ZEIGLER AUTO GROUP

10920 W. 159th STREET ORLAND PARK, IL

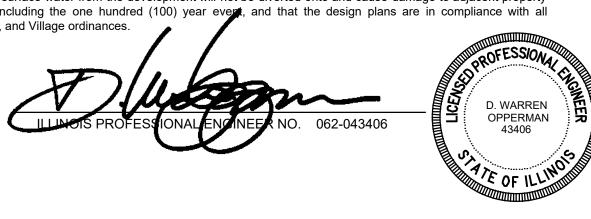
BMW PARKING LOT EXPANSION PLANS

OWNER / DEVELOPER

AJZ-ORLAND PARK, LLC

Contract: Daniel J. Scheid 4201 Stadium Drive Kalamazoo, MI 49008 PHONE: 269.488.2271 ds@zeigler.com www.zeigler.com

I, D. Warren Opperman, hereby certify that adequate storm water storage and drainage capacity has been provided for this development, such that surface water from the development will not be diverted onto and cause damage to adjacent property for storms up to and including the one hundred (100) year every, and that the design plans are in compliance with a applicable state, county, and Village ordinances



DUTY TO INDEMNIFY

The Contractor shall defend, indemnify, keep and save harmless the Village Owner, and Engineer, and their respective board members, representatives, agents, and employees, in both individual and official capacities, against all suits, claims, damages, losses and expenses, including attorney's fees, caused by, growing out of, or incidental to, the performance of the work under the Contract by the Contractor or its subcontractors to the full extent as allowed by the laws of the State of Illinois and not beyond any extent which would render these provisions void or unenforceable. This obligation includes but is not limited to: The Illinois laws regarding structural work (III. Rev. Stat. Ch.48, par.60 et seq.). And regarding the protection of adjacent landowners (III.Rev. Stat. Ch.17 1/2 par.51 et seq.). In the event of any such injury (including death) or loss or damage, or claims therefore, the Contractor shall give prompt notice to the



AND DITCHES SHOWN.

REGIONAL RETENTION

→ MARLEY CREEK

Joseph A. Schudt & Associates

9455 ENTERPRISE DRIVE MOKENA, IL 60448 PHONE: 708-720-1000 www.jaseng.com FAX: 708-720-1065

CIVIL ENGINEERING LAND SURVEYING ENVIRONMENTAL LAND PLANNING GPS SERVICES

ILLINOIS PROFESSIONAL DESIGN FIRM NO. 184-001172

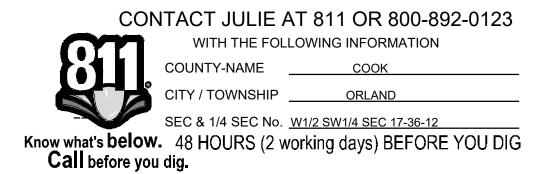
PREPARED AT OR UNDER THE DIRECTION OF: 43406

SIGNED: 12-06-21 LIC. EXP: 11-30-23

PROJECT

(NOT TO SCALE)

INDICATES SITE LOCATION



	LEGEND
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—-c—	EXISTING CABLE T.V.
+	EXISTING BORING LOCATION
	EXISTING SIGN
—x——x—	EXISTING FENCE LINE
	EXISTING DECIDUOUS TREE
	EXISTING EVERGREEN
	EXISTING BUSH/HEDGE
<u> 11/1/</u>	EXISTING WETLAND

INDEX			
Sheet Number	Sheet Title		
1	COVER SHEET		
2	EXISTING SURVEY & TOPOGRAPHY		
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4	SITE GEOMETRIC PLAN		
5	SITE GRADING PLAN		
6	SITE UTILITY PLAN		
7	STORM WATER POLLUTION PROTECTION PLAN		
8	SITE EROSION CONTROL PLAN		
9	CONSTRUCTION SPECIFICATIONS		
10	DETAIL SHEET		
11	DRAINAGE EXHIBIT		
12	MWRD GENERAL NOTES		

LEGAL DESCRIPTION:

THE WEST 400 FEET OF THE SOUTH 544.5 FEET OF THE SOUTH 60 ACRES OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS.

EXCEPTING THEREFROM DESCRIBED AS FOLLOWS: COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 17; THENCE SOUTH 88 DEGREES 46 MINUTES 04 SECONDS WEST, ON THE SOUTH LINE OF SAID SOUTHWEST QUARTER, 917.11 FEET TO THE EAST LINE OF THE GRANTOR'S PARCEL FOR THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 88 DEGREES 46 MINUTES 04 SECONDS WEST, ON SAID SOUTH LINE, 400.01 FEET TO THE WEST LINE OF THE GRANTOR'S PARCEL; THENCE NORTH 01 DEGREE 41 MINUTES 48 SECONDS WEST, ON SAID WEST LINE, 61.83 FEET; THENCE NORTH 88 DEGREES 14 MINUTES 45 SECONDS EAST, 400.00 FEET TO THE EAST LINE OF THE GRANTOR'S PARCEL; THENCE SOUTH 01 DEGREE 41 MINUTES 48 SECONDS EAST, ON SAID EAST LINE, 61.64 FEET TO THE POINT OF BEGINNING.

P.I.N. 27-17-301-013-0000

PROPERTY ADDRESS: 10920 W. 159th STREET, ORLAND PARK, IL

PROPERTY AREA: 4.433 ACRES

TOTAL CONTIGUOUS OWNERSHIP: 13.007 ACRES

PROPOSED PROJECT AREA: 2.481 ACRES

BENCHMARK:

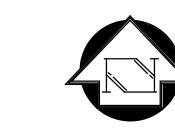
SQUARE CUT IN TOP OF FLAG POLE BASE OPPOSITE AND SOUTH OF THE MAIN BMW BUILDING ENTRANCE ON SOUTH SIDE OF BUILDING.

ELEVATION: 711.96 (NAVD 88)

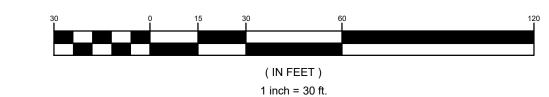
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	10-27-20	Dra	TMF	SHEET	1	OF	17	Project No
REVISIONS								
o. Z	Date	Ву	Description					
1	05/12/21	TMF	VILLAGE OF ORLAND PARK COMMENTS					
/2\	07/07/21	TMF	VILLAGE	VILLAGE OF ORLAND PARK COMMENTS				
/3\	08/18/21	TMF	PER ENC	PER ENGINEER				
4	10/01/21	TMF	VILLAGE	VILLAGE OF ORLAND PARK COMMENTS				
/ 5\	11/11/21	TMF	VILLAGE	VILLAGE OF ORLAND PARK COMMENTS				
/ 6\	12/06/21	TMF	PER VILLAGE REVIEW 2					











LEGAL DESCRIPTION:

PARCEL 1: THAT PART OF THE WEST 400 FEET OF THE SOUTH 544.5 FEET OF THE SOUTH 60 ACRES OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS.

EXCEPT PARCEL 2: THAT PART OF THE WEST 400 FEET OF THE SOUTH 544.5 FEET OF THE SOUTH 60 ACRES OF THE EAST HALF OF THE SOUTHWEST QUARTER OF SECTION 17, TOWNSHIP 36 NORTH, RANGE 12 EAST OF THE THIRD PRINCIPAL MERIDIAN, COOK COUNTY, ILLINOIS DESCRIBED AS FOLLOWS COMMENCING AT THE SOUTHEAST CORNER OF THE SOUTHWEST QUARTER OF SAID SECTION 17; THENCE SOUTH 88 DEGREES 46 MINUTES 04 SECONDS WEST, ON THE SOUTH LINE OF SAID SOUTHWEST QUARTER, 917.11 FEET TO THE EAST LINE OF THE GRANTOR'S PARCEL FOR THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 88 DEGREES 46 MINUTES 04 SECONDS WEST, ON SAID SOUTH LINE, 400.01 FEET TO THE WEST LINE OF THE GRANTOR'S PARCEL; THENCE NORTH 01 DEGREE 41 MINUTES 48 SECONDS WEST, ON SAID WEST LINE, 61.83 FEET; THENCE NORTH 88 DEGREES 14 MINUTES 45 SECONDS EAST, 400.00 FEET TO THE EAST LINE OF THE GRANTOR'S PARCEL; THENCE SOUTH 01 DEGREE 41 MINUTES 48 SECONDS EAST, ON SAID EAST LINE, 61.64 FEET TO THE POINT OF BECINNING.

P.I.N. 27-17-301-013-0000

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——G— EXISTING GAS MAIN
——C— EXISTING CABLE T.V.
+ EXISTING BORING LOCATION
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-x-x- EXISTING FENCE LINE
EXISTING DECIDUOUS TREE
EXISTING EVERGREEN
EXISTING BUSH/HEDGE
业 EXISTING WETLAND

BENCHMARK:

SQUARE CUT IN TOP OF FLAG POLE BASE OPPOSITE AND SOUTH OF THE MAIN BMW BUILDING ENTRANCE ON SOUTH SIDE OF BUILDING.

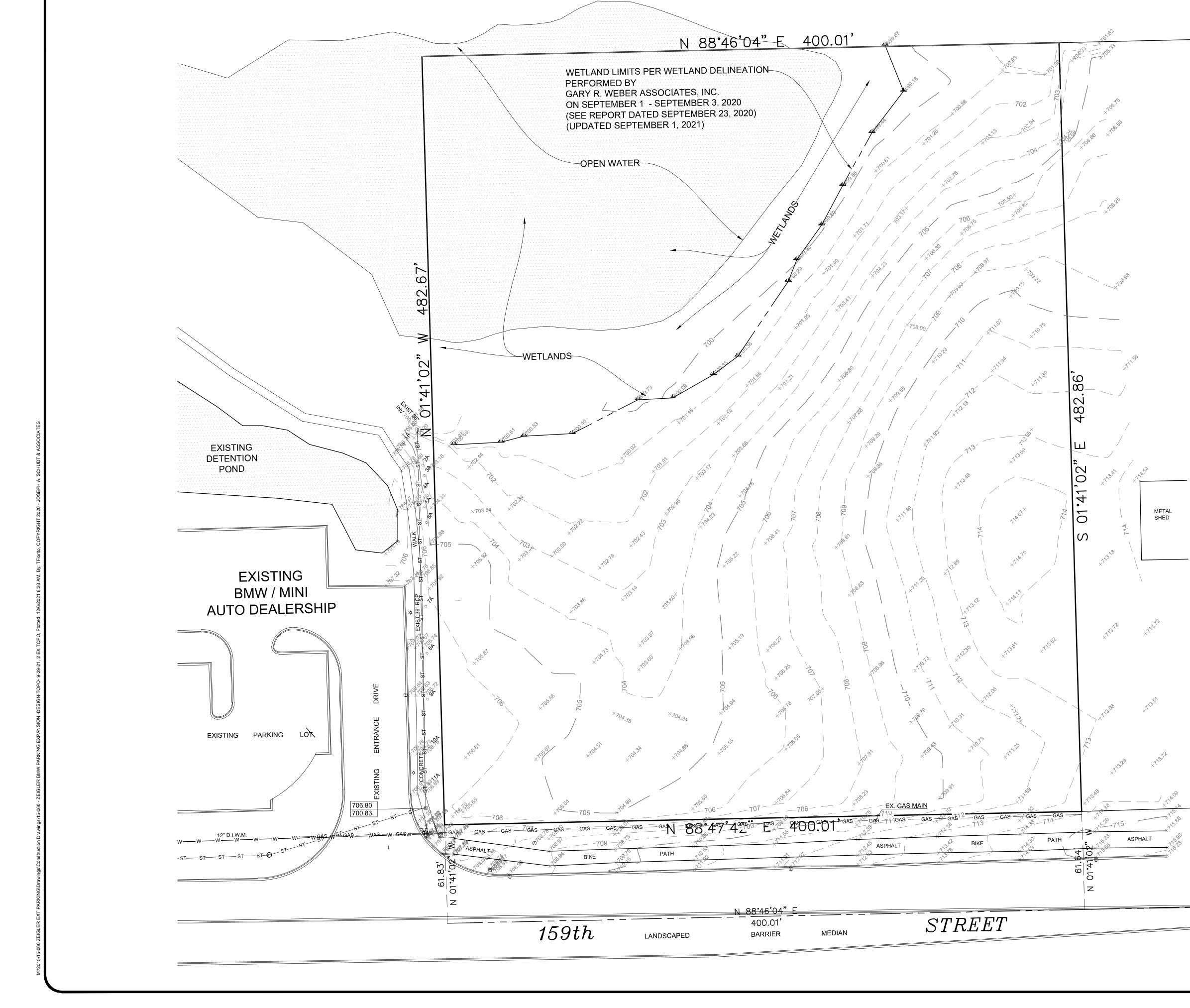
ELEVATION: 711.96 (NAVD 88)

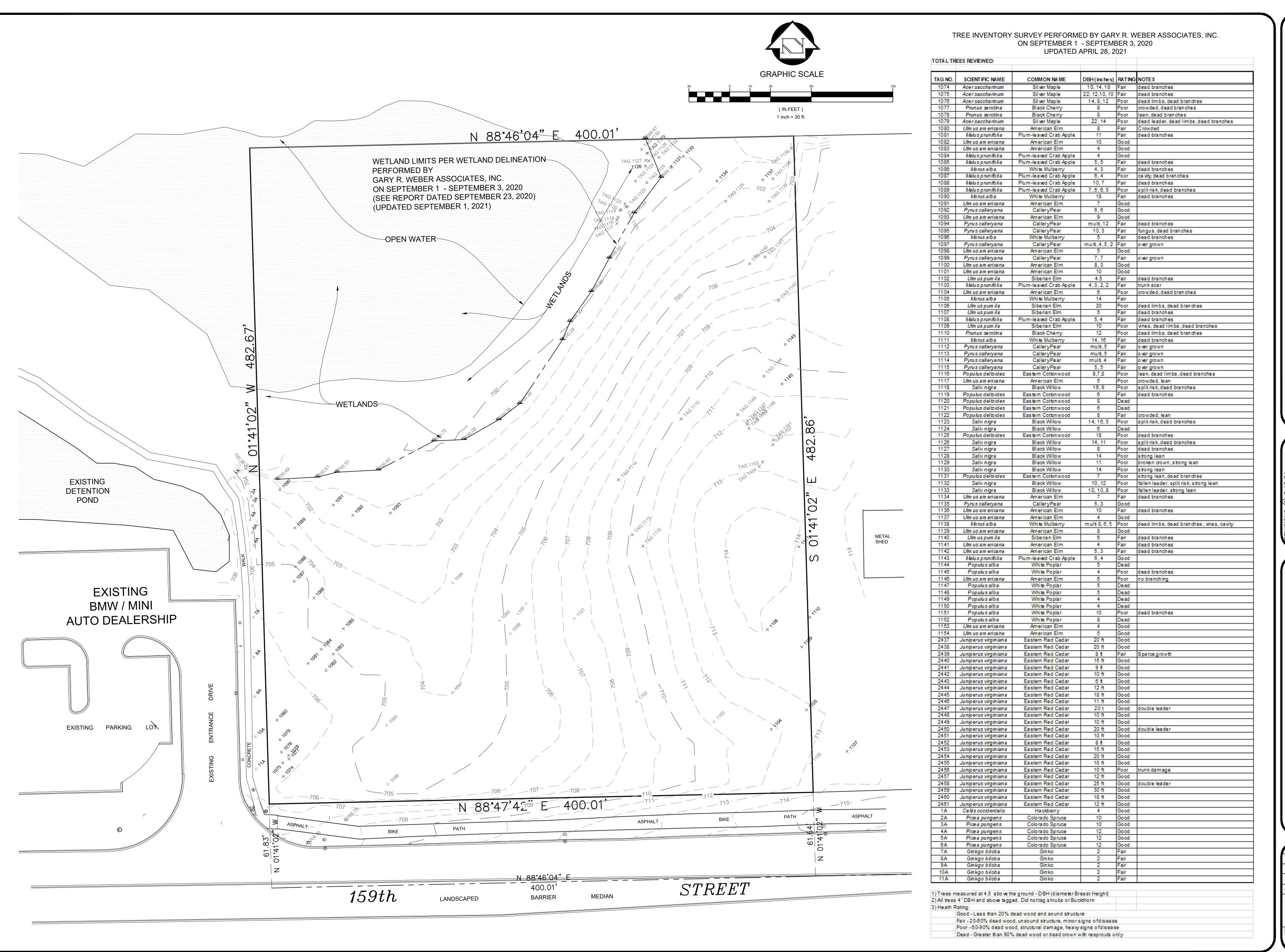
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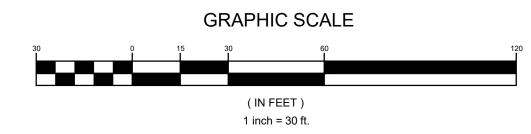
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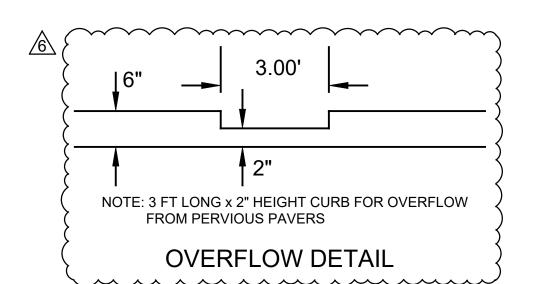
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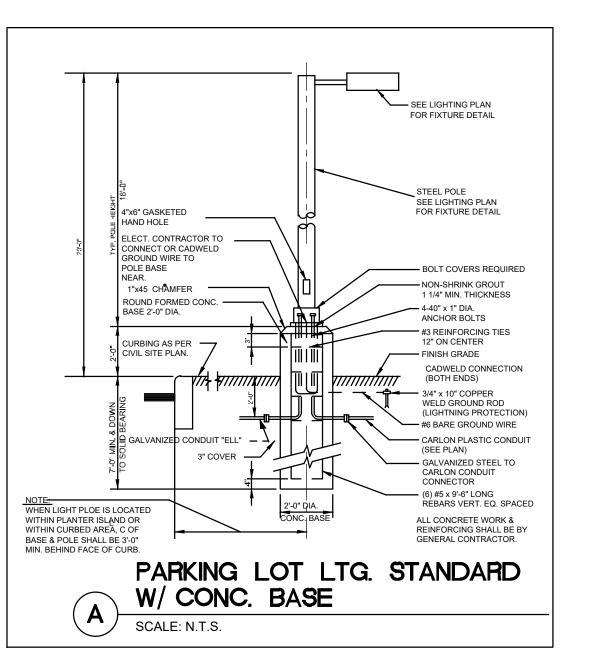




LEGEND:

- PROPOSED 6" CONCRETE BARRIER CURB
- PROPOSED BITUMINOUS ASPHALT PAVEMENT (10" AGG. BASE/ 2 1/4" BITUMINOUS BINDER / 1 1/2" BITUMINOUS SURFACE)
- PROPOSED NEW LANDSCAPE AREA
- PROPOSED PERVIOUS STORM WATER COVENANT AREA.
- 5.) VEHICLE STORAGE PARKING (9'x18')
- PROPOSED 12" WIDE x 15" DEEP FLUSH BORDER CURB
- 7 PROPOSED DETENTION BASIN
- 8 NO PARKING AREA FOR VEHICLE TURN AROUND
- 9 PROPOSED 8' WIDE MAINTENANCE PATH





Joseph A. Schud

ASSOCI8 ENA, IL 60448 FAX: 708-720-1065

REVISIONS: 1 5-12-214 10-1-21

2 7-07-215 11-11-21

3 8-18-216 12-06-21

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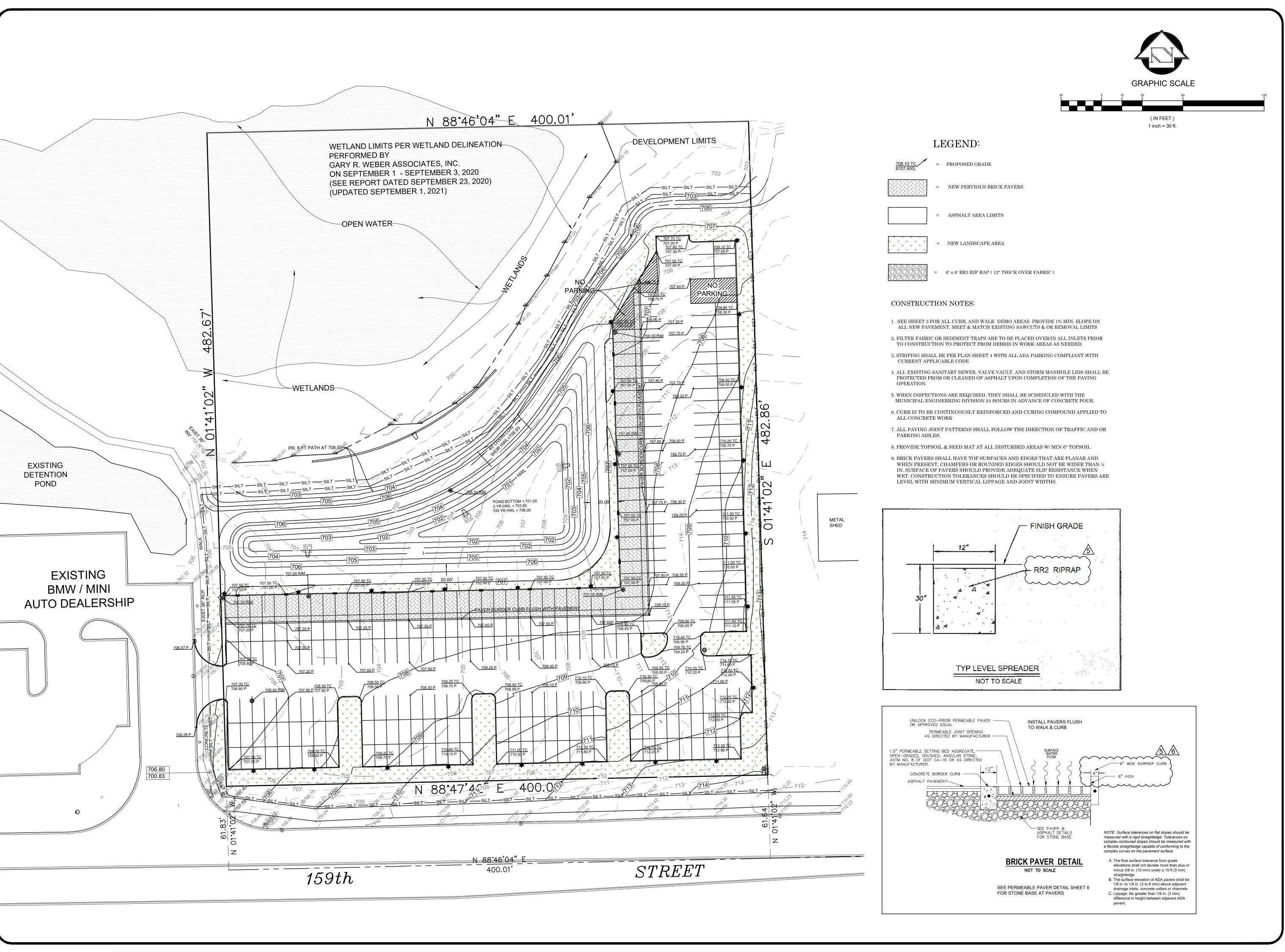
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SEIGLER AUTO GROUP
BMW PARKING LOT EXPANS
ORLAND PARK, IL

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Sheet:

4 OF 12

Project No.: 15-060



1dt & Associates

OSeph A. Schudt & Asso 9455 ENTERPRISE DRIVE MOKENA, IL 6042 PHONE: 708-720-1000 www.jaseng.com FAX: 708-720-7

(184-001172)

NAME OF THE PROPERTY OF THE PROP

27-07-21/5/11-11-21
3 8-18-21/6/12-06-21
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ZEIGLER AUTO GROUP
BMW PARKING LOT EXPANSION
ORLAND PARK, IL
SITE GRADING PLAN

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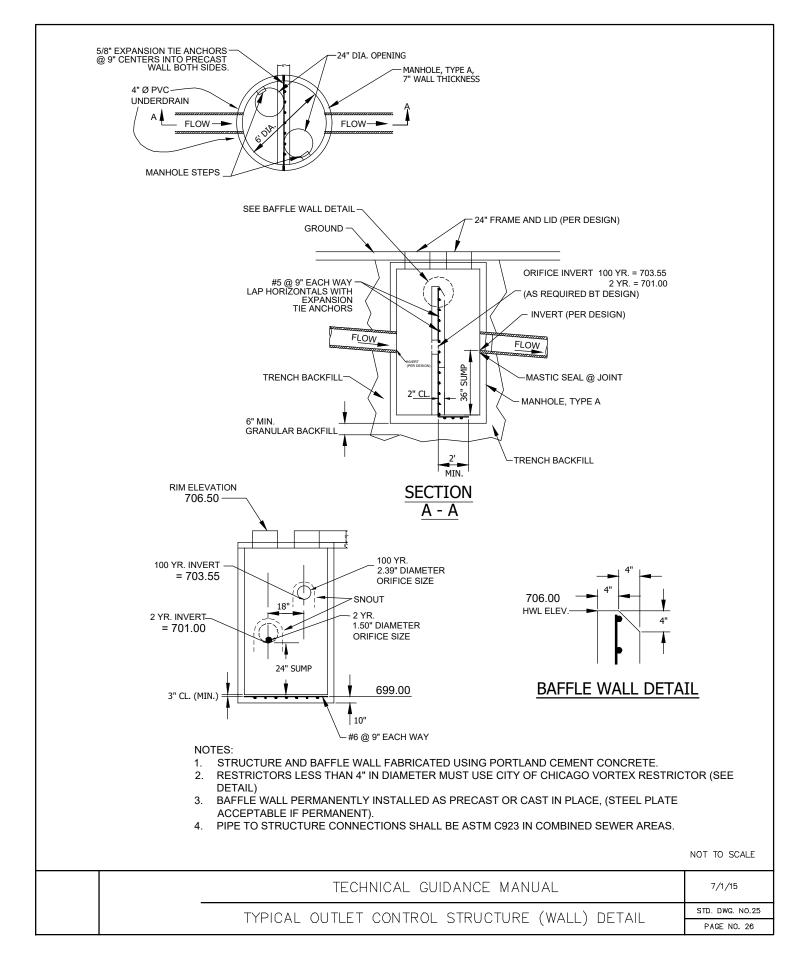
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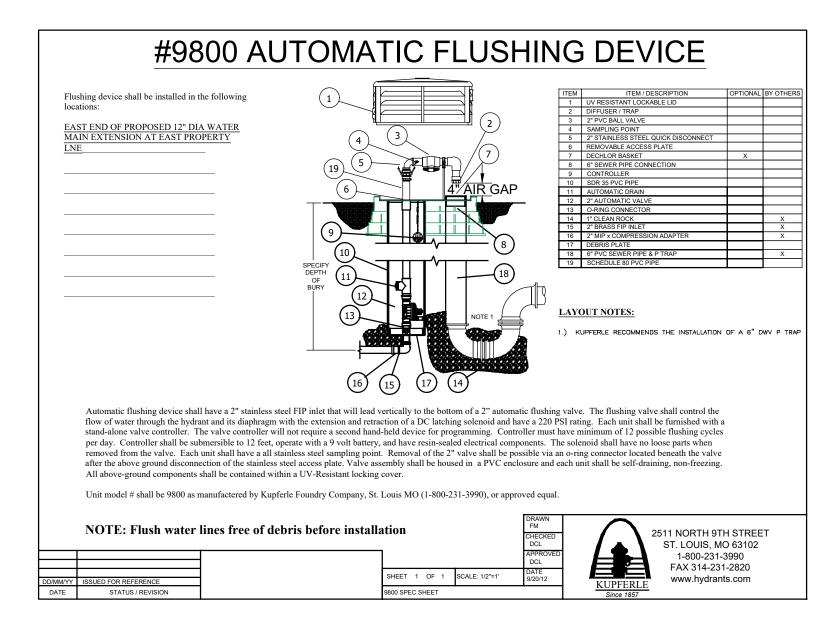
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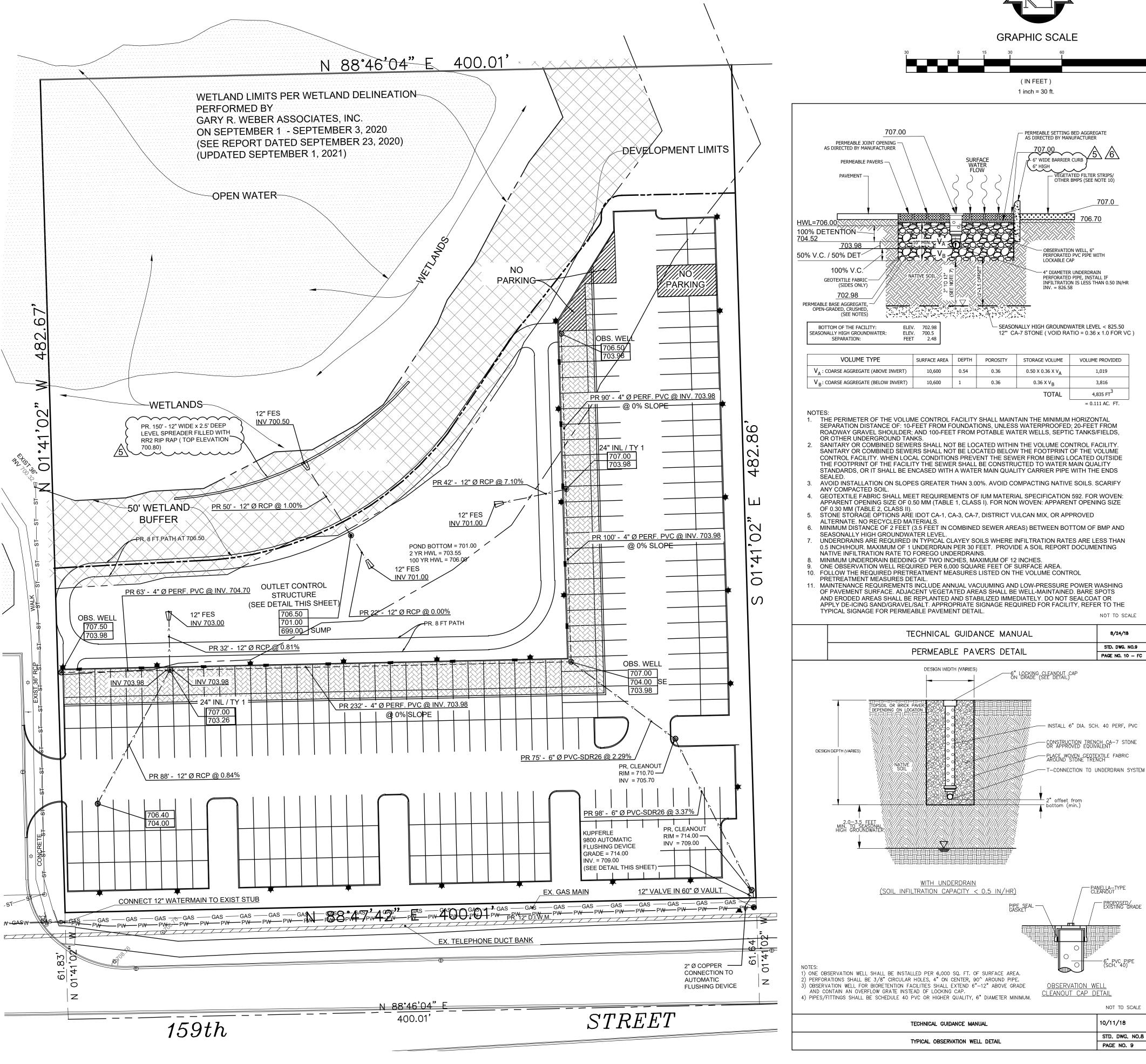
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5 of 12

Project No.: 15-06







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Project No.: 15-060 The purpose of this plan is to minimize erosion within the construction site and to limit sediments from leaving the construction site by utilizing proper temporary erosion control systems and providing ground cover within a reasonable amount of time.

Certain erosion control facilities shall be installed by the contractor at the beginning of construction. Other items shall be installed by the contractor as directed by the Engineer on a case by case situation depending on the contractor's sequence of activities, time of year, and expected weather conditions.

The contractor shall install permanent erosion control systems and seeding within a time frame specified herein and as directed by the Engineer, therefore minimizing the amount of area susceptible to erosion and reducing the amount of temporary seeding. The Engineer will determine if any temporary erosion control systems shown in the plan can be deleted and if any additional temporary erosion control systems, which may not be included in this plan, shall be added. The contractor shall perform all work as directed by the Engineer and as shown in Standard 280001.

Section 280. Temporary erosion control, of the standard specifications additionally supplements this plan.

DESCRIPTION OF CONSTRUCTION ACTIVITY:

- 1. The project is located North of 159th Street and East of Wolf Road in Orland Park, IL. The site disturbance acreage is 2.63 acres.
- 2. Construction includes earthwork, parking improvements, and storm sewer improvements for a proposed
- 3. The project is not within the 100-year Floodplain limits.

DESCRIPTION OF INTENDED SEQUENCE FOR MAJOR CONSTRUCTION ACTIVITIES WHICH WILL DISTURB SOILS FOR MAJOR PORTION OF THE CONSTRUCTION SITE:

Erosion control silt fencing shall be in placed prior to earthwork activities.

Site shall be cleared. Topsoil will be remove and graded as necessary, with all proposed roads graded to roughly 1-foot below final elevation on plans.

After completion of storm sewer construction, storm sewer inlet protection shall be placed at each open-grate

Earthwork construction will be completed and detention side slopes and other landscape areas shall be topsoiled and seeded & covered with erosion control blanket.

Concrete curb & gutter, Pervious Paver and Bituminous areas shall be constructed.

AREA OF CONSTRUCTION SITE:

SOIL PROTECTION CHART

E**-

STABILIZATION

TYPE PERMANENT

SEEDING TEMPORARY

SEEDING DORMAN

SEEDING

SODDING

MULCHING

The total area of the construction site is estimated to be 2.63 acres by which 2.63 acres will be disturbed by excavation, grading, and other activities. Of this 2.63 acres, 0.15 acres are construction within the Public R.O.W.

OTHER REPORTS, STUDIES AND PLANS, WHICH AID IN THE DEVELOPMENT OF THE STORM WATER POLLUTION PREVENTION PLAN AS REFERENCED DOCUMENTS:

- 1. Information of the soils and terrain within the site was obtained from topographic surveys and soil borings that were utilized for the development of the proposed temporary erosion control systems.
- 2. Project plan documents, specifications and special provisions, and plan drawings indicating drainage patterns and approximate slopes anticipated after grading activities were utilized for the proposed placement of the temporary erosion control systems.

DRAINAGE TRIBUTARIES AND SENSITIVE AREAS RECEIVING RUNOFF FROM THIS CONSTRUCTION

1. The site shall drain into proposed stormwater detention ponds by means of a proposed storm sewer system, and overland flow. The stormwater detention system will reduce the peak stormwater runoff before discharging into existing Village drainageway and storm sewer system.

CONTROLS, EROSION CONTROLS AND SEDIMENT CONTROL:

- 1. The drawings, specifications and special provisions will ensure that existing vegetation is preserved where attainable and disturbed portions of the site will be stabilized. Stabilization practices include temporary seeding, permanent seeding, mulching, protection of trees, preservation of nature vegetation, and other appropriate measures as directed by the Engineer. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.
- a. Areas of existing vegetation, wood and grasslands, outside the proposed construction limits shall be identified by the Engineer for preserving and shall be protected from construction activities.
- Dead, diseased, or unsuitable vegetation within the site shall be removed as directed by the Engineer, along with required tree removal.
- c. As soon as reasonable access is available to all locations where water drains away from the project, temporary perimeter erosion barrier shall be installed as called out in this plan and directed by the
- Bare and sparsely vegetated ground in high erodible areas as determined by the Engineer shall be temporarily seeded at the beginning of construction where no construction activities are expected within seven (7) days.
- Immediately after tree removal is completed, areas which are highly erodible as determined by the Engineer, shall be temporarily seeded when no construction activities are expected within seven (7)
- 2. Establishment of these temporary erosion control measures will have additional benefits to the project. desirable grass seed will become established in these areas and will spread seeds onto the construction site until permanent seeding/mowing and over seeding can be completed.
- 3. The owner and Village of Orland Park is responsible for conducting site visits and verifying that the practices are working properly and determine if additional practices are needed for better soil erosion and sediment control. if additional practices are deemed necessary by the Village the contractor will implement the practice in a timely manner.

DESCRIPTION OF STABILIZATION PRACTICES DURING CONSTRUCTION:

- 1. During construction, areas outside the construction limits as outlined previously herein shall be protected. The contractor shall not use this area for staging, parking of vehicles of construction equipment, storage of materials or other construction related activities.
- (a.) Within the construction limits, areas which may be susceptible to erosion as determined by the Engineer shall remain undisturbed until full scale construction is underway to prevent unnecessary soil erosion.
- (b.) As construction proceeds, the contractor shall institute the following as directed by the Engineer.
 - i. Place temporary erosion control facilities at locations shown on the plans.
 - ii. Temporarily seed erodible bare earth on a weekly basis to minimize the amount of erodible surface area within the contract limits.
 - iii. Provide temporary erosion control systems.
- iv. Continue building up the embankment to the proposed grade while, at the same time, placing permanent erosion control final shaping to the slopes.
- (c.) Excavated areas and embankment shall be permanently seeded immediately after final grading. If not, they shall be temporarily seeded if no construction activity in the area is planned for seven (7) days.
- (d.) Construction equipment shall be stored and fueled only at designated locations. All necessary measures shall be taken to contain any fuel or other pollutant in accordance with EPA water quality regulations. Leaking equipment or supplies shall be immediately repaired or removed from the site.
- (e.) The contractor shall inspect the project daily during construction activities. Inspection shall also be done weekly and after rains of 1/2-inch or greater or equivalent snowfall and during the winter shutdown period. The project shall additionally be inspected by the construction field Engineer on a biweekly basis to determine that erosion control efforts are in place and effective and if other erosion control work is necessary.
- (f.) Sediment collected during construction of the various temporary erosion control systems shall be disposed of on the site on a regular basis as directed by the Engineer. The cost of this maintenance shall be included in the unit bid price for earth excavation for erosion control.
- (g.) The temporary erosion control systems shall be removed, as directed by the Engineer, after use is no longer needed or no longer functioning.

DESCRIPTION OF STRUCTURAL PRACTICES AFTER FINAL GRADING:

- 1. Temporary erosion control systems shall be left in place with proper maintenance until permanent erosion control is in place and working properly and all proposed turf areas sodded and established.
- 2. Once permanent erosion control systems as proposed in the plans are functional and established, temporary items shall be removed, cleaned up, and disturbed turf reseeded.
- 3. Upon completion of the site improvements, permanent landscaping features, including sod, will be
- 4. Sod shall be placed after completion and inspection of all public improvements.

STORM WATER POLLUTION PREVENTION PLAN CERTIFICATES The following certificates shall be executed & provided to the Village of Orland Park and Engineer with a

a. Contractor Certification Statement: "I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit (ILR-10) that authorizes the storm water discharges associated with activity from the construction site identifies as part of this certification."

b. Owner Certification Statement: "I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

The Village of Orland Park requires compliance with NPDES Phase II program. As such, all developments shall provide to the extent possible, construction site run-off control and illicit discharge prevention and

- 1. The owner is responsible for submitting the Notice of Intent (NOI) to the IEPA after the Storm Water Pollution Prevention Plan (SWPPP) is complete. The contractor is responsible for insuring that the NOI is postmarked at least 30 days before commencement of any work on site.
- 2. Prior to commencement of construction, the owner shall provide written notification to the IEPA of completion of the SWPPP and that said plan is available at the site.
- 3. The contractor is responsible for having the SWPPP on site at all times.

adverse impacts to water quality.

KENTUCKY BLUEGRASS 90 LBS./AC. MIXED WITH

KENTUCKY BLUEGRASS 135 LBS. /AC. MIXED WITH

PERENINIAL RYEGRASS 45 LBS./AC. + 2 TONS

IRRIGATION NEEDED DURING JUNE, JULY AND SEPT.

** IRRIGATION NEEDED FOR 2-3 WEEKS AFTER SODDING

PERENINIAL RYEGRASS 30 LBS. /AC.

WHEAT OR CEREAL RYE 150 LBS./AC.

STRAW MULCH PER ACRE.

STRAW MULCH 2 TONS/AC.

SPRING OATS 100 LBS./AC.

- 4. Inspection of controls will be completed by the owner at least once every 7 days and within 24 hours of a storm 0.5" or greater.
- 5. An Incident of Non-Compliance (ION) must be completed and submitted by the owner to the IPEA and copied to the Village if, at any time, an erosion or sediment control device fails.
- requirements when all permanent erosion control measures are in place with a 70% establishment rate of vegetation. The NOT shall be sent to the IEPA and the Village. The contractor shall take the necessary steps to control waste such as discarded building materials,

concrete truck washout, chemicals, litter and sanitary waste at the construction site that may cause

6. A Notice of Termination (NOT) shall be completed by the owner in compliance with NPDES Phase II

THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR MAINTENANCE OF ALL SOIL EROSION CONTROL MEASURES DURING CONSTRUCTION AND THE OWNER WILL ASSUME RESPONSIBILITY OF ALL SOIL EROSION CONTROL MEASURES AFTER CONSTRUCTION.

. <u>DIVERSION AND STRUCTURAL MEASURES</u> — WILL BE INSPECTED AT WEEKLY INTERVALS OR AFTER EVERY RAIN STORM PRODUCING

3. <u>VEGETATIVE PLANTINGS</u> — SPRING PLANTINGS WILL BE CHECKED DURING SUMMER OR EARLY FALL. 4. REPAIRS - ANY EROSION CONTROL MEASURES. STRUCTURAL MEASURES, OR OTHER RELATED

SEDIMENT BASINS AND PONDS — WILL BE CHECKED AFTER EACH MAJOR PHASE OF THE DEVELOPMENT FOR SEDIMENT ACCUMULATION.

will be by the contractor.

MAINTENANCE AFTER CONSTRUCTION:

Construction is complete after acceptance by the municipality. Maintenance up to this date

	INSPECTION SCHEDULE	CORRECTIVE ACTIONS
		Inspect all slopes and embankments and replant areas of bare soil or with sparse grow
	Annually early	Armor rill erosion areas with riprap or divert the runoff to a stable area
VEGETATED AREAS	spring and after heavy rains	Inspect and repair down-slope of all spreaders and turn-outs for erosion
AILAO	ricavy rains	Mow vegetation as specified for the area
		Remove obstructions, sediments or debris from ditches, swales and other open channel
		Repair any erosion of the ditch lining
DITCHES, SWALES AND	Annually spring	Mow vegetated ditches
OPEN	and late fall and	Remove woody vegetation growing through riprap
STORMWATER	after heavy rains	Repair any slumping side slopes
CHANNELS	•	Repair riprap where underlying filter fabric or gravel is showing or if stones have dislod
	Spring and late	Remove accumulated sediments and debris at the inlet, outlet, or within the conduit
CULVERTS	fall and after	Remove any obstruction to flow
	heavy rains	Repair any erosion damage at the culvert's inlet and outlet
CATCHBASINS	Annually in the	Remove sediments and debris from the bottom of the basin and inlet grates
	spring	Remove floating debris and oils (using oil absorptive pads) from any trap
		Clear and remove accumulated winter sand in parking lots and along roadways
ROADWAYS	Annually in the	Sweep pavement to remove sediment
AND PARKING	spring or as	Grade road shoulders and remove accumulated winter sand
AREAS	needed	Grade gravel roads and gravel shoulders
		Clean-out the sediment within water bars or open-top culverts
		Ensure that stormwater runoff is not impeded by false ditches of sediment in the should
		Inspect buffers for evidence of erosion, concentrated flow, or encroachment by
		development Manage the buffer's vegetation with the requirements in any deed restrictions
		Repair any sign of erosion within a buffer
RESOURCE AND	Annually in the	Inspect and repair down-slope of all spreaders and turn-outs for erosion
TREATEMENT	spring	Install more level spreaders, or ditch turn-outs if needed for a better distribution of flow
BUFFERS		Clean-out any accumulation of sediment within the spreader bays or turnout pools
		Mow non-wooded buffers no shorter than six inches and less than three times per year
		Inspect the embankments for settlement, slope erosion, piping, and slumping
		Mow the embankment to control woody vegetation
WETPONDS		Inspect the outlet structure for broken seals, obstructed orifices, and plugged trash raci
AND		Remove and dispose of sediments and debris within the control structure
DETENTION	Annually in fall	Repair any damage to trash racks or debris guards
BASINS	and after heavy rains	Replace any dislodged stone in riprap spillways
	Tallio	Remove and dispose of accumulated sediments within the impoundment and forebay
FILTRATION	Annually in the	Clean the basin of debris, sediment and hydrocarbons Provide for the removal and disposal of accumulated sediments within the basin
AND	spring and late	Renew the basin media if it fails to drain within 72 hours after a one inch rainfall event
INFILTRATION	fall	Till, seed and mulch the basin if vegetation is sparse
BASINS		Repair riprap where underlying filter fabric or gravel is showing or where stones have
		dislodged
PROPRIETARY	As specified by	Contract with a third-party for inspection and maintenance
DEVICES	manufacturer	Follow the manufacturer's plan for cleaning of devices
OTHER PRACTICES	As specified for devices	Contact the department for appropriate inspection and maintenance requirements for other drainage control and runoff treatment measures.
PERVIOUS	Annually in the	Clear and remove accumulated winter sand in parking lots and along roadways
PAVER AREA	spring	Sweep pavement to remove sediment Vacuum sweep the pavement to remove sediment and prevent clogs.
,, .	Monthly	1. 3.3.3 Shoop and parement to remove obtaining the provent diogo.

MISCELLANEOUS:

- 1. Temporary erosion control seeding shall be applied at a rate of 100 lbs/acres, if directed.
- 2. Straw bales, hay bales, perimeter erosion barrier and silt fences will not be permitted for temporary or permanent ditch checks. Ditch checks shall be composed of aggregate, silt panels, rolled excelsior, urethane form/geotextile silt wedges, and/or any other material approved by the erosion and sediment control coordinator.
- Sediment collected during construction by the various temporary erosion control systems shall be disposed of on the site on a regular basis, as directed by the Engineer. The cost of this maintenance shall be paid for at the contract unit price per cubic yard for earth
- All erosion control products furnished shall be specifically recommended by the manufacturer for the use specified in the erosion control plan. Prior to the approval and use of the project, the contractor shall submit to the Engineer a notarized certification by the producer stating the intended use of the product and that the physical properties required for this application are met or exceeded. The contractor shall provide manufacturer installation procedures to facilitate the Engineer in construction inspection

6. $\underline{\mathsf{FERTILIZATION}}$ — SEEDED AREAS WHERE THE

WILL BE INSPECTED AND FERTILIZED AS

SEED HAS NOT PRODUCED A GOOD COVER,

TO MAINTAIN THAT FLOW.

<u>CO</u>	NSTRUCTION ACTIVITY SEQUENCING:	DATES:
1. 2. 3. 4. 5.	Erect perimeter silt fence	NOVEMBER 2021 NOVEMBER 2021 NOVEMBER 2021 NOVEMBER 2021 ONGOING
6. 7.	Provide seeding and erosion control blanket in Detention Basin,	NOVEMBER / DECEMBER 2021
8.	and slope areasEstablish seeding on regraded area	NOVEMBER / DECEMBER 2021
9.	Install/construct Storm Sewer System including inlet protection	NOVEMBER / DECEMBER 2021
	excavated drains and end section rip rap protection	NOVEMBER / DECEMBER 2021
10.	Construct new pavement.	DECEMBER 2021 / SPRING 2022
11.	Install final landscaping	SPRING 2022

		380	ΑP
NOTE: PROVIDE TEMPORARY SEEDING FOR ALL DISTURBED PARKWAYS, EASEMENTS, DETENTION PONDS ETC. TO BE LEFT LONGER THAN 7 DAYS BEFORE PERMANENT SEEDING/FINAL LANDSCAPING IS TO OCCUR.	CONSTRUCTION SEQUENCE AND RESPONSIBLE CONTRACTOR 1. INSTALL SEDIMENT CONTROL MEASURES: VC VEGETATIVE CHANNEL BF BARRIER FILTER SE STABILIZED CONSTRUCTION ENTRANCE 2. GRADE SITE/STOCKPILE TOPSOIL. 3. PRESERVE AND PROTECT EXISTING VEGETATION.		■ LANDSCAP
3. VEGETATIVE PLANTINGS — SPRING PLANTINGS WILL BE CHECKED DURING SUMMER OR EARLY FALL. 4. REPAIRS — ANY EROSION CONTROL MEASURES, STRUCTURAL MEASURES, OR OTHER RELATED ITEMS IN NEED OF REPAIR WILL BE MADE WITHIN 1—2 DAYS. 5. MOWING — DRAINAGEWAYS, DITCHES AND OTHER AREAS THAT SUPPORT A DESIGNED FLOW OF WATER WILL BE MOWED REGULARLY	4. TEMPORARY VEGETATIVE STABILIZATION OF CONTROL MEASURES: TS TEMPORARY SEEDING VF VEGETATIVE FILTER M MULCHING 5. VEGETATIVE COVER ON ALL AREAS TO BE EXPOSED LONGER THAN 7 DAYS: TS TEMPORARY SEEDING 6. PERMANENT VEGETATIVE STABILIZATION OF ALL EXPOSED AREAS WITH 7 DAYS OF: PS PERMANENT SEEDING	•	:

SO SODDING

. INSTALL PERMANENT LANDSCAPING

8. PERFORM CONTINUING MAINTAINENCE.

& REMOVE TEMPORARY EROSION CONTROL

& Soil Erosion & Sediment Control

Construction Specification -- Pollution Control

The work consists of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air from construction activities.

All material furnished shall meet the requirements of the material specifications listed in this specification.

3. Erosion and sediment control measures and works

The measures and works shall include, but are not limited to, the following Staging of earthwork activities--The excavation and moving of soil materials shall be scheduled to minimize the size of areas disturbed and unprotected from erosion for the shortest reasonable time. Seeding-Seeding to protect disturbed areas shall occur as soon as reasonably possible following completion of that earthwork

*Mulching--*Mulching to provide temporary protection of the soil surface from erosion. Diversions—Diversions to divert water from work areas and to collect water from work areas for treatment and safe disposition. They are temporary and shall be removed and the area restored to its near original condition when the diversions are no longer required or when permanent measures are installed. **Stream crossings-**-Culverts or bridges where equipment must cross streams. They are temporary and shall be removed and the area restored to its near original condition when the crossings are no longer required or when permanent measures are installed

Sediment basins--Sediment basins collect, settle, and eliminate sediment from eroding areas from impacting properties and streams below the construction site(s). These basins are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed.

Sediment filters--Straw bale filters or geotextile sediment fences trap sediment from areas of limited runoff. Sediment filters shall be properly anchored to prevent erosion under or around them. These filters are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed. Waterways--Waterways for the safe disposal of runoff from fields, diversions, and other structures or

measures. These works are temporary and shall be removed and the area restored to its original condition when they are no longer required or when permanent measures are installed Other-Additional protection measures as specified in section 8 of this specification or required by Federal, State, or local government.

4. Chemical pollution

The contractor shall provide watertight tanks or barrels or construct a sump sealed with plastic sheets to dispose of chemical pollutants, such as drained lubricating or transmission fluids, grease, soaps, concrete mixer washwater, or asphalt, produced as a by-product of the construction activities. At the completion of the construction work, sumps shall be removed and the area restored to its original condition as specified in section 8 of this specification. Sump removal shall be conducted without causing pollution. Sanitary facilities, such as chemical toilets, or septic tanks shall not be located next to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water source. At the completion of construction activities, facilities shall be disposed of without causing pollution as specified in this specification.

5. Air pollution

The burning of brush or slash and the disposal of other materials shall adhere to state and local regulations. Fire prevention measures shall be taken to prevent the start or spreading of wildfires that may result from project activities. Firebreaks or guards shall be constructed and maintained at locations shown on the drawings. All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall ensure safe construction operations at all times. If chemical dust suppressants are applied, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommended application procedures shall be provided to the engineer 5 working days before the first application.

6. Maintenance, removal, and restoration All pollution control measures and temporary works shall be adequately maintained in a functional condition for the duration of the construction period. All temporary measures shall be removed and the site restored to near original condition.

7. Standards and Specifications

Standards and specifications for Soil Erosion and Sediment Control and other Pollution Controls shall be in accordance with the Illinois Urban Manual Standards as indicated below

Illinois Urhan Manual

Traffic Control

Construction Specification Name	Cod
Clearing	1
Clearing and Grubbing	2
Contractor Quality Control	94
Corrugated Polyethylene Tubing	44
Digging, Transporting, Planting and	707
Establishment of Trees, Shrubs and Vines	
Drainfill	24
Ductile-Iron Pipe	53
Earthfill	23
Excavation	21
Field Fence	92
Field Office	96
Geotextile	95
Identification Markers or Plaques	93
Mobilization and De-mobilization	8
Plastic Pipe	45
Pollution Control	5
Reinforced Concrete Pressure Pipe Conduits	41
Seeding, Sprigging and Mulching	6
Sodding	204
Stripping, Stockpiling, Site Preparation and	752
Spreading Topsoil	
Topsoiling	26

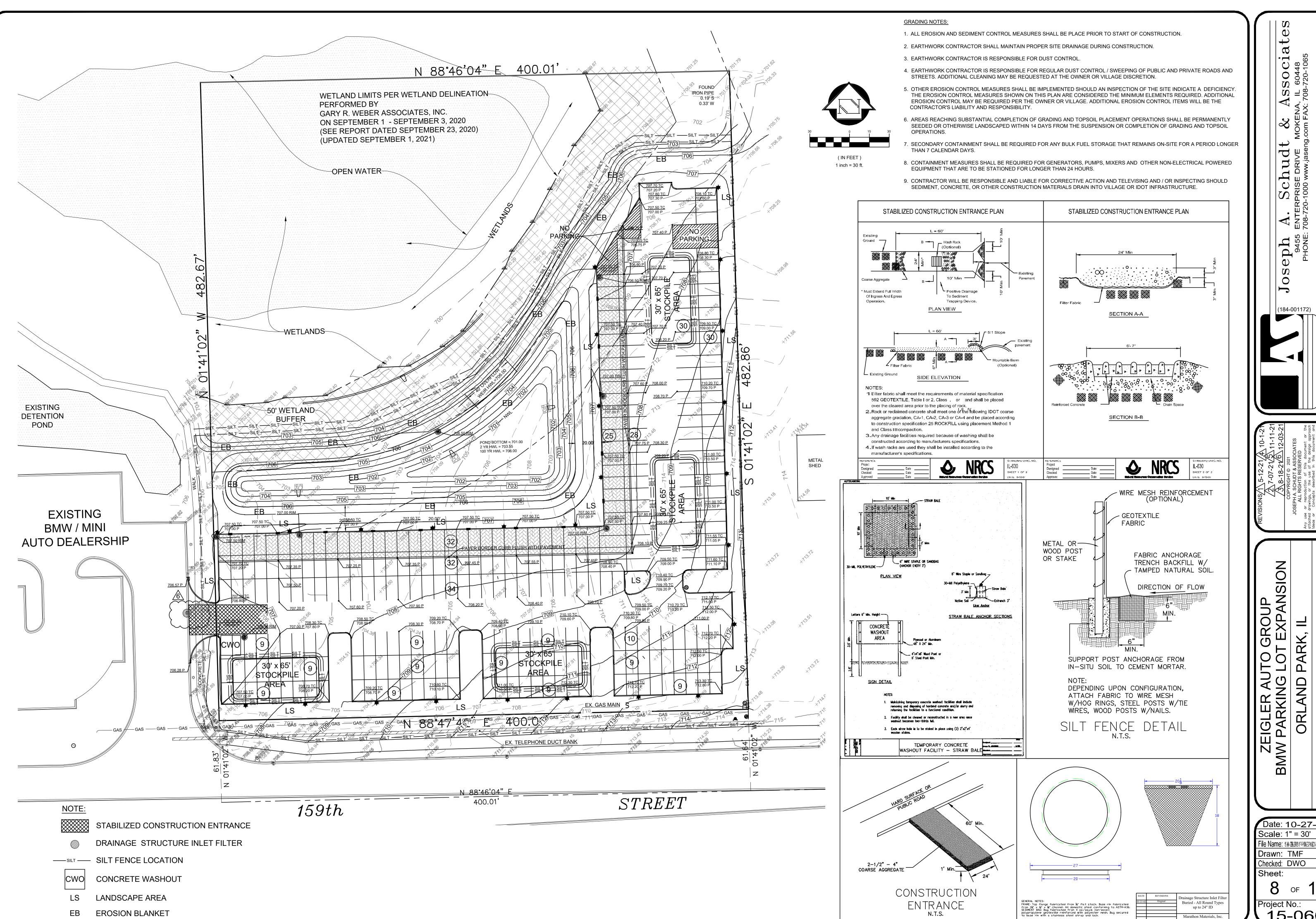
Illinois Urban Manual Practice Standard	Code	Date	
Bioretention Facility	800	11/201	
Construction Road Stabilization	806	1/1999	
Dust Control	825	2/1994	
Erosion Control Blanket	830	6/2009	
Filter Strip	835	1/199	
Infiltration Trench	847	1/199	
Inlet Protection - Fabric Drop	860	2/199	
Inlet Protection - Paved Areas	861	5/201	
Inlet Protection - Sod Filter	862	11/1999	
Land Grading	865	2/199	
Mulching for Seeding and Soil Stabilization	875	6/201	
Permanent Vegetation	880	10/200	
Permanent Vegetation	880a	10/200	
Table A - Grass, Forb and Sedge Species			
for Low Maintenance Areas			
Permanent Vegetation	880b	10/200	
Silt Fence	920	4/2012	
Sodding	925	12/199	
Stabilized Construction Entrance	930	8/1994	
Temporary Concrete Washout Facility	954	6/2009	
Temporary Sediment Trap	960	10/2001	
Temporary Seeding	965	12/1994	
Topsoiling	981	2/1994	
Tree Protection	990	4/2000	

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 \Box

(184-001172)

Date: 10-27-2 | Scale: 1" = 20' File Name: 1500 ZBSERRW PRABSPARKO 2380 TRO Drawn: TMF Checked: DWO



PARK,

Date: 10-27-20 Scale: 1" = 30' File Name: 1500 IBERRANDAM BERNANDE SANDLESSON TREE Drawn: TMF Checked: DWO

OF

Project No.: 15-060

- The Standard Specifications, construction plans and subsequent details are all to be considered as part of the contract. Incidental items or accessories necessary to complete this work may not be specifically noted but are to be considered a part of the contract.
- No construction plans shall be used for construction unless specifically marked "For Construction". Prior to commencement of construction, the contractor shall verify all dimensions and conditions at the job site. In addition, the contractor must verify the Engineer line and grade stakes. If there are any discrepancies from what is shown on the construction plans, he must 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 affected by omissions or discrepancies Failing to secure such instructions, the contractor will be considered to have proceeded at his own risk and expense. In the event of any doubt or question rising with respect to the true meaning of the construction plans or specifications, the decision of the Engineer shall be final and conclusive.
- All work performed under this contract shall be guaranteed by the contractor and his surety for a period of 12 months from the date of final acceptance of the work by the Municipality against all defects in materials and workmanship of whatever nature.
- Before acceptance by the Owner and final payment, all work shall be inspected and approved by the Owner or his representative. Final payment will be made after all of the contractor's work has been approved and accepted.
- Intentionally Deleted.
- Easements for the existing utilities, both public and private, and utilities within public rights-of-way are shown on the plans according to available record. The contractor shall be responsible for determining the exact location in the field of these utility lines and their protection from damage due to construction operations. If existing utility lines of any nature are encountered which conflict in location with new construction, the contractor shall notify the Engineer so that the conflict may be resolved.
- 8. Removed pavement, sidewalk, curb and gutter, etc. shall be disposed of at off-site locations provided by the contractor at his own expense.
- The contractor shall be responsible for the installation and maintenance of adequate signs, traffic control devices, and warning devices to inform and protect the public during all phases of construction. One lane in each direction shall be open to traffic at all times except between the hours of 9 A.M. to 3 P.M. During this period all work must be performed in accordance with standards 701201, 701206, and 701401.
- 10. Barricades and warning signs shall be provided in accordance with article 107.14 of the Standard Specifications. Adequate lighting shall be maintained from dusk to dawn at all locations where construction operations warrant or as designated by the Engineer. Traffic control standards which shall be included for use during construction are: 702001, 701201, 701206, 701301, 701401, 701501, 701606, and 701701. Stop signs must be installed as soon as access is available
- 11. Commonwealth Edison (Com-Ed), A.T.&T. Telephone, and Ni-Cor Gas have underground and/or overhead service facilities in the vicinity of the proposed work. the contractor shall be responsible for having the utility companies locate their facilities in the field prior to construction and shall also be responsible for the maintenance and preservation of these facilities. The contractor shall call J.U.L.I.E. at "811" or (800) 892-0123 for utility locations.
- 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 allowed.
- 13. All existing traffic signs, street signs, etc., which interfere with construction operations and not noted for removal or disposal shall be removed and reset by the contractor at locations as designated by the Engineer. This shall be considered incidental to the contract and no additional compensation shall be allowed. Damage to these items shall be repaired by the contractor at his own expense. All signs not required to be reset shall be delivered to the Municipality or County as appropriate.
- 14. All permanent type pavements or permanent improvements which abut the proposed improvement and must be removed. shall be saw-cut prior to removal. All items so removed shall be replaced with similar construction materials to their original condition or better. Payment for sawing shall be included in the cost for removal of each item and replacement will be paid under the respective items in the contract, unless otherwise indicated.
- 15. Where overhanging branches interfere with operations of construction, said branches shall be trimmed and sealed in accordance with section 645.09 of the Standard Specifications, and the cost of same shall be incidental to the contract. If trees or shrubs must be removed, they will be paid for in accordance with the specifications.
- 16. The contractor shall submit in writing to the Owner and Municipality a "Schedule of Operations" showing approximate dates for commencing and completing various phases of construction under this contract. The schedule shall have the approval of the Engineer and the date for starting shall be mutually agreed upon between the contractor, Owner, Municipality, and the
- 17. Special attention is drawn to the fact that article 105.06 of the Standard Specifications require the contractor to have a competent superintendent on the project site at all times irrespective of the amount of work sublet. The superintendent shall be capable of reading and understanding the plans and specifications, shall have full authority to execute orders to expedite the project, and shall be responsible for scheduling and have control of all work as the agent of the general contractor. Failure to comply with the provision will result in a suspension of work as provided in Article 108.07.
- 18. Water Valve boxes and Buffalo boxes that are uncovered during construction shall be adjusted to grade prior to restoring the pavement, sidewalk or parkway. The cost of same shall be considered as incidental to the contract.
- 19. It shall be the responsibility of the contractor to remove from the site any and all materials and debris which result from his construction operation at no additional expense to the Owner.
- 20. The Municipality and/or the Governing Agency shall be notified 48 hours prior to the start of any construction

EARTHWORK

- 1. Work under this section shall include but not be limited to the following:
- A. Clearing and removing from the site, all undesirable trees and other vegetative growth within the construction area. Tree removal shall be kept
- B. Stripping of topsoil from all excavation, pavement and structural clay fill
- C. Stockpiling of topsoil at locations as directed by the Owner or Engineer. Topsoil stockpiled for future use shall be relatively free from large roots, sticks, weeds, brush, stones larger than one (1) inch diameter or other litter and waste products including other extraneous materials not conductive to plant growth. Topsoil shall be stockpiled in sequence to eliminate any rehandling or double movements by the contractor.
- D. Clay cut and Clay fill with compaction within roadway and all other structural fill areas.

- E. Clay Cut and Excavation of all lakes and waterways per plan including all
- F. Placement and compaction of clay to standards as required on the construction plans to the design subgrade elevations. The contractor will note that the elevations shown on the construction plans are finished grade elevations and that pavement thickness must be subtracted to determine subgrade elevations. The contractor may obtain required clay fill from on-site excavation and on-site borrow excavation as directed by the Engineer, or Owner.
- G. Backfilling and compaction behind new curbs and gutters.
- H. Movement and compaction of soil material from the construction of underground utilities.
- I. Topsoil Placement to design finished grade elevations (6" minimum or as otherwise noted)
- J. If required, removal from site of all excess earth material including excess utility trench spoil after final grading.
- The quantities given in the Engineer's Bid Proposal for earthwork is intended as a guide for the contractor in determining the scope of the completed project. It is the contractor's responsibility to determine all material quantities and appraise himself of all site conditions. The contract price submitted by the contractor shall be considered as lump sum for the complete project. No claims for extra work will be recognized unless ordered in writing by the Engineer, and/or Owner.
- Proposed pavement areas and when applicable, building pads, driveways and sidewalks shall be excavated or filled to plus or minus 0.1 foot of design subgrade elevations by the contractor.
- The subgrade shall be free of unsuitable material and shall be compacted to a minimum of ninety-five (95) percent of modified proctor density. Testing

for compaction shall be the responsibility of the contractor.

- Upon completion of the surface improvements, the excavator shall respread a 6" layer of topsoil on all disturbed parkway, berm, and detention pond
- During construction operations, the contractor shall insure positive site drainage at the conclusion of each day. Site drainage may be achieved by ditching, pumping or any other method acceptable to the Engineer. The contractor's failure to provide the above will preclude any possible added compensation requested due to delays or unsuitable materials created as a result thereof.
- Whenever, during construction operations, any loose material is deposited in the flow line of gutter, drainage structures, ditches, etc., such that the natural flow line of water is obstructed, this loose material shall be removed at the close of each working day. 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.
- All disturbed areas within the right-of-way, parkways and detention areas shall be seeded with I.D.O.T. CL. I mixture in accordance with the "Standard Specifications" unless otherwise noted on landscape plans and protected with Excelsior Erosion Blanket or equal.
- Soil erosion control specifications shall be considered as part of this section.
- 10. All earthwork and utility spoils to be hauled offsite shall be tested by the contractor for disposal requirements.

UNDERGROUND

- Work under this section shall include trenching, installation of pipe, castings, structures, backfilling of trenches and compaction.
- All manholes and valve vaults shall be equipped with steps. Manholes will contain plastic coated steps per Precast Concrete Manhole Detail at 16 inch
- All sewer and water main trenches beneath proposed or existing utilities, proposed or existing pavement, driveways, sidewalks and for a distance of two feet on either side of same, and/or wherever else shown on the construction plan shall be backfilled with course aggregate backfill (CA-7) and thoroughly compacted in accordance with the State Specifications.
- All mating surfaces of concrete adjustment riser(s), structure sections, and frames shall be sealed with an external seal. no mastic sealant, concrete mortar or epoxy mortar shall be allowed as a sealant for adjustment risers, structure sections or frames. infi-sheild uni-band provided by sealing systems, inc. and wrapidseal manhole encapsulation system by cci piping systems or equivalent, as determined by the Village of Orland Park, are acceptable external seal products.
- The underground contractor shall stock pile all utility spoil in an area designated by the Engineer or Owner. This work shall be considered incidental to the contract. If authorized to do so, the underground contractor shall level out and disburse all utility spoil or remove it from the site. If no Earthwork Contract is awarded for this project, the underground contractor shall be responsible for removal of all excess Utility Spoil from the site. This work shall be considered incidental to the contract.
- The construction will be observed by the Owners Engineer. All work shall conform to the requirements of the Municipality as well as the Standard Specifications.
- The contractor shall provide the Engineer and the Municipality, and/ or the Governing Agency, with prints and/or legible Mylar Record Drawings of all field tiles, cleanouts, wyes, service stubs, B-Boxes, and underdrains as required.
- Separation between water mains and sewers must be maintained in accordance with Section 41-2.01B, C. & D of the "Standard Specifications". For storm sewer pipes that cross water mains, the storm sewer must be constructed of low head pressure pipe meeting ASTM C-443. The flexible "O" ring utilized in the type of joint must be properly seated to insure water-tightness.
- All floor drains shall be connected to the sanitary sewer and all downspouts and footing drains shall discharge into storm sewer or onto the ground.
- 10. Curb inlets are to be EJIW 7010 Type M-3 HD, or as indicated on the plans.
- 11. Rigid Sanitary Sewers and Storm Sewers shall be installed on Class B bedding, 1/4" to 1" in size, with a minimum thickness equal to that identified on the appropriate sewer section indicated on the detail sheet. Blocking of any kind for grade is not permitted. Bedding material shall conform to the requirements of ASTM C-33 for soundness and CA-11 for gradation. Cost for bedding shall be merged with unit price bid for the sewer.
- 12. Where flexible pipe is used, the pipe shall be installed on Class I Bedding and additional backfill extending to 12" over the pipe. Backfilling shall be in accordance with ASTM 2321. A deflection test shall be required by using a Rigid Ball or Mandrel as required in accordance with ASTM D-3034. A 95% Mandrel is required and will not be used prior to 45 days after backfilling.
- 13. 'band-seal' or similar flexible type couplings shall be used when connecting sewer pipes of dissimilar materials. when connecting to an existing sanitary sewer by means other than an existing wye or manhole, contractor shall use a 'sewer-tap' and hub-wye or hub-tee saddle.
- 14. All sewer main connections to an existing sanitary sewer main shall be with a manhole.

- 15. Sanitary sewers shall be pvc sdr 26 (astm 3034) with rubber gasketed joints (astm d-3212) and shall be installed according to the requirements of uni-b-79. only class i bedding material shall be allowed according to the requirements of astm d-2321. connection to the existing sanitary manhole shall be completed by removing a portion of the existing main and connecting the manhole utilizing pvc sdr 26 (astm 3034) pipe and a mission coupling. a "doghouse-style" manhole is not allowed. the manhole shall be provided with flexible manhole sleeves for the pvc pipe connection. sanitary sewers, where indicated as ductile iron, shall be awwa C151, class 52 with cement lining (awwa c104) and rubber push on joints (awwa c110).
- 16. All sanitary sewer manholes shall have eccentric cones; cone openings shall be centered over the outlet pipe. all precast structures to be as per astm C-478.
- 17. Sanitary sewer manholes shall be 4'-0" diameter precast structures. manholes shall also include the appropriate frame and sealed lids.

SECTION 6-410. WATER SUPPLY. (entire section amended - ord. 5312- 7/16/18)

C. MATERIAL SPECIFICATIONS AND DETAILS. all water distribution system elements shall conform to the following specifications:

1. DUCTILE IRON PIPE.

- a. Pipe class thickness -ansi a21.50 (awwa c150), minimum thickness, class 52 b. Pipe -ANSI A21-51 (AWWA C151)
- c. Pipe lining ANSI A21.4 (AWWA C104)
- d. Fittings -ANSI 21.10 (AWWA C110) e. Joints - mechanical and push-on, ANSI A21.11 (AWWA C111)
- f. Polyvinyl wrapping of all watermain is required.
- g. All tees, elbows, bends and reducers, shall utilize megalugs@ for joint restraints. megalugs joint restraints) shall be required to be installed in addition to concrete thrust blocks.

2. <u>VALVES.</u>

- a. Twelve (12) inch and smaller- iron body east jordan flowmaster rw (resilient wedge), non-rising stem gate valves, counter clockwise to open, awwa c515
- b. Fourteen (14) inch and larger- iron body, rubber seat, butterfly valve, class 150b, counter clockwise to open. AWWA C504
- c. Joint end mechanical, AWWA C111
- FIRE HYDRANTS. (Exhibit No. WM-06.) a. East Jordan Iron Works, Inc. Watermaster 5BR250 with Storz Connection with brass
- liner, painted safety yellow. AWWA C502.
- b. Valve size, 5 1/4-inch, counter clockwise to open. c. Nozzles, 2 - 2 1/2", 1 - 4 1/2", Machined 5" Storz Nozzle, with threads conforming
- to national standard specifications. d. Frangible section (breakaway type) with the break line flange
- located one (1) inch above finished grade. e. Hydrant to be installed with MJ swivel Tee with swivel MJ Gland. Auxiliary to
- be attached to fire hydrant and utilize six (6) anodized cap sacrificial nuts. f. Hydrant Marker - Roden style.
- 4. HYDRANT VALVE BOX (EXHIBIT NO. WM-06L
- a. East Jordan 8550 Series
- b. Lid embossed "WATER"
- c. Must include Valve Box Stabilizer Alberico Plastic or Adapter II
- AIR RELEASE VALVES. Apco, type 200a, 2-inch or valvematic. 6. CORPORATION STOPS. (Exhibit No. WM-08). Mueller H15000, 1-inch minimum,
- SERVICE PIPE,
- a. Copper tube, 2-inch and smaller, ASTM B88, Type K (base minimum on number of fixtures)
- b. Ductile iron, larger than 2-inch, conform to Section C(1) above. 8. CURB STOP.
- a. Copper service, Mueller H-15154 as denoted in exhibit No.wm-08.
- 9. CURB BOX.
- a. Copper service, Mueller H-10302 or H-10304 as denoted in exhibit No. WM-08.

b. Ductile Iron service, 4-inch and larger, conform to Section C(12)

10. CONCRETE THRUST RESTRAINTS.

- a. Horizontal reactions thrust restraints at all tees, plugged ends, hydrants, and bends between 11 1/4 degrees and 90 degrees shall conform to exhibit no. WM-10. b. Vertical reactions - the engineer shall submit individual designs for each location and
- comply with AWWA C600, Section 3.8. c. Material - precast or poured Class X concrete.
- d. Where undisturbed earth is not available or not likely to be available to back up pressure type concrete thrust blocks, the engineer shall specify tie rods with or without anchor type concrete thrust blocks and submit design data for such specifications. care shall be taken when pouring concrete so that the mix will not interfere with access to joints or with hydrant drainage. all tees, elbows, bends and reducers, shall utilize megalugs © for joint restraints. megalugs joint
- restraints) shall be required to be installed in addition to concrete thrust blocks. 11. CASING PIPES. Steel Pipe- 0.375" minimum thickness, bituminous coated, casing spacers are stainless steel, casing is to be sealed at both ends with a
- masonry cap and made water-tight. **12. VALVE VAULTS.** (Exhibit Nos. WM-01 and WM-02).
- a. Precast reinforced concrete -ASTM C478 and ASTM C443. b. Size: for-, 8", - and smaller diameter valves, valve vaults shall have a 60"" inside
- c. Adjustment: no more than two (2) precast concrete adjusting rings with six (6) inch maximum height adjustment shall be allowed. rubber adjusting rings shall be used for structures in pavement.

diameter; for pressure connections and valves -10" and larger in diameter, valve

vaults shall have a minimum 72"" inside diameter or as required by the village

- 13. CASTINGS, a. Manhole frame and cover - EJ (East Jordan Iron Works, Inc.) 1022Z1 and 1020A HD embossed WATER and VILLAGE OF ORLAND PARK with a lid design as denoted on Exhibit No. WM-03.
- b. Manhole steps, EJ (East Jordan Iron Works, Inc.). #8518. 406. 14. CRUSHED GRANULAR BEDDING. (EXHIBIT NO. WM-11). Crushed gravel or crushed stone coarse aggregate -ASTM C33, Size No. 67.
- CARRIER PIPE. a. PVC pipe - AWWA C900, minimum thickness equal to SDR26, push-on type joints. b. Other pipes - conforming to water main standards of this Section.
- D. INSTALLATION REQUIREMENTS. 1. Environmental Protection Agency Permit. Water system design and construction shall in all respects be in accordance with the regulations of the Environmental Protection Agency, State of Illinois. No construction shall commence until a copy of a permit from this agency is filed with the Village.
- 2. Installation. The installation of water mains and appurtenances, including services, shall conform to the requirements of this Section and shall conform to AWWA C600.
- E. WATER SERVICE LINE.

1. <u>Installation and Location.</u> A water service line is a water pipe connected at the water main by a brass corporation stop or a ductile iron filling. Such pipe is extended horizontally at right angles with the water main to the front line of a lot or single building which it is to serve. The service pipe shall be provided with a brass curb stop or gate valve at the mid-point between the curb and the sidewalk unless otherwise specified by the Village Engineer. A cast iron curb box shall be installed over curb stops. A valve vault shall be provided for gate valves - three (3) inches and larger. All water service lines shall be located at the approximate center of each lot at a minimum depth of five (5) feet. A water service curb box that falls within a hard service area shall be relocated. 2. Meters.

a. All meters shall be installed in a habitable area and shall be accessible for inspection and serviceable by the Village.

- b. All meters shall be per Village standard as determined by the Director of Development Services. Meter size shall be determined by the Director of Development Services. All meters less than 1.5" shall be installed by the Village. All meters greater than 1-1/2" shall be installed by a plumbing contractor at his expense. All meter installation shall comply with Village's codes and inspections. Residential meters shall have an AWWA approved ball valve at both ends. Both ball valves shall have female threads to accept male ends of meter couplings. Spread design shall be so only the meter and meter couplings will be between the two (2) valves. Ord. 2680-3/18/961
- c. All 1"-meter settings shall have an AWWA approved ball valve at both sides Both valves shall have female threads to accept male ends of meter couplings. Spread design shall allow only the meter and meter couplings to be between the two (2) valves.
- d. All 1 1/2" meter settings shall have an AWWA approved ball valve at both sides. Both valves shall have male threads to accept female meter unions. Spread design shall allow only the meter and meter coupling unions to be between the two (2) valves.
- e. All 2" and larger meter settings shall receive flanged type meters per Village standard. A high-quality brass ball valve shall be located immediately adjacent to companion flanges. corn. 2860-3118196
- f. All meter settings of 3-inch size and larger will be equipped with a by-pass system that shall be metered. corn. 2860-3118196)
- g. All meter settings require a remote reading device that is external to the meter location. Conduit or thin wall is required when necessary to facilitate installation and maintenance of the reading device. Conduit shall be placed so the reading device will be mounted near the gas meter, 18" to 36" above foundation. Ord. 2860- 3118/961
- h. At all water meter settings, an electrical jumper wire shall be installed so the meter may be removed without breaking continuity, or interfering with the maintenance of the metering equipment. The wire size shall be equal to, or greater than the neutral conductor of the largest service supplied to the building by the electric service provider. Ground wires should be located to service side of meter wherever possible.
- All special meter applications, including sprinkler systems, back flow preventers, and fire systems, shall require special review and authorization by the Director of Development Services and Director of Public Works. corn. 2860-3118/96)
- 3. <u>Back Flow Prevention.</u> Back flow prevention devices should be required in conformance with other applicable Village regulations.

4. Water Service Connection Requirements.

- a. Residential and Commercial. 1. Each individual residential unit, except as noted below in 4.a.2, shall have a separate metered water service to each unit. The service line shall be individually tapped into the water main and extended into the unit without passing through the property of another unit. Location and placement of wiring conduit shall be determined by the Village Plumbing Inspector and installed by the contractor
- 2. Multi-floor residential buildings can be served by one (1) adequately sized water service line into a meter room. Inside the meter room, the service shall be manifolded to accept one (1) meter per unit served and one (1) meter for any common purpose water use. The manifold shall be constructed similarly to a single meter setting with padlock type valving device as approved by the Village Plumbing Inspector. A single meter for the entire building may be allowed in unique cases with the approval of the Director of Development
- Services and Director of Public Works. 3. Commercial, Industrial and Office type buildings shall be served by one (1) adequately sized water service line into a meter room. If the units are individually owned (not leased or rented), inside the meter room, the service shall be manifolded to accept one (1) meter per unit served and one (1) meter for any common water purpose. The manifold should be constructed similarly to a single meter setting with padlock type valving device as approved by the Village Plumbing Inspector. If the building is singularly owned (units leased or rented) only one (1) adequately sized meter will be allowed. 4. The meter room shall be accessible from a public area and constructed solely for water meter housing. A separate conduit shall be installed by the electrical contractor from each meter to a common point area on the building exterior. Location and placement
- of the wiring shall be determined by the Village Plumbing Inspector. Fire Service Line. All fire sprinklers shall be connected to the water system through a single water service line constructed in accordance with the requirements in this
- Section and separated inside the building prior to meter. **G.** <u>Water Main Protection</u>. All water main, storm sewer and sanitary sewer construction shall meet the requirements of this Section.
- 5. Horizontal Separation. a. A water main shall be laid at least ten (10) feet horizontally from any existing or
- proposed storm or sanitary sewer line. b. Should local conditions prevail which would prevent a lateral separation of ten (10) feet, a water main may be laid closer than ten (10) feet to a storm or sanitary sewer provided the main is laid in a separate trench or on an undisturbed earth shelf located to one side of the sewer and at such an elevation that the bottom of the water main is a least eighteen (18) inches above the top of the sewer.

In such cases, water main shall be laid with as much horizontal clearance for sewer

- as possible. c. If it is impossible to obtain proper horizontal and vertical separation as stipulated in Subsections (a) or (b) above, both the water main and the length of sewer between adjacent manholes shall be constructed of push-on or mechanical-joint ductile iron pipe, or pre-stressed concrete pipe and shall be pressure-tested to assure water tightness before backfilling.
- 2. Vertical Separation. a. Whenever a water main must cross house sewers, storm drains, or sanitary sewer,
- the water main shall be laid at such an elevation that the bottom of the water main is eighteen (18) inches above the top of the drain or sewer. This vertical separation shall be maintained for that portion of the water main located within ten (10) feet, horizontally, of any sewer or drain crossed. Said ten (10) feet is to be measured at the normal distance from the water main to the drain or sewer.
- b. Where conditions exist that the minimum vertical separation set forth in a subsection above cannot be maintained, or it is necessary for the water main to pass under a sewer or drain, one of the following two measures must be taken:

1. The water main shall be installed within a PVC carrier pipe and the carrier pipe

- shall extend on each side of the crossing until the normal distance from the water main to the sewer or drain line is at least ten (10) feet 2. The involved sewer or drain shall be constructed from manhole to manhole with "O" ring pipe conforming to ASTM 361 or other pipe material which
- 1. Excavation. a. The trench shall be excavated so that the wa1er main shall have a minimum of five (5) feet six (6) inches of cover. The trench for the pipe shall be excavated at least twelve (12) inches wider than the external diameter of the pipe but not wider than the widths denoted on Exhibit No. WM-11.
- b. Bell holes of sufficient depth shall be provided across the bottom of the trench to accommodate the bell of the pipe, to provide sufficient room for joint making and to insure uniform bearing for the pipe.

would conform to water main standards.

H Construction Requirements.

Where a firm foundation is not found to exist for the bottom of the trench at the required depth due to soft, spongy or other unsuitable soil, such unsuitable soil shall be removed for the full width of the trench or tunnel and replaced with well compacted unwashed gravel or an equal substitute, or crushed stone if such compacted material proves unsatisfactory. Where rock in either ledge or boulder formation is encountered, it shall be removed below grade and replaced with a well-compacted cushion of unwashed gravel having a thickness under

the pipe of not less than eight (8) inches. 2. Sheeting and Bracing,

- a. Sheeting and bracing shall be used in the excavation area as may be necessary for the safety of the work and the public, for the protection of the workmen and to prevent damage to adjacent properties.
- b. Sheeting shall not be removed until the backfill has been placed and thoroughly compacted.
- 3. Laying Water Main.
- a. The contractor shall keep the trench free from water while the water main is being placed and until the pipe joint has been sealed to the satisfaction of the Village Engineer
- b. Adequate provision shall be made for the safety, storage and protection of all water pipe prior to actual installation in the trench. Care shall be taken to prevent damage to the pipe castings and coating, both inside and out. Provisions shall be made to keep the inside of the pipe clean throughout its storage period and to keep mud and/or other debris from being deposited therein. All pipes shall be thoroughly cleaned on the inside before placement of the pipe. Proper equipment shall be used for the safe handling, conveying and laying of the pipe. All pipes shall be carefully lowered into the trench, piece by piece, by means of a derrick, ropes, or other suitable tools or equipment, in such manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.
- c. In making joints, all portions of the joining materials and the socket and spigot ends of the joining pipe shall be wiped clean of all foreign materials. The actual assembly of the jointing shall be in accordance with the manufacturer's installation instructions and/or as directed by the Village Engineer. During construction, until jointing operations are complete, the open ends of all pipes shall be at all times protected and sealed with temporary watertight plugs. d. Polyvinyl encasement shall be installed around ductile iron pipe with a

minimum overlap of 12" at each joint and sealed with approved polyvinyl compatible adhesive tape.

- a. The cutting of pipe for inserting valves, fittings or closure pieces shall be done in a neat and workmanlike manner without damage to cement lining and so as to leave a smooth end at right angles to the axis of the pipe.
- b. When machine cutting is not available for cutting pipe twenty (20) inches in diameter or larger, the electric-arc cutting method shall be permitted, using a carbon or steel rod. Only qualified and experienced workmen shall be allowed to perform this work.
- c. The flame cutting of pipe by means of an oxyacetylene torch shall not be allowed.

a. The trench bottom shall be flat and shall provide full bearing of the length of

valves and hydrants. c. Backfilling of the trench shall be accomplished by careful replacement of the excavated material after the pipe and the bedding material have been installed. Any pipe installed within two (2) feet of a pavement edge or curb and gutter shall be backfilled to the top of the trench with granular material in

compliance with Illinois Department of Transportation Standard Specifications

b. Thrust blocks shall be used to prevent movement at all bends, tees, caps,

for Road and Bridge Construction.

the pipe.

a. Fire hydrants shall be placed as specified on engineering plans. All hydrants shall stand plumb, their pumper nozzle pointing normal to the road. They shall conform to the established grade, with the breakaway flange being between 1 to 5 inches above finished grade. All nozzles shall be at sufficient height above finished grade to provide free rotation of a standard hydrant wrench free and clear of any obstructions

b. A drainage pit two (2) feet in diameter and two (2) feet deep shall be

- excavated below each hydrant and filled completely with a minimum of one cubic yard of 1" river rock under and around the bowl of the hydrant and to a level six (6) inches above the waste opening. No hydrant drainage pit shall be connected to a sewer
- c. Hydrant leads are not allowed for extending the setback unless approved by the Director of Development Services and the Director of Public Works. d. Barrel extensions shall be provided as needed in order to provide sufficient

height above finished grade to provide free rotation of a standard hydrant

- wrench free and clear of any obstructions and to provide a minimum 18" height above finished grade to the break-a-way flange. An extension shall not exceed a maximum of 3 feet. e. Front of hydrant shall be no closer than three (3) feet to back of curb.
- 7. Water Main Installation. During water main installation, to make a closure between two pipe ends, or between pipe end fittings, or between pipe end and valve, short lengths shall be used with proper connections or couplings. Repair sleeves shall not be used to make closures during new construction
- 8. <u>Dewatering.</u> Where water is encountered in the trench, ii shall be removed during pipe-laying and jointing operations. Trench water shall not be allowed to enter the pipe at 9. Connections to Existing Mains. All connections to the Village water distribution system shall be made under full water service pressure unless otherwise approved by the Director of Development Services and the Director of Public Works at locations approved
- by the Director of Public Works I Pressure Test.
- 1. As part of the construction, the water mains shall be pressure tested in accordance with this Section. 2. All newly laid pipes shall be subjected to a hydrostatic pressure of one hundred fifty (150) pounds per square inch. Duration of each pressure test shall be for a period of, at less than two (2) hours. Each valved section of pipe shall be filled with water and the specified test pressure shall be applied oy means of a pump connected to the pipe. Before applying the specified test pressure, all air shall be expelled from the pipe. All leaks shall be repaired until tight. Any cracked or defective pipes, fittings, valves, or hydrants discovered

in consequence of this pressure test shall be removed and replaced and the test repeated

- until satisfactory results are obtained. 3. All testing shall be done before the installation of service lines. Suitable means shall be provided for determining the quantity of water lost by leakage under the specified test pressure. Allowable leakage shall not be greater than that computed as follows:
- L = Allowable leakage in gallons per hour

necessary to maintain the specified leakage test pressure.

- N = number of joints in length of pipeline tested
- D = Nominal diameter of the pipe in inches P = Average test pressure during leakage test in pounds per square inch gauge. Leakage is defined as the quantity of water required to be supplied to the newly laid pipe
- J. <u>Preliminary: Flushing.</u> Prior to chlorination, the main shall be flushed as thoroughly as possible with the water pressure and outlets available. Flushing shall be done after the pressure test is made. Because such flushing removes only the lighter solids, it cannot be relied upon to remove heavy material allowed to get into the main during pipe placement. If no hydrant is installed at the end of the main, a tap should be provided large enough to affect a velocity in the main of at least two and one- half (2 1/2) feet per second.

K. <u>Disinfection</u>.

L = (N)(D)(P)

1. The preferred point of application of the chlorinating agent shall be at the beginning of the pipeline extension or any valved section of it and through a corporation stop in the top of the newly laid pipe. The injector for delivering the chlorine-gas into the pipe should be supplied from a tap on the pressure side of the gate valve controlling the flow into the pipeline extension.

2. Water from the existing distribution system or other source of supply shall be controlled

- so as to flow slowly i,to the newly laid pipeline during the application of chlorine-gas. The rate of chlorine mixture flow shall be in such proportion to the rate of water entering the pipe that the chlorine dose applied to the water entering the newly laid pipe shall be at least fifty (50) ppm, or enough to meet the requirements during the retention period. This may require as much as one hundred (100) ppm of chlorine in the water left in the line after chlorination.
- 3. Valves shall be manipulated so that the strong chlorine solution in the line being treated shall not flow back into the line supplying the water 4. Treated water shall be retained in the pipe long enough to destroy all spore-forming bacteria. This retention period shall be at least twenty-four (24) hours. After the chlorine-treated water has been retained for the required time, the chlorine residual at

the pipe extremities and at other representative points should be at least 25 ppm.

operated while the pipeline is filled with the chlorinating agent.

5. In the process of chlorinating newly laid pipe, all valves or other appurtenances shall be

6 All water mains shall be disinfected and tested according to the requirements of the "Standards for Disinfecting Water Mains," AWWA C601, and as required by this Section. All disinfection, as required by this Section, shall be performed by an independent firm exhibiting experience in the methods and techniques of this operation, and shall be approved by the Village Engineer.

L. Final Flushing and Testing.

1. Following chlorination, all treated water shall be thoroughly flushed from the newly laid pipeline at its extremities until the replacement water, throughout its length shall, upon test, be approved as safe water by the Village Engineer. This quality of water delivered by the new main should continue for a period of at least two (2) full days as demonstrated by laboratory examination of samples taken from a tap located and installed in such a way as to prevent outside contamination. Samples should never be taken from an unsterilized hose or fro11 a fire hydrant because such samples seldom meet current bacteriological standards.

- 2. After disinfecting and flushing, a minimum of two (2) water samples shall be collected by the contractor on two successive days, with notice given, so that the collection may be witnessed by the Village Engineer. Bacteriological sampling and analysis of the samples shall be performed by a laboratory approved by the Illinois Department of Public Health and the Village Engineer. Should the initial treatment result in an unsatisfactory bacterial test, the procedure shall be repeated until satisfactory results are obtained. The contractor or developer shall pay for the sampling and analysis. Results of the analysis shall be transmitted by the laboratory directly to the Village Engineer. Test results shall indicate the date the sample was collected, the date the analysis was made, the exact locations at which samples were taken, the firm submitting the sample, and the project at which the samples were collected. Sufficient samples shall be collected in order to insure that the
- system is bacteriologically safe. 3. Village of Orland Park to operate valve.

PAVING, CURB & WALKS

- Work under this section shall include final subgrade shaping and preparation, forming placement of roadway base course materials and subsequent binder and/or surface courses, finishing and curing of concrete, final clean-up and all related work.
- The proposed pavement shall consist of the subgrade course (as specified) base course, Bituminous Concrete Binder course, and Bituminous Concrete Surface course, Class 1, or the thickness and materials as specified on the construction plans. Prime coat material shall be bituminous M.C. - 30. Unless shown as a bid item, prime coat shall be considered as incidental to the cost of the contract. All pavement shall be constructed in accordance with the I.D.O.T. "Standard Specifications for Road and Bridge Construction", current edition.
- Sidewalks and curb shall be of the type as detailed in the construction plans shall consist of Portland Cement Concrete with air entrainment of six percent (6%) (+/-1%). Concrete shall be a minimum six (6) bag mix and shall develop a minimum of 3,500 PSI compressive strength at fourteen (14) days. All concrete shall be broom
- Curing and protection shall be in accordance with article 606 of the "Standard Specifications", current edition.
- All damaged areas in the binder, base or curb shall be repaired to the satisfaction of the Engineer and Municipality prior to laying the surface course. The paving contractor shall provide whatever equipment and manpower necessary including the use of power brooms if required by the Engineer to prepare the pavement for application of the surface course. Equipment and manpower for cleaning shall be considered as incidental to the cost of the contract. Prime coat for the binder course shall also be considered as incidental to the cost of the contract and shall be applied
- to the binder at a rate of 0.05 gallons per square yard. 3/4" thick Premoulded Fibre Expansion Joints with 3/4" x 13" plain round, steel dowel bars shall be installed at fifty (50) foot intervals and at all P.C.'S, P.T.'S, and curb returns. Alternated ends of the dowel bars shall be greased and fitted with metal expansion tubes. Contraction joints shall be provided at twenty-five (25) foot intervals in the curb. The cost of these joints shall be considered as incidental to the cost of the
- contract. Expansion joints shall be placed near all curb inlets. Backfilling of curbs or pavement shall be the responsibility of the earthwork contractor.
- Curbs shall be depressed at locations where public walks/pedestrian paths intersect curb line at street intersections and other locations as directed, in accordance with Americans with Disabilities Act (ADA) requirements.
- Two (2) coats of boiled linseed oil in conformance with section 408 of the Standard Specifications shall be applied to exposed concrete surfaces, cost of which shall be incidental to the cost of the contract.
- 0. It shall be the responsibility of the contractor to remove from the site any and all materials and debris which result from his construction operations at no additional expense to the Owner. The paving contractor shall be responsible for providing all coring, testing, and
- All testing results shall be made available to the Municipality for review. 2. Concrete sidewalks shall have three - 1/4 inch diameter, 10 foot long reinforcing rods centered over all utility crossings. Expansion joints shall be provided in the concrete

expense. The contractor shall include this as a separate bid item or else it will be

assumed that this cost has been figured into the unit prices for the paving items.

pavement evaluation as required by the Municipality for acceptance at his own

SEDIMENTATION & EROSION CONTROL

sidewalks at 50 foot intervals.

All storm water runoff is to be directed to catch basins with proper sumps. Drainage

so as to filter and contain any and all soil and debris.

When storm water is to be routed through existing or proposed detention basins, they are to be constructed immediately upon commencement of the project. Basins will be properly over excavated so as to provide sufficient volume for debris and settlement. If the drainage is in an existing basin, the upstream project will be

properly protected so as to prevent siltation of the downstream basin.

Structure Inlet Filter Devices shall be placed in the catch basins, inlets, or manholes,

- All catch basins, sumps and/or retention basins are to be cleaned at the end of the project prior to final acceptance. Cleaning may also be required during the course of the construction of the project if it is determined that the silt and debris traps are not properly functioning and their performance is impaired.
- topsoil respread, seeding, etc.), they are to be considered as incidental to the cost of the contract. . Soil erosion control measures in accordance with the "Procedures and Standards for Urban Soil Erosion and Sedimentation Control in Illinois", current edition, shall be

. Unless soil erosion control items are specifically referred to as bid items (such as

- followed at the discretion of the Municipality. Any soil erosion control measures in addition to those outlined in these plans and which are deemed necessary by the Engineer, shall be implemented immediately by
- Seeding shall conform to section 250 of the "Standard Specifications".

NOTE: VILLAGE OF ORLAND PARK SPECIFICATIONS AND DETAILS SHALL SUPERSEDE AND TAKE PRECEDENCE OVER ANY SPECIFICATIONS NOTED HEREON.

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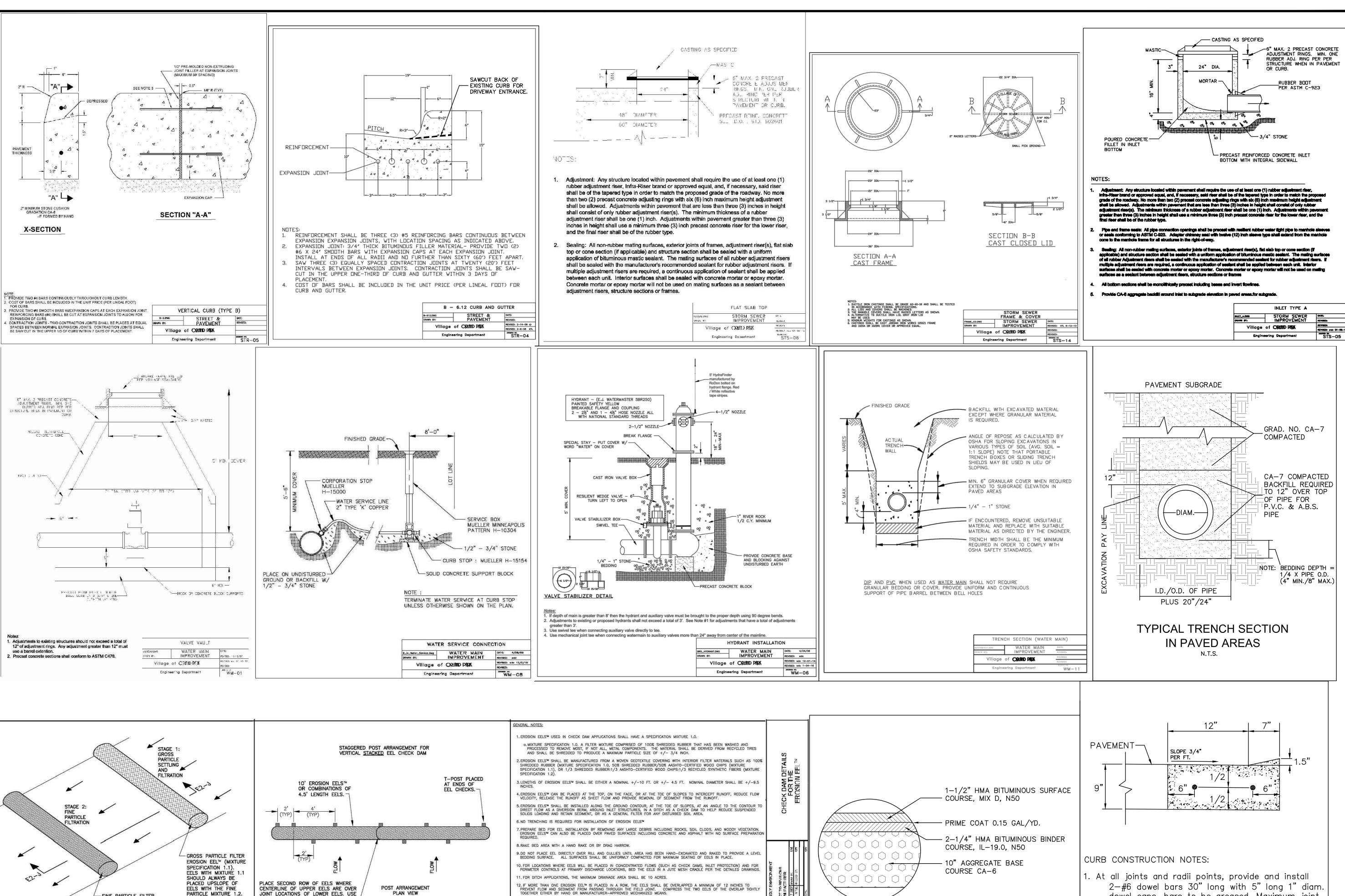
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ON

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Project No.:

Sheet:



14. FOR CHECK DAM APPLICATIONS, EROSION EELS™ SHALL BE PLACED PERPENDICULAR TO THE FLOW OF THE WATER. EROSION EELS™ SHALL CONTINUE UP THE SIDES SLOPES A MINIMUM OF 3 FEET ABOVE THE DESIGN FLOW DEPTH.

16. ANCHORING POSTS FOR CHECK DAM APPLICATIONS SHALL HAVE A MINIMUM WEIGHT OF 1.25 LBS/FT STEEL T-POSTS (5 TO 7 FT. LENGTHS) ROLLED FROM HIGH CARBON STEEL. POSTS SHOULD BE HOT-DIP GALVANIZED OR COATED WITH A WEATHER-RESISTANT PAINT FOR STEEL APPLICATION, POSTS SHOULD BE EQUIPPED WITH A METAL ANCHOR PLATE. INSTALL PER DETAILS ON THIS SHFFT.

17. PLACE T—POSTS THROUGH HANDLE OF BAGS. DO NOT DRIVE POSTS THROUGH EROSION EELS™. T—POSTS ARE TO BE EMBEDD

A MINIMUM OF 2 FT INTO GROUND.

15. EROSION EELS™ SHALL REMAIN IN PLACE UNTIL FULLY ESTABLISHED VEGETATION HAS COMPLETELY DEVELOPED OR UNTIL THE STORAGE CAPACITY/FUNCTIONAL LIFE OF THE EEL HAS BEEN EXHAUSTED (REQUIRING REPLACEMENT WITH NEW EELS).

CENTERLINE OF UPPER EELS ARE OVER JOINT LOCATIONS OF LOWER EELS. USE

STACKED LAYERS OR 10' LENGTH EELS LAID UP ALONG DITCH SIDESLOPES.

4.5' LENGTH EELS AT ENDS OF

PARTICLE MIXTURE 1.2

FINE PARTICLE FILTER

SPECIFICATION 1.2).

EROSION EEL™ (MIXTURE

POST ARRANGEMENT PLAN VIEW

DETAIL E2-E(A): PLAN VIEW -REINFORCED CHECK DAM FOR HIGH FLOW APPLICATIONS (OPTION A) N.T.S. 2-#6 dowel bars 30" long with 5" long 1" diam. dowel caps, bars to be greased. Maximum joint

File Name: 1500 IBSERBW PRANSEPANSON 3390 TAG Drawn: TMF Checked: DWO Sheet:

TYPICAL DEPRESSED CURB

shall be reinforced with two 8' long #5 bars

2. All curb shall be built on a minimum 2" thick

3. Any curb section built over a trench crossing

spacing not to exceed 40'.

centered over the trench.

granular cushion.

STANDARD DUTY

ASPHALT PAVEMENT

N.T.S.

Date: 10-27-28 Scale: 1" = 20'

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AND

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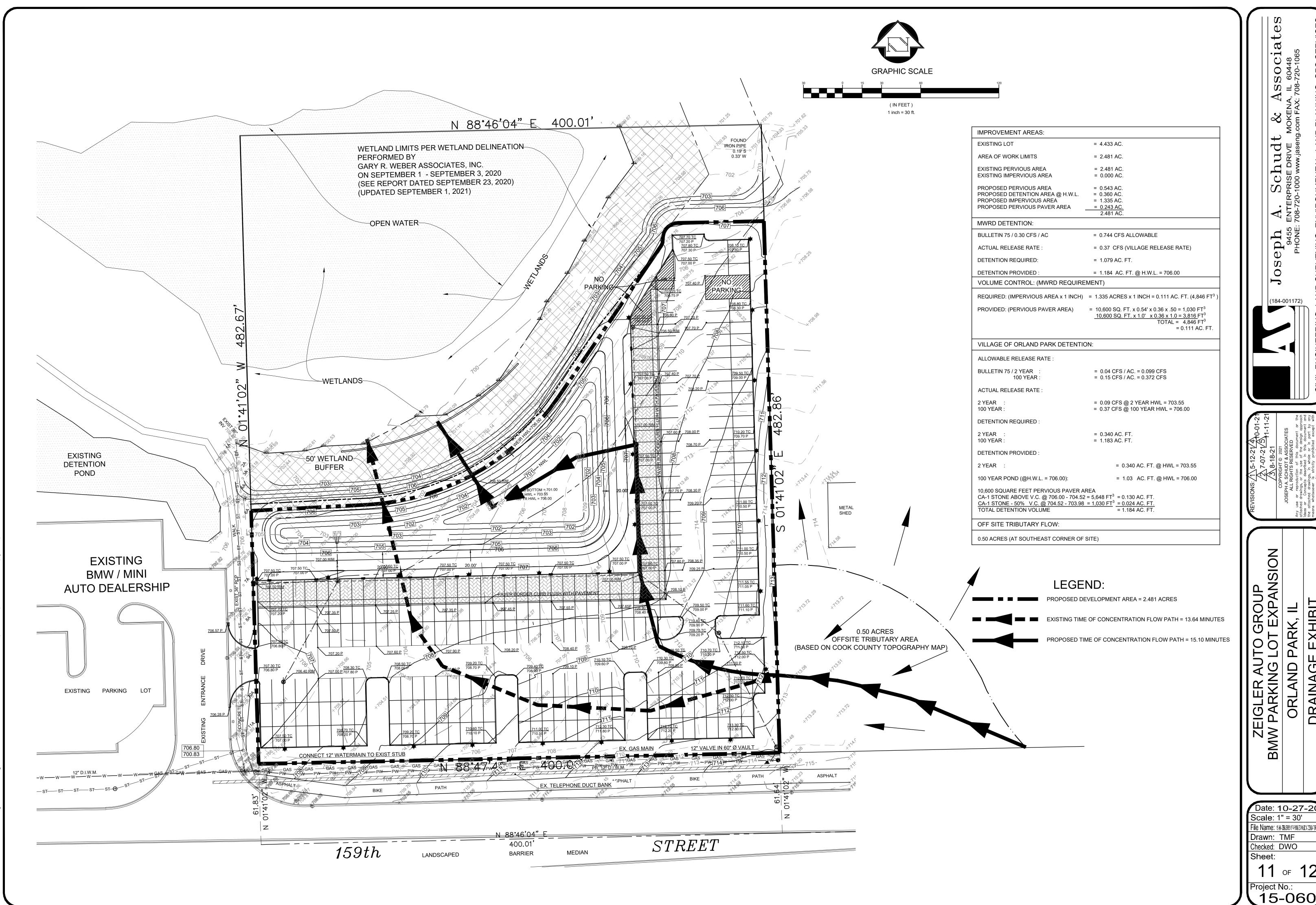
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10 of Project No.: 15-060



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JTO GR LOT EX PARK, ZEIGLER AUT 3MW PARKING L ORLAND F

Date: 10-27-20 Scale: 1" = 30' File Name: 1500/IBBRINDRANGERANCHESIN TOOK Drawn: TMF Checked: DWO Sheet:

1 1 OF Project No.:

- 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 ILLINOIS 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 <u>ORLAND PARK</u> 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.

- 1. THE MWRD LOCAL SEWER SYSTEM SECTION FIELD OFFICE MUST BE NOTIFIED AT LEAST TWO (2) WORKING DAYS PRIOR TO THE COMMENCEMENT OF ALL WORK (CALL 1-708-444-5500) AND
- 2. THE VILLAGE OF <u>ORLAND PARK</u> 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.

- 1. ALL ELEVATIONS SHOWN ON PLANS REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). CONVERSION FACTOR IS 0.00 FT.
- 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
- 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
- 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.

- 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.
- 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 AND SEWER MAIN CONSTRUCTION IN ILLINOIS (LATEST EDITION). 5. ALL FLOOR DRAINS SHALL DISCHARGE TO THE SANITARY SEWER SYSTEM.
- 6. ALL DOWNSPOUTS AND FOOTING DRAINS SHALL DISCHARGE TO THE STORM SEWER SYSTEM.
- 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 MATERIAL	PIPE SPECIFICATIONS	JOINT SPECIFICATIONS
VITRIFIED CLAY PIPE	ASTM C-700	ASTM C-425
REINFORCED CONCRETE SEWER PIPE	ASTM C-76	ASTM C-443
CAST IRON SOIL PIPE	ANSI A21.51	ANSI A21.11
DUCTILE IRON PIPE	ANSI A21.51	ANSI A21.11
POLYVINYL CHLORIDE (PVC) PIPE 6-INCH TO 15-INCH DIAMETER SDR 26 18-INCH TO 27-INCH DIAMETER F/DY=46		ASTM D-2855 OR ASTM D-3212 ASTM D-3212
HIGH DENSITY POLYETHYLENE (HDPE)	ASTM D-3350	ASTM D-3261
WATER MAIN QUALITY PVC 4-INCH TO 36-INCH 4-INCH TO 12-INCH 14-INCH TO 48-INCH	ASTM D-2241 AWWA C900 AWWA C905	ASTM D-2672 OR ASTM D-3139 ASTM D-3212 ASTM D-3212

- 8. ALL SANITARY SEWER CONSTRUCTION (AND STORM SEWER CONSTRUCTION IN COMBINED SEWER AREAS), REQUIRES STONE BEDDING WITH STONE 1/4" TO 1" IN SIZE, WITH MINIMUM BEDDING THICKNESS EQUAL TO 1/4 THE OUTSIDE DIAMETER OF THE SEWER PIPE, BUT NOT LESS THAN FOUR (4) INCHES NOR MORE THAN EIGHT (8) INCHES, MATERIAL SHALL BE CA-11 OR CA-13 AND SHALL BE EXTENDED AT LEAST 12" ABOVE THE TOP OF THE PIPE WHEN USING PVC.
- 9. "BAND SEAL" OR SIMILAR NON-SHEAR FLEXIBLE-TYPE COUPLINGS SHALL BE USED IN THE CONNECTION OF SEWER PIPES OR DISSIMILAR MATERIALS.
- 10. ALL MANHOLES SHALL BE PROVIDED WITH BOLTED, WATERTIGHT COVERS, SANITARY LIDS SHALL BE CONSTRUCTED WITH A CONCEALED PICKHOLE AND A WATERTIGHT GASKET WITH THE WORD "SANITARY" CAST INTO THE LID.
- 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: 1. A CIRCULAR SAW-CUT OF SEWER MAIN BY PROPER TOOLS ("SEWER-TAP" MACHINE OR SIMILAR) AND PROPER INSTALLATION OF HUBWYE SADDLE OR HUB-TEE SADDLE. ii. REMOVE AN ENTIRE SECTION OF PIPE (BREAKING ONLY THE TOP OF ONE BELL) AND REPLACE WITH A WYE OR TEE BRANCH SECTION. iii. 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
- 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 A SEPARATE 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 MAINTAINED, OR THE SEWER CROSSES 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 GROOVE 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 TRIBÚTARY TO COMBINED SEWERS, SANITARY SEWERS, OR STORM SEWERS TRIBUTARY TO COMBINED SEWERS IN COMBINED SEWER AREAS. 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
- 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 MAINTENANCE SHALL BE PERFORMED TO ENSURE FUNCTIONALITY. IN THE EVENT OF A SEWER SURCHARGE INTO AN OPEN DETENTION BASIN TRIBUTARY TO COMBINED SEWERS, THE PERMITTEE SHALL ENSURE THAT CLEAN UP AND WASH OUT 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 SITE.
- 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 TIMES.
- 5. INSPECTIONS AND DOCUMENTATION SHALL BE PERFORMED, AT A MINIMUM: I. UPON COMPLETION OF INITIAL EROSION AND SEDIMENT CONTROL MEASURES, PRIOR TO ANY SOIL DISTURBANCE.
- ii. 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 ILLINOIS 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 ILLINOIS 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 RUNOFF 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 HAS BEEN STABILIZED.

- 13. SOIL STOCKPILES SHALL, AT A MINIMUM, BE PROTECTED WITH PERIMETER SEDIMENT CONTROLS. SOIL STOCKPILES SHALL NOT BE PLACED IN FLOOD PROTECTION AREAS OR THEIR BUFFERS.
- 14. EARTHEN EMBANKMENT SIDE SLOPES SHALL BE STABILIZED WITH APPROPRIATE EROSION
- 15. STORM SEWERS THAT ARE OR WILL BE FUNCTIONING DURING CONSTRUCTION SHALL BE
- 16. THE CONTRACTOR SHALL EITHER REMOVE OR REPLACE ANY EXISTING DRAIN TILES AND INCORPORATE THEM INTO THE DRAINAGE PLAN FOR THE DEVELOPMENT. DRAIN TILES
- 17. IF DEWATERING SERVICES ARE USED, ADJOINING PROPERTIES AND DISCHARGE LOCATIONS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION. DEWATERING SYSTEMS SHOULD BE INSPECTED DAILY DURING OPERATIONAL PERIODS. THE SITE
- 18. THE CONTRACTOR 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, FLOOD PROTECTION AREAS OR THE
- 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.
- THE ENGINEER, SITE INSPECTOR, OR MWRD.

PROTECTED BY APPROPRIATE SEDIMENT CONTROL MEASURES.

CANNOT BE TRIBUTARY TO A SANITARY OR COMBINED SEWER.

INSPECTOR MUST BE PRESENT AT THE COMMENCEMENT OF DEWATERING ACTIVITIES.

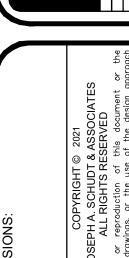
19. ALL PERMANENT EROSION CONTROL PRACTICES SHALL BE INITIATED WITHIN SEVEN (7) DAYS FOLLOWING THE COMPLETION OF SOIL DISTURBING ACTIVITIES.

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

22. THE EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS. ADDITIONAL MEASURES MAY BE REQUIRED, AS DIRECTED BY d (184-001172)

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