City of Florence
Community Development Department
250 Highway 101
Florence, OR 97439
Phone: (541) 997 – 8237
Fax: (541) 997 – 4109
www.ci.florence.or.us

EXHIBIT B

Type of Request

THIS SECTION FOR OFFICE USE ONLY

☐ **Type I** ☐ **Type II** ☐ **Type III** ☐ **Type IV**

Proposal:

Applicant Information

Name: Carson Shields Phone 1: 503.545.9493

E-mail Address: carsons@sdra.com Phone 2:

Address: 1331 NW Lovejoy Street #775, Portland, OR 97209

Signature: Carson Shields Date: 02/19/2024

Applicant's Representative (if any):

Property Owner Information

Name: Andrew Grzeskowiak Phone 1: 541.997.2651

E-mail Address: agrzeskowiak@siuslaw.k12.or.us Phone 2:

Address: 2111 Oak Street, Florence, OR 97439

Signature: Date: 2/19/2024

Applicant's Representative (if any):

NOTE: *If applicant and property owner are not the same individual, a signed letter of authorization from the property owner which allows the applicant to act as the agent for the property owner must be submitted to the City along with this application. The property owner agrees to allow the Planning Staff and the Planning Commission onto the property. Please inform Planning Staff if prior notification or special arrangements are necessary.*

For Office Use Only:

Received	Approved	Exhibit

Property Description

Site Address: 2221 Oak Street / Florence, OR 97439

General Description: New Pre-Engineered Metal Building with basketball court below.

Assessor's Map No.: _ - 18 - 12 - 2200 Tax lot(s): 1812220000300

Zoning District: high density residential

Conditions & land uses within 300 feet of the proposed site that is one-acre or larger and within 100 feet of the site that is less than an acre OR add this information to the off-site conditions map (FCC 10-1-1-4-B-3):

Project Description

Square feet of new: 5,880 Square feet of existing: 106,100

Hours of operation: 8:00 am - 4:00 pm Existing parking spaces: 125

Is any project phasing anticipated? (Check One): Yes ☐ No ☐

Timetable of proposed improvements: Summer 2024 - Fall 2024

Will there be impacts such as noise, dust, or outdoor storage? Yes ■ No ☐

If yes, please describe: Normal construction work

Proposal: (Describe the project in detail, what is being proposed, size, objectives, and what is desired by the project. Attach additional sheets as necessary)

a new 60' x 88'-8" covered play structure to give the students a place to play outside on rainy days. Structure will include basketball hoops and striping for volleyball.

A new 60' x 88'-8" covered play structure to give the students a place to play on rainy days. Structure to include basketball hoops and striping for volleyball. Walls to the north and south will be solid CMU wall to help protect the structure from wind and will include overhead doors to open on nice days. Due to increased impervious area a rain garden will be added to the south-east corner of the site.

For Office Use Only:

Date Submitted: _____ Fee: _____

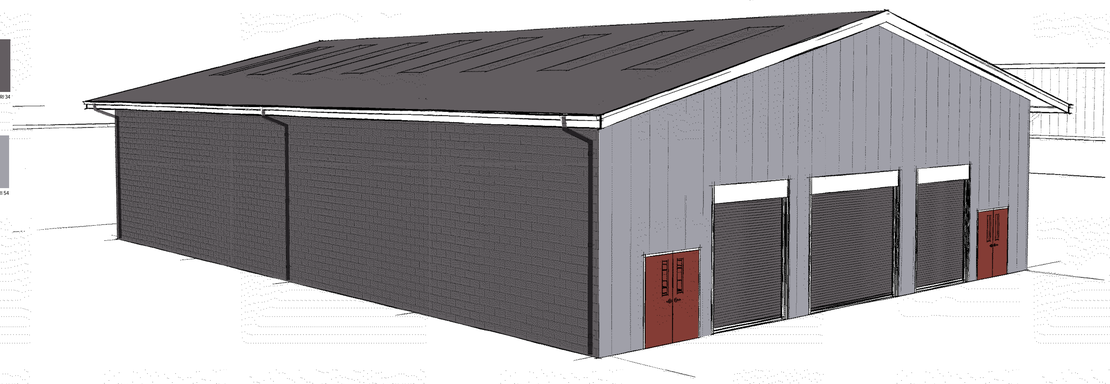
Received by: _____

Paid

Exhibit C

Siuslaw ES Covered Play Structure

SIUSLAW SCHOOL DISTRICT



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2221 Oak Street
Florence, OR 97439

LAND USE 02.02.24

Soderstrom
Architects

VICINITY MAP:

Siuslaw ES Covered Play Structure

PROJECT ADDRESS:

2221 Oak Street
Florence, OR 97439

PROJECT SUMMARY:

CONSTRUCTION OF ONE COVERED PLAY STRUCTURE, APPROX 5560 SQUARE FEET, WITH PRE-ENGINEERED METAL BUILDING ON CONCRETE.

PROJECT TEAM

OWNER
SIUSLAW SCHOOL DISTRICT 97J
2221 Oak Street
Florence, OR 97439
(541) 997-2651

ARCHITECT
SODERSTROM ARCHITECTS, LTD.
www.sdra.com
1331 NW Lovejoy Street, Suite 775
Portland, OR 97209
T 503-228-5617
Marlene Gillis, Principal

CIVIL ENGINEER
ZCS
524 MAIN STREET SUIT 2
OREGON CITY, OR 97045
(503) 659-2205
Zachary A. Stokes, PE

ELECTRICAL ENGINEER
LANDIS CONSULTING
5335 MEADOWS Rd, #388
LAKE OSWEGO, OR 97035
(503)584.1576
Ben Perry, PE

STRUCTURAL ENGINEER
MILLER CONSULTING
9600 SW OAK St, SUITE 400
PORTLAND, OR 97223
(503) 246-1250
Lane Jobe, Principal

SHEET INDEX

01 - GENERAL

G0.01 COVER SHEET

03 - ARCHITECTURAL

A1.00 LAND USE
A1.01 ARCHITECTURAL SITE PLAN
A2.01 ARCHITECTURAL PLANS AND SCHEDULES
A3.01 EXTERIOR ELEVATIONS AND SECTIONS
A4.01 CONSTRUCTION DETAILS

05 - STRUCTURAL

S0.01 COVER SHEET
S0.02 STRUCTURAL NOTES
S0.03 STRUCTURAL NOTES
S2.01 ENLARGED PLAN
S8.01 DETAILS

06 - CIVIL

C0.0 CIVIL COVER SHEET
C0.1 EROSION AND SEDIMENT CONTROL NOTES
C1.0 EXISTING CONDITIONS, DEMO, AND ESC PLAN
C2.0 SITE IMPROVEMENT PLAN
C3.0 PRIVATE CIVIL DETAILS

10 - ELECTRICAL

E6.01 PANEL SCHEDULES

TABLE 10-3-1 MINIMUM REQUIRED PARKING BY USE:
ELEMENTARY SCHOOL: 1 SPACE PER CLASSROOM
NUMBER OF CLASSROOMS: 36
NUMBER OF REQUIRED PARKING SPACES = 36
NUMBER OF PROVIDED PARKING SPACES = 122

NORTH

1 SITE PLAN
A1.00 (1" = 60'-0")

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A1.00

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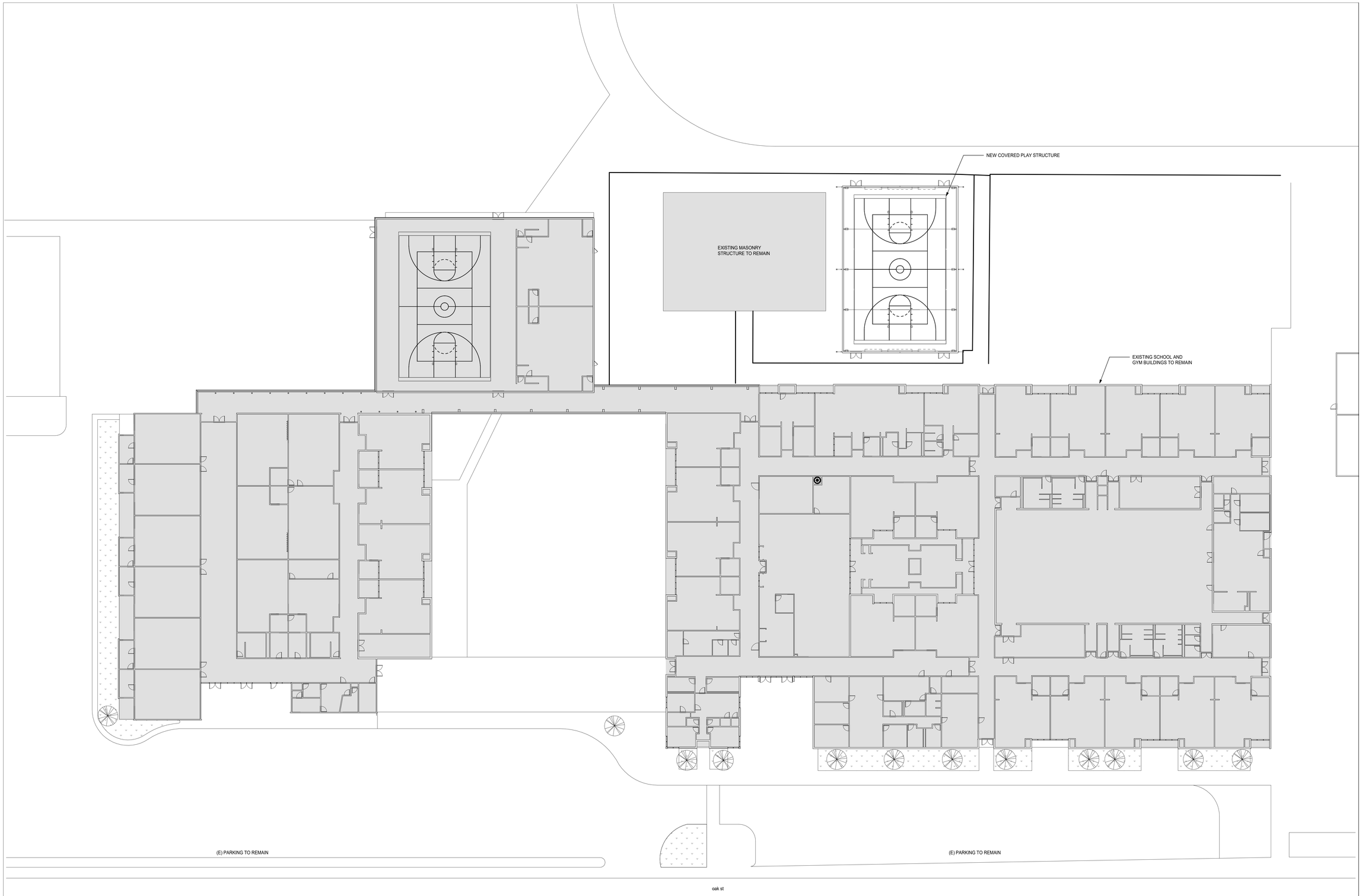

1 OVERALL SITE PLAN

A1.01 (1" = 20'-0")

NORTH

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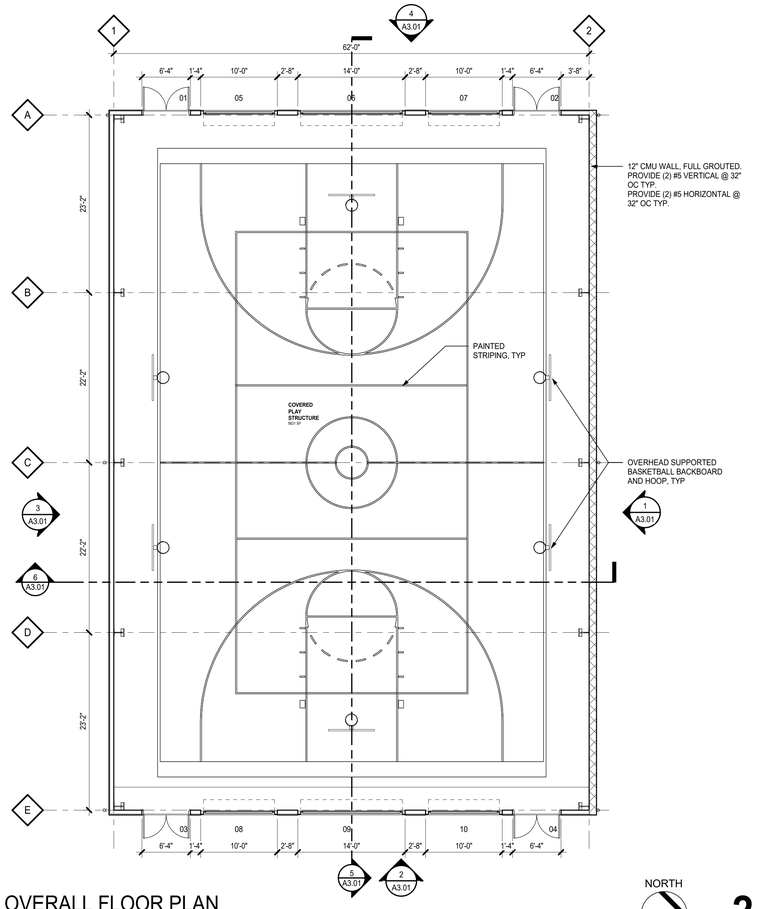
Drawing Title
ARCHITECTURAL SITE PLAN

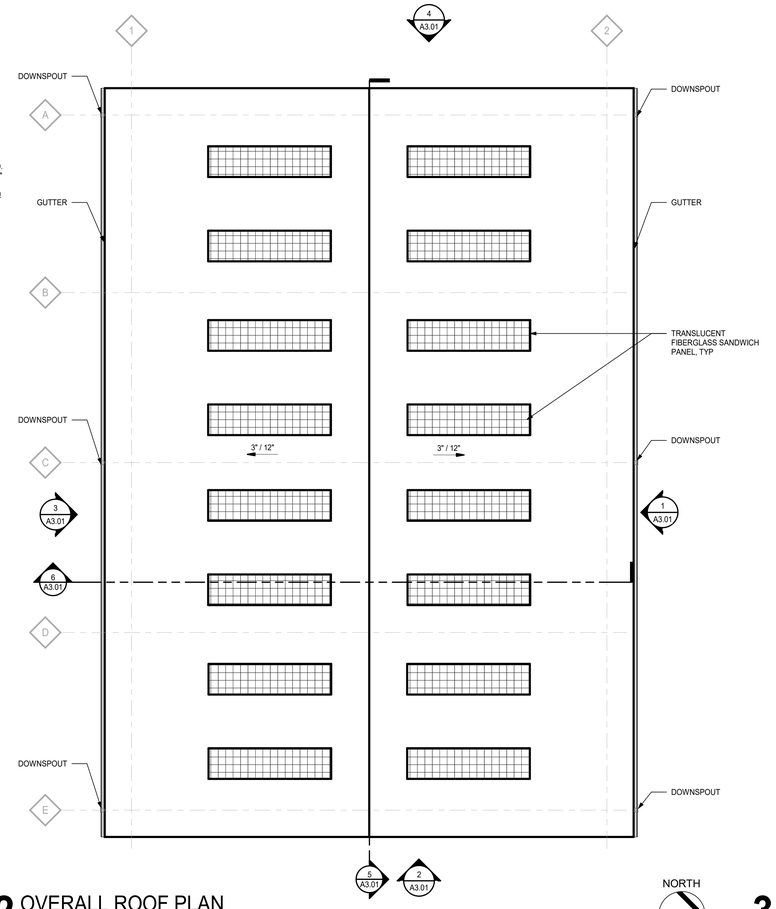
Sheet No
A1.01



1 OVERALL FLOOR PLAN

A2.01 (1/8" = 1'-0")

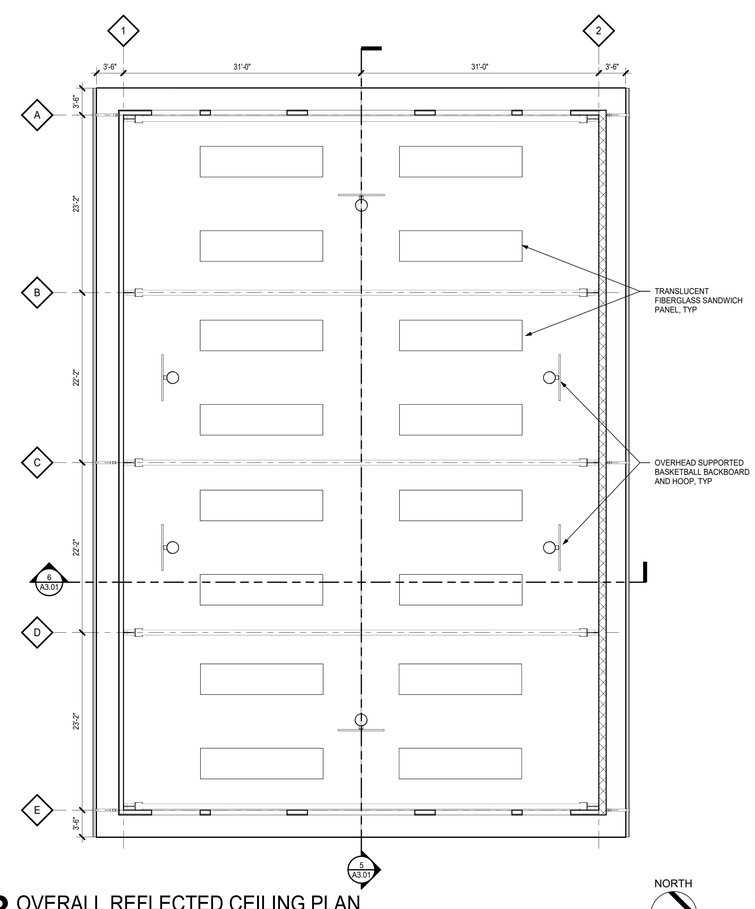
NORTH



2 OVERALL ROOF PLAN

A2.01 (1/8" = 1'-0")

NORTH



3 OVERALL REFLECTED CEILING PLAN

A2.01 (1/8" = 1'-0")

NORTH

MASONRY REINFORCING STEEL

ALL REINFORCING STEEL SHALL BE DEFORMED BARS PER ASTM A615 OR A706 GRADE 60. ALL REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE *ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES*, ACI 315.

REINFORCING STEEL EXCEPT WHERE OTHERWISE NOTED SHALL BE AS FOLLOWS:
- (2) #5 IN GROUTED LINTEL OVER OPENINGS
- (2) #5 IN GROUTED CELLS AT JAMBS AND WALL ENDS
- (2) #5 IN GROUTED BOND BEAMS AND SILL AND TOP OF WALLS

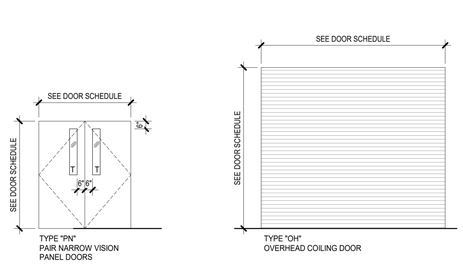
EXTEND ALL REINFORCING STEEL A MINIMUM OF 24 INCHES BEYOND EDGES OF OPENING. PROVIDE MATCHING CORNER BARS FOR ALL BOND BEAMS. VERTICAL REINFORCING STEEL IN MASONRY WALLS TO BE AT CENTER LINE OF WALL UNLESS INDICATED OTHERWISE. REINFORCING MUST BE RESTRAINED TO PREVENT MOVEMENT FROM CONSTRUCTION LOADS AND DURING PLACEMENT OF MORTAR AND GROUT. WIRE-TYING OR PREFABRICATED POSITIONERS ARE METHODS OF PROVIDING THE NECESSARY RESTRAINT FOR REINFORCEMENT. WET-SETTING OF REINFORCEMENT IS NOT PERMITTED.

USE MINIMUM 30" LAP FOR # BAR AND SMALLER UNLESS NOTED OTHERWISE. USE MINIMUM 36" LAP FOR #5 BAR.

FOR WALLS WITH A SINGLE LAYER OF REINFORCING STEEL, THE VERTICAL BARS SHALL BE CENTERED IN THE WALL. FOR WALLS WITH TWO LAYERS OF REINFORCING STEEL, THE VERTICAL BARS ON EACH FACE SHALL BE PLACED TO MAINTAIN 1/2" CLEAR DISTANCE BETWEEN THE INTERIOR OF THE MASONRY UNIT OR FORMED SURFACE, UNO. THE CLEARANCES NOTED SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE FOLLOWIGN MINIMUM COVER TO REINFORCING BARS.

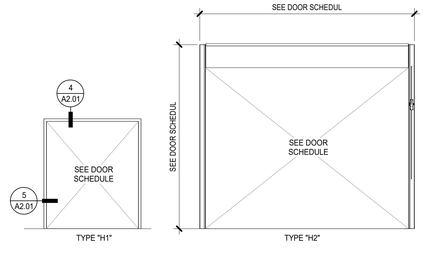
DOOR AND FRAME SCHEDULE

	DOORS					FRAMES		
	OPENING SIZE							
MARK	WIDTH	HGT.	TYPE	MAT	FIN	TYPE	MAT	FIN
01	6'-0"	7'-0"	PN	HM	P	H1	HM	P
02	6'-0"	7'-0"	PN	HM	P	H1	HM	P
03	6'-0"	7'-0"	PN	HM	P	H1	HM	P
04	6'-0"	7'-0"	PN	HM	P	H1	HM	P
05	10'-0"	12'-0"	OH	HM	MFR	H2	HM	MFR
06	14'-0"	12'-0"	OH	HM	MFR	H2	HM	MFR
07	10'-0"	12'-0"	OH	HM	MFR	H2	HM	MFR
08	10'-0"	12'-0"	OH	HM	MFR	H2	HM	MFR
09	14'-0"	12'-0"	OH	HM	MFR	H2	HM	MFR



LEGEND - DOOR TYPES

'T' ON DOOR TYPES INDICATES TEMPERED SAFETY GLAZING.



LEGEND - FRAME TYPES

SHEET NOTES

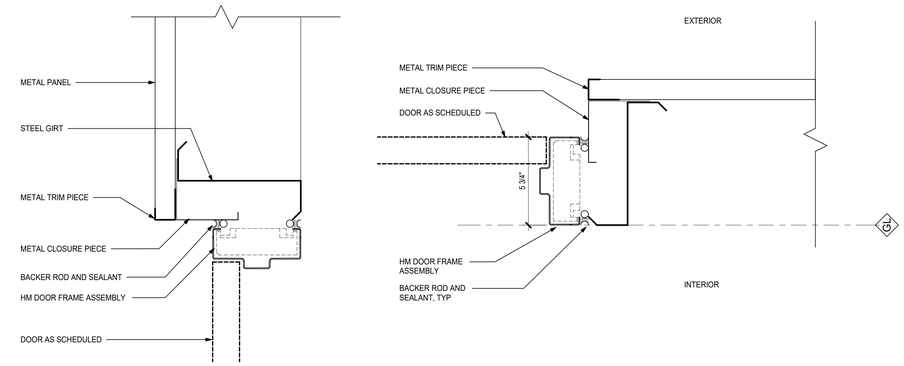
1. 'T' ON FRAME TYPES INDICATES TEMPERED SAFETY GLAZING.
2. VERIFY IN FIELD ALL ROUGH OPENING DIMENSIONS

PLAN LEGEND

1 A101 SIM — ENLARGED VIEW MARK 1=SECTION NO. A101= SHEET NO.

A 1001 — DOOR TAG

WALL

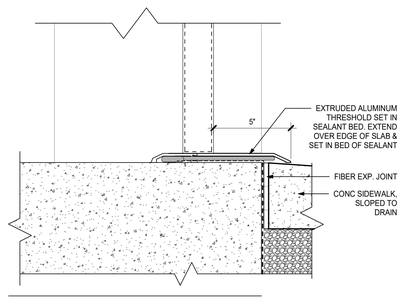


4 HM DOOR HEAD DETAIL

A2.01 (3" = 1'-0")

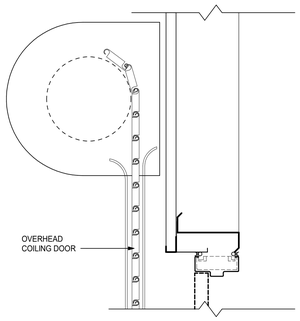
5 HM DOOR JAM DETAIL

A2.01 (3" = 1'-0")



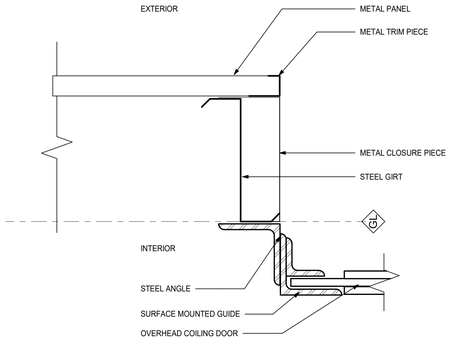
6 HM DOOR THRESHOLD

A2.01 (3" = 1'-0")



7 OVERHEAD DOOR HEAD DETAIL

A2.01 (1 1/2" = 1'-0")



8 OVERHEAD DOOR JAMB

A2.01 (3" = 1'-0")

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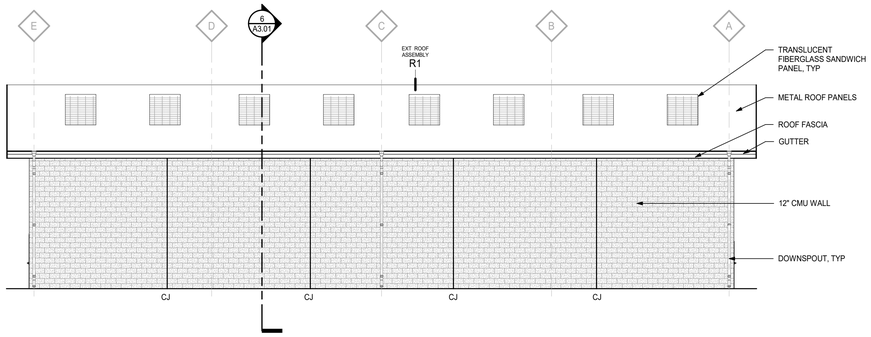
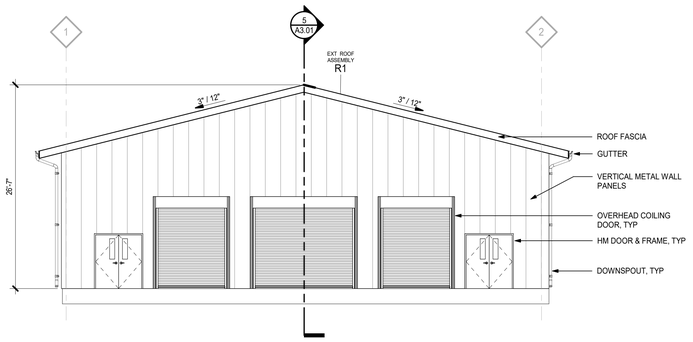


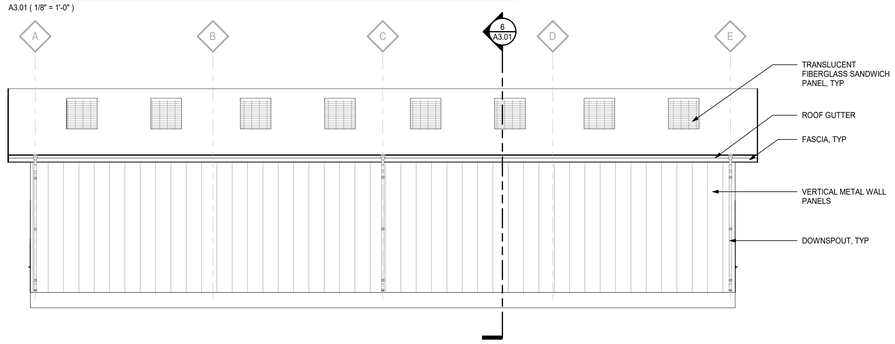
1 NORTH ELEVATION

A3.01 (1/8" = 1'-0")



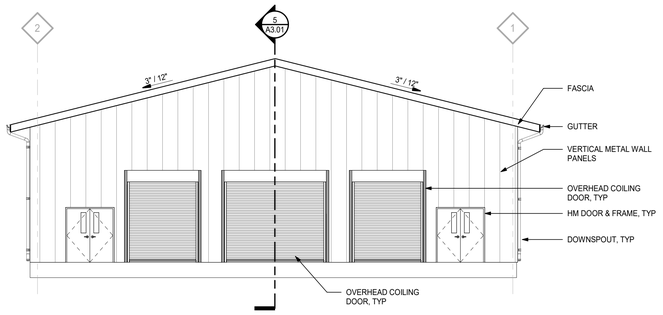
2 EAST ELEVATION

A3.01 (1/8" = 1'-0")



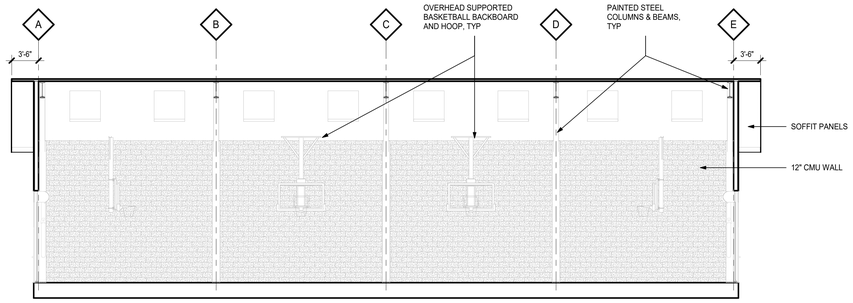
3 SOUTH ELEVATION

A3.01 (1/8" = 1'-0")



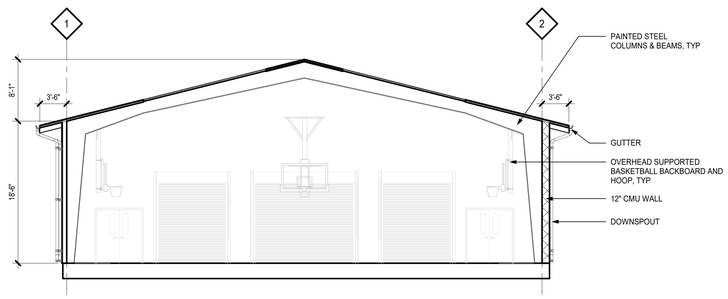
4 WEST ELEVATION

A3.01 (1/8" = 1'-0")



5 Section A

A3.01 (1/8" = 1'-0")



6 Section B

A3.01 (1/8" = 1'-0")

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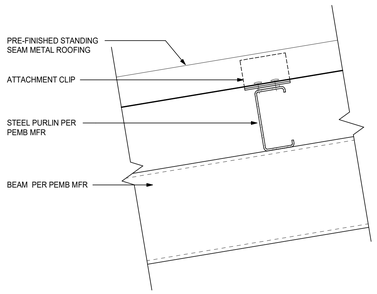
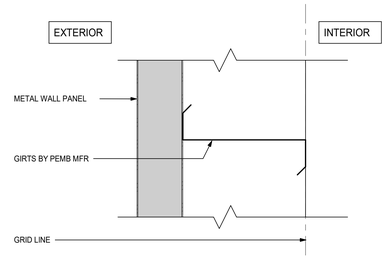
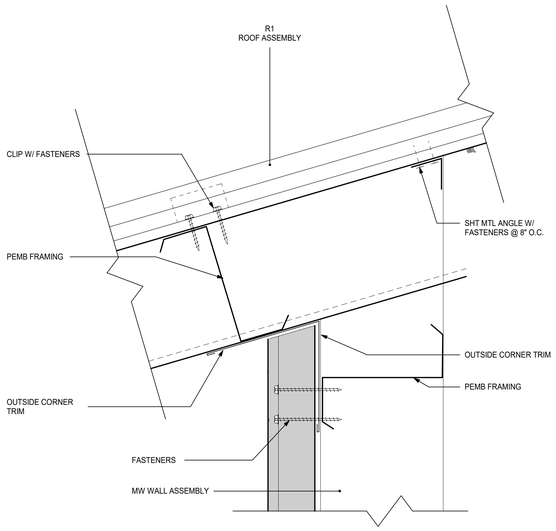


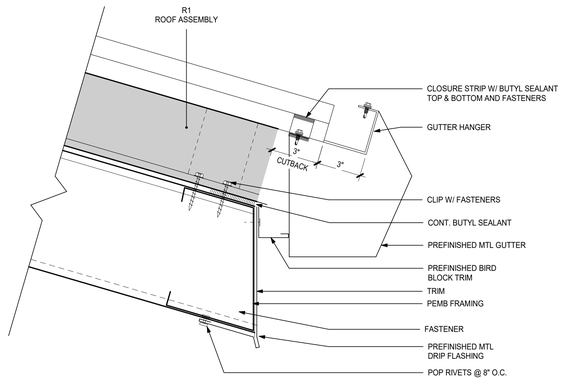
1 R1 - ROOF ASSEMBLY
A4.01 (3" = 1'-0")



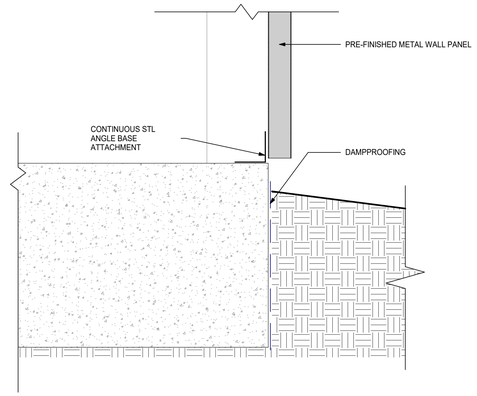
2 MW - WALL ASSEMBLY
A4.01 (3" = 1'-0")



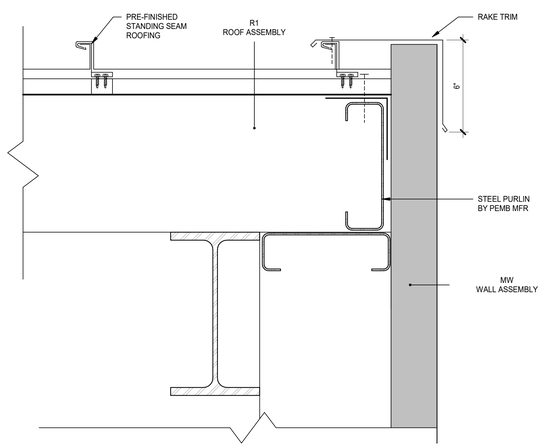
3 WALL TO ROOF
A4.01 (3" = 1'-0")



4 GUTTER DETAIL
A4.01 (3" = 1'-0")



5 BASE OF METAL WALL
A4.01 (1 1/2" = 1'-0")



6 RAKE DETAIL
A4.01 (3" = 1'-0")

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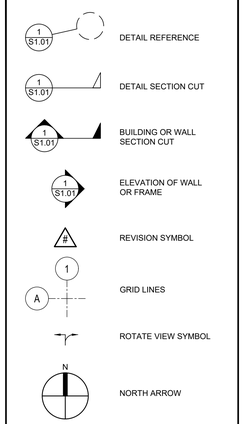
STRUCTURAL ABBREVIATIONS

#	NUMBER OR POUNDS
AB	ANCHOR BOLT
ACI	AMERICAN CONCRETE INSTITUTE
ADDL	ADDITIONAL
ADJ	ADJACENT
AESS	ARCHITECTURALLY EXPOSED STRUCTURAL STEEL
AFF	ABOVE FINISH FLOOR
AISC	AMERICAN INSTITUTE OF STEEL CONSTRUCTION
ALT	ALTERNATE
ALUM	ALUMINUM
APA	AMERICAN PLYWOOD ASSOCIATION
ARCH	ARCHITECTURAL
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIALS
ASSY	ASSEMBLY
ATR	ALL THREAD ROD
ATR/A	ALL THREAD ROD WITH ADHESIVE
AWS	AMERICAN WELDING SOCIETY
B/	BOTTOM OF
BF	BRACED FRAME
BLDG	BUILDING
BLKG	BLOCKING
BM	BEAM
BN	BOUNDARY NAIL
BOT	BOTTOM
BRBF	BUCKLING RESTRAINED BRACED FRAME
BRNG	BEARING
BSMT	BASEMENT
BTWN	BETWEEN
BU	BUILT-UP
C	CAMBER OR CHANNEL (AMERICAN STANDARD)
CANT	CANTILEVER
CIP	CAST IN PLACE
CG	CENTER OF GRAVITY
CGS	CENTER OF GRAVITY OF (PRESTRESSING) STEEL
CJ	CONTROL OR CONSTRUCTION JOINT
CJP	COMPLETE JOINT PENETRATION
CL	CENTERLINE
CLG	CEILING
CLR	CLEARANCE; CLEAR
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CMU	CONCRETE MASONRY UNIT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CSA	CONCRETE SCREW ANCHOR
d	PENNY (NAIL)
db	NOMINAL BAR DIAMETER
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DBO	DESIGNED BY OTHERS
DEG	DEGREE
DEMO	DEMOLISH; DEMOLITION
DF/L	DOUGLAS FIR-LARCH
DIA	DIAMETER
DIAG	DIAGONAL
DIM	DIMENSION
DIST	DISTANCE
DL	DEAD LOAD
DN	DOWN
DTL	DETAIL
DWG	DRAWING
(E)	EXISTING
EA	EACH
EB	EXPANSION BOLT
EF	EACH FACE
EJ	EXPANSION JOINT
EL	ELEVATION
ELEC	ELECTRICAL
EN	EDGE NAIL
EQ	EQUAL; EARTHQUAKE
EW	EACH WAY
EXT	EXTERIOR
EXTD	EXTEND; EXTENDED
f'c	28 DAY CONC COMPRESSIVE STRENGTH
FF	FINISH FLOOR
FN	FIELD NAIL
FLR	FLOOR
FDN	FOUNDATION
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUD
FT	FEET
FTG	FOOTING
GA	GAUGE
GALV	GALVANIZED
GLB	GLUE LAMINATED BEAM
GWB	GYPSUM WALL BOARD
HDG	HOT-DIP GALVANIZED
HDR	HEADER
HF	HEM-FIR
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSS	HOLLOW STRUCTURAL SECTION
HT	HEIGHT
ID	INSIDE DIAMETER
IN	INCH
INT	INTERIOR
JST	JOIST
JT	JOINT
K	KIP(S) (1,000 POUNDS)
KSI	KIPS PER SQUARE INCH
L OR 2L	ANGLE OR DOUBLE ANGLE
LF	LINEAR FOOT
LL	LIVE LOAD
LLBB	LONG LEGS BACK TO BACK
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LONG	LONGITUDINAL
LVL	LAMINATED VENEER LUMBER
LWC	LIGHT WEIGHT CONCRETE
MAX	MAXIMUM
MC	MISCELLANEOUS CHANNEL
MECH	MECHANICAL
MF	MOMENT FRAME
MFR	MANUFACTURER
MEP	MECHANICAL, ELECTRICAL, PLUMBING
MIN	MINIMUM
MIR	MIRROR
MISC	MISCELLANEOUS
MSA	MASONRY SCREW ANCHOR
(N)	NEW
NIC	NOT IN CONTRACT
NOM	NOMINAL
NTE	NOT TO EXCEED
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPP	OPPOSITE
OWJ	OPEN WEB JOIST
PAF	POWER-ACTUATED FASTENER
PC	PRECAST
PCF	POUNDS PER CUBIC FOOT
PERP	PERPENDICULAR
PJP	PARTIAL JOINT PENETRATION
PL	PLATE
PLF	POUNDS PER LINEAL FOOT
PLYWD	PLYWOOD
PSI	POUNDS PER SQUARE INCH
PSF	POUNDS PER SQUARE FOOT
PT	PRESSURE TREATED OR POST TENSIONED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RAD	RADIUS
REF	REFERENCE
RAD	REFERENCE ARCH DOCUMENTS
REINF	REINFORCING
REQD	REQUIRED
REV	REVISED, REVISION
RO	ROUGH OPENING
SC	SLIP CRITICAL
SER	STRUCTURAL ENGINEER OF RECORD
SHT	SHEET
SHTG	SHEATHING
SIM	SIMILAR
SLBB	SHORT LEGS BACK TO BACK
SMS	SHEET METAL SCREW
SOG	SLAB ON GRADE
SQ	SQUARE
SS	STAINLESS STEEL
SSL	SHORT SLOTTED (HOLES)
STD	STANDARD
STL	STEEL
SQ	SQUARE
SYM	SYMMETRICAL
T&B	TOP AND BOTTOM
T&G	TONGUE AND GROOVE
T/	TOP OF
TRANS	TRANSVERSE
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
URM	UNREINFORCED MASONRY
UT	ULTRASONIC TEST
VERT	VERTICAL
VIF	VERIFY IN FIELD
W/	WITH
W/O	WITHOUT
WD	WOOD
WF	WIDE FLANGE
WP	WORK POINT
WTS	WELDED THREADED STUDS
WWR	WELDED WIRE REINFORCING

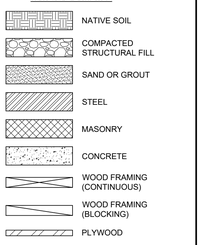
STRUCTURAL DRAWING INDEX

SHEET	DRAWING TITLE	PERMIT SET
S0.01	COVER SHEET	●
S0.02	STRUCTURAL NOTES	●
S0.03	MATERIAL SPECIFICATIONS	●
S1.01	OVERALL PLAN	●
S2.01	ENLARGED PLANS	●
S3.01	ELEVATIONS	●
S8.01	DETAILS	●

STRUCTURAL DRAWING SYMBOLS



MATERIAL SYMBOLS



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STRUCTURAL NOTES:

GENERAL NOTES

THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION AND CORRELATION OF ALL ITEMS AND WORK NECESSARY FOR COMPLETION OF THE PROJECT AS INDICATED BY THE CONTRACT DOCUMENTS. SHOULD ANY QUESTION ARISE REGARDING THE CONTRACT DOCUMENTS OR SITE CONDITIONS, THE CONTRACTOR SHALL REQUEST INTERPRETATION AND CLARIFICATION FROM THE ENGINEER BEFORE BEGINNING THE PROJECT. THE ABSENCE OF SUCH REQUEST SHALL SIGNIFY THAT THE CONTRACTOR HAS REVIEWED AND FAMILIARIZED HIMSELF WITH ALL ASPECTS OF THE PROJECT AND HAS COMPLETE COMPREHENSION THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE TO ALL SAFETY REGULATIONS DURING CONSTRUCTION.

THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. UNLESS OTHERWISE SPECIFICALLY NOTED, THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION OR CONSTRUCTION LOADS. ONLY THE CONTRACTOR SHALL PROVIDE ALL METHODS, DIRECTION AND RELATED EQUIPMENT NECESSARY TO PROTECT THE STRUCTURE, WORKMEN AND OTHER PERSONS AND PROPERTY DURING CONSTRUCTION. THE CONTRACTOR SHALL, AT THEIR OWN EXPENSE, ENGAGE PROPERLY QUALIFIED PERSONS TO DETERMINE WHERE AND HOW TEMPORARY PRECAUTIONARY MEASURES SHALL BE USED AND INSPECT SAME IN THE FIELD. ANY MATERIAL NOT AS SPECIFIED OR IMPROPER MATERIAL INSTALLATION OR WORKMANSHIP SHALL BE REMOVED AND REPLACED WITH SPECIFIED MATERIAL IN A WORKMANLIKE MANNER AT THE CONTRACTOR'S EXPENSE.

THESE PLANS, SPECIFICATIONS, ENGINEERING AND DESIGN WORK ARE INTENDED SOLELY FOR THE PROJECT SPECIFIED HEREIN. MILLER CONSULTING ENGINEERS DISCLAIMS ALL LIABILITY IF THESE PLANS AND SPECIFICATIONS OR THE DESIGN, ADVICE AND INSTRUCTIONS ATTENDANT THERETO ARE USED ON ANY PROJECT OR AT ANY LOCATION OTHER THAN THE PROJECT AND LOCATION SPECIFIED HEREIN. OBSERVATION VISITS TO THE JOB SITE AND SPECIAL INSPECTIONS ARE NOT PART OF THE STRUCTURAL ENGINEER'S RESPONSIBILITY UNLESS THE CONTRACT DOCUMENTS SPECIFY OTHERWISE.

NON-STRUCTURAL PORTIONS OF PROJECT INCLUDING, BUT NOT LIMITED TO, PLUMBING, FIRE SUPPRESSION, ELECTRICAL, MECHANICAL, LAND USE, SITE PLANNING, EROSION CONTROL FLASHING AND WATER-PROOFING ARE BEYOND THE SCOPE OF THESE DRAWINGS AND ARE PROVIDED BY OTHERS.

SCOPE OF WORK
MILLER CONSULTING ENGINEERS, INC. HAS DESIGNED THE REINFORCED CONCRETE FOUNDATION FOR THE STRUCTURAL LOADS AS PROVIDED BY THE METAL BUILDING ENGINEER, PACIFIC BUILDING SYSTEMS (PBS). IN ADDITION, MILLER CONSULTING ENGINEERS, INC. HAS ALSO PROVIDED DESIGN LOADS APPLIED TO THE REINFORCED CONCRETE SLAB FOR THE SUPPORT OF MINIMUM LIVE LOADS AS REQUIRED BY THE BUILDING CODE AND ITS REFERENCED DOCUMENTS.

TEMPORARY SHORING
WHEREVER SHORING IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING A SHORING SYSTEM THAT PREVENTS SETTLEMENT AND/OR DAMAGE TO EXISTING FACILITIES AND PROTECTS PERSONNEL, THE PUBLIC AND THE BUILDING AS REQUIRED. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROTECTING STREETS, WALKWAYS, UTILITIES, IMPROVEMENTS AND EXCAVATION AGAINST LOSS OF GROUND OR CAVING OF EMBANKMENTS DURING CONSTRUCTION, AS REQUIRED. THE CONTRACTOR SHALL LOCATE THE SHORING SYSTEM CLEAR WITHOUT OBSTRUCTION OF THE PERMANENT STRUCTURE AND TO PERMIT CONSTRUCTION TO PROCEED.

BUILDING CODE
ALL PHASES OF THE WORK SHALL CONFORM TO THE 2022 OREGON STRUCTURAL SPECIALTY CODE (OSSC), BASED ON THE 2021 INTERNATIONAL BUILDING CODE (IBC), INCLUDING ALL REFERENCE STANDARDS, UNLESS NOTED OTHERWISE.

SPECIAL INSPECTION / STRUCTURAL OBSERVATION
CONTRACTOR RESPONSIBILITIES
SPECIAL INSPECTION AND/OR TESTING IS REQUIRED IN ACCORDANCE WITH IBC SECTION 1704. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING OF SPECIAL INSPECTION. IT IS THE OWNER'S RESPONSIBILITY TO PROVIDE SPECIAL INSPECTION AND TESTING BY A QUALIFIED THIRD PARTY, SUCH AS A TESTING AGENCY REVIEWED BY THE ENGINEER.

STRUCTURAL OBSERVATION SHALL VERIFY BY PERIODIC VISUAL OBSERVATION THAT THE STRUCTURAL SYSTEM HAS GENERAL CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS AT SIGNIFICANT STAGES OF CONSTRUCTION AND AT COMPLETION AS REQUIRED IN ACCORDANCE WITH IBC SECTION 1704.6. THE CONTRACTOR SHALL PROVIDE SUFFICIENT NOTICE TO ALLOW SCHEDULING FOR A STRUCTURAL OBSERVATION. STRUCTURAL OBSERVATION SHALL BE BY THE ENGINEER OF RECORD.

REQUIRED SPECIAL INSPECTIONS AND TESTS
SPECIAL INSPECTIONS SHALL CONFORM TO SECTION 1705 OF THE 2018 IBC, CONTRACT DOCUMENTS AND APPROVED SUBMITTALS. REFER TO THE SPECIAL INSPECTION TABLES FOR ADDITIONAL PROJECT REQUIREMENTS. SPECIAL INSPECTORS SHALL BE APPROVED BY THE BUILDING OFFICIAL. THE SPECIAL INSPECTOR SHALL OBSERVE THE INDICATED WORK FOR COMPLIANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS. ALL DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR FOR CORRECTION AND NOTED IN THE INSPECTION REPORTS.

INSPECTION TYPES:
CONTINUOUS: THE FULL-TIME OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK IS BEING PERFORMED.

PERIODIC: THE PART-TIME OR INTERMITTENT OBSERVATION OF WORK REQUIRING SPECIAL INSPECTION BY AN APPROVED SPECIAL INSPECTOR WHO IS PRESENT IN THE AREA WHERE THE WORK HAS BEEN OR IS BEING PERFORMED AND AT THE COMPLETION OF THE WORK.

OBSERVE: OBSERVE THESE FUNCTIONS ON A RANDOM, DAILY BASIS. OPERATIONS NEED NOT BE DELAYED PENDING OBSERVATIONS.
PERFORM: INSPECTIONS SHALL BE PERFORMED PRIOR TO THE FINAL ACCEPTANCE OF THE ITEM

SHOP DRAWINGS/SUBMITTALS
SHOP DRAWINGS FOR SPECIFIC PRODUCTS GENERATED BY SUPPLIER SHALL BE SUBMITTED FOR THE ITEMS NOTED IN THE SUBMITTAL SCHEDULE. DRAWINGS SHALL BE TO SCALE AND SHOW COMPLETE DETAILS AND INSTRUCTIONS FOR FABRICATION AND ASSEMBLY. SHOP DRAWINGS SHALL INDICATE ERECTION AND TEMPORARY BRACING INFORMATION FOR CONTRACTOR'S USE.

THE DESIGN OF DELEGATED DESIGN ITEMS NOTED IN THE SUBMITTAL SCHEDULE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. DOCUMENTS FOR THE DESIGN AND FABRICATION OF DELEGATED DESIGN ITEMS (INCLUDING STRUCTURAL CALCULATIONS AND DRAWINGS) SHALL BEAR THE SEAL AND SIGNATURE OF A LICENSED ENGINEER REGISTERED IN THE STATE THAT THE PROJECT IS BEING CONSTRUCTED.

THE CONTRACTOR SHALL REVIEW AND MODIFY ALL SUBMITTALS AS REQUIRED FOR CONFORMANCE WITH DATE AND SIGNATURE ON ALL SETS OF DOCUMENTS PRIOR TO SUBMITTAL TO THE ENGINEER. THE CONTRACTOR SHALL SCHEDULE SUBMITTALS TO ALLOW SUFFICIENT TIME FOR REVIEW AND POSSIBLE RE-SUBMITTAL.

SUBMITTAL SCHEDULE

ITEM	SUBMITTAL	SHOP DRAWINGS	DELEGATED DESIGN
CONCRETE MIX DESIGNS	X		
CONCRETE REINFORCING STEEL	X		
CONCRETE ANCHORAGE	X		
EMBEDDED STEEL ITEMS	X	X	
CONCRETE MASONRY UNITS	X		
GROUT MIX DESIGNS	X		
MORTAR	X		
CMU REINFORCING STEEL	X		

STRUCTURAL DESIGN CRITERIA

LIVE LOAD REDUCTION FOR BEAMS AND COLUMNS WAS USED. DESIGN FOR MECHANICAL LOADS INCLUDES ONLY THOSE INDICATED ON STRUCTURAL DRAWINGS. THE FOLLOWING ARE THE DESIGN REQUIREMENTS:

STRUCTURAL DESIGN CRITERIA	
RISK CATEGORY	II
SUPERIMPOSED DEAD LOAD (EXCLUDING STRUCTURAL FRAME SELF WEIGHT)	
ROOF (TOTAL INCLUDING ROOFING/CEILING)	PER PACIFIC BUILDING SYSTEMS
FLOOR (TOTAL INCLUDING FLOORING/CEILING)	100 PSF (8 INCH CONCRETE SLAB)
CMU WALL	81 PSF (8 INCH FULLY GROUTED WALL)
COLLATERAL (COMMERCIAL)	
COLLATERAL LOADING	9 PSF
TROLLEY CRANE LIVE LOAD	
TROLLEY CRANE	5 TON (PART OF METAL BUILDING DESIGN)
FLOOR LIVE LOAD (COMMERCIAL)	
LIGHT STORAGE	150 PSF
ROOF LIVE LOAD	
ROOF LIVE LOAD	20 PSF

STRUCTURAL DESIGN CRITERIA	
ROOF SNOW LOAD	
DESIGN ROOF SNOW LOAD	20 PSF
SNOW DRIFTING	AS NOTED ON PLANS (IF OCCURS)
IMPORTANCE FACTOR	Is = 1.0
GROUND SNOW LOAD	Pg = 14 PSF
EXPOSURE FACTOR	Ce = 1.0
THERMAL FACTOR	Ct = 1.0
SLOPE FACTOR	Cs = 1.0
WIND DESIGN DATA (PER PACIFIC BUILDING SYSTEMS)	
BASIC DESIGN WIND SPEED (3 SEC GUST)	V =97 MPH
EXPOSURE	C
INTERNAL PRESSURE COEFFICIENT	GCpi = +/- 0.18
SEISMIC DESIGN DATA (PER PACIFIC BUILDING SYSTEMS)	
IMPORTANCE FACTOR	Ie = 1.0
SPECTRAL RESPONSE ACCELERATIONS	SS = 0.88, S1 = 0.417
SITE CLASS	D-DEFAULT
SPECTRAL RESPONSE COEFFICIENTS	SDS = 0.704, SD1 = 0.52
SEISMIC DESIGN CATEGORY	D
SEISMIC FORCE RESISTING SYSTEM	PER PACIFIC BUILDING SYSTEMS
ANALYSIS PROCEDURE USED	ASCE 7-16 EQUIVALENT LATERAL FORCE
SOIL DESIGN DATA	
ALLOWABLE BEARING PRESSURE	1500 PSF
PASSIVE LATERAL RESISTANCE	250 PCF

FOUNDATION CRITERIA
CONTRACTOR SHALL VERIFY SOIL CONDITIONS AT THE FOOTINGS AND MAKE ANY NECESSARY CORRECTIONS TO PLACE THEM ON FIRM NATIVE SOIL OR STRUCTURAL FILL COMPACTED TO 95% OF MAXIMUM DENSITY AT OPTIMUM MOISTURE CONTENT PER ASTM D698 (STANDARD PROCTOR) OR ASTM D1557 (MODIFIED PROCTOR). THE COMPACTION SHALL BE VERIFIED BY A QUALIFIED INSPECTOR APPROVED BY THE BUILDING OFFICIAL. COMPACTED STRUCTURAL FILL FOR DEPTHS GREATER THAN 12 INCHES SHALL COMPLY WITH PROVISIONS OF AN APPROVED GEOTECHNICAL REPORT.

CONCRETE

MIXING, BATCHING, TRANSPORTING, PLACING AND CURING OF CONCRETE SHALL BE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE, ACI 318, ACI 301 AND IBC CHAPTER 19.

CONCRETE MIX DESIGNS SHALL MEET THE FOLLOWING REQUIREMENTS:

CONCRETE MIX DESIGN REQUIREMENTS

MEMBER TYPE/LOCATION	COMPRESSIVE STRENGTH AT 28 DAYS, F'C (PSI)	MAXIMUM AGGREGATE SIZE	MAXIMUM W/CM RATIO
FOOTINGS AND MAT FOUNDATIONS	4500	1"	0.50
GRADE BEAMS/PILE CAPS	4500	3/4"	0.50

CONCRETE USED IN ELEVATED SLABS AND BEAMS SHALL HAVE A SHRINKAGE LIMIT OF 0.045% AT 28 DAYS AS MEASURED IN ACCORDANCE WITH ASTM C157. SUBMIT LABORATORY TEST RESULTS FOR APPROVAL PRIOR TO CONSTRUCTION.

ALL EXTERIOR CONCRETE SUBJECT TO FREEZE/THAW CYCLES AND/OR CONTINUOUS MOISTURE OR DEICING CHEMICALS, INCLUDING SIDEWALKS, SLABS AND WALLS, SHALL HAVE A MAXIMUM W/CM RATIO OF 0.45 AND A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, F'C = 4500 PSI AND SHALL MEET THE FOLLOWING AIR CONTENT REQUIREMENTS:

CONCRETE MIX AIR CONTENT REQUIREMENTS

MAXIMUM AGGREGATE SIZE	CONCRETE SUBJECT TO FREEZE/THAW CYCLES	CONCRETE SUBJECT TO CONTINUOUS MOISTURE AND/OR DEICING CHEMICALS
3/8"	6%	7.5%
1/2"	5.5%	7%
3/4"	5%	6%

THE AIR-ENTRAINING ADMIXTURE SHALL CONFORM TO ASTM C260. ALL CONCRETE WITH REINFORCEMENT SHALL HAVE NO CHLORINE OR CHLORIDES. NO WATER MAY BE ADDED TO THE CONCRETE IN THE FIELD UNLESS SPECIFICALLY APPROVED IN WRITING BY THE CONCRETE SUPPLIER IN CONJUNCTION WITH THE APPROVED CONCRETE MIX DESIGN.

SLEEVES, OPENINGS, CONDUIT AND OTHER EMBEDDED ITEMS NOT SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE REVIEWED BY THE STRUCTURAL ENGINEER BEFORE PLACING CONCRETE.

WHERE NEW CONCRETE IS PLACED AGAINST EXISTING CONCRETE, THE EXISTING CONCRETE SURFACE SHALL BE CLEANED AND ROUGHENED TO A MINIMUM 1/4" AMPLITUDE.

DESIGN OF FORMWORK, SHORING AND RE-SHORING DESIGN IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL CONFORM TO THE MOST RECENT EDITION OF ACI 347R.

CONCRETE REINFORCING STEEL
ALL REINFORCING STEEL SHALL BE DEFORMED BARS PER ASTM A615 OR A706, GRADE 60 UNLESS NOTED OTHERWISE.

ALL REINFORCING STEEL SHALL BE SUPPORTED ON WELL-CURED CONCRETE BLOCKS, PLASTIC CHAIRS OR APPROVED METAL CHAIRS, AS SPECIFIED BY THE CRSI MANUAL OF STANDARD PRACTICE, MSP-1 AND SECURELY TIED IN PLACE WITH #16 ANNEALED IRON WIRE PRIOR TO PLACING CONCRETE. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE *GUIDE TO PRESENTING REINFORCING STEEL DESIGN DETAILS*, ACI 315R-18. BAR LENGTHS DETAILED ARE OUT TO OUT AND DO NOT INCLUDE ALLOWANCE FOR HOOKS OR BENDS.

WELDING OR TACK WELDING OF REINFORCING BARS TO OTHER BARS OR EMBEDDED STEEL ITEMS IS PROHIBITED EXCEPT WHERE SPECIFICALLY APPROVED BY THE ENGINEER. WHERE WELDING IS APPROVED, REINFORCING STEEL SHALL CONFORM TO ASTM A706 AND WELDING SHALL BE PERFORMED BY AWS CERTIFIED WELDERS USING E9018 OR APPROVED ELECTRODES. WELDING PROCEDURES SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.4.

CAST-IN-PLACE CONCRETE COVER OVER REINFORCING STEEL SHALL BE AS FOLLOWS:

CONCRETE COVER (UNLESS NOTED OTHERWISE)

BAR SIZE	CONCRETE CAST AGAINST EARTH	CONCRETE EXPOSED TO EARTH/WEATHER	SLABS & JOISTS	WALLS	BEAMS & COLUMNS (TIES, STIRRUPS, SPIRALS)
#5 & SMALLER	3"	1 1/2"	"TOP BARS: 3/4"" BOTTOM BARS: 1"""	1"	1 1/2"
#6 TO #11		2"			
#14 & #18			1 1/2"	1 1/2"	

SPECIFIED CONCRETE COVER SHALL BE MAINTAINED TO ALL REINFORCEMENT AT CONCRETE REVEALS AND INSETS. SHOP DRAWINGS SHOWING CONCRETE REVEALS AND OTHER INSETS SHALL BE SUBMITTED FOR REVIEW.

REINFORCING BARS SHALL BE LAP SPLICED AS NOTED ON THE STRUCTURAL DRAWINGS AND DETAILS. USE MINIMUM 30" LAP FOR #4 BAR AND A MINIMUM 36" LAP FOR #5 BAR UNO. AT THE CONTRACTOR'S OPTION, MECHANICAL COUPLINGS MAY BE USED FOR ANY BAR SIZE AND AT ANY LOCATION, PROVIDED A CURRENT ICC-ES REPORT DEMONSTRATES THE COUPLING CAN ACHIEVE A MINIMUM TENSILE STRENGTH OF 125% OF THE SPECIFIED YIELD STRENGTH OF THE BAR AND 100% OF THE SPECIFIED TENSILE STRENGTH OF THE SPLICED BAR.

HEADED BARS OR TERMINATORS SHALL BE PROVIDED WHERE INDICATED ON THE DRAWINGS OR AT THE CONTRACTOR'S OPTION FOR CONGESTED AREAS OF REINFORCEMENT, SUBJECT TO THE ENGINEER'S APPROVAL. HEADED BARS OR TERMINATORS SHALL MEET THE REQUIREMENTS OF ACI 318 AND ASTM A970 AND HAVE A CURRENT ICC-ES REPORT.

AT EACH RE-ENTRANT CORNER IN SLABS, PROVIDE ONE #4 X 4'-0" DIAGONALLY CENTERED ON THE CORNER AT EACH LAYER OF REINFORCING STEEL.

CONCRETE ANCHORS
ALL CAST IN PLACE ANCHOR BOLTS SHALL BE SECURELY TIED IN THEIR FINAL POSITION PRIOR TO PLACING CONCRETE (WET-SETTING OF ANCHOR BOLTS IS NOT PERMITTED). ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 36. FURNISH ANCHOR RODS WITH MATCHING DOUBLE HEAVY HEX NUTS JAMMED AT THE END EMBEDDED IN CONCRETE. HOOKED ANCHOR RODS SHALL NOT BE USED EXCEPT WHERE NOTED.

ALL HEADED STUD ANCHORS (HSA) SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1, TYPE B, AND ASTM A108. DEFORMED BAR ANCHORS (DBA) SHALL CONFORM TO ASTM A1064. ALL HSA AND DBA SHALL BE WELDED WITH AUTOMATIC STUD WELDING EQUIPMENT PER THE RECOMMENDATIONS OF THE STUD AND EQUIPMENT MANUFACTURER, UNLESS OTHERWISE SPECIFIED.

POST INSTALLED CONCRETE ANCHORS SHALL CONSIST OF THE FOLLOWING UNLESS NOTED OTHERWISE:

EXPANSION BOLTS: SIMPSON STRONG-BOLT 2
SCREW ANCHORS: SIMPSON TITEN HD
ADHESIVE ANCHORS: SIMPSON SET-3G
POWER-ACTUATED FASTENERS: 0.157" DIAMETER SIMPSON PDPA (1" EMBEDMENT)

ALL POST INSTALLED CONCRETE ANCHORS SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTALLATION CRITERIA AND PER THE CURRENT ICC EVALUATION REPORT. ANCHOR INSTALLERS SHALL BE QUALIFIED AS REQUIRED BY JURISDICTION REQUIREMENTS.

NON-SHRINK GROUT
ALL NON-SHRINK GROUT SHALL BE NON-METALLIC GROUT CONFORMING TO ASTM C1107 AND SHALL HAVE A SPECIFIED MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF AT LEAST 1000 PSI HIGHER THAN THE SUPPORTING CONCRETE STRENGTH. GROUT SHALL BE MIXED, APPLIED AND CURED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS. PRE-GROUTING OF BASE PLATES IS NOT PERMITTED.

EMBEDDED ELECTRICAL CONDUIT AND OTHER EMBEDDED ITEMS
ELECTRICAL CONDUIT AND OTHER EMBEDDED CONDUIT SHALL BE RIGID STEEL CONDUIT OR FLEXIBLE PLASTIC CONDUIT. ALUMINUM CONDUIT IS PROHIBITED.

FOR CONDUIT PLACED IN CONCRETE FLAT SLABS OR SLABS THAT ARE PART OF A CONCRETE SLAB AND BEAM SYSTEM, CONDUIT SHALL HAVE A MAXIMUM OUTSIDE DIAMETER OF 1/6 TIMES THE SLAB THICKNESS AND SHALL BE EMBEDDED WITHIN THE MIDDLE THIRD OF THE SLAB DEPTH. MINIMUM CLEAR DISTANCE BETWEEN CONDUITS SHALL BE THREE TIMES THE CONDUIT DIAMETER.

CONDUIT SHALL BE FIRMLY CHAIRED AND TIED TO PREVENT DISPLACEMENT DURING POURING. FOR GROUPS OF (3) OR MORE CONDUITS, PLACE #4 AT 12 INCHES OC ADDITIONAL REINFORCING ABOVE CONDUIT RUNNING ABOVE STEEL DECK FLUTES AND ABOVE AND BELOW CONDUIT IN CONCRETE SLABS, PERPENDICULAR TO THE CONDUIT. THE ADDED REINFORCING SHALL EXTEND 1'-0" PAST THE CONDUIT ON BOTH SIDES.

STRUCTURAL STEEL

DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE SPECIFICATION FOR STRUCTURAL STEEL BUILDINGS (AISC 360). QUALITY ASSURANCE (QA) IS REQUIRED FOR STRUCTURAL STEEL ITEMS PER AISC 360 AND 341 UNLESS SPECIFICALLY NOTED OTHERWISE. QUALITY CONTROL (QC) TO BE PROVIDED BY THE FABRICATOR, ERECTOR OR OTHER RESPONSIBLE CONTRACTOR AS APPLICABLE. CONTRACTOR AND SPECIAL INSPECTOR TO DOCUMENT QUALITY CONTROL AS REQUIRED IN AISC 360 SECTION N3 AND AISC 341 SECTION J2.

ALL STRUCTURAL AND MISCELLANEOUS STEEL SHALL CONFORM TO THE FOLLOWING MATERIAL STANDARDS:

STRUCTURAL STEEL MATERIAL STANDARDS

SHAPE	ASTM SPECIFICATION	YIELD STRESS
ALL OTHER SECTIONS AND PL	A36	36 KSI

UNLESS NOTED OTHERWISE, ALL BOLTS TO BE ASTM F3125 GRADE A325 WITH MATCHING NUTS. UNLESS CONNECTION IS NOTED AS SLIP-CRITICAL OR PRETENSIONED, NUTS SHALL BE TIGHTENED TO A SNUG TIGHT CONDITION PER RESEARCH COUNCIL ON STRUCTURAL CONNECTIONS (RCSC) SPECIFICATION FOR STRUCTURAL JOINTS, SECTION 8.1. FOR SLIP-CRITICAL AND PRETENSIONED CONNECTIONS, INSTALLATION OF FASTENERS SHALL BE PER RCSC SECTION 8.2.

ALL STRUCTURAL STEEL SHALL HAVE ONE SHOP COAT OF PRIMER, EXCEPT SURFACES TO BE EMBEDDED IN CONCRETE OR MASONRY OR STEEL TO BE GALVANIZED. EMBEDDED SURFACES SHALL BE FREE OF CONTAMINANTS. ALL EXPOSED STRUCTURAL STEEL TO HAVE ONE FINISH COAT OF RUST INHIBITING PAINT, COLOR BY OWNER.

ALL ZINC (GALV.) COATINGS ON IRON AND STEEL PRODUCTS SHALL CONFORM TO ASTM A123. REPAIRS OF GALVANIZED COATINGS ARE TO CONFORM TO ASTM A780. HOT DIP GALVANIZED COATINGS ON ASTM F3125 GRADE A325 FASTENER ASSEMBLIES SHALL CONFORM TO ASTM A153. SURFACE PREPARATION OF GALVANIZED STEEL TO RECEIVE A FINISH COAT OF PAINT SHALL CONFORM TO ASTM D6386.

REFER TO THE ARCHITECTURAL DRAWINGS FOR STEEL ELEMENTS THAT REQUIRE INTUMESCENT FIRE PROOFING. INTUMESCENT COATINGS SHALL BEAR THE UNDERWRITERS LABORATORIES (UL) LABEL. STEEL MEMBERS SHALL BE PROPERLY PREPARED, INCLUDING THE USE OF A COMPATIBLE PRIMER, AS SPECIFIED BY THE MANUFACTURER. INSTALL INTUMESCENT COATINGS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

STRUCTURAL STEEL WELDING
ALL WELDING SHALL CONFORM TO AMERICAN WELDING SOCIETY (AWS) D1.1 USING E70XX ELECTRODES. WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED BY AWS FOR THE WELD TYPES SPECIFIED. WELD LENGTHS SHOWN ARE EFFECTIVE AS SPECIFIED PER THE SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC). WHERE WELD LENGTHS ARE NOT SHOWN, THE WELD SHALL BE FULL LENGTH OF MEMBERS BEING JOINED. FIELD WELDING SYMBOLS HAVE NOT NECESSARILY BEEN INDICATED ON THE DRAWINGS. WHERE SHOWN, PROPER FIELD WELDING PER AWS D1.1 SHALL BE USED. WHERE NO FIELD WELDING SYMBOLS ARE SHOWN, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE USE OF SHOP AND FIELD WELDS.

ALL PARTIAL JOINT PENETRATION GROOVE WELD SIZES SHOWN ON THE DRAWINGS REFER TO THE EFFECTIVE THROAT THICKNESS. ALL BUTT WELDS SHALL BE FULL PENETRATION WELDS UNLESS NOTED OTHERWISE ON STRUCTURAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOINT PREPARATION AND WELDING PROCEDURES THAT INCLUDE, BUT ARE NOT LIMITED TO: REQUIRED ROOT OPENINGS, ROOT FACE DIMENSIONS, GROOVE ANGLES, BACKING BARS, COPES, SURFACE ROUGHNESS VALUES AND TAPERS AND TRANSITIONS OF UNEQUAL PARTS.

MASONRY

ALL CONCRETE MASONRY UNITS (CMU) SHALL BE CONSTRUCTED IN ACCORDANCE WITH IBC CHAPTER 21 AND TMS 402/602. CMU SHALL BE MEDIUM WEIGHT SAND UNITS (115 LBS PER CUBIC FOOT) CONFORMING TO ASTM C90 WITH LINEAR DRYING SHRINKAGE LIMITED TO 0.065% AND RATE OF ABSORPTION NOT EXCEEDING 0.035 OUNCES OF WATER PER SQ. IN. OF SURFACE AT THE TIME OF PLACEMENT. THE NET AREA COMPRESSIVE STRENGTH OF CONCRETE MASONRY UNITS SHALL BE 1,900 PSI. CMU SHALL BE INSTALLED IN A RUNNING BOND PATTERN UNLESS NOTED OTHERWISE.

THE COMPRESSIVE STRENGTH OF THE MASONRY ASSEMBLY SHALL BE A MINIMUM OF F'M=2000 PSI ON NET AREA BY UNIT STRENGTH METHOD.

HOT AND COLD WEATHER CONSTRUCTION REQUIREMENTS PER TMS 602 SPECIFICATIONS SHALL APPLY. TEMPORARY BRACING OF MASONRY WALLS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

CONTROL JOINTS ARE TO BE SPACED AT 1 ½ TIMES THE WALL HEIGHT WITH A MAXIMUM OF 25 FT.

UNLESS OTHERWISE SPECIFIED ON THE ARCHITECTURAL CONSTRUCTION DOCUMENTS, ALL MASONRY EXPOSED TO THE WEATHER TO RECEIVE (2) COATS OF MOISTURE PROOF SEALANT APPLIED PER MANUFACTURER'S INSTRUCTIONS AND MASONRY EXPOSED TO THE SOIL SHALL HAVE TWO COATS OF WATERPROOF EMULSION APPLIED. INSTALL COMPATIBLE PAINT PER OWNER'S REQUIREMENTS.

MASONRY MORTAR
ALL MORTAR SHALL CONFORM TO ASTM C270 TYPE S. MORTAR SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 1,800 PSI AT 28 DAYS. COMPLETELY COVER THE BEDDING AREA OF THE UNITS AT ALL BED, HEAD AND WEB JOINTS WITH MORTAR (100% MORTAR FILLING IS REQUIRED).

MASONRY GROUT
ALL GROUT TO BE FINE GROUT CONFORMING TO ASTM C476 WITH A MINIMUM COMPRESSIVE STRENGTH OF 2,000 PSI AT 28 DAYS. ALL CELLS CONTAINING VERTICAL BARS AND ALL BOND BEAMS SHALL BE FILLED WITH GROUT. FULLY GROUT ALL STRUCTURAL MASONRY WALLS UNLESS NOTED OTHERWISE.

GROUT LIFTS SHALL NOT EXCEED 5'-4" IN HEIGHT. CONSOLIDATION MUST BE PERFORMED IN EACH GROUTED CELL IMMEDIATELY AFTER GROUT PLACEMENT WITH A MECHANICAL VIBRATOR. RODDING IS NOT AN ACCEPTABLE MEANS OF GROUT CONSOLIDATION. GROUT POURS SHALL BE RECONSOLIDATED BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED. ALL PROCEDURES FOR HIGH LIFT GROUTING ARE OPTIONAL AND ARE TO BE REVIEWED AND ACCEPTED BY THE ENGINEER OF RECORD PRIOR TO GROUTING.

CLEAN OUTS SHALL BE PROVIDED IN THE BOTTOM COURSE OF MASONRY FOR EACH GROUT POUR WHEN THE GROUT POUR HEIGHT EXCEEDS 5'-4". WHERE REQUIRED, CLEANOUTS SHALL BE PROVIDED AT EVERY VERTICAL BAR BUT SHALL NOT BE SPACED MORE THAN 32 INCHES ON CENTER FOR SOLID GROUTED MASONRY. CONSTRUCT CLEANOUTS WITH AN OPENING OF SUFFICIENT SIZE TO PERMIT REMOVAL OF DEBRIS, WITH A MINIMUM OPENING DIMENSION OF 3 INCHES. CLEANOUTS SHALL BE ADEQUATELY SEALED AFTER INSPECTION AND BEFORE GROUTING TO RESIST GROUT PRESSURE.

MASONRY REINFORCING STEEL
ALL REINFORCING STEEL SHALL BE DEFORMED BARS PER ASTM A615 OR A706 GRADE 60. ALL REINFORCING STEEL TO BE WELDED SHALL BE ASTM A706. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH THE *ACI MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES*, ACI 315.

REINFORCING STEEL EXCEPT WHERE OTHERWISE NOTED SHALL BE AS FOLLOWS:

(2) #5 IN GROUTED LINTEL OVER OPENINGS
(2) #5 IN GROUTED CELLS AT JAMBS AND WALL ENDS
(2) #5 IN GROUTED BOND BEAMS AT SILLS AND TOP OF WALLS.

EXTEND ALL REINFORCING STEEL A MINIMUM OF 24 INCHES BEYOND EDGES OF OPENING. PROVIDE MATCHING CORNER BARS FOR ALL BOND BEAMS. VERTICAL REINFORCING STEEL IN MASONRY WALLS TO BE AT CENTER LINE OF WALL UNLESS INDICATED OTHERWISE. REINFORCEMENT MUST BE RESTRAINED TO PREVENT MOVEMENT FROM CONSTRUCTION LOADS AND DURING PLACEMENT OF MORTAR AND GROUT. WIRE-TYING OR PREFABRICATED POSITIONERS ARE METHODS OF PROVIDING THE NECESSARY RESTRAINT FOR REINFORCEMENT. WET-SETTING OF REINFORCEMENT IS NOT PERMITTED.

USE MINIMUM 30" LAP FOR # BAR AND SMALLER UNLESS NOTED OTHERWISE (UNO). USE MINIMUM 36" LAP FOR #5 BAR UNO.

FOR WALLS WITH A SINGLE LAYER OF REINFORCING STEEL, THE VERTICAL BARS SHALL BE CENTERED IN THE WALL. FOR WALLS WITH TWO LAYERS OF REINFORCING STEEL, THE VERTICAL BARS ON EACH FACE SHALL BE PLACED TO MAINTAIN ½" CLEAR DISTANCE BETWEEN THE INTERIOR OF THE MASONRY UNIT OR FORMED SURFACE, UNO. THE CLEARANCES NOTED SHALL BE ADJUSTED AS REQUIRED TO MAINTAIN THE FOLLOWING MINIMUM COVER TO REINFORCING BARS:

MASONRY COVER (UNLESS NOTED OTHERWISE)

BAR SIZE	MASONRY EXPOSED TO EARTH/WEATHER	MASONRY NOT EXPOSED TO EARTH/WEATHER
#5 & SMALLER	1 1/2"	1 1/2"
#6 & LARGER	2"	

BRICK VENEER
BRICK VENEER SHALL BE PER IBC SECTIONS 1404.6 THROUGH 1404.9 AND TMS SECTIONS 12.1 AND 12.2 AND SHALL BE INSTALLED WITH TYPE S MORTAR. PROVIDE AT LEAST ONE ANCHOR TIE FOR EACH 2 SQUARE FEET OF WALL AREA, BUT ANCHOR TIE SPACING SHALL NOT EXCEED 32 INCHES ON CENTER HORIZONTALLY AND 24 INCHES ON CENTER VERTICALLY. PROVIDE ADDITIONAL ANCHOR TIES WITHIN 12 INCHES OF OPENINGS, SPACED AT A MAXIMUM OF 3 FEET ON CENTER AROUND THE OPENING. ANCHOR TIES SHALL BE ANCHORED TO A NO. 9 GAUGE HORIZONTAL JOINT REINFORCING WIRE. THE JOINT REINFORCING SHALL BE CONTINUOUS WITH BUTT SPLICES CENTERED BETWEEN TIES PERMITTED. UNLESS OTHERWISE SPECIFIED ON THE ARCHITECTURAL CONSTRUCTION DOCUMENTS, AFTER CLEANING, APPLY TWO WATER REPELLANT COATINGS PER MANUFACTURER'S RECOMMENDATIONS.

MASONRY ANCHORS
ALL CAST IN PLACE ANCHOR BOLTS SHALL BE SECURELY TIED IN THEIR FINAL POSITION PRIOR TO GROUTING WALL (WET-SETTING OF ANCHOR BOLTS IS NOT PERMITTED). ANCHOR RODS SHALL CONFORM TO ASTM F1554 GRADE 36. FURNISH ANCHOR RODS WITH MATCHING DOUBLE HEAVY HEX NUTS JAMMED AT THE END EMBEDDED IN GROUT. HOOKED ANCHOR RODS SHALL NOT BE USED EXCEPT WHERE NOTED.

ALL HEADED STUD ANCHORS (HSA) SHALL CONFORM TO THE REQUIREMENTS OF AWS D1.1, TYPE B, AND ASTM A108. DEFORMED BAR ANCHORS (DBA) SHALL CONFORM TO ASTM A496. ALL HSA AND DBA SHALL BE WELDED WITH AUTOMATIC STUD WELDING EQUIPMENT PER THE RECOMMENDATIONS OF THE STUD AND EQUIPMENT MANUFACTURER, UNLESS OTHERWISE SPECIFIED.

POST INSTALLED MASONRY ANCHORS SHALL CONSIST OF THE FOLLOWING UNLESS NOTED OTHERWISE. ALTERNATE ANCHORS MAY ONLY BE USED WITH PRIOR APPROVAL BY THE ENGINEER OF RECORD.
EXPANSION BOLTS: SIMPSON STRONG-BOLT 2
SCREW ANCHORS: SIMPSON TITEN HD
ADHESIVE ANCHORS: SIMPSON SET-XP
POWER-ACTUATED FASTENERS: 0.157" DIAMETER SIMPSON PDPA (1 3/4" EMBEDMENT)
[EXPANSION BOLTS: HILTI KWIK BOLT TZ2
SCREW ANCHORS: HILTI KWIK HUS-EZ
ADHESIVE ANCHORS: HILTI HIT-RE 500 V3
POWER-ACTUATED FASTENERS: HILTI X-U P8 (1 3/4" EMBEDMENT)]

ALL POST INSTALLED MASONRY ANCHORS SHALL BE INSTALLED IN CONFORMANCE WITH THE MANUFACTURER'S INSTALLATION CRITERIA AND PER THE CURRENT ICC EVALUATION REPORT.

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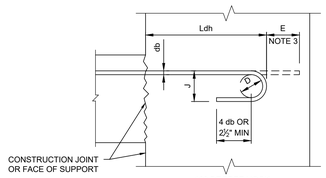
ASTM STANDARD REINFORCING BARS

BAR SIZE DESIGNATION	NOMINAL DIMENSIONS DIAMETER (in.)	AREA (in.²)	MASS (lb/ft)
#3	0.375	0.11	0.376
#4	0.500	0.20	0.668
#5	0.625	0.31	1.043
#6	0.750	0.44	1.502
#7	0.875	0.60	2.044
#8	1.000	0.79	2.670
#9	1.128	1.00	3.400
#10	1.270	1.27	4.303
#11	1.410	1.56	5.313
#14	1.693	2.25	7.65
#18	2.257	4.00	13.6

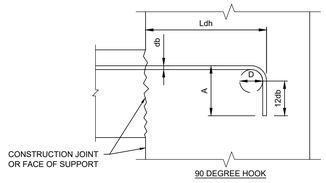
1. ASTM A615 GRADE 40 IS LIMITED TO BAR SIZES #3 THROUGH #6
2. CHECK AVAILABILITY WITH LOCAL SUPPLIERS FOR BAR SIZES #14 AND #18

1 S0.03 STANDARD REBAR DIMENSIONS

1 1/2" = 1'-0"



180 DEGREE HOOK



90 DEGREE HOOK

END HOOKS, ALL GRADES OF STEEL

BAR SIZE	D	180°HOOKS E	180°HOOKS J	90°HOOKS A
#3	2 1/4"	5"	3"	6"
#4	3"	6"	4"	8"
#5	3 3/4"	7"	5"	10"
#6	4 1/2"	8"	6"	1'-0"
#7	5 1/4"	10"	7"	1'-2"
#8	6"	11"	8"	1'-4"
#9	9 1/2"	1'-3"	11 3/4"	1'-7"
#10	10 3/4"	1'-5"	1'-1 1/4"	1'-10"
#11	12"	1'-7"	1'-2 3/4"	2'-0"
#14	18 1/4"	2'-3"	1'-9 3/4"	2'-7"
#18	24"	3'-0"	2'-4 1/2"	3'-5"

HOOK DEVELOPMENT LENGTHS (Ldh) FOR GRADE 60 REBAR

BAR SIZE	NORMAL WEIGHT CONCRETE, f'c (PSI) 2500	3000	4000	5000	6000	7000	8000
#3	9"	9"	7"	7"	6"	6"	6"
#4	12"	11"	10"	9"	8"	7"	7"
#5	15"	14"	12"	11"	10"	9"	9"
#6	18"	17"	15"	13"	12"	11"	10"
#7	21"	19"	17"	15"	14"	13"	12"
#8	24"	22"	19"	17"	16"	15"	14"
#9	27"	25"	22"	19"	18"	16"	15"
#10	31"	28"	24"	22"	20"	19"	17"
#11	34"	31"	27"	24"	22"	21"	19"
#14	41"	37"	32"	29"	27"	25"	23"
#18	55"	50"	43"	39"	35"	33"	31"

NOTES:
1. FOR BAR SIZES #3 THROUGH #11 ONLY:
   a. IF CONCRETE SIDE COVER IS > 2½" AND END COVER > 2", THEN A MODIFICATION FACTOR OF 0.7 MAY BE APPLIED BUT THE LENGTH MUST NOT BE LESS THAN 8 BAR DIAMETERS NOR 6 IN.
2. FOR EPOXY-COATED HOOKS, MULTIPLY THE TABULATED VALUES BY 1.2.
3. BAR DIMENSION REQUIRED TO MANUFACTURE HOOK

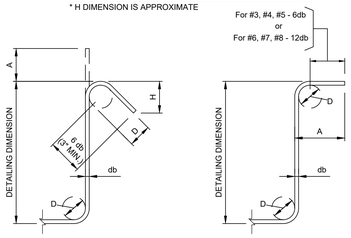
3 S0.03 STANDARD HOOKS AND EMBEDMENT

1 1/2" = 1'-0"

STIRRUP HOOKS (TIE BENDS SIMILAR)

BAR SIZE	D	90° A	135° A	135° H*
#3	1 1/2"	4"	4 1/4"	3"
#4	2"	4 1/2"	4 1/2"	3"
#5	2 1/2"	6"	5 1/2"	3 3/4"
#6	4 1/2"	1'-0"	8"	4 1/2"
#7	5 1/4"	1'-2"	9"	5 1/4"
#8	6"	1'-4"	10 1/2"	6"

* H DIMENSION IS APPROXIMATE



2 S0.03 STIRRUP HOOKS AND TIE BENDS

1 1/2" = 1'-0"

TYPICAL LAP SPLICE LENGTH SCHEDULE

BAR SIZE	f'c = 2500 PSI CASE 1	CASE 2	f'c = 3000 PSI CASE 1	CASE 2	f'c = 4000 PSI CASE 1	CASE 2	f'c = 5000 PSI CASE 1	CASE 2	f'c = 6000 PSI CASE 1	CASE 2
#3	24	36	22	32	19	28	17	25	16	23
#4	32	47	29	43	25	37	23	34	21	31
#5	39	59	36	54	31	47	28	42	26	38
#6	47	71	43	65	37	56	34	50	31	46
#7	69	103	63	94	54	81	49	73	44	67
#8	78	117	72	107	62	93	56	83	51	76
#9	88	132	81	121	70	105	63	94	57	86
#10	100	149	91	136	79	118	71	106	64	96
#11	110	165	101	151	87	131	78	117	71	107
#14	102 *	153 *	93 *	140 *	81 *	121 *	72 *	108 *	66 *	99 *
#18	136 *	204 *	124 *	186 *	107 *	161 *	96 *	144 *	88 *	132 *

TYPICAL TOP BAR LAP SPLICE LENGTH SCHEDULE

BAR SIZE	f'c = 2500 PSI CASE 1	CASE 2	f'c = 3000 PSI CASE 1	CASE 2	f'c = 4000 PSI CASE 1	CASE 2	f'c = 5000 PSI CASE 1	CASE 2	f'c = 6000 PSI CASE 1	CASE 2
#3	32	47	29	42	25	37	23	33	21	30
#4	42	62	38	56	33	49	30	45	28	41
#5	51	77	47	71	41	62	37	55	34	50
#6	62	93	56	85	49	73	45	65	41	60
#7	90	134	82	123	71	106	64	95	58	88
#8	102	153	94	140	81	121	73	108	67	99
#9	115	172	106	158	91	137	82	123	75	112
#10	130	194	119	177	103	154	93	138	84	125
#11	143	215	132	197	114	171	102	153	93	140
#14	133 *	199 *	121 *	182 *	106 *	158 *	94 *	141 *	86 *	129 *
#18	177 *	266 *	162 *	242 *	140 *	210 *	125 *	188 *	115 *	172 *

* NO LAP LENGTHS ALLOWED, NUMERICAL VALUES ARE FOR DEVELOPMENT LENGTH ONLY

NOTES:
1. DIMENSIONS ARE IN INCHES
2. CASE 1 AND 2 ARE DEFINED AS FOLLOWS
   BEAMS OR COLUMNS: CASE 1: COVER ≥ db AND c-c SPACING ≥ 2 db
   CASE 2: COVER < db AND c-c SPACING < 2 db
   ALL OTHERS: CASE 1: COVER ≥ db AND c-c SPACING ≥ 3 db
   CASE 2: COVER < db AND c-c SPACING < 3 db
3. TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.

4 S0.03 TYPICAL REBAR LAP SPLICE LENGTH SCHEDULE

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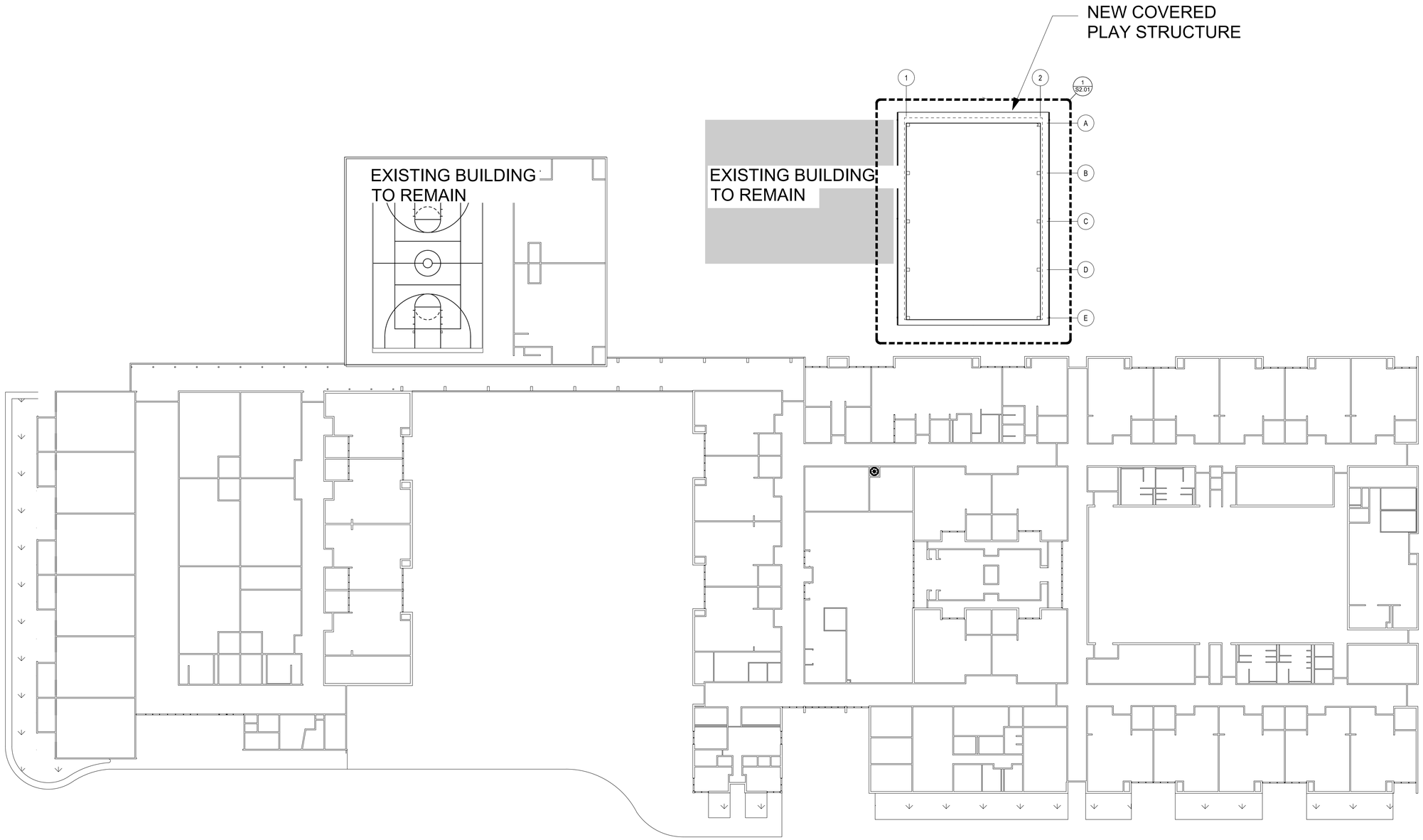

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1
S1.01
OVERALL PLAN

1" = 20'

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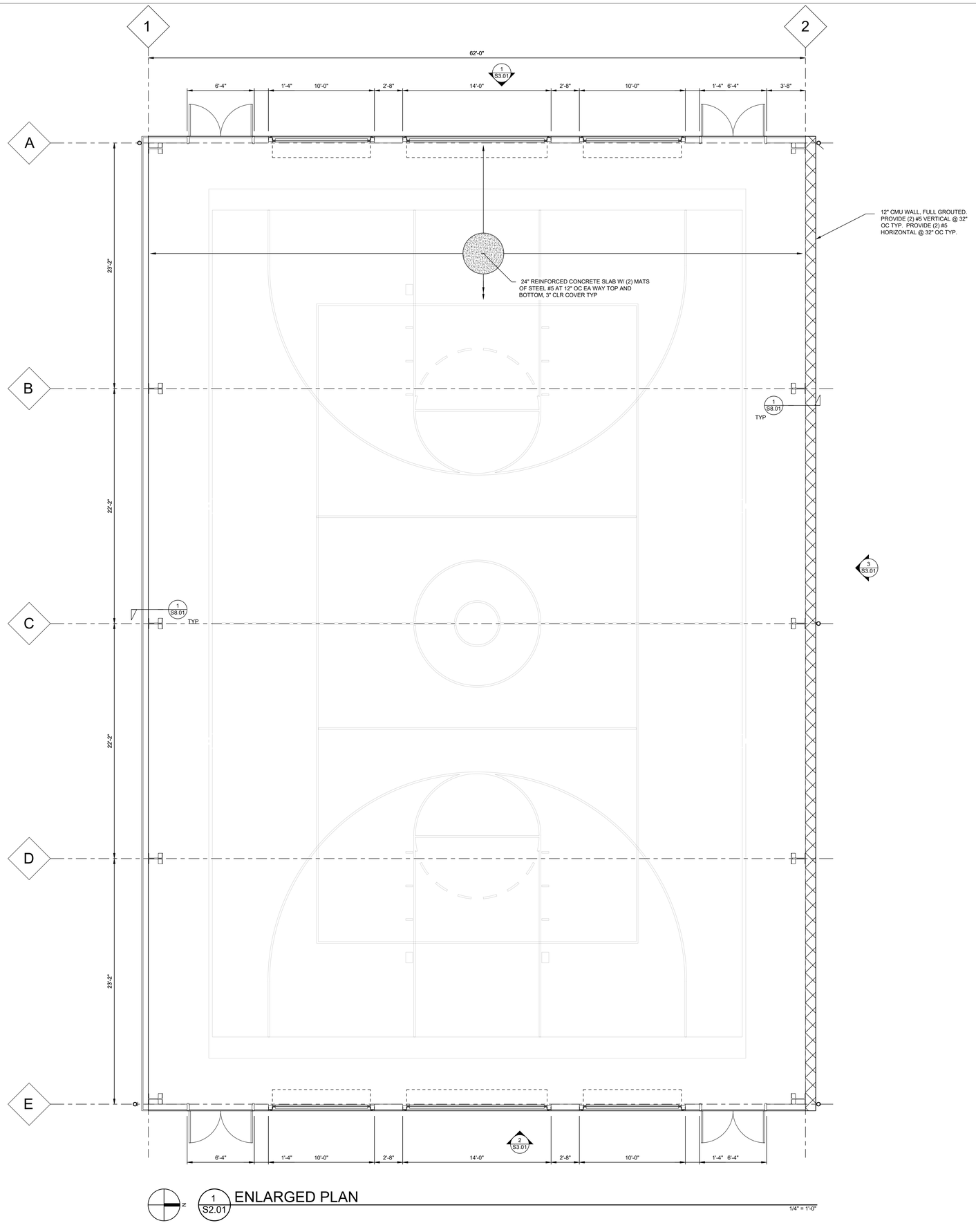

1 S2.01 ENLARGED PLAN

1/4" = 1'-0"

GENERAL FOUNDATION NOTES

1. TYPICAL SLAB SUBGRADE PREPARATIONS TO BE PER GEOTECH. REPORT.
2. SEE DETAILS 2/S8.01,
3. FOUNDATION AND COLUMN ANCHORAGES HAVE BEEN DESIGNED UTILIZING 'PINNED' CONNECTIONS AT ALL COLUMN BASES.
4. SEE SHEET S0.01 FOR LOADING USED FOR FOUNDATION DESIGN.

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ENLARGED PLAN

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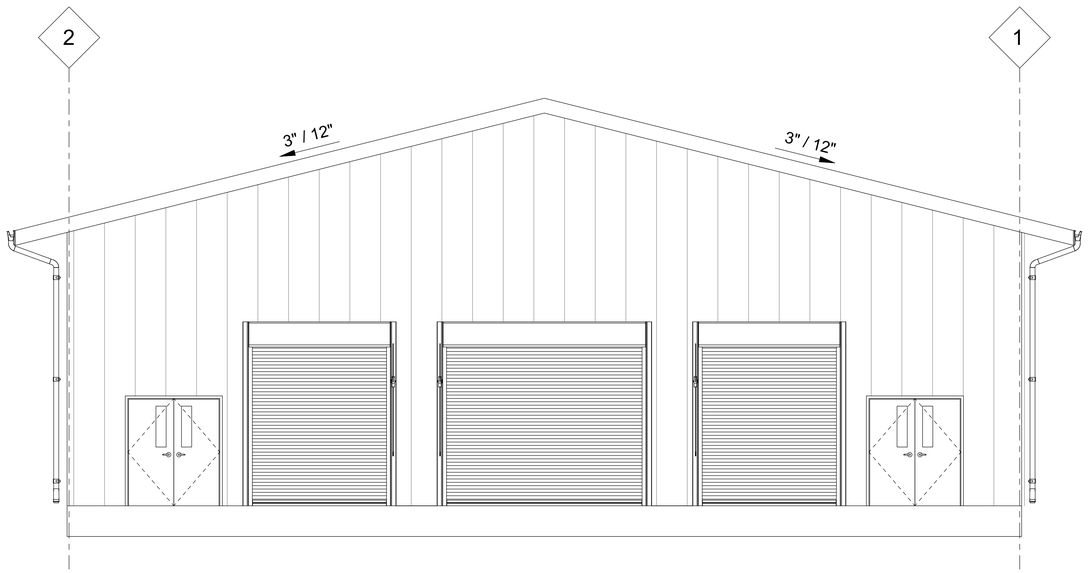
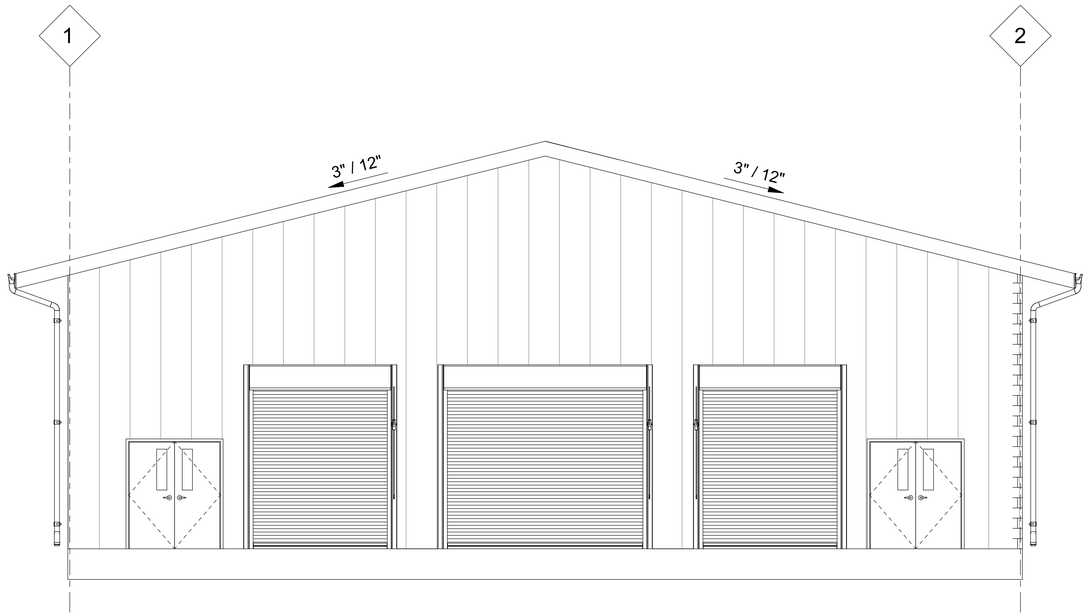


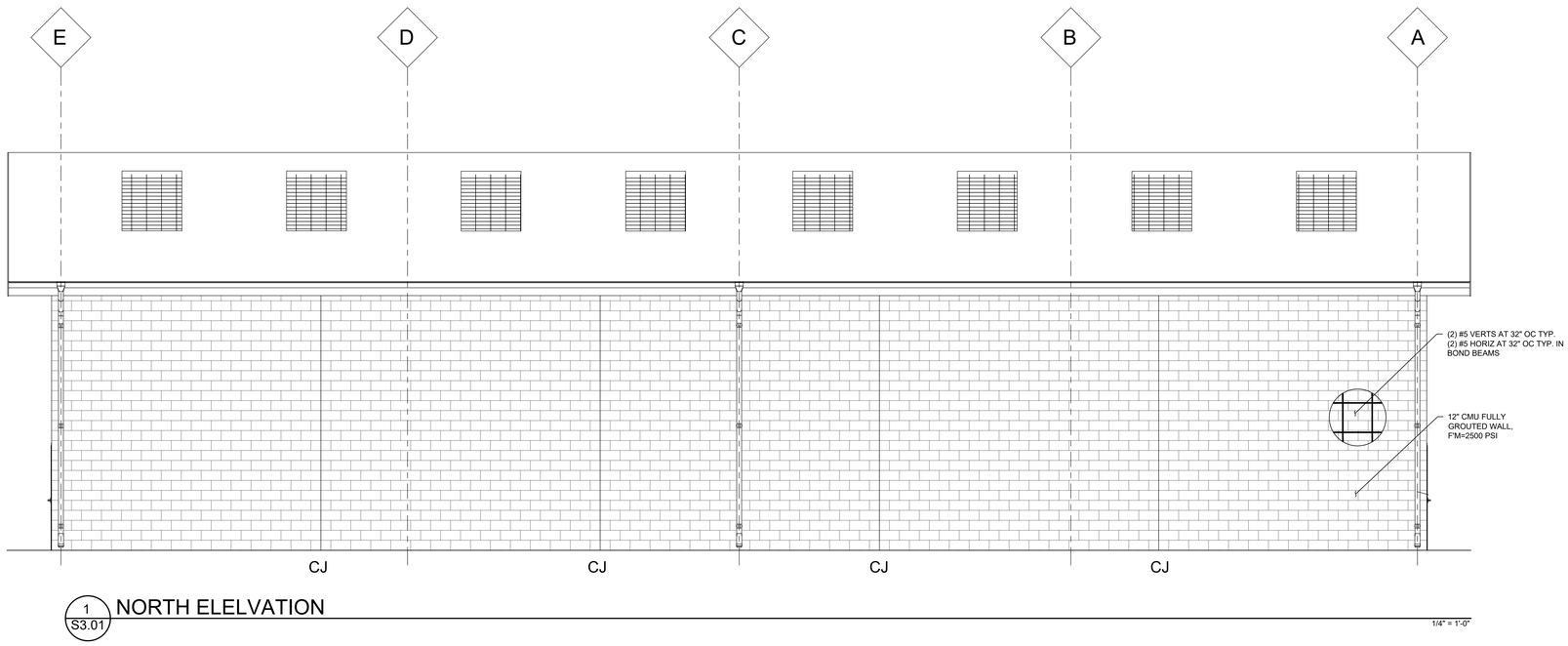
1 S3.01 WEST ELELVATION

1/4" = 1'-0"



2 S3.01 EAST ELELVATION

1/4" = 1'-0"



1 S3.01 NORTH ELELVATION

1/4" = 1'-0"

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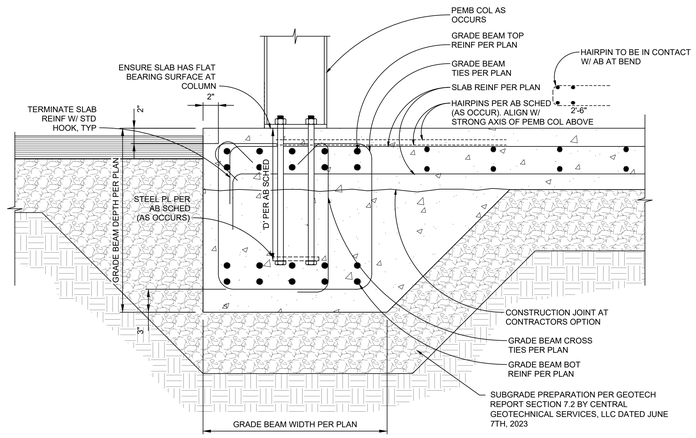
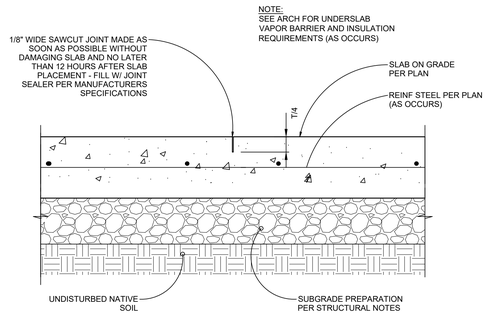


1 S8.01 GRADE BEAM AT PILE FOUNDATION

1 1/2" = 1'-0"



2 S8.01 TYPICAL SLAB CONSTRUCTION JOINT

1 1/2"=1'-0"

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CIVIL PLANS
SIUSLAW ES COVERED PLAY STRUCTURE
SIUSLAW SCHOOL DISTRICT

GENERAL CIVIL NOTES

GENERAL REQUIREMENTS

1. PRIOR TO START OF WORK, CONTRACTOR TO PROVIDE PRE-CONSTRUCTION RECORD DRAWING CROSS-REFERENCED WITH PHOTOGRAPHIC DOCUMENTATION OF ALL DAMAGED OR DEFECTIVE CURBS AND SIDEWALKS THAT ARE NOT SCHEDULED FOR REPAIR OR REPLACEMENT. PROVIDE ONE COPY TO THE ENGINEER, ONE TO THE OWNER AND MAINTAIN CONTRACTOR COPIES AS NEEDED. THESE DRAWINGS AND PHOTOS WILL SERVE AS THE MEANS TO IDENTIFY DAMAGE THAT OCCURRED DURING CONSTRUCTION. DAMAGE THAT OCCURS DURING CONSTRUCTION MUST BE REPAIRED TO THE SATISFACTION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.

2. REFER TO THE ARCHITECTURAL SITE PLAN FOR SITE LAYOUT DIMENSIONS SUCH AS BUILDING SETBACKS, BUFFER YARDS, RIGHT-OF-WAY DEDICATIONS, DRIVEWAY WIDTHS, PARKING STALL DIMENSIONS, PARKING STALL COUNTS, ISLAND LAYOUT AND PEDESTRIAN WALKWAY WIDTHS.

3. THE SURVEYOR OR OTHER PERSON STAKING THE BUILDING AND PARKING LOT LAYOUT IS RESPONSIBLE FOR DOING SO ACCORDING TO THE WRITTEN DIMENSIONS AND COORDINATES SHOWN ON THE MOST CURRENT SET OF PROJECT PLANS. POINTS EXTRACTED FROM ELECTRONIC FILES MAY NOT EXACTLY MATCH THE DESIGNER'S INTENDED LAYOUT AS DIMENSIONED. WRITTEN DIMENSIONS ON THE PLANS GOVERN OVER ELECTRONIC DATA. PLANS SHOULD NOT BE SCALED. CONTACT ARCHITECT AND/OR ENGINEER TO VERIFY DIMENSIONS THAT ARE NOT CLEARLY PROVIDED ON THE PLANS.

4. ALL CONSTRUCTION MATERIALS AND WORKMANSHIP IN PUBLIC RIGHT-OF-WAY OR EASEMENT TO CONFORM TO "DESIGN STANDARDS" AND "STANDARD CONSTRUCTION SPECIFICATIONS" OF THE PUBLIC WORKS DEPARTMENT OF THE LOCAL AUTHORITY HAVING JURISDICTION. FACILITIES WITHIN ANOTHER APPROVING AGENCIES JURISDICTION SHALL CONFORM TO THAT AGENCY'S CONSTRUCTION SPECIFICATIONS. OTHER AGENCIES MAY INCLUDE CITY, COUNTY, OREGON HEALTH DIVISION (OHD) AND THE OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY (DEQ).

5. REFERENCES TO STANDARD DRAWING NUMBERS REFER TO STANDARD DRAWINGS OF THE LOCAL AUTHORITY HAVING JURISDICTION UNLESS NOTED OTHERWISE.

6. CONTRACTOR SHALL OBTAIN A CONSTRUCTION PERMIT FROM THE PUBLIC WORKS DEPARTMENT OF THE LOCAL AUTHORITY HAVING JURISDICTION AND SHALL CONTACT CONSTRUCTION MANAGEMENT (DURING WORKING HOURS) 48 HOURS PRIOR TO START OF ANY WORK.

7. ANY CHANGE IN CONSTRUCTION AFTER PLAN APPROVAL MUST BE SUBMITTED IN WRITING AND APPROVED BY LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO CHANGE AS REQUIRED BY THAT JURISDICTION'S STANDARD CONSTRUCTION SPECIFICATIONS.

8. CONTRACTOR SHALL PROCURE, PAY ALL COSTS FOR, AND CONFORM TO ALL CONSTRUCTION PERMITS REQUIRED BY THE LOCAL JURISDICTION OR APPROVING AUTHORITY. CONTRACTOR SHALL COORDINATE AND PAY ALL FEES AND COSTS ASSOCIATED WITH CONNECTING TO EXISTING WATER, SANITARY SEWER, AND STORM SEWER FACILITIES, INCLUDING SERVICES AND INSPECTIONS BY THE GOVERNING JURISDICTIONS. COSTS SHALL INCLUDE AS APPLICABLE BUT NOT BE LIMITED TO FEES FOR CONNECTION, TAPPING, INSPECTION, TESTING, CHLORINATION, WATER METERS, BACKFLOW CERTIFICATIONS, OR OTHER SIMILAR OR RELATED COSTS.

9. CONTRACTOR SHALL PROVIDE ALL BONDS AND INSURANCE REQUIRED BY PUBLIC AND/OR PRIVATE AGENCIES HAVING JURISDICTION. WHERE REQUIRED BY PUBLIC AND/OR PRIVATE AGENCIES HAVING JURISDICTION, THE CONTRACTOR SHALL SUBMIT A SUITABLE MAINTENANCE BOND PRIOR TO FINAL PAYMENT.

10. CONTRACTOR SHALL PERFORM ALL WORK NECESSARY TO COMPLETE THE PROJECT IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DRAWINGS INCLUDING SUCH INCIDENTALS AS MAY BE NECESSARY TO MEET APPLICABLE AGENCY REQUIREMENTS AND PROVIDE A COMPLETED PROJECT.

11. ANY INSPECTION BY THE CITY, COUNTY OR OTHER AGENCIES SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH THE CONTRACT DOCUMENTS, APPLICABLE CODES, AND AGENCY REQUIREMENTS.

12. CONTRACTOR SHALL MAINTAIN ONE COMPLETE SET OF APPROVED DRAWINGS ON THE CONSTRUCTION SITE AT ALL TIMES WHEREON THEY WILL RECORD ALL APPROVED DEVIATIONS IN CONSTRUCTION FROM THE APPROVED DRAWINGS, AS WELL AS THE STATION LOCATIONS AND DEPTHS OF ALL EXISTING UTILITIES ENCOUNTERED. THESE FIELD RECORD DRAWINGS SHALL BE KEPT UP TO DATE AT ALL TIMES AND SHALL BE AVAILABLE FOR INSPECTION BY THE ENGINEER, LOCAL JURISDICTION OR OWNER'S REPRESENTATIVE UPON REQUEST. FAILURE TO CONFORM TO THIS REQUIREMENT MAY RESULT IN DELAY IN PAYMENT AND/OR FINAL ACCEPTANCE OF THE PROJECT.

13. UPON COMPLETION OF CONSTRUCTION OF ALL NEW FACILITIES, CONTRACTOR SHALL SUBMIT A CLEAN SET OF FIELD RECORD DRAWINGS CONTAINING ALL AS-BUILT INFORMATION TO THE ENGINEER SHOWING ALL LENGTHS, DEPTHS, INVERTS, AND LOCATIONS OF COMPLETED WORK. CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND SECURING OF ALL SURVEYING SERVICES NECESSARY TO ACCURATELY OBTAIN "AS-BUILT" INFORMATION. ALL INFORMATION SHOWN ON THE CONTRACTOR'S FIELD RECORD DRAWINGS SHALL BE SUBJECT TO VERIFICATION. IF SIGNIFICANT ERRORS OR DEVIATIONS ARE NOTED, AN AS-BUILT SURVEY PREPARED AND STAMPED BY A REGISTERED PROFESSIONAL LAND SURVEYOR SHALL BE COMPLETED AT THE CONTRACTOR'S EXPENSE.

14. CONTRACTOR SHALL PROCURE AND CONFORM TO DEQ STORMWATER PERMIT NO. 1200C FOR CONSTRUCTION ACTIVITIES WHERE 1 ACRE OR MORE ARE DISTURBED.

15. CONTRACTOR SHALL RETAIN AND PAY FOR THE SERVICES OF A LAND SURVEYOR LICENSED IN THE STATE OF OREGON TO ESTABLISH CONSTRUCTION CONTROL AND PERFORM INITIAL CONSTRUCTION SURVEYS TO ESTABLISH THE LINES AND GRADES OF IMPROVEMENTS AS INDICATED ON THE DRAWINGS. STAKING FOR BUILDINGS, STRUCTURES, CURBS, GRAVITY DRAINAGE PIPES/STRUCTURES AND OTHER CRITICAL IMPROVEMENTS SHALL BE COMPLETED USING EQUIPMENT ACCURATE TO 0.04 FEET HORIZONTALLY AND 0.02 FEET VERTICALLY, OR BETTER. USE OF GPS EQUIPMENT FOR CONSTRUCTION STAKING OF THESE IMPROVEMENTS IS PROHIBITED. AT THE DESIGN ENGINEER'S REQUEST, THE REGISTERED PROFESSIONAL SURVEYOR SHALL PROVIDE THE DESIGN ENGINEER WITH COPIES OF ALL GRADE SHEETS FOR CONSTRUCTION STAKING PERFORMED FOR THE PROJECT.

16. GEOTECHNICAL INVESTIGATION AND REPORT -- THE DESIGN IS BASED ON OWNER-ACCEPTED RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL REPORT PREPARED BY CENTRAL GEOTECHNICAL SERVICES, LLC DATED JUNE 7, 2024.

17. VAULTS SHALL BE DESIGNED TO RESIST BUOYANCY. ASSUME GROUND WATER IS AT FINISH GROUND ELEVATION UNLESS A LOWER ELEVATION IS SUBSTANTIATED BY GEOTECHNICAL REPORT OR OTHER INFORMATION APPROVED BY ENGINEER AND/OR LOCAL JURISDICTION.

18. AS PART OF FINAL CLEANUP, CONTRACTOR IS RESPONSIBLE TO CLEAN AND FLUSH ALL STORM DRAINAGE STRUCTURES AND PIPING FROM INLETS TO POINT OF DISPOSAL. ALL DEBRIS REMOVED FROM THE SYSTEM IS TO BE REMOVED FROM THE SITE.

EXISTING UTILITIES AND FACILITIES

19. COORDINATION AND NOTIFICATION WITH LOCAL JURISDICTION AND UTILITY COMPANIES:
    a. THE LOCATION AND DESCRIPTIONS OF EXISTING UTILITIES SHOWN ON THE DRAWINGS ARE COMPILED FROM AVAILABLE RECORDS AND/OR FIELD SURVEYS. THE ENGINEER OR UTILITY COMPANIES DO NOT GUARANTEE THE ACCURACY OR THE COMPLETENESS OF SUCH RECORDS. CONTRACTOR SHALL FIELD VERIFY LOCATIONS AND SIZES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.
    b. OREGON LAW REQUIRES THE CONTRACTOR TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH OAR 952-001-0090. COPIES OF THE RULES ARE AVAILABLE BY CALLING THE OREGON UTILITY NOTIFICATION CENTER AT (503) 232-1987.
    c. THE CONTRACTOR SHALL NOTIFY THE LOCAL JURISDICTION AND EACH UNDERGROUND UTILITY AT LEAST 48 BUSINESS-DAY HOURS PRIOR TO EXCAVATING, BORING, OR POTHOLING. ALL UTILITY CROSSINGS SHALL BE POTHOLED AS NECESSARY PRIOR TO EXCAVATING OR BORING TO ALLOW THE CONTRACTOR TO PREVENT GRADE OR ALIGNMENT CONFLICTS.

20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MARKING ALL EXISTING DISCOVERED SURVEY MONUMENTS OF RECORD (INCLUDING BUT NOT LIMITED TO PROPERTY AND STREET MONUMENTS) PRIOR TO CONSTRUCTION. IF ANY SURVEY MONUMENTS ARE REMOVED, DISTURBED OR DESTROYED DURING CONSTRUCTION OF THE PROJECT, THE CONTRACTOR SHALL RETAIN AND PAY FOR THE SERVICES OF A REGISTERED PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF OREGON TO REFERENCE AND REPLACE ALL SUCH MONUMENTS PRIOR TO FINAL PAYMENT. THE MONUMENTS SHALL BE REPLACED WITHIN A MAXIMUM OF 90 DAYS, AND THE COUNTY SURVEYOR SHALL BE NOTIFIED IN WRITING AS REQUIRED BY PER ORS 209.150.

21. CONTRACTOR SHALL FIELD VERIFY LOCATION AND DEPTH OF ALL EXISTING UTILITIES WHERE NEW FACILITIES CROSS, WHERE NEW CONNECTIONS ARE TO BE MADE, OR WHERE EXISTING CONNECTIONS ARE TO BE REMOVED. ALL UTILITY CROSSINGS MARKED OR SHOWN ON THE DRAWINGS SHALL BE POTHOLED USING HAND TOOLS OR OTHER NON-INVASIVE METHODS PRIOR TO EXCAVATING OR BORING. CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING FIELD VERIFICATIONS AND EXPOSING POTENTIAL UTILITY CONFLICTS FAR ENOUGH AHEAD OF CONSTRUCTION TO AVOID DELAYING THE WORK DUE TO GRADE MODIFICATIONS, HORIZONTAL ALIGNMENT MODIFICATIONS, OR ANY OTHER REASON. IF GRADE OR ALIGNMENT MODIFICATION IS NECESSARY, CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER, AND THE DESIGN ENGINEER OR THE OWNER'S REPRESENTATIVE SHALL OBTAIN APPROVAL FROM THE CITY PRIOR TO CONSTRUCTION.

22. ALL FACILITIES SHALL BE MAINTAINED IN-PLACE BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR DIRECTED. CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO SUPPORT, MAINTAIN, OR OTHERWISE PROTECT EXISTING UTILITIES AND OTHER FACILITIES AT ALL TIMES DURING CONSTRUCTION. CONTRACTOR TO LEAVE EXISTING FACILITIES IN AN EQUAL OR BETTER-THAN-ORIGINAL CONDITION AND TO THE SATISFACTION OF THE LOCAL JURISDICTION AND OWNER'S REPRESENTATIVE.

23. UTILITIES OR INTERFERING PORTIONS OF UTILITIES THAT ARE ABANDONED IN PLACE SHALL BE REMOVED BY THE CONTRACTOR TO THE EXTENT NECESSARY TO ACCOMPLISH THE WORK. THE CONTRACTOR SHALL PLUG THE REMAINING EXPOSED ENDS OF ABANDONED UTILITIES AFTER APPROPRIATE VERIFICATION PROCEDURES HAVE TAKEN PLACE.

24. CONTRACTOR SHALL REMOVE ALL EXISTING SIGNS, MAILBOXES, FENCES, LANDSCAPING, ETC., AS REQUIRED TO AVOID DAMAGE DURING CONSTRUCTION AND REPLACE THEM TO EXISTING OR BETTER CONDITION.

25. CONTRACTOR SHALL COORDINATE AND PAY ALL COSTS ASSOCIATED WITH REMOVING OR ABANDONING ANY SEPTIC TANKS, WELLS (INCLUDING BOREHOLE PIEZOMETERS) AND FUEL TANKS ENCOUNTERED AS PER REGULATING AGENCY REQUIREMENTS. WHEN SHOWN ON THE DRAWINGS, THESE STRUCTURES SHALL BE REMOVED OR ABANDONED AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL NOTIFY THE OWNER IMMEDIATELY UPON DISCOVERY OF ANY SEPTIC TANKS, WELLS, OR FUEL TANKS NOT SHOWN ON THE DRAWINGS, AND OBTAIN CONCURRENCE FROM THE OWNER PRIOR TO PROCEEDING WITH THE WORK. THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A DETAILED COST BREAKDOWN OF ALL WORK RELATED TO REMOVING OR ABANDONING SAID STRUCTURES. THE CONTRACTOR WILL BE REIMBURSED ON A TIME & MATERIALS BASIS OR AT A NEGOTIATED PRICE AS AGREED BY THE OWNER.

26. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MANAGING CONSTRUCTION ACTIVITIES TO ENSURE THAT PUBLIC STREETS AND RIGHT-OF-WAYS ARE KEPT CLEAN OF MUD, DUST OR DEBRIS. DUST ABATEMENT SHALL BE MAINTAINED BY ADEQUATE WATERING OF THE SITE BY THE CONTRACTOR.

TRAFFIC CONTROL

27. CONTRACTOR SHALL ERECT AND MAINTAIN BARRICADES, WARNING SIGNS, TRAFFIC CONES (AND ALL OTHER TRAFFIC CONTROL DEVICES REQUIRED) PER CITY REQUIREMENTS IN ACCORDANCE WITH THE CURRENT MUTCD (INCLUDING OREGON AMENDMENTS). ALL TRAFFIC CONTROL MEASURES SHALL BE APPROVED AND IN PLACE PRIOR TO ANY CONSTRUCTION ACTIVITY. PRIOR TO ANY WORK IN THE EXISTING PUBLIC RIGHT-OF-WAY, CONTRACTOR SHALL SUBMIT FINAL TRAFFIC CONTROL PLAN TO THE CITY FOR REVIEW AND ISSUANCE OF A LANE CLOSURE OR WORK IN RIGHT-OF-WAY PERMIT.

SUBMITTALS, TESTING AND INSPECTION

28. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE THAT ALL REQUIRED OR NECESSARY INSPECTIONS ARE COMPLETED BY AUTHORIZED INSPECTORS PRIOR TO PROCEEDING WITH SUBSEQUENT WORK WHICH COVERS OR THAT IS DEPENDENT ON THE WORK TO BE INSPECTED. FAILURE TO OBTAIN NECESSARY INSPECTION(S) AND APPROVAL(S) SHALL RESULT IN THE CONTRACTOR BEING FULLY RESPONSIBLE FOR ALL PROBLEMS AND/OR CORRECTIVE MEASURES ARISING FROM UNINSPECTED WORK.

29. THE SPECIFICATIONS OUTLINE THE REQUIRED SUBMITTALS AND MINIMUM TESTING AND INSPECTION REQUIREMENTS FOR THE PROJECT. THE CONTRACTOR HAS THE RESPONSIBILITY OF OBTAINING ALL NECESSARY TESTING, INSPECTIONS OR OBSERVATIONS FOR ALL WORK PERFORMED, REGARDLESS OF WHO IS RESPONSIBLE FOR PAYMENT. COST FOR RETESTING SHALL BE BORNE BY THE CONTRACTOR.

GRADING, DRAINAGE, CURBS AND SIDEWALKS

30. ALL EXISTING OR CONSTRUCTED MANHOLES, CLEANOUTS, MONUMENT BOXES, GAS VALVES, WATER VALVES AND SIMILAR STRUCTURES SHALL BE ADJUSTED TO MATCH FINISH GRADE OF THE PAVEMENT, SIDEWALK, LANDSCAPED AREA OR MEDIAN STRIP WHEREIN THEY LIE. VERIFY THAT ALL VALVE BOXES AND RISERS ARE CLEAN AND CENTERED OVER THE OPERATING NUT.

31. CONTRACTOR SHALL SEED AND MULCH (UNIFORMLY BY HAND OR HYDRO-SEED) ALL EXPOSED SLOPES AND DISTURBED AREAS WHICH ARE NOT SCHEDULED TO BE LANDSCAPED, INCLUDING TRENCH RESTORATION AREAS. IF THE CONTRACTOR FAILS TO APPLY SEED AND MULCH IN A TIMELY MANNER DURING PERIODS FAVORABLE FOR GERMINATION, OR IF THE SEEDED AREAS FAIL TO GERMINATE, THE OWNER REPRESENTATIVE MAY (AT HIS DISCRETION) REQUIRE THE CONTRACTOR TO INSTALL SOD TO COVER SUCH DISTURBED AREAS.

32. CONTRACTOR SHALL CONSTRUCT ALL ACCESS RAMPS IN ACCORDANCE WITH CURRENT ADA REQUIREMENTS.

33. WHERE TRENCH EXCAVATION REQUIRES REMOVAL OF PCC CURBS AND/OR SIDEWALKS, THE CURBS AND/OR SIDEWALKS SHALL BE SAWCUT AND REMOVED AT A TOOLED JOINT UNLESS OTHERWISE AUTHORIZED IN WRITING BY THE LOCAL JURISDICTION. THE SAWCUT LINES SHOWN ON THE DRAWINGS ARE SCHEMATIC AND NOT INTENDED TO SHOW THE EXACT ALIGNMENT OF SUCH CUTS.

34. REPLACE SIDEWALK AND CURB DAMAGED BY CONSTRUCTION ACTIVITY PER LOCAL JURISDICTION'S STANDARD DRAWINGS.

PIPED UTILITIES

35. PIPE BEDDING AND BACKFILL IN PUBLIC RIGHT-OF-WAY OR EASEMENT TO BE DONE PER LOCAL JURISDICTION'S STANDARD CONSTRUCTION SPECIFICATIONS, SEE PLAN FOR EXTENTS.

36. ALL TAPPING OF EXISTING MUNICIPAL SANITARY SEWER, WATER LINES, STORM DRAIN MAINS, AND MANHOLES MUST BE DONE BY CITY FORCES.

37. ALL PIPED UTILITIES ABANDONED IN PLACE SHALL HAVE ALL OPENINGS CLOSED WITH CONCRETE PLUGS WITH A MINIMUM LENGTH EQUAL TO 2 TIMES THE DIAMETER OF THE ABANDONED PIPE.

38. UNLESS SPECIFIED OTHERWISE, ALL NON-METALLIC WATER, SANITARY AND STORM SEWER PIPING SHALL HAVE AN ELECTRICALLY CONDUCTIVE 12-GAUGE STRANDED OR SOLID COPPER INSULATED HIGH MOLECULAR WEIGHT POLYETHYLENE (HMW-PE) TRACER WIRE THE FULL LENGTH OF THE INSTALLED PIPE. THE HMW-PE INSULATED COVER SHALL BE A MINIMUM 45 MIL THICK AND UL RATED FOR 140 °F. USE BLUE WIRE FOR WATER AND GREEN WIRE FOR STORM AND SANITARY PIPING. TRACER WIRE SHALL BE EXTENDED UP INTO ALL VALVE BOXES, CATCH BASINS, MANHOLES AND LATERAL CLEAN OUT BOXES. TRACER WIRE PENETRATIONS INTO MANHOLES SHALL BE WITHIN 18 INCHES OF THE RIM ELEVATION AND ADJACENT TO MANHOLE STEPS. THE TRACER WIRE SHALL BE TIED TO THE TOP MANHOLE STEP OR OTHERWISE SUPPORTED TO ALLOW RETRIEVAL FROM THE OUTSIDE OF THE MANHOLE. ALL TRACER WIRE SPLICES SHALL BE MADE WITH WATERPROOF SPLICES OR WATERPROOF/CORROSION RESISTANT WIRE NUTS.

39. NO TRENCHES IN SIDEWALKS, ROADS, OR DRIVEWAYS SHALL BE LEFT IN AN OPEN CONDITION OVERNIGHT. ALL SUCH TRENCHES SHALL BE CLOSED BEFORE THE END OF EACH WORKDAY AND NORMAL TRAFFIC AND PEDESTRIAN FLOWS RESTORED.

WATER SYSTEM

40. MAINTAIN 6" CLEAR BETWEEN DOMESTIC WATERLINES AND STORM DRAIN LINES. BACKFILL WITH CRUSHED AGGREGATE.

SANITARY AND STORM DRAIN SYSTEMS

41. CATCH BASINS AND JUNCTION BOXES SHALL BE SET SQUARE WITH BUILDINGS OR WITH THE EDGE OF THE PARKING LOT OR STREET WHEREIN THEY LIE. STORM DRAIN INLET STRUCTURES AND PAVING SHALL BE ADJUSTED SO WATER FLOWS INTO THE STRUCTURE WITHOUT PONDING WATER.

42. UNLESS OTHERWISE APPROVED BY THE ENGINEER, ALL STORM DRAIN CONNECTIONS SHALL BE BY MANUFACTURED TEES OR SADDLES.

43. UNLESS OTHERWISE SHOWN ON THE DRAWINGS, ALL STORM PIPE INLETS & OUTFALLS SHALL BE BEVELED FLUSH TO MATCH THE SLOPE WHEREIN THEY LIE.

44. SWEEP (DEFLECT) STORM SEWER PIPE INTO CATCH BASINS AND MANHOLES AS REQUIRED. JOINT DEFLECTION SHALL NOT EXCEED 5 DEGREES OR MANUFACTURERS RECOMMENDATIONS, WHICHEVER IS LESS.

45. BEFORE FINAL ACCEPTANCE, FLUSH AND CLEAN ALL STORM DRAINS, AND REMOVE ALL FOREIGN MATERIAL FROM THE MAINLINES, MANHOLES, CATCH BASINS AND OTHER STRUCTURES.

46. CLEANOUTS ON STORM DRAIN PIPING TO BE SPACED MAXIMUM OF 100 FEET APART. CLEANOUTS ARE REQUIRED FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135 DEGREES (OPSC 719).

47. CLEANOUT COVER TO BE 18" TALL CAST IRON VALVE BOX AND COVER. INSTALL FLUSH WITH FINISHED GRADE, UNLESS NOTED OTHERWISE.

CIVIL LEGEND

SYMBOLS

- 3" W — PROPOSED UTILITY LINE
- 8" SD — EXISTING UTILITY LINE
- 8" SD — EXISTING UTILITY LINE TO BE REMOVED
- FLOW DIRECTION
- PIPE DIAMETER
- UTILITY TYPE
- 8" SS
- 100 LF PVC S=0.02 — SLOPE
- MATERIAL
- LENGTH
- PROPERTY LINE
- CENTER LINE
- 168 — EXISTING CONTOUR LINE
- 168 — PROPOSED CONTOUR LINE
- CONCRETE CURB
- EXISTING FENCE
- PROPOSED FENCE
- SEDIMENT FENCE
- EASEMENT LINE
- PROPOSED BUILDING
- EXISTING BUILDING
- EXISTING BUILDING TO BE REMOVED
- PROPOSED SIDEWALK
- EXISTING SIDEWALK
- DITCH / SWALE FLOW LINE

PROPOSED / EXISTING

- WATER METER
- BACKFLOW VAULT
- CATCH BASIN
- SANITARY SEWER MANHOLE
- STORM DRAIN MANHOLE
- JUNCTION BOX
- FIRE HYDRANT
- DCDA — DOUBLE CHECK DETECTOR ASSEMBLY VAULT
- FIRE DEPARTMENT CONNECTION, F.D.C.
- BLOW-OFF ASSEMBLY WITH TIE BACKS
- VALVE
- T.B. — THRUST BLOCK
- C.O. — CLEAN OUT
- UTILITY POLE
- UTILITY POLE GUY WIRE
- T — TRANSFORMER
- TELEPHONE PEDESTAL
- FG###.## — PROPOSED GRADE
- × GRADE — EXISTING GRADE
- SIGN & POST
- SLOPE ARROW FROM HIGH TO LOW
- DITCH OR SWALE FLOW LINE
- OR — LANDSCAPING BY OTHERS
- EXISTING ASPHALT PAVING
- PROPOSED ASPHALT PATCH
- EXISTING CONCRETE PAVING
- PROPOSED CONCRETE PAVING

ABBREVIATIONS

MATERIAL

AC	ASPHALTIC CONCRETE
DI	DUCTILE IRON
PVC	POLYVINYL CHLORIDE
CHDPE	HIGH DENSITY POLYETHYLENE
CDB	CONTROLLED DENSITY BACKFILL
C, CONC	CONCRETE
CI	CAST IRON
GR	GRAVEL
RT	REINFORCED TURF

UTILITY

SS	SANITARY SEWER
SD	STORM DRAIN
JB	JUNCTION BOX
CO	CLEAN OUT
G	GAS
W	WATER
UPWR	UNDER GROUND POWER
OH PWR	OVER HEAD POWER
TEL	TELECOMMUNICATIONS
FS	FIRE SERVICE
FDC	FIRE DEPARTMENT CONNECTION
FD	FOOTING DRAIN
FO	FIBER OPTICS
OH	OVERHEAD
PWDS	PUBLIC WORKS DESIGN STANDARDS
UPC	UNIFORM PLUMBING CODE
FRAN	FRANCHISE UTILITIES

GENERAL

ASSY	ASSEMBLY
BO	BLOW OFF
CB	CATCH BASIN
℄	CENTER LINE
EP	EDGE OF PAVEMENT
ELEV	ELEVATION
(E) OR EX	EXISTING
FF	FINISH FLOOR
FG	FINISH GRADE
HYD	FIRE HYDRANT
GV	GATE VALVE
INV	INVERT
MH	MAN HOLE
M	METER, MAIN
PP	POWER POLE
ℙ	PROPERTY LINE
ROW	RIGHT-OF-WAY
STD	STANDARD
SVC	SERVICE
TC	TOP OF CURB
TYP	TYPICAL
EG	EDGE OF GRAVEL
EC	EDGE OF CONCRETE
BFV	BUTTERFLY VALVE
PUE	PUBLIC UTILITY EASEMENT
TW	TOP OF WALL
G, GUT	GUTTER
(N)	NEW
DS	DOWNSPOUT
FD	FLOOR DRAIN
RB	REMOVABLE BOLLARD

CIVIL SHEET INDEX

C0.01	CIVIL NOTES, LEGEND & SHEET INDEX
C0.02	EXISTING CONDITIONS SURVEY
C1.01	OVERALL CIVIL PLAN
C1.02	DEMOLITION PLANS
C1.03	GRADING PLANS
C1.04	UTILITY PLANS
C5.01	CIVIL DETAILS
C5.02	STANDARD DETAILS

ATTENTION: OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0100. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-232-1987.

TEMPORARY BENCHMARK INFORMATION
ELEV.= 100.00' (ASSUMED DATUM)

DESCRIPTION:

PK NAIL SET INTO ASPHALT AT SOUTHWEST CORNER OF PAVED PLAY AREA APPROXIMATELY 415' SOUTH OF PROPOSED COVERED PLAY STRUCTURE SOUTHWEST CORNER.

Soderstrom Architects
1331 NW Lovejoy Street,
Suite 775
Portland, OR 97209
T 503-228-5617
sdra.com

Project
Siuslaw ES Covered Play Structure
Siuslaw School District
2221 Oak Street
Florence, OR 97439

Consultant
Locke CIVIL & STRUCTURAL ENGINEERS NW
289 E Ellendale Ave, Suite 703
Dallas, Oregon 97338
503-364-8207
LockeEngineers.com
J.O. 22015-1

Revisions

No.	Description	Date

Stamp
REGISTERED PROFESSIONAL ENGINEER
16,650
DIGITAL SIGNATURE
OREGON
JULY 20, 1982
GREG D. LOCKE
EXPIRES: 12-31-2024
Only the electronic version of this document with a digital signature per OAR 820-010-0620(5) is an original. Contact Engineer of Record for electronic file if an authentic document is required or authenticity is in question.

Issuance
IFB

Date
2.2.2024

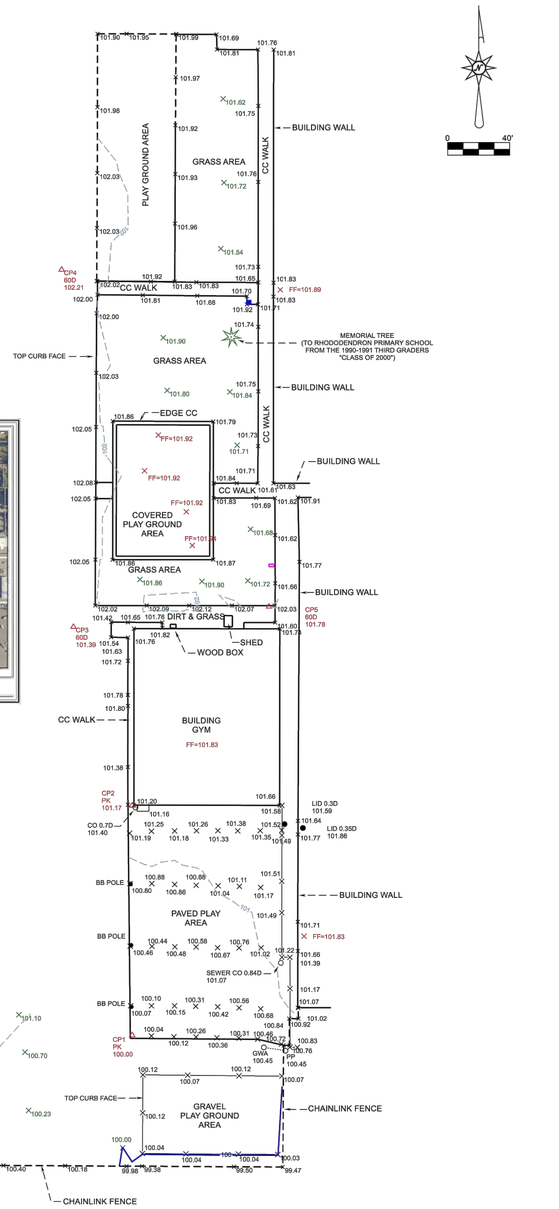
Project Number
22006

Drawing Title
CIVIL NOTES, LEGEND, & SHEET INDEX

Sheet No
C0.01

RECORD OF SITE SURVEY
FOR: SIUSLAW SCHOOL DISTRICT 97J
MAP 18-12-22-00 TAX LOT 300
FLORENCE, LANE COUNTY, OR

NOTE: ELEVATION BASED ON AN ASSUMED DATUM



LEGEND

△	SURVEY CONTROL POINT
✳	16" DIA CONIFER
×	SPOT ELEVATION
■	DRINKING FOUNTAIN
- - -	CHAINLINK FENCE
PP	POWER POLE
GWA	GUYWIRE ANCHOR
FF	FINISH FLOOR

FILE NAME 22-128.TRV		
SCALE 40 Ft/In	DATE 3-6-2023	DRAWN BY RBW
JOB 22-128	REVISION 1/1	SHEET 1/1

This map drawn with TRAVERSE PC, Software

REGISTERED PROFESSIONAL LAND SURVEYOR
OREGON
ROBERT B. WARD JR.
JULY 30 1978
1091

EXPIRES: 6/30/2024

NORTHWEST Land Surveying, Inc.
(541) 997-9201
WWW.NWLSINC.COM
P.O. Box 2827
Florence, OR 97439
Fax (541) 902-0743

Traverse PC

02-01-2024 12:56 PM
L:\2022\22015-1 SDRA Siuslaw SD\Civil\22015 SDRA Siuslaw ES Play Structure - Details.dwg

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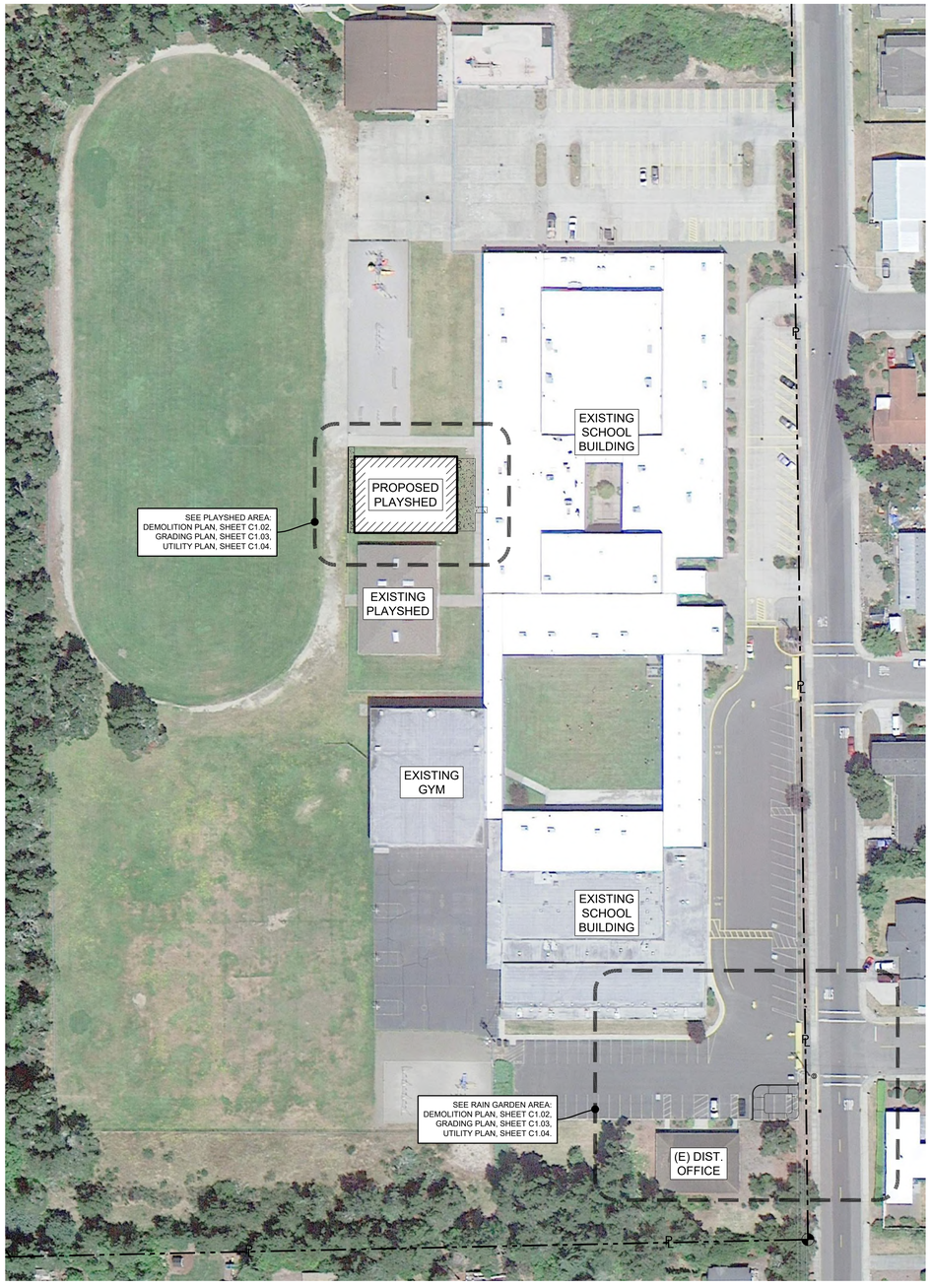
Issuance
IFB

Date
2.2.2024

Project Number
22006

Drawing Title
EXISTING CONDITIONS SURVEY

Sheet No
C0.02



CIVIL KEY PLAN

1" = 50'-0"

0' 50' 100'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2")

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J.O. 22015-1

Revisions

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Drawing Title
CIVIL KEY PLAN

Sheet No
C1.01

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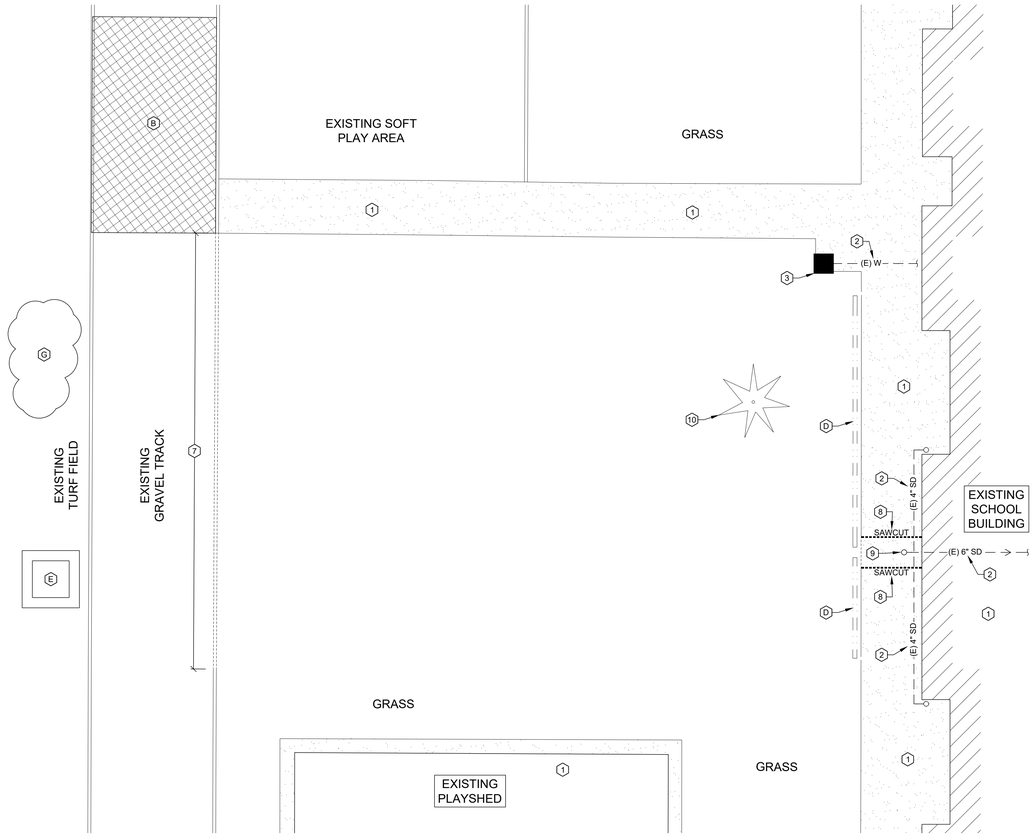
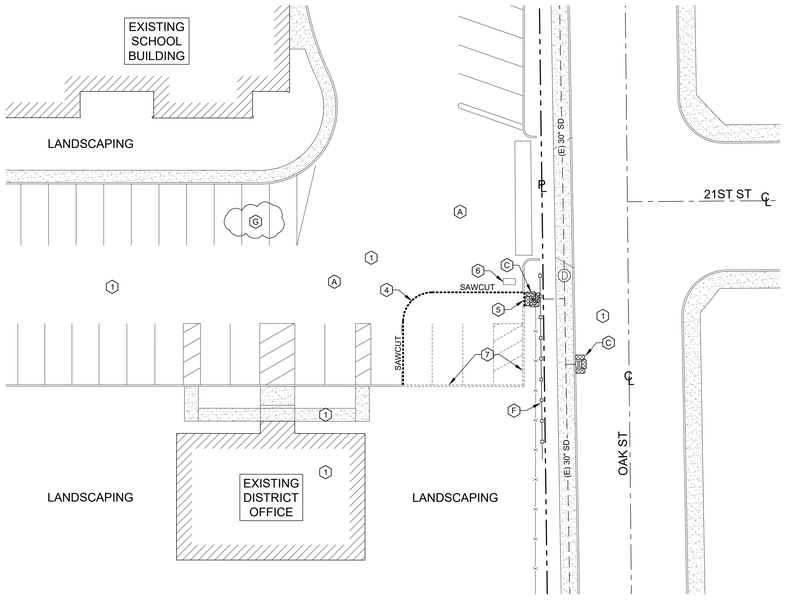


BUILDING AREA DEMOLITION PLAN

1" = 10'-0"

0' 10' 20'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2")



RAIN GARDEN AREA DEMOLITION PLAN

1" = 20'-0"

0' 20' 40'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2")

KEYED EROSION & SEDIMENT CONTROL NOTES (##) :

GENERAL
THESE EROSION AND SEDIMENT CONTROL PLANS ASSUME "DRY WEATHER" CONSTRUCTION. IMPLEMENTATION OF "WET WEATHER" CONSTRUCTION MEASURES ARE REQUIRED BETWEEN OCTOBER 1 AND MAY 31. IN ADDITION TO MINIMUM SPECIFIC BMP'S IDENTIFIED IN THESE KEYED NOTES, CONTRACTOR AND THER SITE INSPECTOR ARE RESPONSIBLE TO FOLLOW ALL REQUIREMENTS OF THE "STANDARD NOTES FOR EROSION CONTROL PLANS" AND OF THE PERMIT AS ISSUED BY THE AUTHORITY HAVING JURISDICTION. CONTRACTOR AND THEIR SITE INSPECTOR SHALL BE RESPONSIBLE TO ADD TO THE BMP'S NOTED HERE AS NEEDED TO ENSURE THE INTEGRITY OF THE SYSTEM.

STANDARD DRAWINGS ARE LOCATED ON SHEET C5.02.

"STANDARD NOTES FOR EROSION CONTROL PLANS" ARE LOCATED ON SHEET C1.02.

AT CONCLUSION OF CONSTRUCTION ACTIVITIES, REMOVE ALL ESCP FEATURES AND RESTORE DISTURBED GROUND TO ORIGINAL SURFACE CONDITION AND MATERIAL. GRASS AREAS TO BE RESTORED ACCORDING TO GENERAL SEEDING NOTES.

A. IT IS ANTICIPATED THAT CERTAIN PHASES OF THE PROJECT WILL REQUIRE CONSTRUCTION SITE ACCESS VIA EXISTING PAVED DRIVEWAYS. PERFORM WHEEL AND EQUIPMENT CLEANING ACTIVITIES IN A LOCATION SUCH THAT SEDIMENT LADEN WASH WATER WILL BE CAPTURED AND FILTERED ONSITE. SWEEP PAVED AREAS AS NEEDED TO PREVENT TRACKING OFFSITE.

B. INSTALL CONSTRUCTION ENTRANCE PER STANDARD DRAWING RD1000, AND IN ACCORDANCE WITH STANDARD ESCP DRAWING NOTES. PERFORM ALL REQUIRED WHEEL CLEANING ACTIVITIES IN AREA SUCH THAT THE SEDIMENT DOES NOT ENTER THE RIGHT-OF-WAY BUT IS INSTEAD CAPTURED ON SITE. SWEEP PAVED PORTION OF CONSTRUCTION SITE ENTRANCE AS NEEDED TO MINIMIZE TRACKING OF SEDIMENT OFF SITE. AT CONCLUSION OF CONSTRUCTION ACTIVITIES, REMOVE CONSTRUCTION ENTRANCE AND RESTORE TO ORIGINAL SURFACE CONDITION. GRASS AREAS TO BE RESTORED ACCORDING TO GENERAL SEEDING NOTES.

C. PRIOR TO THE START OF CONSTRUCTION, PROTECT EXISTING STORMWATER INLETS PER STANDARD DRAWING RD1010 AND RD1015. MAINTAIN IN ACCORDANCE WITH STANDARD ESCP DRAWING NOTES UNTIL FINAL GROUND COVER IS ESTABLISHED OR INLET IS REMOVED.

D. DURING CONSTRUCTION, AS STORMWATER INLETS ARE CONSTRUCTED INSTALL INLET PROTECTION PER STANDARD DRAWING RD1010 AND RD1015. SEE UTILITY PLAN FOR LOCATION OF PROPOSED STORMWATER INLET TO BE INSTALLED. MAINTAIN IN ACCORDANCE WITH STANDARD ESCP DRAWING NOTES UNTIL FINAL GROUND COVER IS ESTABLISHED OR THE COMPLETION OF CONSTRUCTION, WHICHEVER IS LATER.

E. UNLESS CONCRETE OVERAGE IS HAULED OFF SITE, PROVIDE CONCRETE MANAGEMENT FACILITY PER STANDARD DETAIL RD1070 OR PORTABLE CONTAINMENT TANK AT CONTRACTOR'S OPTION, AND IN ACCORDANCE WITH STANDARD ESCP DRAWING NOTES. LOCATE DESIGNATED WASHOUT AREA AS FAR FROM STORM DRAINS, OPEN DITCHES OR WATER BODIES AS POSSIBLE (OVER 50' AWAY IS PREFERRED), MULTIPLE FACILITIES IN VARYING LOCATIONS AS NEEDED DURING THE LIFE OF THE PROJECT. AT CONCLUSION OF CONSTRUCTION ACTIVITIES, REMOVE CONCRETE MANAGEMENT FACILITY AND RESTORE LOCATION TO ORIGINAL SURFACE CONDITION. GRASS AREAS TO BE RESTORED ACCORDING TO GENERAL SEEDING NOTES.

F. INSTALL SEDIMENT BARRIER PRIOR TO THE START OF CONSTRUCTION. SILT FENCE PER CITY OF FLORENCE STANDARD DRAWING F-101. MAINTAIN IN ACCORDANCE WITH STANDARD ESCP DRAWING NOTES.

G. PROTECT STOCKPILES AND EXCAVATED SLOPES PER DETAIL DET6001 AND IN ACCORDANCE WITH STANDARD NOTES FOR EROSION CONTROL PLANS. CONSTRUCT MULTIPLE FACILITIES IN VARYING LOCATIONS AS NEEDED DURING THE LIFE OF THE PROJECT. RE-ESTABLISH PERMANENT GROUND COVER ONCE NO LONGER IN USE. GRASS AREAS TO BE RESTORED ACCORDING TO GENERAL SEEDING NOTES.

KEYED SITE DEMOLITION PLAN NOTES (##) :

GENERAL
DEMOLITION NOTES SPECIFICALLY CALLED OUT ON PLAN ARE IN ADDITION TO ANY INCIDENTAL OR OTHER DEMOLITION NECESSARY TO PERFORM THE REQUIRED WORK. NOT ALL REQUIRED DEMOLITION WORK MAY HAVE BEEN IDENTIFIED. SEE DEMO PLANS OF ARCHITECT AND OTHER CONSULTANTS FOR OTHER ITEMS OF DEMOLITION NOT RELATED TO CIVIL DESIGN.

REMOVAL OF AC IN SOME AREAS MAY ALSO REQUIRE REMOVAL OF BASE ROCK IN ORDER TO ACHIEVE THE PROPER FINISH ROCK ELEVATION PRIOR TO PAVING. LOCATION OF SAWCUTS AND EXTENTS OF PAVEMENT REMOVAL IS SCHEMATIC AND NOT NECESSARILY THE FULL EXTENT NEEDED TO PERFORM THE WORK. CONTRACTOR IS RESPONSIBLE TO INCLUDE WITHIN THEIR BID, THE EXTENT THEY FEEL IS NEEDED TO PROPERLY COMPLETE THE WORK.

PROTECT EXISTING PAVED DRIVEWAYS AND PARKING LOTS FROM DAMAGE FROM CONSTRUCTION OPERATION. CONTRACTOR SHALL REPAIR DAMAGED SURFACE SCHEDULED TO REMAIN AT THEIR OWN EXPENSE.

EXISTING UTILITIES ARE TO REMAIN FUNCTIONAL DURING ENTIRE PROJECT. LOCATIONS AND DESCRIPTIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE AND BASED ON FIELD SURVEY, ARCHIVE PLANS AND AVAILABLE RECORDS. TAKE PRECAUTIONS TO LOCATE AND PROTECT UTILITIES AGAINST DAMAGE. IDENTIFY AND MARK LOCATION OF WATER SHUTOFF VALVES WITH OWNER PRIOR TO START OF EXCAVATION.

1. PROTECT EXISTING BUILDINGS, SIDEWALKS, PAVED AREAS, DRIVEWAYS AND PARKING LOTS FROM DAMAGE FROM CONSTRUCTION OPERATION. CONTRACTOR SHALL REPAIR DAMAGED SURFACE AT THEIR OWN EXPENSE.
2. EXISTING UTILITIES TO REMAIN FUNCTIONAL DURING ENTIRE PROJECT. LOCATIONS ARE APPROXIMATE BASED ON EXISTING ARCHIVE PLANS. TAKE PRECAUTIONS TO LOCATE AND PROTECT UTILITIES AGAINST DAMAGE. IDENTIFY AND MARK LOCATION OF WATER SHUTOFF VALVES WITH OWNER PRIOR TO START OF EXCAVATION.
3. EXISTING DRINKING WATER FOUNTAIN TO REMAIN. PROTECT AGAINST DAMAGE DURING CONSTRUCTION.
4. SAWCUT EDGES OF AFFECTED ASPHALT AREA, EXCAVATE AND REMOVE AC IN PREPARATION FOR CONSTRUCTION OF NEW CURB AND AC PATCH. AREA INDICATED ON PLAN IS APPROXIMATE IN SIZE AND LOCATION. FIELD VERIFY EXTENTS NECESSARY TO PERFORM WORK.
5. SAWCUT EXISTING ASPHALT AT BACK OF EXISTING CURB LINE. REMOVE ASPHALT WEST OF THIS LINE. THE SMALL TONGUE OF ASPHALT SURROUNDING THE EXISTING AREA DRAIN SHOULD REMAIN.
6. EXISTING MAILBOX TO REMAIN, PROTECT FROM DAMAGE DURING CONSTRUCTION.
7. SAWCUT AND REMOVE SECTION OF EXISTING CURB.
8. SAWCUT AND REMOVE EXISTING SIDEWALK FOR EXTENTS REQUIRED FOR INSTALLATION OF JUNCTION BOX AND STORM DRAIN CONNECTION TO EXISTING AS DEPICTED ON UTILITY PLAN SHEET C1.04. CUT SIDEWALK AT FIRST TOOLED JOINT BEYOND REQUIRED WORK ZONE.
9. REMOVE EXISTING CLEANOUT COVER AND 1/16TH BEND. TAKE CARE TO PROTECT EXISTING DOWNSPOUT LATERALS AND PIPE DOWNSTREAM OF CLEANOUT FROM DAMAGE DURING CONSTRUCTION.
10. REMOVE AND DISPOSE OF EXISTING TREE AND/OR STUMP. CLEAR AND GRUB ROOT BALL.

STANDARD NOTES FOR EROSION CONTROL PLANS

A. APPROVAL OF THIS EROSION, SEDIMENT AND POLLUTION CONTROL PLAN (ESPCP) DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)

B. THE IMPLEMENTATION OF THIS ESPCP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESPCP FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

C. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

D. THE ESPCP FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

E. THE ESPCP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESPCP FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.

F. THE ESPCP FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

G. THE ESPCP FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.

H. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO ENSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

STANDARD NOTES FOR SEDIMENT FENCES

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2 INCH X 2 INCH POSTS AND ATTACH AS SHOWN ON DETAIL SHEET F-101.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION, SHALL BE BACKFILLED AND COMPACTED, ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2 INCH X 2 INCH POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILL SIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

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Date
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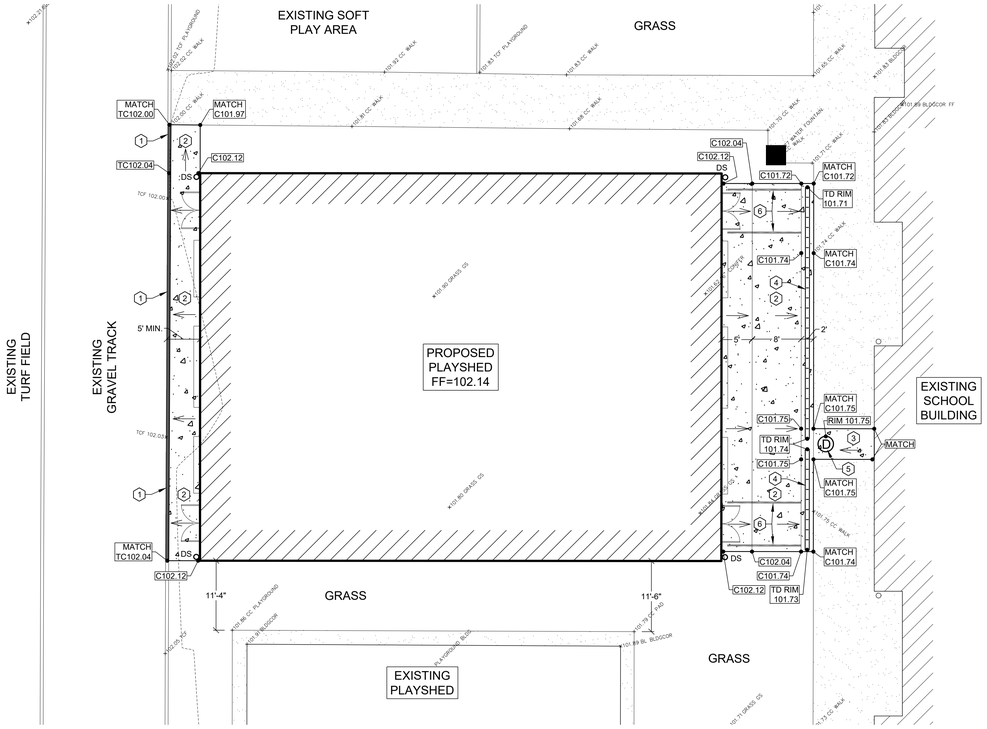
22006

Drawing Title
DEMOLITION PLANS

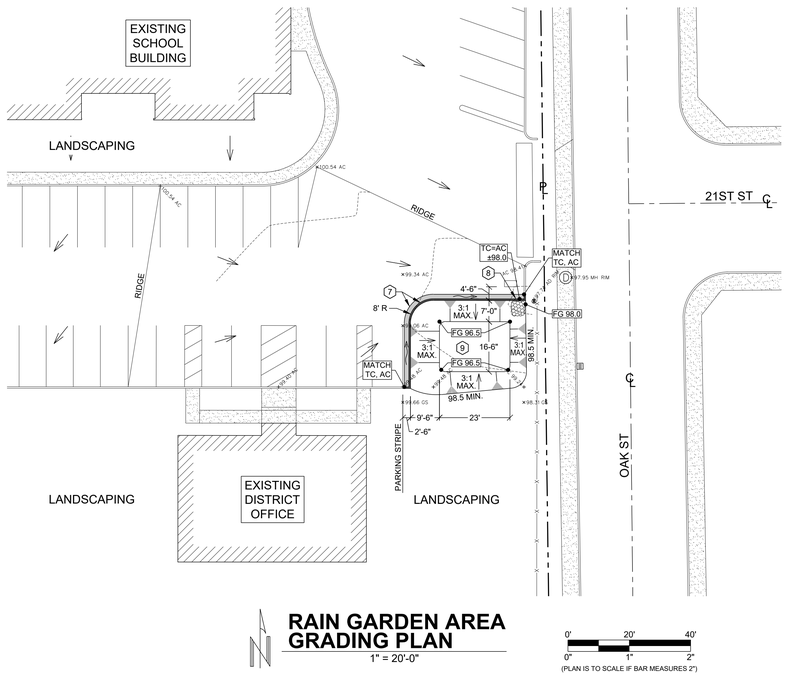
Sheet No
C1.02



BUILDING AREA GRADING PLAN

1" = 10'-0"

0' 10' 20'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2")



RAIN GARDEN AREA GRADING PLAN

1" = 20'-0"

0' 20' 40'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2")

KEYED GRADING PLAN NOTES (HH) :

GENERAL
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1. CONSTRUCT TYPE "C" CONCRETE CURB PER DETAIL 1 ON SHEET C5.01. EXTEND DEPTH OF CURB WHERE REQUIRED TO MATCH FULL DEPTH OF RUNNING TRACK GRAVEL SURFACE.
2. CONSTRUCT CONCRETE SIDEWALK PER DETAIL 1 ON SHEET C5.01.
3. CONSTRUCT REPLACEMENT CONCRETE SIDEWALK PER DETAIL 1 ON SHEET C5.01. MATCH EXPOSED AGGREGATE TEXTURE OF EXISTING ADJACENT SIDEWALK.
4. CONSTRUCT 8" INTERNAL WIDTH TRENCH DRAIN WITH ADA COMPLIANT LOCKING GRATE PER DETAIL 5 ON SHEET C5.01. SEE UTILITY PLAN FOR ADDITIONAL INFORMATION.
5. CONSTRUCT SHALLOW JUNCTION BOX PER DETAIL 6 ON SHEET C5.01 WITH NON-SLIP ADA COMPLIANT CAST IRON MANHOLE LID AND FRAME. SEE UTILITY PLAN FOR ADDITIONAL INFORMATION.
6. PAINT 4" WIDE WHITE STRIPE ON EITHER SIDE OF DOOR OPENING TO CLEARLY DEFINE ACCESSIBLE PATH OF TRAVEL FROM BUILDING ENTRY POINT TO EXISTING SIDEWALK.
7. CONSTRUCT TYPE "C" CONCRETE CURB PER DETAIL 1 ON SHEET C5.01. TOP OF CURB TO BE SET 6" ABOVE ADJACENT ASPHALT SAWCUT EDGE. PATCH ASPHALT BETWEEN SAWCUT LINE AND NEW CURB SIMILAR TO DETAIL 3 ON SHEET C5.01 TO CREATE A SMOOTH SURFACE FOR STORMWATER RUNOFF TO FLOW OVER TO THE NORTHEAST CORNER OF THE RAIN GARDEN AREA.
8. DEPRESS 36" LONG SECTION OF CURB AND EXTEND ASPHALT PATCH INTO CURB OPENING TO ACT AS RAIN GARDEN INLET PER DETAIL 2 ON SHEET C5.01.
9. CONSTRUCT RAIN GARDEN PER CITY OF FLORENCE STORMWATER MANAGEMENT MANUAL TYPICAL DETAIL SW-140 ON SHEET C5.02. CONSTRUCT FLAT BOTTOM TO DIMENSION AND GRADE AS SHOWN ON PLAN. FLAT BOTTOM TO HAVE A MINIMUM SURFACE AREA OF 370 SQUARE FEET.

GENERAL SEEDING NOTES

1. ALL DISTURBED AREAS SHALL BE SEEDED.
2. SEED BETWEEN MARCH 15TH TO OCTOBER 15TH.
3. CONTRACTOR SHALL REMOVE ALL WEEDS AND INVASIVE SPECIES PRIOR TO PLANTING OR SEEDING.
4. ALL SEEDED AREAS SHALL BE STRIPPED OF VEGETATION, SCARIFIED AND RECEIVE 6" OF TOPSOIL PRIOR TO APPLICATION OF SEED.
5. PRIOR TO PLANTING, CONTRACTOR SHALL TEST SOILS FOR SOIL FERTILITY BY CERTIFIED TESTING LAB. IF NECESSARY, SOIL SHALL BE AMENDED AS RECOMMENDED BY SOIL ANALYSIS REPORT. TOPSOIL SHALL COMPLY WITH THE FOLLOWING:
   - A. ASTM D 5268 ACIDITY RANGE (PH) OF 5.5 TO 7.
   - B. A MINIMUM OF 4 PERCENT, AND A MAXIMUM OF 20 PERCENT ORGANIC MATERIAL CONTENT BY VOLUME.
   - C. A MAXIMUM OF 25 PERCENT DECAYING CONTENT BY VOLUME.
   - D. FREE OF STONES 1 INCH OR LARGER IN ANY DIMENSION AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.
   - E. TEXTURAL CLASS REQUIREMENTS: TOPSOIL TEXTURAL ANALYSIS SHALL FALL WITHIN THE FOLLOWING GRADATIONS.

TEXTURAL CLASS	% OF TOTAL WEIGHT	AVERAGE %
SAND (0.05-2.0MM DIA.)	45 - 75	60%
SILT (0.002-0.05MM DIA.)	15 - 35	25%
CLAY (LESS THAN 0.002MM DIA.)	05 - 20	15%

6. SEED SHALL BE A MIX OF FESCUE AND PERENNIAL RYEGRASS AND COMPLY WITH OWNER'S STANDARDS. SEED SHALL MEET OR EXCEED BLUE TAG QUALITY ACCORDING TO CURRENT OREGON CERTIFIED SEED STANDARDS PUBLISHED BY OREGON STATE UNIVERSITY.
7. SATISFACTORY SEEDED AREAS: UNLESS OTHERWISE SPECIFIED, ALL SEEDED AREAS SHALL AT THE TIME OF SUBSTANTIAL COMPLETION, EXHIBIT A HEALTHY, UNIFORM, CLOSE STAND OF THE SPECIFIED SEED MIX, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE OF MIX IN SPECIFIED PROPORTIONS, EXCEEDING 90 PERCENT OVER ANY 10 SQ. FT. AND BARE SPOTS NOT EXCEEDING 5 BY 5 INCHES.
8. LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING & MOWING OF SEEDED AREAS UNTIL FINAL ACCEPTANCE FROM OWNER'S REPRESENTATIVE.

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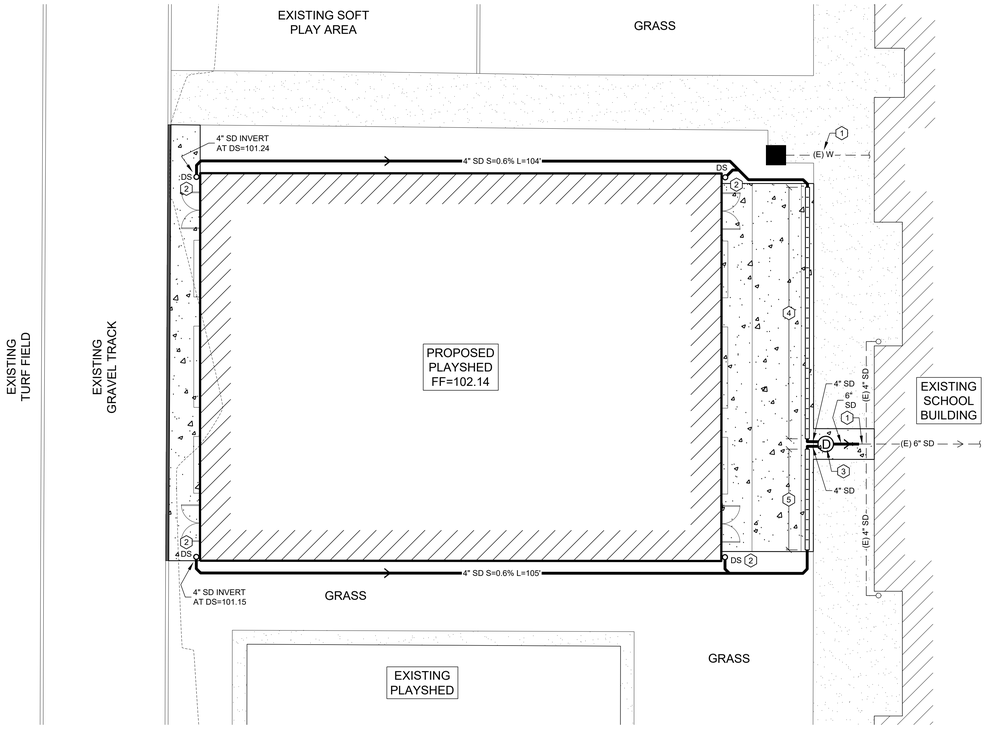
22006

Drawing Title
GRADING PLANS

Sheet No
C1.03



BUILDING AREA UTILITY PLAN

1" = 10'-0"

0' 10' 20'
0" 1" 2"
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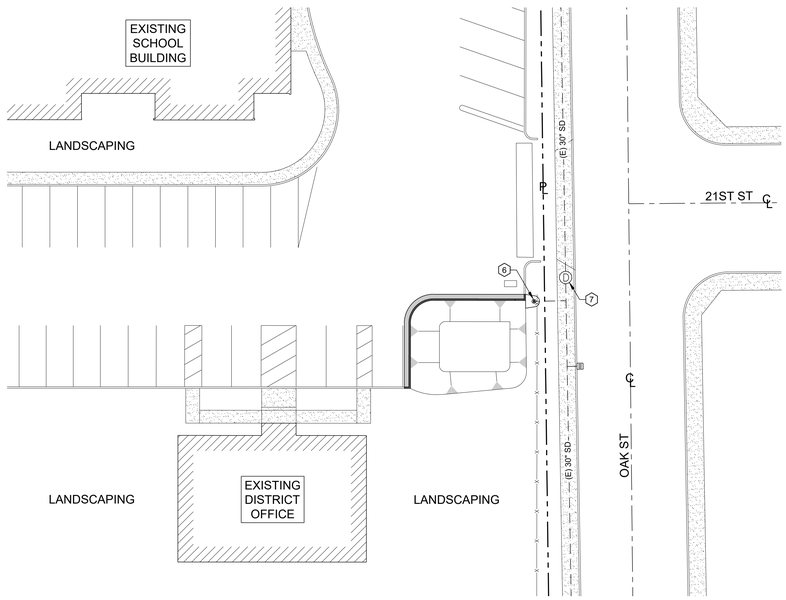

RAIN GARDEN AREA UTILITY PLAN

1" = 20'-0"

0' 20' 40'
0" 1" 2"
(PLAN IS TO SCALE IF BAR MEASURES 2")

GENERAL UTILITY PLAN NOTES

A. ALL CONSTRUCTION IN A PUBLIC RIGHT-OF-WAY OR EASEMENT SHALL BE IN ACCORDANCE WITH THE LOCAL JURISDICTION'S STANDARD CONSTRUCTION SPECIFICATIONS AND ANY SPECIAL PROVISIONS INCLUDED AS A PART OF THE APPROVED PLANS.

B. OREGON LAW REQUIRES YOU TO FOLLOW RULES ADOPTED BY THE OREGON UTILITY NOTIFICATION CENTER. THOSE RULES ARE SET FORTH IN OAR 952-001-0010 THROUGH 952-001-0100. YOU MAY OBTAIN COPIES OF THE RULES BY CALLING THE CENTER. THE TELEPHONE NUMBER FOR THE OREGON UTILITY NOTIFICATION CENTER IS 503-232-1987.

C. SEE SITE PLANS FOR BUILDING DIMENSIONS, PARKING LAYOUTS, SIDEWALK WIDTHS, AND SIMILAR INFORMATION.

D. VERIFY EXACT POSITIONS OF UTILITY SERVICE ENTRY POINTS WITH PLUMBING AND ELECTRICAL PLANS, BY OTHERS.

E. CONSTRUCT PRIVATE UTILITY TRENCH BEDDING AND BACKFILL PER DETAILS 3 AND 4 ON SHEET C5.01.

F. ALL DOWNSPOUT LATERALS ARE TO BE 3" DIA. UNLESS NOTED OTHERWISE. CONNECTION TO DOWNSPOUT SHALL INCLUDE AN INTEGRAL CLEANOUT PER DETAIL 8 ON SHEET C5.01.

G. STORM DRAIN PIPE MATERIAL
WITHIN 5' OF A BUILDING FOUNDATION:
- USE ASTM 1785 SCHEDULE 40 PVC PIPE WHERE COVER IS 12 INCHES OR GREATER.
- USE ANSI CLASS 50 DUCTILE IRON PIPE WHERE COVER IS LESS THAN 12 INCHES.
- USE ASTM A74 CAST IRON PIPE WHERE COVER IS LESS THAN 12 INCHES.

BEYOND 5' OF A BUILDING FOUNDATION:
- USE ASTM D3034 SDR35 PVC PIPE WHERE COVER IS 24 INCHES OR GREATER.
- USE ASTM 1785 SCHEDULE 40 PVC PIPE WHERE COVER IS 12 INCHES OR GREATER.
- USE ANSI CLASS 50 DUCTILE IRON PIPE WHERE COVER IS LESS THAN 12 INCHES.

H. STORM DRAIN PIPE SIZE AND SLOPE
- PIPE SLOPES INDICATED ARE APPROXIMATE MINIMUM SLOPES BASED ON THE STATED INVERTS. INSTALL PIPES ACCORDING TO INVERTS NOTED ON PLAN AND IN STRUCTURE SCHEDULE OR KEYED NOTES.
- UNLESS NOTED OTHERWISE ALL FITTINGS ARE TO BE CONCENTRIC. PIPE INVERT ELEVATIONS NOTED AT FITTINGS ARE CALCULATED FOR THE LARGEST DIAMETER PIPE CONNECTED TO THAT FITTING. TEES TO BE SANITARY TEE OR WYE WITH 1/8 TH BEND.

I. CLEANOUTS ON SANITARY SEWER AND STORM DRAIN PIPING TO BE SPACED MAXIMUM OF 100 FEET APART. CLEANOUTS ARE REQUIRED FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135 DEGREES (OPSC 719).

J. FOR 4" RISER PIPE, COVER ON SANITARY SEWER AND STORM DRAIN CLEANOUT TO BE TYPICALLY 18" TALL CAST IRON 910 VALVE BOX AND COVER. AT SHALLOW PIPE DEPTH, 10" CAST IRON 950 VALVE BOX AND COVER IS ACCEPTABLE. INSTALL FLUSH WITH FINISHED GRADE. SEE DETAIL 7 ON C5.01. ALTERNATE CONCRETE BROOKS VALVE BOX IS ACCEPTABLE.

KEYED UTILITY PLAN NOTES (##) :

GENERAL
UTILITY NOTES SPECIFICALLY CALLED OUT ON PLAN ARE IN ADDITION TO ANY INCIDENTAL WORK NECESSARY TO PERFORM THE REQUIRED WORK. NOT ALL REQUIRED UTILITY WORK MAY HAVE BEEN IDENTIFIED. SEE ARCHITECTURAL, PLUMBING AND ELECTRICAL PLANS FOR ADDITIONAL UTILITY WORK.

EXISTING UTILITIES ARE TO REMAIN FUNCTIONAL DURING ENTIRE PROJECT. LOCATIONS AND DESCRIPTIONS OF EXISTING UTILITIES SHOWN ARE APPROXIMATE AND BASED ON FIELD SURVEY, ARCHIVE PLANS AND AVAILABLE RECORDS. TAKE PRECAUTIONS TO LOCATE AND PROTECT UTILITIES AGAINST DAMAGE. IDENTIFY AND MARK LOCATION OF WATER SHUTOFF VALVES WITH OWNER PRIOR TO START OF EXCAVATION.

1. POTENTIAL GRADE CONFLICT WITH EXISTING UTILITY. POTHOLE LOCATE PRIOR TO CONSTRUCTION. NOTIFY ENGINEER IF A CONFLICT EXISTS.
2. CONSTRUCT 3" DOWNSPOUT PER DETAIL 8 ON SHEET C5.01. TRANSITION TO 4" SD PIPE BENEATH GROUND SURFACE.
3. CONSTRUCT SHALLOW JUNCTION BOX PER DETAIL 6 ON SHEET C5.01 WITH NON-SLIP ADA COMPLIANT CAST IRON MANHOLE LID AND FRAME.
RIM = 101.75
4" INVERT IN WEST 100.42
4" INVERT IN WEST 100.42
6" INVERT OUT EAST 100.42
4. CONSTRUCT 8" INTERNAL WIDTH TRENCH DRAIN WITH ADA COMPLIANT LOCKING DUCTILE IRON GRATE. (12) 1-METER UNITS AND (1) ½-METER UNIT OF ACO DRAIN MODEL K200, INTERNALLY SLOPED TRENCH DRAIN WITH MODEL 678Q GRATE OR APPROVED EQUAL. USE END OUTLET PLATES WITH 4" DIA. BLOCKOUT. SET TRENCH DRAIN UNITS IN REINFORCED CONCRETE BED PER DETAIL 5 ON SHEET C5.01. TRENCH UNITS K2-28 TO K2-39 WITH A SINGLE NEUTRAL SLOPED K2-0303 1/2-METER UNIT PLACED IMMEDIATELY DOWNSTREAM OF UNIT K2-30.
RIM = VARIES 101.74 TO 101.71
4" INVERT IN NORTH 100.61
4" INVERT OUT SOUTH 100.44
5. CONSTRUCT 8" INTERNAL WIDTH TRENCH DRAIN WITH ADA COMPLIANT LOCKING DUCTILE IRON GRATE. (5) 1-METER UNITS OF ACO DRAIN MODEL K200, INTERNALLY SLOPED TRENCH DRAIN WITH MODEL 678Q GRATE OR APPROVED EQUAL. USE END OUTLET PLATES WITH 4" DIA. BLOCKOUT. SET TRENCH DRAIN UNITS IN REINFORCED CONCRETE BED PER DETAIL 5 ON SHEET C5.01.
TRENCH UNITS K2-35 TO K2-39.
RIM = VARIES 101.74 TO 101.73
4" INVERT IN SOUTH 100.52
4" INVERT OUT NORTH 100.44
6. EXISTING AREA DRAIN TO REMAIN.
RIM = 97.74
(E) 8" INVERT OUT EAST 95.82
7. EXISTING PUBLIC STORM SEWER MANHOLE
RIM = 97.95
(E) 30" INVERT THRU 94.74

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Project

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Siuslaw School District
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J.O. 22015-1

Revisions

No.	Description	Date

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16,650
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OREGON
JULY 20, 1982
GREG D. LOCKE
EXPIRES: 12-31-2024
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Issuance
IFB

Date
2.2.2024

Project Number
22006

Drawing Title
UTILITY PLANS

Sheet No
C1.04

02-01-2024 4:27 PM
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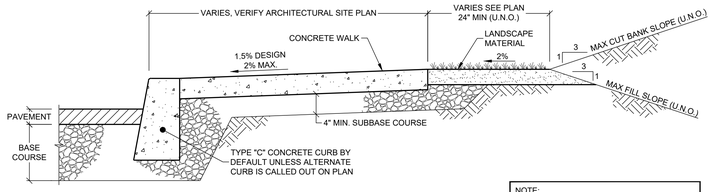
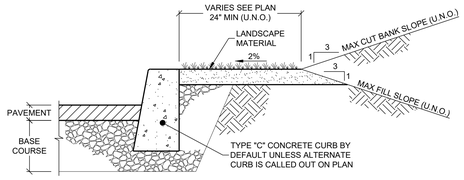


CURB WITH SIDEWALK

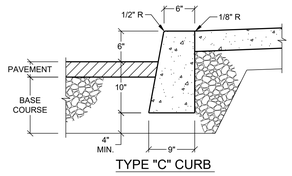
NOTE:
INSTALL CONTRACTION JOINTS IN CURB AT 15' O.C. AND AT POINT OF TANGENCY.

INSTALL CONTRACTION JOINTS IN SIDEWALK AT 5' O.C. EXCEPT WHERE NOTED ON PLANS.

INSTALL EXPANSION JOINTS IN CURBS AND SIDEWALKS AT 45' O.C. INSTALL 1/2" PRE-MOLDED EXPANSION JOINT MATERIAL IN JOINTS.

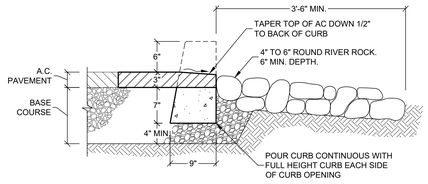


CURB WITH LANDSCAPE

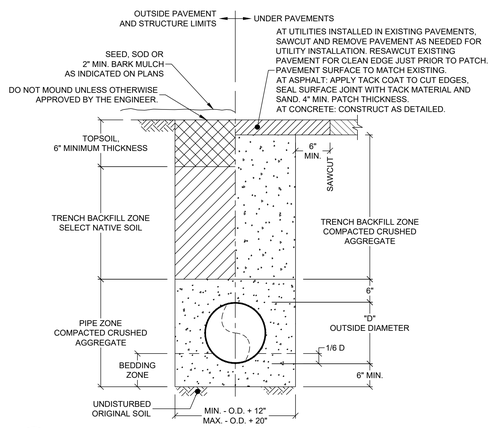


TYPE "C" CURB

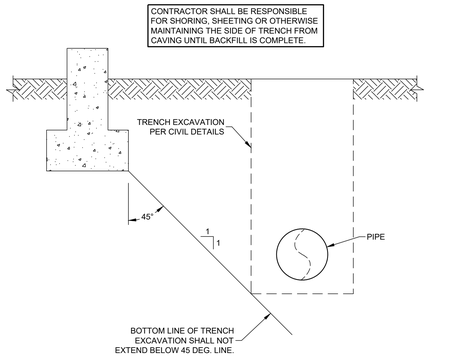
1 C5.01 STANDARD CURBS
1" = 1'-0"



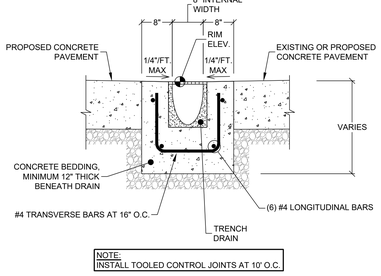
2 C5.01 RAIN GARDEN INLET
1" = 1'-0"



3 C5.01 TRENCH IN EXISTING DEVELOPMENT
N.T.S.

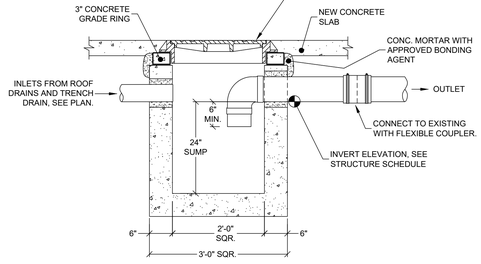


4 C5.01 RELATION OF TRENCHES TO FOOTINGS
1" = 1'-0"

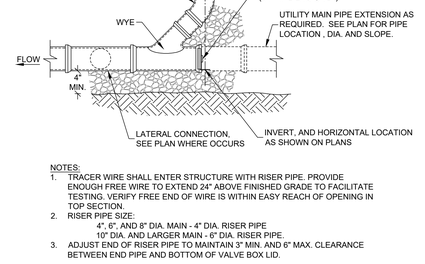


NOTE:
INSTALL TOOLED CONTROL JOINTS AT 10' O.C.

5 C5.01 8" TRENCH DRAIN
3/4" = 1'-0"

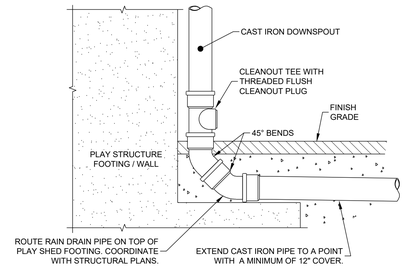


6 C5.01 JUNCTION BOX
3/4" = 1'-0"



NOTES:
1. TRACER WIRE SHALL ENTER STRUCTURE WITH RISER PIPE. PROVIDE ENOUGH FREE WIRE TO EXTEND 24" ABOVE FINISHED GRADE TO FACILITATE TESTING. VERIFY FREE END OF WIRE IS WITHIN EASY REACH OF OPENING IN TOP SECTION.
2. RISER PIPE SIZE:
   4", 6", AND 8" DIA. MAIN - 4" DIA. RISER PIPE
   10" DIA. AND LARGER MAIN - 6" DIA. RISER PIPE.
3. ADJUST END OF RISER PIPE TO MAINTAIN 3" MIN. AND 6" MAX. CLEARANCE BETWEEN END PIPE AND BOTTOM OF VALVE BOX LID.

7 C5.01 STANDARD PRIVATE CLEANOUT (CO)
1" = 1'-0"



ALL CAST IRON PIPE AND FITTINGS TO BE HUB & SPIGOT SOIL PIPE CONFORMING TO ASTM A 74 WITH COMPRESSION GASKETS CONFORMING TO ASTM C 564.

8 C5.01 CAST IRON DOWNSPOUT CONNECTION DETAIL
1" = 1'-0"

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Issuance
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Date
2.2.2024

Project Number
22006

Drawing Title
CIVIL DETAILS

Sheet No
C5.01

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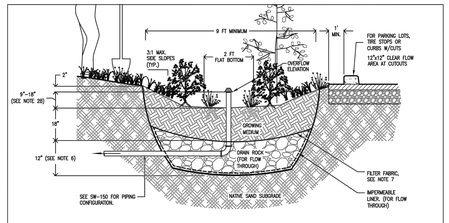


1. Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.
2. Dimensions:
   a. Width of basin: 9' minimum.
   b. Depth of basin (from top of growing medium to overflow elevation); Simplified: 12", Presumptive: 9"-18"
   c. Flat bottom width: 2' min.
   d. Side slopes of basin: 3:1 maximum.
3. Setback (from midpoint of facility):
   a. Infiltration basins must be 10' from foundations and 5' from property lines.
   b. Flow-through swales must be lined with connection to approved discharge point according to SWDM Section 2.1.
4. Overflow:
   a. Overflow required for Simplified Approach.
   b. Inlet elevation must allow for 2" of freeboard, minimum.
   c. Protect from debris and sediment with strainer or grate.
5. Piping: shall be ABS Sch.40, cast iron, or PVC Sch.40. 3" pipe required for up to 1,500 sq ft of impervious area, otherwise 4" min. Piping must have 1% grade and follow the Uniform Plumbing Code.
6. Drain rock:
   a. None required for infiltration basin
   b. Size for flow-through basin: ½" washed
7. Separation between drain rock and growing medium: Use filter fabric (see SWDM Exhibit 2-5).
8. Growing medium:
   a. 18" minimum
   b. See Appendix B for specification.
9. Vegetation: Follow landscape plans otherwise refer to plant list in SWDM Appendix G. Minimum container size is 1 gallon. # of plantings per 100sf of facility area):
   a. Zone A (wet): 115 herbaceous plants OR 100 herbaceous plants and 4 shrubs
   b. Zone B (moderate to dry): 1 tree AND 3 large shrubs AND 4 medium to small shrubs.

   The delineation between Zone A and B shall be either at the outlet elevation or the check dam elevation, whichever is lowest.
10. Install washed pea gravel or river rock to transition from inlets and splash pad to growing medium.
11. Inspections: Call City of Florence Public Works (541) 997-4106 to schedule appropriate inspections.

- DRAWING NOT TO SCALE -

STORMWATER MANAGEMENT MANUAL TYPICAL DETAILS

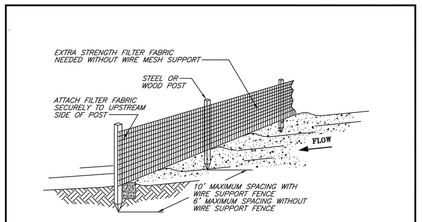
CITY OF FLORENCE
PUBLIC WORKS DEPARTMENT
250 Nopoa Street
Florence, OR 97439
Phone: 541-997-4106

DATE: 11-30-10

- Simplified / Presumptive Design Approach -

Rain Garden

NUMBER
SW-140



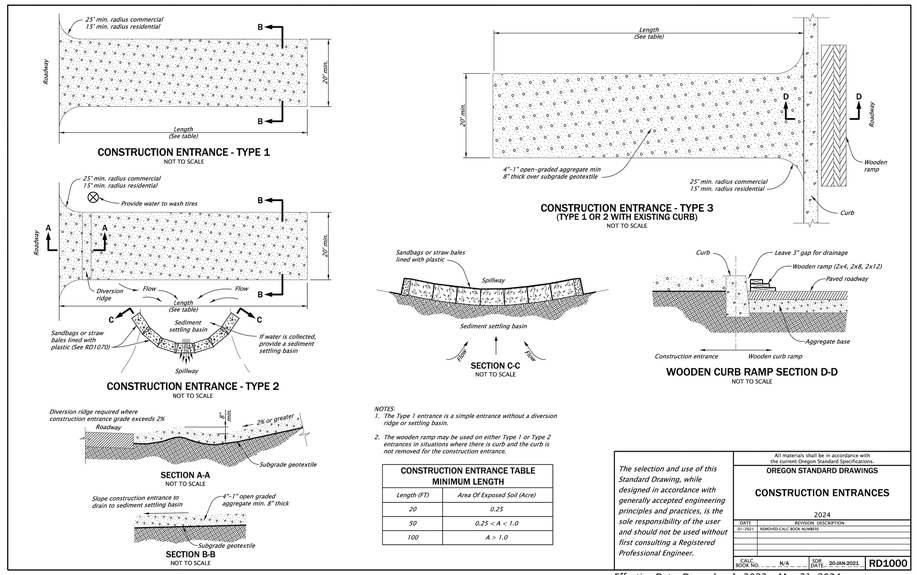
NOT TO SCALE

NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
4. FENCE TO REMAIN IN PLACE AND MAINTAINED BY CONTRACTOR UNTIL ALL DISTURBED SOILS HAVE BEEN STABILIZED

CITY OF FLORENCE STANDARD DRAWING

SILT FENCE

DATE: DEC-2011 | DRAWING NO. F-101



NOTES:
1. The Type 1 entrance is a simple entrance without a diversion ridge or settling basin.
2. The wooden ramp may be used on either Type 1 or Type 2 entrances in situations where there is curb and the curb is not removed for the construction entrance.

CONSTRUCTION ENTRANCE TABLE MINIMUM LENGTH	
Length (FT)	Area Of Exposed Soil (Acre)
20	0.25
50	0.25 < A < 1.0
100	A > 1.0

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

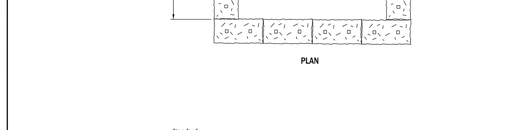
CONSTRUCTION ENTRANCES

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK NO. N/A | SDR DATE 20-JAN-2021 | **RD1000**

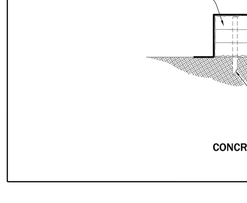
Effective Date: December 1, 2023 – May 31, 2024



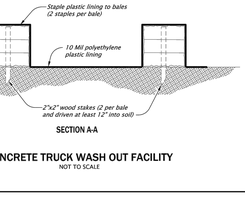
GEOTEXTILE/WIRE MESH/AGGREGATE - TYPE 2
NOT TO SCALE

PREFABRICATED FILTER INSERT - TYPE 3
NOT TO SCALE

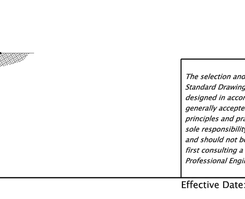
SOD PROTECTION - TYPE 6
NOT TO SCALE



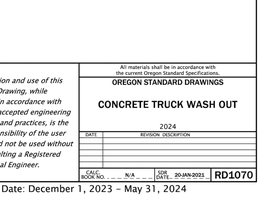
AREA DRAIN PLAN



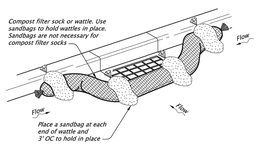
AREA DRAIN PERSPECTIVE VIEW



CURB INLET SEDIMENT DAM - TYPE 10
NOT TO SCALE



WATTLE BARRIER WITH FILTER INSERT - TYPE 11
NOT TO SCALE



CURB INLET PERSPECTIVE VIEW

COMPOST FILTER SOCK OR WATTLE - TYPE 7
NOT TO SCALE

NOTES:
Type 2 – Geotextile/wire mesh/aggregate
Place the wire mesh over the grate. Place sediment fence geotextile over the wire mesh and perimeter area around structure.
Install aggregate over the geotextile fabric.

Type 3 – Prefabricated filter inserts
Install prefabricated filter inserts according to the plans, special provisions, and manufacturer recommendations. Prefabricated inserts with provisions for overflow are allowed only when accompanied by additional BMP's to prevent the potential of sediments entering project storm systems. Field fabricated inserts are not allowed.

Type 7 – Compost filter sock
Drive 2"x2" wood stakes a minimum of 6" into ground and flush with the top of the sock.
Overlap ends of sock per manufacturers recommendations (12"min., 36" max.). Use 8" to 12" dia sock on curbside in traffic areas.

(Type 7 cont.)
Use 12" to 18" dia sock in non-traffic areas or areas where the larger socks can be used safely.
use synthetic mesh socks for temporary installations.

Type 10 – Curb inlet sediment dam
Fit curb inlet sediment dam snugly into inlet mouth. Curb inlet sediment dam is required for use with inlet filter insert where at-grade inlet grate and curb inlet are combined at a catch basin.

Type 11 – Wattle barrier with filter insert
Install prefabricated filter insert per Type 3 detail.
Install wattles over opening and 36" to each side of opening tight against curb. Adjust wattle to force storm water to flow through filter insert or wattle prior to leaving the site.
Adjust, replace or modify the inlet protection as needed to prevent sediment laden water from entering the catch basin.

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All materials shall be in accordance with the current Oregon Standard Specifications.

OREGON STANDARD DRAWINGS

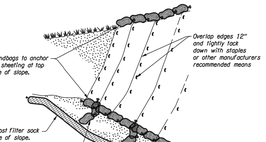
INLET PROTECTION TYPE 2, 3, 6, 7, 10 AND 11

2024

DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS
01-2021	MOVED NOTES AT INDIA OVERLAPPING THE SHEET BORDER

CALC BOOK No. N/A | SDR DATE 20-JAN-2021 | **RD1010**

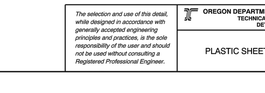
Effective Date: December 1, 2023 – May 31, 2024



PLAN
DITCH INLET

PLAN
AREA DRAIN

SECTION A-A
DITCH INLET



PLAN
CATCH BASIN

BIOFILTER BAGS - TYPE 4
NOT TO SCALE

NOTES:
1. Stake biofilter bags with 2"x2"x36" wood stakes, and use a minimum 2 stakes per bag. Drive stakes a minimum of 6" into the ground and flush with the top of the bags.
2. Omit stakes when bags are placed on pavement surface.
3. Overlap all bag joints 6".
4. Biofilter bags used on active roadways are easily displaced and made ineffective if struck by vehicles. If struck by a cyclist, falls with injury could result. On active roadways alternative inlet protection should be considered.

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OREGON STANDARD DRAWINGS

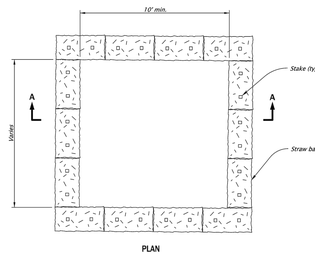
INLET PROTECTION TYPE 4

2024

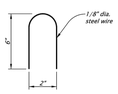
DATE	REVISION DESCRIPTION
01-2021	REMOVED CALC BOOK NUMBERS

CALC BOOK No. N/A | SDR DATE 20-JAN-2021 | **RD1015**

Effective Date: December 1, 2023 – May 31, 2024



PLAN



STAPLE DETAIL
NOT TO SCALE

SECTION A-A

CONCRETE TRUCK WASH OUT FACILITY
NOT TO SCALE

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OREGON STANDARD DRAWINGS

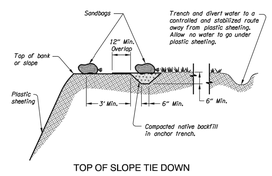
CONCRETE TRUCK WASH OUT

2024

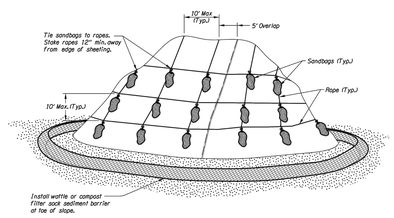
DATE	REVISION DESCRIPTION

CALC BOOK No. N/A | SDR DATE 20-JAN-2021 | **RD1070**

Effective Date: December 1, 2023 – May 31, 2024



TOP OF SLOPE TIE DOWN



STOCKPILE

SLOPES

NOTES:
1. Install plastic sheeting vertically down slope.
2. Install plastic sheeting so edges overlap and are shingled away from prevailing winds.

STAPLE DETAIL PIN STAPLE

The selection and use of this detail, while designed in accordance with generally accepted engineering principles and practices, is the sole responsibility of the user and should not be used without consulting a Registered Professional Engineer.

OREGON DEPARTMENT OF TRANSPORTATION TECHNICAL SERVICES DETAILS

PLASTIC SHEETING | DETAIL NO. DET6001

Effective Date: December 1, 2023 – May 31, 2024

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EXPIRES: 12-31-2024

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Issuance

IFB

Date

2.2.2024

Project Number

22006

Drawing Title

STANDARD DETAILS

Sheet No

C5.02

PANEL NAME: 2F
VOLT/PHASE: 208/120V, 3Ø
NUM. POLES: 42
AIC RATING: 42,000
NOTES:
REF. KEY NOTE #:

LOCATION: ELECTRICAL 48
FED FROM: TRANSFORMER TR-C
BREAKER MOUNTING: BOLTED
MAIN BREAKER AMPS: 400
BUS RATING AMPS: 400
SPD: YES

NOTES	LOAD DESCRIPTION	LOAD TYPE	VA L1	VA L2	VA L3	TRIP RATING AMPS	CIRCUIT NUMBER	CIRCUIT NUMBER	TRIP RATING AMPS	VA L1	VA L2	VA L3	LOAD TYPE	LOAD DESCRIPTION	NOTES
	SPARE		-			20	1	2	20	-				SPARE	
	SPARE			-		20	3	4	20		-			SPARE	
	SPARE				-	20	5	6	20			-		SPARE	
	SPARE		-			20	7	8	20	-				SPARE	
	SPARE			-		20	9	10	20		-			SPARE	
	SPARE				-	20	11	12	20			-		SPARE	
	SPARE		-			20	13	14	20	-				SPARE	
	SPARE			-		20	15	16	20		-			SPARE	
	SPARE				-	20	17	18	20			-		SPARE	
	SPARE		-			20	19	20	20	-				SPARE	
	SPARE			-		20	21	22	20		-			SPARE	
	SPARE				-	20	23	24	20			-		SPARE	
	SPARE		-			20	25	26	20	-				SPARE	
	SPARE			-		20	27	28	20		-			SPARE	
	SPARE				-	20	29	30	20			-		SPARE	
	SPARE		-			20	31	32	20	-				SPARE	
	SPARE			-		20	33	34	20		-			SPARE	
	SPARE				-	20	35	36	20			-		SPARE	
	SPARE		-			20	37	38		10			R		
	SPARE			-		20	39	40	30		10		R	SURGE PROTECTION DEVICE	
	SPARE				-	20	41	42				10	R		

TOTAL LOAD:	0	0	0	TOTAL LOAD:	10	10	10	
COMBINED LOAD:	10	10	10	CONNECTED LOAD:	30	DEMAND LOAD:	30	
						DEMAND AMPS:	0	

Load Type Key		Demand Factor	Connected Load	Demand Load	
R	General Purpose...	100% Firs...	30	30	
L	Lighting	125% Load	0	0	
M1	Largest Motor	125% Load	0	0	
M	Motor	100% Load	0	0	
A	Appliance	50% Load	0	0	
H	HVAC	75% Load	0	0	
K	Kitchen	XX% Load	0	0	XX - Units of...
E	Equipment	100% Load	0	0	
T	Transformer	100% Load	0	0	
W	Welder	100% Load	0	0	
RV	Recreational Vehicle	XX% Load	0	0	XX - RV Sites...

NOTES:

PANEL NAME: 2F1
VOLT/PHASE: 208/120V, 3Ø
NUM. POLES: 42
AIC RATING: 42,000
NOTES: FEED THROUGH LUGS
REF. KEY NOTE #:

LOCATION: ELECTRICAL 48
FED FROM: PANEL 2F
BREAKER MOUNTING: BOLTED
MAIN LUGS ONLY
BUS RATING AMPS: 400
SPD: YES

NOTES	LOAD DESCRIPTION	LOAD TYPE	VA L1	VA L2	VA L3	TRIP RATING AMPS	CIRCUIT NUMBER	CIRCUIT NUMBER	TRIP RATING AMPS	VA L1	VA L2	VA L3	LOAD TYPE	LOAD DESCRIPTION	NOTES
	SPARE		-			20	1	2	20	-				SPARE	
	SPARE			-		20	3	4	20		-			SPARE	
	SPARE				-	20	5	6	20			-		SPARE	
	SPARE		-			20	7	8	20	-				SPARE	
	SPARE			-		20	9	10	20		-			SPARE	
	SPARE				-	20	11	12	20			-		SPARE	
	SPARE		-			20	13	14	20	-				SPARE	
	SPARE			-		20	15	16	20		-			SPARE	
	SPARE				-	20	17	18	20			-		SPARE	
	SPARE		-			20	19	20	20	-				SPARE	
	SPARE			-		20	21	22	20		-			SPARE	
	SPARE				-	20	23	24	20			-		SPARE	
	SPARE		-			20	25	26	20	-				SPARE	
	SPARE			-		20	27	28	20		-			SPARE	
	SPARE				-	20	29	30	20			-		SPARE	
	SPARE		-			20	31	32	20	-				SPARE	
	SPARE			-		20	33	34	20		-			SPARE	
	SPARE				-	20	35	36	20			-		SPARE	
	SPARE		-			20	37	38		10			R		
	SPARE			-		20	39	40	30		10		R	SURGE PROTECTION DEVICE	
	SPARE				-	20	41	42				10	R		

TOTAL LOAD:	0	0	0	TOTAL LOAD:	10	10	10	
COMBINED LOAD:	10	10	10	CONNECTED LOAD:	30	DEMAND LOAD:	30	
						DEMAND AMPS:	0	

Load Type Key		Demand Factor	Connected Load	Demand Load	
R	General Purpose...	100% Firs...	30	30	
L	Lighting	125% Load	0	0	
M1	Largest Motor	125% Load	0	0	
M	Motor	100% Load	0	0	
A	Appliance	50% Load	0	0	
H	HVAC	75% Load	0	0	
K	Kitchen	XX% Load	0	0	XX - Units of...
E	Equipment	100% Load	0	0	
T	Transformer	100% Load	0	0	
W	Welder	100% Load	0	0	
RV	Recreational Vehicle	XX% Load	0	0	XX - RV Sites...

NOTES:

Soderstrom Architects

1200 NW Naito Parkway, Suite 410
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T 503-228-5617
F 503-227-8584

sdra.com

SOUTH SHORE CLASSROOM ADDITION
Greater Albany Public Schools
910 Bain St SE,
Albany, OR 97322

Project

Consultant

Landis Consulting
ENGINEERING SERVICES
Salem | Lake Oswego
503-584-1576
www.landisconsulting.com

Revisions

No.	Description	Date

Stamp

PRELIMINARY · PRELIMINARY · NOT FOR CONSTRUCTION · PRELIMINARY · PRELIMINARY ·

Issuance
LAND USE

Date
02.02.24

Project Number
22006

Drawing Title
PANEL SCHEDULES

Sheet No
E6.01

DATE 6/22/2022 3:00:51 PM
FILE PATH:G:\PROJECTS\319 - Soderstrom Architects\319106 - GAPS Takena & South Shore Addition\Design\(2) Drawings\Current\319106-South Shore

Exhibit C.1

Soderstrom Architects

April 12, 2024

Clare Kurth
Assistant Planner
City of Florence
250 Hwy 101
Florence, OR 97439

RE: Siuslaw Elementary School, Planning Hearing

Dear Clare:

FCC 10-37 Lighting: Is exterior lighting proposed for the exterior of this building?
If lighting is proposed please provide fixture details and a photometric plan for the proposed building site
If lighting on the exterior of this building is not proposed, please provide information on the existing site lighting

- All lighting will be on a photo cell to turn on at night only for security purposes. The exterior lighting is only above new mandoors on the covered play areas for security purposes. A photometric plan of the new exterior lights on the building has been provided. The intent is not to illuminate the area but simply the doors for security.

Rain Garden:
How many parking spaces will be eliminated? I see that 3 are being eliminated, but will the abutting parking space still be usable or will 4 spaces be eliminated?

- Three parking spaces and one loading area are being eliminated with the final total noted on sheet A1.00

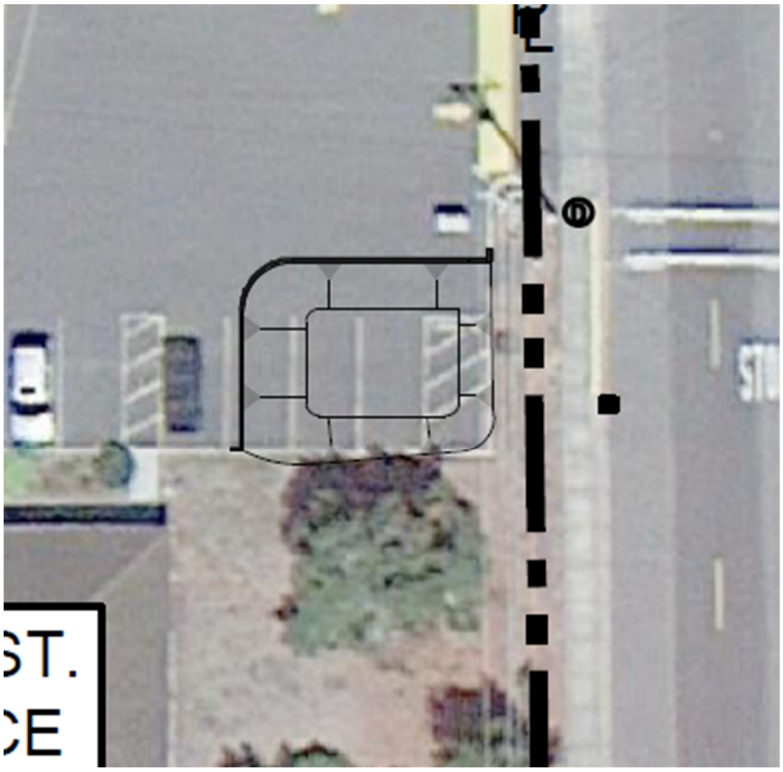
I see the curb proposed around the rain garden at 6''. Is there also a fence proposed? Just checking, if there is we will be requesting details on materials and height, if not that is fine too.

- There is not a new fence proposed.

Landscaping plan: Can you please provide a landscaping plan with proposed plants for the rain garden? I see on Sheet C1.03 the plan is to seed the area with grass. Because this area abuts the parking lot and a street evergreen screening will be required. I know this is new information since the rain garden was not proposed with the earlier plans.
FCC 10-3-8-D Parking spaces shall be located or screened so that headlights do not shine onto adjacent residential uses
FCC 10-34-3-7

10-34-3-7: Buffering and Screening. Buffering and screening are required under the conditions listed below. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with FCC 10-35-2-13. (See Section 10-34-5 for standards specific to fences and walls.)

A. Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a berm; an evergreen hedge; decorative wall (masonry or similar quality material) with openings; arcade; trellis; or similar partially opaque structure 3-4 feet in height shall be established between street and driveway or parking area. See also FCC 10-3-7-D for standards specific to parking lots adjacent to the street. The required screening shall have breaks or portals to allow visibility (natural surveillance) into the site and to allow pedestrian access to any adjoining walkways. Hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number, and spacing to provide year-round screening within five (5) years after planting. Vegetative ground cover is required on all surfaces between the wall/hedge and the street/driveway line.



- The existing fencing will be modified to include opaque slats to screen the neighbors.

FCC 10-6 Design Review: Because of the location of the building not all the design criteria for non-residential buildings will apply. Typically, we apply FCC 10-6-6-3 and FCC 10-6-6-7. Some of these items only apply if there is a civic space. I would recommend taking a look at the snip below. We are still working on whether we can work around this requirement, but if articulations were required, would covered doors, overhangs/awnings, changes in material patterns, or similar be possible to break up the long planes of this building.

C. Articulation and Detailing: All building elevations that orient to a street or civic space must have breaks in the wall plane (articulation) of not less than one break for every 30 feet of building length or width, as applicable, as follows:

1. Plans shall incorporate design features such as varying rooflines, offsets, balconies, projections (e.g., overhangs, porches, or similar features), recessed or covered entrances, window reveals, or similar elements that break up otherwise long, uninterrupted elevations. Such elements shall occur at a minimum interval of 30-40 feet. In addition, each floor shall contain at least two elements meeting the following criteria:

   a. Recess (e.g., porch, courtyard, entrance balcony, or similar feature) that has a minimum depth of 4 feet;

   b. Extension (e.g., floor area, porch, entrance, balcony, overhang, or similar feature) that projects a minimum of 2 feet and runs horizontally for a minimum length of 4 feet; and/or

   c. Offsets or breaks in roof elevation of 2 feet or greater in height.

   d. A "break," for the purposes of this subsection, is a change in wall plane of not less than 24 inches in depth. Breaks may include, but are not limited to, an offset, recess, window reveal, pilaster, frieze, pediment, cornice, parapet, gable, dormer, eave, coursing, canopy, awning, column, building base, balcony, permanent awning or canopy, marquee, or similar architectural feature.

- The play structure is behind the school and hidden from the neighbors to the south with the existing gym building so additional articulation will not be required.

What is the proposed color of the doors?

- The doors will be red to match the existing red doors on the elementary school

The Geotech report was completed for the first proposed location. There should be no issue since the slopes and soils are the same in both locations, but is the engineer willing to submit a brief statement that the recommendations have not changed with the revised location?

- The geotechnical engineer responded "We anticipate conditions at the relocated site will be effectively the same as the original site and our recommendations would be applicable for the revised location." The email response has been sent in an email.

Sincerely,

Marlene Gillis
President
Soderstrom Architects, Ltd.

Locke CIVIL & STRUCTURAL ENGINEERS inc
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Dallas, OR, 97338
503.364.8207 LockeEngineers.com

JOB NO. 22015-1

SODERSTROM ARCHITECTS

PROJECT SIUSLAW ES – COVERED PLAY STRUCTURE

CLIENT 31 JAN 2024 BY CF REVIEWER GL

Exhibit D

COMPUTATIONS FOR COVERED PLAY STRUCTURE

PROJECT INFORMATION

PROJECT: STORM WATER MANAGEMENT IMPROVEMENTS FOR PROPOSED COVERED PLAY STRUCTURE AT SIUSLAW ELEMENTARY SCHOOL
2221 OAK ST, FLORENCE, OREGON 97439

CLIENT: SODERSTROM ARCHITECTS
1331 NW LOVEJOY STREET ST #775
PORTLAND, OR 97209
CONTACT: CARSON SHIELDS
(e) CARSONS@SDRA.COM
(p) 503.595.1405

ENGINEER: LOCKE ENGINEERS
289 E ELLENDALE AVE, SUITE 703
DALLAS, OR 97338
CONTACT: GREG LOCKE, P.E.
(e) Greg@LockeEngineers.com
(p) 503.364.8207
OR
CHARLES FISHER
(e) Charles@LockeEngineers.com
(p) 503.364.8207

REGISTERED PROFESSIONAL ENGINEER
16,650
DIGITAL SIGNATURE
OREGON
JULY 20, 1993
GREG D. LOCKE

RENEWS: 12-31-2024

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PROJECT REQUIREMENTS

GIVEN: PROPOSED IS THE CONSTRUCTION OF A COVERED PLAY STRUCTURE. THIS STRUCTURE IS PLANNED TO BE LOCATED IN AN AREA CURRENTLY USED FOR OUTDOOR PLAY BY STUDENTS. LOCATION OF REQUIRED STORMWATER MANAGEMENT FACILITIES IN THIS GENERAL VACINITY IS NOT DESIRED. AN EXISTING PARKING AREA ON THE SITE OF A SIMILAR BUT LARGER AREA WILL BE RETROFIT TO MANAGE AN EQUAL AMOUNT OF STORMWATER RUNOFF.

CODE: CITY OF FLORENCE STORMWATER MANAGEMENT DESIGN MANUAL, OREGON PLUMBING SPECIALTY CODE.

REQ'D: DESIGN STORM WATER FLOW CONTROL AND TREATMENT SYSTEMS TO MEET CITY REQUIREMENTS.

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Storm Water Flow Control Narrative	*3*
Site Specific Rainfall and Soil Data	*3*
Infiltration Testing Summary	*3*
Post-developed Discharge Rate Calculation	*4*
Rain Garden Characteristics	*5*
Appendix A – Maps and Exhibits	*A1*
Appendix B – NRCS Soil Data	*B1*
Appendix C – Geotechnical Reports	*C1*
Appendix E – Operations and Maintenance Forms	*E1*
Appendix H – Hydrocad Model Output	*H1*

STORM WATER FLOW CONTROL NARRATIVE

RUNOFF FROM THE PARKING AREA PROPOSED FOR MANAGEMENT FLOWS TO AND THROUGH AN EXISTING CURB OPENING TO AN EXISTING AREA DRAIN JUST SOUTH OF THE 21ST STREET DRIVEWAY ONTO THE SITE. THIS FLOW WILL BE REDIRECTED INTO A NEW RAIN GARDEN BEING CONSTRUCTED IN THE ADJACENT AREA CURRENTLY OCCUPIED BY THREE PARKING SPACES AND AN UNUSED PARKING SPACE CUTOFF BY THE EXISTING MAILBOX. THIS RAIN GARDEN WILL BE CONSTRUCTED PER TYPICAL DETAIL SW-140, GROWING MEDIUM UTILIZED WILL CONFORM TO APPENDIX B, AND PLANTINGS WILL BE FROM APPENDIX G ALL FROM THE CITY OF FLORENCE STORMWATER MANAGEMENT DESIGN MANUAL.

EXISTING ASPHALT AND BASE ROCK WILL BE STRIPPED FROM THIS AREA AND EXCAVATION AT 3:1 HORIZONTAL TO VERTICAL WILL EXTEND INTO NATIVE SOIL ONTO WHICH 18” OF GROWING MEDIUM WILL BE PLACED. NO LINER OR DRAIN ROCK WILL BE REQUIRED AS THIS RAIN GARDEN WILL UTILIZE THE INFILTRATION CAPACITY OF THE EXISTING SOIL FOR THE DISPOSAL OF RUNOFF FROM THE 25-YR AND SMALLER STORMS IN ACCORDANCE WITH CITY OF FLORENCE FLOW CONTROL REGULATIONS. STORM EVENTS LARGER THAN THE 25-YR EVENT WILL OVERFLOW THROUGH AN OPENING IN THE CURB AND TO THE EXISTING AREA DRAIN SERVING THE AREA CURRENTLY. DISCHARGE FROM THIS AREA DRAIN IS CURRENTLY DIRECTLY CONNECTED TO THE ADJACENT 30” DIAMETER STORM DRAIN LINE BENEATH THE WEST OAK STREET SIDEWALK.

SITE SPECIFIC RAINFALL AND SOIL DATA

RAINFALL DEPTH

RAINFALL DEPTHS WERE TAKEN FROM CHAPTER 4.5 OF THE CITY OF FLORENCE STORMWATER MANAGEMENT DESIGN MANUAL.

2-YR 24-HOUR RAINFALL DEPTH = 3.46 INCHES
10-YR 24-HOUR RAINFALL DEPTH = 4.48 INCHES
25-YR 24-HOUR RAINFALL DEPTH = 5.06 INCHES
100-YR 24-HOUR RAINFALL DEPTH = 5.95 INCHES

RUNOFF CURVE NUMBER

THE EXISTING SITE SOIL PROFILE FALLS INTO HYDROLOGIC SOIL GROUP A. CURVE NUMBER / SOIL TYPE VALUES ARE FROM NRCS TR-55.

IMPERVIOUS CURVE NUMBER, cn = 98, (ROOFS, PAVEMENTS)

INFILTRATION TESTING SUMMARY

THREE INFILTRATION TESTS WERE PERFORMED AT A DEPTH OF 4’ BGS. THE TESTS YIELDED MEASURED INFILTRATION RATES OF 35, 30, AND 6 INCHES PER HOUR.

A 2:1 FACTOR OF SAFETY WAS APPLIED TO THE LOWEST VALUE. AN INFILTRATION RATE OF 3 INCHES PER HOUR WAS UTILIZED FOR DESIGN.

DETERMINE POST-DEVELOPED DISCHARGE RATE USING SANTA BARBARA URBAN HYDROGRAPH METHOD

AREA

POST-DEVELOPED AREA TRIBUTARY TO THE PROPOSED DETENTION SYSTEM WAS DETERMINED GRAPHICALLY USING TOPOGRAPHIC DATA OBTAINED FOR THIS PROJECT.

IMPERVIOUS AREA = 7,926 SF
TOTAL TRIBUTARY AREA = 7,926 SF, SEE APPENDIX A, MAPS AND EXHIBITS

TIME OF CONCENTRATION

POST-DEVELOPED TIME OF CONCENTRATION WAS CALCULATED USING TR-55 METHOD.

POST-DEV TIME OF CONCENTRATION = 1.4 MINUTES, (SEE ATTACHED WORKSHEET FOR SUBCATCHMENT NO. 0.1: Post-dev)

POST-DEVELOPED PEAK DISCHARGE RATE

(SEE ATTACHED HYDROGRAPH REPORT SUBCATCHMENT NO. 0.1: Post-dev)

2-YR PRE-DEV PEAK DISCHARGE RATE = 0.150 CFS

10-YR PRE-DEV PEAK DISCHARGE RATE = 0.196 CFS

25-YR PRE-DEV PEAK DISCHARGE RATE = 0.222 CFS

100-YR PRE-DEV PEAK DISCHARGE RATE = 0.261 CFS

Locke CIVIL & STRUCTURAL ENGINEERS inc
289 E Ellendale Ave, Suite 703
Dallas, OR, 97338
503.364.8207 LockeEngineers.com

DETERMINE REQUIRED DETENTION VOLUME, AND CHARACTERISTICS OF RAIN GARDEN FOR CONSTRUCTION

REQUIRED RAIN GARDEN VOLUME

THE HYDROGRAPH FOR THE POST DEVELOPED AREA WAS ROUTED THROUGH THE PROPOSED RAIN GARDEN STAGE-STORAGE MODEL. RAIN GARDEN CONFIGURATION WAS ADJUSTED SUCH THAT THE FACTORED INFILTRATION RATES COMPLETELY DISPOSED OF FLOWS RESULTING FROM THE 25-YR AND SMALLER STORMS, SEE APPENDIX A – MAPS AND EXHIBITS AND APPENDIX H – HYDROCAD MODEL OUTPUT.

EMERGENCY OVERFLOW PATH

THE 100-YR MODEL STORM WAS ALSO ROUTED THROUGH THE PROPOSED RAIN GARDEN STAGE-STORAGE MODEL. THE OVERFLOW CURB OPENING WAS MODELED AS BROAD-CRESTED WEIR AND HAS BEEN SHOWN TO FULLY PASS THE 100-YR PEAK THROUGH THE EMERGENCY OUTLET WITHOUT OVERTOPPING THE RAIN GARDEN.

MAXIMUM NORMAL DETENTION VOLUME REQUIRED (25-YR) = 718 CUFT

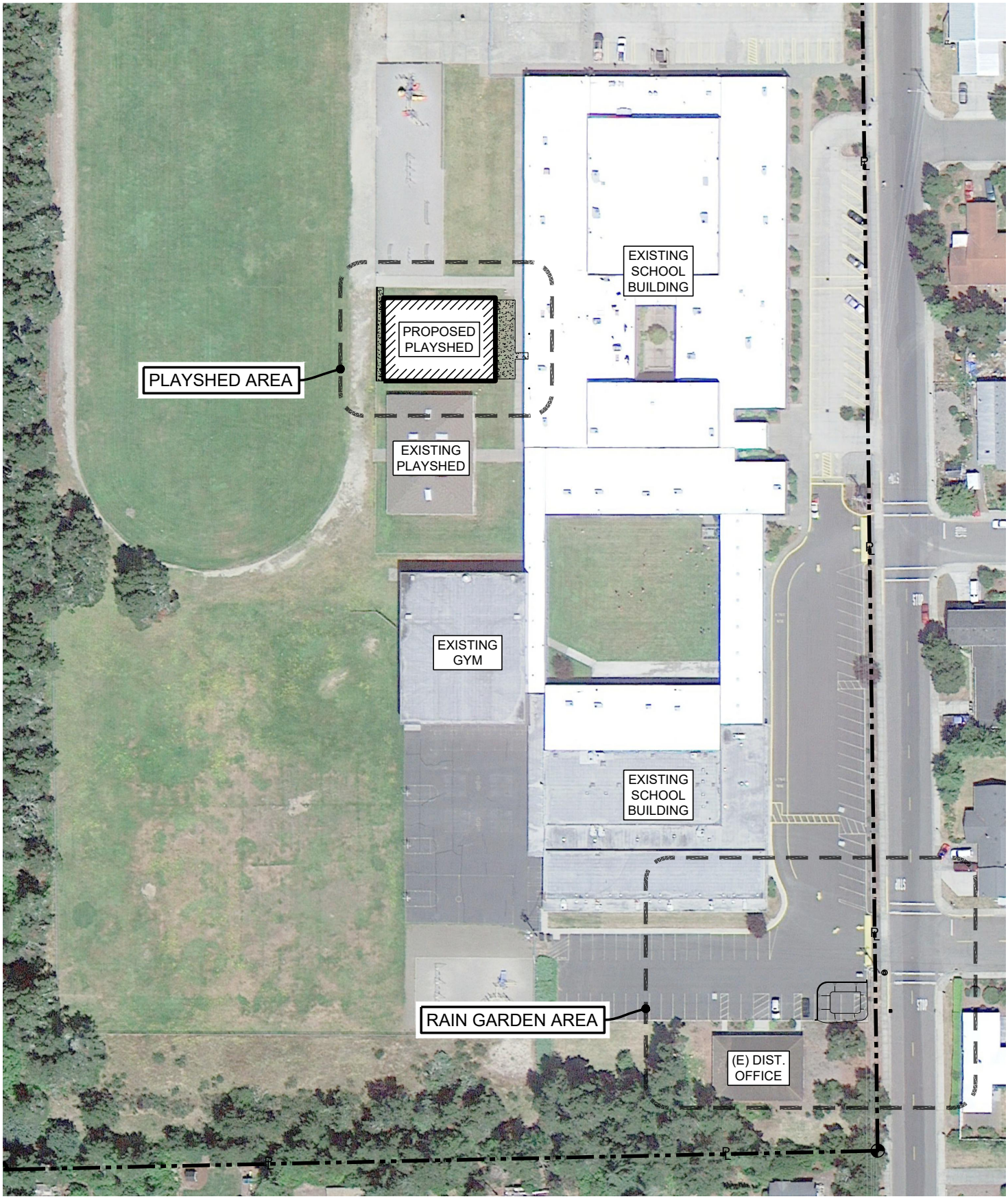
MAXIMUM NORMAL DETENTION WATER SURFACE ELEVATION = 97.81’

MINIMUM TOP OF POND ELEVATION = 98.0’

OVERFLOW CONDITION DETENTION VOLUME REQUIRED (100-YR) = 880 CUFT

OVERFLOW CONDITION MAXIMUM DETENTION WATER SURFACE ELEVATION = 98.03’

Appendix A – Maps and Exhibits

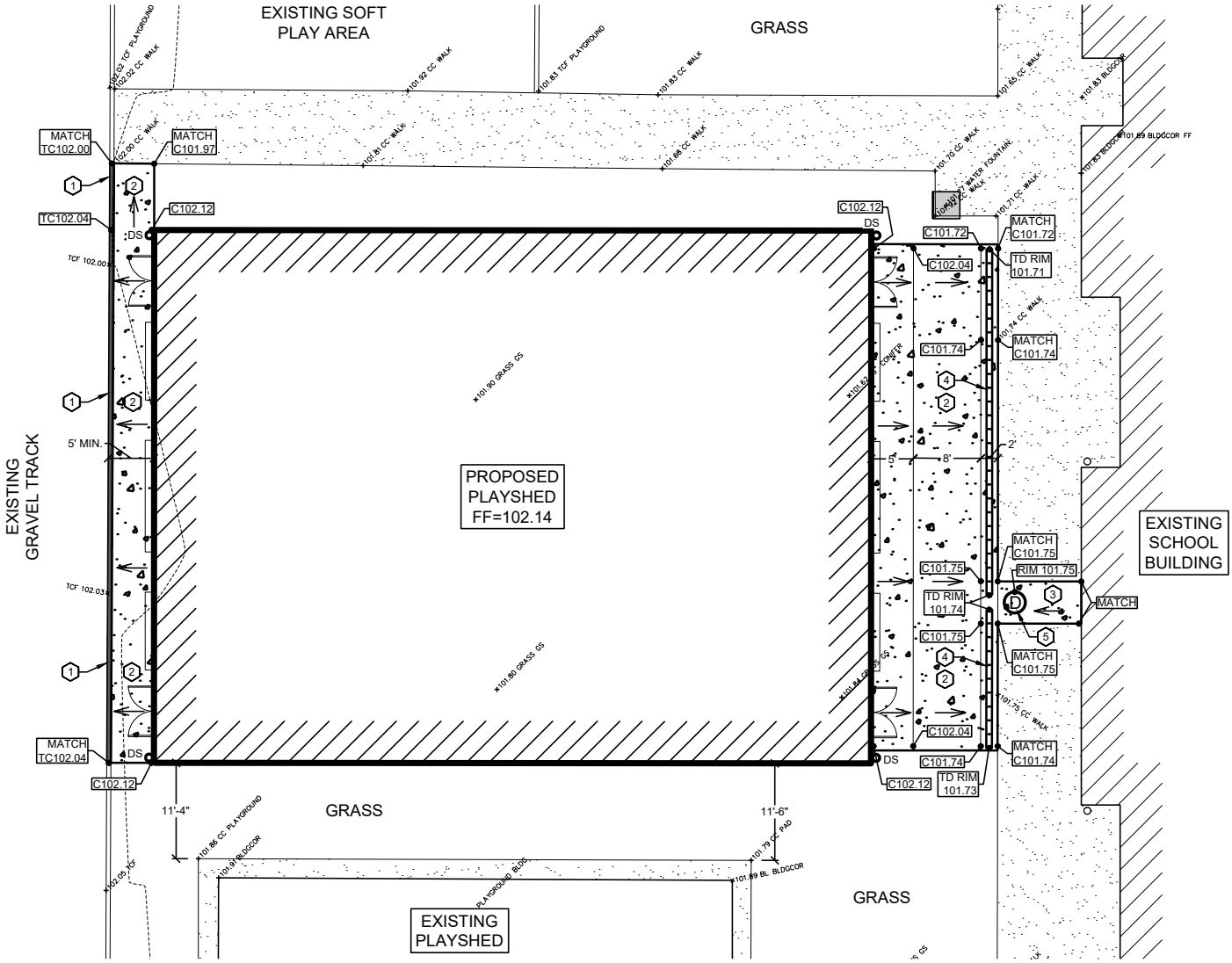


CIVIL KEY PLAN

1" = 100'-0"

0' 50' 100'

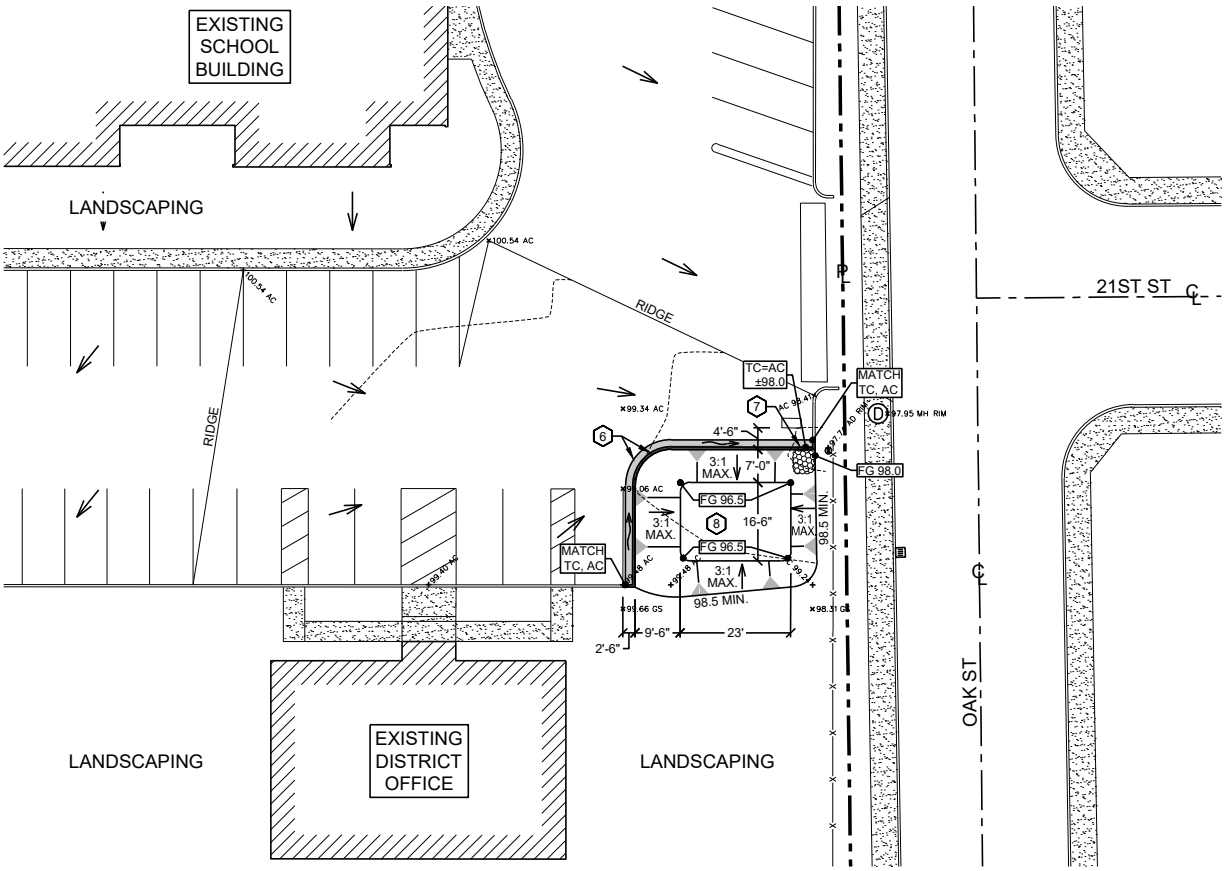
0" 1" 2"



BUILDING AREA GRADING PLAN

1" = 20'-0"

0' 10' 20'
0" 1" 2"

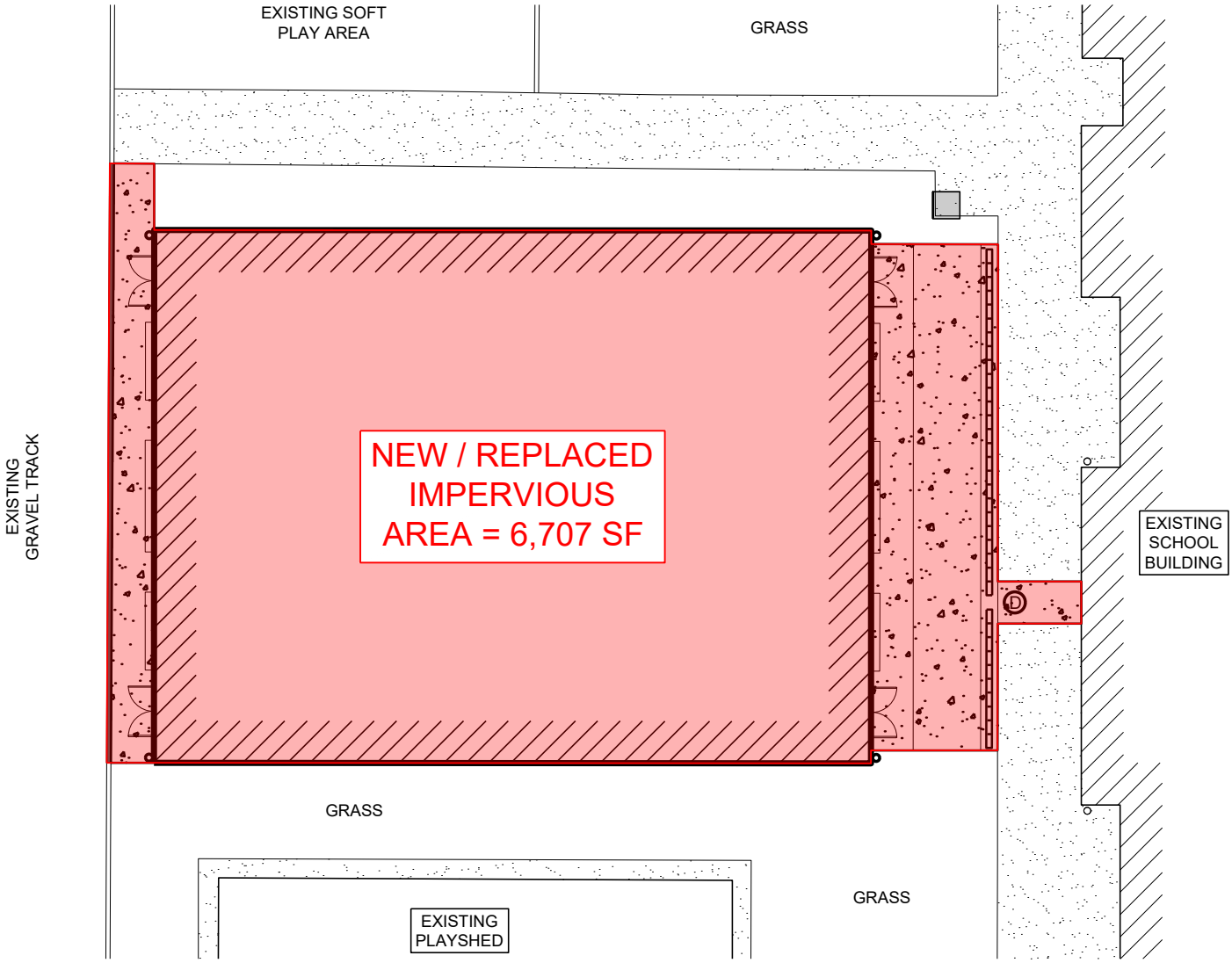


RAIN GARDEN AREA GRADING PLAN

1" = 40'-0"

0' 20' 40'

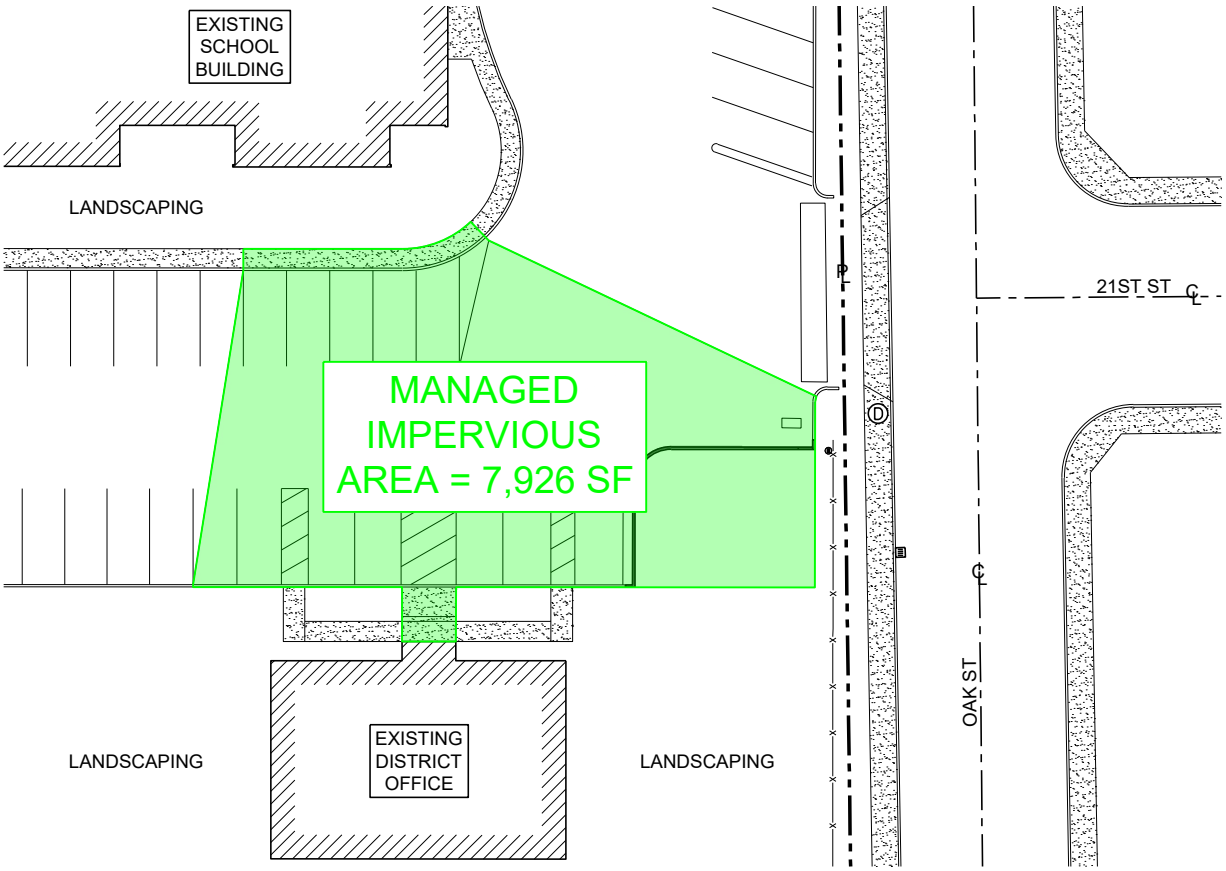
0" 1" 2"



BUILDING AREA GRADING PLAN

1" = 20'-0"

0' 10' 20'
0" 1" 2"

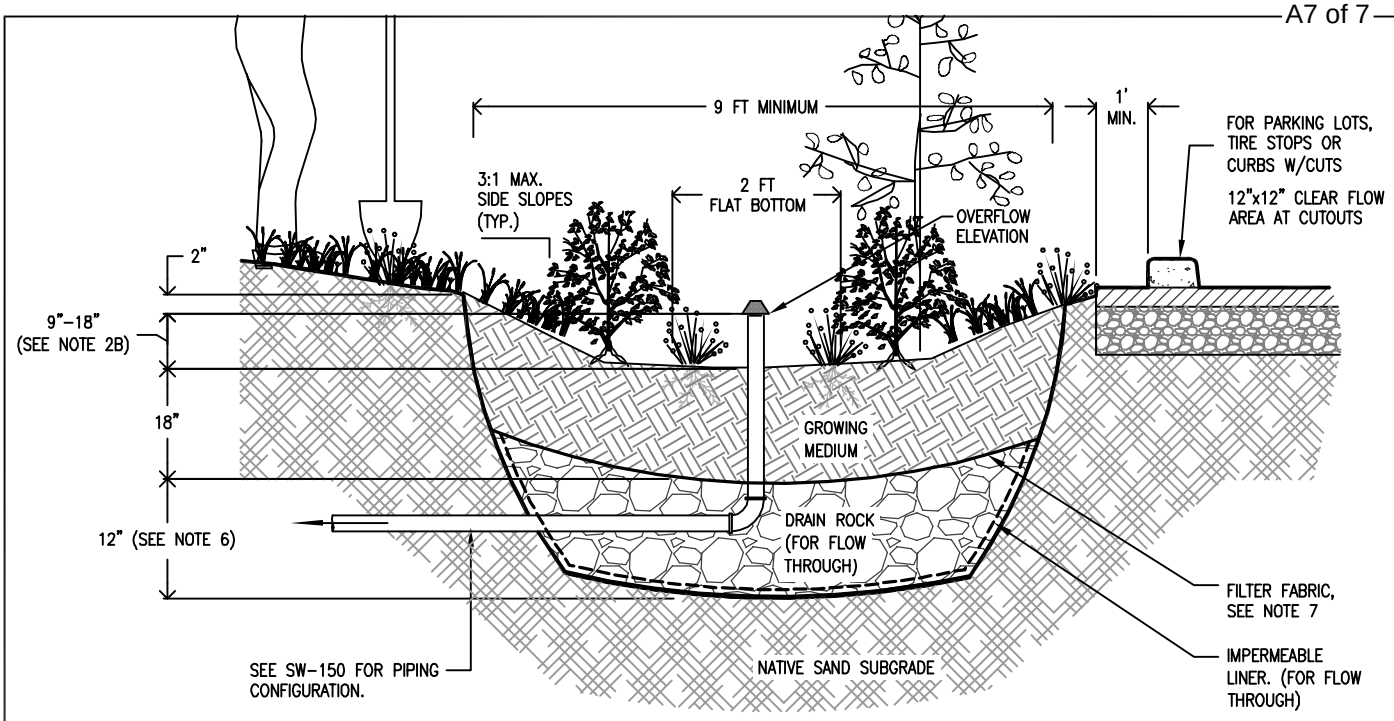


RAIN GARDEN AREA GRADING PLAN

1" = 40'-0"

0' 20' 40'

0" 1" 2"



1. Provide protection from all vehicle traffic, equipment staging, and foot traffic in proposed infiltration areas prior to, during, and after construction.

2. Dimensions:
   a. Width of basin: 9' minimum.
   b. Depth of basin (from top of growing medium to overflow elevation); Simplified: 12", Presumptive: 9"-18".
   c. Flat bottom width: 2' min.
   d. Side slopes of basin: 3:1 maximum.

3. Setbacks (from midpoint of facility):
   a. Infiltration basins must be 10' from foundations and 5' from property lines.
   b. Flow-through swales must be lined with connection to approved discharge point according to SWDM Section 2.1.

4. Overflow:
   a. Overflow required for Simplified Approach.
   b. Inlet elevation must allow for 2" of freeboard, minimum.
   c. Protect from debris and sediment with strainer or grate.

5. Piping: shall be ABS Sch.40, cast iron, or PVC Sch.40. 3" pipe required for up to 1,500 sq ft of impervious area, otherwise 4" min. Piping must have 1% grade and follow the Uniform Plumbing Code.

6. Drain rock:
   a. None required for infiltration basin
   b. Size for flow-through basin: ¾" washed

7. Separation between drain rock and growing medium: Use filter fabric (see SWDM Exhibit 2-5).

8. Growing medium:
   a. 18" minimum
   b. See Appendix B for specification.

9. Vegetation: Follow landscape plans otherwise refer to plant list in SWDM Appendix G. Minimum container size is 1 gallon. # of plantings per 100sf of facility area):
   a. Zone A (wet): 115 herbaceous plants OR 100 herbaceous plants and 4 shrubs
   b. Zone B (moderate to dry): 1 tree AND 3 large shrubs AND 4 medium to small shrubs.

   The delineation between Zone A and B shall be either at the outlet elevation or the check dam elevation, whichever is lowest.

10. Install washed pea gravel or river rock to transition from inlets and splash pad to growing medium.

11. Inspections: Call City of Florence Public Works (541) 997-4106 to schedule appropriate inspections.

- DRAWING NOT TO SCALE -

STORMWATER MANAGEMENT MANUAL TYPICAL DETAILS

CITY OF FLORENCE
PUBLIC WORKS DEPARTMENT
989 Spruce Street
Florence, OR 97439
Phone: 541-997-4106

DATE: 11-30-10

- Simplified / Presumptive Design Approach -

Rain Garden

NUMBER

SW-140

Appendix B – NRCS Soil Data

United States Department of Agriculture

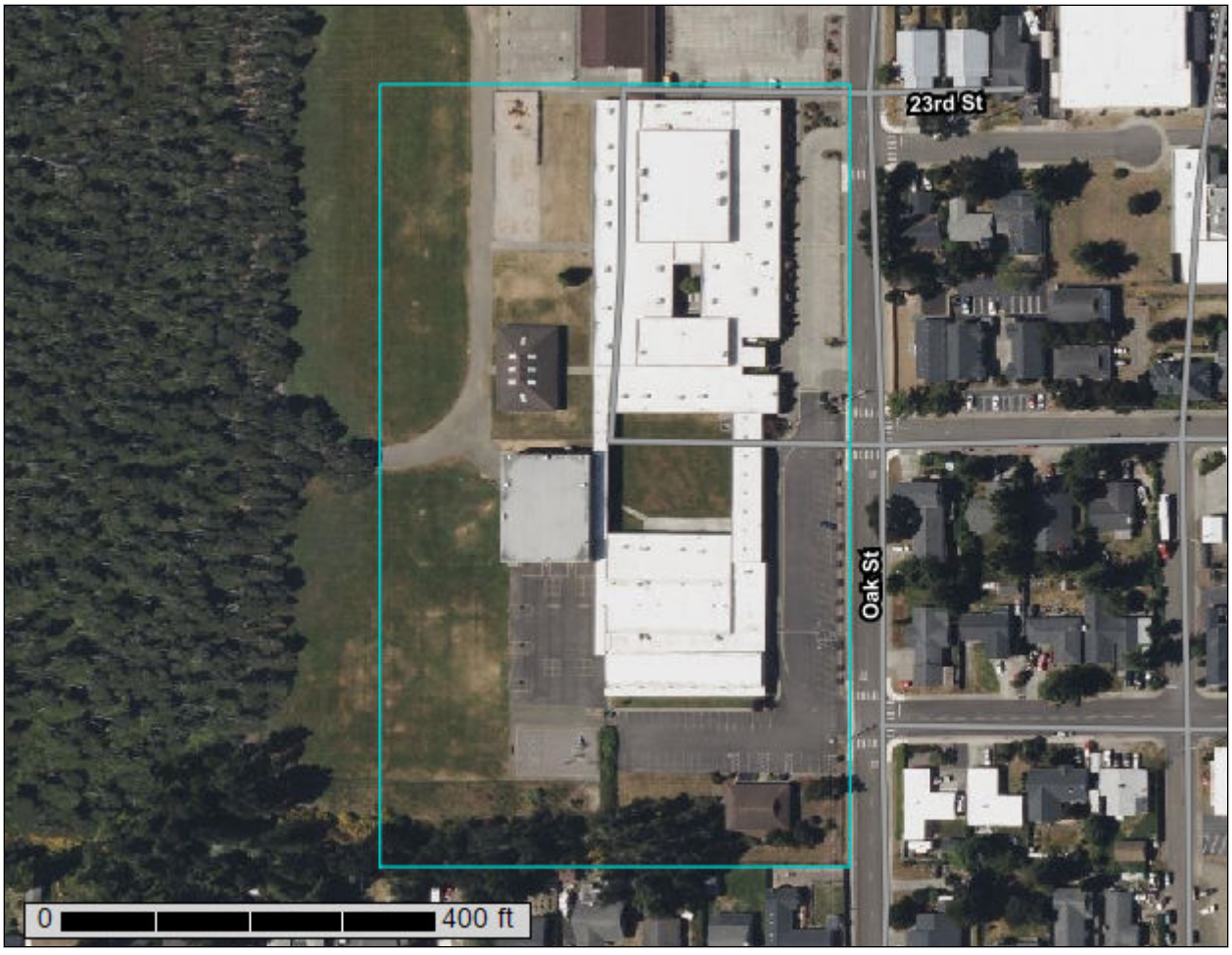
NRCS

Natural Resources Conservation Service

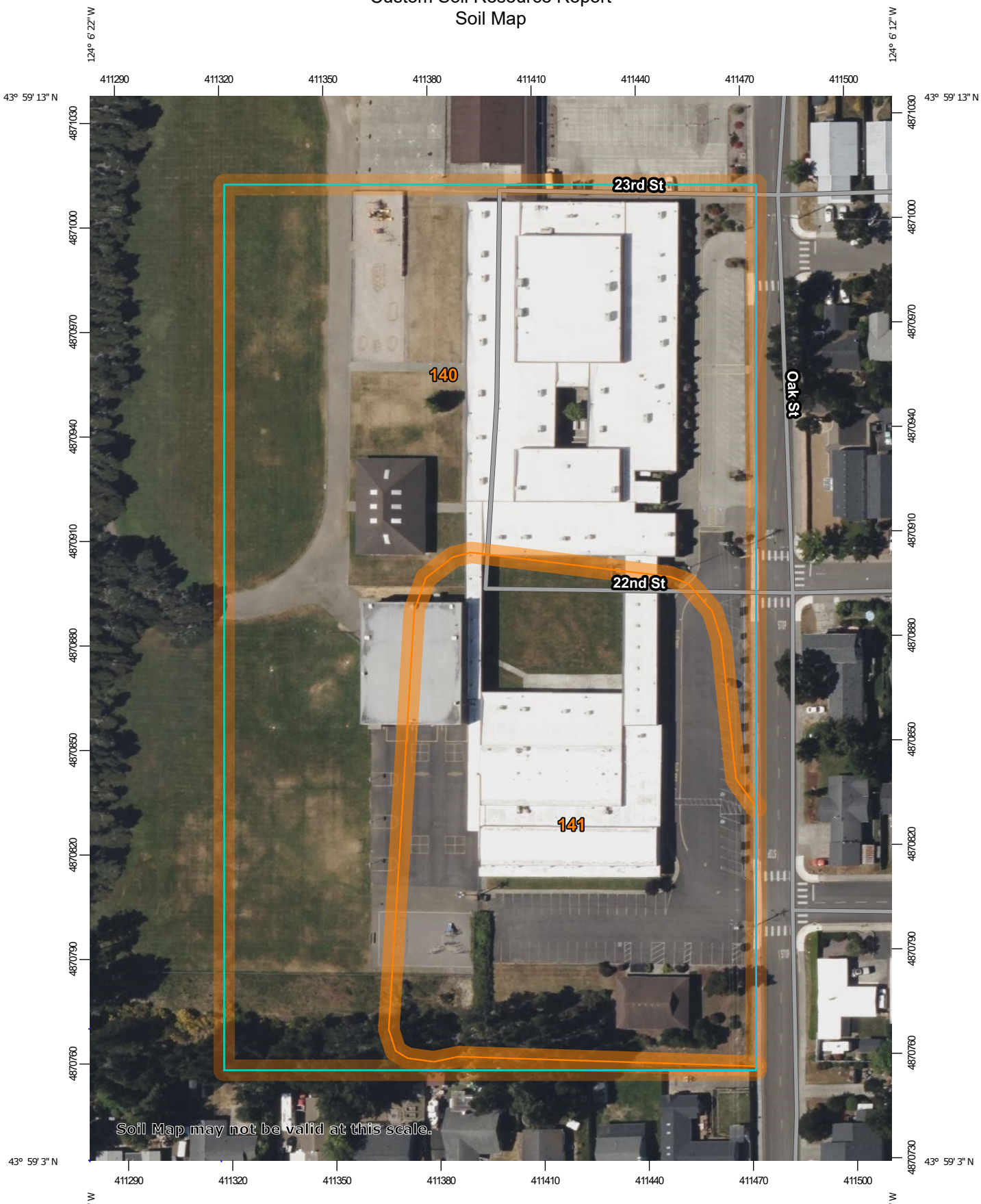
A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Lane County Area, Oregon

Siuslaw Elementary School



January 30, 2024



Map Scale: 1:1,490 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 20 40 80 120

Feet
0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lane County Area, Oregon
Survey Area Data: Version 22, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 19, 2023—Jun 3, 2023

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
140	Yaquina loamy fine sand	6.2	64.5%
141	Yaquina-Urban land complex	3.4	35.5%
Totals for Area of Interest		**9.7**	**100.0%**

Lane County Area, Oregon

140—Yaquina loamy fine sand

Map Unit Setting

National map unit symbol: 2359
Elevation: 20 to 130 feet
Mean annual precipitation: 70 to 80 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Yaquina and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yaquina

Setting

Landform: Dune slacks
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sand of mixed origin

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 9 inches: loamy fine sand
H2 - 9 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: About 0 to 24 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water supply, 0 to 60 inches: Low (about 4.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Ecological site: F004AB202OR - Dune Forest
Forage suitability group: Somewhat Poorly Drained (G004AY017OR)
Other vegetative classification: Somewhat Poorly Drained (G004AY017OR)
Hydric soil rating: Yes

141—Yaquina-Urban land complex

Map Unit Setting

National map unit symbol: 235b
Elevation: 20 to 130 feet
Mean annual precipitation: 70 to 80 inches
Mean annual air temperature: 50 to 52 degrees F
Frost-free period: 180 to 210 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Yaquina and similar soils: 50 percent
Urban land: 40 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yaquina

Setting

Landform: Dune slacks
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Eolian sand of mixed origin

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
H1 - 1 to 9 inches: loamy fine sand
H2 - 9 to 30 inches: fine sand
H3 - 30 to 60 inches: fine sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
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Ecological site: F004AB202OR - Dune Forest
Forage suitability group: Somewhat Poorly Drained (G004AY017OR)
Other vegetative classification: Somewhat Poorly Drained (G004AY017OR)
Hydric soil rating: Yes

Appendix C – Geotechnical Reports

CENTRAL
GEOTECHNICAL SERVICES

10240 SW Nimbus Avenue
Suite L6
Portland, Oregon 97223
503.616.9419
www.centralgeotech.com

June 7, 2023

Siuslaw School District
c/o Soderstrom Architects
1331 NW Lovejoy Street #755
Portland, Oregon 97209

Attention: Carson Shields

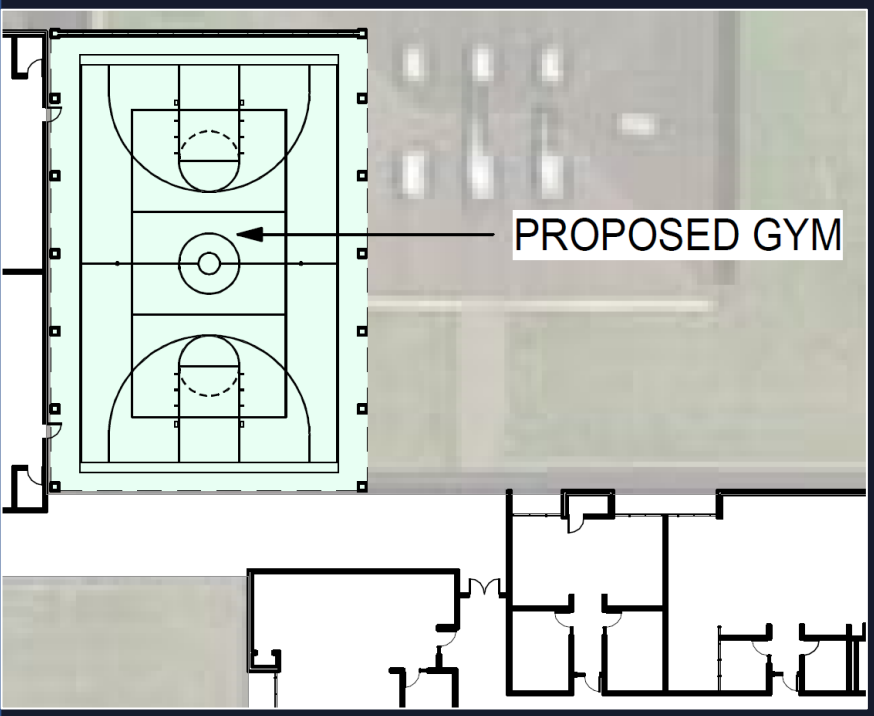
Re: Report of Geotechnical Engineering Services:
CGS Project: Soderstrom-1-01
Siuslaw School District – Covered Play Structure
Florence, Oregon

Central Geotechnical Services, LLC (CGS) is pleased to submit this report of geotechnical engineering services for the proposed Siuslaw School District (SSD) covered play structure project in Florence, Oregon. The report was prepared for conformance with the signed contract dated April 20, 2023. We appreciate the opportunity to be of service to Siuslaw School District and Soderstrom Architects. Please feel free to call our office with questions about this report.

Respectfully,

Central Geotechnical Services, LLC

Julio Vela, PhD, P.E., G.E.
Principal Engineer



Report of Geotechnical Engineering Services:

Siuslaw School District
Covered Play Structure

CGS Project: Soderstrom-1-01

Prepared For:

Siuslaw School District
c/o Soderstrom Architects
1331 NW Lovejoy Street #755
Portland, Oregon 97209

June 3, 2023

Submitted by:

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1.0 INTRODUCTION

Central Geotechnical Services, LLC (CGS) is pleased to submit this geotechnical engineering report to Siuslaw School District and Soderstrom Architects (Soderstrom) for the proposed Siuslaw Elementary School Covered Play Structure project located at 2221 Oak Street in Florence, Oregon. The project site is generally partially developed with grassy, landscaped areas and underground utilities for the existing school structures on the north and south margins of the proposed development area. The location of the site is shown in the Vicinity Map, Figure 1.

Our understanding of the project was developed from discussions with, and information provided to us by Carson Shields of Soderstrom , aerial images of the area from Google Earth, a preliminary site plane prepare by Soderstrom titled "*Proposed Gym Location"* dated January 5, 2023, and geologic maps and geotechnical reports for the area in our files. Based on information provided to us, we understand that project development consists of construction of a new pre-engineered covered play structure (proposed gym) open in the direction of the existing building.

Based on subsurface soils encountered at the site, initial discussions with the project team indicated that site structures would likely require foundation support on drilled shaft or mat foundations. Based on project discussions with Soderstrom and the Siuslaw School District, we understand that the proposed structures will be designed for life safety. As such, the building may be unsuitable for service following a design level event. The recommendations presented herein are based on team discussions and potential design for life safety design criteria.

2.0 PURPOSE AND SCOPE OF WORK

The purpose of our services was to provide geotechnical design and construction recommendations for site development and to provide parameters for the design of stormwater facilities. Our scope of services was provided in general accordance with our proposal titled "Proposal for Geotechnical Engineering Design Services," dated April 20, 2023, and authorized April 20, 2023.

3.0 SITE CONDITIONS

3.1. Site Geology

The geology of the site is mapped by Schlicker et al. (1974) as mantled by quaternary surficial beach deposits within a deflation plain, which forms as a result of wind eroding dune deposits to the summer water table elevation. They describe this unit as consisting of deposits of clean fine sand with local deposits of silt clay and peat or buried soils horizons. Based on the subsurface conditions observed in our borings, near surface soil conditions are generally consistent with the published geologic mapping.

3.2. Surface Conditions

The site comprises approximately 5,500 square feet of open grassy areas partially developed with underground utilities and landscaping along the west edge of Siuslaw Elementary School. The site is located between an existing gym to the south and a covered play structure to the north near the southeast corner of the track and

field area. Site vegetation generally consists of short, landscaped grasses and the topography is generally flat as a result of site development.

3.3. Subsurface Conditions

Subsurface conditions at the site were explored by drilling one geotechnical bore (B-1) to a total depth of 81.5 feet below ground surface (bgs) as discussed in the proposal to extend a single boring to deeper depths if loose sand soils were encountered. In addition, we completed field Infiltration testing at three locations (INF-1 through INF-3) at a depth of approximately 4 feet bgs. Field work was completed on May 5, 2023. Approximate locations of the explorations completed at the site are presented in Figure 2. The logs of CGS's explorations completed for this study are presented in Appendix A.

Soil samples obtained during excavation were taken to CGS's laboratory for further evaluation. Selected samples were tested for determination of moisture content. A description of the laboratory testing and the test results are presented in Appendix A.

3.3.1. Groundwater Conditions

Groundwater was observed at a depth of approximately 7.5 feet bgs in CG-1 and CG-3. Based on observations on site and data from nearby sites, groundwater may be present at shallower depths in a perched condition on harder underlying layers as it moves downslope during wet times of the year or during extended periods of wet weather. Groundwater conditions at the site are expected to vary seasonally due to rainfall events and other factors not observed in our explorations.

3.3.2. Soil Conditions

Subsurface conditions generally consist of a 6-inch layer of dark brown, medium stiff to stiff sandy silt (ML) topsoil underlain by poorly graded, very loose to very dense at depth fine sand that was observed to extend to the maximum depths of explorations.

4.0 INFILTRATION TESTING

As requested by the project team, we conducted three on-site infiltration tests to assist in the evaluation of the site for stormwater design at the exploration locations as shown in Figure 2 at a depth of 4 feet bgs. On-site testing was conducted in general accordance with the professional encased falling head procedure. Our general procedure included drilling an 8-inch diameter hole to insert a 6-inch diameter polyvinyl chloride (PVC) pipe for the encased falling head procedure at a depth of 4 feet bgs.

The encased PVC pipe was filled with clean water to approximately 1 foot above the soil at the bottom of the drilled hole. The initial fill of water did not drain into the soil within 10 minutes, so the water level was maintained, and the soil allowed to saturate for 2 to 4 hours at the test location. The levels were checked, and the test pits were refilled to 12 inches above the soil in the bottom of the test pits at the end of each hour. The drop-in water level was measured during three, hour-long iterations at both locations. Field test results are summarized in Table 1.

Field-measured rates represent a relatively short-term infiltration rate, and factors of safety have not been applied for the type of infiltration system being considered, or for variability that may be present across large

areas in the on-site soil. In our opinion, and consistent with the state of the practice, correction factors should be applied to this measured rate to reflect the localized area of testing relative to the field sizes. Additionally, based on our experience with similar soils, the results presented in Table 1 for IT-1 and IT-3 are generally larger than what is typically observed and indicate large infiltration rate variability across the site. If these rates are used for design, we recommend additional field testing at the location of proposed infiltration facilities during facility construction to verify the design rates.

Table 1. Field Measured Infiltration results

Infiltration Test No.	Location	Depth (feet)	USCS Material Type	Field Measured Infiltration Rate[(1)] (in/hr)
INF-1	See Site Plan	4	SP	35
INF-2	See Site Plan	4	SP	30
INF-3	See Site Plan	4	SP	6

Notes:

1. Appropriate factors should be applied to the field-measured infiltration rate, based on the design methodology and specify system used.

USCS = Unified Soil Classification System

In/hr = inches per hour

Appropriate correction factors should also be applied by the project civil engineer to account for long-term infiltration parameters. From a geotechnical perspective, we recommend a factor of safety (correction factor) of at least 2 be applied to the field infiltration values to account for potential soil variability with depth and location within the area tested. In addition, the stormwater system design engineer should determine and apply appropriate remaining correction factor values, or factors of safety, to account for repeated wetting and drying that occur in this area, degree of in-system filtration, frequency and type of system maintenance, vegetation, potential for siltation and bio-fouling, etc., as well as system design correction factors for overflow or redundancy, and base and facility size.

The actual depths, lateral extent and estimated infiltration rates can vary from the values presented above. Field testing/confirmation during construction is often required in large or long systems or other situations where soil conditions may vary within the area where the system is constructed. The results of this field testing might necessitate that the infiltration locations be modified to achieve the design infiltration rate.

The infiltration flow rate of a focused stormwater system like a drywell or small infiltration box or pond typically diminishes over time as suspended solids and precipitates in the stormwater further clog the void spaces between the soil particles or cake on the infiltration surface or in the engineered media. The serviceable life of an infiltration media in a stormwater system can be extended by pre-filtering or with on-going accessible maintenance. Eventually, most systems will fail and will need to be replaced or have media regenerated or replaced.

We recommend that infiltration systems include an overflow that is connected to a suitable discharge point. Also, infiltration systems can cause localized, high groundwater levels and should not be located near basement walls, retaining walls or other embedded structures unless these are specifically designed to account for the resulting hydrostatic pressure. Infiltration locations should not be located on sloping ground, unless it is approved by a geotechnical engineer, and should not be infiltrated at a location that allows for flow to travel

laterally toward a slope face, such as a mounded water condition or too close to a slope face that could cause instability of the slope.

4.1. Suitability of Infiltration System

Successful design and implementation of stormwater infiltration systems and whether a system is suitable for development depends on several site-specific factors. Stormwater infiltration systems are generally best suited for sites having sandy or gravelly soil with saturated hydraulic conductivities greater than 2 in/hr.

Local groundwater conditions can significantly affect the capacity to infiltrate from a stormwater system. Sites with shallow groundwater can result in groundwater mounding. A hydraulic gradient that reaches the level of water in the soil immediately drops to zero and local groundwater will rise and mound and the infiltration rate slows dramatically, resulting in overflows or system flooding (failure). Groundwater mounding can also negatively impact structures, slopes or other areas adjacent to the stormwater infiltration facility. Typically, we do not recommend using infiltration systems where groundwater is less than 10 feet below the bottom of the proposed system unless the host soil is very permeable and consistently graded and will not cause mounding. Some jurisdictions require a minimum of 5 or 10 feet between high groundwater conditions and the bottom of proposed facilities. Depending on the size of the project, adjacent features such as streams that can source water to a system instead of allowing it to drain and on-site soil infiltration capacities, there may be conditions where even a 10-foot separation between the level of groundwater and the base of the infiltration system may not be sufficient.

Considering the potential for shallow groundwater, on-site infiltration will likely be minimal during wet times of the year and infiltration may cause mounding of groundwater if shallow groundwater is present in the area. We do not recommend stormwater infiltration be used as the exclusive method of stormwater management and recommend an overflow be a part of system design.

5.0 CONCLUSIONS

Based on our explorations, testing, and analyses, it is our opinion that the site is suitable for the proposed project from a geotechnical standpoint, provided the recommendations in this report are incorporated into the project design and implemented during construction. We offer the following conclusions regarding geotechnical engineering design and construction at the site.

- The proposed structure can be satisfactorily founded on drilled shafts or mat foundations provided that they can be designed for life safety and in accordance with the recommendations in this report. Based on our experience, mat foundations may be more economically feasible than drilled shafts because of the required embedment depth of shafts resulting from the depth of liquefaction susceptible soils and the relatively large construction footprint.
- Groundwater was observed during our explorations at approximately 7.5-ft bgs. Based on our experience and our observations, shallower groundwater may be present during periods of persistent rainfall. Significant dewatering using wells or well points could be required where excavations extend beneath the groundwater table depending on the subsurface conditions at the time of construction. If wells or well points are required, they should be designed by a registered professional engineer or hydrogeologist and submitted to the project team for approval prior to implementation.

- Existing site structures and structural features designated for removal from within the new facility footprint should be demolished and completely removed from the site.
- Existing utilities below proposed structural areas should be relocated, or abandoned and grouted full if left in place.
- Surface conditions at the site consist primarily of vegetated areas covered with grasses. Therefore, clearing and stripping will be required. We anticipate a stripping depth of approximately 4 inches bgs to remove the topsoil layer. While not anticipated, grubbing and deeper excavations up to several feet will be required to remove the root zones of shrubs and trees if encountered. Cleared, stripped and grubbed materials should be hauled off-site and properly disposed unless otherwise allowed by the project specifications for other uses such as landscaping, stockpiling or on-site burning.
- The soils at the site below the topsoil zone are suitable to use as structural fill if they are properly moisture conditioned and compacted. Site soils are generally not considered to be moisture sensitive based on our subsurface observations. However, conditions not directly observed in our explorations such as localized deposits of fine-grained material, could result in sandy soils becoming moisture sensitive at relatively low fines contents (approximately 10 to 15 percent). If moisture sensitive soils are encountered during construction, wet weather construction practices will be required over exposed native soils and to protect exposed subgrades.
- Assuming that liquefaction induced settlement of site slabs is tolerable, slabs on grade for proposed structure can be satisfactorily supported on Aggregate Base that is founded on the firm native soils or on structural fill that extends to the firm native soils. We recommend that slabs-on-grade be provided with proper moisture control by constructing the aggregate base as a capillary break and providing a vapor barrier for moisture-sensitive applications.
- Based on the assumed design loads described in the “Introduction” section of this report, we estimate total static settlements of floor slabs will be less than 1 inch for floor slabs on grade constructed as recommended. If larger structural loads are anticipated, we should review and reassess the estimated settlement.
- The site is generally subject to liquefaction of subsurface soils during the design seismic event. We estimate that could experience approximately 4- to 7-inches of liquefaction-induced ground settlement depending on the elevation of the groundwater table at the time of the design event.
- Soil caving within drilled shafts is anticipated during construction. Drilled shaft contractors should be prepared to construct shafts in the wet at all locations to prevent potential collapsing or heaving of soils into the shaft, and to limit potential settlement of nearby structures.
- Mat foundations are suitable to support foundation design loads for the project. Shallow groundwater at and near the site may necessitate excavations for mat foundations to be completed during the driest times of the year.

6.0 EARTHWORK RECOMMENDATIONS

6.1. Site Preparation and Removal of Existing Fill

In general, initial site preparation and primary earthwork operations will include stripping and grubbing of upper organics minor grading to create level working surfaces and raise site grades in building areas, excavating and filling for foundations, and utilities, recompacting (dry weather) or replacing (wet weather) near surface

disturbed soils, demolition of existing structural features, fine grading to establish final grades, and relocating live utilities.

All existing utilities in the proposed earthwork construction areas should be identified prior to excavation. Live utility lines beneath proposed structures should be completely removed or filled with grout to reduce potential settlement of new structures. Soft or loose soil encountered in utility line excavations should be removed and replaced with structural fill where it is located within structural areas.

Debris materials generated during demolition of existing improvements or relocation of utilities should be transported off site for disposal. Existing voids and new depressions created during site preparation, and resulting from removal of existing utilities, or other subsurface elements, should be cleaned of loose soil or debris down to firm soil and backfilled with compacted structural fill. Disturbance to a greater depth should be expected if site preparation and earthwork are conducted during period of wet weather.

6.2. Demolition

All structures and belowground structures to be demolished should be completely removed from proposed structural areas and for a margin of at least 3 feet around proposed structural areas. Proposed structural areas are areas where new structures will be built, including the proposed covered play structure. Existing utilities that will be abandoned on site should be identified prior to construction. Abandoned utility lines should be completely removed or filled with grout if abandoned and left in place to reduce potential settlement or caving in the future. Materials generated during demolition should be transported off site and properly disposed.

6.3. Clearing and Grubbing

Site clearing will be required to remove site vegetation, including grass and weeds that are designated for removal. While not anticipated based on our subsurface exploration, excavations up to several feet may be required to remove the more fully-developed root zones. The area does not contain areas of of shrubs and trees that would require deeper excavations, up to 6 or 8 feet to remove if present. If encountered, roots larger than ½ inch in diameter should be removed. Excavations to remove root zones should be done with a smooth bucket to minimize subgrade disturbance. Portions of the site are heavily vegetated and previously buried roots are also expected, even in the current grassy areas of the site. Grubbed materials should be hauled off site and properly disposed of unless otherwise allowed by the project specifications for other uses such as landscaping, stockpiling or on-site burning.

Existing voids and new depressions created during demolition, clearing, grubbing or other site preparation activities, should be excavated to firm soil and backfilled with Imported Select Structural Fill. Greater depths of disturbance should be expected if site preparation and earthwork are conducted during periods of wet weather.

6.4. Stripping

Based on our observations at the site, we estimate that the depth of stripping should be on the order of about 4 inches. Greater stripping depths may be required to remove localized zones of loose or organic soil, and in areas where moderate to heavy vegetation are present, or where surface disturbance from prior use has occurred. The actual stripping depth should be based on field observations at the time of construction. Stripped material should be transported off site for disposal unless otherwise allowed by the project specifications for other uses such as landscaping.

6.5. Site Subgrade Preparation and Evaluation

Upon completion of site preparation activities, exposed subgrades should be proof-rolled with a fully loaded dump truck or similar heavy rubber-tired construction equipment where space allows to identify soft, loose, or unsuitable areas. Probing may be used for evaluating smaller areas or where proof-rolling is not practical. Proof-rolling and probing should be conducted prior to placing fill and should be performed by a representative of CGS who will evaluate the suitability of the subgrade and identify areas of yielding that are indicative of soft or loose soil. If soft or loose zones are identified during proof-rolling or probing, these areas should be excavated to the extent indicated by our representative and replaced with structural fill.

As discussed in Section 3.3 of this report, soils observed in our explorations are generally granular with little fines and are considered to be moderately sensitive to moisture as a function of increasing fines content. Granular soils can become moisture sensitive and difficult or impossible to compact at relatively low fines contents. If encountered, silty sand can be sensitive to small changes in moisture content and will be difficult, or not possible, to compact adequately during wet weather. While tilling and compacting the subgrade is the economical method for subgrade improvement, it will likely only be possible during extended dry periods and following moisture-conditioning of the soil.

During wet weather, or when the exposed subgrade is wet or unsuitable for proof-rolling, the prepared subgrade should be evaluated by observing excavation activity and probing with a steel foundation probe. Observations, probing and compaction testing should be performed by a member of our staff. Wet soil that has been disturbed due to site preparation activities or soft or loose zones identified during probing should be removed and replaced with compacted structural fill.

6.6. Subgrade Protection and Wet Weather Considerations

Site soils are generally moderately susceptible to moisture. If wet weather construction practices are necessary based on conditions observed at the time of construction, it may be necessary to use track-mounted equipment, load removed material into trucks supported on gravel haul roads, use gravel working pads and employ other methods to reduce ground disturbance. The contractor should be responsible for protecting the subgrade during construction.

Earthwork planning should include considerations for minimizing subgrade disturbance. We provide the following recommendations if wet weather construction is considered:

- The ground surface in and around the work area should be sloped so that surface water is directed to a sump or discharge location. The ground surface should be graded such that areas of ponded water do not develop. Measures should be taken by the contractor to prevent surface water from collecting in excavations and trenches. Measures should be implemented to remove surface water from the work areas.
- Earthwork activities should not take place during periods of heavy precipitation.
- Slopes with exposed soils should be covered with plastic sheeting or similar means.
- The site soils should not be left in a disturbed or uncompacted state and exposed to moisture. Sealing the surficial soils by rolling with a smooth-drum roller prior to periods of precipitation may reduce the extent to which these soils become wet or unstable.
- Construction activities should be scheduled so that the length of time that soil is left exposed to moisture is reduced to the extent practicable.

- Construction traffic should be restricted to specific areas of the site, preferably areas that are not susceptible to wet weather disturbance such as haul roads and areas that are adequately surfaced with working pad materials.
- When on-site, moisture sensitive soils are wet of optimum, they are easily disturbed and will not provide adequate support for construction traffic nor for the proposed development. The use of granular haul roads and staging areas will be necessary to support heavy construction traffic. Generally, a 12- to 16-inch-thick mat of Imported Select Structural Fill should be sufficient for light staging areas for the building pad and light staging activities but is not expected to be adequate to support repeated heavy equipment or truck traffic. The thickness of the Imported Select Structural Fill for haul roads and areas with repeated heavy construction traffic should be increased to between 18 and 24 inches. The actual thickness of haul roads and staging areas should be determined at the time of construction and based on the contractor's approach to site development and the amount and type of construction traffic.
- The base rock (Aggregate Base and Aggregate Subbase) thicknesses described in the "Pavement Recommendations" sections of this report are intended to support post-construction design traffic loads. The design base rock thicknesses will likely not support repeated heavy construction traffic during site construction or during pavement construction. A thicker base rock section as described above for haul roads will likely be required to support construction traffic.
- During periods of wet weather, concrete should be placed as soon as practical after preparing foundation excavations. Foundation bearing surfaces should not be exposed to standing water. Should water infiltrate and pool in the excavation, the water should be removed, and the foundation subgrade should be re-evaluated before placing reinforcing steel or concrete. Foundation subgrade protection, such as a 3- to 4-inch thickness of Aggregate Base/Aggregate Subbase or lean concrete, may be necessary if footing excavations are exposed to extended wet weather conditions.

During wet weather, or when the exposed subgrade is wet or unsuitable for proof-rolling, the prepared subgrade should be evaluated by observing excavation activity and probing with a steel foundation probe. Observations and probing should be performed by a member of our staff. Wet soil that has been disturbed due to site preparation activities, or soft or loose zones identified during probing, should be removed, and replaced with Imported Select Structural Fill.

6.7. Dewatering

As discussed in the "Groundwater" section of this report, groundwater was encountered in our explorations at approximately 7.5-bgs at the time of our explorations near the end of the dry season. It is anticipated that groundwater could be a major factor during shallow excavations and earthwork depending on groundwater conditions at the time of construction. Excavations that extend into saturated/wet soils, or excavations that extend into perched groundwater, should be dewatered.

If excavations beneath the groundwater table, or during or after extended periods of wet weather are required, significant dewatering other than sump pumps should be expected. Open pumping, pumped wells, and well points are dewatering options typically used. Maximum drawdown of the water table in the immediate vicinity of pumped wells or well points is often achieved several hours after the start of pumping. However, complete dewatering of the saturated zone within the cone of depression may require several days or weeks. This lag reflects the time it takes for vertical drainage of the water stored in the saturated zone. If used, we recommend pumping from wells or well points at least 3 to 5 days prior to extending deep excavations below the depth of anticipated groundwater.

As noted, shallow excavations that extend into saturated/wet soils should be dewatered. Sump pumps are expected to adequately address light groundwater inflow that may be encountered in relatively shallow excavations or during times following extended dry periods. However, excavations beneath the static groundwater table at the time of construction will require larger pumps and/or systems to seal off the excavation walls from the groundwater. In addition to groundwater seepage and upward groundwater flow into excavations, surface water inflow to the excavations during the wet season can be problematic. Provisions for surface water control during earthwork and excavations should be included in the project plans and should be installed prior to commencing earthwork.

If sandy soil is present at the base of the excavation as anticipated, dewatering should be extended deeper than the base to prevent upward inflow of water that will cause upward heaving from the base. This may also require a section of stabilization material (4-inch- or 2-inch-minus crushed rock) up to 3 feet thick to be placed at the base of the excavation as a working and firm foundation surface. In addition, inflowing water into excavations may result in saturated soils to flow in, commonly referred to as “running sand” conditions. This would necessitate filtered dewatering methods or dewatering externally from the excavation.

The level of effort required for dewatering and degree of base stabilization required will depend to a great extent on the time of year during which construction is accomplished. In general, we recommend that construction be completed in the late summer or early autumn months when the groundwater level is typically at its lowest elevation, or that a plan be in place for more intense dewatering systems to be used in deeper excavations as necessary. The contractor is in the best position to understand the required construction sequence and should be responsible for the design, installation, monitoring, and maintenance of any required dewatering system(s). If wells or well points are necessary, the contractor should submit a dewatering plan prepared by a registered professional engineer or geologist for review by the project team and the City if required.

Additionally, Lowering the groundwater table beneath existing structures can result in settlement. If a dewatering plan is required, it should be designed to address potential settlement of nearby structures as a result of dewatering.

6.8. Trench Shoring

All trench excavations should be made in accordance with applicable Occupational Safety and Health Administration (OSHA) and state regulations. In our opinion, native soils are generally OSHA Type C, provided there is no seepage and excavations occur during periods of dry weather. Temporary excavations deeper than 4 feet should be shored or laid back at an inclination of 1.5H:1V or flatter if workers are required to enter. Excavations made to construct footings or other structural elements should be laid back or shored at the surface as necessary to prevent soil from falling into excavations.

It should be expected that unsupported cut slopes will experience some sloughing and raveling if exposed to water. Plastic sheeting, placed over the exposed slope and directing water away from the slope, will reduce the potential for sloughing and erosion of cut slopes during wet weather.

The contractor is responsible for shoring methods and shoring system design. Shoring systems should be designed by a professional engineer before installation.

In our opinion, the contractor will be in the best position to observe subsurface conditions continuously throughout the construction process and to respond to the soil and groundwater conditions. Construction site safety is generally the sole responsibility of the contractor, who also is solely responsible for the means, methods, and sequencing of the construction operations and choices regarding excavations and shoring.

Under no circumstances should the information provided by CGS be interpreted to mean that CGS is assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

6.9. Structural Fill and Backfill.

6.9.1. General

Structural areas include areas beneath foundations, floor slabs, pavements, and any other areas intended to support structures or within the influence zone of structures. Fill intended for use in structural areas should meet the criteria for structural fill presented below. All structural fill soils should be free of debris, clay balls, roots, organic matter, frozen soil, man-made contaminants, particles with greatest dimension exceeding 4 inches (3-inch-maximum particle size in building footprints) and other deleterious materials.

The suitability of soil for use as structural fill will depend on the gradation and moisture content of the soil. As the amount of fines in the soil matrix increases, the soil becomes increasingly more sensitive to small changes in moisture content and achieving the required degree of compaction becomes more difficult or impossible. Recommendations for suitable fill material are provided in the following sections.

6.9.2. Reuse of On-Site Soils

On-site near surface soil generally consists of native fine sand. On-site soils can be used as structural fill, provided the material meets the above requirements. Site soils are considered moderately susceptible to moisture, but could become highly moisture sensitive with a relatively small amount of fines. If encountered, materials with appreciable fines will likely be unsuitable as structural fill during most of the year. If the soil is too wet to achieve satisfactory compaction, moisture conditioning by drying back the material will be required. If the material cannot be properly moisture conditioned, we recommend using imported material for structural fill. The properly prepared and compacted on-site soils in the tilled zone qualify as structural fill provided, they meet the recommendations in the "Site Subgrade Preparation and Evaluation" section of this report.

An experienced geotechnical engineer from CGS should determine the suitability of on-site soil encountered during earthwork activities for reuse as structural fill.

6.9.3. Imported Select Structural Fill

Imported Select Structural Fill may be used as structural fill and should consist of pit or quarry run rock, crushed rock, or crushed gravel and sand that is fairly well-graded between coarse and fine sizes (approximately 25 to 65 percent passing the U.S. No. 4 sieve). It should have less than 5 percent passing the U.S. No. 200 sieve and have a minimum of 75 percent fractured particles according to American Association of State Highway and Transportation Officials (AASHTO) TP-61.

6.9.4. Aggregate Base

Aggregate base material located under floor slabs crushed rock used in footing overexcavations should consist of imported clean, durable, crushed angular rock. Such rock should be well-graded, have a maximum particle

size of 1 inch and have less than 5 percent passing the U.S. No. 200 sieve (3 percent for retaining walls). In addition, aggregate base shall have a minimum of 75 percent fractured particles according to AASHTO TP-61 and a sand equivalent of not less than 30 percent based on AASHTO T-176.

6.9.5. Trench Backfill

Backfill for pipe bedding and in the pipe zone should consist of well-graded granular material with a maximum particle size of ¾ inch and less than 5 percent passing the U.S. No. 200 sieve. The material should be free of organic matter and other deleterious materials. Further, the backfill should meet the pipe manufacturer's recommendations. Above the pipe zone backfill, Imported Select Structural Fill may be used as described above.

6.9.6. Fill Placement and Compaction

Structural fill should be compacted at moisture contents that are within 3 percent of the optimum moisture content as determined by ASTM International (ASTM) Test Method D 1557 (Modified Proctor). The optimum moisture content varies with gradation and should be evaluated during construction. Fill material that is not near the optimum moisture content should be moisture conditioned prior to compaction.

Fill and backfill material should be placed in uniform, horizontal lifts and compacted with appropriate equipment. The appropriate lift thickness will vary depending on the material and compaction equipment used. Fill material should be compacted in accordance with Table 2. It is the contractor's responsibility to select appropriate compaction equipment and place the material in lifts that are thin enough to meet these criteria. However, in no case should the loose lift thickness exceed 18 inches.

Table 2. Compaction Criteria

Fill Type	Compaction Requirements		
	Percent Maximum Dry Density Determined by ASTM Test Method D 1557 at ± 3% of Optimum Moisture		
	0 to 2 Feet Below Subgrade	> 2 Feet Below Subgrade	Pipe Zone
Fine-grained soils (non-expansive)	92	92	-----
Imported Granular, maximum particle size < 1¼ inch	95	95	-----
Imported Granular, maximum particle size 1¼ inch to 6 inches (3-inch-maximum under building footprints)	n/a (proof-roll)	n/a (proof-roll)	-----
Retaining Wall Backfill*	92	92	------
Nonstructural Zones	90	90	90
Trench Backfill	95	90	90

Note:

* Measures should be taken to prevent overcompaction of the backfill behind retaining walls. We recommend placing the zone of backfill located within 5 feet of the wall in lifts not exceeding about 6 inches in loose thickness and compacting this zone with hand-operated equipment such as a vibrating plate compactor or a jumping jack.

A representative from CGS should evaluate the compaction of each lift of fill. Compaction should be evaluated by compaction testing unless other methods are proposed for oversized materials and are approved by CGS during construction. These other methods typically involve procedural placement and compaction specifications together with verification requirements such as proof-rolling.

7.0 STRUCTURAL DESIGN RECOMMENDATIONS

Based on site subsurface conditions and as discussed with the project team, we understand that as a result of potential liequefaction-induced settlement, steel frames for the pre-engineered building will be supported on mat foundations, or on 30- or 36-inch diameter drilled shaft foundations, and will likely be designed for life safety (designed against structural collapse) rather than functional serviceability to limit post-seismic settlement to less than 1 inch. The proposed structures can be satisfactorily supported using drilled shafts or mat foundations, provided the recommendations presented herein are incorporated into their design. Although, mat foundations may be the more economically feasible option because of the depth requirements for drilled shafts.

7.1. Drilled Shaft Recommendations

Recommendations for drilled shaft foundations are provided as a structural support option for the pre-engineered building as a result of potential liquefaction at the site and the need to extend foundation support to sufficient depth that can provide vertical support. Drilled shaft support has the advantage of large moment transfer capacity as well as extending to depths where firm support is available. Constructability and installation costs may limit their practical implementation, but the option is presented in case serviceable structural life is required for the project. Also, in liquefaction prone soils, downdrag loads against the shaft from liquefaction-induced settlement adds load to the shaft and reduces design capacity resulting in longer shafts to support downdrag loading as discussed below.

7.1.1. Drilled Shaft Lateral Foundation Capacity

If the drilled shaft option is selected, shaft design is required to include lateral shaft capacities. A computer program, such as Ensoft's LPILE, can be used to calculate the lateral capacity of drilled shaft foundations. LPILE uses lateral soil reaction (p) and lateral deflection (y) curves generalized from field load tests and soil input properties to approximate lateral pile deflections and moments. As discussed in section 7.6, site soils are considered susceptible to liquefaction during the design level event. LPILE input parameters for lateral capacity calculations under static conditions and liquefied conditions for the design level event are provided in Tables 3 and 4, respectively.

Table 3. Recommended LPILE Soil Parameters – Static Configuration

Depth Below Existing Grade (ft)	Effective Unit Weight (pci)[(1)]	Friction Angle (Degrees)	Soil Modulus K (pci)	Soil Model
0 – 15	0.02176	33	20	Sand (Reese)
15 – 85	0.04201	42	34	Sand (Reese)

1) PCI = Pounds per cubic inch

Table 4 Recommended LPILE Soil Parameters – Liquefied Configuration

Depth Below Existing Grade (ft)	Effective Unit Weight (pci)	SPT $(N1)_{60\text{-}cs}$	Undrained Residual Shear Strength (Sr; PSF)	Strain Facto ε_{50}	Soil Model
0 – 15	0.02176	-	-	-	Liquefied Sand (Rollins)
15 – 85	0.04201	50	740	0.0248	Liquefied Sand (Hybrid)

Recommended parameters assume a single shaft without group effects. Groups of shafts will have less lateral resistance than the sum of the single shaft resistance due to soil structure interaction amongst closely spaced shafts. Lateral load response of shafts in groups should be modified to account for this group effect by multiplying the P-values by the P multipliers presented in Table 5 where shafts are located within 3D to 5D of each other where D is equal to the shaft diameter.

Table 5. P-Multipliers for Multiple Row Shading (AASHTO 2020)

Pile Center to Center Spacing in Direction of Loading	P-Multipliers (P_m)		
	Row 1	Row 2	Row 1
3D	0.8	3D	0.8
5D	1.0	5D	1.0

7.1.2. Drilled Shaft Axial Capacity

Nominal axial capacities estimated for single, 30- and 36-inch diameter drilled shafts were determined using the beta method (Kulhawy 2007) method presented in the *LRFD Bridge Design Specifications 9th Edition* (AASHTO 2020). The assumed design profile is based on the subsurface conditions observed in B-1. Nominal (ultimate) shaft friction and end bearing capacity, and capacities at the service, strength limit 1, and extreme limit 1 states are presented in figures 3a through 3d, Respectively. Applicable resistance factors for nominal calculated resistances are provided in Table 6.

Table 6. Recommended LRFD Resistance Factors for Drilled Shafts

Load Type	Service Limit	Strength Limit	Extreme Limit
Compression	1.0	0.5 (Tip Resistance) 0.55 (Side Resistance)	1.0
Uplift	1.0	0.45	0.8

7.1.3. Downdrag

As noted in section 7.5 and 7.6 of this report, site soils are considered subject to liquefaction that could result in a magnitude of settlement that could fully mobilize negative skin friction (downdrag) as the soil settles relative to drilled shaft foundations. Estimated nominal downdrag loads for drilled shafts at the extreme limit state 1 (liquefied conditions) are presented in Table 7. The estimated downdrag loads are for drilled shafts without permanent casing. If permanent casing is included in the construction of drilled shafts the nominal downdrag loads should be multiplied by 0.7 to account for reduction of skin friction from permanent casing.

Soils at the toe of drilled shafts are anticipated to consist of very dense sand that could result in the axial capacity of drilled shafts being structurally controlled. As a result, downdrag loading should be checked at the strength limit state using the nominal values presented in Table 7 to check for structural integrity.

Table 7. Nominal Downdrag Loads

Shaft Diameter (in)	Nominal Downdrag (Kips)
30	1135
36	1360

7.1.4. Construction Considerations

Typically, shafts are constructed using one of or a combination of the dry method, the cased method, and the wet method. The dry method consists of construction of drilled shafts to the full depth without the use of casing or slurry typically used in granular soils with some cohesion, or in weaker looser soils with significant cohesion. The dry method is generally not applicable where shallow groundwater is present or where granular soils can cave into the shaft excavation. The cased method is applicable where seepage and/or caving soils are anticipated, and casing can be pushed, driven, vibrated, or twisted into an impermeable, firm stratum below the zone of seepage or caving soil. The wet Method generally involves the use of a column drilling slurry and is applicable to the conditions mentioned for the cased method with the added benefit that it can counter act potential seepage forces that could cause heave or a blowout of the base of the shaft when a seal into a relatively impermeable layer cannot be formed.

Given the potential for loose cohesionless soils, shallow groundwater, and the potential for settlement induced damage of nearby structures that could occur as a result of caving, it is CGS's opinion that the drilled shaft contractor should be prepared to drill in the wet and/or with casings at all locations. Drilling in the wet includes the use of a column of drilling slurry, within casings and beneath them as the excavations advance and requires a large footprint for the necessary construction equipment. It also includes the disposal of both drilling fluids and saturated cuttings.

Access tubes should be installed in all shafts for crosshole sonic logging tests or other appropriate integrity tets. Access tubes should consist of steel pipes and the integrity tests should be performed and analyzed by experienced, qualified personnel. Typically, this service is provided by a specialty inspection firm subcontracted to the general contractor.

7.2. Mat Foundations

Subsurface conditions encountered at the project site are suitable for support of the proposed structure on mat foundations provided that they can be designed to tolerate the estimated potential liquefaction induced settlement presented in section 7.7. Mats should be constructed on the underlying medium dense or better sand prepared in accordance with the Site Preparation section of this report and should be constructed a minimum of 18-inches below adjacent grade. Mat foundations constructed as recommended in this report may be designed for an allowable bearing capacity of 2,500 psf

Mat foundations should be constructed on a minimum 3-foot section of crushed rock structural fill that extends a minimum of 4-ft laterally beyond the edges of structural foundations. Crushed rock should be placed and compacted in accordance with section 6.9.7 of this report. The intent of the crushed rock aggregate section is to provide stiffness to the foundation in combination with the concrete section in order to limit differential settlement of the structure under potential liquefaction-induced settlement as well as to provide a clean and solid working surface for construction of the concrete mat. A crushed rock base section also allows for a higher friction coefficient to be used during design of lateral resistance.

The subgrade reaction modulus will vary with mat width (least mat dimension) as shown in Mat Foundation Subgrade Modulus, Figure 3. We recommend a subgrade reaction modulus (k) of 35 psi per inch for a 60-foot by 80-ft rectangular loaded area as a design value used to design for stiffness of relatively rigid mats and assuming an approximately 300 to 500 psf areal load. Lateral loads can be resisted by passive earth pressure on the sides of mat foundations and by friction on the bearing surface. Available passive earth pressure against on-site soil and structural fill is 350 pcf, modeled as an equivalent fluid pressure. Typically, the movement required to develop the available passive resistance may be relatively large; therefore, we recommend using a reduced passive pressure of 250 pcf equivalent fluid pressure. Allowable frictional resistance may be computed using coefficient of friction of 0.30 applied to vertical dead-load forces for foundations founded on firm native silt soils, and for compacted angular structural fill a coefficient of 0.5 may be applied.

7.3. Foundation Subgrade Preparation

The subgrades beneath proposed structural elements should be prepared as described below and in the “Earthworks Recommendations” section of this report. We recommend loose or disturbed soils resulting from foundation excavation be removed before placing reinforcing steel and concrete. Foundation bearing surfaces should not be exposed to standing water. If water infiltrates and pools in the excavation, the water, along with any disturbed soil, should be removed before placing reinforcing steel and concrete. A thin gravel layer consisting of Aggregate Base or Aggregate Subbase material can be placed at the base of foundation excavations to help protect the subgrade from weather and light foot traffic. The layer thickness for the gravel layer should be determined at the time of construction but is typically 3 to 4 inches. The gravel layer should be compacted as described in the “Fill Placement and Compaction” section.

In some areas of the site, soft soils were encountered near the surface. Where soft soils are encountered in foundation subgrades, soft soils should be overexcavated and replaced with structural fill compacted in accordance with Section 6.11. The gravel layer recommended in this section is not intended to support mat foundations.

We recommend that a qualified geotechnical engineer or their representative observe all foundation subgrades before placing concrete forms and reinforcing steel to determine that bearing surfaces have been adequately prepared and the soil conditions are consistent with those observed during our explorations.

7.4. Drainage Considerations

We recommend the ground surface be sloped away from the buildings at least 5 percent for a minimum distance of 10 feet measured perpendicular to the face of the wall in accordance with section 1804.4 of the 2018 International Building Code (IBC). All downspouts should be tightlined away from the building foundation areas and should also be discharged into a stormwater disposal system. Downspouts should not be connected to footing drains.

Based on areal groundwater depths observed in our explorations and our experience, and if necessary, perimeter footing drains should be installed for below-grade structural elements to control relatively shallow groundwater conditions. Foundation drains should be installed at the base of exterior building foundations where interior spaces should be protected from inflowing water from surrounding soils. Perimeter foundation drains should be provided with cleanouts and should consist of at least 4-inch-diameter perforated pipe placed on a 3-inch bed of and surrounded by 6 inches of drainage material enclosed in a non-woven geotextile such as Mirafi 140N (or approved equivalent) to prevent fine soil from migrating into the drain material. We recommend against using flexible tubing for footing drainpipes. The perimeter drains should be sloped to drain by gravity to a suitable discharge point, preferably a storm drain. We recommend that the cleanouts be covered and placed in flush-mounted utility boxes. Water collected in roof downspout lines must not be routed to the footing drain lines.

7.5. Floor Slabs

The recommendations presented in this section are not intended for application to design of mat foundations. If the project will utilize floor slabs, satisfactory subgrade support for floor slabs-on-grade supporting the assumed 150 psf floor loads can be obtained, provided the floor slab subgrade is described in the “Earthworks Recommendations” section of this report. Slabs should be reinforced according to their proposed use and per the structural engineer’s recommendations. Subgrade support for concrete slabs can be obtained from the firm native soils underlying the topsoil or on structural fill placed over firm native soils. Subgrade materials should meet the requirements for aggregate base rock as presented in Section 6.11.4 of this report.

We recommend that on-grade slabs be underlain by a minimum 6-inch-thickness of Aggregate Base acting as a capillary break material to reduce the potential for moisture migration into the slab and to provide the subgrade reaction required for slab design discussed below. The base rock section material should be placed as recommended in the “Fill Placement and Compaction” section of this report.

If dry on-grade slabs are required, for example at interior spaces where adhesives are used to anchor carpet or tile to the slab, a waterproof liner may be placed as a vapor barrier below the slab. The vapor barrier should be selected by the structural engineer and should be accounted for in the design floor section and mix design selection for the concrete, to accommodate the effect of the vapor barrier on concrete slab curing. Load-bearing concrete slabs should be designed assuming a modulus of subgrade reaction (k) of 150 psi per inch. The recommended subgrade modulus is for a 1-foot by 1-foot square and is not applicable to the design of mat foundations. We estimate that concrete slabs constructed as recommended will settle less than ½ inch. Floor slab subgrades should be evaluated according to the “Subgrade Evaluation” section of this report.

7.6. Seismic Design

Parameters provided on Table 3 are based on the conditions encountered during our subsurface exploration program and the procedure and requirements outlined in the 2018 IBC. Per American Society of Civil Engineers (ASCE) 7-16 Section 11.4.8, a site-specific response analysis is required for site class F sites, and a ground motion hazard analysis or site-specific response analysis is required to determine the design ground motions for structures on Site Class D and E sites with S_1 greater than or equal to 0.2g.

For this project, the site is classified as site class F; therefore, the provisions of 11.4.8 are applicable. Alternatively, the parameters listed on Table 3 may be used to determine the design ground motions if the exceptions provided in ASCE 7-16 Supplement 3 are met and the fundamental period of the structure is less than 0.5 seconds. The applicable exceptions for the project site listed in ASCE 7-16 Supplement 3 are provided on the following page. If it is desirable to avoid these exceptions, a ground motion hazard analysis or site response analysis which is outside of the scope of services for this report, would need to be completed to determine the design seismic parameters for the site.

From ASCE 7-16 Supplement 3
Exception: A ground motion hazard analysis not required:

1. Where the values of the parameter S_{M1} determined by Eq. (11.4-2) is increased by 50% for all applications of S_{M1} in the standard. And:
2. The resulting value of the parameter S_{D1} determined by Eq. (11.4-4) shall be used for all applications of S_{D1} in the standard.

Table 3. Mapped 2018 IBC Seismic design parameters

Parameter	Recommended Value[1,2,4]
Site Class	D/F
Mapped Spectral Response Acceleration at Short Period (S_S)	1.409 g
Mapped Spectral Response Acceleration at 1 Second Period (S_1)	0.74 g
Site Modified Peak Ground Acceleration (PGA_M)	0.780 g
Site Amplification Factor at 0.2 second period (F_a)	1.0
Site Amplification Factor at 1.0 second period (F_v)	1.7
Design Spectral Acceleration at 0.2 second period (S_{DS})	0.939 g
Design Spectral Acceleration at 1.0 second period (S_{D1})[(3)]	1.258

Note:
[1] Parameters developed based on Latitude 43.985778° and Longitude -124.105587 °using the ATC Hazards online tool.
[2] These values are only valid if the structural engineer utilizes Exception 1 of ASCE 7-16 Supplement 3 Exception 1.
[3] Increased by a factor of 1.5 per ASCE 7-16 Supplement 3 Exception 1.
[4] Only applicable to structures with a fundamental period of vibration less than 0.5 seconds

7.7. Liquefaction Potential

Liquefaction is a phenomenon caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles to near zero. The excessive buildup of pore water pressure results in the sudden loss of shear strength in a soil. Granular soil, which relies on interparticle friction for strength, is susceptible to

liquefaction until the excess pore pressures can dissipate. Sand boils and flows observed at the ground surface after an earthquake are the result of excess pore pressures dissipating upwards, carrying soil particles with the draining water. In general, loose, saturated sand soil with low silt and clay contents is the most susceptible to liquefaction. Low plasticity, silty sand may be moderately susceptible to liquefaction under relatively higher levels of ground shaking.

As discussed in Section 3.3.1 of this report, groundwater was encountered during our explorations at approximately 7.5 feet bgs. Site soils below the groundwater table are expected to include fine sand that is considered susceptible to liquefaction for the design earthquake event. Current analytical methods, based on soil index properties and relative density, estimate that post-liquefaction settlement could range from about 4 to 7 inches for the design earthquake event if ground improvement is not completed at the site. Differential settlement of half of the total settlement can be anticipated over 50 to 100 foot distances across the project footprint.

8.0 LIMITATIONS OF REPORT

We have prepared this report for the exclusive use of Siuslaw School District and Soderstrom Architects and there authorized parties for the project specifically identified in this report only. The report should be provided in its entirety to prospective contractors for bidding and estimating purposes; however, the conclusions and interpretations presented should not be construed as a warranty of the subsurface conditions. Experience has shown that soil and groundwater conditions can vary significantly over small distances. Inconsistent conditions can occur between explorations that may not be detected by a geotechnical study. If, during future site operations, subsurface conditions are encountered which vary appreciably from those described herein, CGS should be notified for review of the recommendations of this report, and revision of such if necessary.

We recommend that CGS be retained to review the plans and specifications and verify that our recommendations have been interpreted and implemented as intended. Sufficient geotechnical monitoring, testing and consultation should be provided during construction to confirm that the conditions encountered are consistent with those indicated by explorations. Recommendations for design changes will be provided should conditions revealed during construction differ from those anticipated. Should CGS not be retained for Design or Construction related services further into the development process, this report and its recommendations should be considered void, as we cannot take on responsibility for construction operations that were unobserved by our office.

Within the limitations of scope, schedule and budget, the analysis, conclusions, and recommendations presented in this report were prepared in accordance with generally accepted professional principles and practices in the fields of geotechnical engineering and engineering geology in this area at the time the report was prepared. No warranty, express or implied, is made. The scope of our work did not include environmental assessments or evaluations regarding the presence or absence of wetlands or hazardous or toxic substances in the soil, surface water, or groundwater at this site.

Within the limitations of scope, schedule, and budget, our services were executed in accordance with generally accepted practices in this area at the time this report was prepared. No warranty, express or implied, should be understood.

9.0 REFERENCES

American Association of State Highway and Transportation Officials (AASHTO). 2020. *LRFD Bridge Design Specification – 9th Edition*. American Association of State Highway and Transportation Officials. LRFDUS-9.

International Code Council. 2018. 2018 International Building Code.

Isenhower, W.M., Wang, S. 2016. User's Manual for LPILE 2016 (Using Data Format Version 9). Ensoft, Inc.

Isenhower, W.M., Wang, S., Gonzalo Vasquez, L. 2017. *Technical Manual for LPile 2018 (Using Data Format Version 10)*. Ensoft, Inc.

Occupational Safety and Health Administration (OSHA) Technical Manual Section V: Chapter 2, Excavations: Hazard Recognition in Trenching and Shoring:

Schlicker, H.G., Deacon, R.J., 1974. Environmental Geology of Coastal Lane County Oregon: Oregon Department of Geology and Mineral Industries bulletin 85. State of Oregon Department of Geology and Mineral Industries.

10.0 SIGNATURES

We appreciate the opportunity to provide geotechnical services to support your project. If you feel obliged, we welcome referrals from our previous clients and would enjoy the opportunity to work with others in your professional and personal networks.

Central Geotechnical Services, LLC

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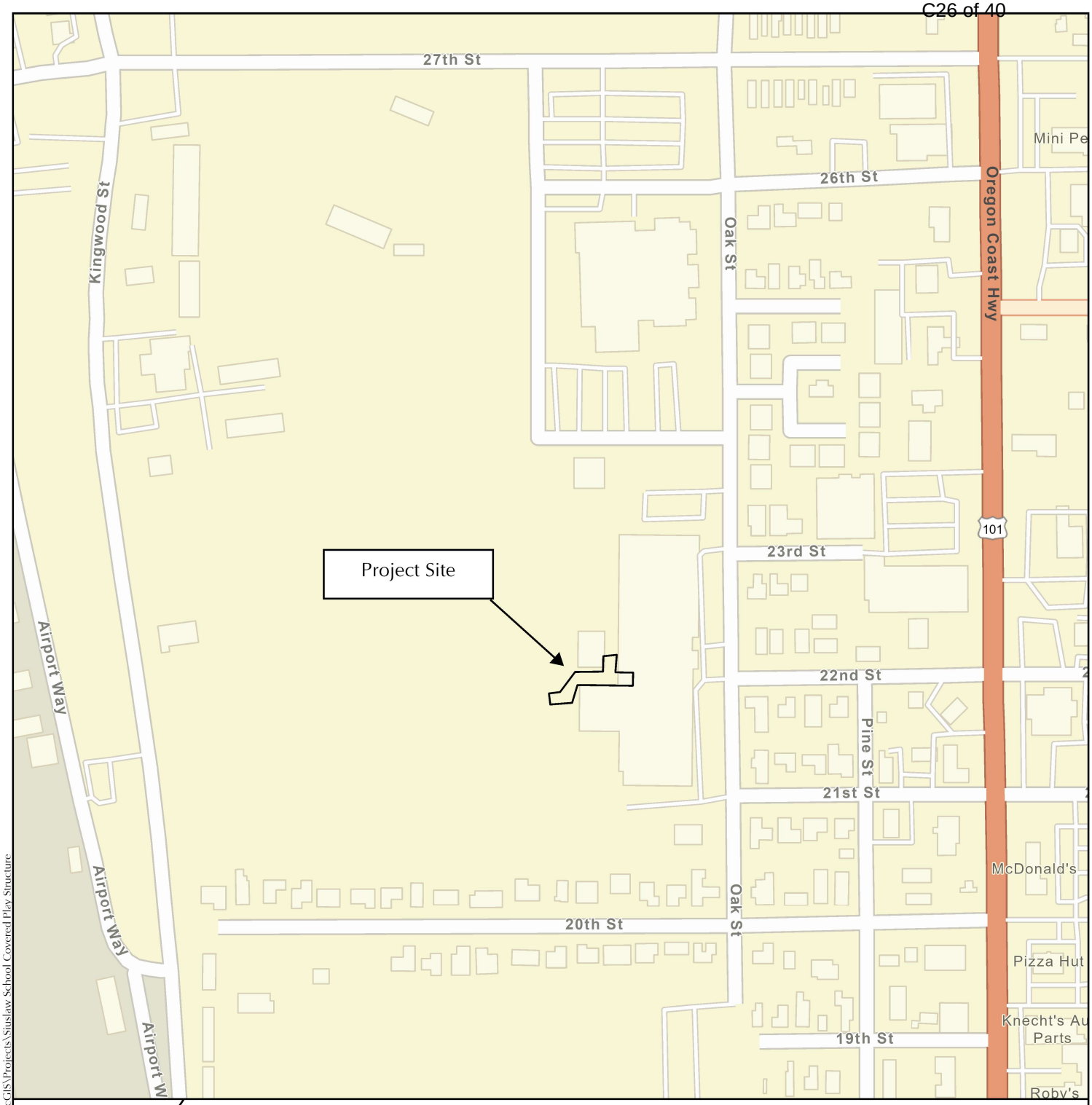

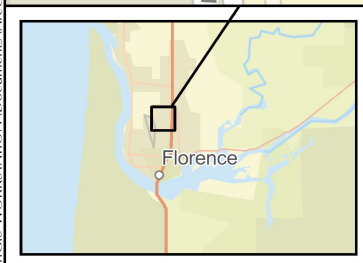

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0 200 400 600 800
Feet

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Siuslaw Covered Play Structure	
Project Vicinity	
CENTRAL Geotechnical Services, LLC	Figure-1

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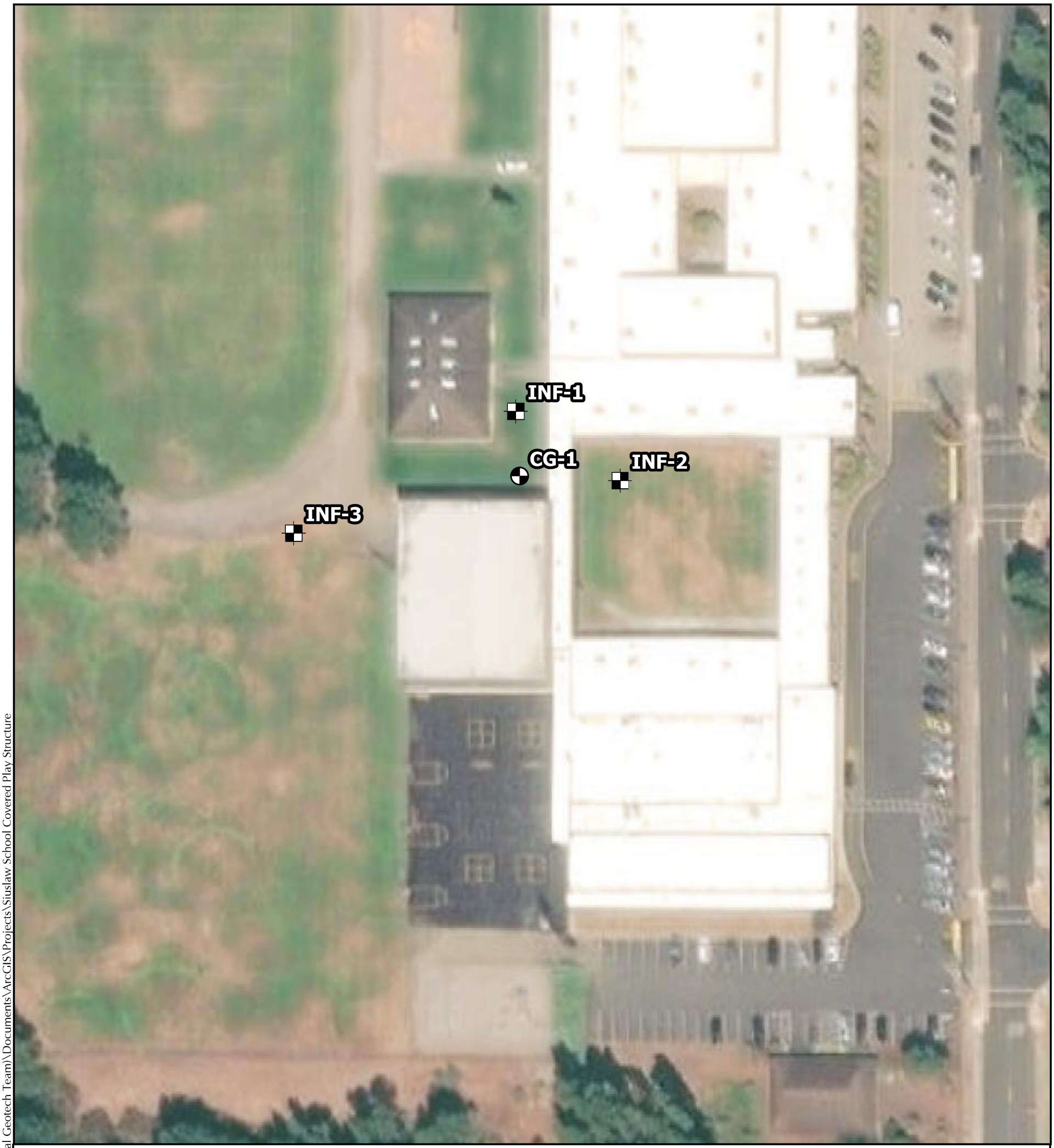


Legend

- Boring Designation and Approximate Location
- Infiltration Test Designation and Approximate Location

N

0 50 100 200 300 Feet

Disclaimer: The locations of features shown in this figure may be approximate. CGS makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein.

Sources:Maxar, Microsoft

Covered Play Structure

Site Plan

CENTRAL GEOTECHNICAL SERVICES, LLC

Figure-2

Default Folder: C:\Users\cgsuser.GIS-WORKSTATION\Dropbox (Central Geotech Team)\Documents\ArcGIS\Projects\Siuslaw School Covered Play Structure

CENTRAL
GEOTECHNICAL SERVICES

APPENDIX A: Field Explorations

APPENDIX A
FIELD EXPLORATIONS AND LABORATORY TESTING

Field Explorations

Soil and groundwater conditions at the proposed project were explored on May 5, 2023, by completing one drilled boring (B-1) and three infiltration tests (INF-1 through INF-3) at the approximate locations shown on the Site Plan, Figure 2. The exploratory boring was extended to a final depth of 81.5 feet below ground surface using a hollow stem auger or 4-3/8-inch diameter solid stem auger and mud rotary drilling techniques. The boring was completed with a drill rig owned and operated by Western States Soil Conservation Inc.

The drilling was continuously monitored by a qualified staff from our office who maintained detailed logs of subsurface explorations, visually classified the soil encountered and obtained representative soil samples from the borings. Representative soil samples were obtained from each boring at approximate 2½-foot-depth intervals using a 1-inch, inside-diameter, standard split spoon sampler. The samplers were driven into the soil using a 140-pound hammer, free-falling 30 inches on each blow. The number of blows required to drive the sampler each of three, 6-inch increments of penetration were recorded in the field. The sum of the blow counts for the last two, 6-inch increments of penetration is reported on the boring logs as the ASTM International (ASTM) Test Method D 1556 Standard Penetration Test (SPT) N-value.

Recovered soil samples from exploratory borings were visually classified in the field in general accordance with ASTM D 2488 and the classification chart listed in Key to Exploration Logs. Logs of the borings are presented in this Appendix. The logs are based on interpretation of the field and laboratory data and indicate the depth at which subsurface materials, or their characteristics change, although these changes might actually be gradual.

Recovered soil samples from exploratory borings were visually classified in the field in general accordance with ASTM D 2488 and the classification chart listed in Key to Exploration Logs, Figures A-1 and A-2. Logs of the borings are presented in Figures A-3 through A-13. The logs are based on interpretation of the field and laboratory data and indicate the depth at which subsurface materials, or their characteristics change, although these changes might actually be gradual.

Laboratory Testing

Soil samples obtained from the explorations were visually classified in the field and in our laboratory using the USCS and ASTM classification methods. ASTM Test Method D 2488 was used to visually classify the soil samples, while ASTM D 2487 was used to classify the soils based on laboratory tests results. Moisture content tests were performed in general accordance with ASTM D 2216-05. Results of the moisture contents testing are presented in the appropriate exploration logs at the respective sample depths.

Selected samples were “washed” through the U.S. No. 200 mesh sieve to estimate the relative percentages of coarse- and fine-grained particles in the soil. The percent passing value represents the percentage by weight of the sample finer than the U.S. No. 200 sieve. These tests were conducted to verify field descriptions and to estimate the fines content for analysis purposes. The tests were conducted in accordance with ASTM D 1140, and the results are shown on the exploration logs in Appendix A at the respective sample depths.

LITHOLOGIC SYMBOLS
(Unified Soil Classification System)


ASPHALT: Asphalt


CL: USCS Low Plasticity Clay


GP: USCS Poorly-graded Gravel


GP-GM: USCS Poorly-graded Gravel with Silt


GW: USCS Well-graded Gravel


ML: USCS Silt


SM: USCS Silty Sand


SPG: USCS Poorly-graded Gravelly Sand

SAMPLER SYMBOLS


Grab Sample


Split Spoon

WELL CONSTRUCTION SYMBOLS

None

ABBREVIATIONS

LL - LIQUID LIMIT (%)
PI - PLASTIC INDEX (%)
W - MOISTURE CONTENT (%)
DD - DRY DENSITY (PCF)
NP - NON PLASTIC
-200 - PERCENT PASSING NO. 200 SIEVE
PP - POCKET PENETROMETER (TSF)

TV - TORVANE
PID - PHOTOIONIZATION DETECTOR
UC - UNCONFINED COMPRESSION
ppm - PARTS PER MILLION


Water Level at Time Drilling, or as Shown


Water Level at End of Drilling, or as Shown


Water Level After 24 Hours, or as Shown

SOIL CLASSIFICATION DESCRIPTION AND GUIDELINES

SOIL CLASSIFICATION

Major Divisions			Symbol	Typical Descriptions
Coarse Grained (More Than 50% Retained By No. 200 Sieve)	Gravel	Clean Gravels	GW	Well-Graded Gravels And Gravel/Sand Mixtures, Little Or No Fines
			GP	Poorly-Graded Gravels, Gravel/Sand Mixtures, Little Or No Fines
		Gravels With Fines	GM	Silty Gravels, Gravel/Sand/Silt Mixtures
			GC	Clayey Gravels, Gravel/Sand/Clay Mixtures
	Sand	Clean Sands	SW	Well-Graded Sand And Gravelly Sands, Little Or No Fines
			SP	Poorly-Graded Sand And Gravelly Sands, Little Or No Fines
		Sands With Fines	SM	Silty Sands, Sand/Silt Mixtures
			SC	Clayey Sands, Sand/Clay Mixtures
Fine Grained (More Than 50% Passing By No. 200 Sieve)	Silts And Clays	Liquid Limit Less Than 50	ML	Inorganic Silts, Silt With Slight Plasticity
			CL	Inorganic Clay, Clay With Low To Medium Plasticity
			OL	Organic Silts, Organic Silty Clays With Low Plasticity
		Liquid Limit More Than 50	MH	Inorganic Silts, Clayey Silts
			CH	Inorganic Clays Of High Plasticity, Fat Clays
			OH	Organinc Clays Of Medium To High Plasticity
Highly Organic Soils			PT	Peat, Humus And Other High Orgainc Soils

SOIL CHARACTERISTICS

Granular Soil		Cohesive Soil		
Relative Density	**Standard Penetration Test**	**Consistency**	**Standard Penetration Test**	**Unconfined Strength (Tsf)**
Very-Loose	0 - 4	Very-Soft	< 2	< 0.25
Loose	4 - 10	Soft	2 - 4	0.25 - 0.5
Medium-Dense	10 - 30	Medium-Stiff	4 - 8	0.5 - 1.0
Dense	30 - 50	Stiff	8 - 16	1.0 - 2.0
Very-Dense	> 50	Very-Stiff	16 - 32	2.0 - 4.0
Standard Penetration Tests Record The Number Of Blows Required To Drive A Split-Spoon Sampler 12 Inches (N-Value)		Hard	32 - 50	> 4.0
		Very-Hard	> 50	

ADDITIONAL SOIL CLASSIFICATION TERMS

Moisture Content		Structure	
Dry	Absence Of Moisture, Dusty, Dry To The Touch	Stratified	Alternating Layers of Material or Color > 6 mm
Damp	Some Moisture But Leaves No Moisture On Hand	Laminated	Alternating Layers of Material or Color < 6 mm
Moist	Leaves Moisture On Hand	Fissured	Breaks Along Definite Fracture Planes
Wet	Visible Free Water, Likely From Below Water Table	Slickenslided	Striated, Polished Or Glossy Fracture Planes
Groundwater Seepage		Blocky	Cohesive Soil That Can Be Broken Down Into Angular Lumps Which Resist Further Breakdown
Slow	< 1.0 gpm		
Moderate	1.1 - 3.0 gpm	Lenses	Small Pockets Of Different Soils, Note Thickness
Rapid	> 3.0 gpm	Homogeneous	Uniform Color And Appearance Througout

Minor Fractions in Fine Grained Soil		Caving	
Trace (Clay, Silt, Sand, or Gravel)	< 15 percent	Minor	Isolated Spalling
With (Clay, Silt, Sand, or Gravel)	16 to 30 percent	Moderate	Common Spalling
Clayey, Silty, Sandy, Gravelly	31 to 49 percent	Severe	Will not stand vertical

Plasticity		Dilatancy	
Nonplastic	Cannot Be Rolled At Any Water Content	None	No Visible Changes in the Specimen
Low	3 mm Thread Can Barely Be Rolled But Not Under The Plastic Limit	Slow	Water Slowly Appears and Dissapears
Medium	Can Be Rolled To 3 mm Thread , Crumbles When Drier Than Plastic Limit.	Rapid	Water Quickly Appears and Dissapears
High	Can Easily Be Rolled To 3 mm Thread. Can Be Rerolled Several Times.		

ODOT ROCK HARDNESS CLASSIFICATION CHART

Hardness Designation	Field Identification/Excavation Methods	Approx. Strength (Unconfined Compressive Strength)
Extremely-Soft (RO)	Can Be Indented With Thumbnail. May Be Moldable Or Friable With Finger Pressure.	< 100 Psi
Very-Soft (R1)	Crumbles Under Firm Blows With Geology Pick. Scratched With Finger Nail.	100 - 1,000 psi
Soft (R2)	Can Be Peeled By Knife Or Pick. Shallow Indentation Made By Frim Blow Of Geology Pick.	1,000 - 4,000 psi
Medium-Hard (R3)	Can Be Scratched By Knife Or Pick, Specimen Can Be Fractured With A Single Blow Of Hamer Or Geology Pick / Excavation Often Requires Medium To Large Equipment With Ripper Teeth.	4,000 - 8,000 psi
Hard (R4)	Can Be Scratched With Knife Or Pick Only With Difficulty. Several Hammer Blows Required To Fracture Specimen / Excavation Requires Large Equipment, Rock Chipper, Expansive Compound Fracturing Or Blasting.	8,000 - 16,000 psi
Very-Hard (R5)	Cannont Be Scratched By Knife Or Sharp Pick. Specimen Requires Many Blows Of Hammer To Fracture Or Chip. Hammer Rebounds After Impact / Expansive Compound Fracturing Or Blasting Required To Excavate.	> 16,000 psi

Chart Taken From Oregon Department Of Transportation Soil/Rock Classification Manual. Modified To Include Typical Excavation Methods.

Central Geotechnical Services
10240 SW Nimbus Ave, Suite L6
Portland, OR 97223
Telephone: (503) 616-9419

Project No:
Soderstrom-1-01

BORING LOG B-1

Project: Soderstrom-1-01
Location: 2221 Oak Street, Florence, Oregon 97439
Client: Siuslaw School District

Date Started: 5/5/23
Date Completed: 5/5/23

Approximate Ground Elevation:
Groundwater first observed: 7.50 ft
Groundwater at end of drilling: ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY (in.)	MOISTURE (%)	BLOW COUNTS	LAB RESULTS/ REMARKS
0		0.5 Medium-stiff to stiff, sandy SILT (ML), trace sub-angular gravel, sand is fine-grained, dark brown, moist	SS 1	8		6-4-4	
2		Very-loose to loose, poorly graded SAND (SP), sand is fine-grained, light brown, moist					
3			SS 2	8		3-3-3	
5							
6			SS 3	8		2-3-2	
7					▽		
8		Becomes wet and very-loose	SS 4	8		1-1-2	
10							
11		Becomes loose	SS 5	8		1-2-4	Boring terminated at 11.5 feet then moved north 5 feet and began mud-rotary from 10-81.5 feet.
12							
14							
15							
16		Becomes medium-dense	SS 1	10		5-7-12	
17							
18							
19							
20							
21			SS 2	10		10-14-17	
22							
23							
24							
25							
26		Becomes very-dense	SS 3	12		16-21-32	
27							
28							
29							
30		30.0					

(Continued Next Page)

Operator: Western States Soil Conservation Inc.
Drilling Method: 4 3/8" Solid Stem Auger
Equipment: CME 75 HT Truck Rig

Logged By: Troy Howard
Checked By: Blayne Sandau

Approximate Location Coordinates:
Lat: Long:

Remarks:

Central Geotechnical Services
10240 SW Nimbus Ave, Suite L6
Portland, OR 97223
Telephone: (503) 616-9419

Project No: Soderstrom-1-01

BORING LOG B-1

Project: Soderstrom-1-01
Location: 2221 Oak Street, Florence, Oregon 97439
Client: Siuslaw School District

Date Started: 5/5/23
Date Completed: 5/5/23

Approximate Ground Elevation:
Groundwater first observed: 7.50 ft
Groundwater at end of drilling: ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY (in.)	MOISTURE (%)	BLOW COUNTS	LAB RESULTS/ REMARKS
30							
31		Dense to very-dense, poorly graded SAND (SP), sand is fine-grained, light brown, moist	SS 4	10		11-25-26	
32							
33							
34							
35							
36			SS 5	10		10-20-22	
37							
38							
39							
40							
41			SS 6	10		12-19-15	
42							
43							
44							
45							
46		Becomes medium-dense	SS 7	10		4-2-20	
47							
48							
49							
50							
51		Becomes very-dense	SS 8	6		45-50	
52							
53							
54							
55							
56			SS 9	10		25-37-32	
57							
58							
59							
60		60.0					

(Continued Next Page)

Operator: Western States Soil Conservation Inc.
Drilling Method: 4 3/8" Solid Stem Auger
Equipment: CME 75 HT Truck Rig

Logged By: Troy Howard
Checked By: Blayne Sandau

Approximate Location Coordinates:
Lat: Long:

Remarks:

Central Geotechnical Services
10240 SW Nimbus Ave, Suite L6
Portland, OR 97223
Telephone: (503) 616-9419

Project No:
Soderstrom-1-01

BORING LOG B-1

Project: Soderstrom-1-01
Location: 2221 Oak Street, Florence, Oregon 97439
Client: Siuslaw School District

Date Started: 5/5/23
Date Completed: 5/5/23

Approximate Ground Elevation:
Groundwater first observed: 7.50 ft
Groundwater at end of drilling: ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY (in.)	MOISTURE (%)	BLOW COUNTS	LAB RESULTS/ REMARKS
60							
61		Very-dense, poorly graded SAND (SP), sand is fine-grained, light brown, moist	SS 10	10		35-24-32	
62							
63							
64							
65							
66			SS 11	10		18-26-31	
67							
68							
69							
70							
71			SS 12	12		18-26-33	
72							
73							
74							
75							
76			SS 13	12		38-47-48	
77							
78							
79							
80							
81			SS 14	16		21-29-36	
	81.5						

Boring terminated at 81.5 feet bgs
Groundwater first encountered at 7.5 feet bgs

Operator: Western States Soil Conservation Inc.
Drilling Method: 4 3/8" Solid Stem Auger
Equipment: CME 75 HT Truck Rig

Logged By: Troy Howard
Checked By: Blayne Sandau

Approximate Location Coordinates:
Lat: Long:

Remarks:

Central Geotechnical Services
10240 SW Nimbus Ave, Suite L6
Portland, OR 97223
Telephone: (503) 616-9419

Project No:
Soderstrom-1-01

BORING LOG INF-1

PAGE 1 OF 1

Project: Soderstrom-1-01
Location: 2221 Oak Street, Florence, Oregon 97439
Client: Siuslaw School District

Date Started: 5/5/23
Date Completed: 5/5/23

Approximate Ground Elevation:
Groundwater first encountered: ---
Groundwater at end of drilling: ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation:	SAMPLE TYPE NUMBER	RECOVERY (in.)	MOISTURE (%)	LAB RESULTS/ REMARKS
0.0		Medium-stiff, sandy SILT (ML), trace sub-angular gravel, sand is fine-grained, dark brown, moist					
0.6		Loose, poorly graded SAND (SP), sand is fine-grained, light brown, moist		GS 1	6		
2.5							
4.3		Boring terminated at 4.3 feet bgs No groundwater was encountered					

Operator: Western States Soil Conservation Inc.
Drilling Method:
Equipment: 6" Hand Auger

Logged By: Troy Howard
Checked By: Blayne Sandau

Approximate Location Coordinates:
Lat: Long:

Remarks:

Central Geotechnical Services
10240 SW Nimbus Ave, Suite L6
Portland, OR 97223
Telephone: (503) 616-9419

Project No:
Soderstrom-1-01

BORING LOG INF-2

PAGE 1 OF 1

Project: Soderstrom-1-01
Location: 2221 Oak Street, Florence, Oregon 97439
Client: Siuslaw School District

Date Started: 5/5/23
Date Completed: 5/5/23

Approximate Ground Elevation:
Groundwater first encountered: ---
Groundwater at end of drilling: ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation:	SAMPLE TYPE NUMBER	RECOVERY (in.)	MOISTURE (%)	LAB RESULTS/ REMARKS
0.0		Medium-stiff, sandy SILT (ML), trace sub-angular gravel, sand is fine-grained, dark brown, moist					
0.5		Loose, poorly graded SAND (SP), sand is fine-grained, light brown, moist					
2.5				GS 1	6		
4.0		Boring terminated at 4 feet bgs No groundwater was encountered					

Operator: Western States Soil Conservation Inc.
Drilling Method:
Equipment: 6" Hand Auger

Logged By: Troy Howard
Checked By: Blayne Sandau

Approximate Location Coordinates:
Lat: Long:

Remarks:

Central Geotechnical Services
10240 SW Nimbus Ave, Suite L6
Portland, OR 97223
Telephone: (503) 616-9419

Project No:
Soderstrom-1-01

BORING LOG INF-3

PAGE 1 OF 1

Project: Soderstrom-1-01
Location: 2221 Oak Street, Florence, Oregon 97439
Client: Siuslaw School District

Date Started: 5/5/23
Date Completed: 5/5/23

Approximate Ground Elevation:
Groundwater first encountered: ---
Groundwater at end of drilling: ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	Elevation:	SAMPLE TYPE NUMBER	RECOVERY (in.)	MOISTURE (%)	LAB RESULTS/ REMARKS
0.0		Medium-stiff, sandy SILT (ML), trace sub-angular gravel, sand is fine-grained, dark brown, moist					
0.8		Loose, poorly graded SAND (SP), sand is fine-grained, light brown, moist					
2.5							
				GS 1	6		
5.0			5.0				

Boring terminated at 5 feet bgs
No groundwater was encountered

Operator: Western States Soil Conservation Inc.
Drilling Method:
Equipment: 6" Hand Auger

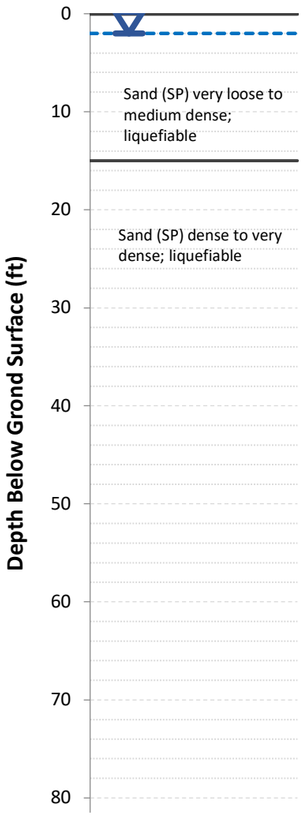
Logged By: Troy Howard
Checked By: Blayne Sandau

Approximate Location Coordinates:
Lat: Long:

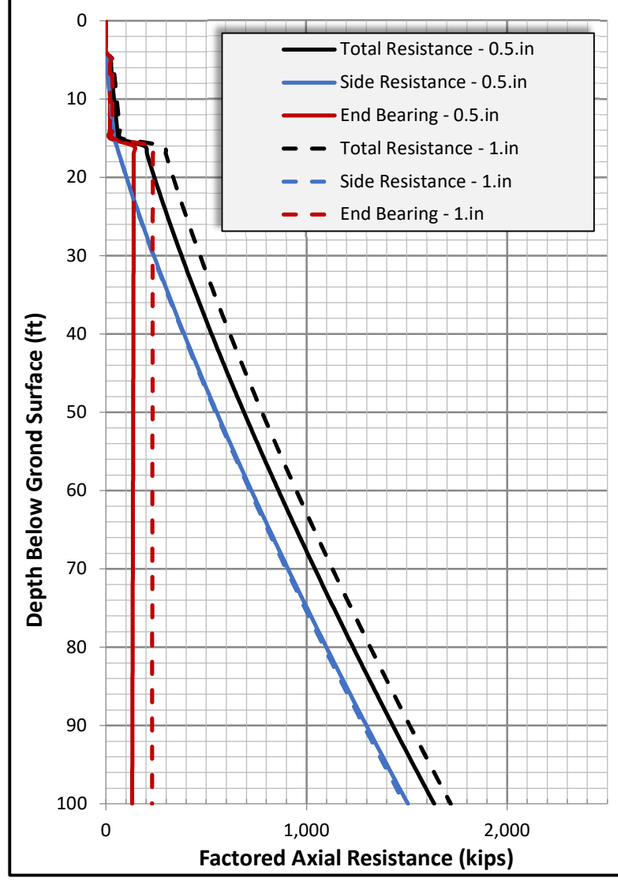
Remarks:

APPENDIX B: Drilled Shaft Capacities

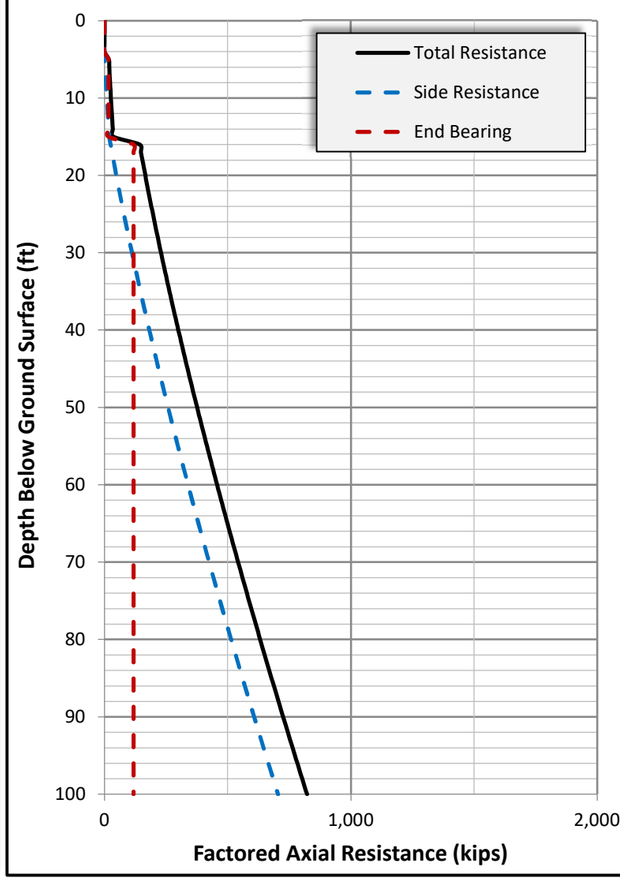
Subsurface Profile



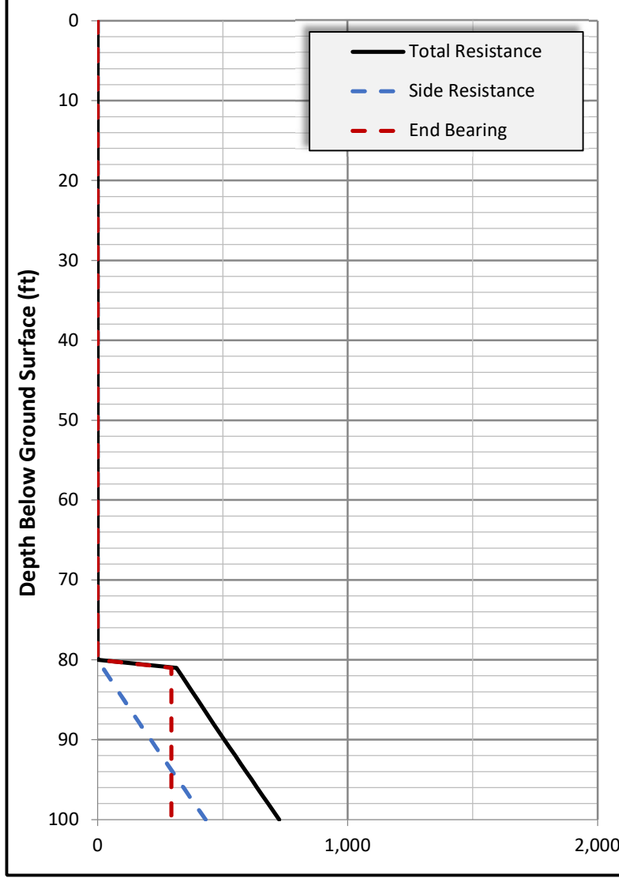
Service Limit State



Strength Limit State



Extreme Limit State



General Notes

1. Axial shaft resistance was developed in accordance with the 2020 AASHTO LRFD Bridge Design Manual (9th Edition).
2. The axial resistances include resistance factors shown on the adjacent table for Strength, Extreme, and Service Limit States.Axial resistances are based on a single non-redundant shaft. A 20% reduction in the Strength Limit State resistance factors was applied to the axial resistances.
3. Unfactored downdrag load for the Extreme Limit State is estimated to be 1133 kips. A load factor of 1.0 should be applied with post-earthquake loading conditions in accordance with the 2020 AASHTO LRFD Bridge Design Manual.
4. Axial resistances assume permanent steel casing to a depth of 0 feet of permanent steel casing below the ground surface. The geotechnical engineer should re-evaluate axial shaft resistance if permanent steel casing length or top of shaft elevation changes.

Resistance Factors						
Soil Type	Strength			Extreme		Service
	Side	Uplift	End	Comp.	Uplift	
Sand	0.55	0.45	0.5	1	0.8	1
Clay	0.36	0.28	0.32			
Rock	0.44	0.32	0.4			

Drilled Shaft Axial Capacity - 30" Diameter

Siuslaw School District Covered Play Structure

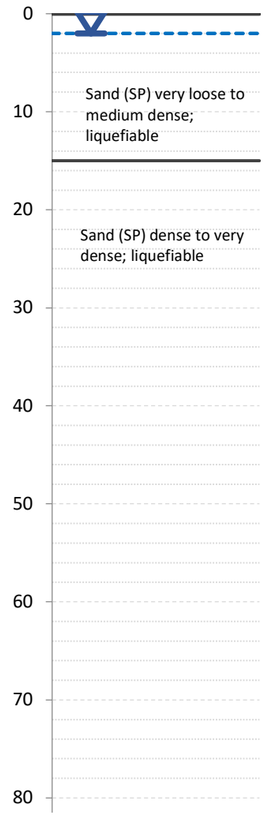
Florence, OR

CENTRAL GEOTECHNICAL SERVICES

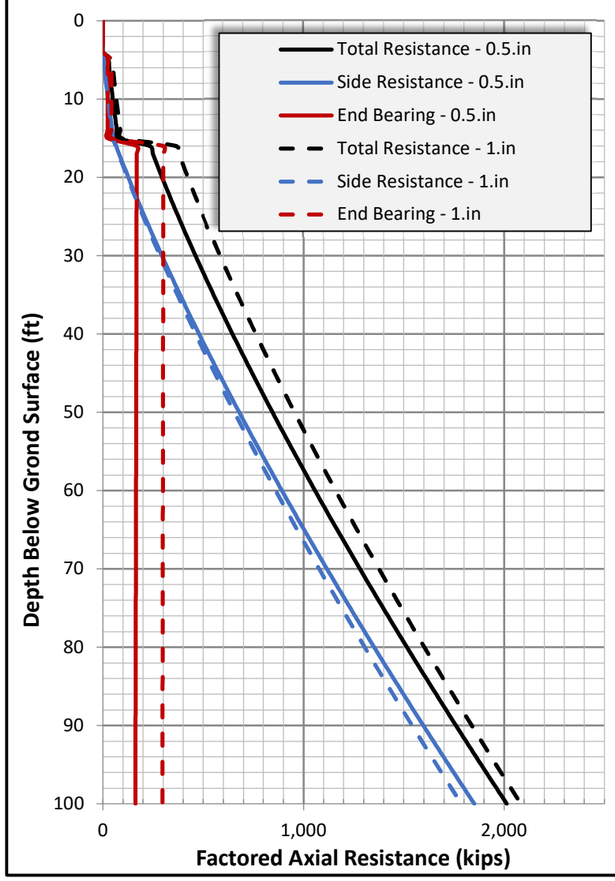
Figure B-1

Project Number: Soderstrom-1-01 Date Exported: 06/01/2023

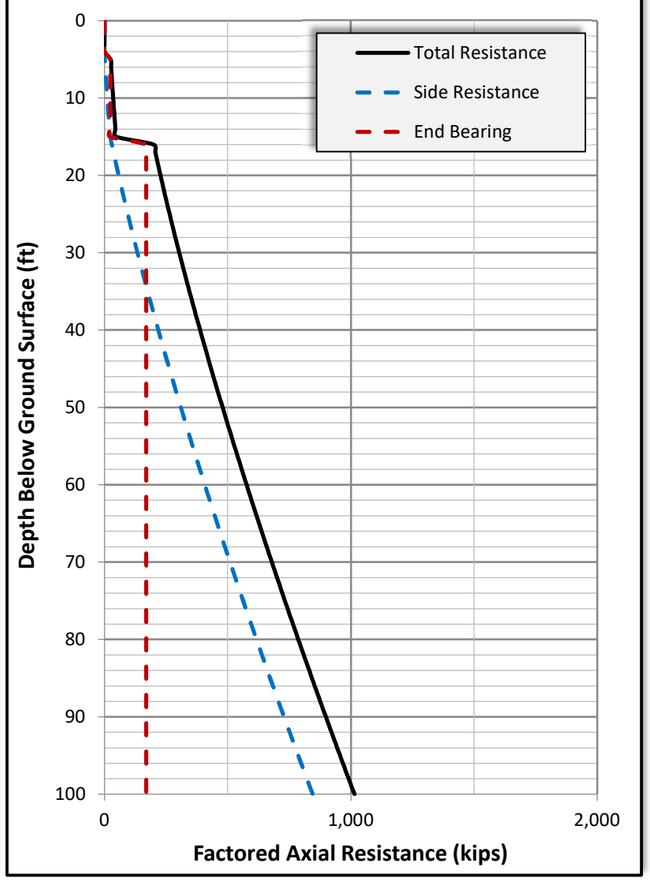
Subsurface Profile



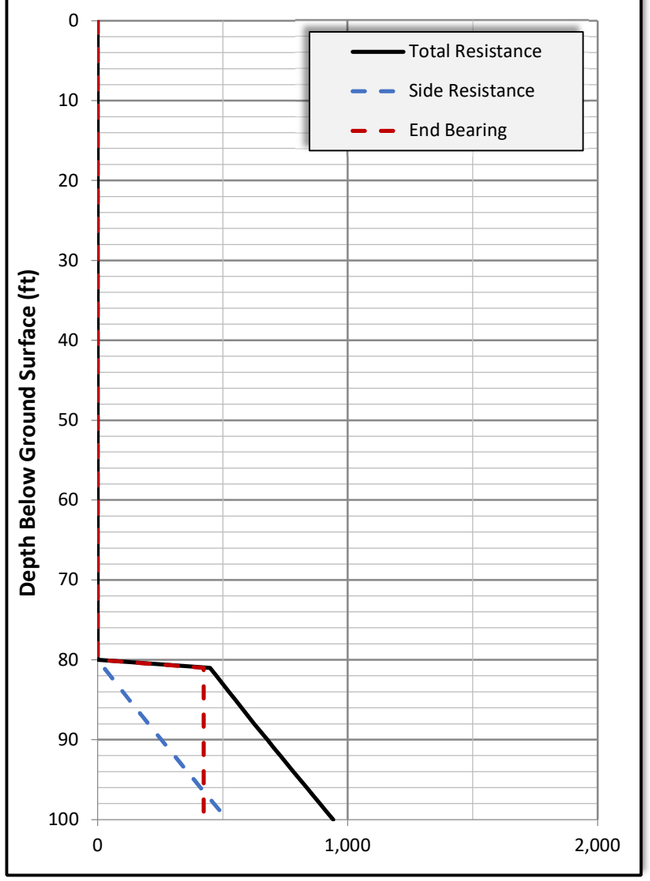
Service Limit State



Strength Limit State



Extreme Limit State



General Notes

1. Axial shaft resistance was developed in accordance with the 2020 AASHTO LRFD Bridge Design Manual (9th Edition).
2. The axial resistances include resistance factors shown on the adjacent table for Strength, Extreme, and Service Limit States.Axial resistances are based on a single non-redundant shaft. A 20% reduction in the Strength Limit State resistance factors was applied to the axial resistances.
3. Unfactored downdrag load for the Extreme Limit State is estimated to be 1359 kips. A load factor of 1.0 should be applied with post-earthquake loading conditions in accordance with the 2020 AASHTO LRFD Bridge Design Manual.
4. Axial resistances assume permanent steel casing to a depth of 0 feet of permanent steel casing below the ground surface. The geotechnical engineer should re-evaluate axial shaft resistance if permanent steel casing length or top of shaft elevation changes.

Resistance Factors						
Soil Type	Strength			Extreme		Service
	Side	Uplift	End	Comp.	Uplift	
Sand	0.55	0.45	0.5	1	0.8	1
Clay	0.36	0.28	0.32			
Rock	0.44	0.32	0.4			

Drilled Shaft Axial Capacity - 36" Diameter

Siuslaw School District Covered Play Structure

Florence, OR

CENTRAL GEOTECHNICAL SERVICES

Figure B-2

Project Number: Soderstrom-1-01 Date Exported: 06/01/2023

Appendix E – Operations and Maintenance Forms

Rain Gardens

Operations & Maintenance Plan

Training and/or written guidance information for operating and maintaining vegetated infiltration basins shall be provided to all property owners and tenants. A copy of the O&M Plan shall be provided to all property owners and tenants.

Access to the infiltration basin shall be safe and efficient. Egress and ingress routes shall be maintained to design standards. Roadways shall be maintained to accommodate size and weight of vehicles, if applicable.

- Obstacles preventing maintenance personnel and/or equipment access to the infiltration basin shall be removed.
- Gravel or ground cover shall be added if erosion occurs, e.g., due to vehicular or pedestrian traffic.

Insects & Rodents shall not be harbored in the infiltration basin. Pest control measures shall be taken when insects/rodents are found to be present.

- If a complaint is received or an inspection reveals that a stormwater facility is significantly infested with mosquitoes or other vectors, the property owner/owners or their designee may be required to eliminate the infestation at the City inspector's discretion. Control of the infestation shall be attempted by using first non-chemical methods and secondly, only those chemical methods specifically approved by the City's inspector. Acceptable methods include but are not limited to the following:
  i) Installation of predacious bird or bat nesting boxes.
  ii) Alterations of pond water levels approximately every four days in order to disrupt mosquito larval development cycles.
  iii) Stocking ponds and other permanent water facilities with fish or other predatory species.
  iv) If non-chemical methods have proved unsuccessful, contact the City inspector prior to use of chemical methods such as the mosquito larvicides Bacillus thurengensis var. israeliensis or other approved larvacides. These materials may only be used with City inspector approval if evidence can be provided that these materials will not migrate off-site or enter the public stormwater system. Chemical larvicides shall be applied by a licensed individual or contractor.
- Holes in the ground located in and around the infiltration basin shall be filled.

If used at this site, the following will be applicable:

Fences shall be maintained to preserve their functionality and appearance.

- Collapsed fences shall be restored to an upright position.
- Jagged edges and damaged fences shall be repaired or replaced.

Rain Gardens

Operations & Maintenance Plan

A **vegetated Infiltration Basin** is a vegetated depression created by excavation, berms, or small dams to provide for short-term ponding of surface water until it percolates into the soil. The basin shall infiltrate stormwater within 24 hours. All facility components and vegetation shall be inspected for proper operations and structural stability, at a minimum, quarterly for the first 2 years from the date of installation, 2 times per year thereafter, and within 48 hours after each major storm event. The facility owner must keep a log, recording all inspection dates, observations, and maintenance activities. The following items shall be inspected and maintained as stated:

Basin Inlet shall assure unrestricted stormwater flow to the vegetated basin.

- Sources of erosion shall be identified and controlled when native soil is exposed or erosion channels are present.
- Inlet shall be cleared when conveyance capacity is plugged.
- Rock splash pads shall be replenished to prevent erosion.

Embankment, Dikes, Berms & Side Slopes retain water in the infiltration basin.

- Structural deficiencies shall be corrected upon discovery:
- Slopes shall be stabilized using appropriate erosion control measures when soil is exposed/ flow channels are forming.
- Sources of erosion damage shall be identified and controlled.

Overflow or Emergency Spillway conveys flow exceeding reservoir capacity to an approved stormwater receiving system.

- Overflow shall be cleared when 25% of the conveyance capacity is plugged.
- Sources of erosion damage shall be identified and controlled when soil is exposed.
- Rocks or other armament shall be replaced when only one layer of rock exists.

Filter Media shall allow stormwater to percolate uniformly through the infiltration basin. If water remains 36-48 hours after storm, sources of possible clogging shall be identified and corrected.

- Basin shall be raked and, if necessary, soil shall be excavated, and cleaned or replaced.

Sediment/ Basin Debris Management shall prevent loss of infiltration basin volume caused by sedimentation. Gauges located at the opposite ends of the basin shall be maintained to monitor sedimentation.

- Sediment and debris exceeding 4" in depth shall be removed every 2-5 years or sooner if performance is affected.

Debris and Litter shall be removed to ensure stormwater infiltration and to prevent clogging of overflow drains and interference with plant growth.

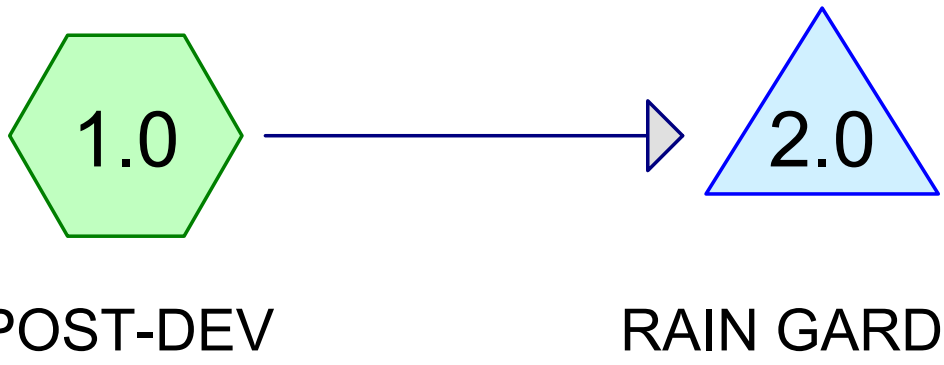
- Restricted sources of sediment and debris, such as discarded lawn clippings, shall be identified and prevented.

Vegetation shall be healthy and dense enough to provide filtering while protecting underlying soils from erosion.

- Mulch shall be replenished as needed to ensure healthy plant growth.
- Vegetation, large shrubs or trees that limit access or interfere with basin operation shall be pruned or removed.
- Grass shall be mowed to 4"-9" high and grass clippings shall be removed no less than 2 times per year.
- Fallen leaves and debris from deciduous plant foliage shall be raked and removed.
- Nuisance or prohibited vegetation from the Eugene Plant List (such as blackberries or English Ivy) shall be removed when discovered. Invasive vegetation contributing up to 25% of vegetation of all species shall be removed.
- Dead vegetation shall be removed to maintain less than 10% of area coverage or when infiltration basin function is impaired. Vegetation shall be replaced within 3 months, or immediately if required to control erosion.

Spill Prevention measures shall be exercised when handling substances that contaminate stormwater. Releases of pollutants shall be corrected as soon as identified.

Appendix H – Hydrocad Model Output



Subcat Reach Pond Link

Routing Diagram for Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc., Printed 1/30/2024

Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1.0: POST-DEV Runoff Area=7,926 sf 100.00% Impervious Runoff Depth=3.23"
Flow Length=124' Slope=0.0200 '/' Tc=1.4 min CN=0/98 Runoff=0.150 cfs 0.049 af

Pond 2.0: RAIN GARDEN Peak Elev=97.28' Storage=368 cf Inflow=0.150 cfs 0.049 af
Discarded=0.040 cfs 0.049 af Primary=0.000 cfs 0.000 af Outflow=0.040 cfs 0.049 af

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

Summary for Subcatchment 1.0: POST-DEV

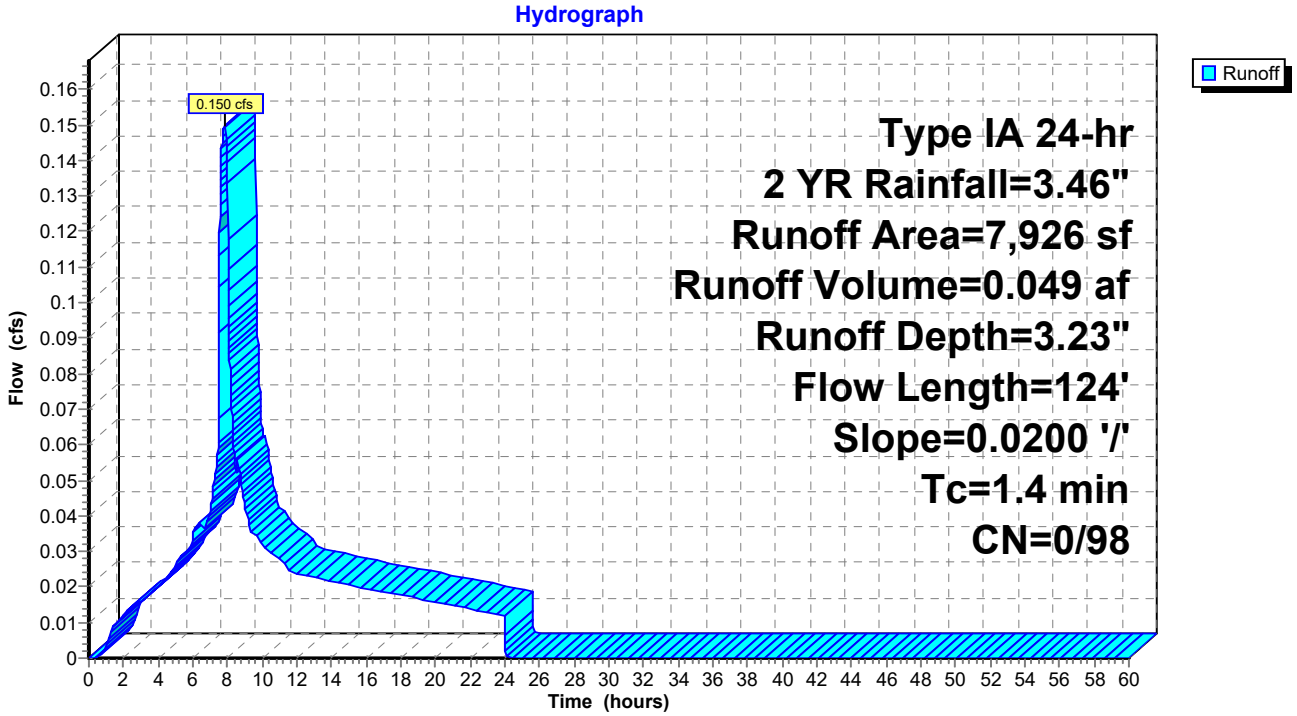
Runoff = 0.150 cfs @ 7.81 hrs, Volume= 0.049 af, Depth= 3.23"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 2 YR Rainfall=3.46"

	Area (sf)	CN	Description
*	7,926	98	Pavement
	7,926	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	124	0.0200	1.49		**Sheet Flow, Flow on Parking Lot** Smooth surfaces n= 0.011 P2= 3.46"

Subcatchment 1.0: POST-DEV



Summary for Pond 2.0: RAIN GARDEN

Inflow Area = 0.182 ac,100.00% Impervious, Inflow Depth = 3.23" for 2 YR event
Inflow = 0.150 cfs @ 7.81 hrs, Volume= 0.049 af
Outflow = 0.040 cfs @ 9.12 hrs, Volume= 0.049 af, Atten= 73%, Lag= 78.6 min
Discarded = 0.040 cfs @ 9.12 hrs, Volume= 0.049 af
Primary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 97.28' @ 9.12 hrs Surf.Area= 582 sf Storage= 368 cf

Plug-Flow detention time= 68.7 min calculated for 0.049 af (100% of inflow)
Center-of-Mass det. time= 68.7 min (728.2 - 659.5)

Volume	Invert	Avail.Storage	Storage Description
#1	96.50'	1,252 cf	**RAIN GARDEN (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
96.50	361	0	0
98.00	785	860	860
98.50	785	393	1,252

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.50'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	98.00'	**2.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

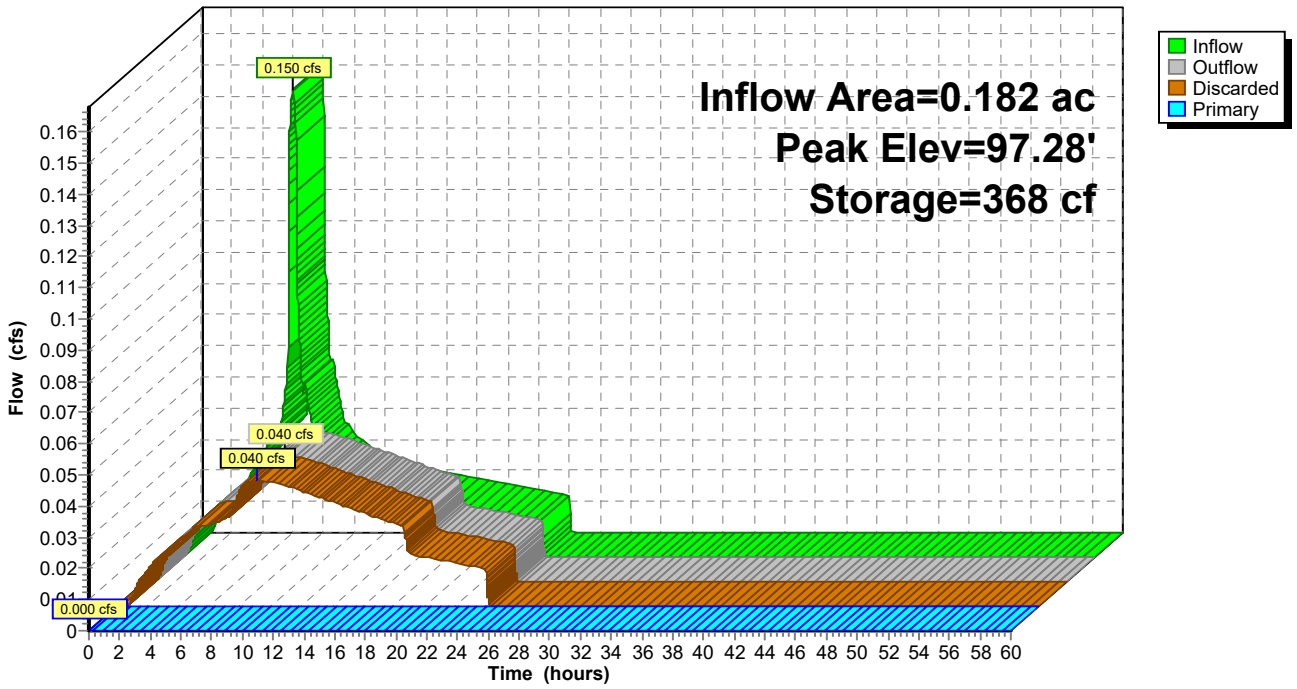
Discarded OutFlow Max=0.040 cfs @ 9.12 hrs HW=97.28' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.040 cfs)

Primary OutFlow Max=0.000 cfs @ 0.00 hrs HW=96.50' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

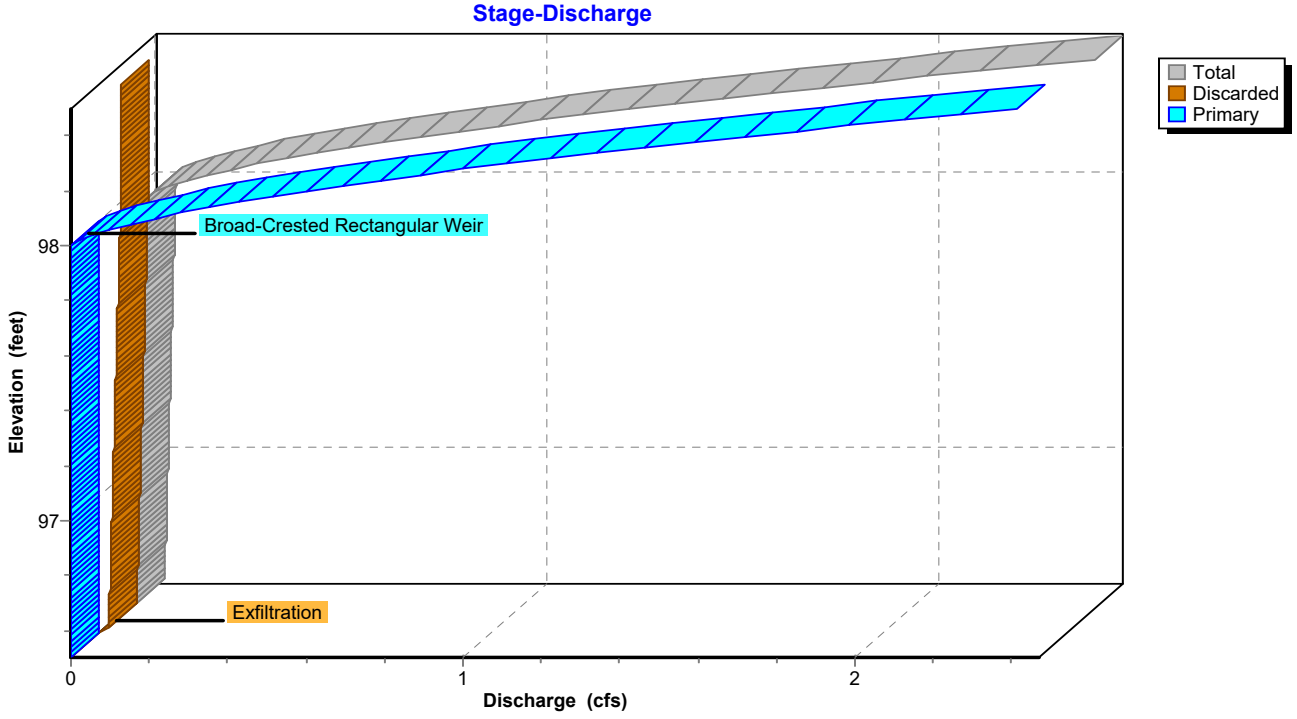
Pond 2.0: RAIN GARDEN

Hydrograph

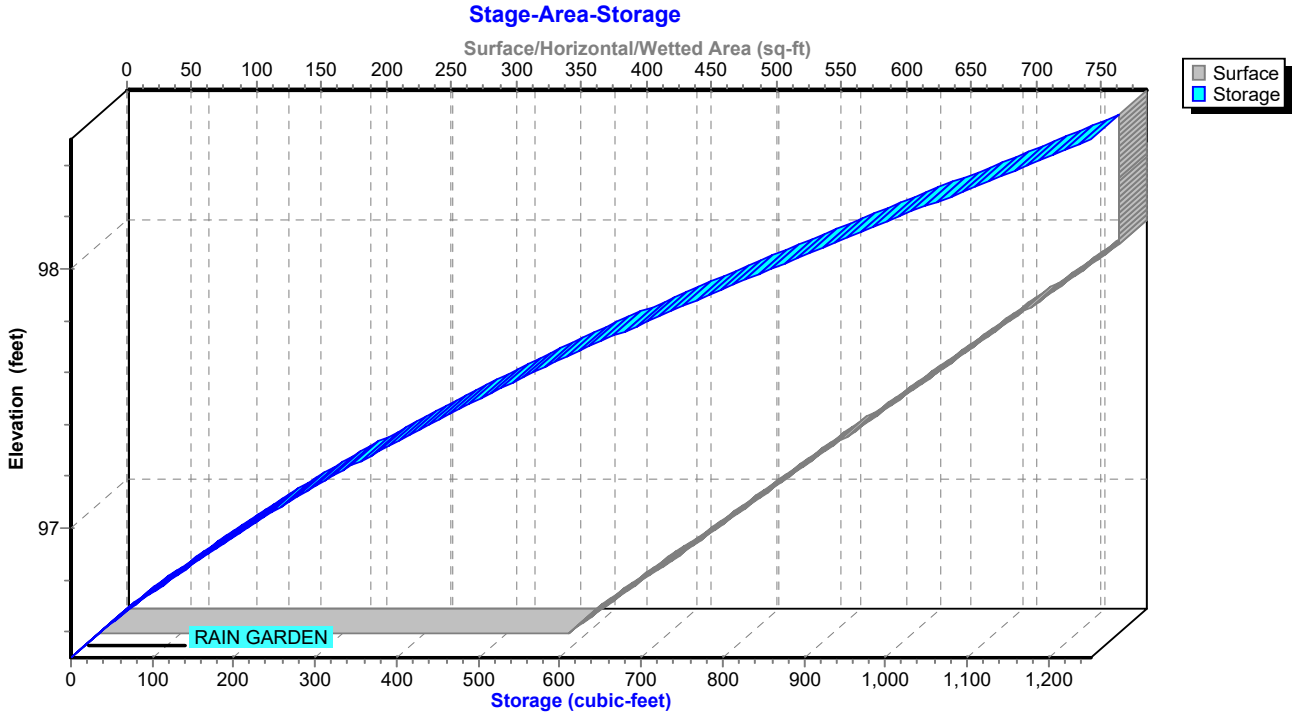


Pond 2.0: RAIN GARDEN

Stage-Discharge



Pond 2.0: RAIN GARDEN



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1.0: POST-DEV Runoff Area=7,926 sf 100.00% Impervious Runoff Depth=4.24"
Flow Length=124' Slope=0.0200 '/' Tc=1.4 min CN=0/98 Runoff=0.196 cfs 0.064 af

Pond 2.0: RAIN GARDEN Peak Elev=97.62' Storage=584 cf Inflow=0.196 cfs 0.064 af
Discarded=0.047 cfs 0.064 af Primary=0.000 cfs 0.000 af Outflow=0.047 cfs 0.064 af

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

Summary for Subcatchment 1.0: POST-DEV

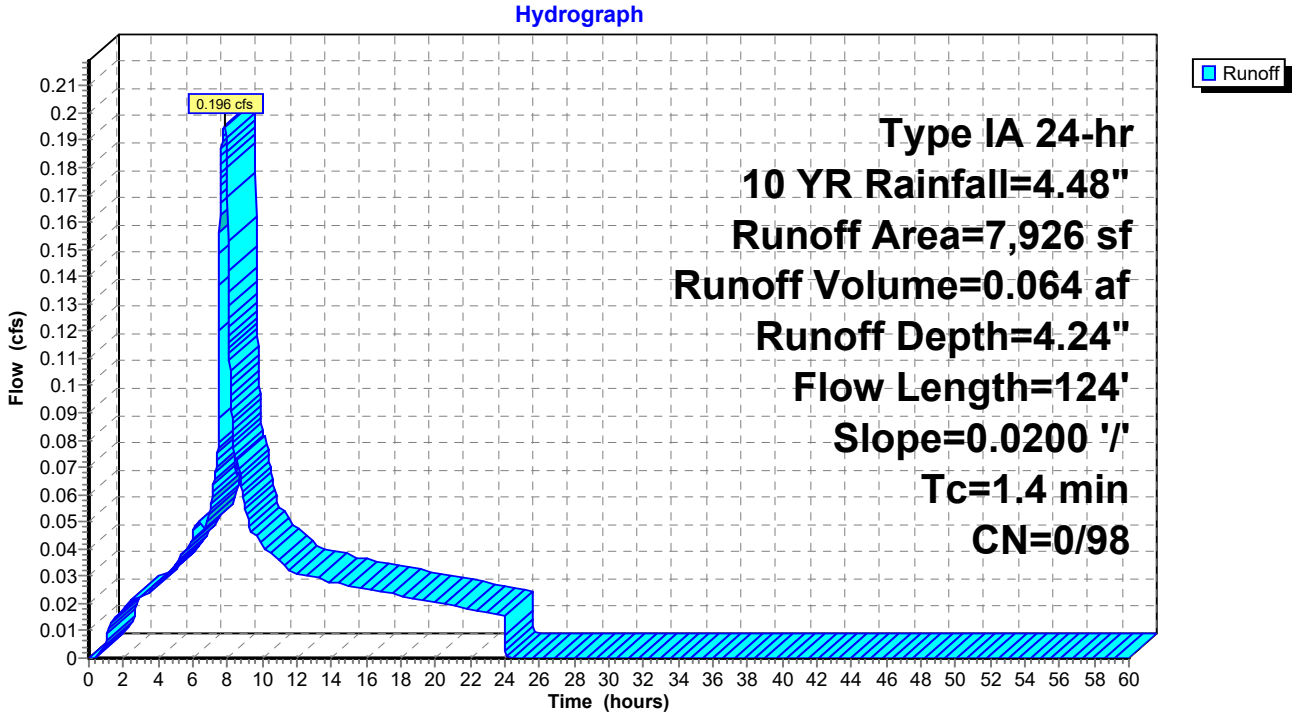
Runoff = 0.196 cfs @ 7.81 hrs, Volume= 0.064 af, Depth= 4.24"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 10 YR Rainfall=4.48"

	Area (sf)	CN	Description
*	7,926	98	Pavement
	7,926	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	124	0.0200	1.49		**Sheet Flow, Flow on Parking Lot** Smooth surfaces n= 0.011 P2= 3.46"

Subcatchment 1.0: POST-DEV



Summary for Pond 2.0: RAIN GARDEN

Inflow Area = 0.182 ac,100.00% Impervious, Inflow Depth = 4.24" for 10 YR event
Inflow = 0.196 cfs @ 7.81 hrs, Volume= 0.064 af
Outflow = 0.047 cfs @ 9.35 hrs, Volume= 0.064 af, Atten= 76%, Lag= 92.7 min
Discarded = 0.047 cfs @ 9.35 hrs, Volume= 0.064 af
Primary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 97.62' @ 9.35 hrs Surf.Area= 679 sf Storage= 584 cf

Plug-Flow detention time= 115.3 min calculated for 0.064 af (100% of inflow)
Center-of-Mass det. time= 115.3 min (768.7 - 653.4)

Volume	Invert	Avail.Storage	Storage Description
#1	96.50'	1,252 cf	**RAIN GARDEN (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
96.50	361	0	0
98.00	785	860	860
98.50	785	393	1,252

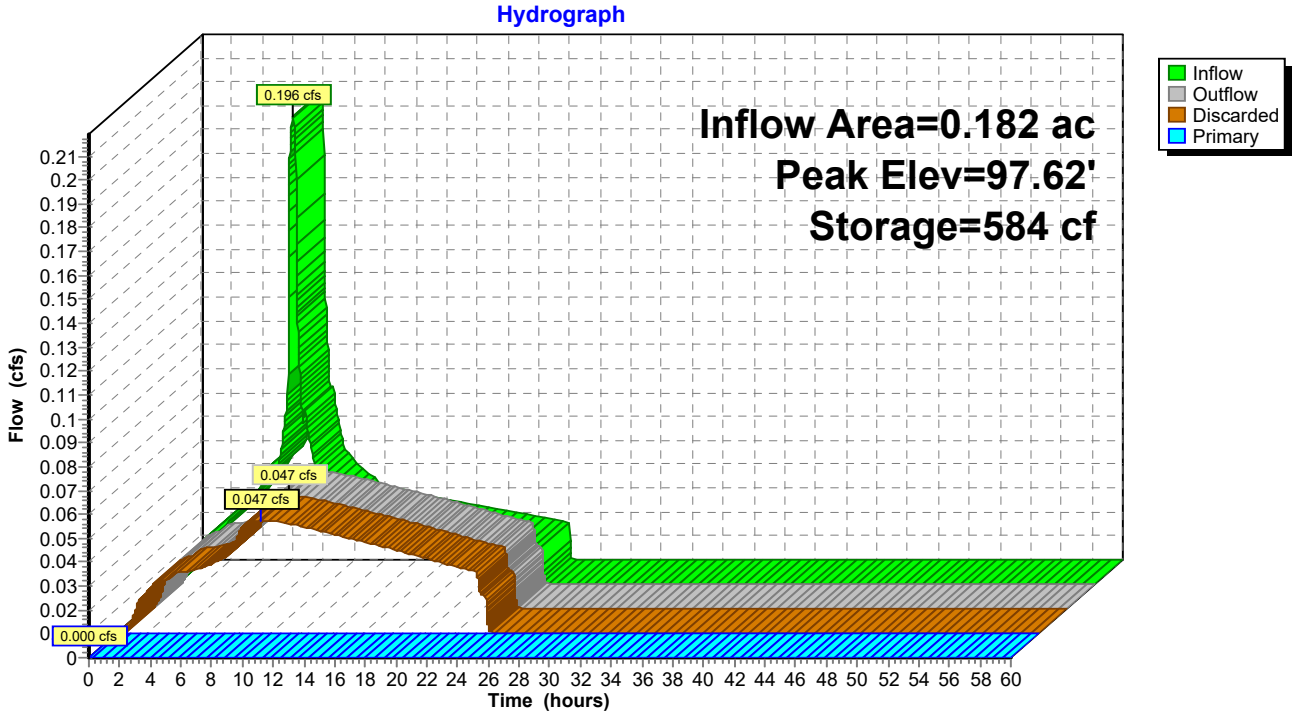
Device	Routing	Invert	Outlet Devices
#1	Discarded	96.50'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	98.00'	**2.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.047 cfs @ 9.35 hrs HW=97.62' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.047 cfs)

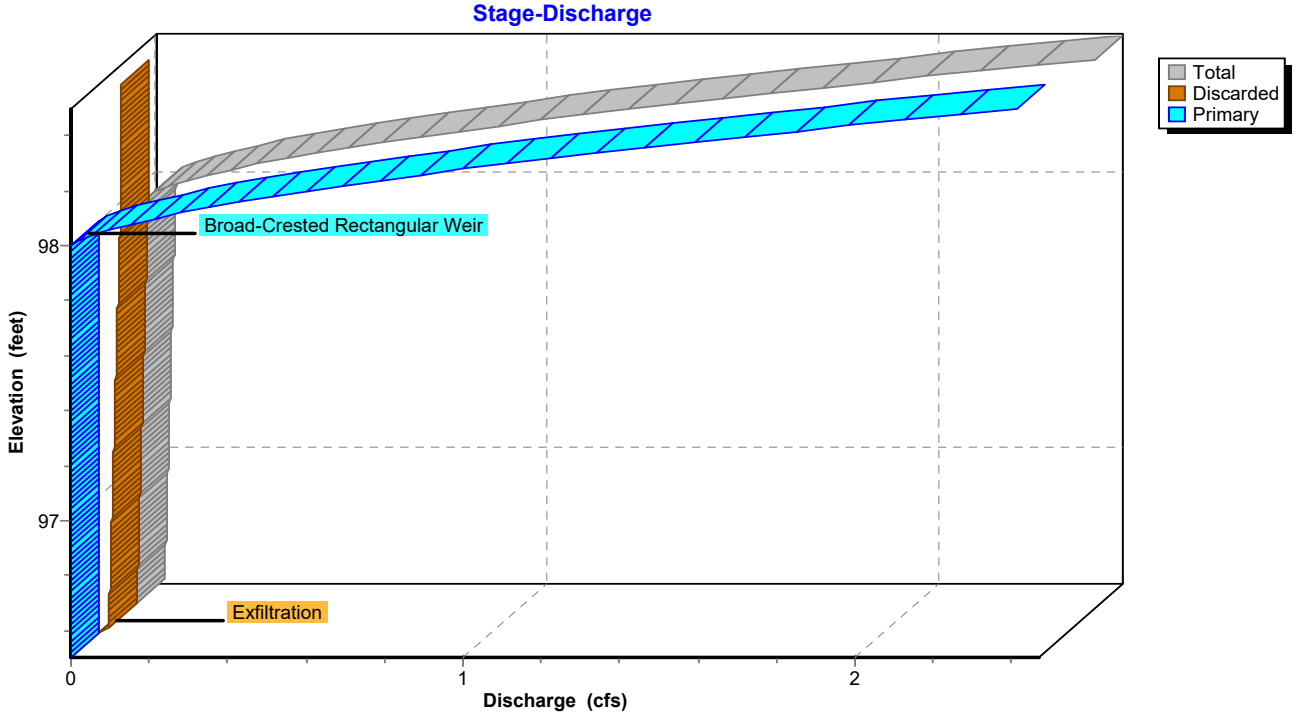
Primary OutFlow Max=0.000 cfs @ 0.00 hrs HW=96.50' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

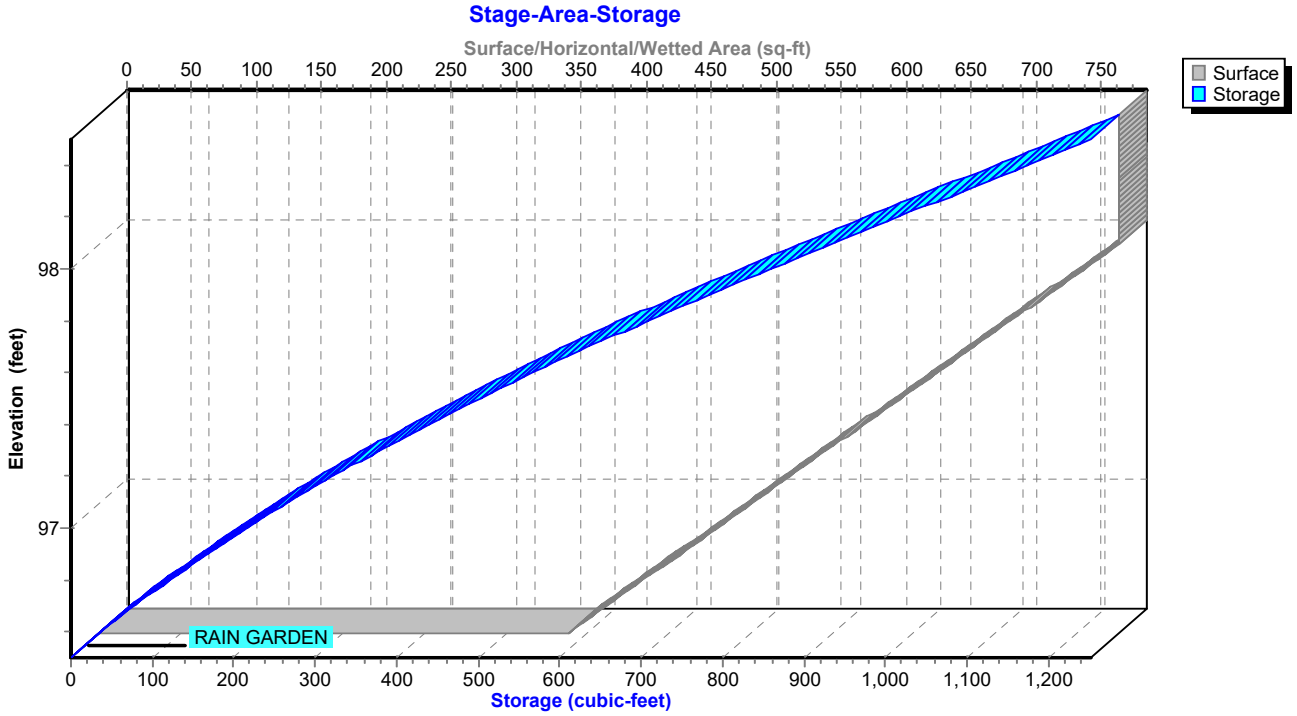
Pond 2.0: RAIN GARDEN



Pond 2.0: RAIN GARDEN



Pond 2.0: RAIN GARDEN



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1.0: POST-DEV Runoff Area=7,926 sf 100.00% Impervious Runoff Depth=4.82"
Flow Length=124' Slope=0.0200 '/' Tc=1.4 min CN=0/98 Runoff=0.222 cfs 0.073 af

Pond 2.0: RAIN GARDEN Peak Elev=97.81' Storage=718 cf Inflow=0.222 cfs 0.073 af
Discarded=0.051 cfs 0.073 af Primary=0.000 cfs 0.000 af Outflow=0.051 cfs 0.073 af

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

Summary for Subcatchment 1.0: POST-DEV

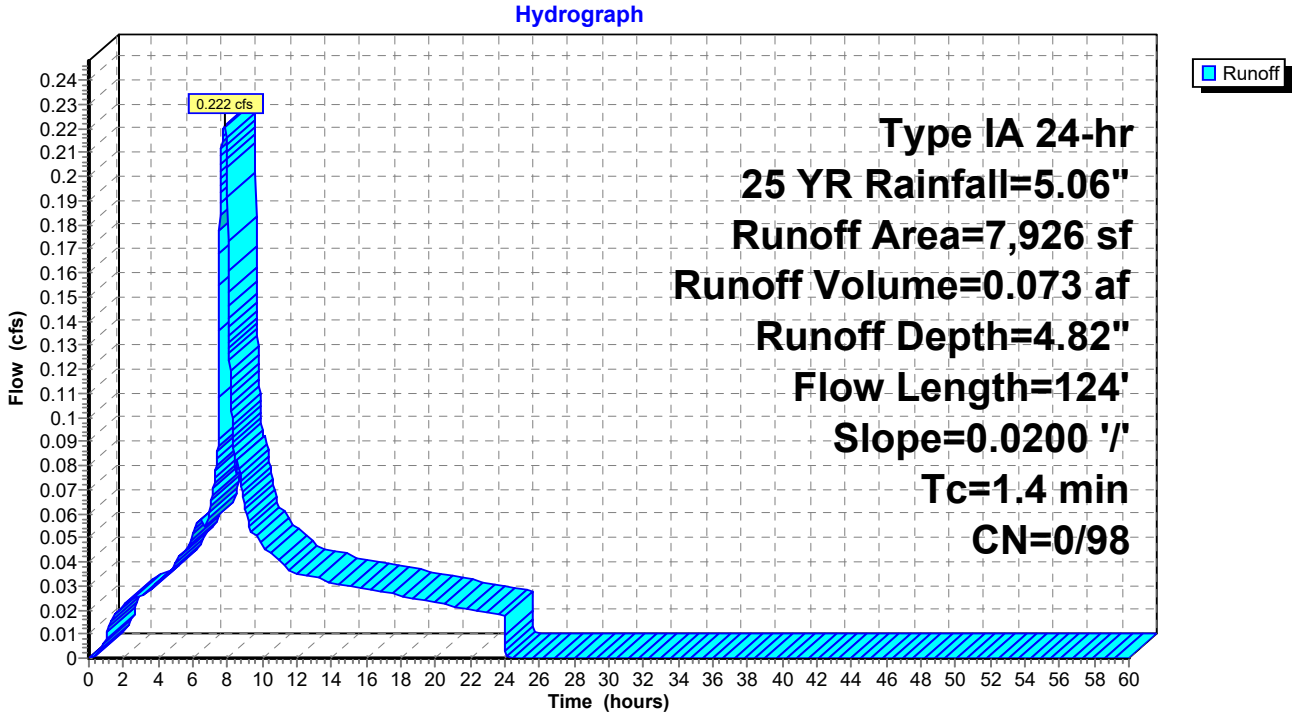
Runoff = 0.222 cfs @ 7.81 hrs, Volume= 0.073 af, Depth= 4.82"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 25 YR Rainfall=5.06"

	Area (sf)	CN	Description
*	7,926	98	Pavement
	7,926	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	124	0.0200	1.49		**Sheet Flow, Flow on Parking Lot** Smooth surfaces n= 0.011 P2= 3.46"

Subcatchment 1.0: POST-DEV



Summary for Pond 2.0: RAIN GARDEN

Inflow Area = 0.182 ac,100.00% Impervious, Inflow Depth = 4.82" for 25 YR event
Inflow = 0.222 cfs @ 7.81 hrs, Volume= 0.073 af
Outflow = 0.051 cfs @ 9.69 hrs, Volume= 0.073 af, Atten= 77%, Lag= 113.2 min
Discarded = 0.051 cfs @ 9.69 hrs, Volume= 0.073 af
Primary = 0.000 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 97.81' @ 9.69 hrs Surf.Area= 732 sf Storage= 718 cf

Plug-Flow detention time= 142.0 min calculated for 0.073 af (100% of inflow)
Center-of-Mass det. time= 142.0 min (792.9 - 650.9)

Volume	Invert	Avail.Storage	Storage Description
#1	96.50'	1,252 cf	**RAIN GARDEN (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
96.50	361	0	0
98.00	785	860	860
98.50	785	393	1,252

Device	Routing	Invert	Outlet Devices
#1	Discarded	96.50'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	98.00'	**2.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

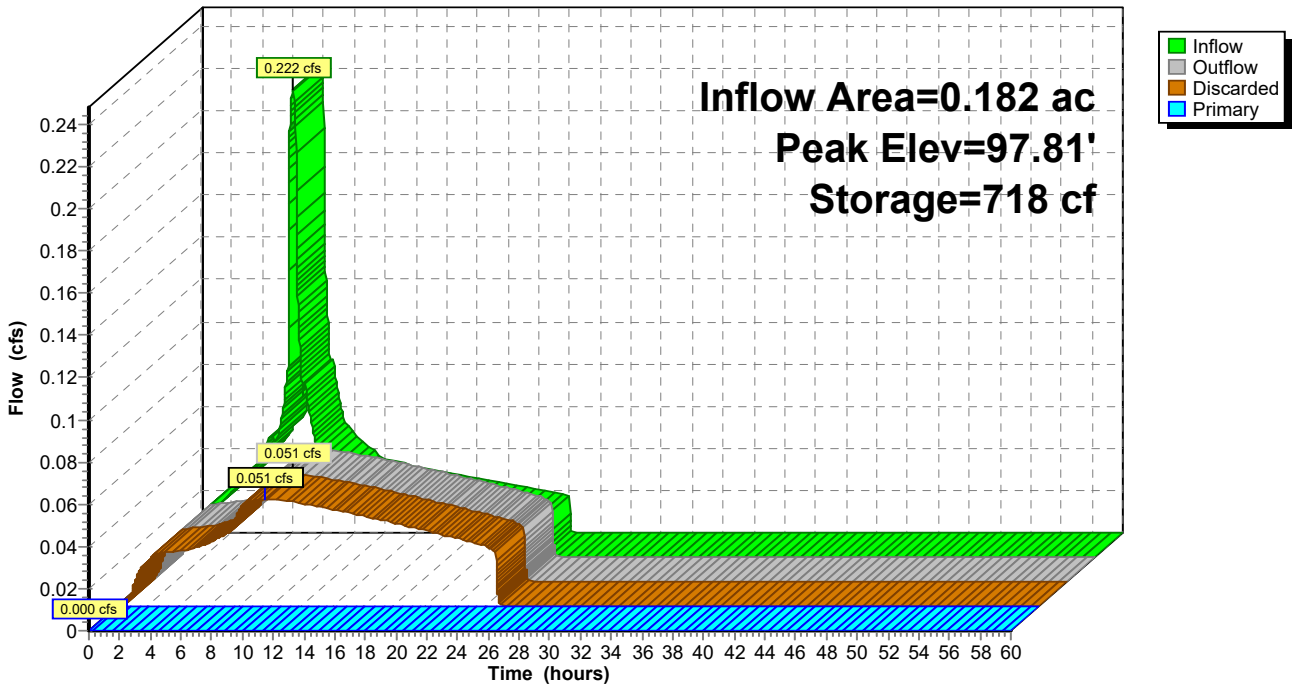
Discarded OutFlow Max=0.051 cfs @ 9.69 hrs HW=97.81' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.051 cfs)

Primary OutFlow Max=0.000 cfs @ 0.00 hrs HW=96.50' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.000 cfs)

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

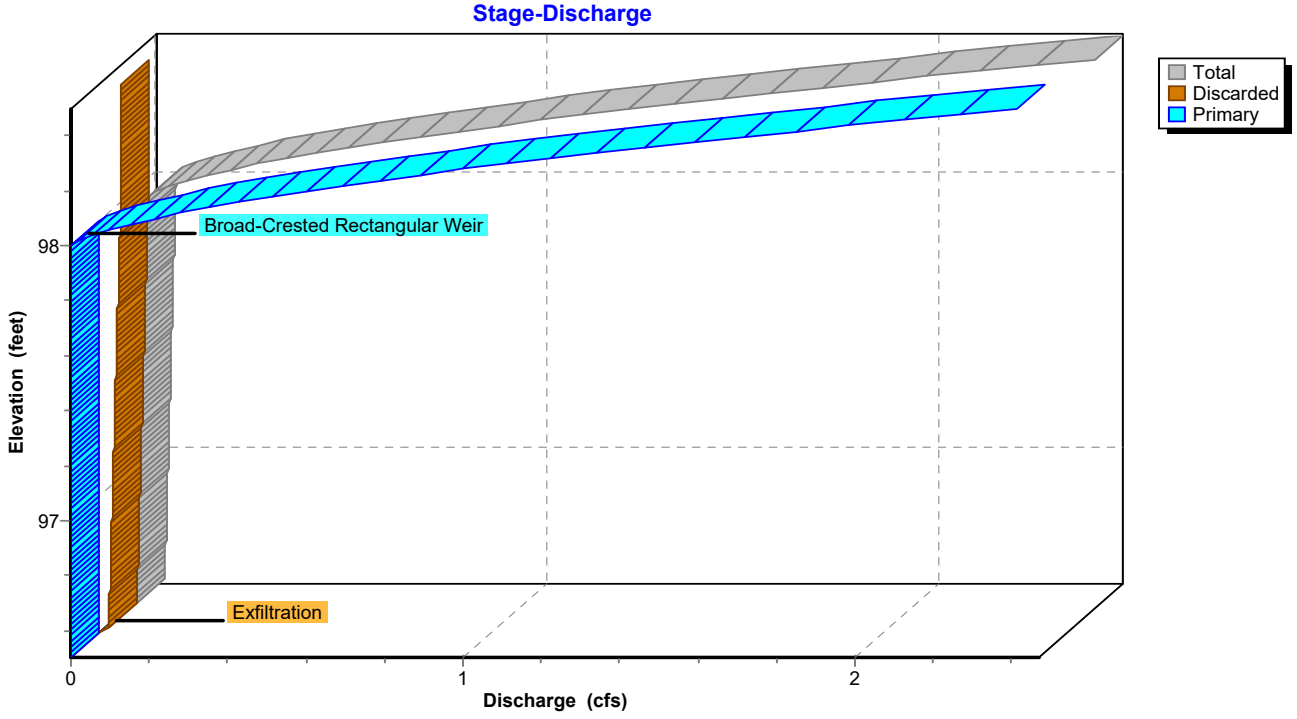
Pond 2.0: RAIN GARDEN

Hydrograph

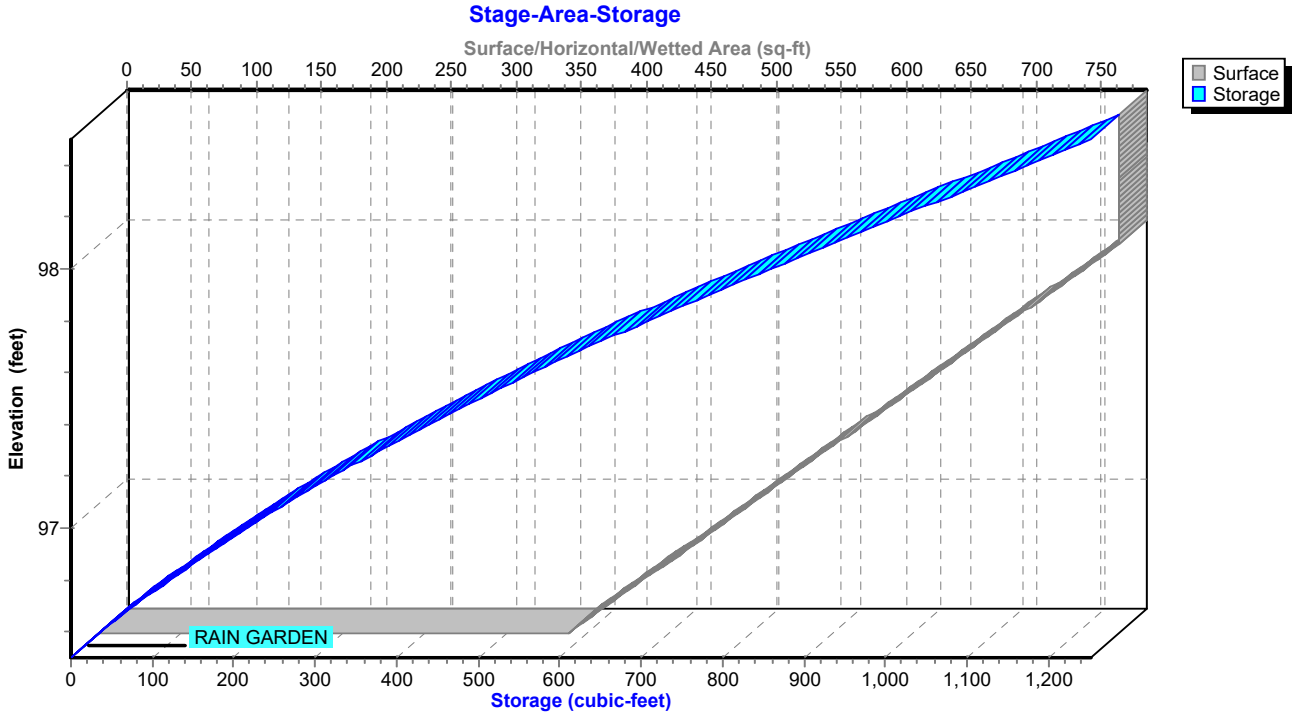


Pond 2.0: RAIN GARDEN

Stage-Discharge



Pond 2.0: RAIN GARDEN



Time span=0.00-60.00 hrs, dt=0.01 hrs, 6001 points
Runoff by SBUH method, Split Pervious/Imperv.
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1.0: POST-DEV Runoff Area=7,926 sf 100.00% Impervious Runoff Depth=5.71"
Flow Length=124' Slope=0.0200 '/' Tc=1.4 min CN=0/98 Runoff=0.261 cfs 0.087 af

Pond 2.0: RAIN GARDEN Peak Elev=98.03' Storage=880 cf Inflow=0.261 cfs 0.087 af
Discarded=0.055 cfs 0.085 af Primary=0.030 cfs 0.002 af Outflow=0.085 cfs 0.087 af

Summary for Subcatchment 1.0: POST-DEV

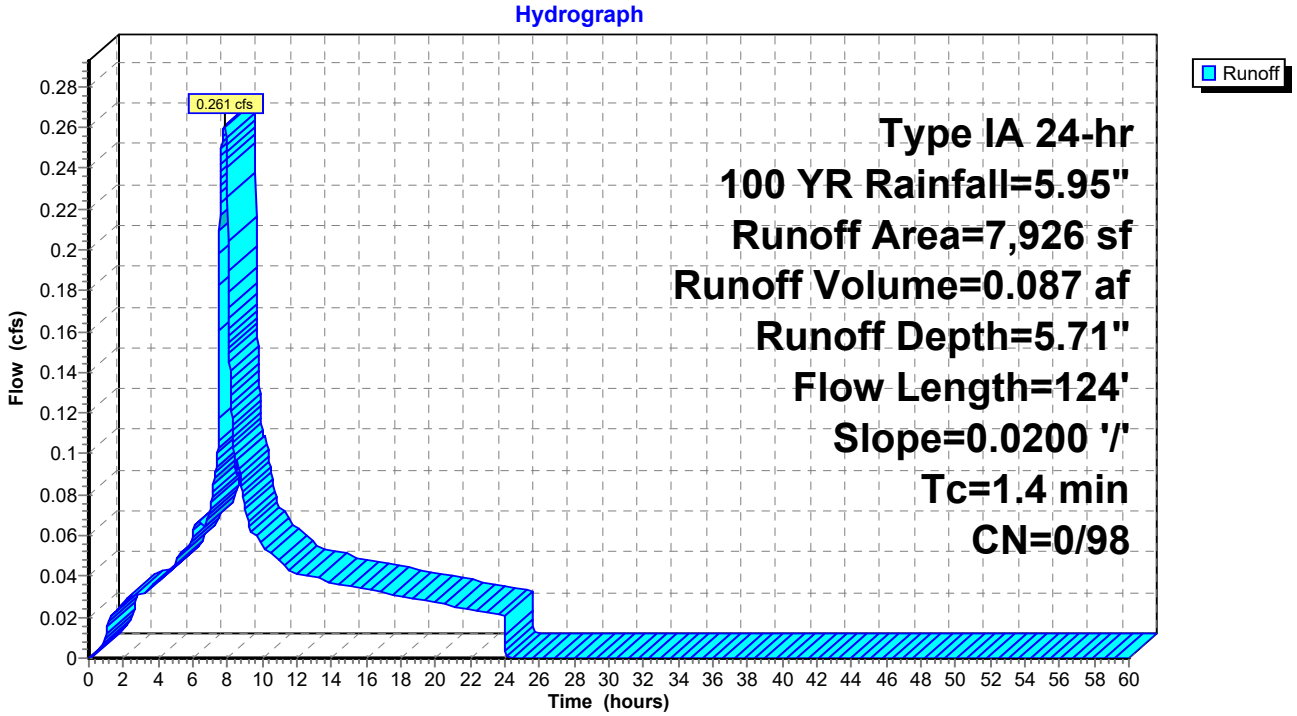
Runoff = 0.261 cfs @ 7.80 hrs, Volume= 0.087 af, Depth= 5.71"

Runoff by SBUH method, Split Pervious/Imperv., Time Span= 0.00-60.00 hrs, dt= 0.01 hrs
Type IA 24-hr 100 YR Rainfall=5.95"

	Area (sf)	CN	Description
*	7,926	98	Pavement
	7,926	98	100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.4	124	0.0200	1.49		**Sheet Flow, Flow on Parking Lot** Smooth surfaces n= 0.011 P2= 3.46"

Subcatchment 1.0: POST-DEV



Summary for Pond 2.0: RAIN GARDEN

Inflow Area = 0.182 ac,100.00% Impervious, Inflow Depth = 5.71" for 100 YR event
Inflow = 0.261 cfs @ 7.80 hrs, Volume= 0.087 af
Outflow = 0.085 cfs @ 8.81 hrs, Volume= 0.087 af, Atten= 68%, Lag= 60.5 min
Discarded = 0.055 cfs @ 8.50 hrs, Volume= 0.085 af
Primary = 0.030 cfs @ 8.81 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-60.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 98.03' @ 8.81 hrs Surf.Area= 785 sf Storage= 880 cf

Plug-Flow detention time= 169.5 min calculated for 0.087 af (100% of inflow)
Center-of-Mass det. time= 169.5 min (817.4 - 647.9)

Volume	Invert	Avail.Storage	Storage Description
#1	96.50'	1,252 cf	**RAIN GARDEN (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
96.50	361	0	0
98.00	785	860	860
98.50	785	393	1,252

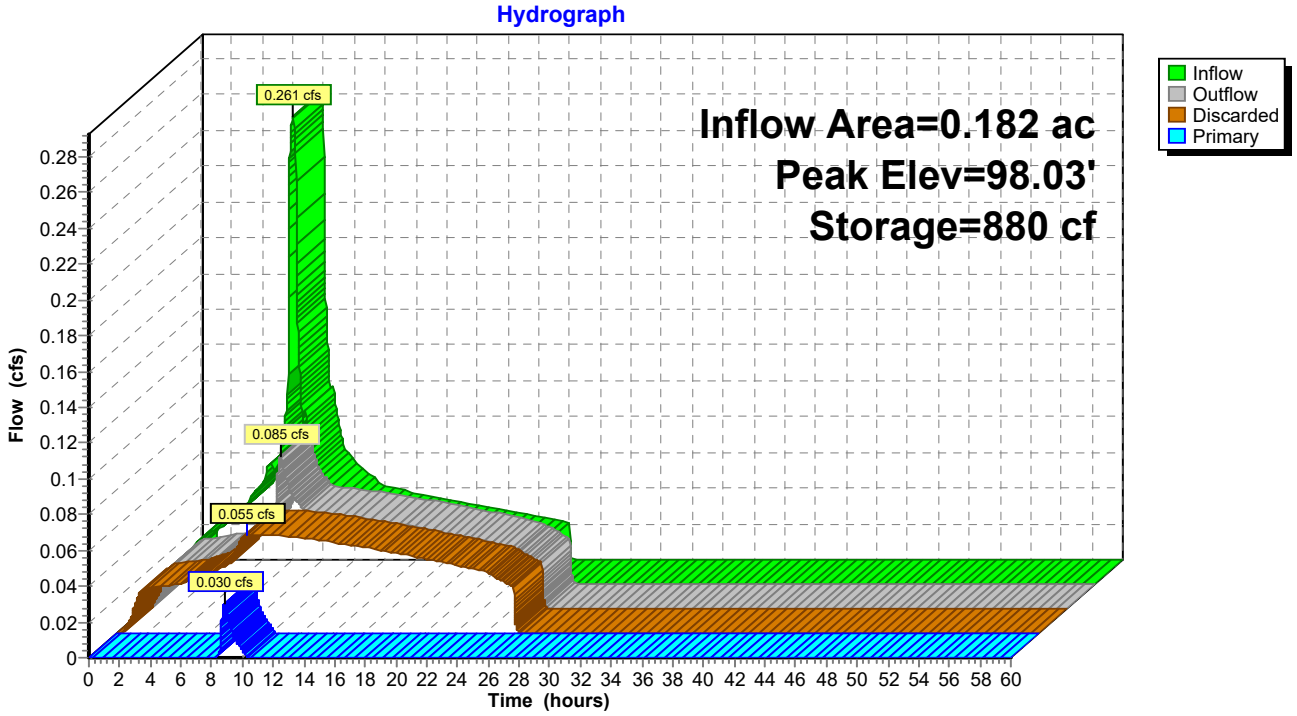
Device	Routing	Invert	Outlet Devices
#1	Discarded	96.50'	**3.000 in/hr Exfiltration over Surface area**
#2	Primary	98.00'	**2.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Discarded OutFlow Max=0.055 cfs @ 8.50 hrs HW=98.00' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.055 cfs)

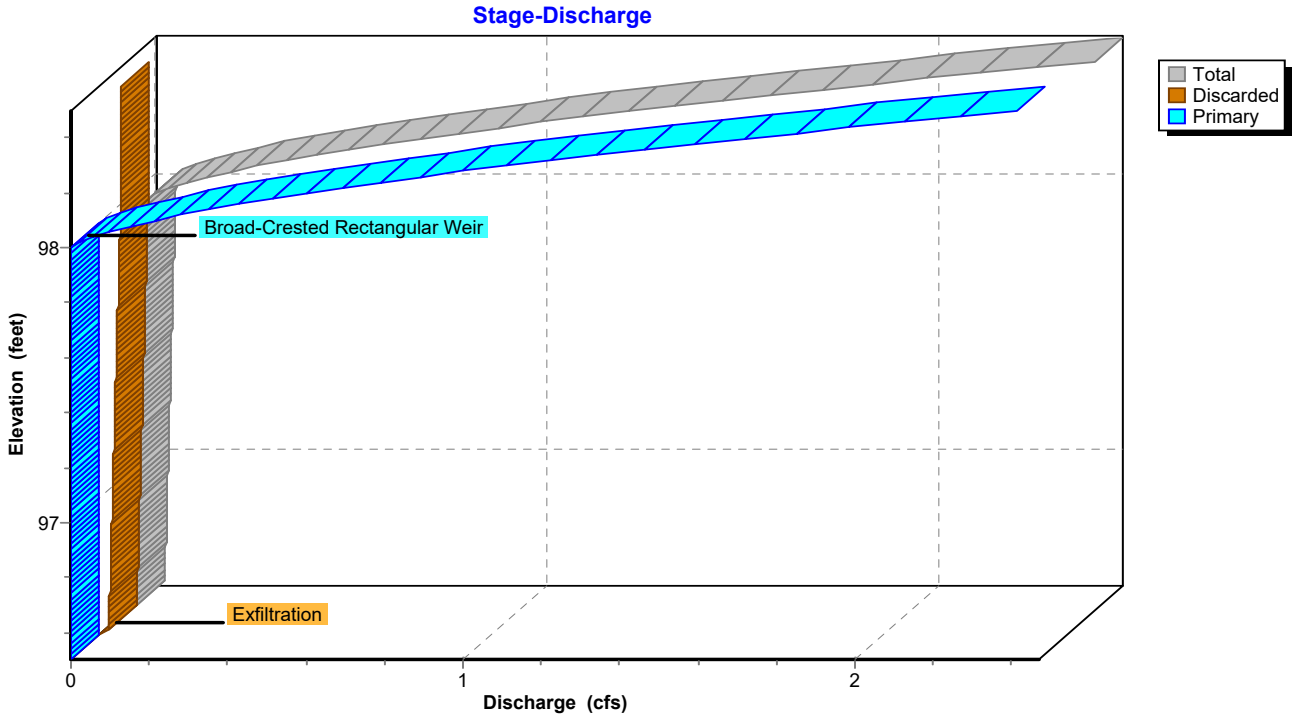
Primary OutFlow Max=0.029 cfs @ 8.81 hrs HW=98.03' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 0.029 cfs @ 0.44 fps)

Siuslaw ES - New Play Structure SWM
Prepared by Locke Engineers, Inc.

Pond 2.0: RAIN GARDEN



Pond 2.0: RAIN GARDEN



Pond 2.0: RAIN GARDEN

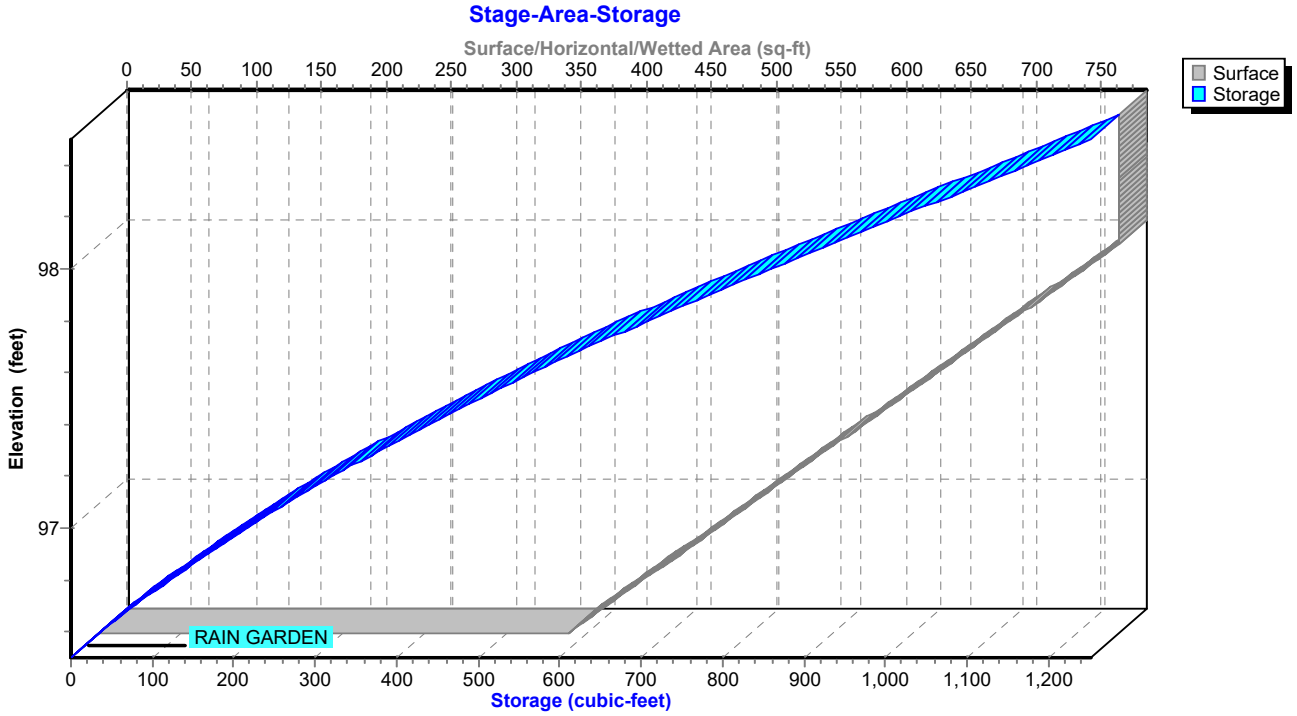


Exhibit D.1

Hi Carson. Very much remember the project. We anticipate conditions at the relocated site will be effectively the same as the original site and our recommendations would be applicable for the revised location. In order to have code level confirmation, we'd technically have to get data from that site. Our thought is that conditions are quite consistent across that distance and at that location though, which is why we believe our recommendations continue to be applicable to the project.

I hope this is helpful to the end of applying the existing data to the revised location.

Julio

CENTRAL
GEOTECHNICAL SERVICES

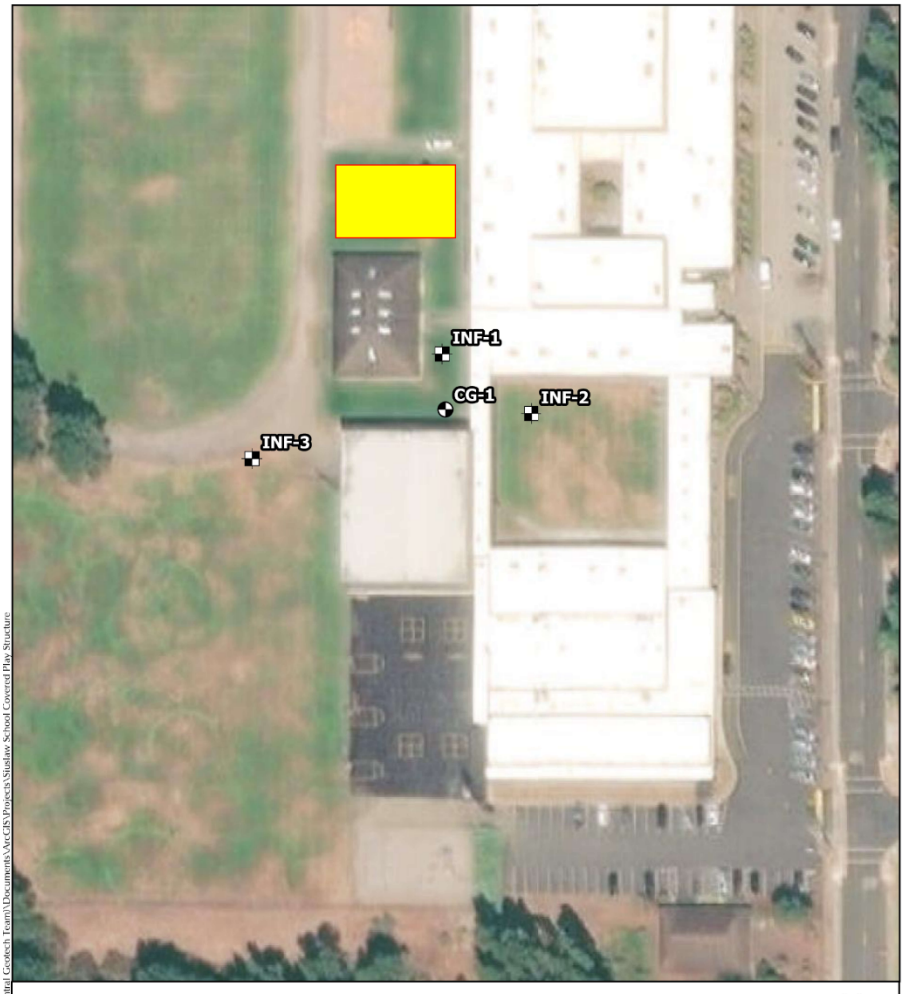
Julio C. Vela, PhD, PE, GE
Principal

office: (503) 616-9419 I mobile: (503) 314-6988
email: juliov@centralgeotech.com
A Service-Disabled Veteran-Owned Small Business

From: Carson Shields <carsons@sdra.com>
Sent: Wednesday, April 10, 2024 2:31 PM
To: Julio Vela <juliov@centralgeotech.com>
Cc: Blayne Sandau <blaynes@centralgeotech.com>; Susan Gabe <susang@sdra.com>
Subject: RE: Siuslaw - Geotech

Good afternoon Julio,

Sorry for responding to an email from a year ago. We worked with you last year for a Geotech report for Siuslaw Elementary in Florence Oregon. We issued the drawings and the district asked us to change the location by about 100' to the north to the highlighted location below



We submitted the documents to Florence for the Land Use review and they asked us to confirm the recommendations in your report would still apply.

1. The Geotech report was completed for the first proposed location. There should be no issue since the slopes and soils are the same in both locations, but is the engineer willing to submit a brief statement that the recommendations have not changed with the revised location? Or something similar.

Could you provide a written response indicating the 100' change wouldn't require additional testing? Thank you Julio,

Carson Shields | Soderstrom Architects
Project Manager | He/Him

D: 503.595.1405 | carsons@sdra.com
1331 NW Lovejoy Street, #775, Portland, OR 97209 | **sdra.com**

Exhibit E

Clare Kurth

From: Michael Schick <chief@wlfea.org>
Sent: Thursday, April 4, 2024 4:06 PM
To: Clare Kurth; Mike Miller; August Murphy; Courtney Krossman; Gwynn, Brandy
Cc: Sharon Barker
Subject: RE: Referral Request: PC 24 11 CUP 08 - SSD Covered Play Structure at 2221 Oak Street

Clare,

Western Lane Fire and EMS Authority has no issues with the plans as presented for the new covered play structure at the Siuslaw Elementary School.

Michael R Schick, EFO, PhD
Fire & EMS Chief
Western Lane Fire and EMS Authority
2625 Hwy 101
Florence, OR 97439
(541) 997-3212 (office)
(541) 999-9098 (cell)
chief@wlfea.org

From: Clare Kurth <clare.kurth@ci.florence.or.us>
Sent: Thursday, April 4, 2024 3:41 PM
To: Mike Miller <mike.miller@ci.florence.or.us>; August Murphy <august@ci.florence.or.us>; Michael Schick <chief@wlfea.org>; Courtney Krossman <ckrossman@ctclusi.org>; Gwynn, Brandy <BGwynn@cencoast.com>
Cc: Sharon Barker <sharon.barker@ci.florence.or.us>
Subject: Referral Request: PC 24 11 CUP 08 - SSD Covered Play Structure at 2221 Oak Street

Good evening,

The City of Florence has received an application for the addition of a 60' x 88' 8'' covered play structure on the Siuslaw Elementary School site at 2221 Oak Street. This project also involved construction of a rain garden in the southeastern corner of the parking lot to accommodate the increased impervious surface. This item will be going to Planning Commission for a public hearing on April 23rd, please provide any comments or concerns by April 15, 2024.

The links below are for the application materials. Please let me know if you need additional information or have questions.

I'm using Adobe Acrobat.
Here's the CIVIL CALCS - 22015-1 SIUSLAW ES Play Structure - 01 Feb 2024 - Copy Not Digitally Signed.pdf for you to review.
Here's the general_application_Siuslaw_signed (1).pdf for you to review.
Here's the Siuslaw Land Use_2024-03-27.pdf for you to review.

Clare Kurth, AICP Candidate
Associate Planner | City of Florence
clare.kurth@ci.florence.or.us

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