WORCESTER TOWNSHIP PLANNING COMMISSION
Meeting Minutes
July 24, 2025 | 7:00 PM

Call to Order
The meeting was called to order at 7:00 PM by Chair Tony Sherr.

Roll Call
Present: Tony Sherr (Chair), Michelle Greenawalt, Bob Andorn, Jennifer Taylor, and Lee Koch.
Also present: Dan DeMeno (Township Manager) and John Evarts (Township Engineer).

Approval of Minutes
Motion by Commissioner Lee Koch, seconded by Commissioner Bob Andorn, to approve the minutes of the May 22, 2025 meeting with one correction: the motion to recommend the Childcare Ordinance was made by Commissioner Koch, not Commissioner Andorn. Motion passed unanimously, 5-0. Township Manager DeMeno will make the correction.

1616 Whitehall Farm Improvement Plan Application

Applicant: DePaul (Owner)
Location: 1616 Whitehall Road
Plan Type: Farm Improvement Plan

- The applicant did not appear for the scheduled review.
- The Commission discussed whether to recommend denial or table the application.
- Commissioner Andorn recommended that the matter be tabled.
- Following discussion, the Commission agreed by consensus to table the application until the applicant appears.
- Chair Sherr emphasized that applicants should resolve all zoning issues before returning to the Commission.

Public Comment

- Resident Kim David requested a summary of the 1616 Whitehall Road issue and asked to review the agreement between DePaul and the Township.
- Resident Cheryl Brumbaugh asked about next steps regarding the matter.

Sign Ordinance Review

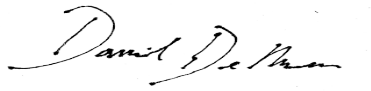
- The Commission directed that the draft ordinance be integrated with the existing redline version and distributed as soon as possible.
- Staff will review the use of “shall,” “must,” and “may” to ensure enforceability.
- The Commission will focus on definitions at the first review session.
- A copy of the Montgomery County Model Sign Ordinance will be provided for reference.
- Staff will review Franconia Township’s billboard regulations as a comparable example and provide this information to the Commission.

Other Business

- Commissioner Andorn noted the importance of continuing open space reviews.
- Township Manager DeMeno will provide supporting materials.
- The Commission directed staff to assemble a binder of all Township-owned properties, to include a photograph, history, and any restrictions for each parcel.

Adjournment
Motion by Commissioner Andorn, seconded by Chair Sherr, to adjourn. Motion passed unanimously, 5-0.

Respectfully submitted,



Dan DeMeno
Township Manager

HEALTH CARE NORTHEAST EXPANSION
for
MEADOWOOD SENIOR LIVING
TOWNSHIP of WORCESTER – MONTGOMERY COUNTY – PENNSYLVANIA

APPROVAL CERTIFICATIONS:

OWNER'S CERTIFICATE

I, ______________________, HEREBY CERTIFY THAT I AM AUTHORIZED TO ACT ON BEHALF OF MEADOWOOD CORPORATION AND THAT SAID CORPORATION DOES HEREBY CONSENT TO THE APPROVAL OF THIS PLAN THAT HAS BEEN GRANTED AND THAT THE CORPORATION DESIRES THE SAME TO BE RECORDED.

____

CORPORATE SEAL

COMMONWEALTH OF PENNSYLVANIA
COUNTY OF MONTGOMERY

ON THIS, THE _______ DAY OF ____________________, 2025, BEFORE ME, THE UNDERSIGNED OFFICER, A NOTARY PUBLIC, PERSONALLY APPEARED PAUL NORDEMAN, KNOWN TO ME OR SATISFACTORILY PROVEN TO BE THE PRESIDENT / CEO OF THE MEADOWOOD CORPORATION, AND AS SUCH OFFICER, BEING DULY AUTHORIZED TO DO SO, EXECUTED THE WITHIN INSTRUMENT ON BEHALF OF THE CORPORATION BY HIMSELF / HERSELF AS SUCH OFFICER FOR THE PURPOSES THEREIN CONTAINED.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL.

(NOTARY PUBLIC) ________________________________

(MY COMMISSION EXPIRES ON) ________________________________

TOWNSHIP ENGINEER CERTIFICATE

REVIEWED BY THE TOWNSHIP ENGINEER OF THE TOWNSHIP OF WORCESTER CERTIFYING THAT THIS PLAN CONFORMS TO THE TOWNSHIP SUBDIVISION & LAND DEVELOPMENT REGULATIONS ON THIS ________________ DAY OF ________________ 2025.

TOWNSHIP ENGINEER ________________________________

PLANNING COMMISSION CERTIFICATE

RECOMMENDED FOR APPROVAL BY THE TOWNSHIP PLANNING COMMISSION OF THE TOWNSHIP WORCESTER ON THIS ________________ DAY OF ________________ 2025.

SECRETARY (ATTEST) ________________________________

BOARD OF SUPERVISORS CERTIFICATE

APPROVED BY THE TOWNSHIP BOARD OF SUPERVISORS OF THE TOWNSHIP OF WORCESTER ON THIS ________________ DAY OF ________________ 2025.

SECRETARY (ATTEST) ________________________________

SURVEYOR'S CERTIFICATION

I, KEITH A. HOUSER, DO HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL SURVEYOR, LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA; THAT THIS PLAN CORRECTLY REPRESENTS A SURVEY MADE BY MYSELF OR UNDER MY SUPERVISION AND THAT ALL DIMENSIONAL AND GEODETIC DETAILS SHOWN ARE CORRECT.

SIGNATURE: ______________ LIC. No: SU-075710 DATE: ______________

ENGINEER'S CERTIFICATION

I, TIMOTHY P. WOODROW, DO HEREBY CERTIFY THAT I AM A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN COMPLIANCE WITH THE LAWS OF THE COMMONWEALTH OF PENNSYLVANIA; THAT THIS PLAN WAS PREPARED BY MYSELF OR UNDER MY SUPERVISION AND THAT SAID PLAN COMPLIES WITH ALL ORDINANCES AND REGULATIONS OF THE TOWNSHIP.

SIGNATURE: ______________ LIC. No: 038735-E DATE: ______________

RECORDER OF DEEDS

RECORDED THIS ____________ DAY OF _______ , 2025 IN THE OFFICE FOR THE RECORDING OF DEEDS, IN AND FOR THE COUNTY OF MONTGOMERY, PENNSYLVANIA IN PLAN BOOK ___________ , PAGE NUMBER ___________ .

RECORDER OF DEEDS: ________________________________

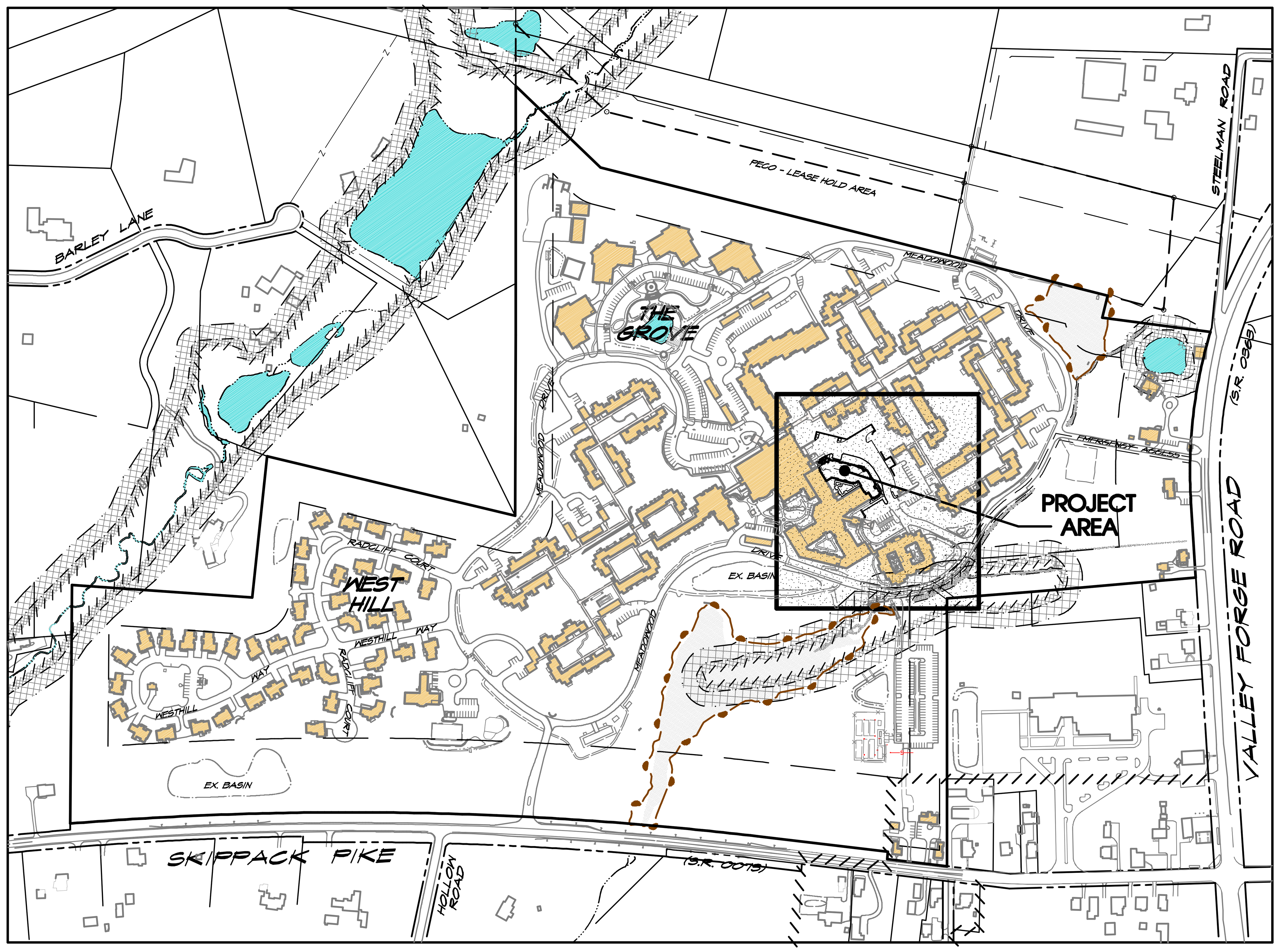
MCPC No.: ________________________________

PROCESSED and REVIEWED. A report has been prepared by the Montgomery County Planning Commission in accordance with the Municipalities Planning Code.

Certified this date: ________________________________

____
For the Director

Montgomery County Planning Commission



SITE LAYOUT

Image provided by Nearmap. Flight date: March 11, 2024

CAMPUS AREA SCHEDULE

● PROJECT TRACT AREA SCHEDULE:

Block 28 Unit 28 – 3205 Skippack Pk	124.6160 Acres
Block 28 Unit 66 – PECO Lease Hold Area	12.8761 Acres
GROSS PROJECT AREA: [1]	137.4921 Acres
Legal/Ultimate Right–of–Way	–0.9507 Acres
Right–of–Way of Overhead Utility	–12.8761 Acres
Existing Easements (San., Water)	–1.0199 Acres
Floodplains, Wetlands, Lands Covered by Water	–5.9696 Acres
DEVELOPABLE AREA:	116.6758 Acres

● SITE DENSITY:

EXISTING:	Apartments	260 Units
	ILU (West Hill=40/Grove=52)	92 Units
	McLean Memory Care	20 Units
	Skilled Beds (113/2) [1]	57 Units
EXISTING DWELLING UNITS:		429 Units
PROPOSED:	1st Floor Personal Care	8 Units
	2nd Floor Skilled Beds (16/2)	8 Units
	3rd Floor Skilled Beds (15/2)	7 Units
TOTAL PROPOSED UNITS:		23 Units
POST–DEVELOPMENT TOTAL UNITS:		452 Units

● BUILDING COVERAGE: [2]

Existing LIFE CARE Buildings		7.8746 Acres
Existing WEST HILL Homes		2.4729 Acres
Existing GROVE Buildings		1.2338 Acres
Existing Accessory Buildings		1.4945 Acres
EXISTING BUILDING:	(11.21 %)	13.0758 Acres
PROPOSED BUILDING:		+0.1881 Acres
TOTAL PROPOSED AREA:	(11.37 %)	13.2639 Acres

● IMPERVIOUS COVERAGE: [2]

Total Bulding Area:		13.0758 Acres
Conc Walks/Pads/Decks/Patios:		5.0638 Acres
Site Asphalt Paving:		12.4021 Acres
Asphalt (Pervious) Trail Area:		0.8183 Acres
Stone Parking/Maint. Yard:		1.3500 Acres
EXISTING IMPERVIOUS:	(28.04 %)	32.7100 Acres
PROPOSED IMPERVIOUS: [3]		+0.1141 Acres
TOTAL PROPOSED AREA:	(28.13 %)	32.8241 Acres

[1] 2 Non–Independent Beds = 1 Dwlg. Unit
[2] Building & Impervious ratio are based on Developable Area.
[3] See DEVELOPMENT IMPERVIOUS SCHEDULE on plan Sh 05 for detailed area breakdown for this application project area.

SITE ZONING DATA SCHEDULE

EXISTING/PROPOSED SITE USE: RESIDENTIAL LIFE CARE FACILITY
(USE APPROVED per CONDITIONAL USE – Z.O. Section 150–11.E(7))

ZONING DISTRICT: LPD – LAND PRESERVATION DISTRICT (SECTION 150–110.10)
(AGR REQUIREMENTS USED PER Z.O. SECTION 150–110.11)

ORDINANCE ITEM	SECTION No.:	REQUIREMENT:	PROVIDED:
MINIMUM LOT AREA	150–11.E(7)	75 Acres	137.4921 Acres
MINIMUM LOT WIDTH	150–12.B(1)	250 Ft.	>250 Ft.
MINIMUM FRONT YARD:	150–13.B(2)	250 Ft.	>250 Ft.
MINIMUM SIDE YARD:	150–13.B(2)	125 Ft.	>125 Ft.
MINIMUM REAR YARD:	150–13.B(2)	125 Ft.	>125 Ft.
MINIMUM PARKING SETBACK:	150–16.B(2)	100 Ft.	>100 Ft.
MAXIMUM BUILDING HEIGHT	150–15	35 Ft. (2.5 Stories)	42.0 Ft. [2] (3 Stories)
MAXIMUM IMPERVIOUS: BUILDING	150–11.E(7)	15 %	11.37 %
TOTAL LOT	150–11.E(7)	40 %	28.01 %
PARKING SPACE QTY. (EXCLUDES WEST HILL CARRIAGE HOMES)	150–153.B(3)	1/Every 3 Beds + 1/Employee on 2 Largest Shifts	
Ex. Apartments	260 Apts @ 2 Beds Ea.=	173 Required	173+ Spaces
Ex. Health Care Beds	113 Beds=	37 Required	37+ Spaces
Ex. Grove Units	52 Apts @ 2 Beds Ea.=	35 Required	35+ Spaces
Ex. Employees	1/Employee on 2 largest shifts=	100 Required	100+ Spaces
PR. HEALTH CARE ADDITION	31 Beds=	10 Required	10+ Spaces
TOTAL		355 Spaces	701 Spaces [1]

[1] Provided Parking Space Count:
EXISTING: *493 Lot + 137 Carport + 36 Handicapped + 52 Garage = 718 Spaces*
PROPOSED: 476 Lot + 137 Carport + 38 Handicapped + 52 Garage = 703 Spaces
NET PARKING CHANGE = –15 Spaces

[2] VARIANCE GRANTED for proposed building height of 42.0 Ft. & 3 Stories at the January 21, 2025 Zoning Hearing Board meeting. (Docket No. 2024–25)

WAIVER LIST (Requested):

The following list of the Waivers from the Worcester Township Subdivision & Land Development Ordinance (SLDO). GRANTED per Resolution #2025–__ Granting Preliminary Approval of Health Care Northeast Expansion – Meadowood Senior Living dated ______ __, 2025:

A. 130–17.D(7): Requires Parking stalls to be not less than 10' x 20'. Project has designated spaces for small service (carts) that utilize smaller parkign space sizes.
B. 130–28.E(1): Existing Tree Survey: To allow existing tree survey only for impacted project area.
C. 130–28.G(4): Street Trees: To allow existing trees along frontage to satisfy this requirement for both the existing Skippack Pike and Valley Forge Road frontages.
D. 130–28.G(6)(b): Not more than 15 parking spaces shall be placed in a continuous row w/o an intervening raised planting island of at least 10' in width.
E. 130–33.C: To allow use of Aerial Photograph to fullfill requirements of showing existing features within 400–Ft. of the project tract.

PROJECT SHEET INDEX

The Cover Sheet (Sheet 1) and Record Plan – Overall Tract (Sheet 2) are to be recorded together with the Montgomery County Recorder of Deeds. Plan Sheets 1 through 17 inclusive, on record at Worcester Township, shall be considered a part of the Approved Final Plan as if Recorded with same.

Preliminary Plan approval GRANTED per Resolution #2025–__, dated ______ __, 2025
Final Plan approval granted per Resolution #2025–__, dated ______ __, 2025

REVISIONS

No.	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

PLAN NORTH

KEITH A. HOUSER

TIMOTHY P. WOODROW ENGINEER No. 038735–E PENNSYLVANIA

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non–profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67–00–03185–00–6
Block 28 Unit 28
DB: 6370 Page 2199–2208
3205 SKIPPACK PIKE

Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

150' 0' 300'
Scale In Feet (1" = 300')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION
COVER – INDEX SHEET
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542–5648 Web: www.WoodrowInc.com

Layer List: D21–01_Cover
Job No: 00–0606 D21
Plan Date: JAN. 31, 2025

GENERAL PLAN NOTES

BASE EXISTING FEATURES AND SURVEY NOTES:

1. The boundary information illustrated on this plan was taken from a plan entitled ALTA/NSPS – Land Title Survey for Meadowood as prepared for The Meadowood Corp. as prepared by Woodrow & Assoc., Inc., Lower Gwynedd, PA.. Plan dated October 12, 2018, last revised October 17, 2018. Bearings shown reflect a '–05 Deg. 33 Min. 05 Sec.' clockwise rotation from the above referenced plan to match Pennsylvania South Zone 3702 State Plane Coordinate Bearing Basis.

   Boundary information updated per Subdivision – Land Development Plan prepared by Woodrow & Assoc., Inc. dated December 16, 2019 (as amended) to include Parcel B, C & D.

2. The base existing features and project topography illustrated on this plan was compiled from Aerial Survey data prepared by PROMAPS, Inc., Bensalem, PA (Feb 2005). Additional field survey has been performed in target on–site project locations to verify and reflect accurate information.
3. The site benchmark is an existing sanitary sewer manhole located in the existing Loop Road directly in front of the Sanitary Sewer Pump Station having a rim elevation of 249.19 and floor elevation of 235.58.
4. This plan was prepared utilizing the following references:
   a. Tax maps and deeds of record as obtained from the Recorder of Deeds online resources.
   b. Existing Soils classifications and mapping has been plotted from maps obtained from the USDA Web Soil Survey website (http://websoilsurvey.sc.egov.usda.gov/) unless otherwise noted.
   c. Vertical datum references provided by the PA Spacial Data Access system (PASDA). PAMAP data is based on PA State Plane (South) NAD83 horizontal, NAVD88 vertical datum.
   d. Aerial imagery provided by Nearmap, Inc. for the subject project limits. Aerial imagery from Flight dated FEB. 17, 2020, updated February 24, 2024.
   e. ALTA/ACSM Survey Plan prepared for Meadowood Life Care Community, by Urwiler & Walter, Inc., dated 02/03/2005, last revised 02/08/2005, Project No. 04155.
5. Wetland & Waters illustrated on this plan were field mapped by Penns Trail Environmental, Hatfield, PA during the month of March 2018, updated by Cherry Ridge Consulting, LLC, Sciota, PA during the month of March 2023.
6. There are no identifiable Flood Plain areas within the project site as illustrated on Community Panel Number 421919–0253 G (March 2, 2016) of the Flood Insurance Rate Map, prepared by the Federal Emergency Management Association for the Township of Worcester, Pennsylvania.
7. All persons digging on this site shall comply with the requirements of Section 5 of PA Act 287 as amended by PA Act 181. State law requires a three (3) business day notice prior to any digging (does not include state holidays or weekends). Dial 8–1–1 or go to www.paonecall.org.
8. Existing subsurface utility information illustrated on these plans were based upon visual field locations obtained as part of site survey operations. Information pertaining to; size, location, depth, etc. of subsurface utilities is approximate in nature and has been obtained as an aid for the project design. The information provided is representative of subsurface conditions only at locations and depths where such information was available. There is no expressed or implied agreement that subsurface utility connections exist between explored locations. Accordingly, utility information shown should not be relied upon for construction purposes. It is incumbent upon the contractor to verify subsurface utilities prior to excavation.
9. All of the stormwater management facilities, including the conveyance system and stormwater basins are to be owned and maintained by the Meadowood Corporation. Any repairs needed, as may be determined by Township inspection, are to be at the sole cost of the Meadowood Corporation.
10. All of the sanitary sewer facilities (gravity only), including the main conveyance system and building laterals are to be owned and maintained by the Meadowood Corporation. Any repairs needed, as may be determined by Township inspection, are to be at the sole cost of the Meadowood Corporation.
11. A 'Blanket Utility Easement' in favor of North Penn Water Authority, over the existing water main that runs the perimeter of the Meadowood Drive loop driveway and is recorded in Deed Book 6109, Page 1481.

PRIOR APPROVALS

The Meadowood Property has been subject to several previously implemented Land Development applications and approvals as noted below:

1. Conditional Use Order for the Development of the West Hill Cottages and the Laurel House Healthcare Expansion. Conditional Use approved on April 30, 2001.
2. Resolution #02–05 for the Development of the West Hill Cottages (Phase 1) and the Laurel House Healthcare Expansion (Phase 2). Approval for Phase 1 dated March 20, 2002.
3. Resolution #08–04 for the Development of the West Hill Cottages (Phase 1) and the Laurel House Healthcare Expansion (Phase 2). Approval for Phase 2 dated January 16, 2008.
4. Resolution #2015–31 for the Development of the Schultz Community Center & Courtyard Expansion. Approval dated November 18, 2015.
5. Resolution #2017–11 for the Development of the Schultz Community Center – Office Suite Additions at Meadowood (aka Marketing Suite Additions).
6. ZHB Application #2017–12 for Variance from 150–15, to allow the (4) Buildings at the Grove to be 3–Stories, with Bldg 3 to be 38'–8" in height, and Bldg 4 to be 37'–10" in height.
7. Resolution #2018–02 for Final Land Development Approval of The Grove at Meadowood. Approval dated June 20, 2018.
8. Re–Zoning of 3103 Skippack Pike (Parcel C) from R–100 Residential District to LPD Land Preservation District. Nov. 20, 2019.
9. Resolution #2020–12 for the Consolidation of Parcel(s) A, B, C, & D and the installation of two Emergency Generators.
10. Conditional Use Order for the crossing of the Riparian Corridor with a new Access Drive to Victory Garden site. Conditional Use approved March 20, 2019 (CUA #2019–01).
11. Variance from ZO 150–13.B(2) to encroach 20' into the required Side Yard setback & from ZO 150–146.8 to encroach not more than 40' into required Riparian Corridor. Granted by the Zoning Hearing Board at their 03/09/20 meeting (#2020–04).
12. Special Exception to allow a roadway & pedestrian crossing in the Flood Plain Conservation Overlay District under ZO 150–138.A(4)(b). Granted by the Zoning Hearing Board July 14, 2020 per Order No. 2020–07.
13. Conditional Use Order for installation of a Pedestrian Bridge crossing the Riparian Corridor and modification of the Access Drive to the proposed Parking Lot. Conditional Use approved Sept. 16, 2020 (CUA #2020–01).
14. Resolution #2021–21 for the Final Land Development Approval of new Memory Care Facility. Approval dated May 19, 2021.

SITE ZONING DATA SCHEDULE

EXISTING/PROPOSED SITE USE: RESIDENTIAL LIFE CARE FACILITY
(USE APPROVED per CONDITIONAL USE – Z.O. Section 150–11.E(7))

ZONING DISTRICT: LPD – LAND PRESERVATION DISTRICT (SECTION 150–110.10)
(AGR REQUIREMENTS USED PER Z.O. SECTION 150–110.11)

ORDINANCE ITEM	SECTION No.:	REQUIREMENT:	PROVIDED:
MINIMUM LOT AREA	150–11.E(7)	75 Acres	**137.4921 Acres**
MINIMUM LOT WIDTH	150–12.B(1)	250 Ft.	**>250 Ft.**
MINIMUM FRONT YARD:	150–13.B(2)	250 Ft.	**>250 Ft.**
MINIMUM SIDE YARD:	150–13.B(2)	125 Ft.	**>125 Ft.**
MINIMUM REAR YARD:	150–13.B(2)	125 Ft.	**>125 Ft.**
MINIMUM PARKING SETBACK:	150–16.B(2)	100 Ft.	**>100 Ft.**
MAXIMUM BUILDING HEIGHT	150–15	35 Ft. (2.5 Stories)	**42.0 Ft.** [2] **(3 Stories)**
MAXIMUM IMPERVIOUS: BUILDING	150–11.E(7)	15 %	**11.37 %**
TOTAL LOT	150–11.E(7)	40 %	**28.01 %**
PARKING SPACE QTY. (EXCLUDES WEST HILL CARRIAGE HOMES)	150–153.B(3)	1/Every 3 Beds + 1/Employee on 2 Largest Shifts	
Ex. Apartments	260 Apts @ 2 Beds Ea.=	173 Required	173+ Spaces
Ex. Health Care Beds	113 Beds=	37 Required	37+ Spaces
Ex. Grove Units	52 Apts @ 2 Beds Ea.=	35 Required	35+ Spaces
Ex. Employees	1/Employee on 2 largest shifts=	100 Required	100+ Spaces
PR. HEALTH CARE ADDITION	31 Beds=	10 Required	10+ Spaces
TOTAL		**355 Spaces**	**701 Spaces** [1]

[1] Provided Parking Space Count:
EXISTING: *493 Lot + 137 Carport + 36 Handicapped + 52 Garage = 718 Spaces*
PROPOSED: **476 Lot + 137 Carport + 38 Handicapped + 52 Garage = 703 Spaces**
NET PARKING CHANGE = –15 Spaces

[2] VARIANCE GRANTED for proposed building height of 42.0 Ft. & 3 Stories at the January 21, 2025 Zoning Hearing Board meeting. (Docket No. 2024–25)

WAIVER LIST (Requested):

The following list of the Waivers from the Worcester Township Subdivision & Land Development Ordinance (SLDO). GRANTED per Resolution #2025–__ Granting Preliminary Approval of Health Care Northeast Expansion – Meadowood Senior Living dated ______ __, 2025:

A. 130–17.D(7): Requires Parking stalls to be not less than 10' x 20'. Project has designated spaces for small service (carts) that utilize smaller parkign space sizes.

B. 130–28.E(1): Existing Tree Survey: To allow existing tree survey only for impacted project area.

C. 130–28.G(4): Street Trees: To allow existing trees along frontage to satisfy this require–ment for both the existing Skippack Pike and Valley Forge Road frontages.

D. 130–28.G(6)(b): Not more than 15 parking spaces shall be placed in a continuous row w/o an intervening raised planting island of at least 10' in width.

E. 130–33.C: To allow use of Aerial Photograph to fullfill requirements of showing existing features within 400–Ft. of the project tract.

PLAN LEGEND

- *Tract Boundary Line*
- *Legal Right–of–Way Line*
- *Existing Roadway Centerline*
- *Zoning District Boundary*
- *Riparian Buffer Limit*
- *Mapped 'Wetland' Limits*
- *Mapped 'Waters' Limits*

CAMPUS AREA SCHEDULE

- **PROJECT TRACT AREA SCHEDULE:**

Block 28 Unit 28 – 3205 Skippack Pk	124.6160 Acres
Block 28 Unit 66 – PECO Lease Hold Area	12.8761 Acres
GROSS PROJECT AREA: [1]	137.4921 Acres
Legal/Ultimate Right–of–Way	–0.9507 Acres
Right–of–Way of Overhead Utility	–12.8761 Acres
Existing Easements (San., Water)	–1.0199 Acres
Floodplains, Wetlands, Lands Covered by Water	–5.9696 Acres
DEVELOPABLE AREA:	116.6758 Acres

- **SITE DENSITY:**

EXISTING:	Apartments	260 Units
	ILU (West Hill=40/Grove=52)	92 Units
	McLean Memory Care	20 Units
	Skilled Beds (113/2) [1]	57 Units
EXISTING DWELLING UNITS:		429 Units
PROPOSED:	1st Floor Personal Care	8 Units
	2nd Floor Skilled Beds (16/2)	8 Units
	3rd Floor Skilled Beds (15/2)	7 Units
TOTAL PROPOSED UNITS:		23 Units
POST–DEVELOPMENT TOTAL UNITS:		452 Units

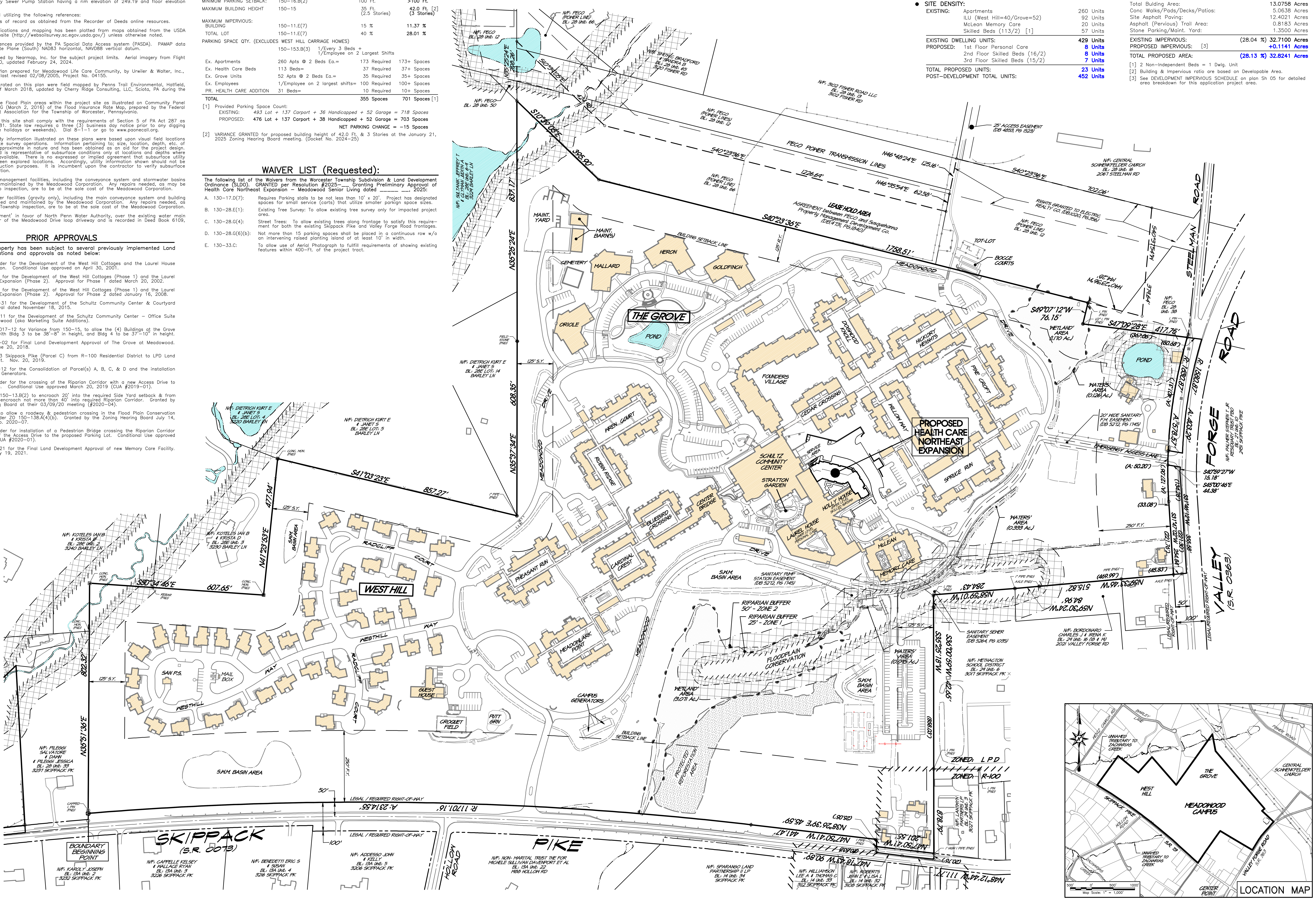
- **BUILDING COVERAGE:** [2]

Existing LIFE CARE Buildings		7.8746 Acres
Existing WEST HILL Homes		2.4729 Acres
Existing GROVE Buildings		1.2338 Acres
Existing Accessory Buildings		1.4945 Acres
EXISTING BUILDING:	(11.21 %)	13.0758 Acres
PROPOSED BUILDING:		+0.1881 Acres
TOTAL PROPOSED AREA:	(11.37 %)	13.2639 Acres

- **IMPERVIOUS COVERAGE:** [2]

Total Bulding Area:		13.0758 Acres
Conc Walks/Pads/Decks/Patios:		5.0638 Acres
Site Asphalt Paving:		12.4021 Acres
Asphalt (Pervious) Trail Area:		0.8183 Acres
Stone Parking/Maint. Yard:		1.3500 Acres
EXISTING IMPERVIOUS:	(28.04 %)	32.7100 Acres
PROPOSED IMPERVIOUS: [3]		+0.1141 Acres
TOTAL PROPOSED AREA:	(28.13 %)	32.8241 Acres

[1] 2 Non–Independent Beds = 1 Dwlg. Unit
[2] Building & Impervious ratio are based on Developable Area.
[3] See DEVELOPMENT IMPERVIOUS SCHEDULE on plan Sh 05 for detailed area breakdown for this application project area.



LOCATION MAP

REVISIONS

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

PLAN NORTH

KEITH A. HOUSER
TIMOTHY P. WOODROW
ENGINEER
No. 038735–E

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non–profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67–00–03185–00–6
Block 28 Unit 28
DB: 6370 Page 2199–2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

75' 0' 150'
Scale In Feet (1" = 150')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION
RECORD PLAN – OVERALL TRACT
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542–5648 Web: www.WoodrowInc.com

Layer List: D21–02_Record
Job No: 00–0606 D21
Plan Date: JAN. 31, 2025
Sheet No:

GENERAL PLAN NOTES

BASE EXISTING FEATURES AND SURVEY NOTES:

1. The boundary information illustrated on this plan was taken from a plan entitled ALTA/NSPS – Land Title Survey for Meadowood as prepared for The Meadowood Corp. as prepared by Woodrow & Assoc., Inc., Lower Gwynedd, PA.. Plan dated October 12, 2018, last revised October 17, 2018. Bearings shown reflect a '–05 Deg. 33 Min. 05 Sec.' clockwise rotation from the above referenced plan to match Pennsylvania South Zone 3702 State Plane Coordinate Bearing Basis.

   Boundary information updated per Subdivision – Land Development Plan prepared by Woodrow & Assoc., Inc. dated December 16, 2019 (as amended) to include Parcel B, C & D.

2. The base existing features and project topography illustrated on this plan was compiled from Aerial Survey data prepared by PROMAPS, Inc., Bensalem, PA (Feb 2005). Additional field survey has been performed in target on-site project locations to verify and reflect accurate information.

3. The site benchmark is an existing sanitary sewer manhole located in the existing Loop Road directly in front of the Sanitary Sewer Pump Station having a rim elevation of 249.19 and floor elevation of 235.58.

4. This plan was prepared utilizing the following references:
   a. Tax maps and deeds of record as obtained from the Recorder of Deeds online resources.
   b. Existing Soils classifications and mapping has been plotted from maps obtained from the USDA Web Soil Survey website (http://websoilsurvey.sc.egov.usda.gov/) unless otherwise noted.
   c. Vertical datum references provided by the PA Spacial Data Access system (PASDA). PAMAP data is based on PA State Plane (South) NAD83 horizontal, NAVD88 vertical datum.
   d. Aerial imagery provided by Nearmap, Inc. for the subject project limits. Aerial imagery from Flight dated FEB. 17, 2020, updated February 24, 2024.
   e. ALTA/ACSM Survey Plan prepared for Meadowood Life Care Community, by Urwiler & Walter, Inc., dated 02/03/2005, last revised 02/08/2005, Project No. 04155.

5. Wetland & Waters illustrated on this plan were field mapped by Penns Trail Environmental, Hatfield, PA during the month of March 2018, updated by Cherry Ridge Consulting, LLC, Sciota, PA during the month of March 2023.

6. There are no identifiable Flood Plain areas within the project site as illustrated on Community Panel Number 421919–0253 G (March 2, 2016) of the Flood Insurance Rate Map, prepared by the Federal Emergency Management Association for the Township of Worcester, Pennsylvania.

7. All persons digging on this site shall comply with the requirements of Section 5 of PA Act 287 as amended by PA Act 181. State law requires a three (3) business day notice prior to any digging (does not include state holidays or weekends). Dial 8–1–1 or go to www.paonecall.org.

8. Existing subsurface utility information illustrated on these plans were based upon visual field locations obtained as part of site survey operations. Information pertaining to; size, location, depth, etc. of subsurface utilities is approximate in nature and has been obtained as an aid for the project design. The information provided is representative of subsurface conditions only at locations and depths where such information was available. There is no expressed or implied agreement that subsurface utility connections exist between explored locations. Accordingly, utility information shown should not be relied upon for construction purposes. It is incumbent upon the contractor to verify subsurface utilities prior to excavation.

9. All of the stormwater management facilities, including the conveyance system and stormwater basins are to be owned and maintained by the Meadowood Corporation. Any repairs needed, as may be determined by Township inspection, are to be at the sole cost of the Meadowood Corporation.

10. All of the sanitary sewer facilities (gravity only), including the main conveyance system and building laterals are to be owned and maintained by the Meadowood Corporation. Any repairs needed, as may be determined by Township inspection, are to be at the sole cost of the Meadowood Corporation.

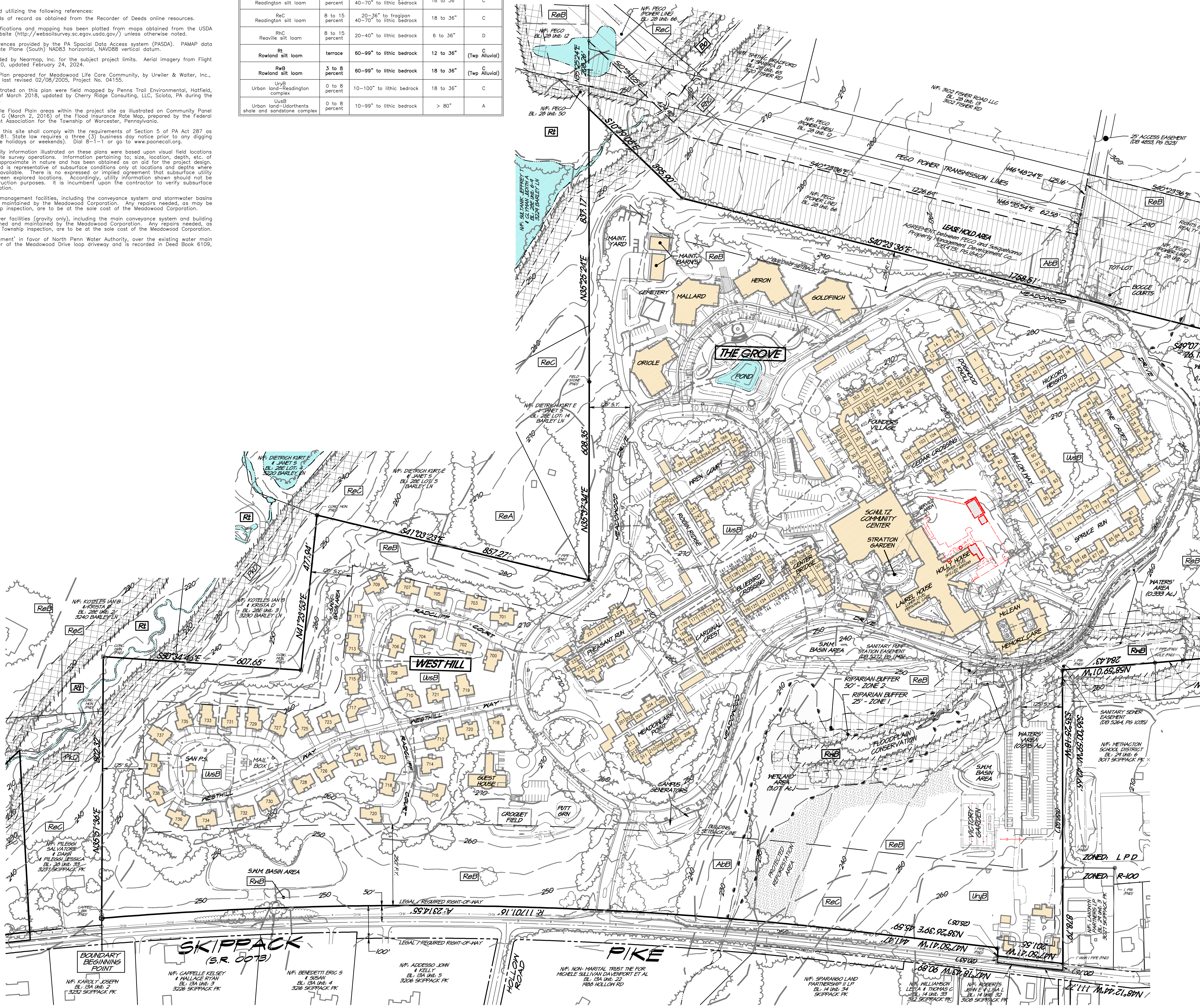
11. A 'Blanket Utility Easement' in favor of North Penn Water Authority, over the existing water main that runs the perimeter of the Meadowood Drive loop driveway and is recorded in Deed Book 6109, Page 1481.

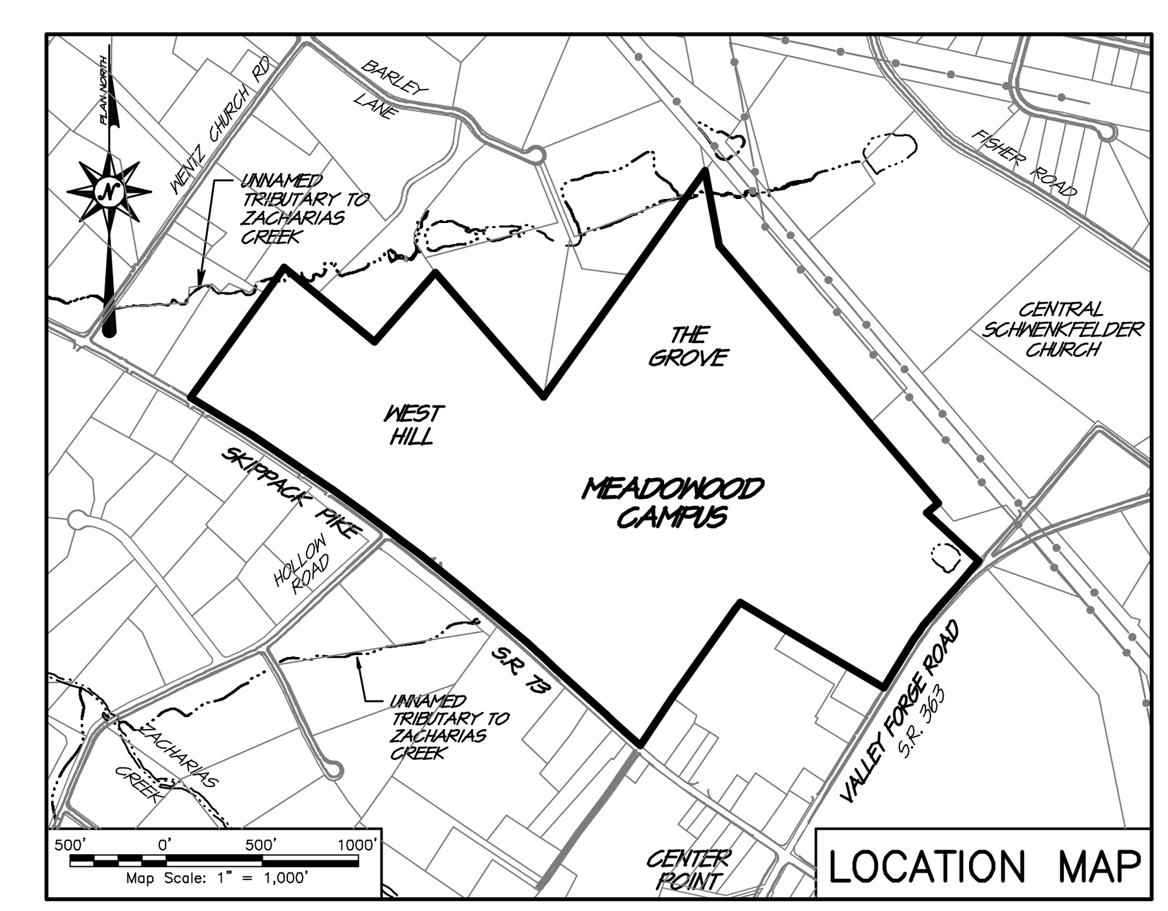
PROJECT SOILS DATA

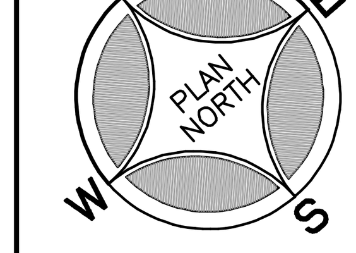
Soils Type:	Slopes:	Depth to Restrictive Feature:	Depth to Water Table:	Hydrologic Soil Group:
AbB Abbottstown silt loam	3 to 8 percent	18–22" to fragipan 40–60" to lithic bedrock	6 to 18"	D
Bo Bowmansville–Knauers silt loam	**N/A**	**72–99" to lithic bedrock**	**0 to 18"**	**C/D (Twp Alluvial)**
PkD Penn–Klinesville channery silt loam	15 to 25 percent	20–40" to lithic bedrock	> 80"	B
ReA Readington silt loam	0 to 3 percent	20–36" to fragipan 40–70" to lithic bedrock	18 to 36"	C
ReB Readington silt loam	3 to 8 percent	20–36" to fragipan 40–70" to lithic bedrock	18 to 36"	C
ReC Readington silt loam	8 to 15 percent	20–36" to fragipan 40–70" to lithic bedrock	18 to 36"	C
RhC Reaville silt loam	8 to 15 percent	20–40" to lithic bedrock	6 to 36"	D
Rt Rowland silt loam	**terrace**	**60–99" to lithic bedrock**	**12 to 36"**	**C (Twp Alluvial)**
RwB Rowland silt loam	**3 to 8 percent**	**60–99" to lithic bedrock**	**18 to 36"**	**C (Twp Alluvial)**
UryB Urban land–Readington complex	0 to 8 percent	10–100" to lithic bedrock	18 to 36"	C
UusB Urban land–Udorthents shale and sandstone complex	0 to 8 percent	10–99" to lithic bedrock	> 80"	A

PLAN LEGEND

Line type	Line type
Tract Boundary Line	Existing Index Contour
Legal Right-of-Way Line	Existing Soil Series Limits
Existing Roadway Centerline	Existing Drive / Paving Limit
Zoning District Boundary	Existing Vegetation Limit
Floodplain Conservation District	Existing Storm Sewer Piping
Riparian Buffer Limit	Existing Sanitary Sewer Piping
Mapped 'Wetland' Limit	Existing Gas Main
Mapped 'Waters' Limit	Existing Water Main / Service
	Existing Underground Telephone
	Existing Overhead Utility Wires







REVISIONS

No.	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

KEITH A. HOUSER

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67–00–03185–00–6
Block 28 Unit 28
DB: 6370 Page 2199–2208
3205 SKIPPACK PIKE

Gross Tract:
137.4921 Acres
Developable Area:
116.6758 Acres

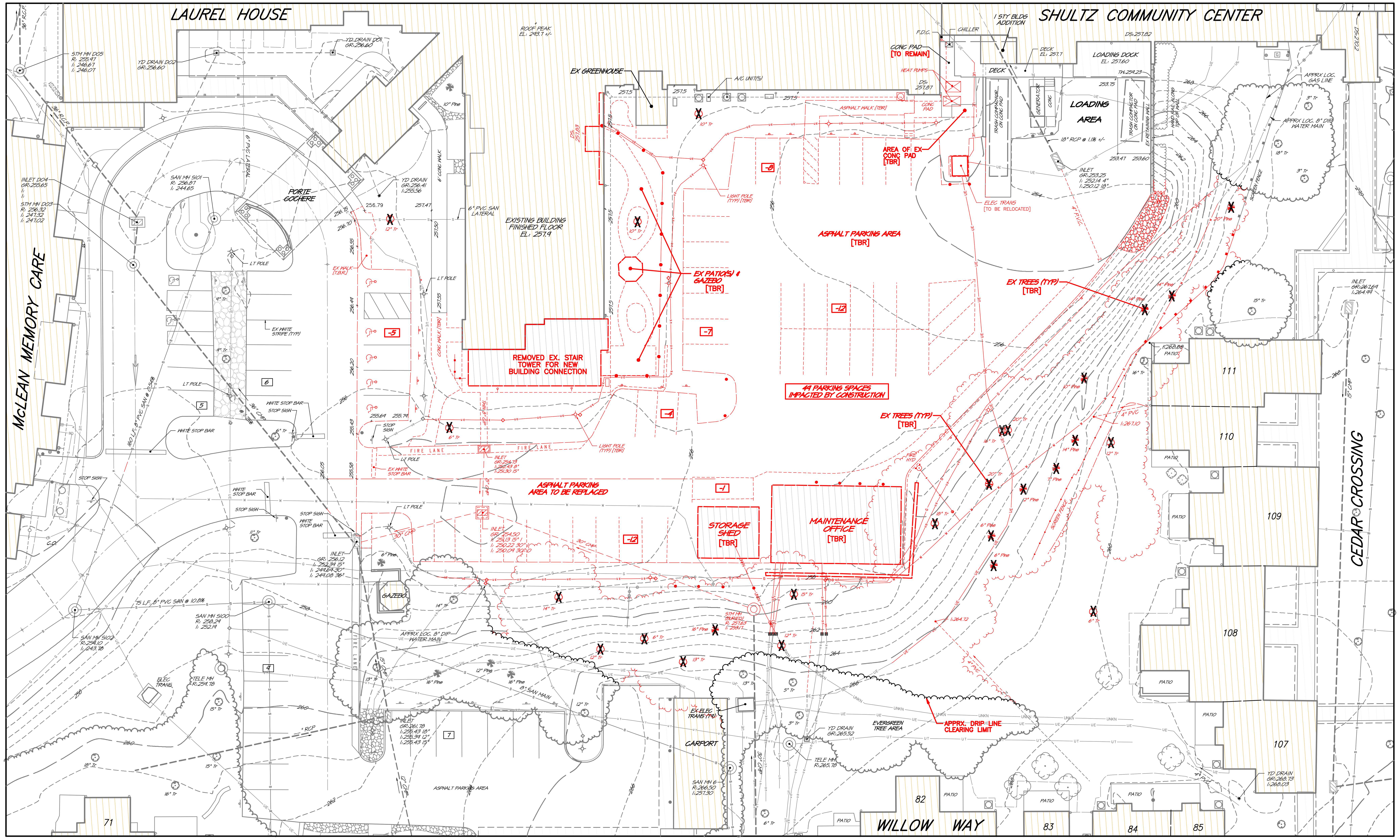
Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

75' 0' 150'
Scale In Feet (1" = 150')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION
EXISTING FEATURES PLAN
OVERALL TRACT
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542–5648 Web: www.WoodrowInc.com

Layer List: D21–03_ExFea
Job No: 00–0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 3 of 16



PLAN LEGEND

EXISTING (EX) FEATURES

- EX DRIVE CENTERLINE
- EX TOPOGRAPHIC CONTOURS
- EX FENCE LINE
- EX TREE DRIP LINE
- XX" T — EX DECIDUOUS TREE
- XX" P — EX CONIFEROUS TREE
- M.B. — EX MAILBOX
- SIGN — EX SIGN
- LT. — EX LIGHT/LAMP POST
- C.O. — EX SEWER CLEAN OUT
- W.V. — EX WATER VALVE
- F.H. — EX FIRE HYDRANT
- G.V. — EX GAS VALVE
- EX STORM SEWER AND INLET
- EX SANITARY SEWER & MH
- EX U.G. ELECTRIC LINE
- EX GAS MAIN & SERVICE
- EX WATER MAIN & SERVICE
- EX TELE COMMUNICATIONS
- T.B.R. — ITEM TO BE REMOVED
- DRIPLINE CLEARING LIMIT
- DRIPLINE LIMIT TO BE REMOVED

GENERAL PLAN NOTES

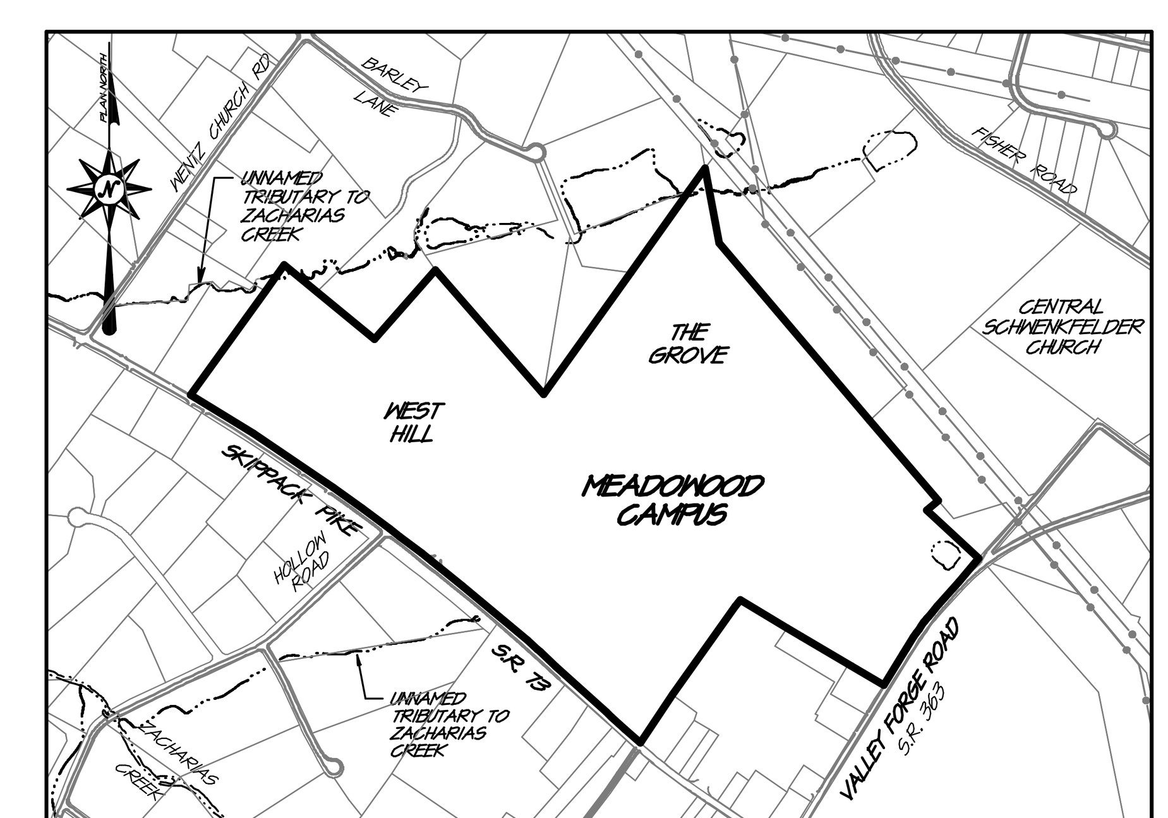
Refer to plan sheet 2 'RECORD PLAN – OVERALL TRACT' for all 'BASE EXISTING FEATURES and SURVEY NOTES'.

EXISTING FEATURES and DEMOLITION NOTES:

1. The contractor shall ensure that all necessary permits and approvals have been obtained prior to commencement of any site construction activities.
2. Demolition, general site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the Erosion and Sedimentation control measures are in place and functional as described on the (NPDES) Erosion & Sediment Control Plan.
3. Nothing shall be permitted to be set on, placed or planted within, the area of any utility or storm water easement except lawns or suitable low ground cover.
4. Construction materials and procedures shall follow Pennsylvania Department of Transportation Specifications and Standard Drawings (latest edition).
5. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.

SOILS DATA WITHIN PROPOSED LIMIT OF DISTURBANCE

Soils Type:	Slopes:	Depth to Restrictive Feature:	Depth to Water Table:	Hydrologic Soil Group:
UusB Urban land – Udorthents shale and sandstone complex	0 to 8 percent	10–99" to lithic bedrock	More than 80"	A



LOCATION MAP

REVISIONS

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

PLAN NORTH

PROFESSIONAL ENGINEER TIMOTHY P. WOODROW No. 038735-E PENNSYLVANIA

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

15' 0' 30'
Scale In Feet (1" = 30')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

EXISTING FEATURES & DEMOLITION – PROJECT AREA

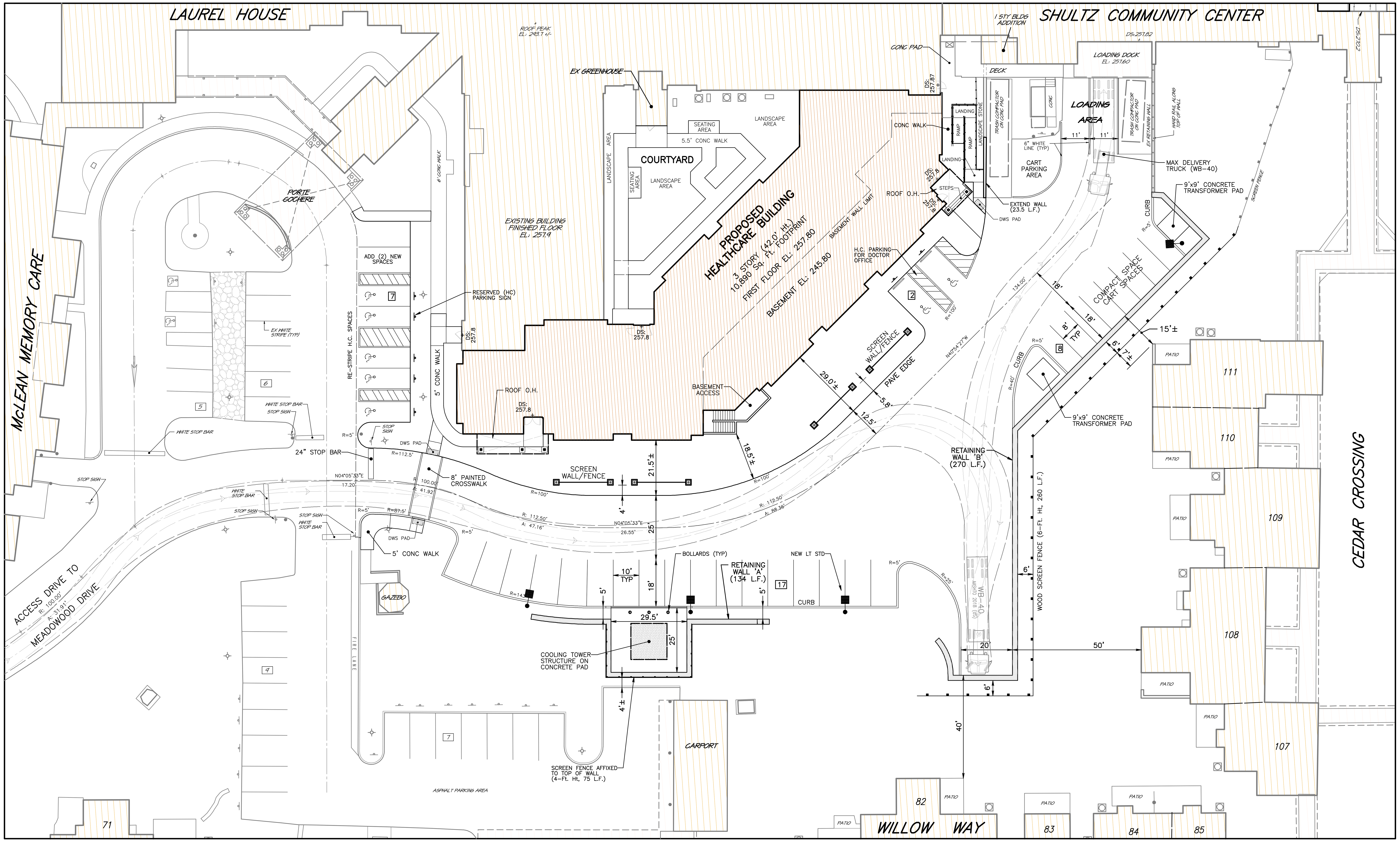
MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-04_Demo
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 4 of 16

Print Date: Jul 8, 2025 (12:34) Print Scale: 1" = 20.00'
File Name: G:\2000\00-0606D\00-0606D.pro



PLAN LEGEND

EXISTING (EX) FEATURES
- EX DRIVE CENTERLINE
- EX FENCE LINE

PROPOSED (PR) FEATURES
- PR WOOD SCREEN FENCING
- PR WALL SCREEN FENCING
- PR LIGHTING FIXTURE
- PR SIGNAGE
- PR PROTECTION BOLLARD

GENERAL PLAN NOTES

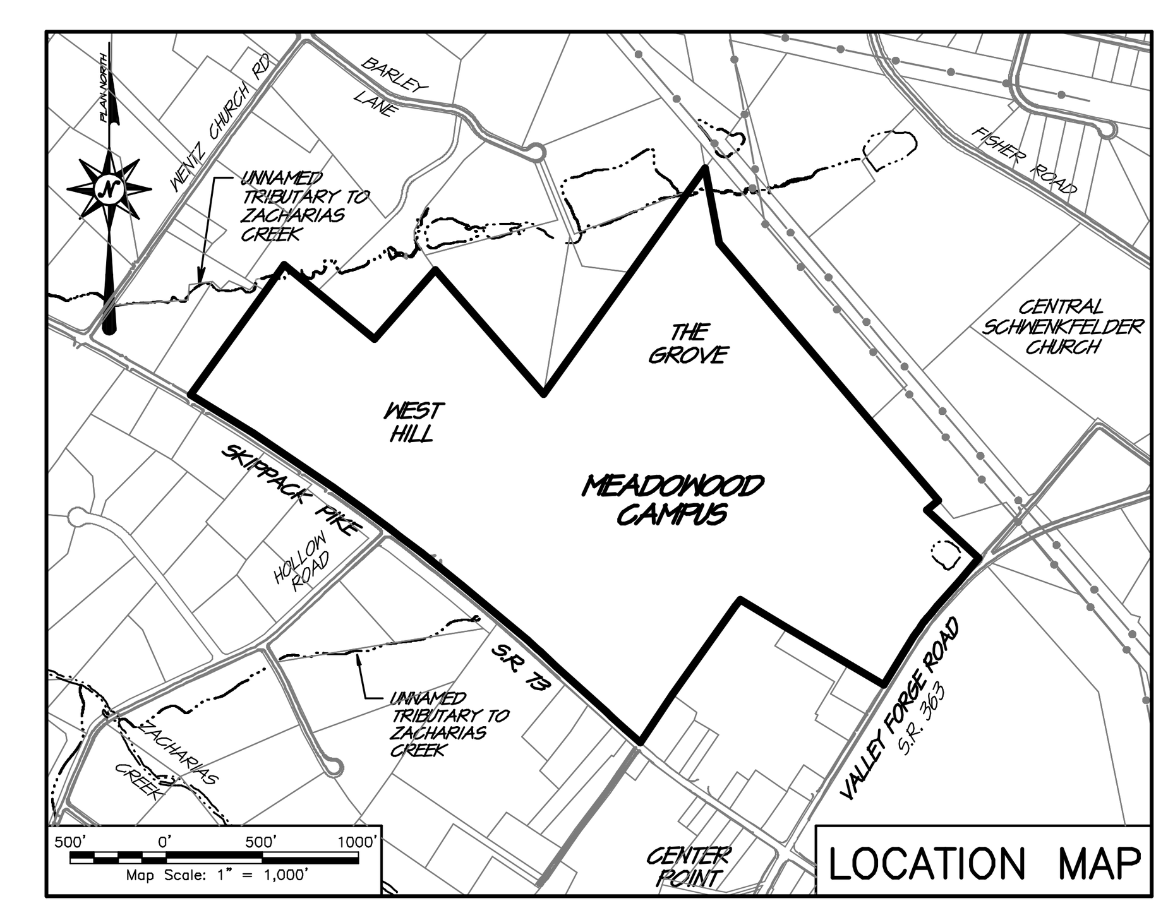
Refer to plan sheet 2 'RECORD PLAN – OVERALL TRACT' for all 'BASE EXISTING FEATURES and SURVEY NOTES'.

BASE DEVELOPMENT NOTES:

1. The contractor shall ensure that all necessary permits and approvals have been obtained prior to commencement of any site construction activities.
2. Demolition, general site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the Erosion and Sedimentation control measures are in place and functional as described on the (NPDES) Erosion & Sediment Control Plan.
3. Nothing shall be permitted to be set on, placed or planted within, the area of any utility or storm water easement except lawns or suitable low ground cover.
4. Construction materials and procedures shall follow Pennsylvania Department of Transportation Specifications and Standard Drawings (latest edition).
5. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
6. Any/all storm water conveyance system(s) and detention facilities shown on these plans are a basic and perpetual part of the storm water management system for this Township, and as such, are to be protected, maintained and preserved in accordance with the approved final plans. The Township and/or its agents may reserve the right and privilege to enter upon such lands from time to time for the purpose of inspection of said storm water management system in order to determine that the structural design and integrity are being maintained.
7. TRAFFIC CONTROL SIGNAGE:
Building driveway & access signage to be provided by Meadowood subject to submission and approval of Worcester Township prior to installation.
8. Contractor to ensure compliance with ADA regulations.
9. This project shall be served by public sanitary sewer by Worcester Township and water services by North Penn Water Company.
10. Structural plans and calculations, signed and sealed by a professional engineer licensed in the Commonwealth of Pennsylvania, must be submitted to the Township for review and approval before any retaining wall is constructed.

DEVELOPMENT IMPERVIOUS SCHEDULE

IMPERVIOUS ITEM:	EXISTING DEMO:		NEW CONSTRUCTION:		NET DEVELOPMENT:
BUILDING FOOTPRINT:	–3,177 Sq. Ft.	+	11,370 Sq. Ft.	=	+8,193 Sq. Ft.
CONC / PADS / WALKS:	–2,078 Sq. Ft.	+	3,533 Sq. Ft.	=	+1,455 Sq. Ft.
ASPHALT PAVING:	–27,314 Sq. Ft.	+	22,637 Sq. Ft.	=	–4,677 Sq. Ft.
TOTALS:	–32,569 Sq. Ft.	+	37,540 Sq. Ft.	=	+4,971 Sq. Ft.



LOCATION MAP

Print Date: Jul 8, 2025 (12:34) Print Scale: 1" = 20.00'
File Name: G:\2000\00-0606D\00-0606D.pro

REVISIONS

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

PLAN NORTH

TIMOTHY P. WOODROW
ENGINEER
No. 038735-E
PENNSYLVANIA

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

10' 0' 20'
Scale In Feet (1" = 20')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

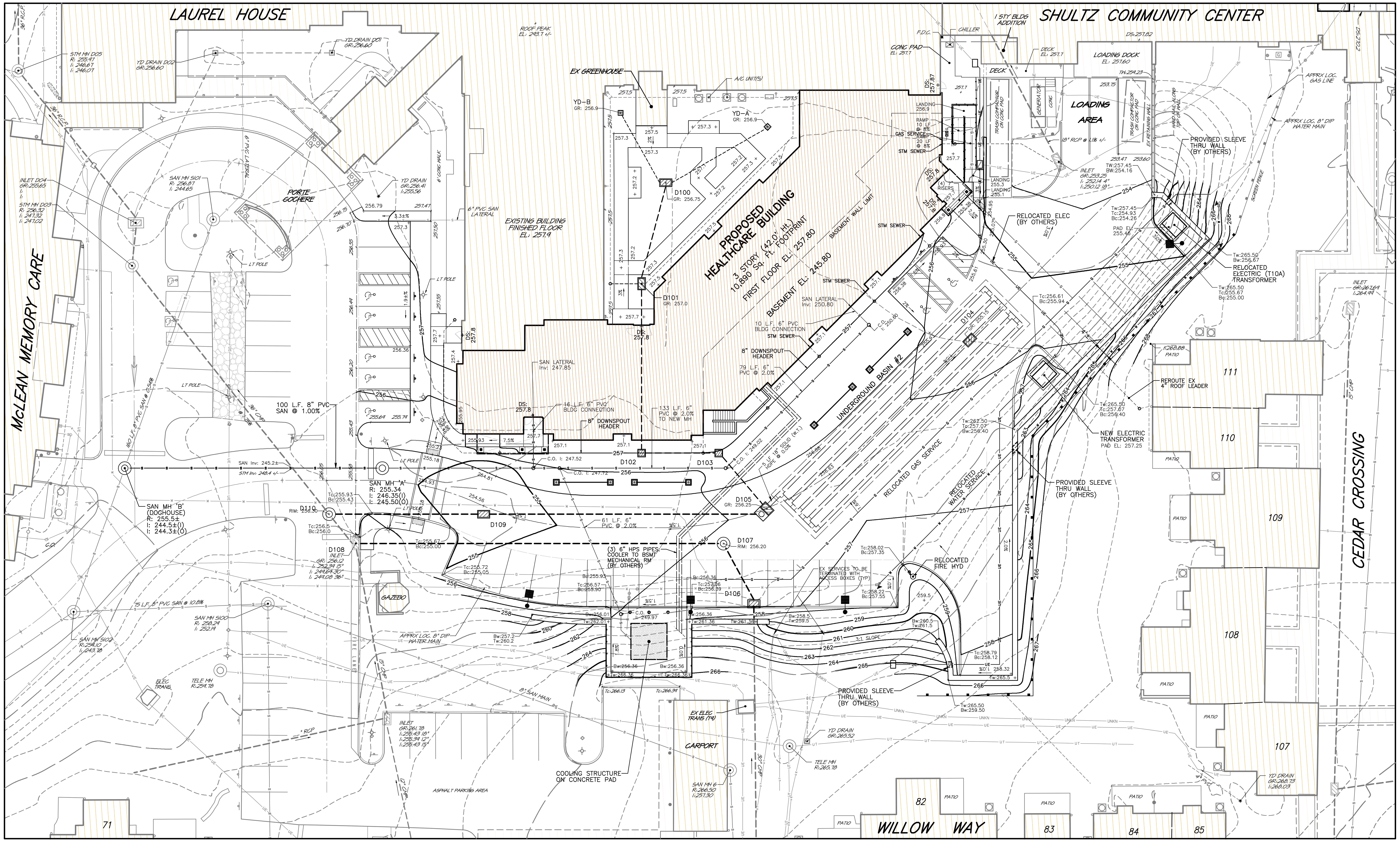
PROJECT AREA LAYOUT PLAN

MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-05_Layout
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 5 of 16



GENERAL PLAN NOTES

Refer to plan sheet 2 'RECORD PLAN – OVERALL TRACT' for all 'BASE EXISTING FEATURES and SURVEY NOTES'.

Refer to plan sheet 3 'LAYOUT PLAN – MEMORY CARE FACILITY' for all 'BASE DEVELOPMENT NOTES".

BASE CONSTRUCTION DESIGN NOTES:

1. The contractor shall ensure that all necessary permits and approvals have been obtained prior to commencement of any site construction activities.
2. Erosion and sedimentation control measures shall be in place and functional prior to any earth disturbance or grading work.
3. Contractor to ensure compliance with ADA regulations.
4. This project shall be served by public sanitary sewer by Worcester Township and water services by North Penn Water Authority.
5. Nothing shall be permitted to be set on, placed or planted within, the area of any utility or storm water easement except lawns or suitable low ground cover.
6. Construction materials and procedures shall follow Pennsylvania Department of Transportation Specifications and Standard Drawings (latest edition).
7. Any/all storm water conveyance system(s) and detention facilities shown on these plans are a basic and perpetual part of the storm water management system for this Township, and as such, are to be protected, maintained and preserved in accordance with the approved final plans. The Township and/or its agents may reserve the right and privilege to enter upon such lands from time to time for the purpose of inspection of said storm water management system in order to determine that the structural design and integrity are being maintained.
8. The proposed finished grading shown on this plan has been based on the proposed building(s) finished floor elevations and has been used to design the storm water management facilities. The contractor shall comply with the grading scheme indicated unless otherwise approved by the Township and the Project design engineers.
9. A minimum of six (6) inches of clean topsoil shall be provided on all lawn and planting areas.
10. Site grading shall be performed in accordance with these plans. The contractor shall be responsible for removing and replacing all soft, yielding or unsuitable materials and replacing with suitable materials. All excavated or filled areas shall be compacted to 95% of modified proctor maximum density per A.S.T.M. Test D–1557. moisture content at time of placement shall be no more than 2% above nor 3% below optimum. contractor shall submit a compaction report prepared by a qualified soils engineer, registered within the state where the work is performed, verifying that all filled areas and subgrade areas within the building pad area and areas to be paved have been compacted in accordance with these plans.
11. Subbase material for sidewalks, curb, or asphalt shall be free of organics and other unsuitable materials. Should subbase be deemed unsuitable, subbase is to be removed and filled with approved fill material compacted to 95% optimum density (as determined by modified proctor method).
12. The minimum slope in grassed areas shall not be less than 2% and the minimum in paved areas shall not be less than 1.
13. Erosion control matting shall be provided on all earth slopes at 3:1 or greater.

STORMWATER STRUCTURE SCHEDULE

Structure ID: D100
Type: STD M INLET
Loc: COURTYARD
Gr: 256.75
Inv: 254.28 (8" I)
Inv: 253.70 (15" O)

Structure ID: D101
Type: STD M INLET
Loc: COURTYARD
Gr: 257.00
Inv: 254.83 (8" I)
Inv: 253.32 (15" I)
Inv: 253.15 (15" O)

Structure ID: D102
Type: STD M INLET
Loc: PARKING AREA
Gr.: 256.60
Inv.: 253.40 (8" I)
Inv.: 252.82 (15" I)
Inv.: 252.57 (18" O)

Structure ID: D103
Type: STD M INLET
Loc: PARKING AREA
Gr: 256.60
Inv.: 252.41 (18" I)
Inv.: 252.24 (18" O)

Structure ID: D104
Type: STD M INLET
Loc: PARKING AREA
Gr.: 255.50
Inv.: 252.05 (18" O)

Structure ID: D105
Type: MOD BOX M INLET
Loc: PARKING AREA
Gr: 256.40
Inv: 254.30 (TOW)
Inv: 252.05 (7.5" C.O.)
Inv: 252.05 (18" I)
Inv: 252.01 (18" O)

Structure ID: D106
Type: DOGHOUSE INLET
Loc: PARKING AREA
Gr: 256.74
Inv: 253.13 (30" I)
Inv: 250.70 (30" O)

Structure ID: D107
Type: STM MH
Loc: PARKING AREA
Rim: 256.15
Inv.: 250.57 (30" I)
Inv.: 250.40 (30" O)

Structure ID: D108
Type: EX INLET
Loc: DRIVEWAY
Gr: 256.12
Inv: 252.39 (15" I)
Inv: 249.69 (30" I)
Inv: 249.08 (36" O)

Structure ID: D109
Type: STD. M INLET
Loc: PARKING AREA
Rim: 254.50
Inv.: 251.47 (18" I)
Inv.: 251.30 (18" O)

Structure ID: D110
Type: DOGHOUSE STM MH
Loc: PARKING AREA
Rim: 256.30
Inv.: 251.00 (18" I)
Inv.: 248.88 (36" O)

Structure ID: YD–A
Type: 24" YARD DRAIN
Gr: 256.90
Inv: 253.90 (8" O)

Structure ID: YD–B
Type: 24" YARD DRAIN
Gr: 256.90
Inv: 253.90 (8" O)

STORMWATER PIPE SCHEDULE

Structure (Fr)	Structure (To)	Length (L.F.)	Size (Dia.)	Material	Slope Percentage
YD–A	D100	45	8"	H.D.P.E.	1.00%
YD–B	D100	32	8"	H.D.P.E.	1.40%
D100	D101	40	15"	H.D.P.E.	0.95%
D101	D102	66	15"	CLASS IV RCP	0.50%
D102	D103	30	18"	H.D.P.E.	0.53%
D103	D105	29	18"	H.D.P.E.	0.66%
D105	D109	108	18"	(WT) H.D.P.E.	0.50%
D109	D110	60	18"	H.D.P.E.	0.50%
D106	D107	26	30"	H.D.P.E.	0.50%
D107	D108	142	30"	H.D.P.E.	0.50%

PLAN LEGEND

EXISTING (EX) FEATURES

- EX DRIVE CENTERLINE
- EX TOPOGRAPHIC CONTOURS
- EX FENCE LINE
- EX TREE DRIP LINE
- XX" T — EX DECIDUOUS TREE
- XX" P — EX CONIFEROUS TREE
- M.B. — EX MAILBOX
- SIGN — EX SIGN
- LT. — EX LIGHT/LAMP POST
- C.O. — EX SEWER CLEAN OUT
- W.V. — EX WATER VALVE
- F.H. — EX FIRE HYDRANT
- G.V. — EX GAS VALVE
- EX STORM SEWER AND INLET
- EX SANITARY SEWER & MH
- EX U.G. ELECTRIC LINE
- EX GAS MAIN & SERVICE
- EX WATER MAIN & SERVICE
- EX TELE COMMUNICATIONS

PROPOSED (PR) FEATURES

- PR TREE DRIP LINE
- PR SIGNAGE
- PR PROTECTION BOLLARD
- PR WOOD SCREEN FENCING
- PR WALL SCREEN FENCING
- EX | PR SPOT ELEVATION
- PR TOPOGRAPHIC CONTOURS
- PR STORM SEWER AND INLET
- PR SANITARY SEWER & MH
- C.O. — PR SEWER CLEAN OUT
- PR LIGHTING FIXTURE
- PR U.G. ELECTRIC LINE
- PR GAS MAIN & SERVICE
- PR WATER MAIN & SERVICE
- PR TELE COMMUNICATIONS

REVISIONS

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

PLAN NORTH

PROJECT SERIAL NUMBER FOR DESIGN:

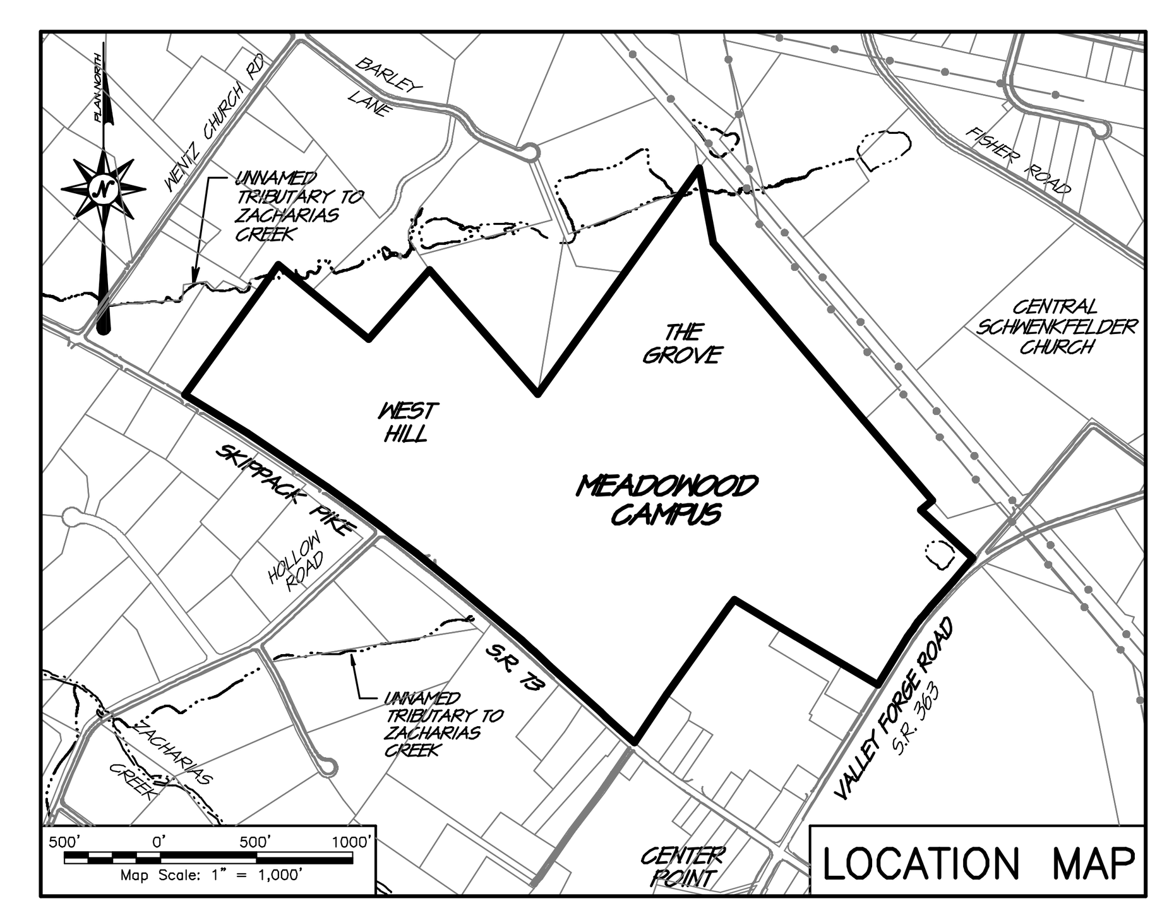
Pennsylvania 811
A Privately funded non–profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67–00–03185–00–6
Block 28 Unit 28
DB: 6370 Page 2199–2208
3205 SKIPPACK PIKE

Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

Scale In Feet (1" = 20')



LOCATION MAP

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

PROJECT AREA IMPROVEMENTS PLAN

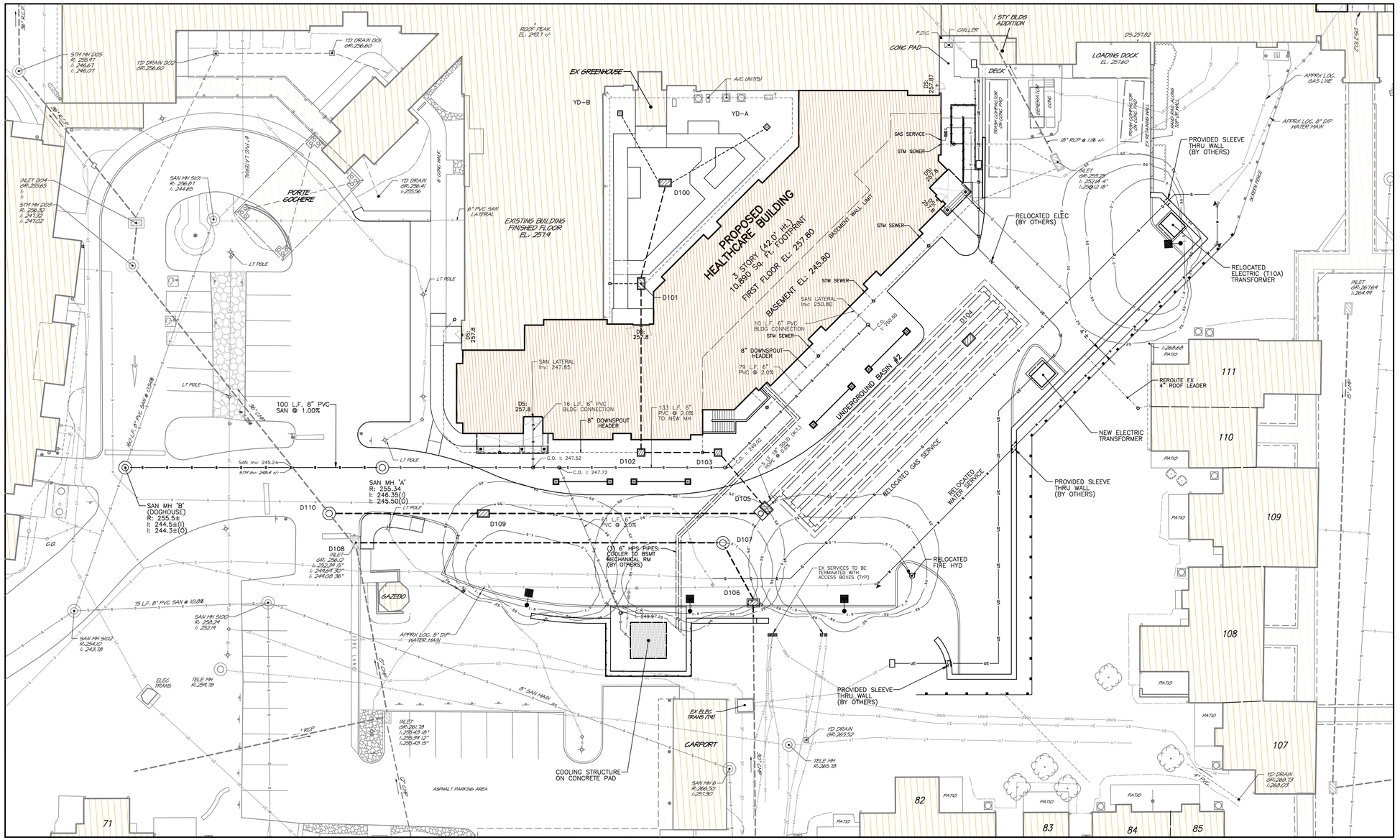
MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542–5648 Web: www.WoodrowInc.com

Layer List: D21–06_Grading
Job No: 00–0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 6 of 16

Print Date: Jul. 8, 2025 (12:33) Print Scale: 1" = 20.00'
File Name: G:\2000\00–0606D\00–0606D.pro



PLAN LEGEND

EXISTING (EX) FEATURES

- EX FENCE LINE
- SIGN — EX SIGN
- LT. — EX LIGHT/LAMP POST
- C.O. — EX SEWER CLEAN OUT
- W.V. — EX WATER VALVE
- F.H. — EX FIRE HYDRANT
- G.V. — EX GAS VALVE
- EX STORM SEWER AND INLET
- EX SANITARY SEWER & MH
- EX U.G. ELECTRIC LINE
- EX GAS MAIN & SERVICE
- EX WATER MAIN & SERVICE
- EX TELE COMMUNICATIONS

PROPOSED (PR) FEATURES

- PR SIGNAGE
- PR PROTECTION BOLLARD
- PR WOOD SCREEN FENCING
- PR WALL SCREEN FENCING
- PR STORM SEWER AND INLET
- PR SANITARY SEWER & MH
- C.O. — PR SEWER CLEAN OUT
- PR U.G. ELECTRIC LINE
- PR GAS MAIN & SERVICE
- PR WATER MAIN & SERVICE
- PR TELE COMMUNICATIONS
- PR LIGHTING FIXTURE
- .25 .50 1.0 — PR LIGHT ISOMETRIC PATTERN

GENERAL PLAN NOTES

Refer to plan sheet 2 'RECORD PLAN – OVERALL TRACT' for all 'BASE EXISTING FEATURES and SURVEY NOTES'.

Refer to plan sheet 3 'LAYOUT PLAN – MEMORY CARE FACILITY' for all 'BASE DEVELOPMENT NOTES".

Refer to plan sheet 7 'SITE IMPROVEMENTS – MEMORY CARE FACILITY' for all 'BASE CONSTRUCTION DESIGN NOTES".

CONSTRUCTION DESIGN NOTES:

1. The contractor shall ensure that all necessary permits and approvals have been obtained prior to commencement of any site construction activities.
2. Erosion and sedimentation control measures shall be in place and functional prior to any earth disturbance or grading work.
3. Contractor to ensure compliance with ADA regulations.
4. This project shall be served by public sanitary sewer by Worcester Township and water services by North Penn Water Authority.
5. Nothing shall be permitted to be set on, placed or planted within, the area of any utility or storm water easement except lawns or suitable low ground cover.
6. Construction materials and procedures shall follow Pennsylvania Department of Transportation Specifications and Standard Drawings (latest edition).
7. Any/all storm water conveyance system(s) and detention facilities shown on these plans are a basic and perpetual part of the storm water management system for this Township, and as such, are to be protected, maintained and preserved in accordance with the approved final plans. The Township and/or its agents may reserve the right and privilege to enter upon such lands from time to time for the purpose of inspection of said storm water management system in order to determine that the structural design and integrity are being maintained.
8. The proposed finished grading shown on this plan has been based on the proposed building(s) finished floor elevations and has been used to design the storm water management facilities. The contractor shall comply with the grading scheme indicated unless otherwise approved by the Township and the Project design engineers.
9. A minimum of six (6) inches of clean topsoil shall be provided on all lawn and planting areas.
10. Site grading shall be performed in accordance with these plans. The contractor shall be responsible for removing and replacing all soft, yielding or unsuitable materials and replacing with suitable materials. All excavated or filled areas shall be compacted to 95% of modified proctor maximum density per A.S.T.M. Test D–1557. moisture content at time of placement shall be no more than 2% above nor 3% below optimum. contractor shall submit a compaction report prepared by a qualified soils engineer, registered within the state where the work is performed, verifying that all filled areas and subgrade areas within the building pad area and areas to be paved have been compacted in accordance with these plans.
11. Subbase material for sidewalks, curb, or asphalt shall be free of organics and other unsuitable materials. Should subbase be deemed unsuitable, subbase is to be removed and filled with approved fill material compacted to 95% optimum density (as determined by modified proctor method).
12. The minimum slope in grassed areas shall not be less than 2% and the minimum in paved areas shall not be less than 1.
13. Erosion control matting shall be provided on all earth slopes at 3:1 or greater.

SANITARY SEWER CONSTRUCTION NOTES:

14. The existing buildings located at #3031 & 3103 W Skippack Pike which are located on the subject Tract are currently served by on–lot sanitary sewer. These buildings are to be connected to the public sanitary sewer main (se eplan for location).
15. The existing on–lot sanitary sewer facilities noted above are to be abandoned or removed in accordance with current PA DEP requirements.
16. In locations where existing sanitary piping is to be removed from existing manholes (specifically manholes S100 & S105), the openings in the manholes are to be closed with concrete and sealed to prevent infiltration into the sewer system.
17. The new sewer connection to existing manhole S100 & S104 are to be made by core–boring into the manhole and the installation of a water tight seal (link seal or manhole gasket, or approved equal).

STORMWATER STRUCTURE SCHEDULE

Structure ID: D100
Type: STD M INLET
Loc: COURTYARD
Gr: 256.75
Inv: 254.28 (8" I)
Inv: 253.70 (15" O)

Structure ID: D101
Type: STD M INLET
Loc: COURTYARD
Gr: 257.00
Inv: 254.83 (8" I)
Inv: 253.32 (15" I)
Inv: 253.15 (15" O)

Structure ID: D102
Type: STD M INLET
Loc: PARKING AREA
Gr.: 256.60
Inv.: 253.40 (8" I)
Inv.: 252.82 (15" I)
Inv.: 252.57 (18" O)

Structure ID: D103
Type: STD M INLET
Loc: PARKING AREA
Gr: 256.60
Inv.: 252.41 (18" I)
Inv.: 252.24 (18" O)

Structure ID: D104
Type: STD M INLET
Loc: PARKING AREA
Gr.: 255.50
Inv.: 252.05 (18" O)

Structure ID: D105
Type: MOD BOX M INLET
Loc: PARKING AREA
Gr: 256.40
Inv: 254.30 (TOW)
Inv: 252.05 (7.5" C.O.)
Inv: 252.05 (18" I)
Inv: 252.01 (18" O)

Structure ID: D106
Type: DOGHOUSE INLET
Loc: PARKING AREA
Gr: 256.74
Inv: 253.13 (30" I)
Inv: 250.70 (30" O)

Structure ID: D107
Type: STM MH
Loc: PARKING AREA
Rim: 256.15
Inv.: 250.57 (30" I)
Inv.: 250.40 (30" O)

Structure ID: D108
Type: EX INLET
Loc: DRIVEWAY
Gr: 256.12
Inv: 252.39 (15" I)
Inv: 249.69 (30" I)
Inv: 249.08 (36" O)

Structure ID: D109
Type: STD. M INLET
Loc: PARKING AREA
Rim: 254.50
Inv.: 251.47 (18" I)
Inv.: 251.30 (18" O)

Structure ID: D110
Type: DOGHOUSE STM MH
Loc: PARKING AREA
Rim: 256.30
Inv.: 251.00 (18" I)
Inv.: 248.88 (36" O)

Structure ID: YD–A
Type: 24" YARD DRAIN
Gr: 256.90
Inv: 253.90 (8" O)

Structure ID: YD–B
Type: 24" YARD DRAIN
Gr: 256.90
Inv: 253.90 (8" O)

STORMWATER PIPE SCHEDULE

Structure (Fr)	Structure (To)	Length (L.F.)	Size (Dia.)	Material	Slope Percentage
YD–A	D100	45	8"	H.D.P.E.	1.00%
YD–B	D100	32	8"	H.D.P.E.	1.40%
D100	D101	40	15"	H.D.P.E.	0.95%
D101	D102	66	15"	CLASS IV RCP	0.50%
D102	D103	30	18"	H.D.P.E.	0.53%
D103	D105	29	18"	H.D.P.E.	0.66%
D105	D109	108	18"	(WT) H.D.P.E.	0.50%
D109	D110	60	18"	H.D.P.E.	0.50%
D106	D107	26	30"	H.D.P.E.	0.50%
D107	D108	142	30"	H.D.P.E.	0.50%

LIGHTING INFORMATION

Luminaire Schedule: **Cooper Lighting – Galleon Area**

Symbol	Qty	Catalog Number	IES File	Color Temperature	Mounting Height	Avg. Lighting Parking Lot
●■	4	GLEON–SA1B–730–U–SL4–HSS	GLEON–SA1B–730–U–SL4–HSS.ies	3000K	12'	1.5 fc

LOCATION MAP

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

REVISIONS

PLAN NORTH

TIMOTHY P. WOODROW No. 038735-E

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non–profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67–00–03185–00–6
Block 28 Unit 28
DB: 6370 Page 2199–2208
3205 SKIPPACK PIKE

Gross Tract:
137.4921 Acres
Developable Area:
116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

10' 0' 20'
Scale In Feet (1" = 20')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

PROJECT AREA UTILITY PLAN

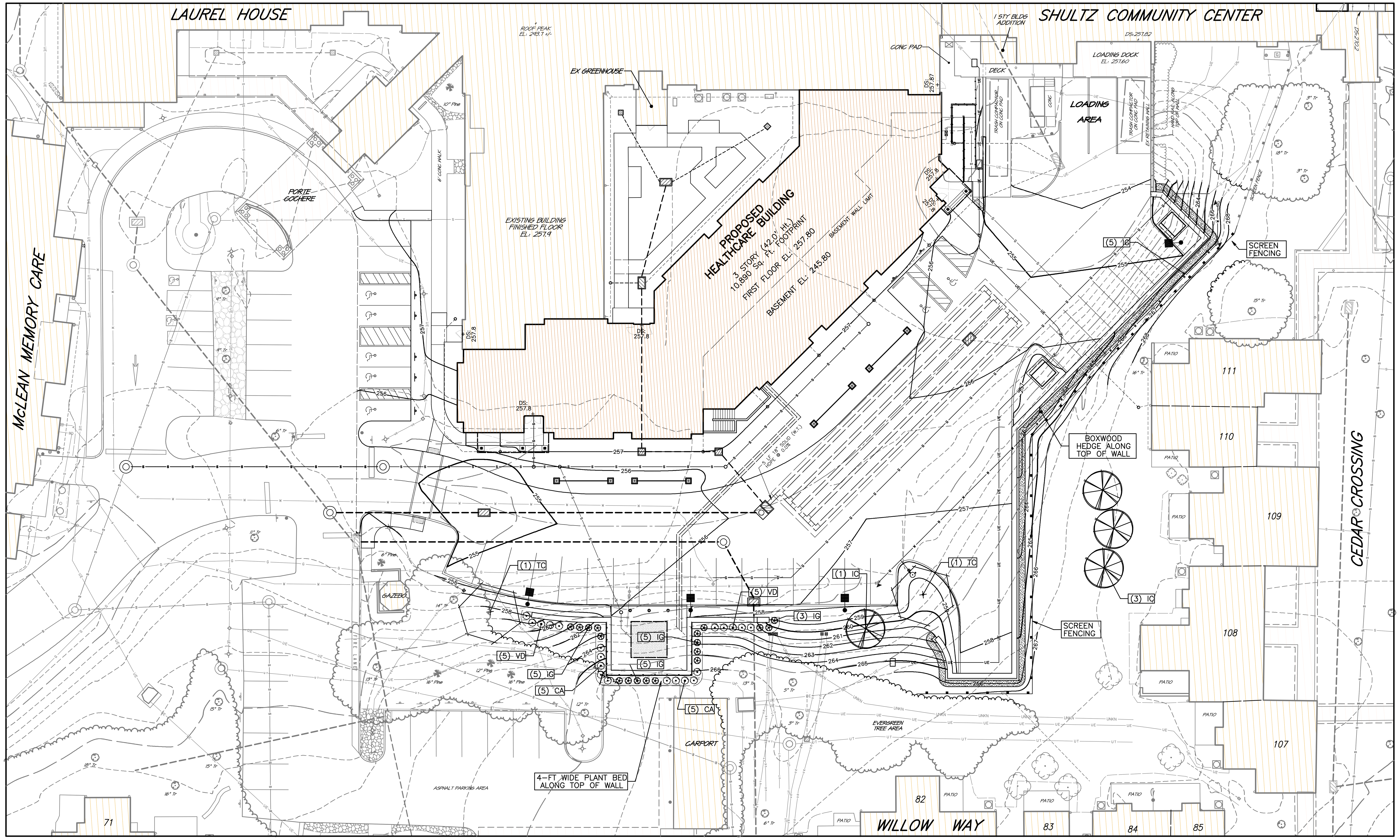
MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542–5648 Web: www.WoodrowInc.com

Layer List: D21–07_Utility
Job No: 00–0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 7 of 16

Print Date: Jul 8, 2025 (12:32) Print Scale: 1" = 20.00'
File Name: G:\2000\00–0606D\00–0606D.pro



PLAN LEGEND

EXISTING (EX) FEATURES

- EX DRIVE CENTERLINE
- EX TOPOGRAPHIC CONTOURS
- EX FENCE LINE
- EX TREE DRIP LINE
- XX" T — EX DECIDUOUS TREE
- XX" P — EX CONIFEROUS TREE
- M.B. — EX MAILBOX
- SIGN — EX SIGN
- LT. — EX LIGHT/LAMP POST
- C.O. — EX SEWER CLEAN OUT
- W.V. — EX WATER VALVE
- F.H. — EX FIRE HYDRANT
- G.V. — EX GAS VALVE
- EX STORM SEWER AND INLET
- EX SANITARY SEWER & MH
- EX U.G. ELECTRIC LINE
- EX GAS MAIN & SERVICE
- EX WATER MAIN & SERVICE
- EX TELE COMMUNICATIONS

PROPOSED (PR) FEATURES

- PR TREE DRIP LINE
- PR SIGNAGE
- PR PROTECTION BOLLARD
- PR WOOD SCREEN FENCING
- PR WALL SCREEN FENCING
- 251.5 — EX | PR SPOT ELEVATION
- PR TOPOGRAPHIC CONTOURS
- PR STORM SEWER AND INLET
- PR SANITARY SEWER & MH
- C.O. — PR SEWER CLEAN OUT
- PR LIGHTING FIXTURE
- PR U.G. ELECTRIC LINE
- PR GAS MAIN & SERVICE
- PR WATER MAIN & SERVICE
- PR TELE COMMUNICATIONS

REVISIONS

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

GENERAL PLAN NOTES

Refer to plan sheet 2 'RECORD PLAN – OVERALL TRACT' for all 'BASE EXISTING FEATURES and SURVEY NOTES'.

Refer to plan sheet 3 'LAYOUT PLAN – MEMORY CARE FACILITY' for all 'BASE DEVELOPMENT NOTES".

Refer to plan sheet 7 'SITE IMPROVEMENTS – MEMORY CARE FACILITY' for all 'BASE CONSTRUCTION DESIGN NOTES".

BASE LANDSCAPING NOTES:

1. All topsoil shall be a minimum 4" in all sod areas and 8" in tree, shrub and groundcover beds, including parking lot island beds.
2. Planting behind perpendicular parking is to be located a minimum of 3' behind the curb line.
3. All landscape and grass areas are to be hand raked and left clear of all stones, rock, construction debris and any unsuitable materials.
4. Landscape contractor will locate all underground utilities prior to any planting installations.
5. All areas to be landscaped must be treated with a pre-emergence herbicide (surflan, dactal or approved equal) in accordance with applicable federal, state regulations and manufacturer's instructions.
6. Landscape contractor to supply and install a pervious weed barrier (Dewitt, DuPont or approved equal) in accordance with manufacturer's installation within all landscape and mulch beds. All weed barrier will be overlapped a minimum of 6" at all seams. At plant locations, barrier should be cut in an "X" pattern so to accommodate root ball and replaced after plant has been installed.
7. All proposed landscaping to be nursery grown, typical of their species or variety. They are to have normal vigorous root systems, free from defects and infections and in accordance with ANSI Z60.1.
8. All proposed plantings should be installed per standards of the "American Association of Nurserymen" and state nursery/ landscape associations with regard to planting, pit size, backfill mixture, staking and guying.
9. All planting containers and baskets shall be removed during planting. All plants shall be set plumb and positioned so that the top of the root collar matches, or is no more than two (2") inches above, finished grade. Replace amended backfill in 6-inch layers and compact backfill to eliminate voids. Contractor shall provide a four-inch high earthen watering saucer along the perimeter of each planting pit. Contractor shall water newly planted vegetation prior to mulching planting pit. All voids shall be filled and settling mitigated as required.
10. After initial watering and prior to mulching, contractor shall apply herbicides and pre-emergent herbicides as required to eliminate any weed seeds or plants present on root ball.
11. All planting beds and pits except for landscape islands adjacent to the building shall be mulched with double ground hardwood mulch at a minimum depth of 3".
12. Plant material shall be guaranteed for 18 Months from the date of substantial completeness. The contractor shall replace plants, dead, unhealthy, dying or damaged through loss of branches and/or foliage. Lawns that are not in good condition at the end of the guarantee period shall be repaired until a good lawn results.
13. It is understood that the owner shall assume responsibility for watering all plant material and lawn area beginning with the date of substantial completeness.
14. Seedbed Preparation:
    a. Apply limestone and fertilizer according to soil tests or fertilizer may be applied at the rate of 260 pounds per acre or 6 pounds per 1000 square feet using 10-20-10 or equivalent. In addition, 300 pounds 4-1-2 per acre or equivalent of slow release nitrogen may be used in lieu of topdressing.
    b. Work lime and fertilizer into the soil as practical to a depth of 4-inches with a disc, spring tooth harrow or other suitable equipment. The final harrowing or disking operation should be parallel to the general contour. Continue tillage until a reasonable uniform, fine seedbed is prepared. All but clay or silty soils and coarse sands should be rolled to firm the seedbed wherever feasible.
    c. Inspect seedbed just before seeding. If traffic has left the topsoil compacted, the area must be retiled and firmed as outlined below.
    d. Grass seeding mixture and application rate:

Percentage of total weight	Application Rate	Seed Type	Minimum Germination Allowed
60 %	5-7 lbs per 1000 Sq. Ft.	"REBEL" Tall Fescue	90-97
35 %		"YORKTOWN" Perennial Rye	90-98
5 %		"STREEKER" Redtop	90-92

    e. In areas designated as sod, fescue sod is to be installed on minimum 4" topsoil. Areas to be sodded are to be prepared as noted above for seeded areas.

LANDSCAPING REQUIREMENTS

Item	Requirement	Provided
SALDO Section 130-28.F(7) Tree Replacement	Less than 25% of the trees on site are proposed to be removed, therefore no replacement trees are required.	N / A [1]
SALDO Section 130-28.G(6) Off-street parking	Parking areas greater than 2,000 SF shall have a min. of 10% devoted to landscaping. New Parking: 4,840*10% = 484 SF	**571 SF Planter or 11.8%** 4 Evergreen treees 38 Shrubs 70 Boxwood Hedge
	One tree shall be provided per 15 parking spaces. 27 parking spaces: 27/15 = 2 Trees Required	2 Shade trees
TOTAL PLANTINGS PROVIDED		4 Evergreen Trees 38 Shrubs 70 Boxwood Hedge 2 Shade Trees **114 TOTAL**

[1] See Plan Sheet 4 for Removal locations. Trees to be removed with this Application:

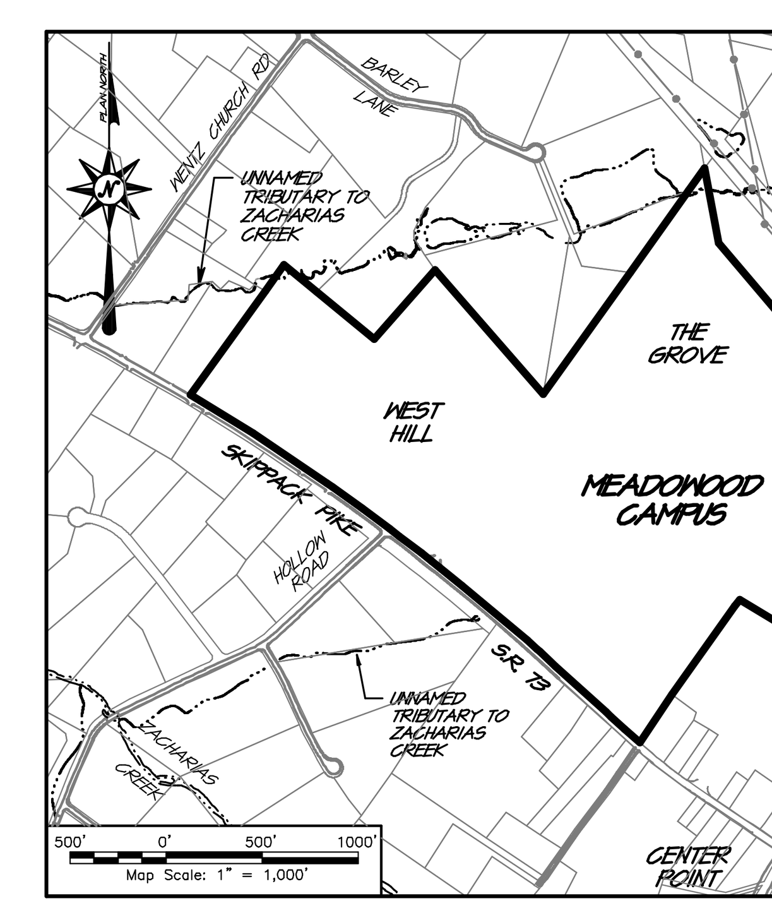
16 (6"+ Cal) Deciduous Trees =	202 Cal Inches
10 (6"+ Cal) Evergreen Trees =	119 Cal Inches
TOTAL REMOVAL =	321 Cal Inches

PLANT MATERIAL SCHEDULE [a]

Plan Symbol	Quantity	Botanical Name	Common Name	Minimum Planting Caliper	Minimum Planting Height	Remarks
TC	2	Tilia cordata	Littleleaf Linden	3"	10-12'	B&B
IC	4	Ilex cornuta 'Burfordii'	Burford Holly	–	6'	B&B
CA	10	Clethra alnifolia 'Ruby Spice'	'Ruby Spice' Summersweet	–	18-24"	CONT
IG	18	Ilex glabra 'Shamrock'	'Shamrock' Inkberry	–	18-24"	CONT
VD	10	Viburnum dentatum 'Blue Muffin'	'Blue Muffin' Arrowwood Viburnum	–	18-24"	CONT
BM	70± [b]	Boxus microphylla	Japonica 'Green Beauty' Boxwood	–	12-18"	CONT
	114	TOTAL TREES & SHRUBS				

[a] Plant material subject to local availability. Substitutions may be provided, but require Municipal approval prior to installation.

[b] Quantity based on approx planting area length and planting spread. Quantity subject to adjustment to fill designated area.



LOCATION MAP

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

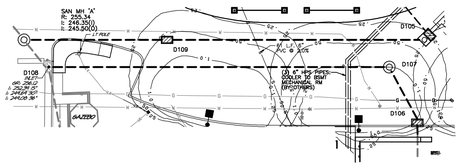
Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

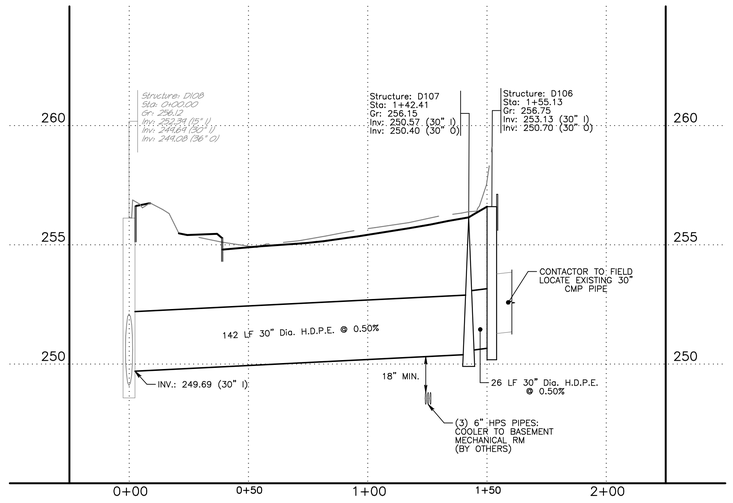
Scale In Feet (1" = 20')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION
PROJECT AREA LANDSCAPING PLAN
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

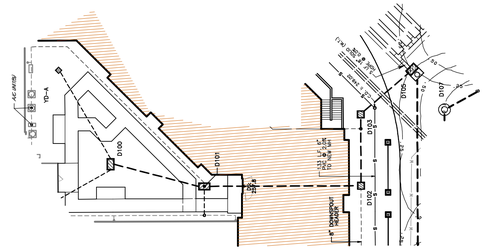
WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

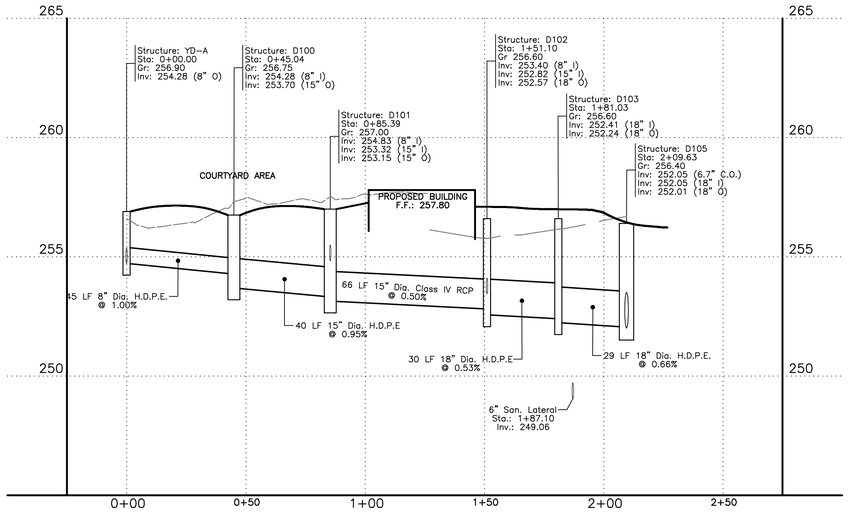
Layer List: D21-08_Land
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025



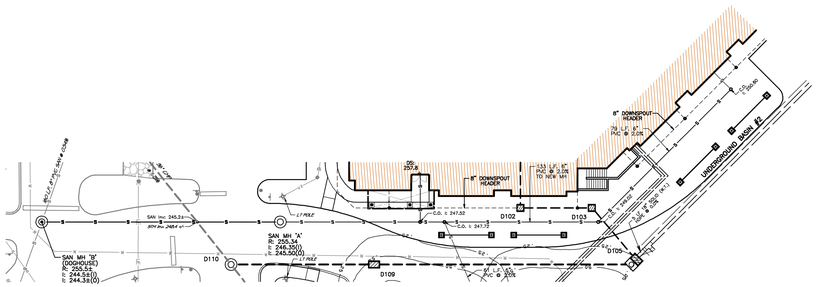


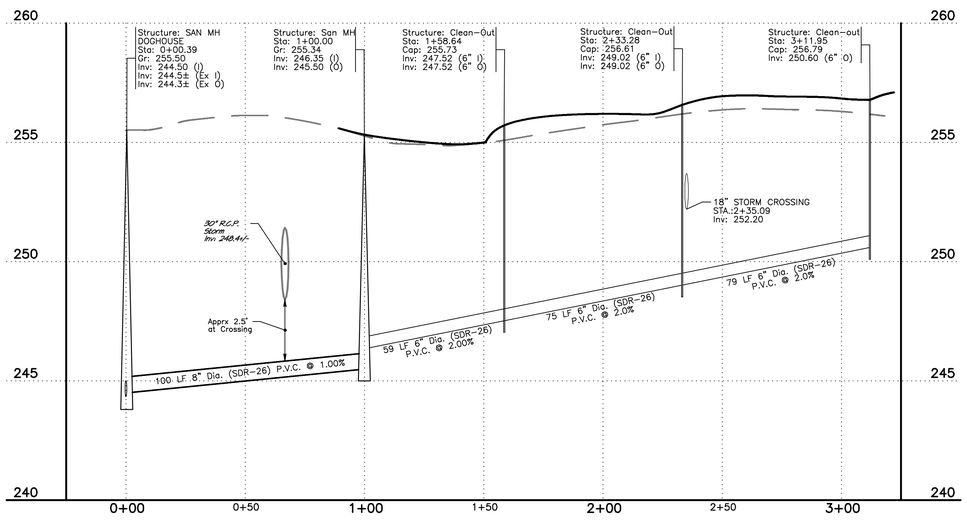
PROFILE: EXISTING INLET D108 to INLET D106



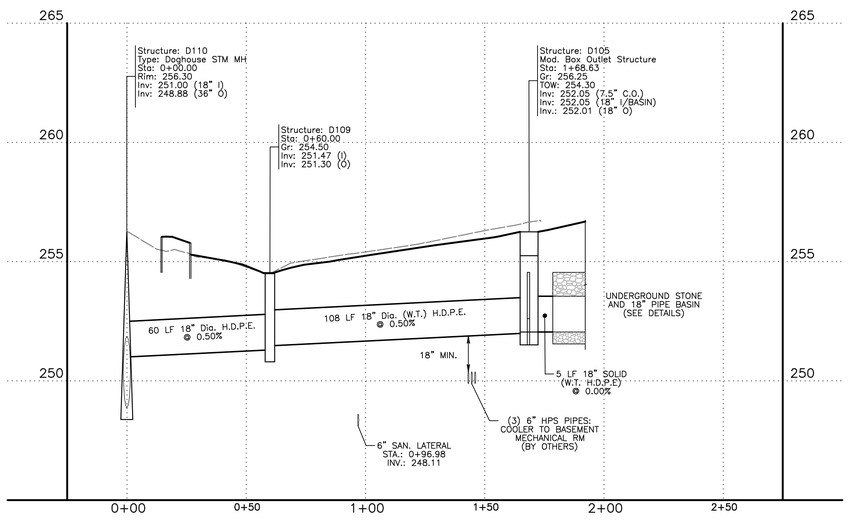


PROFILE: YARD DRIAN YD-A to INLET D105





PROFILE: SANITARY LATERAL to SANITARY MH 'B'



PROFILE: STORM MANHOLE D110 TO OUTLET STRUCTURE D105

Plot Date: JAN. 8, 2025 (12:21) Plot Scale: 1" = 20.00'
File Name: C:\2000\00-0606\00-0606.dwg

REVISIONS

No.	DATE	DESCRIPTION
1	06/30/25	Twp Engineer letter (5/20/25), traffic Consultant letter (5/14/25) & WEP update

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
TIMOTHY P. WOODROW
ENGINEER
No. 038735-E

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately Funded Non-Profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

15' 0' 30'
Scale In Feet (1" = 30')

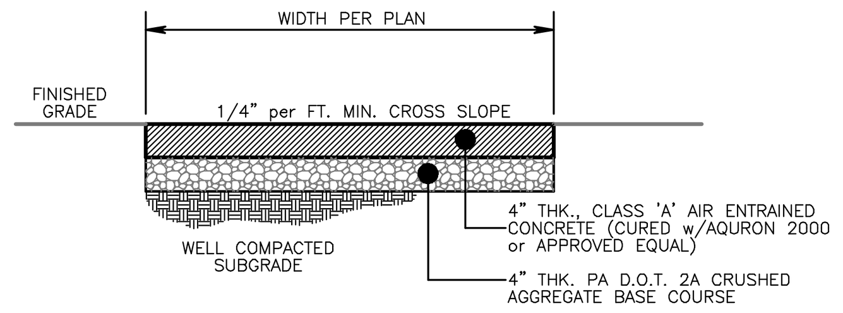
PRELIMINARY / FINAL PLAN - HEALTH CARE NORTHEAST EXPANSION

PROFILE SHEET
CROSS-LOT PROFILES
MEADOWOOD SENIOR LIVING

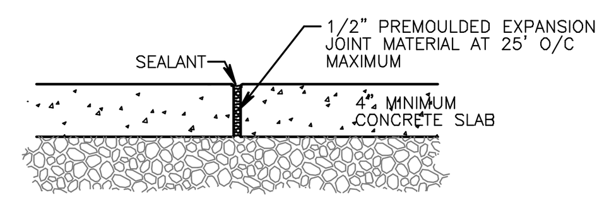
WORCESTER TOWNSHIP - MONTGOMERY COUNTY - PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 3 - Lower Gwynedd - PA 19002
Phone: (215) 542-9588 www.woodrowassoc.com

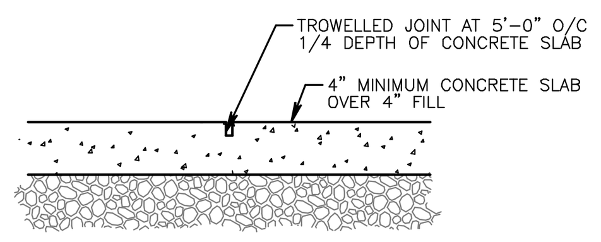
Layer List: D21-09_Profile
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 9 of 16



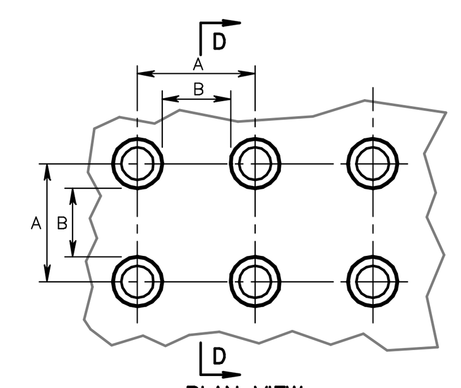
CONCRETE SIDEWALK
Not To Scale



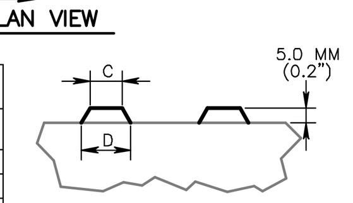
TYPICAL EXPANSION JOINT DETAIL
Not To Scale



TYPICAL CONTROL JOINT DETAIL
Not To Scale



TRUNCATED DOME DIMENSIONS		
DIM	MIN mm (inch)	MIN mm (inch)
A	41 (1.6")	61 (2.4")
B	17 (0.65")	37 (1.5")
C	(13)	(13)
D	23 (0.9")	36 (1.4")

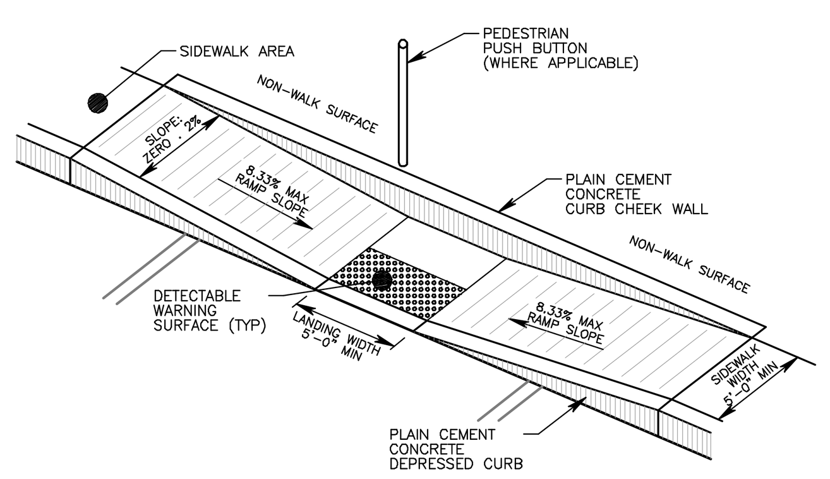


(13) The C Dimension is 50% to 65% of the D Dimension

(14) Place adjacent DWS Tiles with Manufactured Surface to Manufactured Surface. Cut Tiles along the perimeter only.

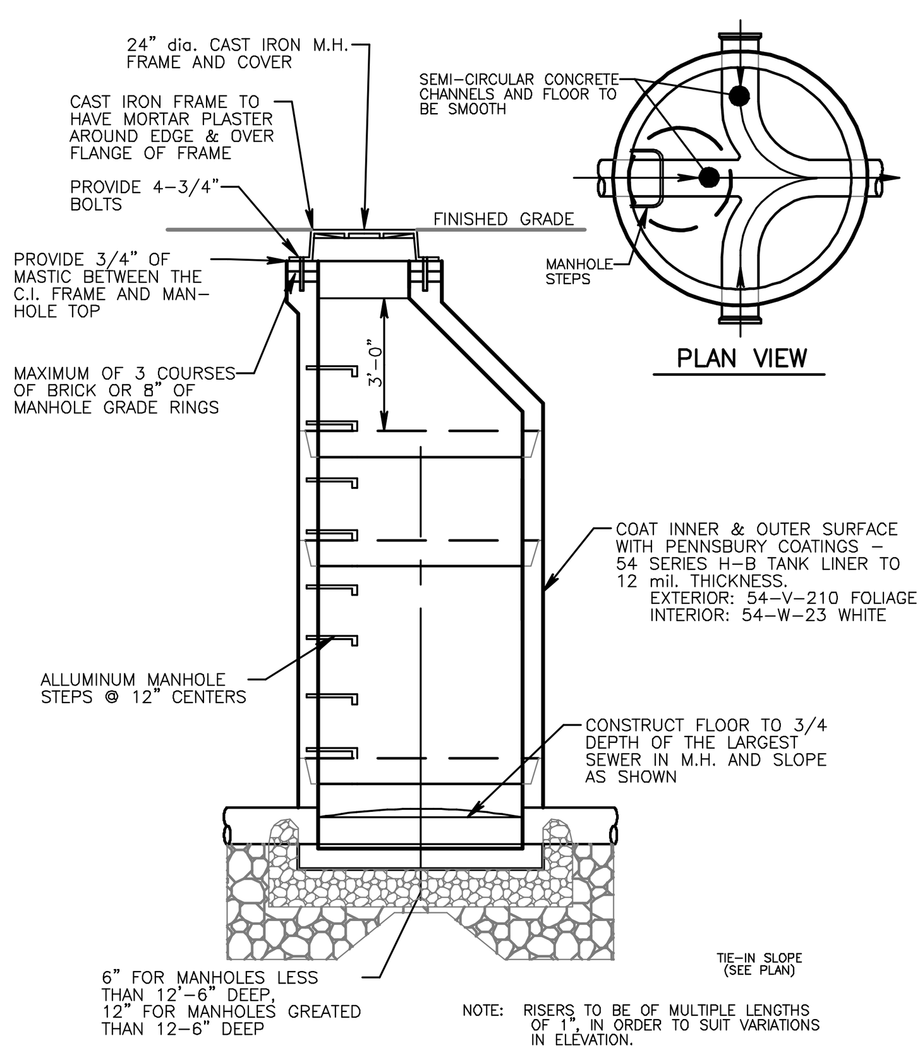
(24) Locate one corner of the DWS at the back of the curb. No other point on the leading edge of the DWS may be more than 1525 (60") away from the back of the curb.

DETECTABLE WARNING SURFACE (DWS) TRUNCATED DOME DETAIL
Not To Scale



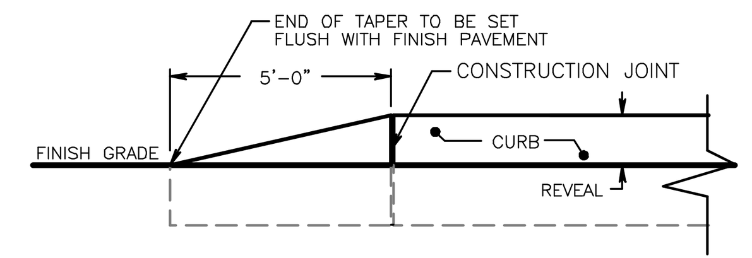
RAMP TO BE IN CONFORMANCE WITH PennDOT PUB 72M, RC-67M (June 10, 2013 or Latest)

TYPE 2 CURB RAMP
Not To Scale

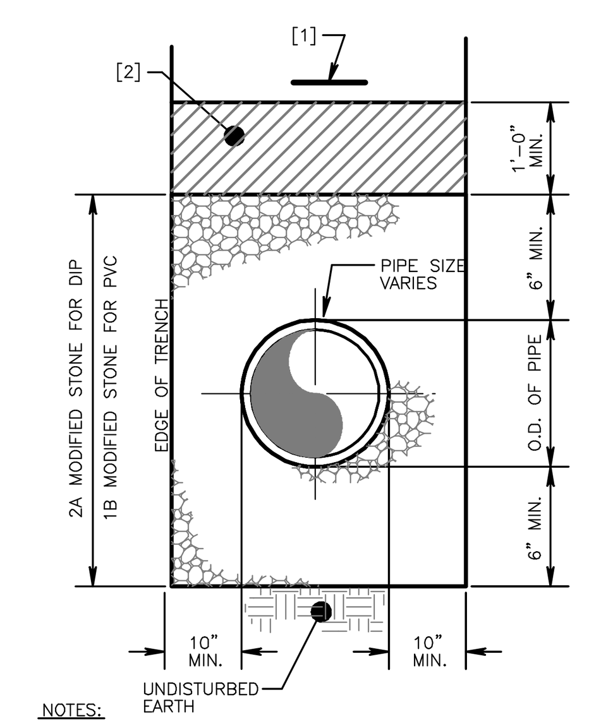


NOTE: RISERS TO BE OF MULTIPLE LENGTHS OF 1", IN ORDER TO SUIT VARIATIONS IN ELEVATION.

PRE-CAST SANITARY MANHOLE and BASE
Not To Scale



5' CONCRETE CURB END TAPER
Not To Scale

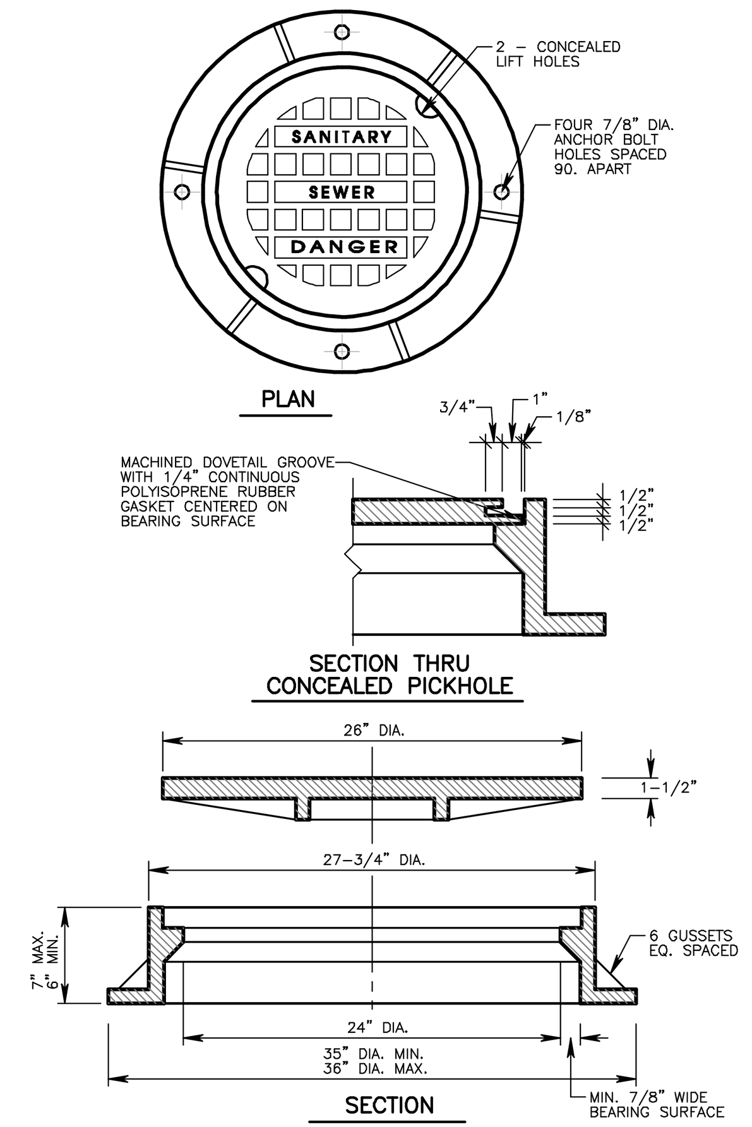


NOTES:

[1] EARLY WARNING TAPE SHALL BE TWO (2) INCH WIDE GREEN COLORED, METALLIC LINED PRINTED PLASTIC TAPE WITH THE WORDS "CAUTION BURIED SEWER LINE BELOW" STENCILED ON TAPE EVERY TWO (2) FEET. (USED IN PVC PIPE BEDDING)

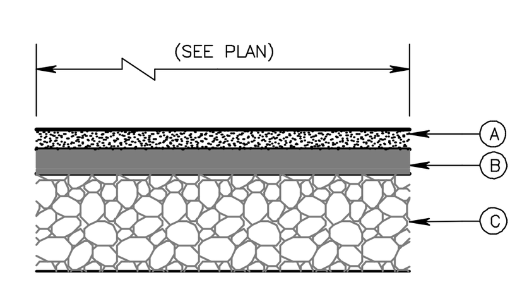
[2] HAND TAMPED BACKFILL AS SPECIFIED. (2A MODIFIED STONE UNDER ALL ROADWAYS, DRIVEWAYS & PARKING LOTS)

STANDARD SANITARY SEWER PIPE BEDDING DETAIL
Not To Scale



1. COVER SHALL HAVE THE WORDS "DANGER SEWER – DO NOT REMOVE COVER" CAST THEREON. LETTERS ARE TO HAVE A MINIMUM HEIGHT OF 2".
2. PROVIDE FOUR (4) ANCHOR BOLT HOLES, 1". MIN.
3. CASTINGS SHALL BE DESIGNED FOR AASHTO HIGHWAY LOADING CLASS HS-20.
4. FRAME AND COVER SHALL BE NEENAH FOUNDARY COMPANY MODEL R-1642 WITH SELF-SEALING GASKET TYPE COPER OR APPROVED EQUAL.

SANITARY SEWER MANHOLE FRAME AND COVER
Not To Scale



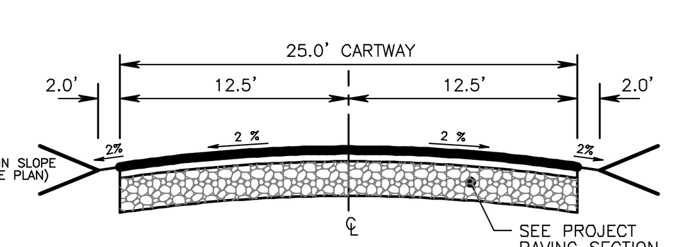
(A) = 1.5" SuperPave Volumetric Asphalt Mixture Design, 9.5mm, PG 64S-22, Wearing Course, 0–0.3M ESALs, M or Greater

(B) = 4.5" SuperPave Volumetric Asphalt Mixture Design, 25mm, PG 64S-22, Base Course, 0–0.3M ESALs

(C) = 6" 2A Modified Subbase on Geotextile Class IV

1. ALL SUBGRADE AREAS TO BE COMPACTED AND APPROVED PRIOR TO PLACEMENT OF MATERIALS.

PROJECT PAVING SECTION
Not To Scale



CROSS-SECTION ACCESS DRIVE RECONSTRUCTION
Not To Scale

PAVEMENT MARKINGS NOTES

GENERAL:

- MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DEPARTMENT'S SPECIFICATIONS, FORM 408.
- THESE PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE REGULATIONS GOVERNING THE DESIGN, LOCATION, AND OPERATION OF ALL OFFICIAL TRAFFIC SIGNS, SIGNALS, AND MARKINGS ON AND ALONG HIGHWAYS WITHIN THE COMMONWEALTH OF PENNSYLVANIA.
- ALL PAVEMENT MARKINGS SHALL BE REFLECTORIZED.
- THE CONTRACTOR SHALL PREPARE THE EXISTING PAVEMENT SURFACE FOR PROPER ADHESION. THESE PREPARATIONS MAY INCLUDE, BUT MAY NOT BE LIMITED TO, ANY SWEEPING AND REMOVAL OF DEBRIS, DIRT OR OTHER MATERIALS.
- THE CONTRACTOR SHALL REMOVE ALL PREVIOUS EXISTING PAVEMENT MARKINGS WITHIN THE CONFINES OF THE PROJECT AREA.
- UNLESS SPECIFIED OTHERWISE, THE BASIS OF MEASUREMENT SHALL BE ALONG THE LONGITUDINAL CENTERLINE OF PAVEMENT MARKINGS.
- PRIOR TO APPLICATION, THE CONTRACTOR SHALL FIELD CHECK AND LOCATE ALL PAVEMENT MARKINGS TO THE SATISFACTION OF THE ENGINEER.
- WHERE BITUMINOUS SEALANTS PREVENTS OR MAKES IMPRACTICAL THE EXTENDING OF LINES TO THE FACE OF THE CURB, THE CONTRACTOR SHALL EXTEND LINES TO EDGE OF SEALANT OR WITHIN ONE FOOT OF THE FACE OF CURB, WHICHEVER IS LESS.
- ALL INTERSECTION PAVEMENT MARKINGS (SHORT LINES & LEGENDS) SHALL BE HOT THERMOPLASTIC. ALL LONG LINES SHALL BE EPOXY.

CROSSWALKS:

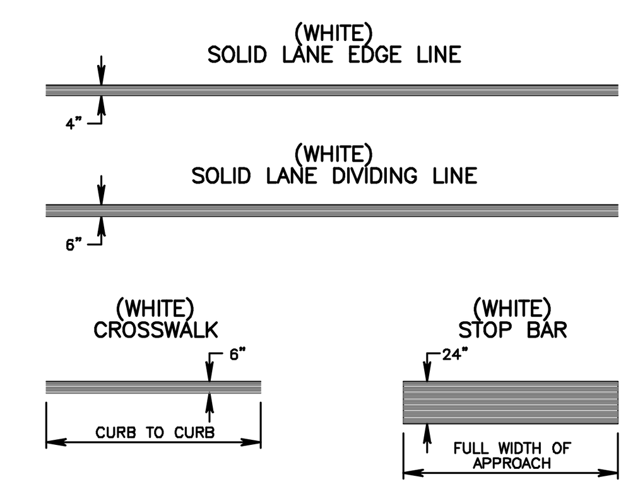
1. CROSSWALK LINES SHALL BE SOLID WHITE LINES, SIX (6) INCHES WIDE, MARKING BOTH EDGES OF THE CROSSWALK AREA.
2. CROSSWALK LINES SHALL EXTEND FROM FACE OF CURB TO FACE OF CURB OR EDGE OF SHOULDER AS APPLICABLE.
3. LINES FORMING A CROSSWALK SHALL BE PARALLEL.
4. THE WIDTH OF THE CROSSWALK IS NORMALLY SIX (6) FEET.

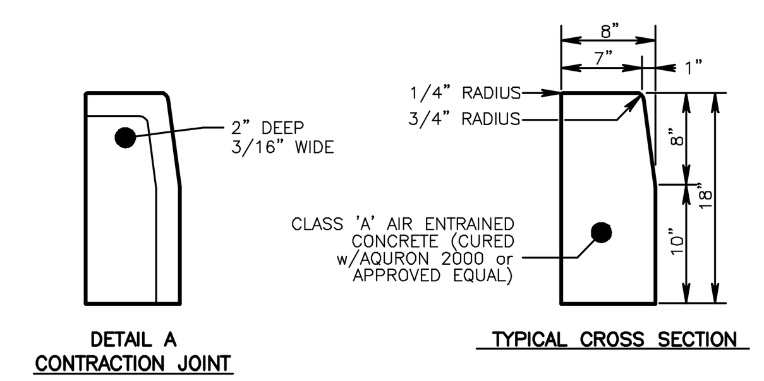
STOP BARS:

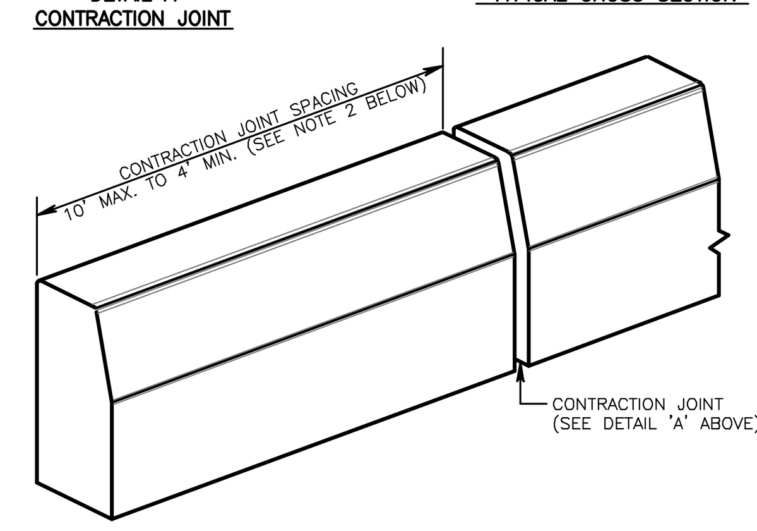
5. STOP BARS, SOLID WHITE LINES BEING 24 INCHES WIDE, SHALL COMPLETELY TRAVERSE ALL TRAFFIC LANES ON EACH APPROACH.
6. STOP BARS SHALL BE LOCATED AT A MINIMUM OF FOUR (4) FEET IN ADVANCE OF AND PARALLEL TO THE CROSSWALK LINES, UNLESS OTHERWISE NOTED ON THE PLAN.

LANE and EDGE LINES:

7. LANE LINES, EITHER SOLID OR BROKEN WHITE, SHALL BE SIX (6) INCHES WIDE.
8. EDGE LINES, WHEN NOTED ON THE PLANS, SHALL BE SOLID WHITE LINES FOUR (4) INCHES WIDE.



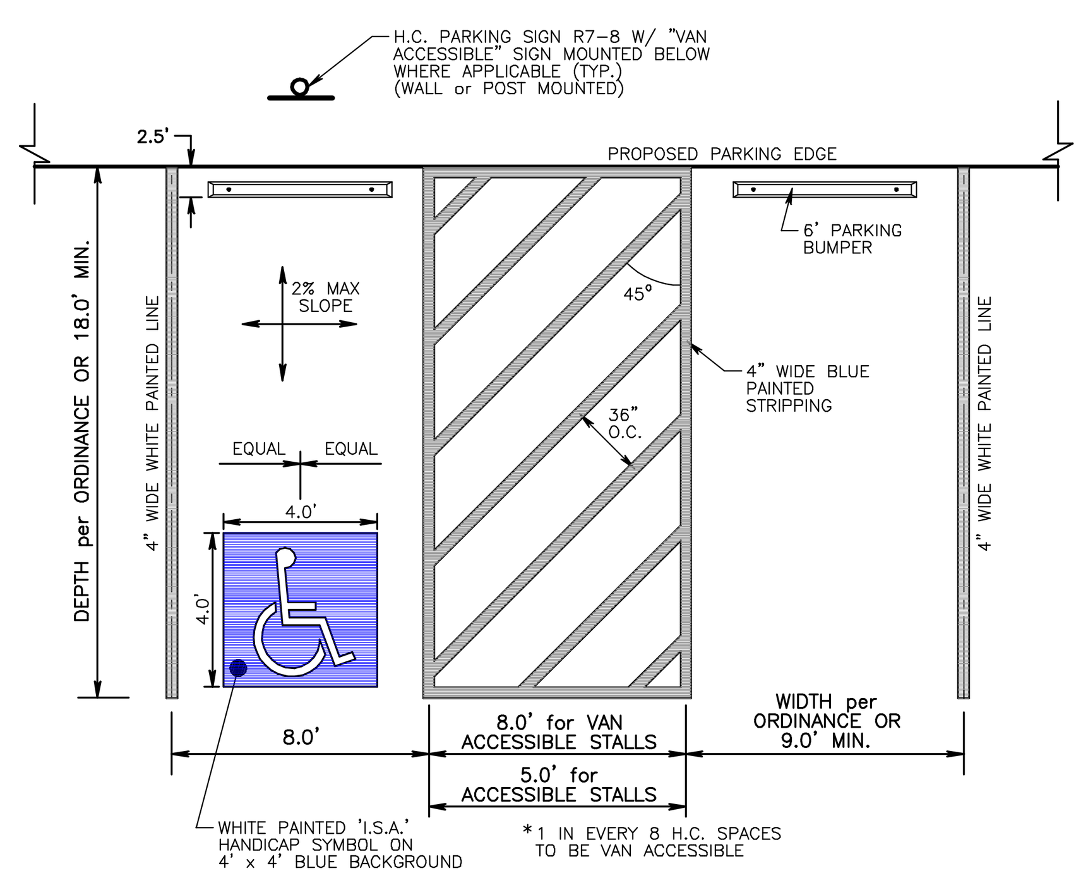




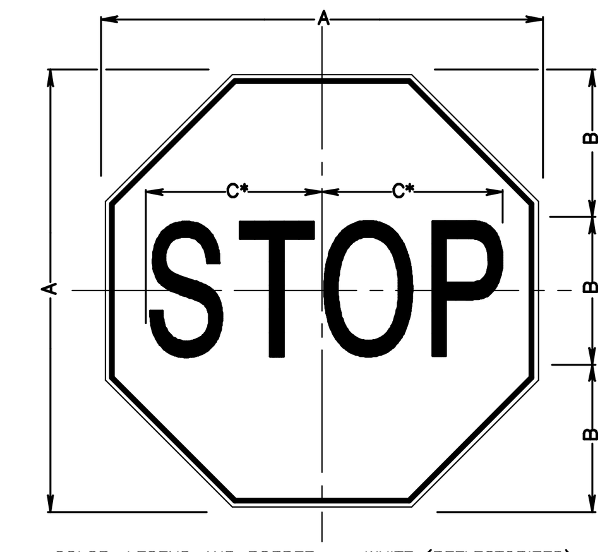
DETAIL NOTES:

1. MATERIALS AND CONSTRUCTION SHALL MEET THE REQUIREMENTS OF PUBLICATION 408, SECTION 630 FOR PLAIN CEMENT CONCRETE CURB. SECTION 640 FOR PLAIN CEMENT CONCRETE GUTTER AND SECTION 641 FOR PLAIN CEMENT CONCRETE CURB GUTTER.
2. SPACE CONTRACTION JOINTS IN UNIFORM LENGTHS OR SECTIONS.
3. PLACE 3/4 INCH PREMOLDED EXPANSION JOINT FILLER MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL AREA OF CURB.

PLAIN CONCRETE CURB
Not To Scale



PARKING SPACE LETTERING/STRIPING DETAIL
Not To Scale

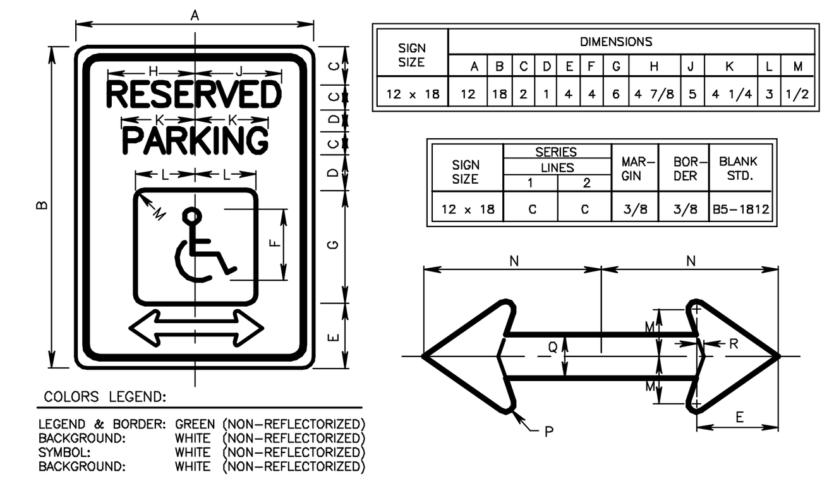


COLOR: LEGEND AND BORDER — WHITE (REFLECTORIZED)
BACKGROUND — RED (REFLECTORIZED)

SIGN SIZE	DIMENSIONS A	DIMENSIONS B	DIMENSIONS C*	SERIES	BORDER	BLANK STUD
24 x 24	24	8	10	C	5/8	B1–24
30 x 30	30	10	12 1/2	C	3/4	B1–30
36 x 36	36	12	15	C	7/8	B1–36
48 x 48	48	16	20	C	1 1/4	B1–48

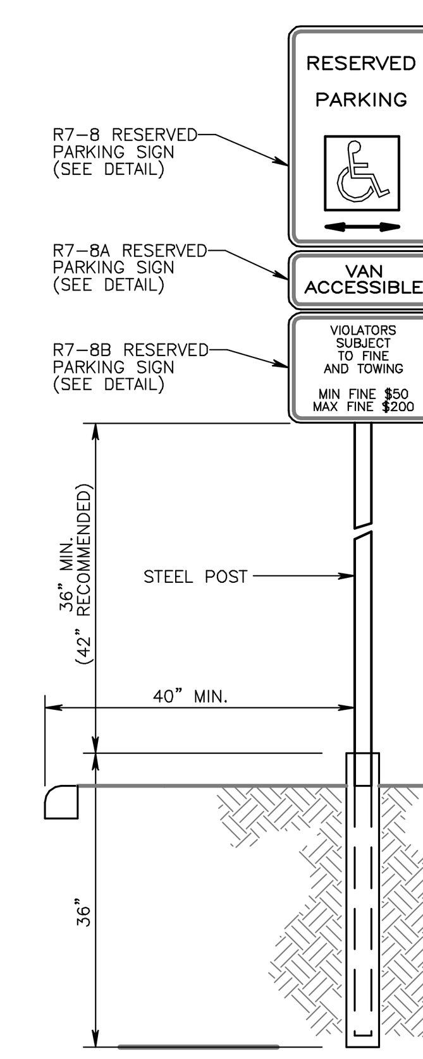
* REDUCE SPACING BY 40%

(R1-1) STOP SIGN DETAIL
Not To Scale



SIGN SHALL MEET THE REQUIREMENTS OF PUBLICATION 68, SECTION 211.241.

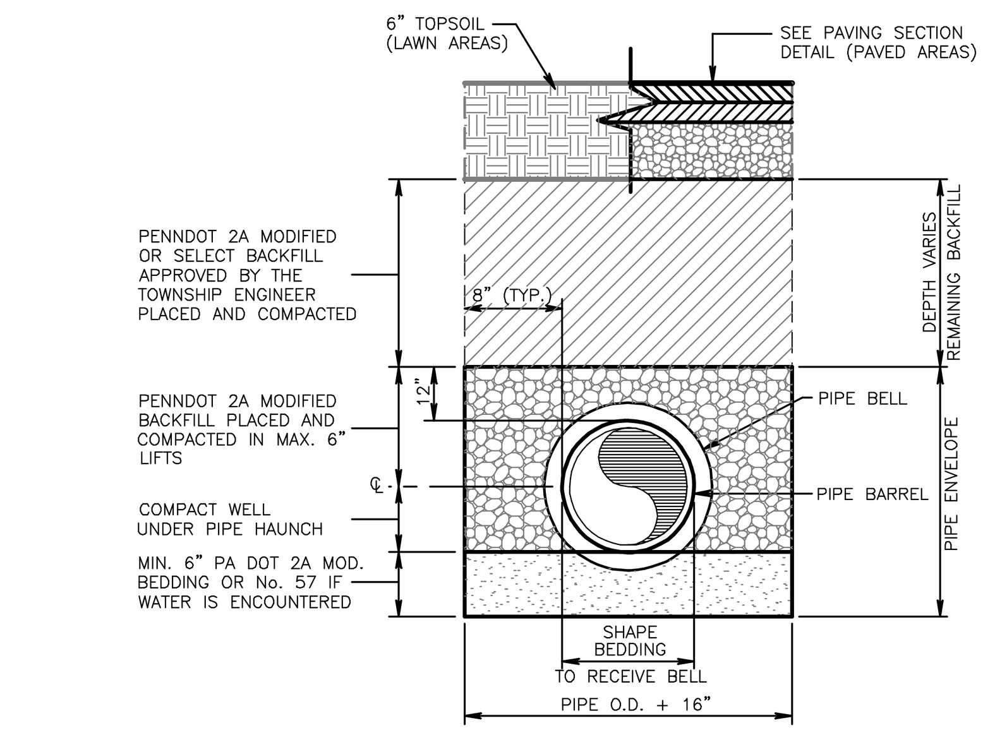
(R7-8) RESERVED PARKING SIGN
Not To Scale



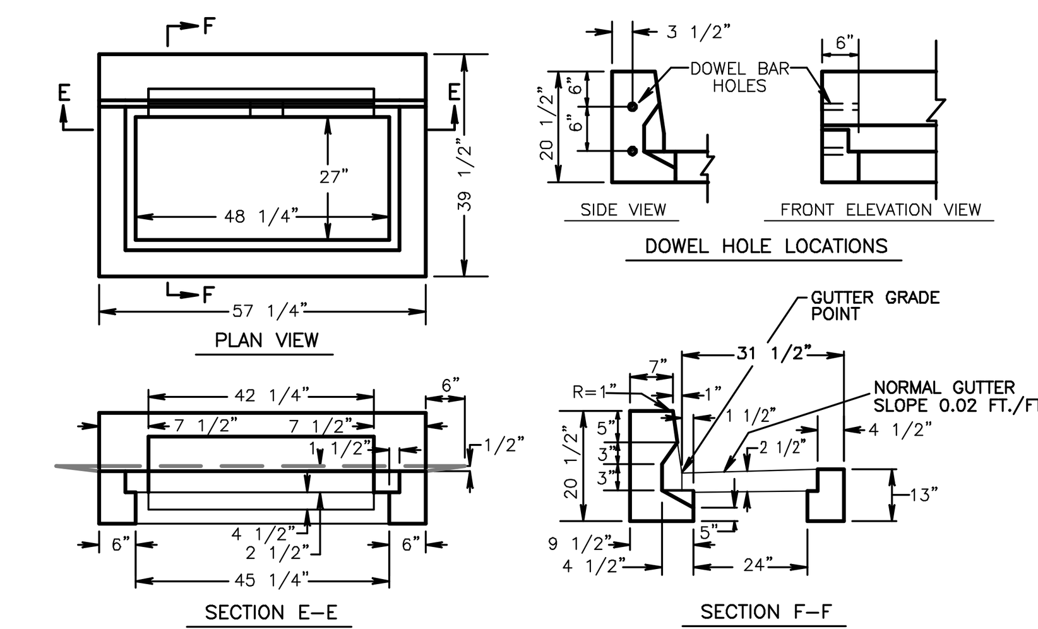
INSTALLATION NOTES:

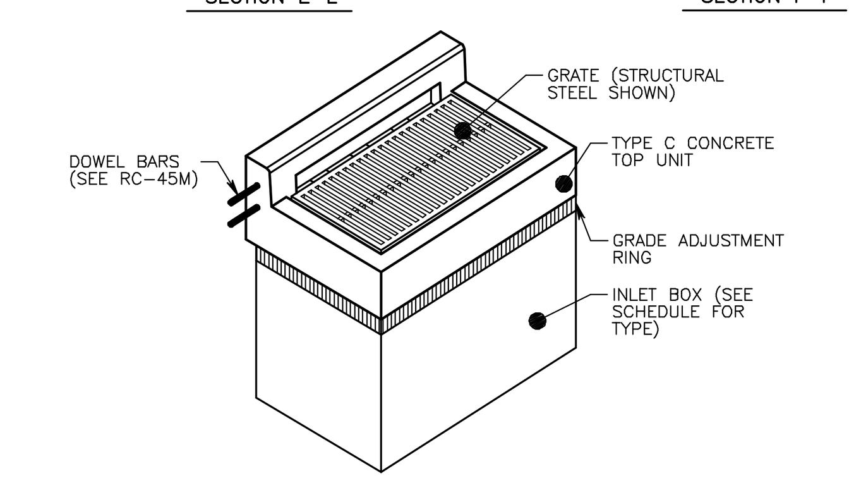
1. SIGNS SHALL CONFORM TO THE STANDARDS OF PA D.O.T. PUB 68 "OFFICIAL TRAFFIC-CONTROL DEVICES"
2. SIGNS SHALL BE SET DIRECTLY FACING THE LINE OF TRAVEL FOR THE VEHICLE ENTERING THE STALL
3. SIGNS SHALL BE MOUNTED ON A STURDY POST AT THE HEIGHT SPECIFIED HEREON, OR MAY BE SECURELY BOLTED TO AN ADJACENT WALL
4. EACH SPACE SHALL BE POSTED WITH A SIGN, CENTERED ON THE STALL, HOWEVER, ONE SIGN MAY BE USED FOR A PAIR OF STALLS WHEN PLACED BETWEEN THE TWO SPACES WITH THE APPROPRIATE ARROWS
5. SIGNS SHALL BE PLACED A MINIMUM OF 40" FROM THE FACE OF ADJACENT CURB OR BUMPER BLOCK.

(R7-8) SIGN INSTALLATION DETAIL
Not To Scale



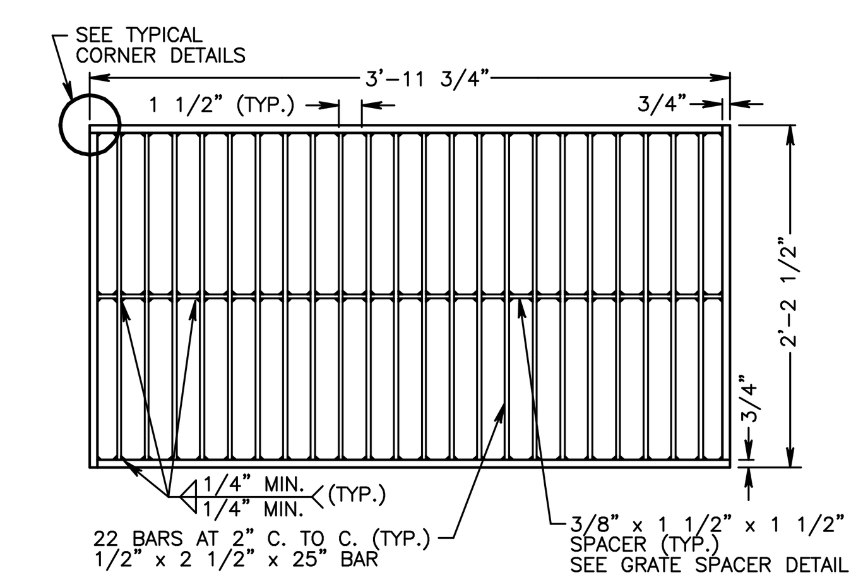
STORM SEWER TRENCH and BEDDING DETAIL
Not To Scale





DETAIL FOR GENERAL REFERENCE ONLY, ACTUAL STRUCTURE TO BE IN COMPLIANCE WITH PennDOT PUB 72, RC-45M, JUN. 1, 2010 OR LATEST EDITION.

PennDOT TYPE 'C' INLET TOP DETAIL
Not To Scale



1. CONSTRUCT STEEL GRATE IN ACCORDANCE WITH PA D.O.T. PUBLICATION 72, (RC-34)
2. WELD STRUCTURAL STEEL GRATES IN ACCORDANCE WITH THE REQUIREMENTS OF PUBLICATION 408, SECTION 1105.03(R)

STRUCTURAL STEEL GRATE
Not To Scale

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

REVISIONS

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE

Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

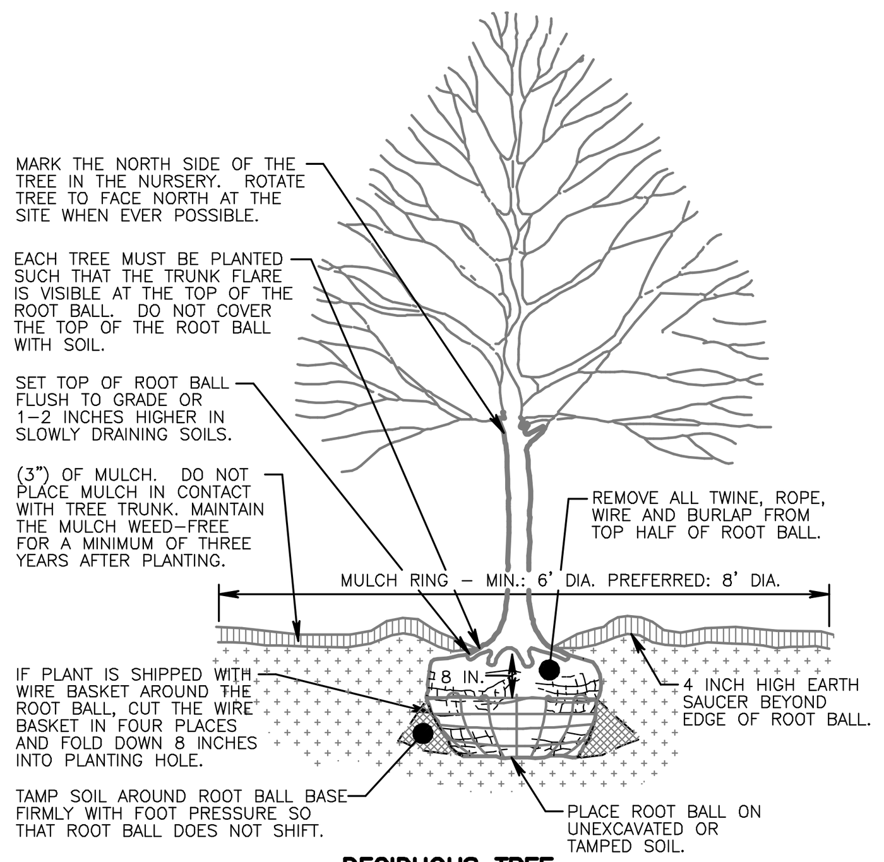
Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

PROJECT CONSTRUCTION DETAILS 'A'
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-10_Details
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 10 of 16



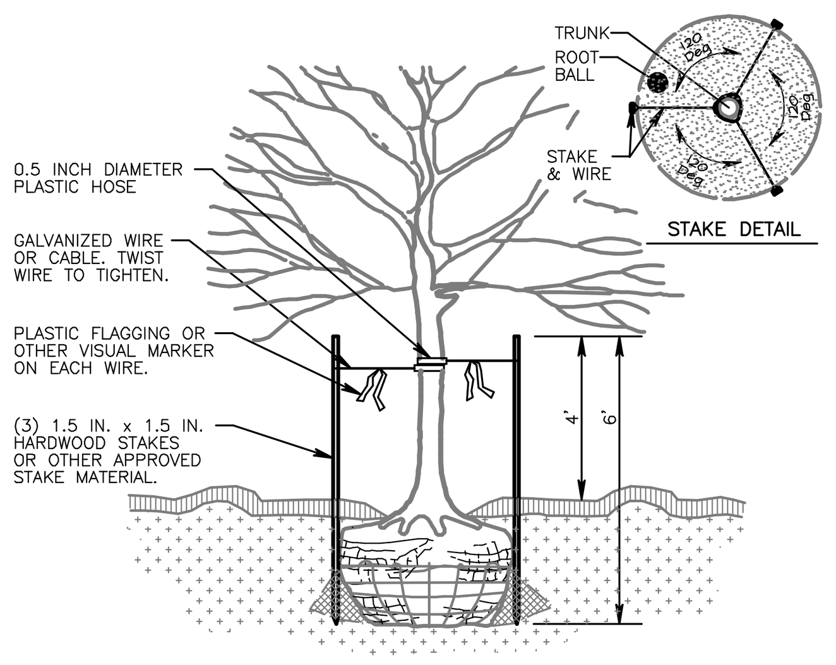
DECIDUOUS TREE

1. TREES WITH POOR QUALITY ROOT BALLS OR ROOT BALLS THAT HAVE BEEN CRACKED OR DAMAGED SHALL BE REJECTED.
2. TREES THAT HAVE GROWN TOO CLOSE TOGETHER IN THE NURSERY, RESULTING IN WEAK TRUNKS SHALL BE REJECTED.
3. TREES WITH CENTRAL LEADER BROKEN SHALL BE REJECTED.
4. TREES THAT DO NOT DISPLAY THE NORMAL CHARACTERISTICS SHALL BE REJECTED.
5. DO NOT HEAVILY PRUNE THE TREE AT PLANTING. PRUNE ONLY CROSSOVER LIMBS, CO-DOMINANT LEADERS AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
6. STAKE TREES ONLY UPON APPROVAL FROM THE LANDSCAPE ARCHITECT. (SEE STAKING DETAIL AS APPROPRIATE)
7. REPLENISHMENT OF MULCH IS ONLY TO REPLACE MULCH LOST. MULCH DEPTH TO BE 3" MAXIMUM AND NOT INCREASED WITH ADDITIONAL LAYERS OF MULCH.

THIS DETAIL ASSUMES THAT THE PLANTING SPACE IS LARGER THAN 8 FEET SQUARE, OPEN TO THE SKY, AND NOT COVERED BY ANY PAVING OR GRATING.

TREE PLANTING DETAIL

Not To Scale

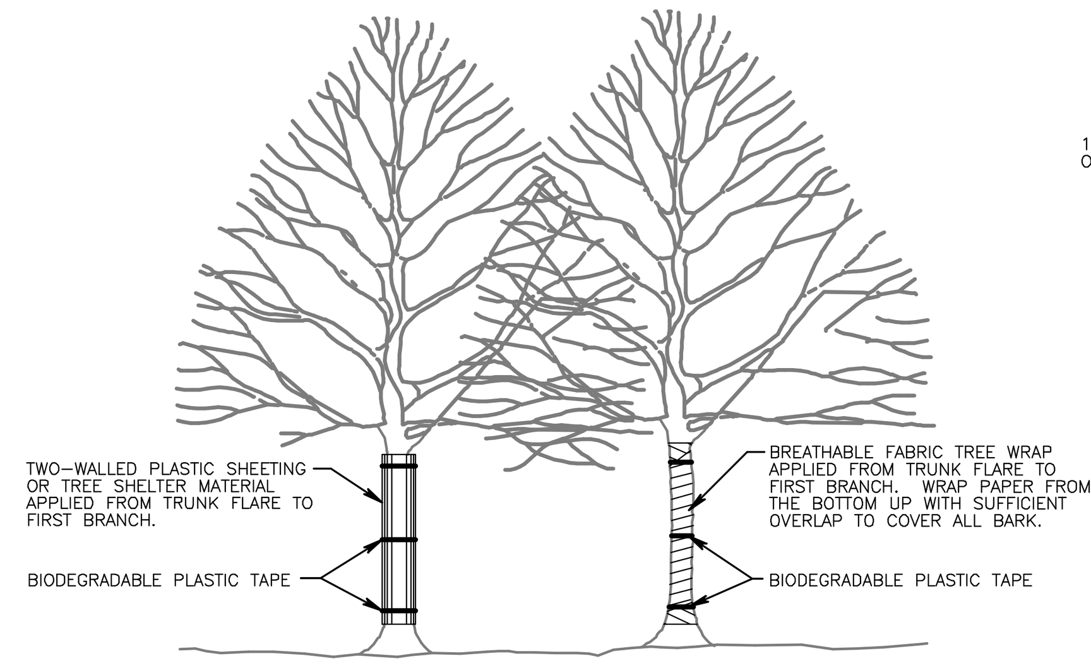


DECIDUOUS TREE

1. ALL STAKES SHALL BE DRIVEN OUTSIDE THE EDGE OF THE ROOT BALL.
2. ASSURE THAT THE BEARING SURFACE OF THE PROTECTIVE COVERING OF THE WIRE OR CABLE AGAINST THE TREE TRUNK IS A MINIMUM 0.5 INCH.
3. REMOVE ALL STAKING AS SOON AS THE TREE HAS GROWN SUFFICIENT ROOTS TO OVER-COME THE PROBLEM THAT REQUIRED THE TREE TO BE STAKED. STAKES SHALL BE REMOVED NO LATER THAN THE END OF THE FIRST GROWING SEASON.
4. TREES NORMALLY DO NOT NEED TO BE STAKED AND STAKING CAN BE HARMFUL TO THE TREE. STAKING SHOULD BE DONE ONLY WITH THE APPROVAL OF THE LANDSCAPE ARCH-ITECT IF IT IS EXPECTED THAT THE TREE WILL NOT BE ABLE TO SUPPORT ITSELF.
5. WIRE OR CABLE SIZES SHALL BE AS FOLLOWS:
   TREES UP TO 2.5 INCH CALIPER – 14 GAUGE
   TREES 2.5 INCH TO 3 INCH CALIPER – 12 GAUGE
6. TIGHTEN WIRE OR CABLE ONLY ENOUGH TO KEEP FROM SLIPPING. ALLOW FOR SOME TRUNK MOVEMENT. PLASTIC HOSE SHALL BE LONG ENOUGH TO ACCOMMODATE 1.5 INCH CALIPER OF TRUNK MOVEMENT.
7. TUCK ANY LOOSE ENDS OF THE WIRE OR CABLE INTO THE WIRE WRAP SO THAT NO SHARP WIRE ENDS ARE EXPOSED.

TREE STAKING DETAIL

Not To Scale

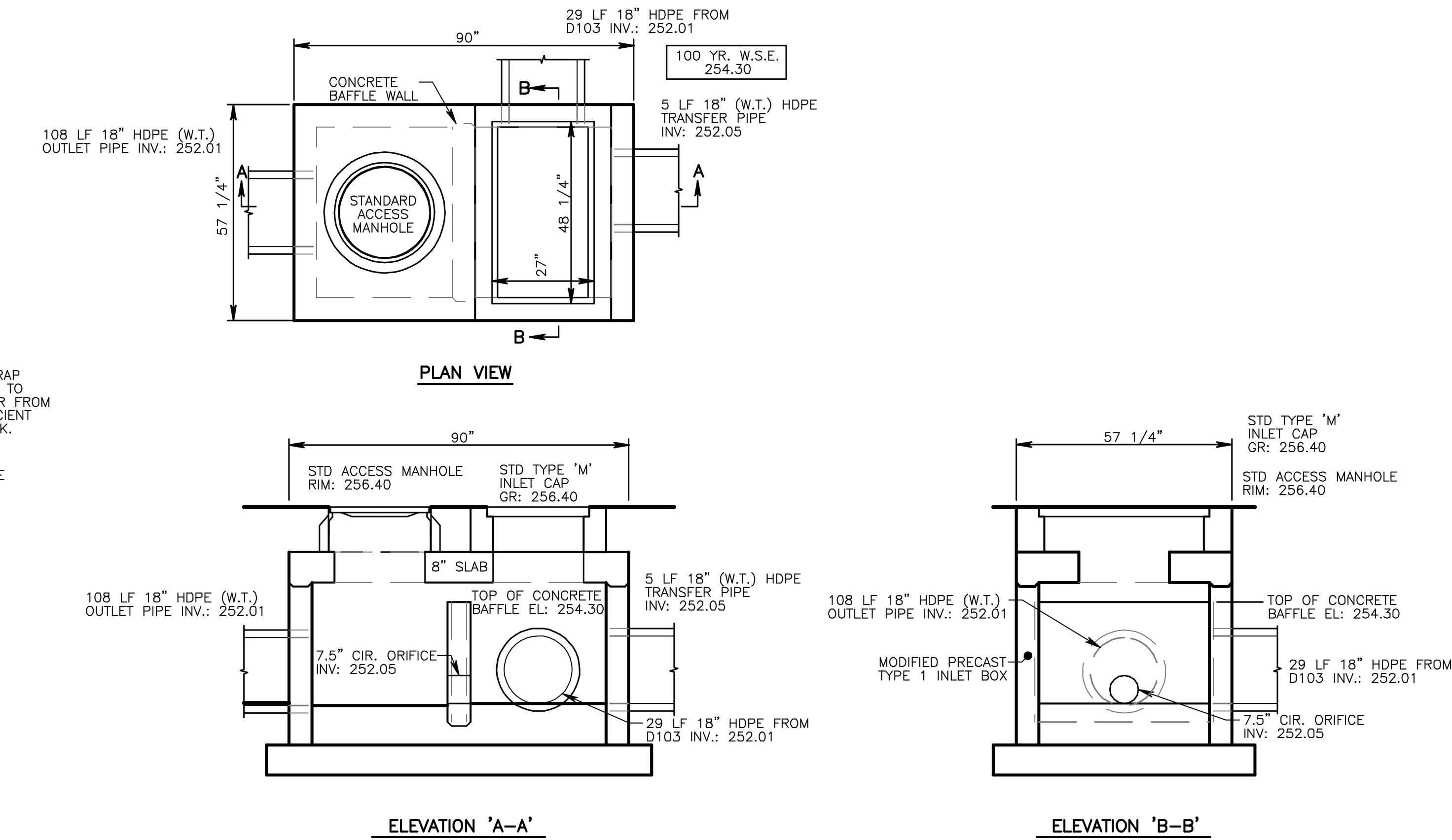


NOTES:

1. APPLY THE PLASTIC SHEETING LOOSELY AROUND THE TRUNK TO LEAVE A 0.5 INCH GAP BETWEEN THE TRUNK AND THE SHEETING.
2. THE TREE WRAP SHOULD BE INSTALLED AT TIME OF PLANTING AND BE REMOVED WHEN DIRECTED BY THE LANDSCAPE ARCHITECT, BUT NO LATER THAN 12 MONTHS AFTER PLANTING.
3. TREES WHOSE NORTH ORIENTATION IS NOT CHANGED FROM THE NURSERY DO NOT NEED TO BE WRAPPED EXCEPT TREES WITH VERY THIN BARK, SUCH AS RED MAPLE, SHOULD BE WRAPPED IF APPROVED BY THE LANDSCAPE ARCHITECT.

TREE WRAPPING DETAIL

Not To Scale



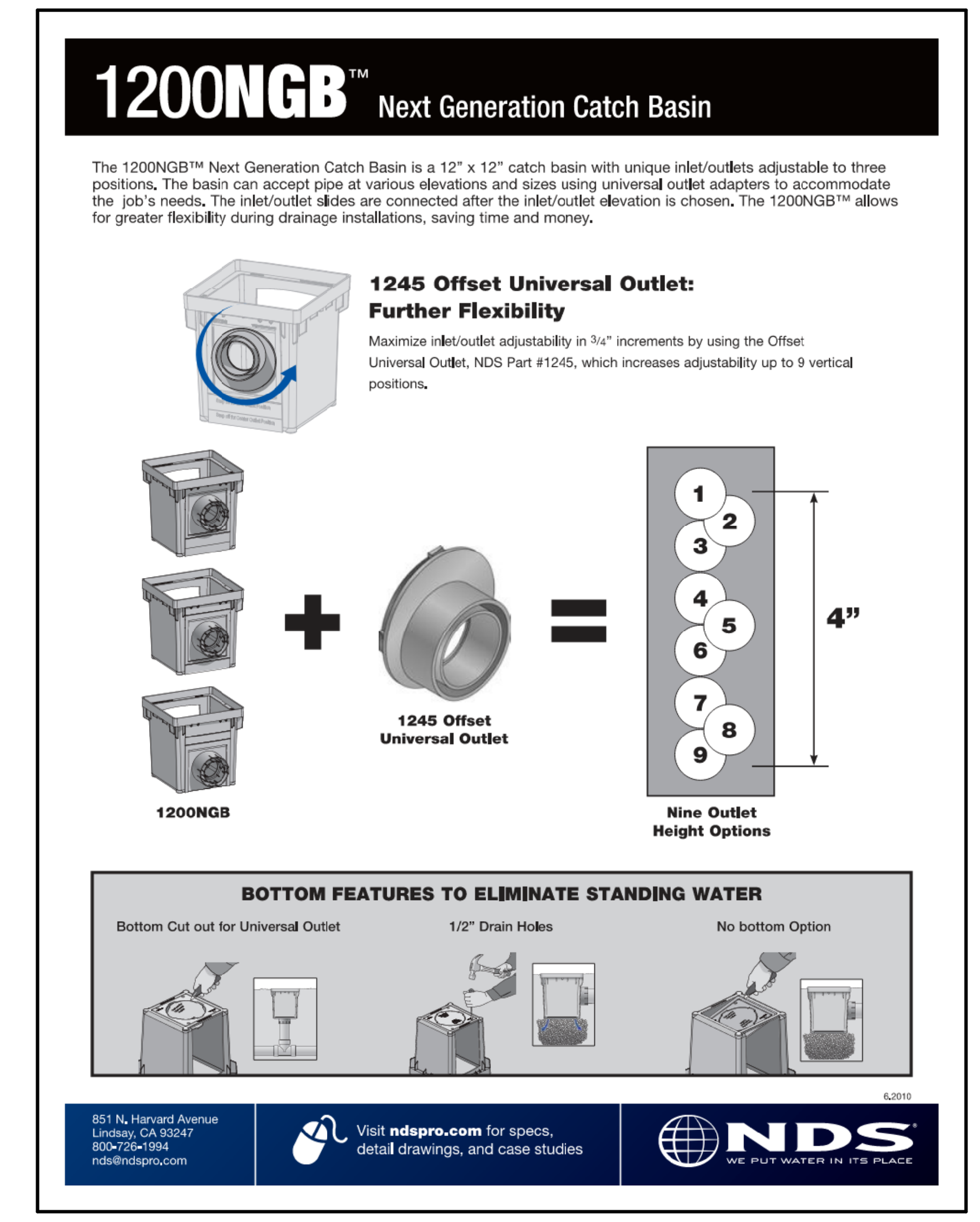
NOTE:

SHOP DRAWINGS, SPECIFICATIONS AND CALCULATIONS TO BE PROVIDED TO THE TOWNSHIP ENGINEER FOR REVIEW AND COMMENT PRIOR TO FABRICATION OF ANY COMPONENT OF THIS STRUCTURE.

STRUCTURE ID: D105

UNDERGROUND BASIN OUTLET STRUCTURE

NOT TO SCALE


1200NGB™ Next Generation Catch Basin

The 1200NGB™ Next Generation Catch Basin is a 12" x 12" catch basin with unique inlet/outlets adjustable to three positions. The basin can accept pipe at various elevations and sizes using universal outlet adapters to accommodate the job's needs. The inlet/outlet slides are connected after the inlet/outlet elevation is chosen. The 1200NGB™ allows for greater flexibility during drainage installations, saving time and money.

1245 Offset Universal Outlet: Further Flexibility

Maximize inlet/outlet adjustability in 3/4" increments by using the Offset Universal Outlet, NDS Part #1245, which increases adjustability up to 9 vertical positions.

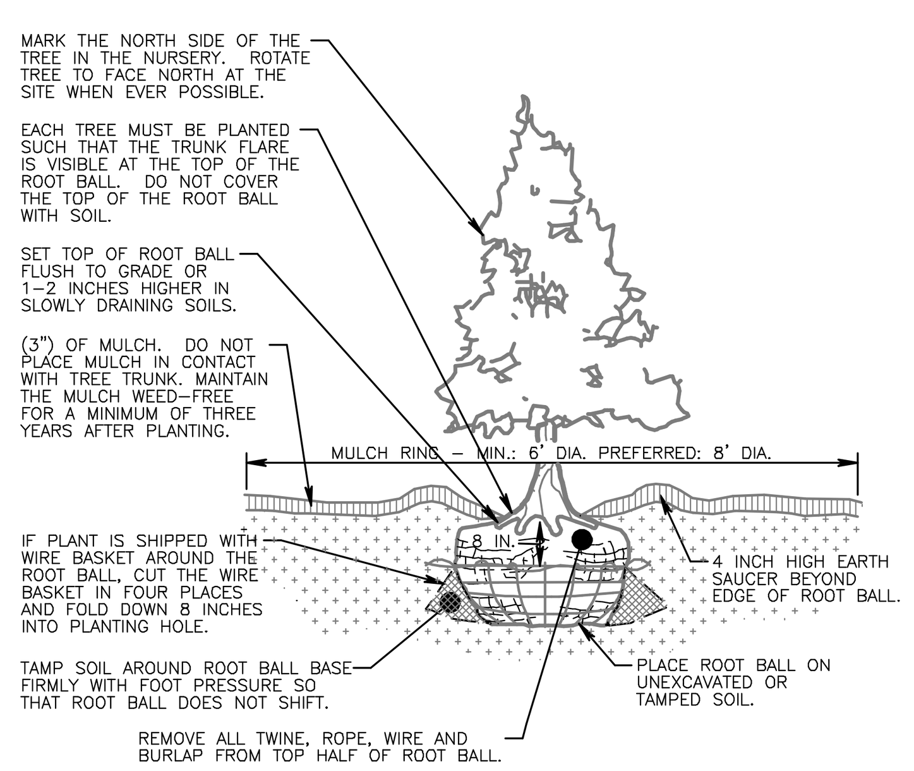
1200NGB — 1245 Offset Universal Outlet — Nine Outlet Height Options — 4"

BOTTOM FEATURES TO ELIMINATE STANDING WATER

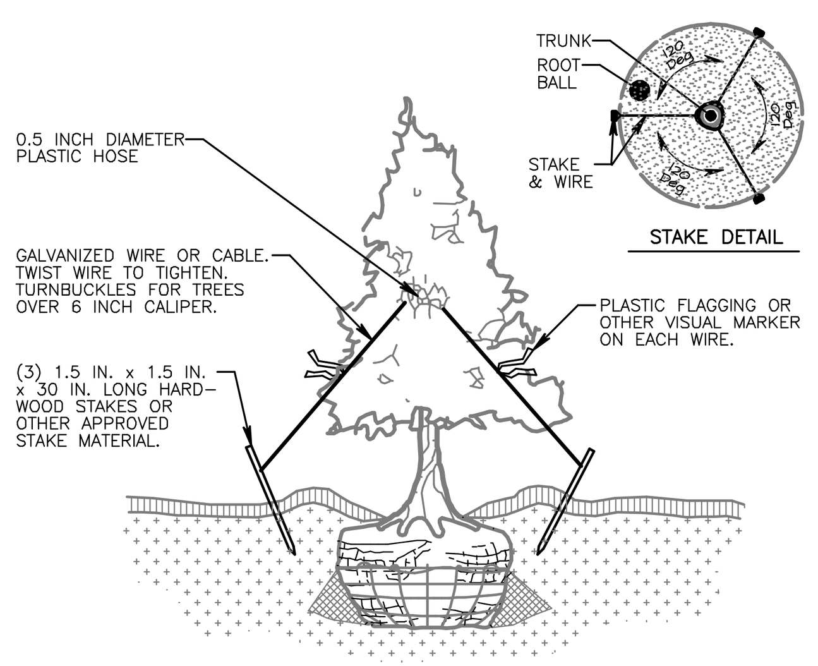
Bottom Cut out for Universal Outlet — 1/2" Drain Holes — No bottom Option

851 N. Harvard Avenue, Lindsay, CA 93247 — Visit ndspro.com for specs, detail drawings, and case studies — NDS

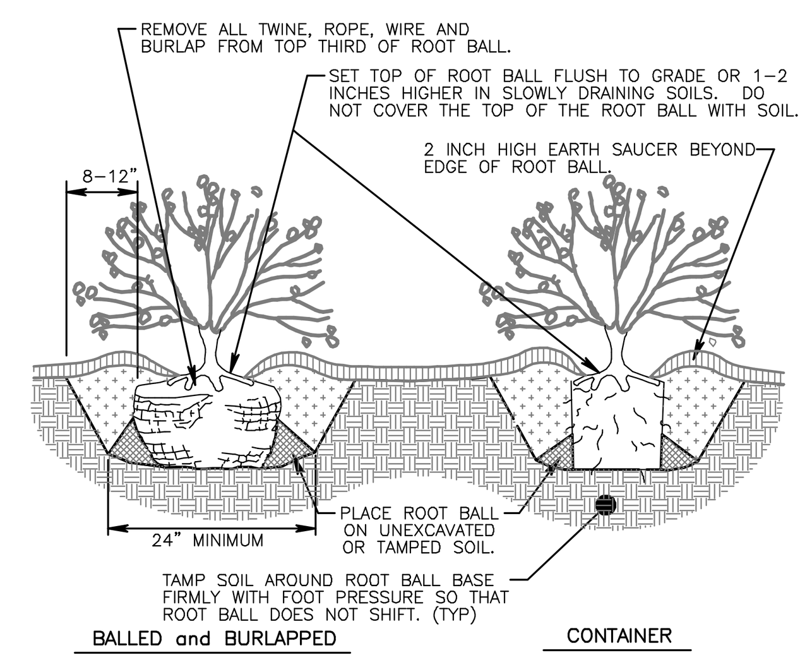
ATRIUM DRAIN INLET DETAIL



EVERGREEN TREE



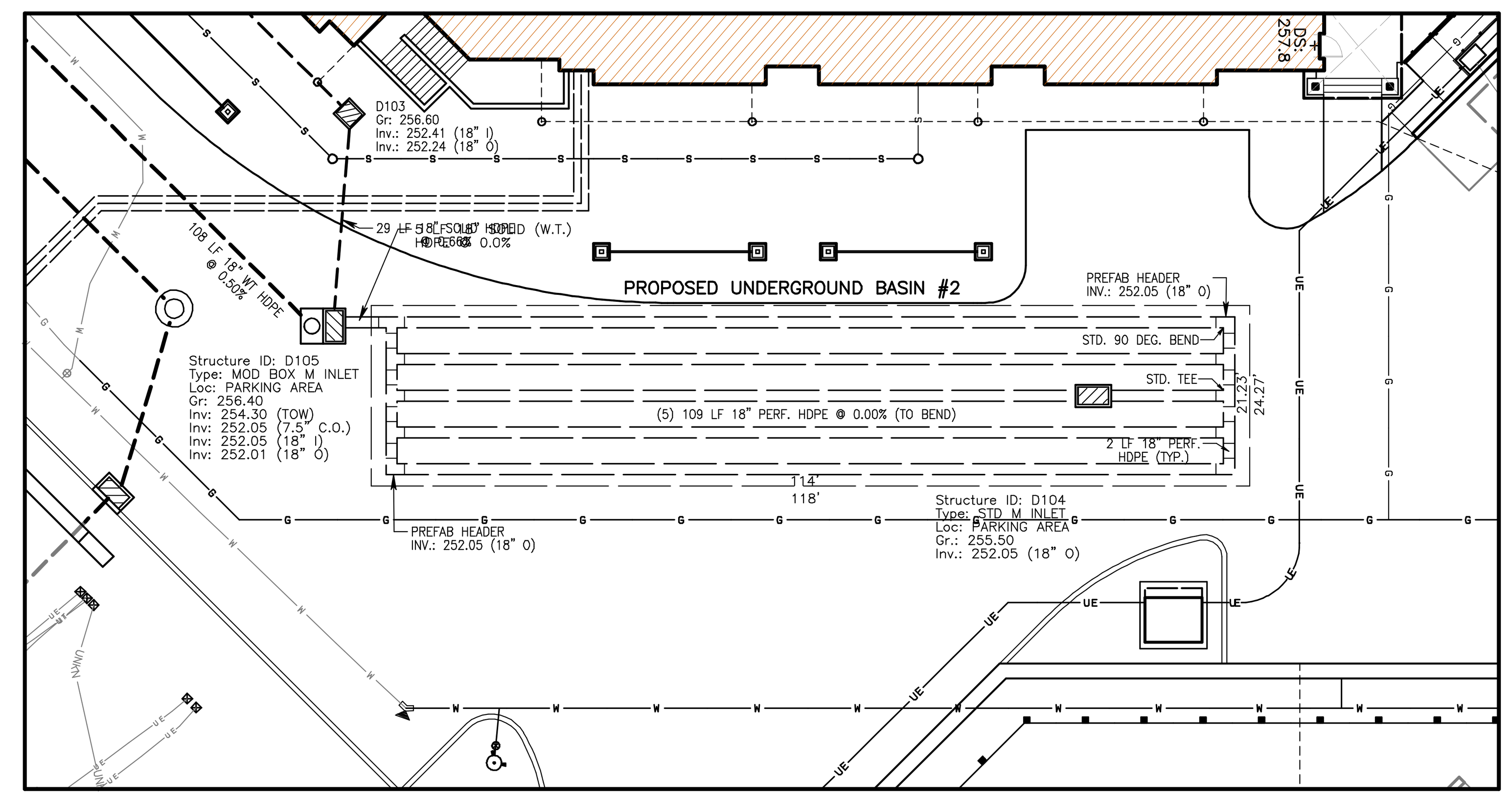
EVERGREEN TREE



1. THREE INCHES (3") OF MULCH. DO NOT PLACE MULCH IN CONTACT WITH TREE TRUNK. MAINTAIN THE MULCH WEED-FREE FOR A MINIMUM OF THREE YEARS AFTER PLANTING.
2. PLANTS WITH POOR QUALITY ROOT BALLS OR ROOT BALLS THAT HAVE BEEN CRACKED OR DAMAGED SHALL BE REJECTED.
3. PLANTS THAT DO NOT DISPLAY THE NORMAL CHARACTERISTICS FOR THEIR SPECIES SHALL BE REJECTED.
4. DO NOT HEAVILY PRUNE THE SHRUBS AT PLANTING. PRUNE ONLY BROKEN OR DEAD BRANCHES SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED, HOWEVER DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
5. MARK THE NORTH SIDE OF THE TREE IN THE NURSERY. ROTATE TREE TO FACE NORTH AT THE SITE WHEN EVER POSSIBLE.

DECIDUOUS & EVERGREEN SHRUB PLANTING

Not To Scale



UNDERGROUND PIPE STORMWATER SYSTEM #2

SCALE: 1" = 20'


NDS TECHNICAL SPECIFICATIONS

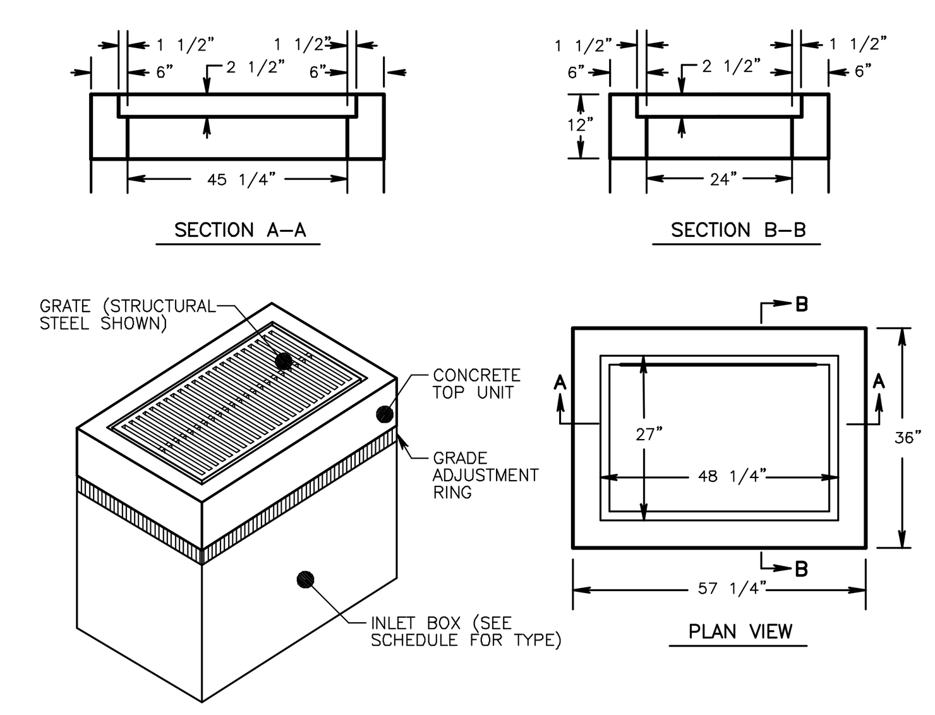
12" x 12" ATRIUM GRATE

6" — 1 1/8" — 11 3/4" — 3/8" Grate Opening

Material: UV Protected High Density Polyethylene (HDPE)
Weight: 1.74 lbs
Colors: Green (1280), Black (1290)
Fits: Use with 12" Catch basin series
Grate Openings: 50.60 in^2
Will accommodate 154.79 gallons per minute with 1/2" of head

851 N. Harvard Avenue, Lindsay, CA 93247 — Visit ndspro.com for specs, detail drawings, and case studies — NDS

ATRIUM GRATE DETAIL

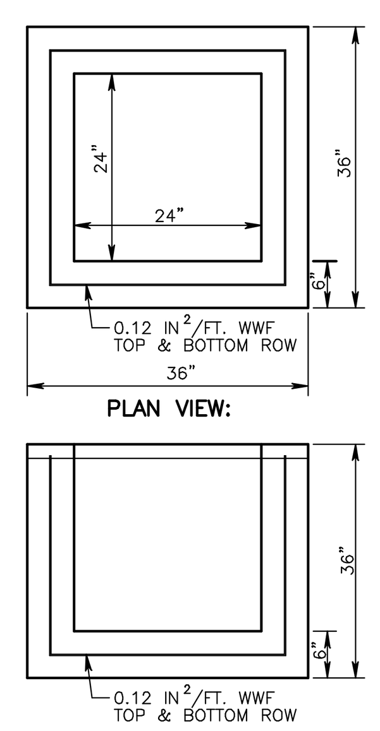


DETAIL FOR GENERAL REFERENCE ONLY, ACTUAL STRUCTURE TO BE IN COMPLIANCE WITH PennDOT PUB 72, RC-45M, JUN. 1, 2010 OR LATEST EDITION.

PennDOT TYPE 'M' INLET TOP DETAIL

Not To Scale

ALL INLETS IN AREAS TO BE PAVED ARE TO BE BACKFILLED WITH 2A MATERIAL

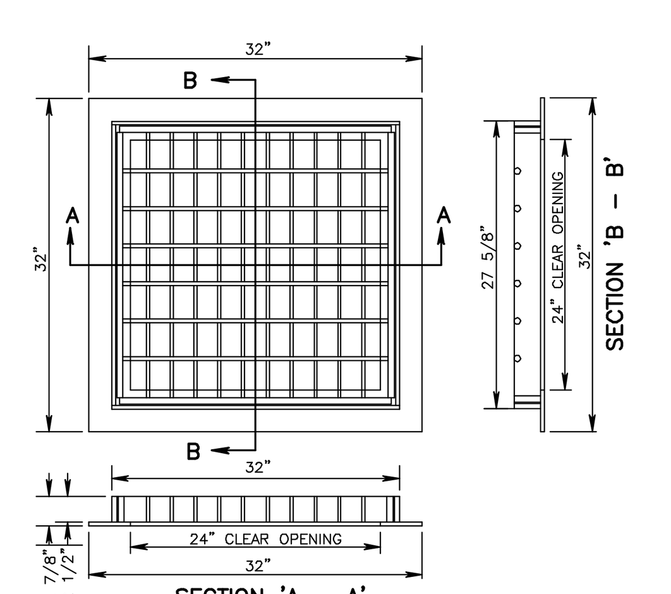


NOTES:

1. MATERIALS IN THE CONSTRUCTION TO COMPLY WITH THE REQUIRE-MENTS OF PA DOT 408, SECT. 714 FOR PRECAST UNITS.
2. ALL CONCRETE SHALL BE 4500 PSI OR BETTER AND SHALL COMPLY WITH THE REQUIREMENTS OF FORM 408, SECT. 704.1(3) FOR CLASS OF CEMENT CONCRETE.
3. CONCRETE LOW FLOW CHANNELS (3300 PSI MINIMUM) SHALL BE POURED IN THE BASE OF THE STRUCTURES AFTER THE STRUCTURES AND PIPING ARE INSTALLED.
4. ALL TOLERANCES SHALL BE 1 1/2" +/-.
5. ALL REINFORCEMENT SHALL COMPLY WITH THE REQUIREMENTS OF FORM 408, SECTION 709 FOR REINFORCEMENT STEEL.
6. ALL REINFORCEMENT SHALL HAVE A MINIMUM CLEARANCE OF 1 1/2" FROM FACE OF CONCRETE.
7. ALL INLET BOXES, WITH A DEPTH OF 5' OR GREATER, SHALL HAVE CLIMBING RUNGS. CLIMBING RUNGS SHALL BEGIN AT A MAX. A MAX. 24" FROM THE STRUCTURE INVERT, SPACED 12" ON CENTER.
8. ALL INLETS SHALL BE MANUFACTURED IN ACCORDANCE WITH PA DOT STANDARDS FOR HS25 LOADING.
9. A 4" MINIMUM SHALL BE MAINTAINED BETWEEN THE TOP OF THE PIPE OPENING AND THE TOP OF THE BOX IN ACCORDANCE WITH PA DOT RC STANDARDS WHEN APPLICABLE.

24" x 24" PRECAST INLET BOX

Not To Scale

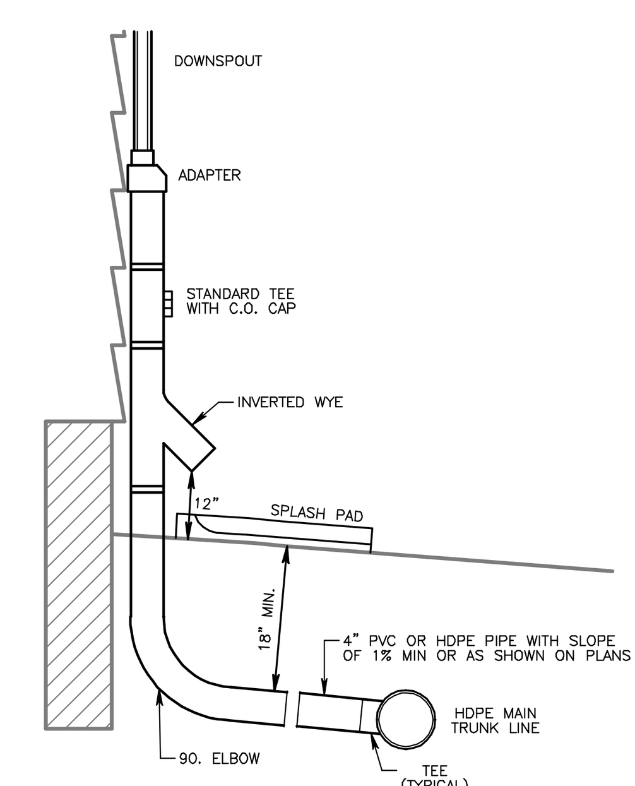


NOTES:

1. BEARING BARS SHALL CONFORM TO ASTM A+36MOD STEEL (MIN. 50 K.P.S.I. YEILD).
2. ALL OTHER MATERIAL SHALL CONFORM TO ASTM A-36.
3. ENTIRE GRATE SHALL BE PAINTED BLACK PER PA DOT SPECIFICATIONS.
4. OPEN AREA = 550 SQUARE INCHES.

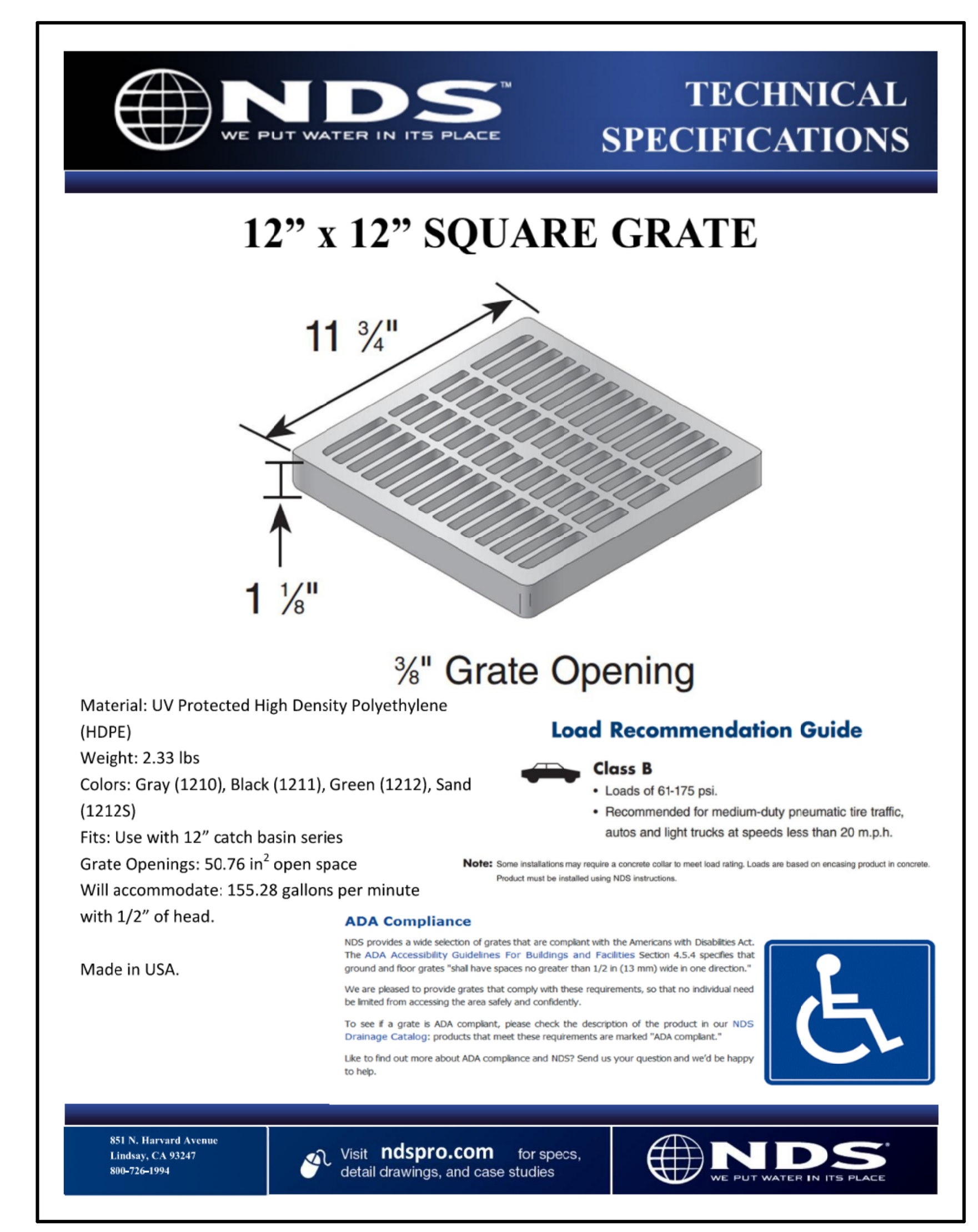
24" x 24" FRAME and BICYCLE SAFE GRATE

Not To Scale



DOWNSPOUT COLLECTION SYSTEM

Not To Scale


NDS TECHNICAL SPECIFICATIONS

12" x 12" SQUARE GRATE

11 3/4" — 1 1/8" — 3/8" Grate Opening

Material: UV Protected High Density Polyethylene (HDPE)
Weight: 2.33 lbs
Colors: Gray (1210), Black (1211), Green (1212), Sand (1212S)
Fits: Use with 12" catch basin series
Grate Openings: 50.76 in^2 open space
Will accommodate: 155.28 gallons per minute with 1/2" of head.

Made in USA.

Load Recommendation Guide

Class B
- Loads of 61-175 psi.
- Recommended for medium-duty pneumatic tire traffic, autos and light trucks at speeds less than 20 m.p.h.

Note: Some installations may require a concrete collar to meet load rating. Loads are based on encasing product in concrete. Product must be installed using NDS instructions.

ADA Compliance

NDS provides a wide selection of grates that are compliant with the Americans with Disabilities Act. The ADA Accessibility Guidelines For Buildings and Facilities Section 4.5.4 specifies that ground and floor grates "shall have spaces no greater than 1/2 in (13 mm) wide in one direction."

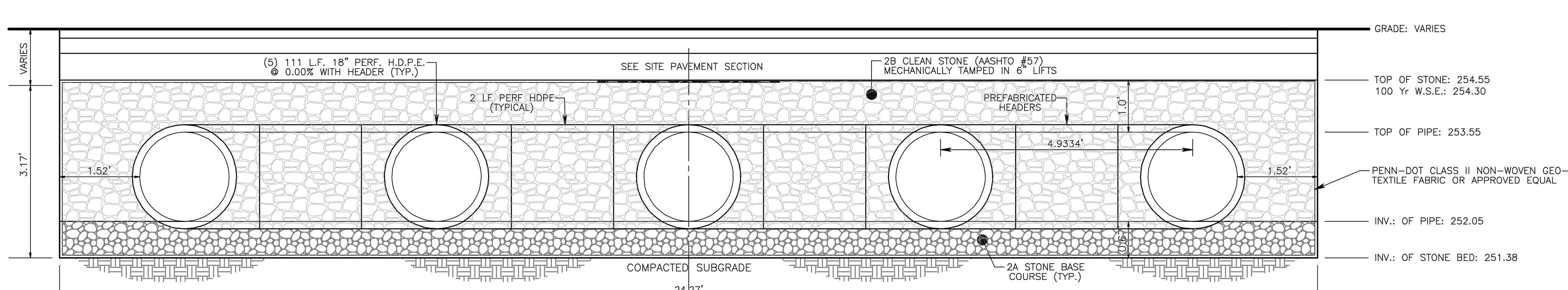
We are pleased to provide grates that comply with these requirements, so that no individual need be limited from accessing the area safely and confidently.

To see if a grate is ADA compliant, please check the description of the product in our NDS Drainage Catalog: products that meet these requirements are marked "ADA compliant."

Like to find out more about ADA compliance and NDS? Send us your question and we'd be happy to help.

851 N. Harvard Avenue, Lindsay, CA 93247, 800-726-1994 — Visit ndspro.com for specs, detail drawings, and case studies — NDS

AREA DRAIN GRATE DETAIL



UNDERGROUND PIPE STORMWATER SYSTEM #2

Not To Scale

Print Date: Jul. 8, 2025 (12:28) Print Scale: 1" = 20.00'
File Name: G:\2000\00-0606\00-0606D.pro

REVISIONS

No.	DATE:	DESCRIPTION:
1	05/30/25	Twp. Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & WEF Update

REGISTERED PROFESSIONAL ENGINEER — TIMOTHY P. WOODROW — No. 038735-E — COMMONWEALTH OF PENNSYLVANIA

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811 — A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

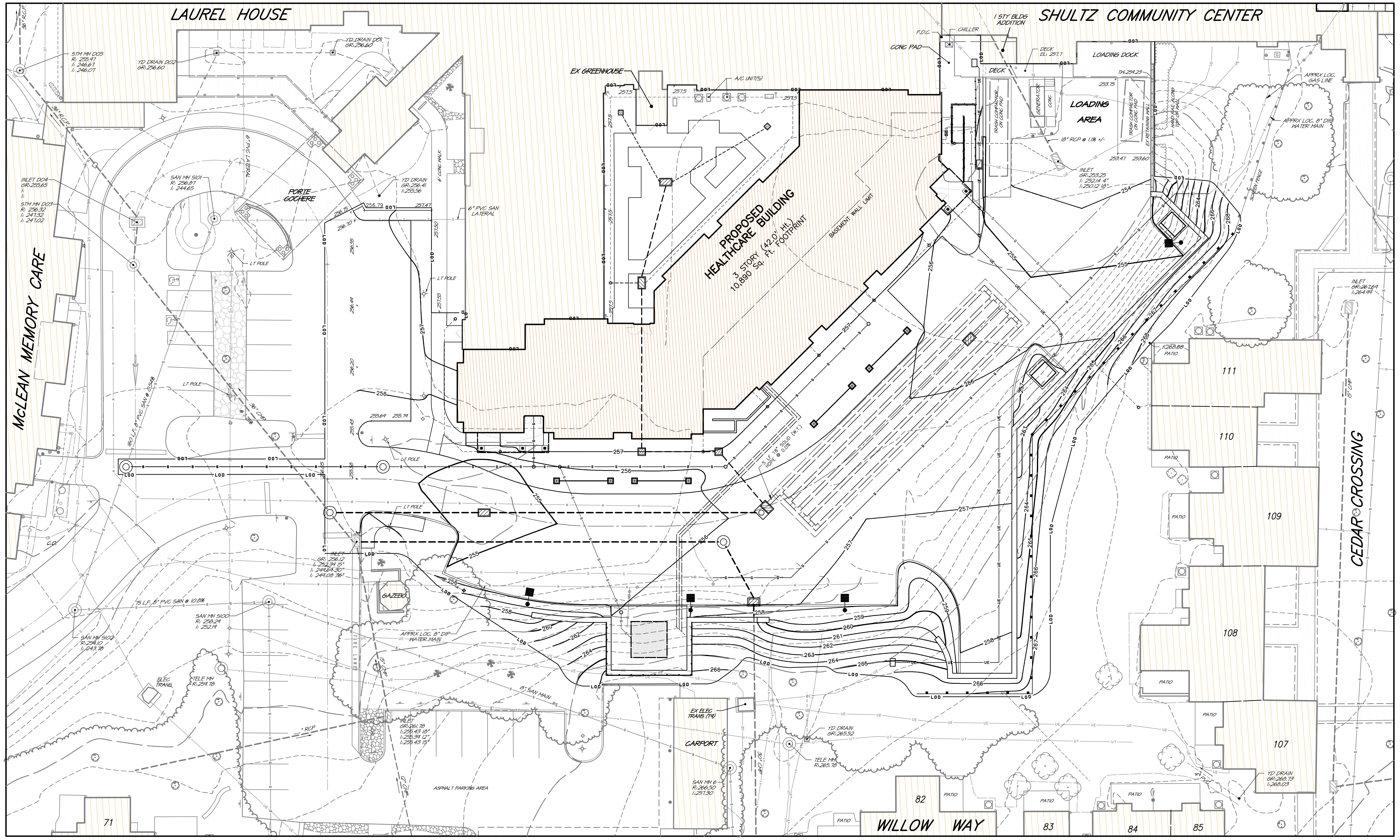
PROJECT CONSTRUCTION DETAILS 'B'

MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-11_Details
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025
Sheet No: 11 of 16



PLAN LEGEND

EXISTING (EX) FEATURES

EX DRIVE CENTERLINE
EX TOPOGRAPHIC CONTOURS
EX FENCE LINE
EX TREE DRIP LINE
EX DECIDUOUS TREE
EX CONIFEROUS TREE
EX MAILBOX
EX SIGN
EX LIGHT/LAMP POST
EX SEWER CLEAN OUT
EX WATER VALVE
EX FIRE HYDRANT
EX GAS VALVE
EX STORM SEWER AND INLET
EX SANITARY SEWER & MH
EX U.G. ELECTRIC LINE
EX GAS MAIN & SERVICE
EX WATER MAIN & SERVICE
EX TELE COMMUNICATIONS

PROPOSED (PR) FEATURES

PR TREE DRIP LINE
PR SIGNAGE
PR PROTECTION BOLLARD
PR WOOD SCREEN FENCING
PR WALL SCREEN FENCING
EX | PR SPOT ELEVATION
PR TOPOGRAPHIC CONTOURS
PR STORM SEWER AND INLET
PR SANITARY SEWER & MH
PR SEWER CLEAN OUT
PR LIGHTING FIXTURE
PR U.G. ELECTRIC LINE
PR GAS MAIN & SERVICE
PR WATER MAIN & SERVICE
PR TELE COMMUNICATIONS

EROSION CONTROL FEATURES

COMPOST FILTER SOCK
ORANGE CONSTRUCTION FENCING
LIMIT OF DISTURBANCE
INLET FILTER BAG

Design Point discharges to the existing Basin on the Campus. Post-development runoff rates and volumes to this basin are reduced when compared to predevelopment conditions, therefore, there is no negative impact to this existing Basin with the implementation of the proposed improvements.

Project Construciton Area:
1.42 Acres

Project Disturbance: *
0.64 Acres

* *Re-paving of the existing Asphalt Area not counted against Project Disturbance.*

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

REVISIONS

PLAN NORTH

GENERAL PLAN NOTES

Refer to Sht 2 'RECORD PLAN – OVERALL TRACT' for all 'EXISTING FEATURES and SURVEY NOTES', Sht 5 'PROJECT AREA LAYOUT PLAN' for all 'DEVELOPMENT NOTES', Sht 6 'PROJECT AREA IMPROVEMENTS PLAN' for all 'CONSTRUCTION DESIGN NOTES'.

BASE EROSION CONTROL DESIGN:

1. The Erosion & Sedimentation Control Plan shall minimize the extent and duration of earth disturbance to the greatest extent possible by outlining an efficient construction sequence to complete the proposed improvements as quickly as possible while utilizing the following Erosion and Sedimentation Controls, as shown and detailed on the plan, to minimize any sediment-laden runoff during construction; Compost Sock Sediment Trap 'A', Sediment Basin 'B' with Skimmer, Rock Construction Entrances, Inlet Filter Bags, and Compost Filter Socks.
2. The Erosion & Sedimentation Control Plan shall maximize protection of existing drainage features and vegetation to the greatest extent possible by staking and flagging the Limit of Disturbance to avoid impact to any natural drainage features.
3. The Erosion & Sedimentation Control Plan shall minimize soil compaction to the greatest extent possible by minimizing traffic within the area of any utilized Sediment Basin, Sediment Trap, or similiar BMP once it is constructed and functioning in an effort to preserve natural infiltration rates for Post-Construction conversion. Soil compaction shall also be avoided by loosening the subsoil to a depth of 3 to 5 inches to permit the bonding of topsoil to the surface areas and scarification of 6 to 12 inches for compacted soils prior to seeding. Fencing off of infiltration areas may be implemented as noted on the plans or in the provided Construction Sequence.
4. The Erosion & Sedimentation Control Plan outlines controls to prevent and/or minimize the generation of increased stormwater through the use of a floating skimmer within Sediment Basin 'B' to capture slow, and cool runoff while allowing the natural infiltration properties in this location the greatest amount of time to infiltrate.
5. Any proposed impervious areas, Rooftops, Pavement and Sidewalk areas, Etc., have the potential to increase thermal impacts to the watershed. Through the use of the proposed BMPs identified on the Plan and specifications for this Project, runoff is captured, slowed, and cooled to the greatest extent possible; thereby reducing the potential for thermal impacts to the watershed as much as possible.
6. There are no naturally occurring geologic conditions on-site that could potentially cause pollution. All Erosion and Sedimentation Controls (Sedimentation Basin(s), Compost Socks, Etc.) are proposed around the project site in an effort to minimize any construction related pollution from leaving the site.
7. If bedrock is encountered during the construction of the proposed BMPs, the project engineer shall be consulted to ensure that the proposed BMPs will still function as designed.
8. Sediment-laden runoff is an anticipated construction waste. Through the use of the proposed Erosion Control Device outlined on this plan set, sediment-laden runoff has been mitigated and prevented from leaving the project site to the greatest extent possible.
9. The project site can be referenced on the LANSDALE U.S.G.S. Quadrangle Map.
10. All utility trenching spoils shall be stored upslope of the trench during digging to prevent sediment-laden runoff from leaving the area of work. Upon completion of the installation and backfill activities, any remaining stockpile shall be immediately relocated to the designated stockpile location and all disturbance immediately stabilized with a permanent seed and mulch mixture applied at the recommended rates.

LIMITATION OF SOILS PERTAINING TO EARTHMOVING

SOILS NAME:	CUTBANKS CAVE	CORROSIVE TO CONCRETE/STEEL	DROUGHTY	EASILY ERODIBLE	FLOODING	DEPTH TO SATURATED ZONE/SEASONABLE HIGH WATER TABLE	HYDRIC/HYDRIC INCLUSIONS	LOW STRENGTH/LANDSLIDE PRONE	SLOW PERCOLATION	PIPING	POOR SOURCE OF TOPSOIL	FROST ACTION	SHRINK – SWELL	POTENTIAL SINKHOLE	PONDING	WETNESS
Udorthents	X	C/S	X	X				X	X	X		X				

SPECIFIC LIMITATION RESOLUTIONS:

- CUTBANKS CAVE
  Trench wall reinforcement shall be provided if necessary to stabilize construction related trenching.
- CORROSIVE TO CONCRETE/STEEL
  Soils testing should be conducted to determine the actual risk of corrosion to concrete or steel and if necessary, concrete mixes adjusted and steel coated to withstand the soil corrosiveness.
- DROUGHTY
  Special consideration should be applied to ensure that seed mixes and proposed plantings have sufficient water and nutrients within the soil to establish growth.
- EASILY ERODIBLE
  Additional erosion control blanketing shall be considered to control any potential erosion in sloped areas.
- DEPTH TO SATURATED ZONE/SEASONAL HIGH WATER TABLE
  Special consideration shall be taken in the design of all proposed BMPs to ensure that any existing saturated zones or high water tables will not impact the proposed design.
- HYDRIC/HYDRIC INCLUSIONS
  Hydric soils shall be scarified and mixed with a planting soils mixture and/or topsoil to improvie the vegetative properties of the soil.
- LOW STRENGTH/LANDSLIDE PRONE
  Additional erosion control mats or other slope reinforcment shall be considered to assist in landslide and erosion prevention.
- SLOW PERCOLATION
  Scarification of the subsoil shall be a consideration during final grading and topsoil placement to improve the infiltration rates of the subsoil.
- PIPING
  Extra care must be taken in site grading to locate and identify any potential sinkhole areas, and if discovered, immediate measures shall be taken to remediate any sinkhole locations.
- POOR SOURCE OF TOPSOIL
  If on-site stockpiles are deemed to be poor for use in topsoil, improved topsoil shall be imported to the site and utilized for final site grading.
- FROST ACTION
  Special care must be taken to ensure that the soil is not frozen solid when grading the site to the proposed elevations. If large areas of the project site appear to be frozen, the soil shall be thawed before being set to final design elevations.
- WETNESS
  Scarification of the subsoil shall be a consideration during final grading and topsoil placement to improve the infiltration rates of the subsoil. Additional plantings shall be considered to be placed on-site to assist in removing extra wetness from the soil.

MAINTENANCE PROGRAM for EROSION & SEDIMENT CONTROL MEASURES

All Erosion and Sediment Control Measures require inspection and maintenance as specified below. A written report shall be compiled and kept on-site at all times outlining any necessary maintenance and repair that has been performed on the Erosion & Sediment Control Measures. The report shall be updated weekly and after each runoff event requiring BMP inspection. The owners, their successors, or its assigns, shall assume all responsibility for the cost associated with the inspection, cleaning of the system(s), engineering fees and ultimately any costs associated with the required repairs and/or replacement of said facilities.

TEMPORARY ROCK CONSTRUCTION ENTRANCE: (CONSTANT MAINTENANCE)

Rock construction entrance thickness shall be constantly maintained to the specified dimensions by adding rock. A stockpile shall be maintained on site for this purpose. All sediment deposited on paved roadways shall be removed and returned to the construction site immediately. If excessive amounts of sediment are being deposited on roadway, extend length of rock construction entrance by 50-foot increments until condition is alleviated or install wash rack. Washing the roadway or sweeping the deposits into roadway ditches, sewers, culverts, or other drainage courses is not acceptable.

PUMPED WATER FILTER BAG: (DAILY MAINTENANCE)

Filter bags shall be inspected daily. If any problem is detected, pumping shall cease immediately and not resume until the problem is corrected.

COMPOST SOCK CONCRETE WASHOUT AREA: (DAILY MAINTENANCE)

1. All concrete washout facilities should be inspected daily. Damaged or leaking washouts should be deactivated and repaired or replaced immediately.
2. Accumulated materials should be removed when they reach 75% capacity.
3. Plastic liners should be replaced with each cleaning of the washout facility.

ROCK FILTER OUTLET: (DAILY MAINTENANCE)

Sediment shall be removed when accumulations reach 1/3 the height of the outlet.

RIPRAP APRON: (WEEKLY MAINTENANCE & AFTER EACH RUNOFF EVENT)

All aprons shall be inspected at least weekly and after each runoff event. Displaced riprap within the apron shall be replaced immediately.

EROSION CONTROL BLANKET: (WEEKLY MAINTENANCE & AFTER EACH RUNOFF EVENT)

Blanketed areas shall be inspected weekly and after each runoff event until perennial vegetation is established to a minimum uniform 70% coverage throughout the blanketed area. Damaged or displaced blankets shall be resotred or replaced within 4 calendar days.

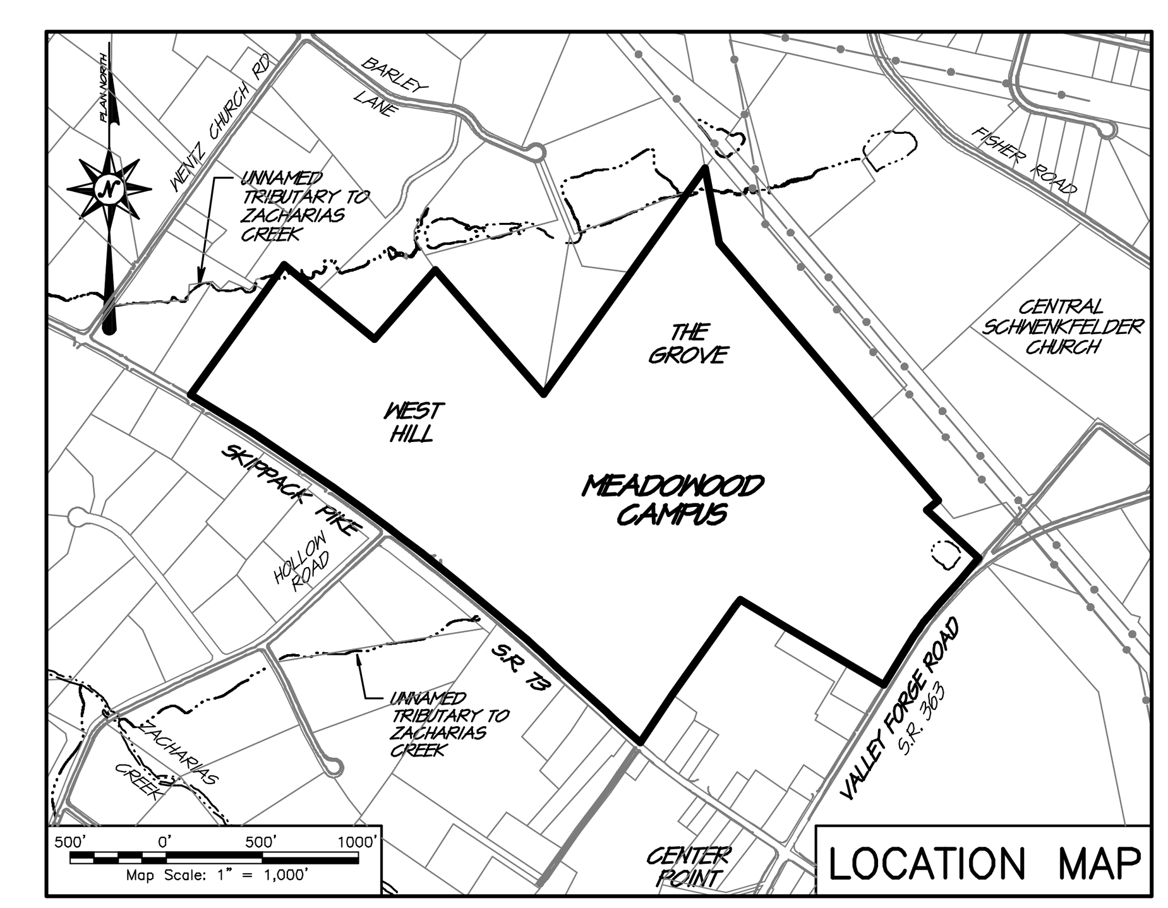
COMPOST FILTER SOCK: (WEEKLY MAINTENANCE & AFTER EACH RUNOFF EVENT)

Compost filter socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection. Bio-degradable filter socks shall be replaced after 6 months; photodegradable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's specifications.

COMPOST FILTER SOCK & PROTECTION FENCING SCHEDULE

Sock No.	Location	Type	Sock Size	Slope Length Above Sock	Slope Above Sock (%)	Length (L.F.)

Note: additional specifications for each proposed sock can be found at www.filtrexx.com



LOCATION MAP

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE
Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

10' 0' 20'
Scale In Feet (1" = 20')

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION
EROSION & SEDIMENT CONTROL PLAN
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-12_ES-PLAN
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025

Print Date: Jul 8, 2025 (12:27) Print Scale: 1" = 20.00'
File Name: G:\2000\00-0606D\00-0606D.pro

STANDARD EROSION CONTROL PLAN NOTES

1. All earth disturbances, including clearing and grubbing as well as cuts and fills shall be done in accordance with the approved E&S plan. A copy of the approved drawings (stamped, signed and dated by the reviewing agency) must be available at the project site at all times. The reviewing agency shall be notified of any changes to the approved plan prior to implementation of those changes. The reviewing agency may require a written submittal of those changes for review and approval at its discretion.
2. At least 7 days prior to starting any earth disturbance activities, including clearing and grubbing, the owner and/or operator shall invite all contractors, the landowner, appropriate municipal officials, the E&S plan preparer, the PCSM plan preparer, the licensed professional responsible for oversight of critical stages of implementation of the PCSM plan, and a representative from the local conservation district to an on-site preconstruction meeting.
3. At least 3 days prior to starting any earth disturbance activities, or expanding into an area previously unmarked, the Pennsylvania One Call System Inc. shall be notified at 1-800-242-1776 or 811 for the location of existing underground utilities.
4. All earth disturbance activities shall proceed in accordance with the sequence provided on the plan drawings. Deviation from that sequence must be approved in writing from the local conservation district or by the Department prior to implementation.
5. Areas to be filled are to be cleared, grubbed, and stripped of topsoil to remove trees, vegetation, roots and other objectionable material.
6. Clearing, grubbing, and topsoil stripping shall be limited to those areas described in each stage of the construction sequence. General site clearing, grubbing and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the BMP sequence for that stage or phase have been installed and are functioning as described in the E&S plan.
7. At no time shall construction vehicles be allowed to enter areas outside the limit of disturbance boundaries shown on the plan maps. These areas must be clearly marked and fenced off before clearing and grubbing operations begin.
8. Topsoil required for the establishment of vegetation shall be stockpiled at the location(s) shown on the plan map(s) in the amount necessary to complete the finish grading of all exposed areas that are to be stabilized by vegetation. Each stockpile shall be protected in the manner described on the plan drawings. Stockpile heights shall not exceed 35 feet. Stockpile slopes shall be 2H:1V or flatter.
9. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to minimize the potential for erosion and sediment pollution and notify the local conservation district and/or the regional office of the Department.
10. All building materials and wastes shall be removed from the site and recycled or disposed of in accordance with the Department's Solid Waste Management Regulations at 25Pa. Code 260.1 et seq., 271.1, and 287.1 et. seq. No building materials or wastes or unused building materials shall be burned, buried, dumped, or discharged at the site.
11. All off-site waste and borrow areas must have an E&S plan approved by the local conservation district or the Department fully implemented prior to being activated.
12. The contractor is responsible for ensuring that any material brought on site is clean fill. Form FP-001 must be retained by the property owner for any fill material affected by a spill or release of a regulated substance but qualifying as clean fill due to analytical testing.
13. All pumping of water from any work area shall be done according to the procedure described in this plan, over undisturbed vegetated areas.
14. Until the site is stabilized, all erosion and sediment BMPs shall be maintained properly. Maintenance shall include inspections of all erosion and sediment BMPs after each runoff event on a weekly basis. All preventative and remedial maintenance work, including clean out, repair, replacement, regrading, reseeding, remulching and renetting must be performed immediately. If the E&S BMPs fail to perform as expected, replacement BMPs, or modifications of those installed will be required.
15. A log showing dates that E&S BMPs were inspected as well as any deficiencies found and the date they were corrected shall be maintained on the site and be made available to conservation district officials at the time of inspection. All inspections shall be logged onto DEP form 3150-FM-BWEW0083 dated 2/2012 and kept on site at all times.
16. Sediment tracked onto any public roadway or sidewalk shall be returned to the construction site by the end of each work day and disposed in the manner described in this plan. In no case shall the sediment be washed, shoveled, or swept into any roadside ditch, storm sewer, or surface water.
17. All sediment removed from BMPs shall be disposed of in the manner described on the plan drawings.
18. Areas which are to be topsoiled shall be scarified to a minimum depth of 3 to 5 inches - 6 to 12 inches on compacted soils - prior to placement of topsoil. Areas to be vegetated shall have a minimum 4 inches of topsoil in place prior to seeding and mulching. Fill outslopes shall have a minimum of 2 inches of topsoil
19. All fills shall be compacted as required to reduce erosion, slippage, settlement, subsidence or other related problems. Fill intended to support buildings, structures and conduits, etc. shall be compacted in accordance with local requirements or codes.
20. All earthen fills shall be placed in compacted layers not to exceed 9 inches in thickness.
21. Fill materials shall be free of frozen particles, brush, roots, sod, or other foreign or objectionable materials that would interfere with or prevent construction of satisfactory fills.
22. Frozen materials or soft, mucky, or highly compressible materials shall not be incorporated into fills.
23. Fill shall not be placed on saturated or frozen surfaces.
24. Seeps or springs encountered during construction shall be handled in accordance with the standard and specification for subsurface drain or other approved method.
25. All graded areas shall be permanently stabilized immediately upon reaching finished grade. Cut slopes in competent bedrock and rock fills need not be vegetated. Seeded areas within 50 feet of a surface water, or as otherwise shown on the plan drawings, shall be blanketed according to the standards of this plan.
26. Immediately after earth disturbance activities cease in any area or subarea of the project, the operator shall stabilize all disturbed areas. During non-germinating months, mulch or protective blanketing shall be applied as described in the plan. Areas not at finished grade, which will be reactivated within 1 year, may be stabilized in accordance with the temporary stabilization specifications. Those areas which will not be reactivated within 1 year shall be stabilized in accordance with the permanent stabilization specifications.
27. Permanent stabilization is defined as a minimum uniform, perennial 70% vegetative cover or other permanent non-vegetative cover with a density sufficient to resist accelerated erosion. Cut and fill slopes shall be capable of resisting failure due to slumping, sliding, or other movements.
28. E&S BMPs shall remain functional as such until all areas tributary to them are permanently stabilized or until they are replaced by another BMP approved by the local conservation district of the Department.
29. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, the owner and/or operator shall contact the local conservation district for an inspection prior to removal/conversion of the E&S BMPs.
30. After final site stabilization has been achieved, temporary erosion and sediment BMPs must be removed or converted to a permanent post construction stormwater management BMPs. Areas disturbed during removal or conversion of the BMPs shall be stabilized immediately. In order to ensure rapid revegetation of disturbed areas, such removal/conversions are to be done only during the germinating season.
31. Upon completion of all earth disturbance activities and permanent stabilization of all disturbed areas, areas, the owner and/or operator shall contact the local conservation district to schedule a final inspection.
32. Failure to correctly install E&S BMPs, failure to prevent sediment-laden runoff from leaving the construciton site, or failure to take immediate corrective action to resolve failure of E&S BMPs may result in administrative, civil, and/or criminal penalties being instituted by the Department as defined in Section 602 of the Pennsylvania Clean Streams Law. The Clean Streams Law provides for up to $10,000 per day in civil penalties, up to $10,000 in summary criminal penalties, and up to $25,000 in misdemeanor criminal penalties for each violation.

SITE SPECIFIC NOTES:

33. Concrete wash water shall be handled in the manner described on the plan drawings. In no case shall it be allowed to enter any surface waters or groundwater systems.
34. All channels shall be kept free of obstructions including but not limited to fill, rocks, leaves, woody debris, accumulated sediment, excess vegetation, and construction material/wastes.
35. Underground utilities cutting through any active channel shall be immediately backfilled and the channel restored to its original cross-section and protective lining. Any base flow within the channel shall be conveyed past the work area in the manner described in this plan until such restoration is complete.
36. Sediment traps shall be kept free of all construction waste, wash water, and other debris having potential to clog the basin/trap outlet structures and/or pollute the surface water.
37. Sediment trap shall be protected from unauthorized acts by third parties.
38. Any damage that occurs in whole or in part as a result of sediment trap discharge shall be immediately repaired by the permittee in a permanent manner satisfactory to the municipality, local conservation district, and the owner of the damaged property.
39. Upon request, the applicant or his contractor shall provide an as-built (record drawing) for any sediment trap to the municipal inspector, local conservation district or the Department.
40. Erosion control blanketing shall be installed on all slopes 3H:1V or steeper within 50 feet of a surface water and on all other disturbed areas specified on the plan maps and/or detail sheets.
41. Fill material for embankments shall be free of roots, or other woody vegetation, organic material, large stones, and other objectionable materials. The embankment shall be compacted in maximum 8" layered lifts at 95 % density.

DUST CONTROL:

42. Dust control measures must be implemented upon the generation of enough dust whereas it leaves the project site on an as-needed basis or upon direction of a municipal representative and/or a representative of the local Conservation District.

Water Control:

The exposed soil surface should be moistened until the surface has been adequately wettened to prevent dust.

Vegetative Cover Control:

The exposed soil surface shall be seeded and mulched according to the recommended rates per the Temporary Seeding Specification.

Calcium Chloride Placement:

Shall be in the form of loose, dry granules or flakes fine enough to feed through a spreader at a rate that will keep the surface moist but not cause pollution or plant damage.

EROSION and SEDIMENTATION CONTROL

I. GENERAL NOTES:

1. This Erosion and Sedimentation Control Plan was prepared by the staff of Woodrow & Associates, Inc. under the direction of Mr. Timothy P. Woodrow, P.E.
2. Sediment must be removed from storm water inlet protection after each runoff event.
3. Straw mulch shall be applied in long strands, not chopped or finely broken.

II. RECEIVING WATERSHED:

The receiving watershed for this development is an unnamed tributary to Zacharias Creek to Skippack Creek. The Chapter 93 Classification for this receiving watershed is TSF & MF.

III. INTENT OF CONSERVATION PROGRAM:

The intent of this program is to prevent accelerated erosion of the exposed site soils during the construction and permanent life periods of the Development. The program requires retention of all sediments on the construction site while minimizing the impact of development on existing streams and adjacent properties.

These objectives will be achieved by minimizing exposure time of potentially erosive soils to runoff and installation of the temporary and permanent conservation practices in proper sequence with construction. The intent of this program should be understood and implemented throughout the entire development. The various construction trades should be appraised of this program and directed to prevent undue disturbance of prepared and protected surfaces.

IV. SURFACE STABILIZATION CRITERIA:

All denuded soil surfaces including soil stockpiles that are subject to erosion shall be stabilized immediately, either temporarily or permanently. Crushed stone on pavement subgrades is considered adequate protection. Disturbed areas which are not at finished grade and which will be redisturbed within one (1) year may be stabilized with a quick growing, temporary seeding mixture and mulch. During non-germination periods, mulch shall be applied at recommended rates. Germination period shall be from April 1st to June 15th and August 15th to October 15th. During non-germination periods mulched areas shall be limed, fertilized, seeded and remulched immediately.

Contractor/Applicant shall assume responsibility for the maintenance and operation of all erosion and sediment control facilities.

Silt fence must be installed parallel to existing contours and constructed in level alignments. The ends of the fence must be extended a minimum of eight (8) feet up slope and at forty-five (45) degrees to the main fence alignment.

If any of the measures contained within this plan prove inadequate at removing sediment from flows prior to discharge or stabilizing of the surfaces involved, additional measures will be immediately implemented by the Contractor/Applicant to eliminate all such problems. Said measures shall be approved by the local conservation district.

A reserve supply of crushed stone, silt fence, temporary seed and hay bales shall be maintained on site for emergency replacement of any failing erosion and sediment control measures.

V. EROSION CONTROL DEVICES / MAINTENANCE PROGRAM:

STABILIZED CONSTRUCTION ENTRANCE:

Entrances are to be constructed per Ch. 102 Standard Construction Detail #16 and the details provided with this plan set. The stabilized construction entrance(s) shall be maintained so that tire scrubbing activity does not become ineffective. Any buildup of mud or soil on the street shall be cleaned immediately by hand or mechanical sweeping.

COMPOST FILTER SOCKS:

Compost Socks shall be installed per Ch. 102 Standard Construction Details #4-1 and the details provided with this plan set. Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

COMPOST SOCK SEDIMENT TRAPS:

Sediment Traps shall be constructed per Ch. 102 Standard Construction Details #3-11 and the details provided with this plan set. Clean-out stakes shall be placed near the center of each trap. Accumulated sediment shall be removed when it reaches the clean-out elevation marked on the stake.

STORM INLET PROTECTION:

Inlet protection devices shall be constructed per Ch. 102 Standard Construction Details #28-32 and the details provided with this plan set. Inlet protection shall be maintained until all earthwork within the tributary drainage area has been completely stabilized.

SEDIMENT DISPOSAL:

Silt removed from temporary erosion and sediment control devices shall be disposed of on-site in landscaped areas located outside the 100 year flood plains, wetlands, steep slopes and drainage swales. Areas of sediment disposal shall be considered a critical vegetation area requiring immediate stabilization.

Each drainage sub-area will require separate and unique erosion and sediment control measures. The contractor shall follow the specific construction sequence deemed appropriate by the local soil conservation district.

All BMP listed above require inspection weekly and after each runoff event. All required repairs and or replacement of BMP's must be done immediately.

VI. UTILITY TRENCH EXCAVATION:

GENERAL REQUIREMENTS:

Exposed trench excavations have high potential for accelerated erosion and sediment pollution. Since these excavations are usually located at lower elevation along or across earth disturbance sites, open trenches serve to concentrate sediment laden runoff and convey it to site boundaries or waterways. The most important erosion and sediment pollution control consideration for trench construction is the limiting and specific scheduling of work activities.

CONSTRUCTION REQUIREMENTS:

Limit advance clearing and grubbing operations to a distance equal to two times the length of pipe installation that can be completed in one day.

Work crews and equipment for trenching, placement of pipe, plug construction and backfilling will be self contained and separate from clearing and work crews and site restoration and stabilization operations.

All soils excavated from the trench shall be placed on uphill side of the trench.

Limit daily trench excavation to the length of pipe placement, plug installation and backfilling that can be completed the same day.

Water which accumulates in the open trench will be completely removed by pumping before pipe placement and/or backfilling begins. Water removed from the trench shall be pumped through a filtration device.

On the day following pipe placement and trench backfilling, the disturbed area will be graded to final contours and immediately stabilized.

Soils excavated from the existing surface layer should be stockpiled separately and returned as final surface layer following trench backfilling.

VII. FERTILIZATION, SEEDING AND MULCHING:

TEMPORARY COVER ON DISTURBED AREAS:

Upon temporary cessation of an earth disturbance or any stage or phase of an activity where a cessation of earth disturbance activities exceed 4 days, the site shall be immediately seeded, mulched or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.

PERMANENT COVER ON DISTURBED AREAS:

Disturbed areas which are either at finish grade or will not be redisturbed a within one (1) year period must be seeded and mulched with a permanent seed mixture.

All disturbed areas shall be stabilized immediately with a temporary seed and mulch mixture applied at the recommended rates. Site preparation of mulch and maintenance shall be performed in accordance with the Penn State University's Erosion Control & Conservation Plantings on Noncropland manual and Pennsylvania Department of Transportation publication form 408 specifications (latest edition). During nongermination periods, mulch must be applied at the recommended rates.

Graded areas shall be scarified or otherwise loosened to a depth of 3" to 5" prior to topsoil placement to permit the bonding of new topsoil.

MULCHING:

All seeded areas should be mulched or blanketed to minimize the potential for failure to establish adequate vegetated cover. Mulching may also be used as a temporary stabilization of disturbed areas in non-germinating seasons. Mulch shall be applied immediately after seeding or at the termination of grading operations during non-germinating seasons.

Straw and hay mulch should be anchored or tackified immediately after application to prevent being windblown. A tractor-drawn implement may be used to "crimp" the straw or hay into the soil about 3 inches deep. This method should be limited to slopes no steeper than 3H:1V. The machinery shall be operated on the contour.

Polymeric and gum tackifiers mixed and applied according to manufacturer's recommendations may be used to tack-mulch. Avoid application during rain and on windy days. A 24 hour curing period and a soil temperature of 45 degrees F are typically required. Application should generally be heaviest at edges of seeded areas and at crests of ridges and banks to prevent loss. The remainder of the area shall have applied uniformly. Binders may only be applied after mulch is spread or sprayed onto the mulch as it is being blown onto the soil.

Synthetic binders, or chemical binders, may be used as recommended by the manufacturer to anchor mulch provided that sufficient documentation is provided to show they are non-toxic to native plant and animal species.

Mulch on slopes of 8% or steeper should be held in place with netting. Light-weight plastic, fiber, or paper nets may be stapled over the mulch according to manufacturer's recommendations.

Shredded paper hydromulch should not be used on slopes steeper than 5%. Wood fiber hydromulch may be applied on steeper slopes provided a tacifier is used. The application for any hydromulch should be 2000 lb/acre at a minimum.

MULCH APPLICATION RATES

Mulch Type:	Application Rate (Min.)			Notes:
	Per Acre:	Per 1,000 S.F.	Per 1,000 S.Y.	
Straw	3 tons	140 lbs.	1,240 lbs.	Either wheat or oat straw, free of weeds, not chopped or finely broken
Hay	3 tons	140 lbs.	1,240 lbs.	Timothy, mixed clover and timothy or other native forage grasses
Wood Chips	4-6 tons	185-275 lbs.	1,650-2500 lbs.	May prevent germination of grasses and legumes
Hydromulch	1 ton	47 lbs.	415	See limitations above

VIII. SEEDING SCHEDULE:

Seeding to conform to specifications outlined in Section 804 - Seeding and Soil Supplements of PADOT Publication 408/2003 (latest revision).

A soils test should be performed in order to determine actual lime and fertilizer needs of the project site instead of using the generic application rates listed below.

TEMPORARY SEEDING SPECIFICATION - FORMULA E:

100% ANNUAL RYEGRASS (LOLIUM MULTIFLORUM): 10.0 lbs./1,000 s.y.

PERMANENT SEEDING SPECIFICATION - FORMULA B:

70% Tall Fescue (Festuca Arunoinacea var., Kentucky 31): 15.0 lbs./1,000 s.y.
30% Creeping Red Fescue or Chewings Fescue: 6.0 lbs./1,000 s.y.

SEEDING RATES FOR THE ABOVE MIXTURES:

Spread seeds where indicated and at the rates specified above (and Table A, Pub 408, Section 804). Spread seeds within the following dates, or as otherwise indicated or directed:

* Formula B: - March 15 to June 01 / August 01 to October 15
* Formula E: - March 15 to October 15

Extend seeding dates where project conditions warrant. Apply full treatment or apply only 50% of the permanent seeding and soil supplements and apply the remaining 50% within the next seeding dates.

Place mulch, hay or straw immediately after seeding or within 48 hours after seeding is completed. Place hay or straw uniformly, in a continuous blanket, until seeding is completed. If directed, increase the rate of application, depending upon the material used, season, soil conditions or method of application.

SOIL SUPPLEMENTS:

Pulverized agricultural limestone and commercial fertilizer shall be applied to all disturbed areas which are to be seeded in both temporary and permanent conditions at the following rates:

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

Soil Amendment	Permanent Seeding Application Rate			Notes
	Per Acre:	Per 1,000 S.F.	Per 1,000 S.Y.	
Agricultural Lime	6 tons	240 lb.	2,480 lb.	Or as per soil test; may not be required in agricultural fields
10-10-20 Fertilizer	1,000 lb.	25 lb.	210 lb.	Or as per soil test; may not be required in agricultural fields
	Temporary Seeding Application Rate			
Agricultural Lime	1 ton	40 lb.	410 lb.	Typically not required for topsoil stockpiles
10-10-10 Fertilizer	500 lb.	12.5 lb.	100 lb.	Typically not required for topsoil stockpiles

Adapted from Penn State, "Erosion Control and Conservation Plantings on Noncropland

IX. SOILS RESOLUTIONS:

Winter Grading:

Contractor to ensure proper stablization. Methods to include, seeding and mulching at the recommended rates and where necessary, the placement of an approved erosion control blanket.

Road Fill

Contractor to ensure all fill used for roadway construction is placed and compacted in appropriate lifts. Should material not be suitable for roadway construction the contractor may import suitable material from an area within the permitted area.

Topsoil

Contractor to ensure proper stablization. Methods to include, seeding and mulching at the recommended rates and where necessary, the placement of an approved erosion control blanket.

Contractor shall consider soils testing to ensure topsoil is suitable to produce and sustain proper growth. Should the topsoil be lacking of the nutrients to produce growth the contractor shall consider applying lime and/or fertilizers at the rates recommended by the project landscape consultant and/or the local conservation district.

Topsoil may be imported from an area within the permitted area proven to be suitable.

Ponds, Dikes and Levees Embankments

Contractor to ensure all fill used for basin embankment construction is placed and compacted in appropriate lifts. Should material not be suitable for basin construction the contractor may import suitable material from an area within the permitted area.

Contractor to ensure proper stablization. Methods to include, seeding and mulching at the recommended rates and where necessary the placement of an approved erosion control blanket.

Terraces, diversions and waterways

Contractor to ensure all earthwork associated with swales, diversion berms and/or watercourses is adequately stabilized with an approved erosion and sediment control blanket and/or seeding and mulching applied at the recommended rates.

Should erosion continue the contractor shall consult the design engineer, the local conservation district, and take appropriate measures to correct the problems. Corrective measures may include but are not limited to the following:

Additional seeding and mulching, the placement of sod, armoring the channel with a stronger stabilization blanket, or the placement of rip-rap.

X. POST-CONSTRUCTION MAINTENANCE PROGRAM:

Post-Construction maintenance of all implemented BMP's shall include but not be limited to the following:

1. Check all vegetated areas after any runoff events to identify any areas showing accelerated erosion. If any area is identified as eroding, these areas are to be stabilized using methods described on this plan.
2. All storm structures shall be inspected and cleaned of debris annually or as necessary to maintain full capacity of the storm system.

CONSTRUCTION SEQUENCE

At least 7 days before starting any earth disturbance activities, the operator shall invite all contractors involved in those activities, the landowner, all appropriate municipal officials, the erosion and sediment control plan preparer, the designated Licensed Professional, and the local Conservation District to an on-site meeting. Also, at least 3 days before starting any earth disturbance activities, all contractors involved in those activities shall notify the Pennsylvania One Call Incorporated System at 811 or 1-800-242-1776 for buried utilities locations.

All earth disturbance activities shall proceed in accordance with the outlined sequence on these plans. Each stage shall be completed before any following stage is initiated; clearing and grubbing shall be limited only to those areas described in each stage. General site clearing, grubbing, and topsoil stripping may not commence in any stage or phase of the project until the E&S BMPs specified by the Construction Sequence for that stage or phase have been installed and are functioning as described in this document. Deviation from this sequence must be approved in writing from the local Conservation District or by DEP prior to implementation.

Upon temporary cessation of an earth disturbance or any stage or phase of an activity where a cessation of earth disturbance activities exceed 4 days, the site shall be immediately seeded, mulched or otherwise protected from accelerated erosion and sedimentation pending future earth disturbance activities.

Per NPDES requirements "Upon the installation or stabilization of all perimeter sediment control BMPs and at least 3 days prior to proceeding with the bulk earth disturbance activities, the permittee or co-permittee shall provide notification to the Department or authorized conservation district.

No more than 15,000 square feet of disturbed area shall reach final grade before initiating seeding and mulching operations to stabilize these areas (§102.11(a)(1))

XI. STANDARD NOTE TO COMPLY WITH NPDES CHECKLIST ITEM #2.b.xv: (#3.b.xv for an Individual NPDES Permit)

If the site will need to import or export material from the site, the responsibility for performing environmental due diligence and determination of clean fill will rest with the permittee.

1. Clean Fill is defined as: Uncontaminated, non-water soluble, non-decomposable, inert, solid material. The term includes soil, rock, stone, dredged material, used asphalt, and brick, block or concrete from construction and demolition activities that is separate from other waste and is recognized as such. The term does not include "materials placed in or on the waters of the Commonwealth unless otherwise authorized. (The term "used asphalt" does not include milled asphalt or asphalt that has been processed for re-use).
2. Clean Fill affected by a spill or release of a regulated substance: Fill materials affected by a spill or release of a regulated substance still qualifies as clean fill provided the testing reveals that the fill material contains concentrations of regulated substances that are below the residential limits in Tables FP-1a and FP-1b found in the Department's policy "Management of Fill".
3. Any person placing clean fill that has been affected by a spill or release of a regulated substance must use form FP-001 to certify the origin of the fill material and the results of the analytical testing to qualify the material as clean fill. Form FP-001 must be retained by the owner of the property receiving the fill.
4. Environmental due diligence: The applicant must perform environmental due diligence to determine if the fill materials associated with the project qualify as clean fill. Environmental due diligence is defined as: investigative techniques, including, but not limited to, visual property inspections, electronic data base searches, review of property ownership, review of property use history, Sanborn maps, environmental questionaires, transaction screens, analytical testing, environmental assessments or audits. Analytical testing is not a required part of due diligence unless visual inspection and/or review of the past land use of the property indicates that the fill may have been subjected to a spill or release of regulated substance. If the fill may have been affected by a spill or release of a regulated substance, it must be tested to determine if it qualifies as clean fill. Testing should be performed in accordance with Appendix A of the Department's policy "Management of Fill".

Fill material that does not qualify as clean fill is regulated fill. Regulated fill is waste and must be managed in accordance with the Department's municipal or residual waste regulations based on 25 Pa. Code Chapter 287 Residual Waste Management or 271 Municipal Waste Management, whichever is applicable. These regulations are available on-line at www.pacode.com

XII. MONITORING, INSPECTION, AND REPORTING REQUIREMENTS:

Visual Inspections:

The permittee or co-permitee(s) must ensure that visual site inspections are conducted weekly, and within 24 hours after each measurable rainfall event throughout the duration of construction and until the receipt and acknowledgement of the N.O.T. by the department or authorized conservation district. The visual site inspections and reports shall be completed in a format provided by the department, and conducted by qualified personnel, trained and experienced in erosion and sediment control, to ascertain that E&S BMP's and PCSM BMP's are properly constructed and maintained to effectively minimize pollution to the waters of this commonwealth. A written report of each inspection shall be kept and include at a minimum:

(1) A summary of site conditions, E&S BMP and PCSM BMP, implementation and maintenance and compliance actions; and

(2) The date, time, name and signature of the person conducting the inspection.

Noncompliance Reporting:

Where E&S, PCSM or PPC BMP's are found to be inoperative or ineffective during an inspection or any other time, the permittee and co-permittee(s) shall, within 24 hours, contact the department or authorized conservation district, by phone or personal contact, followed by the submission of a written report within 5 days of the initial contact. Noncompliance reports shall include the following information:

(1) Any condition on the project site which may endanger public health, safety, or the environment, or involved incidents which cause or threaten pollution;

(2) The period of noncompliance, including exact dates and times and/or anticipated time when the activity will return to compliance;

(3) Steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance; and

(4) The date or schedule of dates, and identifying remedies for correcting noncompliance conditions.

Reduction, Loss, or Failure of the BMP's:

Upon reduction, loss or failure of the BMP's, the permittee and co-permittee shall take immediate action to restore the BMP's or provide an alternative method of treatment. Such restored BMP's or alternative treatment shall be at least as effective as the original BMP's.

Termination of Coverage:

N.O.T.: Upon permanent stabilization of earth disturbance activities associated with construction activity that are authorized by this permit and when BMP's identified in the PCSM Plan have been properly installed, the permittee and/or co-permittee of the facility must submit a N.O.T. form that is signed in accordance with Part B, Section I.c, Signatory Requirements, of the NPDES permit. All letters certifying discharge termination are to be sent to the department or authorized conservation district. The N.O.T. must contain the following information: facility name, address and location, operator name and address, permit number, identification and proof of acknowledgment from the person(s) who will be responsible for the operation and maintenance of the PCSM BMP's in accordance with the approved PCSM Plan, and the reason for the permit termination. Until the permittee has recieved written acknowledgement of the N.O.T., the permittee will remain responsible for the operation and maintaining all E&S BMP's and PCSM BMP's on the project site and will be responsible for the violations occurring on the project site.

Completion Certificate and Final Plans:

Within 30 days after the completion of the earth disturbance activities authorized by this permit, including the permanent stabilization of the site and proper installation of PCSM BMP's in accordance with the approved PCSM Plan, or upon submission of the N.O.T., the permittee shall file with the department or authorized conservation district a statement signed by a licensed professional and by the permittee certifying that work has been performed in accordance with the terms and conditions of the NPDES permit and the approved E&S and PCSM Plans.

REVISIONS

No.	DATE	Twp. Engineer letter (5/20/25); Traffic Consultant letter (5/14/25) & WEP Update
1	08/26/25	DESIGNATION

PROFESSIONAL ENGINEER - TIMOTHY P. WOODROW - No. 038735-E - REGISTERED

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811 - A Privately funded not-for-profit Pennsylvania Corporation

Parcel Information:

THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208

3205 SKIPPACK PIKE

Gross Tract: 137.4921 Acres

Developable Area: 116.6758 Acres

Applicant:

THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

PRELIMINARY / FINAL PLAN - HEALTH CARE NORTHEAST EXPANSION

EROSION & SEDIMENT CONTROL SPECIFICATIONS & NOTES

MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP - MONTGOMERY COUNTY - PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike, Suite 2 - Lower Gwynedd - PA 19002
Phone: (215) 542-9668 - Web: www.woodrowinc.com

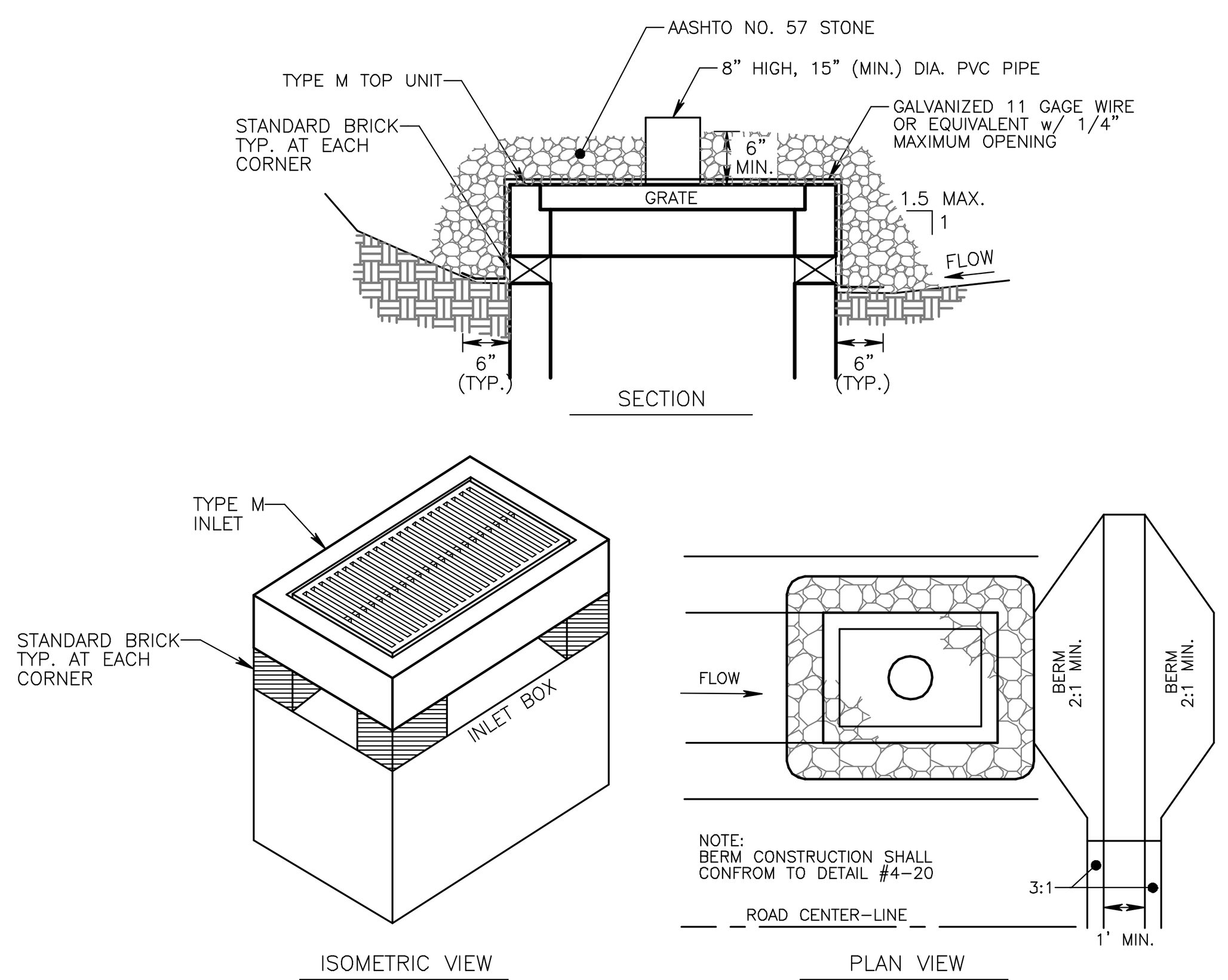
Layer List: D21-13_ES-Spec

Job No: 00-0606 D21

Plan Date: JAN. 31, 2025

Sheet No: 13 of 16

Plot Date: JUL 8, 2025 (12:28)
File Name: G:\2021\00-0606\00-0606.dgn
Plot Scale: 1" = 20.00'



Inlet protection shall not be required for inlets tributary to sediment basins or sediment traps. Alternate Type M inlet protection can be used on one acre maximum drainage area with 15" overflow pipe and 4" head.

Berms shall be required for all installations not located at low points. Earthen berms shall be stabilized with vegetation and maintained until roadway is stoned or tributary area is permanently vegetated. Road subbase berms shall be maintained until roadway is paved.

Inlets shall be inspected weekly and after each runoff event. Accumulated sediment shall be removed when it reaches half the height of the stone. Damaged installations shall be repaired or replaced within 24 hours of inspection.

For systems discharging to HQ or EV surface water, a 6 inch thick compost layer shall be securely anchored on outside and over top of stone. Compost shall meet the standards of Table 4.2.

(PADEP EROSION and SEDIMENT POLLUTION CONTROL PROGRAM MANUAL – MARCH 2012)
(STANDARD CONSTRUCTION DETAIL #4-23)

ATLERNATE TYPE M INLET PROTECTION – NOT AT GRADE

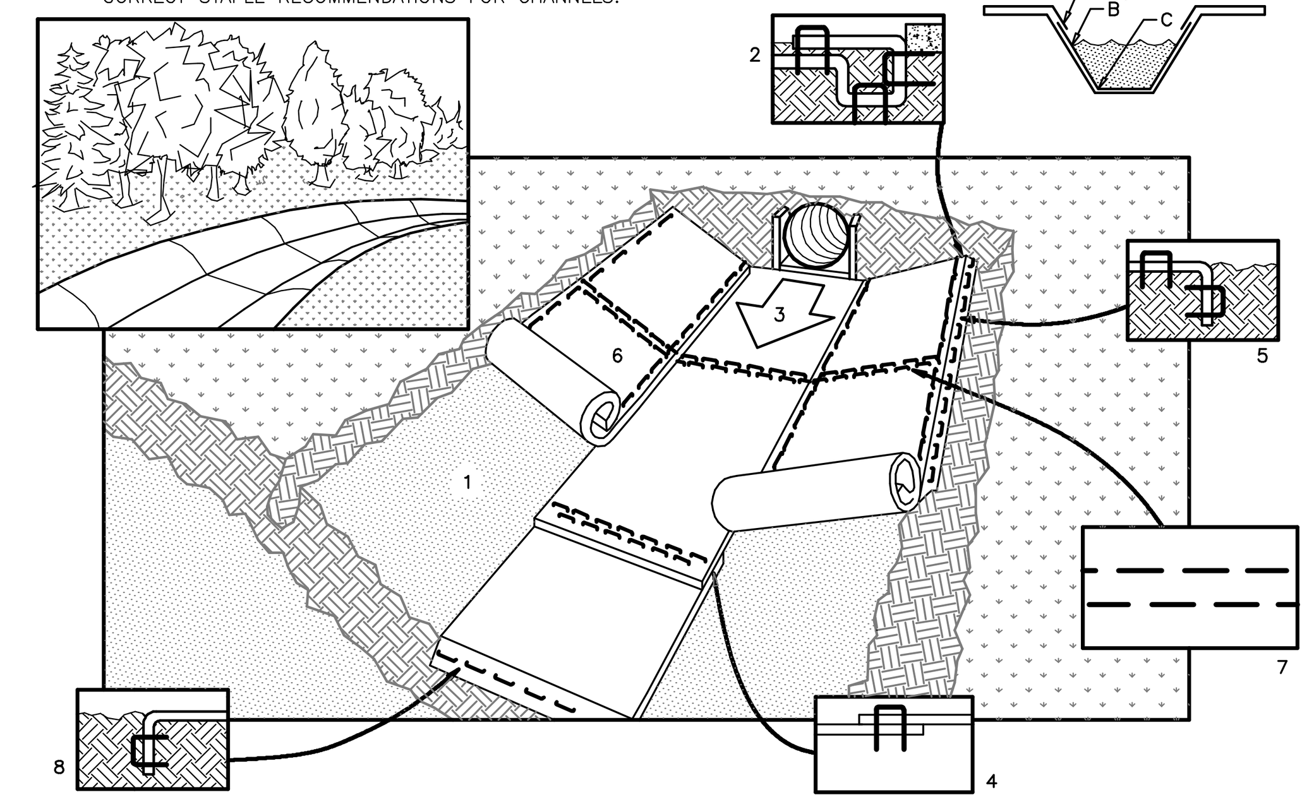
Not to Scale

CHANNEL INSTALLATION

NOTE: HORIZONTAL STAPLE SPACING SHOULD BE ALTERED IF NECESSARY TO ALLOW STAPLES TO SECURE THE CRITICAL POINTS ALONG THE CHANNEL SURFACE.

REFER TO GENERAL STAPLE PATTERN GUIDE FOR CORRECT STAPLE RECOMMENDATIONS FOR CHANNELS.

CRITICAL POINTS
A. OVERLAPS AND SEAMS
B. PROJECTED WATER LINE
C. CHANNEL BOTTOM/SIDE SLOPE VERTICES

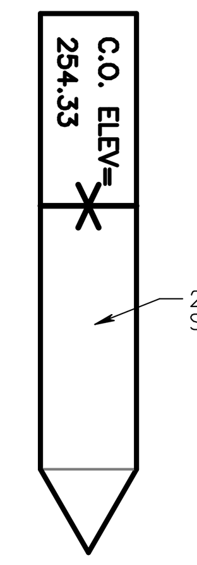


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE CHANNEL BY ANCHORING THE BLANKET IN A 6" DEEP X 6" WIDE TRENCE. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL CENTER BLANKET IN DIRECTION OF WATER FLOW ON BOTTOM OF CHANNEL.
4. PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED STAPLES 4" APART TO SECURE BLANKETS.
5. FULL LENGTH EDGE OF BLANKETS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
6. BLANKETS ON SIDE SLOPES MUST BE OVERLAPPED 4" OVER THE CENTER BLANKET AND STAPLED (2" FOR C350 MATTING).
7. IN HIGH FLOW CHANNEL APPLICATIONS, A STAPLE CHECK SLOT IS RECOMMENDED AT 30 TO 40 FOOT INTERVALS. USE A ROW OF STAPLES 4" APART OVER ENTIRE WIDTH OF THE CHANNEL. PLACE A SECOND ROW 4" BELOW THE FIRST ROW IN A STAGGERED PATTERN.
8. THE TERMINAL END OF THE BLANKETS MUST BE ANCHORED IN A 6" DEEP X 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.

NORTH AMERICAN GREEN
14649 HIGHWAY 41 NORTH
EVANSVILLE, INDIANA 47711
USA 1-800-772-2040

STRAW EROSION CONTROL BLANKET

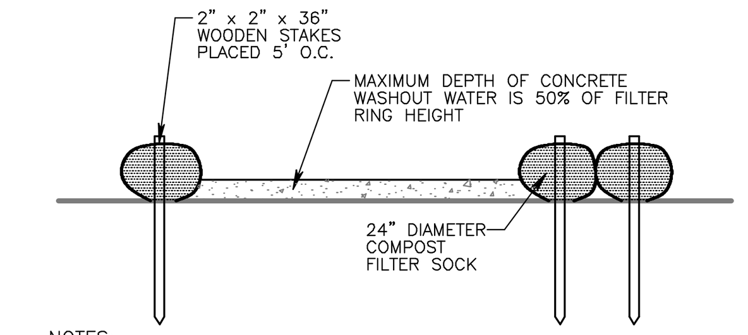
Not To Scale



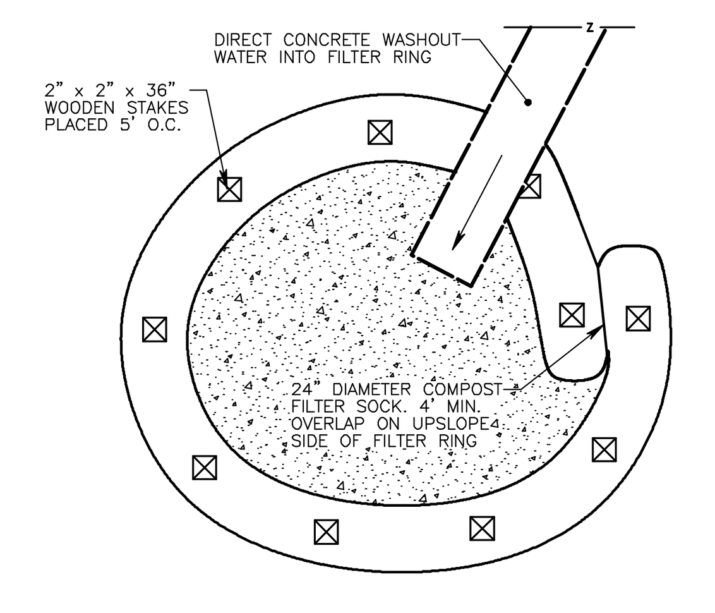
SEDIMENT SHALL BE REMOVED FROM THE SEDIMENT TRAP WHEN IT HAS REACHED THE CLEANOUT ELEVATION MARKED ON THE CLEANOUT STAKE. SEDIMENT SHALL BE DISPOSED OF IN THE LOCATIONS SHOWN ON THE PLANS, AND THE BASIN SHALL BE RETURNED TO ITS ORIGINAL DESIGN DIMENSIONS.

SEDIMENT TRAP CLEAN-OUT STAKE DETAIL

Not To Scale



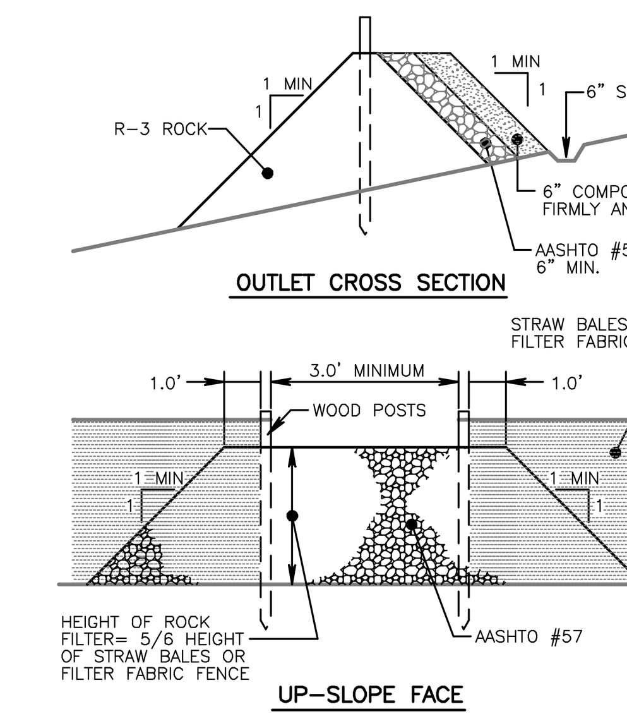
NOTES:
1. Install on flat grade for optimum performance
2. 18" diameter filter sock may be stacked onto double 24" Dia. socks in pyramidal configuration for added height.



A suitable impervious geomembrane shall be placed at the location of the washout prior to installing the sock.

COMPOST SOCK CONCRETE WASHOUT AREA

Not To Scale



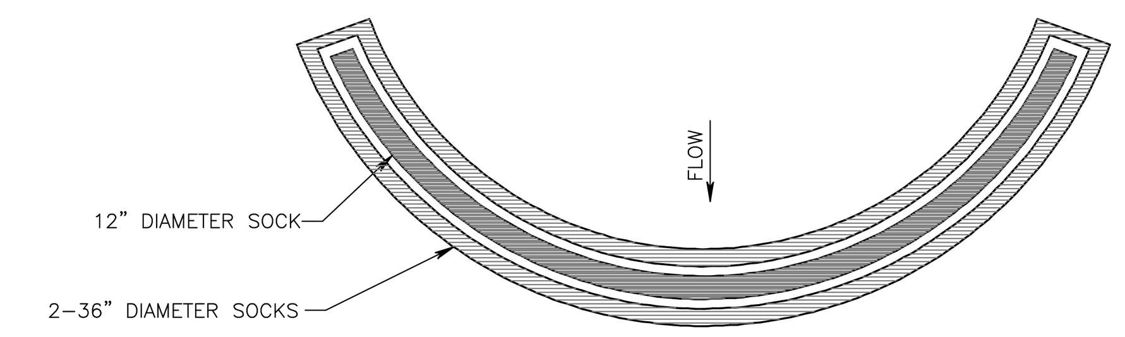
A ROCK FILTER OUTLET SHALL BE INSTALLED WHERE FAILURE OF A COMPOST SOCK OR STRAW BALE BARRIER HAS OCCURRED DUE TO CONCENTRATED FLOW. ANCHORED COMPOST LAYER SHALL BE USED ON UPSLOPE FACE IN HQ AND EV WATERSHEDS.

SEDIMENT SHALL BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE HEIGHT OF THE OUTLET.

STANDARD CONSTRUCTION DETAIL #4-6

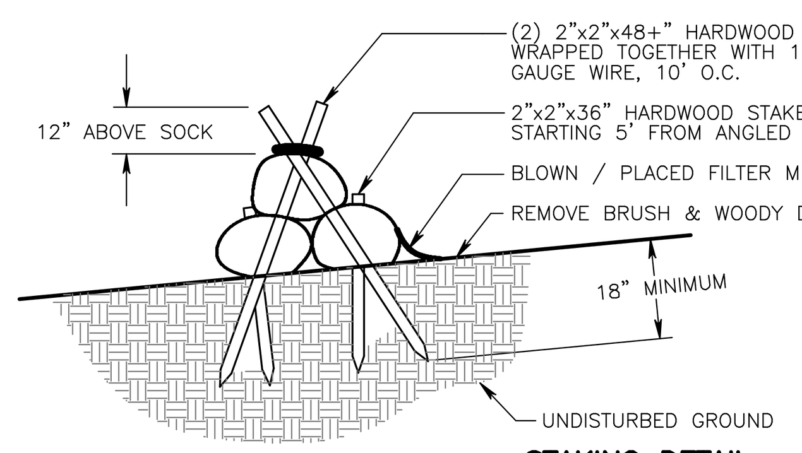
ROCK FILTER BERM DETAIL

NOT TO SCALE



1. COMPOST SOCK SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2,000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUIVALENT TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED 1/3 THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS INDICATED TO THE LEFT.
5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID-SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

PLAN VIEW



STAKING DETAIL

SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2.

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW-THROUGH", NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES 1/3 THE HEIGHT OF THE SOCKS.

PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 YEAR.

(PADEP EROSION and SEDIMENT POLLUTION CONTROL PROGRAM MANUAL – MARCH 2012)
(STANDARD CONSTRUCTION DETAIL #3-11)

COMPOST SOCK SEDIMENT TRAP

Not To Scale

TABLE 4.1

Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting			HDPE biaxial net		
			Continuously wound		
			Fusion-welded junctures		
			3/4" x 3/4" Max. aperture size		
Outer Filtration Mesh			Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)		
			3/16" Max. aperture size		
Sock fabrics composed of burlap may be used on projects lasting 6 months or less					

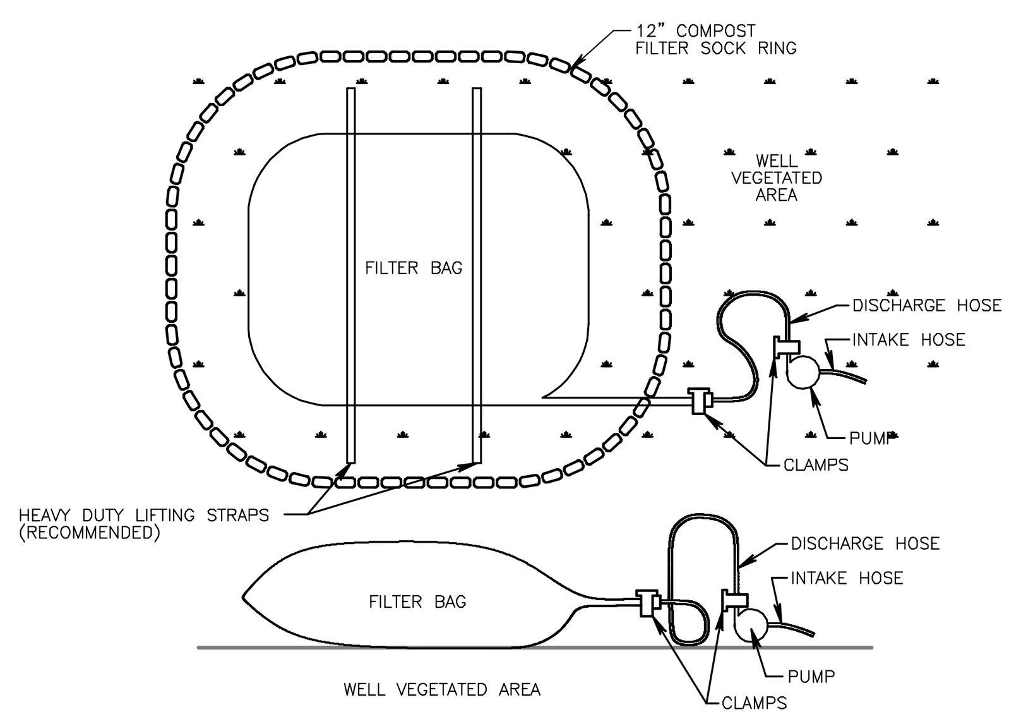
Filtrexx & JMD

TABLE 4.2

Compost Standards

Organic Matter Content	80% – 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 – 8.0
Moisture Content	35% – 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum

Filtrexx



LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THEN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY:	TEST METHOD:	MINIMUM STANDARD:
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 lb/in
GRAB TENSILE	ASTM D-4632	205 lb
PUNCTURE	ASTM D-4833	110 lb
MULLEN BURST	ASTM D-3786	350 psi
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-4751	80 Sieve

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL-VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NOT POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACED ON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5%. FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON-ERODIBLE AND NON-POLLUTING MATERIAL MAY BE PLACED UNDER THE BAG TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

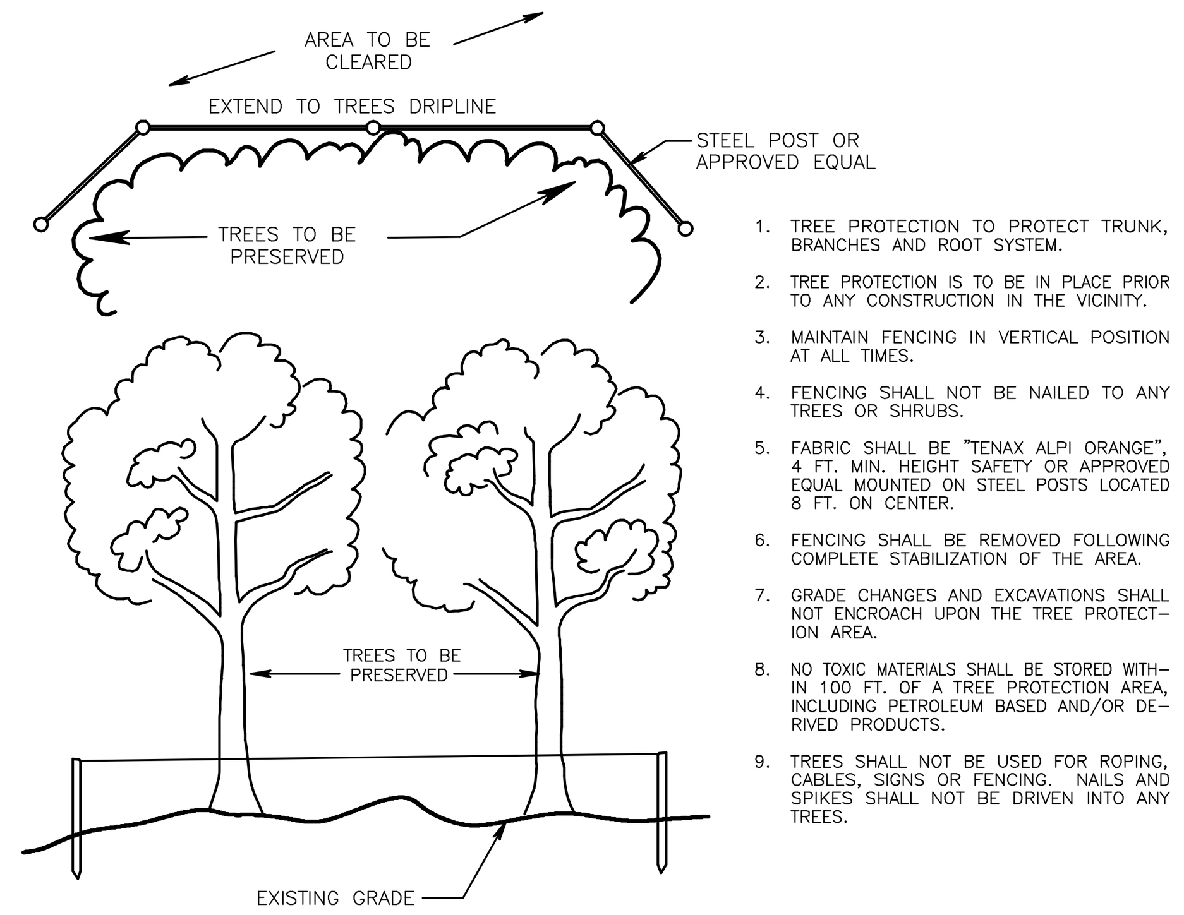
THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR 1/2 THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

(PADEP EROSION and SEDIMENT POLLUTION CONTROL PROGRAM MANUAL – MARCH 2012)
(STANDARD CONSTRUCTION DETAIL #3-16)

SEDIMENT FILTER BAG FOR PUMPED WATER

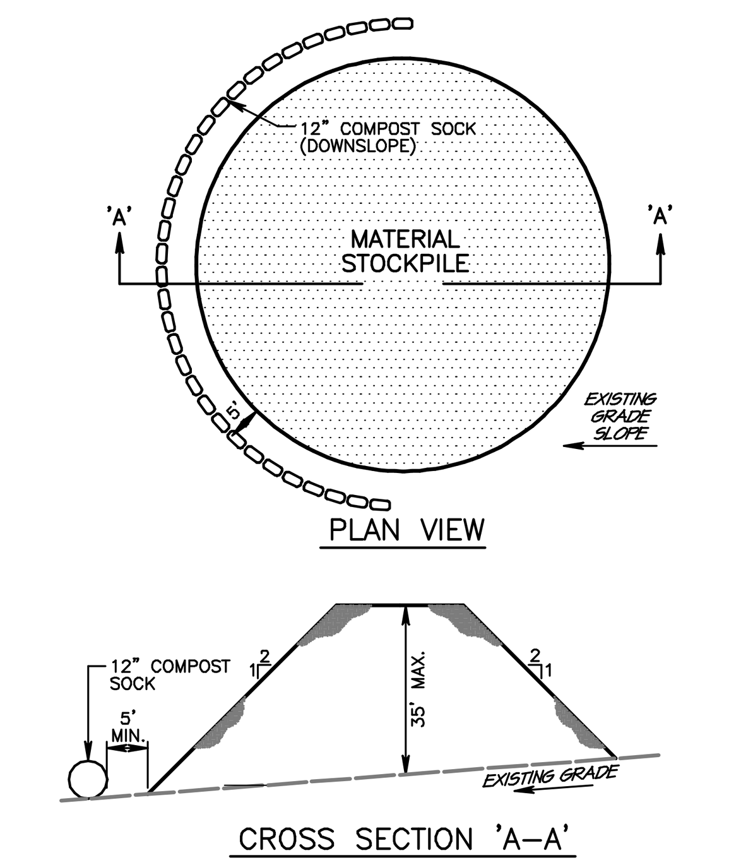
Not To Scale



1. TREE PROTECTION TO PROTECT TRUNK, BRANCHES AND ROOT SYSTEM.
2. TREE PROTECTION IS TO BE IN PLACE PRIOR TO ANY CONSTRUCTION IN THE VICINITY.
3. MAINTAIN FENCING IN VERTICAL POSITION AT ALL TIMES.
4. FENCING SHALL NOT BE NAILED TO ANY TREES OR SHRUBS.
5. FABRIC SHALL BE "TENAX ALPI ORANGE", 4 FT. MIN. HEIGHT SAFETY OR APPROVED EQUAL MOUNTED ON STEEL POSTS LOCATED 8 FT. ON CENTER.
6. FENCING SHALL BE REMOVED FOLLOWING COMPLETE STABILIZATION OF THE AREA.
7. GRADE CHANGES AND EXCAVATIONS SHALL NOT ENCROACH UPON THE TREE PROTECTION AREA.
8. NO TOXIC MATERIALS SHALL BE STORED WITHIN 100 FT. OF A TREE PROTECTION AREA, INCLUDING PETROLEUM BASED AND/OR DERIVED PRODUCTS.
9. TREES SHALL NOT BE USED FOR ROPING, CABLES, SIGNS OR FENCING. NAILS AND SPIKES SHALL NOT BE DRIVEN INTO ANY TREES.

TREE PROTECTION FENCING DETAIL

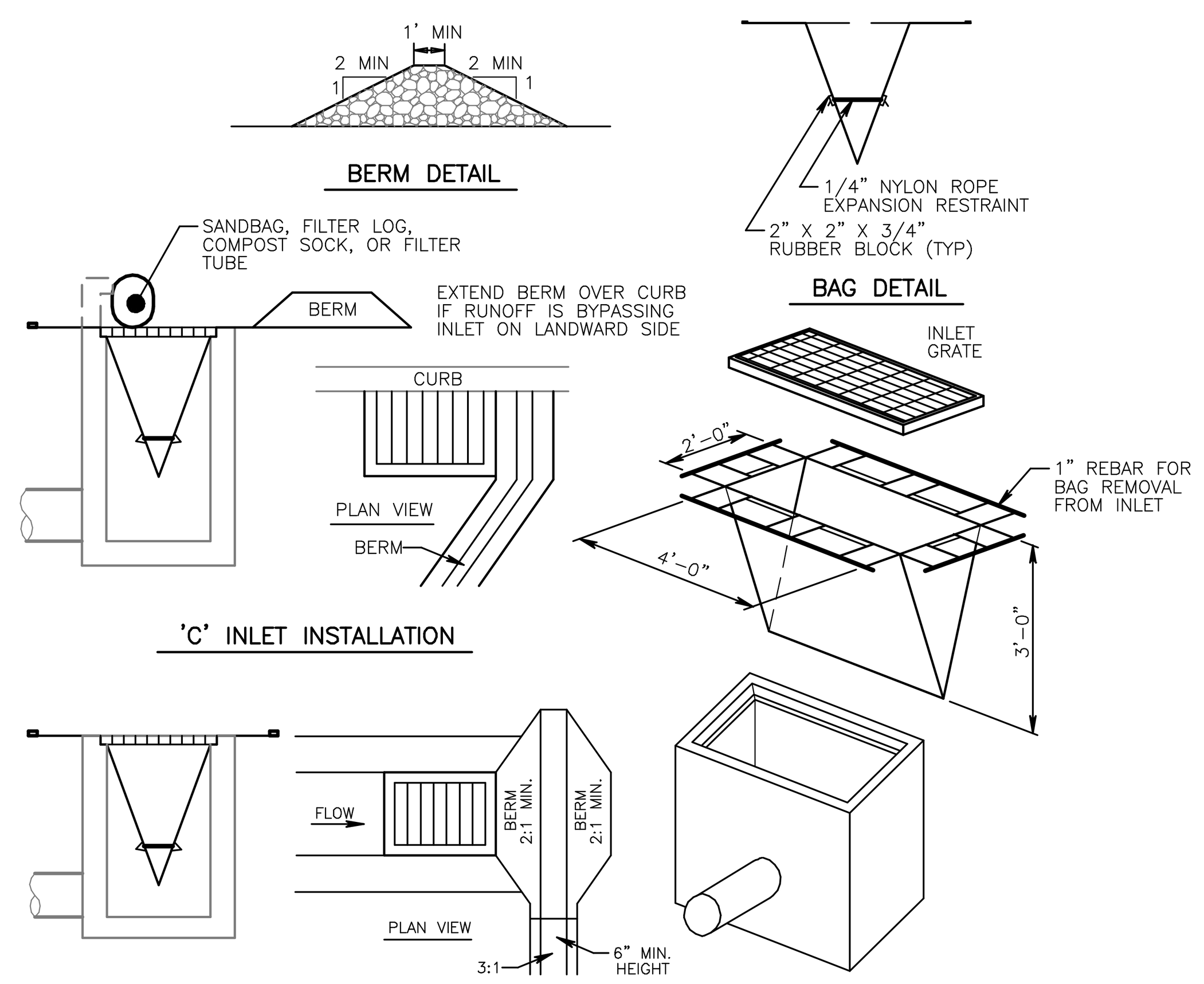
Not To Scale



1. STOCKPILE HEIGHTS MUST NOT EXCEED 35 FEET.
2. SIDE SLOPES MUST BE NO GREATER THEN 2:1. 2 FEET HORIZONTALLY TO ONE FOOT VERTICALLY.
3. 12" COMPOST SOCK SHALL BE INSTALLED ON THE DOWN SLOPE SIDE OF THE STOCKPILE AT A MINIMUM OF 5 FEET FROM THE TOE OF SLOPE.
4. SHOULD THE NEED ARISE WHERE ADDITIONAL STOCKPILE AREAS ARE REQUIRED, THOSE AREAS MUST BE APPROVED BY THE LOCAL AUTHORITY OR COUNTY CONSERVATION DISTRICT.
5. STOCKPILE AREA MUST BE SEEDED AND MULCHED IMMEDIATELY AFTER THE PLACEMENT OF ANY STOCKPILE MATERIAL.

TEMPORARY STOCKPILE AREA

Not To Scale



* ADAPTED FROM PENNDOT RC-70, 2008 EDITION

* EARTHEN BERM TO BE STABILIZED WITH TEMPORARY OR PERMANENT VEGETATION

MAXIMUM DRAINAGE AREA = 1/2 ACRE.

INLET PROTECTION SHALL NOT BE REQUIRED FOR INLETS TRIBUTARY TO SEDIMENT BASIN OR TRAP. BERMS SHALL BE REQUIRED FOR ALL INSTALLATIONS.

ROLLED EARTHEN BERM SHALL BE MAINTAINED UNTIL ROADWAY IS STONED. ROAD SUBBASE BERM SHALL BE MAINTAINED UNTIL ROADWAY IS PAVED. SIX INCH MINIMUM HEIGHT ASPHALT BERM SHALL BE MAINTAINED UNTIL ROADWAY SURFACE RECEIVES FINAL COAT.

AT A MINIMUM, THE FABRIC SHALL HAVE A MINIMUM GRAB TENSILE STRENGTH OF 120 lbs, A MINIMUM BURST STRENGTH OF 200 psi, AND A MINIMUM TRAPEZOIDAL TEAR STRENGTH OF 50 lbs. FILTER BAGS SHALL BE CAPABLE OF TRAPPING ALL PARTICLES NOT PASSING A No. 40 SIEVE.

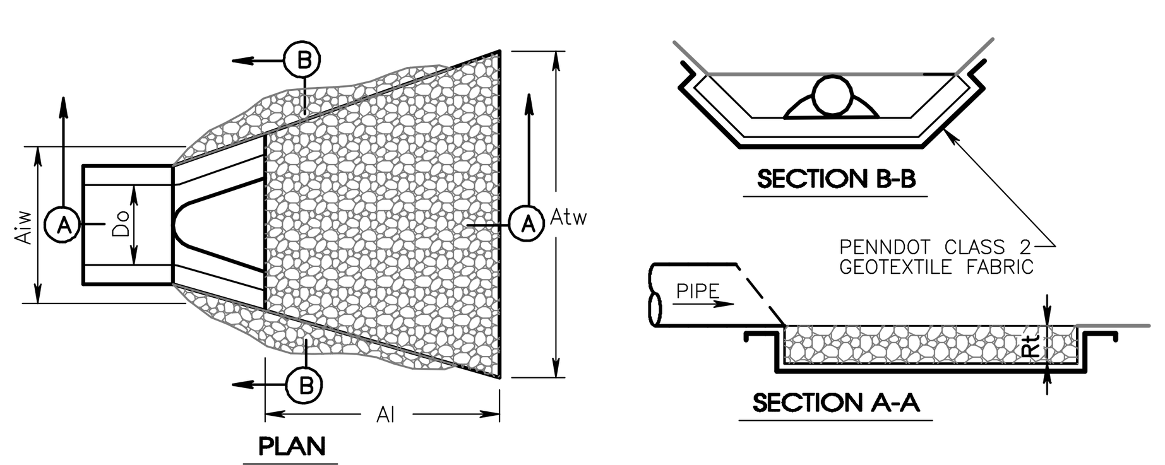
INLET FILTER BAGS SHALL BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. BAGS SHALL BE EMPTIED AND RINSED OR REPLACED WHEN HALF FULL OF WHEN FLOW CAPACITY HAS BEEN REDUCED SO AS TO CAUSE FLOODING OR BYPASSING OF THE INLET. DAMAGED OR CLOGGED BAGS SHALL BE REPLACED. A SUPPLY SHALL BE MAINTAINED ON SITE FOR REPLACEMENT OF BAGS. ALL NEEDED REPAIRS SHALL BE INITIATED IMMEDIATELY AFTER THE INSPECTION. DISPOSE OF ACCUMULATED SEDIMENT AS WELL AS ALL USED BAGS ACCORDING TO THE PLAN NOTES.

** DO NOT USE ON MAJOR PAVED ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS **

(PADEP EROSION and SEDIMENT POLLUTION CONTROL PROGRAM MANUAL – MARCH 2012)
(STANDARD CONSTRUCTION DETAIL #4-15 and #4-16)

FILTER BAG INLET PROTECTION

Not to Scale



ENERGY DISSIPATOR SIZING DATA									
Outlet Structure No.	Pipe Dia. Do (in)	Tailwater Condition (Max or Min)	Q (CFS)	V* (FPS)	Riprap Size	Riprap Thickness Rt (inches)	Length Al (ft)	Initial Width Aiw (ft)	Terminal Width Atw (ft)
D10	18	MAX.	7.54	6.11	R 3	6	7.5	4.5	7.5
D13	18	MIN.	2.13	3.64	R 4	12	8.0	4.5	12.5
D22	18	MAX.	8.44	7.65	R 3	6	7.5	4.5	7.5
D24	15	MIN.	1.96	6.77	R 4	12	8.0	3.75	12.5

NOTE:

ALL APRONS SHALL BE CONSTRUCTED TO THE DIMENSIONS SHOWN. TERMINAL WIDTHS SHALL BE ADJUSTED AS NECESSARY TO MATCH RECEIVING CHANNELS.

ALL APRONS SHALL BE INSPECTED AT LEAST WEEKLY AND AFTER EACH RUNOFF EVENT. DISPLACED RIPRAP WITHIN THE APRON SHALL BE REPLACED IMMEDIATELY.

EXTEND RIPRAP ON BACK SIDE OF APRON TO AT LEAST 1/2 DEPTH OF PIPE ON BOTH SIDES TO PREVENT SCOUR AROUND THE PIPE.

(PADEP EROSION and SEDIMENT POLLUTION CONTROL PROGRAM MANUAL – MARCH 2012)
(STANDARD CONSTRUCTION DETAIL #9-2)

RIPRAP APRON OUTLET PROTECTION

Not To Scale

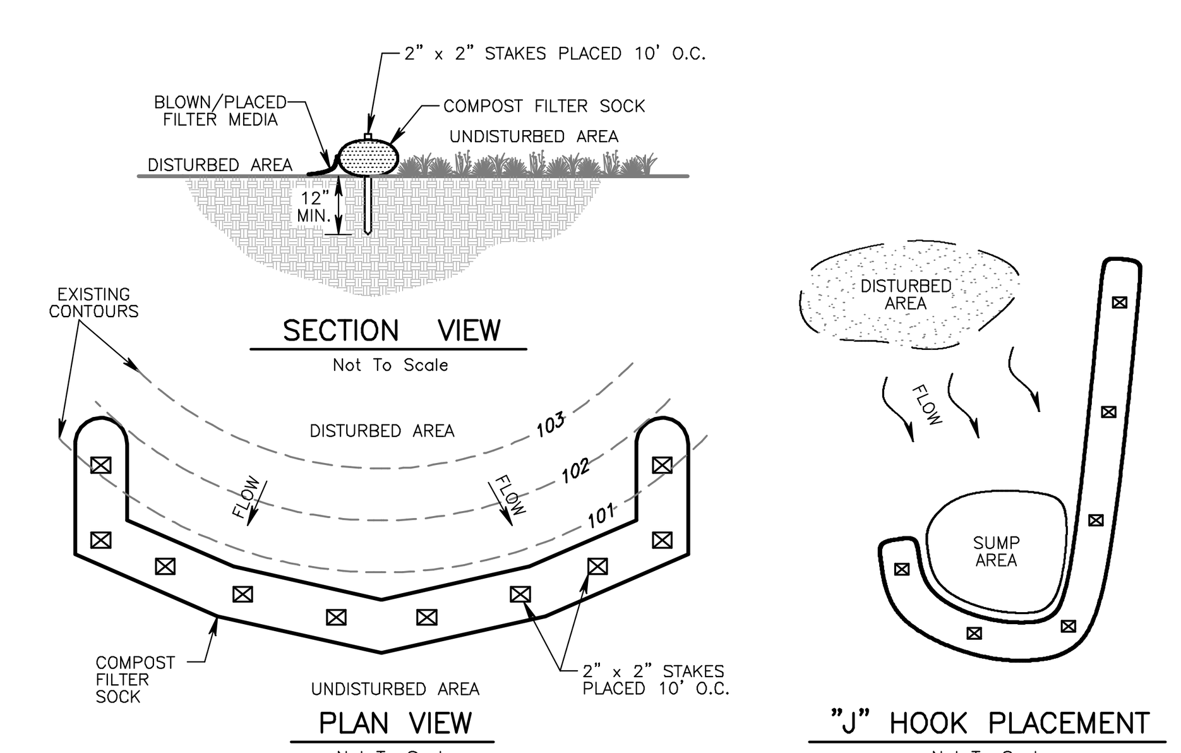


TABLE 4.1

Compost Sock Fabric Minimum Specifications

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photo-degradable	Photo-degradable	Bio-degradable	Photo-degradable	Photo-degradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years
Two-ply systems					
Inner Containment Netting			HDPE biaxial net		
			Continuously wound		
			Fusion-welded junctures		
			3/4" x 3/4" Max. aperture size		
Outer Filtration Mesh			Composite Polypropylene Fabric (Woven layer and non-woven fleece mechanically fused via needle punch)		
			3/16" Max. aperture size		
Sock fabrics composed of burlap may be used on projects lasting 6 months or less					

Filtrexx & JMD

TABLE 4.2

Compost Standards

Organic Matter Content	80% – 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 – 8.0
Moisture Content	35% – 55%
Particle Size	98% pass through 1" screen
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum

Filtrexx

Sock fabric shall meet standards of Table 4.1 of the Pennsylvania Department of Enviromental Protection Erosion and Sediment Pollution Control Program Manual (Technical Guidance Number 363-2134-008).

Compost shall meet standards of Table 4.2 of the Pennsylvania Department of Enviromental Protection Erosion and Sediment Pollution Control Program Manual (Technical Guidance Number 363-2134-008).

Compost filter sock shall be placed at existing level grade. Both ends of the sock shall be extended at least 8 feet up slope at 45 degrees to the main sock alignment. Maximum slope length above any sock shall not exceed that shown on Figure 4.2 of the Pennsylvania Department of Enviromental Protection Erosion and Sediment Pollution Control Program Manual (Technical Guidance Number 363-2134-008). Stakes may be installed immediately downslope of the sock if so specified by the manufacturer.

Traffic shall not be permitted to cross filter socks.

Accumulated sediment shall be removed when it reaches half the aboveground height of the sock and disposed in the same manner described elsewhere in the plan.

Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired according to manufacturer's specifications or replaced within 24 hours of inspection.

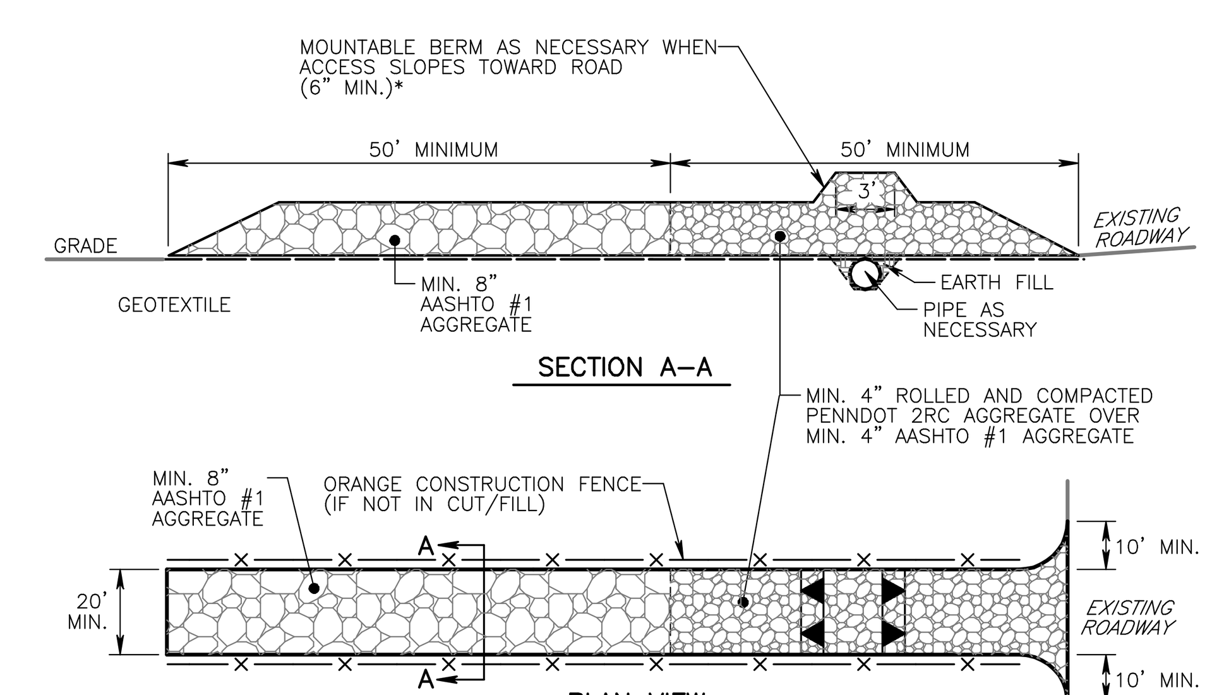
Biodegradable filter socks shall be replaced after 6 months; photodegrable socks after 1 year. Polypropylene socks shall be replaced according to manufacturer's recommendations.

Upon stabilization of the area tributary to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed. In the latter case, the mesh shall be cut open and the mulch spread as a soil supplement.

(PADEP EROSION and SEDIMENT POLLUTION CONTROL PROGRAM MANUAL – MARCH 2012)
(STANDARD CONSTRUCTION DETAIL #4-1)

COMPOST FILTER SOCK

Not to Scale



* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTIONAL CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE:

ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE

NOT TO SCALE

No.	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (5/20/25), Traffic Consultant letter (3/4/25) & MEP Update

REVISIONS

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE

Gross Tract: 137.4921 Acres
Developable Area: 116.6758 Acres

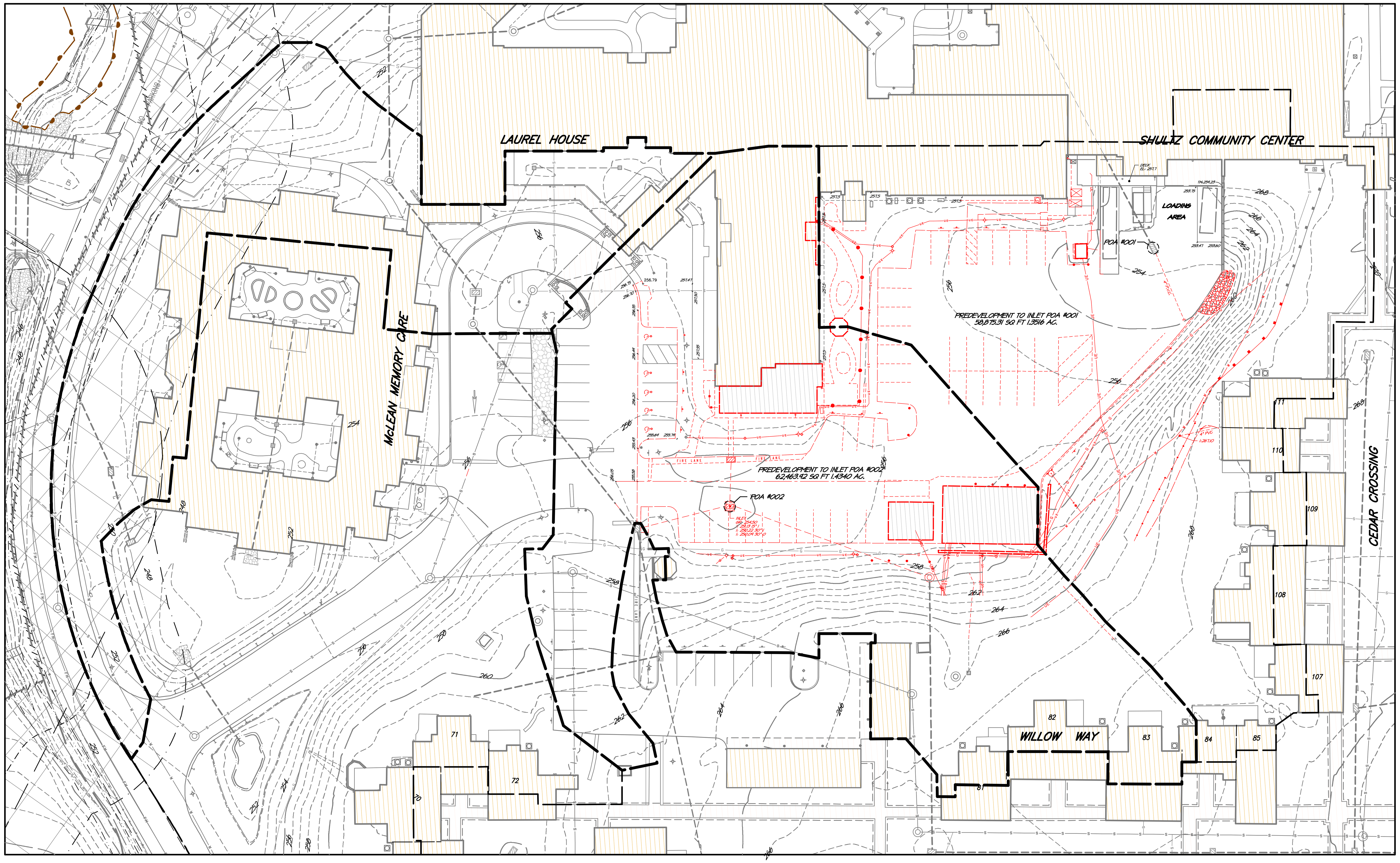
Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION
EROSION & SEDIMENT CONTROL DETAILS
MEADOWOOD SENIOR LIVING
WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-14_ES-Detail
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025

Print Date: Jul 8, 2025 (12:26) Print Scale: 1" = 20.00'
File Name: G:\2000\00-0606\00-0606D.pro



PLAN LEGEND

- Roadway / Driveway Centerline
- Ex Grade Contour
- Ex Vegetation Limit
- Ex Storm Sewer Piping
- Ex Sanitary Sewer Piping
- Ex Gas Main / Service
- Ex Water Main / Service
- Ex Underground Telephone
- + 257.3 Ex SPOT ELEVATION
- PRE-DEVELOPMENT DRAINAGE AREA BOUNDARY
- PRE-DEVELOPMENT DRAINAGE AREA FLOWPATH

No.:	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

REVISIONS

PROJECT SERIAL NUMBER FOR DESIGN:

Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:

THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208

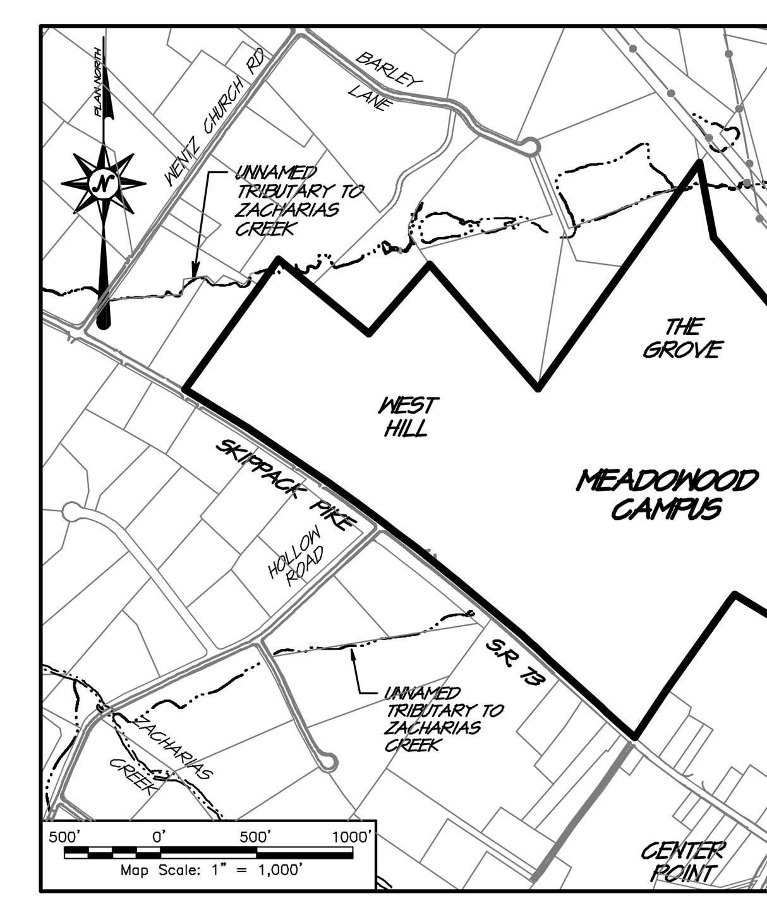
3205 SKIPPACK PIKE

Gross Tract:
137.4921 Acres
Developable Area:
116.6758 Acres

Applicant:

THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

15' 0' 30'
Scale In Feet (1" = 30')



LOCATION MAP

PRELIMINARY / FINAL PLAN – HEALTH CARE NORTHEAST EXPANSION

DRAINAGE AREA BOUNDARY PRE-DEVELOPMENT

MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP – MONTGOMERY COUNTY – PENNSYLVANIA

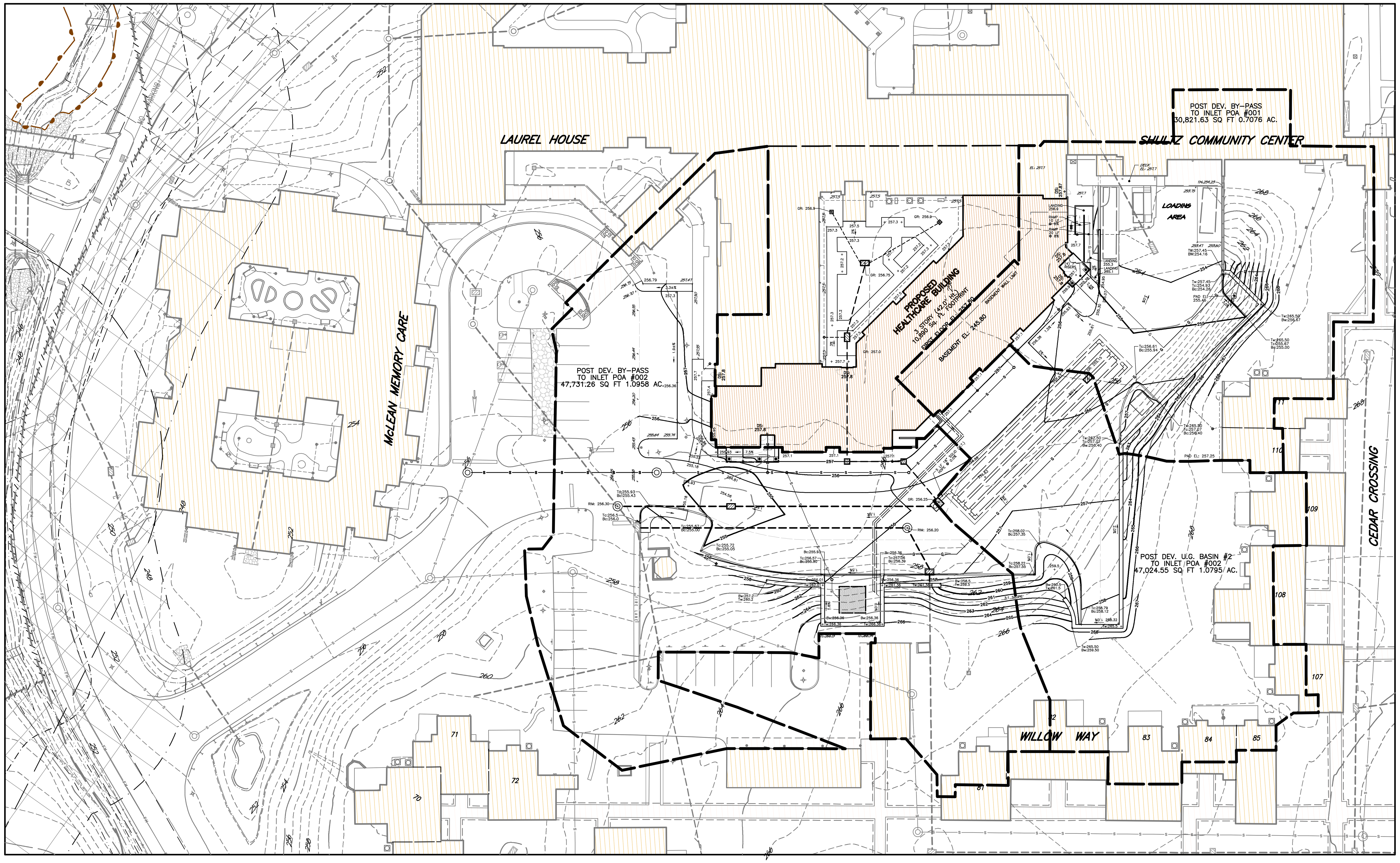
WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 – Lower Gwynedd – PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-15_DAB-Pre

Job No: 00-0606 D21

Plan Date: JAN. 31, 2025

Sheet No: 15 of 16



PLAN LEGEND

	Roadway / Driveway Centerline
248 250	Ex Grade Contour
	Ex Vegetation Limit
	Ex Storm Sewer Piping
S S	Ex Sanitary Sewer Piping
G G	Ex Gas Main / Service
W W	Ex Water Main / Service
UT UT	Ex Underground Telephone
+ 257.3	Ex SPOT ELEVATION
+ 257.3	PR SPOT ELEVATION
248 250	PR GRADE CONTOUR
	PR STORM PIPING
	POST-DEVELOPMENT DRAINAGE AREA BOUNDARY
	DRAINAGE AREA FLOWPATHS

No.	DATE:	DESCRIPTION:
1	06/30/25	Twp Engineer letter (3/20/25), Traffic Consultant letter (3/4/25) & MEP Update

REVISIONS

PLAN NORTH

TIMOTHY P. WOODROW PROFESSIONAL ENGINEER No. 038735-E PENNSYLVANIA

PROJECT SERIAL NUMBER FOR DESIGN:

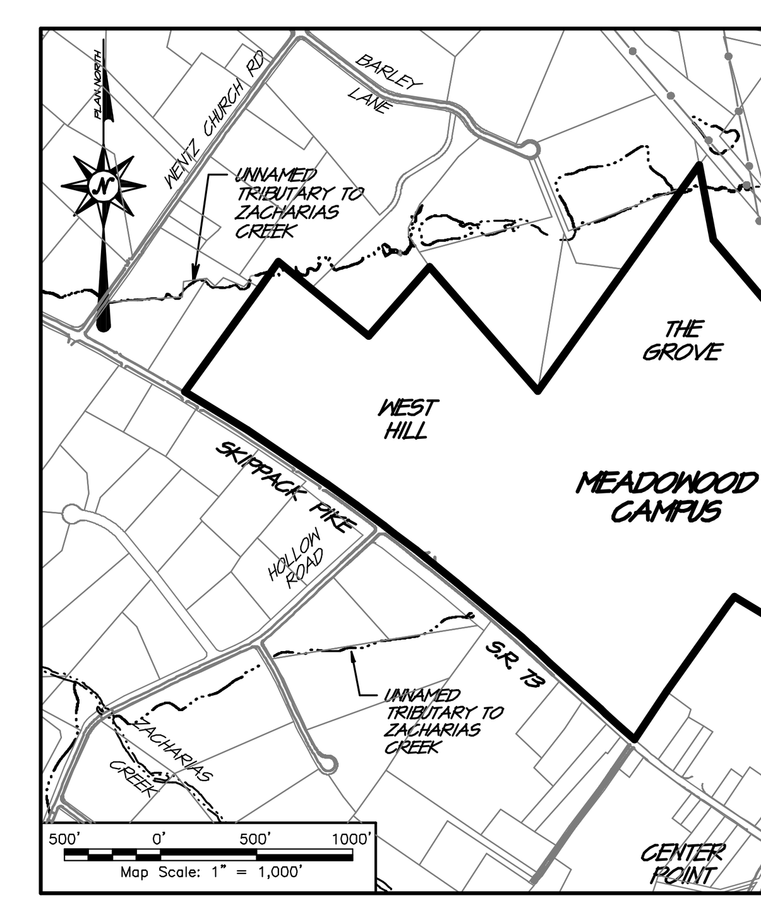
Pennsylvania 811
A Privately funded non-profit Pennsylvania Corporation

Parcel Information:
THE MEADOWOOD CORPORATION
TP: 67-00-03185-00-6
Block 28 Unit 28
DB: 6370 Page 2199-2208
3205 SKIPPACK PIKE

Gross Tract:
137.4921 Acres
Developable Area:
116.6758 Acres

Applicant:
THE MEADOWOOD CORPORATION
c/o Paul Nordeman
President/CEO
3205 Skippack Pike
(PO Box 670)
Worcester, PA 19490

15' 0' 30'
Scale In Feet (1" = 30')



LOCATION MAP

PRELIMINARY / FINAL PLAN - HEALTH CARE NORTHEAST EXPANSION

DRAINAGE AREA BOUNDARY POST-DEVELOPMENT

MEADOWOOD SENIOR LIVING

WORCESTER TOWNSHIP - MONTGOMERY COUNTY - PENNSYLVANIA

WOODROW & ASSOCIATES, INC.
MUNICIPAL / CIVIL CONSULTING ENGINEERS
1108 North Bethlehem Pike / Suite 5 - Lower Gwynedd - PA 19002
Phone: (215) 542-5648 Web: www.WoodrowInc.com

Layer List: D21-16_DAB-Post
Job No: 00-0606 D21
Plan Date: JAN. 31, 2025

July 8, 2025

Mr. Dan Demeno
Township Manager
Worcester Township
1721 Valley Forge Road
P.O. Box 767
Worcester, PA 19490

Reference: Land Development Preliminary Review
Proposed Meadowood Healthcare Building
Worcester Township, Montgomery County, PA

Dear Mr Demeno:

Please be advised that Woodrow & Associates, Inc. is in receipt of the CKS Engineers' review letter dated March 20, 2025, pertaining to the above referenced Land Development Application.

We have had the opportunity to review the letter and have incorporated recommendations and changes to the appropriate plans as requested. We are hereby forwarding to you a revised plan submission in order that the review process of this application can continue.

With regard to the review letter referenced above, we have addressed the technical items contained therein in the following manner.

I. ZONING

The following comments are based upon the provisions of the Worcester Township Zoning Ordinance:

1. *The following variances were granted by the Worcester Township Hearing Board on January 21, 2025 (Docket No. 2024-25):*

   a. *Section 150-15 – to permit the construction of a residential building with a height of three stories, not to exceed 40 feet when the maximum permitted is 35 feet and/or 2.5 stories.*

      No plan revisions required.

   b. *Section 150-15 – to permit the expansion of the existing health center to a height of three stories and/or 42 feet when the maximum permitted is 35 feet and/or 2.5 stories.*

      No plan revisions required.

2. *Both variances granted must be listed on the plans with the docket number.*

Additions have been made to the Plan.

On Sheets 1 and 2, the Site Data Zoning Schedule should also list stories allowed/proposed.

Additions have been made to the Plan.

The variances were granted by the Zoning Hearing Board with the following conditions which should also be listed on the plans:

a. *The applicant shall construct the buildings substantially as set forth in the testimony and as shown in Exhibits A-3, A-7, and A-9. The applicant shall install and maintain a berm and evergreen landscaping, 8 feet in height at time of planting, substantially as shown on Exhibit A-10, to the satisfaction of the Township.*

The Healthcare Project will comply.

b. *The applicant shall apply for and obtain all applicable Township, County and State permits and approvals relative to the use in a timely manner.*

The Healthcare Project will comply.

c. *All use and development permitted by this Decision shall conform to the exhibits and testimony presented by the applicant, unless inconsistent with any specific conditions imposed by this Board, in which case these specific conditions shall take precedence.*

The Healthcare Project will comply.

d. *Except as permitted by prior Decisions of this Board, the use of the subject property shall otherwise comply with the Worcester Township Code, including, but not limited to, all stormwater management fencing, setback, parking, lighting, sign, and noise regulations, and all other codes, regulations and ordinances of Worcester Township.*

The Healthcare Project will comply.

e. *Pursuant to Section 150-225 of the Worcester Township Zoning Ordinance, a special exception or variance shall expire if the applicant fails to obtain a permit in connection therewith within one (1) year of the date of authorization thereof. When land development/subdivision approval is required, the special exception or variance shall expire if the applicant fails to make a diligent effort to obtain such approval within six (6) months following the date of the Zoning Hearing Board's Order. Upon receipt of land development/subdivision approval, the special exception or variances shall expire if a building permit is not obtained within six (6) months of the date of the land development/subdivision approval.*

No plan revisions necessary.

3. *The existing use of the site, residential life-care facility, is permitted by Conditional Use if authorized by the Township Board of Supervisors, where the lot is 100 acres or larger, building coverage does not exceed 15% of the net lot area, and impervious coverage does not exceed 40% of the net lot area. The Township must determine if new Conditional Use approval is warranted to expand the use upon the site. (150-110.22.C & 150-11.E.7)*

   A new Conditional Use is not required per conversation with the Township Solicitor.

4. *The building coverage in the Campus Area Schedule on Sheet 2 must be revised to indicate the square footage of existing buildings that are to be removed.*

   Notation added to reference schedule on Sheet 5.

5. *The plan states that 49 parking spaces are to be removed and 34 parking spaces are to be added which would result in a reduction of 15 spaces from the existing number of spaces. The parking calculation on Sheet 1 indicates a reduction of 17 spaces. The plans must be revised to indicate the correct number of spaces being removed.*

   The Parking Count has been adjusted.

6. *The proposed reconfigured parking area will provide 17, 10 by 18-foot parking spaces; eight, 8 x 18-foot compact vehicle parking spaces; two, 10 x 20-foot parking spaces; and seven ADA accessible spaces. We note that the majority of the parking spaces are undersized, as Section 130-17.D.7 of the Township's Subdivision and Land Development Ordinance requires all parking stalls to be not less than 10 by 20 feet. (150-158)*

   Waiver (A.) has been added to Sheet No. 1 as related to this item.

7. *The height(s) and materials of screen fencing and screen/wall fences depicted on the plan should be noted. (150-182)*

   Fence label updated and detail added to Sheet No. 10.

8. *The plan should indicate if any new lighting is anticipated and demonstrate that no zoning relief is needed for any proposed lighting. We note that a lighting information table is shown on Sheet ~~1~~7, but there are no lighting fixture locations on the plans. Heights for lighting in this table list mounting heights of 12 feet, which is the maximum allowed. Lighting cut sheets, pole details, and lighting values must be added to the plans. (150-200)*

   Site lighting for the project area has been added to the Utility Plan (Sheet 7).

II. SUBDIVISION AND LAND DEVELOPMENT

The following comments are based upon the requirements of Worcester Township's Subdivision and Land Development Ordinance:

1. *As previously stated in this letter, parking stall dimensions shall not be less than 10 ft. x 20 ft. (130-17.D(7))*

   A waiver had been added.

2. *The location of any lighting standards must be shown on the plans to avoid conflicts with any landscaping. (138-28.G(6)(g))*

   Site lighting for the project area has been added to the Utility Plan (Sheet 7).

3. *On Sheet 8, the 'Littleleaf Linden' has a proposed caliper of 1.5-2 inch. The minimum caliper for this tree is 3.5 inches. (130-28.H.1)*

   The minimum caliper for the plan material has been corrected.

4. *Details of the proposed retaining wall must be added to the plans. The detail must include a note that states, "Structural plans and calculations, signed and sealed by a professional engineer licensed in the Commonwealth of Pennsylvania, must be submitted to the Township for review and approval before any retaining wall is constructed."*

   Structural design for the wall to be provided by others. The requested note has been added as note #10 on plan sheet 5.

5. *A timber split rail fence detail is shown on Sheet 10. The applicant should confirm this is the new "screen fence" shown along the northern end of the parking area.*

   The Split Rail Fence detail has been replaced with updated Screen Fence detail.

6. *The truck turning movement must be revised to maneuver into the loading dock, not onto the trash compactor.*

   The truck movement has been adjusted to center of dock lane.

7. *Details of the cooling tower and concrete pad must be added to the plans.*

   To be provided by the architect (RLPS) and MEP Contractor (ReeseHackman).

8. *Detectable warning surfaces (DWS) must be added to the sidewalk near the new building and proposed parking lot and at the northern build access location.*

   DWS pad(s) have been added to the plan sheets.

9. *A detail for the railing along the pedestrian ramp must be added to the plans.*

   The Railing is part of the ramp design provided by the project architect.

10. *The following is a list of requested waivers as shown on Sheet 1:*

    a. *From Section 130-28.E(1) requiring an existing tree survey.*

       The applicant is proposing to use the existing tree survey only for impacted project area.

b. *From Section 130-28G.(4) requiring street trees be installed with any new subdivision use or land development.*

The plans do not propose any supplemental street trees.

c. *From Section 130-28.G.6.g requiring no more than 15 parking spaces shall be placed in a continuous row without an intervening raised planting island of at least 10 ft. in width. (130-28.G.6.b)*

The plans propose a parking row of 17 spaces without a planting island.

d. *From Section 130-33.C requiring all existing features 500 ft. from the project boundary be shown on the plans. The waiver request states that an aerial photograph to fulfill requirements of showing existing features within 500 ft. of the project tract.*

The aerial plan must be included in future submissions. (130-33.C)

Waiver noted remain requested, no plan revisions required.

III. GRADING, STORMWATER MANAGEMENT/STORM DRAINAGE AND EROSION AND SEDIMENT CONTROLS

The following comments are based upon the requirements of Worcester Township's Stormwater Management Ordinance (SMO):

1. *The project proposes to disturb 0.64 acres. The applicant is made aware that if the limit of disturbance exceeds one acre, an NPDES permit and Adequacy for Erosion and Sediment Control will be required. This office is aware of a separate staging area located on the Meadowood site that may be required to be added to the healthcare expansion development. The applicant's engineer must provide confirmation from the Montgomery County Conservation District that the two projects do not need to be combined.*

   No plan revisions are required.

2. *There appears to be a stormwater facility proposed in the new parking lot. The facility must be labeled and the dimensions of the stormwater facility should be provided on the plans. (129-12.H)(129-14.B.5)*

   As noted throughout this application, the net increase in impervious surfaces associated with this application is less than 5,000 square feet. Based upon the proposed development it was necessary to limit the increase to the existing storm sewer collection system. As shown in the Post Construction Stormwater Management Report this design reduces flows to both collection syste

3. *A detail and calculations pertaining to the seepage bed must be added to the plans.*

   Details of the proposed underground basin have been added to the plans based upon the new design. All impacted utilities have been adjusted to provide the necessary vertical and horizontal clearances.

4. *On both Sheet 6 and Sheet 9, there is a missing invert for structure D104.*

   The Structure and Pipe Schedules have been updated to reflect the new design.

5. *Sheet 6 has a rim elevation for Manhole D105 of 255.73 and Sheet 9 has a grate elevation of 255.66. The plans must be revised accordingly.*

   The label has been corrected.

6. *All proposed erosion and sediment controls must be added to the plan on Sheet 12.*

   Acknowledged. Woodrow and Associates is working with the applicant to work through construction staging and a construction sequence that will work to maintain facility operations. All erosions and sediment control measures and a construction sequence will be provided in a subsequent plan submission for review and comment.

7. *Additional top of wall and bottom of wall elevations must be added to the plans.*

   The wall configuration and elevations including additional spot elevations have been added. Additional details for the wall to be provided with full structural design.

8. *Storm sewer calculations must be provided to demonstrate that the existing storm sewer can convey the increase in runoff from the proposed impervious areas.*

   As shown in the Post Construction Stormwater Management Report, The Underground Basin System has been designed with a separate discharge piping system. In doing so this eliminates the adverse effects on the basin as designed.

9. *All utility crossings must be shown on the profiles.*

   The profiles have been updated to reflect all of the crossings.

10. *It appears that the roof drain from existing Units 110/111 will discharge directly upstream of the relocated electrical transformer. The engineer should provide a revision to reroute the existing roof drain outflow around the transformer.*

    The roof leader in question has been shown to be rerouted through the wall and away from the transformer area.

11. *A site specific construction sequence is required to be included on Sheet 13.*

    See response comment 6 above.

12. *A profile from the existing inlet to Inlet D104 must be added to the plans.*

    Profiles of all storm runs have been added.

13. *Additional spot elevations and grading must be added to the courtyard area.*

    Additional spot elevations have been added.

14. *Inlet D106 must be shown on the profiles on Sheet 9. (130-33.F.1)*

    Profiles of all storm runs have been added.

15. *Additional cover over pipe D101 – D100 is required. Further, this pipe shall be RCP.*

    The pipe has been lowered as much as possible and is now noted as Class IV RCP.

16. *Pipe D101 – D 100 is proposed underneath the proposed footing of the proposed building expansion.*

IV. SANITARY SEWER

1. *The size, slope, and material of the sewer lateral must be added to the plans, along with a profile.*

   Profile and Design information has been added.

2. *The existing utilities to the existing maintenance office and storage shed must be shown to be removed or, at a minimum, capped.*

   Only wired services feed the existing buildings and are to be terminated as noted on the plans.

3. *The new sanitary sewer manhole must be indicated as a doghouse manhole on the plans. A doghouse manhole detail must be added to the plans.*

   Manhole now labeled as a "Doghouse."

4. *The applicant will be required to buy additional sewer capacity in conjunction with the healthcare building expansion. The applicant must provide flow calculations to determine the required EDUs. We are currently evaluating the Valley Green WWTP and the Meadowood Pump Station to determine if capacity exists at these facilities. We will work with the applicant directly to address any sewer issues.*

   No plan revisions required.

V. GENERAL

The following are general comments and consideration generated during the course of our review:

1. *Legend(s) should be added to the plan sheets throughout the plan set, as applicable.*

   The Plan Legend has been updated on various plan sheets.

2. *Truck turning movements for emergency services must be added to the plan.*

   We have coordinated the turning templates with Bowman.

3. *The height of the Cooling Tower Building must be provided on the plans.*

   From the current MEP Plans, the Cooling Facility will have a maximum height of 15.7' from base grade.

4. *The proposed courtyard is labeled as landscaped on Sheet 5. Details of the landscaping should be provided on the landscaping plan, Sheet 8.*

   Meadowood is completing the courtyard design and will provide to the township when completed

5. *Approval from the Traffic Engineer is required.*

   No revisions to the plans are required.

6. *Approval from the Fire Marshal is required.*

   No revisions to the plans are required.

7. *A review from the Montgomery County Planning Commission is required.*

   The Montgomery County Planning Commission has issued their review letter dated March 20, 2025.

8. *It appears Sheets 16 and 17 are duplicated. Sheet 17 should be deleted or revised if intended to illustrate individual inlet drainage areas.*

   The plan set has been updated to combing the Post-Construction DA Plan with the Inlet DA Plan for a total plan set of 16 Sheets.

The above represents our comments on this initial plan submission. The plans must be revised accordingly and resubmitted for further review.

Thank you in advance for your attention to this matter. Please call with any questions or comments.

Sincerely,

John Kolb
Woodrow & Associates, Inc.

cc: The Meadowood Corp., Applicant
Catherine Harper, Esq., Applicant Attorney – Timoney Knox LLP
Wendy Feiss McKenna, Esp., Township Solicitor
John W. Evarts, P.E., Twp. Engineer – CKS Engineers
Casey A. Moore, PE, Twp. Traffic Engineer, Bowman
Tim Woodrow, PE, Applicant's Engineer, Woodrow & Assoc., Inc.

MEADOWOOD SENIOR LIVING

POST-CONSTRUCTION STORMWATER MANAGEMENT REPORT

PREPARED FOR:

The Meadowood Corporation

3205 Skippack Pike (PO Box 670)
Worcester, PA 19490

PREPARED BY:

Woodrow & Associates, Inc.
1108 North Bethlehem Pike, Suite 5
Lower Gwynedd, PA 19002
Phone: (215) 542-5648

PROJECT No. 00-0606D21

DATE: JULY 2025

Meadowood Senior Living

Post-Construction Stormwater Management Report
Table of Contents

Section A:
Project Information and Site Data:

a. Project Narrative:

MEADOWOOD SENIOR LIVING
POST-CONSTRUCTION STORMWATER MANAGEMENT REPORT NARRATIVE

Project Description

The applicant, The Meadowood Corp, is proposing the construction of a 10,890 sq. ft. addition to the existing Healthcare facility. The proposed addition will be connected to the Holly House portion of the existing building located northeast of the main entrance to the facility. The subject parcel consists of approximately 125-acre, located on 3205 Skippack Pike, situated in Worcester Township, Montgomery County, Pennsylvania.

The proposed addition and associated improvements will result in a net increase of less than 5,000 square feet of impervious surface. As indicated in the plans the proposed addition and associated improvements will be constructed within the existing parking area. This plan also calls for the removal of the existing storage shed, and maintenance office as shown on the Existing Features and Demolition – Project Area plan. This proposal will also include the relocation of several utilities and the installation of an underground detention facility to ensure that no net increase to either collection system will be compromised as part of this development.

Sanitary and water connections for the new building will be to existing mains already installed on the campus.

Existing Conditions

As noted above, the proposed improvements will be constructed over an existing parking facility located in the vicinity of the Holly House and the Shultz Community Center loading dock area. The existing parking lot area topographically falls to an existing inlet near the loading dock and conveyed under the building via an 18" concrete pipe. It should be noted that this inlet also has a roof collects the roof leaders from the Holly House, the rear portion of the Willow Way and Cedar Crossing units located adjacent to the parking area.

The remaining runoff from this area is collected by an existing inlet collection system that runs through campus. This inlet also collects roof leaders from the Holly House Building. A portion of the existing inlet collection system is to be removed and replaced as part of this construction and illustrated on these plans.

The proposed improvements are bisected by an on-site tributary draining to Zacharias Creek, eventually entering the Skippack Creek. Skippack Creek is a TSF & MF, as classified by Title 25. Environmental Resources Chapter 93, Water Quality Standards as published by the Department of Environmental Resources – Bureau of Water Quality Management.

There are no naturally occurring geological conditions on-site that could potentially cause pollution. Sediment-laden runoff is an anticipated construction waste but due to the implementation of the proposed Erosion Control devices around the project site, there are no anticipated project wastes other than clean water runoff once the site is stabilized and complete.

Soils within the analyzed watershed area

Watershed soils consist of the following:

ReB	Readington silt loam	3 to 8 percent slopes
RwB	Rowland silt loam	3 to 8 percent slopes
UusB	Urban land – Udorthents shale and sandstone complex	0 to 8 percent slopes

On-site soils indicated above are taken from the USDA NRCS Web Soil Survey conducted on July 1, 2020.

Soils Resolutions

Winter Grading – Contractor to ensure proper stabilization. Methods to include, seeding and mulching at the recommended rates and where necessary the placement of an approved erosion control blanket.

Road Fill – Contractor to ensure all fill used for roadway construction is placed and compacted in appropriate lifts. Should material not be suitable for roadway construction the contractor may import suitable material from an area within the permitted area.

Topsoil – Contractor to ensure proper stabilization. Methods to include, seeding and mulching at the recommended rates and where necessary the placement of an approved erosion control blanket.

Contractor shall consider soils testing to ensure topsoil is suitable to produce and sustain proper growth. Should the topsoil be lacking the nutrients to produce growth the contractor shall consider applying lime and/or fertilizers at the rates recommended by the project landscape consultant and/or M.C.C.D.

Topsoil may be imported from an area within the permitted area proven to be suitable.

Ponds, Dikes and Levees Embankments – Contractor to ensure all fill used for basin embankment construction is places and compacted in appropriate lifts. Should material not be suitable for basin construction the contractor may import suitable material from an area within the permitted area.

Contractor to ensure proper stabilization. Methods to include, seeding and mulching at the recommended rates and where necessary the placement of an approved erosion control blanket.

Terraces, diversions and waterways – Contractor to ensure all earthwork associated with swales, diversion berms and/or watercourses is adequately stabilized with an approved erosion and sediment control blanket and/or seeding and mulching applied at the recommended rates.

Should erosion continue the contractor should consult the design engineer, the M.C.C.D. and take appropriate measures to correct the problems. Corrective measures may include but are not limited to the following:

Additional seeding and mulching, the placement of sod, armoring the channel with a stronger stabilization blanket, or the placement of rip-rap.

Proposed Conditions

As mentioned above, the applicant The Meadowood Corp, is proposing the construction of a 10,890 sq. ft. addition to the existing Healthcare facility. The proposed addition will be connected to the Holly House portion of the existing building located northeast of the main entrance to the facility. The subject parcel consists of approximately 125-acre, located on 3205 Skippack Pike, situated in Worcester Township, Montgomery County, Pennsylvania.

The proposed addition and associated improvements will result in a net increase of less than 5,000 square feet of impervious surface. As indicated in the plans the proposed addition and associated improvements will be constructed within the existing parking area. This plan also calls for the removal of the existing storage shed, and maintenance office as shown on the Existing Features and Demolition – Project Area plan. This proposal will also include the relocation of several utilities and the installation of an underground detention facility to ensure that no net increase to either collection system will be compromised as part of this development.

Construction will also include the rerouting of the storm sewer system to redirect flows from the pipe network above the area to the existing inlet located within the main access drive. As shown on the plans a proposed pipe and stone basin is being constructed to capture and retain flows from the increase in impervious surface and the rerouting of the above-mentioned roof leaders from through the proposed courtyard.

With the construction of the underground basin the net increase to the existing pipe will be less than the predevelopment. A separate basin discharge line has been added to the plans and will direct basin discharge and by-pass flows to a doghouse manhole installed over the existing 36 cmp. For calculations purposes pipe network was analyzed with the 36” cmp flowing full.

The basin outlet pipe system was analyzed using a tailwater elevation equal to the hydraulic grade line of the downstream structure. As noted in the calculations, the basin will function as designed to reduce the post development flow below predevelopment levels.

Given the reconfiguration of the roof leader collection system, flows to the inlet located near the loading dock will be significantly reduced.

Sanitary and water connections for the new building will be to existing mains already installed on the campus.

Per Pennsylvania Department of Environmental Protection requirements, the proposed project shall:

- Preserve the integrity of stream channels and maintain and protect the physical, biological, and chemical qualities of the receiving stream reducing post-development runoff rates and volumes to the predesignated Design Points.
- Prevent an increase in the rate and volume of stormwater runoff to the greatest extent possible through the implementation of the proposed Rain Gardens to capture, slow, cool, and infiltrate runoff before discharging runoff towards the predesignated Design Points but at lower flow rates and volumes when compared to predevelopment conditions.
- Minimize impervious areas to the greatest extent possible by limiting proposed impervious solely to the needs of the proposed development.
- Maximize the protection of existing drainage features and existing vegetation to the greatest extent possible by staking and flagging the Limit of Disturbance as the first step in the Construction Sequence to minimize any unnecessary disturbance.
- Minimize land clearing and grading to the greatest extent possible by staking and flagging the Limit of Disturbance as the first step in the Construction Sequence to prevent any unnecessary disturbance and/or land clearing.
- Minimize soil compaction to the greatest extent possible by fencing off the areas of the two proposed Rain Gardens to prohibit unnecessary construction traffic and preserve the natural infiltration rates in these areas.
- Through the use of the proposed BMPs, the project shall minimize the generation of increased stormwater runoff.

The use of the above outlined BMP's shall also help slow and cool runoff, decreasing the possibility of any adverse thermal impacts to offsite waters. There are no naturally occurring geologic conditions on-site that could potentially cause pollution. Sediment-laden runoff is an anticipated construction waste during earth disturbance that has been mitigated to the greatest extent possible through the use of the proposed Erosion Control measures.

Implemented Best Management Practices

In an effort to minimize the possibility of any adverse impacts to downstream watersheds, while also slowing and cooling runoff to the greatest extent possible, the following Best Management Practices have been proposed for this project:

- Per PA DEP Manual, Chapter 6.4.5 – Rain Garden Bioretention has been utilized within proposed Rain Gardens 'A' and 'B' to capture, slow, and cool runoff to the greatest extent possible while allowing natural infiltration rates in both locations the maximum amount of time to absorb and filter runoff.
- Per PA DEP Manual, Chapter 6.7.1 – Riparian Buffer Restoration has been utilized within the existing Riparian Buffer Zones established along the existing on-site channel. All proposed landscaping within these areas have been designed according to the specifications within this chapter.

- Per PA DEP Manual, Chapter 6.7.3 – Soil Amendment and Restoration has been utilized within lawn areas to amend the soils in these locations to promote infiltration.

Design Methodology

The Post-Construction Stormwater Management Plan has been designed by the staff of Woodrow & Associates, Inc. under the direction of Timothy P. Woodrow, P.E.. Mr. Woodrow is a graduate of Penn State were he received a B.S. degree in Civil Engineering. This plan has been prepared in accordance with all applicable PA DEP BMP Manual requirements and specifications. Previous NPDES Permitted projects designed by Woodrow & Associates consist of PAG02004615010, PAG02004614035, & PAG02004614064.

The Worcester Township Subdivision and Land Development Ordinance was reviewed for applicable sections for Storm Water Management. Through the review of the above mentioned Ordinance, it was determined that it would be necessary to control the 2 thru 100 year Storm events to their respective predevelopment rates. The Storm Water Management Report for this project was prepared using the DeKalb Method within the Hydroflow2007 program.

The SCS Method was utilized within all applicable NPDES worksheets to design the proposed BMPs to reduce runoff volumes from the project. Hydraflow calculations were completed using the DeKalb Method as it more accurately reflects 'real-world' drainage conditions for this size of a project.

Summary and Conclusions

Hydrologic and hydraulic calculations and analysis were performed as required to ensure that the proposed development design is in conformance with Worcester Township design criteria and standard engineering practice. The performed analysis appears in the following sections of this report; from which the following can be asserted:

1. The construction of the proposed stormwater management facilities will perform as required to meet and/or exceed both Township and DEP requirements for rate control.

In conclusion, from a Storm Water Management perspective, the proposed development can be constructed without any adverse impact to adjoining and downstream properties.

b. Aerial Photograph & Soils Map/Report of Site:

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Montgomery County, Pennsylvania

Meadowood Healthcare Expansion Area

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Soil Map (Meadowood Healthcare Expansion Area)

Map Scale: 1:1,280 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: Montgomery County, Pennsylvania
Survey Area Data: Version 19, Sep 5, 2024

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

Date(s) aerial images were photographed: Jun 3, 2022—Jul 20, 2022

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

Map Unit Legend (Meadowood Healthcare Expansion Area)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
ReB	Readington silt loam, 3 to 8 percent slopes	0.0	0.3%
UusB	Urban land-Udorthents, shale and sandstone complex, 0 to 8 percent slopes	7.6	99.7%
Totals for Area of Interest		**7.6**	**100.0%**

Map Unit Descriptions (Meadowood Healthcare Expansion Area)

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Montgomery County, Pennsylvania

ReB—Readington silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2w05x
Elevation: 70 to 950 feet
Mean annual precipitation: 38 to 55 inches
Mean annual air temperature: 43 to 57 degrees F
Frost-free period: 170 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Readington and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Readington

Setting

Landform: Hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope, head slope, base slope
Down-slope shape: Concave, linear
Across-slope shape: Concave, linear
Parent material: Triassic colluvium derived from shale and siltstone and/or triassic residuum weathered from shale and siltstone

Typical profile

Ap - 0 to 10 inches: silt loam
Bt1 - 10 to 17 inches: silt loam
Bt2 - 17 to 34 inches: silty clay loam
Btx - 34 to 48 inches: clay loam
C - 48 to 58 inches: channery silt loam
R - 58 to 68 inches: bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 36 inches to fragipan; 40 to 60 inches to lithic bedrock
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F148XY025PA - Moist, Triassic, Upland, Mixed Oak - Hardwood - Conifer Forest

Hydric soil rating: No

Minor Components

Penn

Percent of map unit: 5 percent
Landform: Ridges
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Interfluve, side slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Reaville

Percent of map unit: 5 percent
Landform: Depressions
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Abbottstown

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

UusB—Urban land-Udorthents, shale and sandstone complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2dtz9
Elevation: 50 to 950 feet
Mean annual precipitation: 38 to 48 inches
Mean annual air temperature: 48 to 57 degrees F
Frost-free period: 161 to 215 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 80 percent
Udorthents, shale and sandstone, and similar soils: 15 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Landform: Hills
Parent material: Pavement, buildings and other artifically covered areas

Typical profile

C - 0 to 6 inches: variable

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 10 to 99 inches to lithic bedrock
Available water supply, 0 to 60 inches: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: No

Description of Udorthents, Shale And Sandstone

Setting

Landform: Ridges
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, nose slope, interfluve
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Graded areas of sandstone and shale

Typical profile

A - 0 to 6 inches: very channery loam
C - 6 to 60 inches: very channery silt loam

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 99 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Penn

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, backslope
Landform position (three-dimensional): Side slope, nose slope

Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

c. NOAA Rainfall Tables & TR-55 Runoff Coefficients:

NOAA Rainfall Data

The following Rainfall Data was obtained from NOAA's (National Oceanic and Atmospheric Administration) National Weather Service Hydrometeorological Design Studies Center Precipitation Frequency Data Server (PFDS) website using the project site address and/or the latitude & longitude for the proposed project. The rainfall amounts generated by this website were then imported into the Hydraflow Hydrograph software to generate accurate runoff rates and volumes based upon the project site location.

TR-55 Runoff Coefficients

The following Runoff Coefficients have been utilized within this report to generate Time of Concentration Calculations. These coefficients have been obtained from the USDA (United States Department of Agriculture) Technical Release 55 for Urban Hydrology for Small Watersheds:

Per Chapter 3 of TR-55:
Table 3-1 – Runoff coefficients (Manning's n) for sheet flow:

Smooth surfaces (concrete, asphalt, gravel, or bare soil)	0.011
Short grass (maintained lawn)	0.15
Grass (dense grasses)	0.23
Woods (light underbrush)	0.40
Woods (dense underbrush)	0.80

Section B:
Summary of Runoff Reductions:

Meadowood - Healthcare Expansion
Summary of Runoff Reductions

Predevelopment:				
Storm Year:	*Design Point POA #001*		*Design Point POA #002*	
	c.f.s.	*cu.ft.*		
2	*4.441*	*4,781*	*5.315*	*5,721*
5	*5.210*	*5,608*	*6.235*	*6,712*
10	*5.756*	*6,196*	*6.889*	*7,416*
25	*6.397*	*6,886*	*7.656*	*8,241*
50	*6.828*	*7,350*	*8.172*	*8,796*
100	*7.255*	*7,809*	*8.682*	*9,346*

Post-development By-pass:				
Storm Year:	*Design Point POA #001*		*Design Point POA #002*	
	c.f.s.	*cu.ft.*	*c.f.s.*	*cu.ft.*
2	*2.518*	*2,711*	*3.558*	*3,830*
5	*2.954*	*3,180*	*4.174*	*4,493*
10	*3.264*	*3,514*	*4.612*	*4,964*
25	*3.628*	*3,905*	*5.126*	*5,517*
50	*3.872*	*4,168*	*5.470*	*5,888*
100	*4.114*	*4,428*	*5.815*	*6,256*

Maximum Basin Discharge:				
Storm Year:	*Design Point POA #001*		*Design Point POA #002*	
	c.f.s.	*cu.ft.*	*c.f.s.*	*cu.ft.*
2	*1.923*	*2,070*	*1.757*	*1,891*
5	*2.256*	*2,428*	*2.061*	*2,219*
10	*2.492*	*2,682*	*2.277*	*2,452*
25	*2.769*	*2,981*	*2.530*	*2,724*
50	*2.956*	*3,182*	*2.702*	*2,908*
100	*3.141*	*3,381*	*2.867*	*3,090*

Actual Basin Discharge:		
Storm Year:	*U.G. Basin #002*	
	c.f.s.	*cu.ft.*
2	*1.263*	*1,946*
5	*1.431*	*2,288*
10	*1.563*	*2,533*
25	*1.715*	*2,822*
50	*1.811*	*3,018*
100	*1.904*	*3,214*

Net Reduction: Storm Year:	Design Point POA #001 c.f.s.	Design Point POA #001 cu.ft.	Design Point POA #002	
2	1.923	2,070	1.801	-55
5	2.256	2,428	2.113	-69
10	2.492	2,682	2.335	-81
25	2.769	2,981	2.596	-98
50	2.956	3,182	2.768	-110
100	3.141	3,381	2.948	-124

Section C:
Weighted Runoff & Time of Concentration Calculations

a. Predevelopment Areas:

Project Name: Meadowood
Project Number: 00-0606-D21
Project Location: Healthcare Expansion

Runoff Coefficient Calculations for Rational Method

Drainage Area/Subarea identification: *Predevelopment POA #001*

Ground Cover	***Coefficient (A)***	***Area in Acres (B)***	***Sum (C)***
Heathcare Expansion Area			
Building Area	*0.97*	*0.2932*	*0.2844*
Pavement Area	*0.97*	*0.3642*	*0.3533*
Concrete Pads/Walks	*0.97*	*0.0849*	*0.0824*
Lawn Area (remaining)	*0.40*	*0.6093*	*0.2437*
	Totals:	*1.3516*	*0.9638*

Wc = $\frac{(C)}{(B)}$ *or* $\frac{0.963751}{1.3516}$ ***0.7130***

Use weighted Coefficient of : ***0.71***

Project Name: Meadowood By: RJJ Date: 6/2/2025

Project Location: Healthcare Expansion Chkd: Date:

Circle One: **Present** Developed Predevelopment POA #001

Circle One: **Tc** Tt through Subarea

Sheet flow (Applicable to Tc only)

			Segment ID	A-B		
1)	Surface Description			Lawn		
2)	Manning's roughness coeff., **n**			0.16		
3)	Flow Length, **L** (Total $\leq$ 150 ft.)		ft.			
4)	Two-yr, 24 hr. rainfall, P_2		in.	3.3		
5)	Land Slope, **s**		ft/ft	0.0373		
6)	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$	Compute T_t	hr.	0.000		0.000

Shallow Concentrated Flow

			Segment ID	B-C		
7)	Surface description (paved or unpaved)			unpaved		
8)	Flow length, **L**		ft.			
9)	Watercourse slope, **s**		ft/ft	0.005		
10)	Average velocity, **V**		ft/s	1.141	0.000	
11)	$T_t = \frac{L}{3600\ V}$	Compute T_t	hr.	0.000		0.000

Channel Flow

			Segment ID	n/a		
12)	Cross sectional flow area, **a**		ft^2			
13)	Wetted perimeter, p_w		ft			
14)	Hydraulic radius, r = a/ pw	Compute **r**	ft			
15)	Channel slope, **s**		ft/ft			
16)	Manning's roughness coeff., **n**					
17)	$V = 1.49\ r^{2/3}\ s^{1/2}/n$		ft/s	3.00		
18)	Flow Length, **L**		ft/s			
19)	$T_t = L / (3600\ V)$	Compute T_t	hr	0.000		0.000
20)	Watershed or subarea T_c or T_t (Add 6 + 11 + 19)				hr.	**0.000**
					min.	0.00

Note: Say Tc = Assume 6.0 Minutes.

Project Name: Meadowood
Project Number: 00-0606-D21
Project Location: Healthcare Expansion

Runoff Coefficient Calculations for Rational Method

Drainage Area/Subarea identification: *Predevelopment POA #002*

Ground Cover	***Coefficient (A)***	***Area in Acres (B)***	***Sum (C)***
Heathcare Expansion Area			
Building Area	*0.97*	*0.3213*	*0.3117*
Pavement Area	*0.97*	*0.5051*	*0.4899*
Concrete Pads/Walks	*0.97*	*0.0471*	*0.0457*
Lawn Area (remaining)	*0.40*	*0.5605*	*0.2242*
	Totals:	*1.4340*	*1.0715*

Wc = $\frac{(C)}{(B)}$ *or* $\frac{1.071495}{1.434}$ ***0.7472***

Use weighted Coefficient of : ***0.75***

Project Name: Meadowood By: RJJ Date: 6/2/2025

Project Location: Healthcare Expansion Chkd: Date:

Circle One: **Present** Developed Predevelopment POA #002

Circle One: **Tc** Tt through Subarea

Sheet flow (Applicable to Tc only)

			Segment ID	A-B		
1)	Surface Description			Lawn		
2)	Manning's roughness coeff., **n**			0.16		
3)	Flow Length, **L** (Total $\leq$ 150 ft.)		ft.			
4)	Two-yr, 24 hr. rainfall, P_2		in.	3.3		
5)	Land Slope, **s**		ft/ft	0.0373		
6)	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$	Compute T_t	hr.	0.000		0.000

Shallow Concentrated Flow

			Segment ID	B-C		
7)	Surface description (paved or unpaved)			unpaved		
8)	Flow length, **L**		ft.			
9)	Watercourse slope, **s**		ft/ft	0.005		
10)	Average velocity, **V**		ft/s	1.141	0.000	
11)	$T_t = \frac{L}{3600\ V}$	Compute T_t	hr.	0.000		0.000

Channel Flow

			Segment ID	n/a		
12)	Cross sectional flow area, **a**		ft^2			
13)	Wetted perimeter, p_w		ft			
14)	Hydraulic radius, r = a/ pw	Compute **r**	ft			
15)	Channel slope, **s**		ft/ft			
16)	Manning's roughness coeff., **n**					
17)	$V = 1.49\ r^{2/3}\ s^{1/2}/n$		ft/s	3.00		
18)	Flow Length, **L**		ft/s			
19)	$T_t = L / (3600\ V)$	Compute T_t	hr	0.000		0.000
20)	Watershed or subarea T_c or T_t (Add 6 + 11 + 19)				hr.	**0.000**
					min.	0.00

Note: Say Tc = Assume 6.0 Minutes.

b. Post-development Areas:

Project Name: Meadowood
Project Number: 00-0606-D21
Project Location: Healthcare Expansion

Runoff Coefficient Calculations for Rational Method

Drainage Area/Subarea identification: *Post Dev By-pass POA #001*

Ground Cover	***Coefficient (A)***	***Area in Acres (B)***	***Sum (C)***
Heathcare Expansion Area			
Ex. Building Area	*0.97*	*0.1539*	*0.1493*
New Building Area	*0.97*	*0.0868*	*0.0842*
Pavement Area	*0.97*	*0.1545*	*0.1499*
Concrete Pads/Walks	*0.97*	*0.0628*	*0.0609*
Retaining Wall	*0.97*	*0.0063*	*0.0061*
Lawn Area (remaining)	*0.40*	*0.2433*	*0.0973*
	Totals:	*0.7076*	*0.5477*

Wc = $\frac{(C)}{(B)}$ *or* $\frac{0.547691}{0.7076}$ ***0.7740***

Use weighted Coefficient of : ***0.77***

Project Name: Meadowood By: RJJ Date: 6/2/2025

Project Location: Healthcare Expansion Chkd: Date:

Circle One: **Present** Developed Post Dev By-pass POA #001

Circle One: **Tc** Tt through Subarea

Sheet flow (Applicable to Tc only)

			Segment ID	A-B		
1)	Surface Description			Lawn		
2)	Manning's roughness coeff., **n**			0.16		
3)	Flow Length, **L** (Total $\leq$ 150 ft.)		ft.			
4)	Two-yr, 24 hr. rainfall, P_2		in.	3.3		
5)	Land Slope, **s**		ft/ft	0.0373		
6)	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$	Compute T_t	hr.	0.000		0.000

Shallow Concentrated Flow

			Segment ID	B-C		
7)	Surface description (paved or unpaved)			unpaved		
8)	Flow length, **L**		ft.			
9)	Watercourse slope, **s**		ft/ft	0.005		
10)	Average velocity, **V**		ft/s	1.141	0.000	
11)	$T_t = \frac{L}{3600\ V}$	Compute T_t	hr.	0.000		0.000

Channel Flow

			Segment ID	n/a		
12)	Cross sectional flow area, **a**		ft^2			
13)	Wetted perimeter, p_w		ft			
14)	Hydraulic radius, r = a/ pw	Compute **r**	ft			
15)	Channel slope, **s**		ft/ft			
16)	Manning's roughness coeff., **n**					
17)	$V = 1.49\ r^{2/3}\ s^{1/2}/n$		ft/s	3.00		
18)	Flow Length, **L**		ft/s			
19)	$T_t = L / (3600\ V)$	Compute T_t	hr	0.000		0.000
20)	Watershed or subarea T_c or T_t (Add 6 + 11 + 19)				hr.	**0.000**
					min.	0.00

Note: Say Tc = Assume 6.0 Minutes.

Project Name: Meadowood
Project Number: 00-0606-D21
Project Location: Healthcare Expansion

Runoff Coefficient Calculations for Rational Method

Drainage Area/Subarea identification: *Post Dev By-pass POA #002*

Ground Cover	***Coefficient (A)***	***Area in Acres (B)***	***Sum (C)***
Heathcare Expansion Area			
Ex. Building Area	*0.97*	*0.2004*	*0.1944*
New Building Area	*0.97*	*0.0000*	*0.0000*
Pavement Area	*0.97*	*0.4005*	*0.3885*
Concrete Pads/Walks	*0.97*	*0.0349*	*0.0339*
Retaining Wall	*0.97*	*0.0068*	*0.0066*
Lawn Area (remaining)	*0.40*	*0.3559*	*0.1424*
	Totals:	*0.9985*	*0.7657*

Wc = $\frac{(C)}{(B)}$ *or* $\frac{0.765682}{0.9985}$ ***0.7668***

Use weighted Coefficient of : ***0.77***

Project Name: Meadowood By: RJJ Date: 6/2/2025

Project Location: Healthcare Expansion Chkd: Date:

Circle One: Present **Developed** Post Dev By-pass POA #002

Circle One: **Tc** Tt through Subarea

Sheet flow (Applicable to Tc only)

			Segment ID	A-B		
1)	Surface Description			Lawn		
2)	Manning's roughness coeff., **n**			0.16		
3)	Flow Length, **L** (Total $\leq$ 150 ft.)		ft.			
4)	Two-yr, 24 hr. rainfall, P_2		in.	3.3		
5)	Land Slope, **s**		ft/ft	0.0373		
6)	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$	Compute T_t	hr.	0.000		0.000

Shallow Concentrated Flow

			Segment ID	B-C		
7)	Surface description (paved or unpaved)			unpaved		
8)	Flow length, **L**		ft.			
9)	Watercourse slope, **s**		ft/ft	0.005		
10)	Average velocity, **V**		ft/s	1.141	0.000	
11)	$T_t = \frac{L}{3600\ V}$	Compute T_t	hr.	0.000		0.000

Channel Flow

			Segment ID	n/a		
12)	Cross sectional flow area, **a**		ft^2			
13)	Wetted perimeter, p_w		ft			
14)	Hydraulic radius, r = a/ pw	Compute **r**	ft			
15)	Channel slope, **s**		ft/ft			
16)	Manning's roughness coeff., **n**					
17)	$V = 1.49\ r^{2/3}\ s^{1/2}/n$		ft/s	3.00		
18)	Flow Length, **L**		ft/s			
19)	$T_t = L / (3600\ V)$	Compute T_t	hr	0.000		0.000
20)	Watershed or subarea T_c or T_t (Add 6 + 11 + 19)				hr.	**0.000**
					min.	0.00

Note: Say Tc = Assume 6.0 Minutes.

Project Name: Meadowood
Project Number: 00-0606-D21
Project Location: Healthcare Expansion

Runoff Coefficient Calculations for Rational Method

Drainage Area/Subarea identification: *Post Dev U.G. Basin #2*

Ground Cover	***Coefficient (A)***	***Area in Acres (B)***	***Sum (C)***
Heathcare Expansion Area			
Ex. Building Area	*0.97*	*0.2705*	*0.2624*
New Building Area	*0.97*	*0.1087*	*0.1054*
Pavement Area	*0.97*	*0.1665*	*0.1615*
Concrete Pads/Walks	*0.97*	*0.0592*	*0.0574*
Retaining Wall	*0.97*	*0.0061*	*0.0059*
Lawn Area (remaining)	*0.40*	*0.4685*	*0.1874*
	Totals:	*1.0795*	*0.7801*

Wc = $\frac{(C)}{(B)}$ *or* $\frac{0.78007}{1.0795}$ ***0.7226***

Use weighted Coefficient of : ***0.72***

Project Name: Meadowood By: RJJ Date: 6/2/2025

Project Location: Healthcare Expansion Chkd: Date:

Circle One: Present **Developed** Post Dev U.G. Basin #2

Circle One: **Tc** Tt through Subarea

Sheet flow (Applicable to Tc only)

			Segment ID	A-B		
1)	Surface Description			Lawn		
2)	Manning's roughness coeff., **n**			0.16		
3)	Flow Length, **L** (Total $\leq$ 150 ft.)		ft.			
4)	Two-yr, 24 hr. rainfall, P_2		in.	3.3		
5)	Land Slope, **s**		ft/ft	0.0373		
6)	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$	Compute T_t	hr.	0.000		0.000

Shallow Concentrated Flow

			Segment ID	B-C		
7)	Surface description (paved or unpaved)			unpaved		
8)	Flow length, **L**		ft.			
9)	Watercourse slope, **s**		ft/ft	0.005		
10)	Average velocity, **V**		ft/s	1.141	0.000	
11)	$T_t = \frac{L}{3600\ V}$	Compute T_t	hr.	0.000		0.000

Channel Flow

			Segment ID	n/a		
12)	Cross sectional flow area, **a**		ft^2			
13)	Wetted perimeter, p_w		ft			
14)	Hydraulic radius, r = a/ pw	Compute **r**	ft			
15)	Channel slope, **s**		ft/ft			
16)	Manning's roughness coeff., **n**					
17)	$V = 1.49\ r^{2/3}\ s^{1/2}/n$		ft/s	3.00		
18)	Flow Length, **L**		ft/s			
19)	$T_t = L / (3600\ V)$	Compute T_t	hr	0.000		0.000
20)	Watershed or subarea T_c or T_t (Add 6 + 11 + 19)				hr.	**0.000**
					min.	0.00

Note: Say Tc = Assume 6.0 Minutes.

Section D:
Stormwater Management Design

a. Underground Basin Volume Calculations:

Project Name: *Meadowood - Healthcare Expa*
Location: *Worcester Township*

PIPE & STONE SEEPAGE BED VOLUME CALCULATION

Basin Name: *Underground Basin Area #2*

Elevation:	*Difference:*	*Pipe Volume:*	*Stone Volume:*	*Total C.F.*
252.05	*0.00*	*0.00*	*0.00*	*0.00*
252.35	*0.30*	*145.00*	*288.50*	*433.50*
252.65	*0.60*	*380.00*	*540.99*	*920.99*
252.95	*0.90*	*638.00*	*784.29*	*1422.29*
253.25	*1.20*	*873.00*	*1036.78*	*1909.78*
253.55	*1.50*	*1018.00*	*1325.28*	*2343.28*
254.00	*1.95*	*1018.00*	*1845.02*	*2863.02*
254.55	*2.50*	*1018.00*	*2480.26*	*3498.26*

Trench Length:	*118*
Quanity:	*5*
Pipe Lenth:	*111*
Pipe diameter:	*18"*
Pipe Slope:	*0.00%*
Trench Width:	*24.47*
Stone Voids:	*0.4*

b. 2 thru 100-year Storm Design:

Hydraflow Table of Contents

Hydrograph Return Period Recap

Hydraflow Hydrographs by Intelisolve v9.1

Hyd. No.	Hydrograph type (origin)	Inflow Hyd(s)	Peak Outflow (cfs)								Hydrograph description
			1-Yr	2-Yr	3-Yr	5-Yr	10-Yr	25-Yr	50-Yr	100-Yr	
1	Dekalb	-------	-------	4.441	-------	5.210	5.756	6.397	6.828	7.255	Predevelopment POA #001
2	Dekalb	-------	-------	5.315	-------	6.235	6.889	7.656	8.172	8.682	Predevelopment POA #002
4	Dekalb	-------	-------	2.518	-------	2.954	3.264	3.628	3.872	4.114	Post Dev. By-pass POA #001
5	Dekalb	-------	-------	3.558	-------	4.174	4.612	5.126	5.470	5.812	Post Dev. By-pass POA #002
7	Dekalb	-------	-------	3.597	-------	4.220	4.662	5.181	5.530	5.876	Post Dev. U.G. Basin #2
8	Reservoir	7	-------	1.263	-------	1.431	1.563	1.715	1.811	1.904	U.G. Basin Routings

Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

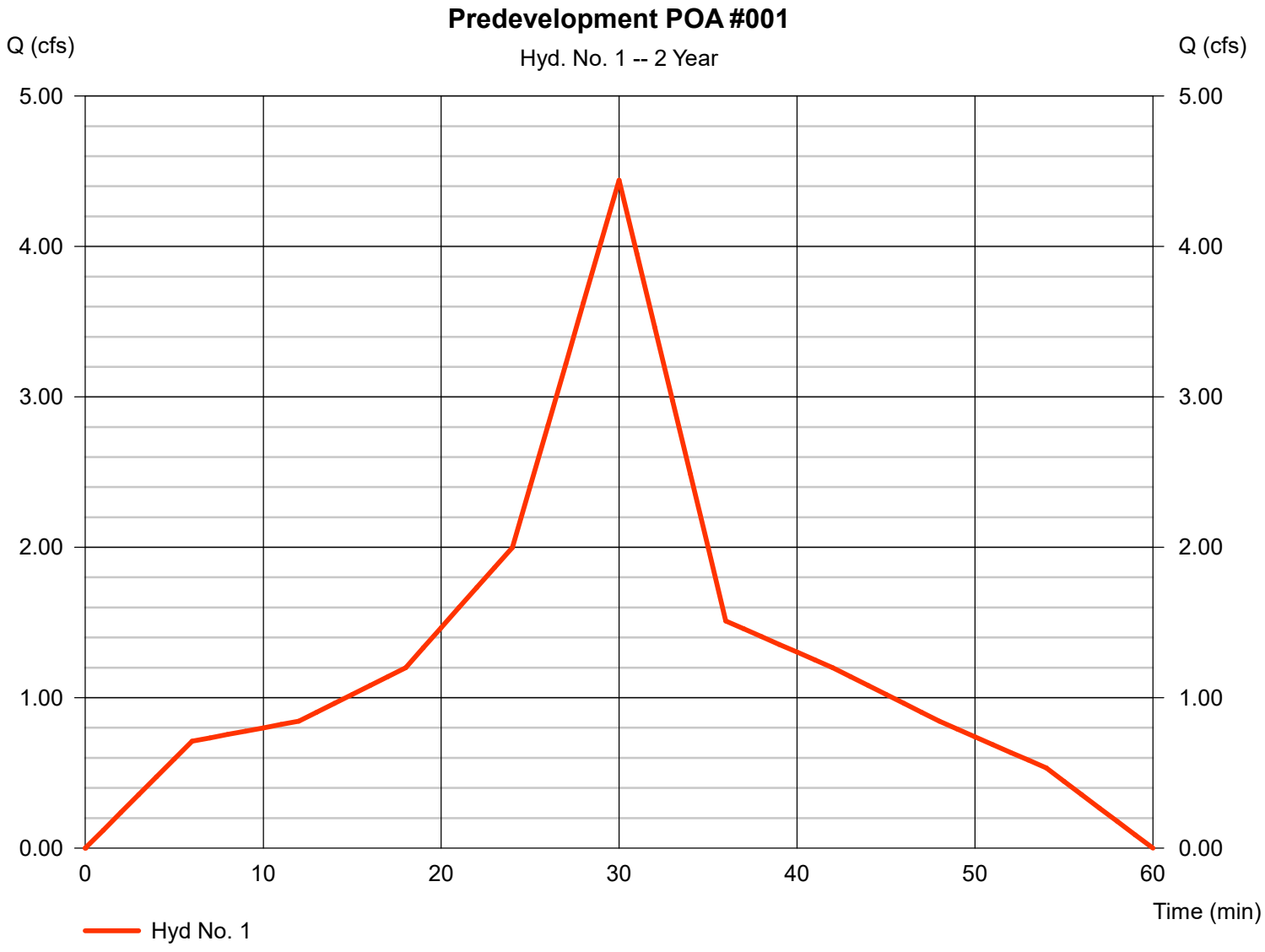
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Dekalb	4.441	1	30	4,781	----	------	------	Predevelopment POA #001
2	Dekalb	5.315	1	30	5,721	----	------	------	Predevelopment POA #002
4	Dekalb	2.518	1	30	2,711	----	------	------	Post Dev. By-pass POA #001
5	Dekalb	3.558	1	30	3,830	----	------	------	Post Dev. By-pass POA #002
7	Dekalb	3.597	1	30	3,872	----	------	------	Post Dev. U.G. Basin #2
8	Reservoir	1.263	1	36	3,611	7	253.28	1,946	U.G. Basin Routings

Hydrograph Report

Hyd. No. 1

Predevelopment POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	4.441 cfs
Storm frequency	=	2 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	4,781 cuft
Drainage area	=	1.352 ac	Runoff coeff.	=	0.71
Intensity	=	4.628 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

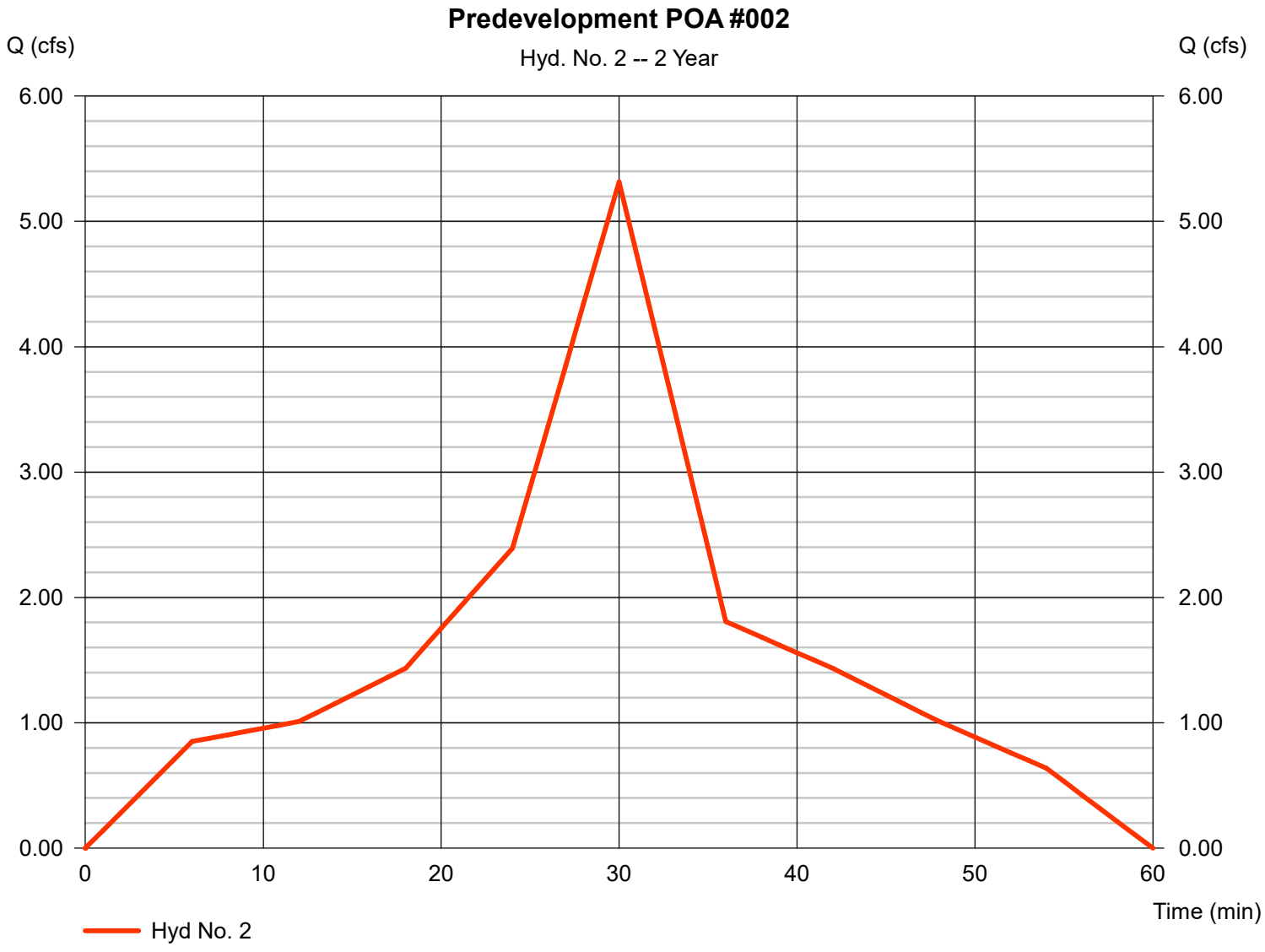


Hydrograph Report

Hyd. No. 2

Predevelopment POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	5.315 cfs
Storm frequency	=	2 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,721 cuft
Drainage area	=	1.531 ac	Runoff coeff.	=	0.75
Intensity	=	4.628 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

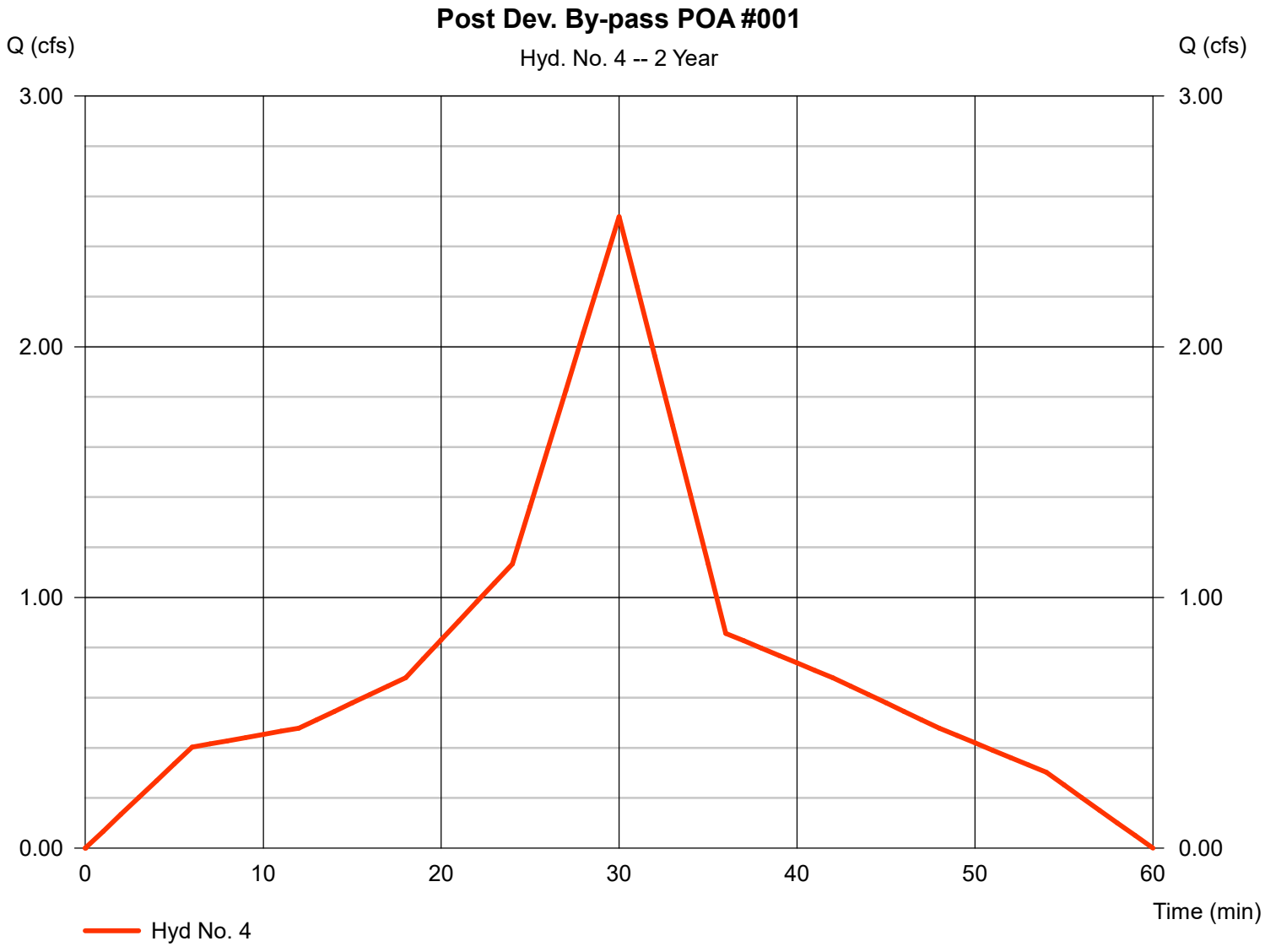


Hydrograph Report

Hyd. No. 4

Post Dev. By-pass POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	2.518 cfs
Storm frequency	=	2 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	2,711 cuft
Drainage area	=	0.707 ac	Runoff coeff.	=	0.77
Intensity	=	4.628 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

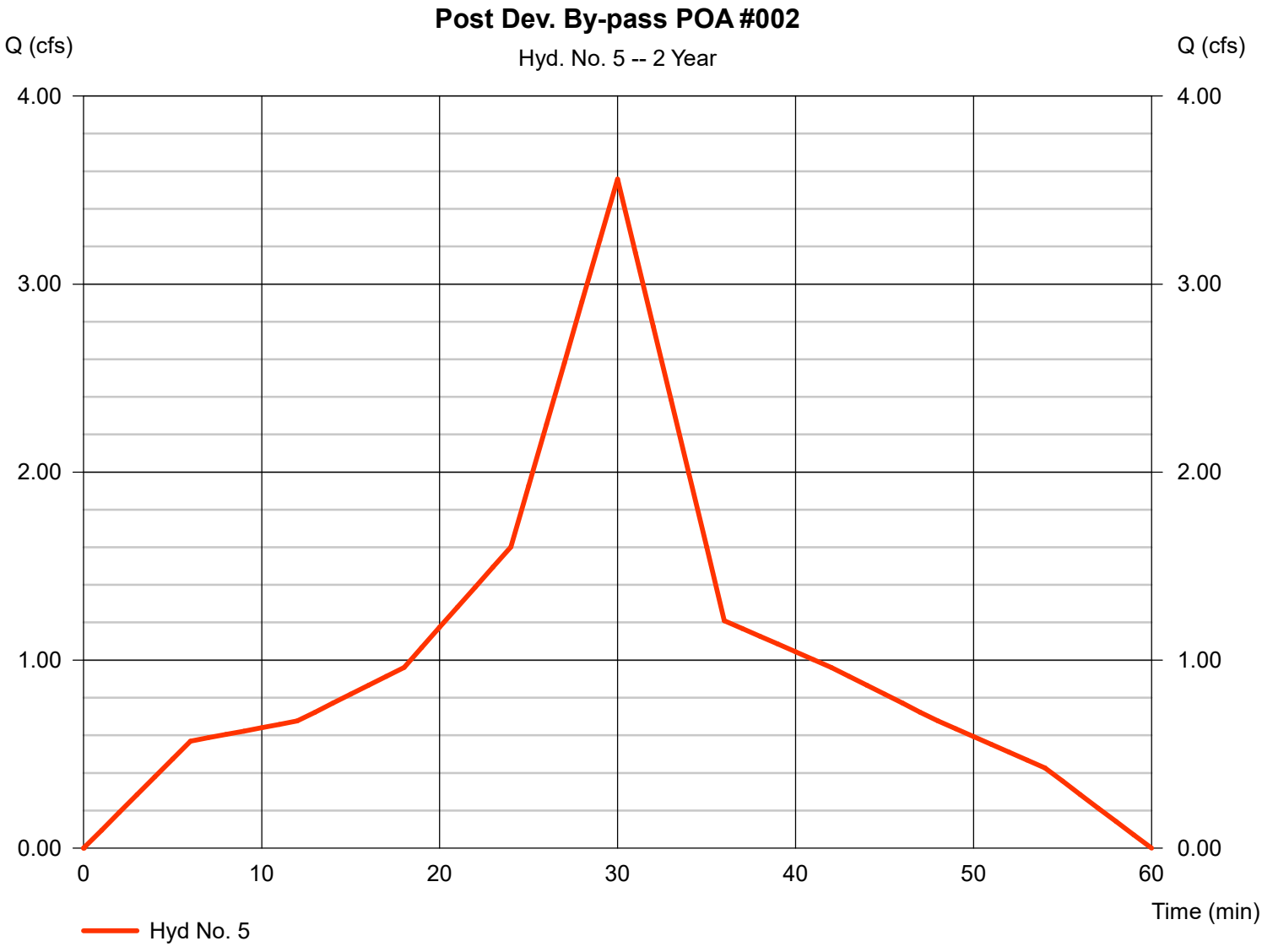


Hydrograph Report

Hyd. No. 5

Post Dev. By-pass POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	3.558 cfs
Storm frequency	=	2 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	3,830 cuft
Drainage area	=	0.999 ac	Runoff coeff.	=	0.77
Intensity	=	4.628 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

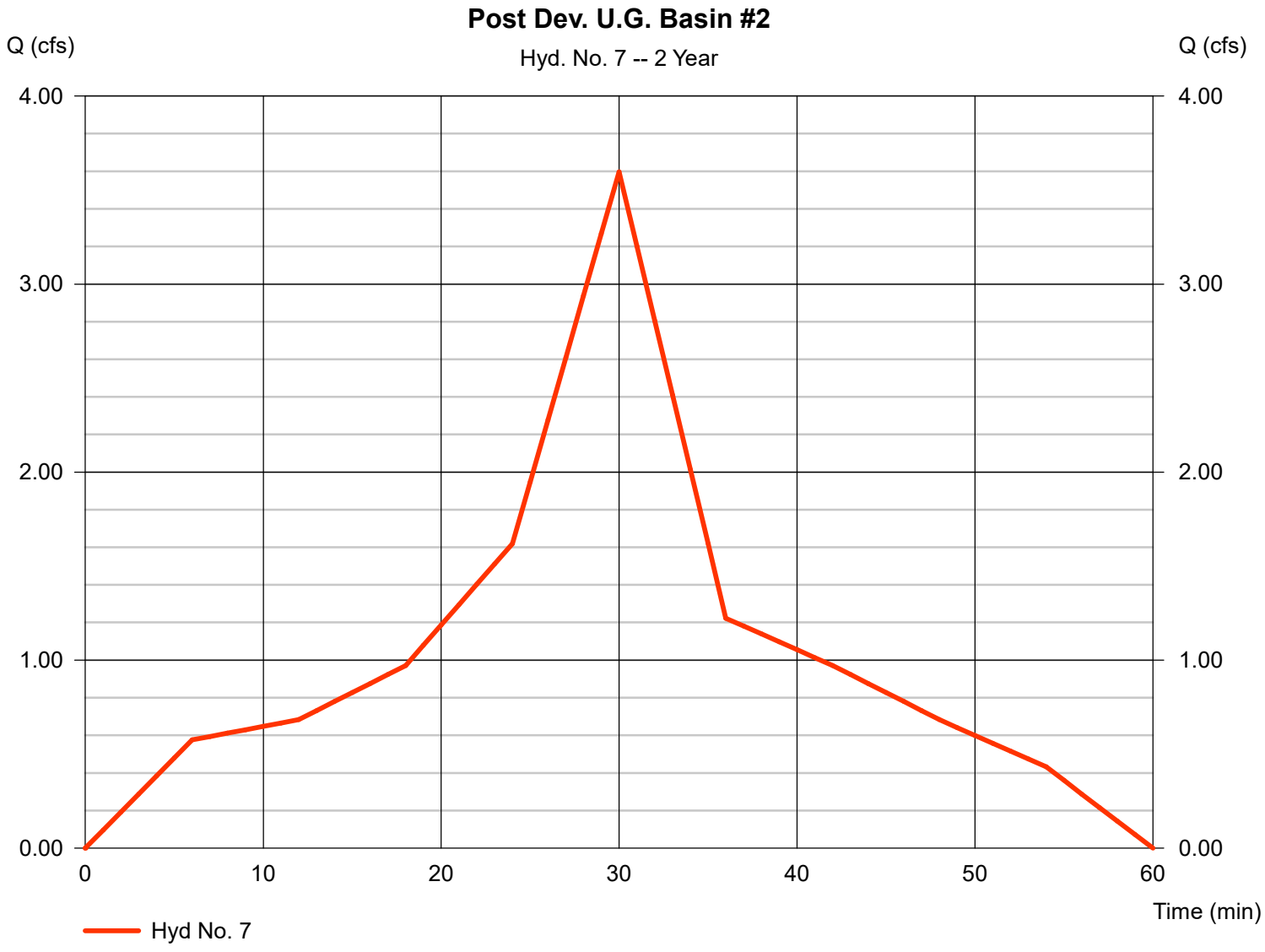


Hydrograph Report

Hyd. No. 7

Post Dev. U.G. Basin #2

Hydrograph type	=	Dekalb	Peak discharge	=	3.597 cfs
Storm frequency	=	2 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	3,872 cuft
Drainage area	=	1.080 ac	Runoff coeff.	=	0.72
Intensity	=	4.628 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a



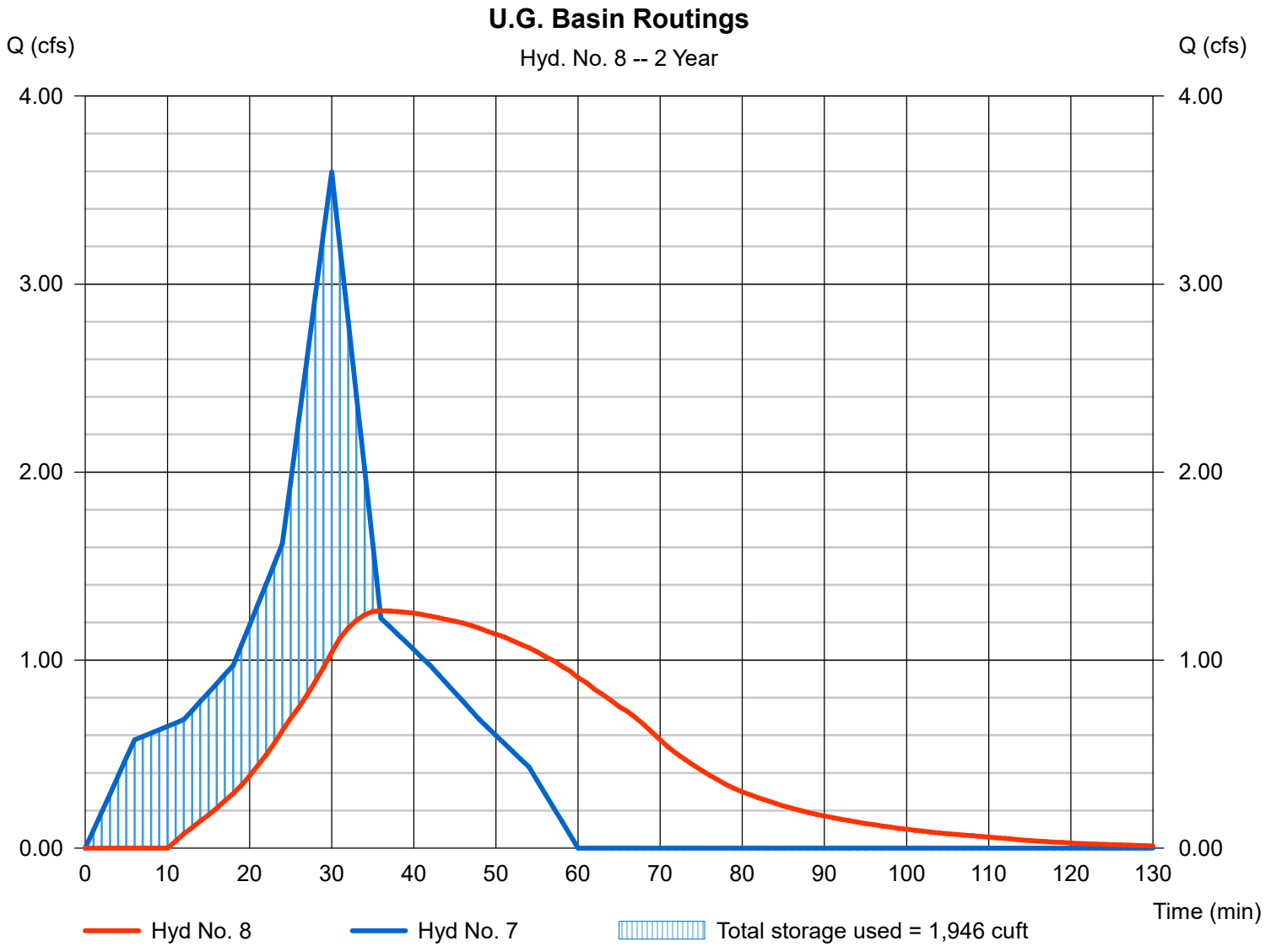
Hydrograph Report

Hyd. No. 8

U.G. Basin Routings

Hydrograph type	=	Reservoir	Peak discharge	=	1.263 cfs
Storm frequency	=	2 yrs	Time to peak	=	36 min
Time interval	=	1 min	Hyd. volume	=	3,611 cuft
Inflow hyd. No.	=	7 - Post Dev. U.G. Basin #2	Max. Elevation	=	253.28 ft
Reservoir name	=	U.G. Basin #2	Max. Storage	=	1,946 cuft

Storage Indication method used.



Pond No. 1 - U.G. Basin #2

Pond Data

Pond storage is based on user-defined values.

Stage / Storage Table

Stage (ft)	Elevation (ft)	Contour area (sqft)	Incr. Storage (cuft)	Total storage (cuft)
0.00	252.05	n/a	0	0
0.30	252.35	n/a	434	434
0.60	252.65	n/a	487	921
0.90	252.95	n/a	501	1,422
1.20	253.25	n/a	487	1,910
1.50	253.55	n/a	434	2,343
1.95	254.00	n/a	520	2,863
2.50	254.55	n/a	635	3,498

Culvert / Orifice Structures

	[A]	[B]	[C]	[PrfRsr]
Rise (in)	= 18.00	7.50	0.00	0.00
Span (in)	= 18.00	7.50	0.00	0.00
No. Barrels	= 1	1	0	0
Invert El. (ft)	= 252.01	252.05	0.00	0.00
Length (ft)	= 108.00	0.00	0.00	0.00
Slope (%)	= 0.50	0.00	0.00	n/a
N-Value	= .013	.013	.013	n/a
Orifice Coeff.	= 0.60	0.60	0.60	0.60
Multi-Stage	= n/a	Yes	No	No

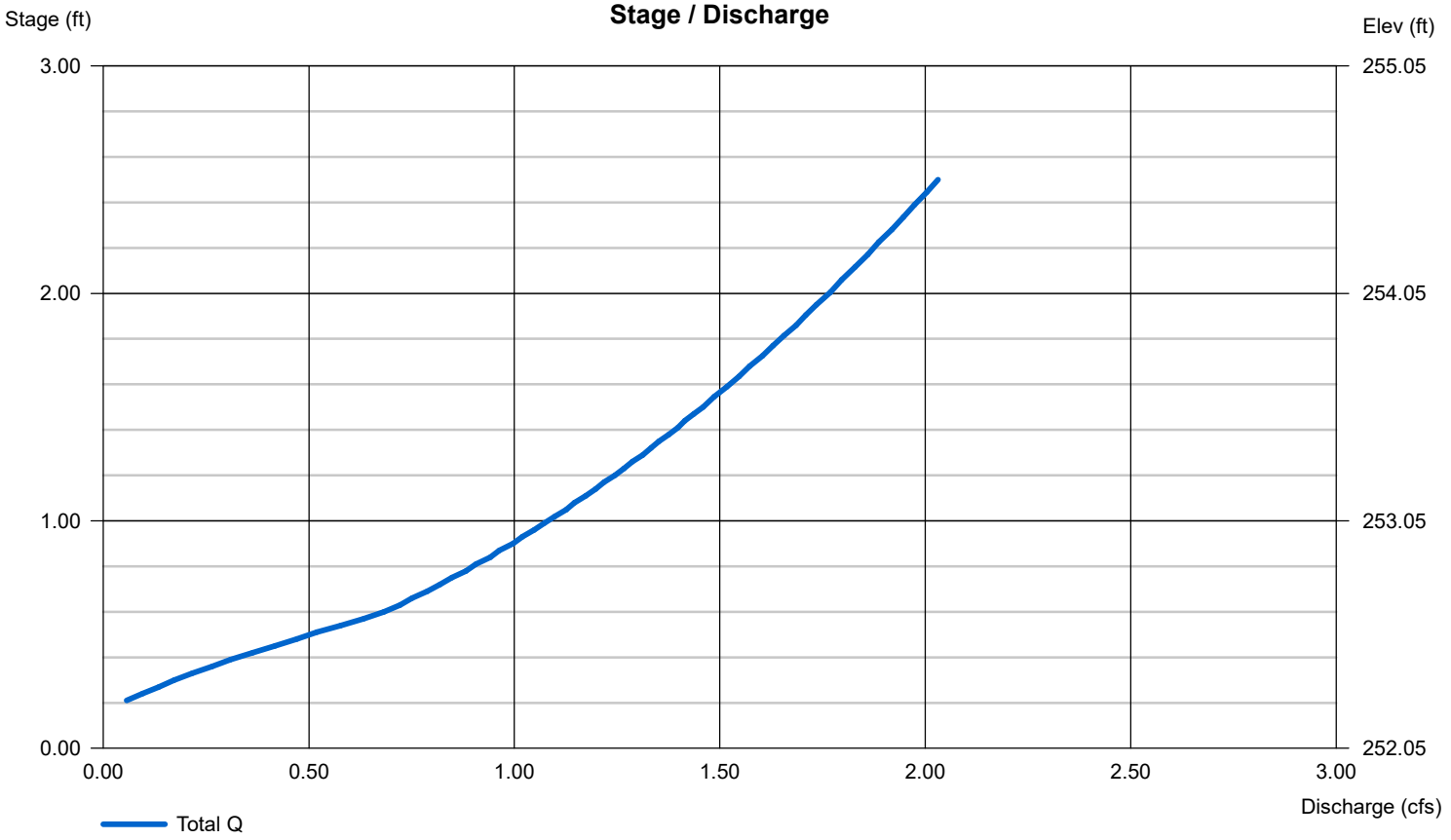
Weir Structures

	[A]	[B]	[C]	[D]
Crest Len (ft)	= 0.00	0.00	0.00	0.00
Crest El. (ft)	= 0.00	0.00	0.00	0.00
Weir Coeff.	= 3.33	3.33	3.33	3.33
Weir Type	= ---	---	---	---
Multi-Stage	= No	No	No	No

Exfil.(in/hr) = 0.000 (by Wet area)

TW Elev. (ft) = 252.23

Note: Culvert/Orifice outflows are analyzed under inlet (ic) and outlet (oc) control. Weir risers checked for orifice conditions (ic) and submergence (s).



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

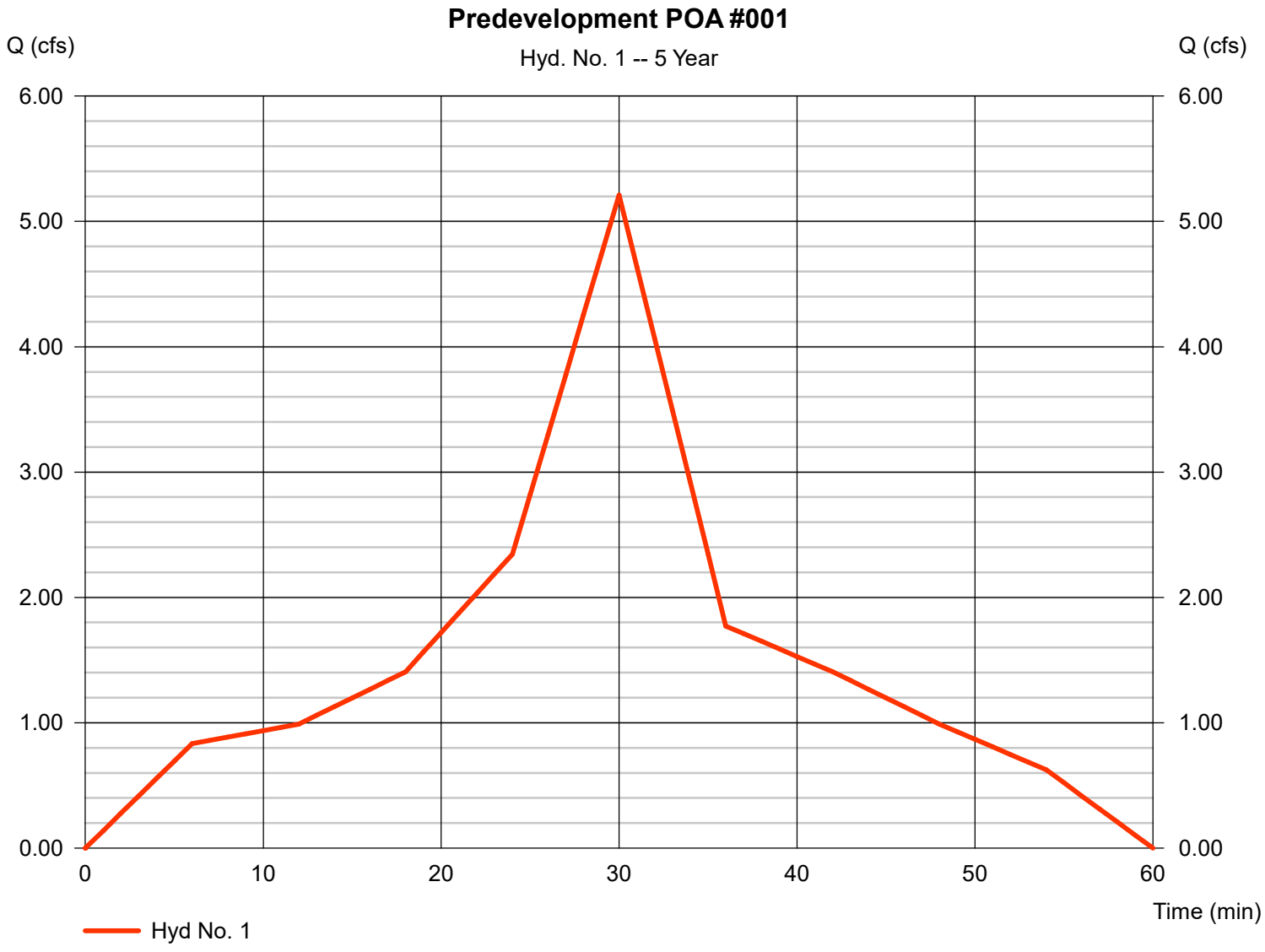
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Dekalb	5.210	1	30	5,608	----	------	------	Predevelopment POA #001
2	Dekalb	6.235	1	30	6,712	----	------	------	Predevelopment POA #002
4	Dekalb	2.954	1	30	3,180	----	------	------	Post Dev. By-pass POA #001
5	Dekalb	4.174	1	30	4,493	----	------	------	Post Dev. By-pass POA #002
7	Dekalb	4.220	1	30	4,542	----	------	------	Post Dev. U.G. Basin #2
8	Reservoir	1.431	1	36	4,281	7	253.51	2,288	U.G. Basin Routings

Hydrograph Report

Hyd. No. 1

Predevelopment POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	5.210 cfs
Storm frequency	=	5 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,608 cuft
Drainage area	=	1.352 ac	Runoff coeff.	=	0.71
Intensity	=	5.429 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

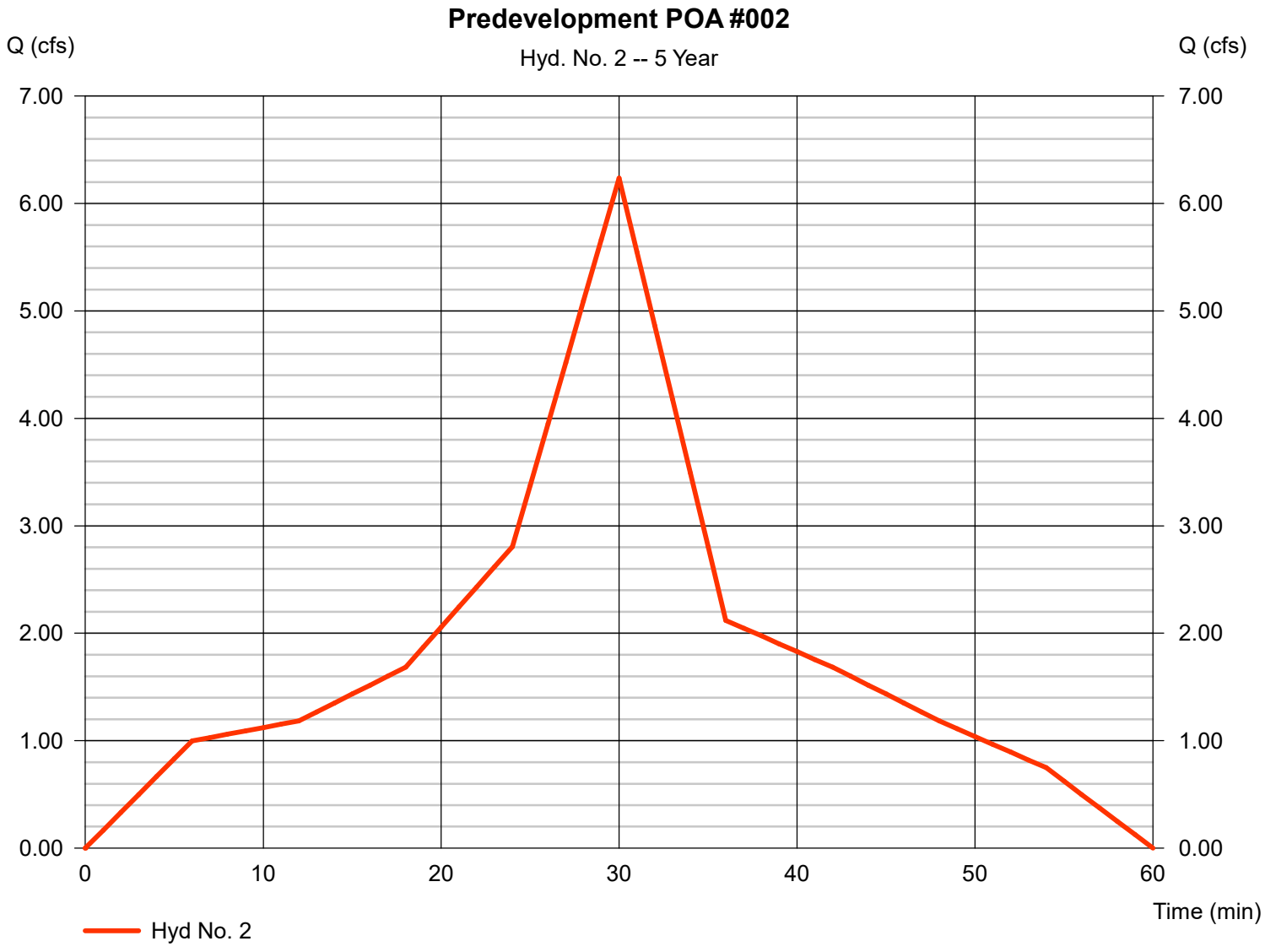


Hydrograph Report

Hyd. No. 2

Predevelopment POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	6.235 cfs
Storm frequency	=	5 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	6,712 cuft
Drainage area	=	1.531 ac	Runoff coeff.	=	0.75
Intensity	=	5.429 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

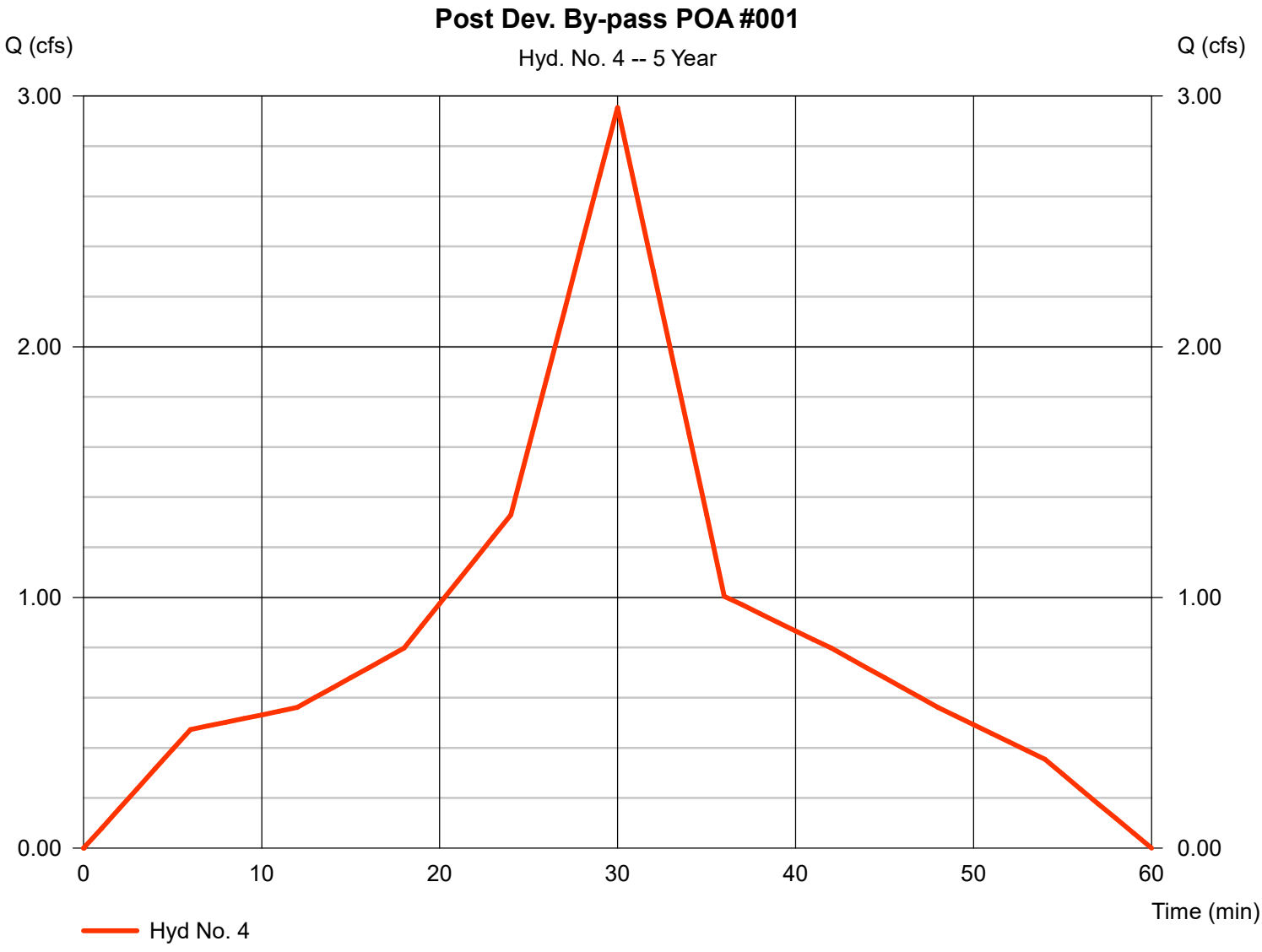


Hydrograph Report

Hyd. No. 4

Post Dev. By-pass POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	2.954 cfs
Storm frequency	=	5 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	3,180 cuft
Drainage area	=	0.707 ac	Runoff coeff.	=	0.77
Intensity	=	5.429 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

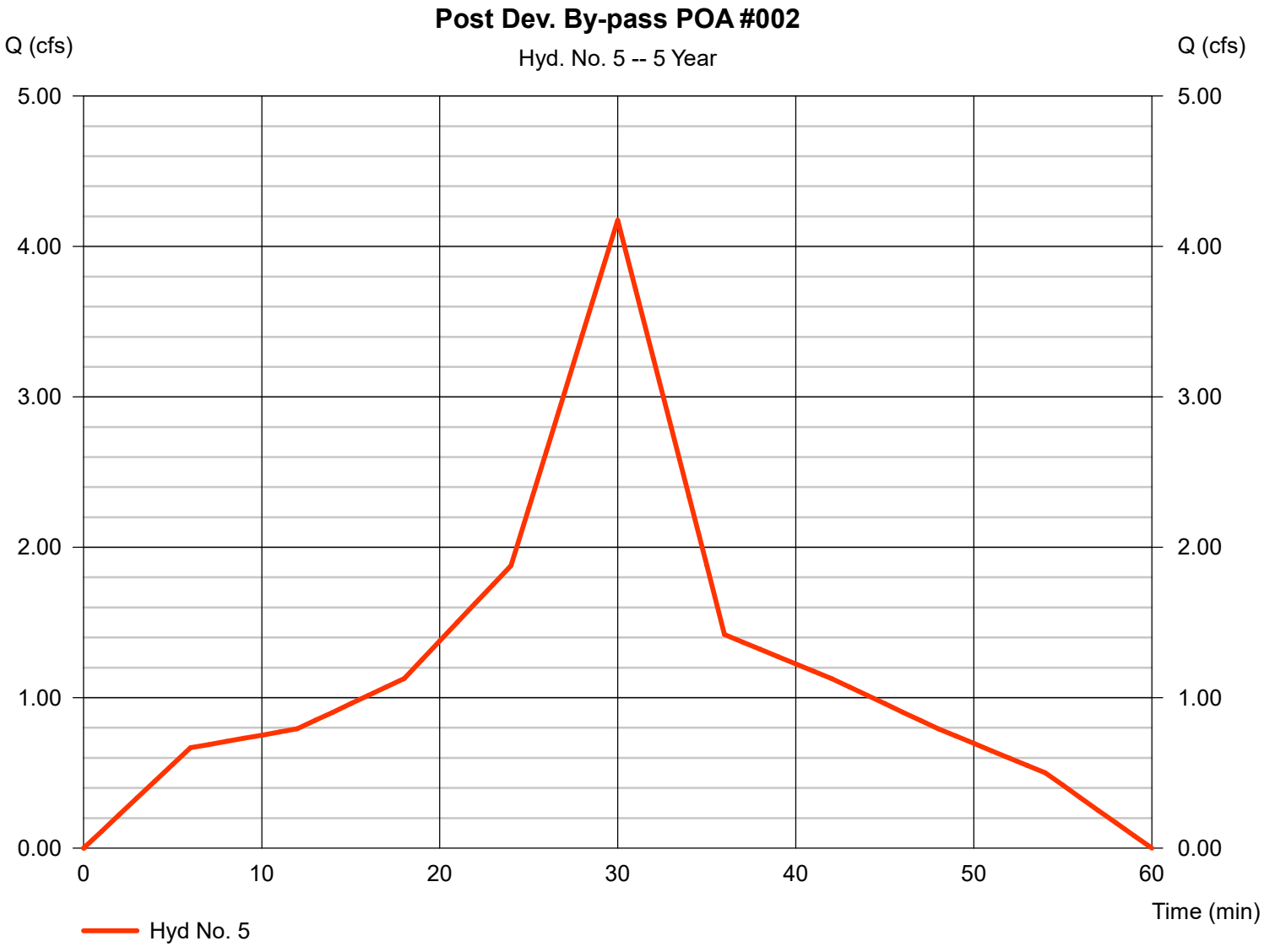


Hydrograph Report

Hyd. No. 5

Post Dev. By-pass POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	4.174 cfs
Storm frequency	=	5 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	4,493 cuft
Drainage area	=	0.999 ac	Runoff coeff.	=	0.77
Intensity	=	5.429 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

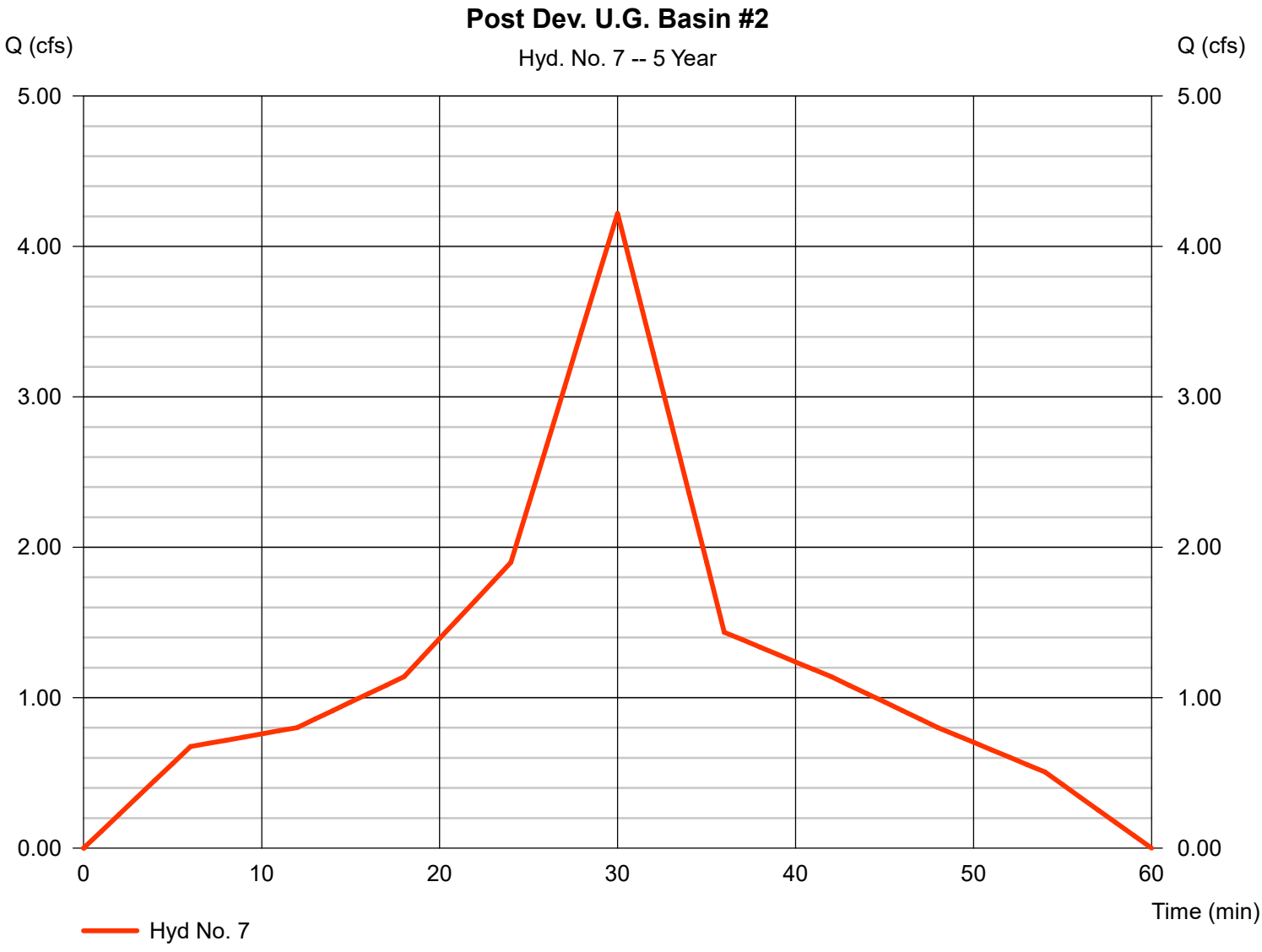


Hydrograph Report

Hyd. No. 7

Post Dev. U.G. Basin #2

Hydrograph type	=	Dekalb	Peak discharge	=	4.220 cfs
Storm frequency	=	5 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	4,542 cuft
Drainage area	=	1.080 ac	Runoff coeff.	=	0.72
Intensity	=	5.429 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a



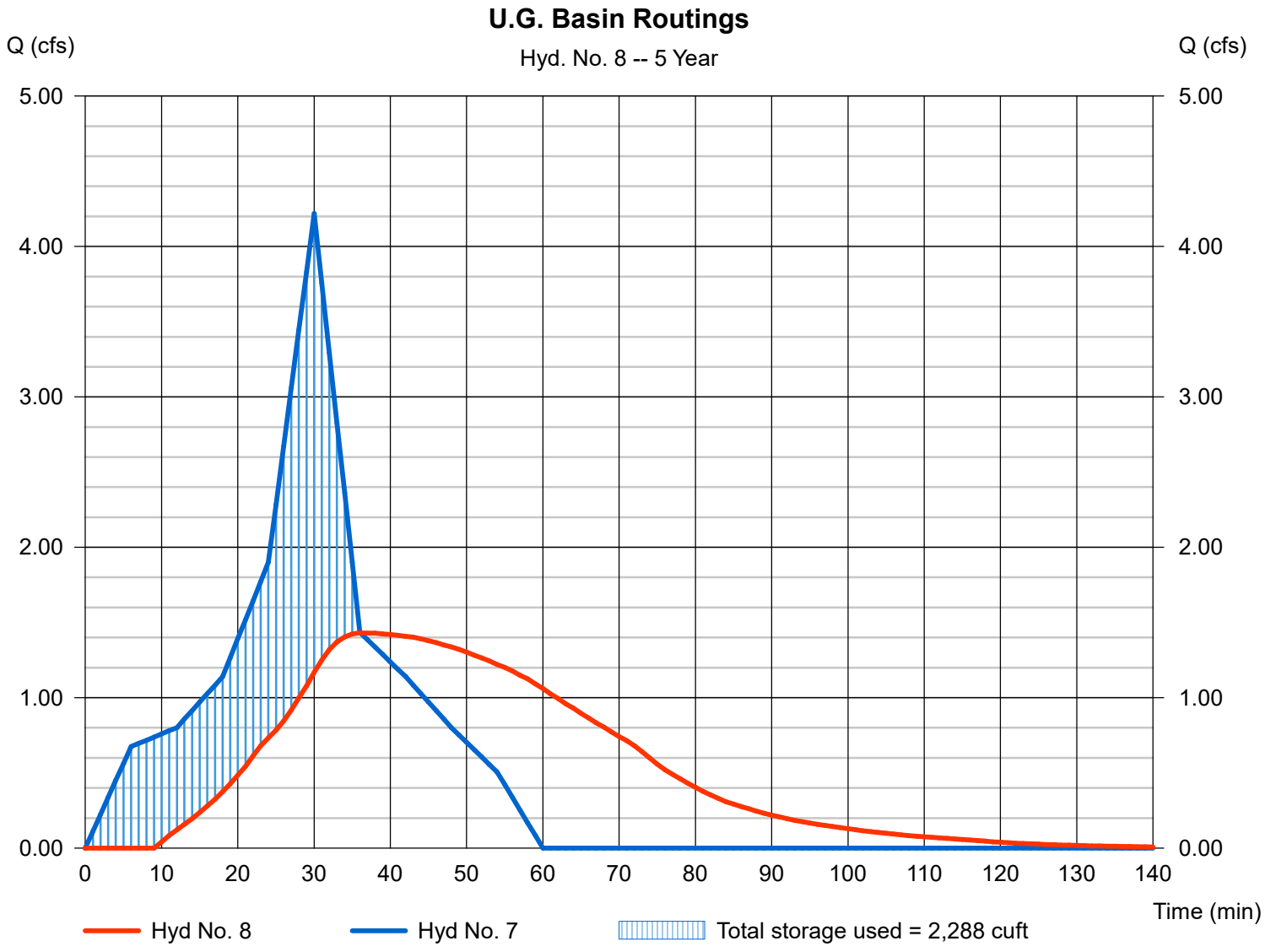
Hydrograph Report

Hyd. No. 8

U.G. Basin Routings

Hydrograph type	=	Reservoir	Peak discharge	=	1.431 cfs
Storm frequency	=	5 yrs	Time to peak	=	36 min
Time interval	=	1 min	Hyd. volume	=	4,281 cuft
Inflow hyd. No.	=	7 - Post Dev. U.G. Basin #2	Max. Elevation	=	253.51 ft
Reservoir name	=	U.G. Basin #2	Max. Storage	=	2,288 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

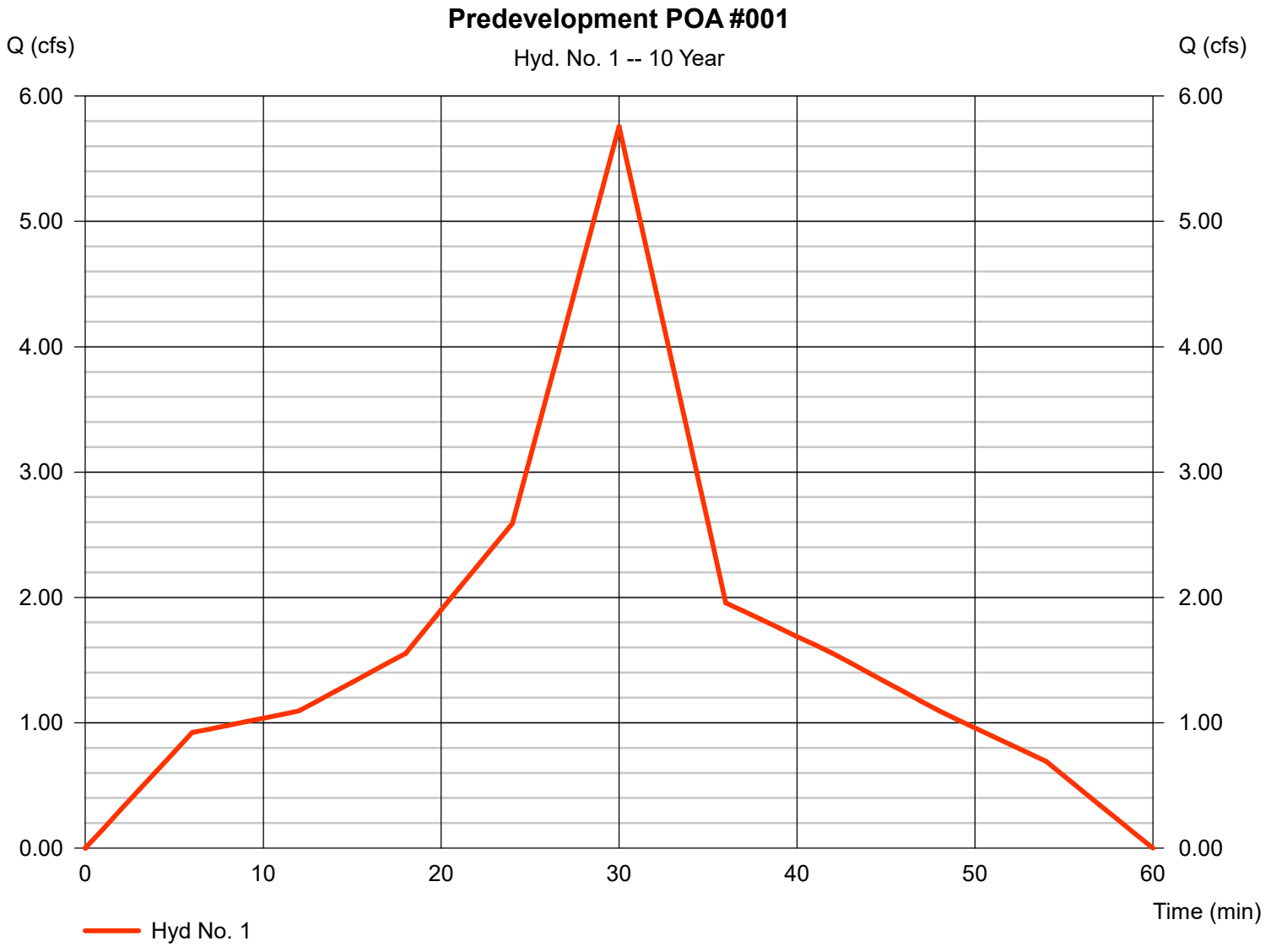
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Dekalb	5.756	1	30	6,196	----	------	------	Predevelopment POA #001
2	Dekalb	6.889	1	30	7,416	----	------	------	Predevelopment POA #002
4	Dekalb	3.264	1	30	3,514	----	------	------	Post Dev. By-pass POA #001
5	Dekalb	4.612	1	30	4,964	----	------	------	Post Dev. By-pass POA #002
7	Dekalb	4.662	1	30	5,019	----	------	------	Post Dev. U.G. Basin #2
8	Reservoir	1.563	1	36	4,758	7	253.71	2,533	U.G. Basin Routings

Hydrograph Report

Hyd. No. 1

Predevelopment POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	5.756 cfs
Storm frequency	=	10 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	6,196 cuft
Drainage area	=	1.352 ac	Runoff coeff.	=	0.71
Intensity	=	5.999 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

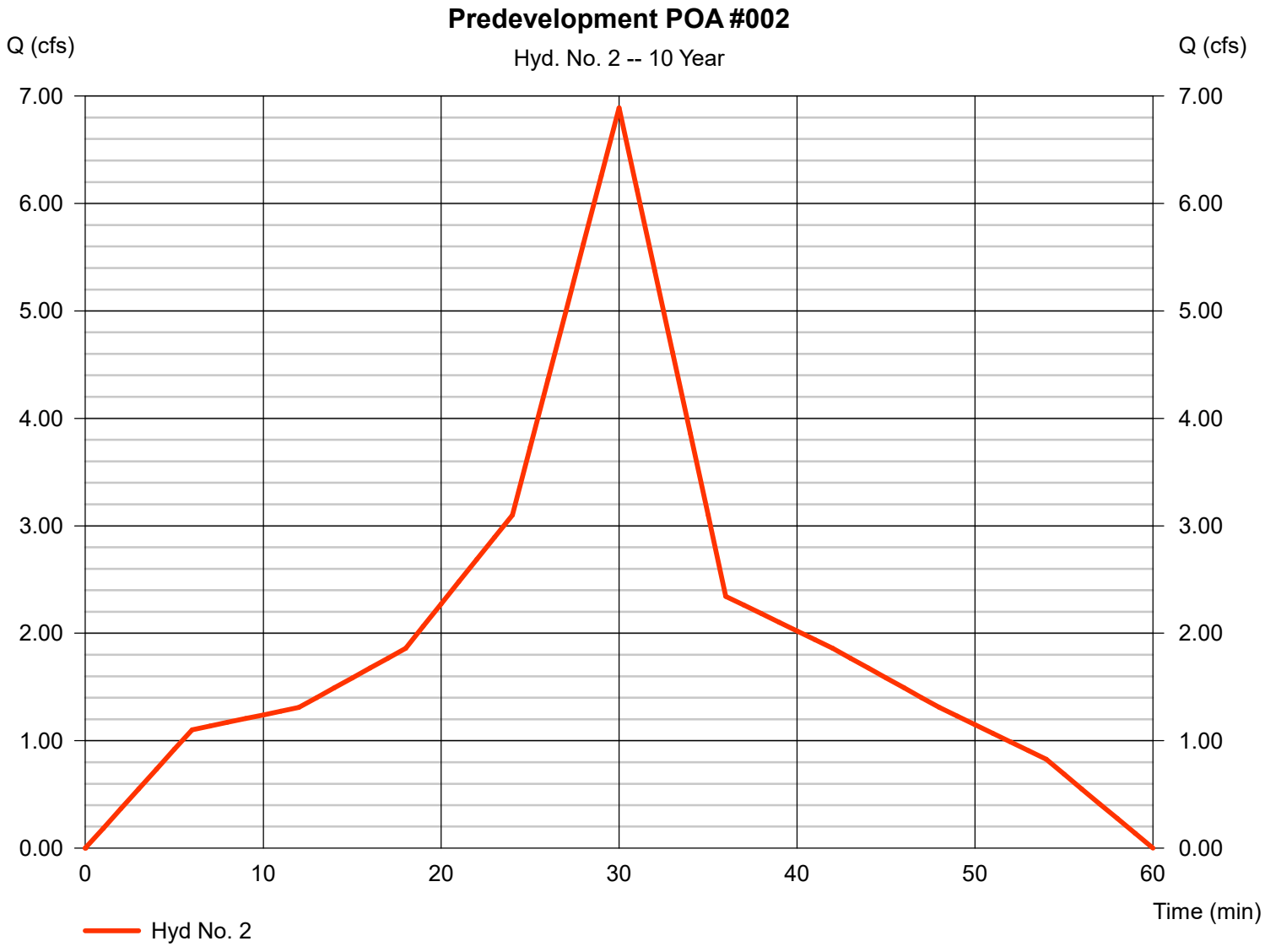


Hydrograph Report

Hyd. No. 2

Predevelopment POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	6.889 cfs
Storm frequency	=	10 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	7,416 cuft
Drainage area	=	1.531 ac	Runoff coeff.	=	0.75
Intensity	=	5.999 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

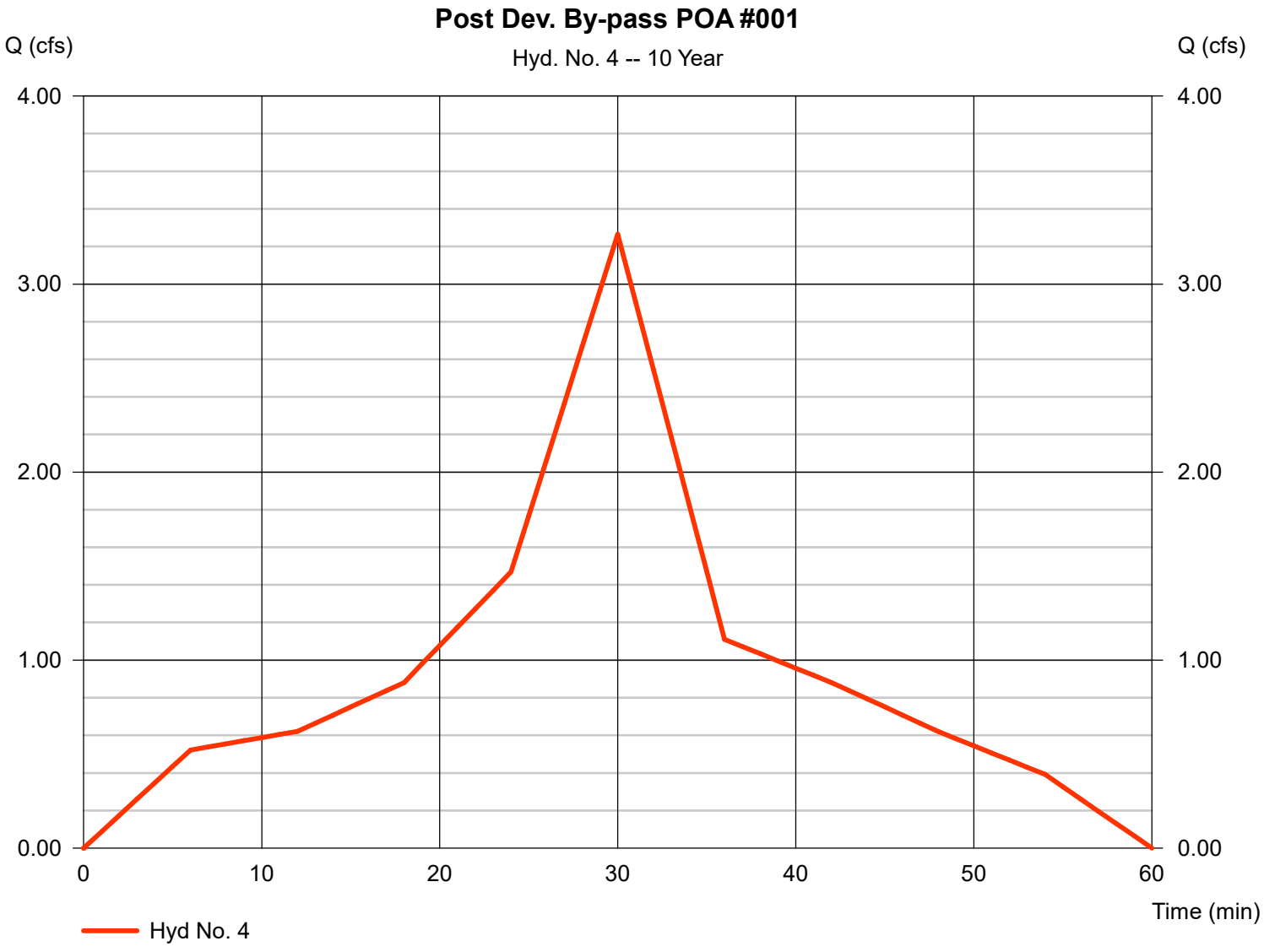


Hydrograph Report

Hyd. No. 4

Post Dev. By-pass POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	3.264 cfs
Storm frequency	=	10 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	3,514 cuft
Drainage area	=	0.707 ac	Runoff coeff.	=	0.77
Intensity	=	5.999 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

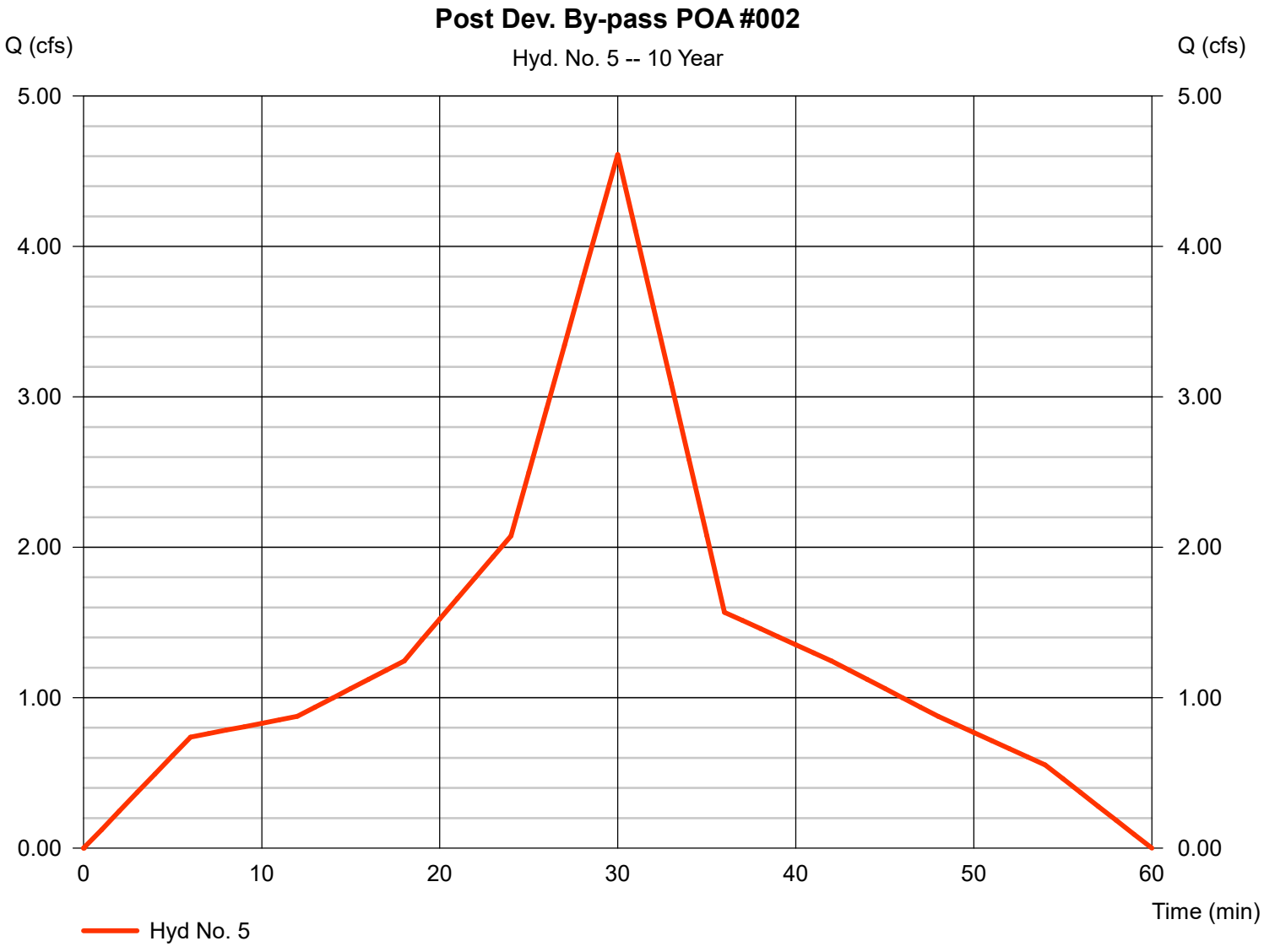


Hydrograph Report

Hyd. No. 5

Post Dev. By-pass POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	4.612 cfs
Storm frequency	=	10 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	4,964 cuft
Drainage area	=	0.999 ac	Runoff coeff.	=	0.77
Intensity	=	5.999 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

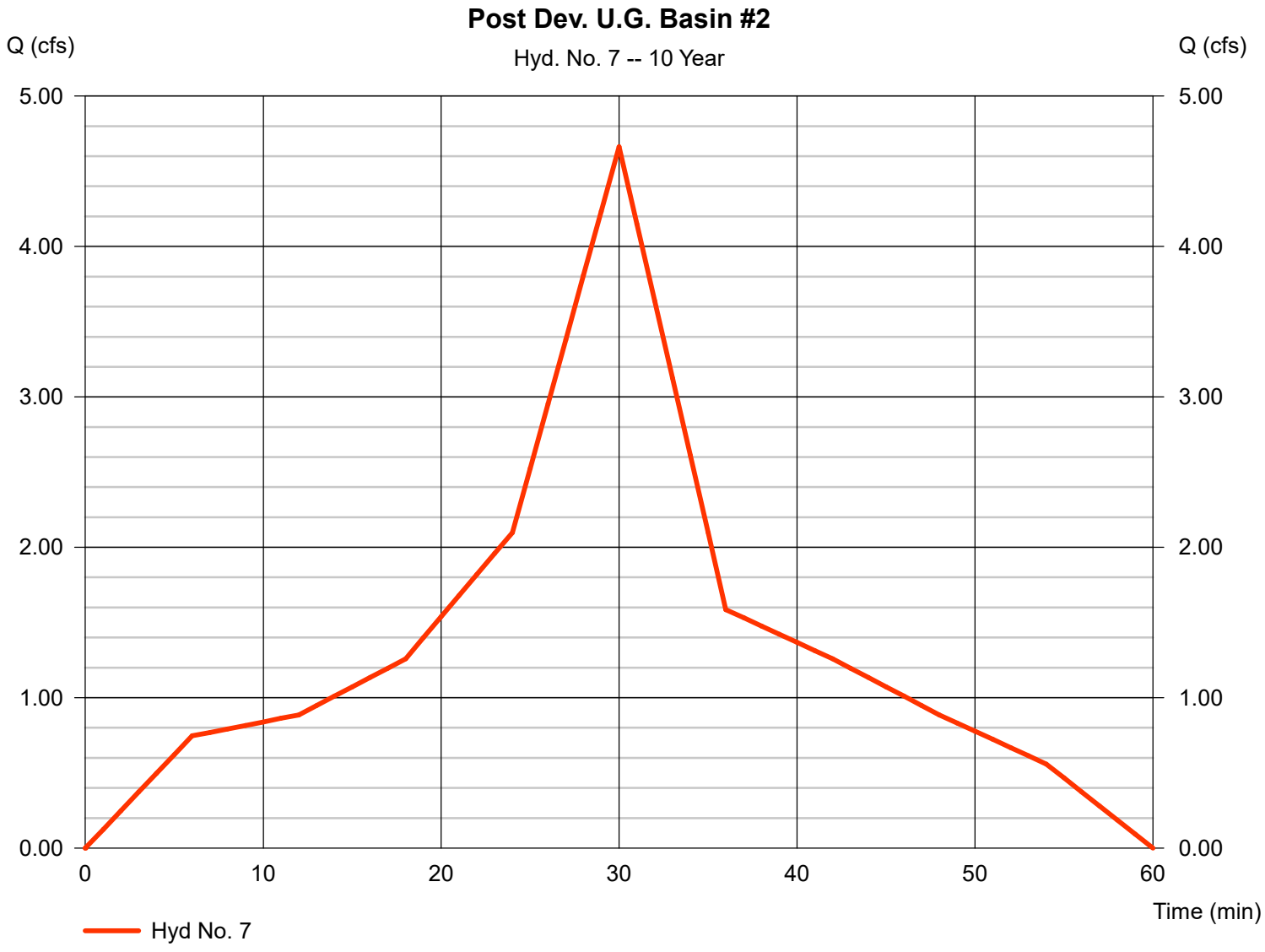


Hydrograph Report

Hyd. No. 7

Post Dev. U.G. Basin #2

Hydrograph type	=	Dekalb	Peak discharge	=	4.662 cfs
Storm frequency	=	10 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,019 cuft
Drainage area	=	1.080 ac	Runoff coeff.	=	0.72
Intensity	=	5.999 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a



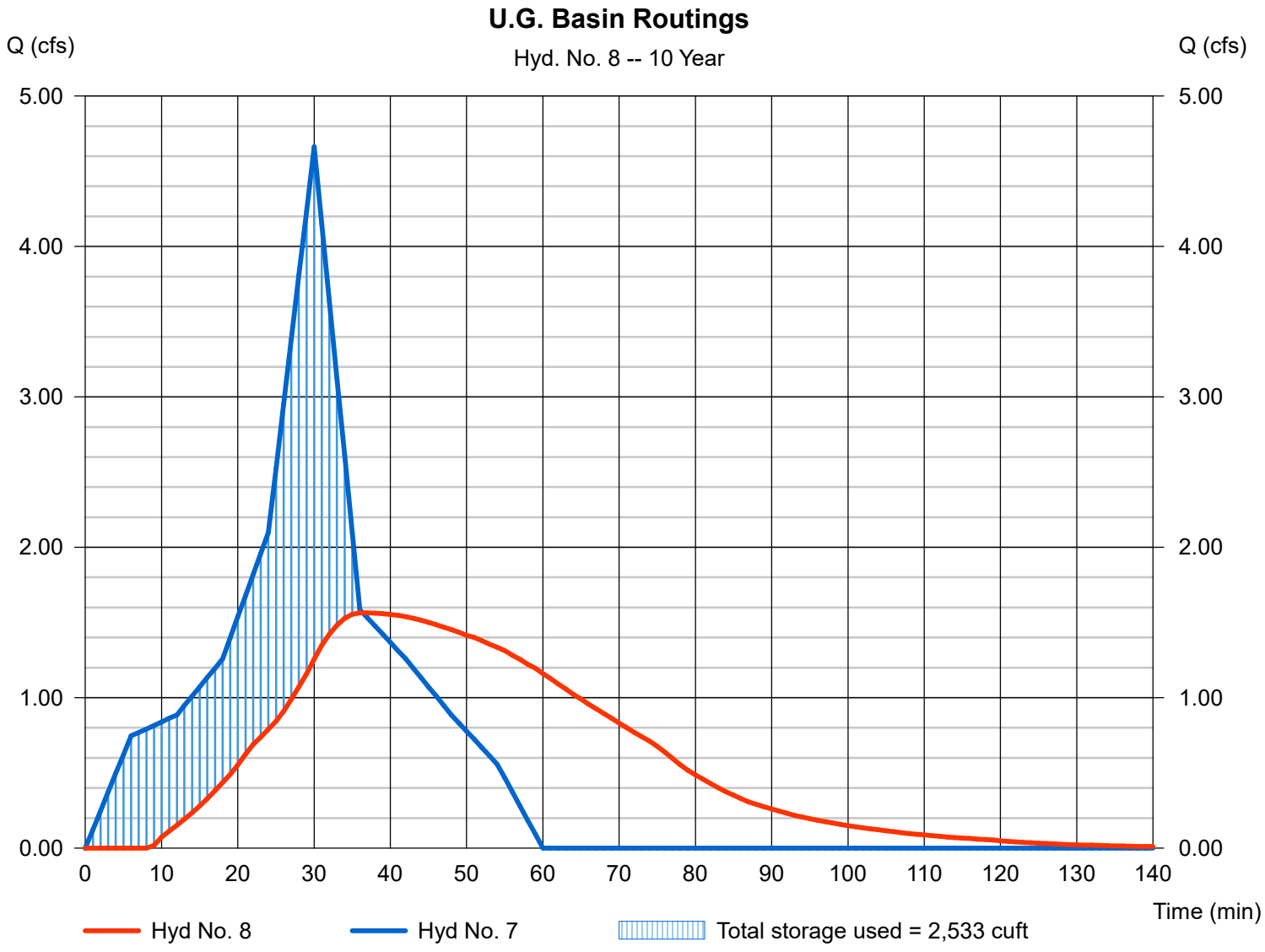
Hydrograph Report

Hyd. No. 8

U.G. Basin Routings

Hydrograph type	=	Reservoir	Peak discharge	=	1.563 cfs
Storm frequency	=	10 yrs	Time to peak	=	36 min
Time interval	=	1 min	Hyd. volume	=	4,758 cuft
Inflow hyd. No.	=	7 - Post Dev. U.G. Basin #2	Max. Elevation	=	253.71 ft
Reservoir name	=	U.G. Basin #2	Max. Storage	=	2,533 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

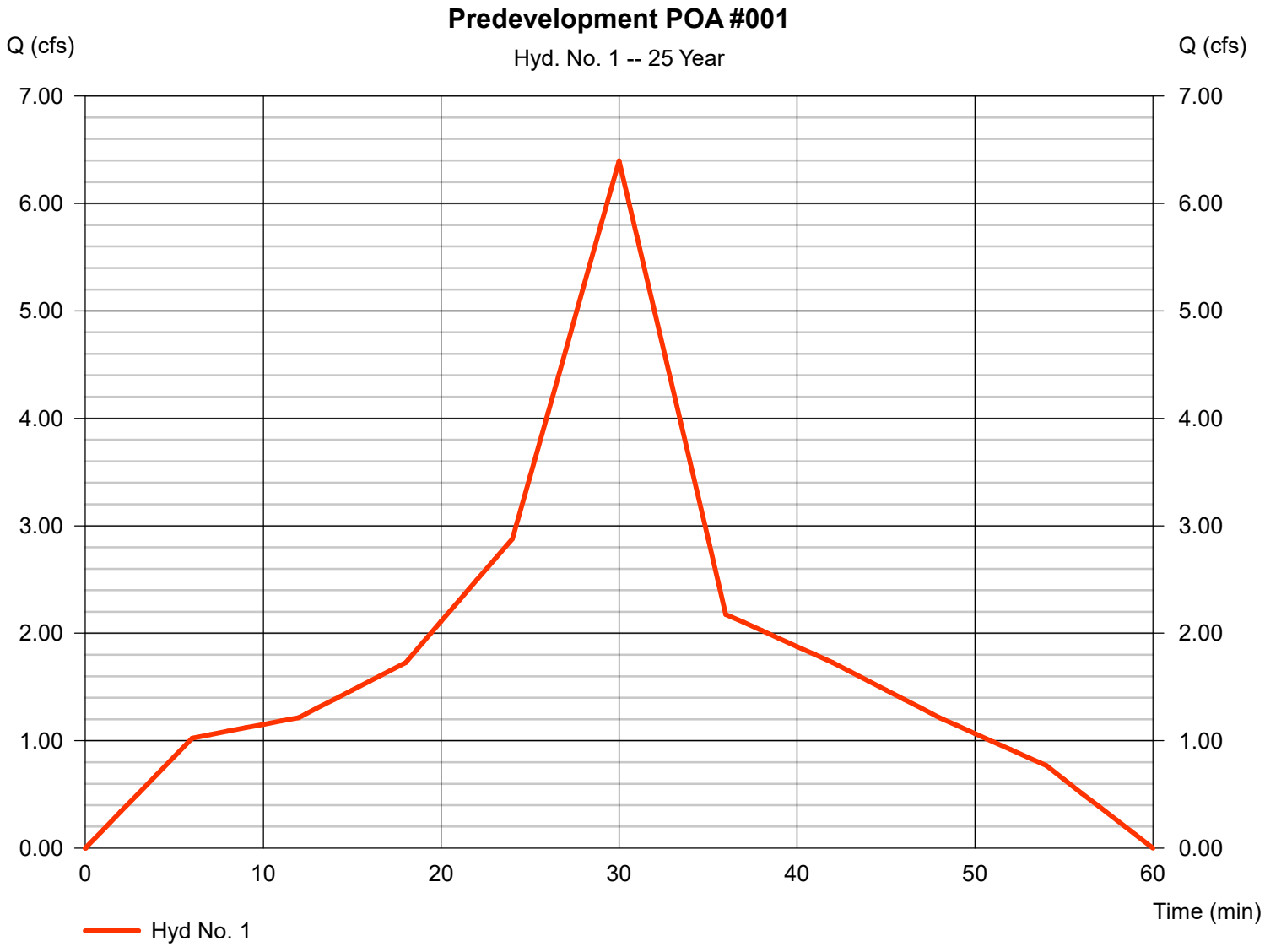
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Dekalb	6.397	1	30	6,886	----	------	------	Predevelopment POA #001
2	Dekalb	7.656	1	30	8,241	----	------	------	Predevelopment POA #002
4	Dekalb	3.628	1	30	3,905	----	------	------	Post Dev. By-pass POA #001
5	Dekalb	5.126	1	30	5,517	----	------	------	Post Dev. By-pass POA #002
7	Dekalb	5.181	1	30	5,577	----	------	------	Post Dev. U.G. Basin #2
8	Reservoir	1.715	1	37	5,316	7	253.96	2,822	U.G. Basin Routings

Hydrograph Report

Hyd. No. 1

Predevelopment POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	6.397 cfs
Storm frequency	=	25 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	6,886 cuft
Drainage area	=	1.352 ac	Runoff coeff.	=	0.71
Intensity	=	6.667 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

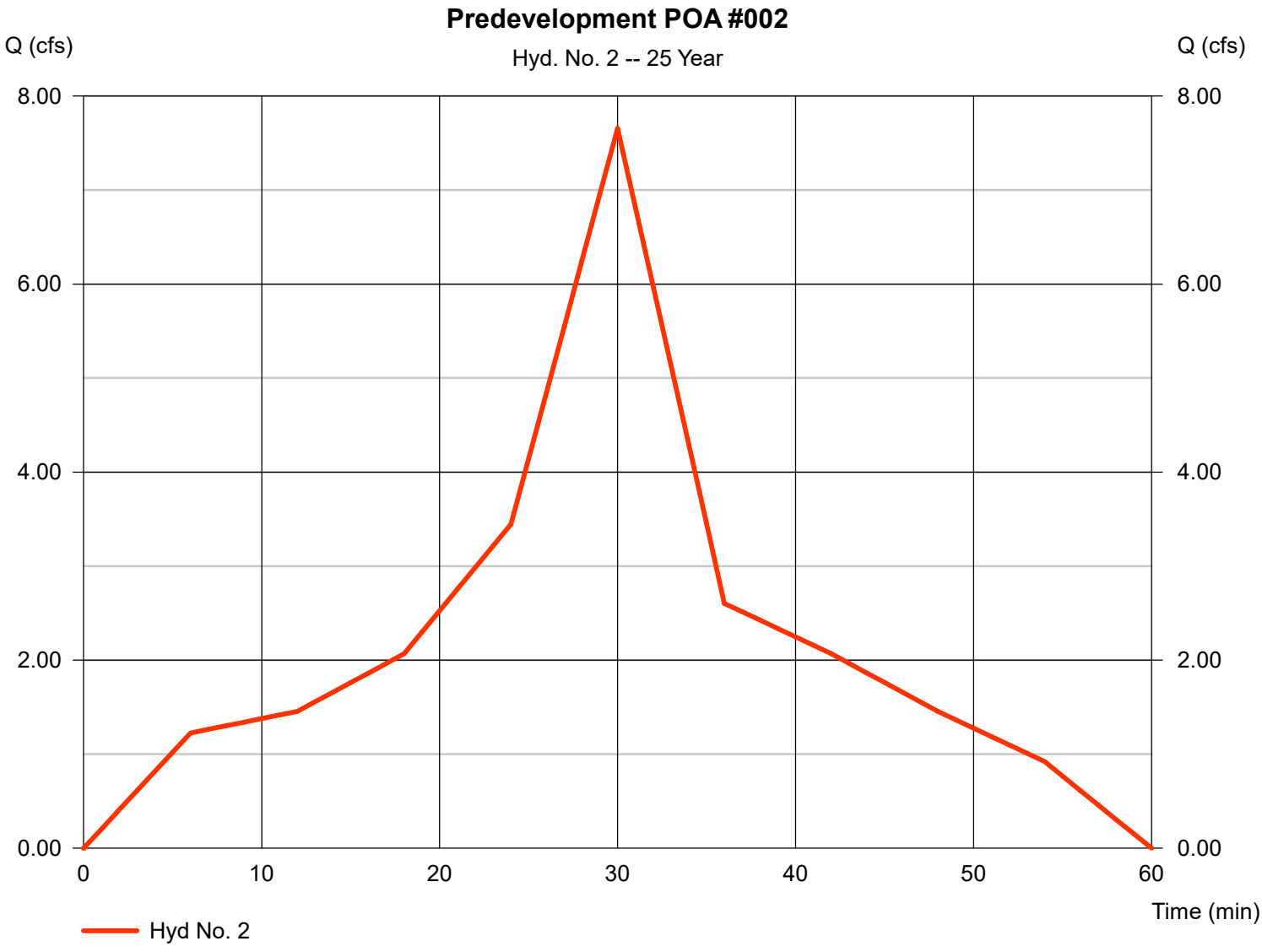


Hydrograph Report

Hyd. No. 2

Predevelopment POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	7.656 cfs
Storm frequency	=	25 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	8,241 cuft
Drainage area	=	1.531 ac	Runoff coeff.	=	0.75
Intensity	=	6.667 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

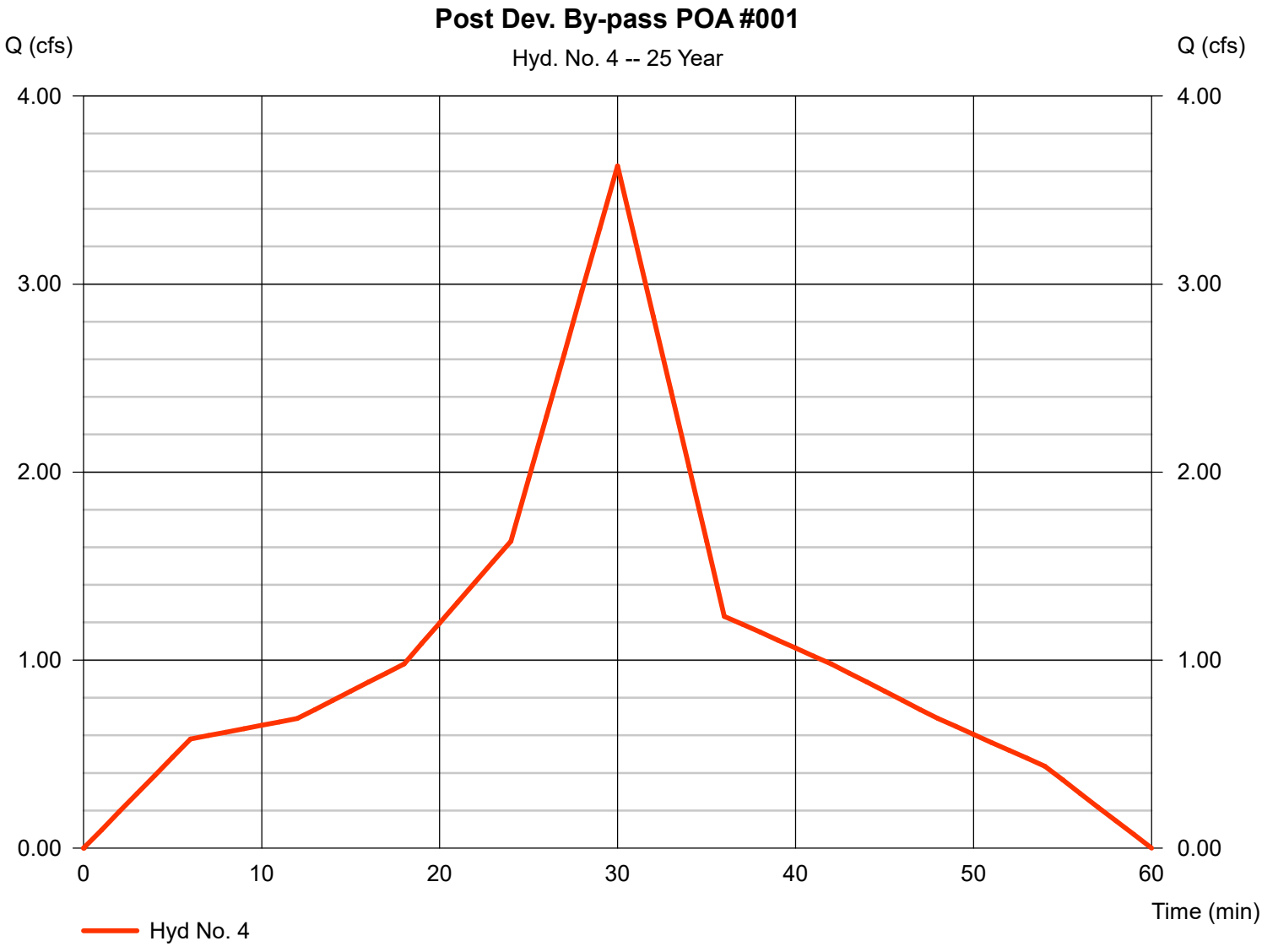


Hydrograph Report

Hyd. No. 4

Post Dev. By-pass POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	3.628 cfs
Storm frequency	=	25 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	3,905 cuft
Drainage area	=	0.707 ac	Runoff coeff.	=	0.77
Intensity	=	6.667 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

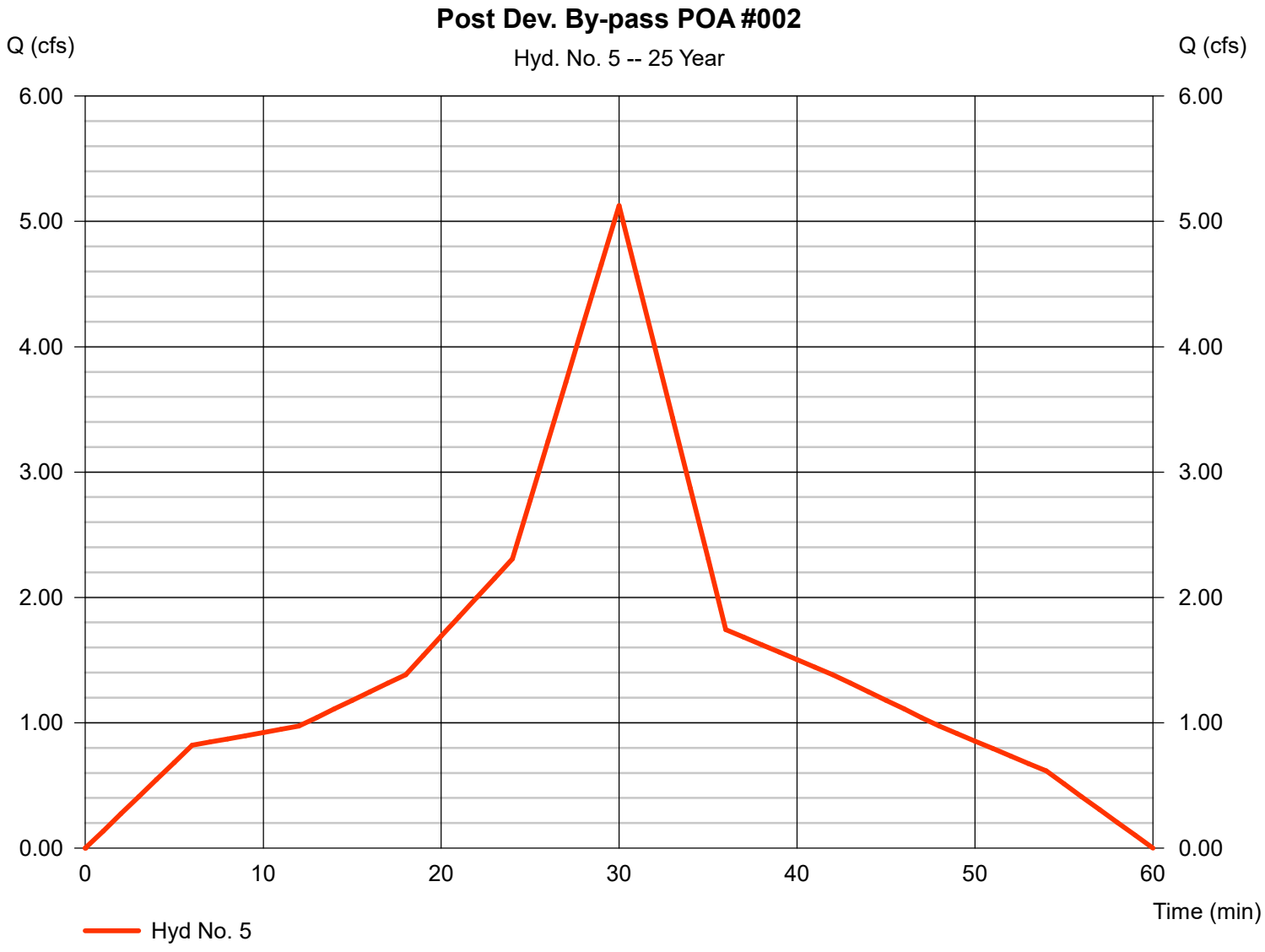


Hydrograph Report

Hyd. No. 5

Post Dev. By-pass POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	5.126 cfs
Storm frequency	=	25 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,517 cuft
Drainage area	=	0.999 ac	Runoff coeff.	=	0.77
Intensity	=	6.667 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

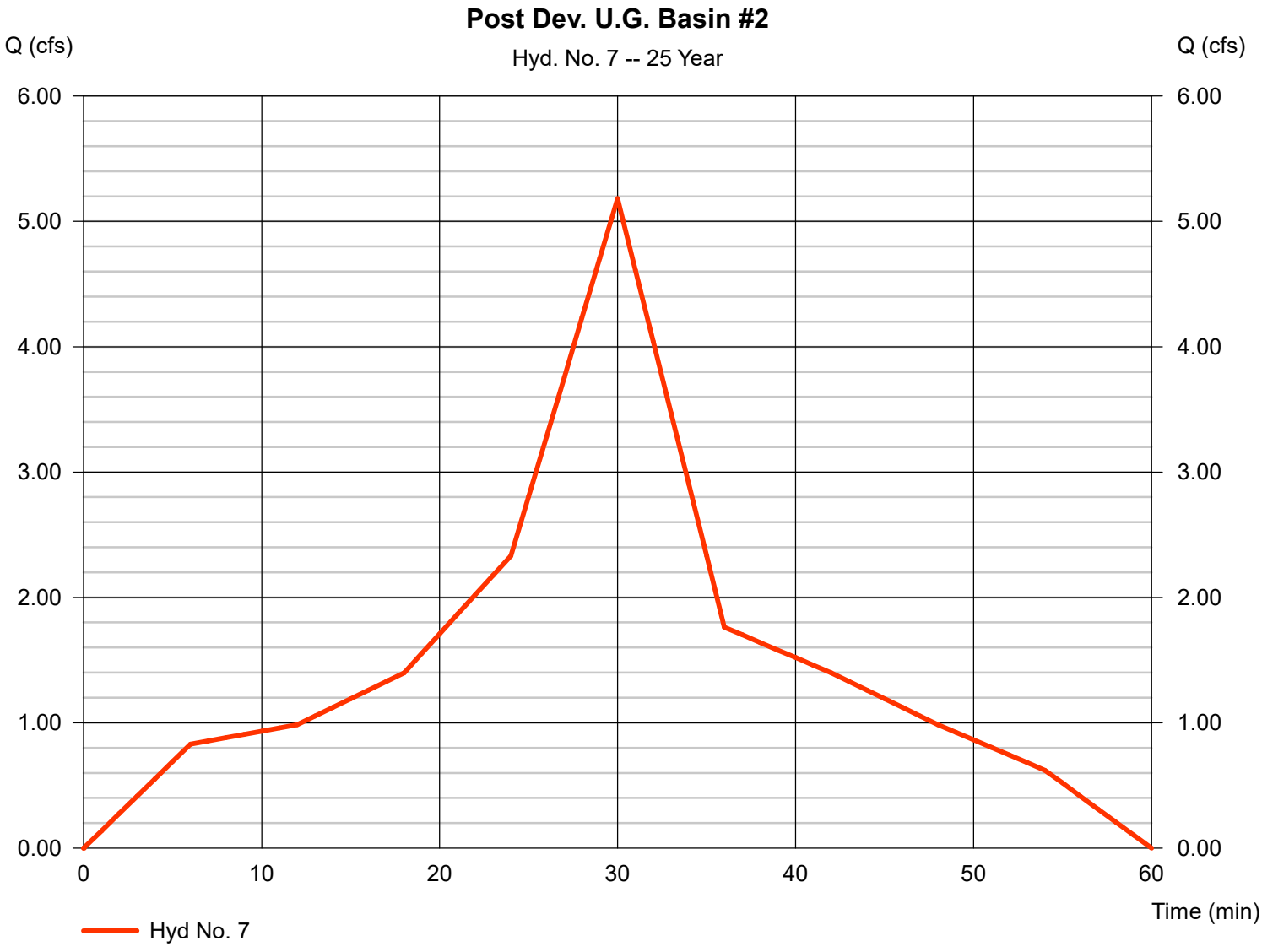


Hydrograph Report

Hyd. No. 7

Post Dev. U.G. Basin #2

Hydrograph type	=	Dekalb	Peak discharge	=	5.181 cfs
Storm frequency	=	25 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,577 cuft
Drainage area	=	1.080 ac	Runoff coeff.	=	0.72
Intensity	=	6.667 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a



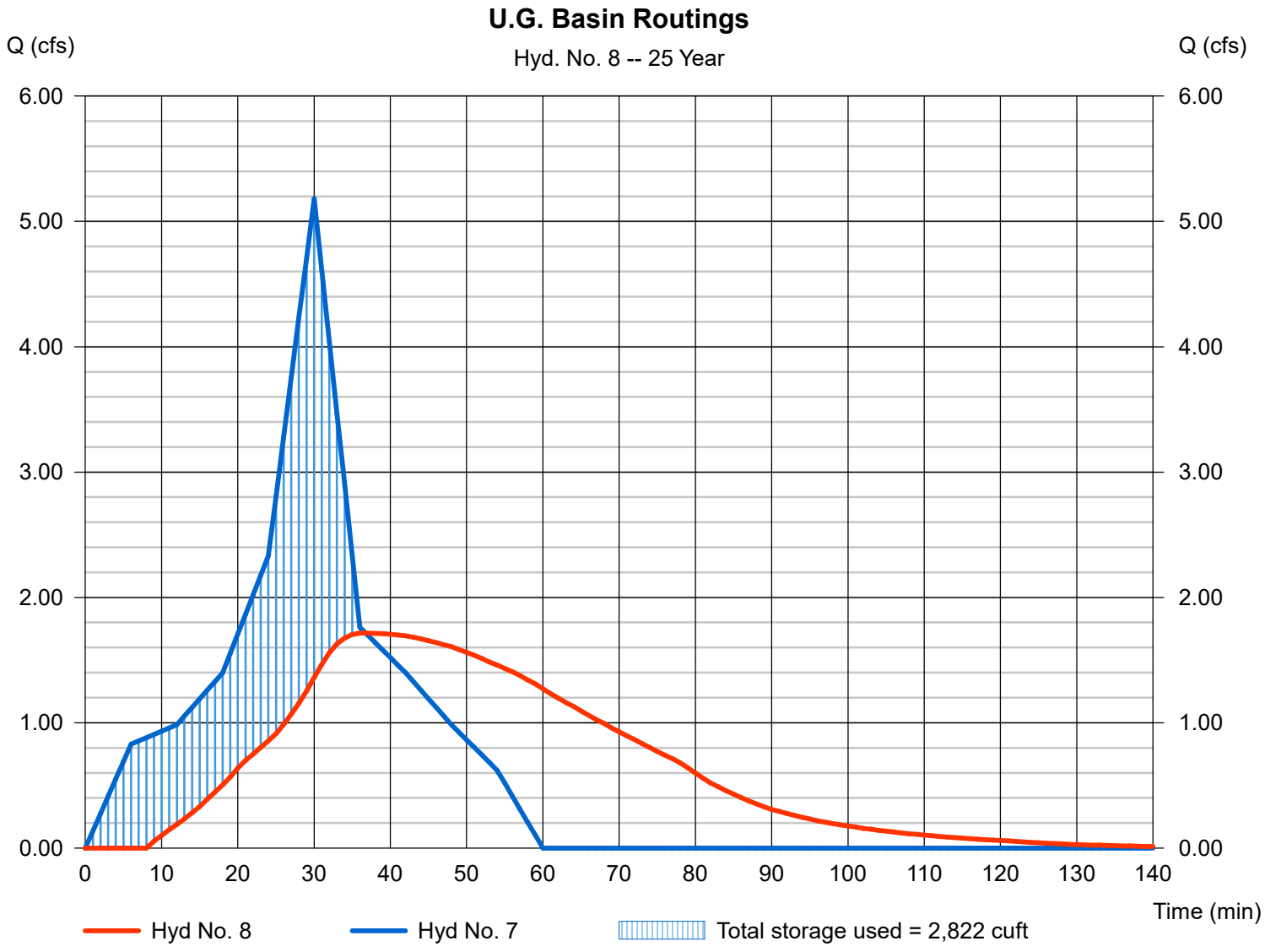
Hydrograph Report

Hyd. No. 8

U.G. Basin Routings

Hydrograph type	=	Reservoir	Peak discharge	=	1.715 cfs
Storm frequency	=	25 yrs	Time to peak	=	37 min
Time interval	=	1 min	Hyd. volume	=	5,316 cuft
Inflow hyd. No.	=	7 - Post Dev. U.G. Basin #2	Max. Elevation	=	253.96 ft
Reservoir name	=	U.G. Basin #2	Max. Storage	=	2,822 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

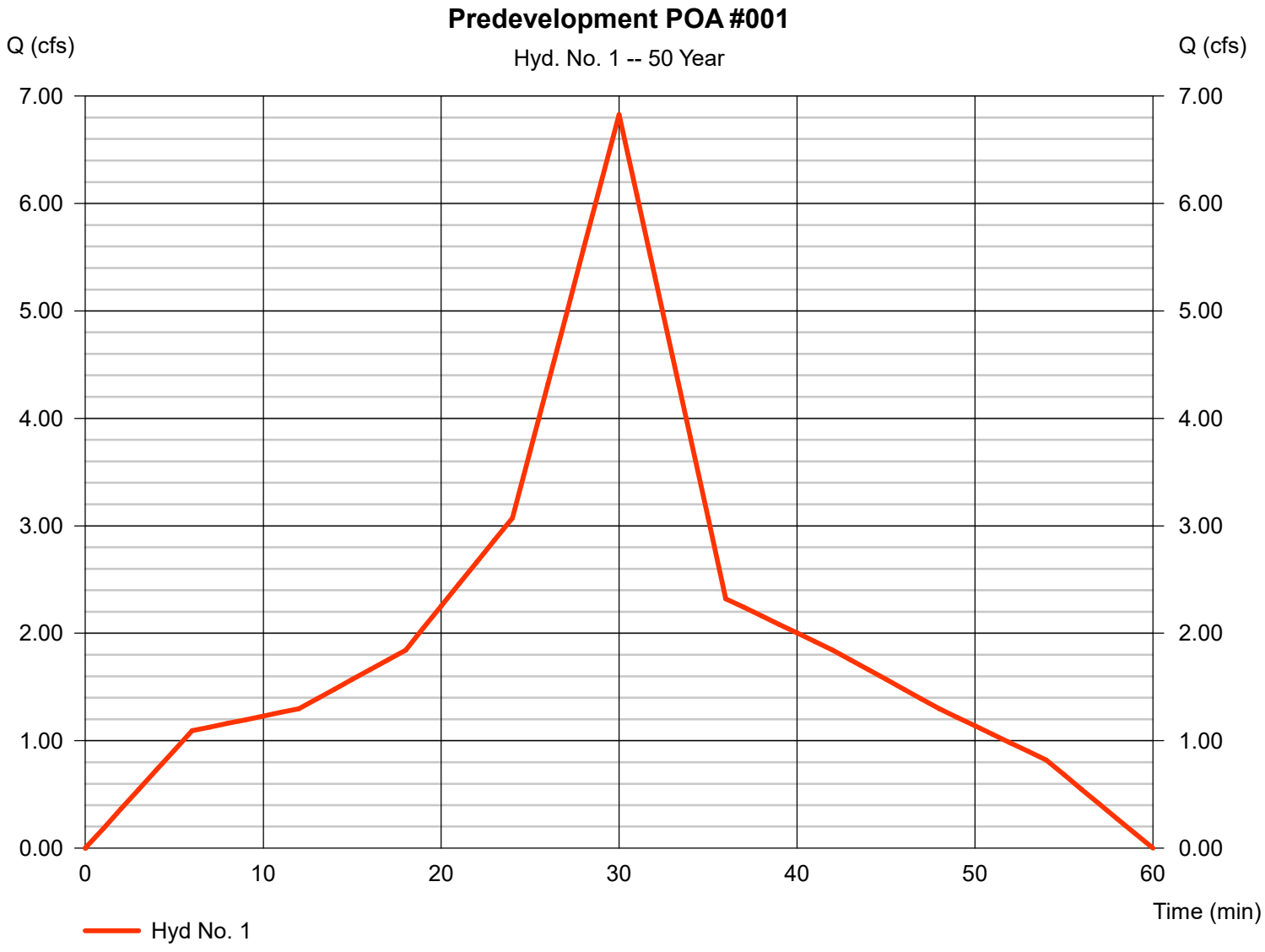
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Dekalb	6.828	1	30	7,350	----	------	------	Predevelopment POA #001
2	Dekalb	8.172	1	30	8,796	----	------	------	Predevelopment POA #002
4	Dekalb	3.872	1	30	4,168	----	------	------	Post Dev. By-pass POA #001
5	Dekalb	5.470	1	30	5,888	----	------	------	Post Dev. By-pass POA #002
7	Dekalb	5.530	1	30	5,953	----	------	------	Post Dev. U.G. Basin #2
8	Reservoir	1.811	1	37	5,692	7	254.13	3,018	U.G. Basin Routings

Hydrograph Report

Hyd. No. 1

Predevelopment POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	6.828 cfs
Storm frequency	=	50 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	7,350 cuft
Drainage area	=	1.352 ac	Runoff coeff.	=	0.71
Intensity	=	7.115 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

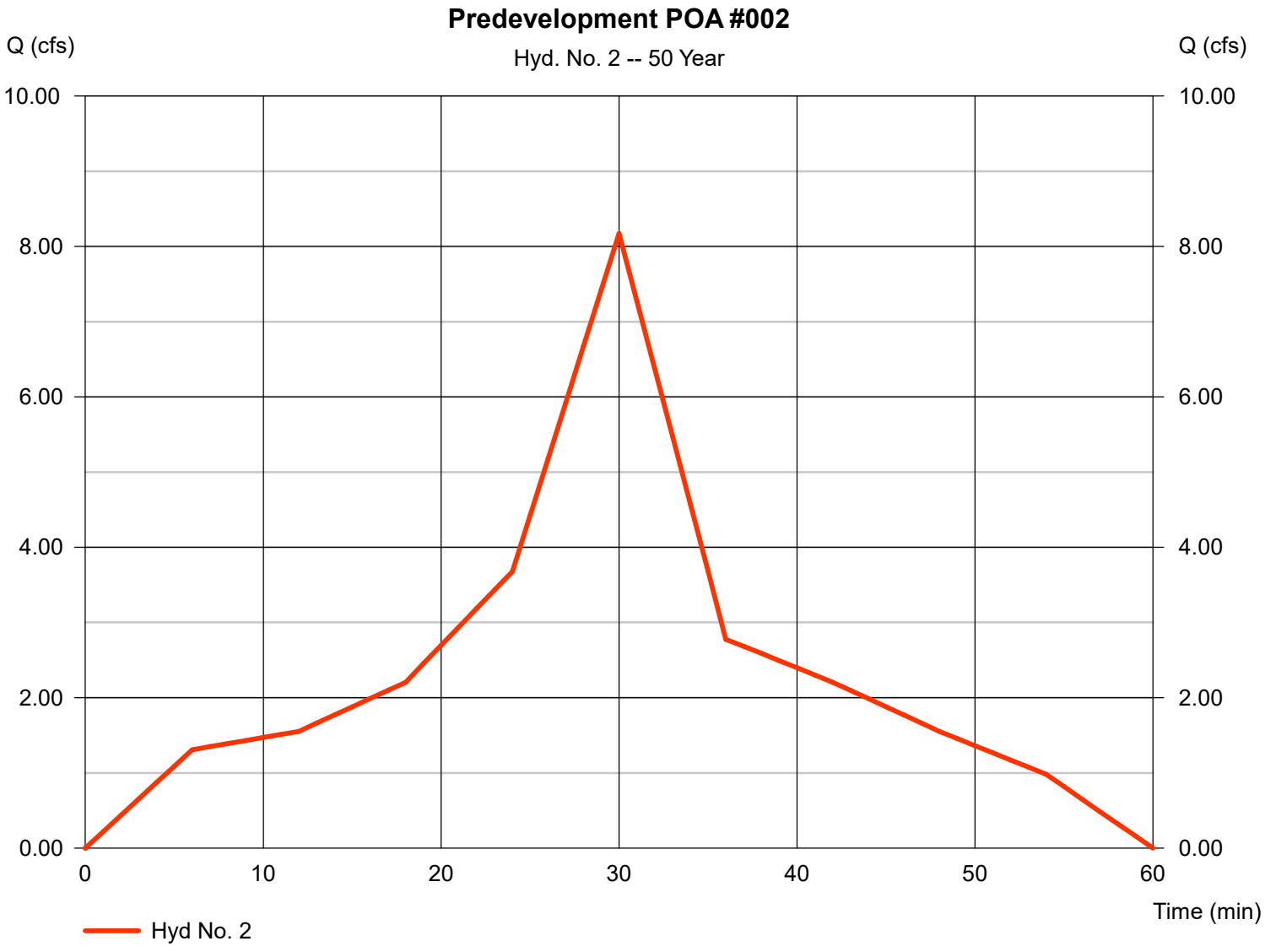


Hydrograph Report

Hyd. No. 2

Predevelopment POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	8.172 cfs
Storm frequency	=	50 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	8,796 cuft
Drainage area	=	1.531 ac	Runoff coeff.	=	0.75
Intensity	=	7.115 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

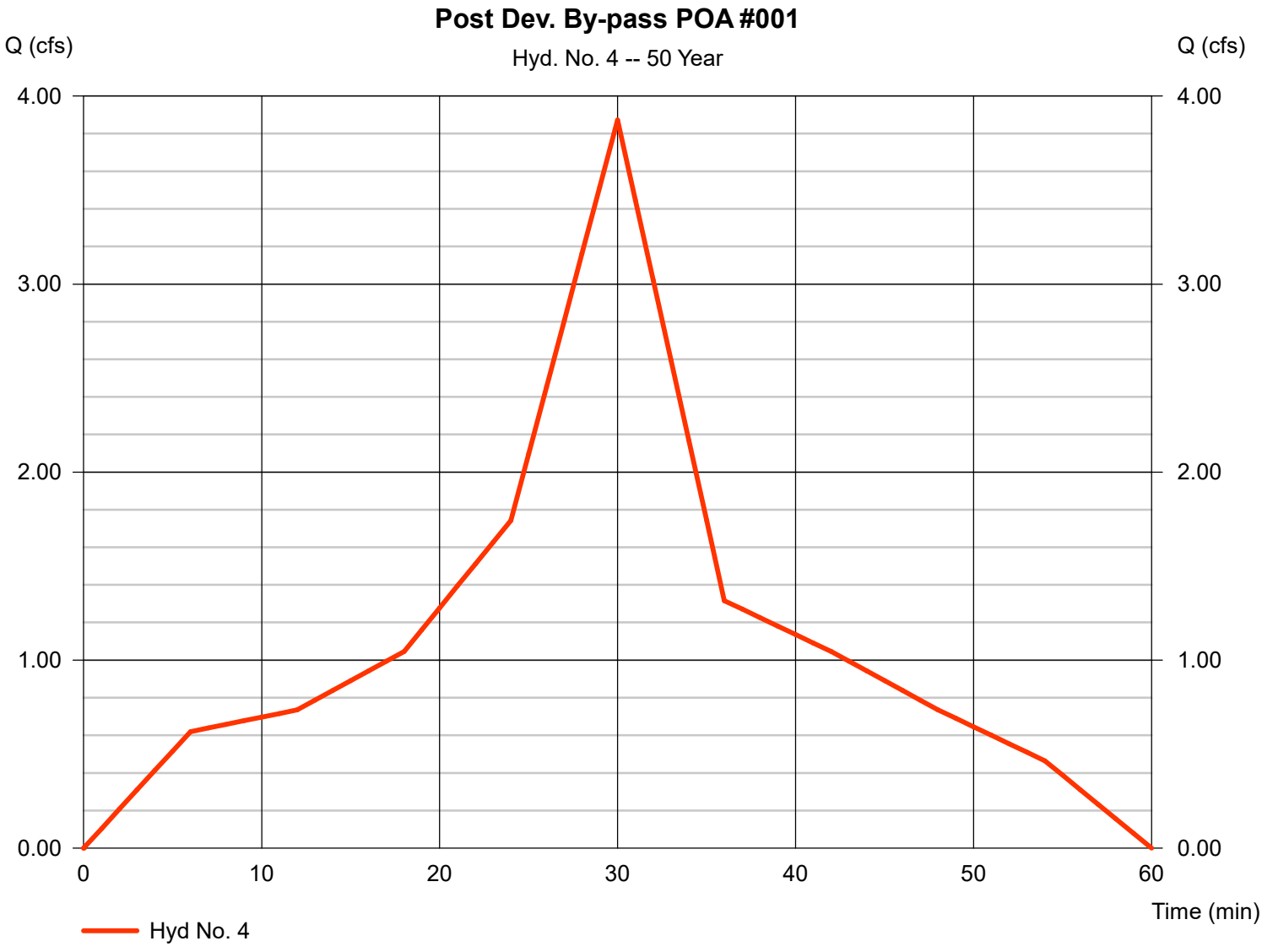


Hydrograph Report

Hyd. No. 4

Post Dev. By-pass POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	3.872 cfs
Storm frequency	=	50 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	4,168 cuft
Drainage area	=	0.707 ac	Runoff coeff.	=	0.77
Intensity	=	7.115 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

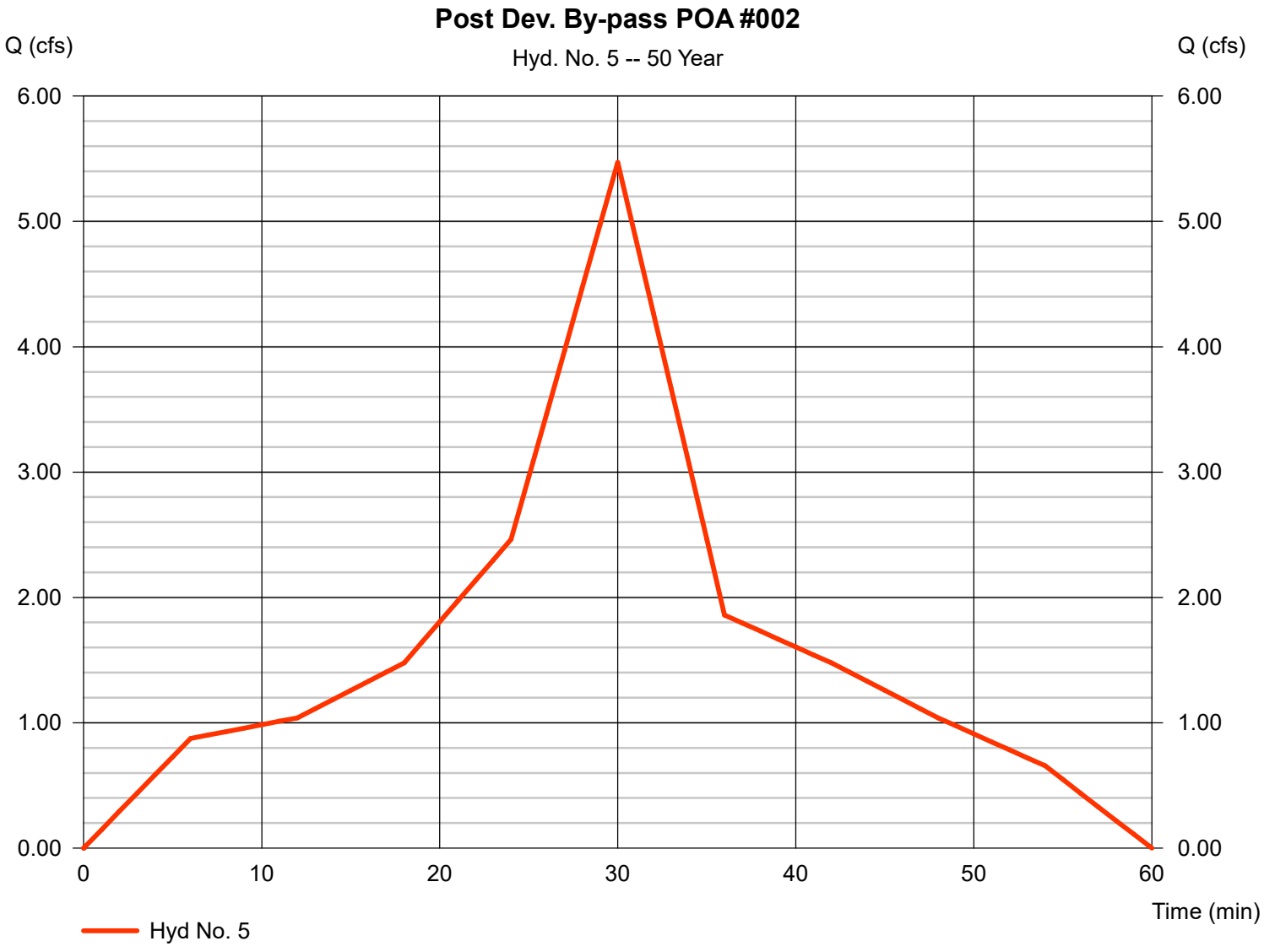


Hydrograph Report

Hyd. No. 5

Post Dev. By-pass POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	5.470 cfs
Storm frequency	=	50 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,888 cuft
Drainage area	=	0.999 ac	Runoff coeff.	=	0.77
Intensity	=	7.115 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

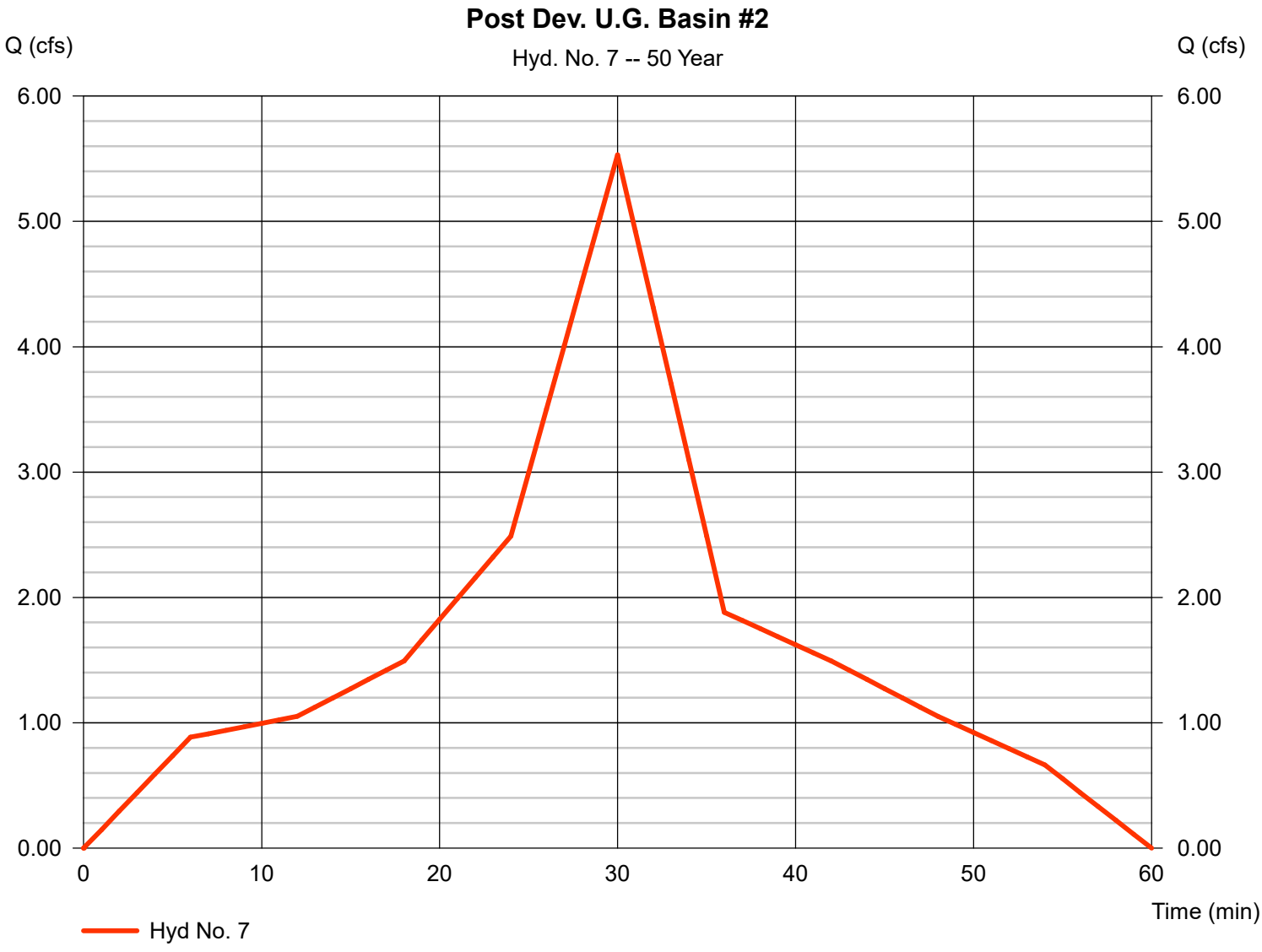


Hydrograph Report

Hyd. No. 7

Post Dev. U.G. Basin #2

Hydrograph type	=	Dekalb	Peak discharge	=	5.530 cfs
Storm frequency	=	50 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	5,953 cuft
Drainage area	=	1.080 ac	Runoff coeff.	=	0.72
Intensity	=	7.115 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a



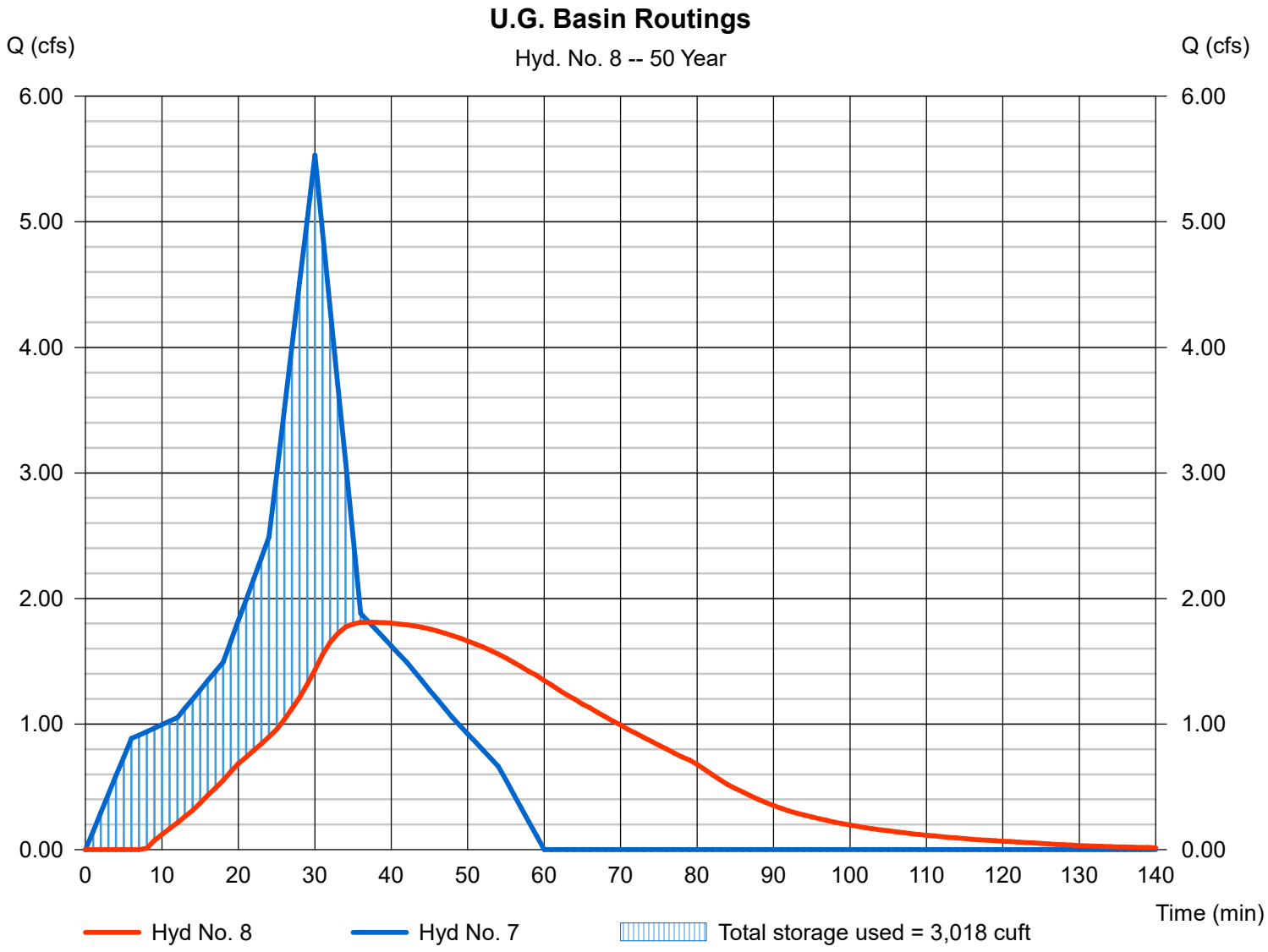
Hydrograph Report

Hyd. No. 8

U.G. Basin Routings

Hydrograph type	=	Reservoir	Peak discharge	=	1.811 cfs
Storm frequency	=	50 yrs	Time to peak	=	37 min
Time interval	=	1 min	Hyd. volume	=	5,692 cuft
Inflow hyd. No.	=	7 - Post Dev. U.G. Basin #2	Max. Elevation	=	254.13 ft
Reservoir name	=	U.G. Basin #2	Max. Storage	=	3,018 cuft

Storage Indication method used.



Hydrograph Summary Report

Hydraflow Hydrographs by Intelisolve v9.1

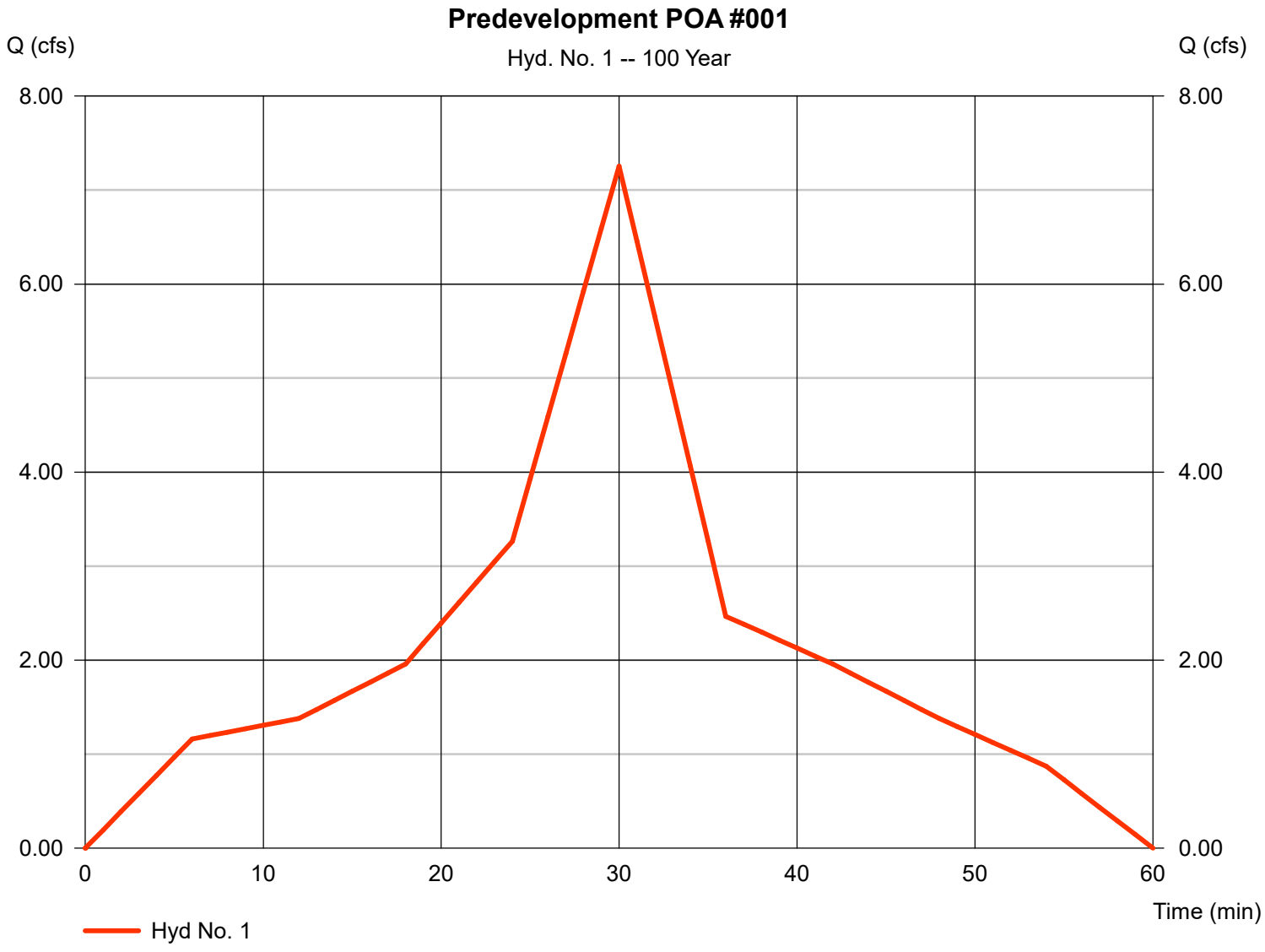
Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph description
1	Dekalb	7.255	1	30	7,809	----	------	------	Predevelopment POA #001
2	Dekalb	8.682	1	30	9,346	----	------	------	Predevelopment POA #002
4	Dekalb	4.114	1	30	4,428	----	------	------	Post Dev. By-pass POA #001
5	Dekalb	5.812	1	30	6,256	----	------	------	Post Dev. By-pass POA #002
7	Dekalb	5.876	1	30	6,325	----	------	------	Post Dev. U.G. Basin #2
8	Reservoir	1.904	1	37	6,064	7	254.30	3,214	U.G. Basin Routings

Hydrograph Report

Hyd. No. 1

Predevelopment POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	7.255 cfs
Storm frequency	=	100 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	7,809 cuft
Drainage area	=	1.352 ac	Runoff coeff.	=	0.71
Intensity	=	7.560 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

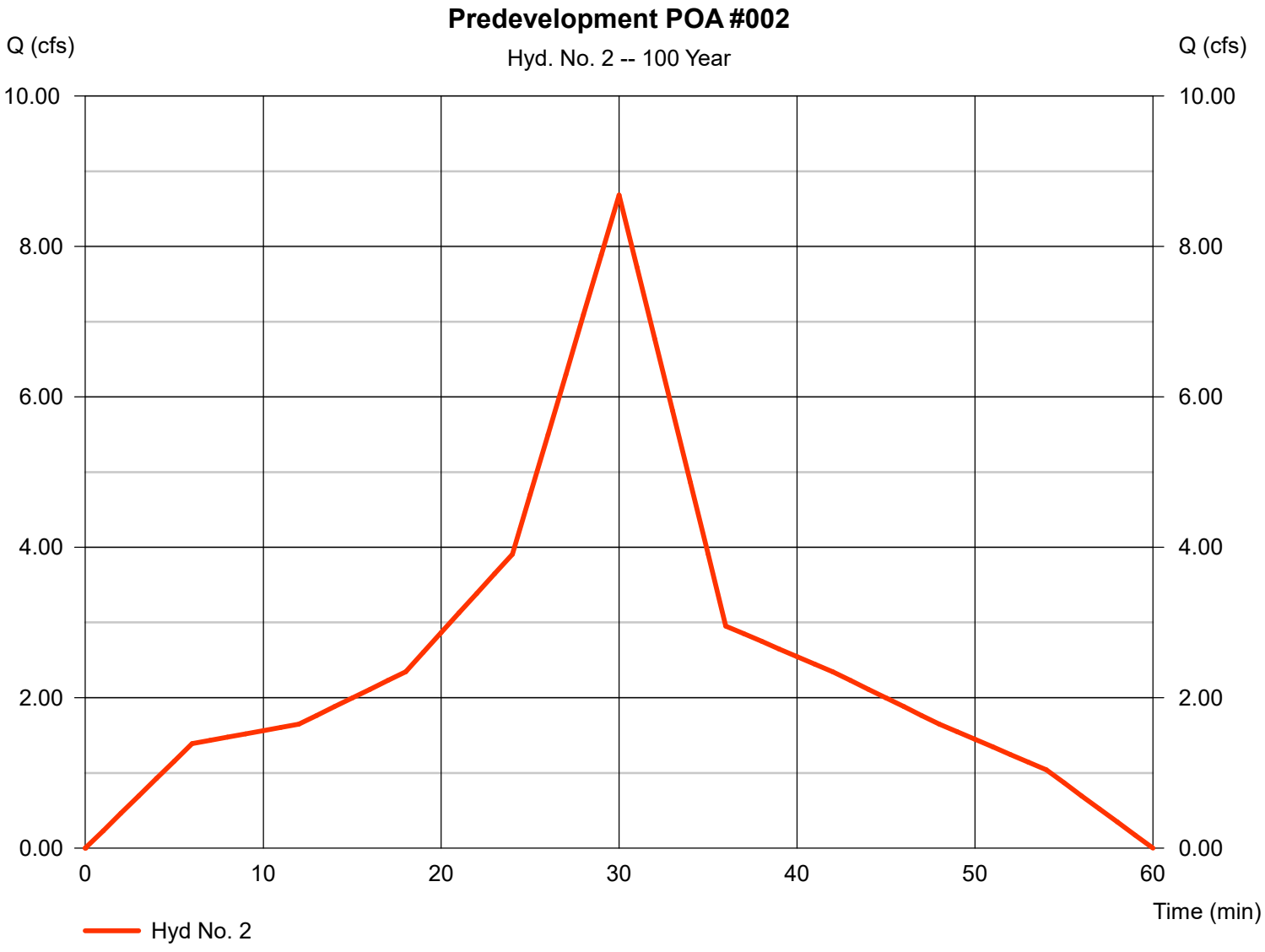


Hydrograph Report

Hyd. No. 2

Predevelopment POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	8.682 cfs
Storm frequency	=	100 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	9,346 cuft
Drainage area	=	1.531 ac	Runoff coeff.	=	0.75
Intensity	=	7.560 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

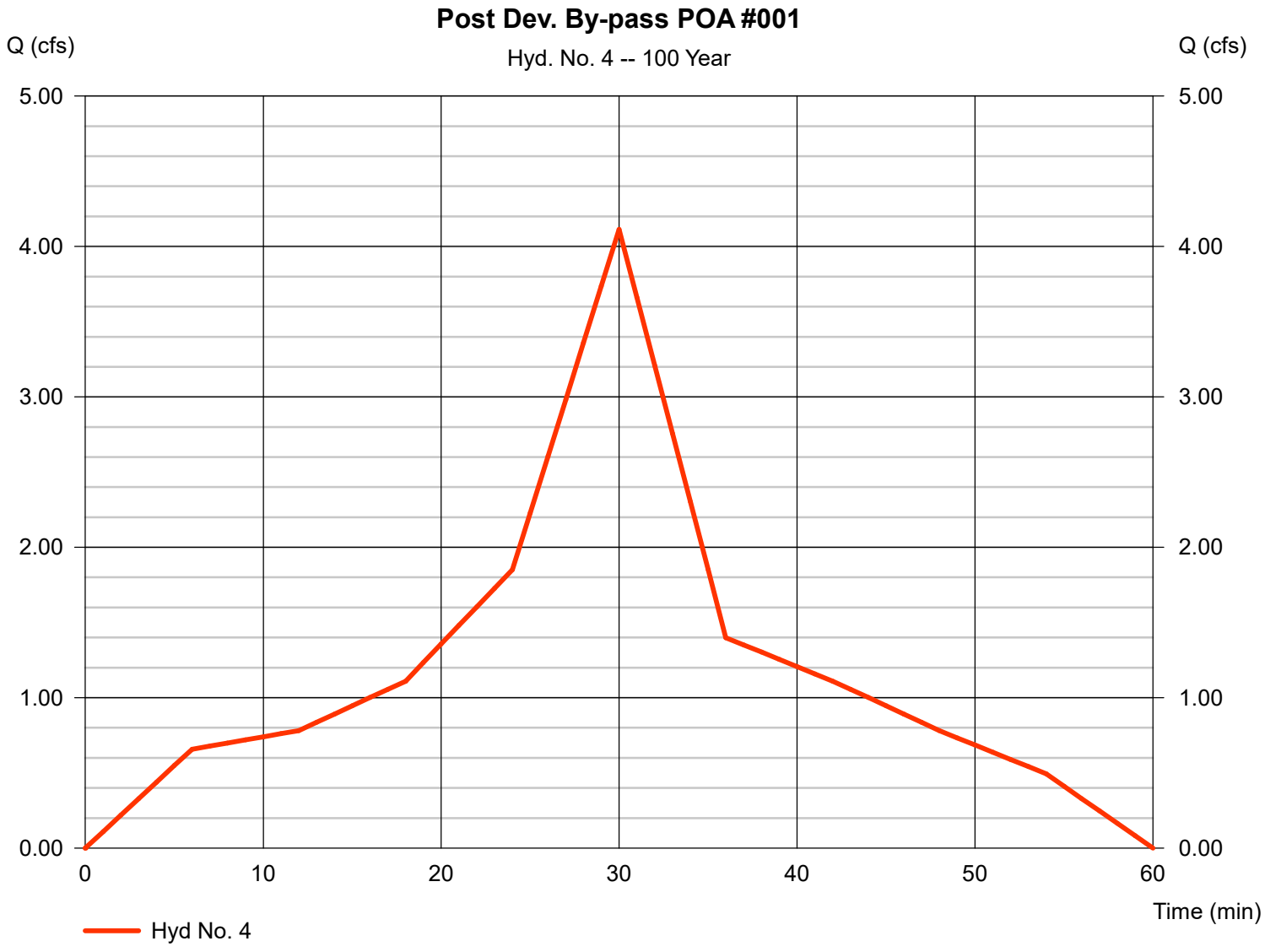


Hydrograph Report

Hyd. No. 4

Post Dev. By-pass POA #001

Hydrograph type	=	Dekalb	Peak discharge	=	4.114 cfs
Storm frequency	=	100 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	4,428 cuft
Drainage area	=	0.707 ac	Runoff coeff.	=	0.77
Intensity	=	7.560 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

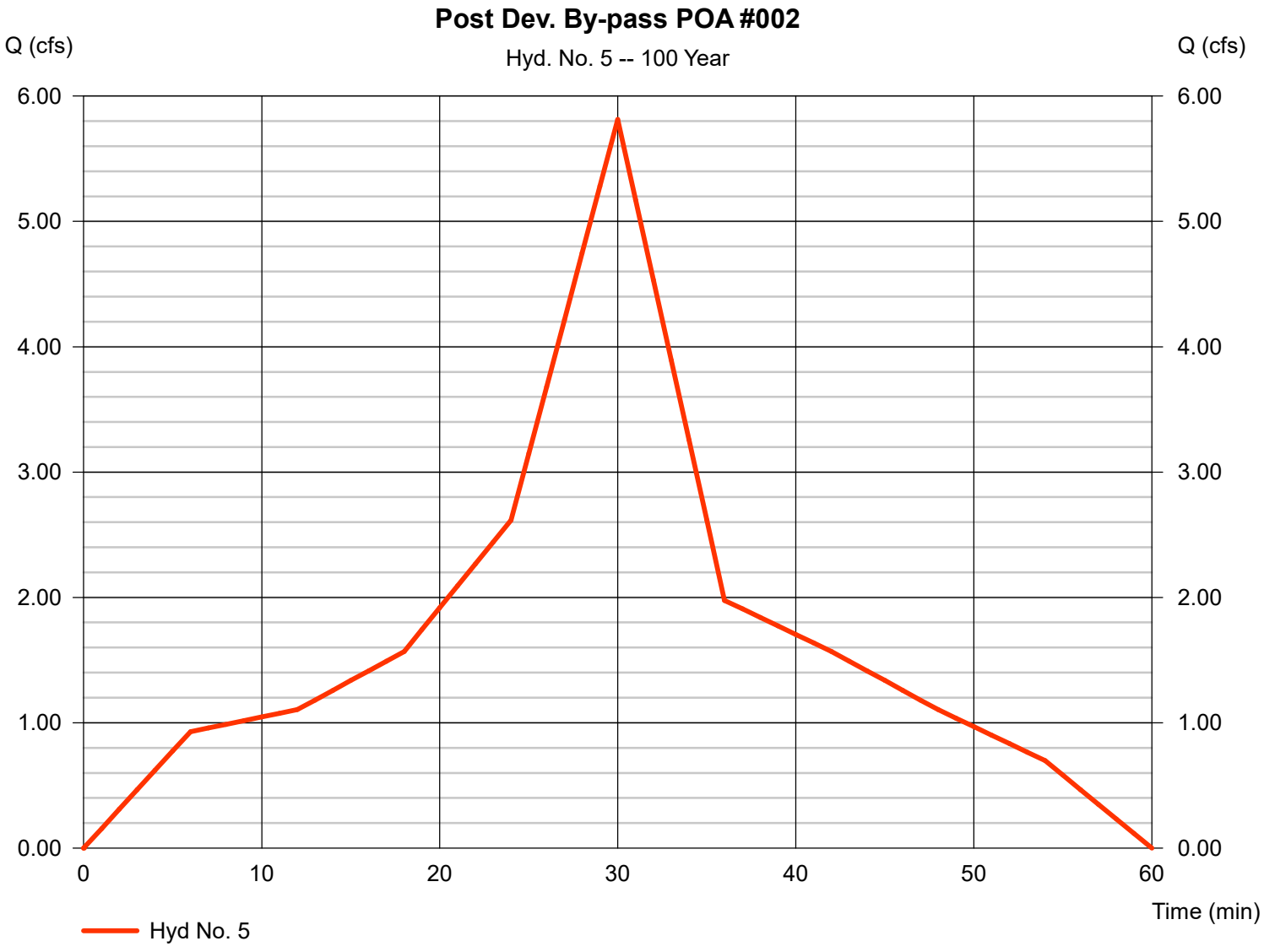


Hydrograph Report

Hyd. No. 5

Post Dev. By-pass POA #002

Hydrograph type	=	Dekalb	Peak discharge	=	5.812 cfs
Storm frequency	=	100 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	6,256 cuft
Drainage area	=	0.999 ac	Runoff coeff.	=	0.77
Intensity	=	7.560 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a

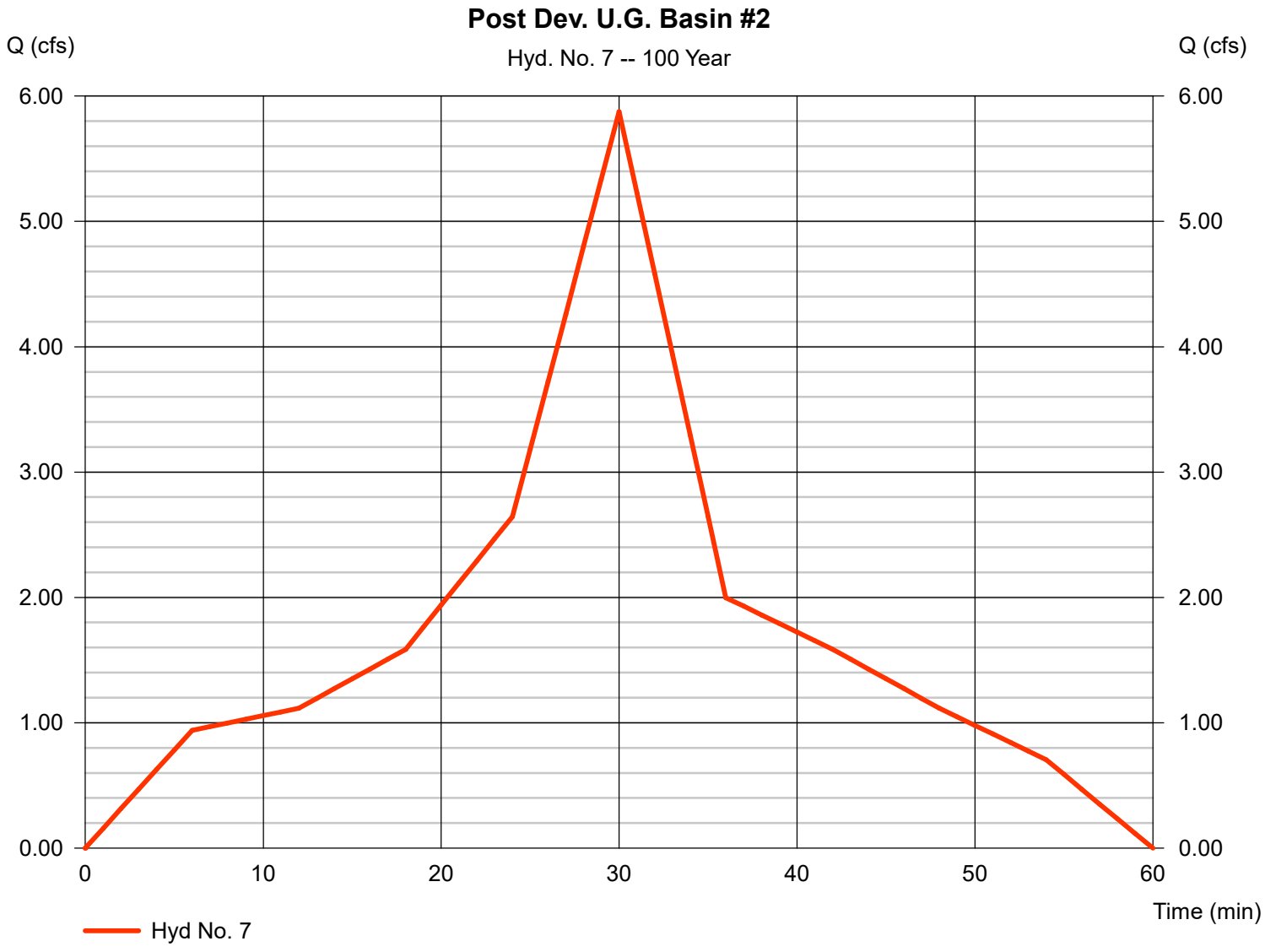


Hydrograph Report

Hyd. No. 7

Post Dev. U.G. Basin #2

Hydrograph type	=	Dekalb	Peak discharge	=	5.876 cfs
Storm frequency	=	100 yrs	Time to peak	=	30 min
Time interval	=	1 min	Hyd. volume	=	6,325 cuft
Drainage area	=	1.080 ac	Runoff coeff.	=	0.72
Intensity	=	7.560 in/hr	Tc by User	=	6.00 min
IDF Curve	=	Meadowood.IDF	Asc/Rec limb fact	=	n/a



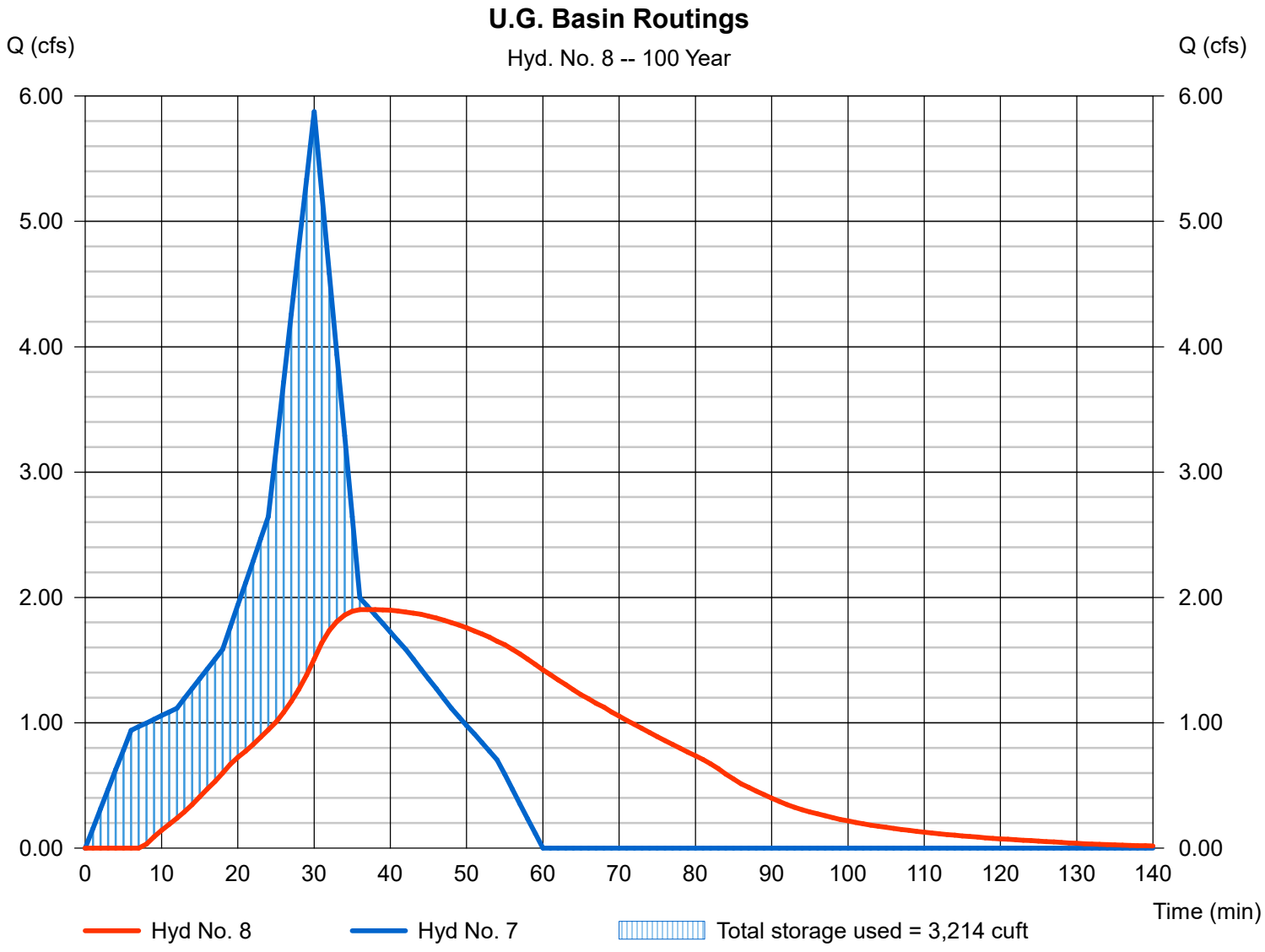
Hydrograph Report

Hyd. No. 8

U.G. Basin Routings

Hydrograph type	=	Reservoir	Peak discharge	=	1.904 cfs
Storm frequency	=	100 yrs	Time to peak	=	37 min
Time interval	=	1 min	Hyd. volume	=	6,064 cuft
Inflow hyd. No.	=	7 - Post Dev. U.G. Basin #2	Max. Elevation	=	254.30 ft
Reservoir name	=	U.G. Basin #2	Max. Storage	=	3,214 cuft

Storage Indication method used.



Hydraflow Rainfall Report

Return Period (Yrs)	Intensity-Duration-Frequency Equation Coefficients (FHA)			
	B	D	E	(N/A)
1	51.1793	12.5000	0.8841	--------
2	62.3088	13.0000	0.8830	--------
3	0.0000	0.0000	0.0000	--------
5	63.8680	12.9000	0.8387	--------
10	61.2779	12.3000	0.7994	--------
25	54.0095	11.0000	0.7384	--------
50	48.0354	9.9000	0.6903	--------
100	44.3328	9.0000	0.6532	--------

File name: Meadowood.IDF

Intensity = B / (Tc + D)^E

Return Period (Yrs)	Intensity Values (in/hr)											
	5 min	10	15	20	25	30	35	40	45	50	55	60
1	4.08	3.26	2.73	2.36	2.08	1.86	1.69	1.54	1.42	1.32	1.24	1.16
2	4.85	3.91	3.29	2.84	2.51	2.25	2.04	1.87	1.73	1.61	1.50	1.41
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	5.68	4.62	3.92	3.41	3.03	2.73	2.49	2.29	2.12	1.98	1.86	1.75
10	6.27	5.12	4.36	3.81	3.39	3.07	2.81	2.59	2.41	2.25	2.12	2.00
25	6.97	5.70	4.87	4.28	3.83	3.48	3.20	2.96	2.76	2.60	2.45	2.32
50	7.44	6.09	5.22	4.60	4.14	3.77	3.47	3.23	3.02	2.85	2.69	2.56
100	7.91	6.48	5.56	4.91	4.43	4.05	3.74	3.49	3.27	3.09	2.93	2.79

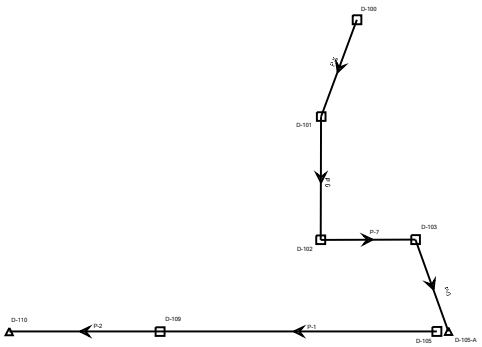
Tc = time in minutes. Values may exceed 60.

Precip. file name: Philadelphia.pcp

Storm Distribution	Rainfall Precipitation Table (in)							
	1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr
SCS 24-hour	2.70	3.30	0.00	4.20	5.00	5.80	6.40	7.20
SCS 6-Hr	1.86	2.28	0.00	2.82	3.36	3.90	4.62	5.40
Huff-1st	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-2nd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-3rd	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-4th	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Huff-Indy	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Custom	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Section E:
100-year Storm Sewer Design

Title: Scenario: Base



a. Haestad StormCAD 100-year Storm Analysis:

Title: Calculation Executive Summary

Scenario Summary

Label	Base

Calculation Executive Summary

	>>>> Info: Subsurface Network Root: D-105-A >>>> Info: Subsurface Analysis iterations: 2 >>>> Info: Convergence was achieved.
Subnetwork Results	
	>>>> Info: Subsurface Network Root: D-110 >>>> Info: Subsurface Analysis iterations: 2 >>>> Info: Convergence was achieved.

Storm Events Executive Summary

Rainfall Alternative Label	100-Year Rainfall	Return Event	100 years
Global Storm Event	Region 5 - 100 Year		

Calculation Messages

Title: Calculation Executive Summary

Calculation Messages

Message Id	44040
Scenario	Base
Element Type	Conduit
Element Id	199
Label	P-5
Time	(N/A)
Message	Conduit does not meet minimum velocity constraint.
Source	Hydraulics Validation

Message Id	44131
Scenario	Base
Element Type	Outfall
Element Id	187
Label	D-110
Time	(N/A)
Message	User defined tailwater is ignored. Frontwater analysis for a hydraulically steep condition or a minimum tailwater control will govern.
Source	Hydraulic Results

Message Id	22019
Scenario	Base
Element Type	(N/A)
Element Id	-1
Label	(N/A)
Time	0.000
Message	One or more conduits are operating under pressure at this time step.
Source	Hydraulic Results

Title: Conduit FlexTable: Woodrow Node-1

Upstream Structure	Upstream Inlet Area (acres)	Upstream Inlet C	Upstream Inlet Tc (min)	System Rational Flow (ft^3/s)	Elevation Ground (Start) (ft)	Upstream Structure Hydraulic Grade Line (In) (ft)	Energy Grade Line (In) (ft)	Invert (Start) (ft)
D-105	(N/A)	(N/A)	0.000	0.00	256.40	253.22	252.81	252.01
D-109	(N/A)	(N/A)	0.000	0.00	254.50	252.73	252.63	251.30
D-100	0.094	0.600	5.000	0.47	265.75	256.43	255.93	253.70
D-101	0.255	0.970	5.000	2.41	257.00	255.92	255.48	253.15
D-102	0.061	0.970	5.000	2.83	256.60	255.33	254.87	252.57
D-103	0.024	0.970	5.000	2.98	256.60	254.82	254.36	252.24

Title: Conduit FlexTable: Woodrow Pipe Schedule-1

Label	Start Node	Stop Node	Length (User Defined) (ft)	Diameter (in)	Rise (ft)	Span (ft)	Material	Manning's n	Slope (ft/ft)	Invert (Start) (ft)	Invert (Stop) (ft)
P-1	D-105	D-109	108.0	18.0			PVC	0.011	0.005	252.01	251.47
P-2	D-109	D-110	60.0	18.0			PVC	0.011	0.005	251.30	251.00
P-5	D-100	D-101	40.0	15.0			PVC	0.011	0.009	253.70	253.32
P-6	D-101	D-102	66.0	15.0			Concrete	0.013	0.005	253.15	252.82
P-7	D-102	D-103	31.0	18.0			PVC	0.011	0.005	252.57	252.41
P-9	D-103	D-105-A	29.0	18.0			PVC	0.011	0.007	252.24	252.05

Title: Conduit FlexTable: Woodrow Pipe/Node-1

Start Node	Stop Node	Upstream Inlet Area (acres)	Upstream Inlet C	Upstream Inlet Tc (min)	System Intensity (in/h)	System Flow Time (min)	System Rational Flow (ft^3/s)	Velocity (ft/s)	Manning's n
D-105	D-109	(N/A)	(N/A)	0.000	8.300	0.000	0.00	3.97	0.011
D-109	D-110	(N/A)	(N/A)	0.000	9.664	0.454	0.00	5.31	0.011
D-100	D-101	0.094	0.600	5.000	8.300	5.000	0.47	0.38	0.011
D-101	D-102	0.255	0.970	5.000	7.852	6.739	2.41	1.96	0.013
D-102	D-103	0.061	0.970	5.000	7.740	7.300	2.83	1.60	0.011
D-103	D-105-A	0.024	0.970	5.000	7.675	7.623	2.98	1.69	0.011

Length (User Defined) (ft)	Diameter (in)	Rise (ft)	Span (ft)	Material	Slope (ft/ft)	Invert (Upstream) (ft)	Invert (Downstream) (ft)	Hydraulic Grade Line (In) (ft)	Hydraulic Grade Line (Out) (ft)
108.0	18.0			PVC	0.005	252.01	251.47	252.72	252.73
60.0	18.0			PVC	0.005	251.30	251.00	252.23	251.89
40.0	15.0			PVC	0.009	253.70	253.32	255.93	255.92
66.0	15.0			Concrete	0.005	253.15	252.82	255.42	255.33
31.0	18.0			PVC	0.005	252.57	252.41	254.83	254.82
29.0	18.0			PVC	0.007	252.24	252.05	254.32	254.30

Energy Grade Line (In) (ft)	Energy Grade Line (Out) (ft)
252.81	252.75
252.63	252.33
255.93	255.93
255.48	255.39
254.87	254.86
254.36	254.34

Section F:
Operation and Maintenance Notes

Post-Construction Maintenance Program:

The applicant, its assigns shall be responsible for the maintenance and care of the Underground Basin, Storm sewer collection system and roof leader collection system.

All BMP's outlined below require yearly inspection and maintenance to ensure they are functioning as designed. More frequent inspection and maintenance may be required if listed as such on the BMP's specific maintenance notes. Maintenance of the entire storm system will include removal of any debris and flushing of the system. An inspection report should be provided by a creditable Engineering Firm under the direction of a Licensed Engineer. The owners, their successors, or its assigns shall assume all responsibility for the cost associated with the inspection, cleaning of the system, engineering fees and ultimately any costs associated with recommended repairs and/or replacement of said facilities. Copies of the inspection report shall be forwarded to the applicable municipality for review and record keeping with State regulations.

BMP Operation and Maintenance Notes:

- During the construction phase of the project, the permittee shall be responsible for the proper construction, stabilization and maintenance of all erosion and sedimentation control measures. The permittee shall also be responsible for the proper construction, operation and maintenance of all post construction stormwater management BMPs identified in the PCSWM plan. The applicant, its assigns will assume responsibility for the operation and maintenance responsibilities of all post construction stormwater management BMPs.

- All inspections of post construction stormwater management BMPs shall be performed by the appointed representative of the Township. The operation and maintenance requirements for the post construction stormwater management BMPs proposed for this project include the following:

  Maintenance of the storm sewer collection system: (After each runoff event)

  - The owner, its assigns shall be responsible to ensure that the storm sewer collection and lawn drain system is free and clear of any debris. The system shall be inspected after each runoff event and cleaned if required.

  Maintenance of the underground detention (Storm Tank) facilities: (After each runoff event)

  - The owner, its assigns shall be responsible to ensure that the underground detention facilities are free and clear of any debris. The system shall be inspected after each runoff event and cleaned if required. Quarterly flushing of the system shall be done to ensure the system is free and clear of any sediment and debris.

Maintenance of the downspout & roof leader collection system: (After each runoff event)

- The owner, its assigns shall be responsible to ensure that the downspout and roof leader collection system is free and clear of any debris. The system shall be inspected after each runoff event and cleaned if required. Quarterly flushing of the system shall be done to ensure the system is free and clear of any sediment and debris.

CKS Engineers
4259 West Swamp Road, Suite 410
Doylestown, PA 18902
P: 215.340.0600
www.cksengineers.com

August 21, 2025
Ref: #7571

Township of Worcester
1721 Valley Forge Road
PO Box 767
Worcester, PA 19490-0767

Attention: Dan DeMeno, Township Manager

Reference: Meadowood Healthcare Northeast Expansion
Land Development Review – Final (2nd Review)
Parcel No. 67-00-03185-00-6
3205 Skippack Pike

Dear Dan:

Our office is in receipt of your request for a preliminary review of a healthcare expansion for The Meadowood Corporation, plans consisting of 16 sheets dated January 31, 2025, last revised June 30, 2025, and a Post-Construction Stormwater Management Report dated July 2025, both prepared by Woodrow & Associates, Inc. The applicant proposes the demolition of the existing stair tower of the Holly House building to accommodate a new 10,890-s.f. footprint, three-story addition with a partial basement for eight personal care and 31 healthcare beds and associated site improvements, including reconfiguration of adjacent off-street parking to provide 19 standard, eight compact, and seven accessible spaces in the work area, new service walks, screen walls, and retaining walls on the site of an existing residential life-care facility. A new underground stormwater management facility is also proposed below the driveway area. The proposed parking reconfiguration will result in a net loss of 15 parking spaces for the campus. This proposal received a favorable recommendation from the Worcester Township Planning Commission at its meeting of March 27, 2025 and Preliminary Approval from the Worcester Township Board of Supervisors at its meeting of April 16, 2025.

We offer the following comments for consideration by the Township:

I. ZONING

The following comments are based upon the provisions of the Worcester Township Zoning Ordinance:

1. The following variances were granted by the Worcester Township Hearing Board on January 21, 2025 (Docket No. 2024-25):

   a. Section 150-15 – to permit the construction of a residential building with a height of three stories, not to exceed 40 feet when the maximum permitted is 35 feet and/or 2.5 stories.

b. Section 150-15 – to permit the expansion of the existing health center to a height of three stories and/or 42 feet when the maximum permitted is 35 feet and/or 2.5 stories.

We note that only the second variance above (b) applies to this project as the variance described in item (a) is for another project (apartments) at a different section of the campus.

2. The preceding variances were granted by the Zoning Hearing Board with the following conditions which should also be listed on the plans:

a. The applicant shall construct the buildings substantially as set forth in the testimony and as shown in Exhibits A-3, A-7, and A-9. The applicant shall install and maintain a berm and evergreen landscaping, 8 feet in height at time of planting, substantially as shown on Exhibit A-10, to the satisfaction of the Township.

We note that installation of this berm and evergreen plantings was intended for the Skippack Pike frontage; therefore, the Township should confirm it applied only to a future apartment project which is not proposed under this land development application.

b. The applicant shall apply for and obtain all applicable Township, County, and State permits and approvals relative to the use in a timely manner.

c. All use and development permitted by this Decision shall conform to the exhibits and testimony presented by the applicant, unless inconsistent with any specific conditions imposed by this Board, in which case these specific conditions shall take precedence.

d. Except as permitted by prior Decisions of this Board, the use of the subject property shall otherwise comply with the Worcester Township Code, including, but not limited to, all stormwater management fencing, setback, parking, lighting, sign, and noise regulations, and all other codes, regulations, and ordinances of Worcester Township.

e. Pursuant to Section 150-225 of the Worcester Township Zoning Ordinance, a special exception or variance shall expire if the applicant fails to obtain a permit in connection therewith within one (1) year of the date of authorization thereof. When land development/subdivision approval is required, the special exception or variance shall expire if the applicant fails to make a diligent effort to obtain such approval within six (6) months following the date of the Zoning Hearing Board's Order. Upon receipt of land development/subdivision approval, the special exception or variances shall expire if a building permit is not obtained within six (6) months of the date of the land development/subdivision approval.

II. SUBDIVISION AND LAND DEVELOPMENT

The following comments are based upon the requirements of Worcester Township's Subdivision and Land Development Ordinance:

1. On Sheet 8, the 'Littleleaf Linden' has a proposed caliper of 3 inches. The minimum required caliper for this canopy tree is 3.5 inches. The minimum height at time of installation would also need to be revised accordingly to match the larger caliper. (130-28.H.1)

2. A detail for "Screen" fencing must be added to the plans. If the six-foot wooden screen fence along the parking area and screen fence/walls adjacent to the building addition are not typical, separate details shall be provided for each of these installations.

3. We previously requested that details of the cooling tower and concrete pad must be added to the plans. The applicant states these details will be supplied by the project architect and M/E/P contractor, but it was not received as part of this submission package.

4. A detail for the railing along the pedestrian ramp must be added to the plans. If to be part of the building permit submission, this detail will need to be reviewed by the Township Building Code Official.

5. The following is a list of requested waivers as shown on Sheet 1:

    a. From Section 130-17.D(7) to allow for parking spaces less than the required 10-foot width and 20-foot depth.

        The applicant is proposing eight "compact" spaces at 8 feet wide by 18 feet deep and notes that they will generally be used for 'service carts' which do not need the same amount of space as passenger vehicles. We recommend these spaces be striped with the word "COMPACT" or signed "Compact Parking Only" to deter larger vehicles from parking in them.

    b. From Section 130-28.E(1) requiring an existing tree survey.

        The applicant is proposing to use the existing tree survey only for impacted project area.

    c. From Section 130-28G.(4) requiring street trees be installed with any new subdivision use or land development.

        The plans do not propose any supplemental street trees.

    d. From Section 130-28.G.6.g requiring no more than 15 parking spaces shall be placed in a continuous row without an intervening raised planting island of at least 10 feet in width. (130-28.G.6.b)

        The plans propose a parking row of 17 spaces without a planting island.

    e. From Section 130-33.C requiring all existing features 500 feet from the project boundary be shown on the plans.

        The waiver request states that an aerial photograph to fulfill requirements of showing existing features within 500 feet of the project tract. The aerial photograph

was not received with this submission and must be included in future submissions. (130-33.C)

III. GRADING, STORMWATER MANAGEMENT/STORM DRAINAGE AND EROSION AND SEDIMENT CONTROLS

The following comments are based upon the requirements of Worcester Township's Stormwater Management Ordinance (SMO):

1. The project proposes to disturb 0.64 acres. The applicant is made aware that if the limit of disturbance exceeds one acre, an NPDES permit and Adequacy for Erosion and Sediment Control will be required. This office is aware of a separate staging area located on the Meadowood site that may be required to be added to the healthcare expansion development. The applicant's engineer must provide confirmation from the Montgomery County Conservation District that the two projects do not need to be combined.

2. Per the Development Impervious Schedule on Sheet 5, the proposed improvements yield a net increase of impervious surface coverage of 4,971 square feet, which would require stormwater volume infiltration. Due to the location of the improvements, infiltration in the proposed improvement area is not feasible. While other BMPs that are located throughout the site may compensate for the volume requirement, it was recommended that the required volume removal for this project be included in the following phase of this project. This must be noted on the plans.

3. The overall dimensions of proposed Underground Basin No. 2 must be added to the plan. Additionally, the facility width is noted as 24.27' in the section on Sheet 11 whereas the PCSM Report lists a width of 24.47'.

4. The rim of manhole D107 is noted as 256.20 in plan view but listed as 256.15 in the Stormwater Structure Schedule on Sheet 6. The rim elevation must be consistent.

5. All proposed erosion and sediment controls must be added to the plan on Sheet 12. While the construction sequence is still being coordinated with the property owner, the plan could still be revised to show inlet filter bags, compost filter sock, and tree protection fencing at a minimum. (129-12.F and 129.20)

6. All utility crossings must be shown on the profiles. The water and sanitary lines are omitted in the D105 to 109 profile and the three HPS pipes are omitted from the D103 to D105 profile.

7. The proposed rerouted 4-inch roof leader from Units 110/111 will discharge through the proposed retaining wall. The plan must indicate the pipe invert at its discharge. We recommend the pipe be continued directly to the underground basin rather than flow over the parking lot.

8. A site specific construction sequence is required to be included on Sheet 13. The applicant states that they are coordinating such a sequence with the property owner to ensure operations of the facility can be maintained during construction. The plan will still need to be revised to include a site-specific sequence once determined. The Township should not issue any permits until this information is documented in the plans.

9. Manhole D110 is a proposed doghouse manhole. Information must be added to the plans to indicate this and a detail must be added to the plans.

10. A waiver will be required from Section 129-18.C.2 for the use of HDPE pipe in lieu of reinforced concrete pipe (RCP) at multiple locations. The use of HDPE on a private lot is acceptable and the applicant has designed certain pipe sections to be RCP where recommended by this office.

11. A waiver from Section 129-18.C.3 for pipe diameter will be required for the proposed 8-inch diameter HDPE pipe segments from YD-A and YD-B to Inlet D-100. The ordinance requires a minimum diameter of 15 inches for all collection piping. Given the limited drainage area contributing to these yard inlets, we would not oppose such a waiver request; however, that would be conditioned upon the PCSM Report being revised to demonstrate that the pipes can safely convey the 100-year storm event.

12. Page 10 of the PCSM Report indicates multiple BMPs that are not proposed as part of this phase. The PCSM Report must be revised accordingly.

IV. SANITARY SEWER

1. The sanitary lateral profile on Sheet 9 only shows one “proposed” segment of PVC; however, it is our understanding that all portions shown in the profile will be newly installed. The labeling and line weights should be adjusted accordingly.

2. A doghouse manhole detail must be added to the plans.

3. The applicant will be required to buy additional sewer capacity in conjunction with the healthcare building expansion. The applicant must provide flow calculations to determine the required EDUs. We have evaluated the Valley Green WWTP and the Meadowood Pump Station and determined capacity exists at these facilities. We will work with the applicant directly to address any sewer issues.

4. The sanitary lateral between the doghouse manhole and manhole A show a 30” RCP storm sewer crossing; however, this same pipe is identified as 36” CMP in the plan view above. The information should be consistent and the noted 2.5-foot clearance between the top of the sanitary line and bottom of the storm pipe should be revised if actually less.

V. GENERAL

The following are general comments and consideration generated during the course of our review:

1. The four proposed free-standing parking lot lights will have a 12-foot mounting height and will be located in the vicinity of parking spaces; however, the plan makes no indication if there will be building-mounted lighting for the new addition. If so, it should be detailed on the plans. We recommend the two accessible spaces abutting the addition be adequately illuminated.

2. The “of 17” total page count noted on the Sheet 1’s Sheet Index should be revised to “of 16”.

3. Truck turning movements for emergency services must be added to the plan. We note that the applicant's response indicates that they coordinated with the traffic engineer. We request that the emergency vehicle turning templates be shown on Sheet 5.

4. The proposed courtyard is labeled as landscaped on Sheet 5. Details of the landscaping should be provided on the landscaping plan, Sheet 8.

5. Approval from the Traffic Engineer is required.

6. Approval from the Fire Marshal is required.

The above represents our comments on this initial final plan submission. The plans must be revised accordingly and resubmitted for further review.

Please contact me if you have any questions or need additional assistance on these plans.

Very truly yours,
CKS ENGINEERS
Township Engineers

John W. Evarts, P.E.

JWE/klk

cc: Christian Jones, Assistant Township Manager
Wendy F. McKenna, Esq., Township Solicitor
Casey Moore, P.E., Township Traffic Engineer
The Meadowood Corp., Applicant
Catherine Harper, Esquire, Timoney Knox L.L.P.
Woodrow & Associates, Inc.
Karen Miller, Brant & Associates
George DiPersio, CKS Engineers
File

Bowman

August 21, 2025

Mr. Dan Demeno
Township Manager
Worcester Township
1721 Valley Forge Road
P.O. Box 767
Worcester, PA 19490

Attention: Christian R. Jones, Assistant Township Manager
Mr. Robert D'Hulster, Public Works Director

RE: **Traffic Review #2 – Preliminary/Final Land Development Plans**
Proposed Meadowood Healthcare Building
Worcester Township, Montgomery County, PA
Project No. 313982-25-004

Dear Dan:

Per the request of the Township, Bowman Consulting Group (Bowman) has prepared this review letter which summarizes our second (2nd) traffic engineering review of the proposed building expansion to be located along the northern side of the Meadowood Drive at the southeastern end of the property adjacent to the Laurel House and Holly House in Worcester Township, Montgomery County, PA. It is our understanding that the proposed expansion will consist of 8 personal care units and 15 skilled care beds. This will bring the total number of dwelling units at the Meadowood property to 452 units (currently at 429 dwelling units of a few varieties). Access to the proposed building will be provided via the existing driveway connection to the Meadowood Drive to the south of the Laurel House and Holly House, which ultimately accesses Skippack Pike (S.R. 0073).

The following documents were reviewed and/or referenced in preparation of our traffic review:

- Preliminary/Final Land Development Plans - Meadowood Senior Living, prepared by Woodrow & Associates, Inc., last revised June 30, 2025.
- Response to Township Traffic Engineer Comments Letter – Proposed Meadowood Healthcare Building, prepared by Woodrow & Associates, Inc., last updated August 7, 2025.
- Response to Township Engineer Comments Letter – Proposed Meadowood Healthcare Building, prepared by Woodrow & Associates, Inc., dated July 8, 2025.

Based on our review of the documents listed above, **Bowman finds that all of our outstanding traffic-related technical comments associated with the Land Development Plans have been addressed, and we find the documents submitted for review to be satisfactory with Worcester Township applying the conditions below.** We continue to note the following items pertaining to the application as a reminder to the applicant, Township staff and consultants, and the governing Board.

1. The applicant is requesting a waiver from **Section 130-17.D(11)** of the **Subdivision and Land Development Ordinance,** requiring parking spaces to be a minimum of 10 feet wide by 20 feet long. The plans currently show several parking spaces in the parking area to the east of the proposed building that are 8 feet wide and/or 18 feet long, thereby do not satisfying the ordinance requirement. Since provision of parking spaces that are less than 10 feet wide by 20 feet long is expected to have a minimal

impact on site traffic operations, our office is supportive to the granting of this waiver should the Board of Supervisors grant this request.

2. The applicant has not provided a current or updated traffic study for the site, nor any trip generation information specific to the addition of 23 units as a result of the building expansion for the Meadowood community campus. Access continues to be proposed at the existing, single point of ingress/egress at Meadowood Drive and Skippack Pike (S.R. 0073), although emergency-only access to/from Valley Forge Road (S.R. 0363) exists for the Meadowood community. While we do not see the need that a full traffic study for this incremental expansion to the Meadowood master plan is necessary at this time, **the applicant must at a minimum prepare a vehicular trip generation letter for the proposed expansion on the site. This could be accomplished by conducting existing trip generation counts (in and out movements) during the weekday morning and weekday afternoon commuter peak hours at the intersection of Skippack Pike (S.R. 0073) and Meadowood Drive over a minimum of three separate typical weekdays to confirm the existing trip generation of the site, and to use that data to help calculate an actual trip generation rate for the site to then calculate the number of trips that will be generated by the proposed 23 units during the peak hours.** If further study is needed at this time based on the information received, we will determine upon review of the resubmitted materials.

   The applicant's engineer indicates in its response that this item needs to be discussed for further resolution.

3. The Skippack Pike (S.R. 0073) intersection at the Meadowood access has been the subject of a signal warrant evaluation over the years, and the necessary access and adjacent roadway improvements that would need to accompany any warranted signal installation. Costs for the design & construction for a signalization and intersection/frontage improvements project will be an expensive undertaking in order to complete them. This said, signal warrants in the most recently completed study we are aware of from April 2023 were <u>not yet satisfied</u>, and PennDOT has not approved a signal installation with associated roadway improvements to date for the access. An access and frontage improvement project desirably would realign Meadowood Drive opposite Hollow Road and signalize the four-legged intersection, also adding left-turn lanes for both Meadowood Drive and Hollow Road, as well as adding a right-turn deceleration lane for Meadowood Drive along Skippack Pike (S.R. 0073). Providing the turning lanes for added safety (especially due to the age-restricted nature of the Meadowood residents), and providing the safety of a signal for both minor road approaches to Skippack Pike (S.R. 0073) in this area are important aspects of a future project when signal warrants are met and can be approved by PennDOT before it is installed.

   With the addition of the proposed building for this project, and while it may not be necessary at this time, we recommend that the applicant consider evaluating the Skippack Pike (S.R. 0073) access and Hollow Road for signal warrants and/or determine the viability of providing additional access to/from the Meadowood community in light of growing traffic demands on the abutting state roadway network along the property. This evaluation, if pursued, could be done in coordination with the capture of trip generation counts in the comment above. Understanding there is a master plan for this project, and that an update to a traffic study was deferred at the time of the development of The Grove project on the site, **we recommend that the Board consider a condition that both an updated traffic study be conducted for the site upon <u>any further expansion</u> to the Meadowood campus (i.e., future garden apartments, etc.) beyond the addition of the building proposed that is the subject to this land development application. The study should be complete with signal warrant evaluation alternatives for access location(s), as well as Skippack Pike (S.R. 0073) access/roadway frontage improvements, in addition to investigating possible additional access to/from the property.**
   The applicant's engineer indicates in its response that this item needs to be discussed for further resolution.

4. The Township Fire Marshal should provide their review of the proposed site modifications for accessibility and circulation needs of emergency apparatus. A copy of the review letter and any approval/acceptance of the plans by the fire marshal should be sent to our office by the applicant's team.

5. "Pedestrian Crossing" signs should be shown on the plans on both sides of the crosswalk located along the Access Drive on the southeastern corner of the proposed building.
The applicant's engineer indicates in its response that these signs will be shown on the final plans. These signs must be shown on the final plans that will be recorded with the Township.

6. The Township and its engineering consultants must continue to be included in any submissions and meetings with PennDOT and other agencies involving Meadowood with regards to its current access, emergency access, signalization, and/or improvements to the adjacent roadways for the Meadowood site.

7. According to the Township's Roadway Sufficiency Analysis, the proposed development is located in Transportation Service Area North, which has a corresponding impact fee of $3,977 per "new" weekday afternoon peak hour trip and the applicant will be required to pay a Transportation Impact Fee in accordance with the Township's Transportation Impact Fee Ordinance. To determine the transportation impact fee applicable for the proposed building expansion, **the applicant must conduct trip generation counts during the weekday afternoon peak hour at the intersection of Skippack Pike (S.R. 0073) and Meadowood as previously mentioned in this letter.** Upon completion of these counts, the applicant must calculate a trip generation rate for the site during the weekday afternoon peak hour that can be used to calculate the expected trip generation for the additional 23 units being proposed for the building expansion with this application. A final determination of the transportation impact fee will be reviewed and determined by our office for recommendation to the Board upon submission of this information.

We trust that this review letter responds to your request. If you or the Township have any questions, or require clarification, please contact me, Casey Moore, P.E., or Brian Jones, PTP, TOPS.

Sincerely,

Michelle E. Eve

Michelle Eve, P.E
Assistant Project Manager - Transportation

BMJ/MEE/CAM

cc: John Evarts, P.E., CKS Engineers (Township Engineer)
Wendy Feiss McKenna, Esq. (Township Solicitor)
Devin Ralph, Esq. (Township Solicitor)
Paul Lutz, PennDOT District 6-0
Catherine Harper, Esquire, Timoney Knox, LLP (Applicant' Attorney)
Tim Woodrow, P.E., Woodrow & Associates, Inc. (Applicant's Engineer)

V:\313982 - Worcester Twp PA\313982-25-004 (TRA) - Meadowood Health Care Expansion\Engineering\Submissions\2025-07-25 LD Plans\Review\2025-08-21 Review Letter #2 - Meadowood (finalized).docx

Planning Commission Open Space Review – Discussion Questions

1. **Overall Purpose & Role**
    - What is the primary role of this property in the Township's open space system (recreation, environmental preservation, community gathering, historic resource, etc.)?
2. **Alignment with Comprehensive Plan**
    - How well does the property's current use and condition align with the goals and objectives in the Worcester Township Comprehensive Plan?
3. **Community Use & Demand**
    - How often is this property used, and by whom (residents, organized groups, visitors)? Are there unmet community needs that could be addressed here?
4. **Access & Parking**
    - Is the property's current access (pedestrian, bicycle, vehicular) adequate? Is parking capacity sufficient for typical and peak usage?
5. **Facilities & Amenities**
    - Are the existing facilities in good condition? What upgrades, replacements, or additions should be considered in the short and long term?
6. **Environmental Stewardship**
    - Does the property adequately protect and enhance natural resources such as streams, tree cover, and wildlife habitat? Are there opportunities for ecological improvements?
7. **Trail & Connectivity**
    - Does the property connect effectively to other Township parks, trails, or regional systems? Are there opportunities to improve or expand these connections?
8. **Programming & Events**
    - Are there existing Township or community programs at this location? Should additional programming (e.g., events, markets, educational activities) be considered?

9. **Maintenance & Management**
    - Are current maintenance practices adequate? What additional resources, staffing, or equipment might be needed?
10. **Constraints & Restrictions**
    - Are there legal, environmental, or deed restrictions that limit potential improvements? If so, should the Township seek to modify or remove them?
11. **Opportunities for Partnerships**
    - Are there potential partnerships (with community groups, schools, businesses, or state/county agencies) that could enhance use, maintenance, or programming?
12. **Capital Improvements Priority**
    - If funds become available, what capital projects at this property should be prioritized?
13. **Public Awareness & Visibility**
    - Is the property well-known and easily located by residents? Could signage, marketing, or mapping improve public awareness?
14. **Safety & Security**
    - Are there safety concerns (lighting, visibility, traffic, accessibility) that should be addressed?
15. **Long-Term Vision**
    - What should this property look like and function as in 10–20 years? What steps should the Township take now to achieve that vision?

OPEN SPACE REVIEW – DEEP MEADOW LANE

Context within Township Open Space Program and Comprehensive Plan

Worcester Township's Open Space Program seeks to preserve land that protects community character, supports environmental health, and maintains the Township's rural-suburban balance. The Worcester Township Comprehensive Plan reinforces these priorities, calling for the preservation of natural resources, enhancement of greenway connections, and protection of scenic viewsheds.

The Deep Meadow Lane parcel is a neighborhood-scale open space that directly supports the Comprehensive Plan's Open Space, Recreation, and Resource Protection goals by maintaining green buffers, providing stormwater benefits, and preserving habitat in a residential context.

1. Location and Setting

- Address/Area: Near the intersection of Bethel Road and Deep Meadow Lane.
- Parcel IDs: 67-00-00343-11-2 and 67-00-00343-10-3.
- Acreage: Approximately 11 acres.
- Surrounding Land Use: Low-density residential, single-family homes.
- Zoning: Consistent with adjacent residential zoning; designated as open space through subdivision approvals.
- Access: Direct from Deep Meadow Lane; no public parking facilities provided or planned.
- Intended Use Pattern: Neighborhood-oriented, pedestrian and bicycle access only.

2. Existing Conditions

- Topography: Gently sloping with stable grades; conducive to infiltration and low-impact stormwater management.
- Vegetation: Predominantly natural vegetation including turf, mixed grasses, and scattered trees; requires monitoring for invasive species.
- Infrastructure: None; no trails, benches, lighting, or signage currently in place.
- Hydrology: No mapped streams or wetlands, but the site functions as a stormwater infiltration and groundwater recharge area.

3. Functional and Environmental Value

- Habitat Provision: Supports bird species, pollinators, and small wildlife; potential to increase biodiversity with targeted plantings.
- Stormwater Management: Provides significant pervious surface area, reducing runoff volumes and improving infiltration in a developed residential area.
- Scenic and Character Contribution: Preserves view corridors and rural-suburban neighborhood character.
- Community Buffer: Serves as a natural separator between homes, reducing visual density and preserving privacy.

4. Alignment with Comprehensive Plan

This parcel supports multiple Comprehensive Plan objectives, including:

- Resource Protection Goal: Protect natural resources and scenic landscapes from loss or degradation.
- Open Space Goal: Maintain a network of open space that balances development with conservation.
- Community Character Goal: Preserve rural viewsheds and neighborhood green buffers.
- Stormwater Management Objective: Utilize natural landscapes for runoff reduction and recharge.
- Recreation & Trails Objective: Where appropriate, integrate passive recreational opportunities into the open space system without compromising environmental integrity.

5. Potential for Enhancement

- Passive Recreation: Consider a mown grass loop trail or compacted stone path for walking (low-impact, minimal grading).
- Ecological Improvements:
    - Convert select turf areas to pollinator meadow or native wildflower planting.
    - Undertake targeted invasive species removal and replacement with native plantings.

- Educational Opportunities: Install small interpretive signage to highlight native species, pollinator benefits, and Township preservation efforts.
- Constraints**:**
    - No parking expansion; all enhancements must maintain low visitation intensity.
    - Privacy considerations for adjacent property owners.

Key Takeaway

The Deep Meadow Lane parcel is a well-positioned, low-maintenance open space asset that already supports Comprehensive Plan goals related to conservation, stormwater management, and scenic preservation. Modest ecological enhancements and passive-use amenities could further increase its value while maintaining its intended neighborhood-scale use and character.