Town / Village of Harrison

HARRISON RECREATION & COMMUNITY CENTER

270 Harrison Avenue
Harrison, NY 10528

JULY 12, 2023

KG+D Project No.
2020-1005

PHASE 1 - ISSUE FOR BID

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Grand total: 32

DESIGN TEAM

ARCHITECT
KG+D Architects, PC
285 Main Street
Mount Kisco, NY 10549
phone: **914.666.5900**

SYSTEMS ENGINEER
OLA Consulting Engineers, PC
50 Broadway - Suite 2
Hawthorne, NY 10532
phone: **914.747.2800**

STRUCTURAL ENGINEER
The Di Salvo Engineering Group
93 Lake Ave - Suite 201
Danbury, CT 06810
phone: **203.490.4140**

CIVIL ENGINEER
Woodard & Curran Engineering & Geological Services, PA, PC
800 Westchester Ave - Suite N507
Rye Brook, NY 10573
phone: **914.246.2931**

COVER SHEET

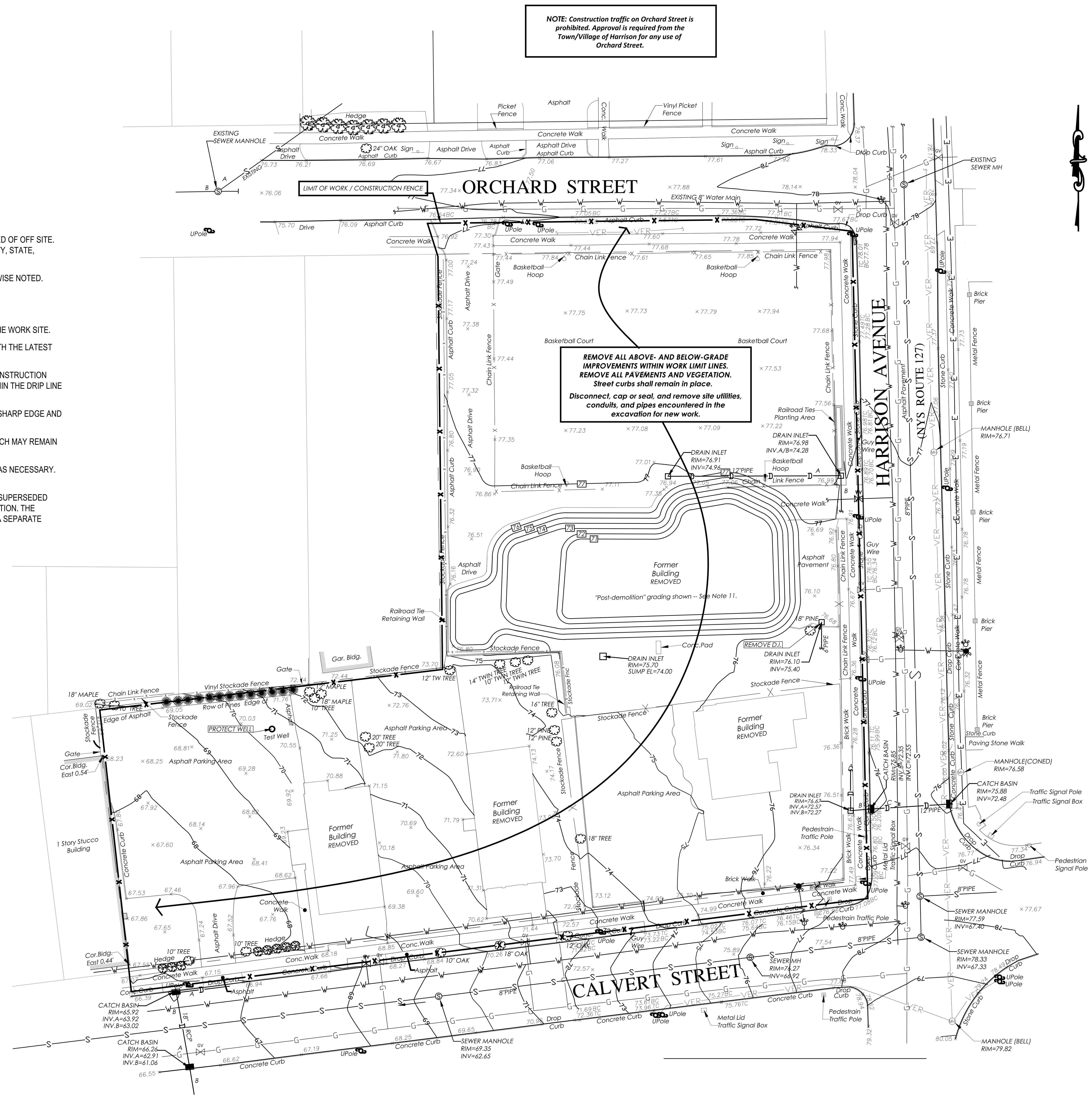
G-000

GENERAL NOTES:

1. THE CONTRACTOR IS CAUTIONED TO VERIFY ALL DIMENSIONS, GRADES AND EXISTING CONDITIONS AT THE SITE PRIOR TO ORDERING MATERIALS OR COMMENCING WORK. ALL DIMENSIONS SHOWN ARE APPROXIMATE ONLY.
2. LOCATIONS OF UNDERGROUND UTILITIES AND SUBSURFACE DRAINAGE SHOWN ARE APPROXIMATE ONLY. ALL EXISTING UTILITY LINES MAY NOT BE SHOWN ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO IDENTIFY AND DETERMINE THE EXACT LOCATION OF ANY UTILITY OR DRAINAGE LINE THAT MAY BE ENCOUNTERED DURING CONSTRUCTION AND TO PROTECT ALL LINES INTENDED TO REMAIN.
3. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER UPON DISCOVERY OF ANY UNDERGROUND UTILITY OR DRAINAGE LINE NOT SHOWN ON THE DRAWINGS.
4. LIMIT OF WORK LINE (LOW) IS COINCIDENT WITH PROPERTY LINE UNLESS OTHERWISE SHOWN. EXTEND CONTRACT LIMIT LINE TO INCLUDE UTILITY WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING ALL CONSTRUCTION DAMAGE INSIDE AND OUTSIDE THE CONTRACT LIMITS TO THEIR ORIGINAL NEW CONDITION.
6. SOURCE OF BASE TOPOGRAPHIC DATA: EXISTING CONDITIONS TOPOGRAPHIC SURVEY BY TC MERRITTS LAND SURVEYORS LAST DATED FEBRUARY 18, 2019. NOTE THAT THE BUILDINGS SHOWN ON THE 2019 SURVEY ARE NOW REMOVED IN THEIR ENTIRETY AND KNOWN UTILITIES CAPPED.

REMOVALS NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE OWNER'S REPRESENTATIVE ON ALL MATERIALS TO BE REMOVED AND RECYCLED/DISPOSED OF OFF SITE. ALL HANDLING OF MATERIALS TO BE REMOVED, RECYCLED, OR DISPOSED OF MUST BE DONE SO IN A SAFE, LEGAL MANNER, IN ACCORDANCE WITH ALL LOCAL, COUNTY, STATE, FEDERAL AND ANY OTHER APPLICABLE REGULATIONS.
2. ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE UNLESS OTHERWISE NOTED.
3. EXISTING ITEMS INDICATED TO BE SALVAGED OR STOCKPILED SHALL BE CAREFULLY REMOVED AND STORED AS DIRECTED BY THE OWNER'S REPRESENTATIVE.
4. EVERY CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE INSIDE AND OUTSIDE THE LIMIT OF WORK DUE TO ITS CONTRACT OPERATIONS.
5. CONTRACTOR SHALL PROTECT AND SUSTAIN IN NORMAL SERVICE ALL EXISTING UTILITIES, STRUCTURES, EQUIPMENT, ROADWAYS AND DRIVEWAYS SURROUNDING THE WORK SITE.
6. CONTRACTOR SHALL INSTALL AND MAINTAIN NECESSARY TRAFFIC CONTROL DEVICES, DRUMS, DELINEATORS, SIGNS, FENCES, AND BARRICADES IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL MUTCD WITH NYS SUPPLEMENT TO PROPERLY PROTECT WORK, EQUIPMENT, PERSONS, AND PROPERTY FROM DAMAGE.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING TREES AND PLANTS OUTSIDE THE LIMIT OF WORK FOR THE DURATION OF THE CONSTRUCTION PERIOD AND SHALL, AT A MINIMUM, INSTALL TREE PROTECTION FENCE AS SHOWN AND SPECIFIED. VEHICLES, EQUIPMENT OR MATERIALS SHALL NOT BE STORED WITHIN THE DRIP LINE OR WHERE DAMAGE MAY RESULT TO TREES TO BE SAVED.
8. AT ALL LOCATIONS WHERE EXISTING PAVEMENT ABUTS NEW CONSTRUCTION, THE EDGE OF THE EXISTING PAVEMENT SHALL BE SAW CUT TO A CLEAN, SMOOTH AND SHARP EDGE AND PROTECTED UNTIL ABUTTING MATERIALS ARE INSTALLED.
9. EXISTING CURB TO BE REPLACED SHALL BE COMPLETELY REMOVED BETWEEN EXISTING EXPANSION JOINTS, EXCEPT FOR EXPANSION JOINT REINFORCING RODS WHICH MAY REMAIN IN PLACE.
10. LIMIT OF WORK LINE IS COINCIDENT WITH THE PERIMETER PROPERTY LINE. LIMIT OF WORK SHALL EXTEND TO INCLUDE OFF-SITE UTILITIES OR OTHER CONNECTIONS AS NECESSARY. WORK LIMIT / CONSTRUCTION FENCE SHALL BE RESTORED TO THE PERIMETER SHOWN AT THE END OF EVERY WORK DAY.
11. THE POST-DEMOLITION GRADING AND OTHER EXISTING CONDITIONS INFORMATION SHOWN ON THIS PLAN IS PROVIDED FOR BIDDING PURPOSES ONLY AND SHALL BE SUPERSEDED AND REPLACED BY AN AS-BUILT SURVEY NOT AVAILABLE AT THE TIME OF BIDDING BUT TO BE PROVIDED BY THE OWNER PRIOR TO BEGINNING OF PHASE 1 CONSTRUCTION. THE POST-DEMOLITION GRADING REPRESENTS THE GRADES AND STABILIZED CONDITIONS TO BE PRESENT AT THE CONCLUSION OF BUILDING DEMOLITION WORK UNDER A SEPARATE CONTRACT.



LEGEND	
MH S D E T	MANHOLES
▭ □ ○	DRAIN INLETS/CATCH BASINS
GV	GAS VALVE/GAS BOX
WV	WATER VALVE
	HYDRANT
	WATER SHUT OFF VALVE
	UTILITY POLE
	LIGHT POST
TC	TOP OF CURB
BC	BOTTOM OF CURB

LEGEND	
—W—W—W—	WATER MAIN
—D—D—D—	DRAINAGE PIPE
—G—G—G—	GAS MAIN
—S—S—S—	SANITARY SEWER MAIN
—E—E—E—	ELECTRICAL LINE
—VER—VER—VER—	VERIZON LINE

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D listen imagine build

KG+D ARCHITECTS, PC
285 MAIN STREET • MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
1	07/12/2023	ISSUE FOR BID - PHASE 1

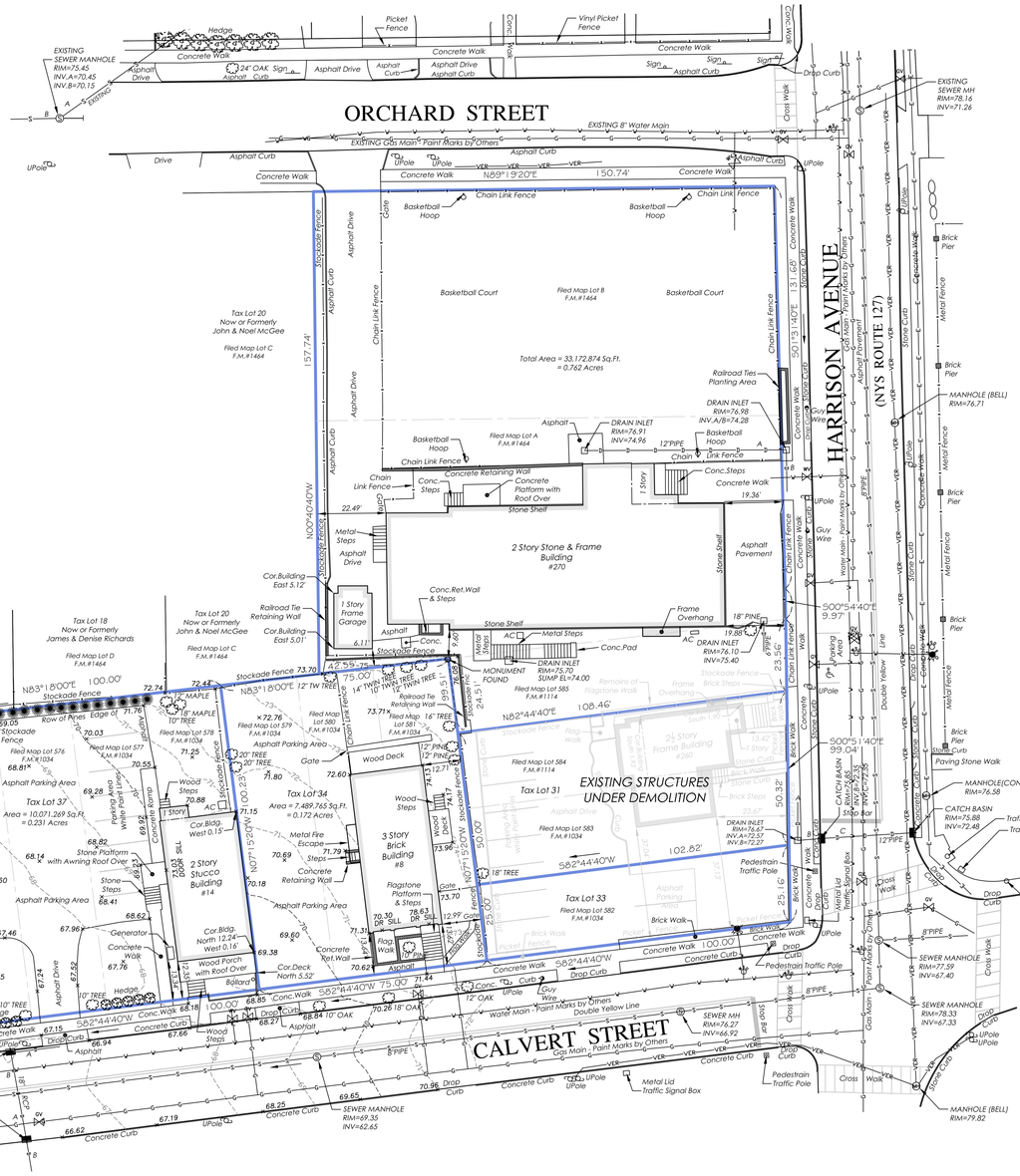
Sheet Title

EXISTING CONDITIONS & REMOVALS PLAN

Job No.	Date
2020-1005	07/12/2023
Scale	Drawn / Checked
1" = 20'	- -

Sheet Number

G-100



Vicinity Map

Only copies from the original of this topography map marked with an original of the Land Surveyors embossed seal shall be considered to be true, valid copies.

Unauthorized alteration or addition to a map bearing a licensed Land Surveyors seal is a violation of Section 7209, Subdivision 2 of the New York State Education Law.

Possession only where indicated.

Adjacent property lines and easements not surveyed or certified.
Access to adjacent rights of way, easements and public or private lands not guaranteed or certified.

Underground utilities shown hereon are approximate and should be verified before excavating.
Additional underground utilities are not shown or certified.
Encroachments and structures below grade, if any, not shown or certified.

Subject to covenants, easements, restrictions, conditions and agreements of record.

This map is prepared to show topography only and is not to be used for title transfer purposes. Map may not be certified to title companies and/or banks.

Tree species shown hereon to be verified by a licensed arborist and are not certified by surveyor.

Elevations shown hereon generally in accordance with North American Vertical Datum 88.

LEGEND	
(M)(S)(D)(E)(T)	MANHOLES
	DRAIN INLETS/CATCH BASINS
GV	GAS VALVE/GAS BOX
WV	WATER VALVE
	HYDRANT
	WATER SHUT OFF VALVE
	UTILITY POLE
	LIGHT POST
TC	TOP OF CURB
BC	BOTTOM OF CURB

LEGEND	
W W W	WATER MAIN
D D D	DRAINAGE PIPE
G G G	GAS MAIN
S S S	SANITARY SEWER MAIN
E E E	ELECTRICAL LINE
VER VER VER	VERIZON LINE

Below ground utilities shown hereon as per delineation by others.
Paint marks set in street by others & drawings supplied by utility companies.
Additional utilities may exist, not shown.

TAX LOTS 31 AND 33
Premises hereon being Lots 582 and 583 as shown on a certain map entitled, "2nd Map of Brentwood Plaza."
Said map filed in the Westchester County Clerk's Office, Division of Land Records July 27, 1892 as map number 1034.
Premises hereon being Lot 584 as shown on a certain map entitled, "4th Map of Brentwood Plaza."
Said map filed in the Westchester County Clerk's Office, Division of Land Records May 31, 1894 as map number 1114.

Surveyed in accordance with Deed Control Number 572483257.

Premises shown hereon designated on the Town of Harrison Tax Maps as: Block 253, Lots 31 and 33.

Property Address: 260 Harrison Avenue
Harrison, NY 10528

TAX LOT 28
Premises hereon being Lot 585 as shown on a certain map entitled, "4th Map of Brentwood Plaza."
Said map filed in the Westchester County Clerk's Office, Division of Land Records May 31, 1894 as map number 1114.
Premises hereon being Lots A and B as shown on a certain map entitled, "Map of Lots Belonging to Mary B. Purdy."
Said map filed in the Westchester County Clerk's Office, Division of Land Records February 23, 1905 as map number 1464.

Premises shown hereon designated on the Town of Harrison Tax Maps as: Block 253, Lot 28.

Property Address: 270 Harrison Avenue
Harrison, NY 10528

TAX LOT 34
Premises hereon being Lots 579, 580 and 581 as shown on a certain map entitled, "2nd Map of Brentwood Plaza."
Said map filed in the Westchester County Clerk's Office, Division of Land Records July 27, 1892 as map number 1034.

Surveyed in accordance with Deed Control Number 532243364.

Premises shown hereon designated on the Town of Harrison Tax Maps as: Block 253, Lot 34.

Property Address: 8 Calvert Street
Harrison, NY 10528

TAX LOT 37
Premises hereon being Lots 575, 576, 577 and 578 as shown on a certain map entitled, "2nd Map of Brentwood Plaza."
Said map filed in the Westchester County Clerk's Office, Division of Land Records July 27, 1892 as map number 1034.

Premises shown hereon designated on the Town of Harrison Tax Maps as: Block 253, Lot 37.

Property Address: 14 Calvert Street
Harrison, NY 10528

TOPOGRAPHY OF PROPERTY PREPARED FOR TOWN OF HARRISON

SITUATE IN THE TOWN OF HARRISON WESTCHESTER COUNTY, NEW YORK

SCALE: 1" = 20'

GRAPHIC SCALE

20 0 10 20 40 80

(IN FEET)
1 inch = 20 ft.

TC MERRITTS LAND SURVEYORS
394 BEDFORD ROAD • PLEASANTVILLE • NY 10570
(914) 769-8003 • (203) 622-8899

Surveyed: October 7, 2017
Map Prepared: October 17, 2017
Map Revised: February 18, 2019 to show structures and topography on Tax Lots 34 and 37.

By: Donald T. Merritts
New York State Licensed Land Surveyor No.050604

Project: Ref.10-216 17-356	*Field Survey By: BC/CR*
Drawn By: DA	*Checked By: DM*

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CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

Sheet Title

TOPOGRAPHIC SURVEY

Job No.	Date
2020-1005	07/12/2023
Scale	Drawn / Checked
AS NOTED	- -

Sheet Number

V-001

GENERAL NOTES:

1. EXISTING CONDITIONS SHOWN HEREON HAVE BEEN TAKEN FROM A FIELD SURVEY PREPARED BY TC MERRITTS LAND SURVEYORS, FOR THE TOWN OF HARRISON, WESTCHESTER COUNTY, NEW YORK, LAST REVISED FEBRUARY 18, 2019.
2. TC MERRITTS LAND SURVEYORS IS LOCATED AT THE FOLLOWING ADDRESS:
   394 BEDFORD ROAD
   PLEASANTVILLE, NEW YORK 10570
   (914) 769–8003
3. EXISTING UTILITIES SHOWN ON THESE PLANS WERE COMPILED FROM A FIELD SURVEY PREPARED BY TC MERRITTS LAND SURVEYORS. THESE PLANS DO NOT NECESSARILY DEPICT THE EXACT LOCATIONS OF ALL UTILITIES, WHICH MAY EXIST AT THIS TIME WITHIN THE SURVEY LIMITS. THERE MAY BE EXISTING LINES OTHER THAN THOSE INDICATED. THE CONTRACTOR SHALL FIELD LOCATE ALL EXISTING UTILITIES USING GROUND PENETRATION RADAR (GPR) PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER IN WRITING. THE CONTRACTOR SHALL CONTACT THE RESPECTIVE UTILITY COMPANIES RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THESE LINES. NO SEPARATE OR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR DUE TO ANY VARIANCE BETWEEN THE DATA SHOWN ON THE PLANS AND ACTUAL FIELD CONDITIONS ENCOUNTERED. THE CONTRACTOR IS RESPONSIBLE FOR HIS/HER OWN DETERMINATION AS TO THE TYPE AND LOCATION OF THE EXISTING UTILITIES AS MAY BE NECESSARY TO AVOID THEIR DAMAGE AND TO FACILITATE THE PROPOSED CONNECTION(S).
4. LAND OUTSIDE THE PROPOSED LIMIT OF WORK SHALL NOT BE DISTURBED BY THE CONTRACTOR.
5. PRIOR TO CONSTRUCTION THE ENGINEER AND CONTRACTOR WILL REVIEW THE PERMITTED LIMITS OF WORK.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL CONTROL POINTS AND BENCH MARKS NECESSARY FOR THE WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE SITE DRAWINGS, INCLUDING BUT NOT LIMITED TO ALL UTILITIES, STORM INFRASTRUCTURE, SIGNS, UTILITY POLES, FENCES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH THE GOVERNING AUTHORITY'S SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COSTS SHALL BE INCURRED BY THE CONTRACTOR.
8. THE CONTRACTOR SHALL CALL "DIG SAFELY. NEW YORK" AT 811 AT LEAST 72 HOURS PRIOR TO EXCAVATION IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL SAFETY CODES.
9. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY CODES, REGULATIONS, LEGAL REQUIREMENTS, PERMIT CONDITIONS, ETC. PERMIT CONDITIONS RELATE TO THOSE OUTLINED IN THE NYSDEC (NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION) SPDES GENERAL PERMIT 0–20–001, AND ALL PERTINENT TOWN/VILLAGE OF HARRISON PERMITS.
10. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, STREETS, PAVEMENTS, CURBING, TREES, PLANTINGS, LAWN, FENCING TO REMAIN ON OR OFF THE PREMISES, AND SHALL REPAIR AND REPLACE AT HIS/HER OWN EXPENSE AS DIRECTED BY THE ENGINEER ANY ITEMS DAMAGED AS A RESULT OF THE CONTRACTOR'S WORK.
11. THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING OF ALL EXCAVATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING CODES AND REGULATIONS.
12. ALL SURFACES TO REMAIN THAT ARE DISTURBED BY THIS WORK SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, AS DETAILED, OR AS SPECIFIED BY THE ENGINEER.
13. SAWCUTS IN EXISTING PAVEMENT SHALL BE SMOOTH AND STRAIGHT.
14. WORK WITHIN PUBLIC RIGHT–OF–WAY SHALL COMPLY WITH APPLICABLE MUNICIPAL AND STATE REQUIREMENTS.
15. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY.
16. IF IMPORTED FILL MATERIAL IS REQUIRED, IT SHALL BE CERTIFIED IN WRITING BY A NEW YORK STATE LICENSED PROFESSIONAL ENGINEER AS NON–CONTAMINATED, CLEAN FILL SUITABLE FOR THE INTENDED USE. THE MATERIAL SHALL BE TESTED WITH THE ENVIRONMENTAL PARAMETERS AS OUTLINED IN THE PROJECT SPECIFICATIONS.
17. THIS PROJECT INCLUDES THE COMPLETION OF DEEP EXCAVATIONS TO COMPLETE THE WORK. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETING ALL EXCAVATION WORK IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS TO ENSURE WORKER AND PUBLIC SAFETY. SPECIAL NOTICE SHOULD BE TAKEN THAT THE CONTRACTOR IS RESPONSIBLE FOR THE COSTS OF DESIGN AND CONSTRUCTION OF ALL SYSTEMS REQUIRED TO COMPLETE EXCAVATIONS SUCH AS SHEETING AND SHORING SYSTEMS. THESE COSTS MUST BE INCLUDED IN THE BID.
18. CONTRACTOR SHALL PROVIDE ALL MAINTENANCE AND PROTECTION OF TRAFFIC LABOR AND EQUIPMENT AS REQUIRED AND SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS IN ORDER TO COMPLETE THE WORK IN A SATISFACTORY AND SAFE MANOR.
19. WHENEVER AN ITEM OF MATERIAL, EQUIPMENT, CONSTRUCTION METHODS OR PROCEDURES IS SPECIFIED OR DESCRIBED IN THE CONTRACT/BIDDING DOCUMENTS BY USING THE NAME OF A PROPRIETARY ITEM, MAKE OR CATALOGUE NUMBER, OR THE NAME OF A PARTICULAR SUPPLIER, THE SPECIFICATION OR DESCRIPTION IS INTENDED TO ESTABLISH A STANDARD OF THE REQUIRED TYPE, FUNCTION, APPEARANCE, AND QUALITY REQUIRED TO BE MET BY ANY PROPOSED SUBSTITUTE OR "OR–EQUAL" ITEM. OTHER ITEMS OF MATERIAL OR EQUIPMENT OF OTHER SUPPLIERS MAY BE SUBMITTED TO AND CONSIDERED BY THE ENGINEER FOR REVIEW AS AN EQUAL OR SUBSTITUTE.

MATERIALS NOTES:

1. ALL FULL DEPTH PAVEMENT REPLACEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS, LATEST REVISION.
2. ALL EXISTING PAVEMENT DEPICTED TO BE SAWCUT, SHALL BE MILLED 2 FEET FROM THE SAWCUT EDGE. SAWCUTS IN EXISTING PAVEMENT SHALL BE SMOOTH AND STRAIGHT.
3. EXISTING PAVEMENT TO BE REMOVED AROUND STRUCTURES SHALL BE SAWCUT 3 FEET FROM THE OUTSIDE WALL OF STRUCTURE AND RESURFACED 2 FEET BEYOND THE EDGE OF THE SAWCUT.
4. TOPSOIL FROM THE EXISTING SITE SHALL BE REUSED ON–SITE IN ALL AREAS REQUIRING TOPSOIL. THE CONTRACTOR SHALL NOT REMOVE ANY TOPSOIL FROM THE SITE PRIOR TO COMPLETION OF WORK, UNLESS PRIOR APPROVAL FROM THE OWNER/ENGINEER IS OBTAINED.
5. ALL FILL GENERATED FROM REQUIRED EXCAVATION ACTIVITY SHALL BE REUSED ON–SITE WHERE IT MEETS THE SPECIFICATIONS, TO THE MAXIMUM EXTENT POSSIBLE. REMOVE AND DISPOSE OF ALL EXCESS FILL MATERIAL GENERATED THAT IS NOT REQUIRED AND/OR SUITABLE TO COMPLETE THE WORK.

GRADING AND DRAINAGE NOTES:

1. CASTINGS FOR EXISTING STRUCTURES TO REMAIN AND PROPOSED STRUCTURES SHALL BE SET TO THE PROPOSED ELEVATIONS SHOWN ON THE DRAWINGS.
2. THE FILLING OF SOIL OVER THE ROOTS OF TREES TO BE PRESERVED IS PROHIBITED.
3. SUITABLE SOIL MATERIALS ARE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GW, SM, SW AND SP AS STATED IN THE PROJECT SPECIFICATIONS.
4. UNSUITABLE FILL AND BACKFILL MATERIALS ARE MATERIALS CONTAINING EXCESSIVE AMOUNT OF WATER, PLASTIC, CLAY, VEGETATION, ORGANIC MATTER, DEBRIS, PAVEMENT, STONES OR BOULDERS OVER 3 INCHES IN GREATEST DIMENSION, FROZEN MATERIAL, AND MATERIAL WHICH, IN THE OPINION OF THE ENGINEER, WILL NOT PROVIDE A SUITABLE FOUNDATION OR SUBGRADE.
5. SUITABLE SOIL SHALL BE PLACED IN LAYERS TO THE REQUIRED ELEVATIONS AS SHOWN ON THE DRAWINGS. FILL, BACKFILL AND COMPACT TO PRODUCE MINIMUM SUBSEQUENT SETTLEMENT OF THE MATERIAL AND PROVIDE ADEQUATE SUPPORT FOR THE SURFACE TREATMENT OR STRUCTURE TO BE PLACED ON THE MATERIAL. PLACE MATERIAL IN APPROXIMATELY HORIZONTAL LAYERS OF BEGINNING AT LOWEST AREA TO BE FILLED. DO NOT IMPAIR DRAINAGE. DO NOT USE ON–SITE TOPSOIL AS FILL MATERIAL.
6. CONTRACTOR SHALL PLACE BACKFILL AND FILL MATERIALS IN LAYERS NOT MORE THAN (6) INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN (4) INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND–OPERATED TAMPERS. DO NOT PLACE BACKFILL OR FILL MATERIAL ON SURFACES THAT ARE MUDDY, FROZEN, OR CONTAIN FROST OR ICE.
7. FOR GROUND SURFACE PREPARATION, CONTRACTOR SHALL REMOVE VEGETATION, DEBRIS, UNSUITABLE SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACEMENT OF FILL. REMOVE MATERIAL TO THE FULL EXTENT OF ROOT PENETRATION. PROOF–ROLL EXISTING GROUND SURFACE PRIOR TO PLACEMENT OF FILL TO PROVIDE A DENSE, STABLE BASE FOR THE FIRST LIFTS OF THE STRUCTURAL FILL.
8. PRIOR TO CONSTRUCTION, COMPLETE CAMERA INSPECTION OF EXISTING STORM DRAINAGE PIPES ADJACENT TO THE PROJECT AS SHOWN ON THE DRAWINGS.
9. PRIOR TO THE START OF CONSTRUCTION, CONTRACTOR SHALL HAND DIG TEST PITS TO VERIFY THE LOCATION OF ALL EXISTING UNDERGROUND UTILITIES. CONTRACTOR SHALL VERIFY LOCATION AND ELEVATION OF ALL EXISTING UTILITIES AT PROPOSED UTILITY CROSSINGS, AND ADVISE THE ENGINEER IN WRITING OF ANY DISCREPANCIES.
10. ALL PROPOSED UTILITIES AND THEIR CONNECTIONS, DISCONNECTION AND RELOCATION OF EXISTING UTILITIES SHALL BE COMPLETED IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY COMPANY HAVING JURISDICTION. ANY COORDINATION WITH THE MUNICIPALITY AND/OR UTILITY COMPANY, PERMITS OR APPROVALS REQUIRED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
11. AT NO TIME SHALL THE CONTRACTOR DISTURB MORE THAN 5 ACRES AT ANY ONE TIME WITHOUT WRITTEN APPROVAL FROM AUTHORITIES HAVING JURISDICTION. THE CONTRACTOR SHALL SEQUENCE THE WORK ACCORDINGLY.

SCHEDULE OF TEMPORARY EROSION CONTROL MEASURES:

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
SILT FENCE/ CONSTRUCTION FENCE	ALL	CONTRACTOR TO INSTALL CONSTRUCTION AND SILT FENCE PRIOR TO THE START OF ANY EXCAVATION AND/OR FILLING ON THE SITE. SILT FENCE SHALL BE INSTALLED AS SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN AND DETAIL SHEETS, AND SHALL BE MAINTAINED IN EFFECTIVE OPERATING CONDITION THROUGHOUT THE CONSTRUCTION PROCESS. ALL STOCKPILES OF DIRT SHALL BE RIMMED WITH SILT FENCE IN ADDITION TO BEING TEMPORARILY SEEDED. DAMAGED SECTIONS OF SILT FENCE SHALL BE REPLACED IMMEDIATELY. FENCING SHALL BE REMOVED ONLY AFTER ALL CONSTRUCTION HAS BEEN COMPLETED AND ALL AREAS HAVE BEEN PERMANENTLY STABILIZED.
INLET PROTECTION	ALL	SHORT TERM PROTECTION OF CATCH BASIN INLETS. ALL EXISTING AND PROPOSED CATCH BASINS SHALL BE PROTECTED WITH INLET PROTECTION INSTALLED BY THE CONTRACTOR AS DETAILED, AND SHALL BE REPLACED AS NECESSARY. INLET PROTECTION SHALL REMAIN IN ALL STRUCTURES UNTIL THE SITE HAS BEEN PERMANENTLY STABILIZED.
DUST CONTROL	ALL	DURING DRY WEATHER, FOR AREAS OF EXPOSED SOIL WHERE IT IS NOT FEASIBLE TO ESTABLISH TEMPORARY GROUND COVER DUE TO CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL WET AREAS WITH WATER AT LEAST TWICE A DAY IN ORDER TO CONTROL DUST. THE MOISTENING OF SUCH AREAS MAY BE INCREASED TO FOUR TIMES A DAY DURING PERIODS OF LITTLE RAIN AS DETERMINED BY THE ENGINEER AND/OR THE CONTRACTOR.
TEMPORARY SEEDING	ALL	CONTRACTOR SHALL TEMPORARILY SEED ALL EXPOSED AREAS OF SOIL THAT WILL NOT RECEIVE PERMANENT SURFACE TREATMENT IMMEDIATELY (WITHIN SEVEN DAYS) AND ALL PILES OF DIRT AND SOIL STOCKPILES. GRASS SEED MIX FOR EROSION AND SEDIMENT CONTROL MAY BE APPLIED BY EITHER MECHANICAL OR HYDROSEEDING METHODS. HYDROSEEDING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN ASSOCIATION OF NURSERYMAN, AMERICAN STANDARD FOR NURSERY STOCK, LATEST EDITION. SEEDING RATES AND DATES OF APPLICATION SHALL BE DETERMINED AS FOLLOWS.
	APRIL 1–JULY 1 AUGUST 15–SEPT. 15	SEED MIXTURE: OATS APPLIED RATE: 1.8 LBS/1,000 S.F.
	APRIL 1–JULY 1	SEED MIXTURE: ANNUAL RYEGRASS APPLIED RATE: 0.9 LBS/1,000 S.F.
	MAY 15–AUGUST 15	SEED MIXTURE: SUDANGRASS APPLIED RATE: 0.9 LBS/1,000 S.F.
	SEPTEMBER 15–OCTOBER 15	SEED MIXTURE: WINTER RYE APPLIED RATE: 2.6 LBS/1,000 S.F.
MULCH	APRIL 1 – NOVEMBER 30	ON ALL AREAS OF EXPOSED SOIL WHICH WILL NOT BE DISTURBED AGAIN WITHIN 7 DAYS, APPLY AT A RATE OF 1.5 TO 2.0 TONS PER ACRE.
WINTER MULCH	DECEMBER 1 – MARCH 31	ON ALL AREAS OF EXPOSED SOIL WHICH WILL NOT BE DISTURBED AGAIN WITHIN 7 DAYS, APPLY AT A RATE OF 3.0 TO 4.0 TONS PER ACRE. EROSION CONTROL BLANKET MAY BE USED AS A SUBSTITUTE FOR WINTER MULCH.
EROSION CONTROL BLANKET	ALL	INSTALL IMMEDIATELY FOLLOWING SEEDING, WITHIN DRAINAGE CHANNELS AND ON ALL EXPOSED SOIL SLOPES WHICH ARE 25% OR STEEPER GRADE, AND LOCATIONS SHOWN ON PLAN. ECB MAY ALSO BE SUBSTITUTED FOR WINTER MULCH.
INSPECTIONS	UNTIL SITE IS PERMANENTLY STABILIZED	ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSPECTED BY THE CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL EVENT AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE BY THE CONTRACTOR. SEDIMENT DEPOSITS SHALL BE REMOVED BY THE CONTRACTOR WHEN THEY REACH APPROXIMATELY ONE–THIRD THE HEIGHT OF THE SILT FENCE. SEDIMENTS SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT RESULT IN ADDITIONAL EROSION OR POLLUTION.

SCHEDULE OF PERMANENT EROSION CONTROL MEASURES:

MEASURE	DATES FOR USE	TIMING, ACTIVITY, AND LOCATION
PAVEMENT – BASE COURSE/ FINAL COURSE	WHEN OUTSIDE AMBIENT TEMP. IS ABOVE 40°F	INSTALL ONLY IN AREAS SHOWN ON THE PLAN, SHORTLY AFTER PAVEMENT BASE IS BROUGHT TO FINAL GRADE. INSTALL NEAR COMPLETION OF PROJECT.
PERMANENT SEEDING	APRIL 15 TO SEPT. 15	ON FINAL GRADE AREAS, WITHIN 10 DAYS OF FINAL GRADE PREPARATION. PREPARE TOPSOIL, FOLLOWED WITH SEEDING AND MULCH APPLICATION. PERMANENT VEGETATION MUST BE SEEDED OR SODDED ON ALL EXPOSED AREAS. MULCH MUST BE USED AS NECESSARY FOR PROTECTION, UNTIL SEEDING IS ESTABLISHED.
DORMANT SEEDING	SEPT. 16 TO APRIL 15	ON FINAL GRADE AREAS, WITH PREPARED TOPSOIL. APPLY SEED AT DOUBLE THE SPECIFIED RATE, ON BARE SOIL, AND FOLLOW WITH AN APPLICATION OF WINTER MULCH.
GROUND COVER, TREES, SHRUBS	APRIL 15 TO NOV. 1	INSTALL WITH FINAL LANDSCAPING.
PERMANENT MULCH	ALL	INSTALL WITH FINAL LANDSCAPING.

NOTES:

1. ALL PROPOSED EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED AS INDICATED ON THE PLANS, AND IN ACCORDANCE WITH THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) "NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL," LATEST REVISION.
2. ADDITIONAL SOIL STABILIZATION WILL BE REQUIRED IF THERE IS THE POSSIBILITY OF WIND EROSION.
3. SEDIMENT AND DEBRIS DROPPED, WASHED, SPILLED OR TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS OR OTHER HARDSCAPE SURFACES SHALL IMMEDIATELY BE REMOVED.

CONTRACTOR CERTIFICATION STATEMENT:

New York State Department of Environmental Conservation (NYSDEC)
SPDES General Permit for
Stormwater Discharges from
CONSTRUCTION ACTIVITY
Permit No. GP-0-20-001

CONTRACTOR CERTIFICATION STATEMENT

Project Address: Harrison Recreation & Community Center
270 Harrison Avenue
Harrison, NY 10528

Date: _____

Certification Statement:

"I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the qualified inspector during a site inspection. I also understand that the owner or operator must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater discharges from construction activities and that it is unlawful for any person to cause or contribute to a violation of water quality standards. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations."

Signature: _____
Name (Print): _____
Title: _____

Contracting Firm: _____
Address: _____
_____
_____
Telephone: _____

SUBCONTRACTOR CERTIFICATION STATEMENT:

New York State Department of Environmental Conservation (NYSDEC)
SPDES General Permit for
Stormwater Discharges from
CONSTRUCTION ACTIVITY
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Signature: _____
Name (Print): _____
Title: _____

Contracting Firm: _____
Address: _____
_____
_____
Telephone: _____

LEGEND

PROPERTY LINE	PROPOSED BUILDING LINE
EXISTING CURB	40 PROPOSED CONTOUR
EXISTING EDGE OF PAVEMENT	+22.28 PROPOSED SPOT GRADE
EXISTING CHAIN LINK FENCE	.5% PROPOSED SLOPE AND DIRECTION OF FLOW
EXISTING RETAINING WALL	PROPOSED DRAIN INLET
EXISTING SIGN	PROPOSED MANHOLE
EXISTING UTILITY POLE	PROPOSED BYPASS MANHOLE
EXISTING FIRE HYDRANT	PROPOSED HYDRODYNAMIC SEPARATOR (OPEN GRATE)
EXISTING MANHOLE	PROPOSED WATER QUALITY FILTER STRUCTURE
EXISTING CATCH BASIN (TYP.)	PROPOSED CLEANOUT
EXISTING LIGHT POLE	PROPOSED HYDRANT
30" STORM EXISTING STORM LINE AND SIZE	PROPOSED SOLID WALL STORM PIPE
24" SANITARY SEWER EXISTING SANITARY SEWER	PROPOSED PERFORATED STORM DRAIN
23 EXISTING CONTOUR	PROPOSED SANITARY SEWER PIPE
x22.6 EXISTING SPOT GRADE	G PROPOSED GAS LINE
EXISTING FEATURE TO BE REMOVED	W PROPOSED WATER LINE
	E PROPOSED UNDERGROUND ELECTRIC LINE
	PROPOSED CONSTRUCTION ENTRANCE
	PROPOSED SOIL STOCKPILE AREA
	PROPOSED TRENCH DRAIN
	PROPOSED CONSTRUCTION FENCE WITH PRIVACY SCREENING
	PROPOSED CONSTRUCTION FENCE
	PROPOSED SILT FENCE
	PROPOSED INLET PROTECTION
	LW LIMIT OF DISTURBANCE/ CONTRACT LIMIT LINE

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

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CONSTRUCTION DOCUMENTS

No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title

CONSTRUCTION NOTES & LEGENDS

Job No. 2020-1005	Date 06/29/2023
Scale AS NOTED	Drawn / Checked CJL/JLMT

Sheet Number

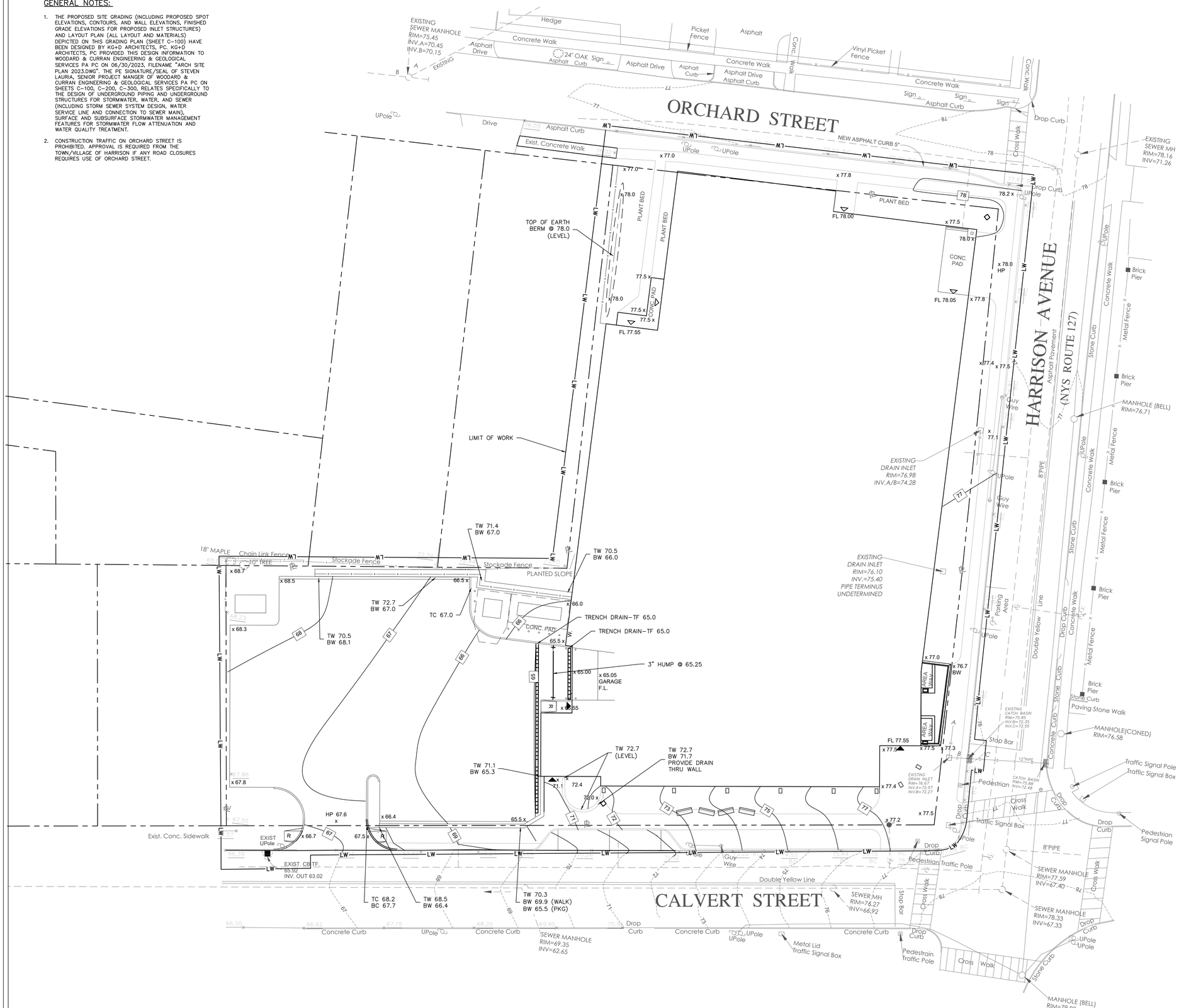
C-001

GENERAL NOTES:

1. THE PROPOSED SITE GRADING (INCLUDING PROPOSED SPOT ELEVATIONS, CONTOURS, AND WALL ELEVATIONS, FINISHED GRADE ELEVATIONS FOR PROPOSED INLET STRUCTURES) AND LAYOUT PLAN (ALL LAYOUT AND MATERIALS) DEPICTED ON THIS GRADING PLAN (SHEET C-100) HAVE BEEN DESIGNED BY KG+D ARCHITECTS, PC. KG+D ARCHITECTS, PC PROVIDED THIS DESIGN INFORMATION TO WOODARD & CURRAN ENGINEERING & GEOLOGICAL SERVICES PA PC ON 06/30/2023, FILENAME "ARCH SITE PLAN 2023.DWG". THE PE SIGNATURE/SEAL OF STEVEN LAURIA, SENIOR PROJECT MANGER OF WOODARD & CURRAN ENGINEERING & GEOLOGICAL SERVICES PA PC ON SHEETS C-100, C-200, C-300, RELATES SPECIFICALLY TO THE DESIGN OF UNDERGROUND PIPING AND UNDERGROUND STRUCTURES FOR STORMWATER, WATER, AND SEWER (INCLUDING STORM SEWER SYSTEM DESIGN, WATER SERVICE LINE AND CONNECTION TO SEWER MAIN), SURFACE AND SUBSURFACE STORMWATER MANAGEMENT FEATURES FOR STORMWATER FLOW ATTENUATION AND WATER QUALITY TREATMENT.
2. CONSTRUCTION TRAFFIC ON ORCHARD STREET IS PROHIBITED. APPROVAL IS REQUIRED FROM THE TOWN/VILLAGE OF HARRISON IF ANY ROAD CLOSURES REQUIRES USE OF ORCHARD STREET.

KEY TO SPOT GRADES:

x 67.55	EXISTING ELEVATION TO REMAIN
x 67.55	PROPOSED SPOT GRADE
67	PROPOSED CONTOUR
HP	HIGH POINT
TW/BW	TOP/BOTTOM OF WALL ELEV.
TC/BC	TOP/BOTTOM OF CURB



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2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title

GRADING PLAN

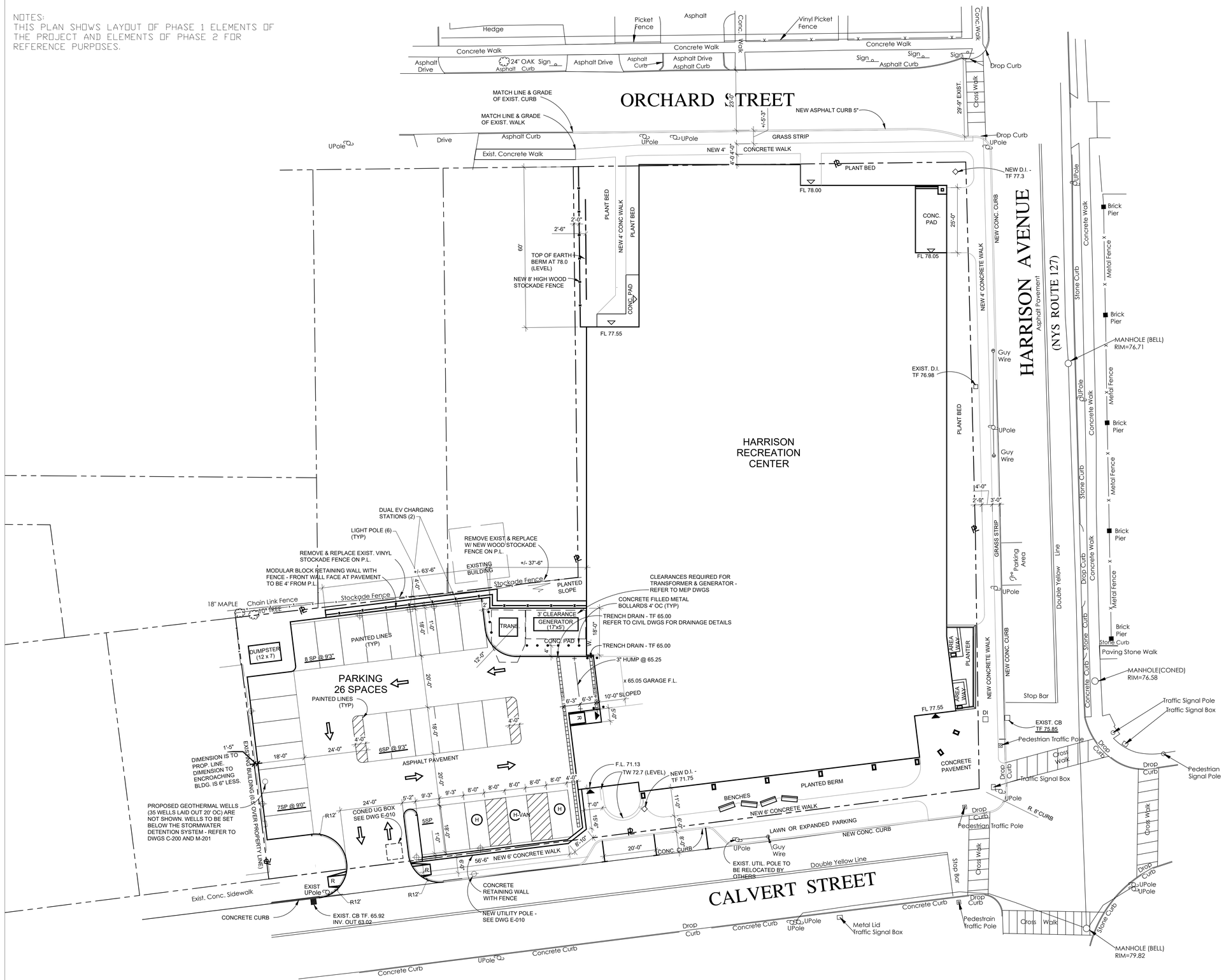
Job No. 2020-1005	Date 07/07/2023
Scale AS NOTED	Drawn / Checked CJL/JLMT

Sheet Number

C-100

15' 0 15' 30'
BAR SCALE
1" = 15'
CHECK GRAPHIC SCALE BEFORE USING

NOTES:
THIS PLAN SHOWS LAYOUT OF PHASE 1 ELEMENTS OF THE PROJECT AND ELEMENTS OF PHASE 2 FOR REFERENCE PURPOSES.



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CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

Sheet Title

LAYOUT PLAN

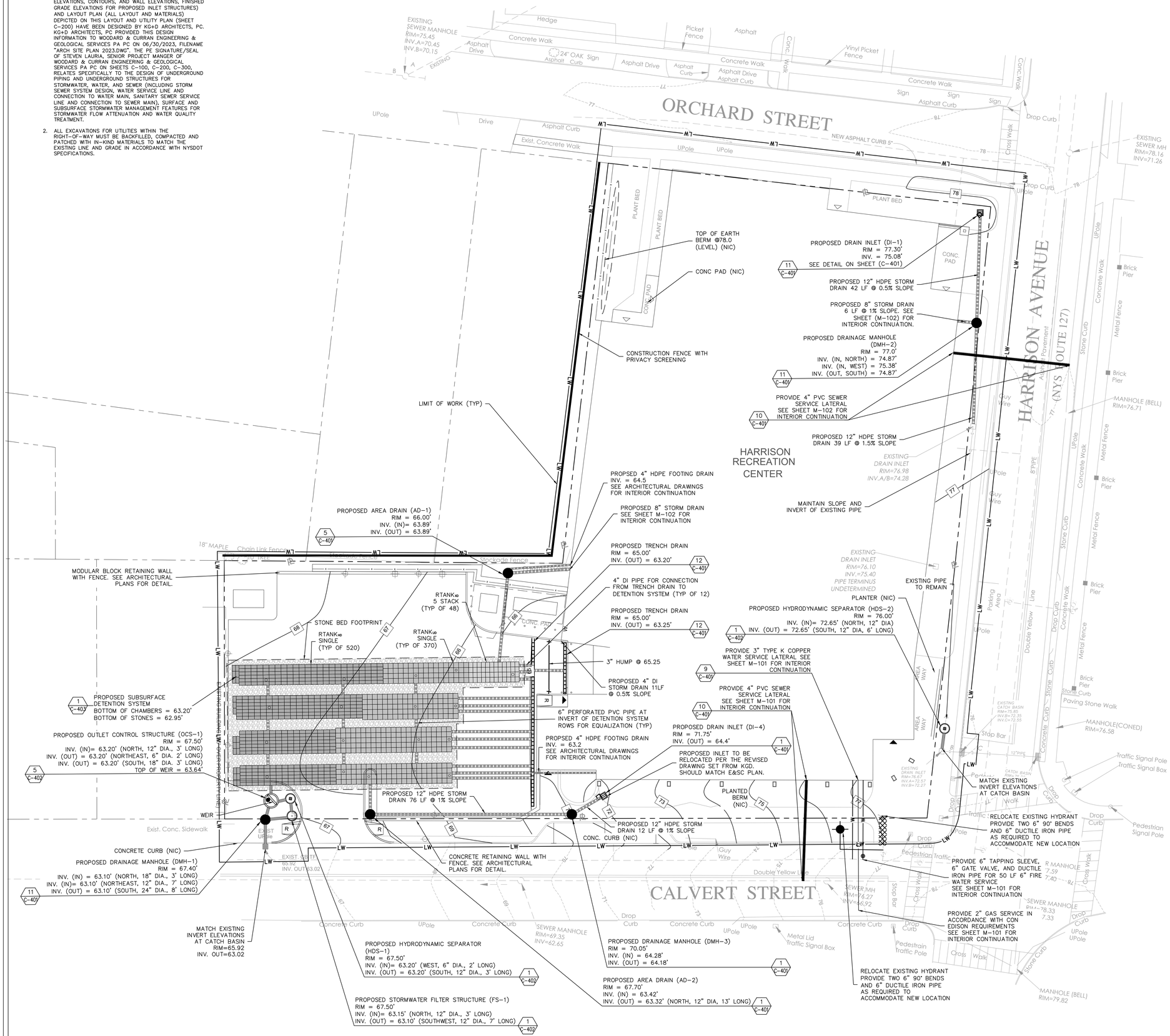
Job No.	Date
2020-1005	07/12/2023
Scale	Drawn / Checked
1" = 15'	FW/RLA

Sheet Number

C-101

GENERAL NOTES:

1. THE PROPOSED SITE GRADING (INCLUDING PROPOSED SPOT ELEVATIONS, CONTOURS, AND WALL ELEVATIONS, FINISHED GRADE ELEVATIONS FOR PROPOSED INLET STRUCTURES) AND LAYOUT PLAN (ALL LAYOUT AND MATERIALS) DEPICTED ON THIS LAYOUT AND UTILITY PLAN (SHEET C-200) HAVE BEEN DESIGNED BY KG+D ARCHITECTS, PC. KG+D ARCHITECTS, PC PROVIDED THIS DESIGN INFORMATION TO WOODARD & CURRAN ENGINEERING & GEOLOGICAL SERVICES PA PC ON 06/30/2023, FILENAME "ARCH SITE PLAN 2023.DWG". THE PE SIGNATURE/SEAL OF STEVEN LAURIA, SENIOR PROJECT MANGER OF WOODARD & CURRAN ENGINEERING & GEOLOGICAL SERVICES PA PC ON SHEETS C-100, C-200, C-300, RELATES SPECIFICALLY TO THE DESIGN OF UNDERGROUND PIPING AND UNDERGROUND STRUCTURES FOR STORMWATER, WATER, AND SEWER (INCLUDING STORM SEWER SYSTEM DESIGN, WATER SERVICE LINE AND CONNECTION TO WATER MAIN, SANITARY SEWER SERVICE LINE AND CONNECTION TO SEWER MAIN), SURFACE AND SUBSURFACE STORMWATER MANAGEMENT FEATURES FOR STORMWATER FLOW ATTENUATION AND WATER QUALITY TREATMENT.
2. ALL EXCAVATIONS FOR UTILITIES WITHIN THE RIGHT-OF-WAY MUST BE BACKFILLED, COMPACTED AND PATCHED WITH IN-KIND MATERIALS TO MATCH THE EXISTING LINE AND GRADE IN ACCORDANCE WITH NYSDOT SPECIFICATIONS.



BAR SCALE
1" = 15'
CHECK GRAPHIC SCALE BEFORE USING

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2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title

UTILITIES PLAN

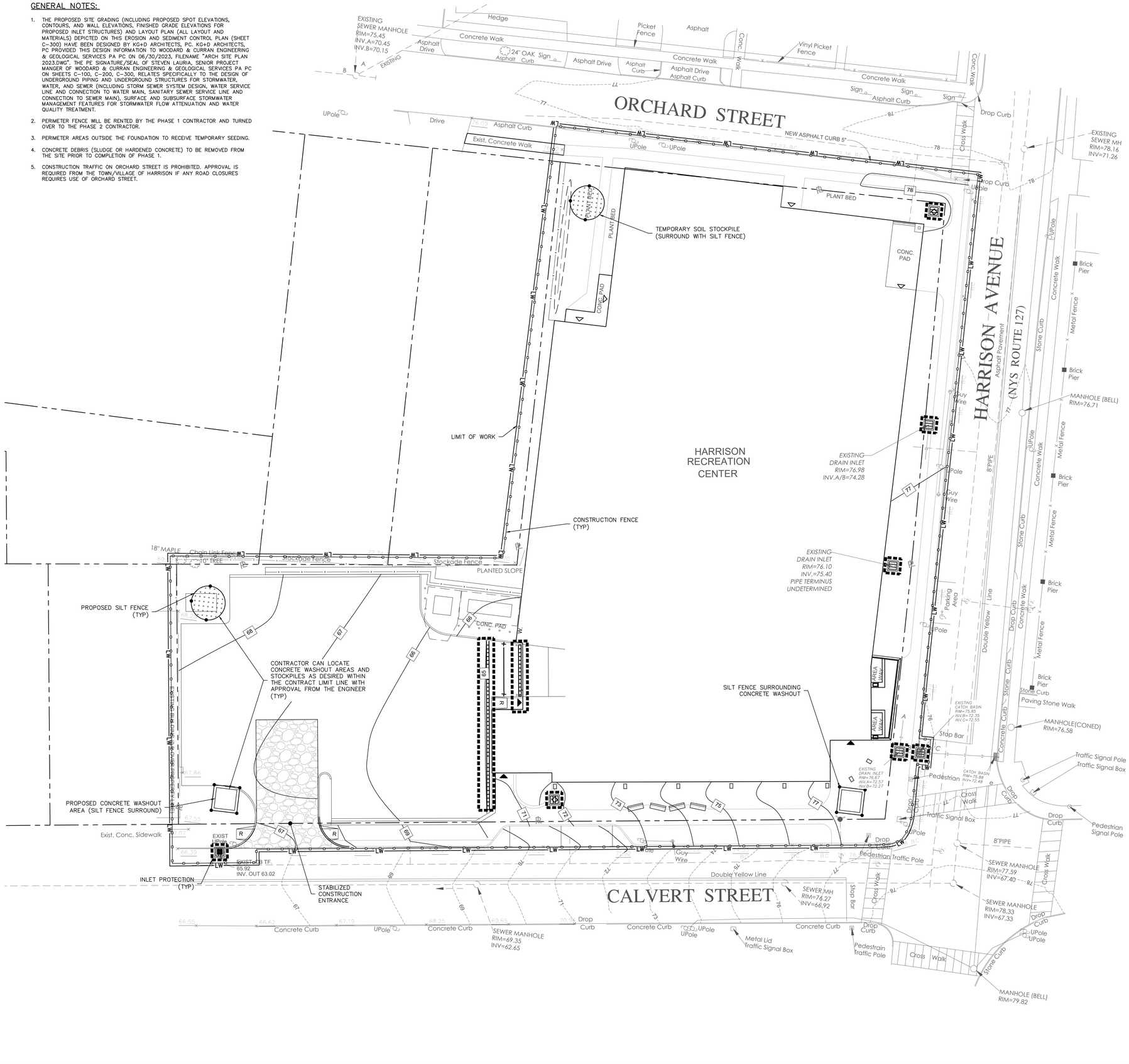
Job No.	Date
2020-1005	07/07/2023
Scale	Drawn / Checked
AS NOTED	CJL/JLMT

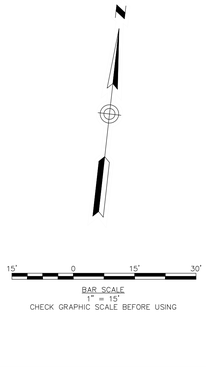
Sheet Number

C-200

GENERAL NOTES:

1. THE PROPOSED SITE GRADING (INCLUDING PROPOSED SPOT ELEVATIONS, CONTOURS, AND WALL ELEVATIONS, FINISHED GRADE ELEVATIONS FOR PROPOSED INLET STRUCTURES) AND LAYOUT PLAN (ALL LAYOUT AND MATERIALS) DEPICTED ON THIS EROSION AND SEDIMENT CONTROL PLAN (SHEET C-300) HAVE BEEN DESIGNED BY KG+D ARCHITECTS, PC. KG+D ARCHITECTS, PC PROVIDED THIS DESIGN INFORMATION TO WOODARD & CURRAN ENGINEERING & GEOLOGICAL SERVICES PA PC ON 06/30/2023, FILENAME "ARCH SITE PLAN 2023.DWG". THE PE SIGNATURE/SEAL OF STEVEN LAURIA, SENIOR PROJECT MANGER OF WOODARD & CURRAN ENGINEERING & GEOLOGICAL SERVICES PA PC ON SHEETS C-100, C-200, C-300, RELATES SPECIFICALLY TO THE DESIGN OF UNDERGROUND PIPING AND UNDERGROUND STRUCTURES FOR STORMWATER, WATER, AND SEWER (INCLUDING STORM SEWER SYSTEM DESIGN, WATER SERVICE LINE AND CONNECTION TO WATER MAIN, SANITARY SEWER SERVICE LINE AND CONNECTION TO SEWER MAIN), SURFACE AND SUBSURFACE STORMWATER MANAGEMENT FEATURES FOR STORMWATER FLOW ATTENUATION AND WATER QUALITY TREATMENT.
2. PERIMETER FENCE WILL BE RENTED BY THE PHASE 1 CONTRACTOR AND TURNED OVER TO THE PHASE 2 CONTRACTOR.
3. PERIMETER AREAS OUTSIDE THE FOUNDATION TO RECEIVE TEMPORARY SEEDING.
4. CONCRETE DEBRIS (SLUDGE OR HARDENED CONCRETE) TO BE REMOVED FROM THE SITE PRIOR TO COMPLETION OF PHASE 1.
5. CONSTRUCTION TRAFFIC ON ORCHARD STREET IS PROHIBITED. APPROVAL IS REQUIRED FROM THE TOWN/VILLAGE OF HARRISON IF ANY ROAD CLOSURES REQUIRES USE OF ORCHARD STREET.





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2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

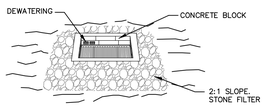
Sheet Title

EROSION & SEDIMENT CONTROL PLAN

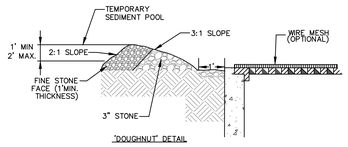
Job No. 2020-1005	Date 07/07/2023
Scale AS NOTED	Drawn / Checked MBA/JM

Sheet Number

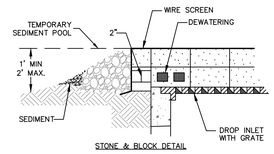
C-300



STONE & BLOCK PLAN VIEW



"DOUGHNUT" DETAIL



STONE & BLOCK DETAIL

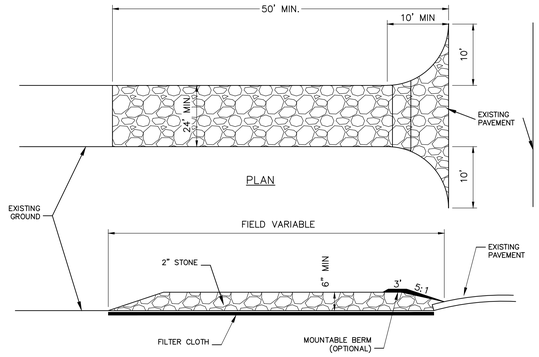
NOTES:

1. LAY ONE BLOCK ON EACH SIDE OF THE STRUCTURE ON ITS SIDE FOR DEWATERING. FOUNDATION SHALL BE 2 INCHES MINIMUM BELOW REST OF INLET AND BLOCKS SHALL BE PLACED AGAINST INLET FOR SUPPORT.
2. HARDWARE CLOTH OR ½" WIRE MESH SHALL BE PLACED OVER BLOCK OPENINGS TO SUPPORT STONE.
3. USE CLEAN STONE OR GRAVEL ½ TO ¼ INCH IN DIAMETER PLACED 2 INCHES BELOW TOP OF THE BLOCK ON A 2:1 SLOPE OR FLATTER.
4. FOR STONE STRUCTURES ONLY, A 1 FOOT THICK LAYER OF THE FILTER STONE WILL BE PLACED AGAINST THE 3 INCH STONE AS SHOWN ON THE DRAWINGS.

MAXIMUM DRAINAGE AREA 1 ACRE

1 C-400 STONE AND BLOCK DROP INLET PROTECTION

NOT TO SCALE



PLAN

PROFILE

CONSTRUCTION SPECIFICATIONS:

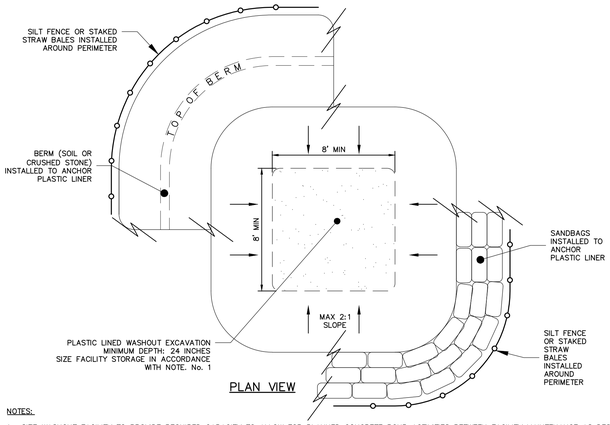
1. USE 2" DIAMETER STONE OR RECLAIMED/RECYCLED CONCRETE EQUIVALENT.
2. RECOMMENDED LENGTH GREATER THAN 50 FEET WHERE PRACTICAL.
3. THICKNESS NOT LESS THAN 6 INCHES.
4. 24 FOOT MINIMUM WIDTH, BUT NOT LESS THAN FULL WIDTH AT POINTS WHERE INGRESS AND EGRESS OCCUR. CONTRACTOR SHALL PROVIDE 24' WIDTH WHEREVER POSSIBLE WITHOUT DISTURBING EXISTING STRUCTURES OR EXISTING TREES TO REMAIN)
5. FILTER CLOTH SHALL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

CONSTRUCTION SPECIFICATIONS:

6. ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WILL BE PERMITTED.
7. ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. PERIODIC INSPECTION AND REQUIRED MAINTENANCE SHALL BE PROVIDED BY THE CONTRACTOR.
9. REMOVE STABILIZED CONSTRUCTION ENTRANCE PRIOR TO PLACEMENT OF BITUMINOUS CONCRETE PAVEMENT.

2 C-400 STABILIZED CONSTRUCTION ACCESS

NOT TO SCALE



PLAN VIEW

NOTES:

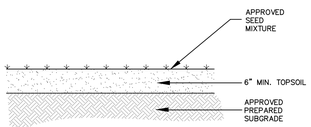
1. SIZE WASHOUT FACILITY TO PROVIDE REQUIRED CAPACITY TO ALLOW FOR PLANNED CONCRETE POUR ACTIVITIES BETWEEN FACILITY MAINTENANCE AS DESCRIBED IN NOTE 9. THE FOLLOWING RELATIONSHIPS CAN BE USED TO ESTIMATE REQUIRED CAPACITY. MINIMUM FACILITY DIMENSIONS SHALL BE CONSTRUCTED AS NOTED ON DETAIL.

REQUIRED WASH WATER	
TRUCK CHUTE	7 GAL
HOPPER	50 GAL

2. CONCRETE WASHOUT FACILITY SHALL BE CONSTRUCTED, INSPECTED AND MAINTAINED IN ACCORDANCE WITH THE NYSDEC NEW YORK STANDARDS & SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, LATEST EDITION.
3. LOCATE WASHOUT FACILITY MINIMUM OF 100 FEET AWAY FROM DRAINAGE SWALES, STORM DRAIN INLETS, WETLANDS, STREAMS AND OTHER SURFACE WATERS.
4. WASHOUT FACILITY SHALL BE LINED WITH MINIMUM 10 MIL THICKNESS PLASTIC SHEETING OR EQUIVALENT WATERTIGHT BARRIER APPROVED BY THE ENGINEER.
5. LINER SHALL BE MAINTAINED FREE OF TEARS AND PUNCTURES AT ALL TIMES.
6. ANCHOR LINER AT TOP OF EXCAVATION WITH EARTHEN BERM, SANDBAGS OR STONE AS SHOWN ON THE DETAIL.
7. SURROUND WASHOUT FACILITY WITH SILT FENCE OR STAKED STRAW BALES.
8. ALL WASHOUT FACILITIES SHALL BE INSPECTED DAILY.
9. ACCUMULATED HARDENED MATERIAL SHALL BE REMOVED WHEN 75 PERCENT OF THE STORAGE CAPACITY OF THE STRUCTURE IS FILLED. ANY EXCESS WASH WATER SHALL BE PUMPED INTO AN ACCEPTABLE CONTAINMENT VESSEL AND DISPOSED OFFSITE IN ACCORDANCE WITH LOCAL REGULATIONS.
10. PLASTIC LINER SHALL BE REPLACED WITH REMOVAL OF ACCUMULATED HARDENED MATERIAL.
11. LOCATION TO BE APPROVED BY ENGINEER.

5 C-400 CONCRETE WASHOUT AREA

NOT TO SCALE



9 C-400 LAWN RESTORATION

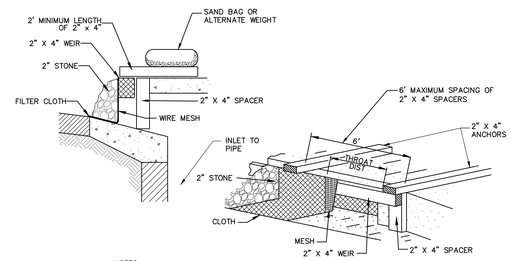
NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL PROVIDE PERIODIC INSPECTION AND MAINTENANCE OF FENCE INCLUDING REPAIRS AS NECESSARY AND REQUIRED.
2. PROVIDE PRIVACY SCREEN WHERE SHOWN ON PLAN.

6 C-400 TEMPORARY CHAIN LINK CONSTRUCTION FENCE

NOT TO SCALE



NOTES:

1. FILTER FABRIC SHALL HAVE AN AOS OF 40-85.
2. WOODEN FRAME SHALL BE CONSTRUCTED OF 2" X 4" CONSTRUCTION GRADE LUMBER.
3. WIRE MESH ACROSS THROAT SHALL BE A CONTINUOUS PIECE 30 INCH MINIMUM WIDTH WITH A LENGTH 4 FEET LONGER THAN THE THROAT. IT SHALL BE SHAPED AND SECURELY NAILED TO A 2" X 4" WEIR.
4. THE WEIR SHALL BE SECURELY NAILED TO 2" X 4" SPACERS 9 INCHES LONG SPACED NO MORE THAN 6 FEET APART.
5. THE ASSEMBLY SHALL BE PLACED AGAINST THE INLET AND SECURED BY 2" X 4" ANCHORS 2' LONG EXTENDING ACROSS THE TOP OF THE INLET AND HELD IN PLACE BY SANDBAGS OR ALTERNATE WEIGHTS.

MAXIMUM DRAINAGE AREA 1 ACRE

3 C-400 CURB INLET PROTECTION

NOT TO SCALE

TRENCH WIDTHS [a]	
PIPE SIZE	MAX (ONE PIPE)[b]
15" OR LESS	4'-0"
18"	5'-0"
24"	5'-6"
30"	6'-0"
36"	6'-6"
42"	7'-0"
48"	7'-6"
MANHOLES	O.D. + 4'-0"

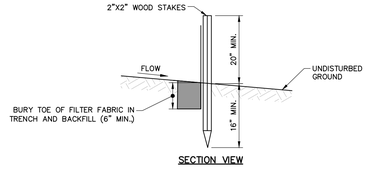
a. REPRESENTS PAYMENT WIDTH
b. FOR ROCK EXCAVATION SUBTRACT 1'-0"

NOTES:

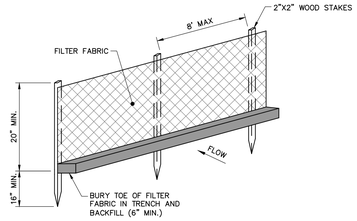
1. MAINTAIN UNIFORM TRENCH WIDTH TO 6" OVER PIPE.
2. IF SHEETING IS REQUIRED TO REMAIN, CUT OFF TWO (2) FEET BELOW FINISH GRADE.
3. NO PAYMENT WILL BE MADE FOR SHEETING LEFT IN PLACE UNLESS DIRECTED BY ENGINEER.
4. IF GROUNDWATER IS ENCOUNTERED, WRAP STONE WITH MIRAFI 140N FILTER FABRIC OR APPROVED EQUAL.
5. SEE PAVEMENT REPAIR DETAILS FOR ROAD WORK AREAS
6. PROVIDE 6" MIN. BEDDING FOR AREAS OF EXCAVATION IN ROCK.

7 C-400 TYPICAL PIPE TRENCH

NOT TO SCALE



SECTION VIEW



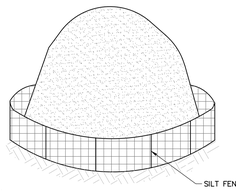
ISOMETRIC VIEW

NOTES:

1. INSTALL FABRIC ON UPHILL SIDE OF WOOD STAKES.
2. SPACING BETWEEN WOOD STAKES PER MANUFACTURER'S RECOMMENDATION.
3. SILT FENCE WILL NOT BE USED IN DRAINAGE WAYS.
4. MAINTENANCE: INSPECT FOR TEARS IN THE FABRIC OR DAMAGE TO SUPPORTS. REPAIR AS NECESSARY. REMOVE ACCUMULATED SEDIMENT WHEN IT REACHES A DEPTH OF SIX-INCHES OR MORE.
5. REMOVAL: WHEN UPSLOPE AREAS ARE STABILIZED, THE STRUCTURE AND ANY ACCUMULATED SEDIMENT WILL BE REMOVED.

4 C-400 SILT FENCE

NOT TO SCALE



NOTES:

1. STOCKPILES SHALL BE SURROUNDED BY SILT FENCE.
2. STOCKPILES SHALL HAVE A MAXIMUM 2:1 (H:V) SIDE SLOPE.
3. REPAIR OR REPLACE DAMAGED SILT FENCE DUE TO CONSTRUCTION ACTIVITIES OR STOCKPILE MITIGATION.
4. STOCKPILE SHALL BE LOCATED IN AREAS AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER.

8 C-400 TEMPORARY SOIL STOCKPILE

NOT TO SCALE

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D listen imagine build

KG+D ARCHITECTS, PC
285 MAIN STREET• MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

Woodard & Curran
Woodard & Curran Engineering & Geological Services PA PC
800 Westchester Avenue, Suite N507
Rye Brook, New York 10573
800.807.4080 | www.woodardcurran.com

CONSTRUCTION DOCUMENTS

No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

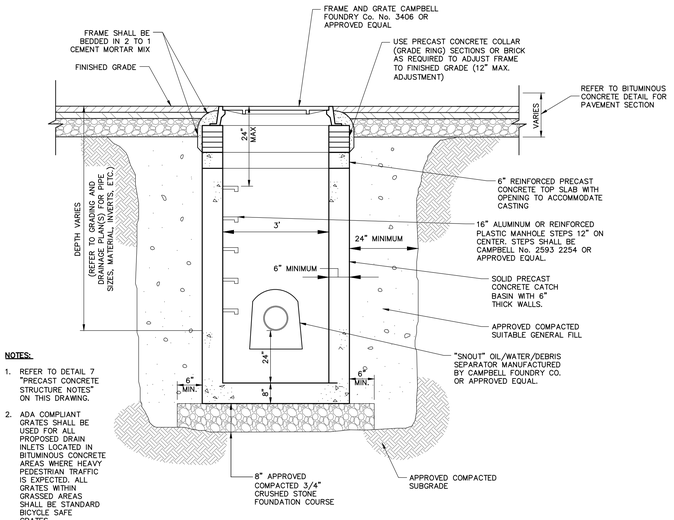
Sheet Title

CONSTRUCTION DETAILS

Job No.	Date
2020-1005	06/29/2023
Scale: AS NOTED	Drawn / Checked: CJL/JLMT

Sheet Number

C-400



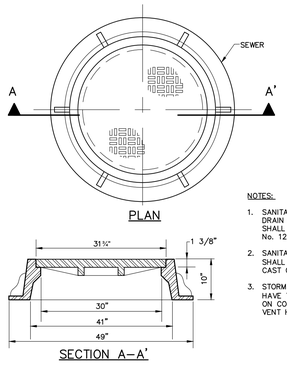
NOTES:

1. REFER TO DETAIL 7 "PRECAST CONCRETE STRUCTURE NOTES" ON THIS DRAWING.
2. ADA COMPLIANT GRATES SHALL BE USED FOR ALL PROPOSED DRAIN INLETS LOCATED IN BITUMINOUS CONCRETE AREAS WHERE HEAVY PEDESTRIAN TRAFFIC IS EXPECTED. ALL GRATES WITHIN GRASSED AREAS SHALL BE STANDARD BICYCLE SAFE GRATES.

SECTION VIEW

1 C-401 DRAIN INLET (CATCH BASIN)

NOT TO SCALE



PLAN

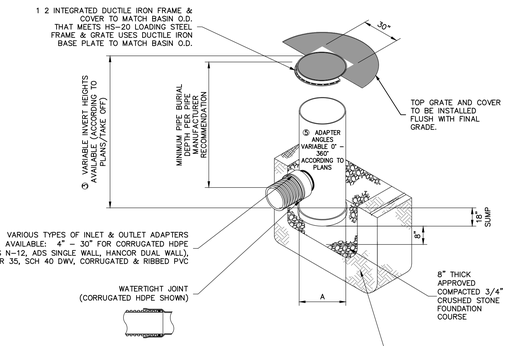
SECTION A–A'

NOTES:

1. SANITARY SEWER AND STORM DRAIN MANHOLE FRAMES COVERS SHALL BE CAMPBELL FOUNDRY No. 1206 OR APPROVED EQUAL.
2. SANITARY SEWER MANHOLES SHALL HAVE THE WORD 'SEWER' CAST ON COVER.
3. STORM SEWER MANHOLES SHALL HAVE THE WORD 'DRAIN' CAST ON COVER. COVER SHALL HAVE VENT HOLES

2 C-401 MANHOLE FRAME & COVER

NOT TO SCALE



1 12" – 30" FRAMES, GRATES, & BASE PLATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05

2 12" – 30" FRAMES & GRATES SHALL BE STEEL PER ASTM A36

3 DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS

4 DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS & HANCOR DUAL WALL) & SDR 35 PVC

5 ADAPTERS CAN BE MOUNTED ON ANY ANGLE 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012, 7001-110-013, & 7001-110-014

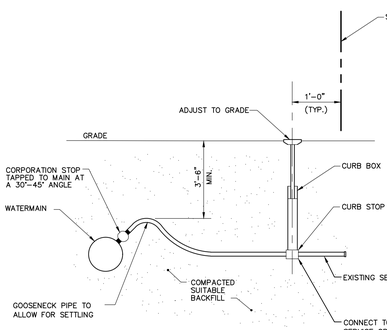
6 ALL OPTIONS SHALL MEET HS-20 LOAD RATING

NOTES:

1. INSTALL BASIN IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

5 C-401 AREA DRAIN

NOT TO SCALE



SERVICE LINE SIZE: 3"

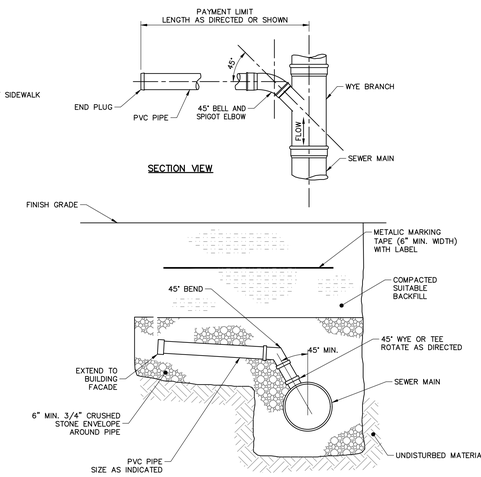
SERVICE LINE MATERIALS: COPPER, TYPE K

NOTES:

1. CORPORATION STOP, CURB STOP, CURB BOX AND ENLARGED BASE FOR CURB BOX SHALL BE MUELLER COMPANY OR APPROVED EQUAL IN ACCORDANCE WITH MUELLER COMPANY CATALOG, LATEST EDITION. REFER TO PROJECT SPECIFICATIONS FOR WATER LINE PIPE, CORPORATION STOP AND CURB STOP AND BOX INFORMATION.
2. THERE SHALL BE NO JOINTS IN THE SERVICE LINE BETWEEN THE WATER MAIN AND CURB STOP.

8 C-401 TYPICAL WATER SERVICE CONNECTION

SCALE: N.T.S.

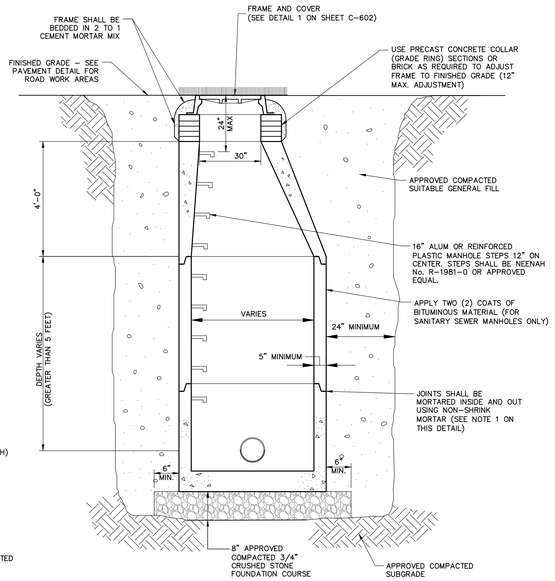


NOTES:

1. A 2" RIGID INSULATION WILL BE REQUIRED IN AREAS WHERE LESS THAN 4'-0" OF COVER OVER TOP OF PIPE OR WHERE REQUIRED BY ENGINEER.
2. SERVICE PIPE SHALL HAVE A MINIMUM SLOPE OF 1/4" PER FOOT UNLESS OTHERWISE DIRECTED.

9 C-401 TYPICAL SEWER SERVICE CONNECTION

SCALE: N.T.S.

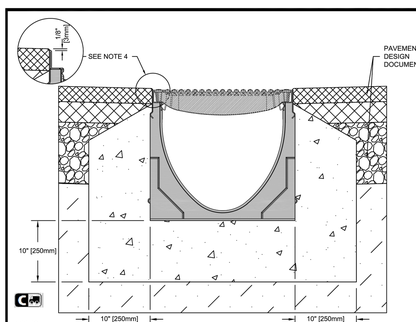


NOTES:

1. THE WIDTH OF THE MANHOLE WILL BE A MINIMUM OF 4' EXCEPT WHERE A NEW MANHOLE WITH A DROP CONNECTION IS SHOWN. THEN THE MINIMUM WIDTH OF THE MANHOLE IS 5'.
2. PRECAST CONCRETE STRUCTURES AND CASTINGS SHALL BE SUITABLE FOR HS-20 LOADINGS.
3. PRECAST CONCRETE STRUCTURES SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM C-478.
4. ALTERNATE TOP SLAB MAY BE USED AS DICTATED BY DESIGN AND/OR FIELD CONDITIONS.
5. MANHOLE FRAME AND GRATE(S) SHALL MEET MUNICIPAL AND STATE SPECIFICATIONS WHEN APPLICABLE.
6. REFER TO PROJECT SPECIFICATIONS FOR MORE DRAINAGE MANHOLE INFORMATION.
7. JOINT SEALANT BETWEEN SECTIONS SHALL BE BUTYL RUBBER.
8. PROVIDE ANTIFLOTATION SLAB EXTENSION AS REQUIRED TO SATISFY ANTIFLOTATION REQUIREMENTS.

10 C-401 DRAINAGE MANHOLE

NOT TO SCALE



NOTES:

1. IT IS NECESSARY TO ENSURE MINIMUM DIMENSIONS SHOWN ARE SUITABLE FOR EXISTING GROUND CONDITIONS. *ENGINEERING ADVICE MAY BE REQUIRED.*
2. MINIMUM CONCRETE STRENGTH OF 4,000 PSI IS RECOMMENDED. CONCRETE SHOULD BE VIBRATED TO ELIMINATE AIR POCKETS.
3. EXPANSION AND CONTRACTION CONTROL JOINTS AND REINFORCEMENT ARE RECOMMENDED TO PROTECT CHANNEL AND CONCRETE SURROUND. *ENGINEERING ADVICE MAY BE REQUIRED.*
4. THE FINISHED LEVEL OF THE CONCRETE SURROUND MUST BE APPROX. 1/8" [3mm] ABOVE THE TOP OF THE CHANNEL EDGE.
5. CONCRETE BASE THICKNESS SHOULD MATCH SLAB THICKNESS. ENGINEERING ADVICE MAY BE REQUIRED TO DETERMINE PROPER LOAD CLASS.
6. REFER TO ACO'S LATEST INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS.

SPECIFICATION CLAUSE

K300 KLASSIKDRAIN 'DRAINLOK' LOAD CLASS C

GENERAL
THE SURFACE DRAINAGE SYSTEM SHALL BE POLYMER CONCRETE K300 CHANNEL SYSTEM WITH GALVANIZED STEEL EDGE RAILS AS MANUFACTURED BY ACO POLYMER PRODUCTS, INC.

MATERIALS
CHANNELS SHALL BE MANUFACTURED FROM POLYESTER RESIN POLYMER CONCRETE WITH AN INTEGRALLY CAST-IN GALVANIZED STEEL EDGE RAIL. MINIMUM PROPERTIES OF POLYMER CONCRETE WILL BE AS FOLLOWS:

COMPRESSIVE STRENGTH:	14,000 PSI
FLEXURAL STRENGTH:	4,000 PSI
TENSILE STRENGTH:	1,500 PSI
WATER ABSORPTION:	0.07%
FROST PROOF	YES
DILUTE ACID AND ALKALI RESISTANT	YES
B117 SALT SPRAY TEST COMPLIANT	YES

THE SYSTEM SHALL BE 12" (300mm) NOMINAL INTERNAL WIDTH WITH A 14.2" (390mm) OVERALL WIDTH AND A BUILT-IN SLOPE OF 0.5%. CHANNEL INVERT SHALL HAVE DEVELOPED "V" SHAPE. ALL CHANNELS SHALL BE INTERLOCKING WITH A MALE/FEMALE JOINT.

THE COMPLETE DRAINAGE SYSTEM SHALL BE BY ACO POLYMER PRODUCTS, INC. ANY DEVIATION OR PARTIAL SYSTEM DESIGN AND/OR IMPROPER INSTALLATION WILL VOID ANY AND ALL WARRANTIES PROVIDED BY ACO POLYMER PRODUCTS, INC.

CHANNEL SHALL WITHSTAND LOADING TO PROPER LOAD CLASS AS OUTLINED BY EN 1433. GRATE TYPE SHALL BE APPROPRIATE TO MEET THE SYSTEM LOAD CLASS SPECIFIED AND INTENDED APPLICATION. GRATES SHALL BE SECURED USING 'DRAINLOK' BOLTLESS LOCKING SYSTEM. CHANNEL AND GRATE SHALL BE CERTIFIED TO MEET THE SPECIFIED EN 1433 LOAD CLASS. THE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.

K3-C-HAP	K300 - KLASSIKDRAIN - LOAD CLASS: C
DATE: 08/18/16	Haunched Asphalt Pavement
	INSTALLATION DRAWING - ACO DRAIN

ACO Polymer Products, Inc.

825 W. Beechcraft St, Casa Grande, AZ 85122, Tel: 520-421-9988, Fax: 520-421-9899
9470 Pinecone Dr, Mentor, OH 44060, Tel: 440-639-7230, Fax: 440-639-7235
4211 Pleasant Rd, Fort Mill, SC 29708, Tel: 440-639-7230, Fax: 803-802-1063

Arizona Tel: 888-490-9552 e-mail: sales@acousa.com Ohio Tel: 800-543-4764 www.acousa.com South Carolina Tel: 800-543-4764

11 C-401 TRENCH DRAIN

SCALE: N.T.S.

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D listen imagine build
KG+D ARCHITECTS, PC
285 MAIN STREET• MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

Woodard & Curran
Woodard & Curran Engineering & Geological Services PA PC
800 Westchester Avenue, Suite N507
Rye Brook, New York 10573
800.807.4080 | www.woodardcurran.com

CONSTRUCTION DOCUMENTS

No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

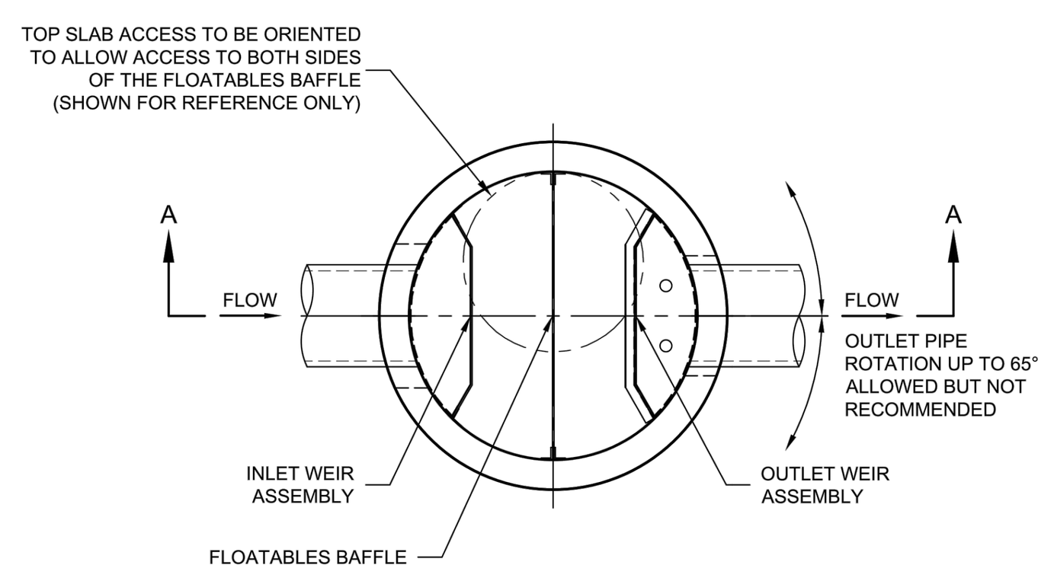
Sheet Title

CONSTRUCTION DETAILS

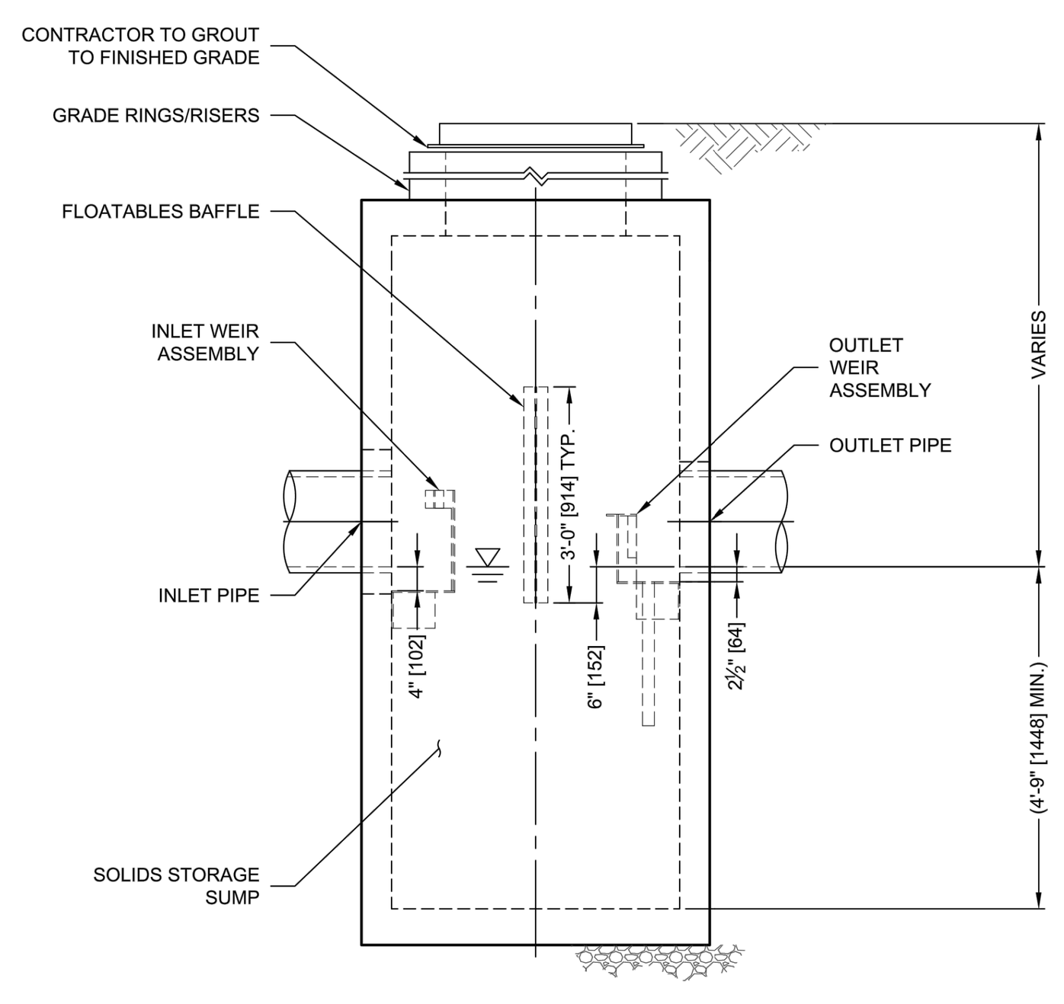
Job No.	Date
2020-1005	06/29/2023
Scale: AS NOTED	Drawn / Checked: CJL/JLMT

Sheet Number

C-401



PLAN VIEW
TOP SLAB NOT SHOWN

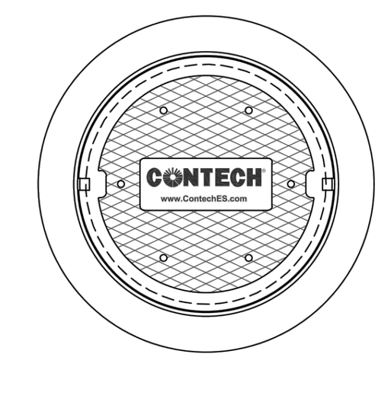


SECTION A-A

SciCloneX

SCICLONEX DESIGN NOTES

THE STANDARD SCX-04 CONFIGURATION IS SHOWN.



FRAME AND COVER
(MAY VARY)
NOT TO SCALE

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs [L/s])			
PEAK FLOW RATE (cfs [L/s])			
RETURN PERIOD OF PEAK FLOW (yrs)			
RIM ELEVATION			
PIPE DATA:	INVERT	MATERIAL	DIAMETER
INLET PIPE 1			
INLET PIPE 2			
OUTLET PIPE			
NOTES / SPECIAL REQUIREMENTS:			

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.ContechES.com
3. SCICLONEX WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. SCICLONEX STRUCTURE SHALL MEET AASHTO HS20 LOAD RATING, ASSUMING EARTH COVER OF 0' - 2' [610], AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 AND BE CAST WITH THE CONTECH LOGO.
5. SCICLONEX STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. ALTERNATE UNITS ARE SHOWN IN MILLIMETERS [mm].

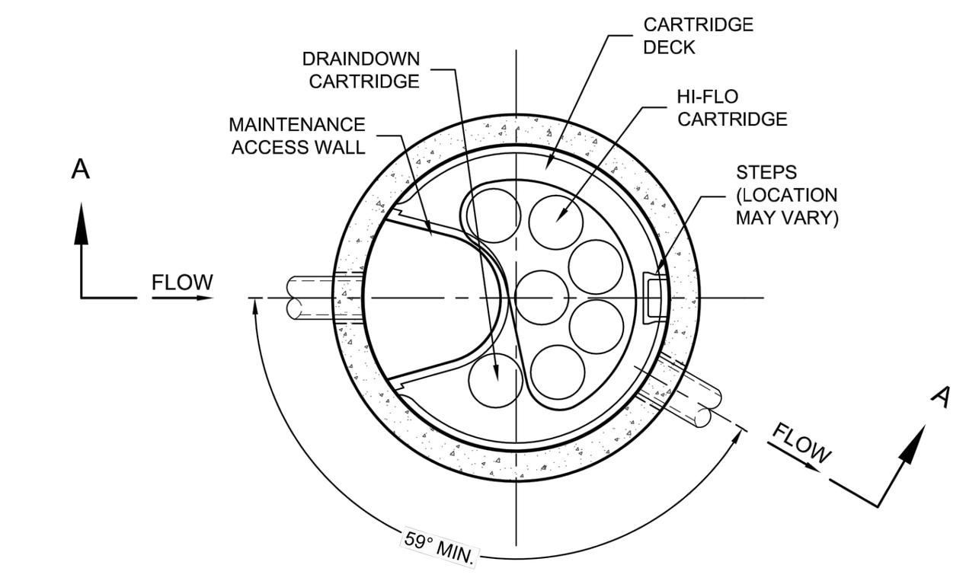
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE SCICLONEX MANHOLE STRUCTURE.
C. CONTRACTOR TO INSTALL JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT INLET AND OUTLET PIPE(S). MATCH PIPE INVERTS WITH ELEVATIONS SHOWN. ALL PIPE CENTERLINES TO MATCH PIPE OPENING CENTERLINES.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9100 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

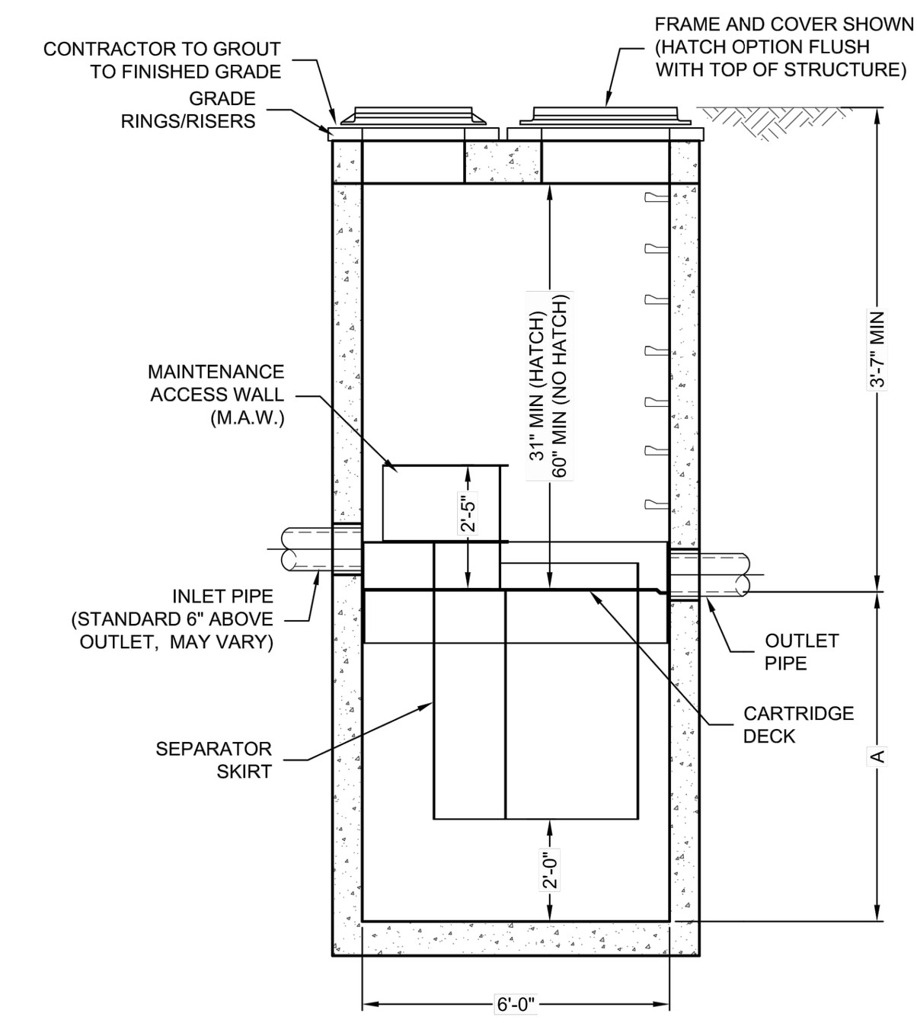
SCX-04
SCICLONEX
STANDARD DETAIL

1 (C-402) HYDRODYNAMIC SEPARATOR TREATMENT STRUCTURE (HDS-1, HDS-2)

NOT TO SCALE



PLAN VIEW



SECTION A-A

Jellyfish® Filter

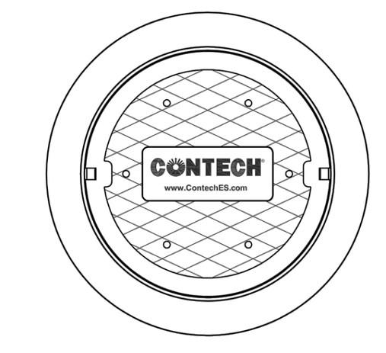
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENT NO. 8,287,726; 8,221,618 & US & CE-EDS; OTHER INTERNATIONAL PATENTS PENDING

JELLYFISH DESIGN NOTES

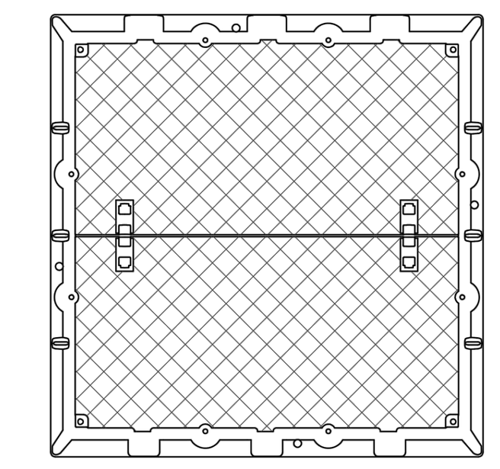
JELLYFISH TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. THE STANDARD MANHOLE STYLE IS SHOWN. Ø72" MANHOLE JELLYFISH PEAK TREATMENT CAPACITY IS 1.16 CFS. IF THE SITE CONDITIONS EXCEED 1.16 CFS AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE DEPTH	54"	40"	27"	15"
OUTLET INVERT TO STRUCTURE INVERT (A)	6'-5"	5'-3"	4'-2"	3'-2"
FLOW RATE HIGH-FLO / DRAINDOWN (cfs) (per cart)	0.18 / 0.09	0.13 / 0.065	0.09 / 0.045	0.05 / 0.025
MAX. CARTS HIGH-FLO / DRAINDOWN	6 / 1			



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.



HATCH
(48" x 48" CAST INTO SLAB)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS			
STRUCTURE ID	*		
WATER QUALITY FLOW RATE (cfs)	*		
PEAK FLOW RATE (cfs)	*		
RETURN PERIOD OF PEAK FLOW (yrs)	*		
# OF CARTRIDGES REQUIRED (HF / DD)	* / *		
CARTRIDGE SIZE	*		
PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE #1	*	*	*
INLET PIPE #2	*	*	*
OUTLET PIPE	*	*	*
RIM ELEVATION	*		
ANTI-FLOTATION BALLAST	WIDTH	HEIGHT	
	*	*	
NOTES/SPECIAL REQUIREMENTS:			
* PER ENGINEER OF RECORD			

GENERAL NOTES:
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHT, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS REPRESENTATIVE. www.ContechES.com
3. JELLYFISH WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING. CONTRACTOR TO CONFIRM STRUCTURE MEETS REQUIREMENTS OF PROJECT.
4. STRUCTURE SHALL MEET AASHTO HS-20 OR PER APPROVING JURISDICTION REQUIREMENTS, WHICHEVER IS MORE STRINGENT, ASSUMING EARTH COVER OF 0' - 3', AND GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION. CASTINGS SHALL MEET AASHTO M306 LOAD RATING AND BE CAST WITH THE CONTECH LOGO.
5. STRUCTURE SHALL BE PRECAST CONCRETE CONFORMING TO ASTM C-478 AND AASHTO LOAD FACTOR DESIGN METHOD.
6. NO PRODUCT SUBSTITUTIONS SHALL BE ACCEPTED UNLESS SUBMITTED 10 DAYS PRIOR TO PROJECT BID DATE, OR AS DIRECTED BY THE ENGINEER OF RECORD.

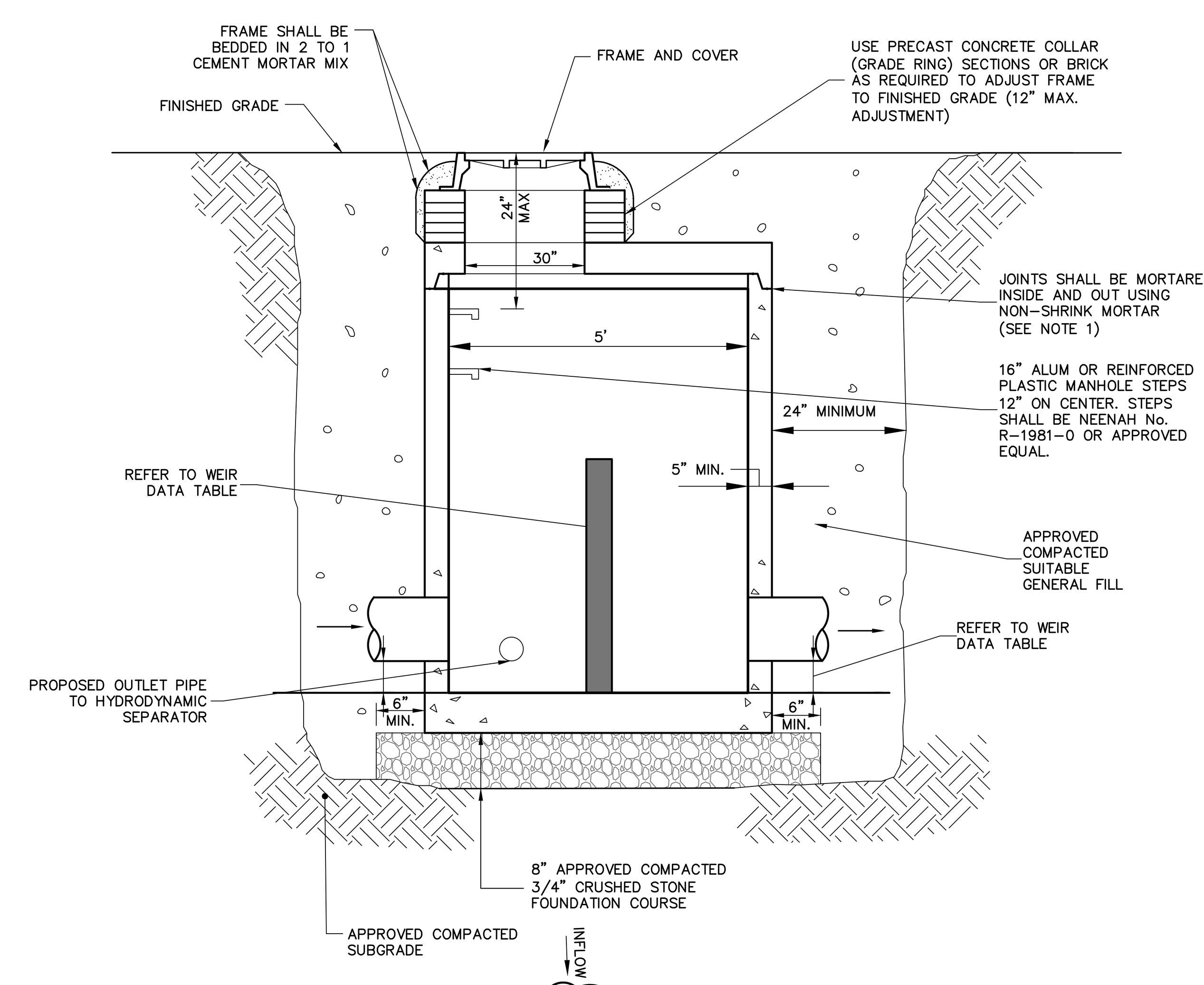
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE STRUCTURE (LIFTING CLUTCHES PROVIDED)
C. CONTRACTOR WILL INSTALL AND LEVEL THE STRUCTURE, SEALING THE JOINTS, LINE ENTRY AND EXIT POINTS (NON-SHRINK GROUT WITH APPROVED WATERSTOP OR FLEXIBLE BOOT)
D. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.
E. CARTRIDGE INSTALLATION, BY CONTECH, SHALL OCCUR ONLY AFTER SITE HAS BEEN STABILIZED AND THE JELLYFISH UNIT IS CLEAN AND FREE OF DEBRIS. CONTACT CONTECH TO COORDINATE CARTRIDGE INSTALLATION WITH SITE STABILIZATION AT (866) 740-3318.

CONTECH ENGINEERED SOLUTIONS LLC
www.ContechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

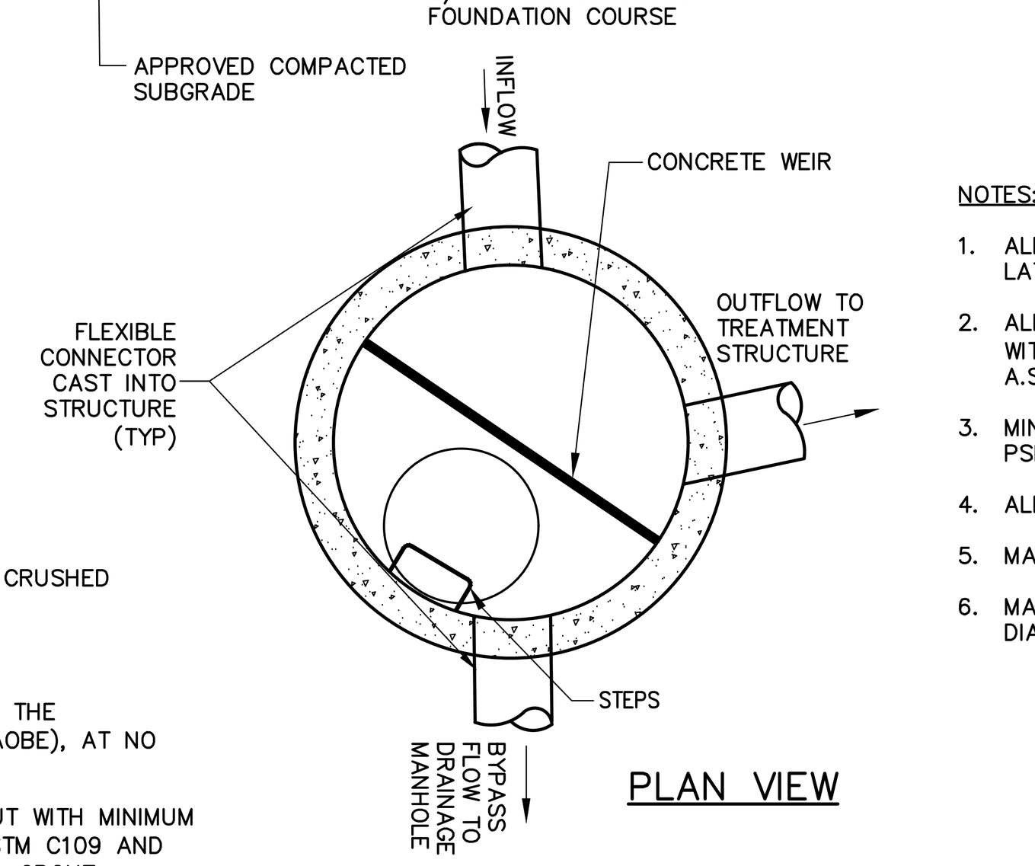
JELLYFISH JF6
STANDARD DETAIL
OFFLINE CONFIGURATION

2 (C-402) STORMWATER FILTER STRUCTURE (FS-1)

NOT TO SCALE



WEIR DATA TABLE	
STAGE	ELEVATION (FT)
	OCS-1
SUMP	62.70
WEIR	63.64



PLAN VIEW

NOTES:
1. ALL JOINTS SHALL CONFORM TO A.S.T.M. DESIGNATION C-443, LATEST EDITION.
2. ALL PRECAST MANHOLE SECTIONS SHALL BE IN ACCORDANCE WITH 'PRECAST REINFORCED CONCRETE MANHOLE SECTIONS' A.S.T.M. DESIGNATION C-478, LATEST REVISION.
3. MINIMUM COMPRESSIVE STRENGTH OF CONCRETE SHALL BE 4,000 PSI
4. ALL LIFT HOLES SHALL BE PLUGGED AND MORTARED.
5. MANHOLES SHALL MEET ALL A.S.T.M. AND O.S.H.A. REQUIREMENTS.
6. MANHOLES GREATER THAN 10 FEET IN DEPTH SHALL HAVE A DIAMETER OF 5 FEET.

GENERAL
1. FOUNDATION COURSE FOR PRECAST CONCRETE STRUCTURES SHALL BE PLACED ON A COMPACTED LAYER OF APPROVED CRUSHED STONE HAVING A MINIMUM COMPACTED THICKNESS OF EIGHT (8) INCHES.
2. ALL PRECAST CONCRETE STRUCTURES SHALL BE DESIGNED TO ACCOMMODATE AN HS-20 DESIGN LOAD.
3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO FURNISH AND CONSTRUCT THE PROPER SIZE STRUCTURE INCLUDING THE NECESSARY OPENINGS TO ACCOMMODATE THE WORK AS SHOWN ON THE DRAWINGS OR AS ORDERED BY THE ENGINEER (AOBE), AT NO ADDITIONAL COST TO THE OWNER.
4. ALL REQUIRED PATCHING FOR DRAINAGE STRUCTURES SHALL BE COMPLETED WITH NON-SHRINKING CEMENT MORTAR GROUT WITH MINIMUM 1,000 PSI COMPRESSIVE STRENGTH IN (1) DAY AND 5,000 PSI COMPRESSIVE STRENGTH IN (28) DAYS AS TESTED PER ASTM C109 AND ASTM C-707. PATCHING PRODUCTS INCLUDE "DURAGROUT" BY L & M CONST. CHEMICAL CO., "FIVE STAR GROUT" BY U.S. GROUT COMPANY OR APPROVED EQUAL.
5. REFER TO PROJECT SPECIFICATIONS FOR DRAINAGE AND SANITARY PIPE CONNECTIONS INTO PRECAST CONCRETE STRUCTURES.
6. PIPES SHALL BE CUT FLUSH WITH THE INSIDE WALL OF THE STRUCTURE.
7. MINIMUM COMPRESSIVE STRENGTH OF CLASS 'A' CONCRETE (4,000 PSI).
8. PRECAST CONCRETE STRUCTURE LIFT HOLES SHALL BE PLUGGED AND MORTARED.
9. STRUCTURES SHALL CONFORM TO CURRENT ASTM AND OSHA REQUIREMENTS.
10. PRECAST CONCRETE STRUCTURE JOINTS SHALL CONFORM TO THE CURRENT ASTM DESIGNATION C-443.
11. PRECAST CONCRETE STRUCTURES SHALL COMPLY WITH ASTM STANDARD C-478. MANHOLE JOINTS SHALL COMPLY WITH ASTM STANDARD C-443.

MANHOLES
1. FOR PRECAST CONCRETE MANHOLES FIVE (5) FEET OR LESS IN HEIGHT, TOP CONE SECTION SHALL BE REPLACED WITH PRECAST REINFORCED CONCRETE SLAB (6" MIN. THICKNESS) WITH OPENING OF SUFFICIENT SIZE TO ACCOMMODATE MANHOLE CASTING.
2. FOR MANHOLES 10 FEET OR MORE IN DEPTH, MANHOLE DIAMETER SHALL BE FIVE (5) FEET.
3. TERMINAL MANHOLE FLOORS SHALL BE SLOPED TOWARD OUTFALL PIPE.

CATCH BASINS AND OUTLET CONTROL STRUCTURES
1. STEPS WILL NOT BE REQUIRED IN CATCH BASINS LESS THAN FOUR (4) FEET IN DEPTH. STEPS WILL BE REQUIRED IN CATCH BASINS FOUR (4) FEET OR GREATER IN DEPTH. DEPTHS FOR CATCH BASINS SHALL BE MEASURED FROM FINISHED GRADE TO INSIDE BOTTOM OF STRUCTURE (INCLUDING SUMP AS APPLICABLE).
2. STEPS SHALL BE LOCATED WITHIN STRUCTURE TO AVOID PLACEMENT OVER PIPES.
3. WHEN STEPS ARE REQUIRED, STEPS SHALL COMPLY WITH THE SAME REQUIREMENTS OF ASTM STANDARD C-478, ARTICLE 13 ENTITLED "MANHOLE STEPS & LADDERS".
4. PROVIDE REINFORCED CONCRETE TOP SLAB FOR OVERSIZED CATCH BASIN WITH PROPER SIZE OPENING TO ACCOMMODATE INSTALLATION OF CASTING (FRAME & GRATE).
5. FOR ALL STRUCTURES GREATER THAN 10 FEET IN DEPTH, STRUCTURES SHALL PROVIDE MINIMUM INSIDE DIMENSIONS OF 4 FEET X 4 FEET.

3 (C-402) OUTLET CONTROL STRUCTURE

NOT TO SCALE

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D listen imagine build
KG+D ARCHITECTS, PC
285 MAIN STREET• MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

Woodard & Curran
Woodard & Curran Engineering & Geological Services PA PC

CONSTRUCTION DOCUMENTS

No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title

CONSTRUCTION DETAILS

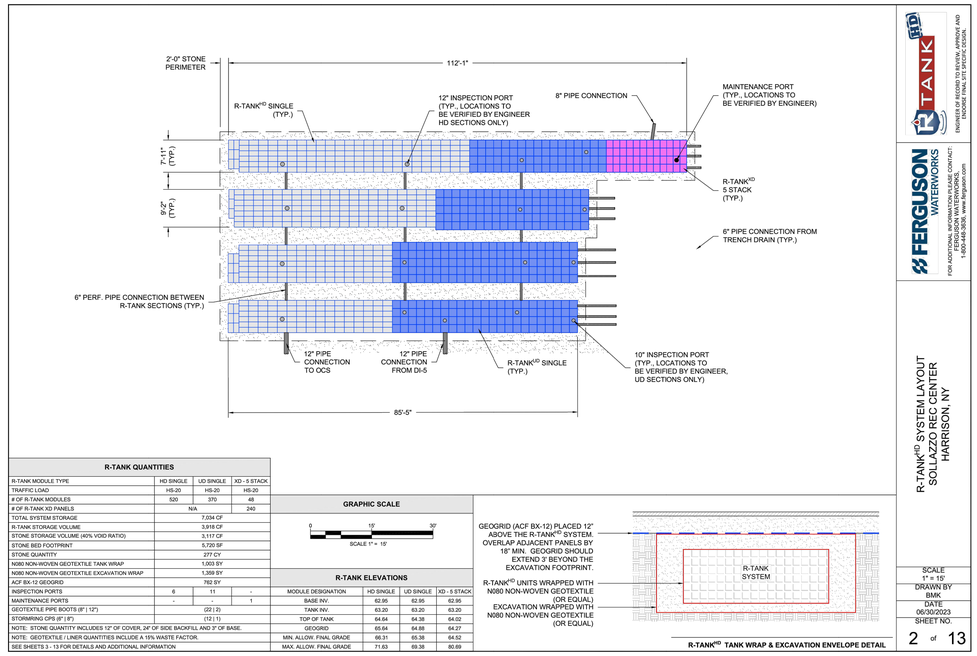
Job No. 2020-1005	Date 06/29/2023
Scale AS NOTED	Drawn / Checked CJL/JLMT

Sheet Number

C-402

R-TANK^HD SYSTEM OVERLAY
SOLLAZZO REC CENTER
HARRISON, NY

SCALE 1" = 15'
DRAWN BY BMK
DATE 06/30/2023
SHEET NO. 1 of 13



R-TANK QUANTITIES			
R-TANK MODULE TYPE	HD SINGLE	UD SINGLE	XD - 5 STACK
TRAFFIC LOAD	HS-20	HS-20	HS-20
# OF R-TANK MODULES	520	370	48
# OF R-TANK XD PANELS	N/A		240
TOTAL SYSTEM STORAGE	7,034 CF		
R-TANK STORAGE VOLUME	3,918 CF		
STONE STORAGE VOLUME (40% VOID RATIO)	3,117 CF		
STONE BED FOOTPRINT	5,720 SF		
STONE QUANTITY	277 CY		
N060 NON-WOVEN GEOTEXTILE TANK WRAP	1,003 SY		
N060 NON-WOVEN GEOTEXTILE EXCAVATION WRAP	1,399 SY		
ACF BX-12 GEOGRID	762 SY		
INSPECTION PORTS	6	11	-
MAINTENANCE PORTS	-		1
GEOTEXTILE PIPE BOOTS (8" | 12")	(22 | 2)		
STORMWING CPS (8" | 8")	(12 | 1)		

NOTE: STONE QUANTITY INCLUDES 12" OF COVER, 24" OF SIDE BACKFILL AND 3" OF BASE.
NOTE: GEOTEXTILE / LINER QUANTITIES INCLUDE A 15% WASTE FACTOR.
SEE SHEETS 3 - 13 FOR DETAILS AND ADDITIONAL INFORMATION

GRAPHIC SCALE
0 15' 30'
SCALE 1" = 15'

R-TANK ELEVATIONS			
MODULE DESIGNATION	HD SINGLE	UD SINGLE	XD - 5 STACK
BASE INV.	62.95	62.95	62.95
TANK INV.	63.20	63.20	63.20
TOP OF TANK	64.64	64.38	64.02
GEOGRID	65.64	64.88	64.27
MIN. ALLOW. FINAL GRADE	66.31	65.38	64.52
MAX. ALLOW. FINAL GRADE	71.63	69.38	80.69

GEOGRID (ACF BX-12) PLACED 12" ABOVE THE R-TANK^HD SYSTEM. OVERLAP ADJACENT PANELS BY 18" MIN. GEOGRID SHOULD EXTEND 3' BEYOND THE EXCAVATION FOOTPRINT.
R-TANK^HD UNITS WRAPPED WITH N080 NON-WOVEN GEOTEXTILE (OR EQUAL)
EXCAVATION WRAPPED WITH N080 NON-WOVEN GEOTEXTILE (OR EQUAL)

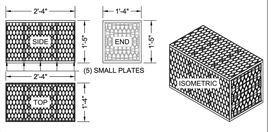
R-TANK^HD TANK WRAP & EXCAVATION ENVELOPE DETAIL

R-TANK^HD SYSTEM LAYOUT
SOLLAZZO REC CENTER
HARRISON, NY

SCALE 1" = 15'
DRAWN BY BMK
DATE 06/30/2023
SHEET NO. 2 of 13

TOTAL COVER: 20" MINIMUM AND 84" MAXIMUM. FIRST 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 7'. CONTACT FERGUSON WATERWORKS IF MORE THAN 7' OR LESS THAN 20" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^HD MODULE SHEET .
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^HD FOOTPRINT.

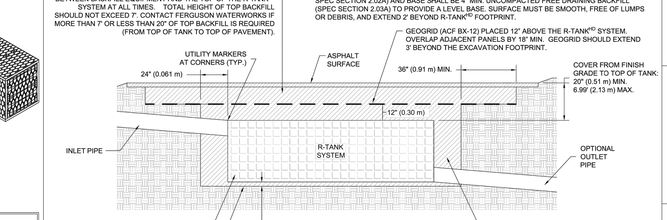


MODULE DATA

GEOMETRY:
LENGTH = 28.15 IN. (715 MM)
WIDTH = 15.75 IN. (400 MM)
HEIGHT = 17.32 IN. (440 MM)
TANK VOLUME = 4.44 CF
STORAGE VOLUME = 4.22 CF
VOID INTERNAL VOLUME: 95%
VOID SURFACE AREA: 90%

LOAD RATING:
33.4 PSI, (MODULE ONLY)
HS20/HS25 - SEE SPEC FOR COVER REQUIREMENTS
MATERIAL:
100% RECYCLED POLYPROPYLENE
SMALL PLATES REQUIRED:
5/SEGMENT, 5/MODULE

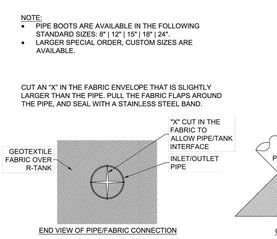
SINGLE R-TANK^HD - MODULE DETAIL



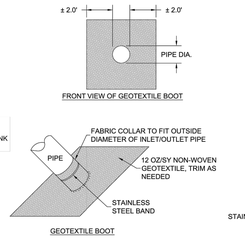
R-TANK^HD & HS-20 LOADS - SECTION VIEW

NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24".
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

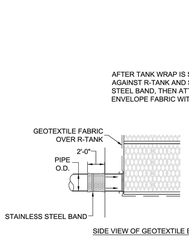
CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.



END VIEW OF PIPE/FABRIC CONNECTION



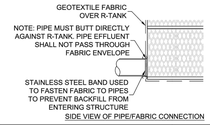
GEOTEXTILE BOOT



FRONT VIEW OF GEOTEXTILE BOOT

SIDE VIEW OF GEOTEXTILE BOOT

AFTER TANK WRAP IS SECURED TO PIPE, SLIDE BOOT AGAINST R-TANK AND SECURE WITH SECOND STAINLESS STEEL BAND, THEN ATTACH BOOT FLAP TO TANK ENVELOPE FABRIC WITH DUCT TAPE OR OTHER ADHESIVE.

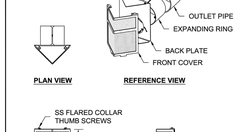


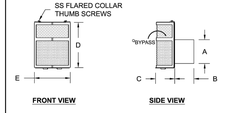
SIDE VIEW OF PIPE/FABRIC CONNECTION

R-TANK TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL

R-TANK^HD SYSTEM DETAILS
SOLLAZZO REC CENTER
HARRISON, NY

SCALE NTS
DRAWN BY BMK
DATE 06/30/2023
SHEET NO. 3 of 13

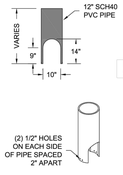


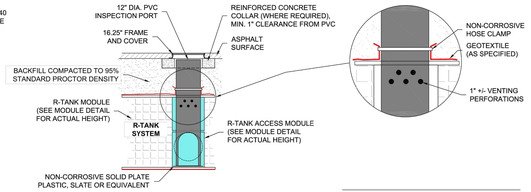


PIPE DIA. (A)	STUB LENGTH (B)	CPS DEPTH (C)	CPS HEIGHT (D)	CPS WIDTH (E)
6"	4.00"	8.50"	10.00"	10.00"
8"	6.00"	11.00"	12.25"	11.50"
12"	8.00"	16.00"	15.50"	15.50"
15"	8.00"	16.00"	21.50"	18.50"
18"	8.00"	16.00"	28.00"	21.50"

STORMRING CPS PRETREATMENT DETAIL

NOTES
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^HD, R-TANK^XD, R-TANK^XD AND R-TANK^XD MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.





R-TANK TYPICAL INSPECTION PORT

R-TANK^HD SYSTEM DETAILS
SOLLAZZO REC CENTER
HARRISON, NY

SCALE NTS
DRAWN BY BMK
DATE 06/30/2023
SHEET NO. 4 of 13

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D ARCHITECTS, PC
285 MAIN STREET• MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

Woodard & Curran
Woodard & Curran Engineering & Geological Services PA PC
800 Westchester Avenue, Suite N507
Rye Brook, New York 10573
800.807.4080 | www.woodardcurran.com

CONSTRUCTION DOCUMENTS

No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

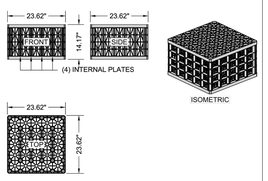
Sheet Title

CONSTRUCTION DETAILS

Job No.	Date
2020-1005	06/29/2023
Scale: AS NOTED	Drawn / Checked: CJL/JLMT

Sheet Number

C-403



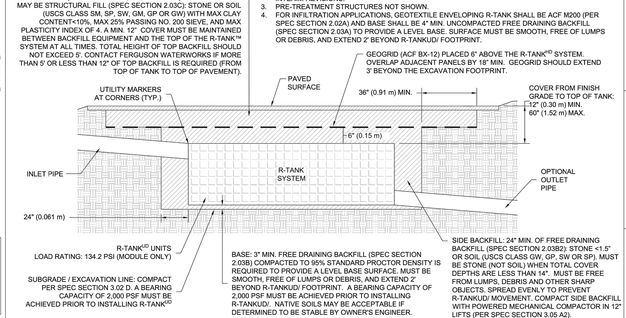
MODULE DATA

GEOMETRY:	LOAD RATING:
LENGTH = 23.62 IN. (600 MM)	134.2 PSI, (MODULE ONLY)
WIDTH = 23.62 IN. (600 MM)	HS20/HS25 - SEE SPEC FOR
HEIGHT = 14.17 IN. (360 MM)	COVER REQUIREMENTS
TANK VOLUME = 4.58 CF	**MATERIAL:**
STORAGE VOLUME = 4.35 CF	100% RECYCLED POLYPROPYLENE
VOID INTERNAL VOLUME: 95%	**INTERNAL PLATES REQUIRED:**
VOID SURFACE AREA: 95%	4/SEGMENT, 4/MODULE

SINGLE R-TANK^{UD} - MODULE DETAIL

TOTAL COVER: 12"(STONE)/14"(SAND/SOIL) MINIMUM AND 60" MAXIMUM. FIRST 6" (OR FROM TOP OF MODULE TO BOTTOM OF PAVEMENT SECTION WHEN MINIMUM COVER CONDITIONS APPLY) MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B2): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PLASTICITY INDEX OF 4. A MIN. 12" COVER MUST BE MAINTAINED BETWEEN BACKFILL EQUIPMENT AND THE TOP OF THE R-TANK™ SYSTEM AT ALL TIMES. TOTAL HEIGHT OF TOP BACKFILL SHOULD NOT EXCEED 5'. CONTACT FERGUSON WATERWORKS IF MORE THAN 5' OR LESS THAN 12" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

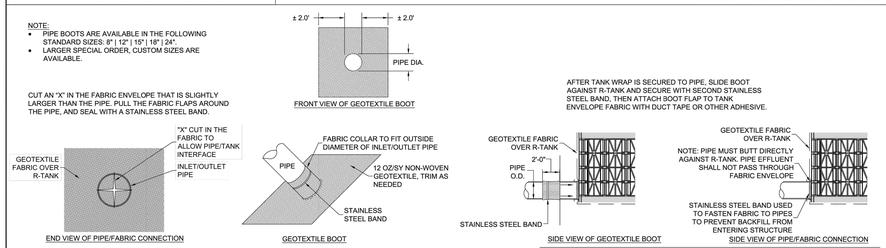
NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANKUD/ MODULE SHEET .
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANKUD/ FOOTPRINT.



R-TANK^{UD} & HS-20 LOADS - SECTION VIEW

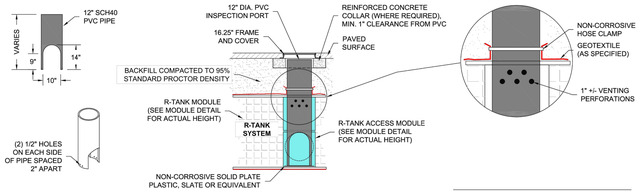
NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24".
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.

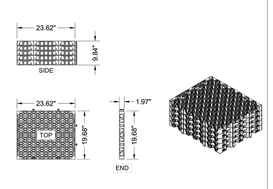


R-TANK^{UD} TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL

NOTES
1. THE INSPECTION PORT IS USED IN THE ACCESS MODULE TO INSPECT THE LEVEL OF SEDIMENT ACCUMULATION.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^{HC}, R-TANK^{SD}, R-TANK^{UD} AND R-TANK^{XD} MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF INSPECTION PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.



R-TANK TYPICAL INSPECTION PORT



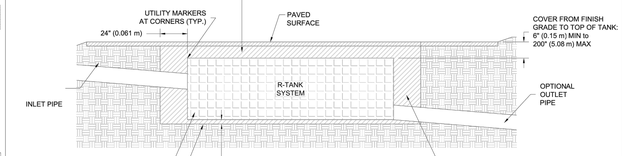
MODULE DATA

GEOMETRY:	LOAD RATING:
LENGTH = 23.62 IN. (600 MM)	240.2 PSI, (MODULE ONLY)
WIDTH = 19.68 IN. (500 MM)	HS20-25, (WITH ACF COVER SYSTEM)
HEIGHT = 19.69 IN. (500 MM)	**MATERIAL:**
TANK VOLUME = 5.30 CF	100% RECYCLED POLYPROPYLENE
STORAGE VOLUME = 4.77 CF	
VOID INTERNAL VOLUME: 90%	
VOID SURFACE AREA: 90%	

R-TANK^{XD} - MODULE DETAIL

TOTAL COVER: 6" MINIMUM AND 200" MAXIMUM. INITIAL COVER UP TO 12" MUST BE FREE DRAINING BACKFILL (SPEC SECTION 2.03B): STONE <1.5" OR SOIL (USCS CLASS GW, GP, SW OR SP). ADDITIONAL FILL MAY BE STRUCTURAL FILL (SPEC SECTION 2.03C): STONE OR SOIL (USCS CLASS SM, SP, SW, GM, GP OR GW) WITH MAX CLAY CONTENT<10%, MAX 25% PASSING NO. 200 SIEVE, AND MAX PLASTICITY INDEX OF 4. CONTACT ACF ENVIRONMENTAL IF MORE THAN 200" OR LESS THAN 6" OF TOP BACKFILL IS REQUIRED (FROM TOP OF TANK TO TOP OF PAVEMENT).

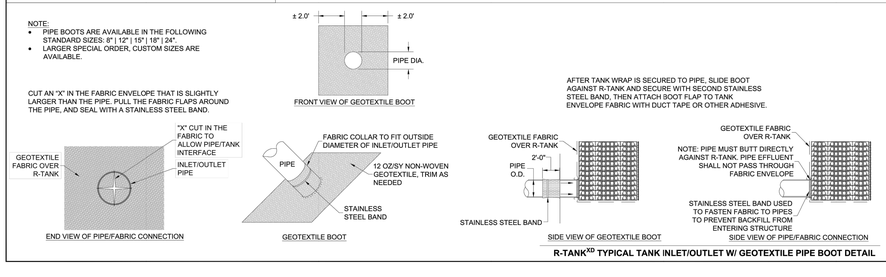
NOTES:
1. FOR COMPLETE MODULE DATA, SEE APPROPRIATE R-TANK^{XD} MODULE SHEET .
2. INSTALLATIONS PER THIS DETAIL MEET GUIDELINES OF HL-93 LOADING PER THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 7TH EDITION, 2014 WITH 2015 AND 2016 INTERIM REVISIONS.
3. PRE-TREATMENT STRUCTURES NOT SHOWN.
4. FOR INFILTRATION APPLICATIONS, GEOTEXTILE ENVELOPING R-TANK SHALL BE ACF M200 (PER SPEC SECTION 2.02A) AND BASE SHALL BE 4" MIN. UNCOMPACTED FREE DRAINING BACKFILL (SPEC SECTION 2.03A) TO PROVIDE A LEVEL BASE. SURFACE MUST BE SMOOTH, FREE OF LUMPS OR DEBRIS, AND EXTEND 2' BEYOND R-TANK^{XD} FOOTPRINT.



R-TANK^{XD} HS20-25 LOADS - SECTION VIEW

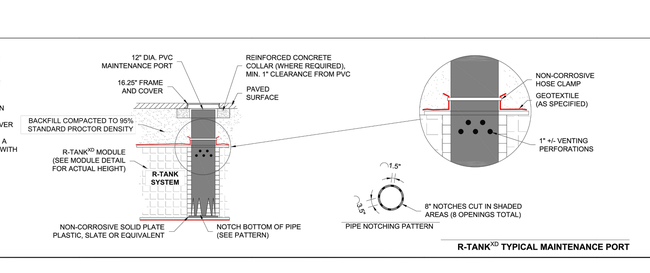
NOTE:
- PIPE BOOTS ARE AVAILABLE IN THE FOLLOWING STANDARD SIZES: 8" | 12" | 15" | 18" | 24".
- LARGER SPECIAL ORDER, CUSTOM SIZES ARE AVAILABLE.

CUT AN "X" IN THE FABRIC ENVELOPE THAT IS SLIGHTLY LARGER THAN THE PIPE. PULL THE FABRIC FLAPS AROUND THE PIPE, AND SEAL WITH A STAINLESS STEEL BAND.



R-TANK^{XD} TYPICAL TANK INLET/OUTLET W/ GEOTEXTILE PIPE BOOT DETAIL

NOTES
1. THIS PORT IS USED TO PUMP WATER INTO THE SYSTEM AND RE-SUSPEND ACCUMULATED SEDIMENT SO THAT IT MAY BE PUMPED OUT.
2. MINIMUM REQUIRED MAINTENANCE INCLUDES A QUARTERLY INSPECTION DURING THE FIRST YEAR OF OPERATION AND A YEARLY INSPECTION THEREAFTER. FLUSH AS NEEDED.
3. R-TANK^{HC}, R-TANK^{SD}, R-TANK^{UD} AND R-TANK^{XD} MAY BE USED IN TRAFFIC APPLICATIONS.
4. SEE TRAFFIC LOADING DETAIL FOR MINIMUM & MAXIMUM COVER REQUIREMENTS.
5. IF MAINTENANCE PORT IS LOCATED IN A NON-TRAFFIC AREA, A PLASTIC CAP CAN BE USED IN LIEU OF A FRAME AND COVER WITH CONCRETE COLLAR.



R-TANK^{XD} TYPICAL MAINTENANCE PORT

No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title

CONSTRUCTION DETAILS

Job No.	Date
2020-1005	06/29/2023
Scale: AS NOTED	Drawn / Checked: CJL/JLMT

Sheet Number

C-404

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D listen imagine build
KG+D ARCHITECTS, PC
285 MAIN STREET• MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

Woodard & Curran
Woodard & Curran Engineering & Geological Services PA PC
800 Westchester Avenue, Suite N507
Rye Brook, New York 10573
800.807.4080 | www.woodardcurran.com

CONSTRUCTION DOCUMENTS

R-TANK^{UD} SYSTEM DETAILS
SOLLAZZO REC CENTER
HARRISON, NY

SCALE: NTS
DRAWN BY: BMK
DATE: 06/30/2023
SHEET NO.: 5 of 13

R-TANK^{UD} SYSTEM DETAILS
SOLLAZZO REC CENTER
HARRISON, NY

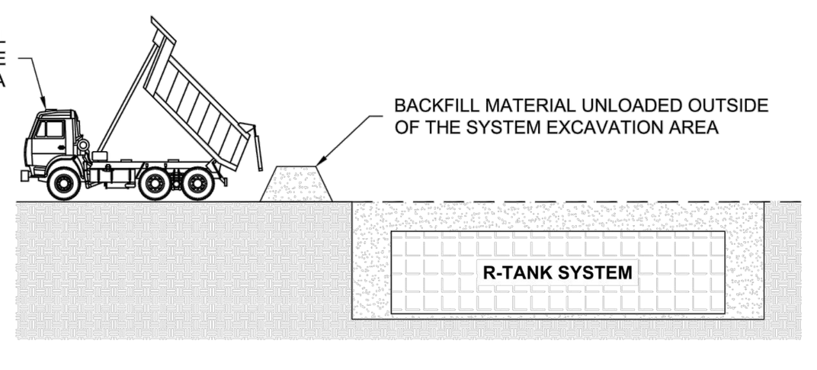
SCALE: NTS
DRAWN BY: BMK
DATE: 06/30/2023
SHEET NO.: 6 of 13

R-TANK^{XD} SYSTEM DETAILS
SOLLAZZO REC CENTER
HARRISON, NY

SCALE: NTS
DRAWN BY: BMK
DATE: 06/30/2023
SHEET NO.: 7 of 13

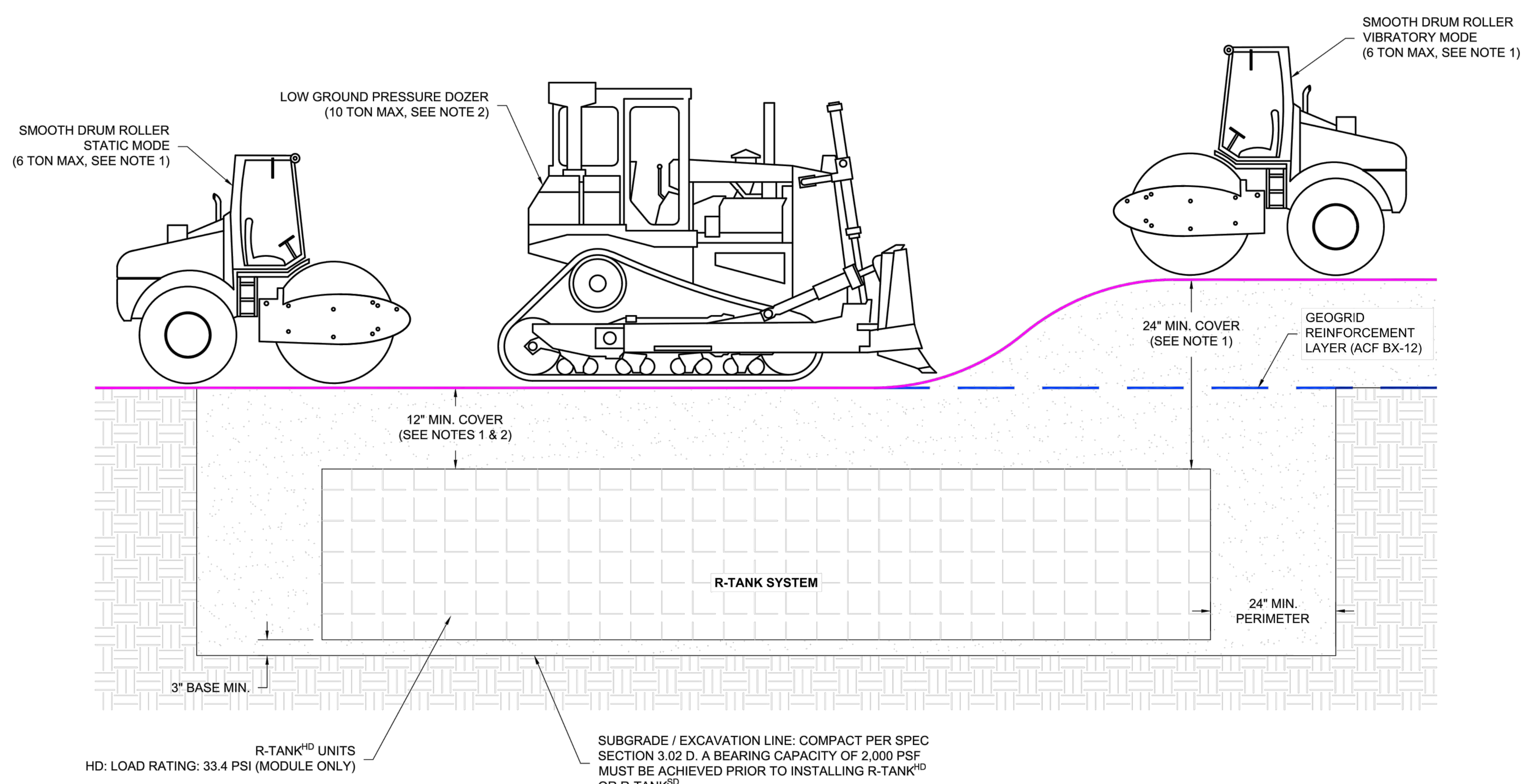
R-TANK^{XD} SYSTEM DETAILS
SOLLAZZO REC CENTER
HARRISON, NY

SCALE: NTS
DRAWN BY: BMK
DATE: 06/30/2023
SHEET NO.: 8 of 13



DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
2. ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
3. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
4. ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT). **SPEC SECTION 3.05 B**
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.



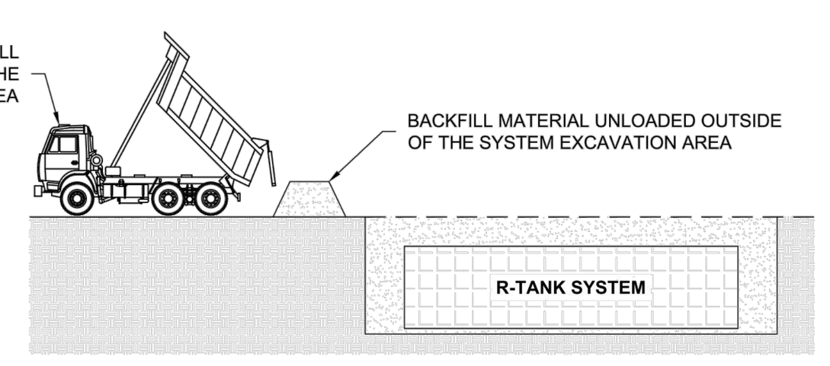
CONSTRUCTION EQUIPMENT COVER DETAIL - VEHICULAR TRAFFIC

R-TANK^{HD} CONSTRUCTION EQUIPMENT COVER DETAIL
SOLLAZZO REC CENTER
HARRISON, NY

FOR ADDITIONAL INFORMATION PLEASE CONTACT: FERGUSON WATERWORKS, 1-800-448-3636, www.ferguson.com

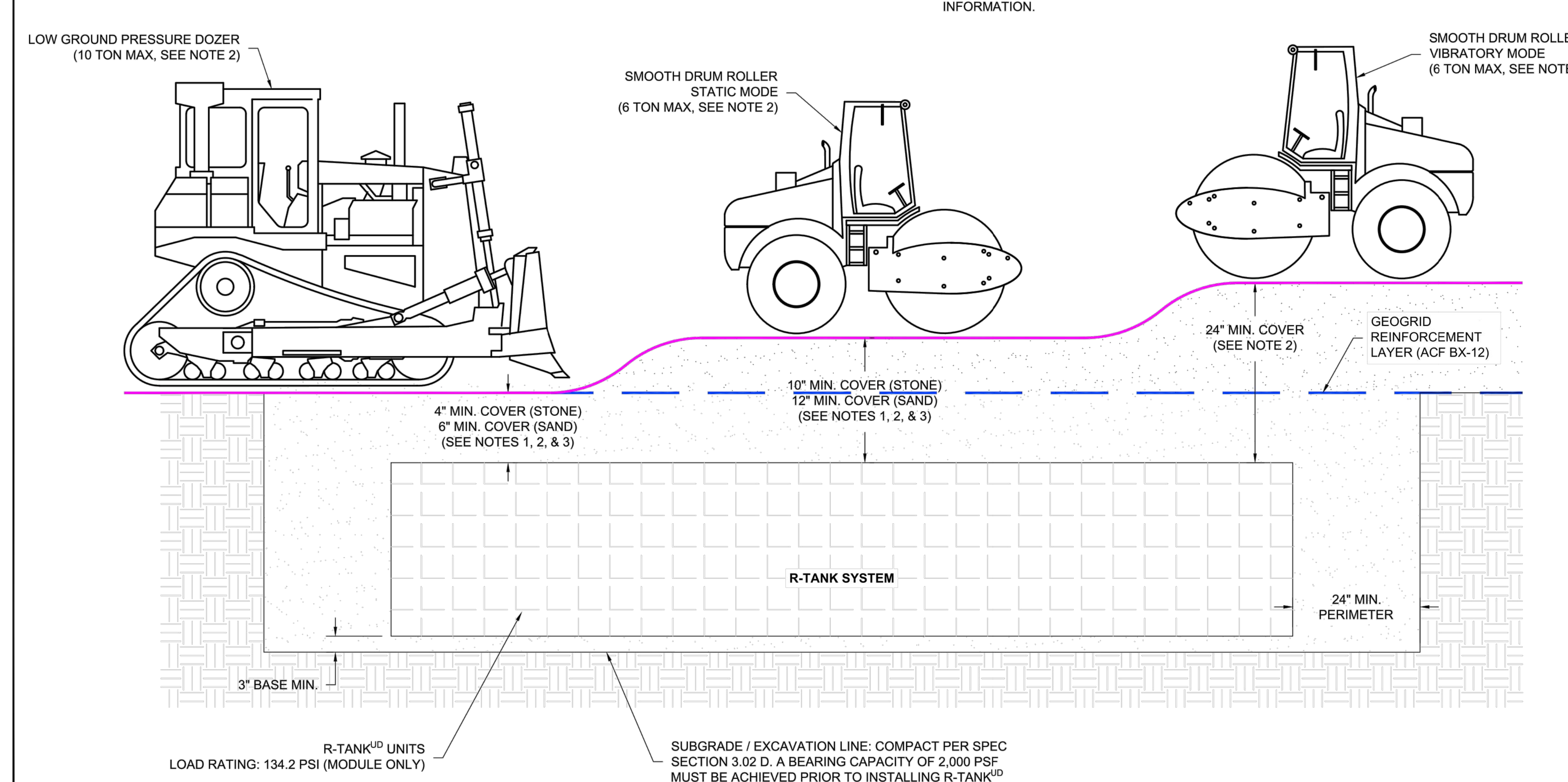
ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE NTS | DRAWN BY BMK | DATE 06/30/2023 | SHEET NO. 9 of 13



DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, THE INITIAL LIFT OF COVER MATERIAL, WHETHER IT IS 6" OF SAND OR 4" OF STONE (SPEC SECTION 2.03 B2), SHOULD BE PUSHED OUT IN A SINGLE LAYER (MAX MACHINE SIZE IS 10 TON LGP DOZER) THICK ENOUGH TO ACHIEVE THE PROPER DEPTH ONCE COMPACTED. HOWEVER, THIS INITIAL LIFT SHOULD ONLY BE TRACKED IN PLACE, WITH NO FURTHER COMPACTION.
2. AFTER THE GEOGRID IS INSTALLED OVER THE INITIAL LAYER, THE GRADED AGGREGATE BASE MATERIALS CAN BE PUSHED OUT (MAX MACHINE SIZE IS 10 TON LGP DOZER OR SMALLER) IN A SINGLE LIFT AND STATIC ROLLED BY A MACHINE WITH A MAX GROSS VEHICLE WEIGHT OF 6 TONS. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
3. ONLY LOW PRESSURE TIRE OR TRACK VEHICLES (LESS THAN 7 PSI AND OPERATING WEIGHT OF LESS THAN 20,000 LBS) SHALL BE OPERATED OVER THE R-TANK SYSTEM DURING CONSTRUCTION. **SPEC SECTION 3.05 A5**
4. DUMP TRUCKS AND PANS SHALL NOT BE OPERATED WITHIN THE R-TANK SYSTEM AT ANY TIME. WHERE NECESSARY, THE HEAVY EQUIPMENT SHOULD UNLOAD IN AN AREA ADJACENT TO THE R-TANK SYSTEM AND THE MATERIAL SHOULD BE MOVED OVER THE SYSTEM WITH TRACKED EQUIPMENT. **SPEC SECTION 3.05 A5**
5. ENSURE THAT ALL UNRELATED CONSTRUCTION TRAFFIC IS KEPT AWAY FROM THE LIMITS OF EXCAVATION UNTIL THE PROJECT IS COMPLETE AND FINAL SURFACE MATERIALS ARE IN PLACE. NO NON-INSTALLATION RELATED LOADING SHOULD BE ALLOWED OVER THE R-TANK SYSTEM UNTIL THE FINAL DESIGN SECTION HAS BEEN CONSTRUCTED (INCLUDING PAVEMENT). **SPEC SECTION 3.05 B**
6. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.



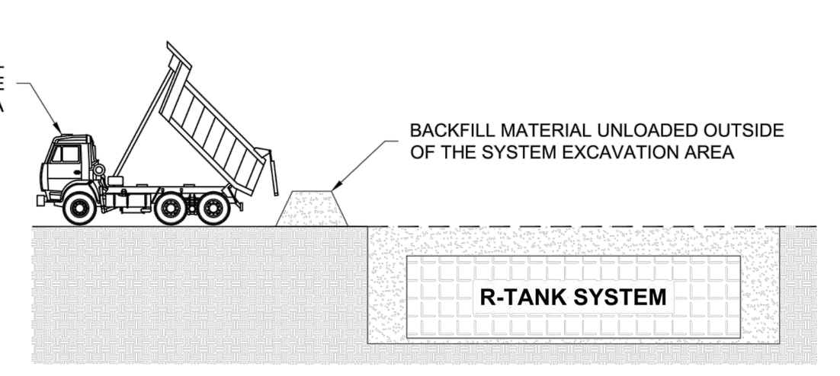
CONSTRUCTION EQUIPMENT COVER DETAIL

R-TANK^{UD} CONSTRUCTION EQUIPMENT COVER DETAIL
SOLLAZZO REC CENTER
HARRISON, NY
SITE DESIGNATION: UGDS

FOR ADDITIONAL INFORMATION PLEASE CONTACT: FERGUSON WATERWORKS, 1-800-448-3636, www.ferguson.com

ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE NTS | DRAWN BY BMK | DATE 06/30/2023 | SHEET NO. 10 of 13



DUMP TRUCK DETAIL (SEE NOTE 3)

NOTES:
1. FOLLOWING PLACEMENT OF SIDE BACKFILL, A UNIFORM 12" (OR AS SHOWN ON PLANS) LIFT OF THE FREELY DRAINING MATERIAL (SPEC SECTION 2.03 B2) SHALL BE PLACED OVER THE R-TANK AND LIGHTLY COMPACTED USING A WALK-BEHIND TRENCH ROLLER. ALTERNATELY, A ROLLER (MAXIMUM GROSS VEHICLE WEIGHT OF 6 TONS) MAY BE USED. ROLLER MUST REMAIN IN STATIC MODE UNTIL A MINIMUM OF 24" OF COVER HAS BEEN PLACED OVER THE MODULES. SHEEP FOOT ROLLERS SHOULD NOT BE USED. **SPEC SECTION 3.05 A5**
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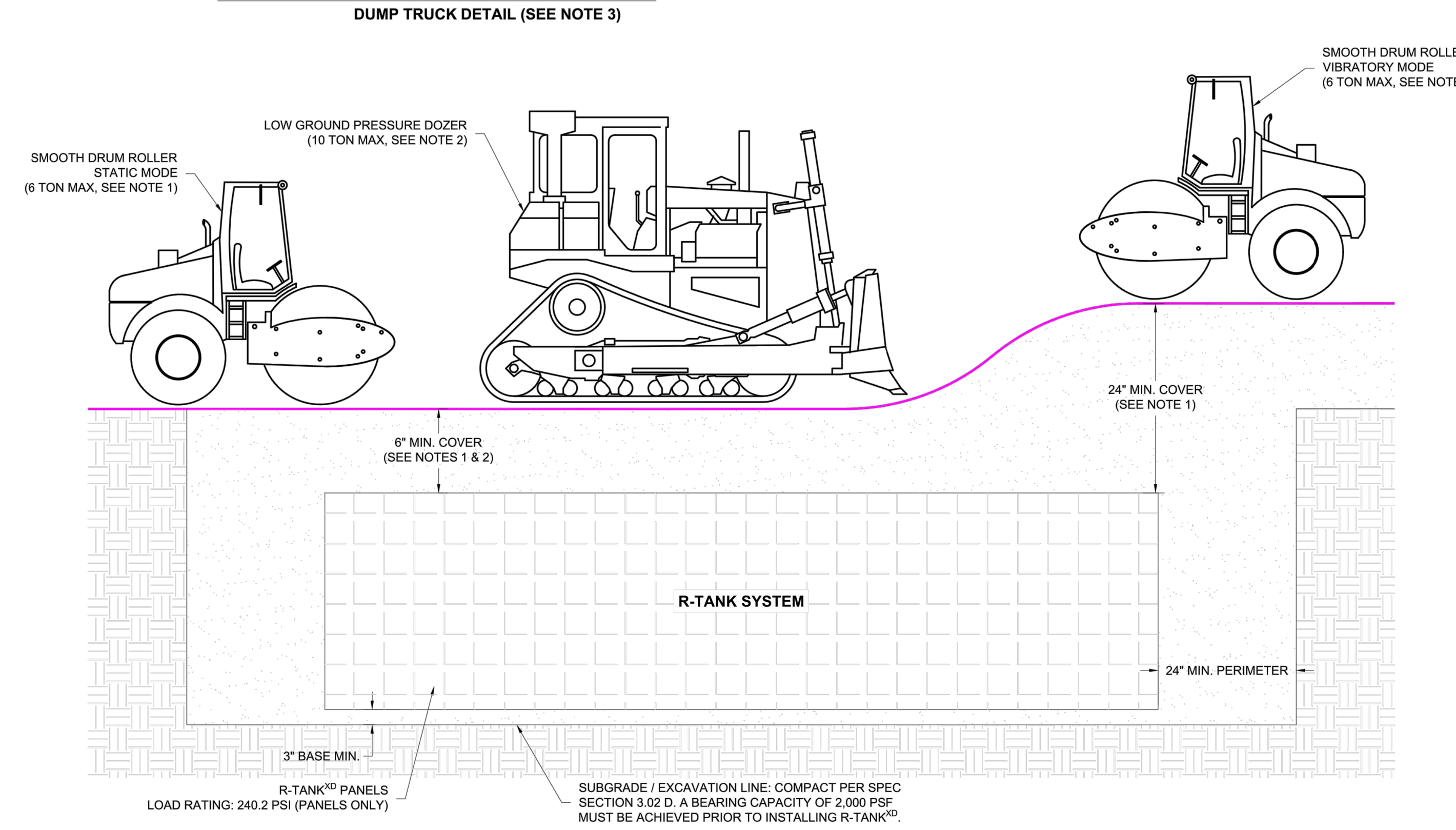
5. SEE R-TANK INSTALLATION GUIDE OR CONTACT YOUR LOCAL FERGUSON REPRESENTATIVE FOR ADDITIONAL INFORMATION.



CONSTRUCTION EQUIPMENT COVER DETAIL - VEHICULAR TRAFFIC

R-TANK^{XD} CONSTRUCTION EQUIPMENT COVER DETAIL
SOLLAZZO REC CENTER
HARRISON, NY

FOR ADDITIONAL INFORMATION PLEASE CONTACT: FERGUSON WATERWORKS, 1-800-448-3636, www.ferguson.com

ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE NTS | DRAWN BY BMK | DATE 06/30/2023 | SHEET NO. 11 of 13

R-TANK SPECIFICATION

PART 1 - GENERAL
1.01 RELATED DOCUMENTS
A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 DESCRIPTION OF WORK INCLUDED
A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
B. Provide and install R-TankLD/, R-TankHD/, R-TankSD/, or R-TankUD/ system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.
D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 QUALITY CONTROL
A. All materials shall be manufactured in ISO certified facilities.
B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 SUBMITTALS
A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
B. Submit manufacturer's product data, including compressive strength and unit weight.
C. Submit manufacturer's installation instructions.
D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
F. Submit required experience and personnel requirements as specified in Section 1.03.
G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 DELIVERY, STORAGE, AND HANDLING
A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.
B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 PREINSTALLATION CONFERENCE.
A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 PROJECT CONDITIONS
A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
B. Protect adjacent work from damage during R-Tank system installation.
C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS
2.01 R-TANK UNITS
A. R-Tank - Injection molded plastic tank plates assembled to form a 95% void modular structure of predesigned height (custom for each project).
B. R-Tank units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank^{LD} VALUE	R-Tank^{HD} VALUE	R-Tank^{SD} VALUE	R-Tank^{UD} VALUE
Void Area	Volume available for water storage	95%	95%	95%	95%
Surface Void Area	Percentage of exterior available for infiltration	90%	90%	90%	90%
Vertical Compressive Strength	ASTM D 2412 / ASTM F 2418	30.0 psi	33.4 psi	42.9 psi	134.2 psi
Lateral Compressive Strength	ASTM D 2412 / ASTM F 2418	20.0 psi	22.4 psi	28.9 psi	N/A
HS-20 Minimum Cover	Cover required to support HS-20 loads	N/A	20"	18"	12" (STONE BACKFILL)
HS-25 Minimum Cover	Cover required to support HS-25 loads	N/A	24"	19"	15" (STONE BACKFILL)
Maximum Cover	Maximum allowable cover depth	3 feet	< 7 feet	< 10 feet	5 feet
Unit Weight	Weight of plastic per cubic foot of tank	3.29 lbs / cf	3.62 lbs/cf	3.96 lbs / cf	4.33 lbs / cf
Rib Thickness	Thickness of load-bearing members	0.18 inches	0.18 inches	0.18 inches	N/A
Service Temperature	Safe temperature range for use	-14 – 167° F	-14 – 167° F	-14 – 167° F	-14 – 167° F

C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 GEOSYNTHETICS
A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. Standard Application: The standard geotextile shall be an 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
2. Infiltration Applications: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
B. Geogrid. For installations subject to traffic loads and/or when required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system. Geogrid is not always required for R-TankUD/ installations, and is often not required for non-traffic load applications.

2.03 BACKFILL & COVER MATERIALS
A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
B. Side and Top Backfill: Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
1. Traffic Applications - Free draining material shall be used adjacent to (24" minimum) and above (for the first 12") the R-Tank system.
a. For HD, and SD modules, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System).
b. For UD modules with less than 14" of top cover, backfill materials shall be free draining stone (angular and smaller than 1.5" in diameter). The use of soil backfill on the sides and top of the UD module is not permitted unless the modules are installed outside of traffic areas or with cover depths of 14" or more. Top backfill material (from top of module to bottom of pavement base or 12" maximum) must be consistent with side backfill.
2. Non-Traffic / Green Space Applications - For all R-Tank modules installed in green spaces and not subjected to vehicular loads, backfill materials may either follow the guidelines for Traffic Applications above, or the top backfill layer (12" minimum) may consist of AASHTO #57 stone blended with 30-40% (by volume) topsoil to aid in establishing vegetation.
C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 OTHER MATERIALS
A. Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION
3.01 ASSEMBLY OF R-TANK UNITS
A. Assembly of modules shall be performed in accordance with the R-Tank Installation Manual, Section 2.

3.02 LAYOUT AND EXCAVATION
A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. Standard Applications: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. Infiltration Applications: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 PREPARATION OF BASE
A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within ½" (+/- ¼") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. Standard Applications: Static roll or otherwise compact bedding materials until they are firm and unyielding.
2. Infiltration Applications: Bedding materials shall be prepared in accordance with the contract documents.
B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 2' perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 INSTALLATION OF THE R-TANKS
A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer. Use tape, special adhesives, sandbags or other ballast to secure overlaps. As geotextiles can be damaged by extreme heat, smoking is not permissible on/near the geotextile, and tools using a flame to tack the overlaps, such as propane torches, are prohibited.
B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A.
C. Install R-Tank modules by placing side by side, in accordance with the design drawings. No lateral connections are required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank system. The modules are to be oriented as per the design drawing with required depth as shown on plans.
1. For LD, HD, and SD installations, the large side plate of the tank should be placed on the perimeter of the system. This will typically require that the two ends of the tank area will have a row of tanks placed perpendicular to all other tanks. If this is not shown in the construction drawings, it is a simple field adjustment that will have minimal effect on the overall system footprint. Refer to R-Tank Installation Guide for more details
2. For UD installations, there is no perpendicular end row required.
D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.
E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against R-Tank system.
F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.
G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with 'U' bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

3.05 BACKFILLING OF THE R-TANK UNITS
A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used.
3. Take care to ensure that the compaction process does not allow the machinery to come into contact with the modules due to the potential for damage to the geotextile and R-Tank units.
4. No compaction equipment is permissible to operate directly on the R-Tank modules.
5. Top Backfill: Only low pressure track vehicles shall be operated over the R-Tank system during construction. Dump Trucks and Pans shall not be operated within the R-Tank system footprint at any time. Heavy equipment should unload in an area adjacent to the R-Tank system and the material should be moved over the system using tracked equipment with an operating weight of less than 10 tons.
a. Typical Applications: Install a 12" (or as shown on plans) lift of freely draining material (Section 2.03 B) over the R-Tank Units, maintaining 12" between equipment tracks and R-Tank System. Lightly compacted using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used. Roller must remain in static mode until a minimum of 24" of cover has been placed over the modules. Sheep foot rollers should not be used.
b. Shallow Applications (< 18" total cover): Install top backfill in accordance with plans.
6. If required, install a geogrid as shown on plans. Geogrid shall extend a minimum of 3 feet beyond the limits of the excavation wall.
7. Following placement and compaction of the initial cover, subsequent lifts of structural fill (Section 2.03 C) shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the R-Tank system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill shall be maintained to within 12" across the footprint of the R-Tank system. Do not exceed maximum cover depths listed in Table 2.01 B.
8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the R-Tank system shall extend a minimum of 3 feet beyond the limits of the excavation wall.
B. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No non-installation related loading should be allowed over the R-Tank system until the final design section has been constructed (including pavement).
C. Place surfacing materials, such as groundcovers (no large trees), or paving materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.
D. Backfill depth over R-Tank system must be within the limitations shown in the table in Section 2.01 B. If the total backfill depth does not comply with this table, contact engineer or manufacturer's representative for assistance.

3.06 MAINTENANCE REQUIREMENTS
A. A routine maintenance effort is required to ensure proper performance of the R-Tank system. The Maintenance program should be focused on pretreatment systems. Ensuring these structures are clean and functioning properly will reduce the risk of contamination of the R-Tank system and stormwater released from the site. Pre-treatment systems shall be inspected yearly, or as directed by the regulatory agency and by the manufacturer (for proprietary systems). Maintain as needed using acceptable practices or following manufacturer's guidelines (for proprietary systems).
B. All inlet pipes and Inspection and/or Maintenance Ports in the R-Tank system will need to be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter.
C. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed.
D. All inspection and maintenance activities should be performed in accordance with the R-Tank Operation, Inspection & Maintenance Manual.

R-TANK^{HD} SPECIFICATION
SOLLAZZO REC CENTER
HARRISON, NY

FOR ADDITIONAL INFORMATION PLEASE CONTACT: FERGUSON WATERWORKS, 1-800-448-3636, www.ferguson.com

ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE NTS | DRAWN BY BMK | DATE 06/30/2023 | SHEET NO. 12 of 13

R-TANK^{XD} SPECIFICATION

PART 1 - GENERAL
1.01 Related Documents
A. Drawings, technical specification and general provisions of the Contract as modified herein apply to this section.

1.02 Description of Work Included
A. Provide excavation and base preparation per geotechnical engineer's recommendations and/or as shown on the design drawings, to provide adequate support for project design loads and safety from excavation sidewall collapse. Excavations shall be in accordance with the owner's and OSHA requirements.
B. Provide and install R-Tank^{XD} system (hereafter called R-Tank) and all related products including fill materials, geotextiles, geogrids, inlet and outlet pipe with connections per the manufacturer's installation guidelines provided in this section.
C. Provide and construct the cover of the R-Tank system including; stone backfill, structural fill cover, and pavement section as specified.
D. Protect R-Tank system from construction traffic after installation until completion of all construction activity in the installation area.

1.03 Quality Control
A. All materials shall be manufactured in ISO certified facilities.
B. Installation Contractor shall demonstrate the following experience:
1. A minimum of three R-Tank or equivalent projects completed within 2 years; and,
2. A minimum of 25,000 cubic feet of storage volume completed within 2 years.
3. Contractor experience requirement may be waived if the manufacturer's representative provides on-site training and review during construction.
C. Installation Personnel: Performed only by skilled workers with satisfactory record of performance on bulk earthworks, pipe, chamber, or pond/landfill construction projects of comparable size and quality.
D. Contractor must have manufacturer's representative available for site review if requested by Owner.

1.04 Submittals
A. Submit proposed R-Tank layout drawings. Drawings shall include typical section details as well as the required base elevation of stone and tanks, minimum cover requirements and tank configuration.
B. Submit manufacturer's product data, including compressive strength and unit weight.
C. Submit manufacturer's installation instructions.
D. Submit R-Tank sample for review. Reviewed and accepted samples will be returned to the Contractor.
E. Submit material certificates for geotextile, geogrid, base course and backfill materials.
F. Submit required experience and personnel requirements as specified in Section 1.03.
G. Any proposed equal alternative product substitution to this specification must be submitted for review and approved prior to bid opening. Review package should include third party reviewed performance data that meets or exceeds criteria in Table 2.01 B.

1.05 Delivery, Storage, and Handling
A. Protect R-Tank and other materials from damage during delivery, and store UV sensitive materials under tarp to protect from sunlight when time from delivery to installation exceeds two weeks. Storage of materials should be on smooth surfaces, free from dirt, mud and debris.
B. Handling is to be performed with equipment appropriate to the materials and site conditions, and may include hand, handcart, forklifts, extension lifts, etc.
C. Cold weather:
1. Care must be taken when handling plastics when air temperature is 40 degrees or below as plastic becomes brittle.
2. Do not use frozen materials or materials mixed or coated with ice or frost.
3. Do not build on frozen ground or wet, saturated or muddy subgrade.

1.06 Preinstallation Conference.
A. Prior to the start of the installation, a preinstallation conference shall occur with the representatives from the design team, the general contractor, the excavation contractor, the R-Tank installation contractor, and the manufacturer's representative.

1.07 Project Conditions
A. Coordinate installation for the R-Tank system with other on-site activities to eliminate all non-installation related construction traffic over the completed R-Tank system. No loads heavier than the design loads shall be allowed over the system, and in no case shall loads higher than a standard AASHTO HS20 (or HS25, depending on design criteria) load be allowed on the system at any time.
B. Protect adjacent work from damage during R-Tank system installation.
C. All pre-treatment systems to remove debris and heavy sediments must be in place and functional prior to operation of the R-Tank system. Additional pretreatment measures may be needed if unit is operational during construction due to increased sediment loads.
D. Contractor is responsible for any damage to the system during construction.

PART 2 - PRODUCTS
2.01 R-Tank Units
A. R-Tank^{XD} - Injection molded plastic cells stacked to form a 90% void modular structure of predesigned height (custom for each project).
B. R-Tank^{XD} units shall meet the following Physical & Chemical Characteristics:

PROPERTY	DESCRIPTION	R-Tank^{XD} VALUE
Void Area	Volume available for water storage	90%
Surface Void Area	Percentage of exterior available for infiltration	90%
Compressive Strength	ASTM D 2412 / ASTM F 2418	240.2 psi
HS-20 Minimum Cover	Cover required to support HS-20 loads	6"
HS-25 Minimum Cover	Cover required to support HS-25 loads	6"
Maximum Cover	Maximum allowable cover depth	< 16.7 feet
Unit Weight	Weight of plastic per cubic foot of tank	7.55 lbs / cf
Service Temperature	Safe temperature range for use	-14 – 185° F

C. Supplier: Ferguson Waterworks 2831 Cardwell Road Richmond, VA 23234 (T): 800-448-3636; (F): 804-743-7779 www.ferguson.com

2.02 Geosynthetics
A. Geotextile. A geotextile envelope is required to prevent backfill material from entering the R-Tank modules.
1. **Standard Application**: The standard geotextile shall be a minimum 8 oz per square yard nonwoven geotextile (ACF N080 or equivalent).
2. **Infiltration Applications**: When water must infiltrate/exfiltrate through the geotextile as a function of the system design, a woven monofilament (ACF M200 or equivalent) shall be used.
B. Geogrid: When required by project plans, install geogrid (ACF BX12 or equivalent) to reinforce backfill above the R-Tank system.

2.03 Backfill & Cover Materials
A. Bedding Materials: Stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used below the R-Tank system (3" minimum). Material must be free from lumps, debris, and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation. For infiltration applications bedding material shall be free draining.
B. Side and Top Backfill:
1. **Deep Applications (> 12" total cover)**: Free draining stone (angular and smaller than 1.5" in diameter) or soil (GW, GP, SW, or SP as classified by the Unified Soil Classification System) shall be used adjacent to (12" minimum) and above (for the first 12") the R-Tank system. Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
2. **Shallow Applications (< 12" total cover)**: Materials listed in section 2.03 B1 above may be used adjacent to the modules. Top backfill must be well graded aggregate (angular and smaller than 0.75" in diameter) or soil (GW or SW as classified by the Unified Soil Classification System). Material must be free from lumps, debris and any sharp objects that could cut the geotextile. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.
C. Additional Cover Materials: Structural Fill shall consist of granular materials meeting the gradational requirements of SM, SP, SW, GM, GP or GW as classified by the Unified Soil Classification System. Structural fill shall have a maximum of 25 percent passing the No. 200 sieve, shall have a maximum clay content of 10 percent and a maximum Plasticity Index of 4. Material shall be within 3 percent of the optimum moisture content as determined by ASTM D698 at the time of installation.

2.04 Other Materials
Utility Marker: Install metallic tape at corners of R-Tank system to mark the area for future utility detection.

PART 3 - EXECUTION
3.01 Assembly of R-Tank Units
A. R-Tank^{XD} modules do not require on-site assembly prior to installation. See Section 3.04 below for details on installation.

3.02 Layout and Excavation
A. Installer shall stake out, excavate, and prepare the subgrade area to the required plan grades and dimensions, ensuring that the excavation is at least 2 feet greater than R-Tank dimensions in each direction allowing for installation of geotextile filter fabric, R-Tank modules, and free draining backfill materials.
B. All excavations must be prepared with OSHA approved excavated sides and sufficient working space.
C. Protect partially completed installation against damage from other construction traffic by establishing a perimeter with high visibility construction tape, fencing, barricades, or other means until construction is complete.
D. Base of the excavation shall be uniform, level, and free of lumps or debris and soft or yielding subgrade areas. A minimum 2,000 pounds per square foot bearing capacity is required.
1. **Standard Applications**: Compact subgrade to a minimum of 95% of Standard Proctor (ASTM D698) density or as required by the Owner's engineer.
2. **Infiltration Applications**: Subgrade shall be prepared in accordance with the contract documents. Compaction of subgrade should not be performed in infiltration applications.
E. Unsuitable Soils or Conditions: All questions about the base of the excavation shall be directed to the owner's engineer, who will approve the subgrade conditions prior to placement of stone. The owner's engineer shall determine the required bearing capacity of the R-Tank subgrade; however in no case shall a bearing capacity of less than 2,000 pounds per square foot be provided.
1. If unsuitable soils are encountered at the subgrade, or if the subgrade is pumping or appears excessively soft, repair the area in accordance with contract documents and/or as directed by the owner's engineer.
2. If indications of the water table are observed during excavation, the engineer shall be contacted to provide recommendations.
3. Do not start installation of the R-Tank system until unsatisfactory subgrade conditions are corrected and the subgrade conditions are accepted by the owner's engineer.

3.03 Preparation of Base
A. Place a thin layer (3" unless otherwise specified) of bedding material (Section 2.03 A), over the subgrade to establish a level working platform for the R-Tank modules. Level to within ½" (+/- ¼") or as shown on the plans. Native subgrade soils or other materials may be used if determined to meet the requirements of 2.03 A and are accepted by the owner's engineer.
1. **Standard Applications**: Static roll or otherwise compact bedding materials until they are firm and unyielding.
2. **Infiltration Applications**: Bedding materials shall be prepared in accordance with the contract documents.
B. Outline the footprint of the R-Tank system on the excavation floor using spray paint or chalk line to ensure a 12" perimeter is available around the R-Tank system for proper installation and compaction of backfill.

3.04 Installation of the R-Tank^{XD}
A. Where a geotextile wrap is specified on the stone base, cut strips to length and install in excavation, removing wrinkles so material lays flat. Overlap geotextile a minimum 12" or as recommended by manufacturer.
B. Where an impervious liner (for containment) is specified, install the liner per manufacturer's recommendations and the contract documents. The R-Tank units shall be separated from impervious liner by a non-woven geotextile fabric installed accordance with Section 3.04A.
C. Install R-Tank^{XD} Units in layers in accordance with the design drawings. R-Tank^{XD} pieces on each layer should be connected to all other pieces on that layer. Layers should stack on top of each preceding layer evenly. No vertical connection between layers is required. It is advisable to use a string line to form square corners and straight edges along the perimeter of the R-Tank system. The panels are to be oriented as per the design drawing (19.68" x 23.62") with required depth as shown on plans.
D. Wrap the R-Tank top and sides in specified geotextile. Cut strips of geotextile so that it will cover the sides and top, encapsulating the entire system to prevent backfill entry into the system. Overlap geotextile 12" or as recommended by manufacturer. Take great care to avoid damage to geotextile (and, if specified, impervious liner) during placement.
E. Identify locations of inlet, outlet and any other penetrations of the geotextile (and optional liner). These connections should be installed flush (butted up to the R-Tank) and the geotextile fabric shall be cut to enable hydraulic continuity between the connections and the R-Tank units. These connections shall be secured using pipe boots with stainless steel pipe clamps. Support pipe in trenches during backfill operations to prevent pipe from settling and damaging the geotextile, impervious liner (if specified) or pipe. Connecting pipes at 90 degree angles facilitates construction, unless otherwise specified. Ensure end of pipe is installed snug against R-Tank system.
F. Install Inspection and Maintenance Ports in locations noted on plans. At a minimum one maintenance port shall be installed within 10' of each inlet & outlet connection, and with a maximum spacing of one maintenance port for every 2,500 square feet. Install all ports as noted in the R-Tank Installation Guide.
G. If required, install ventilation pipes and vents as specified on drawings to provide ventilation for proper hydraulic performance. The number of pipes and vents will depend on the size of the system. Vents are often installed using a 90 degree elbow with PVC pipe into a landscaped area with 'U' bend or venting bollard to inhibit the ingress of debris. A ground level concrete or steel cover can be used.

3.05 Backfilling of the R-Tank Units
A. Backfill and fill with recommended materials as follows:
1. Place freely draining backfill materials (Section 2.03 B) around the perimeter in lifts with a maximum thickness of 12". Each lift shall be placed around the entire perimeter such that each lift is no more than 24" higher than the side backfill along any other location on the perimeter of the R-Tank system. No fill shall be placed over top of tanks until the side backfill has been completed.
2. Each lift shall be compacted at the specified moisture content to a minimum of 95% of the Standard Proctor Density or until no further densification is observed (for self-compacting stone materials). The side lifts must be compacted with walk behind compaction equipment. Even when "self-compacting" backfill materials are selected, a walk behind vibratory compactor must be used.
3. Take care to ensure that the compaction process does not allow the machinery to come into contact with the modules due to the potential for damage to the geotextile and R-Tank units.
4. No compaction equipment is permissible to operate directly on the R-Tank modules.
5. Top Backfill:
a. **Deep Applications (> 12" total cover)**: Install a 12" (or as shown on plans) lift of freely draining material (Section 2.03 B1) over the R-Tank^{XD} Units, maintaining 12" between equipment tracks and R-Tank System. Lightly compact using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used. Roller must remain in static mode until a minimum of 24" of cover has been placed over the modules. Sheep foot rollers should not be used.
b. **Shallow Applications (< 12" total cover):** Install top backfill (Section 2.03 B2) in accordance with plans using an LGP skid steer or dozer (rubber tracks preferred). Lightly compact using a walk-behind trench roller. Alternately, a roller (maximum gross vehicle weight of 6 tons) may be used in static mode only.
6. If required, install a geogrid as shown on plans. Geogrid shall extend a minimum of 3 feet beyond the limits of the excavation wall.
7. Following placement and compaction of the initial cover, subsequent lifts of structural fill (Section 2.03 C) shall be placed at the specified moisture content and compacted to a minimum of 95% of the Standard Proctor Density and shall cover the entire footprint of the R-Tank system. During placement of fill above the system, unless otherwise specified, a uniform elevation of fill shall be maintained to within 12" across the footprint of the R-Tank system. Do not exceed maximum cover depths listed in Table 2.01 B.
8. Place additional layers of geotextile and/or geogrid at elevations as specified in the design details. Each layer of geosynthetic reinforcement placed above the R-Tank system shall extend a minimum of 3 feet beyond the limits of the excavation wall.
B. Only low pressure tire or track vehicles shall be operated over the R-Tank system during construction. No machinery should drive on top of the tank until a minimum of 18" of backfill and compaction is achieved. Dump Trucks and Pans shall not be operated within the R-Tank system footprint at any time. Where necessary the heavy equipment should unload in an area adjacent to the R-Tank system and the material should be moved over the system with tracked equipment.
C. Ensure that all unrelated construction traffic is kept away from the limits of excavation until the project is complete and final surface materials are in place. No non-installation related loading should be allowed over the R-Tank system until the final design section has been constructed (including pavement).
D. Place surfacing materials, such as groundcovers (no large trees), or paving materials over the structure with care to avoid displacement of cover fill and damage to surrounding areas.
E. Backfill depth over R-Tank system must be within the limitations shown in the table in Section 2.01 B. If the total backfill depth does not comply with this table, contact engineer or manufacturer's representative for assistance.

PART 4 - USING THE SYSTEM
4.01 Maintenance Requirements
A. A routine maintenance effort is required to ensure proper performance of the R-Tank system. The Maintenance program should be focused on pretreatment systems. Ensuring these structures are clean and functioning properly will reduce the risk of contamination of the R-Tank system and stormwater released from the site. Pre-treatment systems shall be inspected yearly, or as directed by the regulatory agency and by the manufacturer (for proprietary systems). Maintain as needed using acceptable practices or following manufacturer's guidelines (for proprietary systems).
B. Inspection and/or Maintenance Ports in the R-Tank system will need to be inspected for accumulation of sediments at least quarterly through the first year of operation and at least yearly thereafter. This is done by removing the cap of the port and using a measuring device long enough to reach the bottom of the R-Tank system and stiff enough to push through the loose sediments, allowing a depth measurement.
C. If sediment has accumulated to the level noted in the R-Tank Maintenance Guide or beyond a level acceptable to the Owner's engineer, the R-Tank system should be flushed.
D. A flushing event consists of pumping water into the Maintenance Port and/or adjacent structure, allowing the turbulent flows through the R-Tank system to re-suspend the fine sediments. If multiple Maintenance Ports have been installed, water should be pumped into each port to maximize flushing efficiency. Sediment-laden water can be filtered through a Dirtbag or approved equivalent if permitted by the locality.

R-TANK^{XD} SPECIFICATION
SOLLAZZO REC CENTER
HARRISON, NY

FOR ADDITIONAL INFORMATION PLEASE CONTACT: FERGUSON WATERWORKS, 1-800-448-3636, www.ferguson.com

ENGINEER OF RECORD TO REVIEW, APPROVE AND ENDORSE FINAL SITE SPECIFIC DESIGN.

SCALE NTS | DRAWN BY BMK | DATE 06/30/2023 | SHEET NO. 13 of 13

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D ARCHITECTS, PC
285 MAIN STREET• MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

Woodard & Curran
Woodard & Curran Engineering & Geological Services PA PC
800 Westchester Avenue, Suite N507
Rye Brook, New York 10573
800.807.4080 | www.woodardcurran.com

CONSTRUCTION DOCUMENTS

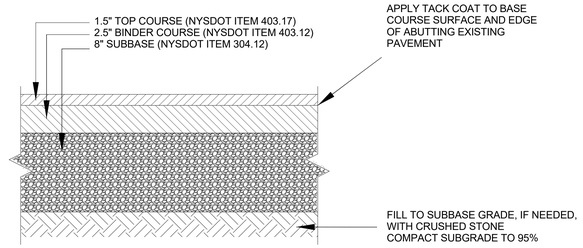
No.	Date	Issue
4	07/12/2023	ISSUE FOR BID - PHASE 1
3	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	06/01/2020	DESIGN DEVELOPMENT
1	03/31/2020	50% DESIGN DEVELOPMENT

Sheet Title
CONSTRUCTION DETAILS

Job No. 2020-1005 | Date 06/29/2023
Scale AS NOTED | Drawn / Checked CJL/JLMT

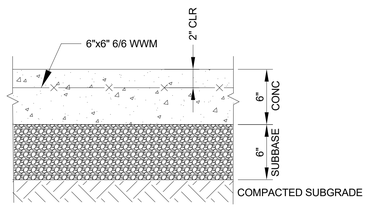
Sheet Number
C-405

FOR REFERENCE – TYPICAL PAVEMENT SECTIONS – PHASE 2



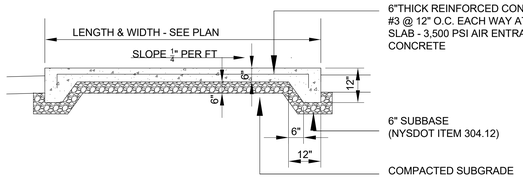
7 FULL DEPTH ASPHALT PAVEMENT

SCALE: NTS



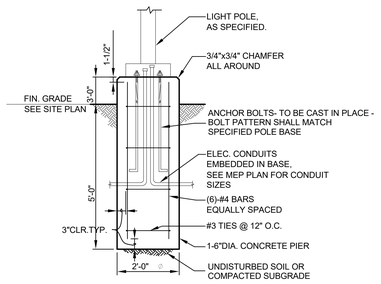
6 CONCRETE SIDEWALK

SCALE: NTS



5 TRANSFORMER CONCRETE PAD

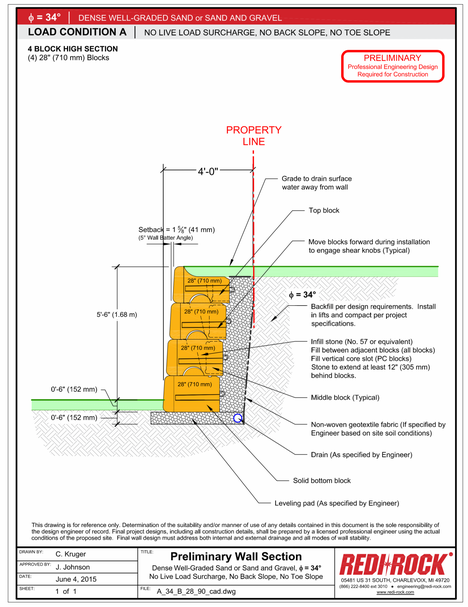
SCALE: NTS



4 LIGHT POLE FOUNDATION DETAIL

DETAIL NOT TO SCALE

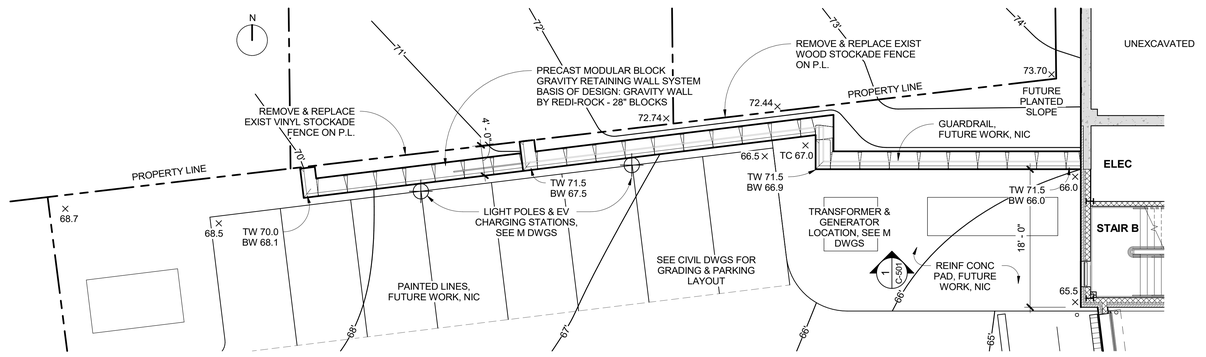
NOTES:
1. CONTRACTOR SHALL ENSURE CONCRETE POLE PIER IS INSTALLED ABSOLUTELY VERTICAL AND LEVEL.
2. PIER TO BE CONSTRUCTED IN ONE CONTINUOUS POUR.
3. EXPOSED PORTION OF PIER TO BE HAND-RUBBED SMOOTH.
4. ANCHOR BOLT PATTERN TO MATCH SPECIFIED LIGHT POLE BASE.
5. CONTRACTOR SHALL CONFIRM GROUNDING DESIGN WITH MEP.
6. COORDINATE FOOTING DETAILS WITH LIGHT POLE MANUFACTURER'S RECOMMENDATIONS.



3 MODULAR BLOCK WALL SECTION

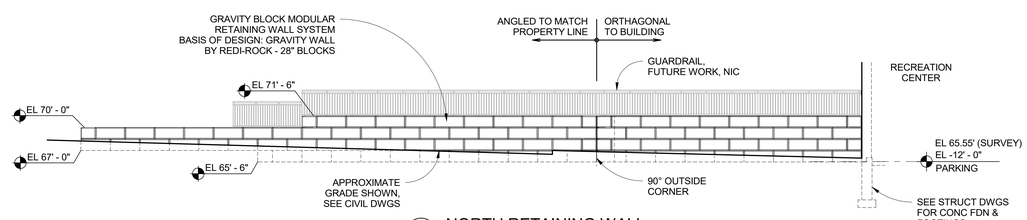
DETAIL NOT TO SCALE

ARCHITECTURAL PLAN & ELEVATION OF MODULAR BLOCK RETAINING WALL BY GC. SEE CIVIL DWGS FOR GRADING & LAYOUT PLANS. BLOCK LAYOUT SHOWN IS APPROXIMATE. GC SHALL BE RESPONSIBLE FOR DELEGATED DESIGN ENGINEERING OF WALL.



2 NORTH RETAINING WALL PLAN

1/8" = 1'-0"



1 NORTH RETAINING WALL

1/8" = 1'-0"

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D listen imagine build
KG+D ARCHITECTS, PC
285 MAIN STREET • MOUNT KISCO, NEW YORK 10549
P:914.666.5900 KGDARCHITECTS.COM

CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

Sheet Title

SITE DETAILS

Job No.	Date
2020-1005	07/12/2023
Scale: AS NOTED	Drawn / Checked: - -

Sheet Number

C-501

General Notes:

1 The purpose of these drawings is to show the structural work associated with Harrison Recreational Center in Harrison, NY.

2 The work shown on these drawings has been designed in accordance with the structural requirements of the 2020 edition of the Building Code of New York State.

3 The structural components have been designed for the following loads:

A. Uniform live load:

Corridors	100 psf
First floor	
Garages	
Passenger vehicles	40 psf
Office buildings	
Corridors above first floor	80 psf
Lobbies and first-floor corridors	100 psf
Offices	50 psf + 15 psf partitions
Recreational uses	
Gymnasiums	100 psf
Stairs and exits	
All other	100 psf

Live load has been reduced on girders, columns and footings in accordance with the building code

B. Roof loads:

Snow:

Ground snow load, p_g	20 psf
Flat roof snow load, p_f	30 psf*
Exposure factor, C_e	1.0
Importance factor, I_s	1.1
Thermal factor, C_t	1.0
Rain loads: in accordance with Section 1611	
Roof live load:	20 psf min
Rainfall intensity (15-min. duration/100 year avg. interval)	2.90 in./hr.

*Note: the flat roof snow load shall be no less than 30 psf.

C. Wind design data:

Wind loads have been determined based on Section 1609.1.1 in accordance with ASCE 7-16, Chapters 26, 27, 29 and 30, Directional Procedure

Risk category	III
Basic wind speed (3-second gust):	
Ultimate design wind speed, Vult	126 mph
Nominal design wind speed, Vasd	98 mph
Exposure	B
Internal pressure coefficient	0.18
"a" dimension for use with components and cladding	13.2 ft

Design wind pressure (Nominal design wind pressures) for components and cladding on building walls (use Zone 4 generally; use Zone 5 within "a" of building wall corners):

Surface pressure (psf)

Area	10 sq.ft	20 sq. ft.	50 sq. ft.	100 sq. ft.
Negative Zone 4	-17.5	-16.7	-15.8	-15.1
Negative Zone 5	-21.5	-20.1	-18.2	-16.7
Positive Zones 4 & 5	16.1	15.4	14.5	13.7

Design wind pressure (Nominal design wind pressures) for components and cladding on building roofs (for locations of zones 1, 2 and 3, refer to building code):

Surface pressure (psf)

Area	10 sq.ft	20 sq. ft.	50 sq. ft.	100 sq.ft.
Negative Zone 1	-28.1	-26.2	-23.8	-21.9
Negative Zone 1'	-16.1	-16.1	-16.1	-16.1
Negative Zone 2	-37.0	-34.6	-31.5	-29.1
Negative Zone 3	-37.0	-34.6	-31.5	-29.1
Positive Zone 1 & 1'	10.0	10.0	10.0	10.0
Positive Zone 2 & 3	16.1	15.4	14.5	13.7
Overhang Zones 1&1'	-25.4	-24.9	-24.3	-23.9
Overhang Zone 2	-34.3	-31.1	-27.0	-23.8
Overhang Zone 3	-34.3	-31.1	-27.0	-23.8

D. Earthquake design data:

Risk category	III
Seismic importance factor, I_e:	1.25
Mapped short period spectral response accelerations, S_s:	0.285g
Mapped 1 second period spectral response accelerations, S_1:	0.060g
Site class:	B
Design short period spectral response accelerations, S_{DS}:	0.171g
Design 1 second period spectral response accelerations, S_{D1}:	0.032g
Seismic design category:	B
Seismic force resisting system: structural steel systems not specifically detailed for seismic resistance	
Design base shear:	125 KIPS
Seismic response coefficient, C_s:	0.028
Response modification factor, R:	3
Deflection amplification factor, C_d:	3
Analysis procedure: Equivalent Lateral Force	

E. Other loads:

Concentrated loads:

All floors except as noted (on 2-1/2 feet square)	0 lbs
Stair treads and catwalks (on 4 inches square)	300 lbs
Garages with passenger vehicles (on 4 ½ inches square)	3000 lbs
All other roof members	300 lbs

Impact loads

Loads increased as follows:	
Elevator machinery	100%
Hangers for floors or balconies	33%
Vehicle and wheel loads	30%

F. Special loads:

Retaining walls

Lateral equivalent fluid pressure	32.5 pcf
Seismic load (h = height of wall)	5.5 h^2
Vertical live load surcharge	100 psf

4 This structure has been designed to be self-supporting and stable after the construction of the building has been completed. The stability of the structure prior to completion is solely the responsibility of the contractor. This responsibility extends to all related aspects of the construction activity including, but not limited to, erection methods, erection sequence, temporary bracing, forms, shoring, use of equipment, and similar construction procedures. Review of the construction by the engineer is for conformance with design aspects only, not to review the contractor's construction procedures. Lack of comment on the part of the engineer with regard to construction procedures is not to be interpreted as approval of those procedures.

5 Jobsite safety and construction procedures are solely the responsibility of the contractor. Review of the construction by the engineer is for conformance with design aspects only, not to review the contractor's provisions for job site safety. Lack of comment by the engineer is not to be interpreted as approval of those aspects of work.

6 PDF digital files of all erection and detail shop drawings for steel reinforcing bars, indicating the fabricator, manufacturer, finish, layout, and all accessories, must be submitted to and be checked by the contractor and subcontractor and bear the checker's initials before submission to the architect for review prior to fabrication. Fabrication and/or delivery to the site of components prior to receiving approved shop drawings shall be at the fabricator's own risk.

7 Testing and inspection of concrete, steel reinforcing bars, and other work are described in the project "Statement of Special Inspections". The contractor shall review the "Statement of Special Inspections" and coordinate the scheduling of inspections with the special inspector. Uninspected work that required inspections may be rejected solely on that basis.

8 If faulty construction procedures, or material, result in defective work that requires additional engineering time to devise corrective measures, professional fees may be charged to the contractor at the standard hourly rate of additional services. Such fees may be withheld from the general contractor's payment.

9 Loads, openings and structure in any way related to requirements of other (non-structural) disciplines are shown for bidding purposes only. However, these plans do not show the full scope of openings, in roofs, floors and walls. For size and location of all openings, see architectural and mechanical drawings. Do not scale openings. The contractor shall obtain from the heating and ventilating, electrical, plumbing and other trades the final approved size and location of all openings, equipment and work to be provided for their trade for roofs, floors and walls, whether shown or not shown on structural drawings. Excess cost related to variation in requirements or equipment are not to be borne by the owner.

10 The contractor shall verify all dimensions, elevations and angles with architectural drawings and existing conditions before proceeding with any work.

11 The contractor and subcontractors shall obtain the latest copies of approved plans and surveys and they shall familiarize themselves thoroughly with these plans before commencing any work.

12 These drawings are supplemented by a detailed technical specification. The notes shown under certain categories of work are intended to summarize basic requirements.

13 Work shown as "Typical Details" apply throughout the project as required. Work shown as "Sections" shall be considered to apply for the same and similar conditions in the building.

14 Some details of the work are shown on the architectural drawings. A careful review and study of these details are necessary before the full scope of the work can be comprehended.

15 Do not scale drawings.

Codes and Standards References

1 Concrete:
Concrete work shall conform to the requirements of:
ACI 301-10, "Specifications for Structural Concrete in Buildings" and
ACI 318-14, "Building Code Requirements for Structural Concrete".

2 Structural steel:
Design, fabrication and erection of structural steel shall conform to the "Specification for Structural Steel for Buildings" as adopted on July 7, 2016, by the American Institute of Steel Construction (AISC) and the 15th Edition of the AISC Steel Construction Manual.

Foundation notes:

1 Recommendations for the site preparation and earthwork within the perimeter of the proposed new structure, preparation of soil bearing surfaces, material specification and placement of structural backfill for support of foundations and slabs-on-grade, and drainage are stated in the geotechnical engineering report prepared for this project by Skylands Engineering, LLC and dated 19 April, 2019. The recommendations of this report are project requirements.

2 The foundations have been designed to rest on inorganic, undisturbed soil or compacted granular fill having a bearing value of 4000 psf as recommended in the geotechnical engineering report referenced above. Such bearing strata are anticipated at the bottom of footing elevations noted on the foundation plan. All bearing strata shall be reviewed by the geotechnical engineer prior to placing concrete in order to verify the bearing value.

3 If ledge rock is encountered above the proposed bottom of footing elevations indicated, then it shall be removed to the extent necessary to provide a minimum of 1'-0" soil cover above the top of the concrete footing.

4 Footings supported on ledge shall rest on broom clean solid rock. If the slope of the rock surface exceeds 1 on 6, then the footing shall be dowelled to the ledge with 3/4" steel rods drilled 10 inches into the rock surface at 2 feet on center.

5 If ledge rock and soil both occur at the bottom of footing bearing elevation, then a minimum of one foot of ledge rock below planned bottom of footing elevation shall be removed and replaced with a "cushion" layer of crushed stone to minimize differential settlement. The crushed stone "cushion" layer shall extend beyond the end of the ledge rock for a minimum of 10 feet along the length of the supported footing.

6 The slab-on-grade sub-base shall be a crusher run stone free from soft disintegrated pieces, mud, dirt, or other injurious material. The material shall have no stone greater than 2 inches in any one dimension and with less than 10 percent by weight passing a No.100 sieve.

7 The bottom of exterior footings not on solid rock shall be at least 3' - 6" below finished grade.

8 All soil surrounding and under footings shall be protected from freezing and frost action during the course of construction.

9 Step footings where elevations change at a maximum slope of one vertical on two horizontal and place lower footings first.

10 Foundation basement walls shall not be backfilled before they are temporarily braced or before the concrete has attained its specified compressive strength and the framed floor system at the top of the wall is in place.

11 Foundation frost walls shall be backfilled by placing fill on both sides simultaneously and to the same level.

12 Keep foundation excavations free of water at all times.

13 Use crushed stone backfill or controlled compacted fill or lean concrete (f'c=1500 psi) for over-excavation of footings.

14 Existing utilities: locate existing underground utilities in areas of excavation work. Provide adequate means of support and protection during earthwork operations.

15 Where footings are in close proximity to sub-surface piping bottom of footings shall be at least 8" below elevation of piping unless otherwise shown on the drawings.

16 Submittals to the engineer are required for structural fill and slab sub-base.

Concrete Notes:

1 All concrete work shall conform to all the requirements of ACI 301, "Specifications for Structural Concrete in Buildings" and ACI 318 "Building Code Requirements for Structural Concrete", as specified in the code reference section of these general notes.

2 Concrete shall be the specified weight and develop a minimum compressive strength in 28 days as follows:

Location	Weight	Minimum Strength	Maximum W/C Ratio (or slump where indicated)
Footings	Normal	3,000 psi	0.55
Walls and piers:			
Interior	Normal	3,000 psi	0.55
Exterior	Normal	4,000 psi	0.45
Exterior exposed	Normal	5,000 psi	0.40

3 All detailing fabrication, and erection of reinforcing bars, unless otherwise noted, must follow the latest ACI code and the latest ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures".

4 Concrete design mix will be submitted to the engineer for review, together with laboratory reports attesting that the mixes can attain the minimum strength required in accordance with ACI 301 indicated above.

5 No admixtures are permitted without the engineer's written permission other than entrained air. Concrete exposed to the weather, such as that used in foundation walls, shall contain 5% +/- 1 1/2% entrained air. Concrete exposed to the weather and to de-icing compounds shall contain 6% +/- 1 1/2% entrained air. Do not use air entrainment admixture for interior normal weight concrete slabs.

6 Limit water-soluble, chloride-ion content in hardened concrete to the following percent by weight of cement: 1.00 for reinforced concrete that will be dry and protected from moisture, 0.30 for reinforced concrete that will exposed to moisture but not exposed to chlorides, 0.15 for reinforced concrete exposed to moisture and chlorides from deicing chemicals and salt/seawater, and 0.06 for prestressed (post-tensioned) concrete.

7 Reinforcing steel shall conform to ASTM A 615, Grade 60.

8 The following concrete cover shall be provided for reinforcement:

Location	Cover (inches)
Concrete cast against and Permanently exposed to earth	3
Concrete exposed to earth or weather:	
#6 through #18 bars	2
#5 bar and smaller	1 1/2
Concrete not exposed to weather or in contact with ground:	
Slabs, walls, joists:	
#14 and #18 bars	1 1/2
#11 bar and smaller	3/4
Beams, columns	
Primary reinforcement, ties, stirrups, spirals	1 1/2

9 The conveyance, placement and protection of the concrete shall conform to the requirements of ACI 318, indicated above, and ACI 304R, "Guide for Measuring, Mixing, Transporting and Placing Concrete". Mechanical vibrators are to be used to consolidate the freshly cast concrete around the reinforcing and against form surfaces and to prevent the formation of air or stone pockets, honeycombing, pitting or planes of weakness. However, care must be used to avoid over vibration that can lead to aggregate segregation.

10 No welding of reinforcing will be permitted.

11 All lap splices shall be Class B, in accordance with ACI 318 indicated above.

12 Concrete piers: Place concrete piers and walls together. Set pier reinforcing and set wall reinforcing through pier vertical bars. Provide dowels with standard hook from footing at all piers. Size and quantity of dowels to match vertical pier reinforcing (Class "B" splice).

13 The contractor shall be responsible for limiting pours to minimize shrinkage cracking. In general, walls shall not be poured in continuous lengths exceeding 30 feet without providing construction joints or control joints. The location and configuration of joints exposed to view shall be coordinated with the architect.

14 The installation of slabs shall conform to the requirements of ACI 302.1R, "Guide to Concrete Floor and Slab Construction". Interior finish slab surfaces are to have a steel trowel finish. Exterior slab surfaces are to have a broom finish unless specified on the architectural drawings.

15 Sizes and locations of all required embedded items, such as anchor bolts, piping sleeves, etc., for all trades shall be coordinated by the general contractor with other trades.

16 Submittals to the engineer are required for concrete mix designs, cement, reinforcing bars, admixtures, and aggregates.

Connections to Hardened Concrete:

1 All proprietary anchoring systems (expansion, adhesive anchoring systems, etc.) to be installed into hardened concrete elements are to be installed in strict accordance with the manufacturer's instructions for drilling and preparation of holes, for spacing and edge distance requirements, and for the utilization of supplemental components for the anchoring systems such as screen tubes, doweling adhesives, etc.

2 Connections to hardened concrete shall be made with anchors conforming to ACI 318, as specified in the code reference section of these general notes, for cracked concrete, and Chapter 19 of the state building code indicated at the beginning of these general notes.

A. Mechanical anchors shall be either
- i. Hilti "Kwik Bolt TZ" expansion anchor.
- ii. Hilti "Kwik HUS-EZ" screw anchor (use only in permanently dry, interior non-corrosive environments)
- iii. Simpson "Strong Bolt 2" expansion anchor
- iv. Simpson "Titen HD" screw ancho, zinc-plated or galvanized (use only in permanently dry, interior non-corrosive environments)
- v. Dewalt "Power-Stud + SD2" expansion anchor.
- vi. Dewalt "Power-Stud + SD4/SD6", Type 304/316 SS expansion anchor
- vii. Dewalt "Screw-Bolt+" screw anchor, zinc-plated or galvanized (use only in permanently dry, interior non-corrosive environments)

Size, embedment, spacing and edge distance of anchors shall be as indicated on the drawings.

B. Adhesive anchor rods or reinforcing bars shall be installed in rotary hammered drilled holes with carbide drill bits using one of the following adhesive anchoring systems:
- i. Hilti "HIT-HY 200 safe set adhesive anchoring system with Hilti "HAS" ASTM F1554, Grade 36 anchor rods.
- ii. Simpson "AT-XP" adhesive anchoring system for base material temperatures between 14 degrees and 80 degrees or Simpson "Set-3G" adhesive anchoring system for temperatures above 40 degrees, with Simpson "RFB" ASTM F1554 Grade 36 anchor rods.
- iii. Dewalt "AC200+" two part adhesive, cold temperature cure with ASTM F1554, Grade 36 anchor rods. Reinforcing bars shall conform to the requirements of the Concrete General Notes.
- iv. Reinforcing bars shall conform to the requirements of the Concrete General Notes.

Adhesive for reinforcing bars and anchors shall have been tested in accordance with ACI 355.4 "Qualification of Post-Installed Adhesive Anchors in Concrete" and ICC-ES (ICC Evaluation Service) "Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements" (AC308) for cracked concrete and seismic applications.

Adhesive bond design strength is based upon concrete that has cured at least 21 days with a minimum compressive strength of 2,500 psi and an in-service temperature in accordance with ACI 355.4 Temperature Category B.

Installation method shall be in accordance with the Manufacturer's Printed Installation Instructions (MPII
Installation of adhesive anchors horizontally or upwardly inclined to support sustained tension loads shall be performed by personnel certified by the ACI/CRSI Adhesive Anchor Installer Certification program or equal.

Unless otherwise noted on the drawings, embed anchor rods and reinforcing bars into drilled holes a minimum of 9 anchor diameters, with a minimum edge distance of 4 inches, measured from the edge of the concrete to the centerline of the anchor/reinforcing bar. Increased embedment depths or edge distances may be required at certain locations, see plans and details.

Structural Steel Notes:

1 Design fabrication and erection of structural steel shall conform to the American Institute of Steel Construction's "Specification for Structural Steel for Buildings", as specified in the code reference section of these general notes.

2 Materials:

American standard shapes, angles, Plates and bars:	ASTM A 36
Anchor rods	ASTM F 1554, Grade 36
Welding electrode	ASTM E 70xx, low hydrogen

3 All welding shall conform to American Welding Society's AWS D1.1 "Structural Welding Code-Steel" code for arc and gas welding and be performed by a certified welder in accordance with A.W.S. standards.

4 Structural steel shall be cleaned in accordance with the Steel Structures Painting Council Specification SP 3 for Power Tool Cleaning (except for steel exposed to weather).

5 All steel members and bolting exposed to weather shall be cleaned in accordance with the Steel Structures Painting Council Specification SP 6 for Commercial Blast Cleaned and hot-dipped galvanized in accordance with ASTM A 123 and ASTM A 153. Minimum acceptable zinc coating weight shall be 2 oz./sq. Ft. See architectural specifications for finished paint if required. Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.

6 Provide bitumastic protection coating for all structural steel below grade.

7 Fabricator shall hold a current AISC certification for "Certified Building Fabricator (BU)", (formerly known as "Standard for Steel Building Structures (STD)".)

8 For miscellaneous steel, see architectural drawings.

9 Submittals to the engineer are required for certificates of compliance for structural steel, bolts, nuts, and weld filler material prior to the fabrication of any steel

10 At the completion of fabrication, the fabricator shall submit a certificate of compliance stating that the work was performed in accordance with the approved contract documents, as required by Section 1704.2 of the building code indicated at the beginning of these General Notes.

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CONSTRUCTION DOCUMENTS

Key Plan

Professional Seal

No.	Date	Issue
5	07/12/2023	ISSUE FOR BID - PHASE 1
4	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	2023-03-31	PHASE 1 - 50% CDS
1	2020-06-01	DESIGN DEVELOPMENT

Sheet Title

GENERAL STRUCTURAL NOTES

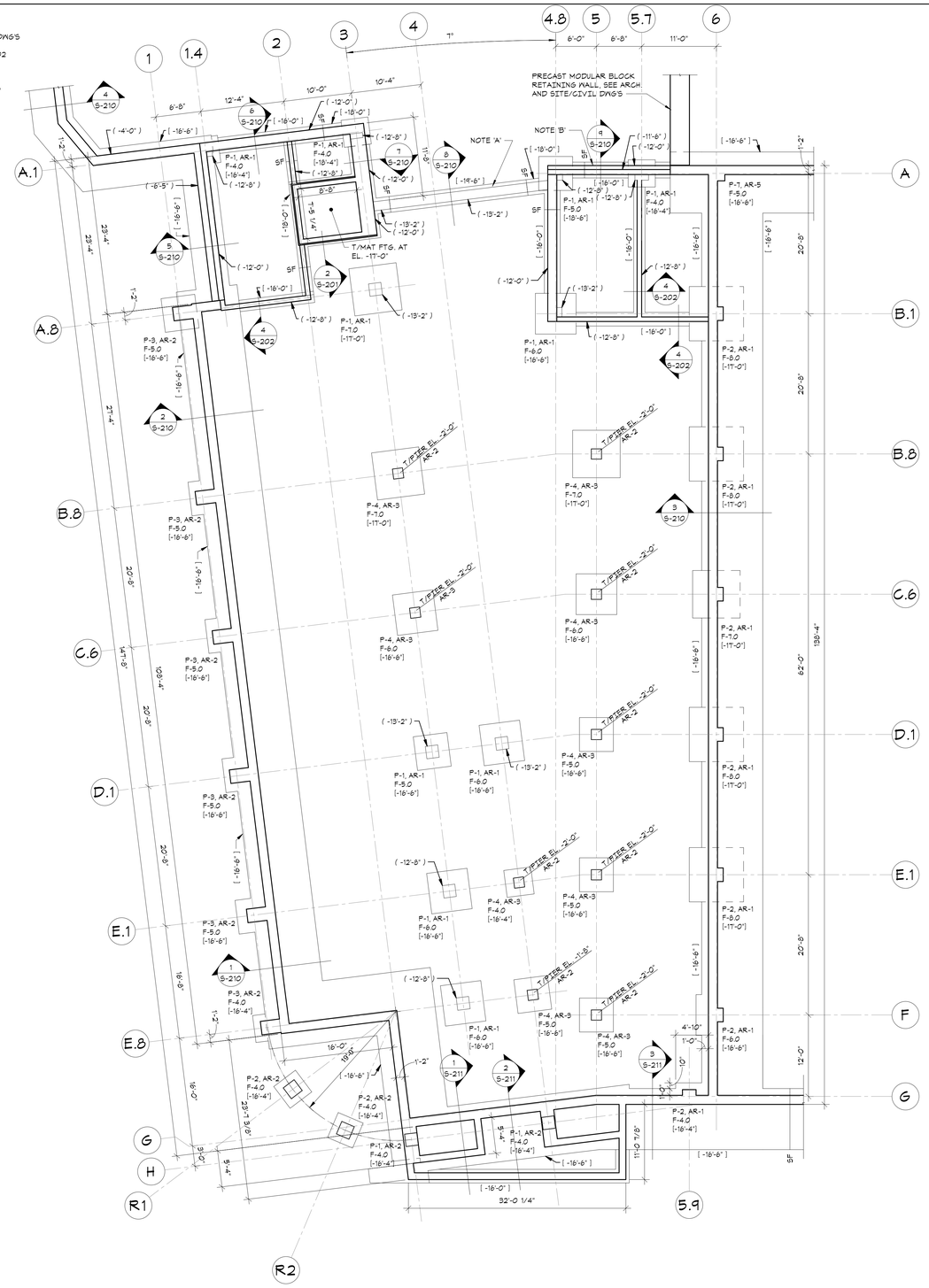
Job No.	Date
20029.00	2020-06-01
Scale: AS NOTED	Drawn / Checked: JM / EM

Sheet Number

S-001

NOTE:
SEE SITE/ELEC MECH. DWG'S FOR EQUIP. PAD LOCATIONS, SEE 2/S202 FOR TYP. PAD DETAIL

NOTE:
SEE SITE/CIVIL DWG'S FOR EXTENT OF SITE RETAINING WALLS IN PARKING LOT



LOWER LEVEL FOUNDATION PLAN

1/8"=1'-0"

NORTH:

- TOP OF PARKING LEVEL = -12'-0" FROM FIRST FLOOR DATUM
- FOR FOUNDATION CONDITION AT EXTERIOR DOORS, SEE "TYPICAL DETAIL AT EXTERIOR DOORS".
- COORDINATE ALL PITS, TRENCHES, POCKETS, BRICK SHELVES, SLEEVES, PENETRATIONS AND INSERTS IN CONCRETE WALLS AND SLABS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
- SEE GENERAL NOTES ON SHEET S001 FOR ADDITIONAL INFORMATION.

LEGEND:

- [+/- ...] INDICATES BOTTOM OF FOOTING ELEVATION FROM FIRST FLOOR DATUM ELEVATION.
- (+/-...) INDICATES TOP OF WALL/PIER ELEVATION FROM FIRST FLOOR DATUM ELEVATION.
- "SF" INDICATES APPROXIMATE LOCATION OF STEPS IN FOOTINGS ON PLAN. COORDINATE LOCATION AND ELEVATION WITH SITE GRADING AND MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. FOR DETAILS, SEE "TYPICAL STEPPED FOOTING DETAIL".
- F-## INDICATES FOOTING TYPE. SEE "FOOTING SCHEDULE AND FOOTING DETAIL".
- P-# INDICATES PIER TYPE. SEE "PIER SCHEDULE AND PIER DETAILS".
- "AR-#" INDICATES BASEPLATE AND ANCHOR BOLT SIZES AND DIMENSIONS, SEE S/S202.
- NOTE 'A': PROVIDE (3)-5'-0" WIDE x 1'-6" HIGH OPN'G IN FDN. WALL FOR PIPE PEN'S. MAINTAIN 1'-0" WIDE PIER BTWN. OPN'GS. PROVIDE ADD'L (3)-#5 BARS ABOVE & BELOW OPN'G & EXTEND 2'-6" BEYOND OPN'G, EA. SIDE. PROVIDE (4)-#5 VERT. AT "PIERS". COORD. W/ MEP DWGS FOR LOCATION AND ELEVATION.
- NOTE 'B': PROVIDE (2)-3'-0" WIDE x 1'-0" HIGH OPN'G IN FDN. WALL FOR CONDUIT PEN'S. MAINTAIN 1'-0" WIDE PIER BTWN. OPN'GS. PROVIDE ADD'L (3)-#5 BARS ABOVE & BELOW OPN'G & EXTEND 2'-6" BEYOND OPN'G, EA. SIDE. PROVIDE (4)-#5 VERT. AT "PIER". COORD. W/ MEP DWGS FOR LOCATION AND ELEVATION.

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Sheet Title

LOWER LEVEL FOUNDATION PLAN

Job No.	Date
20029.00	2020-06-01
Scale: AS NOTED	Drawn / Checked: JM / EM

Sheet Number

S-100

FIRST FLOOR FOUNDATION PLAN

1/8"=1'-0"

NORTH:

- TOP OF FIRST FLOOR = DATUM ELEVATION 0'-0" = TOPOGRAPHICAL ELEVATION = 771.55'
- FOR FOUNDATION CONDITION AT EXTERIOR DOORS, SEE 'TYPICAL DETAIL AT EXTERIOR DOORS'.
- COORDINATE ALL PITS, TRENCHES, POCKETS, BRICK SHELVES, SLEEVES, PENETRATIONS AND INSERTS IN CONCRETE WALLS AND SLABS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.
- SEE GENERAL NOTES ON SHEET S001 FOR ADDITIONAL INFORMATION.

LEGEND:

- (+/- ....) INDICATES BOTTOM OF FOOTING ELEVATION FROM FIRST FLOOR DATUM ELEVATION.
- (+/-...) INDICATES TOP OF WALL/PIER ELEVATION FROM FIRST FLOOR DATUM ELEVATION.
- "BP" INDICATED BEAM BEARING POCKET. SEE DETAIL 3/S202 FOR ANCHOR INFORMATION.
- "SF" INDICATES APPROXIMATE LOCATION OF STEPS IN FOOTINGS ON PLAN. COORDINATE LOCATION AND ELEVATION WITH SITE GRADING AND MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. FOR DETAILS, SEE 'TYPICAL STEPPED FOOTING DETAIL'.
- F-## INDICATES FOOTING TYPE. SEE 'FOOTING SCHEDULE AND FOOTING DETAIL'.
- P-# INDICATES PIER TYPE. SEE 'PIER SCHEDULE AND PIER DETAILS'.
- 'AR-#' INDICATES BASEPLATE AND ANCHOR BOLT SIZES AND DIMENSIONS, SEE S/S202.

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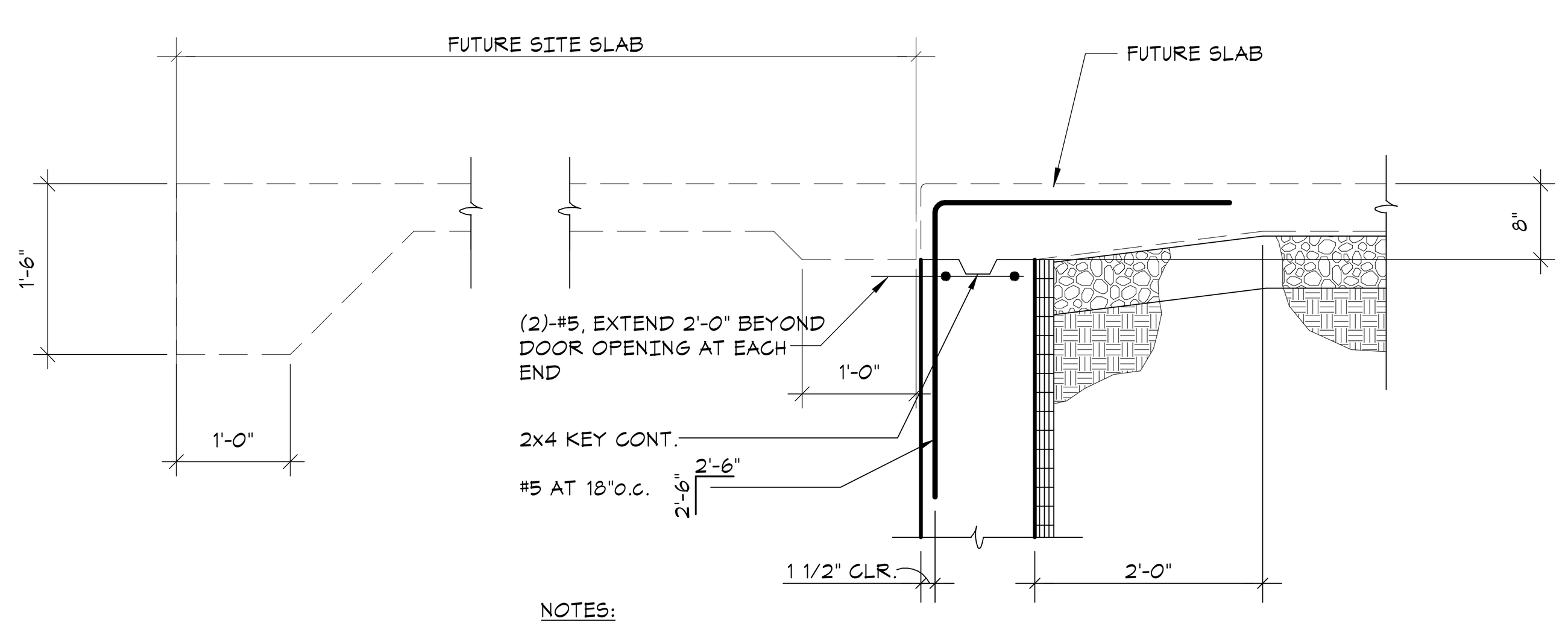
Sheet Title

FIRST FLOOR FOUNDATION PLAN

Job No.	Date
20029.00	2020-06-01
Scale: AS NOTED	Drawn / Checked: JM / EM

Sheet Number

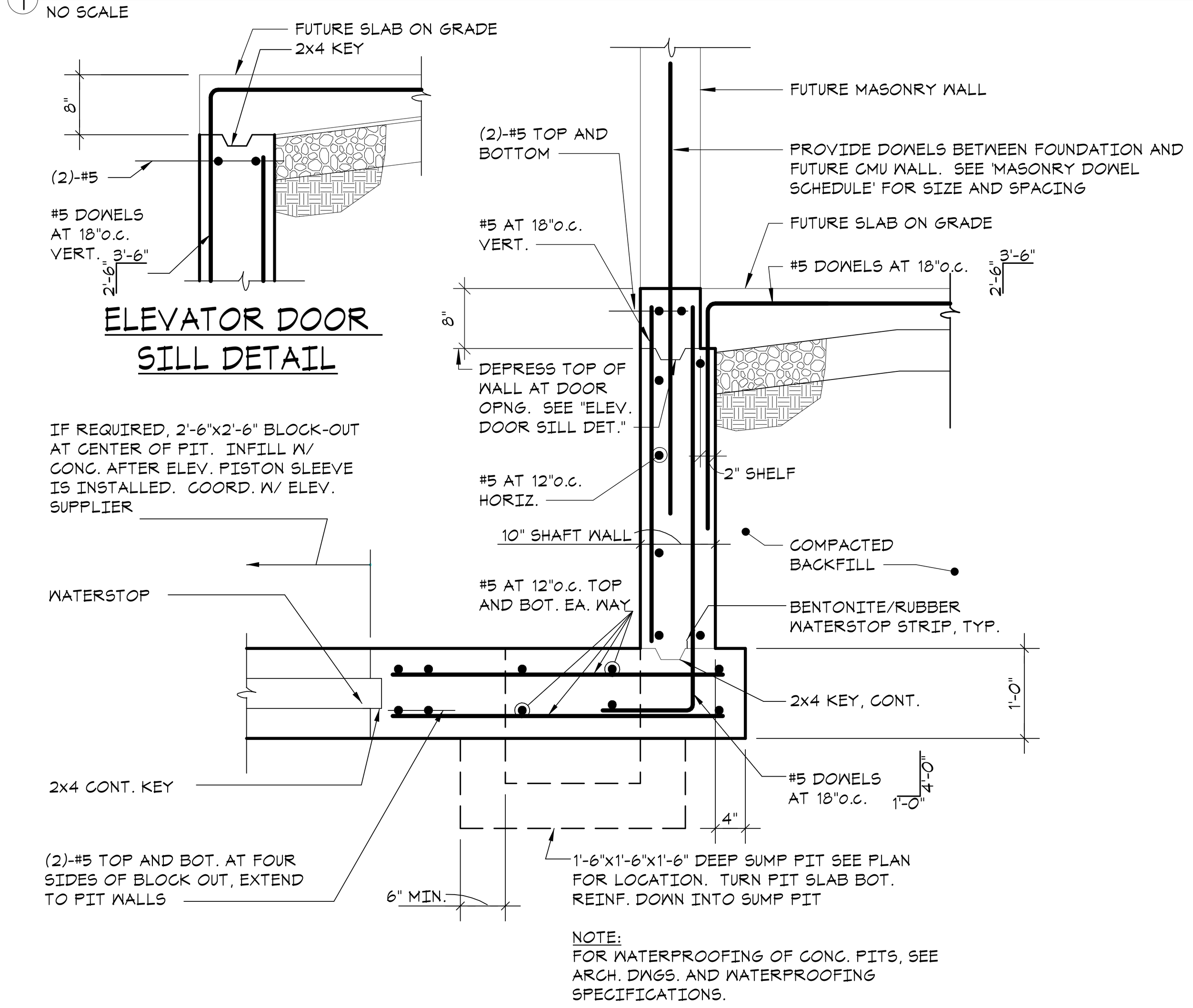
S-101



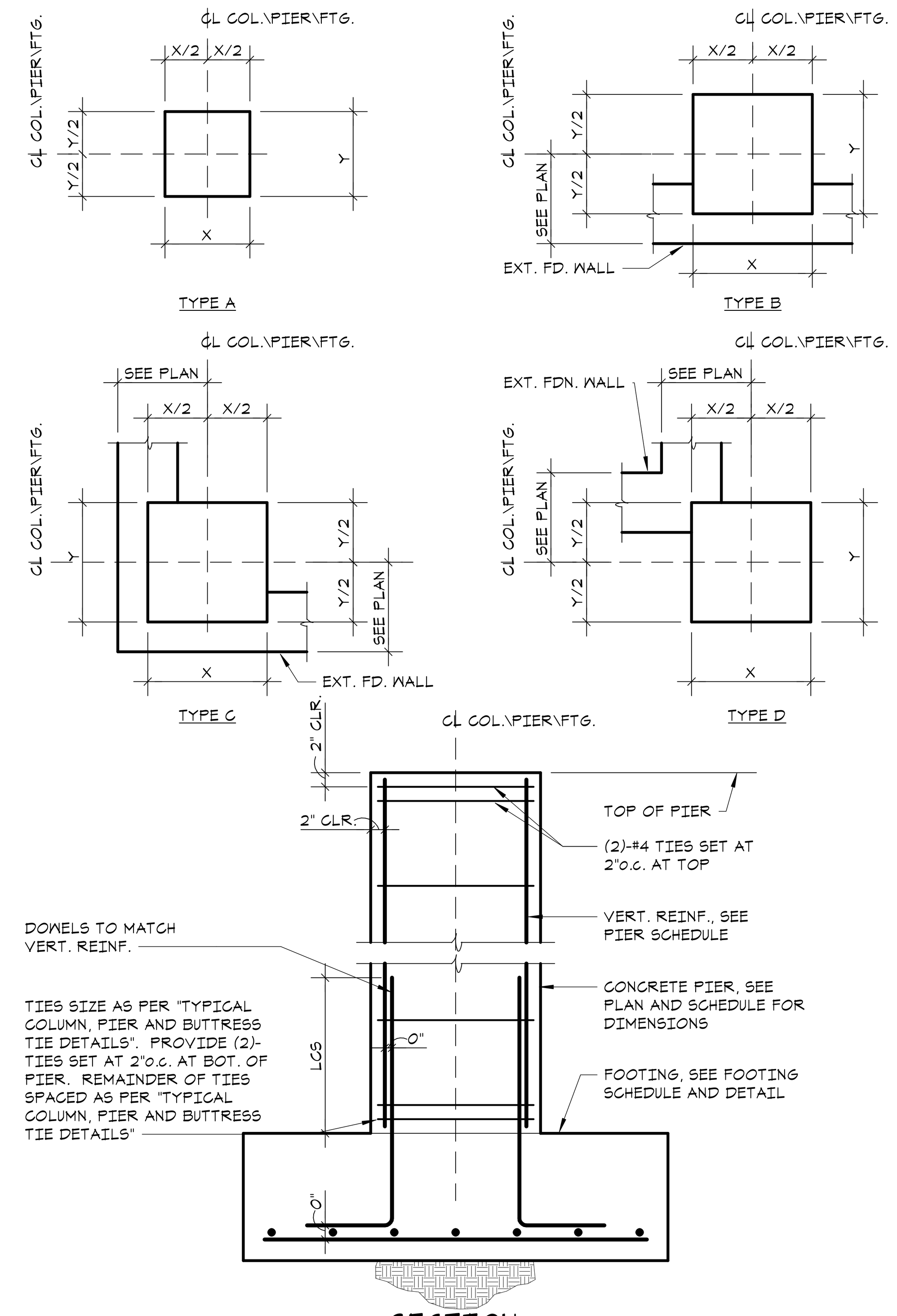
NOTES:

- SEE APPROPRIATE SECTION FOR REMAINDER OF FOUNDATION INFORMATION NOT REPEATED HERE.
- SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT OF EXTERIOR DOORS.

1 TYPICAL FOUNDATION WALL DETAIL AT EXTERIOR DOORS
NO SCALE



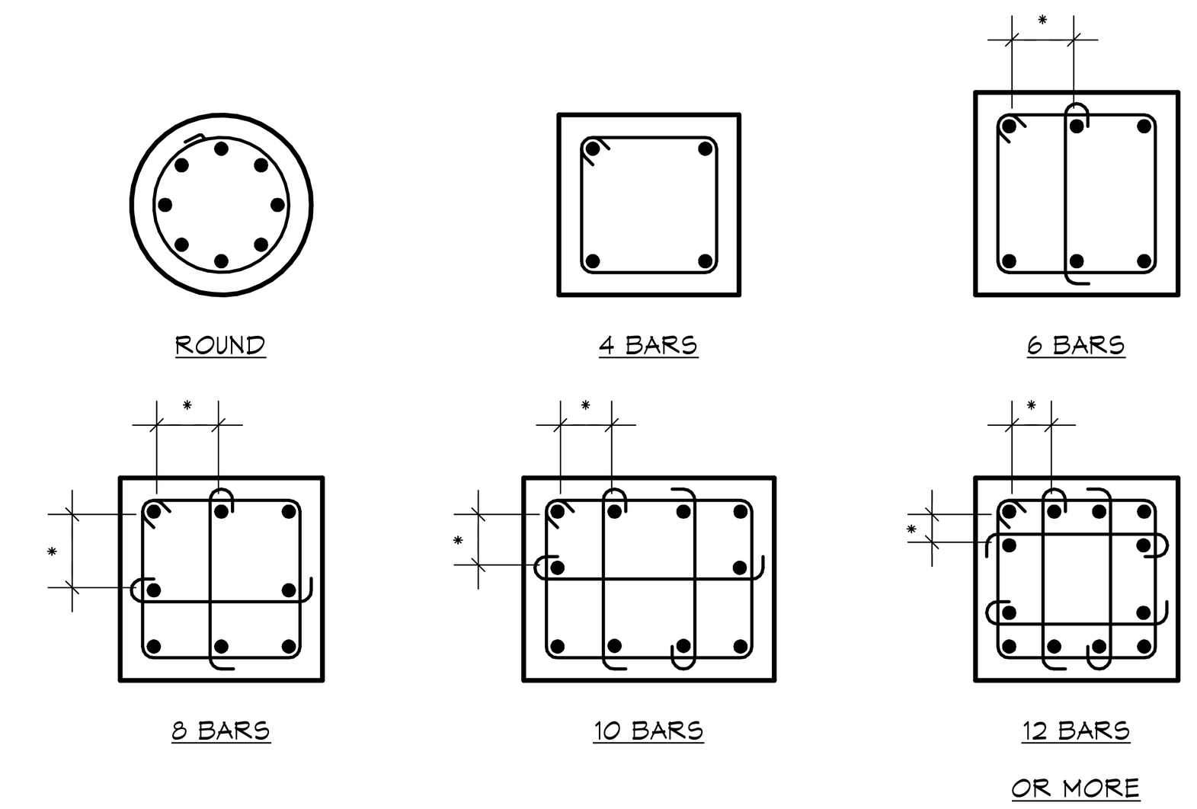
2 TYPICAL ELEVATOR PIT DETAIL
NO SCALE



PIER SCHEDULE

MARK	TYPE	"X" E-W DIR.	"Y" N-S DIR.	VERTICAL REINF.	REMARKS
P-1	VARIES	22"	1'-10"	(6)-#6	
P-2	VARIES	24"	2'-0"	(8)-#6	
P-3	VARIES	34"	2'-0"	(10)-#6	
P-4	VARIES	18"	1'-6"	(4)-#6	
P-5	A	40"	3'-4"	(12)-#8	
P-6	B	24"	1'-7"	(8)-#6	
P-7	C	22"	1'-8"	(8)-#6	

3 TYPICAL PIER SCHEDULE AND PIER DETAILS
NO SCALE



TYPICAL TIE ARRANGEMENT
"*" INDICATES WHEN 6" OR LESS OMIT INTERIOR TIE.

MAXIMUM SPACING OF TIES

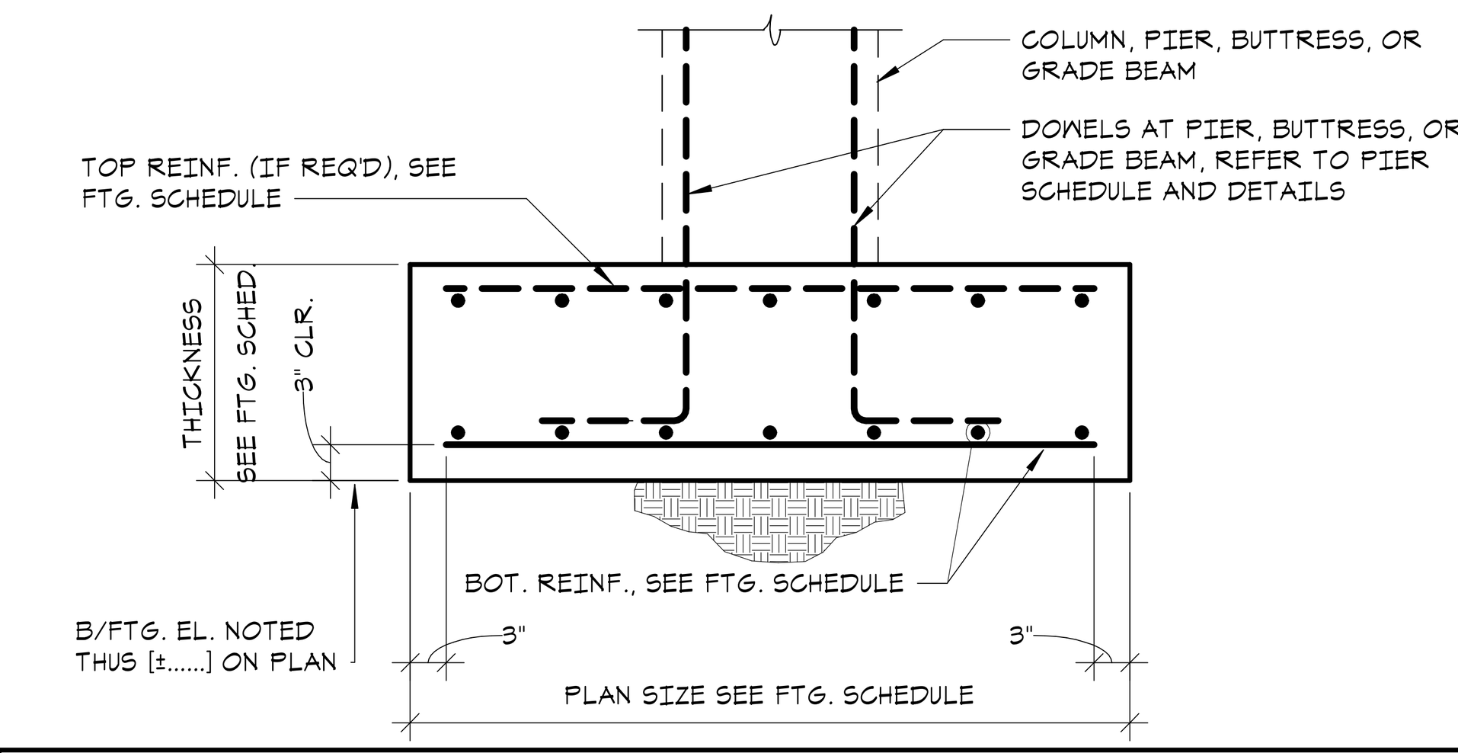
VERTICAL BAR SIZE	SIZE AND SPACING OF TIES		
	#3	#4	#5
#5	10"	-	-
#6	12"	-	-
#7	14"	-	-
#8	16"	16"	-
#9	18"	18"	-
#10	18"	20"	-
#11	†	22"	22"
#14	†	24"	27"
#18	†	24"	30"

"*" INDICATES MAX. SPACING NOT TO EXCEED LEAST DIMENSION OF COMPRESSION MEMBER.

† INDICATES #3 TIES NOT PERMITTED.

NOTES:
1. THE VERTICAL BARS SHALL BE SPACED AROUND THE PERIMETER SO AS TO ACHIEVE APPROXIMATELY EQUAL SPACING.
2. SEE ARCHITECTURAL DRAWINGS FOR LOCATION AND EXTENT OF EXTERIOR DOORS.
3. TIES SHALL BE ARRANGED SUCH THAT EVERY CORNER AND ALTERNATE VERTICAL BAR SHALL HAVE LATERAL SUPPORT PROVIDED BY THE CORNER OF A TIE WITH AN INCLUDED ANGLE OF NOT MORE THAN 135 DEGREES AND NO BAR SHALL BE FURTHER THAN 6" CLEAR ON EACH SIDE ALONG THE TIE FROM SUCH A LATERALLY SUPPORTED BAR.
4. TIES SHALL BE LOCATED VERTICALLY NOT MORE THAN ONE-HALF A TIE SPACING ABOVE THE TOP OF FOOTING OR SLAB IN ANY STORY, AND SHALL BE SPACED AS PROVIDED HEREIN TO NOT MORE THAN ONE-HALF A TIE SPACING BELOW THE LOWEST HORIZONTAL REINFORCEMENT IN SLAB OR DROP PANEL ABOVE.
5. WHERE BEAMS OR BRACKETS FRAME FROM FOUR DIRECTIONS INTO A COLUMN, PIER OR BUTRESS, TERMINATION OF TIES NOT MORE THAN 3" BELOW REINFORCEMENT IN SHALLOWEST OF SUCH BEAMS OR BRACKETS SHALL NOT BE PERMITTED.
6. SEE THE GENERAL NOTES ON DRAWING S1 FOR THE MINIMUM CONCRETE COVER REQUIREMENTS FOR REINFORCEMENT.
7. WHERE PIERS ARE ADJACENT TO FOUNDATION WALLS, PIERS ARE TO BE POURED MONOLITHICALLY WITH WALLS, PIER REINFORCING SHALL EXTEND WITHIN 2" OF OPPOSITE FACE WALL.

4 TYPICAL COLUMN, PIER AND BUTTRESS TIE DETAILS
NO SCALE



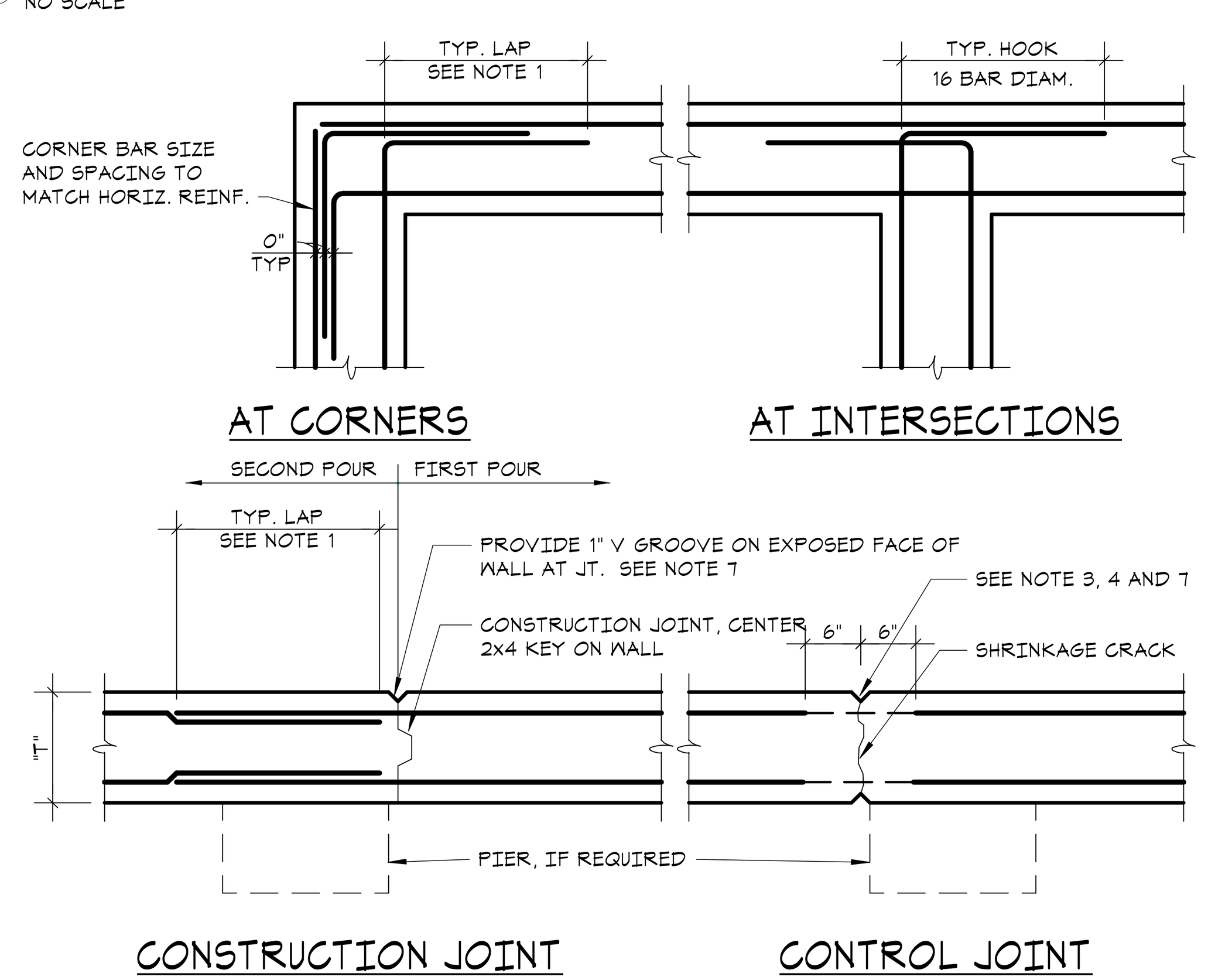
FOOTING SCHEDULE
(ALLOWABLE BEARING PRESSURE: 4000 PSF)

MARK	PLAN SIZE		THICKNESS	BOTTOM REINF.		REMARKS
	N-S	E-W		N-S	E-W	
F-3.0	3'-0"	3'-0"	1'-4"	(4)-#5	(4)-#5	
F-3.5	3'-6"	3'-6"	1'-4"	(4)-#5	(4)-#5	
F-4.0	4'-0"	4'-0"	1'-4"	(5)-#5	(5)-#5	
F-4.5	4'-6"	4'-6"	1'-4"	(6)-#5	(6)-#5	
F-5.0	5'-0"	5'-0"	1'-6"	(7)-#5	(7)-#5	
F-5.5	5'-6"	5'-6"	1'-6"	(7)-#5	(7)-#5	
F-6.0	6'-0"	6'-0"	1'-6"	(8)-#5	(8)-#5	
F-6.5	6'-6"	6'-6"	1'-6"	(9)-#5	(9)-#5	
F-7.0	7'-0"	7'-0"	2'-0"	(7)-#7	(7)-#7	
F-7.5	7'-6"	7'-6"	2'-0"	(7)-#7	(7)-#7	
F-8.0	8'-0"	8'-0"	2'-0"	(7)-#7	(7)-#7	
F-8.5	8'-6"	8'-6"	2'-0"	(8)-#7	(8)-#7	
F-9.0	9'-0"	9'-0"	2'-6"	(10)-#7	(10)-#7	
F-9.5	9'-6"	9'-6"	2'-6"	(11)-#7	(11)-#7	
F-10.0	10'-0"	10'-0"	2'-6"	(11)-#7	(11)-#7	
F-11.0	11'-0"	11'-0"	2'-6"	(12)-#7	(12)-#7	
F-12.0	12'-0"	12'-0"	3'-0"	(16)-#7	(16)-#7	
F-13.0	13'-0"	13'-0"	3'-0"	(17)-#7	(17)-#7	
F-14.0	14'-0"	14'-0"	3'-0"	(12)-#9	(12)-#9	

NOTES:

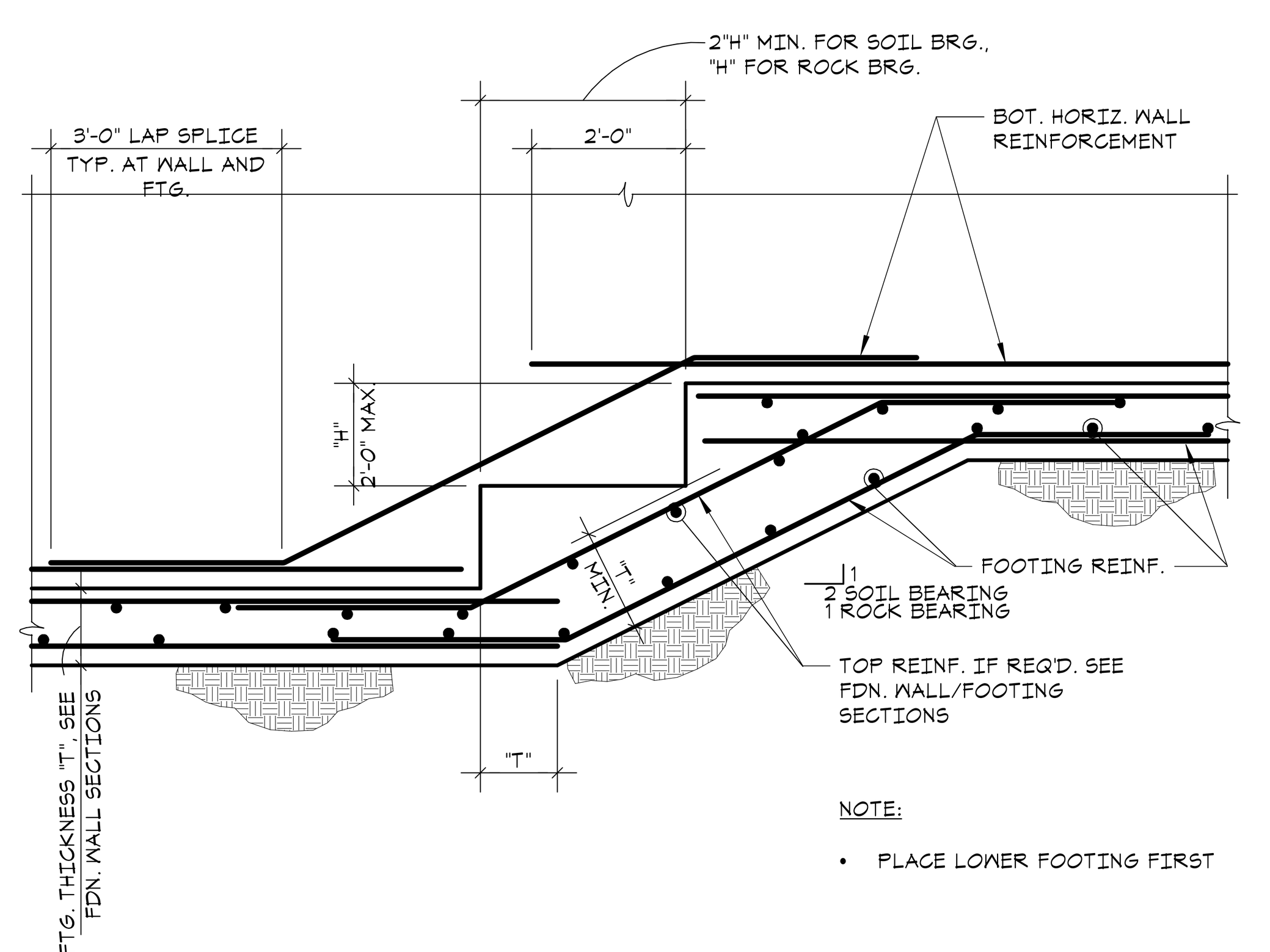
1. REFER TO FOOTING DETAILS AND FOUNDATION NOTES IN USING THIS SCHEDULE.
2. "*" PROVIDE TOP REINFORCING IN ADDITION TO BOTTOM REINFORCING. TOP REINFORCING SHALL BE PLACED 2" CLEAR FROM TOP OF FOOTING AND SHALL BE EQUAL TO SIZE AND SPACING OF BOTTOM REINFORCING.
3. SHEAR WALL FOOTINGS AND COMBINED FOOTINGS ARE DESIGNED AS F-1##.
4. CENTERLINE OF SHEAR WALL FOOTINGS SHALL BE LOCATED ON CENTERLINE OF SHEAR WALL AND 1'-0" IN FROM END OF SHEAR WALL. PROVIDE DOWELS FROM FOOTINGS INTO SHEAR WALL CMU OR CONCRETE FOUNDATION WALLS AS PER NOTE **"A" ON DETAIL 12/S202**.
5. WHERE SHEAR WALL FOOTINGS OVERLAP WITH COLUMN FOOTINGS, COMBINE THE TWO FOOTINGS INCLUDING THE FULL AMOUNT OF REINFORCEMENT. ALIGN TOPS OF FOTTINGS.

5 4000 PSF FOOTING SCHEDULE AND DETAIL
NO SCALE

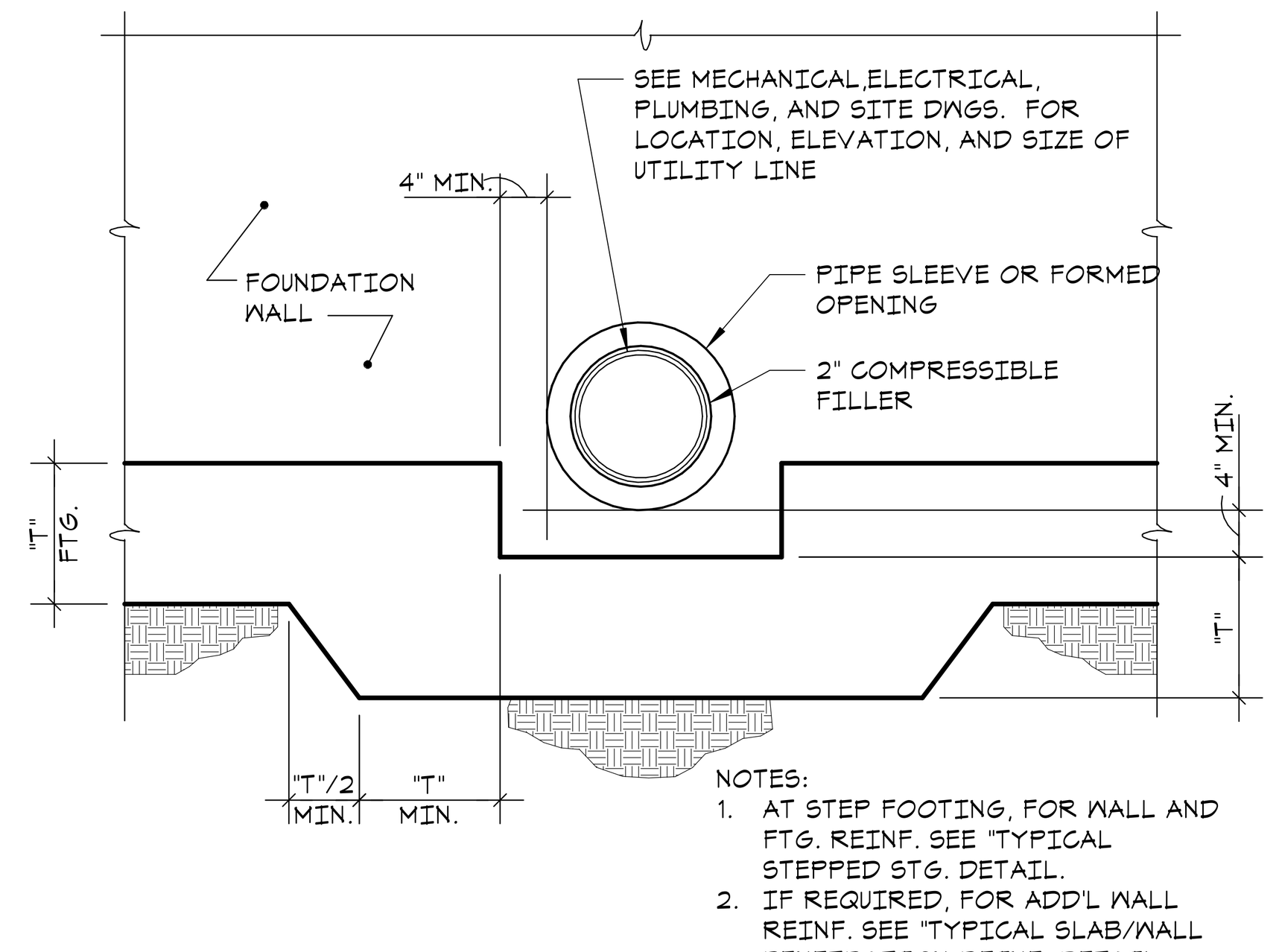


NOTES:
1. ALL BAR SPLICES SHALL BE CLASS "B" LAP SPLICES WITH 56 BAR DIAMETERS MINIMUM.
2. PROVIDE CONSTRUCTION JOINT AT END OF EACH DAY'S POUR. WALLS SHALL NOT BE POURED IN CONTINUOUS LENGTHS EXCEEDING 50 FEET WITHOUT PROVIDING CONSTRUCTION JOINTS OR CONTROL JOINS.
3. PROVIDE CONSTRUCTION/CONTROL JOINTS AT FACE OF PIERS UNLESS OTHERWISE NOTED ON PLAN.
4. AT CONTROL JOINT, PROVIDE BEVEL JOINT "I"/10 INTO WALL SURFACE BOTH SIDES. STOP ALTERNATING HORIZONTAL REINFORCING BARS 6" SHORT OF CONTROL JOINT.
5. SEE APPROPRIATE SECTION FOR WALL REINFORCEMENT.
6. VERTICAL REINFORCING AND/OR SUPPORT BARS NOT SHOWN FOR CLARITY.
7. PROVIDE CAULKING AT JOINT IF REQUIRED. SEE SPECIFICATIONS.

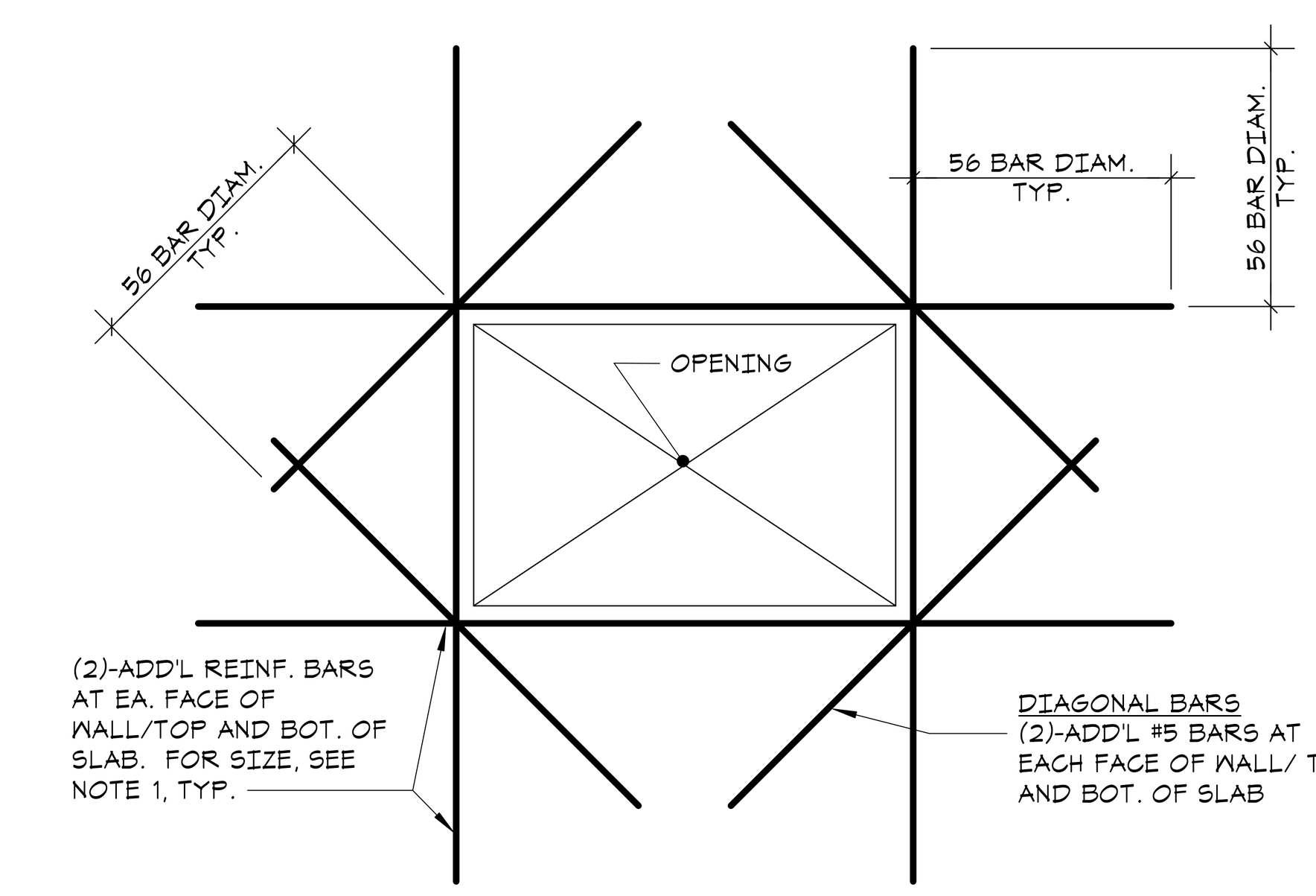
6 TYPICAL CONCRETE WALL CONSTRUCTION DETAIL
NO SCALE



7 TYPICAL STEPPED FOOTING DETAIL
NO SCALE



8 TYPICAL STEP FOOTING DETAIL AT WALL PIPE PENETRATION
NO SCALE



NOTES:

1. AT WALLS, ADDITIONAL REINFORCING SIZE SHALL MATCH HORIZONTAL AND VERTICAL REINFORCING. AT SLABS USE #5 BARS.
2. THIS DETAIL APPLIES AT ALL OPENINGS 12"x12" AND LARGER. DETAIL IS SIMILAR AT ALL CIRCULAR OPENINGS 12" AND LARGER.
3. COORDINATE ALL OPENING SIZES AND LOCATIONS WITH ARCHITECTURAL AND MECHANICAL DRAWINGS.

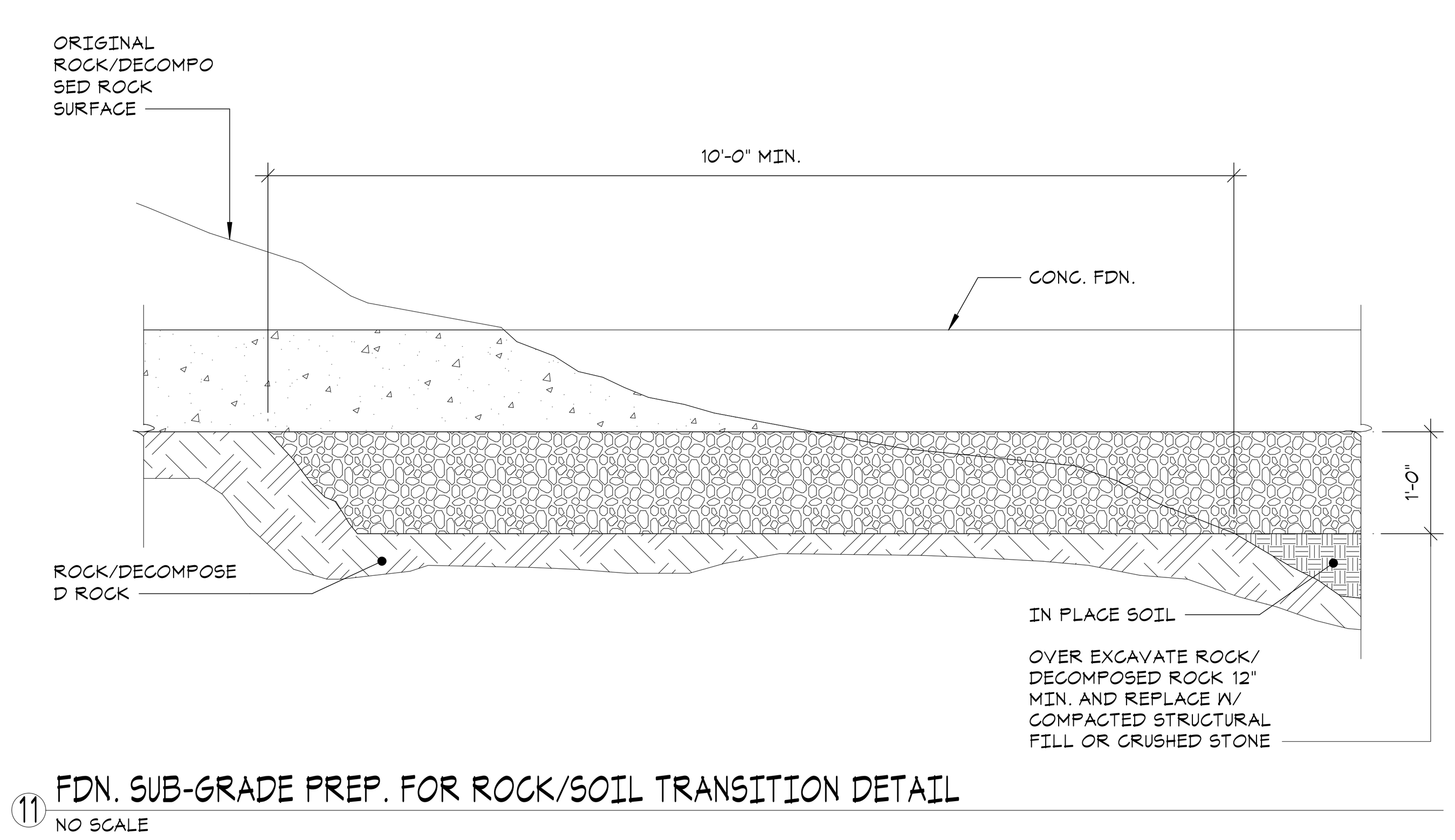
9 TYPICAL SLAB/WALL PENETRATION REINFORCING DETAIL
NO SCALE

SCHEDULE OF EMBEDMENT AND SPLICE LENGTH

BAR SIZE	COMPRESSION		TENSION (f'c = 3000 psi)								TENSION (f'c = 4000 psi)							
	EMBED. LENGTH	LAP SPLICE LENGTH	EMBEDMENT LENGTH				LAP SPLICE LENGTH				EMBEDMENT LENGTH				LAP SPLICE LENGTH			
			TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS		TOP BARS		OTHER BARS	
			CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1		CATEGORY SEE NOTE 1	
			I	II	I	II	I	II	I	II	I	II	I	II	I	II	I	II
#3	9"	12"	22"	33"	17"	25"	29"	43"	23"	33"	19"	28"	15"	22"	25"	37"	20"	29"
#4	11"	15"	29"	43"	22"	33"	38"	56"	29"	43"	25"	37"	19"	29"	33"	49"	25"	38"
#5	14"	19"	36"	54"	28"	42"	47"	71"	37"	55"	31"	47"	24"	36"	41"	62"	32"	47"
#6	17"	23"	43"	65"	33"	50"	56"	85"	43"	65"	37"	56"	29"	43"	49"	73"	38"	56"
#7	20"	27"	63"	94"	48"	72"	82"	123"	63"	94"	54"	81"	42"	63"	71"	106"	55"	82"
#8	22"	30"	72"	107"	55"	83"	94"	140"	72"	108"	62"	93"	48"	72"	81"	121"	63"	94"
#9	25"	34"	81"	121"	62"	93"	106"	158"	81"	121"	70"	105"	54"	81"	91"	137"	71"	106"
#10	28"	39"	91"	136"	70"	105"	119"	177"	91"	137"	79"	118"	61"	91"	103"	154"	80"	119"
#11	31"	43"	101"	151"	78"	116"	132"	197"	102"	151"	87"	131"	67"	101"	114"	171"	88"	132"
#14	38"	NP	121"	181"	93"	140"	NP	NP	NP	NP	105"	157"	81"	121"	NP	NP	NP	NP
#18	50"	NP	161"	242"	124"	186"	NP	NP	NP	NP	140"	209"	108"	161"	NP	NP	NP	NP
SEE NOTE 2	LCE	LCS	LTE				LTS				LTE				LTS			

NOTES:
1. THIS SCHEDULE INCLUDES EMBEDMENT AND SPLICE LENGTHS AS PER ACI 318-02 AND SATISFY THE PROJECT REQUIREMENTS AND THE FOLLOWING CRITERIA. SPECIFIED YIELD STRENGTH OF REINFORCEMENT, f_y = 60,000 psi NORMAL WEIGHT CONCRETE, w = 150 pcf. TENSION EMBEDMENT AND LAP SPLICE LENGTHS ARE DIVIDED INTO TWO CATEGORIES WHICH SHALL BE APPLIED AS FOLLOWS: CATEGORY 1: CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED NOT LESS THAN THE BAR DIAMETER, CLEAR COVER NOT LESS THAN THE BAR DIAMETER, AND STIRRUPS OR TIES THROUGHOUT THE DEVELOPMENT NOT LESS THAN THE CODE MINIMUM; OR, CLEAR SPACING OF BARS BEING DEVELOPED OR SPLICED, NOT LESS THAN 2x THE BAR DIAMETER AND CLEAR COVER NOT LESS THAN THE BAR DIAMETER. CATEGORY 2: ALL OTHER CASES.
2. NOTATION USED IN SECTION AND DETAILS FOR VARIOUS EMBEDMENT AND SPLICE LENGTH REREQUIREMENTS.
3. USE COMPRESSION LAP SPLICE LENGTH (LCS) AT ALL COMPRESSION MEMBER SPLICE LOCATIONS NOT SPECIFICALLY DETAILED AND UNLESS INDICATED OTHERWISE ON PLANS OR DETAILS. USE TENSION SPLICE FOR ALL OTHER SPLICES (UNLESS OTHERWISE NOTED ON DWG'S).
4. THE STANDARD COMPRESSION LAP SPLICE IS (0.0005 x REINFORCED YIELD STRENGTH x THE BAR DIAMETER). THE STANDARD TENSION LAP SPLICE CLASS B IS 1.3 x THE DEVELOPMENT LENGTH. THE CONTRACTOR MAY SUBMIT LESSER SPLICE LENGTHS FOR REVIEW AND APPROVAL AT THE SAME TIME PROVIDING THE FOLLOWING INFORMATION.
   - A DETAILS PREPARED AND SUBMITTED BY THE CONTRACTOR INDICATING LOCATION AND PROPOSED LAYOUT OF REBARS AND LENGTH OF SPLICES.
   - B WHERE THE SIZE AND NUMBER OF TIES OR SPIRALS PERMITS THE REDUCTION OF LAP LENGTH, THOSE BARS SHALL BE INDICATED ON THE DETAILS.
   - C WHERE COMPUTED STRESS VALUES PERMIT THE REDUCTION OF LAP LENGTH, COMPUTATIONS SHALL BE SUBMITTED FOR REVIEW
   - D THE APPLICABLE SECTION OF THE ACI 318-95 CODE PERMITTING THE LESSER SPLICE LENGTH SHALL BE INDICATED ON THE SUBMITTED MATERIAL.
5. TOP BARS ARE HORIZONTAL BARS PLACED SO THAT MORE THAN 12" OF CONCRETE IS CAST ON THE MEMBER BELOW THE BAR.
6. WHERE BARS OF DIFFERENT SIZE ARE TO BE SPLICED, THE SPLICE LENGTH FOR ALL BARS SHALL BE THAT REQUIRED FOR THE LARGEST.
7. "NP" INDICATES NOT PERMITTED. BARS LARGER THAN NO. 11 SHALL NOT BE SPLICED EXCEPT AS FOLLOWS: TO #11 BARS IN COMPRESSION. USE LARGER OF THE DEVELOPMENT LENGTH OF THE LARGER BAR OR THE SPLICE LENGTH OF THE SMALLER BAR (51" FOR #14 AND 68" FOR #18).

10 SCHEDULE OF EMBEDMENT AND SPLICE LENGTH
NO SCALE



11 FDN. SUB-GRADE PREP. FOR ROCK/SOIL TRANSITION DETAIL
NO SCALE

HARRISON RECREATION & COMMUNITY CENTER

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CONSTRUCTION DOCUMENTS

Key Plan

Professional Seal

No.	Date	Issue
5	07/12/2023	ISSUE FOR BID - PHASE 1
4	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	2023-03-31	PHASE 1 - 50% CD'S
1	2020-06-01	DESIGN DEVELOPMENT

Sheet Title

FOUNDATION SCHEDULES AND TYPICAL DETAILS

Job No.	Date
20029.00	2020-06-01
Scale	Drawn / Checked
AS NOTED	JM / EM

Sheet Number

S-201

DOWEL SCHEDULE

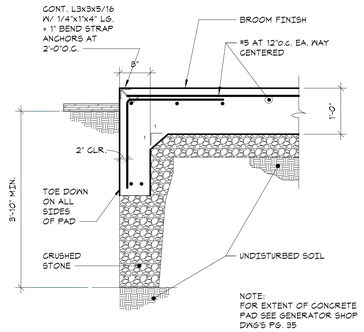
WALL DESCRIPTION	VERTICAL REINFORCEMENT
FUTURE 8" CMU SHEARWALLS, SHAFT WALLS, AND EXTERIOR WALLS	(A) #5 AT 32"O.C. (B) (3)-#5
FUTURE 8" CMU PARTITIONS	(A) #4 AT 48"O.C. (B) (1)-#4

NOTES:
1. PROVIDE REINFORCING DOWELS BETWEEN FOUNDATION AND FUTURE MASONRY WALL EQUAL TO SIZE AND SPACING OF MASONRY VERT. WALL REINFORCING (MAX. SPACING = 4'-0"O.C.). REINFORCING DOWELS SHALL EXTEND UP FROM FOUNDATION WALLS, WITH LENGTHS SUFFICIENT TO PROVIDE FOR LAP LENGTHS OF 48 BAR DIAMETERS.

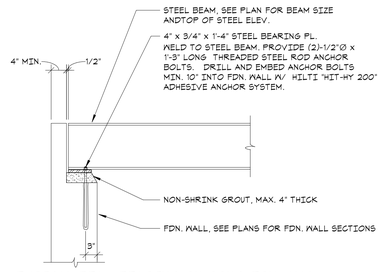
KEYNOTES

(A)	DOWELS FOR TYPICAL VERTICAL REINFORCING
(B)	DOWELS FOR VERT. FULL HEIGHT REINF. AT WALL ENDS, CORNERS, AND EA. SIDE OF CJS

1 MASONRY DOWEL SCHEDULE
NO SCALE



2 EQUIPMENT PAD DETAIL
NO SCALE



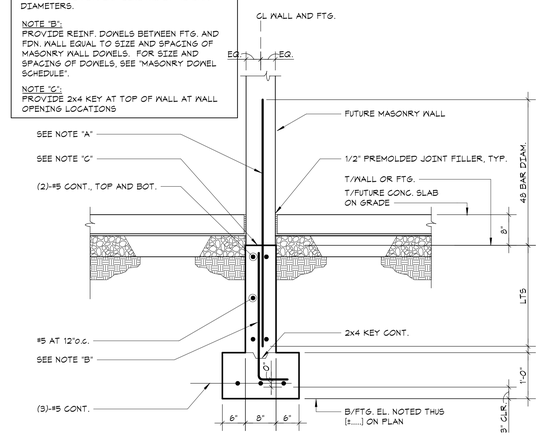
3 TYPICAL BEAM BEARING ON CONC. FDN WALL
NO SCALE

NOTE "A":
PROVIDE REINFORCING DOWELS BETWEEN FOUNDATION AND FUTURE MASONRY WALL EQUAL TO SIZE AND SPACING OF MASONRY VERT. WALL REINFORCING. FOR SIZE AND SPACING OF DOWELS, SEE "MASONRY DOWEL SCHEDULE". REINFORCING DOWELS SHALL EXTEND UP FROM FOUNDATION WALLS, WITH LENGTHS SUFFICIENT TO PROVIDE FOR LAP LENGTHS OF 48 BAR DIAMETERS.

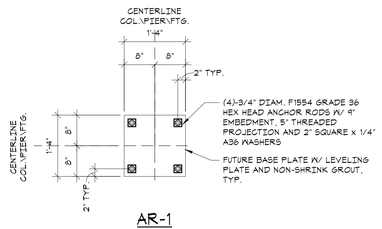
NOTE "B":
PROVIDE REINF. DOWELS BETWEEN FTG. AND FDN. WALL EQUAL TO SIZE AND SPACING OF MASONRY WALL DOWELS. FOR SIZE AND SPACING OF DOWELS, SEE "MASONRY DOWEL SCHEDULE".

NOTE "C":
PROVIDE 2x4 KEY AT TOP OF WALL AT WALL OPENING LOCATIONS

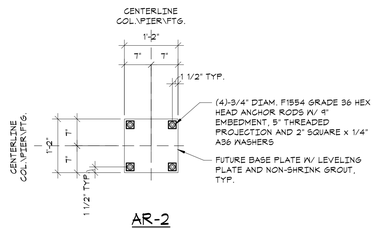
NOTES:
1. PROVIDE 90° BARS AT ALL CORNERS TO LAP MAIN REINF. 2'-6" MIN.



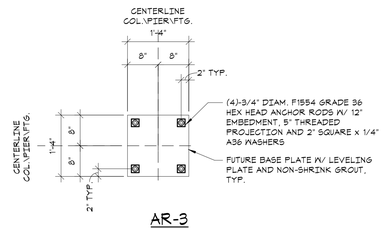
4 TYPICAL FOUNDATION DETAIL FOR FUTURE MASONRY WALLS
NO SCALE



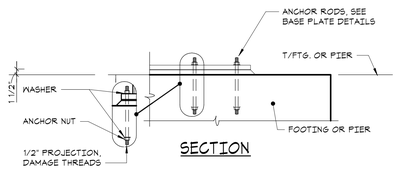
AR-1
BASE PLATE DETAIL



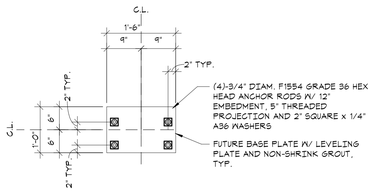
AR-2
BASE PLATE DETAIL



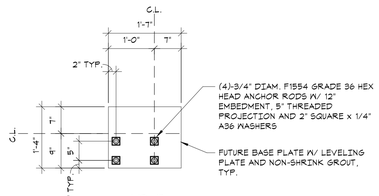
AR-3
BASE PLATE DETAIL



SECTION



AR-4
BASE PLATE DETAIL



AR-5
BASE PLATE DETAIL

5 TYPICAL BASE PLATE ANCHOR DETAILS
NO SCALE

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CONSTRUCTION DOCUMENTS

Key Plan

Professional Seal

No.	Date	Issue
5	07/12/2023	ISSUE FOR BID - PHASE 1
4	06/09/2023	ISSUE FOR PERMIT - PHASE 1

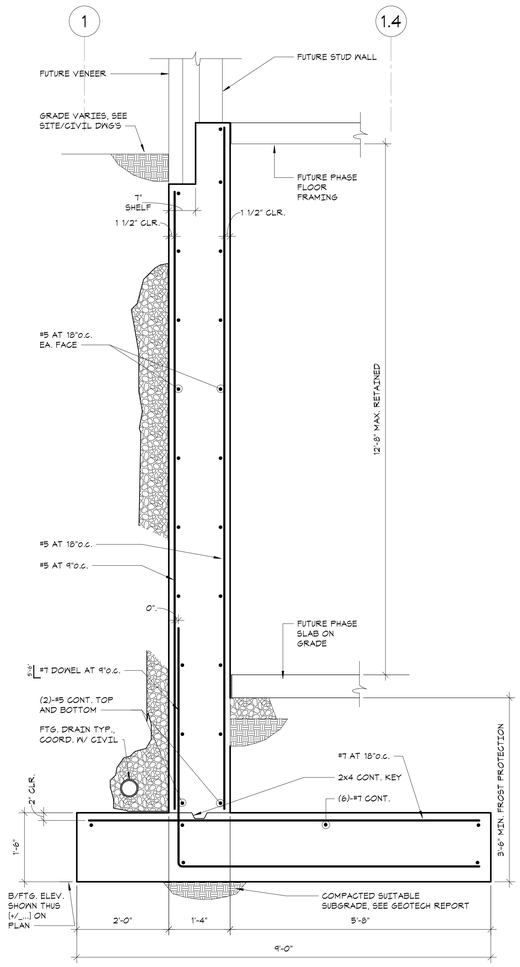
Sheet Title

FOUNDATION SCHEDULES AND TYPICAL DETAILS

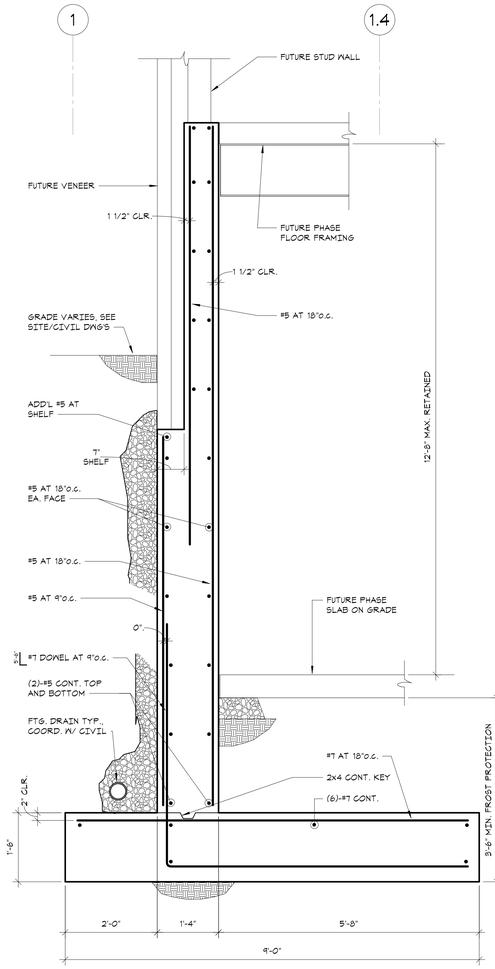
Job No.	Date
20029.00	04/20/23
Scale: AS NOTED	Drawn / Checked: Author Checker

Sheet Number

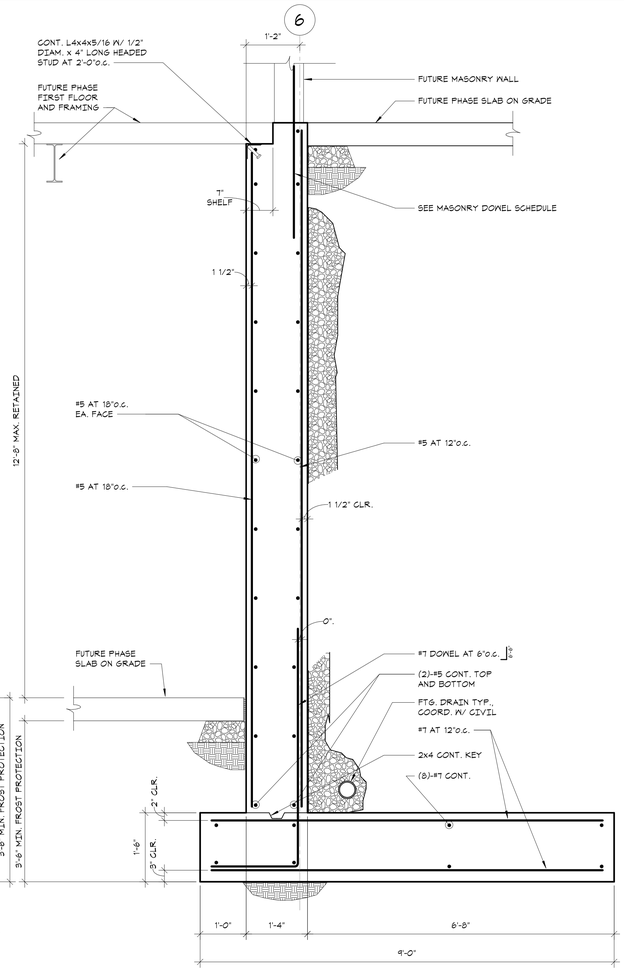
S-202



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



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



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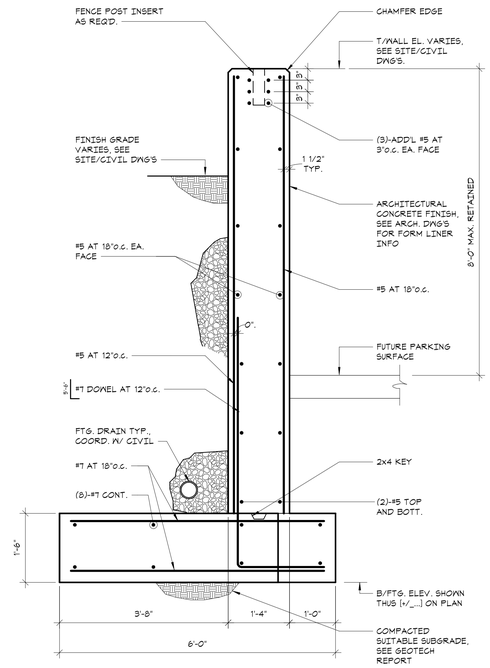
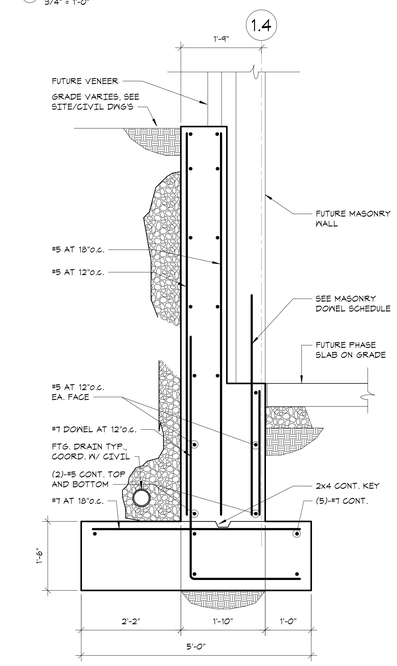
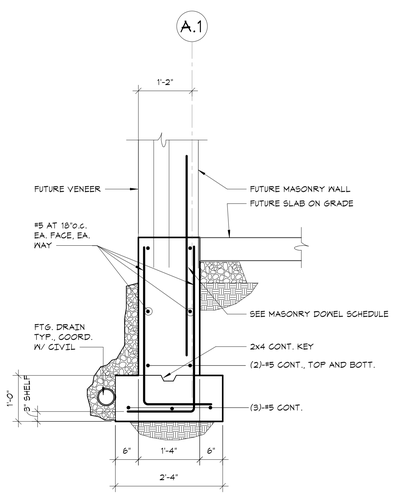
3/4" = 1'-0"



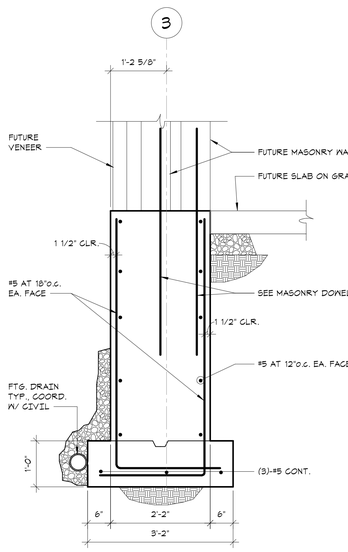
4 SECTION
3/4" = 1'-0"



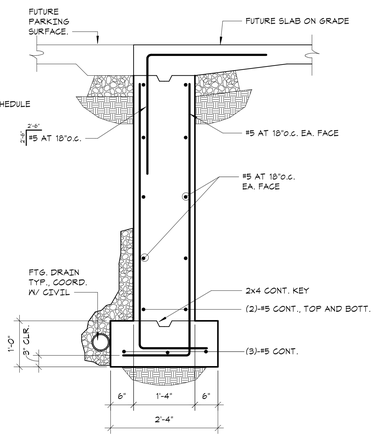
5 SECTION
3/4" = 1'-0"



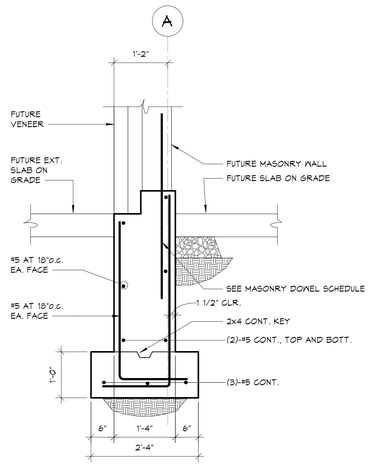
6 SECTION
3/4" = 1'-0"



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



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



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

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CONSTRUCTION DOCUMENTS

Key Plan

Professional Seal

No.	Date	Issue
5	07/12/2023	ISSUE FOR BID - PHASE 1
4	06/09/2023	ISSUE FOR PERMIT - PHASE 1
2	2023-03-31	PHASE 1 - 50% CD'S

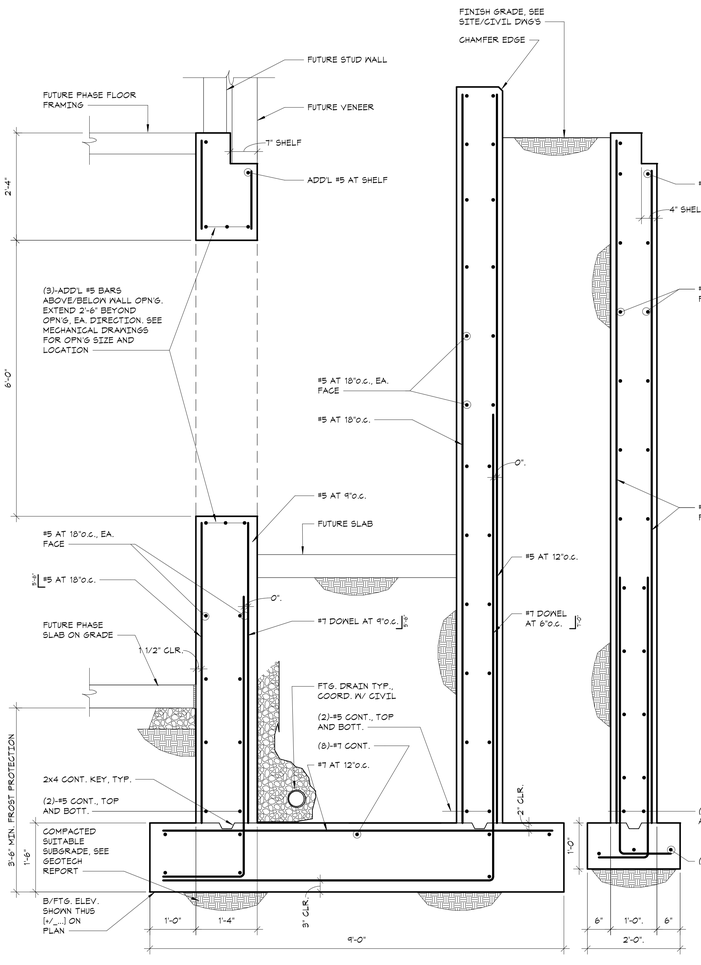
Sheet Title

FOUNDATION SECTIONS

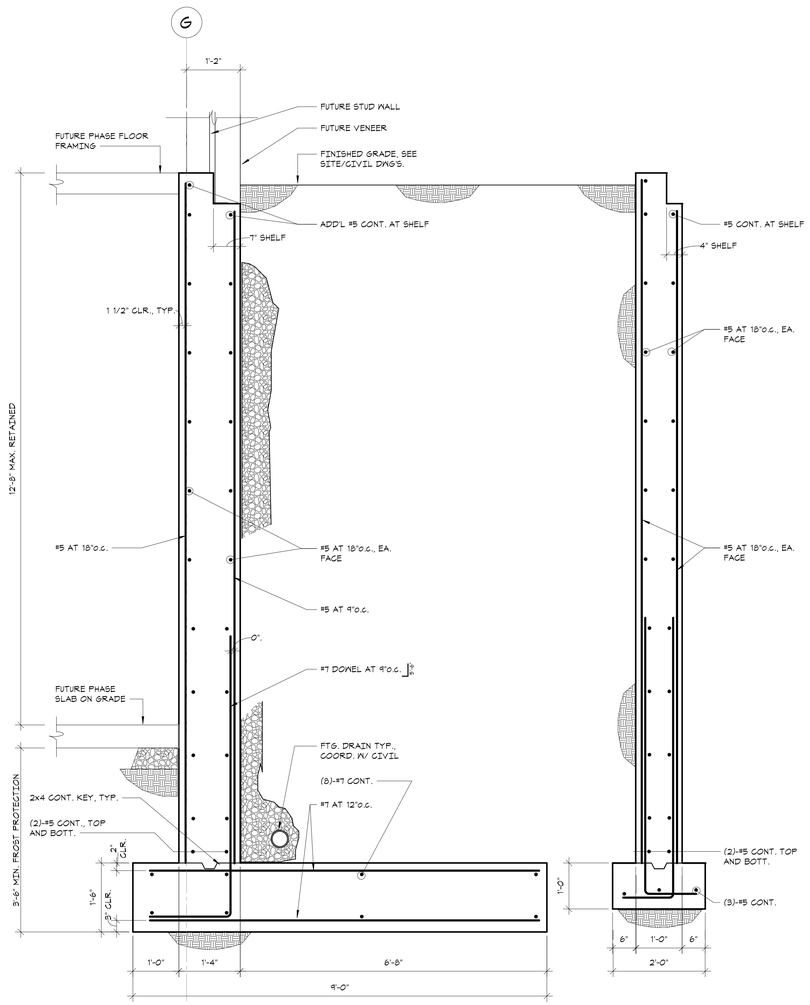
Job No.	Date
20029.00	2020-06-01
Scale	Drawn / Checked
AS NOTED	JM / EM

Sheet Number

S-210



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



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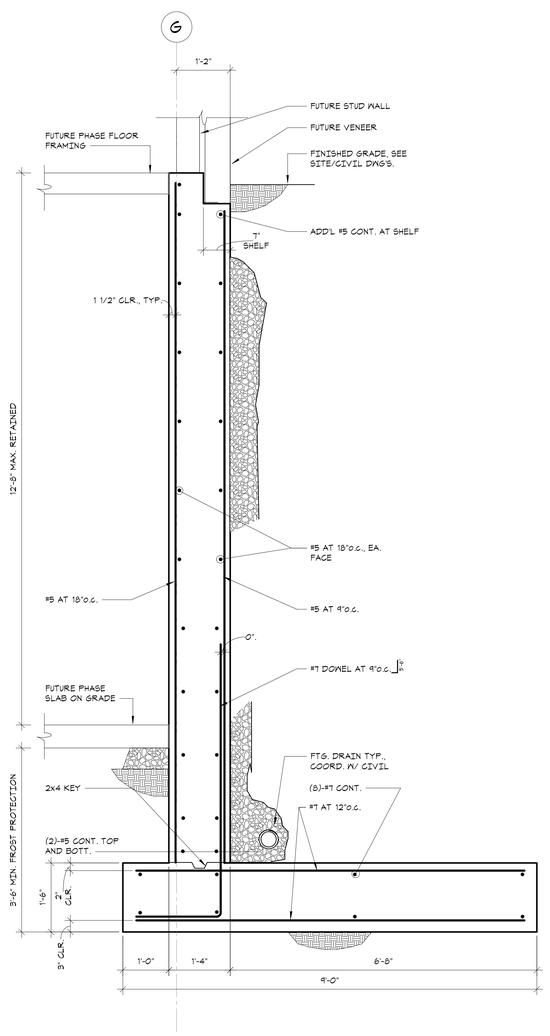

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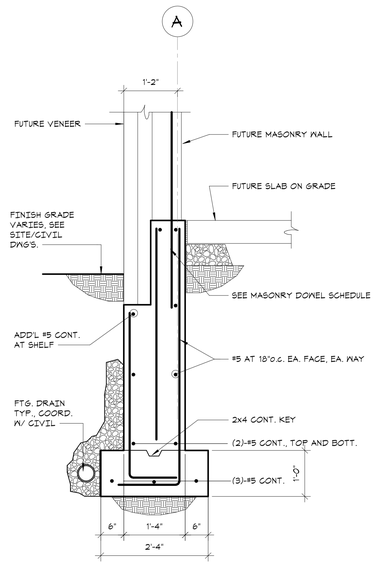

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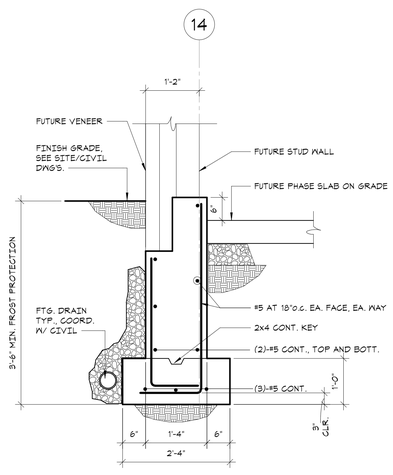
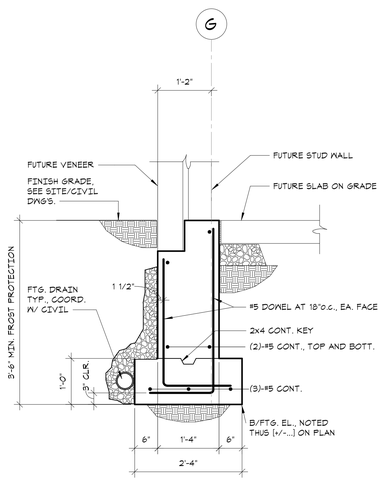


5 SECTION
3/4" = 1'-0"



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

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

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CONSTRUCTION DOCUMENTS

Key Plan

Professional Seal

No.	Date	Issue
5	07/12/2023	ISSUE FOR BID - PHASE 1
4	06/09/2023	ISSUE FOR PERMIT - PHASE 1

Sheet Title

FOUNDATION SECTIONS

Job No.	Date
20029.00	04/26/23
Scale: AS NOTED	Drawn / Checked: JM / CGB

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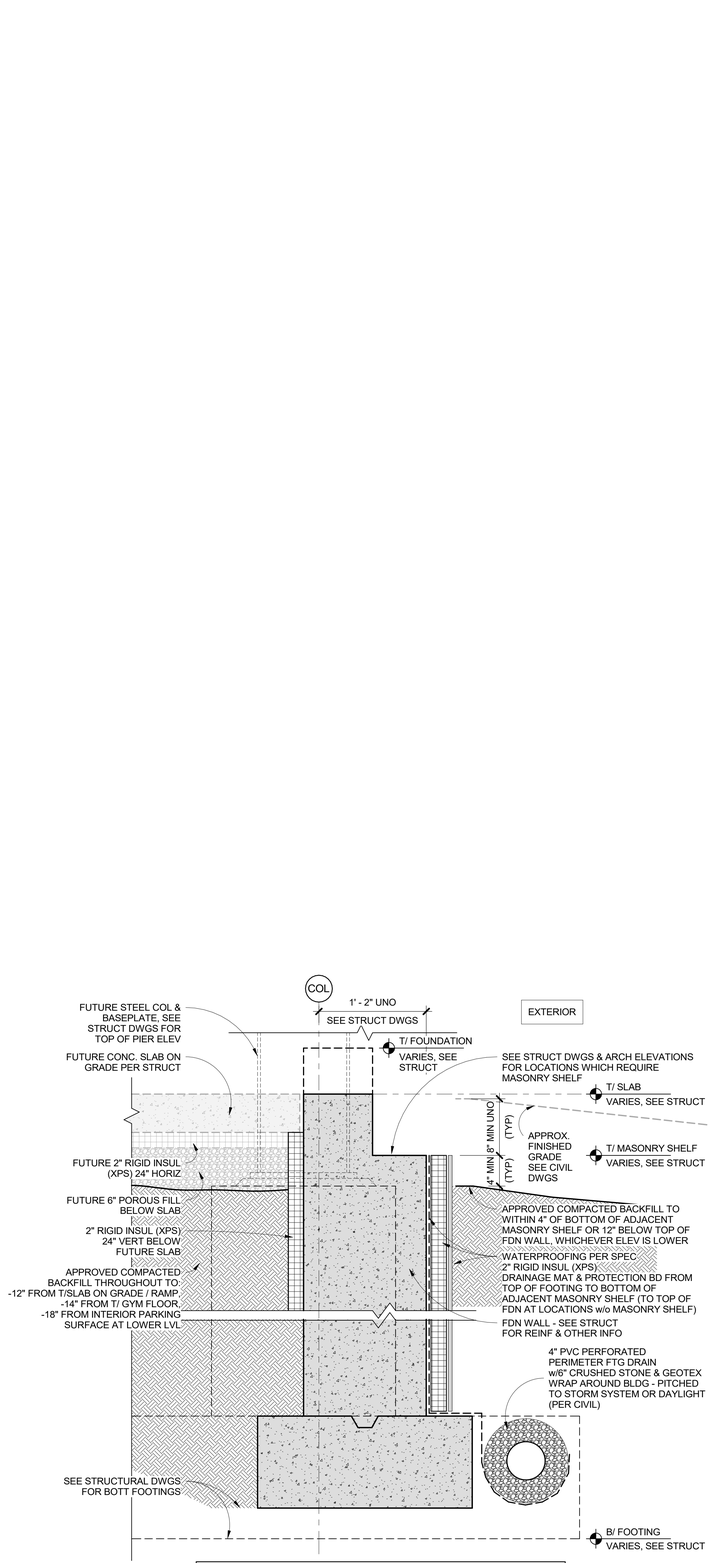
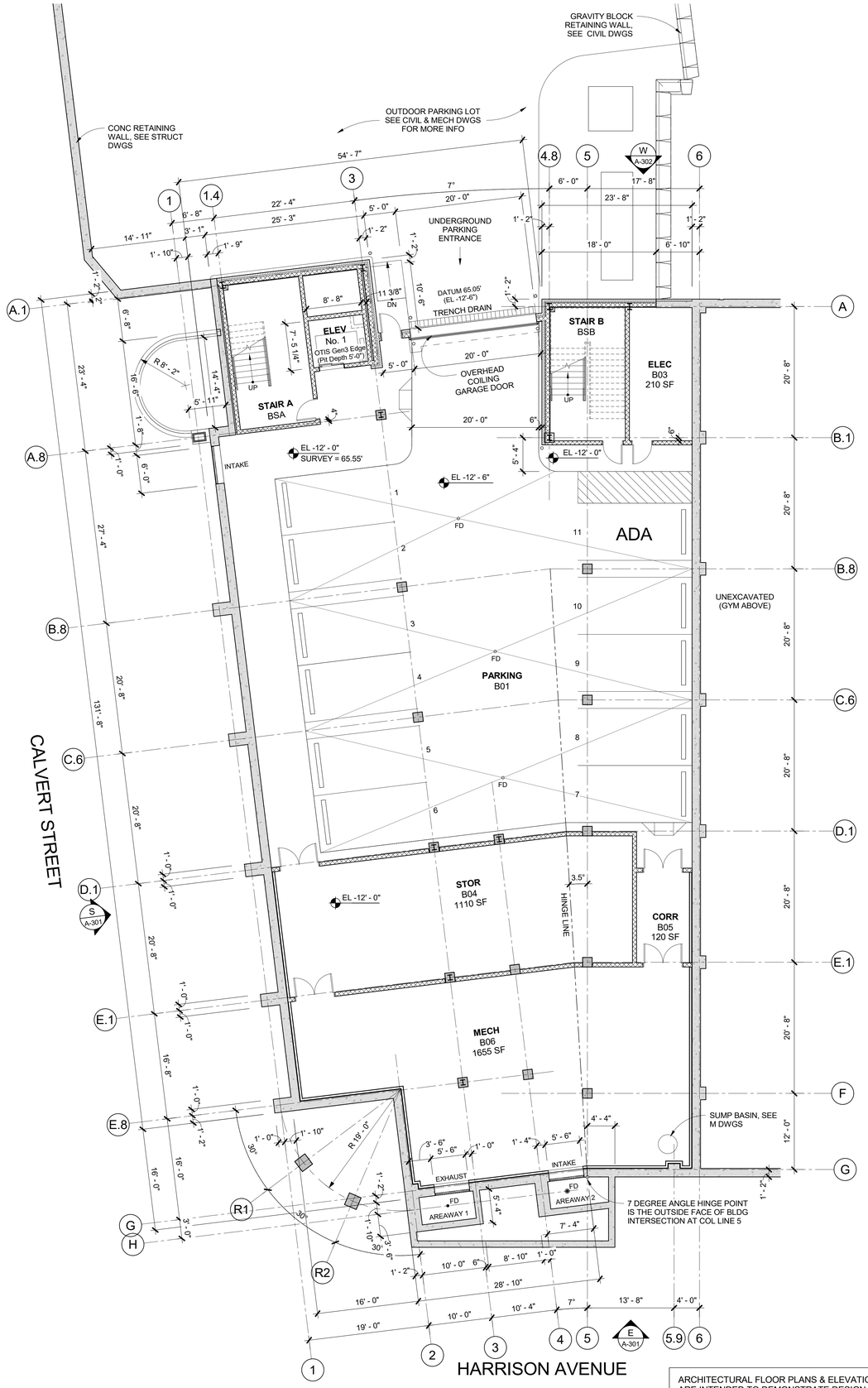
S-211



THIS DETAIL IS INTENDED TO SHOW TYPICAL COMPONENTS REQUIRED AT PERIMETER FOUNDATION WALLS. GC SHALL PROVIDE FOUNDATION DRAINAGE, WATERPROOFING, THERMAL CONTROL, PROTECTION BOARD & BACKFILL TO THE EXTENT AS SHOWN & NOTED. ELEVATIONS SHOWN VARY GREATLY THROUGHOUT THE FOUNDATIONS. SEE STRUCTURAL DRAWINGS FOR ACTUAL FOUNDATION WALL CONFIGURATIONS.

1 TYPICAL FOUNDATION SECTION DETAIL
1 1/2" = 1'-0"



L LOWER LEVEL & PARKING PLAN
1/8" = 1'-0"

ARCHITECTURAL FLOOR PLANS & ELEVATIONS ARE INTENDED TO DEMONSTRATE DESIGN INTENT OF SUBSEQUENT PHASES & ARE INCLUDED WITH PHASE 1 DOCUMENTS SOLELY FOR CONVENIENCE OF REFERENCE.

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CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

Sheet Title
LOWER LEVEL PLAN & FOUNDATION DETAIL

Job No.	Date
2020-1005	07/12/2023
Scale: AS NOTED	Drawn / Checked: - -

Sheet Number
A-200

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

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No.	Date	Issue
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Sheet Title

1st FLOOR PLAN - For Reference Only

Job No.	Date
2020-1005	07/12/2023
Scale	Drawn / Checked
AS NOTED	- -

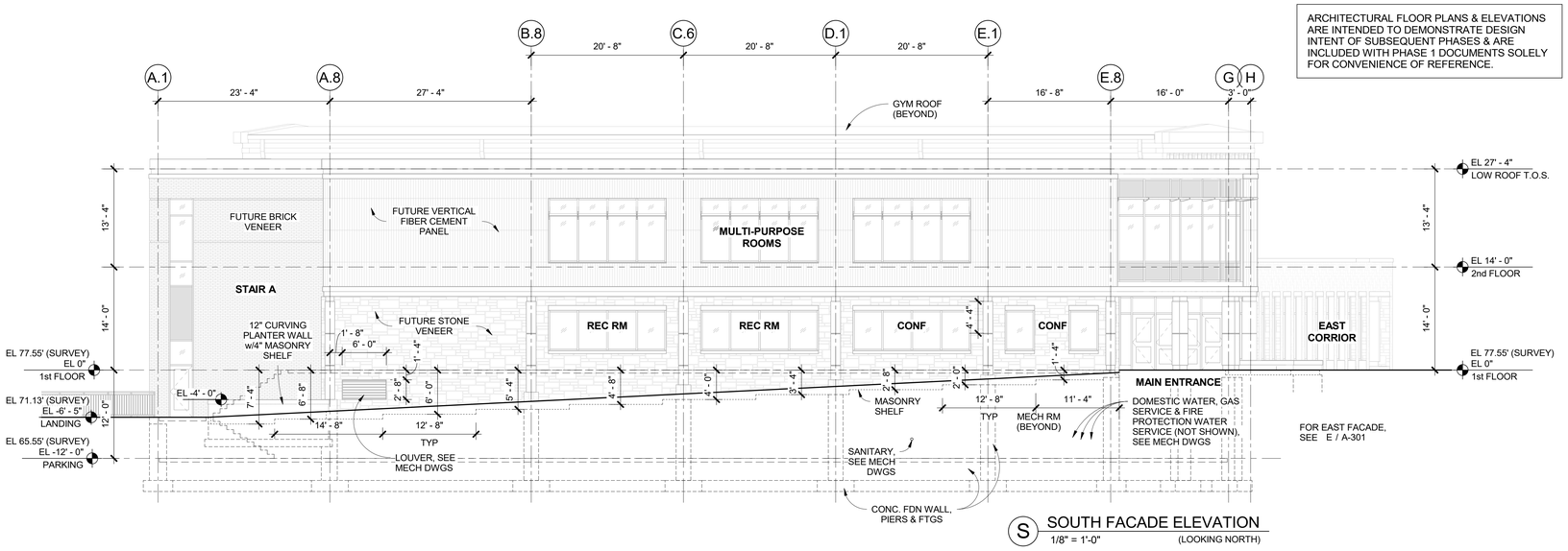
Sheet Number

A-201

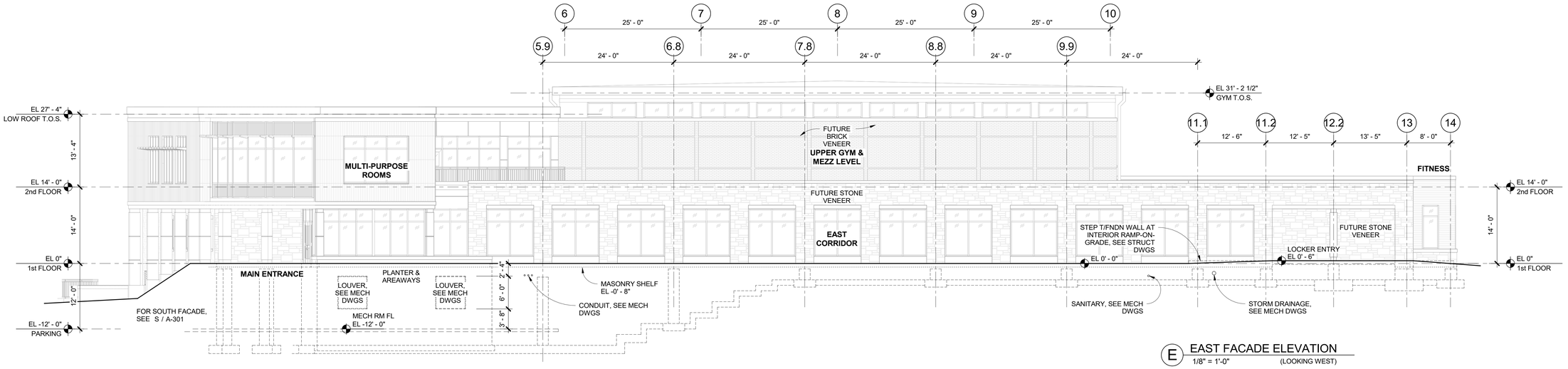
ARCHITECTURAL FLOOR PLANS & ELEVATIONS ARE INTENDED TO DEMONSTRATE DESIGN INTENT OF SUBSEQUENT PHASES & ARE INCLUDED WITH PHASE 1 DOCUMENTS SOLELY FOR CONVENIENCE OF REFERENCE.

1 1st FLOOR PLAN
1/8" = 1'-0"

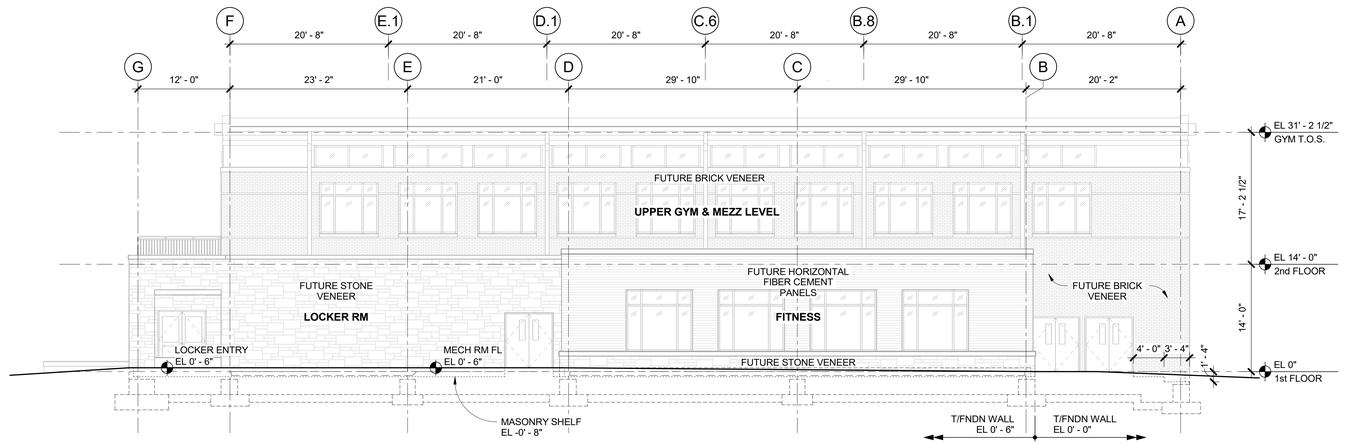
ARCHITECTURAL FLOOR PLANS & ELEVATIONS ARE INTENDED TO DEMONSTRATE DESIGN INTENT OF SUBSEQUENT PHASES & ARE INCLUDED WITH PHASE 1 DOCUMENTS SOLELY FOR CONVENIENCE OF REFERENCE.



S SOUTH FACADE ELEVATION
1/8" = 1'-0" (LOOKING NORTH)



E EAST FACADE ELEVATION
1/8" = 1'-0" (LOOKING WEST)



N NORTH FACADE ELEVATION
1/8" = 1'-0" (LOOKING SOUTH)

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No.	Date	Issue
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Sheet Title

EXTERIOR ELEVATIONS - For Reference Only

Job No.	Date
2020-1005	07/12/2023
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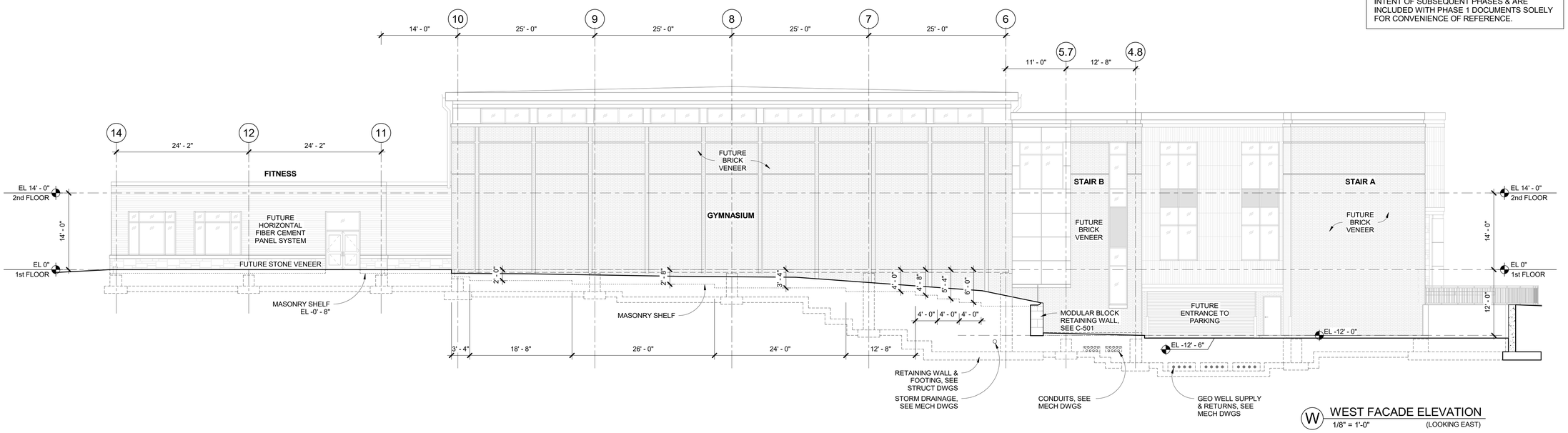
AS NOTED	- -

Sheet Number

A-301

ARCHITECTURAL FLOOR PLANS & ELEVATIONS ARE INTENDED TO DEMONSTRATE DESIGN INTENT OF SUBSEQUENT PHASES & ARE INCLUDED WITH PHASE 1 DOCUMENTS SOLELY FOR CONVENIENCE OF REFERENCE.



W WEST FACADE ELEVATION
1/8" = 1'-0" (LOOKING EAST)

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CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

Sheet Title

EXTERIOR ELEVATIONS - For Reference Only

Job No.	Date
2020-1005	07/12/2023
Scale	Drawn / Checked
AS NOTED	- -

Sheet Number

A-302

SYMBOLS AND ABBREVIATIONS

SYMBOL	ABBREVIATION	DESCRIPTION
–	AFF	ABOVE FINISHED FLOOR
———	NEW	NEW WORK
– – – – –	DEM.	EXISTING TO BE REMOVED
T	–	BALL VALVE
———	–	CONDUIT AND WIRING
– – – – –	–	CONDUIT & WIRING TO BE REMOVED UON
— —UG— —	–	BURIED CONDUIT
	–	ELECTRICAL EQUIPMENT AS INDICATED
——OH——	–	OVERHEAD CONDUCTORS
——UG–E——	–	UNDERGROUND ELECTRICAL
——UG–T——	–	UNDERGROUND TELCO
–	CW	COLD WATER
	–	ELBOW DOWN
	–	ELBOW UP
	–	GATE VALVE
	–	GLOBE VALVE
–	NEW	NEW WORK
	–	OS&Y GATE VALVE
	–	PLUG VALVE
.	–	PIPE CAP
–	S	SANITARY
–	SD	STORM DRAINAGE
	–	TEE DOWN
	–	TEE UP
–	TYP.	TYPICAL
–	V	VENT
–	W	WASTE LINE

NOTE: FOR REFERENCE ONLY. NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED IN THIS PROJECT.

TRENCHING NOTES

1. CONTRACTOR SHALL LOCATE ALL EXISTING UNDERGROUND UTILITIES THAT ARE NOT PART OF N.Y. STATE "CODE 753" PRIOR TO DIGGING.
2. ALL EXCAVATING IN THE AREA OF THE EXISTING UNDERGROUND EQUIPMENT, PIPES AND CONDUITS SHALL BE PERFORMED BY HAND.
3. ANY AREA/PLANTS OR LANDSCAPING OR PAVEMENTS DISTURBED DURING THE EXCAVATION SHALL BE RESTORED OR REPLACED TO MATCH EXISTING CONDITIONS BY THE CONTRACTOR AT NO COST TO THE OWNER.
4. ANY EXISTING BURIED CONDUITS, DRAINAGE, SPRINKLER PIPING, ETC. THAT IS DISTURBED AND/OR DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE OWNER.
5. THE PLANS SHOW SOME KNOWN SUBSURFACE STRUCTURES, ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, EXACT LOCATION OF WHICH MAY VARY FROM THE LOCATIONS INDICATED. IN PARTICULAR, THE CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH PIPELINES, SUBSURFACE STRUCTURES AND/OR UTILITIES IN THE AREA MAY OR MAY NOT BE SHOWN AND IT SHALL BE HIS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. 48 HOURS BEFORE YOU DIG, DRILL OR BLAST, CALL 1-800-962-7962.

DEFINITION OF TERMS

1.) WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "CLIENT" IS USED, IT MUST BE UNDERSTOOD THAT "THE TOWN OF HARRISON, NY" IS INTENDED.

2.) WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "ARCHITECT" IS USED, IT MUST BE UNDERSTOOD THAT "KG&D ARCHITECTS, P.C." IS INTENDED.

3.) WHEREVER IN THE CONTRACT DOCUMENTS THE WORD "ENGINEER" IS USED, IT MUST BE UNDERSTOOD THAT "OLA CONSULTING ENGINEERS" IS INTENDED.

4.) WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "ELECTRICAL UTILITY" OR "POWER COMPANY" ARE USED, IT MUST BE UNDERSTOOD THAT "CON EDISON" IS INTENDED.

5.) WHEREVER IN THE CONTRACT DOCUMENTS THE WORDS "TELEPHONE UTILITY" OR "TELCO" ARE USED, IT MUST BE UNDERSTOOD THAT "VERIZON" IS INTENDED.

6.) "WORK" MUST BE DEEMED TO CONSIST OF ALL LABOR AND OPERATIONS, TRANSPORTATION, HOISTING, MATERIALS, TOOLS, EQUIPMENT, SERVICES, INSPECTIONS, INVESTIGATIONS, COORDINATION AND SUPERVISION REQUIRED AND / OR REASONABLY NECESSARY TO PRODUCE THE CONSTRUCTION REQUIRED BY THE CONTRACT DOCUMENTS.

7.) "FURNISH" MEANS THE DESIGN, FABRICATION, PURCHASE AND DELIVERY TO THE JOB SITE.

8.) "INSTALL OR INSTALLATION" MEANS THE ACT OF PHYSICALLY PLACING, APPLYING, SETTING, ERECTING, ANCHORING, SECURING, ETC., CONSTRUCTION MATERIALS, EQUIPMENT, FURNISHINGS, APPLIANCES, AND SIMILAR ITEMS SPECIFIED AND FURNISHED AT THE JOB SITE. INSTALLATION OF SPECIFIED ITEMS MUST BE COMPLETE IN ALL RESPECTS.

9.) "PROVIDE" MEANS TO FURNISH AND INSTALL CONSTRUCTION MATERIAL, EQUIPMENT, ETC. AS DEFINED ABOVE.

10.) THE FOLLOWING ARE DEFINITIONS OF SHOP DRAWING STAMP ACTIONS:

A.) ''NO EXCEPTIONS TAKEN'' MEANS THAT THE SHOP DRAWING IS CORRECT AS TO PERFORMANCE, CAPACITY, ETC. AND SUBSTANTIAL CONFORMANCE TO THE CONTRACT DRAWINGS AND SPECIFICATIONS. FABRICATION AND/OR PURCHASE MAY COMMENCE.

B.) ''MAKE CORRECTIONS NOTED'' MEANS THAT THE SHOP DRAWING IS CORRECT AS TO PERFORMANCE, CAPACITY, ETC. AND SUBSTANTIAL CONFORMANCE TO THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS, SUBJECT TO AND IN COMPLIANCE WITH THE ANNOTATIONS AND/OR CORRECTIONS INDICATED ON THE SHOP DRAWING. FABRICATION AND/OR PURCHASE MAY COMMENCE.

C.) ''AMEND AND RESUBMIT'' MEANS THAT THE COMMENTS AND/OR CORRECTION ARE SO EXTENSIVE AND IMPORTANT THAT THE REVIEWER WANTS TO SEE HOW THE COMMENTS AND/OR CORRECTIONS ARE RESOLVED PRIOR TO RELEASE FOR FABRICATION AND/OR PURCHASE. FABRICATIONS AND/OR PURCHASE MAY NOT COMMENCE.

D.) ''REJECTED'' MEANS THAT THE SHOP DRAWING DOES NOT COMPLY OR CONFORM TO THE CONTRACT DRAWINGS AND/OR SPECIFICATIONS. FABRICATION AND/OR PURCHASE MAY NOT COMMENCE.

GENERAL NOTES

1. THE CONTRACT DRAWINGS INDICATE THE EXTENT AND GENERAL ARRANGEMENTS OF THE ELECTRICAL, FIRE PROTECTION, MECHANICAL AND PLUMBING SYSTEMS. IF ANY DEPARTURES FROM THE DRAWINGS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND THE REASONS THEREFORE SHALL BE SUBMITTED TO THE OWNER AND ENGINEER FOR APPROVAL. NO SUCH DEPARTURES SHALL BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE OWNER AND ENGINEER. EQUIPMENT AND PIPING ARRANGEMENTS SHALL PROVIDE ADEQUATE AND ACCEPTABLE CLEARANCES FOR ENTRY, SERVICING, AND MAINTENANCE. ANY CHANGES TO PIPING AND EQUIPMENT LOCATIONS NECESSARY TO AVOID INTERFERENCE WITH OTHER TRADES SHALL BE MADE AT NO EXTRA COST.
2. THE WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE LATEST EDITION OF THE PREVAILING NEW YORK STATE PLUMBING, MECHANICAL, ELECTRICAL, AND BUILDING CODES. IN CASE OF CONFLICT BETWEEN THE CONTRACT DOCUMENTS AND A GOVERNING CODE OR ORDINANCE, THE MORE STRINGENT STANDARD SHALL APPLY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND FOR PAYING RELATED FEES.
4. CONNECTIONS TO EXISTING UTILITIES AND SERVICES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS, INVERT ELEVATIONS, AND SIZES OF EXISTING PLUMBING AND ELECTRICAL SERVICES IN FIELD, AND SHALL CONNECT NEW PLUMBING AND ELECTRICAL SERVICES AS INDICATED ON DRAWINGS.
5. PRIOR TO FABRICATION, THIS CONTRACTOR SHALL VERIFY ALL MEASUREMENTS AND CONDITIONS ON JOB SITE, AND COORDINATE THIS WORK WITH THE WORK OF ALL OTHER TRADES
6. PROVIDE ALL PLUMBING PIPING, VALVES AND ACCESSORY ITEMS AS SPECIFIED AND AS REQUIRED FOR A COMPLETE INSTALLATION.
7. PITCH ALL WASTE, SANITARY, AND STORM DRAIN PIPING AT MAXIMUM SLOPE POSSIBLE, BUT NOT LESS THAN 1/8" PER FOOT FOR PIPING ≥ 3" AND 1/4" PER FOOT FOR PIPING ≤ 2½".
8. PROVIDE DIELECTRIC FITTINGS OR COUPLINGS WHEREVER DISSIMILAR METALS ARE JOINED.
9. ALL WORK SHALL BE PROPERLY TESTED, BALANCED, AND CLEANED AND DISINFECTED. PROVIDE A ONE YEAR WARRANTY FROM DATE OF FINAL INSPECTION ON ALL PARTS AND LABOR.
10. PROVIDE ALL PIPE OPENINGS THROUGH PARTITIONS WITH PIPE SLEEVES. FOR PIPES PENETRATING FIRE RATED PARTITIONS, THE SPACE BETWEEN THE PIPE AND THE SLEEVE SHALL BE SEALED WITH FIRE STOPPING MATERIAL. PENETRATIONS FOR PIPING SHALL BE MADE BY CORE DRILLING WHENEVER POSSIBLE.
11. PROVIDE TRAP SEAL PRIMERS FOR FLOOR DRAINS AS REQUIRED. INSTALL THE PRIMER VALVE IN THE COLD WATER SERVICE, WITH THE TRAP CONNECTION PIPED TO THE FLOOR DRAIN TRAP. LOCATE THE VALVE IN AN ACCESSIBLE LOCATION.
12. THE CONTRACTOR SHALL PROVIDE ALL CUTTING, PATCHING, CORE DRILLING AND FINAL RESTORATION REQUIRED TO FACILITATE THE INSTALLATION OF SCOPE OF WORK RELATED TO THIS PROJECT.
13. SEE THE ARCHITECTURAL DRAWINGS FOR EXACT PHASING AND TIME SCHEDULE FOR CONSTRUCTION.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY VENTILATION AND EXHAUST AIR WHEN WELDING OR SOLDERING OPERATIONS ARE PERFORMED, AS REQUIRED BY OSHA.
15. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS PRIOR TO THE BEGINNING OF WORK, AND SHALL COORDINATE ALL WORK WITH OTHER TRADES.
16. THE CONTRACTOR SHALL SUBMIT FOR REVIEW A COMPOSITE SHOP DRAWING, FULLY COORDINATED WITH ALL OTHER TRADES, INDICATING PLUMBING, SPRINKLER PIPING, STRUCTURAL, CONDUITS, ETC.
17. COORDINATE PIPING PENETRATIONS THRU FLOORS/SLABS, WALLS, AND ROOF WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
18. CONTRACTOR SHALL CONDUCT HYDRANT FLOW TEST TO ESTABLISH EXACT FLOW AND PRESSURE AVAILABLE ON THE SITE FOR PREPARATION OF HYDRAULIC CALCULATIONS. HYDRANT FLOW TEST SHALL BE CONDUCTED ON TWO HYDRANTS ON THE SITE WATER MAIN SERVING THE BUILDING FLOWING A MINIMUM OF 500 GPM.
19. PROVIDE TWO 2-1/2 GALLON PRESSURIZED WATER AND ONE 10 LB ABC DRY CHEMICAL EXTINGUISHERS FOR EMERGENCY USE DURING CONSTRUCTION.

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New Construction - Phase 1

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CONSTRUCTION DOCUMENTS

Professional Seal

No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

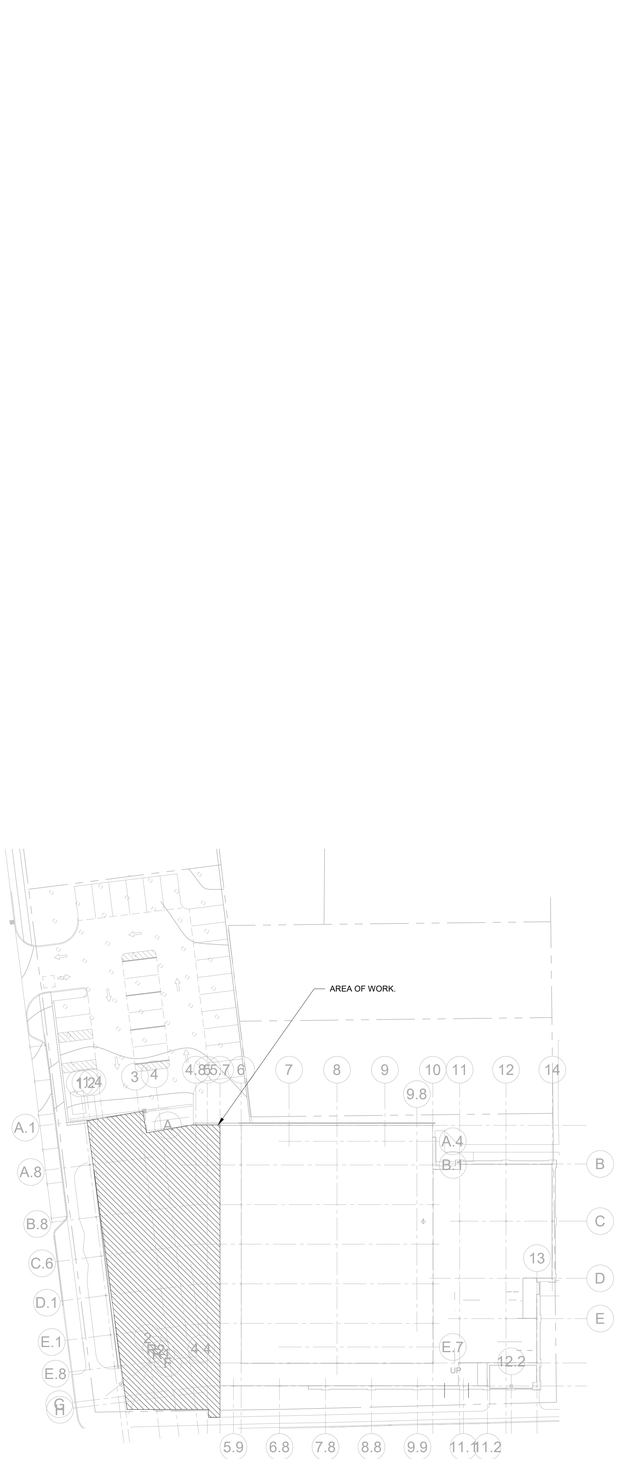
Sheet Title

SYMBOLS, ABBREVIATIONS & NOTES

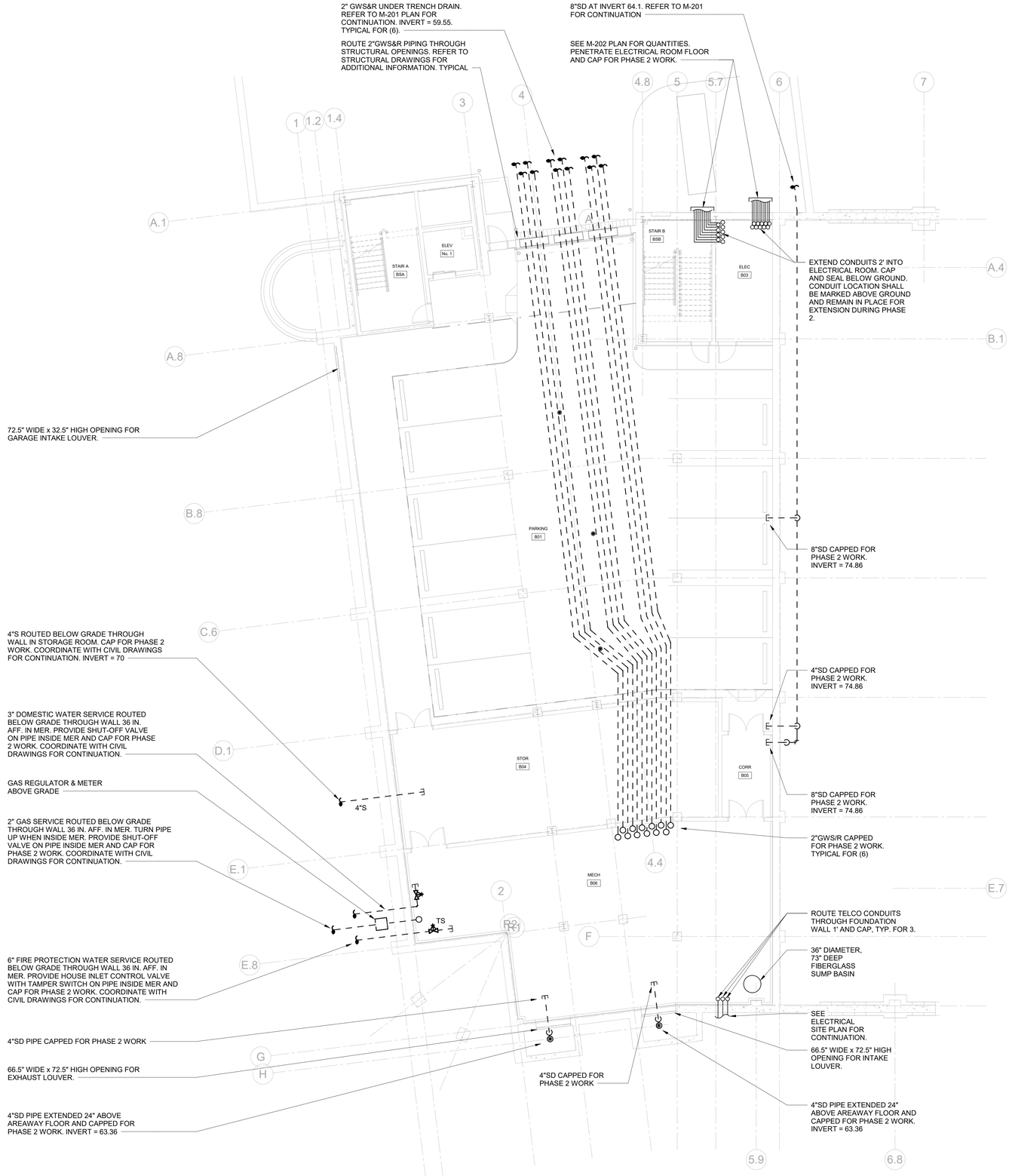
Job No.	Date
NKGD0207.00	06/29/2023
Scale: AS NOTED	Drawn / Checked: HM / RG, VB / ML / DS

Sheet Number

M-001



2 KEY PLAN
NORTH
SCALE: 1/32" = 1'-0"



1 PARKING FLOOR PLAN PHASE 1
NORTH
SCALE: 1/8" = 1'-0"

NOTES:
1.) ALL ELECTRICAL CONDUITS ARE ROUTED UNDERGROUND, UON.
2.) ALL ELECTRICAL CONDUITS SHALL BE PROVIDED WITH DRAGLINES.

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CONSTRUCTION DOCUMENTS

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No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

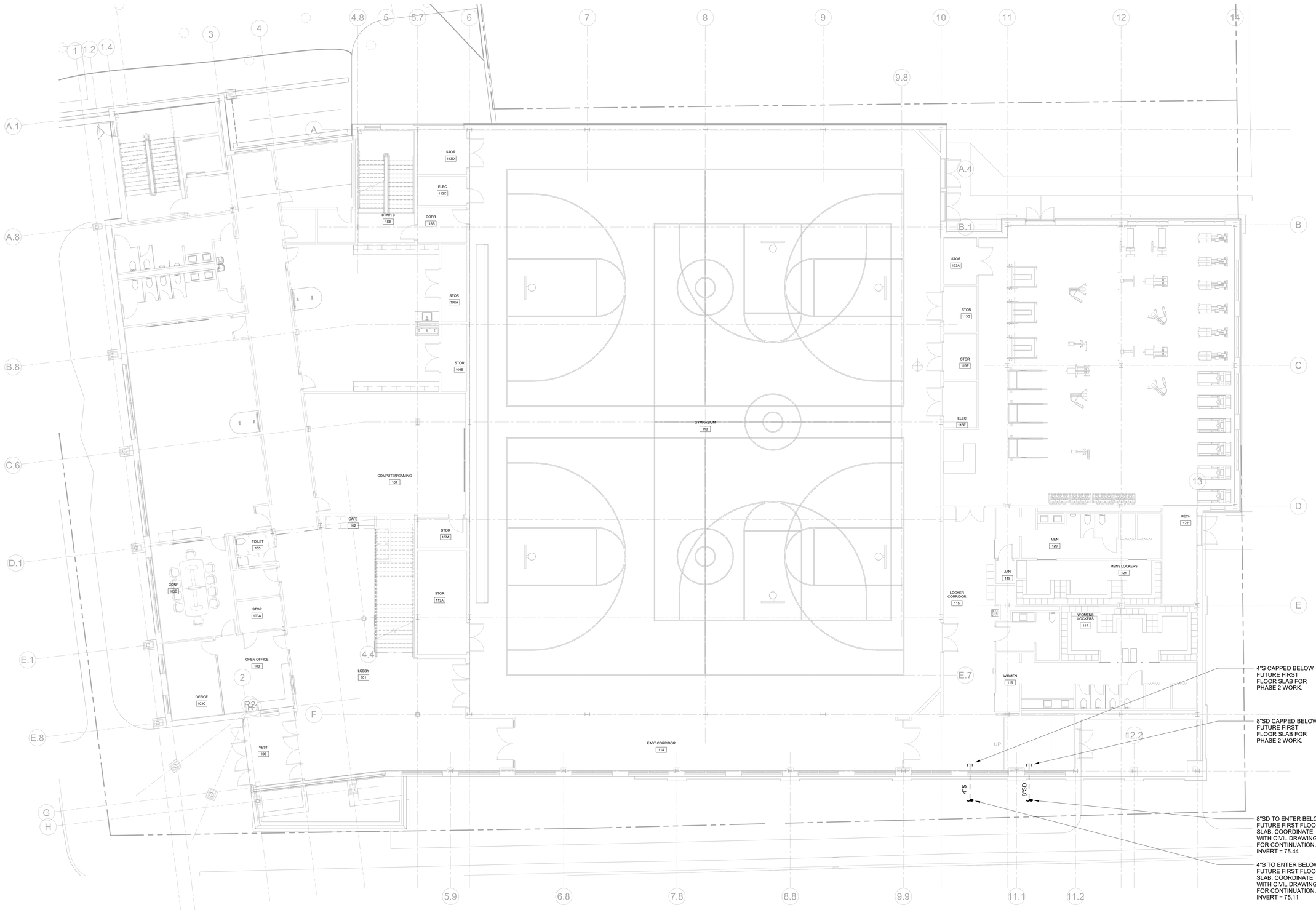
Sheet Title

PARKING FLOOR PLAN PHASE 1

Job No.	Date
NKGD0207.00	06/29/2023
Scale: AS NOTED	Drawn / Checked: HM / RG, YS / ML / OS

Sheet Number

M-101



NORTH

1 FIRST FLOOR PLAN PHASE 1

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

NOTES:
1.) ALL ELECTRICAL CONDUITS ARE ROUTED UNDERGROUND, UON.
2.) ALL ELECTRICAL CONDUITS SHALL BE PROVIDED WITH DRAGLINES.

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No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

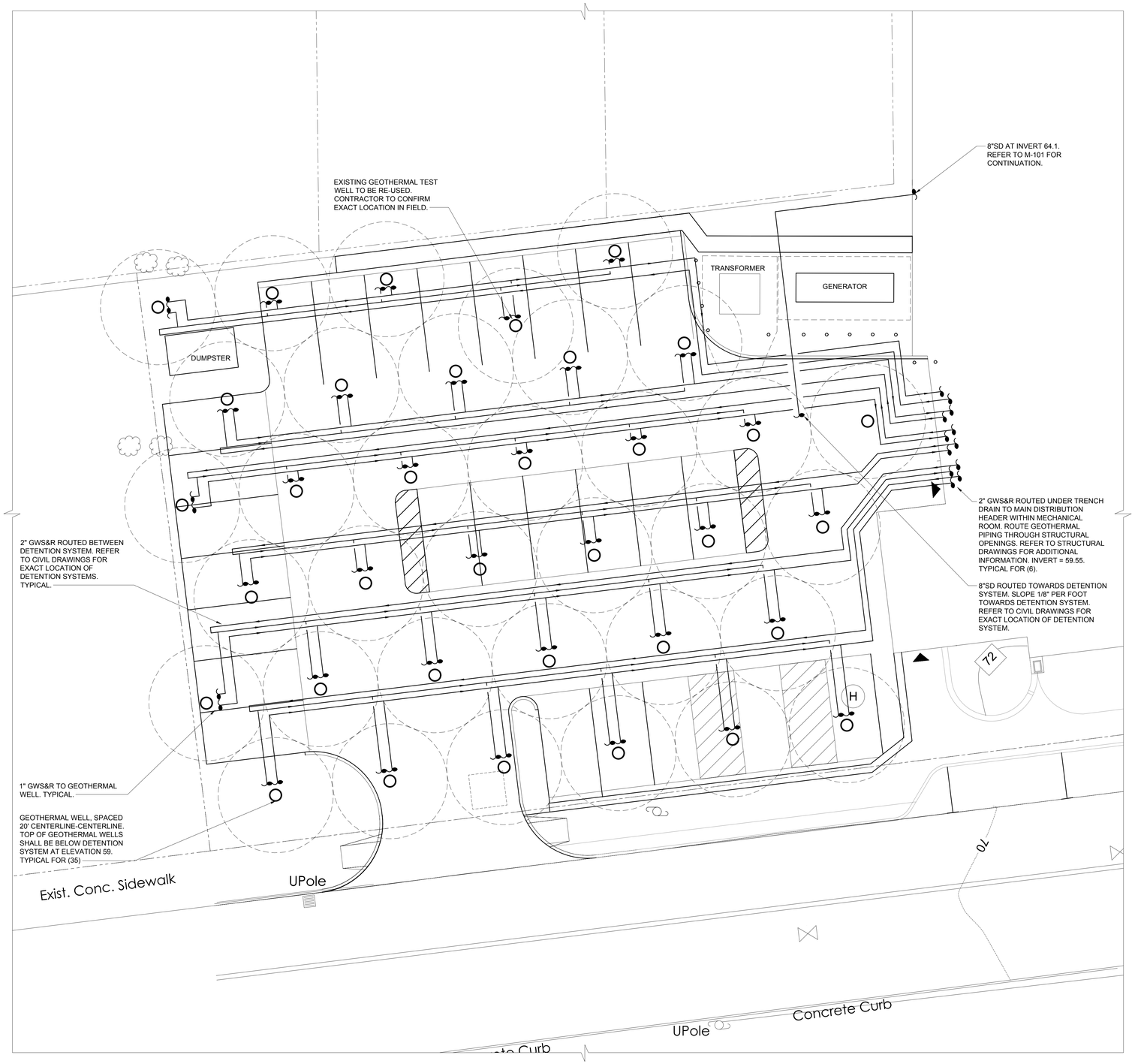
Sheet Title

FIRST FLOOR PLAN PHASE 1

Job No.	Date
NKGD0207.00	06/29/2023
Scale: AS NOTED	Drawn / Checked: HM / RG, VB / ML / DS

Sheet Number

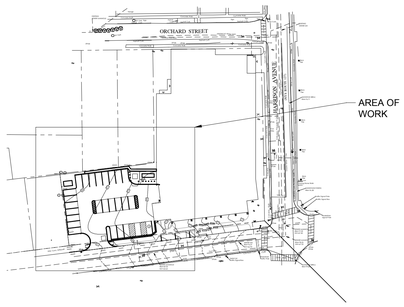
M-102



2 MECHANICAL SITE PLAN
SCALE: 1/8" = 1'-0"

NORTH

NOTES:
1.) ALL GEOTHERMAL PIPING SHALL BE ROUTED BETWEEN DETENTION SYSTEM.
2.) ALL GEOTHERMAL WELLS SHALL BE UNDERNEATH DETENTION SYSTEM. TOP OF ALL GEOTHERMAL WELLS SHALL BE AT ELEVATION 59.



1 KEY PLAN
SCALE: NONE

NORTH

HARRISON RECREATION & COMMUNITY CENTER

New Construction - Phase 1

Town / Village of Harrison

270 Harrison Avenue
Harrison, NY 10528

KG+D ARCHITECTS, PC
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No.	Date	Issue
3	07/12/2023	ISSUE FOR BID - PHASE 1

Sheet Title

MECHANICAL SITE PLAN

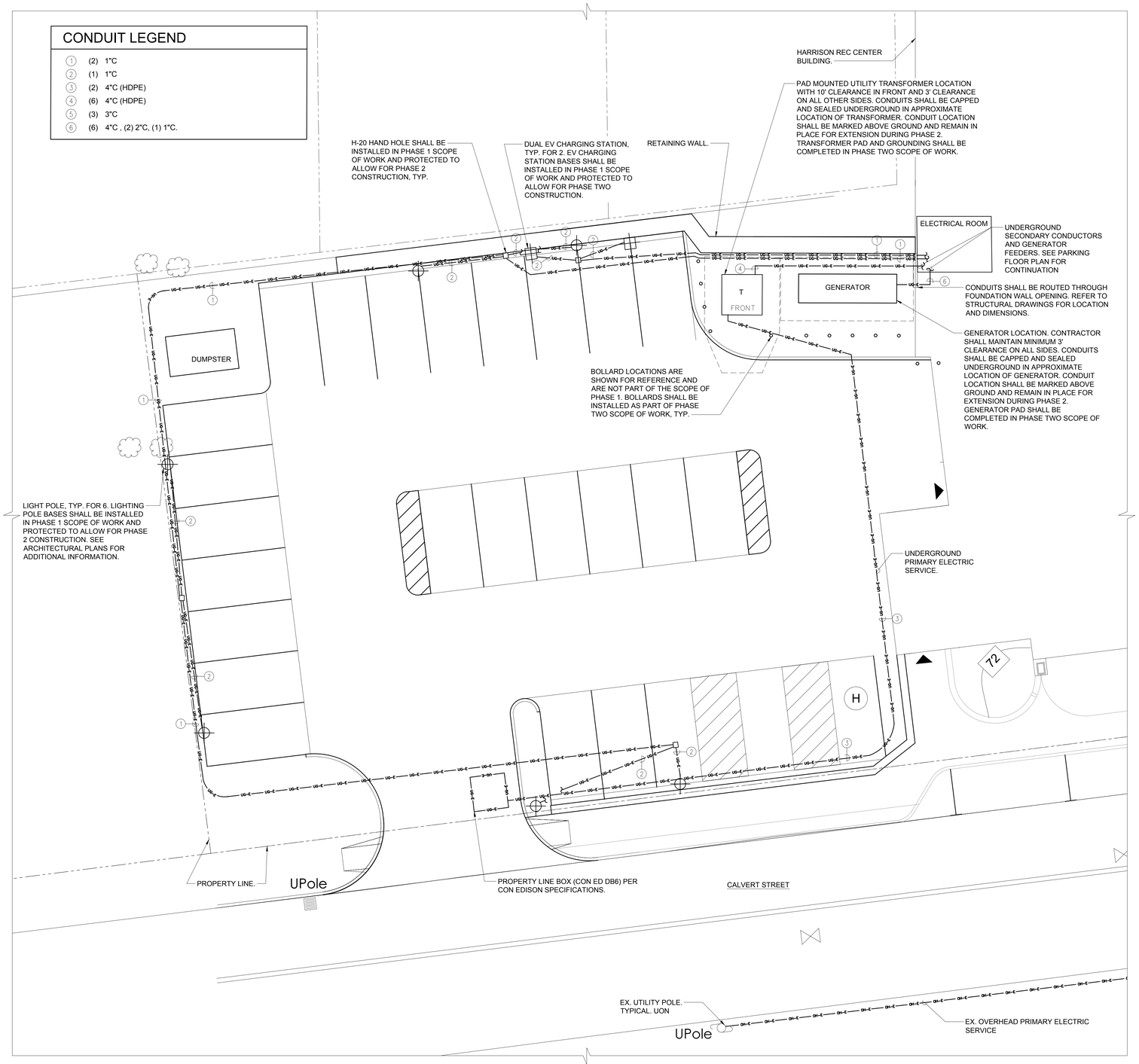
Job No.	Date
NKGD0207.00	06/29/2023
Scale: AS NOTED	Drawn / Checked: HM / RG, VB / ML / DS

Sheet Number

M-201

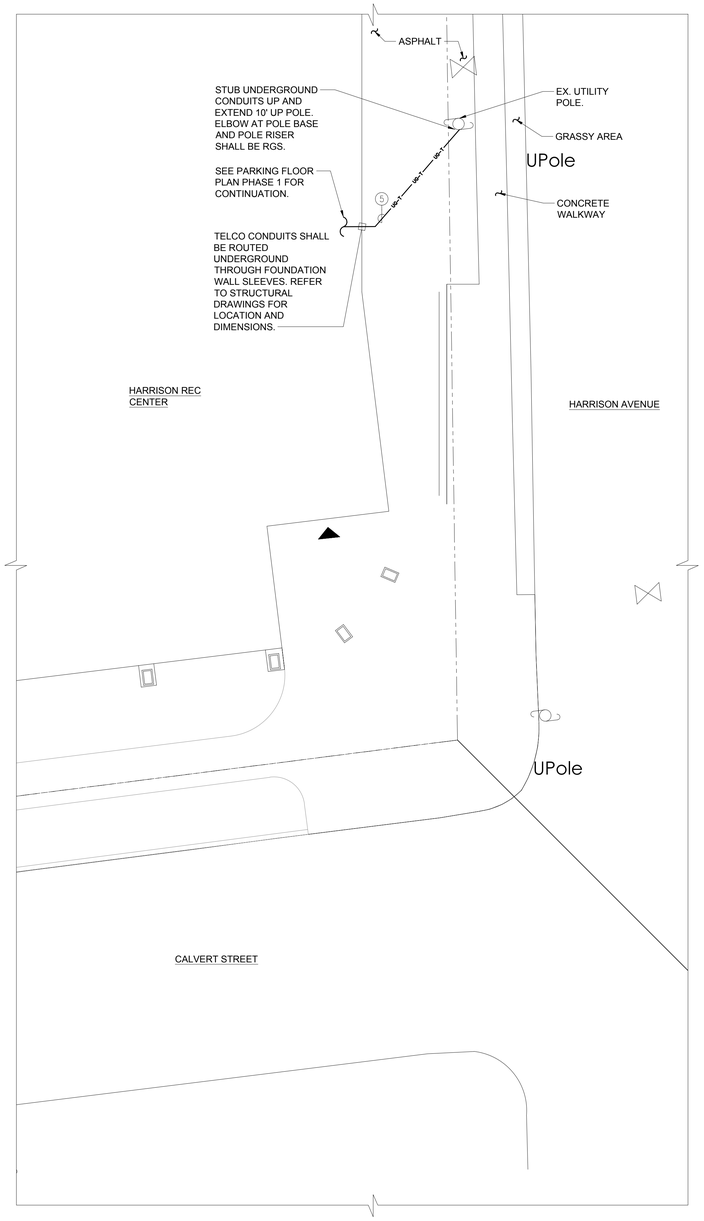
CONDUIT LEGEND

1	(2)	1"C
2	(1)	1"C
3	(2)	4"C (HDPE)
4	(6)	4"C (HDPE)
5	(3)	3"C
6	(6)	4"C , (2) 2"C, (1) 1"C.

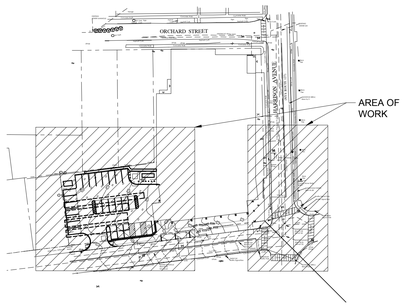


3 ELECTRICAL SITE PLAN
SCALE: 1/8" = 1'-0"
NORTH

NOTES:
1.) ALL ELECTRICAL CONDUITS ARE ROUTED UNDERGROUND, UON.
2.) ALL ELECTRICAL CONDUITS SHALL BE PROVIDED WITH DRAGLINES.
3.) ALL CONDUITS SHALL BE SCHEDULE 40 PVC, UON.



2 ELECTRICAL SITE PLAN
SCALE: 1/8" = 1'-0"
NORTH



1 KEY PLAN
SCALE: NONE
NORTH

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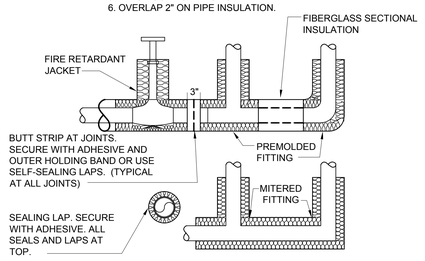
Sheet Title
ELECTRICAL SITE PLAN

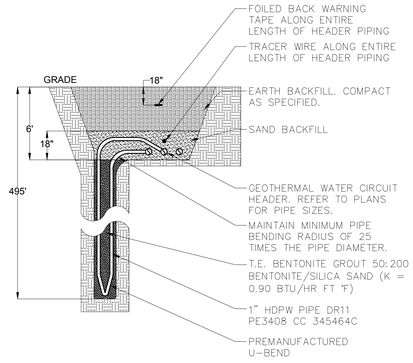
Job No. NKGD0207.00	Date 06/29/2023
Scale AS NOTED	Drawn / Checked HM / RG VB / ML / DS

Sheet Number
M-202

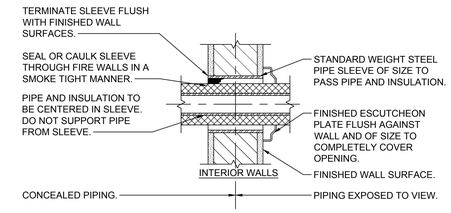
CONCEALED VALVES AND FITTINGS
1. WRAP WITH I" THICK, I LB. DENSITY TO REQUIRED PIPE INSULATION THICKNESS.
2. SECURE WITH WIRE OR TAPE.
3. VAPOR SEAL COLD WATER AND STORM WATER PIPING.
EXPOSED VALVES AND FITTINGS
1. PREMOLDED FIBERGLASS OR RADIAL MITERED PIPE INSULATION.
2. SKIM COAT OF INSULATING CEMENT.
3. COAT OF MASTIC
4. WRAP WITH FIBERGLASS REINFORCING CLOTH.
5. FINISH COAT OF MASTIC.
6. OVERLAP 2" ON PIPE INSULATION.

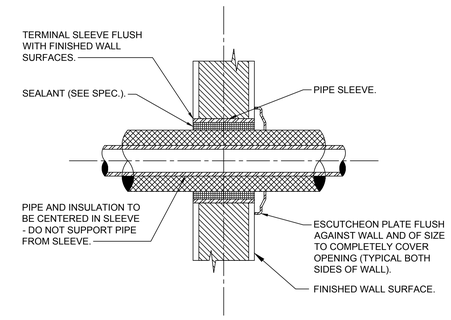


8 PIPE INSULATION DETAIL
SCALE: NONE



5 GEOTHERMAL WELL DETAIL
SCALE: NONE

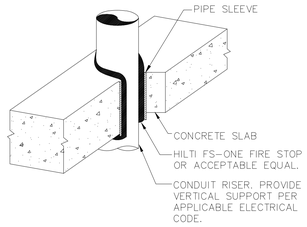




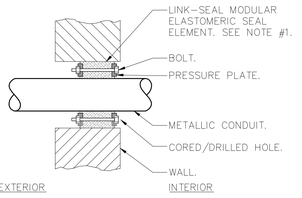
3 PIPE WALL SLEEVE DETAIL
SCALE: NONE

NOTE:
1.) SEE STRUCTURAL DRAWINGS FOR FOUNDATION DETAIL.

LIGHT POST ELECTRICAL INSTALLATION DETAIL
9 SCALE: NONE

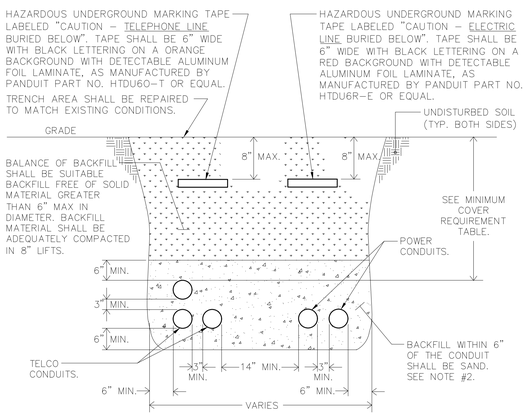


7 TYPICAL VERTICAL CONDUIT PENETRATION DETAIL
SCALE: NONE



NOTES:
1.) SEAL ASSEMBLY BASED ON MODEL "C" LINK-SEAL MODULAR SEAL, WITH EPDM SEAL ELEMENT, REINFORCED NYLON POLYMER PRESSURE PLATES, STEEL WITH 2-PART ZINC DICHROMATE & CORROSION INHIBITING COATING NUTS AND BOLTS AND WITH A OPERATING TEMPERATURE RANGE OF -40°F TO +250°F.
2.) PROVIDE AND INSTALL TWO SEALS WHEN PENETRATED WALL THICKNESS IS GREATER THAN 12".
3.) PROVIDE SCHEDULE 80 WALL SLEEVE FOR NEW WALL CONSTRUCTION PER MANUFACTURER'S REQUIREMENTS.

TYPICAL EXTERIOR MASONRY WALL BELOW GRADE CONDUIT PENETRATION DETAIL
6 SCALE: NONE

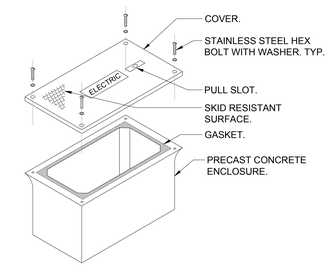


MINIMUM COVER REQUIREMENT TABLE	
LOCATION	NONMETALLIC RACEWAYS LISTED FOR DIRECT BURIAL WITHOUT CONCRETE ENCASEMENT OR OTHER APPROVED RACEWAYS
ALL LOCATION NOT SPECIFIED BELOW.	18"
IN TRENCH BELOW 2-IN. THICK CONCRETE OR EQUIVALENT.	12"
UNDER MINIMUM OF 4-IN. THICK CONCRETE EXTERIOR SLAB WITH NO VEHICULAR TRAFFIC AND THE SLAB EXTENDING NOT LESS THAN 6 IN. BEYOND THE UNDERGROUND INSTALLATION.	4" SEE NOTE #2.
UNDER STREETS, HIGHWAYS, ROADS, ALLEYS, DRIVEWAYS, AND PARKING LOTS.	24"

NOTES:
1.) DETAIL SHOWN FOR INFORMATION PURPOSES. SAME CONCEPT SHALL ALSO APPLY FOR SINGLE CONDUITS.

2.) SAND MAY BE OMITTED FOR INSTALLATIONS WHERE COVER REQUIREMENTS ARE 6" OR LESS.

4 TRENCHING DETAIL FOR CONDUIT
SCALE: NONE

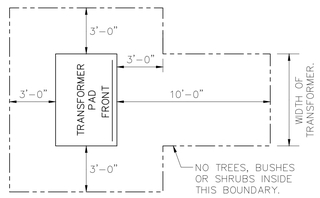


NOTES:
1.) HAND HOLE SHALL BE 12"L x 18"W x 30"H WITH OPEN BOTTOM AND RATED FOR VEHICULAR TRAFFIC AS MANUFACTURED BY HUBBELL-QUAZITE, OR EQUAL. BOX SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.

2.) PROVIDE 6" OF GRAVEL BELOW BOX.

3.) COVER SHALL BE IMPRINTED WITH THE APPROPRIATE DESCRIPTION OF BOX CONTENTS (I.E. ELECTRIC, TELEPHONE, DATA, CABLE TV, ETC.).

2 HAND HOLE DETAIL
SCALE: NONE



TRANSFORMER CLEARANCE NOTES:
1.) AREA IN FRONT OF DOOR TO BE CLEAR OF ALL ROCKS, STUMPS AND OTHER OBSTRUCTIONS SO THAT THE OPERATOR HAS A SAFE WORKING AREA.
2.) UTILITY COMPANY SHALL HAVE THE RIGHT TO CUT BACK GROWING BUSHES TO WITHIN STATED CLEARANCES.

1 TRANSFORMER PAD
SCALE: NONE

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Sheet Number
M-701