HE ENGINEER, OR IN CONTRADICTION TO THE ENGINEER'S DELIVERABLES OR RECOMMENDATIONS

LEGEND

LLG		
	EXISTING	PROPOSED
SANITARY MANHOLE	©	•
STORM MANHOLE	0	•
CATCH BASIN	\circ	•
INLET		
PRECAST FLARED END SECTION	\triangleright	>
CONCRETE HEADWALL		>
VALVE VAULT	\otimes	$oldsymbol{\Theta}$
VALVE BOX	⊞	
FIRE HYDRANT	Þ	>
BUFFALO BOX	Φ	•
CLEANOUT	0	
SANITARY SEWER		
FORCE MAIN		
STORM SEWER		
WATER MAIN		
CONSTRUCT WATER MAIN UNDER SEWER		
GRANULAR TRENCH BACKFILL		
STREET LIGHT	$\stackrel{\smile}{\sim}$	
ELECTRICAL CABLE	—— E——	——Е—
2" CONDUIT ENCASEMENT		
ELECTRICAL TRANSFORMER OR PEDESTAL	E	
POWER POLE	-0-	-
STREET SIGN	þ	þ
GAS MAIN	————G———	—— G —
TELEPHONE LINE	——T——	——— T——
CONTOUR	,749	749
SPOT ELEVATION	×(750.00)	×750.00
WETLANDS		
FLOODWAY		
FLOODPLAIN		
HIGH WATER LEVEL (HWL)		
NORMAL WATER LEVEL (NWL)	-··-	
DIRECTION OF SURFACE FLOW	_	←
DITCH OR SWALE	4	
OVERFLOW RELIEF ROUTING		
SLOPE BANK	·	V V V
TREE WITH TRUNK SIZE	* 6" 6"	
SOIL BORING		
TOPSOIL PROBE	- 	-
FENCE LINE, WIRE OR SILT	X	——×—
FENCE LINE, CHAIN LINK OR IRON	O	<u> </u>
FENCE LINE, WOOD OR PLASTIC		———
CONCRETE SIDEWALK		
CURB AND GUTTER		
DEPRESSED CURB		
REVERSE PITCH CURB & GUTTER		

A D D D C \ / I A T I O N C

TERSECTION

ABBREVIATIONS				
BL	BASE LINE	NWL	NORMAL WATER LEVEL	
С	LONG CHORD OF CURVE	PC	POINT OF CURVATURE	
C & G	CURB AND GUTTER	PT	POINT OF TANGENCY	
CB	CATCH BASIN	PVI	POINT OF VERTICAL IN	
CL	CENTERLINE	R	RADIUS	
D	DEGREE OF CURVE	ROW	RIGHT-OF-WAY	
EP	EDGE OF PAVEMENT	SAN	SANITARY SEWER	
FF	FINISHED FLOOR	ST	STORM SEWER	
FG	FINISHED GRADE	T	TANGENCY OF CURVE	
FL	FLOW LINE	TB	TOP OF BANK	
FP	FLOODPLAIN	TC	TOP OF CURB	
FR	FRAME	TF	TOP OF FOUNDATION	
FW	FLOODWAY	TP	TOP OF PIPE	
HWL	HIGH WATER LEVEL	TS	TOP OF SIDEWALK	
INV	INVERT	TW	TOP OF WALK	
L	LENGTH OF CURVE	WM	WATER MAIN	
MH	MANHOLE	Δ	INTERSECTION ANGLE	

ow what's below. Call before you dig.

Formerly JULIE 1-800-892-012

EASEMENT LINE

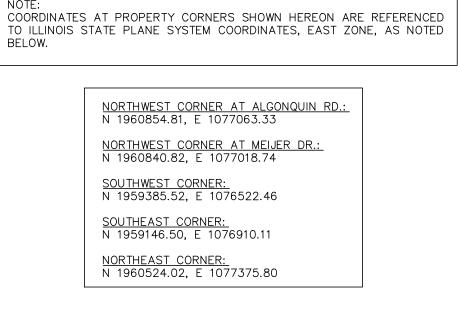
FINAL ENGINEERING PLANS

FOR

ARLINGTON HEIGHTS INDUSTRIAL 703-723 W. ALGONQUIN ROAD

ARLINGTON HEIGHTS, IL

LOCATION MAP



CONTACTS

VILLAGE OF ARLINGTON HEIGHTS
Community Development: 847–368–5200 33 S. Arlington Heights Road Arlington Heights Public Works Department: 847-368-5800 222 N. Ridge Ave. Arlington Heights Underground Utility Locations 1—800—892—0123



GENERAL NOTES

- 1. The contractor shall notify the following governmental agencies at least two 7. Except where modified by the contract documents, all work proposed hereon working days prior to commencement of construction:
 - Village of Arlington Heights Public Works Department (847—368—5800) • MWRD local sewer systems Field Office (708-588-4055)
- 2. The contractor shall notify all utility companies and arrange for their facilities to be located prior to work in any easement, right-of-way, or suspected utility location. Repair of any damage to existing facilities shall be the responsibility of the contractor. Utility locations shown herein are for graphic illustration only and are not to be relied upon.
- 3. Elevations shown herein reflect NAVD 1988 datum.
- 4. The boundary and topographic survey data for this project is based on a field survey prepared by Gentile and Associates, dated August 9, 2017. The contractor shall verify existing conditions prior to commencing construction and shall immediately notify the engineer in writing of any differing
- 5. RWG Engineering, LLC, it's employees and agents are not responsible for the safety of any party at or on the construction site. Safety is the sole responsibility of the contractor, and any other entity performing work at the site. Neither the owner nor the engineer assumes any responsibility for job site safety or for the means, methods or sequences of construction.
- 6. Prior to commencement of any offsite construction, the contractor shall secure written authorization that all offsite easements have been secured. and that permission has been granted to enter onto private property.

- shall be in accordance with the following specifications, which are hereby
- A. "Standard Specifications for Road and Bridge Construction in Illinois," as prepared by I.D.O.T. latest edition.
- B, "Standard Specifications for Water and Sewer Main Construction in Illinois," latest edition.
- C. "Illinois Recommended Standards for Sewage Works," as published by the I.E.P.A., latest edition.
- Village of Arlington Heights, as published by the Municipality.

D. The subdivision and development codes and standards of the

- E. "Illinois Accessibility Code" as published by the State of Illinois Capital Development Board, effective April 24, 1997.
- F. The National Electric Code.
- G. "Illinois Urban Manual" as prepared by the U.S. Dept. of Agriculture latest edition.
- H. Standards and specifications of the Metropolitan Water Reclamation District (MWRD) — Local sewer systems section.
- The Village of Arlington Heights "A Manual of Practice for the Design of Public & Private Improvements" and Development Ordinance and the MWRD requirements shall take precedence if a conflict in project specifications occurs.

PLANS PREPARED FOR

MORGAN HARBOUR CONSTRUCTION LLC 7510 SOUTH MADISON STREET WILLOWBROOK, ILLINOIS 60527 (630)734-7737

INDEX OF SHEETS

- 1. TITLE SHEET
- 2. EXISTING CONDITIONS PLAN PHASE 1
- 3. EXISTING CONDITIONS PLAN PHASE 2
- 4. DEMOLITION PLAN PHASE 1
- 5. DEMOLITION PLAN PHASE 2
- 6. MASTER DEVELOPMENT PLAN PHASE 1 & 2
- 7. SITE GEOMETRIC AND PAVING PLAN PHASE 1
- 8. SITE GEOMETRIC AND PAVING PLAN PHASE 2
- 9. SOIL EROSION & SEDIMENT CONTROL (SESC) PLAN PHASE
- 10. SOIL EROSION & SEDIMENT CONTROL (SESC) PLAN PHASE 2
- 11. SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS
- 12. GRADING PLAN PHASE 1
- 13. GRADING PLAN PHASE 2
- 14. GRADING DETAILS PHASE 1 & 2
- 15. UTILITY PLAN PHASE 1
- 16. UTILITY PLAN PHASE 2
- 18. PROJECT NOTES AND SPECIFICATIONS
- 19. CONSTRUCTION DETAILS AND STANDARDS
- 20. CONSTRUCTION DETAILS AND STANDARDS

ATTACHMENTS

1. UNDERGROUND DETENTION SYSTEM NOTES AND DETAILS

BENCHMARKS

ILLINOIS STATE PLANE COORDINATE SYSTEM EAST ZONE.

BENCHMARK: NGS PID DM3900

SURVEY DISK SET ON THE TOP OF THE SOUTH END OF THE EAST ABUTMENT OF THE GOLF ROAD BRIDGE NO 016-0349 OVER SALT CREEK, APPROXIMATELY 0.3 MI (0.5 KM) WEST OF THE INTERSECTION OF GOLF ROAD WITH NEW WILKE ROAD, 3 FT (0.9 M) SOUTH OF A CHAIN LINK FENCE. THE STATION IS LOCATED ABOUT 7.4 MI (11.9 KM) SOUTHWEST OF WHEELING, 4.3 MI (6.9 KM) SOUTH-SOUTHEAST OF PALATINE AND 3.0 MI (4.8 KM) SOUTH-SOUTHWEST OF ARLINGTON HEIGHTS. OWNERSHIP--ROAD RIGHT-OF-WAY.

ELEV. =695.85 (NAVD 88 DATUM)

SITE BENCHMARK:

CROSS CUT IN WALK ON THE SOUTH SIDE OF ALGONQUIN ROAD IN FRONT OF ELEV. = 616.17

PRELIMINARY FOR REVIEW ONLY NOT FOR CONSTRUCTION

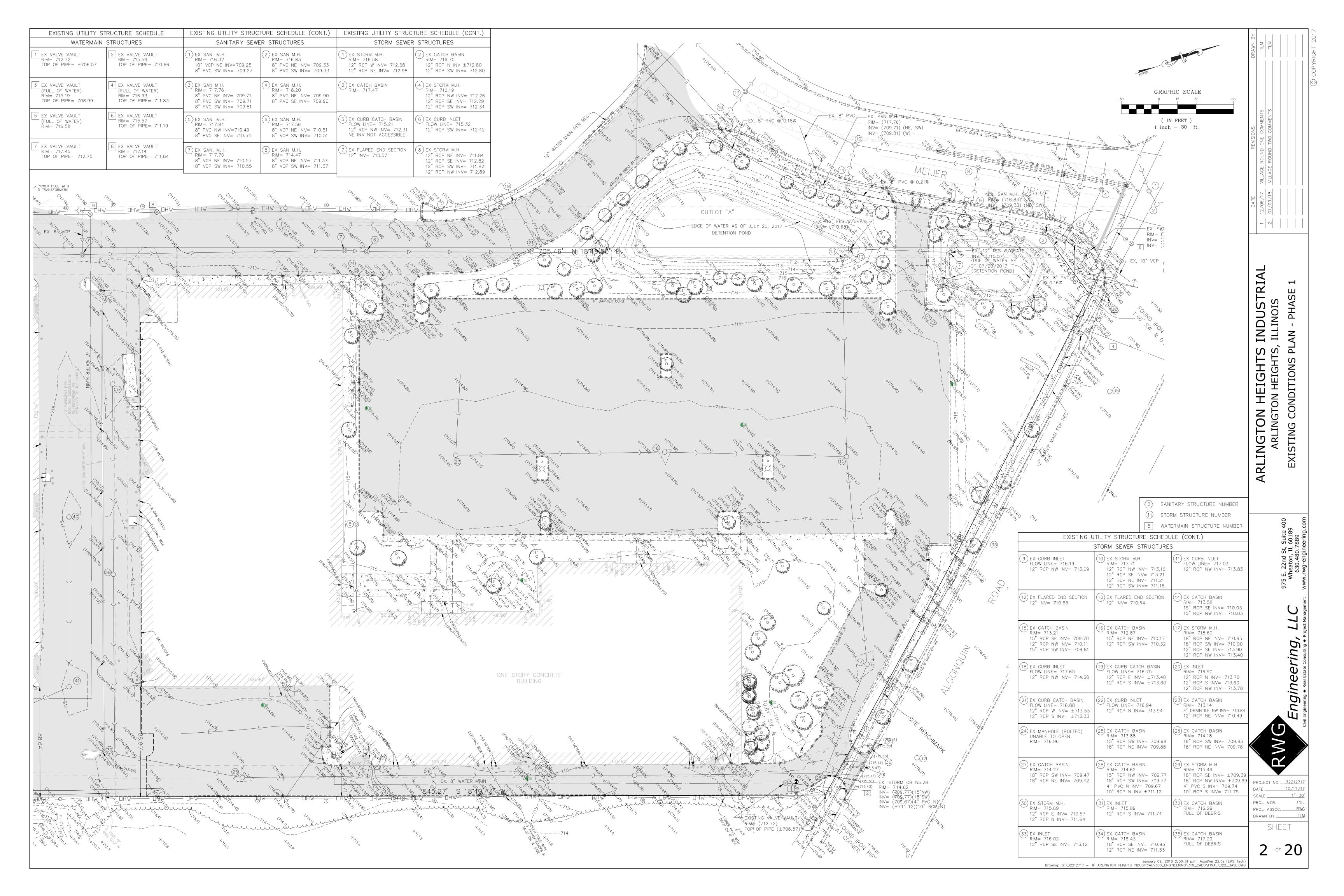
DATE ______10/17/17 NONE SCALE _____ PROJ. MGR.____ PROJ. ASSOC. RWG DRAWN BY _____TLN

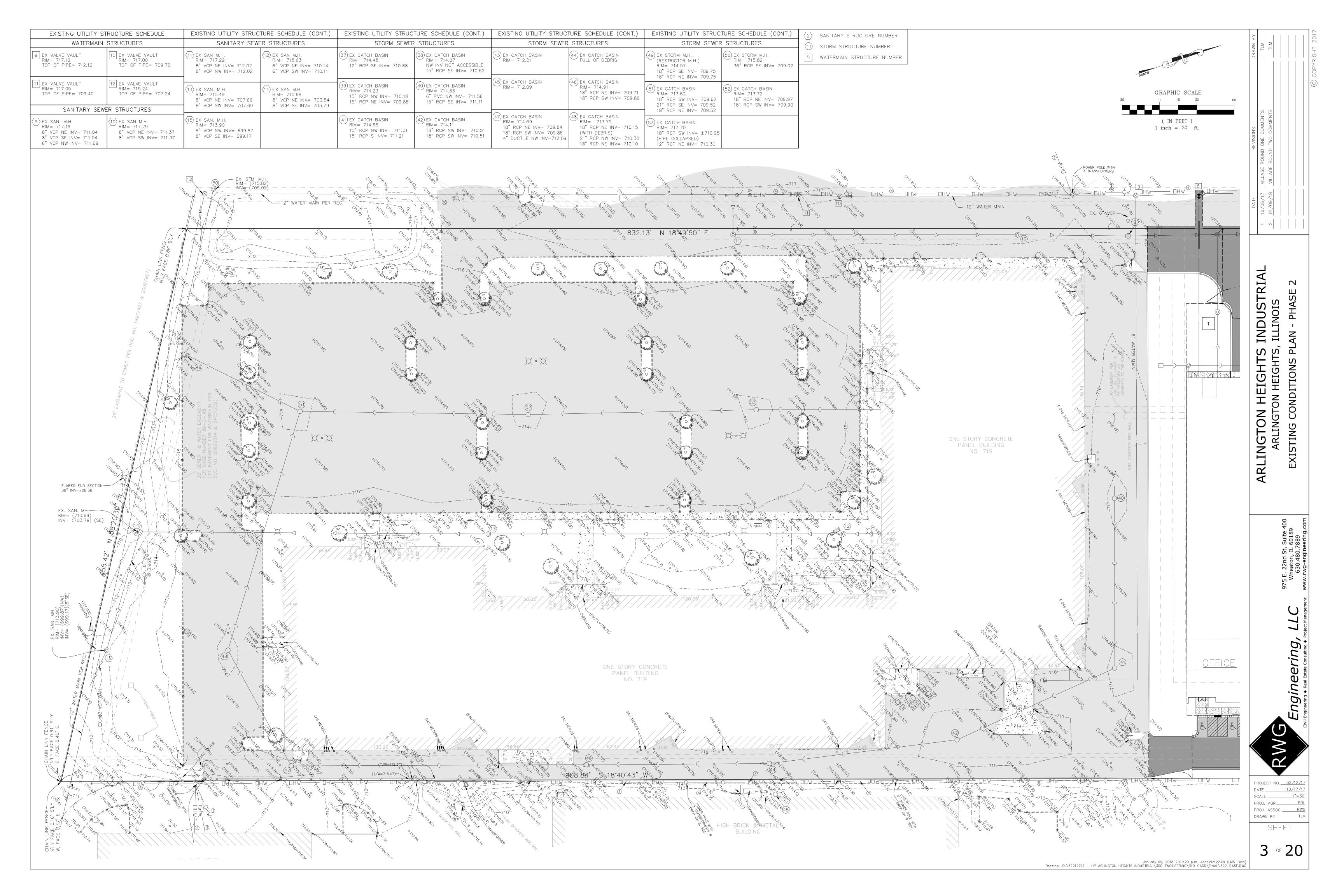
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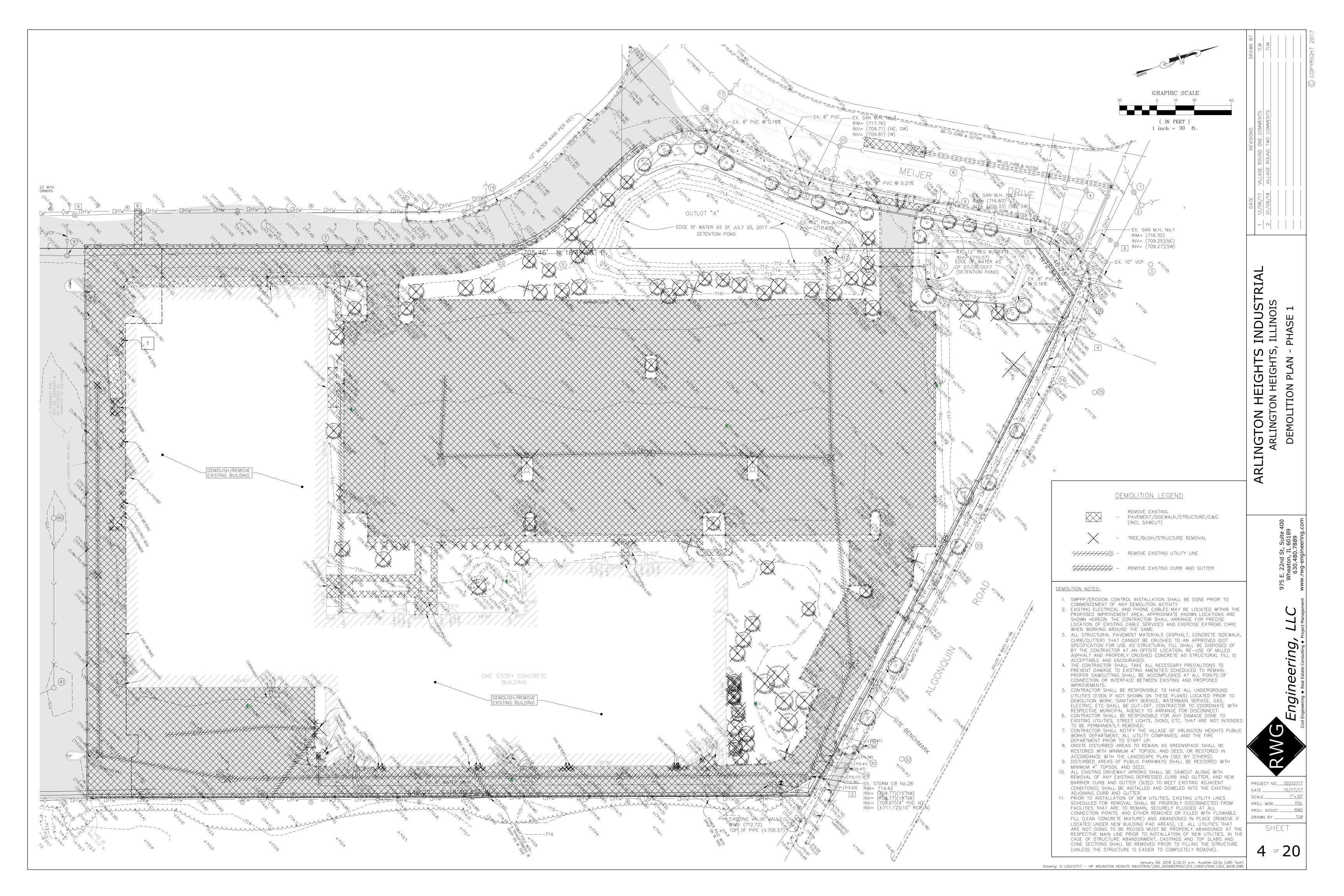
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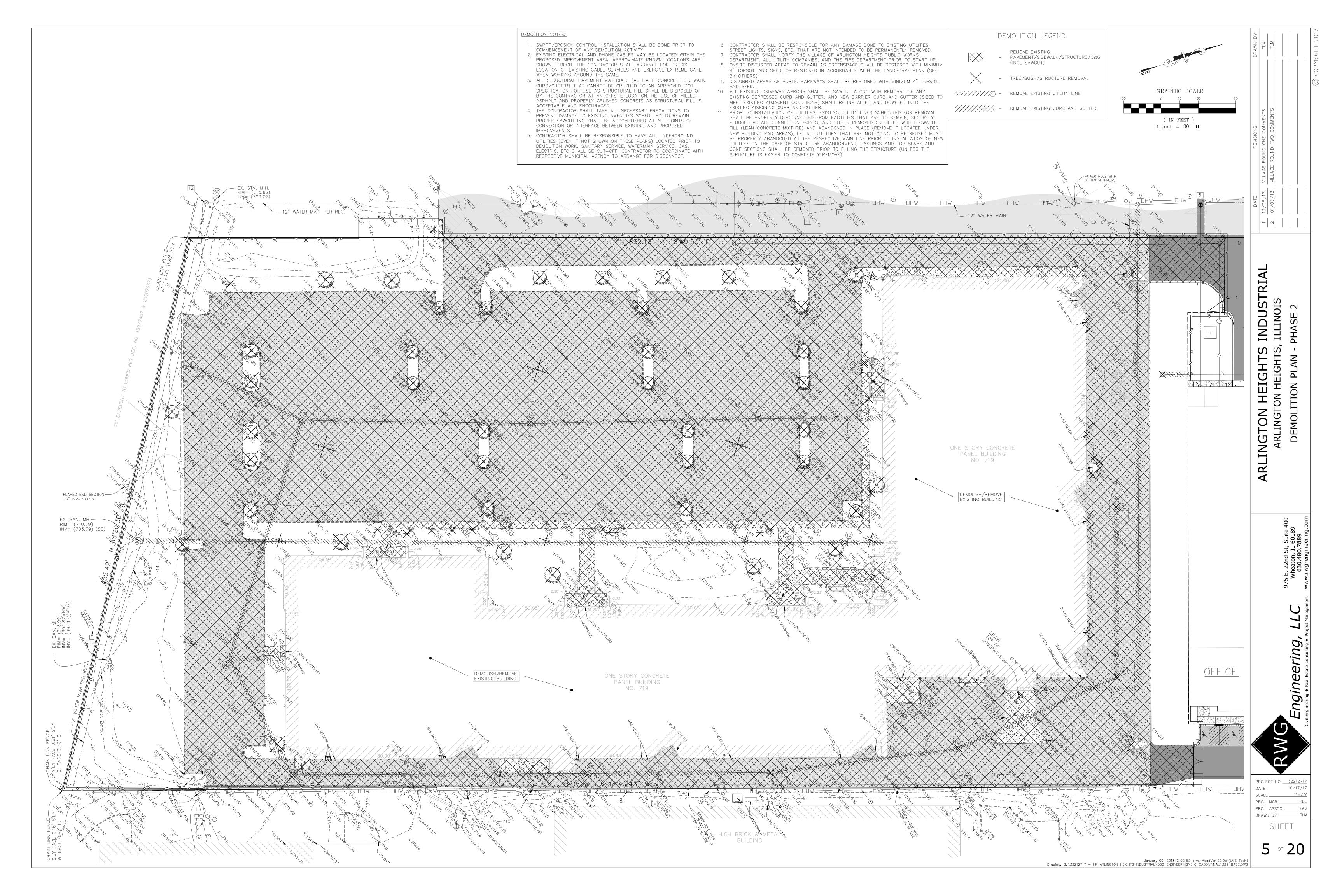
EXPIRATION DATE: 11/30/19

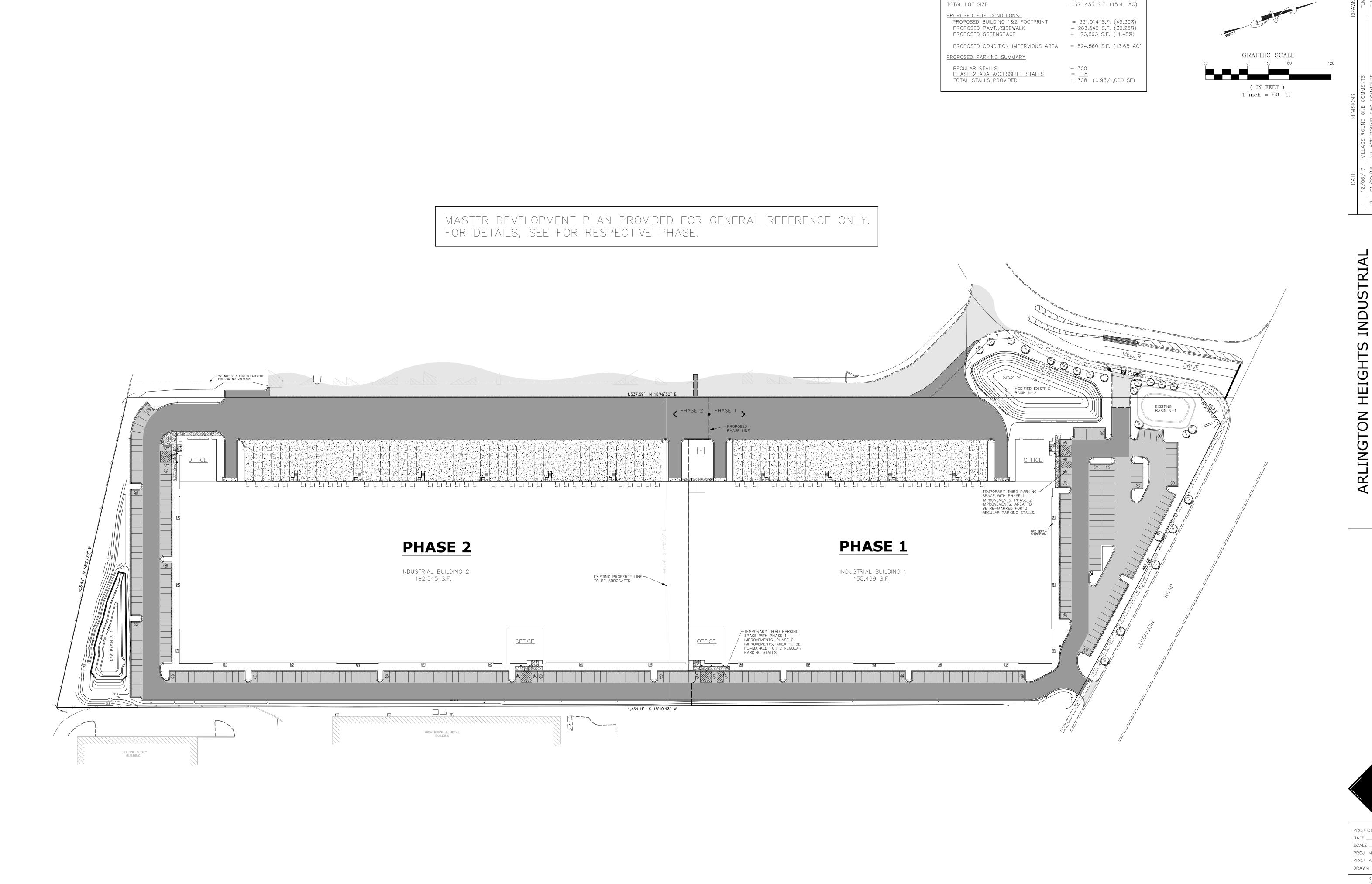
INDUSTRIAL, ILLINOIS ALINGTON HEIGHTS I
ARLINGTON HEIGHTS, 1
TITLE SHEET









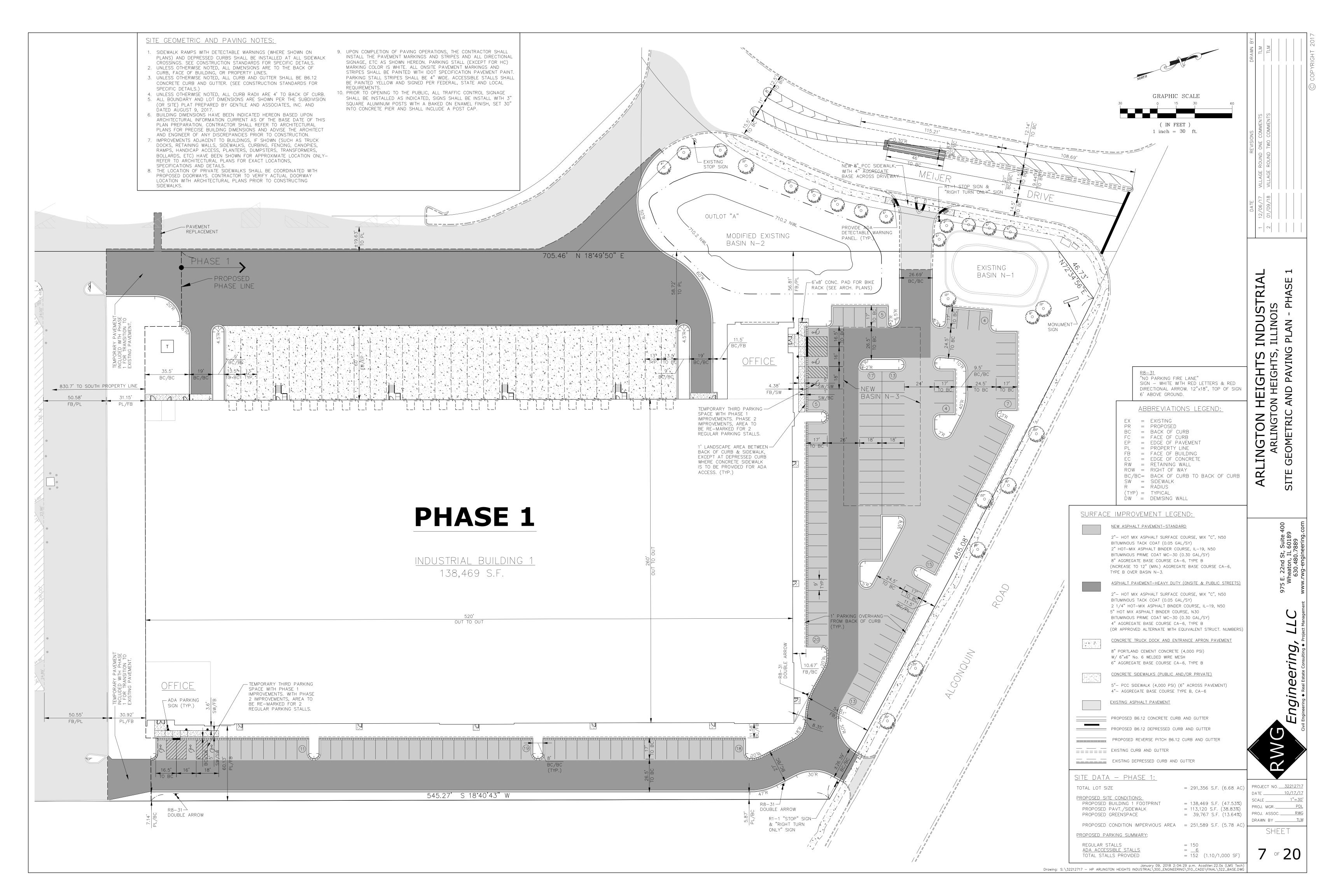


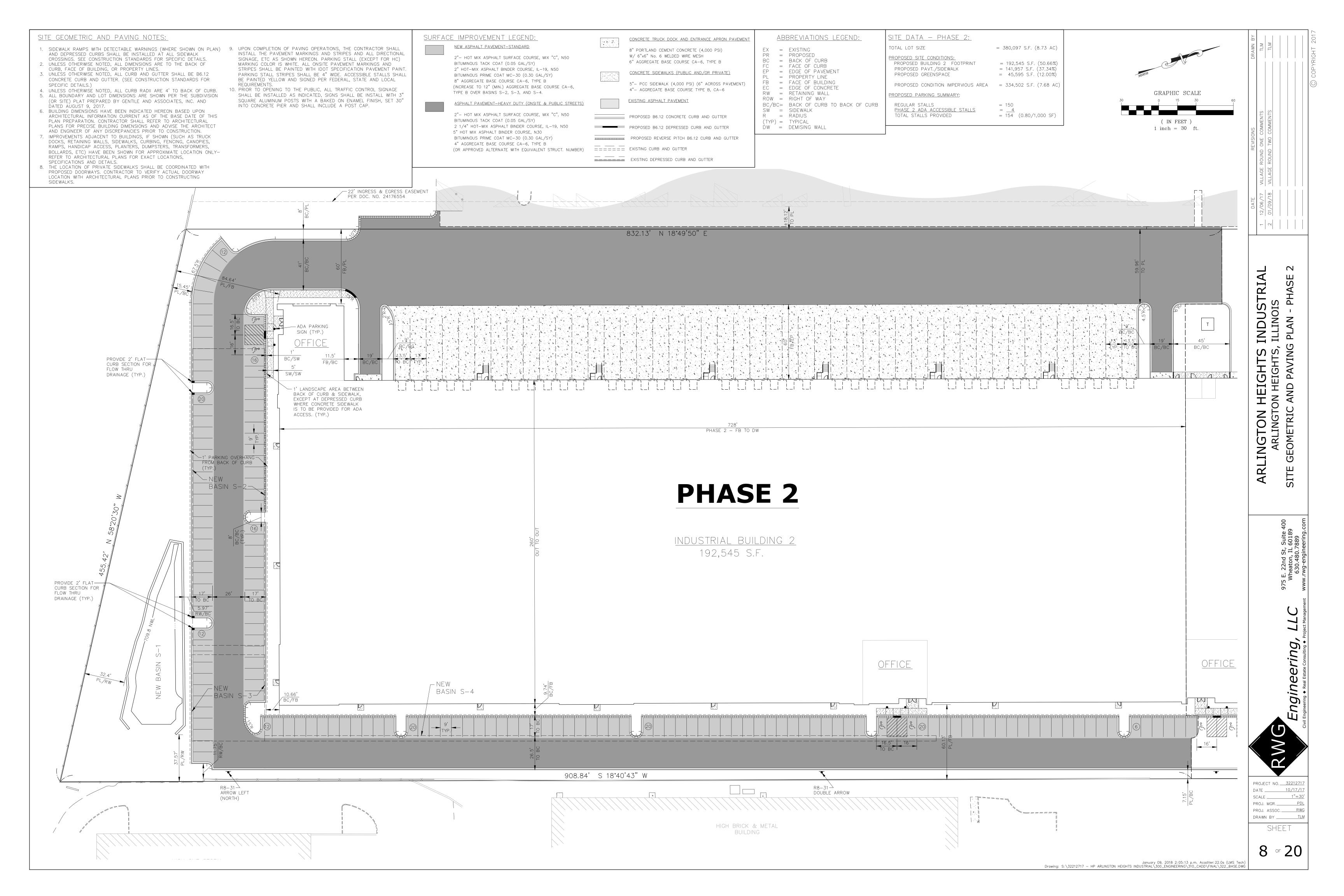
TOTAL SITE (PHASE 1&2 BUILDOUT):

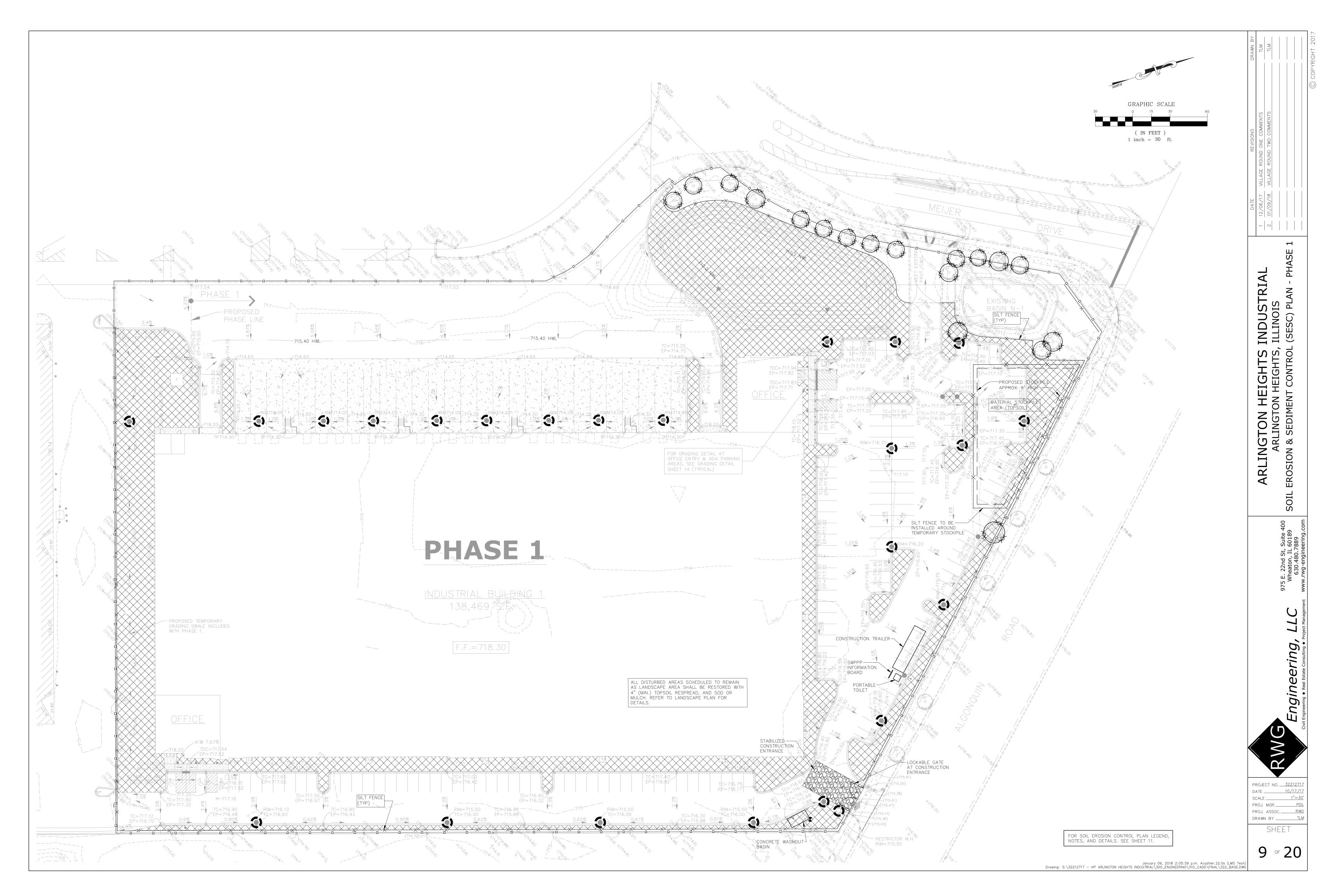
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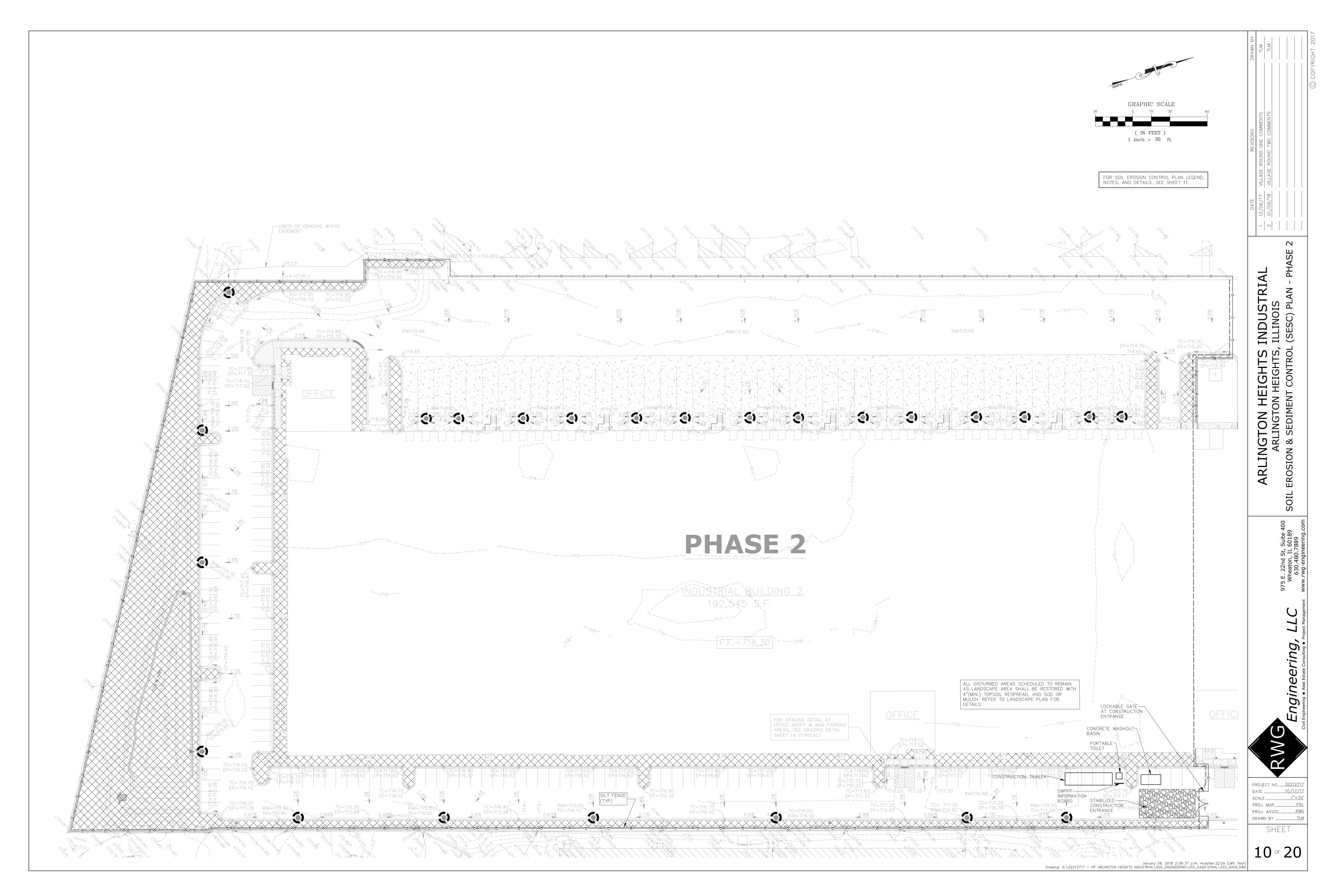
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SHEET











2"X2"X36" FENCE POSTS 10' O/C WITH WOVEN WIRE FENCE (14 1/2 GAGE MIN. MAX. 6" MESH SPACING) OR 5' O/C WITHOUT WIRE FENCE. -



SPECIAL CONCRETE WASHOUT NOTE:

CATCH-ALL

Inlet Protection Device

condition, even with a fully loaded filter

stormwater runoff before they enter the drain system.

Custom fitted to meet virtually any structure and inlet

casting/grate combination, the sturdy metal frame fits under the grate without appreciably changing the grate height - no concerns for street cleaning and plowing crews. The durable frame is reusable - project after project. The filter bag has two layers: a high flow, small

by a strong, polyester net outer layer. A stainless band with

important, the two-ring frame design provides an overflow any potential for a water back-up and site flooding

a worm-screw clamp secures the reusable, replaceable filter bag to the lower frame ring. Unique and critically

Catch-All is a storm drain system inlet protection device Reusable Steel Frame -

CONCRETE WASHOUT SHALL BE CONTAINED AT ALL TIMES.

HANES'GEO COMPONENTS"

a *Leggett & Platt* • company

Low initial cost for reusable metal frame, filter bag

Overflow capacity exceeds grate inlet flow rate

Minimum 2 cubic feet of pollutant storage capacity

Property Test Method Units MARV Grab Tensile ASTM D-4632 lbs 100

Grab Elongation ASTM D-4632 % 50

Trap Tear ASTM D-4533 lbs 45 Puncture ASTM D-4833 lbs 65

Mullen Burst ASTM D-3786 psi 225 Permittivity ASTM D-4491 sec⁻¹ 2.0

UV Resistance ASTM D-4355 %/hrs 70/500

EROSION CONTROL LEGEND

INLET PROTECTION

TREE PROTECTION FENCE

SILT FENCE & CHAIN-LINK FENCE

PERMANENT SEEDING AND LANDSCAPING

(LANDSCAPING PER PLAN BY OTHERS)

ASTM D-4491 gpm/ft² 145 ASTM D-4751 U.S. Std 70

29165 Wall Street, Wixom, MI 48393-3525 Toll free: 866.960.4300

STORM DRAINAGE STRUCTURE

Initial filtration down to 70 microns, with a flow rate of

Easy to install and maintain Filter bags are replaceable

145 gal/min/ft²

The information presented herein is, to the best of our knowledge, true and accurate. No warranty or guarantee, expressed or implied, is made regarding the performance of any product, since the manner of use and handling are beyond the control of Hanes Geo Components. Nothing contained herein is to be

construed as permission or as a recommendation to infringe on a patent

___×___

PLAN ABBREVIATION LEGEND

(IN ADDITION TO TITLE SHEET)

P = PAVEMENT

FI = FLOW LINE

R = RIM (OR RADIUS)

FF = FINISHÈD FLOOR

EP = EDGE OF PAVEMENT

TW = TOP OF WALL ELEV

SW = WALK (OR TOP OF WALK)

BW = BOTTOM OF WALL (GRADE) ELEV

TC = TOP OF CURB

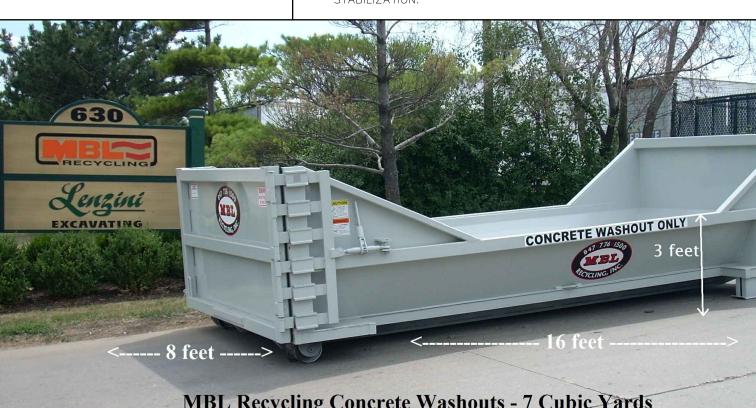
Metro Grand Rapids, MI 425 36th Street SW, Wyoming, MI 49548-2108 Toll free: 800.248.8230

WASHOUT MATERIAL SHALL NOT BE ALLOWED TO ENTER STORM SEWERS OR LEACH INTO THE SOIL UNDER ANY CIRCUMSTANCES. ALL WASTE SHALL BE DISPOSED OF PROPERLY AND THE LOCATION OF THE WASHOUT SHALL BE

DESIGNATED WITH PROPER SIGNAGE (SEE PLAN).

- . ALL SITE RUNOFF SHALL BE ROUTED THROUGH TRAPS AND SILTATION

- 11. THE CONTRACTOR SHALL INSPECT ALL EROSION CONTROL MEASURES AT



Junction Slot Junction Slot Jute Mesh Excelsion Blanket Erosion Control Paper DETAIL 2

4″ Min —

Project

Designed _ Checked _

Terminal Fold

Jute Mesh □nly

EROSION BLANKET PLAN

6″ To 12″-

DETAIL 1

Tamp Soil

Firmly —

_3″ Min

Staple -

Terminal Fold

Excelsion Blanket

Erosion Control Paper

SEEET 1 DF 2

1. In erosion control paper, check slots, in ditch channel shall be spaced so that one occurs within each 50' on slopes of more than 4%

. Staples are to be placed alternately, in columns approximately 2'

are required per 4'x 225' roll of material and 125 staples are

4. All terminal ends and transverse laps shall be stapled at

and less than 6%. On slopes of 6% or more, they shall be spaced so

apart and in rows approximately 3' apart. Approximately 175 staples

8. Erosion control material shall be placed loosely over ground surface

EROSION BLANKET PLAN

Anchor Slot

Jute Mesh

Erosion Control Paper

DETAIL 3

Lap Joint

Jute Mesh

Erosion Control Paper

Excelsion Blanket Shall

Be Butted Together.

DETAIL 5

approximately 12" intervals.

that one occurs within each 25%.

required per 4'x 150' roll of material.

NOTES:

Do not stretch.

Excelsion Blanket

Tamp Soil

Check Slot

DETAIL 4

STAPLE DETAIL

Erosion Control Paper

Firmly

Existing

Coarse Aggregate —

Operation.

* Must Extend Full Width

Of Ingress And Egress

Ground -

3.Any drainage facilities required because of washing shall be

4. If wash racks are used they shall be installed according to the

constructed according to manufacturers specifications.

L = 70' min (check municipality)

30'min for a single residence lot

B — Wash Rack

PLAN VIEW

SIDE ELEVATION

1. Filter fabric shall meet the requirements of material specification

592 GEDTEXTILE, Table I or 2, Class I, II or IV and shall be placed

2.Rock or reclaimed concrete shall meet one of the following IDOT coars

to construction specification 25 ROCKFILL using placement Method 1

aggregate gradation, CA-1, CA-2, CA-3 or CA-4 and be placed according

L = 70' min (check municipality) 30'min for a single residence lot

over the cleared area prior to the placing of rock.

∠Filter Fabric

and Class III compaction.

manufacturer's specifications.

L Existing Ground

(Optional)

└ Positive Drainage

Trapping Device.

To Sediment

STABILIZED CONSTRUCTION ENTRANCE PLAN STABILIZED CONSTRUCTION ENTRANCE PLAN

Filter Fabric —

Reinforced Concrete

Pavement

Existing

-Mountable Berm (Optional)

SECTION A-A

6'- 7"

SECTION B-B

_-630B

- Drain Space

SHEET 2 DF 2

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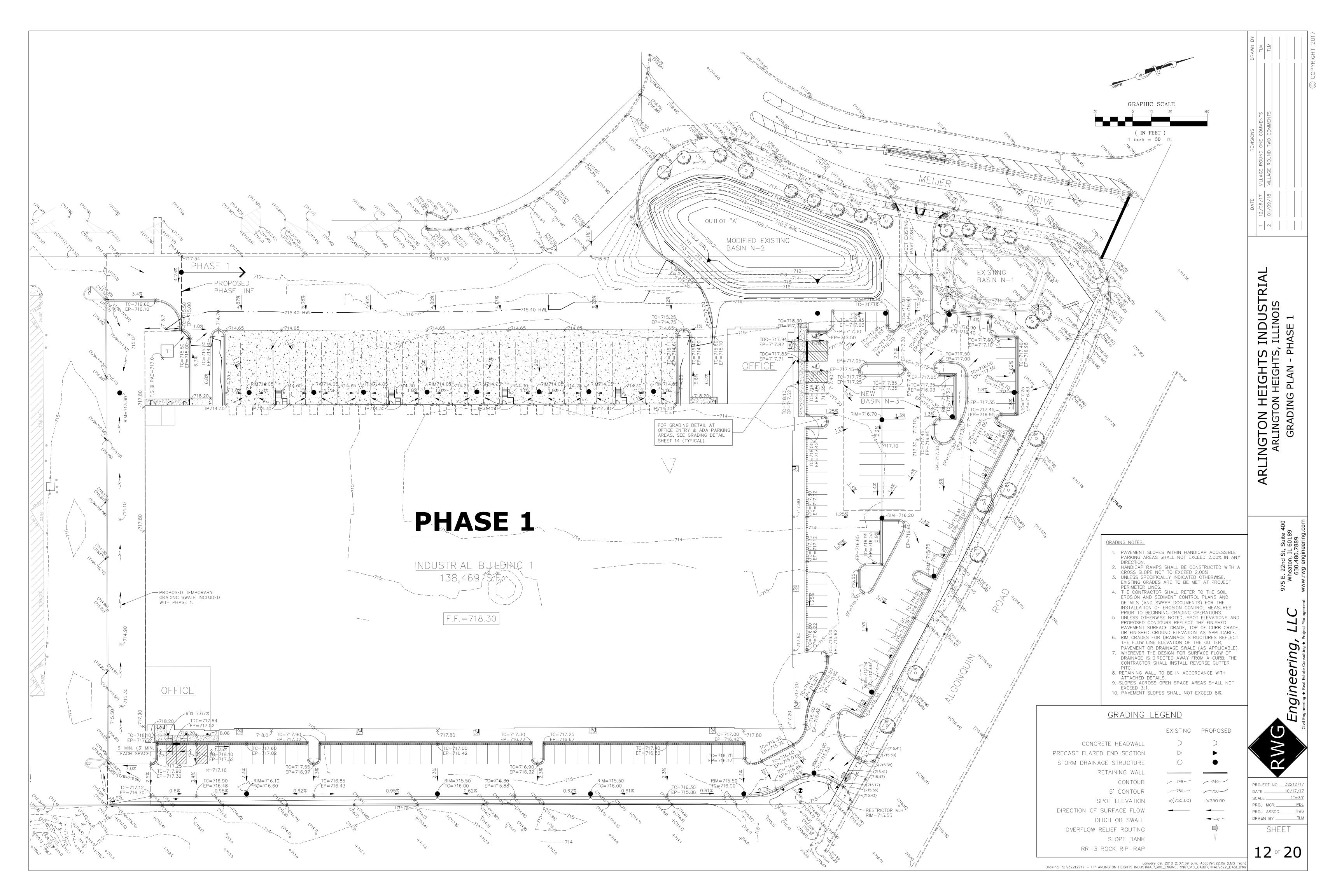
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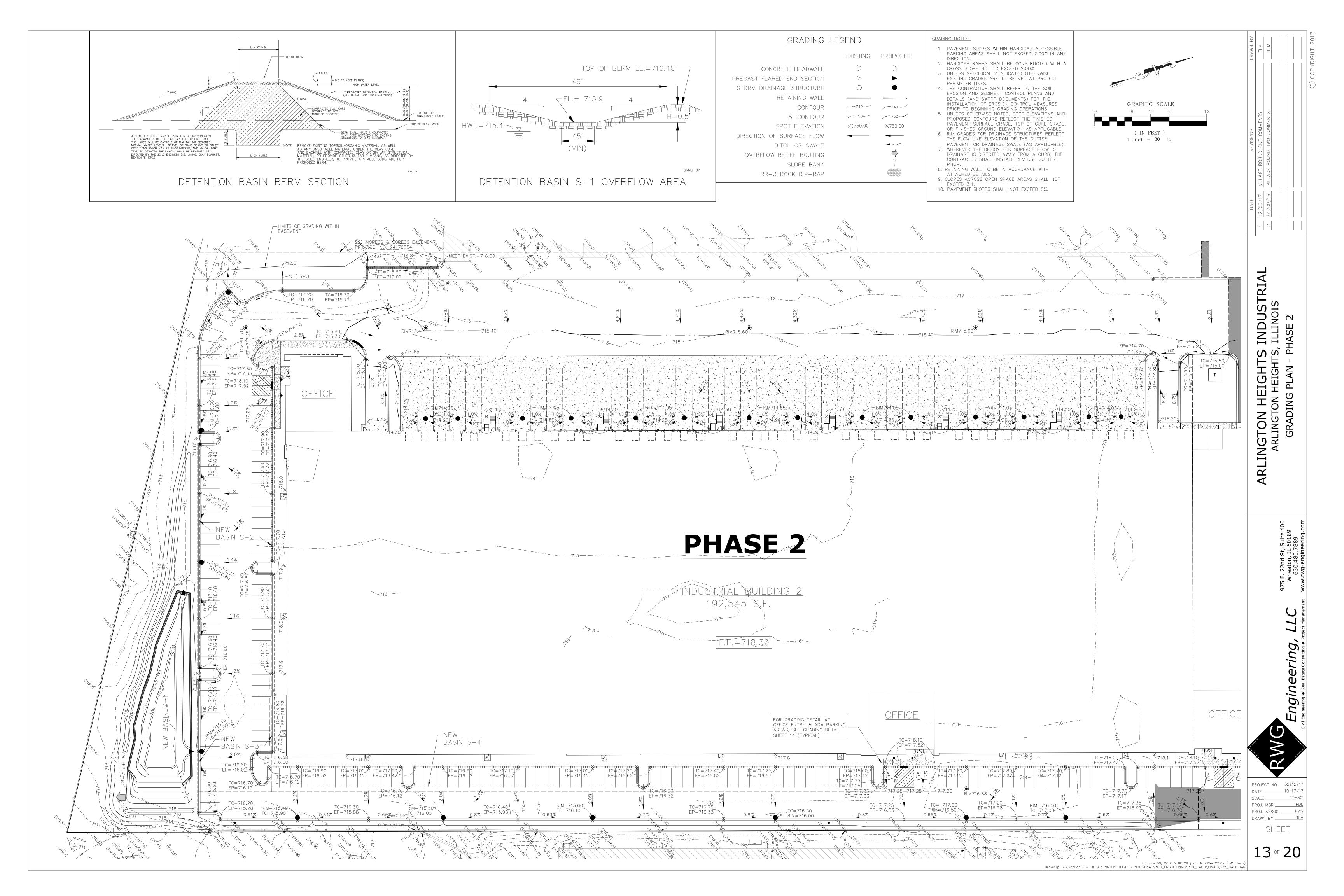
PROJ. MGR. PDL

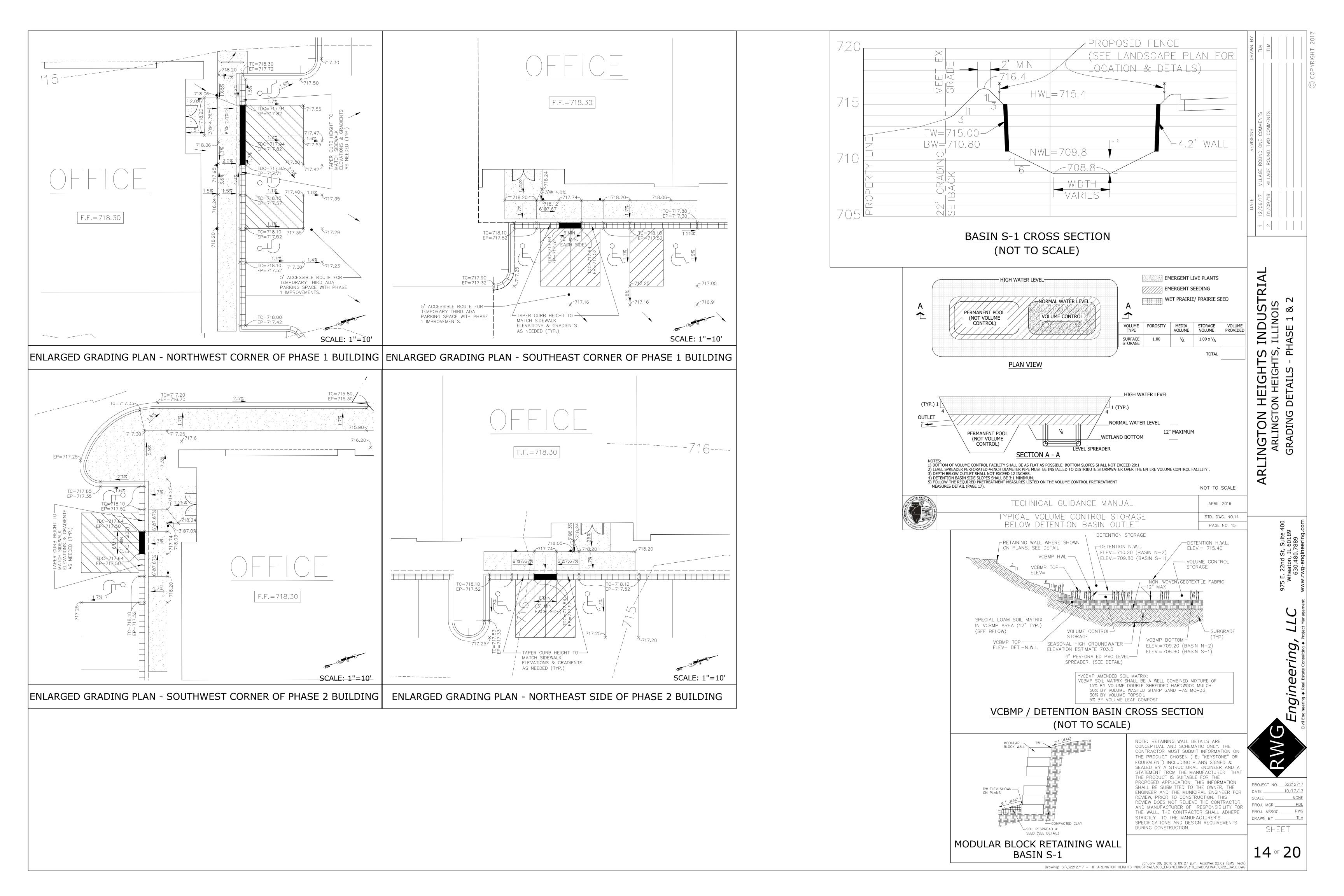
PROJ. ASSOC. RWG

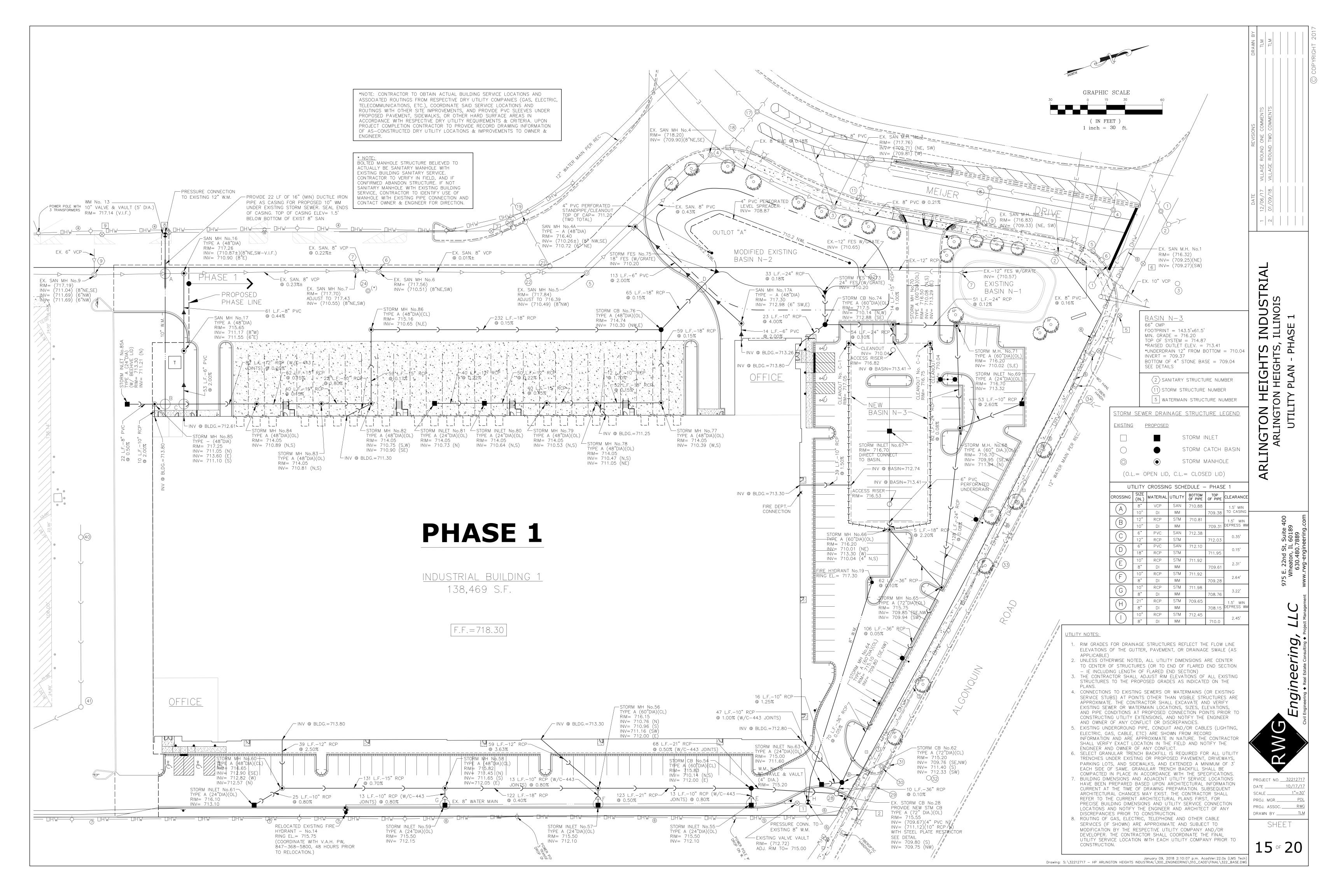
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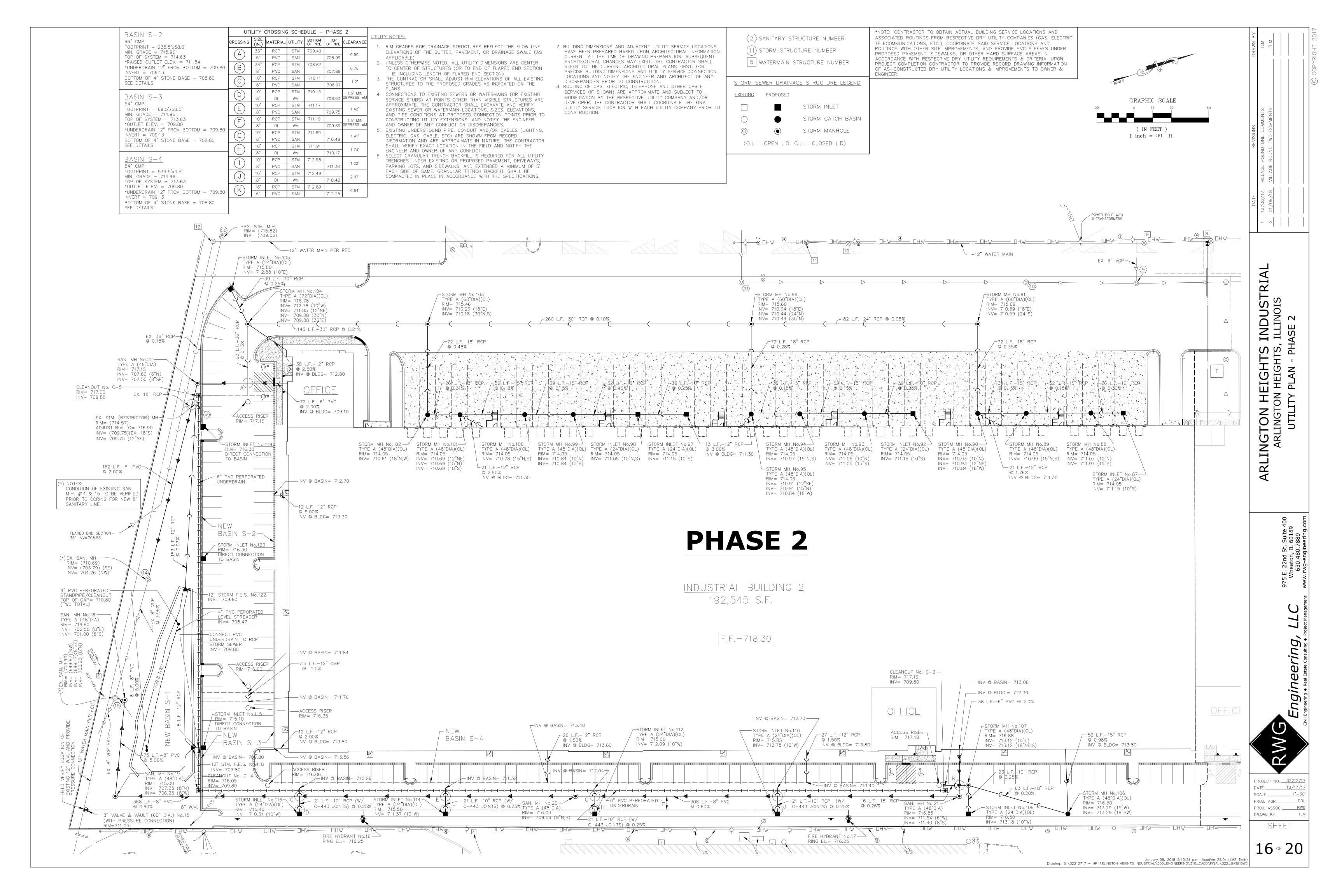
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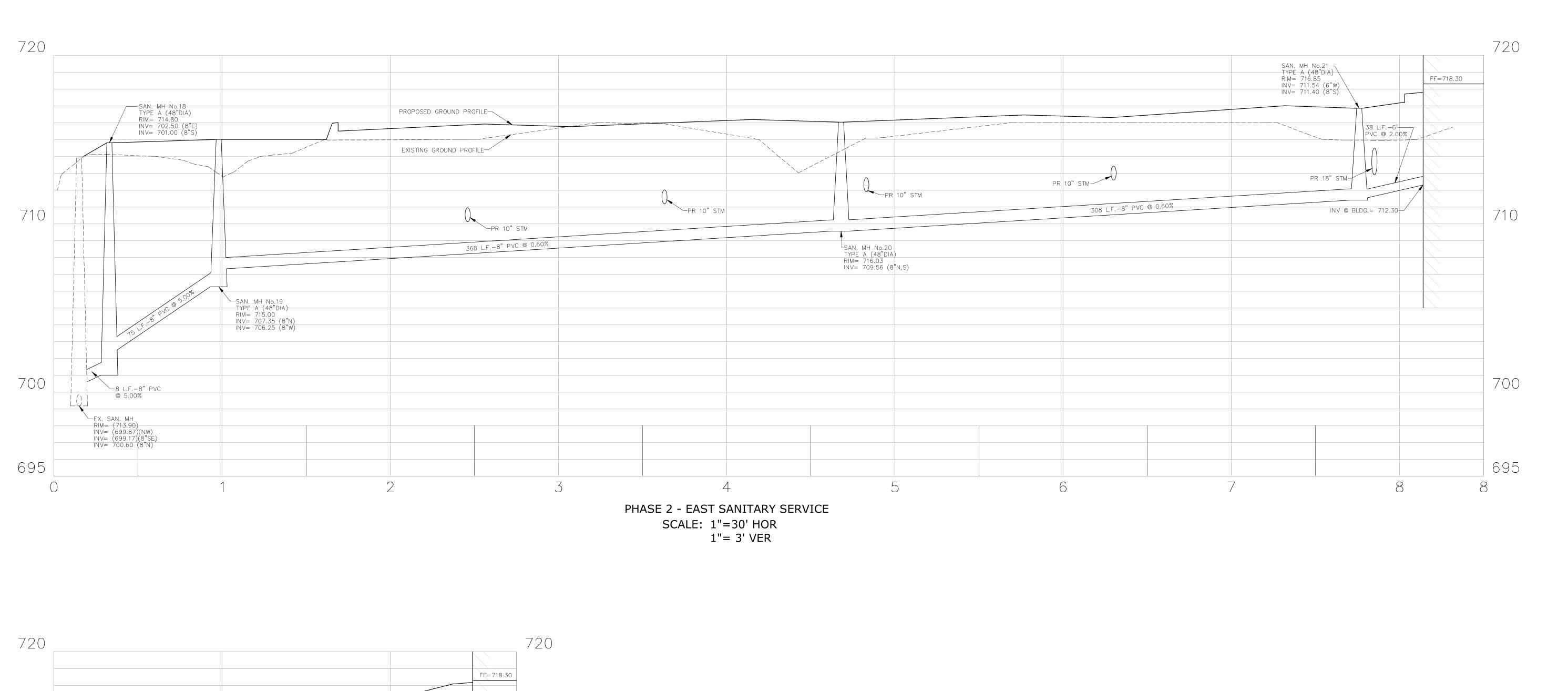


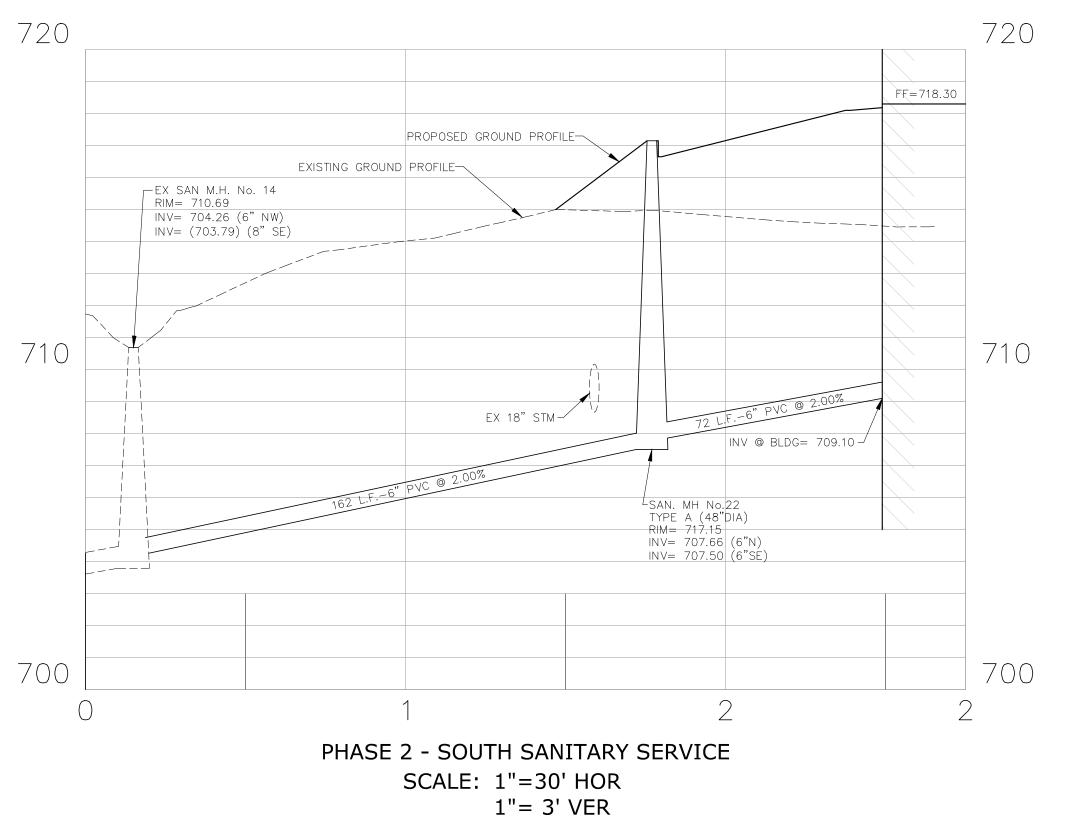


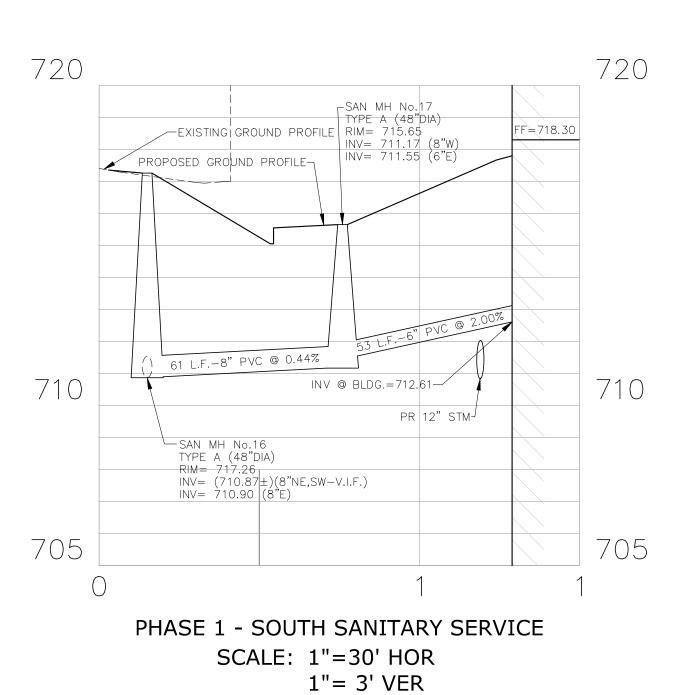


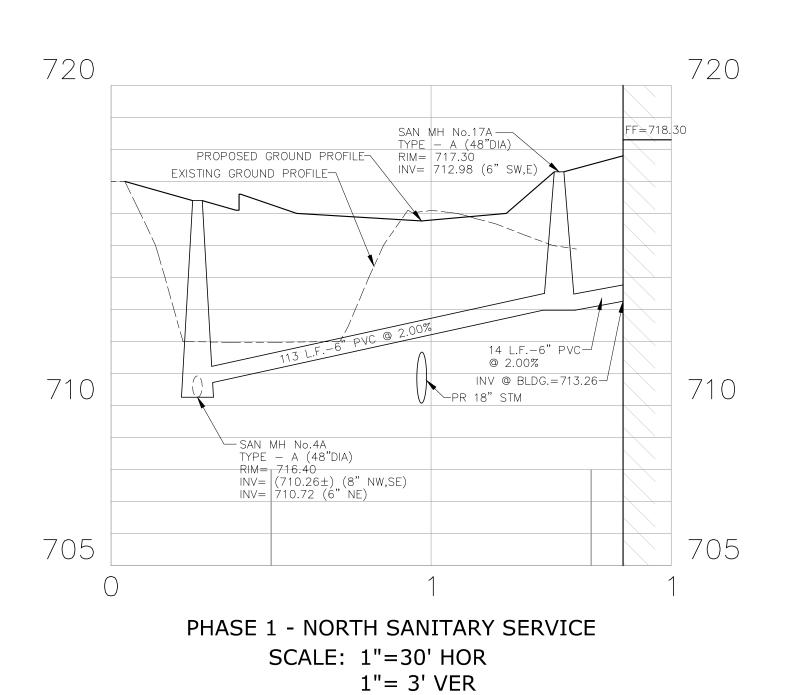














ARLINGTON HEIGHTS INDUSTF ARLINGTON HEIGHTS, ILLINOIS PLAN AND PROFILE - PHASE 1 & 2

975 E. 22nd St, Suite 400 Wheaton, IL 60189 630.480.7889

RWG Engineering, LLC

PROJECT NO. 32212717

DATE 10/17/17

SCALE 1"=30'

PROJ. MGR. PDL

PROJ. ASSOC. RWG

DRAWN BY TLM

SHEET

USE OF IMPROVEMENT PLANS

No Improvement Plans shall be used for construction unless specifically marked "For Construction." Prior to commencement of construction, the contractor shall verify all dimensions and conditions affecting their work with the actual conditions at the job site. If there are discrepancies from what is shown on the construction plans, the contractor shall immediately report same to the engineer before doing any work, otherwise the contractor assumes full responsibility. In the event of disagreement between the construction plans, standard specifications, and/or special details, the contractor shall secure written instructions from the engineer prior to proceeding with any part of the work impacted by omissions or discrepancies. Failing to secure such instruction, the contractor will be considered to have proceeded at his own risk and expense. In the event of any doubt or question with respect to the true meaning of the construction plans or specifications, the decision of the engineer shall be final and conclusive.

HIGHWAY/RDADWAY CONSTRUCTION PERMITS
The contractor shall be responsible for obtaining all required permits for construction along or across existing streets or highways, including the use and access to existing streets. The contractor shall make arrangements for proper bracing, shoring, and other required protection of all roadways before construction begins. The contractor shall be responsible for any damage to streets or roadways and associated structures, and shall make repairs as necessary to the satisfaction of the engineer and applicable governmental agency.

Easements for existing utilities within public right-of-way are shown on the plans according to available records. The contractor shall be responsible for determining the exact location in the field of such utility lines and their protection from damage during construction. If existing utility lines of any nature are encountered which conflict in location or elevation with new construction, the contractor shall notify the engineer immediately so that the conflict may be resolved.

The contractor shall review the construction documents and determine all required improvements and verify all quantities as may be provided by the engineer or owner for bidding purposes, and report any discrepancies to the engineer. The contract price submitted by the contractor shall be considered as lump sum for the completed project unless there is a plan revision or written change to the scope of work.

INCIDENTAL CUNSTRUCTION

Whenever the performance of work is indicated on the plans and no item is included in the contract for payment, the work shall be considered incidental to the contract and no additional compensation will be provided.

During construction operations any loose material that is deposited in the flow line of gutters, drainage structures, ditches, etc. and obstructs the natural drainage flow line shall be removed at the close of each working day by the responsible party. The contractor shall insure positive site drainage at the close of each work day. Drainage may be achieved by ditching, pumping, or any other acceptable method. Failure to provide positive drainage will preclude any possible added compensation requested due to delays or unsuitable materials created as a result thereofter. At the conclusion of construction operations all drainage structures and flow lines shall be free from dirt and debris. This work shall be considered incidental to the contract.

The contractor is responsible for the installation and maintenance of adequate signage, traffic control, and warning devices to inform and protect the public during all phases of construction. All barricades and warning signs shall be provided in accordance with the IDDT Standard Specifications. Adequate lighting shall be maintained from dusk to dawn at all locations where construction operations warrant, or as designated by the engineer or applicable governmental agency. Traffic control items shall be in accordance with the IDDT "Manual on Uniform Traffic Control Devices."

by the engineer or applicable governmental agency. Traffic control items shall be in accordance with the IDDT "Manual on Uniform Traffic Control Devices."

PAVEMENT REMOVAL/REPLACEMENT

Existing permanent type pavements or other permanent improvements which abut or otherwise interfere with proposed improvements and must be removed shall be saw cut full depth prior to removal. Items so removed shall be replaced with similar construction materials to original condition or better. Payment for

the contract, unless otherwise indicated. Removed pavement, sidewalk, curb, etc. shall be disposed of by the contractor at his own expense at an offsite dump site. – If not reused onsite (see demolition notes).

TREE PROTECTION

Existing trees not scheduled for removal shall be protected from damage. Trimming and sealing shall be in

saw cutting shall be included in the removal cost and replacement will be paid under the respective item in

Existing trees not scheduled for removal shall be protected from damage. Trimming and sealing shall be in accordance with IDOT Standard Specifications.

EXISTING SIGNAGE & MAIL BOXES

Existing signage and mill boxes that interfere with construction shall be promoved standard and

Existing signage and mail boxes that interfere with construction shall be removed, stored, and replaced/reset by the contractor in accordance with the IDOT Standard Specifications. Damage to these items shall be repaired/replaced by the contractor at his expense. Temporary mailbox facilities shall be provided as an incidental cost.

EXISITING FIELD TILE
Field tile encountered during construction shall be connected to proposed storm sewer or extended to

outlet into a proposed drainage way. If this is not possible, then existing tile shall be repaired with new pipe of same size and material (or better) and restored in acceptable operating condition at the original grade. Records of location and elevation shall be made by the contractor and furnished to the engineer upon project completion.

CONSTRUCTION DEBRIS CLEAN-UP
The contractor is responsible for removal and disposal of all excess material and debris resulting from his construction operations at no expense to the owner.

The contractor shall keep a set of approved construction plans on the jobsite, and shall maintain a legible record on said plans of field tile encountered, modifications/alterations to alignment/installation of proposed improvements, etc. Upon completion of the contractor's work, said record documents shall be provided to the engineer. Final payments shall not come due until this information is provided to the engineer.

SAFETY & CONSTRUCTION EXECUTION
The contractor shall comply with the rules and regulations of OSHA and appropriate authorities regarding jobsite safety provisions. The engineer and owner are not responsible for the construction means, methods, techniques, sequences or procedures, time for performance, programs, or for any safety precautions used by the contractor. The contractor is solely responsible for execution of his work in accordance with the contract documents.

Contractors responsible for construction shall purchase insurance for the benefit of the engineer, naming RWG Engineering, LLC as an additional insured to cover claims and expenses, including cost of defense, asserted against engineer, it's agents, employees, and consultants for bodily injury, sickness, disease or death caused by any negligent act or omission of the contractor, any subcontractor, anyone directly or indirectly employed by them or anyone for whose acts any of them may be liable. Such insurance shall state that: 'The coverage afforded the additional insured's shall be primary insurance for the additional insured with respect to claims arising out of operations performed by or on behalf of the contractor.' A certificate shall be issued to the engineer prior to the start of work. Applicable insurance maintained by RWG Engineering, LLC shall be considered secondary and on an excess or continent hasis

PROJECT SPECIFICATIONS I. <u>SDIL ERDSIONS AND SEDIMENT CONTROL</u>

GENERAL STANDARDS
Unless specifically modified below, all soil erosion and sediment control work shall be done in accordance with NPDES General Permit No. ILR10 and the "Illinois Urban Manual." The contractor shall conform to all requirements of this general permit including maintenance and inspection of erosion control measures and filing applicable certifications and reports. A copy of the notification of coverage letter shall be posted at the site in a prominent place for public viewing. Any control measures in addition to those outlined in these plans which are deemed necessary by the owner, engineer, or applicable governmental agency shall be immediately implemented by the contractor. Maintenance and replacement of erosion control items shall be considered incidental.

A copy of the Stormwater Pollution Prevention Plan (SWPPP) shall be kept onsite with all supplemental material as required per NPDES General Permit No. ILR10. Construction operations shall conform to permit requirements.

SITE PREPARATION
Prior to clearing and grading, perimeter silt fence shall be installed, and onsite sediment control measures shall be constructed and functional per the soil erosion and sediment control plan. The contractor shall construct ditches, swales, sediment traps, and siltation control measures to intercept surface waters prior to conveyance onto adjacent properties, routing surface flow to onsite treatment facilities.

STABILIZED CONSTRUCTION ENTRANCE
Temporary gravel construction entrances shall be installed and maintained to prevent sediment from being trucked offsite. Sediment reaching a public road shall be removed by shoveling or street sweeping at the end of each work day. Loose material deposited in the flow line of any gutter or drainage structure shall be removed at the end of each work day.

TOPSOIL STOCKPILES
Topsoil stockpiles shall be seeded within seven (7) calendar days of completion for erosion control, unless they will be distributed within fourteen (14) calendar days. Stockpiles shall be encompassed with a silt fence.

<u>DUST CONTROL</u>

Dust control shall be performed on a daily basis using water dispersed from a truck mounted tank with a standard discharge header for uniform application rate.

DE-WATERING

During de-watering operations water shall be pumped into sediment basins or silt traps. De-watering directly into field tile or stormwater structures is not permitted. Water pumped during construction operations shall be filtered.

Disturbed areas shall be stabilized by seeding within seven (7) days of completion of disturbance unless the area will be disturbed within fourteen (14) days. Temporary seed mixtures shall be applied at a rate of 64 lbs/acre.

When stormwater is routed through proposed detention basins to allow for settlement of suspended silt and debris, the basins shall be constructed at the start of the project. Basins shall be sufficiently over-excavated to provide appropriate volume for sediment collection.

STRUCTURE FILTER FABRIC

Filter fabric or inlet protection devices shall be installed in each onsite drainage structure. Fabric shall be cut large enough such that the entire grate is covered with a 24" minimum "basket" to collect sediment.

DRAINAGE SYSTEM MAINTENANCE
All storm sewers, catch basins, sumps, and detention basins provided with this project shall be cleaned at

<u>DRAINAGE SYSTEM MAINTENANCE</u>.
All storm sewers, catch basins, sumps, and detention basins provided with this project shall be cleaned at construction completion and prior to final acceptance. Cleaning may also be required during construction if the traps are not functioning properly.

The contractor shall inspect all erosion control measures at least once every seven (7) calendar days, and within 24 hours of a storm event of 0.5 inches or greater (or equivalent snowfall) and in accordance with NPDES guidelines. Necessary repairs or clean up to maintain the effectiveness of the control measures shall be done immediately.

CLEANUP
All erosion and sediment control measures shall be removed and disposed of in accordance with applicable governmental agency requirements within 30 days of final site stabilization.

II. EXCAVATION AND GRADING - (EARTHWORK)

GENERAL STANDARDS

Unless specifically modified below, all excavation and grading - (earthwork) shall be done in accordance with the applicable sections of the "Standard Specifications for Road and Bridge Construction in Illinois," as published by IDOT, Latest Edition.

the applicable sections of the "Standard Specifications for Road and Bridge Construction in Illinois," as published by IDDT, Latest Edition.

<u>SITE PREPARATIONS</u>
Prior to onset of operations, the contractor shall become familiar with the soil erosion control

specifications. The establishment of erosion control procedures and the placement of filter fencing, etc. to protect adjacent property shall occur before mass grading begins, and in accordance with the implementation schedule.

Tree protection fencing shall be placed around any trees designated to be preserved within the construction zone. Fencing shall be placed in a circle centered around the tree, such that the entire drip zone (extent of furthest extended branches) shall be within the fence limits. The existing grade

within the fenced area shall remain undisturbed.

DEMOLITION

Demolition of existing structures, pavements, curbs, flatwork, utilities, etc. shall be disposed of at an offsite dump site provided by the contractor - If not reused onsite (see demolition notes). Existing water wells shall be closed and capped in accordance with the Illinois Water Well Construction Code, as published

by the Department of Public Health. Existing septic tanks and grease traps shall have all liquids and solids removed by a licensed waste hauler prior to structure removal or filling by the contractor.

<u>CLEARING AND GRUBBING</u>
Unless noted for preservation, all vegetative growth including trees and tree stumps shall be removed from the construction area.

TOPSOIL REMOVAL
Topsoil shall be stripped from all roadway, driveway, parking area, right-of-way, building pad and other designated structural areas. Stockpiling of topsoil for respread shall be at locations as directed by the owner. Topsoil stockpiled for future use shall be free from large roots, sticks, weeds, brush, stones larger than one inch diameter, and other litter or waste products not conducive to plant growth. Failure to properly sequence stockpiling operations shall not constitute a claim for additional compensation. No material shall be stockpiled in front yards, drainage swales, flood routing areas, utility locations, utility

UNSUITABLE MATERIAL
Unsuitable subgrade material shall be removed from roadway, driveway, parking lot, building pad, and any other designated areas. Biviously soft underlying soil shall be removed from all structural improvement areas, areas to receive clay fill, and wherever else designated on the site. If underlying structural subgrade soils rut deeper than one inch under construction equipment or if the moisture content exceeds that needed for proper compaction, the soil shall be scarified, dried, and recompacted to the required specifications.

EXCAVATION AND EMBANKMENT

Upon completion of topsoil removal, the contractor shall perform excavation and embankment (fill) operations in accordance with the improvement plans.

Structural embankment material shall be placed in level uniform layers so that the compacted thickness is

Structural embankment material shall be placed in level uniform layers so that the compacted thickness is approximately six inches. Each layer shall be thoroughly mixed during spreading to insure uniformity.

Embankment material within roadway, driveway, parking areas, and other structural clay fill areas shall be compacted to a minimum of ninety percent (90%) of maximum density (modified proctor method), or to such other density as determined appropriate by the soils engineer. Embankment for building pads shall be compacted to a minimum of ninety-five percent (95%) of maximum density (modified proctor method), or to such other density as determined appropriate by the soils engineer.

Embankment material within non-structural fill areas (random fill) shall be compacted to a minimum of eighty-five percent (85%) of maximum density (modified proctor method), or to such other density as determined appropriate by the soils engineer.

Embankment material within non-structural fill areas (random fill) required to raise the ground surface to or above the base (100 year) flood elevation shall be compacted to a minimum of ninety percent (90%) of maximum density (modified proctor method).

All subgrades for proposed street and pavement areas shall be proof-rolled by the contractor and any unstable areas shall be removed and replaced as directed by the soils engineer.

RACKETLLING CURRS, PAVEMENT, ETC.

BACKFILLING CURBS, PAVEMENT, ETC.
Curbs, pavements, sidewalks, etc. shall be backfilled by the contractor after installation in accordance with the improvement plan grades.

TUPSUIL RESPREAD

Except where otherwise noted, the contractor shall respread a minimum four (4) inch layer of topsoil on

Except where otherwise noted, the contractor shall respread a minimum four (4) inch layer of topsoil on all designated open space, parkway, landscape, and other non-structural areas.

Unless otherwise approved by the owner, the contractor shall remove from the site any excess or unsuitable earth material.

SEEDING
Upon completion of topsoil respread, the contractor shall install seed and fertilizer as indicated on these

INSPECTION BY THE SOILS ENGINEER
The owner provided soils engineer shall closely supervise and inspect the grading operations, particularly during the removal of unsuitable material and the construction of embankments or building pads. All testing, inspection and supervision of embankment quality, unsuitable removal and replacement, and other

soils related operations shall be entirely the responsibility of the soils engineer.

GRADING TOLERANCE

Building pad elevations, subgrades for pavement, driveways and sidewalks, and all yard/open space areas shall be completed within a tolerance of plus or minus 0.1 foot of design subgrade elevations.

<u>UTILITY INSTALLATION PREPARATION</u>
Prior to utility construction, proposed pavement areas, building pads, driveway and sidewalk areas, and yard/open space areas shall be rough graded to plus or minus one foot of design subgrade elevations.

NOTE RECARDING PLAN GRADES
Grade elevations shown on the improvement plans are finished grades. Pavement and/or topsoil respread thicknesses must be subtracted to determine subgrade elevations.

Grading and site improvement construction shall not cause ponding of stormwater. All areas adjacent to improvements shall be graded to provide positive site drainage.

RIP RAP MATERIAL

Stone Rip-Rap material provided shall conform to IDOT specification criteria.

SUBGRADE DESIGN CRITERIA

Pavement subgrade shall have a minimum IBR of 3.0 as determined by the soils engineer. The proposed pavement design has been based on a minimum IBR of 3.0. If areas of pavement subgrade are encountered which do not meet the minimum IBR requirement, subgrade remedial work or pavement design revisions will be ordered by the owner to obtain equivalent pavement strength.

III. <u>Underground utilities - universal</u>

improvement plans or per owner provided landscape plans.

GENERAL STANDARDS
All sewer and water main improvements shall be constructed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois," Latest Edition, along with applicable sections of the "Standard Specifications for Road and Bridge Construction in Illinois" as published by IDOT, Latest Edition, and the construction details and specifications of the applicable governmental agency.

GENERAL WORK SCOPE
Underground utility construction shall include trenching or augering; installation of pipe, structures and castings; backfilling of trenches with compaction; and testing as required. Fittings and accessories necessary to complete the work may not be specified, but shall be considered incidental to the cost of the contract.

<u>GRADE PREPARATION</u>

Rough grading to within one foot of finished subgrade shall be completed by the earthwork contractor prior to commencement of underground utility construction.

The contractor is responsible for dewatering any excavation for the installation of sewer or water systems. Dewatering will be considered incidental to the respective underground utility construction.

SHEETING AND BRACING
Any anticipated costs for sheeting and bracing shall be reflected in the contract amounts. Additional costs for sheeting and bracing will not be allowed.

costs for sheeting and bracing will not be allowed.

SELECT GRANULAR BACKFILL

All utility trenches beneath existing or proposed pavement, driveways and sidewalks, and existing or proposed utilities (i.e. crossings), and for a distance of three (3) feet either side of same (or more for deeper utilities as noted on the plans), and/or wherever else shown on the plans shall be backfilled with select granular material and firmly compacted in accordance with the construction standard details.

EXCESS TRENCH MATERIAL

The contractor shall spread excess excavated trench material adjacent to the trenches in an orderly fashion so as not to create a hazard or obstruction, and to maintain the site in a workable condition.

DISSIMILAR MATERIALS/PIPE CONNECTIONS

DISSIMILAR MATERIALS/PIPE CONNECTIONS

"Band-Seal" or similar flexible type couplings shall be used when connecting sewer pipes of dissimilar materials. When connection to an existing sewer main by means other than an existing wye, tee, or an existing structure, one of the following methods shall be used:

• Circular coring of sewer main with proper tools ("Shewer-Tap" machine or similar) and installation of hub-wye or hub-tee saddle

• Remove entire section of pipe (breaking only the top of one bell) and replace with precast wye or tee branch section

• Using a pipe cutter, neatly and accurately cut out desired length of pipe for insertion of proper fitting, using a non-shear mission coupling to hold assembly firmly in place

UTILITY STRUCTURE SELECT BACKFILL
Where select granular bedding and backfill is required around utility structures, the cost for same shall be merged into the structure cost.

STRUCTURE CASTINGS
Enames and lide (on costes) for societary, we can make and starm sower structures shall be as indicated on

Frames and lids (or grates) for sanitary, water main and storm sewer structures shall be as indicated on the plans, and the cost of same shall be integrated into the respective structure cost.

ADJUSTING RINGS
All structures shall incorporate a minimum of three (3) inches and a maximum of eight (8) inches of adjusting rings (two (2) rings maximum).

STRUCTURE ADJUSTMENT
All top of frames for utility structures (including B-Boxes) shall be adjusted to meet final finished grade upon completion of finished grading and final inspection (cost incidental). The contractor shall insure that roadway, curb, and pavement inlets or structures (frames and grates) are at finished grade.

HORIZONTAL AND VERTICAL SEPARATION OF WATER AND SEWER MAINS
Horizontal and vertical separation between water and sewer mains shall be maintained in accordance with the Standard Specifications for Water and Sewer Main Construction in Illinois and said specifications standard drawings 18, 19, 20, 21, 22, 23, and 24.

FLOOR DRAINS AND FOOTING DRAINS
All floor drains and floor drain sump pumps shall discharge into the sanitary sewer. All downspouts, footing drains and subsurface stormwaters shall discharge into the storm sewer or onto the ground - not into the sanitary sewer.

RIP RAP MATERIAL

Rip Rap material provided in conjunction with underground utility improvements shall conform to IDOT

specifications.

CONSTRUCTION RECORD

The contractor shall maintain a legible record on a set of construction plans information concerning all manholes, wyes and services, valve boxes, curb boxes, etc. such that they can be field located in a manner acceptable to the owner and applicable governmental agencys.

IV UNDERGROUND UTILITIES - SANITARY SEWER

SANITARY SEWER PIPE
Sanitary sewers and services (or combined sewers in combined sewer areas) shall be constructed of one or more of the following materials as specified on the plans:

• PVC gravity sewer pipe conforming to ASTM D-3034 for pipe diameters of 4 inch to 15 inch, or conforming to ASTM F-679 for pipe diameters of 18 inch to 48 inch, with minimum SDR of 26, and with Elastomeric gasket joints conforming to ASTM D-3212. The gasket shall comply with ASTM F-477. Sanitary services shall conform to ASTM D-2680 and D-2751 with solvent cement welded joints

conforming to same.

• Cement-lined ductile iron pipe class 52, conforming to AWWA C-151 (ANSI 21.51) with push-on joints conforming to AWWA C-111 (ANSI A21.11)

SANITARY SEWER BEDDING
Sanitary sewers shall be installed on compacted granular crushed stone bedding, 1/4 inch to 3/4 inch in size (IDBT gradation CA-11 or CA-13), with a minimum thickness of one fourth of the outside pipe diameter, but not less than 4 inches nor more than 8 inches. Bedding shall extend to one foot over the top of

but not less than 4 inches nor more than 8 inches. Bedding shall extend to one foot over the top of pipe for all sanitary sewer and services. Cost for bedding shall be merged into lineal footage cost for the respective sewer pipe.

SANITARY PIPE MANHOLE CONNECTIONS
Sanitary sewer manhole connections shall be made with a flexible water-tight boot precast into the

structure (see construction standard detail). Refer to ASTM C-923.

SERVICE CONNECTIONS TO MAINLINE SEWER

Service connections to mainline sewer shall be done with pre-cast wyes or tees manufactured for that purpose, and shall be of the same material as the mainline sewer.

SANITARY SERVICES
Services shall be laid to a minimum grade of 1.0 percent. The end of the service shall be sealed with a watertight plug.

SERVICE LOCATIONS
Sanitary services shall be installed in a separate trench from water services, with a minimum horizontal

V. UNDERGROUND UTILITIES - WATER MAIN

WATER MAIN PIPE.
Water main shall be cement-lined ductile iron pipe class 52 conforming to AWWA C-151 (ANSI A21.51). Rubber gasket Joints shall conform to AWWA C-111 (ANSI A21.11). Push-Dn pipe joints shall incorporate "Field Lock Gaskets" by U.S. Pipe or Series 1700 Mega-Lug. Ductile iron fittings shall conform to AWWA C-110 (ANSI A21.10). Cement lining shall conform to AWWA C-104 (ANSI A21.4). Protective wrapping is required. It shall conform to AWWA C105-99, minimum thickness 8 mill polyethylene tube such as Clow type F-191 or equal, and shall completely encase and seal the main, fittings, and accessories per manufacturer's directions.

<u>FITTINGS</u>

Water main fittings (bends, elbow, tees, increasers, reducers, etc.) may or may not be specifically referenced on the plans and quantities - if not, they shall be considered incidental and included in the lineal footage cost for the water main.

<u>DEPTH OF COVER - MAIN AND SERVICES</u>
Minimum depth of cover from finished grade to top of water main or water service pipe shall be five and one half (5.5) feet.

<u>THRUST BLOCKING</u>

Thrust blocking shall be installed with water mains at all bends, tees, elbows, etc. (see construction standard detail). Retainer glands or mega-lug fittings may be substituted if permitted by the applicable governmental agency. Cost of either to be merged into lineal footage cost for the water main.

WATER MAIN BEDDING
Water main shall be installed on compacted granular crushed stone bedding, 1/4 inch to 3/4 inch in size

Water main shall be installed on compacted granular crushed stone bedding, 1/4 inch to 3/4 inch in size (IDIT gradation CA-6), a minimum of 4 inches below the bottom of the pipe and extending upward to the springline (1/2 the pipe diameter). Cost for bedding shall be merged into lineal footage cost for the water main.

WALER VALVES Unless specifically noted otherwise, gate valves in accordance with the applicable governmental standard shall be used wherever valves are called for. Valves shall be iron body, bronze mounted, parallel resilient seat valves per AWA C-509. Valves shall be rated for 300 psi test pressure and 200 psi working pressure.

Valve vaults shall be used at all valve locations. Vaults shall be precast reinforced concrete structures, diameter as noted on the plans. Vaults shall include appropriate frames and lids (see construction standard detail(s).

PRESSURE TAPS
Where indicated on the plan, pressure tap operations shall be done while maintaining system pressure in the existing main. The existing main shall be cleaned prior to installation of the tapping sleeve. Tapping valve shall conform to AWWA C-500. Vault, supports, frame, and lid shall conform to the construction

FIRE HYDRANTS

Hydrants shall be of the manufacture and equipped with auxiliary valves and valve boxes in accordance with the applicable governmental agency's standard. Hydrants shall be equipped with two 2 1/2 inch hose nozzle connections and one 4 1/2 inch pumper port. Hose threads shall be the standard of the applicable governmental agency. Hydrants shall open left (counter-clockwise). Hydrants shall generally be located

three (3) feet clear of the back of curb.

SERVICE LOCATIONS

Water services shall be installed in a separate trench from sanitary (or storm) services, with a minimum horizontal separation of 10 feet.

Water mains shall be subject to a pressure test by the contractor. Hydrostatic pressure test and leakage shall be based on 150 psi for 2 hours. Chlorination for disinfection shall be in accordance with the Standard Specifications. Testing and chlorination of existing water mains (where connections are indicated on the plans) shall be considered incidental. In the event that pressure testing of existing mains fail, and such failures are attributable to pre-existing conditions not under the contractor's control, the contractor is entitled to additional payment to correct the deficiencies in the existing system.

VI. UNDERGROUND UTILITIES - STORM SEWER

STORM SEWER PIPE
Storm sewers and services shall be constructed of one or more of the following materials as specified on

Reinforced concrete pipe class IV unless otherwise indicated on the plans, conforming to ASTM C-76 with trowel applied bituminous mastic compound per ASTM C-76. Where noted on the plan the joints and pipe shall incorporate flexible gaskets conforming to ASTM C-443 or ASTM C-361 in lieu of mastic (typically at water main crossings).
Cement-lined ductile iron pipe class 52, conforming to AWWA C-151 (ANSI 21.51) with push-on joints conforming to AWWA C-111 (ANSI A21.11).
PVC gravity sewer pipe conforming to ASTM D-3034 (for pipe diameters of 4 inch to 15 inch) or conforming to ASTM F-679 (for pipe diameters of 18 inch to 48 inch). All pipe shall be SDR 35 or stronger, with elastomeric gasket joints conforming to ASTM D-3212.

STORM SEWER BEDDING
Storm sewers shall be installed on compacted granular crushed stone bedding, 1/4 inch to 3/4 inch in size (IDDT gradation CA-6), with a minimum thickness of one fourth of the outside pipe diameter, but not less than 4 inches nor more than 8 inches. Bedding shall extend upward to the springline of the pipe for concrete and ductile iron pipe, and one foot over the top of the pipe for PVC pipe and CMP pipe. Cost for bedding shall be merged into lineal footage cost for the respective sewer pipe.

INLETS, CATCH BASINS, AND MANHOLES All structures shall be pre-cast reinforced concrete (see construction standard details). Structure sections and adjusting rings shall be securely sealed to each other with flexible bituminous mastic. Gaps at pipe connections shall be filled and securely sealed with non-shrink hydraulic cement mortar. Frames and grates (or lids) shall be as noted on the plans and shall be securely grouted with non-shrink hydraulic cement mortar.

End sections shall be pre-cast reinforced concrete flared end sections with an end block footing in accordance with the construction standard details (or CMP metal end section as appropriate). Flared end sections for sewers 12 inches or greater shall include a safety grating per the construction standard details.

If called for on the plans, special structures (headwalls, boxes, etc.) shall be in accordance with the construction standard details.

VII. PAVEMENT, CURBS, AND SIDEWALKS

Unless specifically modified below, all pavement, curb, and sidewalk construction shall be done in accordance with the applicable sections of the "Standard Specifications for Road and Bridge Construction in Illinois," as published by IDOT, latest edition.

SUBGRADE PREPARATION

The subgrade for roadways, pavement, and/or curbs and walks shall be finished by the excavation contractor to within 0.1 foot, plus or minus, of plan elevation. The paving contractor shall confirm the proper preparation of the rough subgrade, or notify the owner and engineer in writing of any discrepancies. Prior to placement of base material, the paving contractor shall fine grade the subgrade to insure proper thicknesses for all base and pavement courses.

BITUMINOUS PAVEMENT
Bituminous Pavement shall consist of the sub-base course, base course, hot-mix asphalt binder course, and hot-mix asphalt surface course, of the thickness and materials as specified on the plans. The maximum size aggregate for the hot-mix surface course mixture shall be 3/8 inches. A prime coat shall be applied to the sub-base course (or base course) as indicated on the plans. A tack coat shall be applied to the binder course prior to surface course placement.

WEATHER REQUIREMENTS FOR BITUMINOUS PAVING
Hot-mix binder shall be placed only when the ambient air temperature is at least 40 degrees Fahrenheit and the forecast is for rising temperatures. Hot-mix surface shall be placed when the ambient air temperature is at least 45 degrees Fahrenheit and the forecast is for rising temperatures.

BITUMINOUS PAVEMENT INSTALLATION
After installation of the base course, all traffic shall be kept off the base until the binder course is placed. After installation of the binder course (and for public improvements after the binder course has been in place for one winter), and upon completion of inspection and approval by the applicable governmental agency and owner, the binder shall be cleaned, a tack coat shall be applied at a rate of 0.05 gal/square yard (cost incidental), and the surface course shall be placed. All damaged areas in the binder, base or curb shall be repaired prior to surface replacement.

REINFORCED CONCRETE PAVEMENT
Concrete pavement and base course shall be of the thickness as shown on the plans. All concrete pavement shall be reinforced with 6 inch x 6 inch No. 6 welded wire fabric. All concrete pavement shall be broom finished. Contraction joints shall be sawcut immediately after pavement installation and initial curing.

CONCRETE PAVEMENT JOINTING

CONCRETE PAVEMENT JOINTING

Joints for concrete pavement shall be determined by contractor in the field using best practices. Maximum distance between joints shall be 15 feet. Jointing shall follow the American Concrete Pavement Association Publication "Proper use of Isolation and Expansion Joints in Concrete Pavements."

CONCRETE CURB AND GUTTER
Combination curb and gutter shall be as detailed on the plans, underlain with the specified base course. Pre-molded fiber expansion joints (3/4 inch thick) with 3/4 inch x 8 inch plain round steel dowel bars shall be installed at 60 foot intervals and at all P.C.'s, P.T.'s, curb returns, and at the end of each pour. Alternate ends of the dowel bars shall be greased and fitted with metal expansion tubes. Fiber expansion joints 3/4 inch shall also be used wherever sidewalk abuts the curb. Contraction joints shall be sawcut at 5 foot intervals. Two (2) reinforcing bars (No. 4), 10 feet long, shall be installed wherever curb and gutter crosses utility trenches or service lines. Curbs shall be depressed at all locations where public walks or pedestrian paths intersect curb lines (ADA Requirements - see construction standard details). Concrete curb and gutter shall be placed and vibrated to eliminate any honey-combing.

Sidewalks and base course shall be of the thickness and dimensions as shown on the plans. Sidewalks crossing driveways shall be reinforced with 6 inch x 6 inch No. 6 welded wire mesh. Sidewalks crossing utility trenches shall be reinforced with three (3) No. 4 reinforcing bars 10 feet long, centered over the trench crossing.

<u>CONCRETE CURING</u>
Curing and weather protection of all concrete surfaces (pavement, curb, sidewalk) shall be per the standard specifications.

TESTING
Testing of all pavement courses, curbs, and concrete shall be done by a qualified testing firm employed by the owner.

PAINTED PAVEMENT MARKINGS

Painted pavement markings and symbols shall be installed in the color and location as shown on the plan, and conforming to the standard specifications. Markings and symbols shall only be applied when the temperature is 50 degrees Fahrenheit or above.

THERMIPLASTIC PAVEMENT MARKINGS
Thermoplastic pavement markings and symbols, of the type and color as noted on the plans, shall be installed on public roadways. Thermoplastic shall only be applied when the air temperature is 55 degrees Fahrenheit or greater, and no later than November 1st or earlier than April 15th.

VIII. MWRD GENERAL NOTES

A. REFERENCED SPECIFICATIONS

A. REFERENCED SPECIFICATIONS

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE FOLLOWING, EXCEPT AS MODIFIED

HEREIN OR ON THE PLANS:

* STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), BY THE ILLINDIS DEPARTMENT OF TRANSPORTATION (IDOT SS) FOR ALL IMPROVEMENTS EXCEPT SANITARY SEWER AND WATER

* STANDARD SPECIFICATIONS FOR WATER AND SEWER MAIN CONSTRUCTION IN ILLINOIS, LATEST EDITION (SSWS)
FOR SANITARY SEWER AND WATER MAIN CONSTRUCTION;

* VILLAGE OF ARLINGTON HEIGHTS MUNICIPAL CODE;

* THE METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO (MWRD) WATERSHED MANAGEMENT
ORDINANCE AND TECHNICAL GUIDANCE MANUAL;

* IN CASE OF CONFLICT BETWEEN THE APPLICABLE ORDINANCES NOTED, THE MORE STRINGENT SHALL TAKE
PRECEDENCE AND SHALL CONTROL ALL CONSTRUCTION.

B. NOTIFICATIONS
1. THE MWRD LOCAL SEWER SYSTEMS SECTION FIELD OFFICE MUST BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF ANY WORK (CALL 708-588-4055).
2. THE VILLAGE OF ARLINGTON HEIGHTS ENGINEERING DEPARTMENT AND PUBLIC WORKS MUST BE NOTIFIED AT LEAST 24 HOURS PRIOR TO THE START OF CONSTRUCTION AND PRIOR TO EACH PHASE OF WORK. CONTRACTOR SHALL DETERMINE ITEMS REQUIRING INSPECTION PRIOR TO START OF CONSTRUCTION OR EACH WORK PHASE.

3. THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION FOR THE EXACT LOCATIONS OF UTILITIES AND FOR THEIR PROTECTION DURING CONSTRUCTION. IF EXISTING UTILITIES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, IMMEDIATELY NOTIFY THE ENGINEER SO THAT THE CONFLICT CAN BE RESOLVED. CALL J.U.L.I.E. AT 1-800-892-0123.

C. GENERAL NOTES1. ALL ELEVATIONS SHOWN ON PLANS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).2. MWRD, THE MUNICIPALITY AND THE OWNER OR OWNER'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO INSPECT, APPROVE, AND REJECT THE CONSTRUCTION IMPROVEMENTS.

3. THE CONTRACTOR(S) SHALL INDEMNIFY THE OWNER, ENGINEER, MUNICIPALITY, MWRD, AND THEIR AGENTS, ETC., FROM ALL LIABILITY INVOLVED WITH THE CONSTRUCTION, INSTALLATION, OR TESTING OF THIS WORK ON THE PROJECT.

PROJECT.

4. THE PROPOSED IMPROVEMENTS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE ENGINEERING PLANS AS APPROVED BY MWRD AND THE MUNICIPALITY UNLESS CHANGES ARE APPROVED BY MWRD, THE MUNICIPALITY, OR AUTHORIZED AGENT. THE CONSTRUCTION DETAILS, AS PRESENTED ON THE PLANS, MUST BE FOLLOWED. PROPER

CONSTRUCTION TECHNIQUES MUST BE FOLLOWED ON THE IMPROVEMENTS INDICATED ON THE PLANS.

5. THE LOCATION OF VARIOUS UNDERGROUND UTILITIES WHICH ARE SHOWN ON THE PLANS ARE FOR INFORMATION ONLY AND REPRESENT THE BEST KNOWLEDGE OF THE ENGINEER. VERIFY LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING THE CONSTRUCTION OPERATIONS.

6. ANY EXISTING PAVEMENT, SIDEWALK, DRIVEWAY, ETC., DAMAGED DURING CONSTRUCTION OPERATIONS AND NOT CALLED FOR TO BE REMOVED SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR.

7. MATERIAL AND COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE

7. MATERIAL AND COMPACTION TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF 1 MUNICIPALITY, MWRD, AND OWNER.

8. THE UNDERGROUND CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS TO NOTIFY ALL INSPECTION

9. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS DISTURBED DURING CONSTRUCTION SHALL BE ADJUSTED TO FINISH GRADE PRIOR TO FINAL INSPECTION.

10. RECORD DRAWINGS SHALL BE KEPT BY THE CONTRACTOR AND SUBMITTED TO THE ENGINEER AS SOON AS UNDERGROUND IMPROVEMENTS ARE COMPLETED, FINAL PAYMENTS TO THE CONTRACTOR SHALL BE HELD UNTIL THEY ARE RECEIVED. ANY CHANGES IN LENGTH, LOCATION OR ALIGNMENT SHALL BE SHOWN IN RED. ALL WYES OR BENDS SHALL BE LOCATED FROM THE DOWNSTREAM MANHOLE. ALL VALVES, B-BOXES, TEES OR BENDS SHALL BE TIED TO A FIRE HYDRANT.

D. SANITARY SEWER

1. THE CONTRACTOR SHALL TAKE MEASURES TO PREVENT ANY POLLUTED WATER, SUCH AS GROUND AND SURFACE WATER, FROM ENTERING THE EXISTING SANITARY SEWERS.

2. A WATER-TIGHT PLUG SHALL BE INSTALLED IN THE DOWNSTREAM SEWER PIPE AT THE POINT OF SEWER CONNECTION PRIOR TO COMMENCING ANY SEWER CONSTRUCTION. THE PLUG SHALL REMAIN IN PLACE UNTIL REMOVAL IS AUTHORIZED BY THE MUNICIPALITY AND/OR MWRD AFTER THE SEWERS HAVE BEEN TESTED AND ACCEPTED.

3. DISCHARGING ANY UNPOLLUTED WATER INTO THE SANITARY SEWER SYSTEM FOR THE PURPOSE OF SEWER FLUSHING OF LINES FOR THE DEFLECTION TEST SHALL BE PROHIBITED WITHOUT PRIOR APPROVAL FROM THE MUNICIPALITY OR MWRD.

4. ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR WATER

5. ALL FLOOR DRAINS SHALL DISCHARGE TO THE SANITARY SEWER SYSTEM.
6. ALL DOWNSPOUTS AND FOOTING DRAINS SHALL DISCHARGE TO THE STORM SEWER SYSTEM.

AND SEWER MAIN CONSTRUCTION IN ILLINOIS (LATEST EDITION)

14-INCH TO 48-INCH

7. ALL SANITARY SEWER PIPE MATERIALS AND JOINTS (AND STORM SEWER PIPE MATERIALS AND JOINTS IN A COMBINED SEWER AREA) SHALL CONFORM TO THE FOLLOWING:

PIPE SPECIFICATIONS

VITRIFIED CLAY PIPE

ASTM C-700

ASTM C-425

REINFORCED CONCRETE SEWER PIPE

ASTM C-76

ASTM C-443

CAST IRON SOIL PIPE

ASTM A-74

DUCTILE IRON PIPE

ANSI A21.51

POLYVINYL CHLORIDE (PVC) PIPE
6-INCH TO 15-INCH DIAMETER SDR 26
18-INCH TO 27-INCH DIAMETER F/DY=46

ASTM D-3034

ASTM D-3212

HIGH DENSITY POLYETHYLENE (HDPE)

ASTM D-3035

ASTM D-3212,F-477 (GASKETED)

WATER MAIN QUALITY PVC
4-INCH TO 36-INCH

ASTM D-2241

AWWA C905

THE FOLLOWING MATERIALS ARE ALLOWED ON A QUALIFIED BASIS SUBJECT TO DISTRICT REVIEW AND APPROVAL PRIOR TO PERMIT ISSUANCE. A SPECIAL CONDITION WILL BE ADDED TO THE PERMIT WHEN THE PIPE MATERIAL BELOW IS USED FOR SEWER CONSTRUCTION OR A CONNECTION IS MADE.

PIPE SPECIFICATIONS JOINT SPECIFICATIONS

ASTM D-2672 OR ASTM D-3139

ASTM D-3212

ASTM D-3212

POLYPROPYLENE (PP) PIPE

12-INCH TO 24-INCH DOUBLE WALL ASTM F-2736 D-3212, F-477

30-INCH TO 60-INCH TRIPLE WALL

ASTM F-2764

D3212, F-477

8. ALL SANITARY SEWER CONSTRUCTION (AND STORM SEWER CONSTRUCTION IN COMBINED SEWER AREAS), REQUIRES STONE BEDDING WITH STONE ½ " TO 1" IN SIZE, WITH MINIMUM BEDDING THICKNESS EQUAL TO ½ THE DUTSIDE DIAMETER OF THE SEWER PIPE, BUT NOT LESS THAN FOUR (4) INCHES NOR MORE THAN EIGHT (8) INCHES.

MATERIAL SHALL BE CA-7, CA-11 OR CA-13 AND SHALL BE EXTENDED AT LEAST 12" ABOVE THE TOP OF THE PIPE

9. "BAND SEAL" OR SIMILAR NON-SHEAR FLEXIBLE-TYPE COUPLINGS SHALL BE USED IN THE CONNECTION OF SEWER PIPES OF DISSIMILAR MATERIALS.

10. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS. SANITARY LIDS SHALL BE CONSTRUCTED WITH A CONCEALED PICKHOLE AND WATERTIGHT GASKET WITH THE WORD "SANITARY" CAST INTO THE LID.

11. WHEN CONNECTING TO AN EXISTING SEWER MAIN BY MEANS OTHER THAN AN EXISTING WYE, TEE, OR AN EXISTING MANHOLE, ONE OF THE FOLLOWING METHODS SHALL BE USED:

a) A CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS ("SHEWER-TAP" MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUBWYE SADDLE OR HUB-TEE SADDLE.

b) REMOVE AN ENTIRE SECTION OF PIPE (BREAKING ONLY THE TOP OF ONE BELL) AND REPLACE WITH A WYE OR TEE BRANCH SECTION.

c) WITH PIPE CUTTER, NEATLY AND ACCURATELY CUT OUT DESIRED LENGTH OF PIPE FOR INSERTION OF

PROPER FITTING, USING "BAND SEAL" OR SIMILAR COUPLINGS TO HOLD IT FIRMLY IN PLACE.

12. WHENEVER A SANITARY/COMBINED SEWER CROSSES UNDER A WATERMAIN, THE MINIMUM VERTICAL DISTANCE FROM THE TOP OF THE SEWER TO THE BOTTOM OF THE WATERMAIN SHALL BE 18 INCHES. FURTHERMORE, A MINIMUM HORIZONTAL DISTANCE OF 10 FEET BETWEEN SANITARY/COMBINED SEWERS AND WATERMAINS SHALL BE MAINTAINED UNLESS: THE SEWER IS LAID IN SEPARATE TRENCH, KEEPING A MINIMUM 18" VERTICAL SEPARATION; OR THE SEWER IS LAID IN THE SAME TRENCH WITH THE WATERMAIN LOCATED AT THE OPPOSITE SIDE ON A BENCH OF UNDISTURBED EARTH, KEEPING A MINIMUM 18" VERTICAL SEPARATION. IF EITHER THE VERTICAL OR HORIZONTAL DISTANCES DESCRIBED ABOVE CANNOT BE MINIMALM SEWER SCHOOLSES ABOVE THE WATERMAIN, THE SEWER SHALL BE CONSTRUCTED TO WATERMAIN STANDARDS.

13. ALL EXISTING SEPTIC SYSTEMS SHALL BE ABANDONED. ABANDONED TANKS SHALL BE FILLED WITH GRANULAR MATERIAL OR REMOVED.
14. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE A MINIMUM INSIDE DIAMETER OF 48 INCHES, AND SHALL BE CAST IN PLACE OR PRE-CAST REINFORCED CONCRETE.

15. ALL SANITARY MANHOLES, (AND STORM MANHOLES IN COMBINED SEWER AREAS), SHALL HAVE PRECAST "RUBBER

BOOTS" THAT CONFORM TO ASTM C-923 FOR ALL PIPE CONNECTIONS. PRECAST SECTIONS SHALL CONSIST OF MODIFIED GROUVE TONGUE AND RUBBER GASKET TYPE JOINTS.

16. ALL ABANDONED SANITARY SEWERS SHALL BE PLUGGED AT BOTH ENDS WITH AT LEAST 2 FEET LONG NON-SHRINK CONCRETE OR MORTAR PLUG.

17. EXCEPT FOR FOUNDATION/FOOTING DRAINS PROVIDED TO PROTECT BUILDINGS, OR PERFORATED PIPES ASSOCIATED

WITH VOLUME CONTROL FACILITIES, DRAIN TILES/FIELD TILES/UNDERDRAINS/PERFORATED PIPES ARE NOT ALLOWED TO BE CONNECTED TO OR TRIBUTARY TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS IN COMBINED SEWERS CONSTRUCTION OF NEW FACILITIES OF THIS TYPE IS PROHIBITED; AND ALL EXISTING DRAIN TILES AND PERFORATED PIPES ENCOUNTERED WITHIN THE PROJECT AREA SHALL BE PLUGGED OR REMOVED, AND SHALL NOT BE CONNECTED TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS.

18. A BACKFLOW PREVENTER IS REQUIRED FOR ALL DETENTION BASINS TRIBUTARY TO COMBINED SEWERS. REQUIRED BACKFLOW PREVENTERS SHALL BE INSPECTED AND EXERCISED ANNUALLY BY THE PROPERTY OWNER TO ENSURE PROPER OPERATION, AND ANY NECESSARY MAINTENANCES SHALL BE PERFORMED TO ENSURE FUNCTIONALITY. IN THE FVENT OF A SEWER SURCHARGE INTO AN OPEN DETENTION BASIN TRIBUTARY TO COMBINED SEWERS. THE

PERMITTEE SHALL ENSURE THAT CLEAN UP AND WASH DUT OF SEWAGE TAKES PLACE WITHIN 48 HOURS OF THE Storm event.

E. EROSION AND SEDIMENT CONTROL

1. THE CONTRACTOR SHALL INSTALL THE EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

2. EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE FUNCTIONAL PRIOR TO HYDROLOGIC DISTURBANCE OF THE

3. ALL DESIGN CRITERIA, SPECIFICATIONS, AND INSTALLATION OF EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE IN ACCORDANCE WITH THE ILLINOIS URBAN MANUAL.

4. A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL.

5. INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM:

a) UPON COMPLETION OF INITIAL EROSION AND SEDIMENT CONTROL MEASURES, PRIOR TO ANY SOIL DISTURBANCE.
b) ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A STORM EVENT WITH GREATER THAN 0.5 INCH OF RAINFALL OR LIQUID EQUIVALENT PRECIPITATION.

6. SOIL DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER AS TO MINIMIZE EROSION. IF STRIPPING, CLEARING, GRADING, OR LANDSCAPING ARE TO BE DONE IN PHASES, THE CO-PERMITTEE SHALL PLAN FOR APPROPRIATE SOIL EROSION AND SEDIMENT CONTROL MEASURES.

7. A STABILIZED MAT OF CRUSHED STONE MEETING THE STANDARDS OF THE ILLINDIS URBAN MANUAL SHALL BE INSTALLED AT ANY POINT WHERE TRAFFIC WILL BE ENTERING OR LEAVING A CONSTRUCTION SITE. SEDIMENT OR SOIL REACHING AN IMPROVED PUBLIC RIGHT-OF-WAY, STREET, ALLEY OR PARKING AREA SHALL BE REMOVED BY SCRAPING OR STREET CLEANING AS ACCUMULATIONS WARRANT AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.

8. CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE ILLINDIS URBAN MANUAL AND SHALL BE INSTALLED PRIOR TO ANY ON SITE CONSTRUCTION ACTIVITIES INVOLVING CONCRETE.

9. TEMPORARY DIVERSIONS SHALL BE CONSTRUCTED AS NECESSARY TO DIRECT ALL RUNDFF FROM HYDROLOGICALLY DISTURBED AREAS TO AN APPROPRIATE SEDIMENT TRAP OR BASIN. VOLUME CONTROL FACILITIES SHALL NOT BE USED AS TEMPORARY SEDIMENT BASINS.

10. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OR PERMANENTLY CEASED SHALL BE STABILIZED WITH TEMPORARY OR PERMANENT MEASURES WITHIN SEVEN (7) DAYS.
11. ALL FLOOD PROTECTION AREAS AND VOLUME CONTROL FACILITIES SHALL, AT A MINIMUM, BE PROTECTED WITH A DOUBLE-ROW OF SILT FENCE (OR EQUIVALENT).
12. VOLUME CONTROL FACILITIES SHALL NOT BE CONSTRUCTED UNTIL ALL OF THE CONTRIBUTING DRAINAGE AREA

13. SDIL STOCKPILES SHALL, AT A MINIMUM, BE PROTECTED WITH PERIMETER SEDIMENT CONTROLS. SDIL STOCKPILES SHALL NOT BE PLACED IN FLOOD PROTECTION AREAS OR THEIR BUFFERS.14. EARTHEN EMBANKMENT SIDE SLOPES SHALL BE STABILIZED WITH APPROPRIATE EROSION CONTROL BLANKET.

15. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE PROTECTED BY APPROPRIATE SEDIMENT CONTROL MEASURES.
 16. THE CONTRACTOR SHALL EITHER REMOVE OR REPLACE ANY EXISTING DRAIN TILES AND INCORPORATE THEM INTO THE DRAINAGE PLAN FOR THE DEVELOPMENT. DRAIN TILES CANNOT BE TRIBUTARY TO A SANITARY OR COMBINED

17. IF DEWATERING SERVICES ARE USED, ADJUINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE SITE INSPECTOR MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

18. THE CONTRCTOR SHALL BE RESPONSIBLE FOR TRENCH DEWATERING AND EXCAVATION FOR THE INSTALLATION OF SANITARY SEWERS, STORM SEWERS, WATERMAINS AS WELL AS THEIR SERVICES AND OTHER APPURTENANCES. ANY TRENCH DEWATERING, WHICH CONTAINS SEDIMENT SHALL PASS THROUGH A SEDIMENT SETTLING POND OR EQUALLY EFFECTIVE SEDIMENT CONTROL DEVICE. ALTERNATIVES MAY INCLUDE DEWATERING INTO A SUMP PIT, FILTER BAG OR EXISTING VEGETATED UPSLOPE AREA. SEDIMENT LADEN WATERS SHALL NOT BE DISCHARGE TO WATERWAYS,

19. ALL PERMANENT EROSION CONTROL PRACTICES SHALL BE INITIATED WITHIN SEVEN (7) DAYS FOLLOWING THE COMPLETION OFSOIL DISTURBING ACTIVITIES.

20. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED AND REPAIRED AS NEEDED ON A YEAR-ROUND BASIS DURING CONSTRUCTION AND ANY PERIODS OF CONSTRUCTION SHUTDOWN UNTIL PERMANENT

YEAR-ROUND BASIS DURING CONSTRUCTION AND ANY PERIODS OF CONSTRUCTION SHUTDOWN UNTIL PERMANENT STABILIZATION IS ACHIEVED.

21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN THIRTY (30) DAYS

AFTER PERMANENT SITE STABILIZATION.

22. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY THE ENGINEER, SITE INSPECTOR, OR MWRD.

ARLINGTON HEIGHTS INDUSTRI, ARLINGTON HEIGHTS, ILLINOIS PROJECT NOTES AND SPECIFICATIONS

'5 E. 22nd St, Suite 400 Wheaton, IL 60189 630.480.7889

Engineering, LLC

PROJECT NO. 32212717

DATE 10/17/17

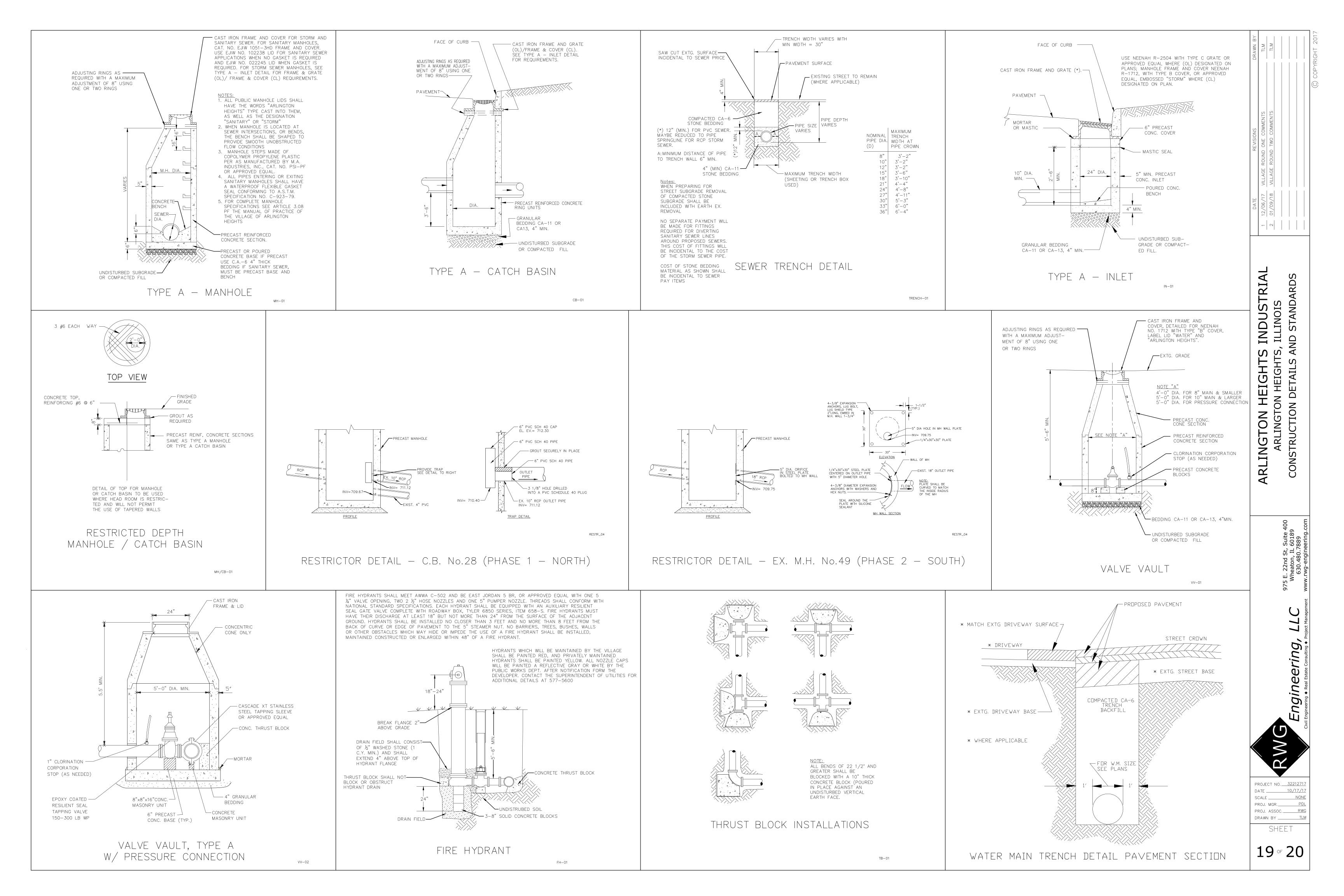
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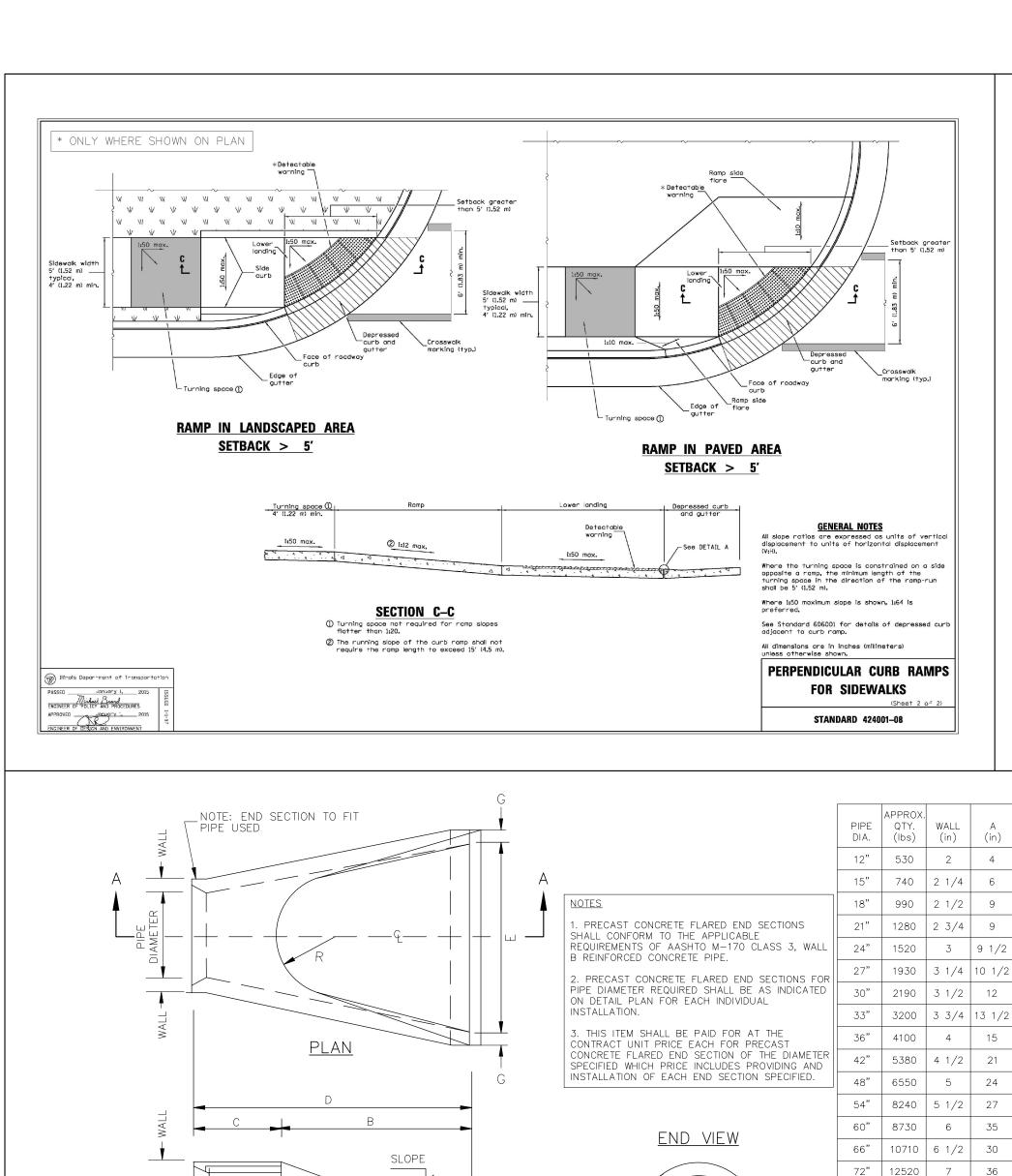
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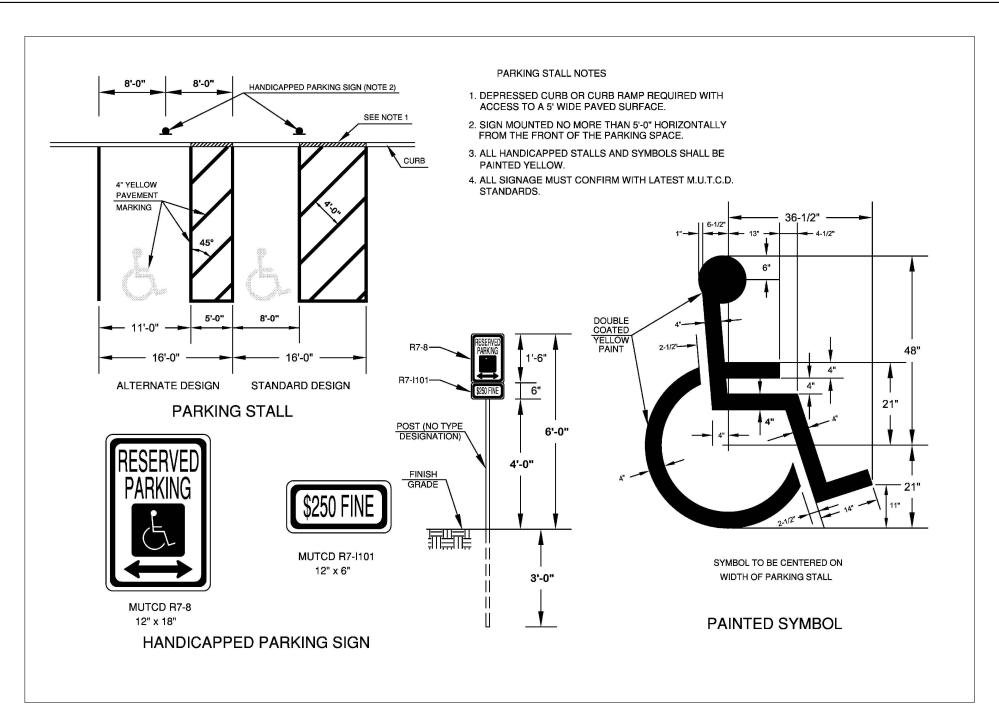
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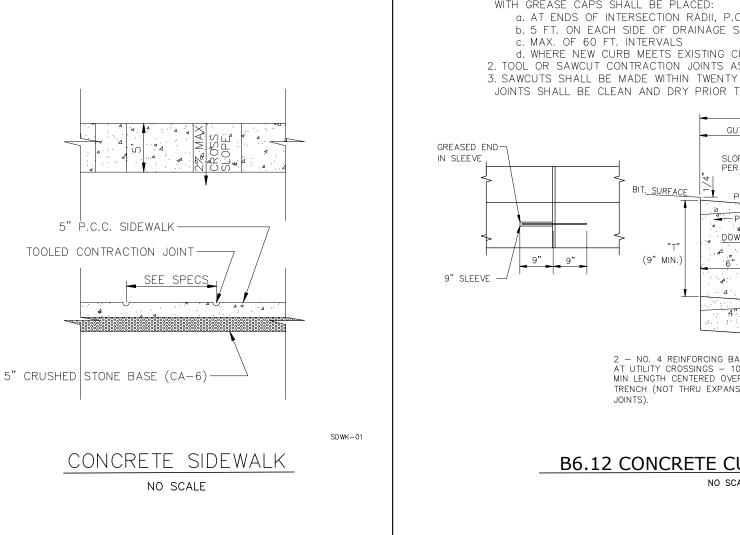
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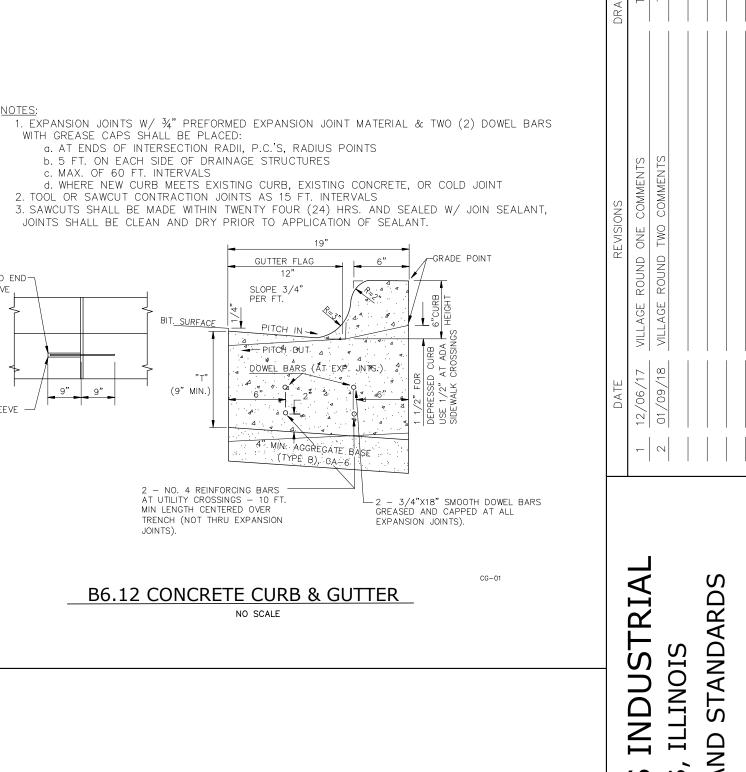
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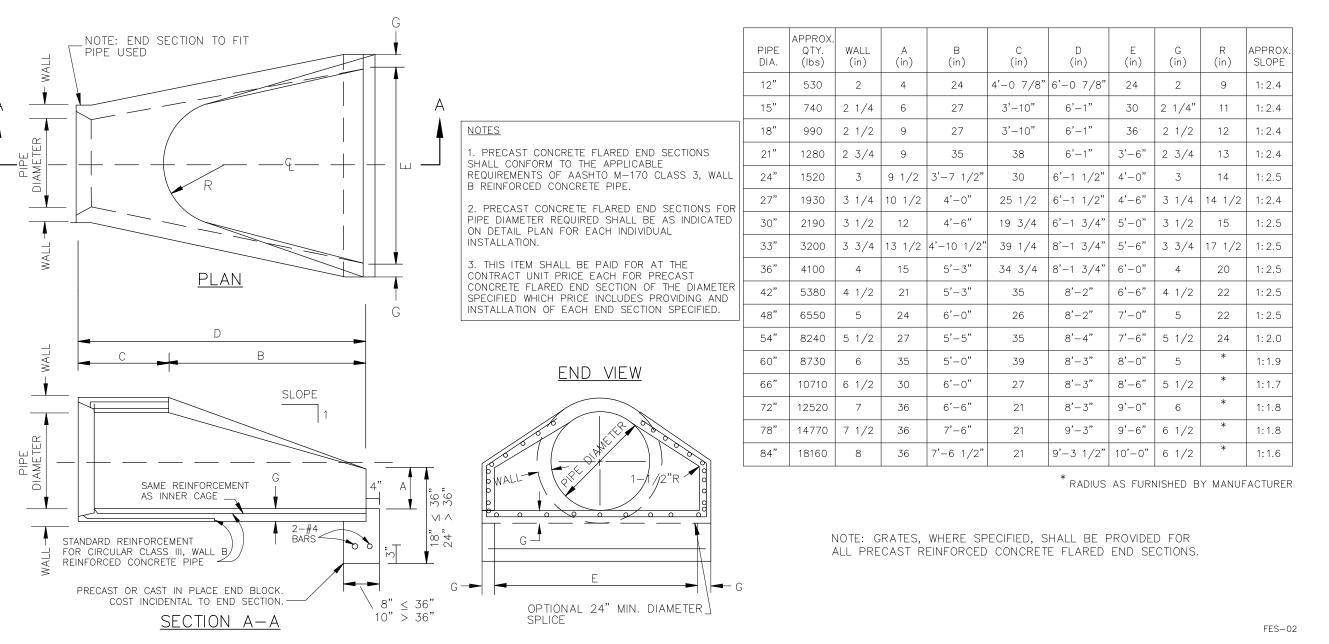












PRECAST REINFORCED CONCRETE FLARED END SECTION

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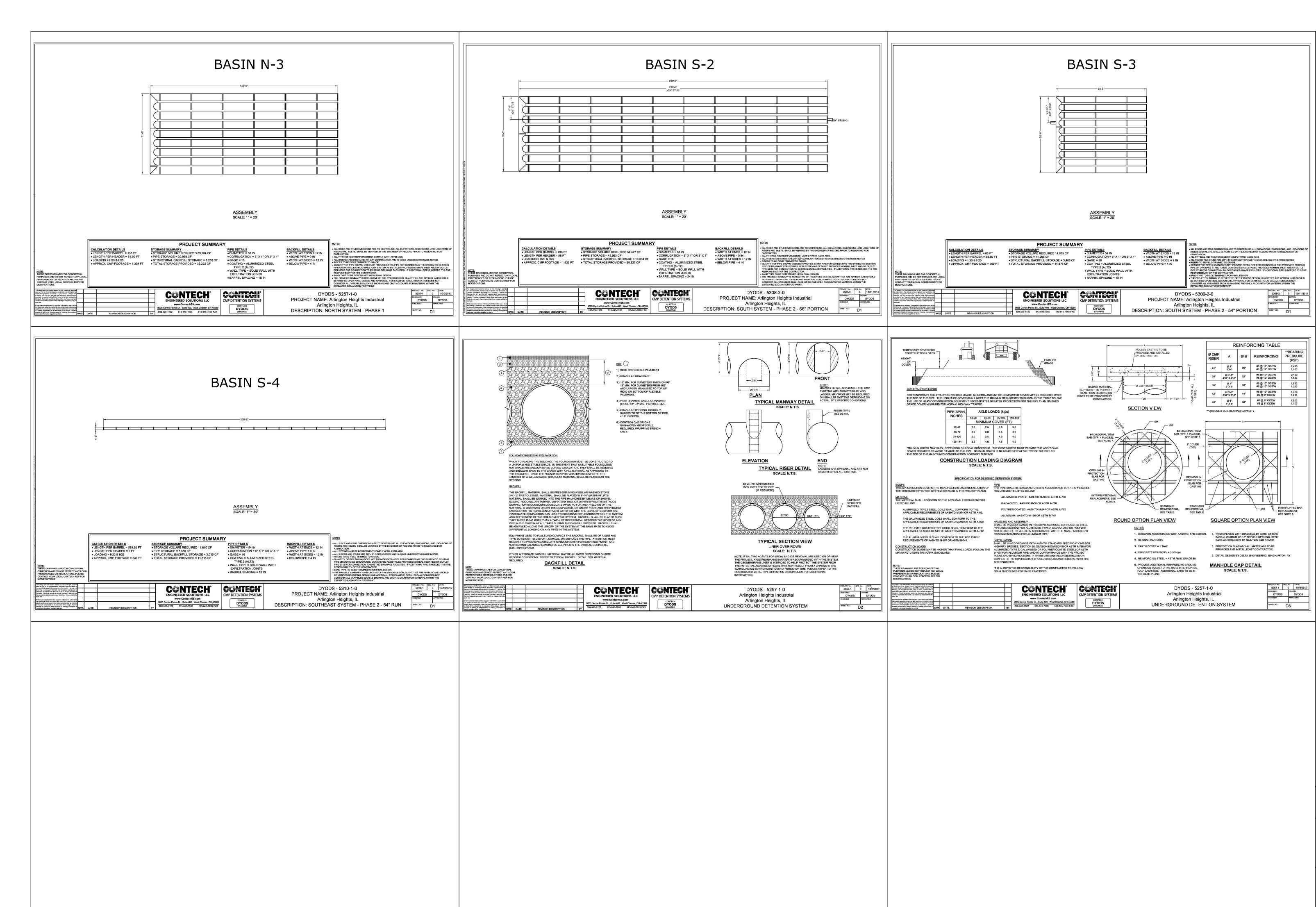
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