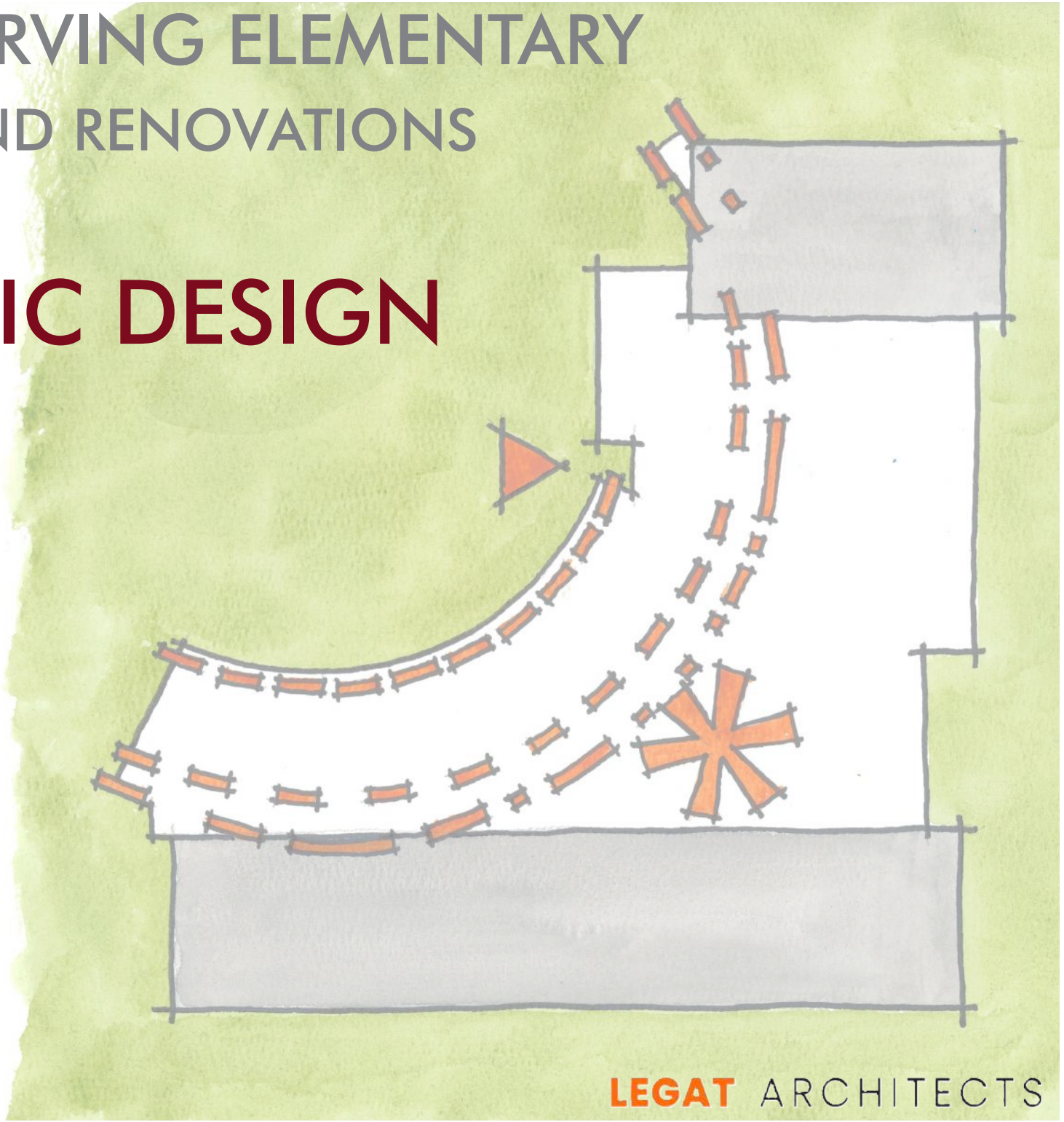
LINCOLN - IRVING ELEMENTARY
ADDITIONS AND RENOVATIONS

SCHEMATIC DESIGN

FEBRUARY 19, 2025



MOLINE-COAL VALLEY
SCHOOL DISTRICT

LEGAT ARCHITECTS

PROJECT DIRECTORY

OWNER

MOLINE-COAL VALLEY SCHOOL DISTRICT

ADDRESS:
1900 52nd Avenue
Moline, IL 61265

Superintendent
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Deputy Superintendent
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Director of Operations
Vincent Gallo

Director of Facilities
Keith Karstens

Board of Education
Andrew Waeyaert
Erin Waldron-Smith
Audrey Adamson
Chet DeSmet
Ramona Dixon
Jason Farrell
Lindsey Hines

Student Board Members
Abigail Greenlee
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LEGAT ARCHITECTS

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ESTES CONSTRUCTION

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Senior Pre-Construction Manager
Brian Rossmiller

Project Manager
Sherry Grubbs

Site Superintendent
Clint Hoeger

Senior Business Development Manager
Nathan Billany

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LEGAT ARCHITECTS Space	Lincoln Irving Addition Quantity	Room Size	Net Area	Notes	Hamilton Elementary School Quantity	Room Size	Net Area	Notes
GENERAL CURRICULUM								
Kindergarten	**4**	**1,190**	**4,760**		4	1,190	4,760	Classroom - 171, 176, 177, & 180
Integrated Therapy	1	265	265	Recommended Pull Out			0	N/A
Kindergarten Toilet	4	80	320	Must have	4	54	216	Toilet - 171A, 176a, 177a, & 179
Kindergarten Storage	2	303	606		2	94	188	Storage - 175 & 178 (Shared)
First Grade	**4**	**906**	**3,624**		4	906	3,624	Classroom - 124, 126, 127, & 133
First Grade Collaboration Area	2	300	600	Between classrooms rather than off hallway	2	300	600	Group
First Grade Bathroom	2	54	108	Must have	2	54	108	Toilet - 125 & 128
Second Grade	**4**	**906**	**3,624**		4	906	3,624	Classroom - 130, 132, 133, & 139
Second Grade Collaboration Area	2	300	600	Between classrooms rather than off hallway	2	300	600	Group
Second Grade Bathroom	2	54	108	Must have	2	54	108	Toilet - 131 & 134
Third Grade	**4**	**906**	**3,624**		4	906	3,624	Classroom - 211, 213, 214, & 218
Third Grade Collaboration Area	2	300	600	Between classrooms rather than off hallway	2	300	600	Group
Third Grade Bathroom	2	54	108	Must have	2	54	108	Toilet - 212 & 215
Fourth Grade	**4**	**906**	**3,624**		4	906	3,624	Classroom - 217, 219, 220, & 225
Fourth Grade Collaboration Area	2	300	600	Between classrooms rather than off hallway	2	300	600	Group
Fourth Grade Bathroom	2	54	108	Must have	2	54	108	Toilet - 218 & 221
Fifth Grade	**4**	**906**	**3,624**		4	906	3,624	Classroom - 207, 223, 228, & 232
Fifth Grade Collaboration Area	2	300	600	Between classrooms rather than off hallway	2	300	600	Group
Fifth Grade Bathroom	2	54	108	Must have	2	54	108	Toilet - 224 & 225
			27,781				**26,824**	
STUDENT SUPPORT SERVICES								
Adult Resource Room	1	136	136	Parent Coordinator	1	136	136	Staff Offices - 182 - Food Pantry room
ESL/ELL	1	643	643		1	643	643	Reading Intervention/ESL/ML 141
Instructional Coach	2	280	560		2	280	560	Resource - 119 & 208
Existing Speech	1	300	300	Speech - 130	2	280	560	Resource 120 & 209
Speech	1	280	280				0	
Psych/ Social Worker	3	139	417		2	139	278	Psychologist - 181 & Social Worker - 183
Existing Special Education	1	214	214	Classroom - 107				
Special Education	3	857	2,571		3	857	2,571	Life Skills - 111 & 114 - ESL 136
Special Education Toilet	2	75	150		2	73	146	Toilet 112 & 137
Special Education Resource	2	550	1,100		1	734	734	Reading Intervention 201
Special Education Storage Room	2	144	288		2	144	288	Storage - 11A & 112
Counselors	2	200	400		1	100	100	Counselor - 107
OT/PT	1	600	600		1	939	939	OT/PT - 180 (Storage - 180A)
ED Suite Flex Space	1	900	900	Can be divided up into 3 rooms				
Sensory/Timeout	1	113	113		1	113	113	Speech Therapy - 123
			8,672				**7,068**	

LEGAT ARCHITECTS Space	Lincoln Irving Addition Quantity	Room Size	Net Area	Notes	Hamilton Elementary School Quantity	Room Size	Net Area	Notes
BUILDING SUPPORT SPACES								
Existing Toilet Rooms (staff)	2	85	170	Room - 111 & 112				
Toilet Rooms (staff)	2	58	116		3	58	174	Toilet - 109, 138, & 162
Existing Toilet Rooms	6	322	1,932	Room - 125, 127x2, 131, 209, & 213				
Toilet Rooms	2	250	500		2	252	504	Girls - 172 & Boys - 174
Gender Neutral Toilet Rooms	2	60	120		1	58	58	Toilet - 163
Existing Building Storage	6	70	420	Room - 106, 114, 121, 203, 215, & 216				
Building Storage	1	50	50		2	84	168	Storage 167 & Speech Therapy 204
Existing Custodial Closets	3	168	504	Room - 117, 129, & 211				
Custodial Closets	2	50	100	Set of two washer and dryers	4	95	378	Custodian - 173. Janitor - 123A, 138A, & 203
Elevator	2	60	120		2	58	116	Elevator - 1L & 2L
Elevator Electrical Room	1	63	63		1	63	63	Machine - 230
Telecom/IT closet	1	139	139		1	139	139	IDF - 118
Existing Mechanical Room	1	781	781	Boiler Room - 124	1	818	818	Basement - 001
Mechanical Rooms	1	2,000	2,000		2	2,261	4,522	Mechanical Room - 231 & 232
Network Distribution Closet	1	170	170		1	170	170	MDF - 161
			7,185				**7,110**	
21st CENTURY LEARNING								
Break-out/Small Group (outside classrooms)	1	849	849	Lobby Flex Space	1	849	849	Portion of Lobby 101 - Flex Space
Professional Development/Seminar	1	878	878	PD/Flex/Etc.	1	950	950	Discovery Lab - 143
Learning Stair	1	714	714	Keep lobby and learning stair separated	1	714	714	Learning Stair - 116
Outdoor Learning - Early Childhood - Courtyard	0	5,000	0	Courtyard play area. Don't need specialized equipment like Hamilton	1	5,710	0	Outdoor Play - 000
			2,441				**2,513**	
EXPLORATORY CURRICULUM								
Existing Art Classroom	1	975	975		1	970	970	Art - 142
Art Kiln	1	60	60		1	61	61	Kiln - 142A
Art Storage	1	172	172		1	178	178	Storage - 142B
Music/Stage	1	950	950		1	981	981	Music/Stage - 151
Music Storage	1	100	100		1	86	86	Music Storage - 151B
Band/Orchestra	1	400	400				0	N/A
			2,657				**2,276**	
PHYSICAL EDUCATION								
Gymnasium	1	6,000	6,000	Reuse existing gym for cafeteria	1	5,888	5,888	Gymnasium - 150
PE Office	1	120	120		1	45	45	PE Office - 152
PE Storage	1	300	300		1	290	290	PE Storage - 149
			6,420				**6,223**	

PROGRAM

LEGAT ARCHITECTS Space	Lincoln Irving Addition Quantity	Room Size	Net Area	Notes	Hamilton Elementary School Quantity	Room Size	Net Area	Notes
MEDIA CENTER								
Library	1	1,165	1,165		1	1,165	1,165	Reading - 115
IT Closet	2	50	100				0	N/A
Book Storage	1	500	500		1	211	211	Book Room - 121
Computer Room	1	1,000	1,000		1	1,050	1,050	Media Technology - 200
			2,765				2,426	
FOOD SERVICE								
Cafeteria	1	4,200	4,200		1	4,189	4,189	Commons - 144
Cafeteria Table Storage/Office	2	121	242		1	242	242	Utility - 158
Cafeteria/Gym Toilet	2	308	616	Boys 108 & Girls 107			0	Listed in - 146 & 147
Uni-Sex Toilet	2	70	140		2	69	138	Toilet - 146 & 147
Kitchen/Serving	1	1,000	1,000	Existing Kitchen is undersized	1	1,858	1,858	Kitchen - 157 (Includes Walk-ins - 115)
Kitchen Storage	1	250	250	Existing Storage is undersized	1	248	248	Dry Storage - 159
Dishwashing	1	213	213		1	213	213	Dish Room - 156
			6,661				6,888	
ADMINISTRATION								
Reception/Secretary	1	600	600	Sized for 2 people	1	609	609	Reception - 103
Waiting Area	1	300	300		1	929	929	Vestibule - 100 & Portion of Lobby - 101
Principal's Office	1	222	222		1	222	222	Principal - 105
Counselor's Office			0	Listed Above			0	Listed Above
Assistant Principal	1	158	158		1	165	165	Assistant Principal - 104
Small Conference Room	2	200	400		1	200	200	Conference - 106
Existing Nurse's Office	1	154	154		1	180	180	Nurse - 110
Nurse's Toilet & Shower	1	100	100		1	56	56	Toilet - 110A
Sensory/Timeout Room	2	113	226					
Existing Staff Work Room	1	207	207				0	
Staff Work Room/Lunch Room	1	906	906	Classroom Sized - restaurant style	2	337	674	Workroom - 108 & 168
Staff Toilet			0	Listed Above			0	Listed Above
PTA/Mother's Room	1	100	100				0	N/A
			3,373				3,035	
Total Program			67,955		**Total Program**		64,363	
		30%	20,348			~33%	21,256	11,369 Vestibule - Stair - Corridor - Imaginarium
Building Total			88,303	Existing Building = 45,164 SF	**Building Total**		85,619	

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

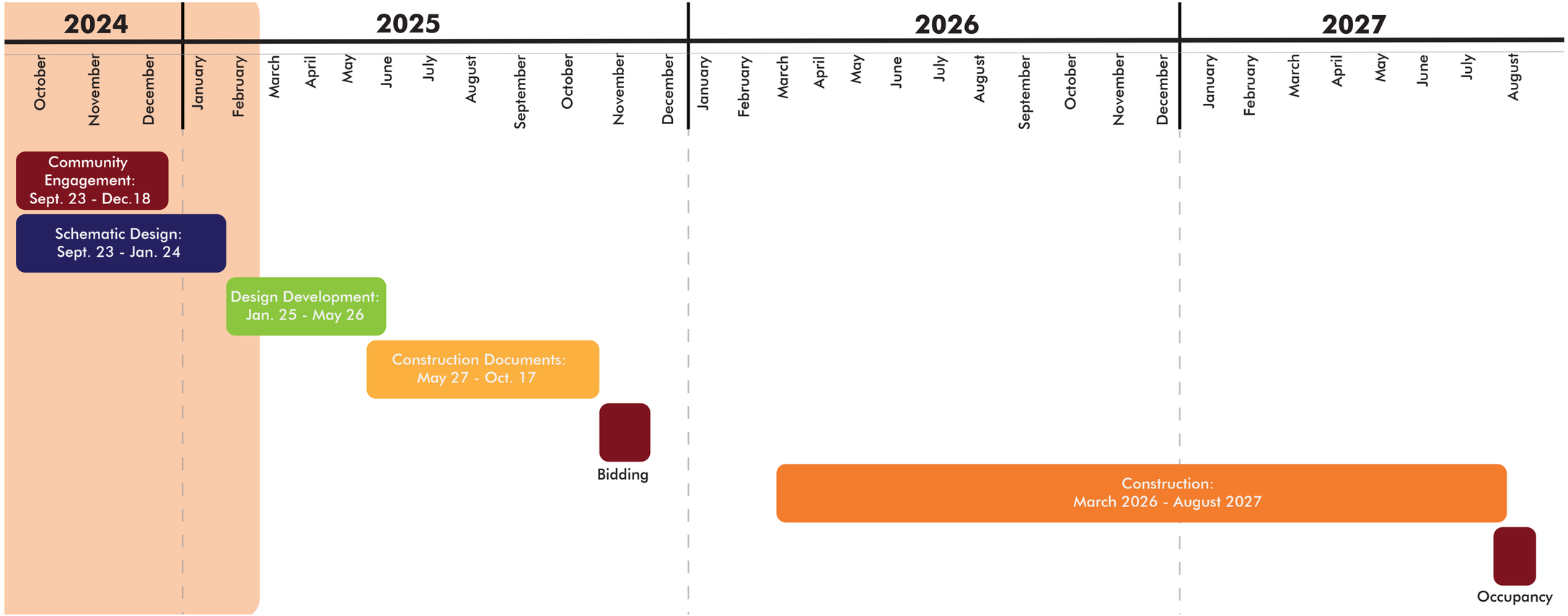
BUDGET

Opinion of Probable Cost

Owner: Moline-Coal Valley School District #40
Project Title: Lincoln Irving Planning
Project #: 01-23-0047
Date: 2/22/2024

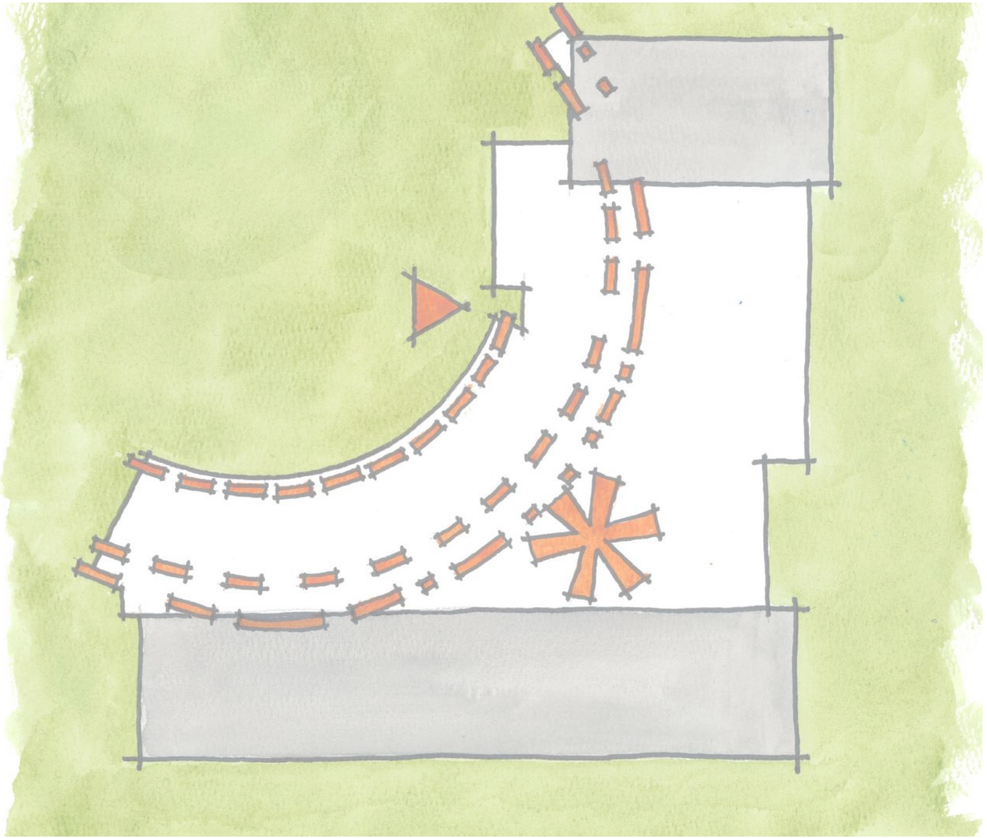
			Low Range	High Range	
Construction Costs ("Hard Costs")					
New Construction	42836	SF	$ 16,277,680	$ 17,134,400	
Renovation	45164	SF	$ 8,581,160	$ 9,032,800	
Site Work			$ 1,200,000	$ 1,500,000	
Construction Subtotal			$ 26,058,840	$ 27,667,200	
Owner Costs ("Soft Costs")					
Construction Contingency	5%		$ 1,302,942	$ 1,383,360	
FF&E			$ 1,000,000	$ 1,000,000	
Survey			$ 30,000	$ 30,000	
Construction Testing			$ 175,000	$ 175,000	
Commissioning			$ 100,000	$ 100,000	
Design & CM Fees			$ 2,765,220	$ 3,318,264	
Playground Equipment			$ 1,000,000	$ 1,000,000	
AV & Technology			$ 200,000	$ 200,000	
Security			$ 300,000	$ 300,000	
Environmental Testing			$ -	$ -	*By District*
Geotechnical			$ 9,450	$ 9,450	
Traffic Study			$ 14,975	$ 14,975	
Total Project Cost			**$ 32,956,427**	**$ 35,198,249**	
Project Budget			**$ 35,000,000**	**$ 35,000,000**	
Difference			$ 2,043,573	$ (198,249)	

SCHEDULE



MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS



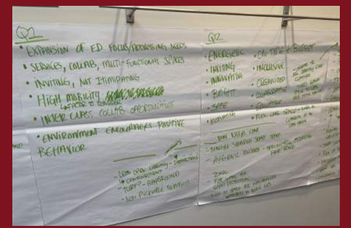
COLLABORATIVE DESIGN

COLLABORATIVE DESIGN

timeline

STAFF ENGAGEMENT

1



COMMUNITY ENGAGEMENT

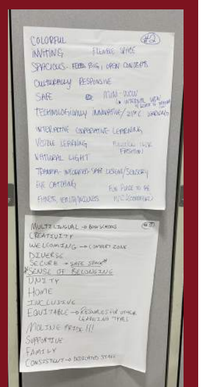
2

LINCOLN - IRVING

3

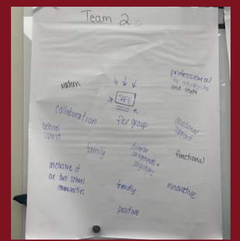
WILLARD

4

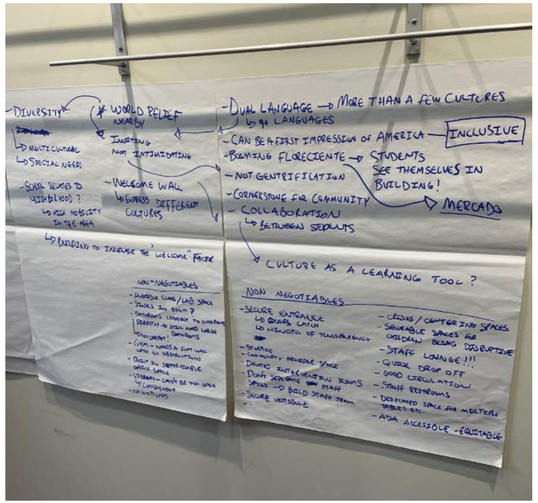


STAFF MEETING

5



STAFF ENGAGEMENT



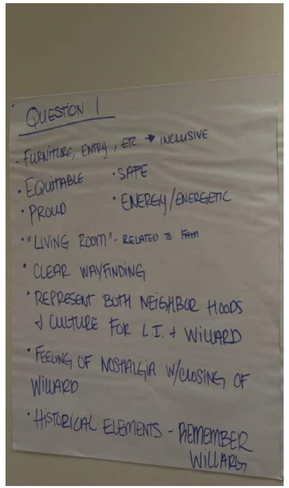
COLLABORATIVE DESIGN SESSION I

- Collect unifying thoughts towards a vision for the new school
- Lessons learned from Hamilton staff
- Share ideas in a gallery walk with inspiration images for the future of learning.
- Discuss program spaces and needs.
- Plan next steps for future collaboration sessions.

world relief®

QUAD CITIES

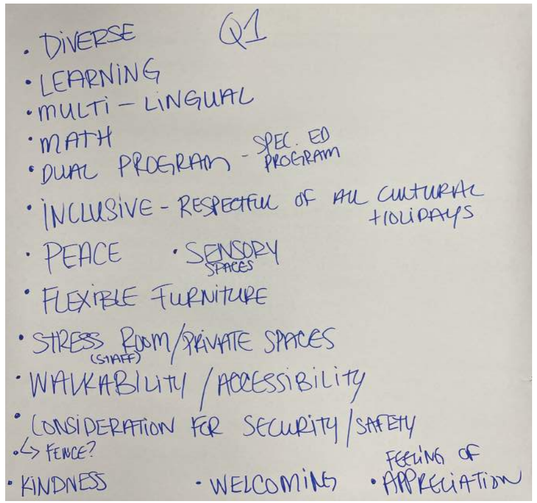
MERCADO on Fifth



COLLABORATIVE DESIGN SESSION 2

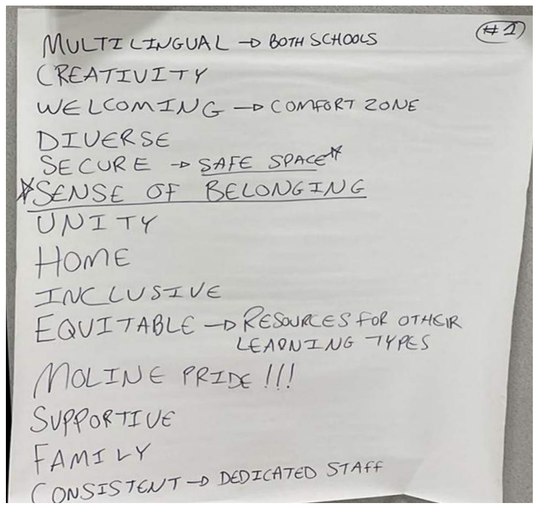
- Collect unifying thoughts from community stakeholders towards a vision for how the new school can serve the community as a whole.
- Share ideas in a gallery walk with inspiration images for the future of learning.
- Discuss program spaces and needs.

COMMUNITY ENGAGEMENT



COLLABORATIVE DESIGN SESSION 3

- Collect unifying thoughts towards a vision for the design of the new school.
- React to gallery walk with the future of learning images to help inform design decisions.
- Discuss program spaces and needs.
- Show program test fit plan.
- Promote survey for additional input from Lincoln - Irving staff and families.



COLLABORATIVE DESIGN SESSION 4

- Collect unifying thoughts towards a vision for design of the new school and how to best incorporate Willard into it.
- React to gallery walk with the future of learning images to help inform design decisions.
- Discuss program spaces and needs.
- Show program test fit plan.
- Promote survey for additional input from Willard staff and families.

STAFF MEETING

COLLABORATIVE DESIGN SESSION 5

- Collect unifying thoughts towards a vision for the design of the new school
- Discuss program spaces and correlated color-coded building blocks.
- Show program space incorporated into test fit site plan and give feedback for the schematic design stage.

FOUR THEMES

- **Cultural** - history of supporting our diverse community, we are a melting pot
- **Flexible** - Fluid, easy to change, large spaces divisible to smaller spaces
- **Visionary** - plan for the future, adaptability for what is next in education and our district
- **Affordability** - Financially responsible, yeilds instructional benefits, responsive design

SURVEY FEEDBACK

WHAT MAKES LINCOLN-IRVING / WILLARD UNIQUE?

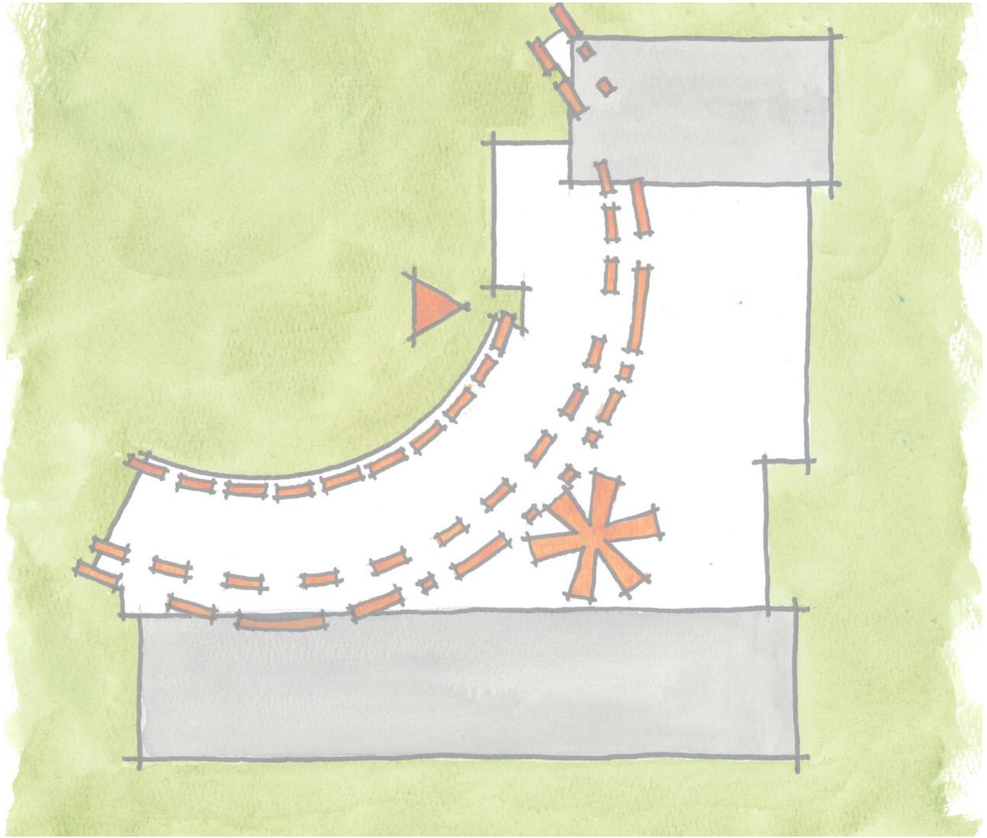
WHAT UPGRADES OR EDUCATIONAL SPACES COULD BE ADDED TO BETTER SERVE STUDENTS?

WHAT ARE THREE WORDS YOU WOULD USE TO DESCRIBE THE COMPLTED ADDITION ON THE FIRST DAY OF SCHOOL?

FEEDBACK SUMMARY

When looking at all of the community engagement feedback we found common words and phrases which will become the driving forces behind the school's design.

- Top Unifying Thoughts included: Welcoming, Secure, and Diversity of Cultures
- Organizing Thoughts included: Flexibility, Inclusivity,



SCHEMATIC DESIGN

CODE AND ZONING REVIEW

CODE AND ZONING REVIEW AND ANALYSIS
APPLICABLE CODES:

Applicable Codes per City of Moline:
2024 International Energy Conservation Code
2015 International Building Code
2015 International Property Maintenance Code
2015 International Mechanical Code
2014 Illinois State Plumbing Code
2020 National Electrical Code
2015 International Fuel Gas Code
2015 International Fire Code, excluding chapter 4

PROJECT USE GROUPS:
Chapter 3 - Use and Occupancy Classification.
The building is designed to contain the occupancies below.

E Education

A-3 Assembly - Gymnasium / Cafeteria and Library
Section 303.1.3 - A room or space used for assembly purposes that is associated with a Group E occupancy is not considered a seperate occupancy.

LOCAL ZONING
Setbacks for zone R-2:

Front: 25'
Side 25'
Side 25'
Rear: 30'

MEANS OF EGRESS:
The building will be two stories with portions that are one story. There will be one exit access stair and an elevator. The number of exits, egress distances and other egress requirements will be in compliance with the applicable codes.

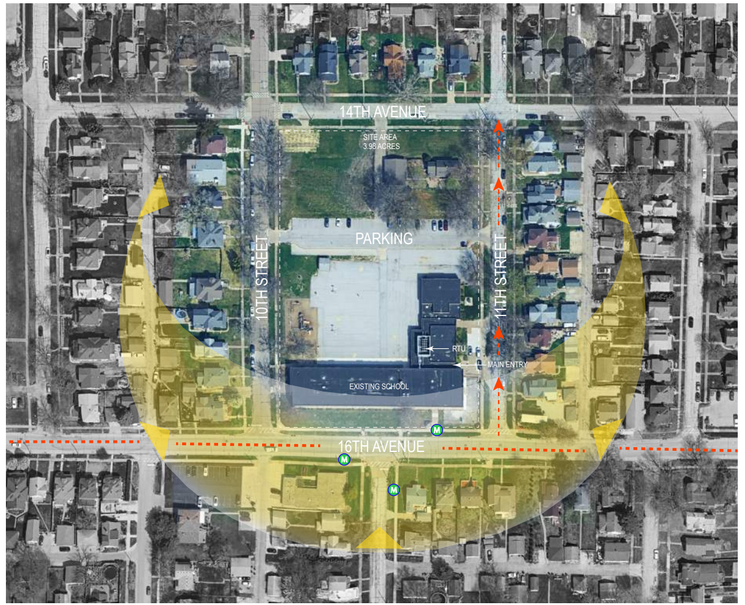
PLUMBING FACILITIES
The building will meet ADA accessiblity requirements and meet code code minimums for requirements. The restrooms in the common spaces will be gender-neutral with private compartments for water closets and a common sink area. Individual unisex restrooms will be implemented throughout the building.

ALLOWABLE HEIGHT AND AREA
The baseline maximum area for the occupancies utilizing Type IIB construction with an automatic sprinkler system is 43,500 SF (Table 506.2) The building does not exceed the baseline area allowed by code so there will not need to be fire seperation between the addition and the existing building.

The allowable building hight is 75' and up to 3 stories. The proposed 2 story structure will be within the maximum height allowed by code.

STORM SHELTERS
The building will be required to incorporate a storm shelter compliant with IBC Section 423 that can accommodate the entire occupant load of the facility. The size will be based on the Table 501.1.1 in ICC-500 with 5 SF per occupant in a seated position and 10 SF per wheelchair space. As the storm shelter location is finalized, total area will be evaluated to accommodate the required population and in compliance with all applicable code.

MOLINE-COAL VALLEY SCHOOL DISTRICT



SITE CONTEXT

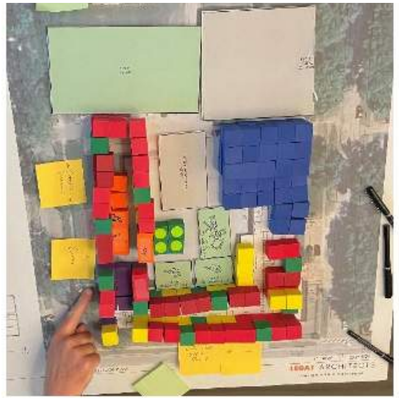
The site is about 4 acres in area on an entire city block. The northern part of the exisiting building is difficult to salvage, but the southern portion provides a great starting point to add on to.

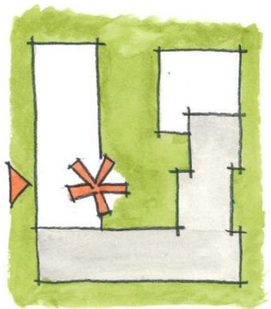
10th street and the one-way 11th street provide challenges with site circulation. The current parking lot and street parking are not sufficient so addtional parking and a new drop off sequence will need to be added on site.

With an addition, new parking, additonal playspace, and a drop off, we will need to make the most of this site to fit the progam.

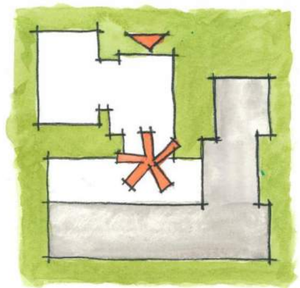
The site is in the middle of a single-family residential neighborhood, so keeping the neighbors in mind will be important. We want the school to fit and be an asset to the neighborhood, not an obstruction.

LEGAT ARCHITECTS

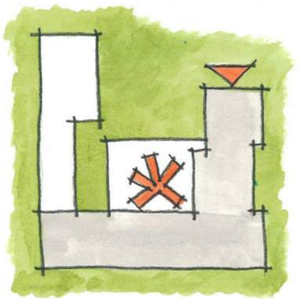




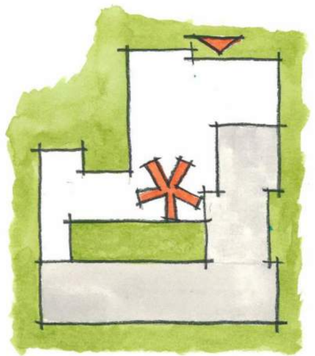
"L" OR "U"



CENTRAL

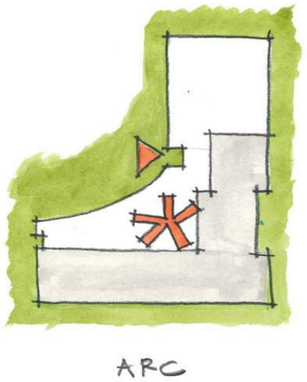


3-STORY



COURTYARD

DESIGN CONCEPTS

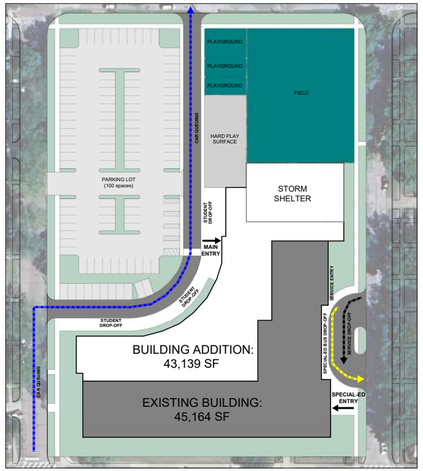


CONCEPT SKETCH

The arc concept utilizes space in a way that balances the needs of the project's external features, and still creates opportunites for new learning spaces inside.

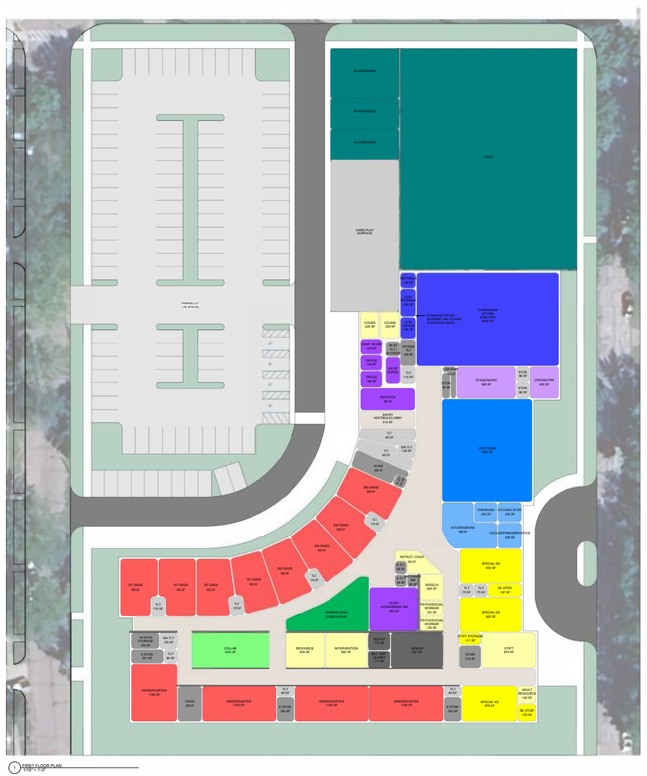
PROGRAM TEST FIT

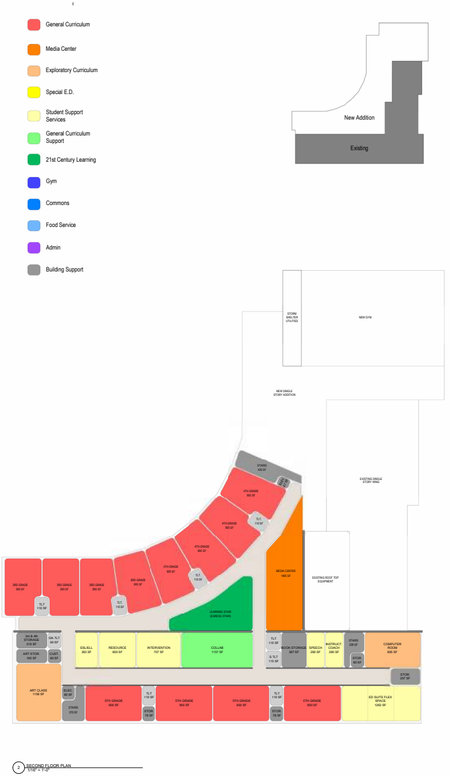
The test fit allows us to see just how much program space will fit on the site, with the arc concept. Following the program charts and lessons learned from Hamilton show that the site does indeed have enough room for all of the program spaces.



BUBBLE DIAGRAM

To the right the bubble diagram shows what can happen when the program space is taken and divided into bubbled areas to start to give a scale reveal design opportunites in the plan. With this diagram the team worked on improving circulation, focused on space adjacencies, and looked for ways to create learning opportunities everywhere.

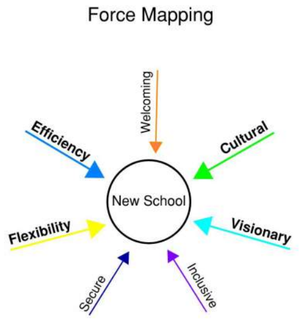




BUBBLE DIAGRAM

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

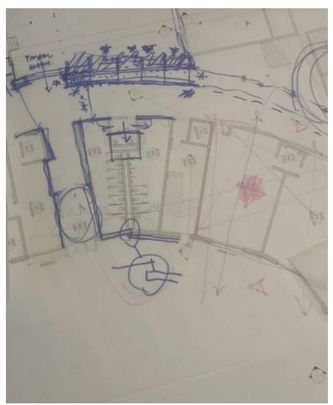


FORCE MAPPING

The comunity engagement stage provided insight into common themes that were highlighted when looking at all of the feedback as a whole. These themes come together and become the main forces acting on the project. This diagram serves as a way to go back and check that the design decisions we make are addressing the project forces in some way.

DESIGN PROCESS

The bubble diagram served as a starting point, but implementing feedback from that and implementing the forces into the design of these spaces is an ongoing process of working on ideas and seeing how they work in plans and 3D views. The way the arc intersects the existing building creates an interesting opportuinity to create a learning space between the old and new, and the way it diverges from the existing creates a new open triangle space that could serve as the heart of the school.



FORCE DIAGRAM

INSPIRATION IMAGES

EXISTING SCHOOLS
What is something the existing buildings do well that we can enhance in the new school?

EFFICIENCY
How can we use materials efficiently to create the spaces while keeping cost and constructability in mind?

WELCOMING
How do we create a welcoming sequence of spaces that create a comfortable environment for learning and keep kids excited to come to school?

CULTURE
Lincoln Irving is located in a very culturally diverse area in Moline, what colors, shapes, and elements could we incorporate into the new school to better reflect the sudents it serves?

FLEXIBILITY
What does it look like when educational spaces are used for multiple kinds of learning?

VISIONARY
What 21st century learning strategies can we incorporate into the design of the school.

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

- ADMIN
- CAFETERIA
- GYM
- KITCHEN
- CLASSROOMS
- EXPLORATARY CIRRICUMULUM
- SPECIAL ED
- STUDENT SUPPORT SPACES
- BREAKOUT / COLLAB
- TOILETS / STORAGE / MECH.

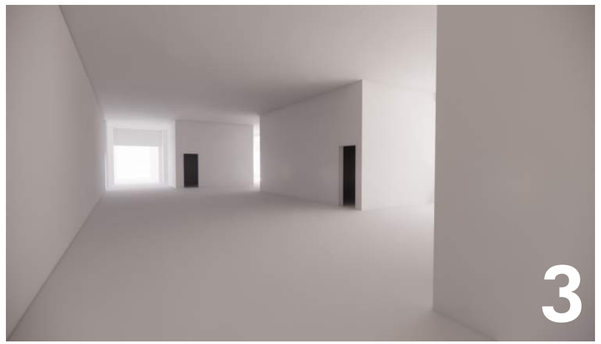
FIRST FLOOR

1. DISPLAY AND NOOKS
The arc shaped hallway creates moments that can be carved out for display or learning. From the entrance you get a glimpse of these spaces happening further down the hall.

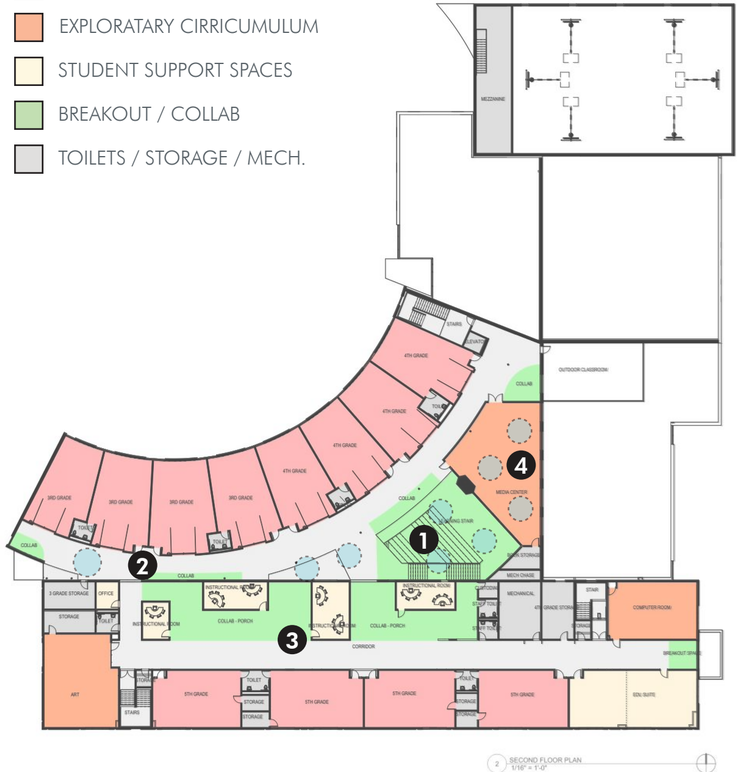
2. MAKERS SPACE
The makers space has a slatted wall both for visual connection to the corridors but also to display work in the slats, the students get an opportunity to create something to go in the space. The tree element brings that natural element and provides a storage space.

3. LEARNING STAIR
The learning stair is nestled in between the new and existing building and provides an area for individual or group work, but can hold an entire grade level for presentations or large group instruction.

4. THE PORCH
The existing building floor meets the new construction at a different level. A ramp and stair connection connect breakout space to the class room area and the specialist offices. Skylights help get natural light into the building's core.



- CLASSROOMS
- EXPLORATARY CIRRICUMULUM
- STUDENT SUPPORT SPACES
- BREAKOUT / COLLAB
- TOILETS / STORAGE / MECH.



SECOND FLOOR

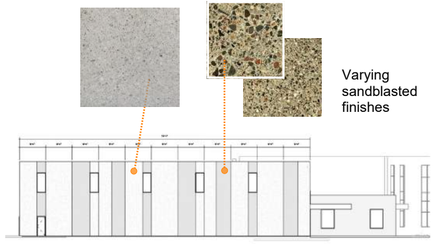
1. LEARNING STAIR
From the learning stair there's a visual connection to the media center above, the tree element is a two-strory element here creating a canopy that goes into the media center.

2. BREAKOUT SPACE
The arc ends and turns into a break out space with space to let sunlight down to the first floor

3. THE SECOND FLOOR PORCH
This area is oriented to give upstairs classes a pocket of space to do breakout work in, the student service classrooms are spread evenly throughout.

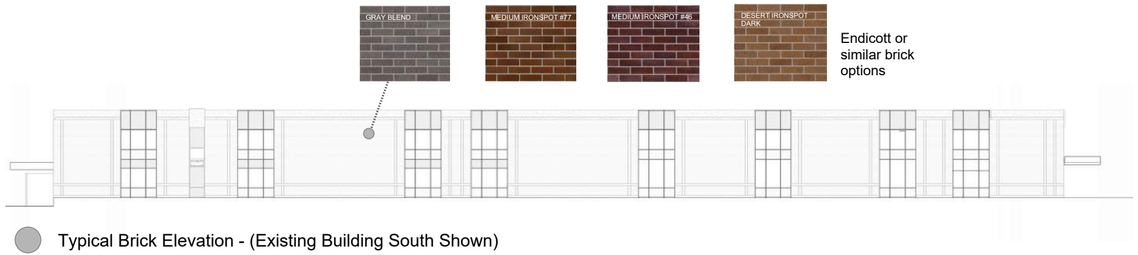
4. THE MEDIA CENTER
The media center overlooks the learning stair and the contains the top of the tree element seen on the first floor and the learning stair. Skylights and big windows let light in and get it to the inside of the building.

CONSENSUS PLAN

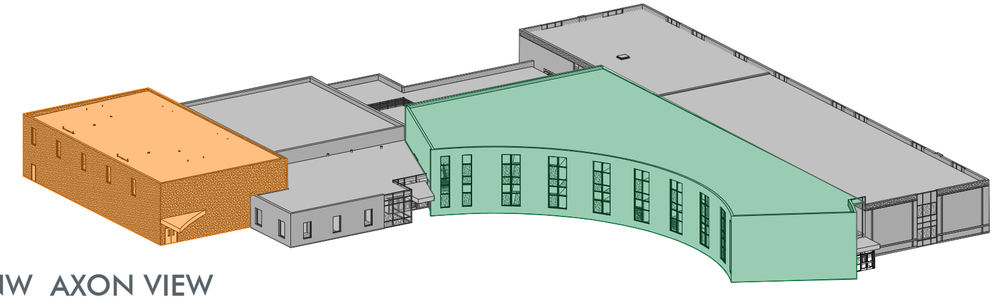


Typical Precast Elevation - (North Shown)

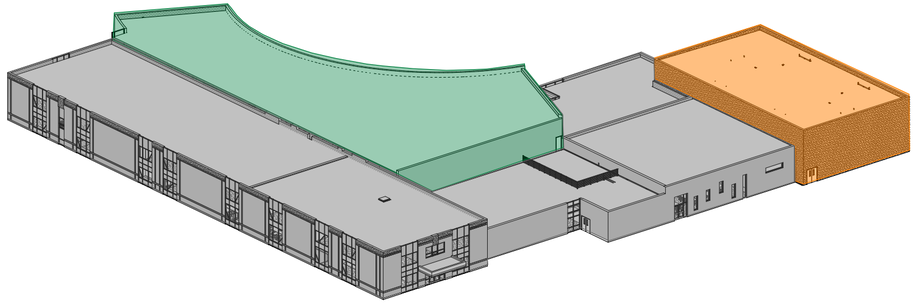
Typical Metal Panel Elevation - (Curve Shown)



Typical Brick Elevation - (Existing Building South Shown)



NW AXON VIEW

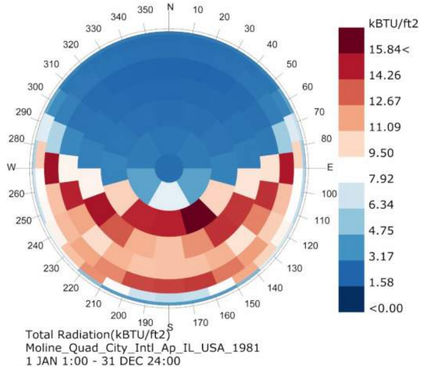


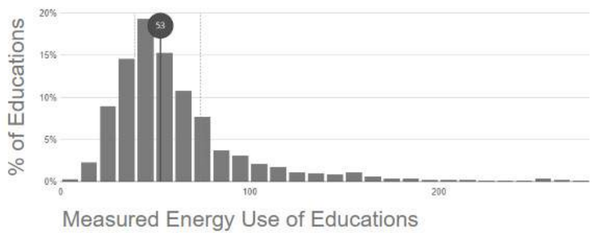
SE AXON VIEW

EXTERIOR AND MATERIALS

CLIMATE ZONE INFORMATION

The schematic design model is run through an energy modeling platform to provide a benchmark to help inform ongoing design decisions in an effort to reduce a buildings energy use.





10%
Glare

Annual Solar Exposure (ASE) refers to the percentage of space that receives too much direct sunlight (1000 Lux or more for at least 250 occupied hours per year), which can cause glare or increased cooling loads.

55%
Daylight

Spatial Daylight Autonomy (sDA) describes the percentage of floor area that receives at least 300 lux for at least 50% of the annual occupied hours.

Energy

83
National Average

8
2030 Target

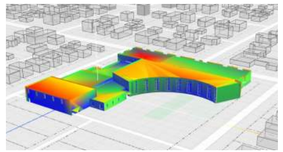
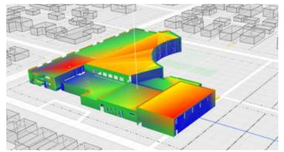
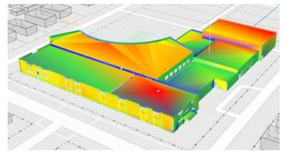
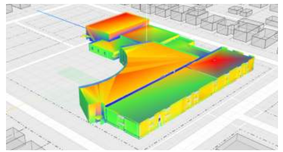
EUI is expressed as energy per square foot per year. It is calculated by dividing the total energy consumed by the building in one year (measured in kBtu) by the total floor area of the building. The most common unit for EUI is kBtu/ft²/year.

WALK SCORE
74

TRANSIT SCORE
42

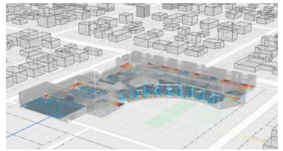
BIKE SCORE
50

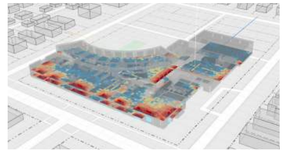
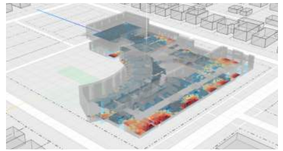
SUSTAINABILITY

SOLAR RADIATION HOURS

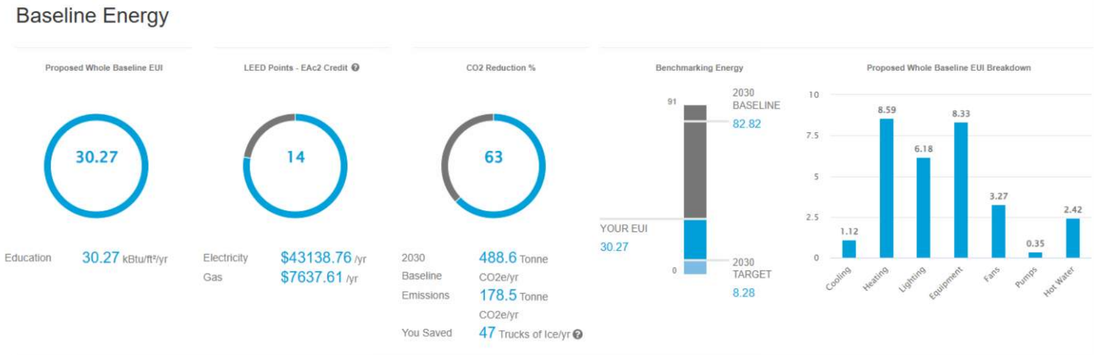
These diagrams show how many hours of sunlight the exterior of the building recieves. This can help inform facade design choices like window placement, insulation needs, and skylight placement.



DAYLIT SPACES

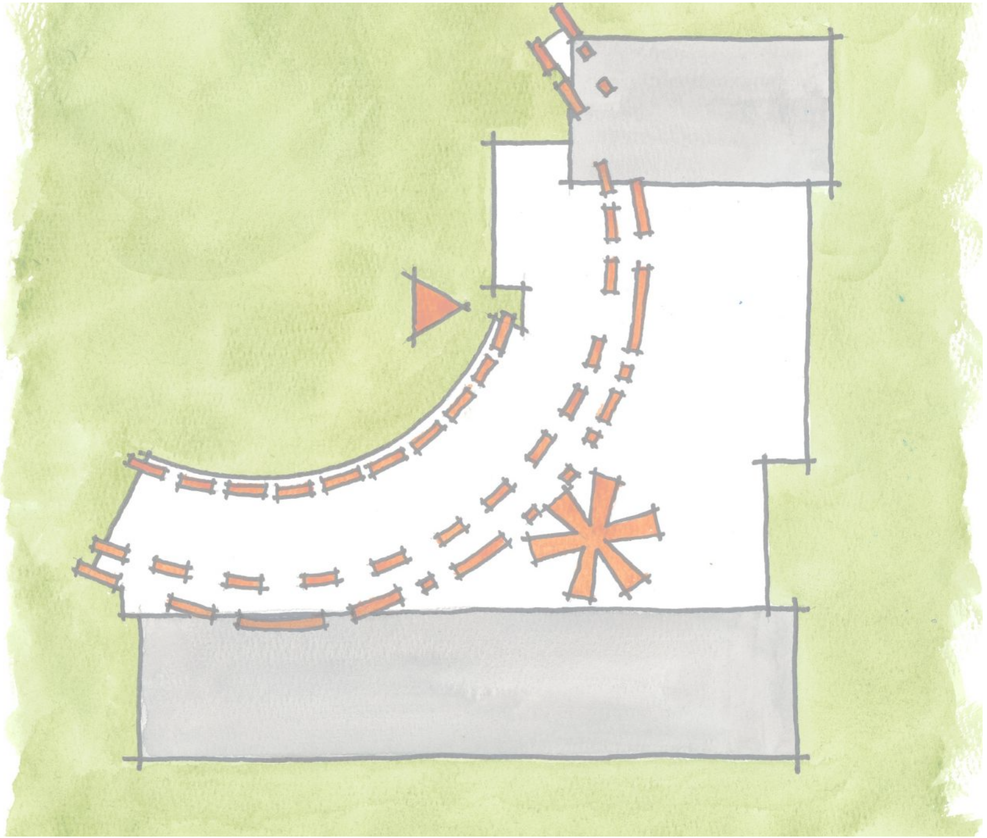
These images simulate the amount of sunlight entering a classroom on average throughout the year. The south classrooms have an abundance of natural light, the ones on the north won't get as much, so the skylights and windows in through the media center will be important for getting light in to the center.



SCHEMATIC DESIGN BENCHMARKS

After schematic design the project's energy use intensity stands in between the 2030 baseline and the 2030 goal. This is a good place to start with room to improve. With Moline being in climate zone five, one of the biggest changes to lower the energy use itensity is through the facade by utilizing the low winter sun.

Disclaimer: In the schematic design phase the preliminary energy use intensity (EUI) is a comparative metric used to evaluate design options. The accuracy of EUI in relation to 2030 baseline / target values increases with project development.



SYSTEMS DESIGN

CIVIL NARRATIVE

EXISTING TOPOGRAPHIC/UTILITIES

- EXISTING PROPERTY LINE
- EXISTING EASEMENT LINE
- EXISTING SETBACK LINE
- EXISTING FENCE LINE
- TEL — EXISTING TELEPHONE LINE
- FO — EXISTING FIBER OPTIC LINE
- E — EXISTING UNDERGROUND ELECTRIC
- OE — EXISTING OVERHEAD ELECTRIC
- GAS — EXISTING UNDERGROUND GAS LINE
- W — EXISTING WATER MAIN OR SERVICE
- ST — EXISTING STORM SEWER/CULVERT
- SAN — EXISTING SANITARY SEWER
- EXISTING TELEPHONE RISER
- EXISTING CABLE TV RISER
- EXISTING ELECTRIC METER
- EXISTING ELECTRIC TRANSFORMER
- EXISTING ELECTRICAL MANHOLE
- EXISTING POWER POLE
- EXISTING LIGHT POLE
- EXISTING GAS METER
- EXISTING WATER VALVE
- EXISTING CURB BOX
- EXISTING FIRE HYDRANT
- EXISTING STORM SEWER INTAKE
- EXISTING STORM SEWER MANHOLE
- EXISTING SANITARY MANHOLE
- SIGN

PROPOSED TOPOGRAPHIC/UTILITIES

- PROPOSED HANDRAIL
- PROPOSED FENCE LINE
- TEL — PROPOSED TELEPHONE LINE
- FO — PROPOSED FIBER OPTIC LINE
- UE — PROPOSED UNDERGROUND ELECTRIC
- OE — PROPOSED OVERHEAD ELECTRIC
- GAS — PROPOSED UNDERGROUND GAS LINE
- W — PROPOSED WATER MAIN OR SERVICE
- ST — PROPOSED STORM SEWER/CULVERT
- PROPOSED SANITARY SEWER

SEWER, WATER, & UTILITY SYMBOLS

- PROPOSED LIGHT POLE
- PROPOSED WATER VALVE
- PROPOSED FIRE HYDRANT
- SIGN
- PROPOSED OPEN DITCH/AREA INTAKE
- PROPOSED STORM SEWER MANHOLE
- PROPOSED SANITARY MANHOLE
- EXISTING SANITARY MANHOLE

CONTOUR LINES

- EXISTING MAJOR CONTOUR LINE
- EXISTING MINOR CONTOUR LINE
- PROPOSED MAJOR CONTOUR LINE
- PROPOSED MINOR CONTOUR LINE

COMMON ABBREVIATIONS

PCC	PORTLAND CEMENT CONCRETE
HMA	HOT MIX ASPHALT
DIP	DUCTILE IRON PIPE
RCP	REINFORCED CONCRETE PIPE
PVC	POLY VINYL CHLORIDE PIPE
CMP	CORRUGATED METAL PIPE
PE	POLYETHYLENE PIPE
HDPE	HIGH DENSITY POLYETHYLENE PIPE
IDOT	IOWA DEPARTMENT OF TRANSPORTATION
SUDAS	STATEWIDE URBAN DESIGN AND SPECIFICATIONS
EX	EXISTING GROUND ELEVATION
TW	TOP OF SIDEWALK ELEVATION
FG	FINAL GRADE ELEVATION
BC	BACK OF CURB ELEVATION
TC	TOP OF CURB ELEVATION
FL	FLOWLINE ELEVATION
HP	HIGH POINT
R.O.W.	RIGHT-OF-WAY

GENERAL NOTES AND PROJECT SPECIFICATIONS

1. THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO PROVIDE CONSTRUCTION DOCUMENT FOR A GENERAL CONTRACTOR UNDER CONTRACT WITH MOLINE COAL VALLEY.
2. CONSTRUCTION STAKING WILL BE PROVIDED BY A LICENSED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.
3. THE PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF MOLINE REQUIREMENTS, THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AND "STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS", LATEST ADDITION. THE CONTRACT DOCUMENTS AND THESE DRAWINGS & SPECIFICATIONS.
4. THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER FOR THE CITY OF MOLINE AND ALL UTILITY COMPANIES AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT ALL EXISTING UTILITIES AND TO NOTIFY THE UTILITY COMPANIES AND THE CITY ENGINEER PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY CONFLICTS WITH THE DRAWINGS OCCUR. ANY DAMAGE TO EXISTING UTILITIES CAUSED BY CONSTRUCTION OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR AT HIS OWN EXPENSE. EXISTING UTILITY LOCATIONS SHOWN ON THE DRAWINGS ARE APPROXIMATE, IT IS POSSIBLE THAT THERE ARE OTHERS UTILITIES WHOSE EXISTENCE IS PRESENTLY NOT KNOWN OR SHOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AND TO AVOID DAMAGE THERETO. MINOR CONFLICT WITH UNDERGROUND UTILITIES THAT MAY BE ENCOUNTERED DURING CONSTRUCTION SHALL BE RESOLVED BY THE CONTRACTOR AS NECESSARY FOR THE CONSTRUCTION OF THE PROJECT BY THE CONTRACTOR. REMOVAL SHALL BE INCIDENTAL TO THE CONTRACT AND SHALL NOT ENTITLE THE CONTRACTOR TO ANY EXTRA COMPENSATION.
6. THE CITY AND UTILITY COMPANIES SHALL HAVE ACCESS TO THE PROJECT FOR CONSTRUCTION AND TO MAKE EXTENSIONS OR ADJUSTMENTS OF SERVICES. NO CLAIM FOR DAMAGES SHALL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSE BY SUCH WORK.
7. ALL UNSUITABLE MATERIAL, CONSTRUCTION DEBRIS RESULTING FROM CONSTRUCTION OPERATIONS, AND EXISTING PAVEMENT, SIDEWALKS AND DRIVEWAY PAVEMENT SCHEDULED FOR REMOVAL SHALL BE LEGALLY DISPOSED OF OFF SITE IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL LAWS BY CONTRACTOR. CONCRETE WASTE SHALL NOT BE DISPOSED OF INTO CONCRETE IN A METHOD APPROVED BY THE ILLINOIS ENVIRONMENTAL PROTECTION AGENCY.
8. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS OR UNDESIRABLE MATERIAL, WHICH IS NOT TO BE INCORPORATED IN THE WORK INVOLVED IN THIS PROJECT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES.
9. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTIONS AREAS. DO NOT ALLOW WATER TO DRAIN OR TO POND ONTO PRIVATE PROPERTY.
10. EROSION CONTROL FEATURES SHALL BE INCORPORATED INTO THE CONSTRUCTION AT THE EARLIEST POSSIBLE TIME TO LIMIT EROSION AND STREAM POLLUTION AND SHALL BE MAINTAINED UNTIL PERMANENT COVER IS ESTABLISHED.
11. ALL STORM SEWER INLETS THAT RECEIVE DRAINAGE FROM EXPOSED EARTH AREAS SHALL SHALL BE PROTECTED FROM INTAKE OF ERODED SOIL WITH COMPOST FILTER SOCK OR OTHER ACCEPTABLE INLET PROTECTION MEASURES. THE INLET PROTECTION SHALL BE MAINTAINED ACCORDING TO THE PROJECT SWPPP.
12. WHEN NOT INITIATED AT AN EXISTING JOINT, REMOVAL OF EXISTING CONCRETE PAVEMENT, ASPHALT OR CONCRETE DRIVES AND SIDEWALKS SHALL BE INITIATED WITH FULL DEPTH SAW CUTS, PARALLEL AND PERPENDICULAR TO THE DIRECTION OF TRAFFIC. WHERE SAW CUTS ARE NOT MADE OR SPALLING OCCUR, ADDITIONAL REMOVAL AND REPLACEMENT SHALL BE MADE AT THE CONTRACTOR'S EXPENSE. THE COST OF SAW CUTS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF CONSTRUCTION.
13. THE CONTRACTOR SHALL PREVENT SILT AND DEBRIS FROM ENTERING STORM AND SANITARY SEWERS DURING THE COURSE OF THE CONSTRUCTION. IF SILT THAT ENTERS THE SEWERS, NO ADDITIONAL PAYMENT WILL BE MADE FOR THIS WORK.
14. CARE SHALL BE TAKEN TO PREVENT STORM WATER FROM UNDERMINING THE PAVEMENT DURING CONSTRUCTION. IF AREAS BECOME UNDERMINED, THEY SHALL BE REPAIRED IN A MANNER ACCEPTABLE TO THE ENGINEER. PRESSURE GROUTING MY BE REQUIRED.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ADJACENT STREETS AND PROPERTY FREE FROM EXCESSIVE BUILD-UP OF SOIL AND/OR GRANULAR MATERIAL FROM THE PROJECT. THE CONTRACTOR SHALL CLEAN EXCESS SOIL AND OTHER MATERIAL FROM THE ADJACENT STREETS ON A DAILY BASIS OR AS DIRECTED BY THE ENGINEER. ANY DAMAGE DONE TO EXISTING STREETS SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
16. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT THE SPREAD OF DUST FROM THE CONSTRUCTION AREAS AND HAUL ROUTES, WHICH MAY INCLUDE THE APPLICATION OF WATER AS DIRECTED BY THE ENGINEER. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
17. SPECIAL CARE SHALL BE TAKEN WHEN FORMING AT INTERSECTIONS SO THAT THE PROFILES AND GRADES OBTAINED ARE AS SHOWN ON THE PLANS AND GRADE SHEETS. SHORT LENGTH OF FORMS OR FLEXIBLE FORMS MAY BE NECESSARY AT THESE LOCATIONS.
18. ANY PROPERTY DAMAGE OR DISTURBANCE TO PRIVATE PROPERTY OUTSIDE OF GRADING/CONSTRUCTION LIMITS SHALL REQUIRE THE CONTRACTOR TO RESTORE THE PROPERTY TO ORIGINAL OR BETTER CONDITION AT HIS OWN EXPENSE.
19. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY IF ANY DISCREPANCIES ARE DISCOVERED BETWEEN THE PLANS AND SPECIFICATIONS AND THE EXISTING FIELD CONDITIONS.
20. CONSTRUCTION STAKING, INSPECTION AND TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
21. TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH THE DETAILS AND STANDARDIZED SHOWN IN THESE PLANS AND THE CONTRACT DOCUMENTS, AND IN COMPLIANCE WITH ILLINOIS DEPARTMENT OF TRANSPORTATION AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D).
22. PROPERTY CORNERS SHALL BE PROTECTED DURING CONSTRUCTION. PROPERTY CORNERS DISTURBED BY CONTRACTOR OPERATIONS SHALL BE REPLACED AT HIS OWN EXPENSE.
23. ALL DIMENSIONS AND RADIUS MEASUREMENTS ARE TO THE BACK OF CURB UNLESS OTHERWISE SHOWN.
24. TRENCH BACKFILL IS REQUIRED FOR ALL TRENCHES WITHIN A 1:1 SLOPE OF PAVEMENT.
25. ALL STORM SEWER SHALL BE A2000 PVC, N12 HDPE, OR APPROVED EQUAL. VERIFY SIZE AND MATERIAL TYPE WITH MECHANICAL PLANS AND LOCAL PLUMBING CODE.
26. ALL WATER MAIN SHALL BE SDR 21 PVC DR18 PVC, OR APPROVED EQUAL. VERIFY SIZE AND MATERIAL TYPE WITH MECHANICAL PLANS AND LOCAL PLUMBING CODE.
27. ALL SANITARY SEWER LATERALS SHALL BE SDR 23.5 PVC OR APPROVED EQUAL. VERIFY SIZE AND MATERIAL TYPE WITH MECHANICAL PLANS AND LOCAL PLUMBING CODE.

UTILITY NOTES

1. THE LOCATIONS OF THOSE BURIED AND ABOVE GROUND UTILITIES SHOWN ARE APPROXIMATE, ARE SHOWN FOR GENERAL INFORMATIONAL USE ONLY, AND ARE NOT TO BE REFERENCED FOR CONSTRUCTION PURPOSES.
2. THE IMPLIED PRESENCE OR ABSENCE OF UTILITIES IS NOT TO BE CONSTRUED BY THE OWNER, ENGINEER, CONTRACTOR, OR SUBCONTRACTORS TO BE AN ACCURATE AND COMPLETE REPRESENTATION OF UTILITIES THAT MAY OR MAY NOT EXIST ON THE CONSTRUCTION SITE.
3. BURIED AND ABOVE GROUND UTILITY LOCATION, IDENTIFICATION, AND MARKING ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
4. REROUTING, DISCONNECTION, PROTECTION, ETC. OF ANY UTILITY MUST BE COORDINATED BETWEEN THE CONTRACTOR, UTILITY COMPANY AND OWNER.
5. SITE SAFETY, INCLUDING THE AVOIDANCE OF HAZARDS ASSOCIATED WITH BURIED AND ABOVEGROUND UTILITIES, REMAINS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
6. THE OWNER AND THE UTILITY COMPANIES SHALL HAVE ACCESS TO THE PROJECT FOR CONSTRUCTION AND TO MAKE EXTENSIONS OR ADJUSTMENTS OF SERVICES. NO CLAIM FOR DAMAGES SHALL BE ALLOWED TO BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OF DELAY CAUSE BY SUCH WORK.
7. HORIZONTAL AND VERTICAL SEPARATION OF SEWER AND WATER SHALL BE IN ACCORDANCE WITH STANDARD DETAILS 18-2A FROM THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS.
8. TESTING OF SANITARY SEWER SHALL BE IN ACCORDANCE WITH SECTIONS 31 AND 32 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS.
9. PRESSURE TESTING, LEAKAGE TESTING, AND DISINFECTION OF WATER MAIN SHALL BE IN ACCORDANCE WITH SECTION 41 OF THE STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION IN ILLINOIS.

GRADING NOTES

1. EXISTING VEGETATION AND ROOT ZONE SHALL BE COMPLETELY STRIPPED REGARDLESS OF DEPTH. AN AVERAGE DEPTH OF APPROXIMATELY 6 INCHES IS ANTICIPATED, HOWEVER NO ADDITIONAL COMPENSATION WILL BE PAID FOR VARIATIONS IN THE DEPTH. TOPSOIL SHALL THEN BE STOCKPILED ON SITE TO BE RE-USED AS NON-STRUCTURAL FILL(SEE GRADING QUANTITY TABLE) AND RE-SPREAD PRIOR TO SEEDING/SODDING. EXCESS SOIL SHALL BE DISPOSED OFF-SITE.
2. EMBANKMENT FILL SHALL BE OF A MATERIAL THAT WILL COMPACT AND DEVELOP A STABILITY SUFFICIENT TO SUPPORT THE SUPERIMPOSED LOADS. FILL SHALL BE IN ACCORDANCE WITH THE CONTRACT SPECIFICATIONS AND STANDARD SPECIFICATIONS.
3. PROVIDE POSITIVE DRAINAGE AT ALL TIMES WITHIN THE CONSTRUCTION AREAS. DO NOT ALLOW WATER TO DRAIN OR TO POND ONTO PRIVATE PROPERTY.
4. THE EXPOSED SUBGRADE SHALL BE PROOF-ROLLED THOROUGHLY TO DETECT ANY UNSUITABLE AREAS AT THE DIRECTION OF THE ENGINEER. THESE REGIONS SHALL BE STABILIZED TO MEET DENSITY REQUIREMENTS BY CORING OUT AND REPLACING WITH STABILIZATION ROCK OR OTHER METHOD ACCEPTABLE TO THE ENGINEER.
5. ALL UNSUITABLE MATERIAL, SEAL COAT, ASPHALT, CONCRETE, ETC. SHALL BE PROPERLY DISPOSED OF OFF SITE.
6. ALL DISTURBED AREAS NOT DESIGNATED TO RECEIVE PLANTINGS SHALL BE SEEDED WITH AN ILDOT CLASS 2A SEED MIXTURE AT A RATE OF 400 POUNDS PER ACRE AND MULCHED WITH 2 TONS OF HAY AND MULCHED IN ACCORDANCE WITH ILDOT SPECIFICATIONS. AREAS TO BE SODDED SHALL ALSO RECEIVE A MINIMUM 6 INCHES OF TOPSOIL IN ACCORDANCE WITH NPDES GENERAL PERMIT #5.
7. THE ESTIMATED EARTHWORK QUANTITIES SHOWN ON THE GRADING PLAN ARE FOR THE BENEFIT OF THE CONTRACTOR AND SHOULD BE FIELD AND PLAN VERIFIED PRIOR TO BIDDING. PAYMENT FOR THESE ITEMS SHALL BE BY PLAN QUANTITY AND NO FURTHER COMPENSATION SHALL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ENGINEER UNLESS THERE IS AN APPROVED REVISION IN THE PLANS.
8. CLEAR AND GRUB ALL EXISTING VEGETATION IN THE AREA OF THE DETENTION POND AND THE REST OF CONSTRUCTION LIMITS.

EROSION CONTROL NOTES

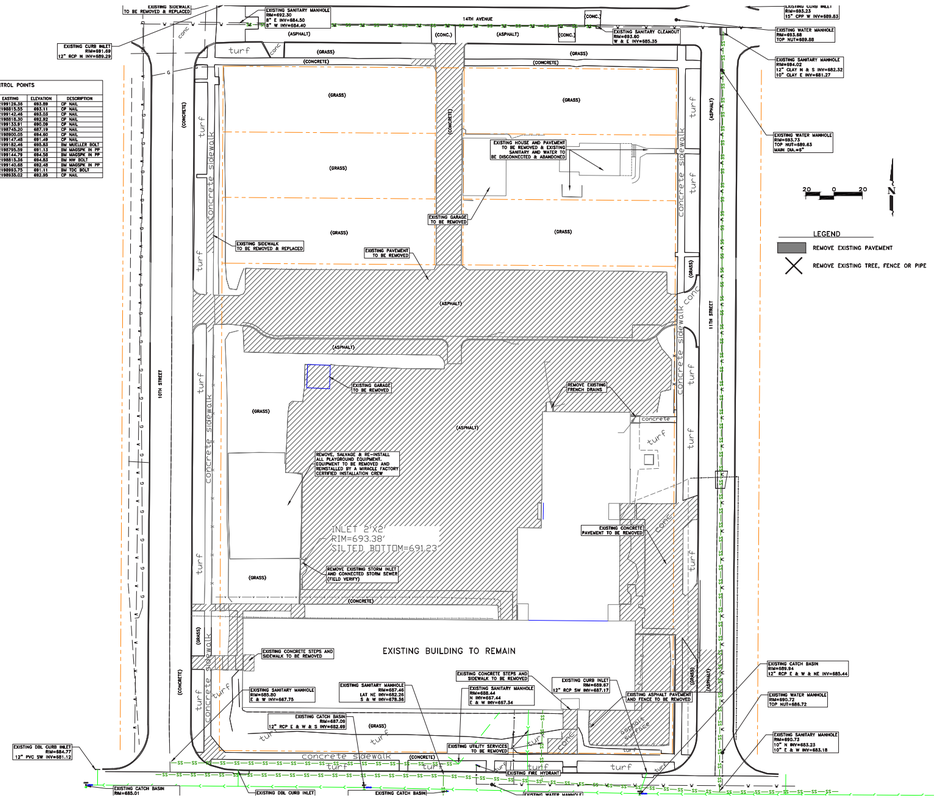
1. ALL EROSION CONTROL FEATURES SHALL BE IN ACCORDANCE WITH THE ILDOT "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," AND CITY OF MOLINE STANDARD SPECIFICATIONS IN SO FAR AS APPLICABLE.
2. VEHICLE TRACKING CONTROL MEASURES SHALL BE PLACED TO LIMIT MUD/DEBRIS FROM CITY STREETS.
3. INSTALL EROSION CONTROL MEASURES, WHERE POSSIBLE, PRIOR TO THE COMMENCEMENT OF ANY EARTH DISTURBING OPERATIONS. ANY REMAINING CONTROL MEASURES MUST BE INSTALLED AS SOON AS REASONABLY POSSIBLE AFTER GRADING OPERATIONS BEGIN.
4. THE CONTRACTOR SHALL DESIGNATE, PRIOR TO BEGINNING CONSTRUCTION, A PERSON OR PERSONS WHO CAN BE CONTACTED IN AN EMERGENCY. THESE PEOPLE SHALL BE AVAILABLE TO REPAIR AND MAINTAIN EROSION DEVICES ON A 24 HOUR PER DAY BASIS. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR CONDUCTING INSPECTIONS OF THE EROSION CONTROL SYSTEM AS REQUIRED BY THE NPDES PERMIT AND STORM WATER POLLUTION PREVENTION PLAN.
5. IN AN EFFORT TO LIMIT SOIL EROSION THE FOLLOWING SEQUENCE OF GRADING ACTIVITY AND TEMPORARY SEDIMENT CONTROL MEASURES ARE REQUIRED.
   5.1. PLACE SILT FENCE AT THE TOE OF UNSEEDED/UNMODIFIED SLOPES DURING CONSTRUCTION.
   5.2 ONCE FINAL SUBGRADE ELEVATIONS ARE OBTAINED, PAVING OPERATIONS CAN PROCEED. MAINTAIN SILT FENCING DURING PAVING OPERATIONS AS MUCH AS PRACTICAL.
   5.3 TEMPORARY STOCK PILES SHALL BE GRADED TO DRAIN WITH A MAXIMUM SIDE SLOPE OF 3 HORIZONTAL TO 1 VERTICAL.
   5.4 UPON COMPLETION OF PAVING AND LANDSCAPING OPERATIONS CONTRACTOR SHALL CLEAN STORM SEWER SYSTEM OF ALL DEBRIS AND SILT.
   5.5 EROSION CONTROL SYSTEM TO BE MAINTAINED BY THE GENERAL CONTRACTOR AFTER EACH RAINFALL EVENT AND THROUGHOUT THE COURSE OF THE PROJECT AND REMOVED UPON PROJECT COMPLETION AFTER AN ADEQUATE STAND OF GRASS HAS BEEN ESTABLISHED.
6. FOR TEMPORARY SEEDING OR INACTIVITY OF 14 DAYS, THE ENTIRE AREA THAT HAS DISTURBED SHALL BE IMMEDIATELY SEEDED WITH OATS AT A RATE OF 65LBS/ACRE AND ANNUAL RYE GRASS AT A RATE OF 20LBS/ACRE AND MULCHED WITH 2 TONS OF HAY PER ACRE AS SOON AS SEEDED. THE ENTIRE AREA SHALL BE FERTILIZED AT THE RATE OF 400 POUNDS PER ACRE WITH A 13-13-13 FERTILIZER INCORPORATED INTO THE SEEDBED. AT THE CONCLUSION OF THE GRADING OPERATIONS PERMANENT SEEDING SHALL BE PLACED PER ILDOT STANDARD SPECIFICATIONS.
7. THE CONTRACTOR IS RESPONSIBLE FOR EXAMINING ALL EROSION CONTROL MEASURES ONCE EACH WEEK. EROSION CONTROL MEASURES SHALL BE MAINTAINED OR, IF NEEDED, REPLACED SO THEY FUNCTION AS DESIGNED. THE CONTRACTOR SHALL KEEP A LOG OF ALL INSPECTIONS AND MAINTAIN WITH SOIL EROSION INSPECTION AND REPORT THE STATUS OF ALL EROSION CONTROL MEASURES. AFTER INCOMPLIANT INSPECTIONS, EROSION CONTROL INSPECTION RECORDS SHALL BE KEPT DETAILING ALL ACTIVITIES AND INSPECTIONS THROUGHOUT THE COURSE OF CONSTRUCTION ACTIVITIES.
8. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ADEQUATE EROSION CONTROL MEASURES AND FOR REMOVING THE MEASURES AFTER THE DISTURBED AREAS ARE STABILIZED. THE CONTRACTOR IS RESPONSIBLE UNTIL NO LESS THAN 70% PERMANENT GROUND COVER IS ACHIEVED AT WHICH TIME ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED. ONCE ALL TEMPORARY EROSION CONTROL MEASURES ARE REMOVED, A NOTICE OF DISCONTINUATION OF CONSTRUCTION ACTIVITY SHALL BE FILED.
9. THE ENGINEER ASSUMES THAT PROPER MAINTENANCE OF THE DETENTION BASIN WILL BE PERFORMED BY THE OWNER, AND THAT DOWNSTREAM PROPERTIES WILL EXPERIENCE NO ADVERSE EFFECTS FROM THIS DEVELOPMENT.

WATER PERMITTING NOTES

1. ALL WATER MAIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ILLINOIS WATER & SEWER STANDARD SPECIFICATIONS.
2. THRUST BLOCKING IS REQUIRED FOR WATER MAIN INSTALLATION AND SHALL BE DONE PER ILLINOIS WATER & SEWER STANDARD SPECIFICATIONS.
3. DISINFECTION OF WATER MAIN SHALL BE DONE PER ILLINOIS WATER & SEWER STANDARD SPECIFICATIONS.
4. PRESSURE AND LEAKAGE TESTS ON WATER MAIN SHALL BE DONE PER ILLINOIS WATER & SEWER STANDARD SPECIFICATIONS.
5. WATER AND SEWER SEPARATION SHALL BE A MINIMUM OF 10 FEET APART, WITH 18 INCHES OF VERTICAL SEPARATION.

SANITARY PERMITTING NOTES

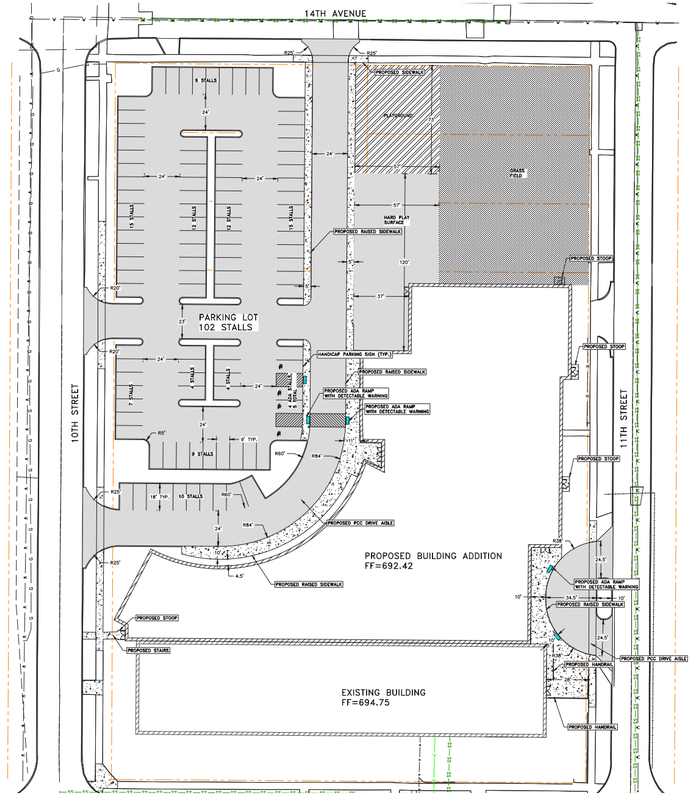
1. ALL SANITARY SEWER LATERALS LESS THAN 8 INCHES IN DIAMETER SHALL BE PVC SDR 26 OR SDR 35 PIPE WITH ELASTOMERIC GASKET JOINTS FOR PUSH ON JOINTS WITH RUBBER GASKETS. PIPE SHALL COMPLY WITH ASTM D-3034 AND GASKETS SHALL MEET ASTM D-3213. PIPE SHALL HAVE A STIFFNESS OF 115 PSI.

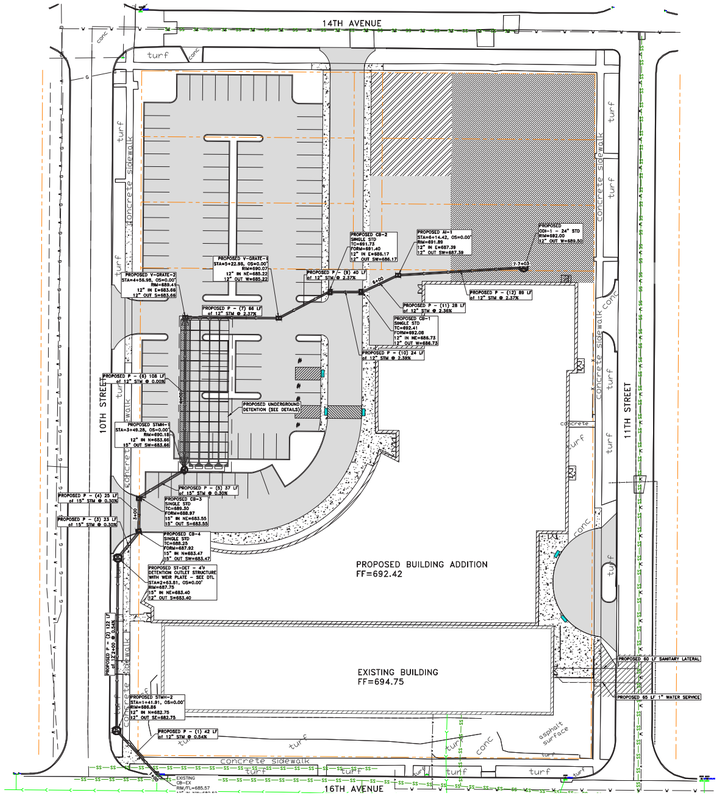


CIVIL NARRATIVE

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

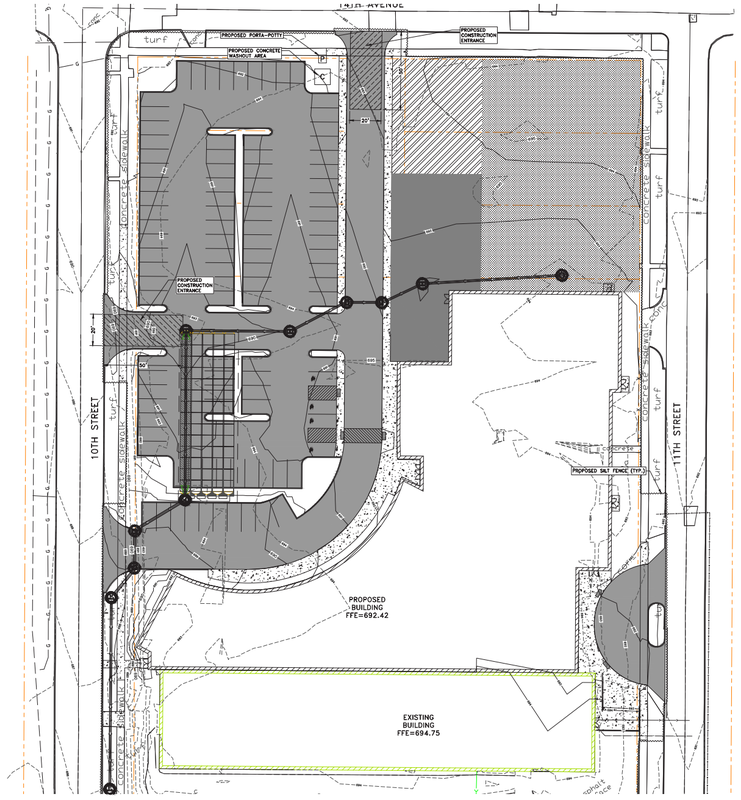


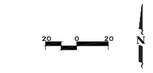


CIVIL NARRATIVE

MOLINE-COAL VALLEY SCHOOL DISTRICT

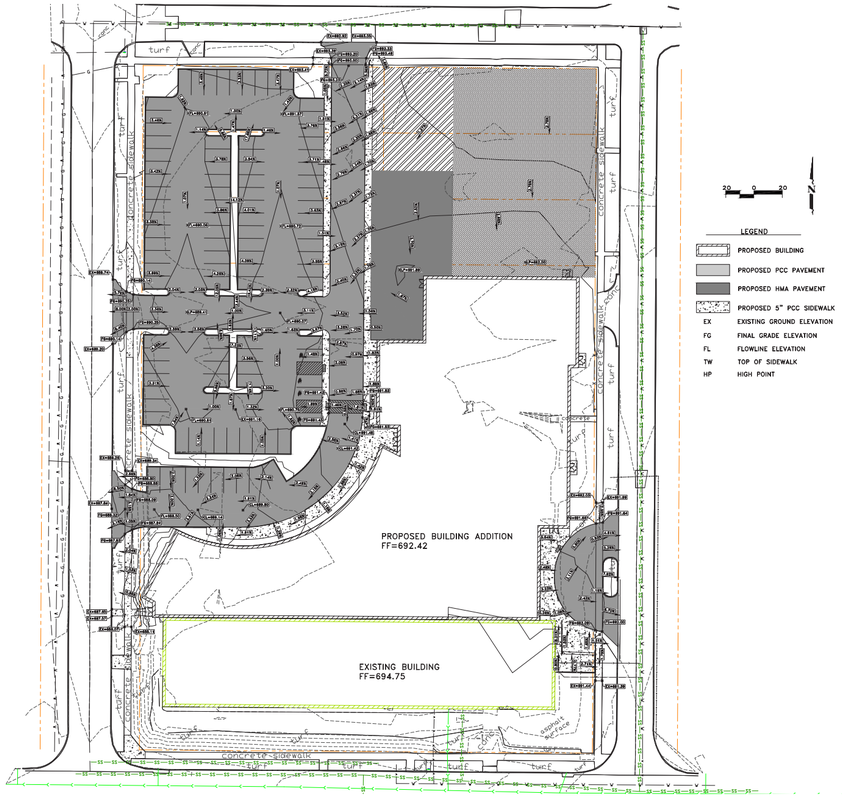
LEGAT ARCHITECTS





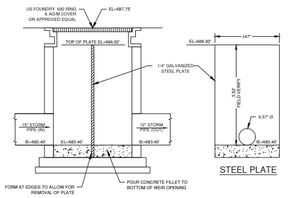
LEGEND

- PROPOSED BUILDING
- PROPOSED PCC PAVEMENT
- PROPOSED HMA PAVEMENT
- PROPOSED 5" PCC SIDEWALK
- PROPOSED INLET PROTECTION
- PROPOSED SILT FENCE
- SEED, FERTILIZE & MULCH
- SEED, FERTILIZE & MAT
- PROPOSED CONSTRUCTION ENTRANCE
- PROPOSED FENCE



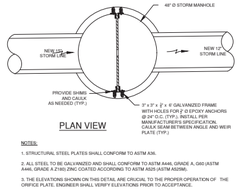
LEGEND

- PROPOSED BUILDING
- PROPOSED PCC PAVEMENT
- PROPOSED HMA PAVEMENT
- PROPOSED 5" PCC SIDEWALK
- EX EXISTING GROUND ELEVATION
- FG FINAL GRADE ELEVATION
- FL FLOWLINE ELEVATION
- TW TOP OF SIDEWALK
- HP HIGH POINT



OUTLET STRUCTURE

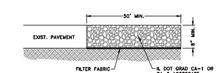
NOT TO SCALE



PLAN VIEW

NOTES:

1. STRUCTURAL STEEL PLATES SHALL CONFORM TO ASTM A36.
2. ALL STEEL TO BE GALVANIZED AND SHALL CONFORM TO ASTM A446, GRADE A, G60 (ASTM A446, GRADE A 2180) ZINC COATED ACCORDING TO ASTM A525 (ASTM A525M).
3. THE ELEVATIONS SHOWN ON THIS DETAIL ARE CRUCIAL TO THE PROPER OPERATION OF THE ORIFICE PLATE, ENGINEER SHALL VERIFY ELEVATIONS PRIOR TO ACCEPTANCE.
4. SHOP DRAWINGS SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION OF THE OUTLET STRUCTURE

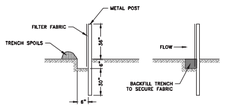


NOTES:

1. CONTRACTOR TO MAINTAIN MINIMUM DEPTH AND SHALL REMOVE SOIL FROM CONSTRUCTION ENTRANCE, AS REQUIRED.
2. CONSTRUCT 12'(MIN.) WIDE FOR ONE-WAY TRAFFIC AND 20' WIDE FOR TWO-WAY TRAFFIC.

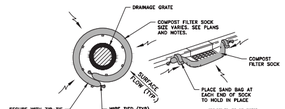
CONSTRUCTION ENTRANCE - SECTION VIEW

NOT TO SCALE



SILT FILTER FENCE AS A PERIMETER EROSION BARRIER

NOT TO SCALE

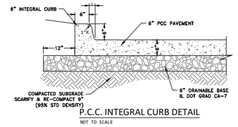


DROP INLET PLAN

NOTES:
1. ANCHORING STAKES SHALL BE SIZED, SPACED AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE FILTER SOCK. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET.
2. OVERLAP ENDS OF SOCK PER MANUFACTURER'S RECOMMENDATIONS. (1' MIN., 3' MAX.)
3. USE 8" TO 12" DIAMETER SOCK ON CURBSIDE IN TRAFFIC AREAS.
4. USE 12"-18" DIAMETER SOCK IN NON-TRAFFIC AREAS OR AREAS WHERE SAFETY IS NOT A CONCERN.

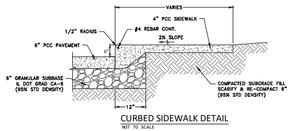
COMPOST FILTER SOCK INLET PROTECTION

NOT TO SCALE



P.C.C. INTEGRAL CURB DETAIL

NOT TO SCALE



CURBED SIDEWALK DETAIL

NOT TO SCALE

TYPICAL SECTION

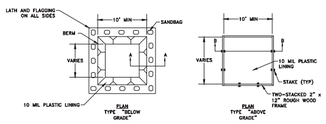
STANDARD PITCH

P.C.C. ROLL OVER CURB & GUTTER DETAIL

NOT TO SCALE

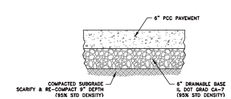
TYPICAL SIDEWALK DETAIL

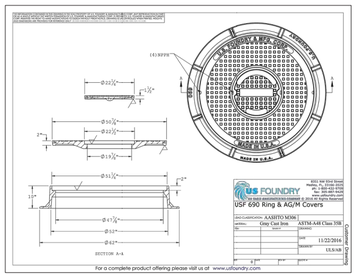
NOT TO SCALE



NOTES

SIDEWALK NOTES:
1. MINIMUM SIDEWALK THICKNESS SHALL BE 4".
2. MAXIMUM TRANSVERSE SLOPE SHALL BE 1.5% (2% MAX).
3. CONTRACTION JOINTS SHALL BE CONSTRUCTED AT A SPACING EQUAL TO THE WIDTH OF THE WALK, UP TO 6 FEET MAXIMUM.
4. SUBGRADE SHALL BE MECHANICALLY COMPACTED PRIOR TO PAVING.
5. NEW SIDEWALKS SHALL BE PROMPTLY BACKFILLED AND PROTECTED FROM DAMAGE.





MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

PROJECT INFORMATION	
ENGINEERED PRODUCT MANAGER	
ADS SALES REP	
PROJECT NO.	

Advanced Drainage Systems, Inc.

SiteAssist FOR STORMTECH INSTALLATION INSTRUCTIONS VISIT OUR APP

LINCOLN IRVING

MOLINE, IL, USA

MC-3500 STORMTECH CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH MC-3500.
2. CHAMBERS SHALL BE ARCH-SHAPED AND SHALL BE MANUFACTURED FROM VIRGIN, IMPACT-MODIFIED POLYPROPYLENE COPOLYMERS.
3. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45s/76 DESIGNATION SS.
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORTS THAT WOULD IMPEDE FLOW OR LIMIT ACCESS FOR INSPECTION.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL, AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12, ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
6. CHAMBERS SHALL BE DESIGNED, TESTED AND ALLOWABLE LOAD CONFIGURATIONS DETERMINED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS". LOAD CONFIGURATIONS SHALL INCLUDE: 1) INSTANTANEOUS (~1 MIN) AASHTO DESIGN TRUCK LIVE LOAD ON MINIMUM COVER 2) MAXIMUM PERMANENT (75-YR) COVER LOAD AND 3) ALLOWABLE COVER WITH PARKED (1-WEEK) AASHTO DESIGN TRUCK.
7. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418. AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.
8. ONLY CHAMBERS THAT ARE APPROVED BY THE SITE DESIGN ENGINEER WILL BE ALLOWED. UPON REQUEST BY THE SITE DESIGN ENGINEER OR OWNER, THE CHAMBER MANUFACTURER SHALL SUBMIT A STRUCTURAL EVALUATION FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE AS FOLLOWS:
   - THE STRUCTURAL EVALUATION SHALL BE SEALED BY A REGISTERED PROFESSIONAL ENGINEER.
   - THE STRUCTURAL EVALUATION SHALL DEMONSTRATE THAT THE SAFETY FACTORS ARE GREATER THAN OR EQUAL TO 1.95 FOR DEAD LOAD AND 1.75 FOR LIVE LOAD, THE MINIMUM REQUIRED BY ASTM F2787 AND BY SECTIONS 3 AND 12.12 OF THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS FOR THERMOPLASTIC PIPE.
   - THE TEST DERIVED CREEP MODULUS AS SPECIFIED IN ASTM F2418 SHALL BE USED FOR PERMANENT DEAD LOAD DESIGN EXCEPT THAT IT SHALL BE THE 75-YEAR MODULUS USED FOR DESIGN.
9. CHAMBERS AND END CAPS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
10. MANIFOLD SIZE TO BE DETERMINED BY SITE DESIGN ENGINEER. SEE TECH NOTE #6.32 FOR MANIFOLD SIZING GUIDANCE. DUE TO THE ADAPTATION OF THIS CHAMBER SYSTEM TO SPECIFIC SITE AND DESIGN CONSTRAINTS, IT MAY BE NECESSARY TO CUT AND COUPLE ADDITIONAL PIPE TO STANDARD MANIFOLD COMPONENTS IN THE FIELD.

IMPORTANT - NOTES FOR THE BIDDING AND INSTALLATION OF MC-3500 CHAMBER SYSTEM

1. STORMTECH MC-3500 CHAMBERS SHALL NOT BE INSTALLED UNTIL THE MANUFACTURER'S REPRESENTATIVE HAS COMPLETED A PRE-CONSTRUCTION MEETING WITH THE INSTALLERS.
2. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. CHAMBERS ARE NOT TO BE BACKFILLED WITH A DOZER OR AN EXCAVATOR SITUATED OVER THE CHAMBERS. STORMTECH RECOMMENDS 3 BACKFILL METHODS:
   - STONESHOOTER LOCATED OFF THE CHAMBER BED.
   - BACKFILL AS ROWS ARE BUILT USING AN EXCAVATOR ON THE FOUNDATION STONE OR SUBGRADE.
   - BACKFILL FROM OUTSIDE THE EXCAVATION USING A LONG BOOM HOE OR EXCAVATOR.
4. THE FOUNDATION STONE SHALL BE LEVELED AND COMPACTED PRIOR TO PLACING CHAMBERS.
5. JOINTS BETWEEN CHAMBERS SHALL BE PROPERLY SEATED PRIOR TO PLACING STONE.
6. MAINTAIN MINIMUM - 6" (150 mm) SPACING BETWEEN THE CHAMBER ROWS.
7. INLET AND OUTLET MANIFOLDS MUST BE INSERTED A MINIMUM OF 12" (300 mm) INTO CHAMBER END CAPS.
8. EMBEDMENT STONE SURROUNDING CHAMBERS MUST BE A CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE; AASHTO M43 #3, 357, 4, 467, 5, 56, OR 57.
9. STONE MUST BE PLACED ON THE TOP CENTER OF THE CHAMBER TO ANCHOR THE CHAMBERS IN PLACE AND PRESERVE ROW SPACING.
10. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH CHAMBER FOUNDATION MATERIALS BEARING CAPACITIES TO THE SITE DESIGN ENGINEER.
11. ADS RECOMMENDS THE USE OF "FLEXSTORM CATCH IT" INSERTS DURING CONSTRUCTION FOR ALL INLETS TO PROTECT THE SUBSURFACE STORMWATER MANAGEMENT SYSTEM FROM CONSTRUCTION SITE RUNOFF.

NOTES FOR CONSTRUCTION EQUIPMENT

1. STORMTECH MC-3500 CHAMBERS SHALL BE INSTALLED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
2. THE USE OF EQUIPMENT OVER MC-3500 CHAMBERS IS LIMITED:
   - NO EQUIPMENT IS ALLOWED ON BARE CHAMBERS.
   - NO RUBBER TIRED LOADER, DUMP TRUCK, OR EXCAVATORS ARE ALLOWED UNTIL PROPER FILL DEPTHS ARE REACHED IN ACCORDANCE WITH THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
   - WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT CAN BE FOUND IN THE "STORMTECH MC-3500/MC-4500 CONSTRUCTION GUIDE".
3. FULL 36" (900 mm) OF STABILIZED COVER MATERIALS OVER THE CHAMBERS IS REQUIRED FOR DUMP TRUCK TRAVEL OR DUMPING.

USE OF A DOZER TO PUSH EMBEDMENT STONE BETWEEN THE ROWS OF CHAMBERS MAY CAUSE DAMAGE TO CHAMBERS AND IS NOT AN ACCEPTABLE BACKFILL METHOD. ANY CHAMBERS DAMAGED BY USING THE "DUMP AND PUSH" METHOD ARE NOT COVERED UNDER THE STORMTECH STANDARD WARRANTY.

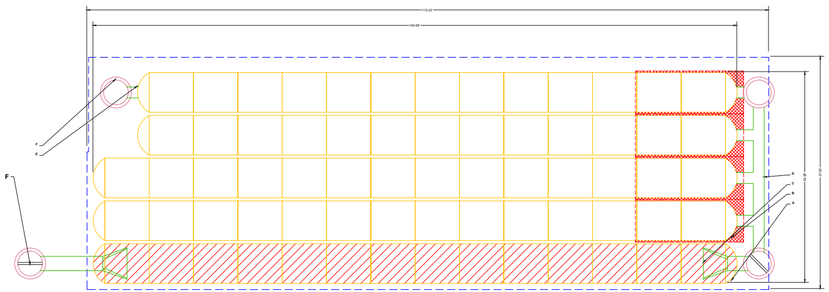
CONTACT STORMTECH AT 1-800-821-6710 WITH ANY QUESTIONS ON INSTALLATION REQUIREMENTS OR WEIGHT LIMITS FOR CONSTRUCTION EQUIPMENT.

CIVIL NARRATIVE

PROPOSED LAYOUT		CONCEPTUAL ELEVATIONS:	
68	STORMTECH MC-3500 CHAMBERS	MAXIMUM ALLOWABLE GRADE (TOP OF PAVEMENT/UNPAVED):	12.50
10	STORMTECH MC-3500 END CAPS	MINIMUM ALLOWABLE GRADE (UNPAVED WITH TRAFFIC):	6.50
12	STONE ABOVE (in)	MINIMUM ALLOWABLE GRADE (UNPAVED NO TRAFFIC):	6.00
9	STONE BELOW (in)	MINIMUM ALLOWABLE GRADE (TOP OF RIGID CONCRETE PAVEMENT):	6.00
40	STONE VOID	MINIMUM ALLOWABLE GRADE (BASE OF FLEXIBLE PAVEMENT):	6.00
13673	INSTALLED SYSTEM VOLUME (CF) (PERIMETER STONE INCLUDED) (COVER STONE INCLUDED) (BASE STONE INCLUDED)	TOP OF STONE:	5.50
		TOP OF MC-3500 CHAMBER:	4.50
		24" ISOLATOR ROW PLUS INVERT:	0.93
		24" ISOLATOR ROW PLUS INVERT:	0.93
4135	SYSTEM AREA (SF)	18" x 18" BOTTOM MANIFOLD INVERT:	0.90
295.5	SYSTEM PERIMETER (ft)	18" BOTTOM CONNECTION INVERT:	0.90
		BOTTOM OF MC-3500 CHAMBER:	0.75
		UNDERDRAIN INVERT:	0.00
		BOTTOM OF STONE:	0.00

*INVERT ABOVE BASE OF CHAMBE

PART TYPE	ITEM ON LAYOUT	DESCRIPTION	INVERT*	MAX FLOW
PREFABRICATED END CAP	A	24" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP24BC / TYP OF ALL 24" BOTTOM CONNECTIONS AND ISOLATOR PLUS ROWS	2.06"	
PREFABRICATED END CAP	B	18" BOTTOM PRE-CORED END CAP, PART#: MC3500IEPP18BC / TYP OF ALL 18" BOTTOM CONNECTIONS	1.77"	
LAMP	C	INSTALL FLAMP ON 24" ACCESS PIPE / PART#: MCFLAMP (TYP 2 PLACES)		
MANIFOLD	D	18" x 18" BOTTOM MANIFOLD, ADS N-12	1.77"	
PIPE CONNECTION	E	18" BOTTOM CONNECTION	1.77"	
CONCRETE STRUCTURE	F	OCS (DESIGN BY ENGINEER / PROVIDED BY OTHERS)		4.0 CFS OUT



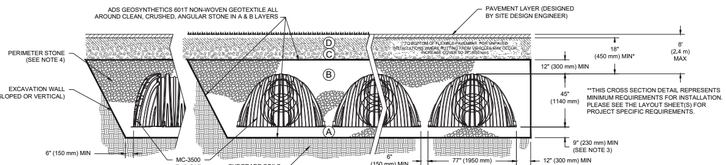
ISOLATOR ROW PLUS
(SEE DETAIL)

PLACE MINIMUM 17.50' OF ADSPLUS125 WOVEN GEOTEXTILE OVER BEDDING

ACCEPTABLE FILL MATERIALS: STORMTECH MC-3500 CHAMBER SYSTEMS

	MATERIAL LOCATION	DESCRIPTION	AASHTO MATERIAL CLASSIFICATIONS	COMPACTION / DENSITY REQUIREMENT
D	**FINAL FILL:** FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISHED GRADE ABOVE. NOTE THAT PAVEMENT SUBBASE MAY BE PART OF THE 'D' LAYER	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER SITE DESIGN ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
C	**INITIAL FILL:** FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE ('B' LAYER) TO 24" (600 mm) ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUBBASE MAY BE A PART OF THE 'C' LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, <35% FINES OR PROCESSED AGGREGATE. MOST PAVEMENT SUBBASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	AASHTO M145* A-1, A-2-4, A-3 OR AASHTO M43* 3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTIONS AFTER 24" (600 mm) OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 12" (300 mm) MAX LIFTS TO A MIN. 95% RELATIVE DENSITY FOR WELL GRADED MATERIAL AND 95% RELATIVE DENSITY FOR PROCESSED AGGREGATE MATERIALS.
B	**EMBEDMENT STONE:** FILL SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE ('A' LAYER) TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	
A	**FOUNDATION STONE:** FILL BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE OR RECYCLED CONCRETE[5]	AASHTO M43* 3, 357, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A FLAT SURFACE.[2,3]

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR, FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) AGGREGATION REQUIRED.
2. STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" (230 mm) (MAX) LIFTS USING TWO FULL COVERAGES WITH A VIBRATORY COMPACTOR.
3. WHERE INFILTRATION SURFACES MAY BE COMPROMISED BY COMPACTION, FOR STANDARD DESIGN LOAD CONDITIONS, A FLAT SURFACE MAY BE ACHIEVED BY RAKING OR DRAGGING WITHOUT COMPACTION EQUIPMENT, FOR SPECIAL LOAD DESIGNS, CONTACT STORMTECH FOR COMPACTION REQUIREMENTS.
4. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION,
5. WHERE RECYCLED CONCRETE AGGREGATE IS USED IN LAYERS 'A' OR 'B' THE MATERIAL SHOULD ALSO MEET THE ACCEPTABILITY CRITERIA OUTLINED IN TECHNICAL NOTE 6.20 "RECYCLED CONCRETE STRUCTURAL BACKFILL".

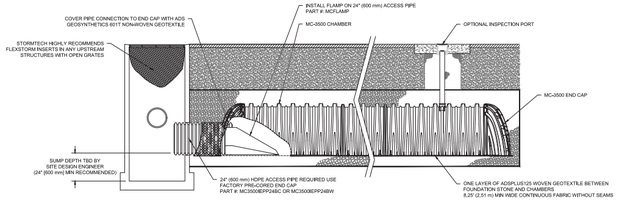


NOTES:
1. CHAMBERS SHALL MEET THE REQUIREMENTS OF ASTM F2418, "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS" CHAMBER CLASSIFICATION 45x76 DESIGNATION BS.
2. MC-3500 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
3. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS, REFERENCE STORMTECH DESIGN MANUAL FOR BEARING CAPACITY GUIDANCE.
4. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
5. REQUIREMENTS FOR HANDLING AND INSTALLATION:
   - TO MAINTAIN THE WIDTH OF CHAMBERS DURING SHIPPING AND HANDLING, CHAMBERS SHALL HAVE INTEGRAL, INTERLOCKING STACKING LUGS.
   - TO ENSURE A SECURE JOINT DURING INSTALLATION AND BACKFILL, THE HEIGHT OF THE CHAMBER JOINT SHALL NOT BE LESS THAN 3".
   - TO ENSURE THE INTEGRITY OF THE ARCH SHAPE DURING INSTALLATION, a) THE ARCH STIFFNESS CONSTANT SHALL BE GREATER THAN OR EQUAL TO 450 LBS/FT/%, THE ASC IS DEFINED IN SECTION 6.2.8 OF ASTM F2418, AND b) TO RESIST CHAMBER DEFORMATION DURING INSTALLATION AT ELEVATED TEMPERATURES (ABOVE 73° F / 23° C), CHAMBERS SHALL BE PRODUCED FROM REFLECTIVE GOLD OR YELLOW COLORS.

CIVIL NARRATIVE

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS



MC-3500 ISOLATOR ROW PLUS DETAIL
NTS

INSPECTION & MAINTENANCE

STEP 1) INSPECT ISOLATOR ROW PLUS FOR SEDIMENT
- A. INSPECTION PORTS (IF PRESENT)
  - A.1. REMOVE/OPEN LID ON NYLOPLAST INLINE DRAIN
  - A.2. REMOVE AND CLEAN FLEXSTORM FILTER IF INSTALLED
  - A.3. USING A FLASHLIGHT AND STADIA ROD, MEASURE DEPTH OF SEDIMENT AND RECORD ON MAINTENANCE LOG
  - A.4. LOWER A CAMERA INTO ISOLATOR ROW PLUS FOR VISUAL INSPECTION OF SEDIMENT LEVELS (OPTIONAL)
  - A.5. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.
- B. ALL ISOLATOR PLUS ROWS
  - B.1. REMOVE COVER FROM STRUCTURE AT UPSTREAM END OF ISOLATOR ROW PLUS
  - B.2. USING A FLASHLIGHT, INSPECT DOWN THE ISOLATOR ROW PLUS THROUGH OUTLET PIPE
    - i) MIRRORS ON POLES OR CAMERAS MAY BE USED TO AVOID A CONFINED SPACE ENTRY
    - ii) FOLLOW OSHA REGULATIONS FOR CONFINED SPACE ENTRY IF ENTERING MANHOLE
  - B.3. IF SEDIMENT IS AT, OR ABOVE, 3" (80 mm) PROCEED TO STEP 2. IF NOT, PROCEED TO STEP 3.

STEP 2) CLEAN OUT ISOLATOR ROW PLUS USING THE JETVAC PROCESS
- A. A FIXED CULVERT CLEANING NOZZLE WITH REAR FACING SPREAD OF 45° (1.1 m) OR MORE IS PREFERRED
- B. APPLY MULTIPLE PASSES OF JETVAC UNTIL BACKFLUSH WATER IS CLEAN
- C. VACUUM STRUCTURE SUMP AS REQUIRED

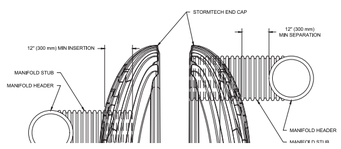
STEP 3) REPLACE ALL COVERS, GRATES, FILTERS, AND LIDS; RECORD OBSERVATIONS AND ACTIONS.

STEP 4) INSPECT AND CLEAN BASINS AND MANHOLES UPSTREAM OF THE STORMTECH SYSTEM.

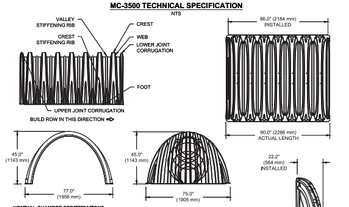
NOTES

1. INSPECT EVERY 6 MONTHS DURING THE FIRST YEAR OF OPERATION. ADJUST THE INSPECTION INTERVAL BASED ON PREVIOUS OBSERVATIONS OF SEDIMENT ACCUMULATION AND HIGH WATER ELEVATIONS.
2. CONDUCT JETTING AND VACTORING ANNUALLY OR WHEN INSPECTION SHOWS THAT MAINTENANCE IS NECESSARY.

MC-SERIES END CAP INSERTION DETAIL
NTS



MC-3500 TECHNICAL SPECIFICATION
NTS



NOMINAL CHAMBER SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	77.0" X 45.0" X 86.0"	(1956 mm X 1143 mm X 2184 mm)
CHAMBER STORAGE	109.9 CUBIC FEET	(3.11 m³)
MINIMUM INSTALLED STORAGE*	175.0 CUBIC FEET	(4.96 m³)
WEIGHT	134 lbs.	(60.8 kg)

NOMINAL END CAP SPECIFICATIONS

SIZE (W X H X INSTALLED LENGTH)	75.0" X 45.0" X 22.2"	(1905 mm X 1143 mm X 564 mm)
END CAP STORAGE	14.0 CUBIC FEET	(0.42 m³)
MINIMUM INSTALLED STORAGE*	45.1 CUBIC FEET	(1.28 m³)
WEIGHT	49 lbs.	(22.2 kg)

*ASSUMES 12" (305 mm) STONE ABOVE, 9" (229 mm) STONE FOUNDATION, 6" SPACING BETWEEN CHAMBERS, 6" (152 mm) STONE PERIMETER IN FRONT OF END CAPS AND 40% STONE POROSITY

STUBS AT BOTTOM OF END CAP FOR PART NUMBERS ENDING WITH "B"
STUBS AT TOP OF END CAP FOR PART NUMBERS ENDING WITH "T"
END CAPS WITH A WELDED CROWN PLATE END WITH "C"
END CAPS WITH A PREFABRICATED WELDED STUB END WITH "W"

PART #	STUB	B	C
MC3500IEPP06T	6" (150 mm)	33.27" (844 mm)	0.69" (17 mm)
MC3500IEPP06B			
MC3500IEPP08T	8" (200 mm)	31.19" (791 mm)	0.81" (21 mm)
MC3500IEPP08B			
MC3500IEPP10T	10" (250 mm)	29.04" (738 mm)	0.93" (24 mm)
MC3500IEPP10B			
MC3500IEPP12T	12" (300 mm)	26.36" (670 mm)	1.35" (34 mm)
MC3500IEPP12B			
MC3500IEPP15T	15" (375 mm)	23.39" (594 mm)	1.50" (38 mm)
MC3500IEPP15B		—	
MC3500IEPP18TC	18" (450 mm)	20.03" (509 mm)	—
MC3500IEPP18BC			
MC3500IEPP18BW		—	1.77" (45 mm)

CUSTOM PRECORED INVERTS ARE AVAILABLE UPON REQUEST. INVENTORIED MANIFOLDS INCLUDE 12-24" (300-600 mm) SIZE ON SIZE AND 12-48" (375-1200 mm) ECCENTRIC MANIFOLDS. CUSTOM INVERT LOCATIONS ITW THAT MC-3500

MOLINE-COAL VALLEY SCHOOL DISTRICT

LEGAT ARCHITECTS

STRUCTURAL NARRATIVE

A. Introduction

1. Purpose

a. The purpose of this report is to describe the proposed building systems for design coordination, preliminary pricing, and Owner review.
b. The proposed design assumptions are outlined for Owner review and approval. These assumptions include, but are not limited to vibration criteria, future expansion needs, and structural systems.
c. The proposed building systems may evolve in future design phases. Any preliminary pricing must include cost contingencies appropriate to the current phase.

B. Adopted Codes and Standards

1. Codes

a. Building Code - 2021 International Building Code
b. Existing Building Code - 2021 International Existing Building Code

C. Structural Design Requirements

1. Design Code and Risk Category

a. The project design will follow ASCE 7-16, TMS 402/602-16, AISC 360-16, and other relevant design standards.

2. Performance Requirements

a. Live Load
1) Building live loads are designed as follows:

a)	Typical floors:	100 psf (reducible)
b)	Mechanical rooms:	125 psf (non-reducible)
c)	Typical roofs:	20 psf
d)	Live load reduction	Used

b. Snow, Wind and Seismic Loads
1) Snow load is based on ASCE7 Chapter 7 as follows:

a)	Ground snow load:	20 psf
b)	Exposure factor, Ce:	1.0
c)	Thermal factor, Ct:	1.0
d)	Importance factor:	1.1
e)	Flat roof snow load:	15 psf
f)	Rain-on-snow surcharge:	0 psf
g)	Design load:	22 psf
h)	Drifting load:	Determined in desgin phase

2) Wind load is based on ASCE 7 Chapter 28 as follows:

a)	Design wind speed:	115 mph
b)	Importance factor:	1.0
c)	Exposure class:	B
d)	Wind pressure, MWFRS:	25 psf
e)	Wind pressure, Components:	40 psf
f)	Wind pressure, roof:	10 psf uplift (gross)

3) Wind load is based on ASCE 7 Chapter 28 as follows at the storm shelter:

a)	Design wind speed:	250 mph
b)	Importance factor:	1.15
c)	Exposure class:	B
d)	Wind pressure, MWFRS:	215 psf
e)	Wind pressure, Components:	250 psf
f)	Wind pressure, roof:	210 psf uplift (gross)

c. Floor Flatness/Floor Levelness Criteria
1) Based on the intended use of the slab on grade and/or elevated slab, IMEG recommends the slab on grade be designed per industry standards with no special requirements.

d. Vibration Requirements
   1) Based on the intended use of the building, IMEG recommends designing the areas per industry standards with no special requirements

e. Future Expansion
   1) No future expansion is being considered as part of this design.

3. Sub-Structure System

a. Foundation System
   a) Column foundations are anticipated to be shallow spread footings. Soil conditions are currently being investigated for recommended foundation design, allowable bearing values, and bottom of footing elevations.
   b) Foundation frost walls will be cast-in-place concrete walls supported on continuous footings.
   c) 3,000 psi concrete will be used for footings.
   d) Polystyrene insulation will be provided at the building perimeter per the architectural narrative.

b. Slab-on-grade Construction
   a) The typical slab-on-grade will be 4", 4,000 psi concrete reinforced with welded wire fabric (typically). Thickened reinforced concrete slabs will be provided at highly loaded areas, below CMU interior partitions, and at locations with depressed slabs.
   b) Slab depressions will be provided, as required, for flooring, equipment, etc.
   c) A 10 mil polyethylene vapor retarder will be provided below the slab. Thickness subject to review of final geotechnical report and recommendations.

4. Superstructure System

a. Floor Construction
   1) Floor construction consists of normal weight concrete on steel deck supported by wide flange steel beams spaced at a maximum of 8'-0" on center. This system is recommended as the most economical system based on performance requirements such as vibration and column spacing.
   2) Floor Construction - Composite Steel and Concrete
      a) Conventional wide flange framing with welded shear studs and composite metal deck forms.
      b) Fire rating to be coordinated during Design Development.
      c) Concrete floor slab thickness and reinforcing will be selected during the Design Development phase to meet the fire rating requirements and to provide an economical design.

b. Roof Construction
   1) Given the loading requirements on the roof, bar joist and wide flange steel girder construction is the most economical solution for this project.
   2) Roof Construction – Bar Joist and Metal Deck
      a) Conventional wide flange framing will support standard K-series bar joists spaced at 5'-0" on center and 1-1/2" metal roof decking. The structure will be sloped a minimum of 1/4" per foot to provide positive roof drainage.
      b) No fire rating is required.

c. Columns and/or Bearing Wall Construction
   1) Steel HSS sections, masonry walls, and load bearing precast walls.
   2) Columns – Hollow Structural Sections
      a) Columns will be ASTM Designation A500, Grade C.
      b) One-hour fire rating is required.
      c) Maximum column width of 5" will be maintained to allow for columns to be hidden in the interior wall system.
      d) Columns will be full height of the structure with no splices.

d. Lateral Load Resisting System
   1) Braced frames and shear walls will be used to resist the lateral forces due to wind and seismic load requirements.
   2) Lateral Load Resisting System – Braced Frames
      a) Concentrically braced frames will be used to provide the lateral support for the structural framing. Tube steel sections will be used for the bracing elements to allow for easy integration into the steel stud wall system. Locations and sizes will be determined during the Design Development phase of the project.
   3) Lateral Load Resisting System – Shear Walls
      a) Ordinary reinforced concrete masonry shear walls will be used for the lateral support of the structure. Locations and sizes will be determined during the Design Development phase of the project.

e. Exterior Enclosure
   1) Exterior Walls - Brick Veneer with Concrete Masonry Backup
      a) 8" concrete masonry walls will be used to back up the brick veneer exterior.

b) Lintels will be galvanized hot rolled sections or concrete masonry bond beams. The selection will be finalized during the Design Development phase.

f. Additional Structural Components
1) The storm shelter will consist of concrete Precast walls and composite long span steel joists or wide flange framing. Further coordination of the storm shelter will be required in Design Development phase.
2) Concrete Precast shear walls will be used for lateral support of the storm shelter.
3) The storm shelter will require a 2-hour minimum fire rating.

g. Structural Expansion Joints
1) Structural expansion joints will be used to separate the facility from the storm shelter

APPENDIX D - STRUCTURAL DESIGN CRITERIA

A. Seismic Load Criteria

1.	Site Soil Classification	D
2.	Risk Category	III
3.	Risk Category (Storm Shelter)	IV
4.	Seismic Design Category	B

B. Foundation Criteria
5. Allowable Net Soil Bearing Pressure

C. Structural Steel Criteria
6. Material Properties

a.	Wide flange beams	ASTM A992 (Gr. 50)
b.	Wide flange columns	ASTM A992 (Gr. 50)
c.	Channel sections	ASTM A992 (Gr. 50)
d.	Angle sections	ASTM A572 (Gr. 50)
e.	Hollow structural sections (HSS)	ASTM A500, Gr. C
f.	Plates	ASTM A572 (Gr. 50)
g.	Anchor rods	ASTM F1554, Gr 36 55

D. Concrete Criteria
7. Material Properties
a. Reinforcing steel ASTM A615, Grade 60
b. Welded wire reinforcement ASTM A1064
c. Fiber reinforcement ASTM C1116

8. Strength Properties
a. Slab on deck 3000 3500 psi
b. Slab on Grade 3000 psi
c. Structural slabs/beams 5000 psi
d. All other concrete 4000 psi

E. Masonry Criteria
9. Material properties:
a. Concrete masonry units ASTM C90
b. Mortar materials ASTM C270, Type S N
c. Grout ASTM C476
d. Joint reinforcing ASTM A82
10. Strength properties:
a. Design assembly strength, f'm 2500 psi
b. Individual concrete masonry units 3250 psi
c. Grout 2500 psi

The following descriptions are a Mechanical, Electrical, Fire Protection and Plumbing design narrative for development for the above-mentioned project. This is a general scope summary and is based upon our discussions and review of the preliminary Architectural materials as well as coordination with the specific Owner requirements and our understanding of the project needs. All sizes and capacities listed below are approximate. Detailed load calculations, equipment selections, or other specifications have not been completed at this time.

DIVISION 21, 22 & 23 GENERAL DEMOLITION

Demolish and remove HVAC and plumbing systems, equipment, and components made obsolete by new work.

DIVISION 26, 27 & 28 GENERAL DEMOLITION

Demolish and remove electrical systems, equipment, and components made obsolete by new work.

DIVISON 21 - FIRE PROTECTION

Existing space has an existing fire protection system and will remain. Slight alterations in head location and style will be needed to address the new layout and ceiling alterations to maintain coverage in existing building.

Fire protection line to be extended to feed addition to maintain coverage in the new addition.

DIVISION 22 - PLUMBING

Plumbing rough ins will consist of water and waste piping extended from the existing building services. All new domestic water piping will be Type L copper and insulated with 1" thick fiberglass with canvas jacket. All new sanitary rough-ins consist of waste piping connecting to existing sanitary system in the building. Cleanouts will be provided more than what is required by code to ensure piping can be easily cleared in the event of a clogged pipe. All piping within the plenum shall be plenum rated.

Upsizing existing domestic water and sanitary mains to accommodate new plumbing fixtures.

A new hot water return system is to be installed to meet the energy code for addition.

New freshwater tank for wastewater and drinking water to be placed in new storm shelter to meet storm shelter requirements. New electric water heater to be sized for storm shelter fixtures. Water heater to be on back up power.

Existing fixtures in existing buildings to remain that are not affected by alterations or addition.

New Plumbing fixtures being installed:
Plumbing fixtures will be comprised of vitreous china, wall-hung water closets and urinals. Individual hand sinks will be wall hung vitreous china. Flush valves will be low-flow, battery-powered, automatically operated. Individual lavatory faucets and wash basins will be low-flow, battery-powered, infrared or ultra-sonic controlled. Exterior wall hydrants will be placed on 100' centers around the perimeter of the building.

Waste and Vent Piping:
All below grade sanitary waste and vent piping will be Schedule 40 PVC. Waste piping within the kitchen that will receive boiling water discharge will be cast iron. Sanitary waste and vent piping within chase walls will be PVC. All piping within the ceiling plenum will be cast iron, no hub. Grease laden waste will be discharged through an exterior grease interceptor.

Storm Piping:
All below grade storm sewer piping will be Schedule 40 PVC. Storm piping within walls will be Schedule 40 PVC while storm piping within the return air plenum will be cast iron, no hub. All storm piping above grade will be insulated.

Natural Gas Distribution:
Natural gas piping will be routed on the roof and be primed and painted, black steel with threaded joints. All gas valves will be rated 125 lbs. Gas will drop down through the roof to serve gas loads within the building. All gas piping within the building will be black steel with threaded joints. Any concealed piping will have welded joints and piping below slab shall be steel in containment conduit with connected vent. New equipment to connect to existing gas lines and main.

DIVISION 23 – MECHANICAL

Environment:
Provide an efficiently controlled atmosphere for a proper learning environment. This involves the selection of an HVAC system that will provide adequate ventilation, comfort and a quiet environment. Generally, interior spaces will be designed for 75 degrees F. with ventilation being provided as required by code and to maintain a slightly positive building pressure.

Maintenance:
Design HVAC systems such that equipment is reasonably accessible and can be maintained. For a facility of this size, control systems should have the capability to incorporate preventive maintenance scheduling.

Responsiveness:
The building will be utilized in a variety of ways throughout the year, including community functions that will take place during evening hours and weekends. HVAC systems and their associated control systems should be able to respond in an efficient and effective manner. Control systems should be user-friendly to allow maintenance personnel to modify scheduling of HVAC systems to coincide appropriately with community events.

Serviceability:
Provide HVAC systems and associated temperature control systems that are familiar to local service companies in the region and for which competent service capability exists within the region.

Flexibility:
Provide HVAC systems that can be adapted to changing spatial configurations.

Energy Conservation:
Occupancy in this type of facility varies greatly. The HVAC systems should be able to respond to optimize energy consumption. This applies to air-side systems (rooftop units, air handling units, etc.) as well as hydronic systems (boilers).

Useful Life Expectancy:
Strong consideration should be given towards selecting HVAC systems with long life expectancies cognizant of the need to stay within a reasonable budget.
The existing building is fed from existing boiler chiller system that connects to classroom unit vents. With the addition all unit vents on the north will need to be demolished or altered to maintain ventilation requirements. This system 4 pipe system with unit vents in each classroom and feeding office above ceilings. around the building was installed in 2022 and appears to be operating and functional. The existing chiller is to be relocated on the roof to accommodate the new addition.

System Types:
There are a multitude of systems that can be used for a building addition that is being connected to an already existing building, in this report a few options of the mechanical system will be suggested. In all the below, reusing systems as much as possible is going to be best for the project and building. All the below options will be to re-utilize the existing system in the existing areas of the building that are being renovated along with a new system or extension of the existing system in the new portion of the building.

Option 1: The first option is to have two separate systems in the building. The existing portion will be served by the existing boiler and chiller plant, and the new addition will be served by a new VAV system with hydronic reheat. In the existing portion of the building the existing unit ventilators will be re-utilized where possible, a few new unit ventilators may be needed to properly serve renovated spaces. The new addition will be served by a new Gas/DX VAV RTU with hydronic heating VAV boxes. The boiler system will need to be analyzed to ensure it can handle the additional VAV load. If the additional load cannot be served by the existing boiler plant new boilers will need to be added along with pumps to satisfy the additional capacity. The existing classroom and office spaces that are along with the new addition portion will be served by the new VAV boxes from the new corridor space. This will be done to ensure the ductwork can fit within the ceiling space of the existing portion of the building.

The advantages of this system are as follows:
- Cheaper install than other systems
- Offers good individual room temperature control.
- Better air distribution in classroom and office spaces.

The disadvantages of this system are as follows:
- Two system types in the building

Option 2: The second option is to extend the existing system to serve the new building portions. The initial assumption is that the existing boilers and chillers do not have capacity for the new addition, this will be verified further in design once the load calculations are completed. This option would utilize the existing boilers and chiller to serve the existing building and add new boilers and chiller(s) to serve the new addition. The boiler room size will need to be verified to ensure that any new boilers and pumps can fit within the existing boiler room footprint. For this option the main piping will also have to be up sized to handle the new addition. The classrooms and public spaces would be served by a mix of dual temperature unit ventilators and dual temperature fan coils. The existing classrooms where the new addition connects to the existing building will be served by fan coils placed in the new addition portion to fit ductwork in the existing ceiling space. Fresh air for any fan coil units will be provided by a DOAS unit or an ERV, calculations on the better option will be done further in design.

The advantages of this system are as follows:

- Has building and addition on similar system for maintenance and parts.
- Offers good individual room temperature control.

The disadvantages of this system are as follows:

- Airflow distribution is not ideal.
- High installation cost for piping, pumps, and chiller

For both options the boiler room size will need to be analyzed to ensure any new boilers and pumps can fit within the existing space or if a new boiler room needs to be added. Additionally, it has been discussed that it is desired to move the existing chiller. If the chiller is moved it may cause problems with the the existing system. The chilled water pumps are designed to have a specific head pressure rating and if the The chiller is relocated and there for adding head pressure to the system these pumps may no longer work and new pumps may need to be added. This will need to be analyzed further in design if moving the chiller is desired Lastly, there is a storm shelter in the new addition of the building. The exact storm shelter rating will need to be determined to propose the best system and all system requirements. Having the storm Shelter on a stand-alone system is the ideal solution to ensure the generator will not need to back up any boilers, chillers, or pumps. RTM is recommending a stand-alone Gas/DX RTU or Electric/DX RTU . If this system is required to be backed up the Electric/DX is the most ideal solution, but this will cause higher utility rates during normal building function. The Gas/DX RTU can also be utilized if the system needs to be backed up by the generator, however, it will need to be studied on the exact requirements for the gas line going to the unit in a storm event.

1. New ceiling exhaust fans to be provided with the new single stall bathrooms in addition.
2. New storm-rated exhaust fans to be provided in storm shelter to serve bathrooms.
3. All new systems to tie into existing BAS building with alterations or extensions for new equipment.
4. New kitchen hood and fans to serve new kitchen equipment.
5. New electric heaters to be provided in new vestibules.
6. All equipment not affected by addition or renovation to be existing to remain.
7. Ductless split systems will be utilized for all IT / Server rooms

DIVISION 26 - ELECTRICAL

Lighting System:

The lighting in untouched spaces will be existing to remain. New LED lighting fixtures and lighting controls will be provided in renovated rooms and in the new spaces.

The lighting levels must adhere to the guidelines provided by the Illuminating Engineering Society. All Energy Code requirements must be met.

LED fixtures with dimmable electronic drivers will be provided.

An Average of 1 foot-candle shall be provided along the path of egress with a minimum of 0.1-foot candle and a maximum to minimum illumination ration of not more than 40:1. Lighting fixtures with built-in battery will be provided.The lighting control will be a low voltage system, provided as required by the Energy Code adopted. Occupancy sensors provided to be dual technology sensors.

Power System:

The school is fed by a 1200A, 120/208V 3Phase, 65kAIC, switchboard located in Boiler Room. Existing switchboard is in-turn feeding electrical distribution panels located in various areas in the school.

The maximum demand over the last 24 months was 134kW in August 2024, received from MidAmerican. It will be determined during the design process if the existing switchboard is able to accommodate the new electrical loads for the school addition. Otherwise, the switchboard is to be upgraded and upsized.

Necessary modifications will be made to the existing panels to best serve the renovated area. New panels will be provided to serve the addition.

Mechanical and Plumbing Equipment to be connected to existing and new panels, as necessary.

Existing power receptacles will be kept if they can be maintained as part of the new architectural and furniture design. Power receptacles are to be provided as required based on new furniture and equipment layouts.

DIVISION 27 – LOW VOLTAGE SYSTEM

Electrical contractor to provide all necessary raceways and rough-ins, as well as backbone and horizontal cabling in coordination with the school district requirement.

Data/Voice and AV outlets are to be provided as required based on new furniture and equipment layouts.

DIVISION 28 – FIRE ALARM SYSTEM

An existing Notifier Fire alarm system with emergency voice alarm is currently serving the school. The fire alarm contractor will extend the existing system as necessary for the school addition scope.

Addition/Relocation of selected fire devices are to be made based new architectural layout. Any added devices to be tied to the existing system.

DIVISION 28 – SECURITY SYSTEM

Rough ins for security devices and raceways will be provided. Location of these devices will be coordinated with School District during design process. School district to advise if the Electrical contractor is responsible for providing the security devices and cabling.

The Clevenger design team has been commissioned to design a new commercial kitchen for the addition and renovation to Lincoln-Irving elementary school in Moline, Il. The school has a current enrollment of 308 students with the enrollment projected to rise to approximately 500 students upon the closure of Willard Elementary School. Our goal is to create a practical and efficient kitchen that caters to the needs of the school's expanding population, ensures compliance with current codes and safety standards, and promotes a healthy dining experience for students.

Conceptual Design: The conceptual design of the commercial kitchen is based on three core principles: functionality, flexibility, and safety. These elements will be integrated to create a kitchen that meets the school's current needs while accommodating future enrollment growth.
Space Planning: The commercial kitchen will be strategically positioned within the school to facilitate convenient delivery access and ensure a smooth flow of students through the serving area into the cafeteria. The layout will prioritize workflow efficiency, enabling seamless operations during peak times.

Key Areas:

1. Cold Prep Area: This area will feature workstations for preparing and portioning fruits, vegetables, and other cold foods. It will include ample counter space, sinks, and storage solutions for ingredients, utensils, and small appliances.

2. Hot Production Area: The hot production area will be equipped with high-quality commercial appliances, such as a combination oven, range, steamer, tilting skillet, and convection ovens. The layout will prioritize proper ventilation and exhaust systems to create a safe and comfortable working environment for kitchen staff.

3. Cold Storage: Adequate cold storage is a critical component of the kitchen. The design will include an approximately 10' x 15' walk-in refrigerator and a 10' x 15' walk-in freezer, ensuring sufficient space to store perishable items, maintain freshness, and reduce waste.

4. Dry Storage: A dry storage room encompassing approximately 200 square feet will be used to store shelf stable and non-perishable food as well as paper/cardboard products to be used in the kitchen facility.

5. Dishwashing Area: A dedicated dishwashing space will include a commercial dishwasher, three-compartment sink, tray carts, and shelving for storage. Positioned adjacent to the cafeteria, this area will feature a tray drop-off window to facilitate easy bussing of trays by students and staff. This setup will streamline cleaning processes and maintain high hygiene standards.

6. Serving Area: The serving area will most likely incorporate a dual-serving line configuration to adequately serve the student population. Each line will include a combination of hot and cold wells, breath guards, and ample flat-top counter space for merchandizing.

Safety and Accessibility: Safety is of utmost importance in any commercial kitchen, particularly in an educational environment. Our design will incorporate safety features such as fire suppression systems, non-slip flooring, and proper ventilation to maintain a safe and healthy working environment.

Sustainability: To promote sustainability and energy efficiency, the design will incorporate eco-friendly practices wherever possible.

In creating a commercial kitchen for the Lincoln-Irving elementary school, our design will focus on functionality, flexibility, and safety. By implementing an efficient layout, incorporating key areas, prioritizing safety, and accessibility, and promoting sustainability, we aim to provide a cutting-edge facility that will support the school's evolving needs and create a nurturing environment for students to enjoy nutritious meals.

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