
7. Concrete slabs to have steel trowel finish. Reinforcing mesh to be lapped 6" minimum and placed in center of slab. Care shall be taken to prevent penetration of vapor barrier before and during slab placement. Follow Architectural for placement of control joints and as per ACI.
8. No admixtures shall be allowed in concrete.
9. The bottom of all footings shall be placed a minimum of 3'-6" below finished grade. Unless otherwise noted or shown, all foundation walls shall be reinforced with #4's at 16"
10. Coordinate the receipt and placement of all embedments with other trades prior to pouring concrete. Anchor bolts for steel columns shall be carefully placed with a 1/16" variation in 4'-0" tolerance in any direction.
11. Reinforcing used shall conform to the following standards:
    a) Reinforcing bars in concrete and masonry work, unless noted otherwise: ASTM A-615 Grade 60 (Fy=60ksi)
    b) Welded wire mesh:: ASTM A-185 (Fy=60ksi)

MASONRY

1. Provide and install normal-weight masonry units - standard size of 8"x8"x16" and 4"x8"x16" nominal.
2. Provide tooled concaved head and bed joints
3. Cleaning methods shall be appropriate for each type of brick or other masonry material encountered and shall be non-injurious to said material. Cleaning methods shall be in accordance with Brick Institute of America Technical Notes 20 and comply with best industry standards and practices.
4. Tie exterior wythe to back-up with galvanized, corrugated tie straps, installed in mortar joints at not more than 16" O/C vertically and 24" horizontally.
5. Install all lintels and flashing according to The Masonry Institute of Michigan.

STEEL

1. Plates shall conform to ASTM A36.
2. Pipe shall conform to ASTM A53 Grade B.
3. Rectangular, square and round HSS shall conform to ASTM A500, Grade B.
4. Structural steel bolting shall be ¾" diameter ASTM A325 Type N.
5. Nuts shall be heavy-hex and shall conform to ASTM A563.
6. Anchor bolts shall conform to ASTM A307 threaded rods.
7. References:
    a. Steel - A.I.S.C. "Specification for the Design, Fabrication, and Erection f Structural Steel for Buildings, 9th edition.
    b. Welding - American Welding Society ANSI/AWS D1.1-96
8. All exterior steel shall be hot-dip galvanized and primed with a primer that is compatible with the specified paint.
9. Welding shall be in accordance with current "Structural Welding Code - Steel", American Welding Society, AWSD1.1. Electrodes shall be E70XX.

WOOD AND PLASTICS

1. Lumber herein referred to shall conform to the American Lumber Standards, Simplified Recommendations, R-16 Latest Edition. Grades shall conform to the grading rules of the Manufacturers Assoc. under whose rules the lumber is produced.
2. All dimensional lumber shall be #2 & better kiln dried spruce-pine-fir and shall conform to the design criteria below, or as shown on drawings:
    a) Modulus of Elasticity "E" = 1,700,00 psi
    b) Allowable extreme Fiber stress "Fb" =1450 psi
    c) Allowable horiz. shear stress "Fv" = 90 psi
3. Exterior 2x6 framing must be straight and true with no warps, twists, etc.
4. Plywood shall be identified with the appropriate grade trademark of the American Plywood Association and meet the requirements of the latest edition of U.S. Product Standard PS1 for construction and industrial plywood. All plywood which has any edge or surface permanently exposed to the weather shall be exterior grade. Plywood thickness and type is shown on drawings.
5. Roof sheathing shall be ¾" min. exterior plywood Use clips at edge between trusses.
6. Sills over concrete to be pressure-treated, .40 retention, on foam sill sealer. All wood in contact with concrete or exposed to the weather shall be pressure-treated, .40 retention, unless noted otherwise.
7. All joists and rafters shall be set with crown side up, carefully leveled with full bearing at ends and intermediate supports. Use metal joist hangers equal to Simpson Strong-Tie Whenever possible. Absolutely no splicing will be allowed.
8. Plates shall be doubled, lapped at all corners and joists.
9. Exterior siding shall be T1-11 with "z" strips at panel junctions.
10. Exterior trim shall be Azek, (or equal) vinyl pieces with rough-surface exposed.
11. Interior wood trim: All wood trim shall be cedar, prepared for staining/painting.
12. All concealed blocking shall be non-combustible and pressure-treated.

THERMAL AND MOISTURE PROTECTION

1. Sheet Seaming System: Manufacturer's standard materials for sealing lapped joints, including edge sealer to cover exposed spliced edges as recommended by manufacturer.
2. Flashing Material: Manufacturer's standard system compatible with metal roof system.
3. Flashing and Coping: ASTM B209; Prefinished Aluminum; 20 ga.; plain finish shop pre-coated with fluoropolymer coating of color as selected by Architect. Profiles as indicated on the drawings.
4. Metal standing seam roof shall match existing system. Provide Alt. #1 cost to match existing roof an Livery Building - adjacent.
5. Install 36" wide "Ice and Water Shield" by W.R. Grace, "Winterguard" by Certainteed, or approved equal under all new standing seam roof.
6. Air infiltration barrier to be installed on outside face of the sheathing, as required, to be "Barricade Building Wrap" by Simplex, or Tyvek.
7. Provide a water-tight warranty-compliant penetration in the existing roof for the new Toilet Room exhaust fan. Coordinate with the mechanical.
8. Fill all gaps in wall at new windows and doors with foam insulation equal to "Polycel Insulating Sealant" by W.R. Grace.

DOORS AND WINDOWS

1. All exterior glassblock shall be similar to Pittsburgh Corning glass block style - 4" 'Cross Ribbed in 8"x8'x4" units.
2. All interior glass (if req'd.) shall be 1/4" safety glass; clear, and tempered. Provide products which comply with ANSI Z97.1 and testing requirements of 16 CFR Part 1201 for category II mat'ls.
3. Door panels shall conform to the following standards:
    A. Galvannealed Steel Sheets: Zinc-coated carbon steel sheets of commercial quality, complying with ASTM A 526, or drawing quality, ASTM A 653, galvannealed in accordance with ASTM A653 with A60 coating designation, mill phosphatized.
    B. All doors or frames shall be galvanized and be factory primed with an appropriate material that shall adhere to the galvanized material prior to be released from the manufacturer.
    C. All doors shall have a 12" high transfer louver.
    D. Exterior Doors shall meet ANSI/SDI A250.802003 (R2008) (SDI-100), Level 3, Model 2 (seamless), Extra heavy-duty± with 16-gage hot-dipped A60 galvanized steel faces, with galvanized hardware reinforcement. Products shall be galvannealed, or galvanized steel shall be treated to insure proper paint adhesion
4. Provide hollow metal steel integral frames as indicted on drawings. Form frames for all exterior doors of No. 14 ga hot-dipped galvannealed steel. The faces of frames at corners shall be welded - typical for most applications. All required welding at exposed joints shall be continuous and shall be ground flush and smooth. All joints not welded shall be tight (no gaps) leaving only hairline cracks which will readily fill with paint
5. Provide steel, integral louvers at the foot of all door panels
6. Door hardware shall be as follows: Schlage, commercial levered lockset in brushed bronze (verify w/ Owner) with storeroom function (coord. with Owner), closer, sweep and door stops as required. Coordinate with Owner for further details.

FINISHES

1. All existing masonry shall be pressure-washed and new masonry primed and then painted with Sherwin-Williams Duration - or equal. All walls shall be a satin sheen.
2. All new wood surfaces shall be stained/sealed with an exterior semi-transparent finish similar to CWF-Flood, or equal. Colors to be selected by Owner.
3. Hollow metal doors and frames shall be primed with an alkyd-based primer and then painted with Sherwin-Williams Duration, or equal - 2 coats. All metals shall be a satin sheen.
4. Coordinate all plumbing fixtures with Owner.
5. Coordinate all Toilet Accessories with Owner. Mounting heights as required by Code.

ACCESSORIES:

1. Provide Bobrick, or equal, for all Code required grab bars for all (4) ADA toilets similar to B-6806.99 series. 1-1/2" bars with peened finish with satin finish - 2 horiz. and 1 vertical per Code.
2. Toilet Partitions shall be Bobrick, or equal, DuraLine Series panels and all associated fittings for a complete installation. Provide heavy-duty stainless steel brackets and occupancy indicators. Provide a Floor-to-ceiling installation for maximum rigidity.
3. Provide Bobrick, or equal, B-1556 1830 mirrors (stainless steel panels) for each sink.
4. Provide Bobrick, or equal, paper towel dispenser B-262 (1 per Toilet Room), soap dispenser B-211 (1 per Toilet Room), toilet tissue dispenser B-4288 (1 per toilet), coat hook B-211 (1 per Toilet Room).

ALTERNATES:

1. ADD ALTERNATE #1: Remove existing METAL ROOFING from existing construction and install an all new STANDING SEAM ROOFING to match Livery Roof on the full, completed construction.
2. ADD ALTERNATE #2: Provide (2) new Cabanas as shown and noted below in Plans and on Sht. A2.1.
3. ADD ALTERNATE #3: Provide an Invincible Changing Table from Astor Bannerman (Harbor Medical Inc.) with electrical height adjustment in Family Changing Rm #2. Provide electrical power as required with this Alternate. With this Alternate - delete (1) Baby Changing Station at location of Invincible Table.

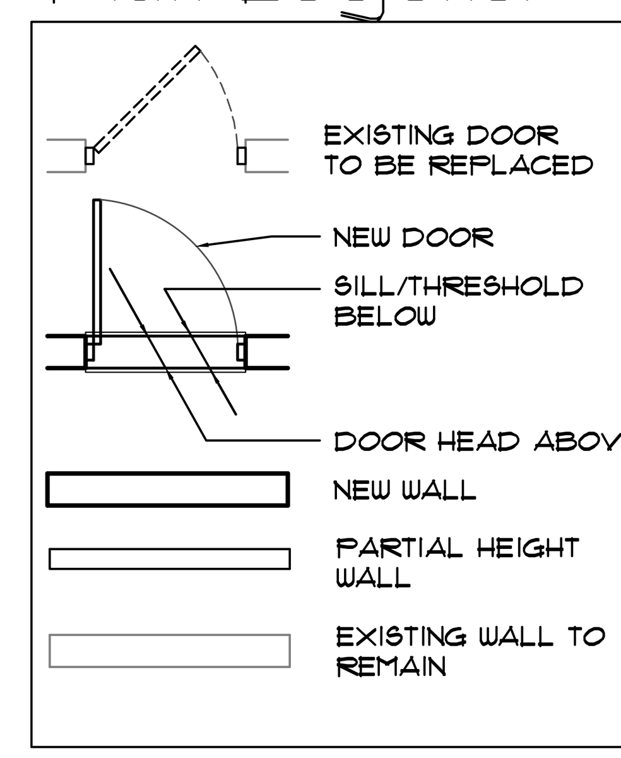
GENERAL DEMOLITION PLAN NOTES

1. ITEMS FOR DEMOLITION ARE INDICATED ON THE DEMOLITION PLANS WITH A DASHED LINE. THE DEMOLITION KEY NOTE TAGS (IF APPLICABLE) ARE FOR ADDITIONAL INFORMATION. THEY DO NOT INDICATE THE LIMITS OF DEMOLITION WORK. COORDINATE WORK INDICATED HEREIN.
2. ALL DEBRIS SHALL BE LEGALLY DISPOSED OF OFF THE SITE BY THE CONTRACTOR.
3. CONTRACTOR SHALL ARRANGE AND PAY FOR CONSTRUCTION REFUSE CONTAINERS AND ANY "TIP FEES" ASSOCIATED THEREWITH. REFUSE MUST BE PLACED IN SAID CONTAINERS AND NOT LEFT ON SITE OR IN BUILDINGS UNDER CONSTRUCTION. THE CONSTRUCTION AREA SHALL BE CLEANED AT THE END OF EACH WORK DAY AND LEFT BROOM CLEAN.
4. TOOTH NEW MASONRY INTO EXISTING WHEREVER INFILL REMAINS EXPOSED TO VIEW - UNLESS OTHERWISE INDICATED
5. PROTECT IN PLACE ALL FIXTURES AND SURFACES SCHEDULED TO REMAIN
6. COORDINATE EXTENT OF ALL DEMOLITION WITH REQUIREMENTS OF NEW CONSTRUCTION, EQUIPMENT AND MILLWORK INSTALLATIONS. SELECTIVELY CUT AND PATCH WALLS AND CEILINGS LOCATED IN OTHERWISE ARCHITECTURALLY UNALTERED AREAS TO COMPLETE ANY NEW MECHANICAL / ELECTRICAL WORK, WHETHER SHOWN ON THE DEMOLITION DRAWINGS OR NOT. COORDINATE ALL WORK WITH MECHANICAL AND ELECTRICAL DRAWINGS AND SPECIFICATIONS.
7. PROCEED WITH CAUTION IN REMOVING WALLS AND ENCLOSURES. OPEN HOLES CAREFULLY TO INVESTIGATE THE PRESENCE OF HVAC, ELECTRICAL AND PLUMBING SYSTEMS. NOTIFY ARCHITECT OF ANY CONFLICT THAT IS IDENTIFIED PRIOR TO CONTINUING WORK. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR RELATED AND ADDITIONAL DEMOLITION AND PATCHING WORK BY MECHANICAL AND ELECTRICAL TRADES THAT MAY BE REQUIRED BY "CUTTING AND PATCHING".
8. REFER TO AND COORDINATE WITH ARCHITECTURAL WALL SECTIONS FOR ADDITIONAL SELECTIVE DEMOLITION - AS REQUIRED.
9. PROVIDE SAFETY FENCING AS REQUIRED BY AAPR TO ISOLATE CONSTRUCTION FROM VISITORS.

GENERAL PLAN NOTES

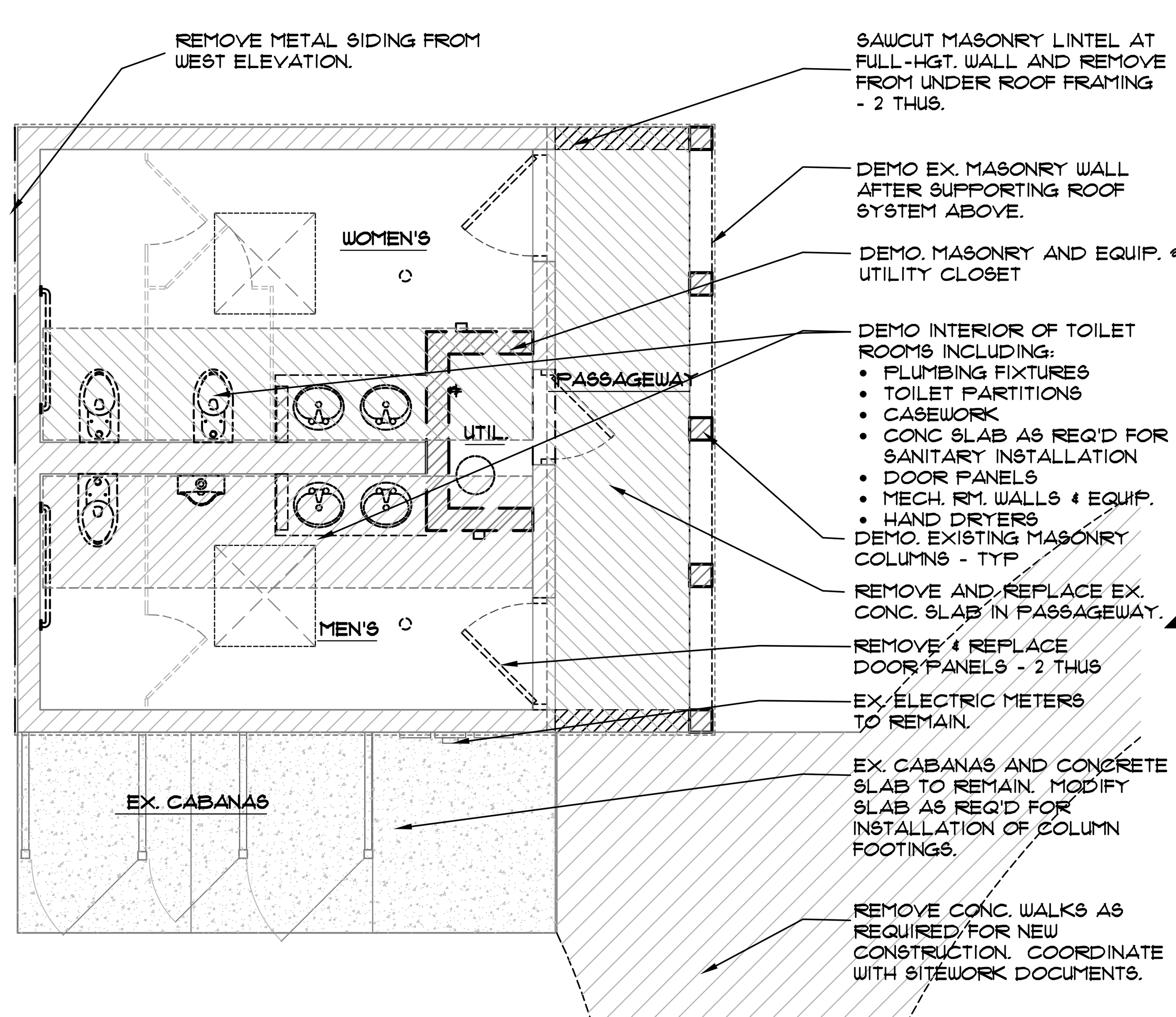
1. CONTRACTORS SHALL VERIFY ALL EXISTING BUILDING DIMENSIONS, PARTITION AND WALL LOCATIONS, AND FLOOR ELEVATIONS IN THE FIELD AND NOTIFY THE ARCHITECT'S REPRESENTATIVE OF ANY DISCREPANCIES BEFORE START OF WORK.
2. FLOOR PLANS ARE DIMENSIONED TO NOMINAL WALL THICKNESS - U.O.N.
3. PROVIDE INTERIOR CMU CONTROL JOINTS AT BOTH JAMBS OF DOORS, WINDOWS, AND OPENINGS.
4. PROVIDE ALL LINTELS REQUIRED FOR OPENINGS AS REQUIRED BY M.I.M. VERIFY QUANTITY, SIZE, AND LOCATION OF ALL FLOOR, ROOF, AND WALL OPENINGS FOR MECHANICAL AND ELECTRICAL WORK WITH THE APPROPRIATE TRADE. PROVIDE ALL OPENINGS SHOWN OR REQUIRED FOR THE COMPLETION OF THE WORK.
5. ALL CONCRETE FLOOR SLABS TO BE REMOVED SHALL BE SAWCUT TO PROVIDE A NEAT, CONTROL JOINT AT JUNCTURE OF NEW AND EXISTING CONCRETE FLOORS.
6. THE INTERIOR OF THE EXISTING CONSTRUCTION SHALL HAVE ALL WALLS AND FLOORS PRESSURE-WASHED IN PREPARATION OF PAINTING. ALL INTERIOR WALLS AND DOOR/FRAMES SHALL BE PAINTED. ALL CONCRETE FLOORS SHALL BE SEALED.
7. ALL EXISTING WOOD CEILING AND WOOD TRIM SHALL BE CLEANED, PREPARED AND STAINED/SEALED.
8. PATCH AND REPAIR ALL HOLES AND DAMAGED AREAS OF EXISTING MASONRY AT INTERIOR AND EXTERIOR.
9. ALL EXTERIOR EX. AND NEW WOOD SURFACES TO BE PREPPED AND STAINED TO MATCH LIVERY
10. ALL EXTERIOR VINYL SURFACES TO BE PREPPED AND PAINTED TO MATCH LIVERY.

Plan Legend

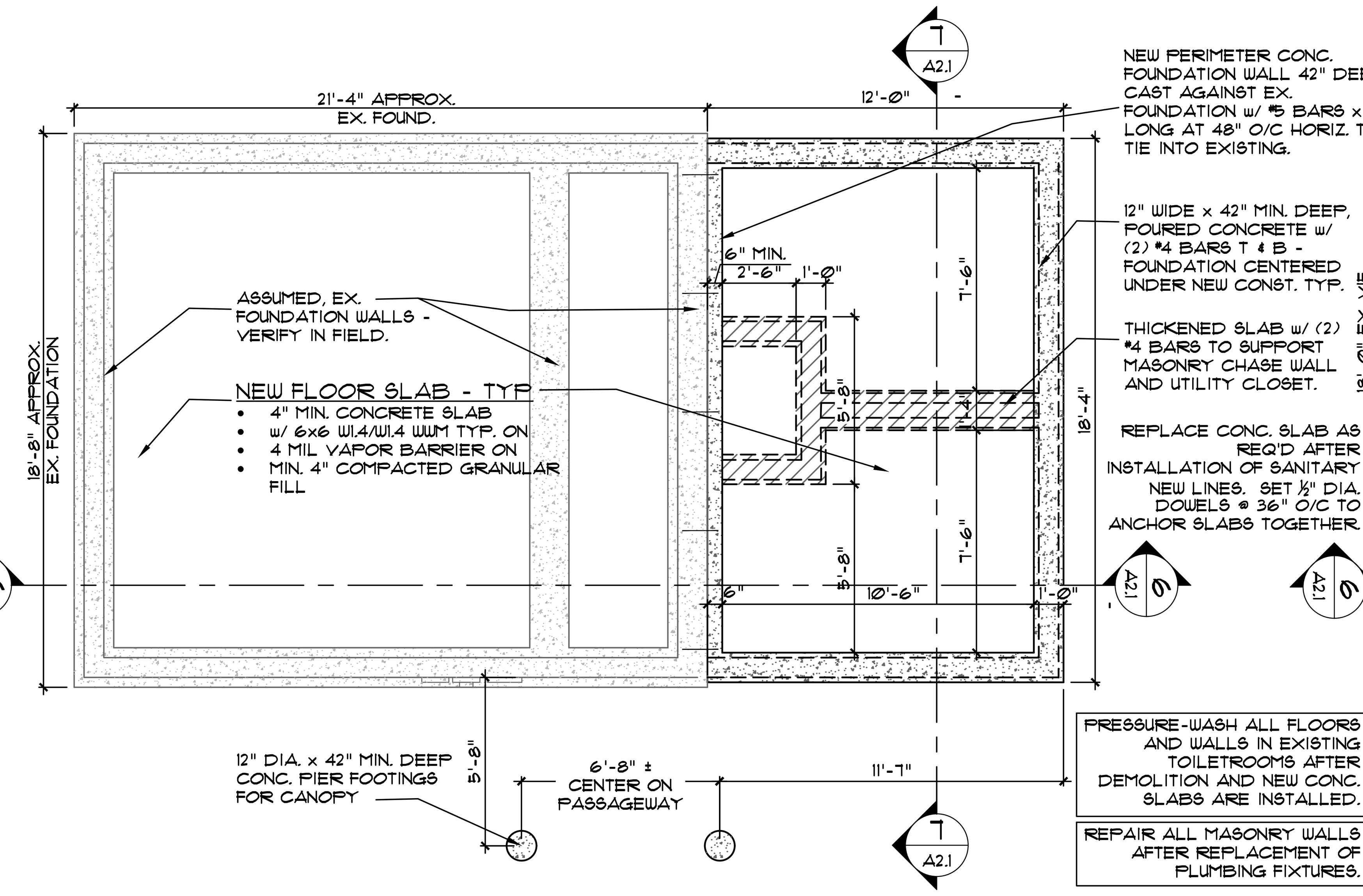


GENERAL NOTES:
1. VERIFY IN FIELD DIMENSIONS AND CONSTRUCTION OF EXISTING BUILDING.
2. PROTECT IN PLACE ALL SURFACES SCHEDULED TO REMAIN.
3. PATCH AND REPAIR EXISTING WALLS LOCATED IN UNALTERED AREAS AFFECTED BY ALL NEW WORK INDICATED, WHETHER PATCHING IS SHOWN ON THE DRAWINGS OR NOT.
5. PLANS AND SPECIFICATIONS DO NOT FULLY REPRESENT ALL NEW WORK. THE CONSTRUCTION DOCUMENTS ARE INTENDED TO TO SERVE AS GENERAL GUIDELINES.
6. REFER TO MECHANICAL, PLUMBING, ELECTRICAL AND STRUCTURAL DRAWINGS FOR ADDITIONAL WORK REQUIRED.
7. DIMENSIONS SHOWN ARE FROM FACE OF MASONRY AND OF TOILET PARTITIONS - UNO.

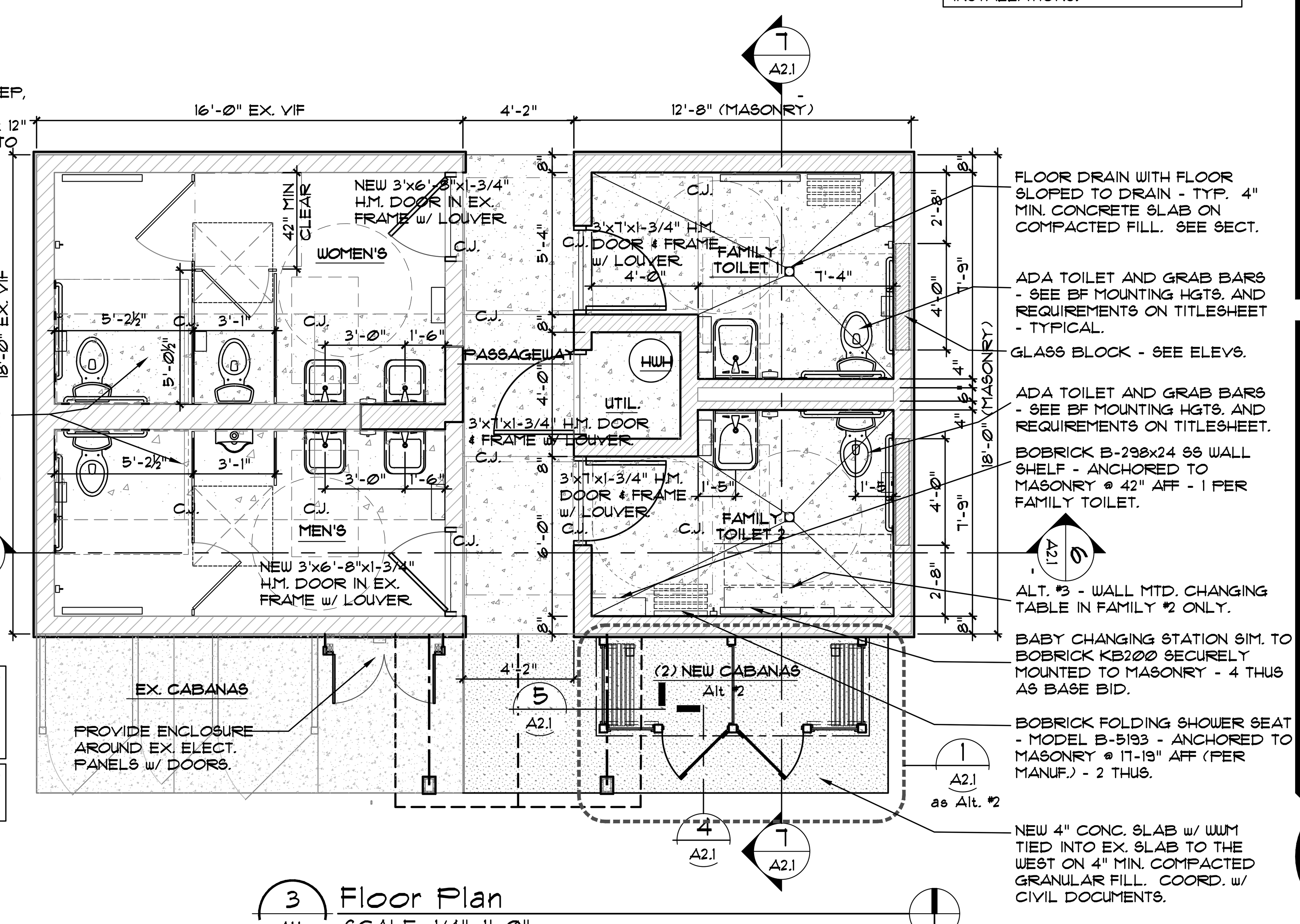
COORDINATE FINAL LOCATIONS AND HEIGHTS OF ALL EQUIPMENT WITH ARCHITECT/OWNER PRIOR TO INSTALLATIONS.



1 A1.1 Demolition Floor Plan
SCALE: 1/4"=1'-0"



2 A1.1 Foundation Floor Plan
SCALE: 1/4"=1'-0"



3 A1.1 Floor Plan
SCALE: 1/4"=1'-0"

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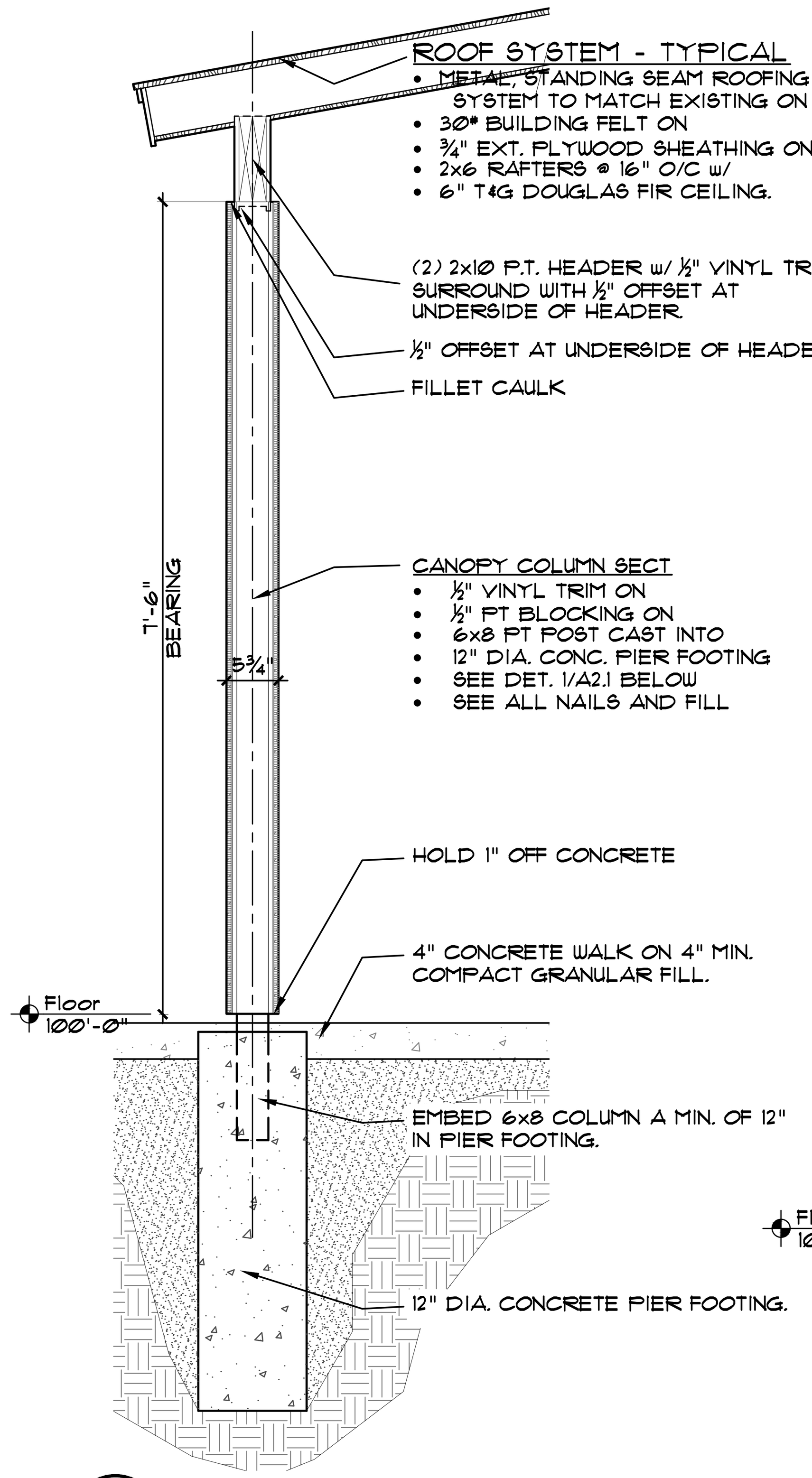
02/22/21	For Construction

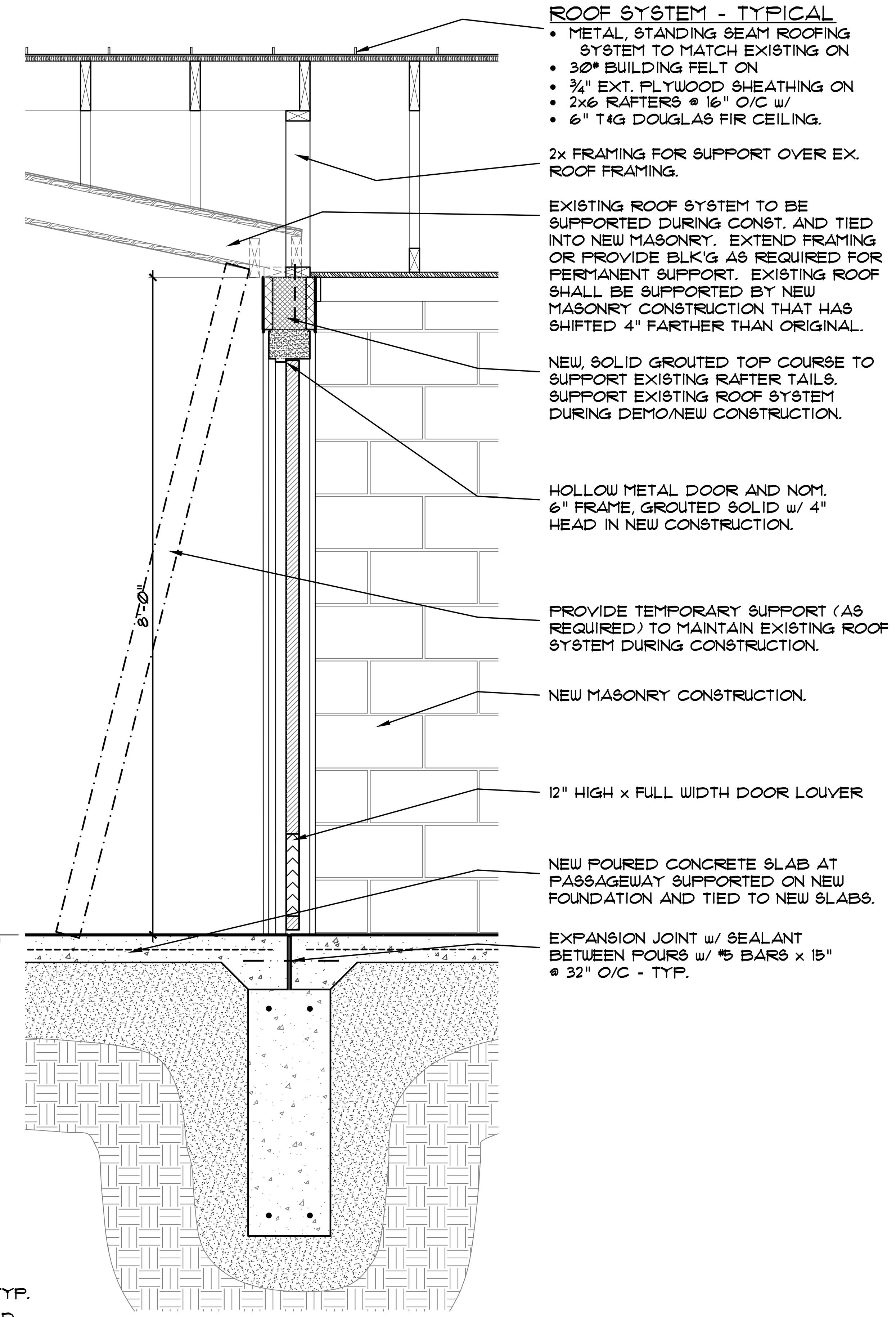
AAPR Argo Park
1055 Longshore Dr
Ann arbor, MI
Project Number: 2002

Demo./Foundation & Floor Plans and Specs.

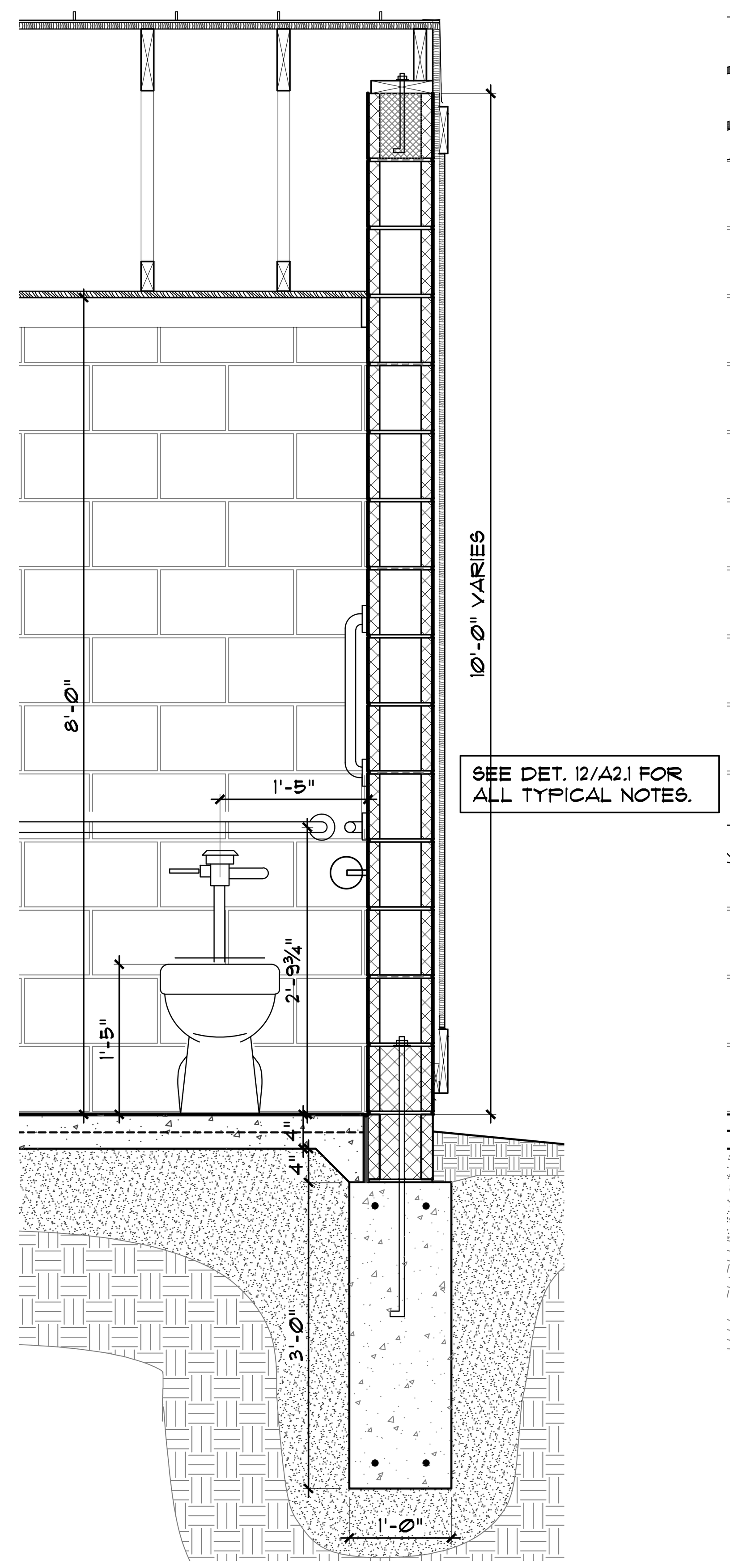
A1.1



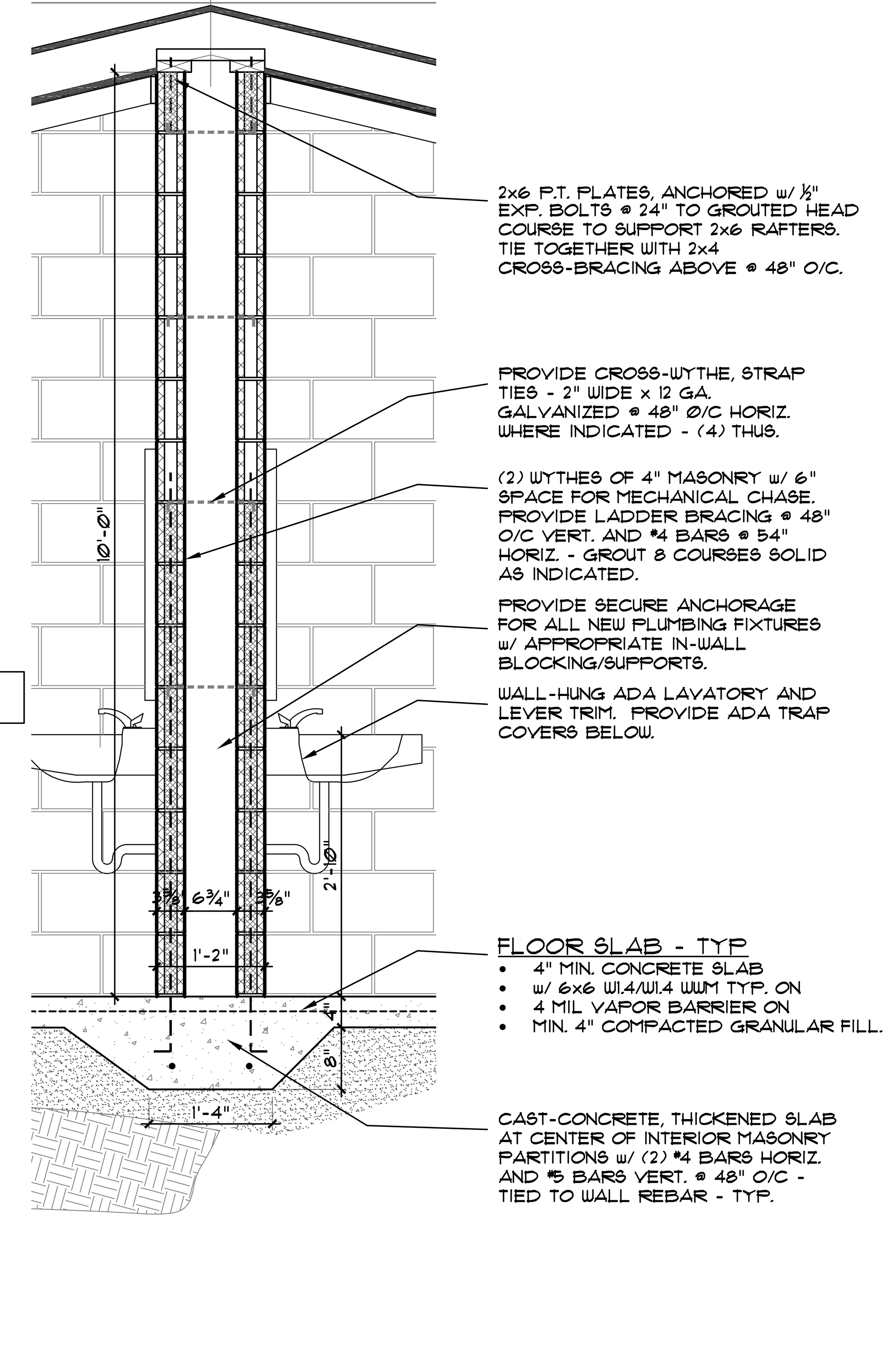
8 Canopy Structure Section
A2.1 SCALE: 3/4"=1'-0"



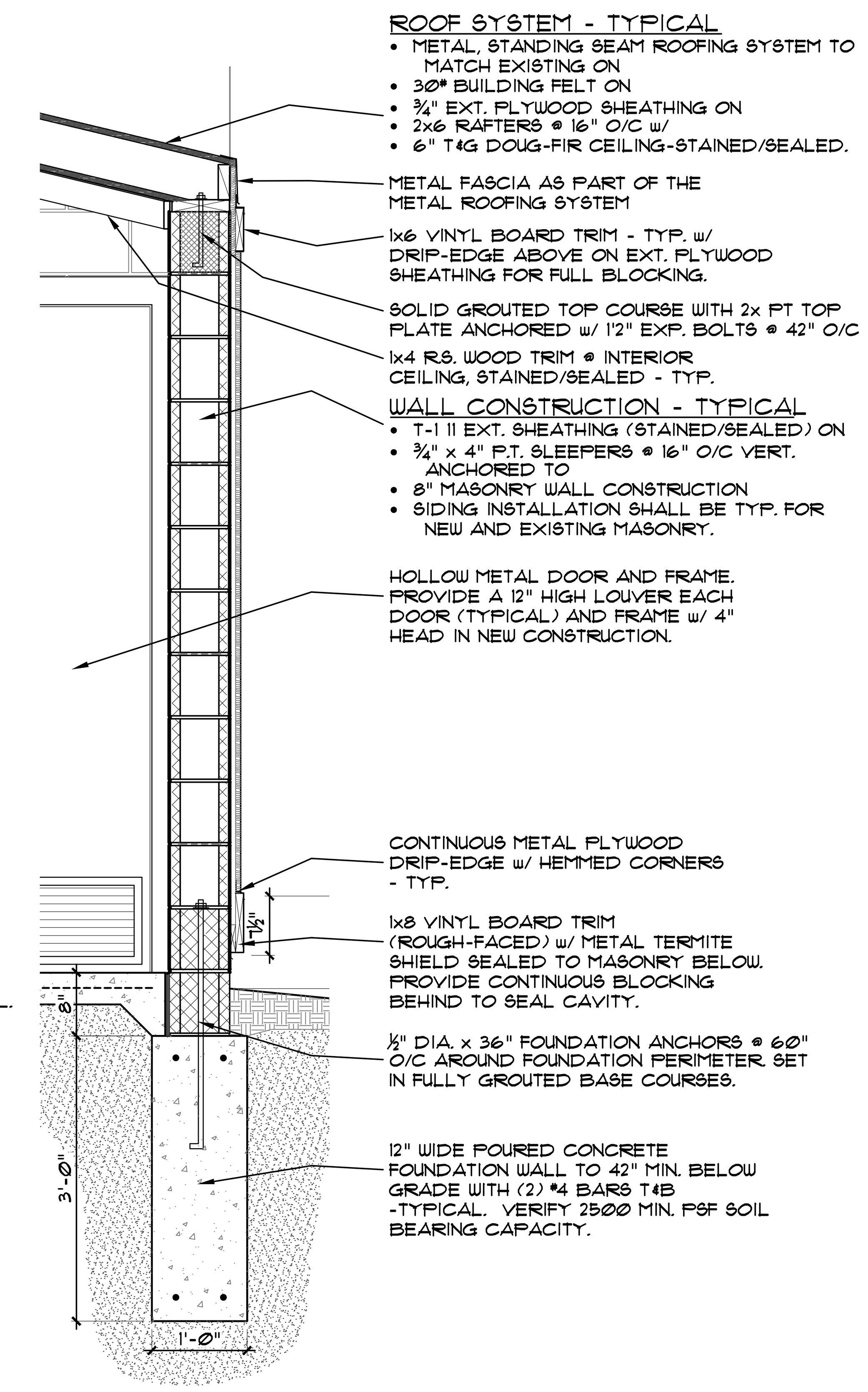
9 Common Wall Section
A2.1 SCALE: 3/4"=1'-0"



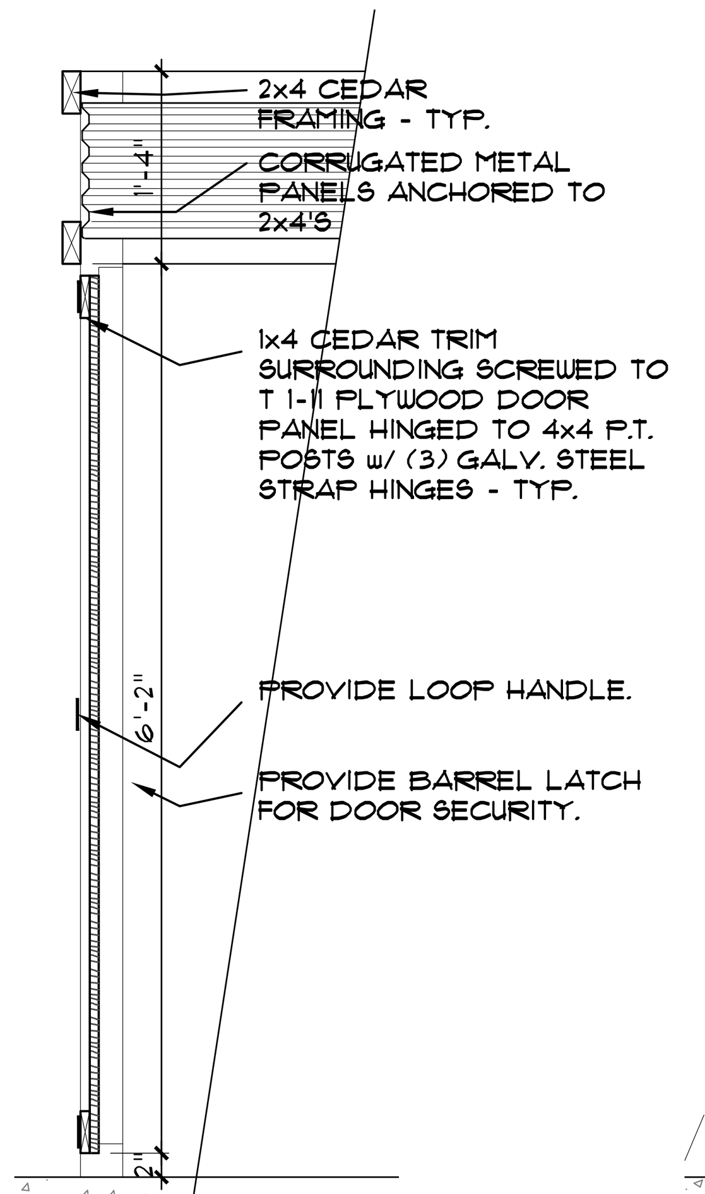
10 Exterior Wall Section
A2.1 SCALE: 3/4"=1'-0"



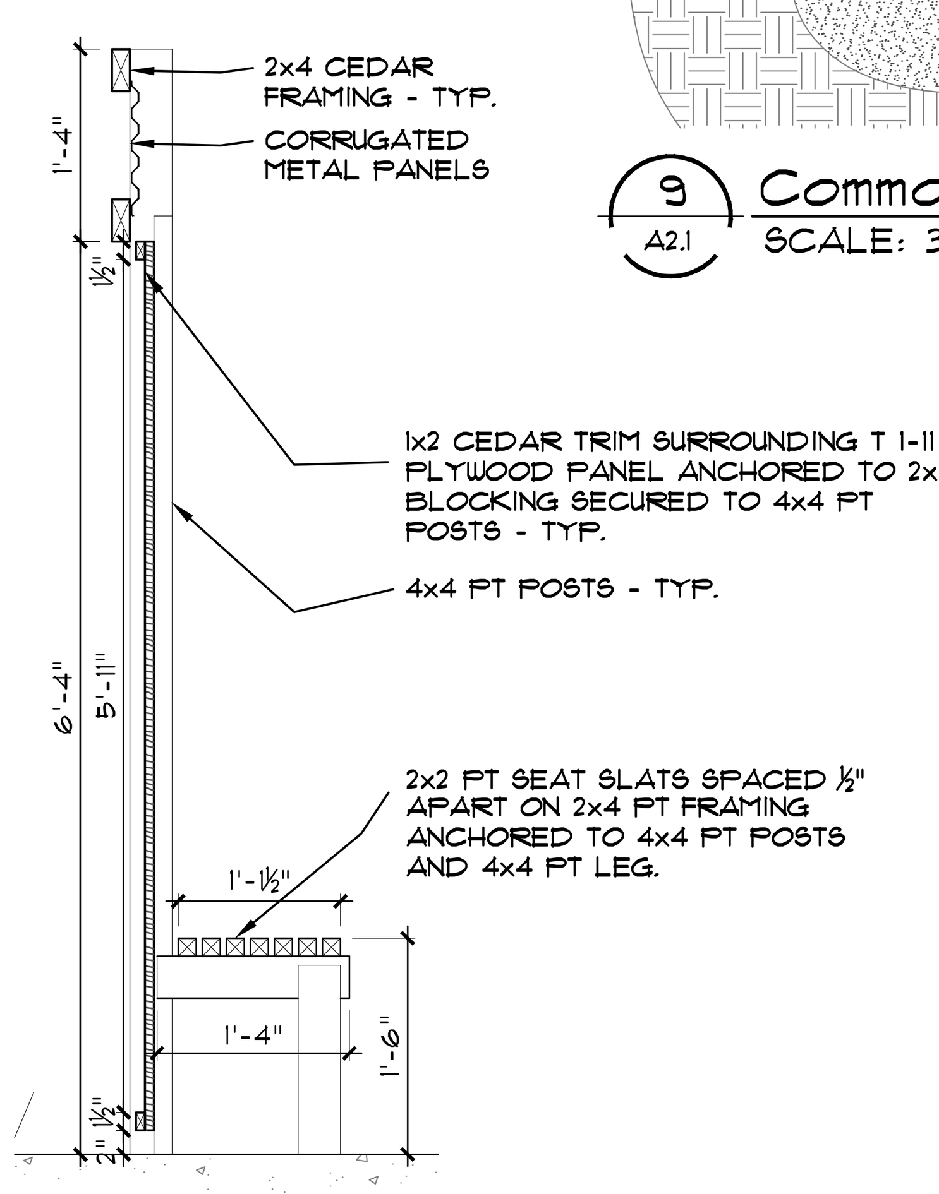
11 Chase Wall Section
A2.1 SCALE: 3/4"=1'-0"



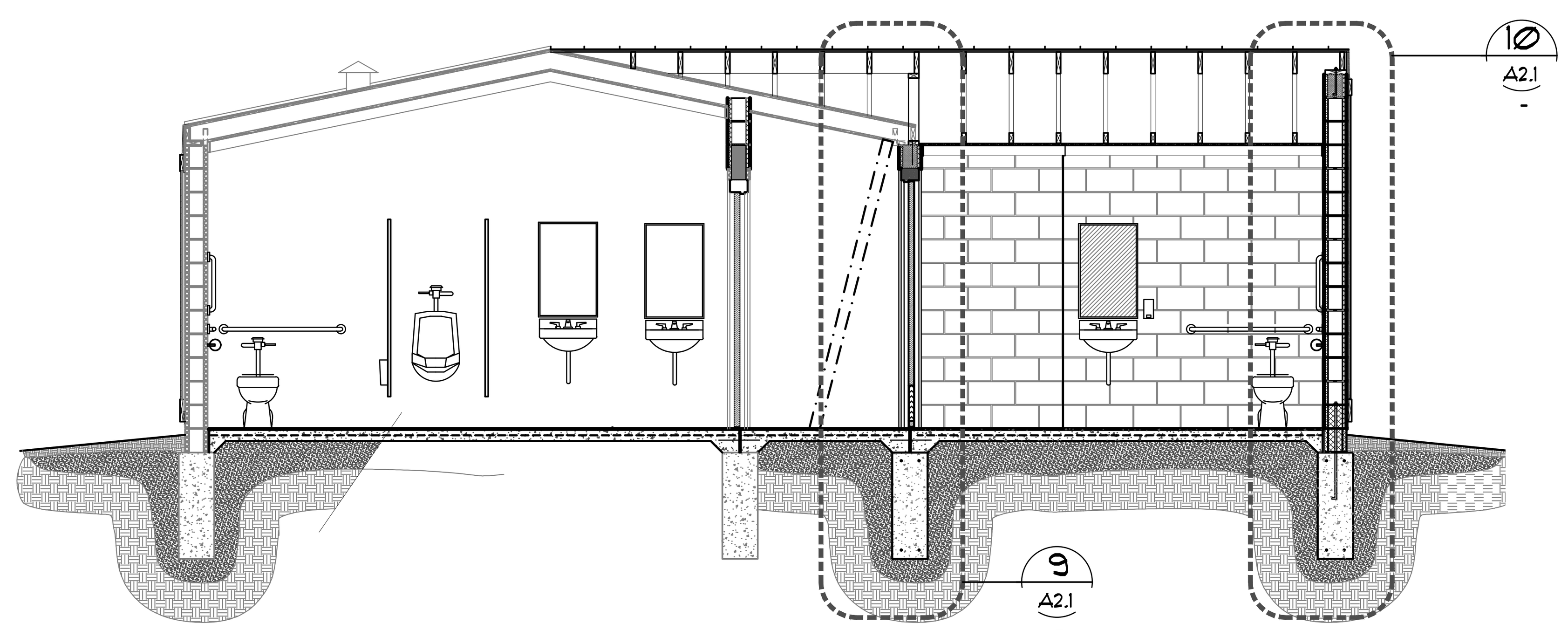
12 Typical Wall Section
A2.1 SCALE: 3/4"=1'-0"



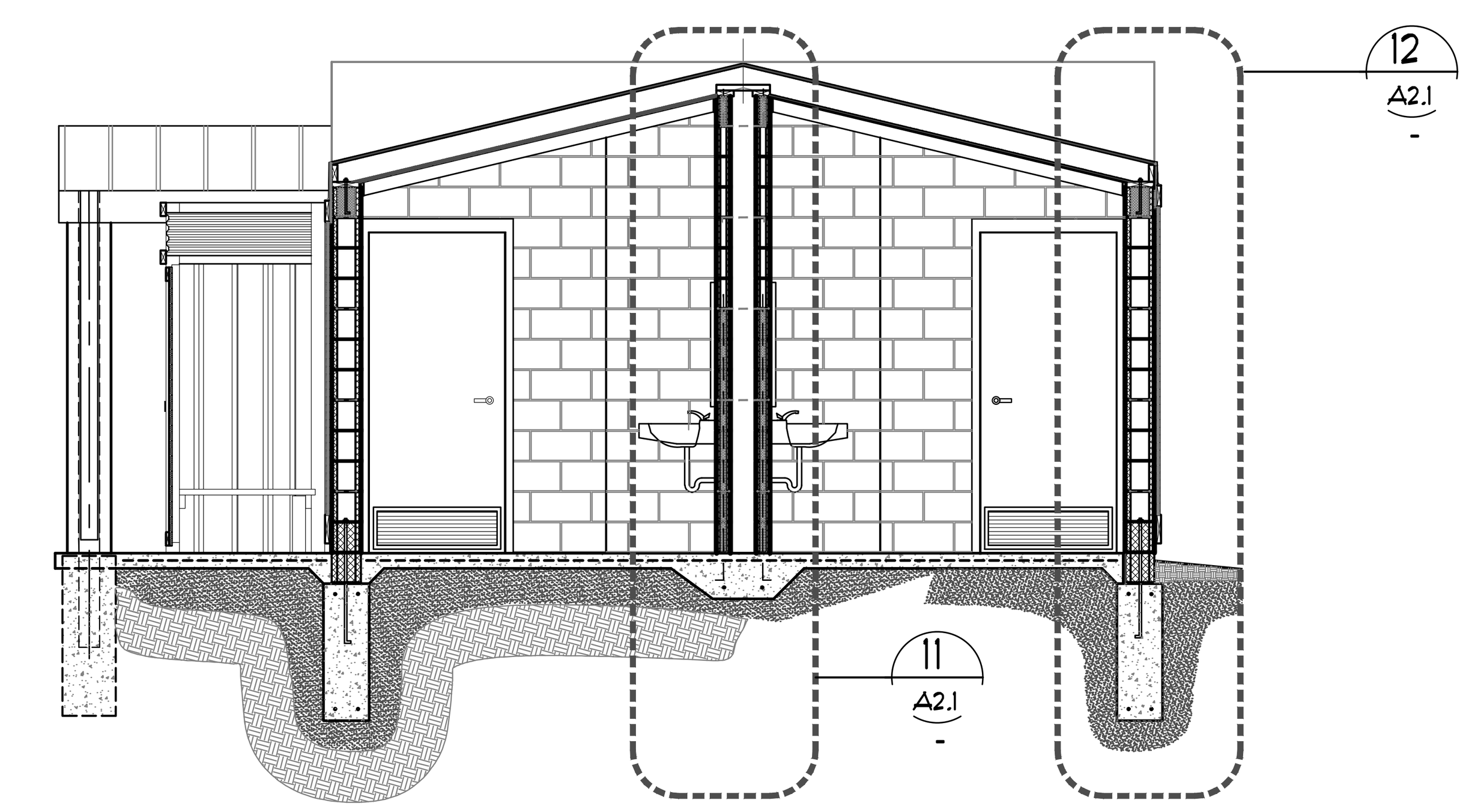
4 Cabana Door Sect.
A2.1 SCALE: 3/4"=1'-0" ALT. #2



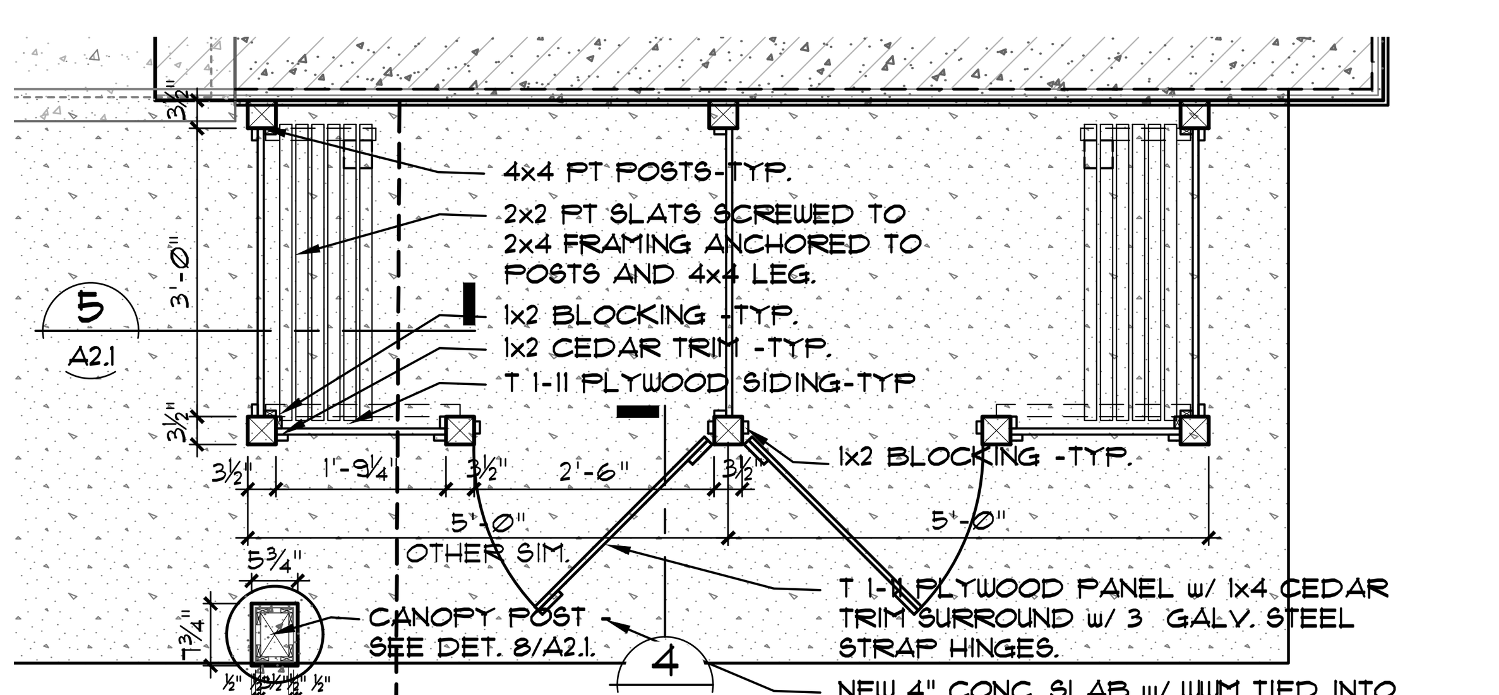
5 Cabana Wall Sect.
A2.1 SCALE: 3/4"=1'-0" w/ Seat - ALT. #2



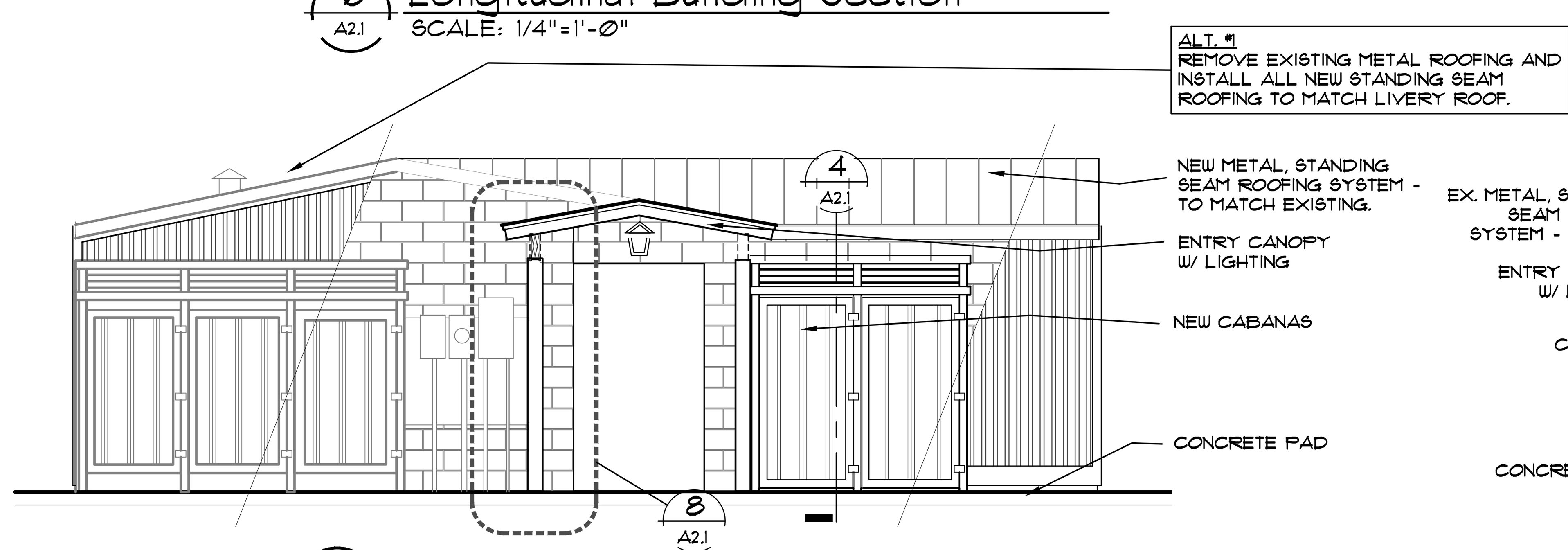
6 Longitudinal Building Section
A2.1 SCALE: 1/4"=1'-0"



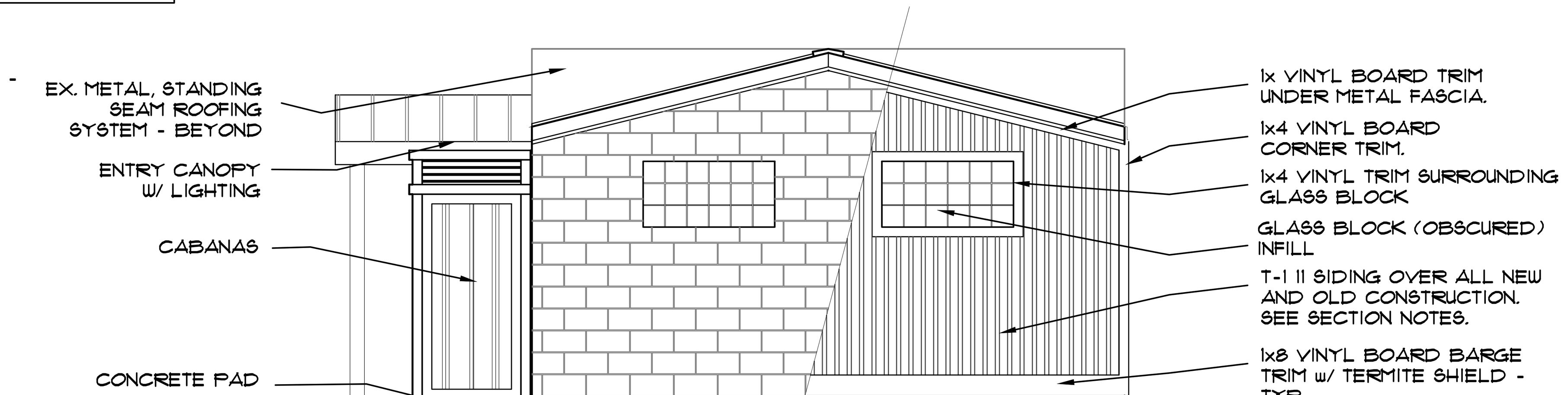
7 Cross Building Section
A2.1 SCALE: 1/4"=1'-0"



1 Cabana Plan
A2.1 SCALE: 1/2"=1'-0" ALT. #2



2 South Elevation
A2.1 SCALE: 1/4"=1'-0"



3 East Elevation
A2.1 SCALE: 1/4"=1'-0"

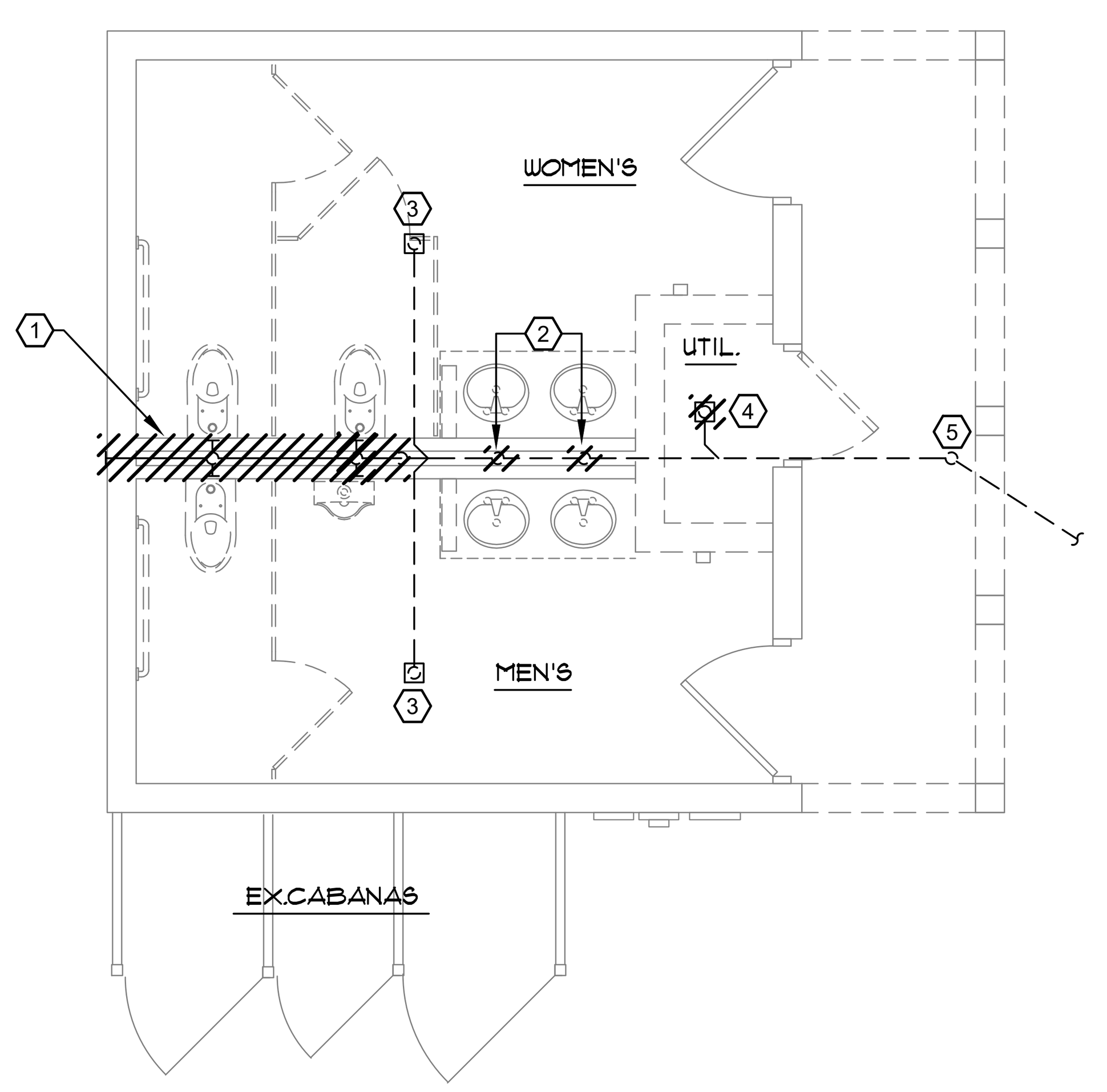
Mitchell and Mouat architects

Date:	Issued For:
8/4/20	90% Owner's Review
1/4/21	99% Owner's Review
02/22/21	For Construction

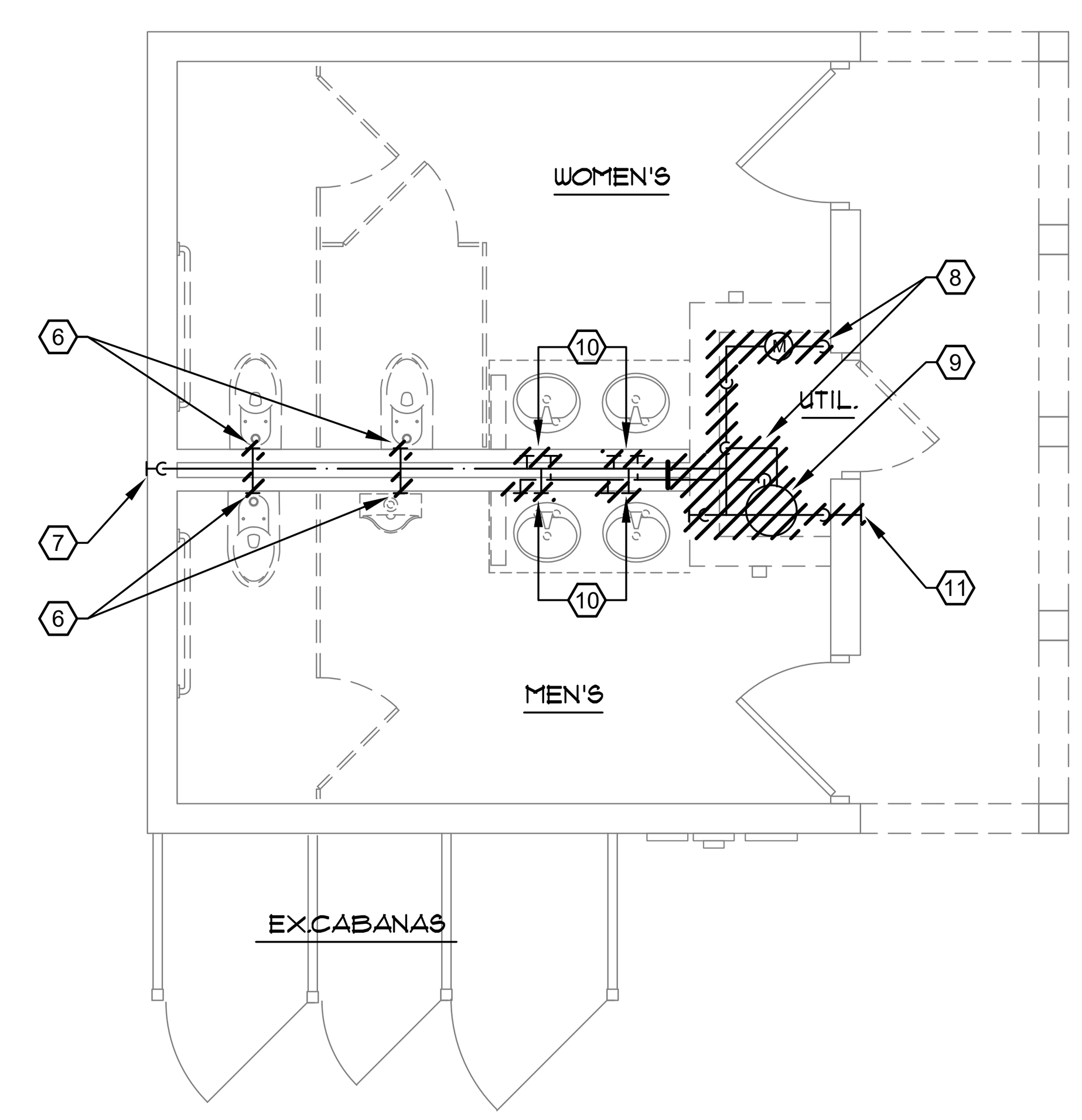
AAPR Argo Park
1055 Longshore Dr
Ann arbor, MI
Project Number: 2002

Building and Wall Sections and Elevations

A2.1



1 / P1.1 **Demolition Floor Plan - Sanitary**
SCALE: 1/4"=1'-0"



2 / P1.1 **Demolition Floor Plan - Plumbing**
SCALE: 1/4"=1'-0"

KEYED NOTES: (#)

1. REMOVE PORTION OF EXISTING SANITARY AND EXTERIOR WALL CLEAN OUT ABOVE SLAB TO WATER CLOSETS AND URINAL. PREP FOR NEW CONNECTION. RETAIN ANY VENT THROUGH ROOF FOR NEW CONNECTION.
2. REMOVE EXISTING SANITARY TO LAVATORIES. CAP SANITARY BELOW FLOOR OR IN WALL. CAP VENT ABOVE CEILING.
3. EXISTING FLOOR DRAIN AND PORTION OF EXISTING SANITARY PIPING TO REMAIN.
4. REMOVE EXISTING FLOOR DRAIN. CAP SANITARY BELOW FLOOR.
5. EXISTING CLEAN OUT TO REMAIN.
6. REMOVE EXISTING COLD WATER CONNECTION TO WATER CLOSET OR URINAL AND CAP AT MAIN IN WALL.
7. EXISTING COLD WATER WALL HYDRANT TO REMAIN.
8. REMOVE EXISTING 1" COLD WATER SERVICE, METER AND ALL ASSOCIATED PIPING TO WALL CHASE. PREP FOR NEW CONNECTION. COORDINATE WITH NEW WORK.
9. REMOVE EXISTING ELECTRIC WATER HEATER COMPLETE.
10. REMOVE EXISTING HOT AND COLD WATER CONNECTION TO LAVATORY AND CAP AT MAIN IN WALL.
11. REMOVE EXISTING WALL HYDRANT.

GENERAL NOTES:

A. COORDINATE REMOVAL AND DISPOSAL OF EXISTING PLUMBING FIXTURES WITH ARCHITECT/OWNER.

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JORDAN KOENIG
ENGINEER
No. 59789
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MEEC JOB # 20-0102

THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.

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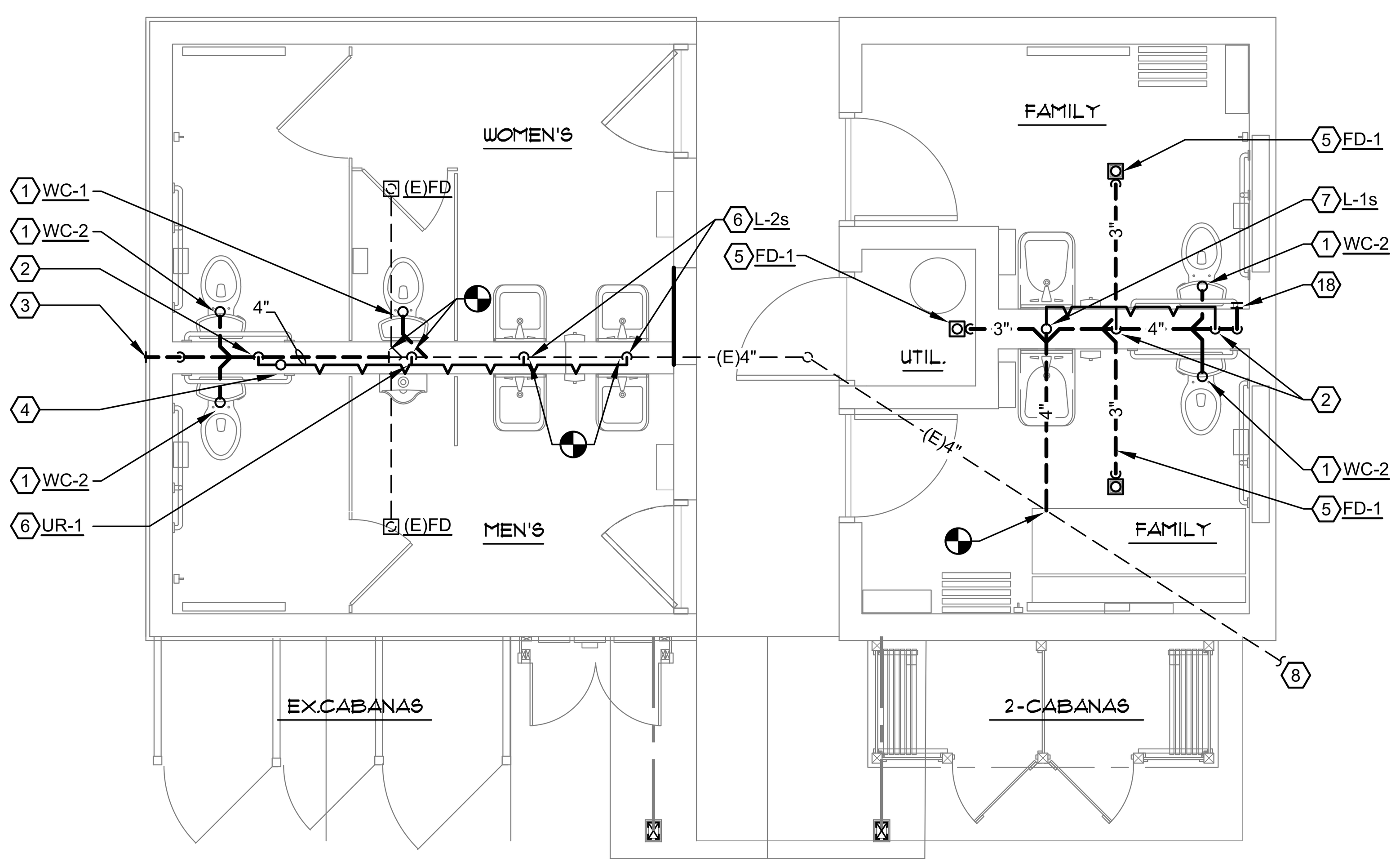
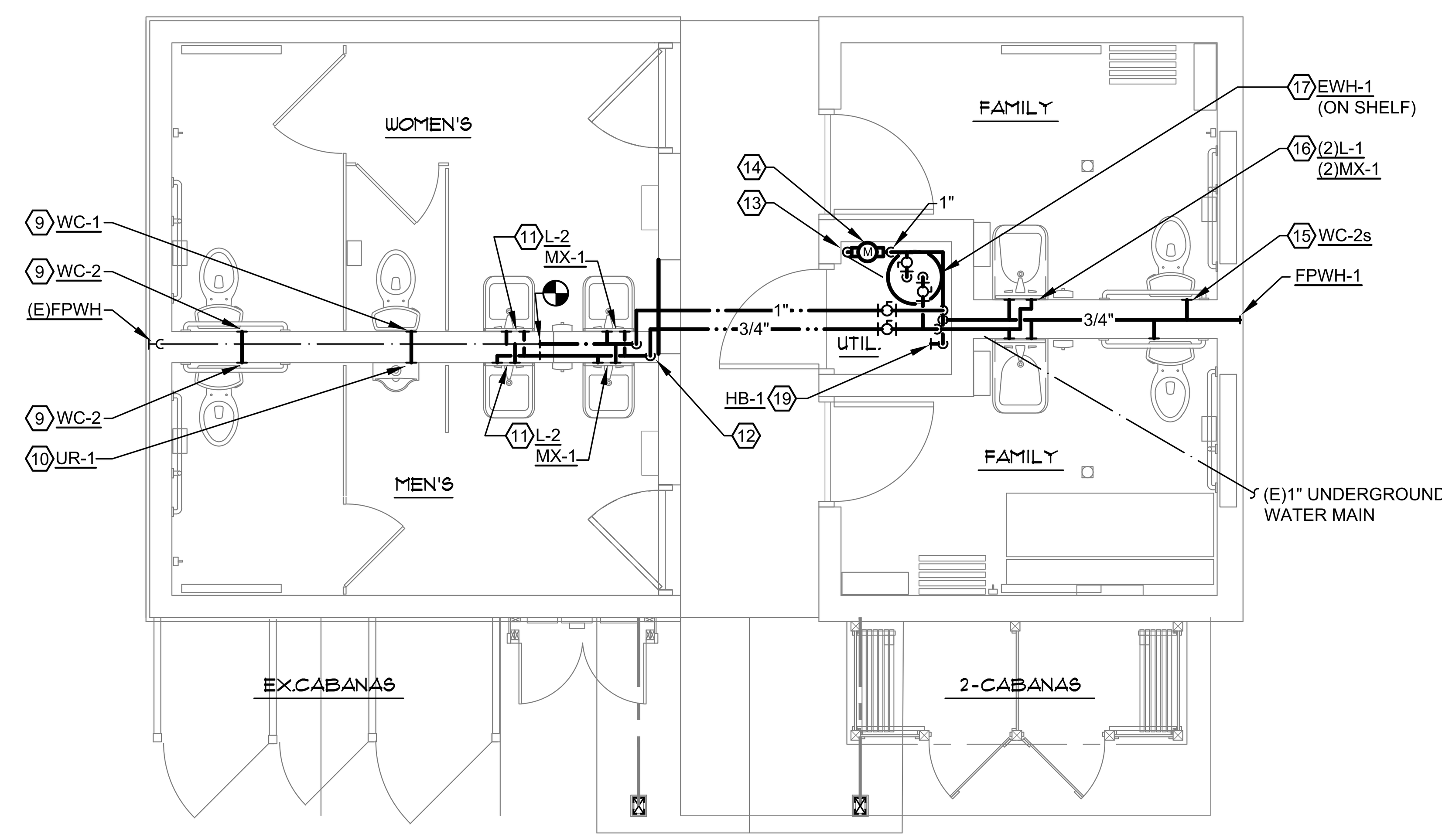
Demolition Plans - Plumbing

P1.1



1 P1.2 **New Work Floor Plan - Sanitary**
SCALE: 1/4"=1'-0"



2 P1.2 **New Work Floor Plan - Plumbing**
SCALE: 1/4"=1'-0"

GENERAL NOTE:

1. SLOPE ALL DOMESTIC HOT AND COLD WATER PIPING AS REQUIRED TO FACILITATE DRAINING THE PIPING IN THE WINTER. THERE SHALL BE NO PIPING INSTALLED THAT TRAPS WATER THAT COULD FREEZE IN THE WINTER.

KEYED NOTES:

1. 4" SANITARY UP TO WATER CLOSET.
2. 2" VENT UP.
3. FULL LINE SIZE SANITARY UP TO WALL CLEAN OUT. INSTALL IN EXISTING WALL OPENING.
4. CONNECT NEW 2" VENT TO EXISTING. FIELD VERIFY LOCATION.
5. 3" SANITARY WITH P-TRAP UP TO FLOOR DRAIN.
6. 2" SANITARY DOWN, 2" VENT UP.
7. 2" SANITARY DOWN, 2" VENT UP TO 4" V.T.R.
8. EXISTING SANITARY. FIELD VERIFY EXACT ROUTING.PROTECT PIPING DURING CONSTRUCTION.
9. 1/2" COLD WATER TO FIXTURE.
10. 3/4" COLD WATER TO FIXTURE.
11. 1/2" HOT AND COLD WATER TO FIXTURE.
12. RELOCATED 1" COLD WATER AND 3/4" HOT WATER DOWN AND CONNECT TO EXISTING.
13. RELOCATED 1" COLD WATER SERVICE. FIELD VERIFY SIZE AND LOCATION.
14. 1" DOMESTIC WATER METER LOCATED BELOW WATER HEATER SHELF.
15. 3/4" COLD WATER DOWN.
16. 3/4" HOT AND COLD WATER DOWN TO FIXTURES.
17. 3/4" HOT AND COLD WATER.
18. FULL LINE SIZE SANITARY UP TO WALL CLEAN OUT.
19. LOW POINT DRAIN. PROVIDE DRAIN VALVE AND COMPRESSED AIR CONNECTION FOR SEASONAL DRAINING.

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New Work Plans - Plumbing

P1.2

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STATE OF MICHIGAN
JORDAN KOENIG
ENGINEER
No. 59789
LICENSED PROFESSIONAL ENGINEER
02/22/21

PLUMBING FIXTURE SCHEDULE

MARK	ITEM	ADA	DESCRIPTION	ACCESSORIES	PIPE CONNECTION SIZES				NOTES
					W	V	CW	HW	
WC-1	FLOOR MOUNTED TANK TYPE WATER CLOSET		Mansfield Alto Elongated 1.6 Gpf Two Piece Tank Type Toilet Model 138-165 with Cover Lock	Seat: Bemis 3155SSCT Supply: McGuire #H172BV Flange 1/4 turn angle valve	4"	2"	1/2"	---	2
WC-2	FLOOR MOUNTED TANK TYPE WATER CLOSET	X	Mansfield Alto Elongated ADA 1.6 Gpf Two Piece Tank Type Toilet Model 139NS-175 Right Height 16-3/4" high with Cover Lock	Seat: Bemis 3155SSCT Supply: McGuire #H172BV Flange 1/4 turn angle valve	4"	2"	1/2"	---	2
UR-1	WALL HUNG URINAL		Mansfield 410HE 1 Gpf Urinal-Meets ADA When Installed At Proper Height	Flush Valve: Sloan #186-1.0 (1.0 gpf.) Strainer: American Standard #047068-0070A Cleanout: Jay R. Smith #SQ4-1819 Carrier: Jay R. Smith #0637	2"	1-1/2"	3/4"	---	
L-1	WALL MOUNTED LAVATORY	X	American Standard #9141.047 Wall mounted lavatory	Faucet: American Standard #6053.204 Drain: McGuire #155A Supply: McGuire #H170BV-LR 1/4 turn p-Trap: McGuire #8872C-17T 1-1/2" Chrome Plated Brass Carrier: Jay R. Smith #0700-Z	1-1/2"	1-1/2"	1/2"	1/2"	1
L-2	WALL MOUNTED LAVATORY	X	Mansfield 2018HBNS-1 Wall Mounted Lavatory With Backsplash	Faucet: American Standard #6053.204 Aerator: American Standard #V05 Drain: McGuire #155A Supply: McGuire #H170BV-LR 1/4 turn p-Trap: McGuire #8872C-17T 1-1/2" Chrome Plated Brass Carrier: Jay R. Smith #0700-Z	1-1/2"	1-1/2"	1/2"	1/2"	1
MX-1	THERMOSTATIC MIXING VALVE		WATTS LFUSG-B-M2	ASSE 1070 Thermostatic Mixing Valve	---	---	1/2"	1/2"	
FPWH-1	FROST PROOF WALL HYDRANT		WOODFORD MODEL B67 WITH RECTANGULAR BOX & DOOR	Automatic draining commercial, freezeless, anti-siphon, wall hydrant with ASSE 1052 Approved Nidel Model 50 high flow double check backflow preventer.	---	---	3/4"	---	
HB-1	HOSE BIBB		WOODFORD MODEL 24-BR	ASSE 1011 Approved Nidel Model 34HF 3/4" hose thread Anti-Siphon Vacuum Breaker.	---	---	3/4"	---	

APPROVED PLUMBING FIXTURE MANUFACTURERS: AMERICAN STANDARD, MANSFIELD, CRANE, TOTO, ELKAY, KOHLER, ZURN, SLOAN, FIAT, FLORESTONE, MUSTEE.
APPROVED PLUMBING HARDWARE MANUFACTURERS: MOEN, AMERICAN STANDARD, DELTA, KOHLER, CHICAGO, SLOAN, ZURN, T&S, ACORN, TOTO.
(FIXTURES TO BE INSTALLED IN ACCORDANCE WITH ADA REQUIREMENTS)

NOTES:
1. PROVIDE PLASTIC TYPE PIPE COVERS EQUAL TO TRUEBRO "LAV GUARD" ON ALL ACCESSIBLE LAVATORIES AND SINKS.
2. ALL TANK TYPE WATER CLOSETS SHALL BE ORDERED WITH HANDLES ON THE OPEN SIDE (ADJACENT TO THE LAVATORY) PER CODE.

ELECTRIC DOMESTIC WATER HEATER SCHEDULE

MARK	MANUFACTURER	MODEL NUMBER	LOCATION	CAPACITIES			ELECTRICAL DATA		NOTES
				RECOVERY (GPH)	STORAGE (GALLONS)	TEMP. RISE (DEG. F)	KW INPUT	VOLT/PHASE	
EWH-1	BRADFORD WHITE	RE112U6	SEE PLAN	7	12	90	1.5	120/1	1, 2, 3, 4

(APPROVED EQUAL: LOCHINVAR, A.O. SMITH)

NOTES:
1. TEMPERATURE AND PRESSURE RELIEF VALVE
2. MAGNESIUM TANK SAVER ANODE ROD
3. U.L. LISTED
4. PROVIDE DRAIN PAN

FLOOR DRAIN SCHEDULE

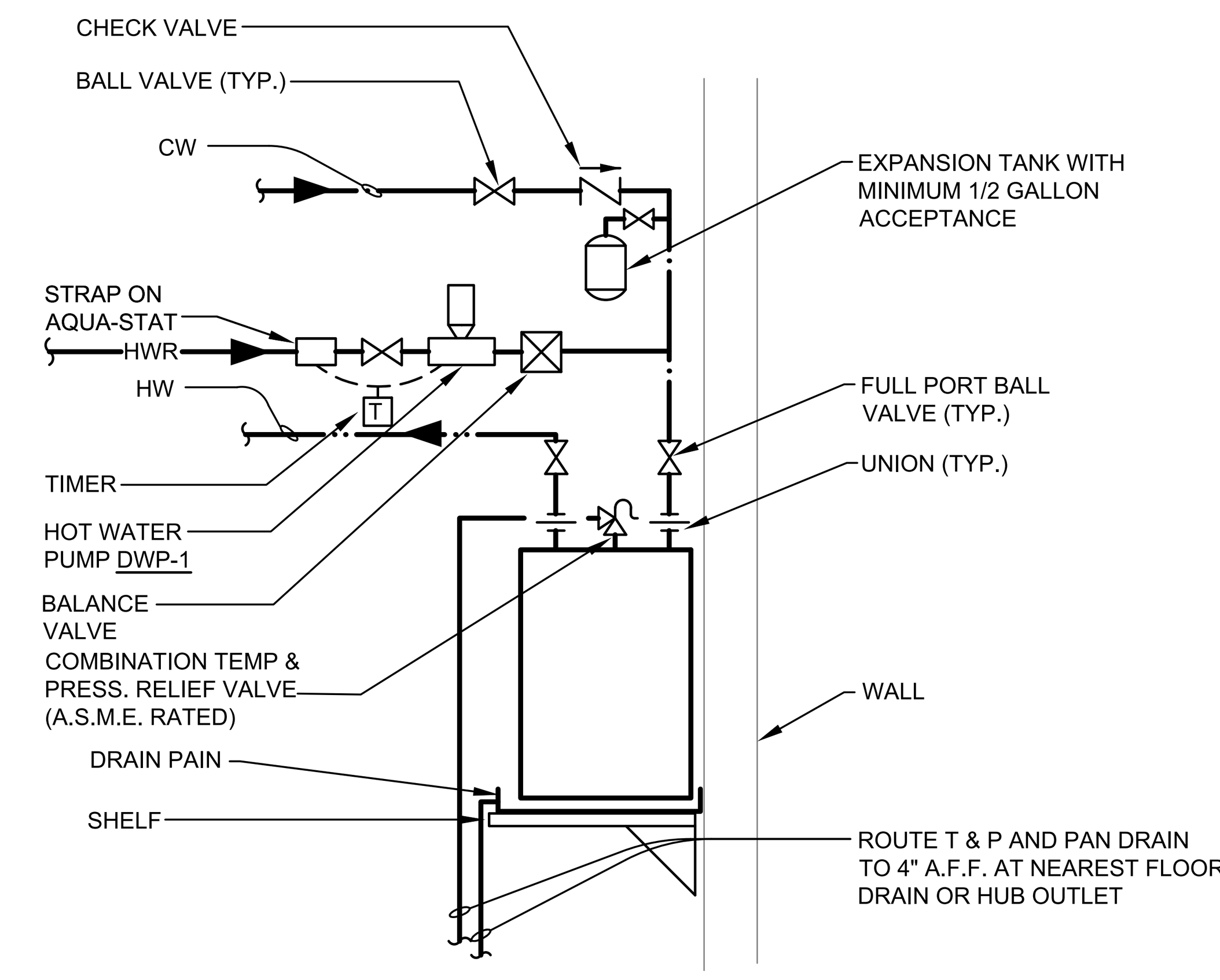
MARK	MANUFACTURER	MODEL NUMBER	LOCATION	BODY MATERIAL	GRATE		ACCESSORY	PIPE SIZE (IN.)	NOTES:
					TYPE	FINISH			
FD-1	ZURN	ZN415-6B	SEE PLAN	DUCO CAST IRON	6" Ø	NICKEL BRONZE	-	3"	1

(APPROVED EQUAL: ZURN, JOSAM, JAY R. SMITH, SIOUX CHIEF, MIFAB)

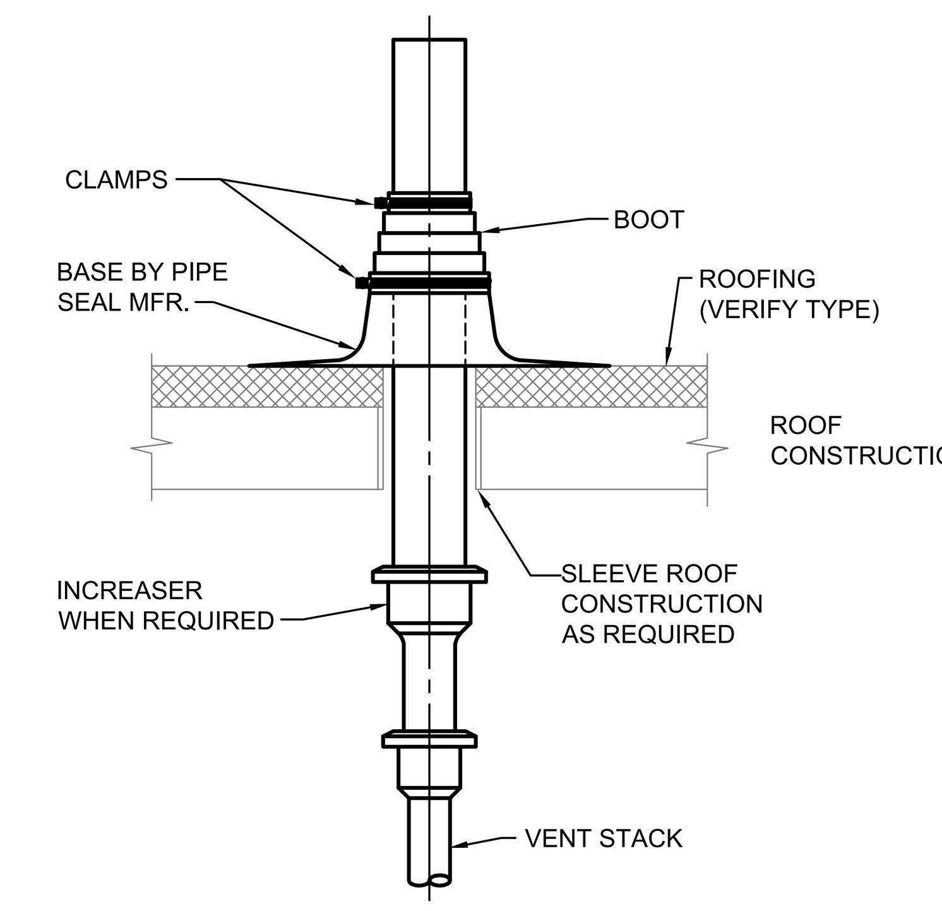
NOTES:
1. PROVIDE "SURESEAL" IN LINE TRAP SEAL.

MINIMUM PIPE INSULATION THICKNESS

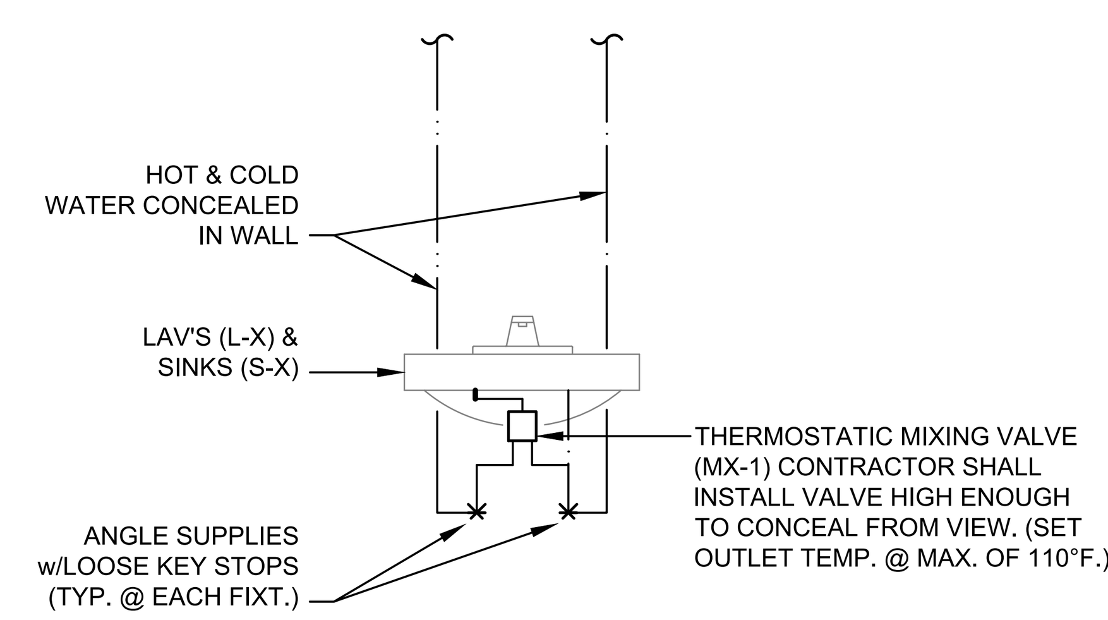
FLUID OPERATING TEMPERATURE RANGE AND USAGE (F°)	INSULATION CONDUCTIVITY (BTU. IN/H.FT2.F°)	NOMINAL PIPE OR TUBE SIZE (INCHES)		
		< 1	1 TO < 1-1/2	1-1/2 TO < 4
141-200	0.25-0.29	1.5	1.5	2.0
105-140	0.21-0.28	1.0	1.0	1.5
40-60	0.20-0.26	0.5	0.5	1.0



SHELF MOUNTED ELECTRIC WATER HEATER PIPING DIAGRAM
N.T.S.



VENT THROUGH ROOF DETAIL
N.T.S.



THERMOSTATIC MIXING VALVE DETAIL
N.T.S.

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AAPR Argo Park
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Plumbing Details and Schedules

STATE OF MICHIGAN ★ JORDAN KOENIG ENGINEER No. 59789 ★ LICENSED PROFESSIONAL ENGINEER
02/22/21

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MEEC JOB # 20-0102

GENERAL NOTES: PLUMBING

1. PROVIDE MATERIALS AND EQUIPMENT AND EXECUTE THE WORK, INCLUDING ALL TESTING AND INSPECTIONS, IN COMPLIANCE WITH THE APPLICABLE PROVISIONS OF FEDERAL, STATE AND LOCAL GOVERNMENT LAWS, ORDINANCES, REFERENCED CODES AND STANDARDS CURRENT AS OF THE ISSUE DATE OF THESE DRAWINGS. ALL MORE STRINGENT REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL MODIFY, SUPPLEMENT AND SUPERSEDE APPLICABLE PORTIONS OF GOVERNING LAWS, ORDINANCES, CODES AND STANDARDS.

2. CONTRACTOR SHALL PRESENT CERTIFICATE TO THE OWNER THAT ALL APPLICABLE BUILDING PERMITS HAVE BEEN SECURED PRIOR TO STARTING ANY WORK, AND PROVIDE THE OWNER WITH ALL REQUIRED CERTIFICATES OF FINAL APPROVAL FROM THE GOVERNING JURISDICTIONS AT COMPLETION OF THE WORK. PROVIDE ALL SHOP DRAWINGS AS REQUIRED IN FOLLOWING SECTIONS.

3. MAKE ALL CONNECTIONS TO EXISTING SYSTEMS DURING DESIGNATED PERIODS UPON APPROVAL OF THE OWNER AND AT NO INCREASE IN CONTRACT SUM.

4. EXISTING FACILITIES:

   A. DO NOT INTERRUPT EXISTING UTILITIES UTILIZED BY THE OWNER EXCEPT AS SPECIFIED OR WHEN APPROVED IN WRITING, AND THEN ONLY AFTER TEMPORARY UTILITY SERVICES HAVE BEEN APPROVED AND PROVIDED. INTERRUPTIONS MUST BE SCHEDULED TO SUIT THE OWNER'S REQUIREMENTS.

   B. VERIFY ALL EXISTING WORK, WHERE EXISTING CONNECTIONS ARE PARTIAL, PROVIDE ALL NECESSARY MATERIALS, LABOR AND EQUIPMENT REQUIRED TO MODIFY EXISTING WORK. IN ADDITION, MAINTAIN INTEGRITY OF THE EXISTING SYSTEMS. RECTIFY ANY CONTAMINATION, DEGRADATION OF CLEANLINESS OR DAMAGE TO THE EXISTING SYSTEMS TO THE SATISFACTION OF THE OWNER. PROVIDE ALL WORK SO REQUIRED AT NO INCREASE IN THE CONTRACTOR'S ORIGINAL PROPOSAL.

5. COORDINATE EXACT LOCATION OF CONSTRUCTION TO PRECLUDE ANY INTERFERENCES BETWEEN PIPING, WIRING, LIGHTING FIXTURES, DUCTWORK, BUILDING EQUIPMENT, PROCESS EQUIPMENT AND OTHER CONSTRUCTION.

6. PROVIDE LABOR, INCLUDING FIELD ERECTION AND SUPERVISION, MATERIALS, EQUIPMENT AND ANCILLARIES, AND COORDINATE, PROCURE, FABRICATE, DELIVER, ERECT OR INSTALL, INTERFACE WITH EXISTING WORK, START, DEBUG AND TEST ALL SYSTEMS AS NECESSARY TO PROVIDE THE OWNER WITH A COMPLETE, OPERATING FACILITY IN CONFORMANCE WITH THE CONSTRUCTION BID DOCUMENTS.

7. ALL CUTTING AND PATCHING THAT MAY BE NECESSARY FOR THE INSTALLATION OF THE MECHANICAL CONTRACTOR'S WORK SHALL BE PERFORMED AND REPAIRED BY THE TRADE WHOM NORMALLY PERFORMS THAT WORK AND PAID FOR BY THE PLUMBING CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT THE WRITTEN CONSENT OF THE ARCHITECT BEING PREVIOUSLY OBTAINED.

8. THE PLUMBING CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE CODES, LAWS, ORDINANCES AND REGULATIONS. SHOULD ANY VIOLATIONS OR INTERFERENCES APPEAR AND DEPARTURE FROM THE DESIGN INTENT OF THE CONTRACT DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONTRACT DOCUMENTS WITH NO ADDITIONAL EXPENSES BEING INCURRED BY THE OWNER.

9. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL LOCATIONS AND ARRANGEMENTS OF ALL THE EQUIPMENT AND PIPING. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS BUILDING CONSTRUCTION AND ALL OTHER WORK WILL PERMIT. DO NOT SCALE DRAWINGS FOR EXACT MEASUREMENTS.

10. DEMOLITION OF PLUMBING EQUIPMENT SHALL INCLUDE ALL EXISTING PIPING, VALVES, CONTROLS, SUPPORTS, FLUES AND EQUIPMENT WHERE SUCH ITEMS ARE NOT REQUIRED FOR THE PROPER OPERATION OF THE REVISED SYSTEM. REMOVE, RECONNECT, CAP, PLUG AND REPLACE EXISTING PIPING.

GENERAL NOTES: PLUMBING AND PIPING

1. ALL PIPING SHALL BE CONCEALED UNLESS OTHERWISE NOTED. EXPOSING OF ANY PIPING MUST HAVE APPROVAL OF THE ARCHITECT.

2. PROVIDE BRANCH LINE SHUT_OFF VALVES ON DOMESTIC WATER PIPING AT EACH PLUMBING FIXTURE.

3. THE PLUMBING AND PIPING SYSTEMS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL STATE AND LOCAL PLUMBING CODES. THE PLUMBING AND PIPING CONTRACTOR SHALL OBTAIN ALL PERMITS, PAY ALL FEES, AND ARRANGE FOR ALL INSPECTIONS FOR HIS WORK. AT THE COMPLETION OF THE PROJECT, THE PLUMBING CONTRACTOR SHALL FURNISH THE OWNER WITH CERTIFICATES OF FINAL INSPECTIONS AND APPROVALS.

4. PIPING SHALL BE AS FOLLOWS:

   A. SANITARY AND VENT PIPING:

      1) ALL 1-1/2" AND LARGER WASTE AND VENT PIPING ABOVE AND BELOW GROUND SHALL BE STANDARD WEIGHT CAST IRON SOIL PIPE WITH NO_HUB FITTINGS AND HEAVY DUTY COUPLINGS. COUPLINGS SHALL BE HUSKY HD 4000, CLAMP ALL 80 OR MISSION HW. SOLID CORE SCHEDULE 40 PVC PIPE WITH CEMENTED FITTINGS IS APPROVED WHERE LOCAL CODE PERMITS. ABOVE GROUND PVC PIPING SHALL NOT BE INSTALLED WITHIN ANY RETURN AIR PLENUM SPACE.

      2) RUN ALL UNDERGROUND SANITARY 2 1/2” OR LESS AT 1/4” PER FOOT MINIMUM PITCH UNLESS NOTED OTHERWISE. SANITARY PIPING 3” OR LARGER SHALL BE PITCHED AT 1/8” PER FOOT MINIMUM UNLESS NOTED OTHERWISE.

      3) ALL CONNECTIONS AND CHANGES IN DIRECTION OF THE SANITARY DRAINAGE SYSTEM SHALL BE MADE WITH APPROVED DRAINAGE FITTINGS PER LOCAL PLUMBING CODE.

   B. DOMESTIC WATER PIPING:

      1) ALL ABOVE GROUND DOMESTIC WATER PIPING SHALL BE TYPE "L" HARD DRAWN COPPER TUBING WITH WROUGHT COPPER OR CAST RED BRONZE FITTINGS OR PEX-a PIPING EQUAL TO UPONOR AQUAPEX PIPE WITH ASTM F1960 IPEX EXPANSION FITTINGS. ALL SOLDERED FITTINGS SHALL BE MADE WITH SIL_FOS SOLDER OR AN APPROVED NON_TOXIC SOLDER. MECHANICAL TYPE FITTINGS EQUAL TO VIEGA “PROPRESS”, APOLLO “EXPRESS” OR MUELLER “STREAMLINE” FOR COPPER PIPING ARE APPROVED IN LIEU OF SOLDERED FITTINGS.

      2) ALL UNDERGROUND PIPING SHALL BE TYPE "K" COPPER OR PEX. PIPE FITTINGS ARE NOT ALLOWED BELOW FLOOR SLAB.

   C. VALVES:

      1) BALL VALVES SHALL BE TWO PIECE FULL PORT BRONZE BALL VALVES WITH STAINLESS STEEL TRIM, TFE SEATS WITH 316 STAINLESS STEEL BALL AND STEM. THREADED BODY PACK NUT DESIGN WITH ADJUSTABLE STEM PACKING WITH THREADED OR SOLDERED ENDS. RATED FOR 150 PSIG SWP AND 600 PSIG CWP.

      2) CHECK VALVES SHALL BE SWING CHECK WITH BRONZE DISC, CLASS 150, ASTM B62. Y PATTERN DESIGN WITH THREADED OR SOLDERED ENDS. RATED FOR 300 PSIG CWP.

      3) GATE VALVES SHALL BE CLASS 150 RISING STEM WITH BRONZE BODY, WEDGE AND BONNET. COPPER-SILICONE BRONZE STEM, SCREW IN BONNET WITH THREADED ENDS. RATED FOR 300 PSIG CWP.

   D. PIPING INSULATION:

      1) DOMESTIC HOT & COLD WATER PIPING SHALL BE INSULATED WITH MINIMUM 1" THICK FIBERGLASS INSULATION, WITH A FIRE RETARDANT JACKET, HAVING AN AVERAGE R VALUE OF 3.45. COLD WATER PIPING INSULATION SHALL BE PROVIDED WITH A VAPOR BARRIER. PROVIDE PREFORMED SECTIONS WITH PVC COVERS AT ALL FITTINGS.

      2) PIPE INSULATION SHALL HAVE A FLAME SPREAD AND SMOKE DENSITY RATING NOT EXCEEDING 25/50, AS TESTED PER ASTM STANDARD E_84.

5. PIPING SHALL BE SUPPORTED FROM HANGERS AT AN ADEQUATE DISTANCE WITH SUPPORTING HANGER RODS FASTENED TO THE BUILDING FRAMING WHENEVER POSSIBLE. SUPPORT SPACING SHALL NOT EXCEED THE HANGER SPACING REQUIREMENTS PER SECTION 308 OF THE LOCAL PLUMBING CODE.

6. ISOLATE PIPING AND EQUIPMENT FROM THE BUILDING STRUCTURE WITH INSULATING HANGERS AND FITTINGS AS REQUIRED TO PREVENT GALVANIC CORROSION OF THE BUILDING PIPING SYSTEMS.

7. DOMESTIC WATER HEATERS SHALL BE EQUIPPED WITH A.S.M.E. RATED TEMPERATURE AND PRESSURE RELIEF VALVES PIPED TO FLOOR. PROVIDE DRAIN PANS BELOW ALL UNITS LOCATED ABOVE CEILINGS AND IN CABINETS. ROUTE DRAIN LINE TO NEAREST FLOOR DRAIN OR INDIRECT WASTE UNDER SINK.

8. ALL SERVICES SHALL BE PROPERLY SLEEVED WHEN ROUTED THROUGH FLOORS AND WALLS. CONTRACTOR TO PROVIDE FIRE RESISTANT ROPE PACKING FOR ALL PIPES PENETRATING FIRE RATED WALLS. CONTRACTOR SHALL OBTAIN A COPY OF THE ARCHITECTURAL DRAWINGS TO IDENTIFY FIRE RATED WALLS. CONTRACTOR SHALL PROVIDE A WEATHERPROOF SEAL FOR PIPING PENETRATING EXTERIOR WALLS AND SHALL PROVIDE A WATER TIGHT SEAL, SIMILAR TO "LINK SEAL", FOR ALL PIPING PENETRATING BASEMENT WALLS.

9. FURNISH AND INSTALL ISOLATION VALVES AT ALL SERVICE POINTS OR EQUIPMENT CONNECTIONS. PROVIDE VACUUM BREAKERS (ASSE 1011, CSA B64.2, CSA B64.2.1) AND ANTI_SIPHON FITTINGS ON WATER PIPING SYSTEMS BEFORE EQUIPMENT CONNECTIONS, AND AT ALL HOSE END SPIGOTS AND HOSE CONNECTIONS, ETC. INSTALL REDUCED PRESSURE BACKFLOW PREVENTERS (ASSE 1013, AWWA C511, CSA B64.4, CSA B64.4.1) ON ALL MAKE_UP WATER LINES TO MECHANICAL EQUIPMENT AND ON BUILDING DOMESTIC WATER SERVICE WHERE LOCAL CODE REQUIRES. THE INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH LOCAL CODES AND/OR AUTHORITIES FOR THE PROTECTION OF THE WATER SUPPLY SYSTEM. INSTALL STRAINER UP STREAM OF REDUCED PRESSURE BACKFLOW PREVENTER.

10. CLEANING OF WATER PIPING

    A. BEFORE BEING PLACED IN SERVICE, ALL NEW DOMESTIC WATER DISTRIBUTION LINES SHALL BE CHLORINATED. AFTER THE PRESSURE TEST, AND BEFORE CHLORINATION, ALL DIRT AND FOREIGN MATTER SHALL BE REMOVED BY A THOROUGH FLUSHING WITH CLEAN POTABLE WATER THROUGH THE LINES, DISCHARGING THE FLOW FROM THE END OF THE LINES UNTIL DIRTY WATER DOES NOT APPEAR AT THE POINTS OF OUTLET.

    B. THE SYSTEM SHALL BE THOROUGHLY STERILIZED USING THE PROCEDURE REQUIRED BY THE AUTHORITIES HAVING JURISDICTION.

11. IDENTIFICATION:

    A. TAG ALL VALVES WITH STAMPED OR ENGRAVED BRASS TAGS AND PROVIDE A COMPLETE VALVE CHART INDICATING LOCATION, FUNCTION AND EQUIPMENT SERVED. CHART SHALL BE TYPED AND MOUNTED IN A GLAZED FRAME.

    B. LABEL ALL PIPING SYSTEMS WITH MANUFACTURED SELF ADHESIVE OR PRE-TENSIONED PIPE MARKERS. MARKERS SHALL INDICATE SERVICE AND DIRECTION OF FLOW. MARK PIPE NEAR: VALVES, BRANCH CONNECTIONS, PENETRATIONS, ACCESS DOORS AND NEAR MAJOR PIECES OF EQUIPMENT. MARKER SPACING SHALL NOT EXCEED 50'.

12. ALL EXTERIOR WALL HYDRANTS SHALL BE INSTALLED IN A FLUSH WITH THE WALL BRONZE CASING. CASING FACE AND HINGED COVER SHALL BE COMPLETE WITH OPERATING KEY LOCK. HYDRANT SHALL BE PROVIDED WITH INTEGRAL BACKFLOW PREVENTOR. HYDRANTS SHALL BE NON FREEZE TYPE, COORDINATE WITH WALL CONSTRUCTION.

13. THE PLUMBING AND PIPING CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER PITCH OF PIPE FOR DRAINAGE AND AIR VENTING OF PIPING SYSTEMS AND SHALL PROVIDE DRAINS TO RECEIVE THE PIPING SYSTEMS CONTENTS OF INDIRECT WASTE AND CONDENSATE DRAINAGE FROM ALL MECHANICAL DRAINS.

14. THE PLUMBING AND PIPING CONTRACTOR SHALL VERIFY EXACT LOCATIONS AND PROVIDE ROUGH_INS FOR ALL EQUIPMENT FURNISHED BY OTHER CONTRACTORS. AFTER ALL EQUIPMENT HAS BEEN INSTALLED BY OTHER CONTRACTORS, THE PLUMBING AND PIPING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS AND SHALL INCLUDE IN HIS BASE BID ALL VALVES, UNIONS, COUPLINGS, VACUUM BREAKERS, ETC., THAT ARE REQUIRED TO MAKE FINAL CONNECTIONS.

15. THE PLUMBING AND PIPING CONTRACTOR SHALL OBTAIN OTHER TRADES DRAWINGS AND COORDINATE HIS WORK WITH THE TOTAL PROJECT AS IT RELATES TO ALL TRADES AND VISIT THE PROJECT SITE PRIOR TO SUBMITTING HIS BID TO FAMILIARIZE HIMSELF WITH THE ACTUAL PROJECT CONDITIONS AND TO CHECK FOR ANY INTERFERENCES BETWEEN HIS SCOPE OF WORK AND THAT OF THE OTHER TRADES, AND/OR ANY APPARENT VIOLATIONS OF LOCAL OR STATE BUILDING CODES, LAWS, ORDINANCES, AND REGULATIONS. IF ANY INTERFERENCES OR VIOLATIONS APPEAR AND DEPARTURE FROM THE INITIAL DESIGN INTENT OF THE CONSTRUCTION BID DOCUMENTS IS REQUIRED, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO ENTERING INTO A CONTRACT WITH THE OWNER. FAILURE TO PROVIDE THE ARCHITECT WITH THE AFOREMENTIONED NOTIFICATION SHALL RESULT IN THE CONTRACTOR BEING HELD RESPONSIBLE TO COMPLETE ALL WORK TO MEET THE INTENT OF THE CONSTRUCTION BID DOCUMENTS WITH NO ADDITIONAL COSTS BEING INCURRED BY THE OWNER.

16. THE CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS OF ALL EQUIPMENT FURNISHED BY THIS CONTRACTOR WITH THE ELECTRICAL CONTRACTOR.

17. FURNISH AND INSTALL AN INDIVIDUAL COMBINATION PRESSURE BALANCING AND THERMOSTATIC CONTROL VALVE THAT CONFORMS TO A.S.S.E. # 1070 WITH TEMPERED WATER PIPING CONNECTIONS FOR ALL ACCESSIBLE PLUMBING FIXTURES. SET THE VALVE FOR A MAXIMUM OF 110°F.

18. THE CONTRACTOR SHALL SUBMIT EQUIPMENT SHOP DRAWINGS TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALLATION OF ANY OF THE FOLLOWING EQUIPMENT:

    A. PLUMBING FIXTURES
    B. DOMESTIC WATER HEATER
    C. PLUMBING VALVES, HANGERS & ACCESSORIES.
    D. PLUMBING INSULATION.
    E. FLOOR DRAINS, CLEANOUTS, ETC.

19. THE CONTRACTOR SHALL GUARANTEE ALL WORK INSTALLED UNDER THIS CONTRACT TO BE FREE FROM DEFECTIVE WORKMANSHIP AND MATERIALS FOR A PERIOD OF ONE YEAR AFTER THE ACCEPTANCE OF THE BUILDING BY THE OWNER, AND SHOULD DEFECTS OCCUR WITHIN THIS PERIOD, REPAIR AND/OR REPLACE DEFECTIVE ITEMS AND ANY DAMAGE RESULTING FROM FAILURE OF THESE ITEMS, AT NO EXPENSE TO THE OWNER.

20. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF HIS EQUIPMENT AND WORK WITH OTHER BUILDING TRADES TO AVOID ANY INTERFERENCES BETWEEN HIS WORK AND THE WORK OF OTHER TRADES.

21. ANY CUTTING AND/OR PATCHING, THAT MAY BE REQUIRED FOR THE INSTALLATION OF THE PLUMBING AND PIPING SYSTEMS, SHALL BE PERFORMED BY THE ARCHITECTURAL TRADES AND PAID FOR BY THIS CONTRACTOR. NO CUTTING OF THE BUILDING STRUCTURAL SYSTEM SHALL BE PERFORMED WITHOUT WRITTEN APPROVAL OF THE ARCHITECT BEING OBTAINED.

22. WATER HAMMER ARRESTORS SHALL BE INSTALLED ON BOTH COLD AND HOT WATER LINES. INSTALL IN AN UPRIGHT POSITION AT ALL QUICK CLOSING VALVES, SOLENOIDS, AND PLUMBING FIXTURES. MANUFACTURED WATER HAMMER ARRESTORS SHALL CONFORM TO ASSE 1010, EQUAL TO SIOUX CHIEF 650/660 SERIES PISTON TYPE LOCATED, SIZED, AND INSTALLED IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE STANDARD NO.WH201.

23. FURNISH AND INSTALL EXPANSION JOINTS, GUIDES, AND ANCHORS, EXPANSION LOOPS, AND/OR SWING JOINTS AS REQUIRED TO PROPERLY TAKE_UP EXPANSION IN THE DOMESTIC AND HEATING HOT WATER SUPPLY AND RETURN PIPING. EXPANSION JOINTS SHALL BE SIZED FOR A TEMPERATURE VARIATION OF 120 DEGREES F. IN DOMESTIC WATER PIPING AND 180 DEGREES F. IN HEATING HOT WATER PIPING, UNLESS OTHERWISE INDICATED ON THE PLANS. SPACING SHALL NOT EXCEED 100 FEET ON STRAIGHT RUNS OF DOMESTIC WATER PIPING AND HEATING HOT WATER PIPING. EXPANSION JOINTS SHALL BE A PACKLESS BELLOWS TYPE, FLEXONICS MODEL HB, GUIDES SHALL BE FLEXONICS MODEL PG, AND ANCHORS SHALL BE FLEXONICS MODEL AC, OR AS APPROVED BY THE ARCHITECT. ALL PIPE EXPANSION COMPONENTS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

24. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATION OF ALL NEW PLUMBING FIXTURES.

25. COORDINATE ALL NEW LOCATIONS, SIZES AND ELEVATIONS OF SLEEVES THROUGH WALL SLABS AND FOUNDATIONS WITH STRUCTURAL DRAWINGS AND EXISTING FIELD CONDITIONS.

26. SEAL ALL PENETRATIONS THROUGH WALLS AND FLOORS AIR AND WATERTIGHT. COORDINATE LOCATIONS AND ELEVATIONS OF ALL NEW UNDERGROUND UTILITIES WITH CIVIL SITE PLANS PRIOR TO START OF CONSTRUCTION.

27. CONTRACTOR SHALL MAINTIAN ADEQUATE CLEARANCES (PER N.E.C.) ABOVE AND AROUND ANY NEW ELECTRICAL PANELS, EQUIPMENT AND TRANSFORMERS WHEN ROUTING OVERHEAD DOMESTIC WATER AND STORM PIPING.

28. CONTRACTOR SHALL PROVIDE PROTECTION FOR PIPING INSTALLED IN CONCEALED SPACES TO PREVENT DAMAGE FROM FASTENERS.

29. PLUMBING FIXTURES:

    A. FLOOR AND TRENCH DRAINS SHALL CONFORM TO ASME A112.3.1, ASME A112.6.3 OR CSA B79.

    B. LAVATORIES SHALL CONFORM TO ANSI Z124.3, ASME A112.19.1/CSA B45.2, ASME A112.19.2/CSA B45.1 OR ASME A112.19.3/CSA B45.4.

    C. URINALS SHALL CONFORM TO ANSI Z124.9, ASME A112.19.2/CSA B45.1, ASME A112.19.3 OR CSA B45.5.

    D. WATER CLOSETS SHALL CONFORM TO ANSI Z124.4, ASME A112.19.2/CSA B45.1, ASME A112.19.3/CSA B45.4 OR CSA B45.5.

    E. FAUCETS SHALL CONFORM TO ASME A112.18.1/CSA B125.1. DRINKING WATER FAUCETS SHALL ALSO CONFORM TO NSF 61, SECTION 9.

    F. FAUCETS AND PLUMBING FIXTURES SHALL BE OF WATER CONSERVATION TYPE AND COMPLY WITH LOCAL ENERGY CODE STANDARDS.

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THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.

Mitchell and Mouat architects

Date:	Issued For:
07.22.20	Review
08.04.20	Owner's Review
02.22.21	Construction

AAPR Argo Park
1055 Longshore Dr
Ann arbor, MI
Project Number: 2002

Plumbing Specifications

P2.2

EXHAUST FAN SCHEDULE

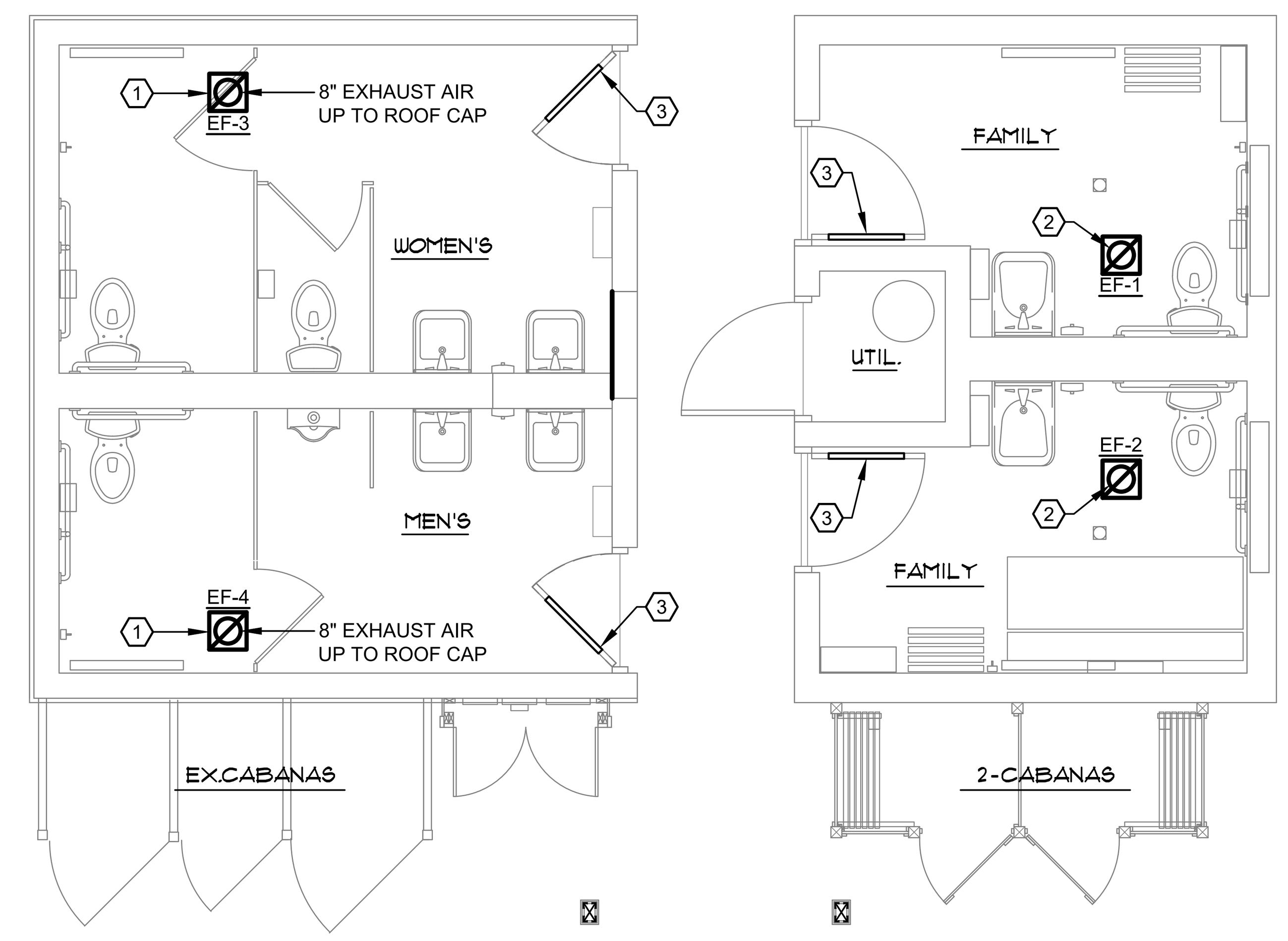
MARK	MANUFACTURER	MODEL NUMBER	AREA SERVED	LOCATION	AIRFLOW (CFM)	EXTERNAL S.P.	FAN (RPM)	GRILLE SIZE	FAN (AMPS)	SONES	ELECTRICAL	NOTES
EF-1	BROAN	505	SEE PLANS	ROOF	200	0.2	2,270	11.5" x 11.5"	1.5	8.5	115V / 1PH	1, 2, 3, 4
EF-2	BROAN	505	SEE PLANS	ROOF	200	0.2	2,270	11.5" x 11.5"	1.5	8.5	115V / 1PH	1, 2, 3, 4
EF-3	BROAN	505	SEE PLANS	ROOF	200	0.2	2,270	11.5" x 11.5"	1.5	8.5	115V / 1PH	1, 2, 3, 4
EF-4	BROAN	505	SEE PLANS	ROOF	200	0.2	2,270	11.5" x 11.5"	1.5	8.5	115V / 1PH	1, 2, 3, 4

(APPROVED EQUAL: GREENHECK, ACME, COOK, PENN, TWIN CITY, RUPP AIR)

NOTES:
1. FAN SHALL HAVE AMCA SEAL & BE U.L. CERTIFIED.
2. SAFETY DISCONNECT SWITCH.
3. PROVIDE DUCT MOUNTED GRAVITY BACKDRAFT DAMPER.
4. FAN CONTROLLED BY ROOM'S MOTION ACTIVATED LIGHT SWITCH

DUCTWORK APPLICATION SCHEDULE

AIR SYSTEM	MATERIAL	DESIGN PRESSURE CLASSIFICATION (INCHED, WG)
TOILET ROOM EXHAUST	GALVANIZED STEEL	- 2



1 M1.1 HVAC - New Work Plan
SCALE: 1/4"=1'-0"

KEYED NOTES: #

1. REMOVE EXISTING FAN IN THIS LOCATION AND REPLACE WITH NEW. COORDINATE INSTALLATION REQUIREMENTS IN FIELD.
2. ROUTE 8"Ø EXHAUST DUCT UP THROUGH ROOF. PROVIDE RAINPROOF VENT CAP WITH BIRD SCREEN 24" ABOVE ROOF LINE.
3. INTEGRAL AIR INTAKE DOOR LOUVER BY ARCHITECTURAL TRADES.

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HVAC - New Work Plan

M1.1

ELECTRICAL SYMBOL LIST

POWER SYMBOLS

SYMBOL	DESCRIPTION
	DUPLEX RECEPTACLE, 120V. 20A. GROUNDING TYPE
M	MEDIA RECEPTACLE
WP	WEATHERPROOF RECEPTACLE
IG	COMPUTER GRADE RECEPTACLE, 120V. 20A., WITH ISOLATED GROUND
	DUPLEX RECEPTACLE, 120V. 20A. GROUNDING TYPE
G	DUPLEX RECEPTACLE, GFCI TYPE,120V. 20A., GROUNDING TYPE
	DOUBLE DUPLEX RECEPTACLE, 120V. 20A. GROUNDING TYPE
	SPECIAL RECEPTACLE, TYPE & MOUNTING HEIGHT AS NOTED
30/15	FUSIBLE DISCONNECT SWITCH - UPPER NUMERAL DENOTES SWITCH SIZE, LOWER NUMERAL DENOTES FUSE SIZE
30	NON-FUSED DISCONNECT SWITCH - NUMERAL DENOTES SWITCH SIZE
	COMBINATION MOTOR STARTER
SM	MANUAL MOTOR STARTER, OR ON MOTORIZED EQUIP.
	MOTOR CONNECTION
	LIGHTING PANELBOARD

LIGHTING SYMBOLS

SYMBOL	DESCRIPTION
S	SINGLE POLE TOGGLE SWITCH
SK	KEY OPERATED SWITCH
SP	SWITCH WITH PILOT LIGHT
OS	OCCUPANCY SENSOR, DUAL TECHNOLOGY, 360°
	RECESSED TROFFER
	EMERGENCY LIGHT
	SURFACE MOUNTED LIGHT
	RECESSED TROFFER
	EMERGENCY LIGHT
	SURFACE MOUNTED LIGHT
	WALL MOUNTED LUMINAIRE, HEIGHT AS NOTED
	SURFACE MOUNTED LIGHT FIXTURE
	PENDANT MOUNTED LIGHT FIXTURE
	RECESSED DOWNLIGHT
	STRIP LIGHT
	WALL MOUNTED LED

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LIGHT TYPE	LUMEN INITIAL LUMEN OUTPUT	CCT	CRI	INPUT VOLTAGE	INPUT WATTAGE	BALLAST/ DRIVER TYPE	MANUFACTURER	BASIS OF DESIGN	NOTES
'A'	4' LOW PROFILE WRAPAROUND	LED	4,000	4000	82	120/277V	35	LED DRIVER	LITHONIA	#BLWP4 ADP LP840 LED	
'AE'	SAME AS 'A' WITH BATTERY BACK-UP	LED	4,000	4000	82	120/277V	35	LED DRIVER	LITHONIA	#BLWP4 ADP LP840 E10 WLCP	
'B'	2' LOW PROFILE WRAPAROUND	LED	2,000	4000		120/277V	16	LED DRIVER	LITHONIA	#BLWP2 20L SDSM LP840	
'C'	WALL PACK LUMINARE	LED	800	4000		120V	8.5	LED DRIVER	LITHONIA	# LIL LED 40K MVOLT PE DDBTXD	DARK BRONZE COLOR, WITH BUILT-IN PHOTOCELL
OS	OCCUPANCY SENSOR	LED				120V			LITHONIA	CM PDT 10R MOLION 360-DEGREE WITH DUAL TECHNOLOGY, WHITE WITH PP20 UNIT	

NOTES:
1. ALTERNATE LIGHTING MANUFACTURERS EQUIPMENT BY EQUITY, COOPER, PHILLIPS OR HUBBEL, SHALL BE SIMILAR IN PERFORMANCE, PHYSICAL APPEARANCE AND CONSTRUCTION TO BE CONSIDERED AS EQUAL TO UNIT SPECIFIED.
2. ALL LED DRIVERS SHALL BE HIGH POWER FACTOR (>0.9), SOUND CLASS A, AND LOW HARMONIC DISTORTION (<20% THD), AND SHALL BE PROVIDED WITH DISCONNECT MEANS WHERE REQUIRED BY NATIONAL ELECTRIC CODE.

(NOTES #1&2)

EXISTING PANEL BOARD LP-'A' MAINS 100A — VOLTAGE AND PHASE 240/120V — SYM. A.I.C. MIN. 10,000 — MOUNTING SURFACE

LOAD SERVED	LOAD - VA A	LOAD - VA B	CKT BRKR	CKT #	CKT #	CKT BRKR	LOAD - VA. A	LOAD - VA. B	LOAD SERVED
WATER HEATER (NEW)	1500		20	1	2	20	656		NEW LIGHTS
NEW HAND DRYER		1450	20	3	4	20		806	NEW EXHAUST FANS, 3 & 4
NEW HAND DRYER	1450		20	5	6	20	360		NEW EXHAUST FANS, 1 & 2
LIVERY (EXISTING LOAD) (NOTE 3)		2000	60 / 2	7	8	20		800	SEWER PUMP (GRINDER PUMP)
	2000			9	10	20	720		BATHROOM GFCI RECEPTACLES
NEW HAND DRYER		1450	20	11	12	20		1450	NEW HAND DRYER
CORRIDOR & WALL PACK LIGHTS	104		20	13	14	20 / 2	625		CHANGING TABLE **(ALTERNATE #3)**
OUTLET FOR FUTURE AIR COMPRESSOR (NOTE 4)		1885	20 / 2	15	16			625	
	1885			17	18	20A	720		OUTDOOR GFI OUTLETS
SPACE		--		19	20			--	SPACE
SPACE	--			21	22		--		SPACE
SPACE		--		23	24			--	SPACE

LOAD DESCRIPTION	DEMAND FACTOR D.F.	VOLT-AMPS CONNECTED	VOLT-AMPS DEMAND		
				--	TOTAL DEMAND LOAD
LIGHTING	1.0	435	435	--	25% LIGHTING LOAD
RECEPTACLES	NEC	1440	1440	--	SPARE
MOTORS	1.25 LARGEST	11,648	12,308		
MISC. EQUIPMENT	0.7	6,750	4,725	18,908	DESIGN LOAD (VA)
		--	--	78.8	DESIGN AMPS
	TOTAL	20,263	18,908		

NOTES:
1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANY TO MAKE SURE 100A, 240V SERVICE IS PROVIDED TO THE BUILDING.
2. PROVIDE NEW UPDATED AND PRINTED PANEL SCHEDULE.
3. EXISTING SEWER/GRINDER PUMP WILL BE REPLACED WITH NEW ONE (PROVIDED AND INSTALLED BY OTHERS).
4. PROVIDE 20A, 240 V, GFCI BREAKER.

PROJECT SPECIFIC NOTES

1. APPLICABLE CODES INCLUDE, BUT ARE NOT NECESSARILY LIMITED TO, THE FOLLOWING:
   - 1.1. 2015 MICHIGAN BUILDING CODE
   - 1.2. 2017 NEC
   - 1.3. 2017 MICHIGAN ENERGY CODE (IECC 2015 / ASHRAE 90.1 - 2013)
   - 1.4. 2009 ICC ANSI STANDARD A117.1-2009
2. CONTRACTOR SHALL PROVIDE NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT AND ARC-FLASH LABELS INDICATING REQUIRED PPE PROTECTION.
3. ALL WIRING AND BUSSING SHALL BE COPPER, UNLESS OTHERWISE NOTED.
4. A SEPARATE EQUIPMENT GROUNDING CONDUCTORS, SIZED PER NEC, SHALL BE INSTALLED WITH ALL CIRCUIT CONDUCTORS.
5. PROVIDE A THERMAL-ADHESIVE LABEL ON EACH DEVICE (LIGHT SWITCH, RECEPTACLE, ETC.) INDICATING THE SOURCE PANEL AND CIRCUIT NUMBER.

GENERAL NOTES

1. THE CONTRACTOR SHALL ABIDE BY ALL FEDERAL, STATE, AND/OR LOCAL CODES. IF A DISCREPANCY BETWEEN CODES OCCURS, THE MOST STRINGENT SHALL PREVAIL.
2. THE CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS PRIOR TO THE COMMENCEMENT OF ANY WORK. SHOULD DISCREPANCIES BE DISCOVERED, THE CONTRACTOR SHALL VERIFY INTENT WITH THE ENGINEER/OWNER BEFORE PROCEEDING.
3. COORDINATE LOCATIONS OF ALL CEILING MOUNTED DEVICES WITH OTHER TRADES PRIOR TO INSTALLATION.
4. COORDINATE ALL ROUGH-IN REQUIREMENTS FOR OWNER FURNISHED EQUIPMENT WITH THE OWNER PRIOR TO BEGINNING WORK. THESE DRAWINGS ARE BASED ON THE BEST INFORMATION AVAILABLE DURING THE DESIGN PHASE OF THE PROJECT.
5. COORDINATE WITH MILLWORK CONTRACTOR TO DETERMINE THE EXACT LOCATION OF OUTLETS BEING PLACED IN MILLWORK.
6. ALL DEVICES ARE TO BE FLUSH MOUNTED UNLESS NOTED OTHERWISE.
7. DEVICES NOTED "GFI" SHALL INCLUDE GROUND FAULT INTERRUPTING DEVICES.
8. DEVICES NOTED "WP" SHALL BE WEATHERPROOF, "WHILE-IN-USE" TYPE WHERE APPLICABLE.
9. DEVICES NOTED "NL" SHALL BE NIGHT LIGHTS. PROVIDE UN-SWITCHED BRANCH CIRCUIT CONDUCTORS TO EACH FIXTURE.
10. CONNECT ALL EXIT AND EMERGENCY LIGHTING FIXTURES TO LOCAL LIGHTING CIRCUIT, AHEAD OF ALL SWITCHES, PER NEC.
11. ELECTRICAL CONTRACTOR SHALL PROVIDE SAFETY DISCONNECT SWITCHES FOR ALL MECHANICAL AND PLUMBING EQUIPMENT.
12. MULTI-WIRE BRANCH CIRCUITS SHALL BE PROVIDED WITH THE MEANS TO SIMULTANEOUSLY DISCONNECT ALL UNDERGROUND CONDUCTORS AT THE POINT WHERE THE BRANCH CIRCUIT ORIGINATES. REFER TO 2017 NEC 210.4 (B). THIS APPLIES TO ALL MULTI-WIRE BRANCH CIRCUITS SUPPLYING ANY LOAD.
13. DEDICATED NEUTRAL CONDUCTORS SHALL BE CONSIDERED CURRENT-CARRYING CONDUCTORS. HOMERUNS CONTAINING MORE THAN THREE CURRENT-CARRYING CONDUCTORS SHALL BE DERATED IN ACCORDANCE WITH THE 2017 NEC.
14. BRANCH CIRCUIT HOMERUN CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH THE 2017 NEC. THE MAXIMUM ALLOWABLE VOLTAGE DROP ON A FEEDER IS 2% AND THE MAXIMUM ALLOWABLE VOLTAGE DROP ON A BRANCH CIRCUIT IS 3%. PROVIDE BRANCH CIRCUIT CONDUCTORS SIZED TO ENSURE THE TOTAL VOLTAGE DROP FROM THE SOURCE TO THE POINT OF UTILIZATION IS LESS THAN OR EQUAL TO 5%.
15. DEDICATED NEUTRALS SHALL BE PROVIDED FOR ALL BRANCH CIRCUITS, EXCEPT WHERE A MULTI-WIRE CIRCUIT IS REQUIRED TO SERVE THE LOAD (I.E. SYSTEMS FURNITURE). WHEN SHARING THE NEUTRAL CONDUCTOR IN A MULTI-WIRE CIRCUIT, THE NEUTRAL SIZE SHALL BE INCREASED 17790.
16. ALL MOUNTING HEIGHTS PROVIDED ARE TO CENTER OF DEVICE, UNLESS OTHERWISE INDICATED.
17. ADD BRANCH CIRCUIT BREAKER TO AVAILABLE SPACES IN EXISTING LIGHTING/RECEPTACLE PANEL, NEW BREAKER SHALL MATCH EXISTING, BREAKER SIZES AS SHOWN IN PANEL SCHEDULE.

GENERAL NOTES - DEMOLITION

1. CERTAIN AREAS IN THE EXISTING BUILDING SHALL BE MODIFIED TO SUIT THE NEW REQUIREMENTS. THESE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO INDICATE THE SCOPE OF WORK REQUIRED TO COMPLETE A SAFE REMOVAL OF THE ELECTRICAL SYSTEMS AS INDICATED BY THE NOTES ON THIS DRAWING.
2. WORK IN THE AREA SHALL INCLUDE THE DISCONNECTION, REMOVAL, RELOCATION, AND RECONNECTION COMPLETE IN ALL RESPECTS OF ALL ITEMS REQUIRED TO SUIT THE DESIGN INTENT. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE PROJECT SITE TO CORRECTLY ASCERTAIN THE SCOPE OF SERVICES AND TO INCLUDE ALL PERTINENT COSTS IN HIS BID. NO EXTRAS WILL BE ALLOWED.
3. ALL ELECTRICAL WORK INTERFERING WITH AND REQUIRING MODIFICATION FOR THE NEW REQUIREMENTS SHALL BE RELOCATED AS DIRECTED BY BUILDING MANAGEMENT PERSONNEL AND REINSTALLED AND REWIRED AS NECESSARY TO THE SATISFACTION OF THE BUILDING OWNER.
4. PROVIDE ALL EQUIPMENT, MATERIALS, LABOR AND SUPERVISION NECESSARY TO PROVIDE A SAFE ELECTRICAL INSTALLATION. ALL ELECTRICAL DEVICES AND SYSTEMS THAT ARE INDICATED AS EXISTING TO REMAIN SHALL BE IN SAFE WORKING ORDER.
5. OBTAIN NECESSARY PERMITS FROM THE LOCAL AUTHORITY HAVING JURISDICTION BEFORE PROCEEDING WITH ANY WORK IN THE FIELD.
6. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, OSHA AND OTHER ELECTRICAL SAFETY STANDARDS AND GUIDELINES. CONFORM TO ALL STATE AND LOCAL CODES AND STANDARDS.
7. ALL EQUIPMENT AND WIRING NOT IN RENOVATION AREAS BUT AFFECTED BY WORK IN RENOVATION AREAS SHALL BE RECONNECTED AS REQUIRED FOR A COMPLETE WORKING SYSTEM.
8. ABANDONED AND INACTIVE CONDUITS, WIRE, DEVICES, EQUIPMENT, ETC., SHALL BE REMOVED IN THEIR ENTIRETY. IN ADDITION TO THESE ITEMS, THIS CONTRACTOR SHALL REMOVE ALL ITEMS AS INDICATED ON THE PLANS, OR AS REQUIRED TO CLEAN UP THE ENTIRE AREA OF UNUSED, ABANDONED, OR INACTIVE MATERIALS. CONDUIT AND WIRING FEEDING DEVICES AND EQUIPMENT TO BE REMOVED SHALL ALSO BE REMOVED UP TO THE NEXT ACTIVE PULLBOX, JUNCTION BOX, OR PANELBOARD. HANGERS, MESSENGER CABLE, BRACKETS, ETC, SUPPORTING ITEMS TO BE REMOVED SHALL ALSO BE UNFASTENED AND REMOVED. OPEN HOLES IN DUCTS, BOXES, PANELBOARDS, AND KNOCKOUTS SHALL BE CLOSED WITH SUITABLE SNAP PLUGS OR FILLER PLATES.
9. THE CONTRACTOR SHALL REMOVE AND DELIVER TO A PLACE DESIGNATED BY THE OWNER ALL EXISTING ELECTRICAL EQUIPMENT NO LONGER INTENDED FOR USE. THIS EQUIPMENT REMAINS THE PROPERTY OF THE OWNER.
10. ANY EQUIPMENT, DEVICES, MATERIALS, ETC., THE OWNER ELECTS NOT TO RETAIN SHALL BE LEGALLY DISPOSED OF BY THE CONTRACTOR OFF THE OWNER'S PREMISES.
11. AT COMPLETION OF ALL ELECTRICAL WORK, UPDATE CIRCUIT DIRECTORIES IN PANELS AFFECTED BY NEW WORK WITH NEW TYPEWRITTEN CIRCUIT DESCRIPTIONS. CIRCUIT DIRECTORIES SHALL BE MOUNTED ON INSIDE OF FRONT PANEL COVER IN A CLEAR PLASTIC ENCLOSURE.
12. EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, AND IN ACCORDANCE WITH THEIR LISTING OR LABELING REQUIREMENTS. ANY PENETRATIONS THROUGH FIRE RATED ASSEMBLIES THAT ARE CREATED BY THE ELECTRICAL DEMOLITION, SHALL BE SEALED AND RESTORED IN ACCORDANCE WITH THE UL FIRE RESISTANCE DIRECTORY.
13. WHERE CONDUIT AND/OR OUTLET BOXES INDICATED FOR DEMOLITION ARE EMBEDDED IN CONCRETE OR BELOW CONCRETE SLAB, ABANDON IN PLACE. CUT BACK AND SEAL EXPOSED CONDUIT. PROVIDE BLANK COVERS FOR ABANDONED BOXES. REMOVE ALL ASSOCIATED WIRING BACK TO SOURCE.

SHEET INDEX

ELECTRICAL ABBREVIATIONS

A.C.	ALTERNATING CURRENT
AC	ABOVE COUNTERTOP
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AFF	ABOVE FINISHED FLOOR TO CENTERLINE
AFG	ABOVE FINISHED GRADE TO CENTERLINE
BC	BLANK COVER PLATE
C	CONDUIT
CKT/CIRC	CIRCUIT
CTC	CURRENT TRANSFORMER CABINET
DP	DISTRIBUTION PANEL
(E)	EXISTING
EC	ELECTRICAL CONTRACTOR
EF	EXHAUST FAN
EWC	ELECTRIC WATER COOLER
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FURN	FURNACE
G/GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GRD	GROUNDED
IG	ISOLATED GROUND
MDP	MAIN DISTRIBUTION PANEL
NL	NIGHT LIGHT
PP	POWER PANEL
P/P	POWER POLE
RIO	ROUGHED-IN ONLY
RTU	ROOFTOP UNIT
(R)	RELOCATED
S	SURFACE MOUNTED
UC	UNDER COUNTER
UON	UNLESS OTHERWISE NOTED
WH	WATER HEATER
WP	WEATHERPROOF

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Date:	Issued For:
07.22.20	Review
08.04.20	Owner's Review
02.22.21	Construction

AAPR Argo Park
1055 Longshore Dr
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Project Number: 2002

Elec. Symbol List, Notes, Abbreviations & Schedules

E0.1

ELECTRICAL SPECIFICATIONS

1. GENERAL CONDITIONS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections, apply to work of this section. The Electrical Contractor shall assume all obligations contained therein that affect his work. The Electrical Engineer shall be consulted in case of any disputes and his decision shall be final.

B. The Electrical Contractor shall examine the Architectural, Structural, Plumbing and Mechanical Drawings and Specifications and shall familiarize himself with all conditions of work affecting the contract. Size and capacity of all equipment shall be as on plans or as indicated herein.

C. Furnish labor and materials to provide a complete electrical system as required by the plans and specifications.

D. Any item appearing on the drawings and not in the specification or vice versa, and any items appearing in neither but necessary to accomplish the intent of these specifications, shall be furnished by the Electrical Contractor.

E. Where equipment specifications or descriptions include a specific manufacturer and catalog number, any substituted equipment or equipment proposed to be provided by an alternative manufacturer shall functionally meet, or exceed, the requirements of the specified equipment in all respects. Alternate manufacturers shall refer to product literature published by the manufacturer of the equipment specified to determine equivalency of their proposed alternate product to that specified.

2. WORK INCLUDED

A. These specifications and accompanying drawings depict the provisions by the Electrical Contractor of all labor and materials required to install a complete system of electrical work as indicated on the drawings and/or herein specified. Without restricting the generality of the foregoing, the following shall be included:

1) Power and lighting panelboards, and feeders, transformers, safety switches, branch circuit wiring, outlets and connection complete.

2) Grounding of complete electrical system per Article 250 of N.E.C. and specifications.

3) Emergency egress lighting and exit lighting systems complete.

4) Service and connections of equipment as specified.

5) Lighting fixtures complete with lamps.

6) Disconnect switches which are not an integral part of equipment.

7) Motor starters which are not integral part of equipment.

3. ENERGY CODE COMPLIANCE

A. DRAWINGS: Within 30 days after the date of system acceptance, the electrical contractor shall submit record drawings of the actual electrical installation to the building owner, including:

1) A single line diagram of the building electrical distribution system and;

2) Floor plans indicating location and area served for all distribution.

B. MANUALS: An operating and maintenance manual shall be provided to the building owner. The manuals shall include, at a minimum, the following:

1) Submittal Data stating equipment rating and selected options for each piece of equipment requiring maintenance.

2) Operation manuals and maintenance manuals for each piece of equipment requiring maintenance; required routine maintenance actions shall be clearly identified.

3) Names and address of at least one qualified service agency.

4) A complete narrative of how each system is intended to operate.

C. The Electrical Contractor shall deliver all required drawings and manuals to the owner before receiving his final payment.

4. ELECTRICAL SUBMITTALS

A. Refer to the Conditions of the Contract (General and Supplementary) for submittal definitions, requirements, and procedures.

B. Submittal of shop drawings, product data, and samples will be accepted only when submitted by The Contractor. Data submitted from subcontractors and material suppliers directly to the Architect/Engineer will not be processed.

C. The Electrical Contractor shall be responsible for final coordination of all electrical feeders and over current protection devices (circuit breakers and/or fuses) with the manufacturer's written data for each mechanical device prior to submittal of any electrical equipment for review. No additional compensation will be allowed for any changes to electrical feeders or over current protection devices required for any mechanical devices.

5. REGULATIONS

A. All work shall be installed in accordance with the local electrical code, the requirements of the local utility companies, the requirements and recommendations of the National Electrical Code and MIchigan Building Code.

B. Where conflict exists between codes or utility company requirements and contract documents, the more stringent shall apply.

C. The installation of telephone service entrance conduit systems shall be as shown and shall comply with the requirements of the local telephone company. Contractor shall verify the exact point of service with the telephone company representative before commencing with the installation of the service entrance conduits.

6. COORDINATION WITH LOCAL UTILITY COMPANIES:

A. The electrical contractor shall verify the exact electric and telephone utility company service points and coordinate the electric utilities primary and secondary conduit routings and length of run with the utility companies service planners prior to submitting his bid for the electrical work for this project.

B. All work shall be done in accordance with the rules and regulations of the local utility companies providing services to the project.

C. Before submitting his bid, the electrical contractor shall check with the utility companies and determine from them all of their requirements and charges. All such requirements and charges shall be included in the base bid proposal.

7. TEMPORARY SERVICE

A. The Electrical Contractor shall furnish and install temporary light and power in accordance with the progress schedule of the General Contractor.

8. STANDARDS OF MATERIAL AND WORKMANSHIP

A. All work shall be done at such times and in such a manner as will least interfere with the maintenance and operation of all related or affected systems.

B. All materials and equipment shall bear the label of approval of the National Board of Fire Underwriter's Laboratories.

C. The Electrical Contractor shall effectively protect, at his own expense, such of his work, materials or equipment as is liable to injury during the construction period.

D. All openings into any part of the conduit system as well as associated fixtures, equipment, etc., both before and after being set in place, must be securely covered or otherwise protected to prevent obstruction of the conduit, or injury due to carelessness or maliciously dropped tools or materials, grit, dirt or any foreign matter. The Electrical Contractor shall be held responsible for all damage so done until his work is fully and finally accepted. Conduit ends shall be covered with capped bushings. All electrical equipment shall be grounded.

E. General requirements and details of equipment are shown. Dimensions or scales shown are approximate and must be checked at job prior to installation of equipment or any order given for fabrication.

F. Electrical Contractors shall have competent foreman on the premises at all times to superintend and check and lay out all work, give information to General Contractor regarding chases and openings, and be responsible for such locations. This Contractor shall cooperate with other contractors where chases, openings, pipes, foundations, etc., are in proximity to the work of other trades and arrange the work to fit. This Contractor shall study where other trades leave connections and outlets to be connected, so that all work and appliances shall be properly arranged for and connected ready for use.

9. PARTS RECEIPT

A. Retain all portable and detachable portions of the installation such as keys, tools, manuals, etc., until the completion of the work and then turn them over to the Owner and obtain itemized receipts. These receipts shall be attached to the "Final Application" for payment.

10. OWNER TESTS AND INSPECTIONS

A. The Owner reserves the right to inspect and test any portion of the equipment during the progress of its erection. The Contractor shall afford the Owner or Owner's representative every facility for evaluating the skill and competence of the mechanics and to examine the materials and installation. Concealed work shall be reopened when so directed during his periodic visits.

B. The Contractor shall notify the Architect or Engineer before any electrical work is concealed by a concrete pour, covering of a wall or installation of a ceiling. This notification shall be received from the Contractor at least 72 hours prior to concealment.

C. The Electrical Contractor shall test the entire system in the presence of the Owner or his representative when the work is finally completed to insure that all portions are free from short circuits and grounds and are in good and intended working condition. Power for final tests after all erections are completed will be furnished by the Owner. All equipment necessary to conduct the above tests shall be furnished at the expense of the Electrical Contractor.

11. CHARACTER OF MATERIALS AND EQUIPMENT

A. All materials and equipment shall be new and conform to standards specified herein, defined to include conduits, cable, wiring materials and devices, panelboards, etc.

B. Equipment shall be installed in strict accordance with manufacturer's instructions for type, capacity and suitability of each piece of equipment used.

C. The Electrical Contractor shall obtain the instructions which shall be considered as a part of these specifications.

12. MANUFACTURER'S DRAWING

A. The Electrical Contractor shall submit to the Architect manufacturer's drawings of lighting fixtures, switches, any special electrical equipment to be installed on this job, for the approval before ordering same for installation.

B. The Electrical Contractor shall be responsible for final coordination of all electrical feeders and over current protection devices (circuit breakers and/or fuses) with the manufacturer's written data for each mechanical device prior to submittal of any electrical equipment for review. No additional compensation will be allowed for any changes to electrical feeders or over current protection devices required for any mechanical devices.

C. Failure of the subcontractor to submit shop drawings in ample time for checking shall not entitle him to an extension of contract time, and no claim for extension by reason of such default will be allowed.

13. AS-BUILT DRAWINGS

A. The construction drawings shall be revised during construction to indicate the "as-built" condition. At the completion of the project, they shall serve as final "as-built" drawings. Submit to the Architect/Engineer the revised "as-built" drawings in hard copy or PDF format.

14. STRUCTURAL DIFFICULTIES

A. Should any structural difficulties prevent setting of cabinets, running conductors, etc., at points shown on plans, the necessary minor deviations therefrom, as determined by the Architect, may be permitted and must be made without additional cost.

15. COOPERATION WITH OTHER CONTRACTORS

A. The Electrical Contractor shall arrange all parts of his work in proper relation to the work of others and to the architectural finish.

B. Where interferences occur, the Electrical Contractor shall, before installing the work involved, consult with the Architect as to the exact location and level of his work. The Architect's decision shall be final.

16. DRAWINGS AND SPECIFICATIONS

A. The drawings are intended to show the general arrangement of outlets. Door swings shall be checked for final arrangement and switches installed on the knob side. The Electrical Contractor shall check all structural and mechanical plans and specifications so that he may coordinate his work with these trades.

17. CODES, PERMITS AND FEES

A. Obtain and pay for all permits, licenses, inspections, approvals and fees required and ensure that the entire electrical installation conforms to codes and regulations required by authority or agency having jurisdiction over the entire installation or construction of work included. All fees shall be included in the base proposal.

B. The Electrical Contractor shall, at his expense, have an inspection made by the local electrical inspection department of the complete electrical installation and shall deliver certificate of approval of the complete work to the Owner before receiving his final payment.

C. Whenever the requirements of these specifications and drawings exceed the requirements of governing codes, laws, regulations and ordinances, these specifications and drawings shall govern.

D. Should any change in the drawings and specifications be required to conform to these codes, ordinances, laws of regulations, notify the Architect-Engineer at time of submitting proposal. After entering into a contract, Contractor shall complete all work necessary to meet code, laws, regulations and ordinance requirements without extra expense to the Owner.

18. PAINTING AND CLEANING

A. See "Finishing and Painting" in Architectural Specifications.

B. Electrical metal conduit installed in earth or below vapor barrier shall be given two coats of black asphaltum. Conduit embedded in concrete need not be painted.

C. Factory finish as damaged shall be retouched or replaced to satisfaction of Architect and Owner.

19. CLEAN UP

A. The Contractor shall keep the premises free of debris and unusable materials resulting from his work and immediately upon completion of this work, he shall remove such debris and materials from the Owner's property and he shall leave all floors broom clean in areas affected by his work.

20. GROUNDING

A. Furnish and install a complete grounding system in accordance with the National Electrical Code and local codes and ordinances.

B. Grounding path from circuits, equipment, and conductor enclosures shall be permanent and continuous; have capacity to conduct safely any fault currents likely to be imposed on it; and shall have a resistance to ground of less than 5 ohms.

C. All branch circuit conductors shall include a separate copper, insulated (green), equipment grounding conductor sized per Article 250 of the National Electrical Code.

D. Piping systems and exposed structural steel that may become energized shall be bonded to the service equipment enclosure, the grounded conductor at the service, the grounding electrode conductor where of sufficient size, or to the one or more grounding electrodes used. Bonding shall be per NEC Art. 250.104.

21. LIGHTING AND RECEPTACLE PANELBOARDS

A. Panelboards for the control of general lighting, and receptacles shall be dead front type with 4 wire mains and branches of the circuit breaker type providing thermal and magnetic tripping. Circuit breakers shall be the molded case quick-make type, and shall be provided with branches as scheduled on the drawings.

1) All breakers shall be "bolt-on" type. Handle ties shall not be permitted.

2) Circuit breakers shall be Cutler-Hammer series B for 240/120 volt and series G for 480/277 volt.

3) Interrupting Rating:

a. Panelboards shall have fully rated interrupting ratings. Panelboards shall be labeled with the UL short-circuit rating.

b. Interrupting capacity for 480/277 volt panelboards and breakers shall be not less than the fault current indicated on the drawings and a minimum of 14,000 amperes at 480 volt. Interrupting capacity for 208/120 volt panelboard and breakers shall be not less than the fault current indicated on the drawings and a minimum of 10,000 amperes at 240 volt.

1) All Bus - Bar shall be copper.

2) Panelboards shall be Cutler-Hammer type Pow-R Line C, PRL-1, PRL-2, PRL-3a or PRL-4B, or equal by general Electric, Square D Company, Siemens Energy and Automation.

3) Alternate manufacturer's equipment shall functionally meet, or exceed, the requirements of the specified equipment in all respects.

22. CONDUIT

A. General:

1) Minimum size conduit shall be 3/4", except switch legs and drops to individual light fixtures may be 1/2" conduit.

2) Install exposed conduit runs parallel to or at right angles with principal structural members and with adjacent walls.

3) Install vertical runs perpendicular to finish floors and ceilings.

4) Concealed runs may take most direct route between outlets.

5) Use plastic or metal cap closures during construction to prevent lodgment of plaster, dirt, concrete, or trash in conduit, boxes and fittings.

6) Fasten and support conduit at least every 10 ft. and within 3 ft. of outlet box, junction box, cabinet, or fitting.

7) Ream cut ends to remove rough edges.

8) Where conduit is threaded in field, use conduit thread cutting die with taper.

9) Run of conduit between outlet and outlet, fitting and fitting, or outlet and fitting shall not contain more than equivalent of three quarter bends (270 deg. total), including bends located immediately at outlet or fitting.

10) Conduit runs, including boxes, fittings, cabinet, and wireways, shall be electrically continuous throughout.

11) Install conduit runs concealed within finished area.

12) Fasten and support conduit with malleable iron or galvanized steel conduit straps.

13) Fasten and support group runs of raceways with prefabricated, noncorrosive, channel systems supported with threaded hanger rods.

14) Terminate conduit runs in main service switchboard with grounding type insulated bushings.

15) Where conduit runs pass through interior fire-rated partitions or above grade concrete floors, provide fireseal fittings.

16) Where conduit runs pass through interior non-rated partitions or above grade concrete floors, install conduit in galvanized steel conduit sleeves.

17) Seal void between sleeve and conduit with approved fire proofing compound.

B. Underground Conduit Runs:

1) Construct conduit runs on thoroughly compacted earth and compacted backfill.

2) Slope conduits toward each end.

3) Space conduit accurately with plastic or precast concrete spacers held firmly in place.

4) Coat male threads of metal conduit with white lead prior to assembly.

5) Rod and draw mandrel through conduit; follow by swab to clear obstruction which may cause abrasions.

23. SUPPORTING DEVICES

A. Codes and Standards

1) Methods of installation shall comply with the provisions of applicable sections of the latest editions of the National Electrical Code, the State Building Code, the State Electrical Code, the International Building Code, and the ICC Electrical Code, as applicable to construction and installation of electrical supporting devices.

2) Compliance: Comply with applicable MSS standard requirements, National Electrical Contractors Association's "Standard of Installation",UL, and Federal Specification FF-S-760.

B. Provide supporting devices which comply with manufacturer's standard materials, design and construction in accordance with published product information, and as required for complete installation.

C. Sleeves and Seals: Provide sleeves and seals, of types, sizes and materials indicated; with the following construction features:

1) Conduit Sealing Bushings: Factory-fabricated watertight conduit sealing bushing assemblies suitable for sealing around conduit, or tubing passing through concrete floors and walls.

2) Construct seals with steel sleeve, malleable iron body, neoprene sealing grommets or rings, metal pressure rings, pressure clamps, and cap screws.

D. Cable Supports for Vertical Conduit: Factory-fabricated assembly consisting of threaded body and insulating wedging plug for non-armored electrical cables in riser conduits. Provide plugs with number and size of conductor gripping holes as required to suit individual risers. Construct body of malleable-iron casting with hot-dip galvanized finish.

E. U-Channel Strut Systems:

1) Provide U-channel strut system for supporting electrical equipment, 12-gauge hot-dip galvanized steel, of types and sizes indicated; construct with 9/16" dia. holes, 8" o.c. on top surface.

F. Installation of Supporting Devices:

1) Install hangers, anchors, sleeves and seals as indicated, in accordance with manufacturer's written instructions and with recognized industry practices to insure supporting devices comply with requirements. Comply with requirements of NECA and NEC for installation of supporting devices.

2) Coordinate with other electrical work, including raceway and wiring work, as necessary to interface installation of supporting devices with other work.

3) Install hangers, supports, clamps and attachments to support piping properly from building structure. Arrange for grouping of parallel runs of horizontal conduits to be supported together on trapeze type hangers where possible. Install supports with spacings indicated and in compliance with NEC requirements.

4) Torque sleeve seal nuts, complying with manufacturer's recommended values. Ensure that sealing grommets expand to form watertight seal.

24. ELECTRICAL IDENTIFICATION

A. General:

1) Materials and methods of installation shall comply with the provisions of applicable sections of latest editions of the National Electrical Code , the State Electrical Code, the International Building Code, and the ICC Electrical Code as applicable to installation of identifying labels and markers for wiring and equipment.

2) UL Compliance: Comply with applicable requirements of UL Std 969, "Marking and Labeling Systems", pertaining to electrical identification systems.

3) ANSI Compliance: Comply with applicable requirements of ANSI Std A13.1, "Scheme for the Identification of Piping Systems".

4) NEMA Compliance: Comply with applicable requirements of NEMA Std No's. WC-1 and WC-2 pertaining to identification of power and control conductors.

B. Lettering and Graphics:

1) General: Coordinate names, abbreviations and other designations used in electrical identification work, with corresponding designations shown, specified or scheduled. Provide numbers, lettering and wording as indicated or, if not otherwise indicated, as recommended by manufacturer or as required for proper identification and operation/maintenance of electrical systems and equipment. Comply with ANSI A13.1 pertaining to minimum sizes for letters and numbers.

C. General Installation Requirements:

1) Install electrical identification products as indicated, in accordance with manufacturer's written instructions, and requirements of NEC.

2) Coordination: Where identification is to be applied to surfaces which require finish, install identification after completion of painting.

3) Regulations: Comply with governing regulations and requests of governing authorities for identification of electrical work.

D. Conduit Identification:

1) Underground Conduit and Cable Identification:

a. General: During back-filling/top-soiling of each exterior underground electrical conduit, and signal or communication cable, install continuous underground-type plastic line marker, located directly over buried line at 6" to 8" below finished grade. Where multiple lines are buried in a common trench and do not exceed an overall width of 12", install a single line marker.

b. Install line marker for every buried service, regardless of whether direct-buried or protected in conduit.

E. Equipment/System Identification:

1) General: Install engraved plastic-laminate sign on each major unit of electrical equipment in building; including central or master unit of each electrical system including communication/ control/signal systems, unless unit is specified with its own self-explanatory identification or signal system. Except as otherwise indicated, provide single line of text, 1" high lettering on 1-1/2" high sign (2" high where 2 lines are required), black lettering in white field. Provide text matching terminology and numbering of the contract documents and shop drawings. Provide signs for each unit of the following categories of electrical work:

a. Panelboards, electrical cabinets and enclosures.

b. Access panel/doors to electrical facilities.

c. Major electrical switchgear.

1) Install signs at locations indicated or, where not otherwise indicated, at location for best convenience of viewing without interference with operation and maintenance of equipment. Secure to substrate with fasteners, except use adhesive where fasteners should not or cannot penetrate the substrate.

25. WIRE AND CABLE (600 Volts)

A. All wiring shall be run in conduit.

B. Wire shall be as manufactured by Anaconda, Walker, General Cable, or Southwire, and shall be copper, minimum conductivity of 98 percent. Aluminum conductors shall be allowable where indicated on the drawings.

C. Feeders and branch circuit wiring shall be 600 volt rated, 75 deg. C insulated type XHHW, THW or THWN.

D. Conductors installed in runs within 6 inches of heating pipes shall be type AVA. No conductors shall be drawn into conduit until all work which may cause cable damage is completed.

E. No wiring smaller than No. 12 AWG gauge shall be used unless otherwise noted, and all wire No. 10 AWG gauge and larger shall be stranded, unless otherwise specified.

F. Home runs to panelboards 75 feet in length or over shall be not less than No. 10 AWG gauge, whether shown or not shown on the drawings.

G. Conductors shall be color coded per the National Electrical Code.

H. Armored Cable (AC) and Metal Clad (MC) Cable:

1) Armored cable and metal clad cable may be used for branch circuit wiring within partition walls.

2) The use of AC or MC cable for circuit homeruns to branch breakers in panelboards shall not be allowed. All such homeruns shall be via EMT, type IMC or rigid steel conduit.

26. OUTLET BOXES

A. Outlets boxes shall be zinc-coated and shall be of the size and type to accommodate:

1) Structural conditions

2) Size and number of conductors and conduit entering

3) Devices or fixtures for which required.

B. Outlet boxes shall be firmly anchored in place and shall be provided with approved fixture supports. Outlet boxes for switches, convenience outlets, etc., shall be set flush with finished walls.

C. Outlet boxes shall be not less than 1-1/2 inches deep unless shallower boxes are required by structural conditions. Ceiling and bracket boxes shall be not less than 4 inch octagonal except that smaller boxes may be used where required by the particular fixture installed. Flush or recessed fixtures shall be provided with separate junction boxes when required by the fixture terminal requirements. Switch and receptacle boxes shall be approximately 4 inches. Telephone outlet boxes shall be 4 inches square.

27. WIRING DEVICES

A. Switches shall be 20 amperes, 277/120 volts. They shall be single pole, three-way or four-way as required. Switches shall be equal to Hubbell 1221, 1223 or 1224.

B. General use receptacles shall be specification grade, duplex type with the mechanism enclosed in a cup body, rated 20 amperes, 125 volt. Receptacles shall be equal to Hubbell 5362.

C. Ground fault receptacles shall be specification grade, duplex type, rated 20 ampere, 125 volt, UL listed under 498 Receptacle Requirements and 943 Class A Requirements, shall conform to NEC requirements, and equal to Hubbell series #5260, P&S, or Arrow-Hart.

D. Special-purpose receptacles shall be single outlet type with the mechanism enclosed in a cup body, with rating and NEMA configuration as indicated on the drawings.

E. Switch with pilot light shall be 20 amperes, 120 volt, single-pole, with illuminated handle. Switches shall be equal to Hubbell 1221-PL.

F. Device colors shall be as selected by Architect.

28. WEATHERPROOF BOXES AND COVERS

A. Wiring devices installed at exterior locations shall be installed in a single gang, deep weatherproof box with while-in-use cover per NEC Section 406.8(b)(1). Boxes and covers shall be constructed of polycarbonate and shall be fully gasketed. The translucent cover shall include a pad-lockable, break-resistant bullnose and latch. Pass & Seymour #WIUC10-DC or equal.

29. DEVICE PLATES

A. Device plates shall be stainless steel type 302. Hubbell "S" series, or as selected by the architect or Owner.

30. SAFETY DISCONNECT SWITCHES

A. Switches shall be quick-make, quick-break type, horsepower rated. All switches shall be NEMA type HD (heavy duty).

B. In-door enclosures shall be NEMA I, indoor; outdoor enclosures shall be NEMA 3R, raintight.

C. Equip fusible switches with Class R, rejection type fuse clips.

D. Safety disconnect switches shall be manufactured by: Square D Company, General Electric, Siemens Energy & Automation, or Cutler-Hammer.

31. LIGHTING FIXTURES

A. Light emitting diode fixtures (LED) lamps and fixtures (combinations of diodes, driver, heat sink, housing and optics). Refer to lighting schedule on drawing E0.1.

32. EMERGENCY LIGHTING

A. The Electrical Contractor shall install an emergency lighting system as shown on the drawings, conforming to the International Fire Code and local code requirements.

B. Branch circuit conductors for emergency lights shall not run in raceway with other branch circuit conductors, nor shall they enter an outlet box with other wire.

C. The system shall be independent of all other wiring beyond the point where emergency service is secured. Connect emergency lights to emergency power source.

33. OCCUPANCY SENSOR LIGHTING CONTROL EQUIPMENT

A. Scope of Work:
1) Contractor shall include all labor, materials, tools, appliances, control hardware, sensor, wire, junction boxes and equipment necessary for and incidental to the delivery, installation and furnishing of a completely operational occupancy sensor lighting control system, as described herein.

B. All components shall be ul listed, offer a five (5) year warranty and meet all state and local applicable code requirements.

C. Contractor shall verify and make all proper adjustments to assure owner's satisfaction with the occupancy system. Contractor shall train owner's personnel to ensure owner's satisfaction with the occupancy system.

D. Products:
1) All equipment indicated on plans are based on products manufactured by SensorSwitch, Leviton, Lutron or Watt Stopper.
2) Alternate manufacturers equipment will be considered for use on this project. However, all equipment proposed as equal to or better than equipment indicated on plans.
3) Circuit control hardware:
a). Control units - For ease of mounting, installation and future service, control unit(s) shall be able to externally mount through a ½" knock-out on a standard electrical enclosure and be an integrated, self-contained unit consisting internally of an isolated load switching control relay and a transformer to provide low-voltage power. Control unit shall provide power to a minimum of two (2) sensors.
4) Control wiring:
a) Control wiring between sensors and controls units shall be class ii, 18-24 A.W.G., stranded UL classified, PVC insulated or Teflon jacketed cable suitable for use in plenums, where applicable.
b) Minimum acceptable wire gauge from the circuit control hardware relays shall be #14 A.W.G.

F. Installation
1) Proper judgment must be exercised in executing the installation so as to ensure the best possible installation in the available space and to overcome local difficulties due to space limitations or interference of structural components. The contractor shall also provide, at the owner's facility, the training necessary to familiarize the owner's personnel with the operation, use, adjustment, and problem solving diagnosis of the occupancy sensing devices and system.

33. GUARANTEE

A. The Electrical Contractor shall leave the electrical installation in proper working order and shall, without charge, replace any work or materials which develop defects, within one (1) year from date of final inspection and acceptance by the Owner.

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08.04.20	Owner's Review
02.22.21	Construction

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Project Number: 2002

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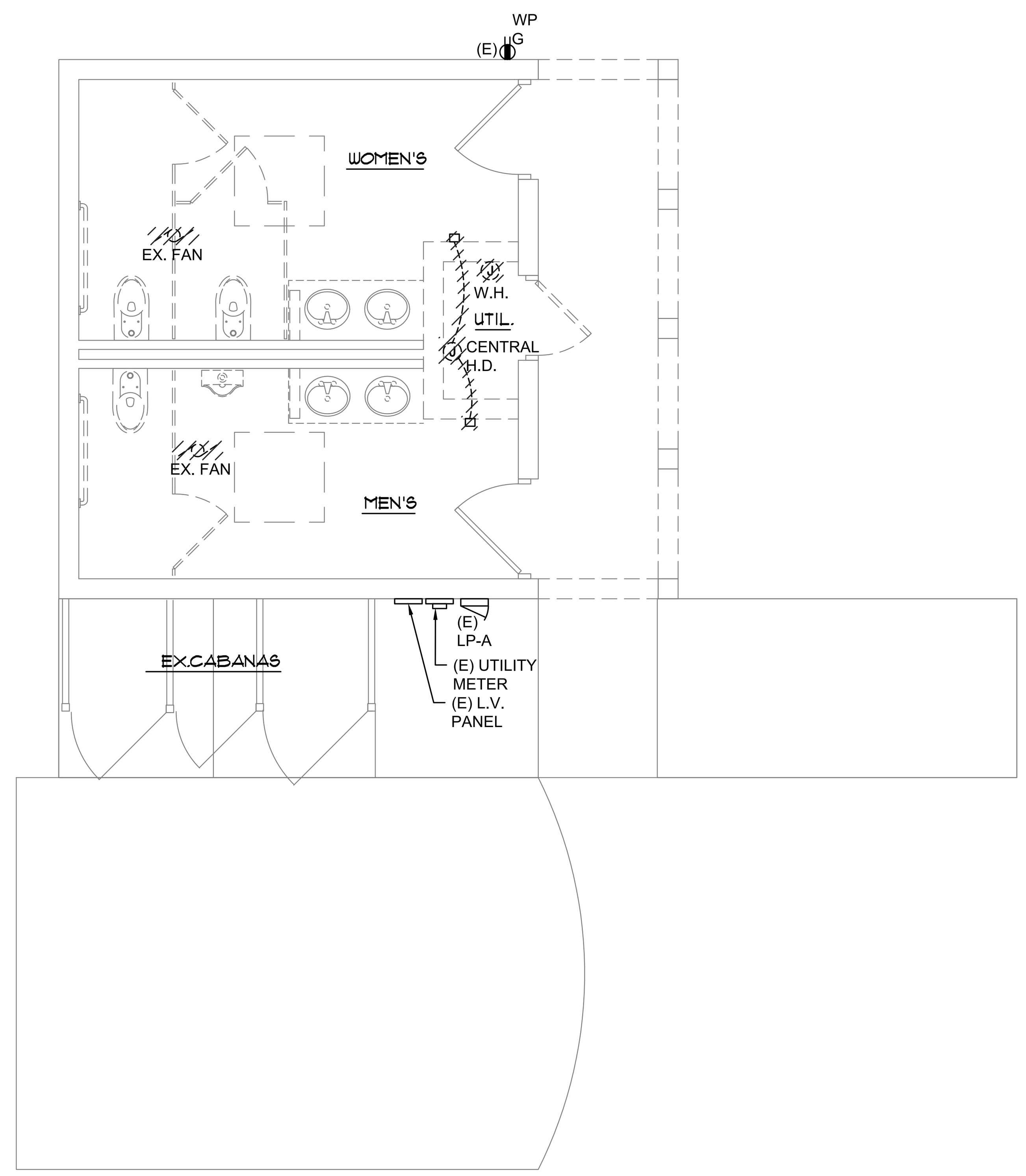
MEEC JOB # 20-0102

Electrical Specifications

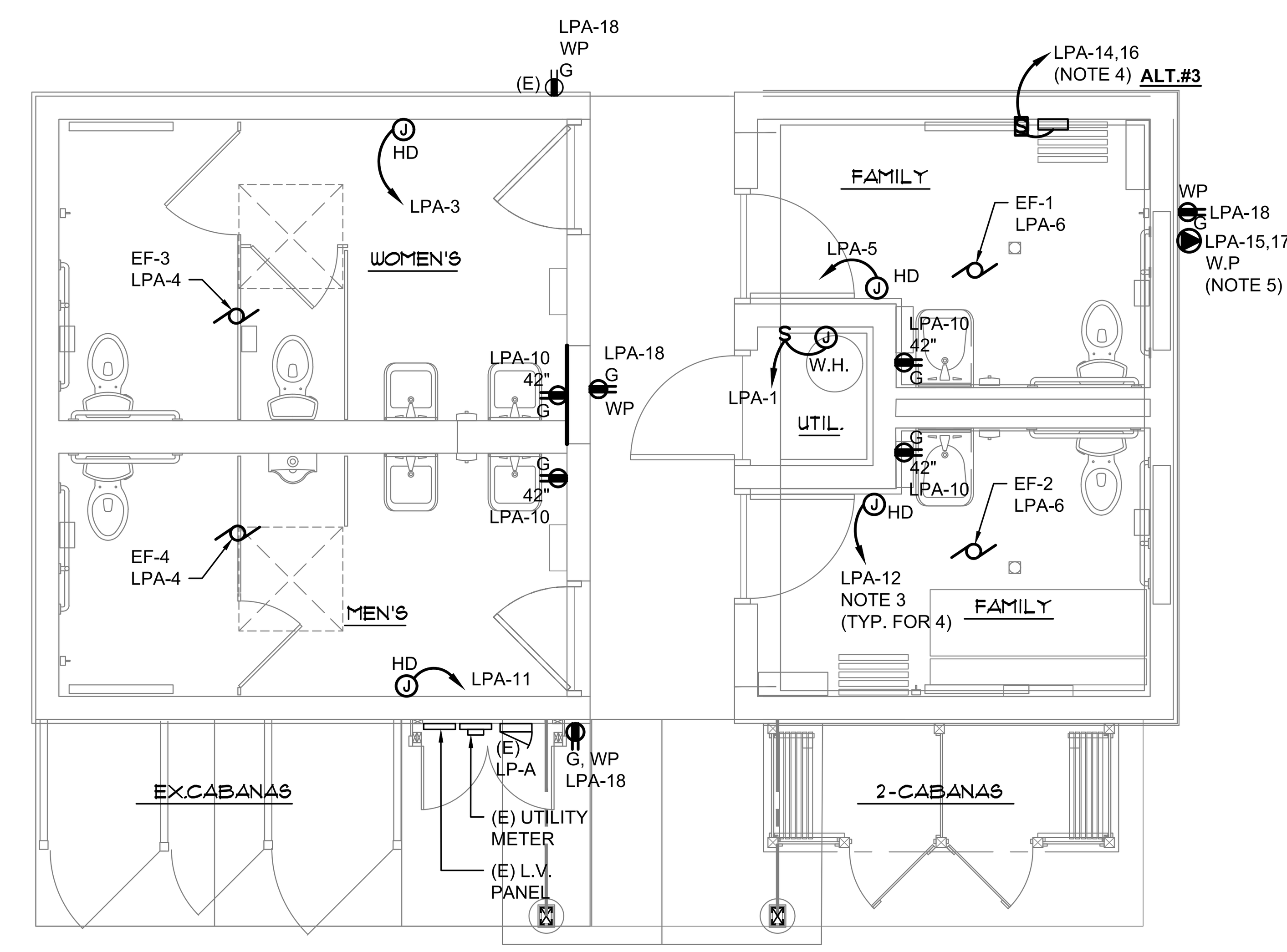
E0.2



1 Demolition Floor Plan - Power
E1.1
SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

1. DISCONNECT AND REMOVE POWER FROM WATER HEATER, GFI RECEPTACLES, AND EXHAUST FANS PULL WIRES BACK TO SOURCE PANEL.
2. DISCONNECT WIRES AND REMOVE EXISTING CENTRAL HAND DRYER WITH ASSOCIATED CONTROL WIRES, PIPING AND DRYER WALL VENT.



2 New Work Floor Plan - Power
E1.1
SCALE: 1/4"=1'-0"

NOTES:

1. COORDINATE WITH MECHANICAL FOR EXACT LOCATION OF EXHAUST FANS, EXHAUST FAN SHALL BE CONTROLLED BY ROOM LIGHTING SWITCH AND OCCUPANCY/MOTION SENSOR.
2. COORDINATE EXACT REQUIREMENT AND LOCATION OF HAND DRYER WITH ARCHITECT.
3. USE HAND DRYERS TYPE "WORLD DRYER - VERDEdri Q-974A". AND SHALL BE FOR OUTDOOR HUMID APPLICATION.
4. PROVIDE POWER FOR ELECTRIC CHANGING TABLE AND PROVIDE SEALED (IP66) SWITCHED FLEX OUTLET, MOUNT AT 12" A.F.F. AND 26" FROM CENTER OF THE CHANGING TABLE, REFER TO INSTALLATION MANUAL. **(ALTERNATE #3).**
5. PROVIDE HEAVY DUTY WEATHERPROOF 240V, 20A OUTLET WITH COVER FOR FUTURE AIR COMPRESSOR, AND 120V, 15A GFCI, WEATHERPROOF OUTLET FOR FUTURE EXHAUST FAN FOR FUTURE AIR COMP. SHELTER. MOUNT BOTH OUTLETS AT 48" A.F.F. COORDINATE EXACT LOCATION WITH OWNER.

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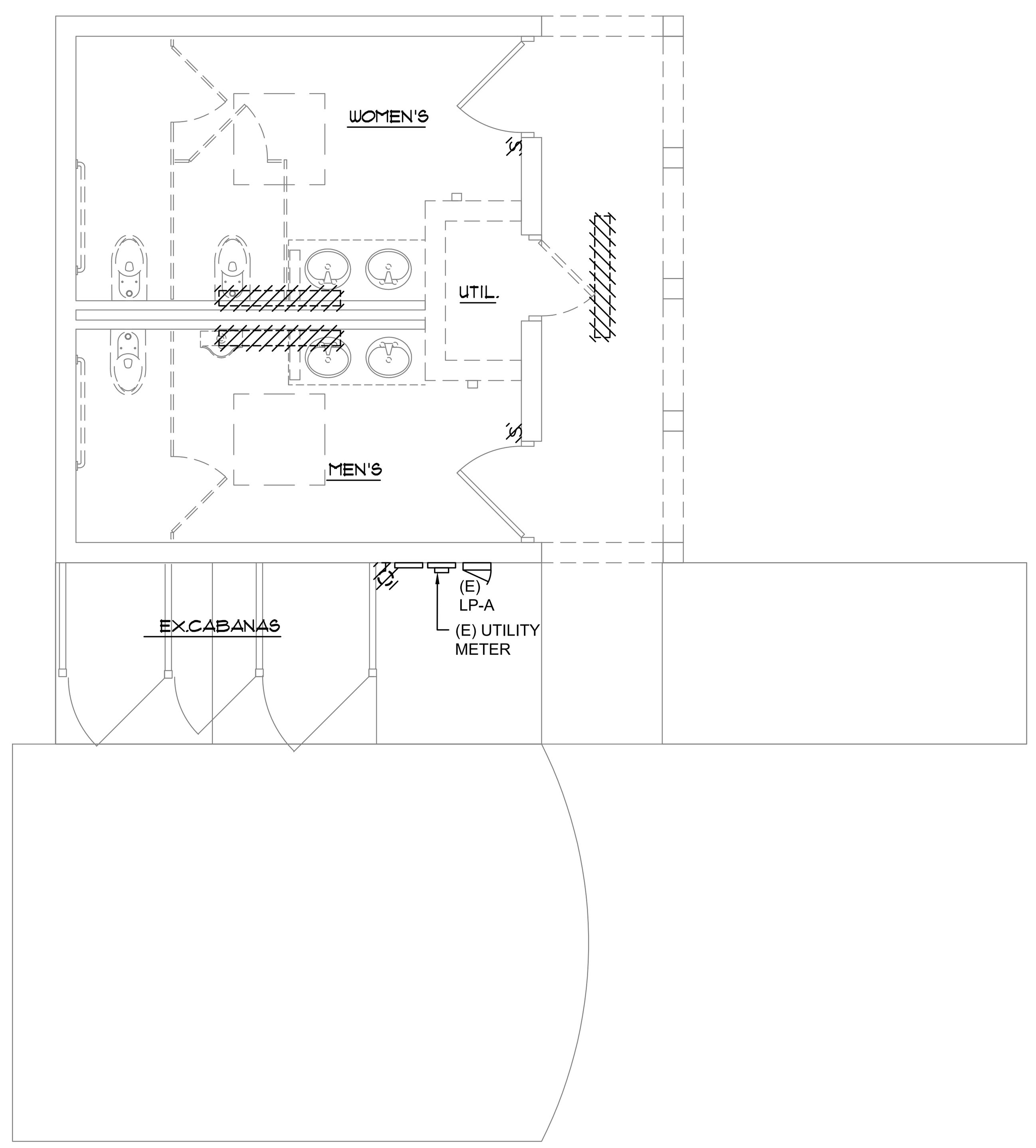
Demolition and New Work Plans - Power

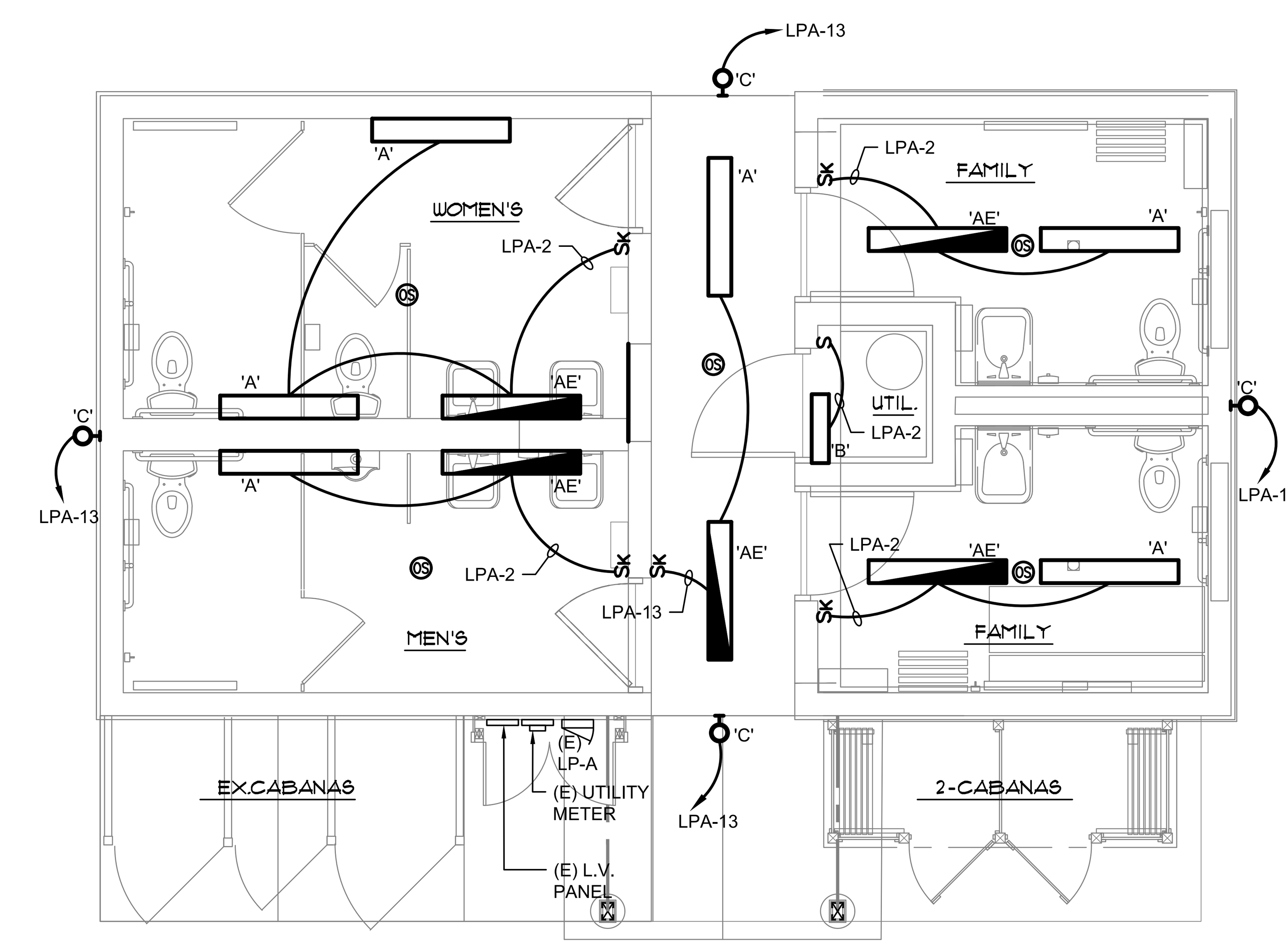
E1.1



1 Demolition Floor Plan - Lighting
E1.2 SCALE: 1/4"=1'-0"

DEMOLITION NOTES:

1. DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES, PULL WIRES AND REMOVE CONDUIT BACK TO SOURCE PANEL.
2. DISCONNECT AND REMOVE LIGHTING SWITCHES AND ANY ELECTRICAL DEVICES, PULL WIRES BACK TO SOURCE PANEL.
3. DISCONNECT AND REMOVE EXISTING EXHAUST FAN, PULL WIRES AND CONDUIT BACK TO SOURCE PANEL.



2 New Work Floor Plan - Lighting
E1.2 SCALE: 1/4"=1'-0"

NOTES:

1. REFER TO LIGHTING FIXTURE SCHEDULE, GENERAL NOTES, AND PANEL SCHEDULE ON SHEET E0.1.
2. REFER TO ELECTRICAL SPECIFICATIONS ON SHEET E0.2.

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THIS DRAWING IS DIAGRAMMATIC AND SHOULD BE USED TO DETERMINE THE DESIGN INTENT. THE CONTRACTOR SHALL FIELD VERIFY ALL WORK AND SHALL NOTIFY THE ARCHITECT IMMEDIATELY OF ANY DISCREPANCIES IN THE DOCUMENTS BEFORE PROCEEDING. FAILURE TO DO SO WILL RESULT IN THE CONTRACTOR TAKING FULL RESPONSIBILITY AND LIABILITY FOR SAID DISCREPANCIES.

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Demolition and New Work Plans - Lighting

E1.2