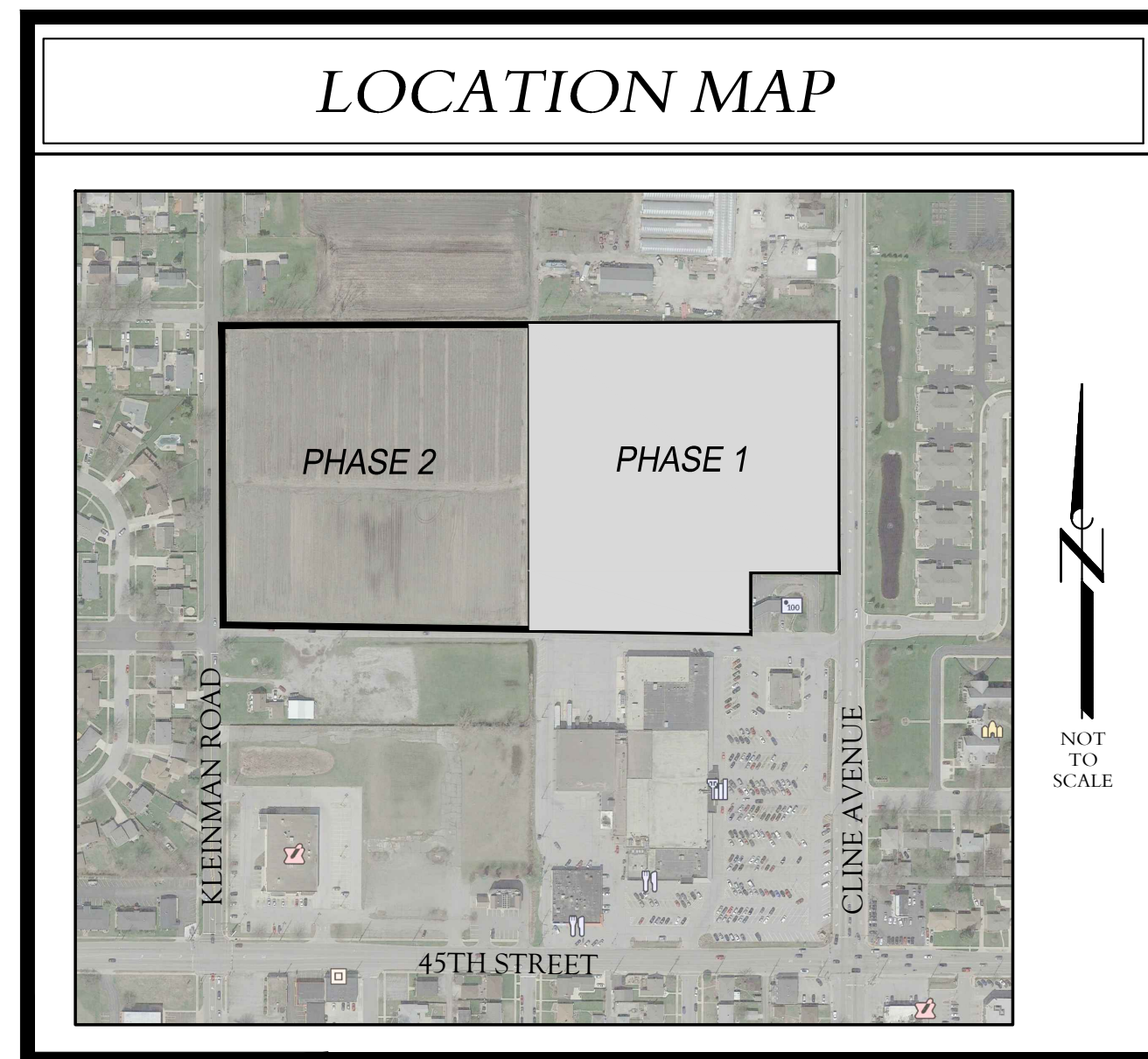


FINAL ENGINEERING

SENIOR LIVING - PHASE 1

NWC CLINE AVE. & ERNIE STRACK DRIVE
HIGHLAND, INDIANA

PREPARED FOR
RUSSELL
4600 W. 53rd STREET
DAVENPORT, IA



DRAWINGS INDEX			
	ON-SITE IMPROVEMENTS	REV	DATE
C0.1	TITLE SHEET & INDEX	3	9/16/20
C0.2	EXISTING CONDITIONS & DEMOLITION PLAN	3	9/16/20
C0.3	EXISTING CONDITIONS & DEMOLITION PLAN	3	9/16/20
C1.0	APPROVED FINAL DETAILED PLANNED UNIT DEVELOPMENT	3	9/16/20
C1.1	GEOMETRIC & PAVING PLAN	3	9/16/20
C2.1	GRADING PLAN	3	9/16/20
C2.2	STORMWATER POLLUTION PREVENTION PLAN	3	9/16/20
C2.3	SWPPP DETAILS	3	9/16/20
C3.1	UTILITY PLAN	3	9/16/20
C3.2	SANITARY EXTENSION PLAN & PROFILE	3	9/16/20
C3.3	SANITARY EXTENSION PLAN & PROFILE	3	9/16/20
L0.0	LANDSCAPE PLAN	5	9/16/20
L1.0	LANDSCAPE PLAN	5	9/16/20
L2.0	LANDSCAPE PLAN	5	9/16/20
SL3.0	PHOTOMETRIC PLAN	5	9/16/20
SL3.1	SPECIFICATION SHEETS	5	9/16/20
SL3.2	SPECIFICATION SHEETS	5	9/16/20
C7.1	GENERAL NOTES & SPECIFICATIONS	3	9/16/20
C7.2	SITE DETAILS	3	9/16/20
C7.3	UTILITY DETAILS	3	9/16/20
C7.4	UTILITY DETAILS	3	9/16/20
	LATEST REVISION	3	9/16/20

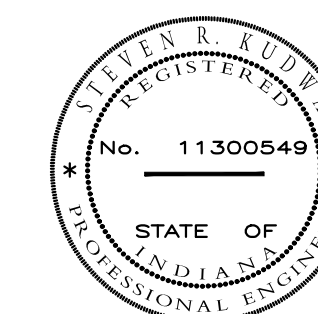
CONTACTS
HIGHLAND TOWN HALL 3333 RIDGE ROAD HIGHLAND, IN 46322 (219) 838-1080
BUILDING COMMISSIONER - KENNETH MIKA (219) 972-7595
PUBLIC WORKS - JOHN BACH (219) 972-5069

BENCHMARKS
BENCHMARK #1: RIM OF XWV IN THE GREEN SPACE WITHIN THE KLEINMAN ROAD ROW, ROUGHLY 32.5' SOUTHWEST OF THE SITE'S NORTHWEST PROPERTY CORNER. ELEVATION: 614.52
BENCHMARK #2: RIM OF XWV IN CLINE AVENUE, NORTHEAST OF THE SITE'S SOUTHEAST PROPERTY CORNER, IS THE NORTHERN MOST VALVE OF FOUR VALVES IN CLINE AVENUE BY THE SITE'S SOUTHEAST PROPERTY CORNER. ELEVATION: 615.52
REFER TO SHEETS C0.2 & C0.3 FOR BENCHMARK LOCATIONS. ALL BENCHMARKS ARE NAVD 88 DATUM.

INDIANA 811
1-800-382-5544
CALL TOLL FREE
1-800-428-5200
FOR CALLS OUTSIDE OF INDIANA



PER INDIANA STATE LAW IT IS AGAINST THE LAW TO EXCAVATE WITHOUT NOTIFYING THE UNDERGROUND LOCATION SERVICE TWO (2) WORKING DAYS BEFORE COMMENCING WORK.



REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS

TITLE SHEET
& INDEX

SENIOR LIVING - PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

HEREBY CERTIFY THAT THESE PLANS WERE PREPARED UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE COMPLY WITH THE CODES AND ORDINANCES OF THE TOWN OF HIGHLAND, INDIANA.

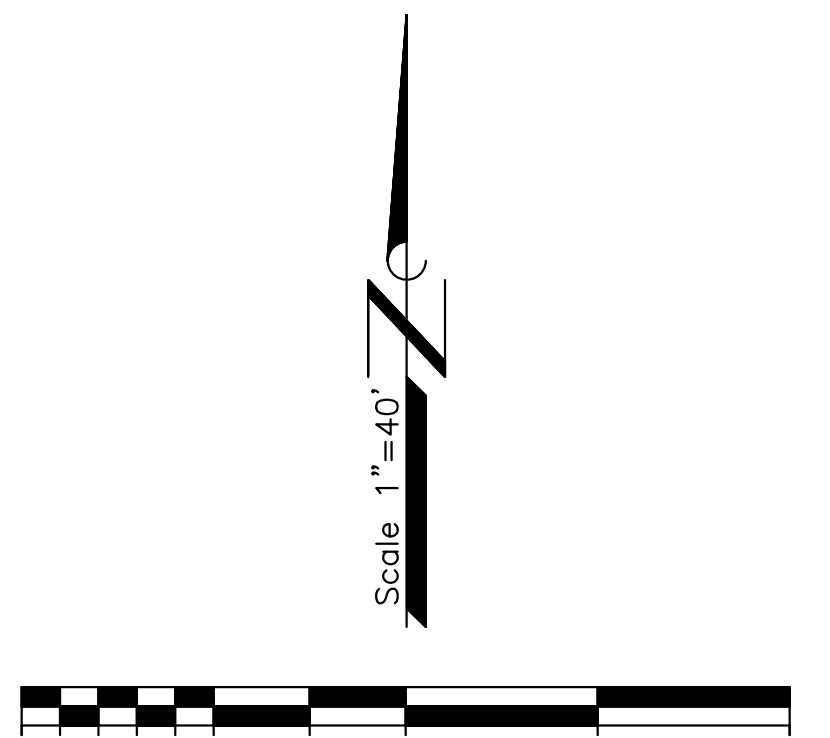
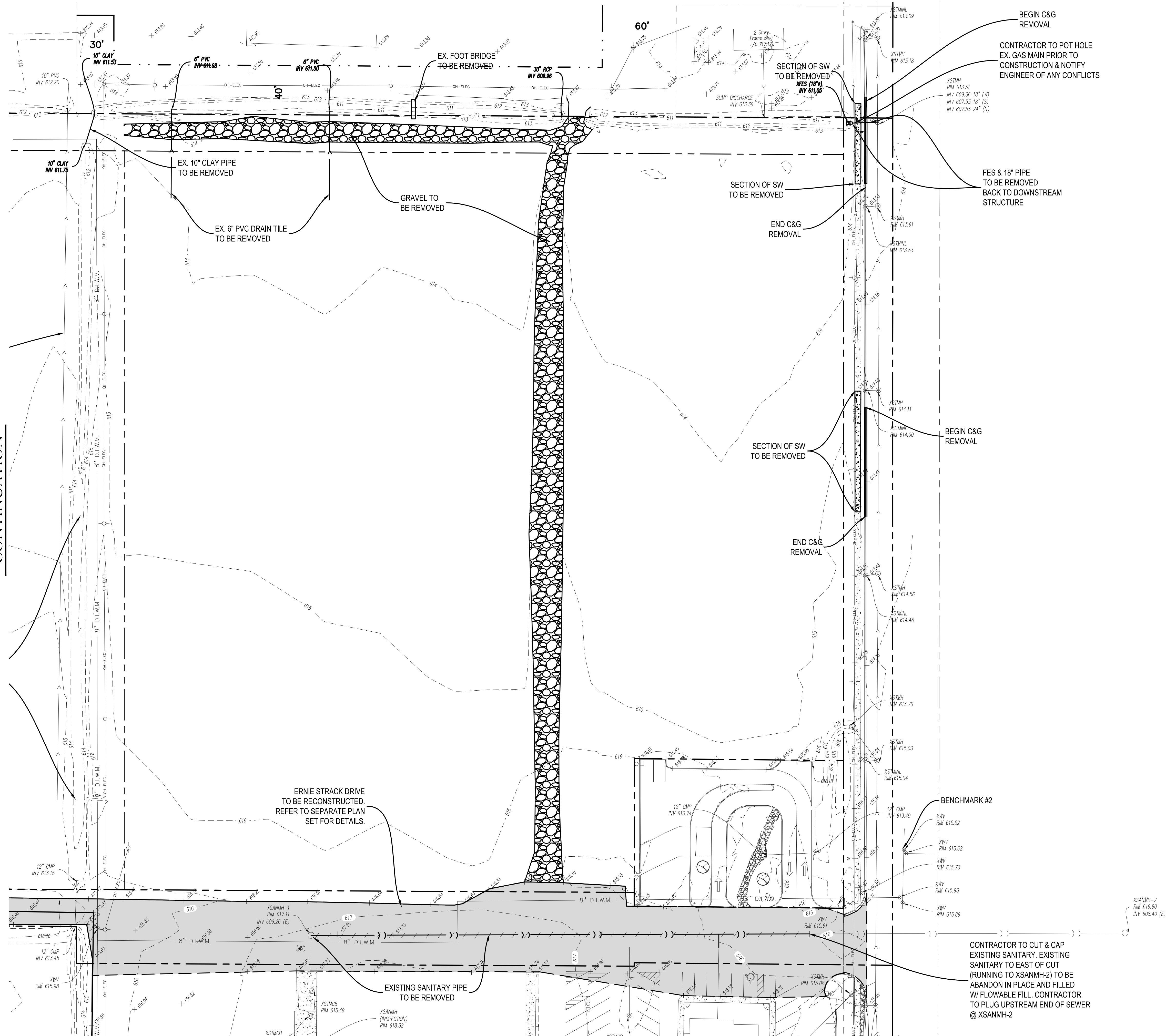
STEVEN R. KUDWA, P.E. LICENSED ENGINEER # PE11300549

Craig R. Knoche & Associates • Civil Engineers
Civil Engineers, P.C. • Surveyors • Land Planners
24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE: 3/18/2020	C0.1
FILE: 18-003 C01	
JOB NO: 18-003	

SENIOR LIVING - PHASE 1 HIGHLAND, INDIANA

SEE SHEET C0.3 FOR CONTINUATION



DEMOLITION LEGEND		
	TO REMAIN	TO BE REMOVED
WATERMAIN		
STORM SEWER		
SANITARY SEWER		
STORM MANHOLE		
SANITARY MANHOLE		
VALVE VAULT/BOX		
FIRE HYDRANT		
UTILITY POLE		
LIGHT POLE		
CURB AND GUTTER		
CONTOUR		
TREES		
CONCRETE		
BIT PAVEMENT		
GRAVEL		

- DEMOLITION NOTES**
- All sewers which are to be abandoned shall be removed and replaced with approved trench backfill and compacted to 90% standard proctor. Plugs shall be on both ends of pipe for a distance of 2' and be made of non-shrink concrete or mortar.
 - Contractor shall field verify all existing conditions prior to demolition and notify engineer of any discrepancies or potential conflicts between existing conditions and proposed design.
 - All excess material shall be hauled offsite and disposed of properly. Demolition debris shall not be buried on site unless soil engineer has approved as allowable backfill.
 - All open trenches must be backfilled the same day they are opened.
 - Existing asphalt and base material and concrete building slabs may be stockpiled and reused. Any stockpile material to be reused shall meet I.D.O.T. CA-6 aggregate specifications and be free of foreign material. All reused base and backfill material shall be subject to approval by the soil engineer. All existing, removed concrete and asphalt shall be crushed to a topsize of 2-3 inches for backfill use. All areas backfilled with recycled material shall be capped with one foot of approved CA-6 gradation material and compacted to 95% modified proctor or 98% standard proctor.
 - Demolition contractor shall call J.U.L.I.E. prior to any demolition work.
 - Demolition contractor is responsible for demolition permits and associated fees.
 - Demolition contractor is responsible for following all O.S.H.A. regulations.
 - All utilities to be abandoned shall be capped in accordance with the requirements of the appropriate utility companies and municipality.
 - Traffic control for work in the right-of-way shall meet I.D.O.T. standards per Section 700, Standard Specifications for Road and Bridge Construction, (as adopted 2016)
 - Contractor must barricade (including warning lights) all open excavations to prevent vehicular and pedestrian traffic from entering the area.
 - All excavations to be filled in 9" lifts with approved engineered backfill and compacted to 90% standard proctor.
 - Excavation contractor shall grade site in order to provide full pavement section per pavement detail.
 - A construction schedule shall be coordinated with all adjacent property owners to maintain continuous access to all existing driveways.
 - All manholes to be abandoned shall have the cone removed and backfilled per the requirements of the appropriate utility company and the municipality.
 - Demolition of all utilities (including but not limited to gas, electric, telephone and cable) shall be coordinated with the municipality and the utility companies.
 - Excavate all existing landscape areas, including parkways, to full pavement design depth for new construction.

REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS

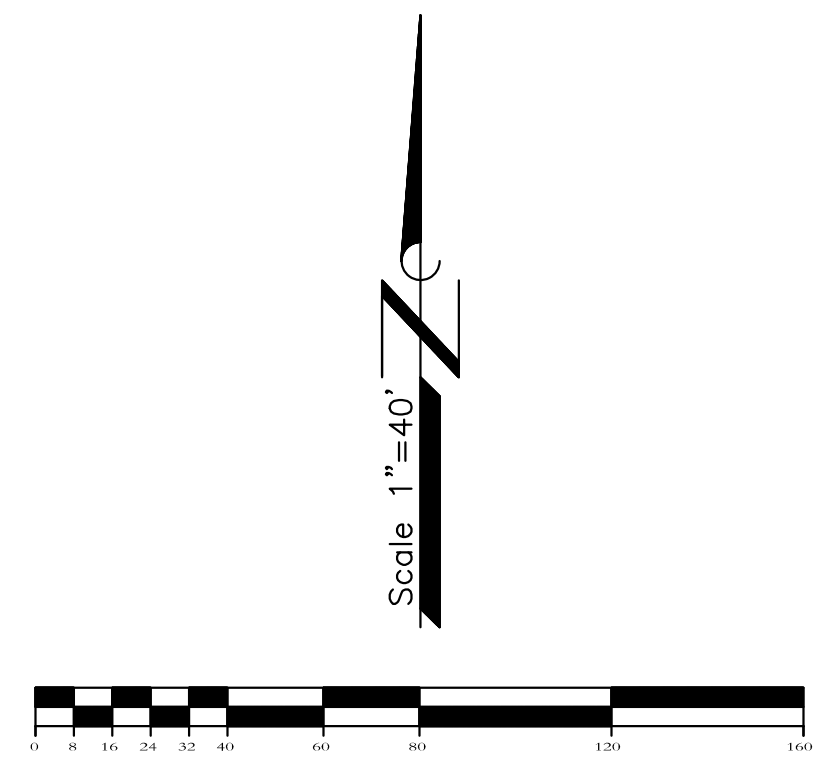
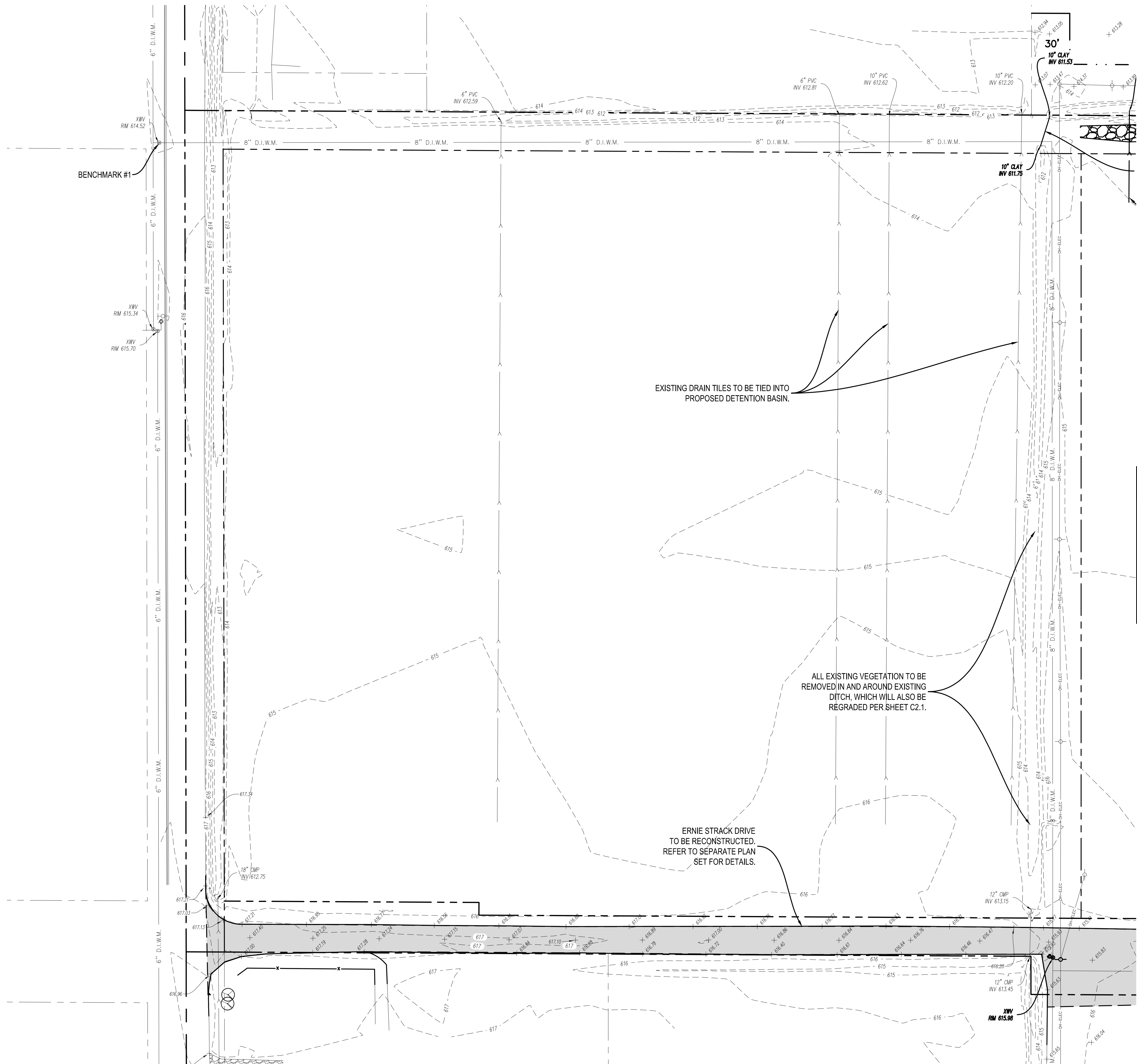
EXISTING CONDITIONS & DEMOLITION PLAN

**SENIOR LIVING — PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA**

Craig R. Knoche & Associates • Civil Engineers
• Surveyors
• Land Planners
24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE:	3/18/2020
FILE:	18-003 C02
JOB NO.:	18-003
SHEET NO.:	C0.2

SENIOR LIVING — PHASE 1 HIGHLAND, INDIANA



EXISTING DRAIN TILES TO BE TIED INTO PROPOSED DETENTION BASIN.

SEE SHEET C0.2 FOR CONTINUATION

ALL EXISTING VEGETATION TO BE REMOVED IN AND AROUND EXISTING DITCH, WHICH WILL ALSO BE REGRADED PER SHEET C2.1.

ERNIE STRACK DRIVE TO BE RECONSTRUCTED. REFER TO SEPARATE PLAN SET FOR DETAILS.

REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS
1	6/07/20	PER TOWN COMMENTS

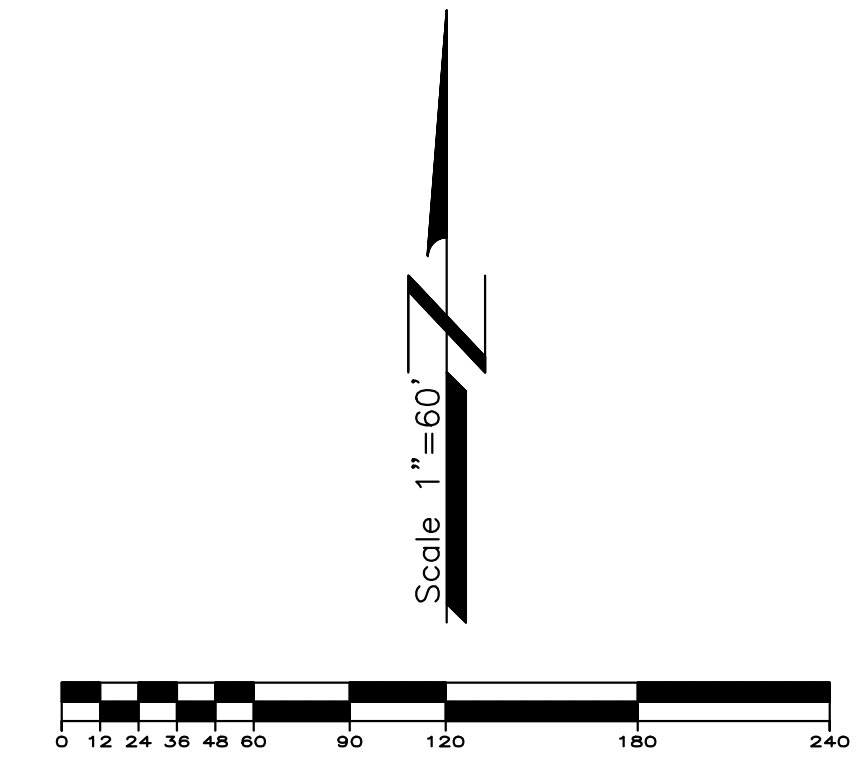
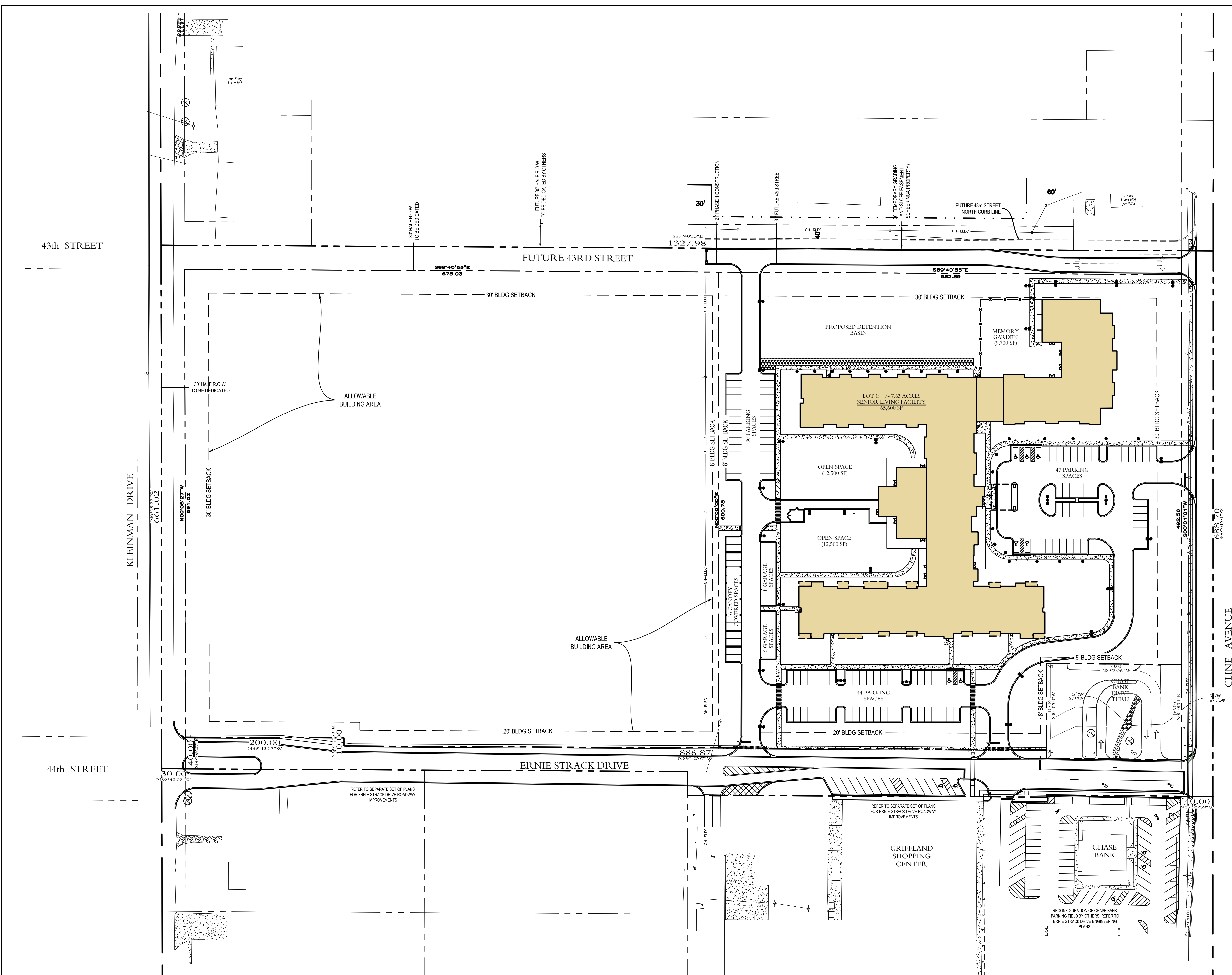
EXISTING CONDITIONS & DEMOLITION PLAN

SENIOR LIVING – PHASE 1
 NWC CLINE AVE. & ERNIE STRACK DR.
 HIGHLAND, INDIANA

Craig R. Knoche & Associates • Civil Engineers
 • Surveyors
 • Land Planners
 24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE:	3/18/2020
FILE:	18-003 C02
JOB NO.:	18-003

C0.3
SHEET NO.



PUD MASTER PLAN ANALYSIS

DEVELOPMENT

NW Corner of Cline Avenue & Ernie Strack Drive
Highland, Indiana

Proposed Use Senior Living Development/Mixed Use
Existing Zoning R-1A Single Family (Large Lot) Residential District
Required Zoning R-3 PUD

Development Parcel Area	734,976 sf 16.87 Acres
Lot 1 - Senior Living	331,641 sf 7.61 Acres
Lot 2	403,335 sf 9.26 Acres
Senior Living Building Envelope Area	65,600 sf
Senior Living Building Floor Area	168,000 sf
Senior Living Floor Area Ratio Req'd (Max) Provided	0.50 0.51

SETBACKS - LOT 1

	Front Yard (Cline Ave.)	Rear Yard (43rd St.)	Side Yard (West)	Corner Side Yard (Ernie Strack Dr.)
Building Setback	30'	30'	8'	20'
Provided	81.4'	32'	101.4'	138.7'
Green Space Setback	20'	10'	8'	15'
Provided	41.5'	32'	8'	29.8'

SETBACKS - LOT 2

	Front Yard (Ernie Strack Dr)	Rear Yard (43rd St.)	Side Yard (East)	Corner Side Yard (Kleinman Ave.)
Building Setback	30'	30'	8'	30'
Provided	30'	30'	8'	30'
Green Space Setback	10'	10'	8'	15'
Provided	10'	10'	8'	15'

PARKING - LOT 1

Quantity Req'd	66 = 60 x 1.1 40 = 79 x 0.5 40 = 40 x 1.0 146 Required	LL. (1.1 Spaces per Unit) M.C./A.L. (1 Space per Two Units) 1 Space per Staff
Provided	151 = 144 Standard + 7 ADA	
Stall Size Required	9' x 19' (Standard)	
Provided	9' x 19' (Standard), 13' x 19' (ADA), 16' x 19' (Van ADA)	
Driveway Width Minimum	25'	
Provided	25'	

LEGEND

PROPOSED CURB & GUTTER	=====
EXISTING CURB & GUTTER	=====
PROPERTY LINE	-----
SETBACK LINE	-----

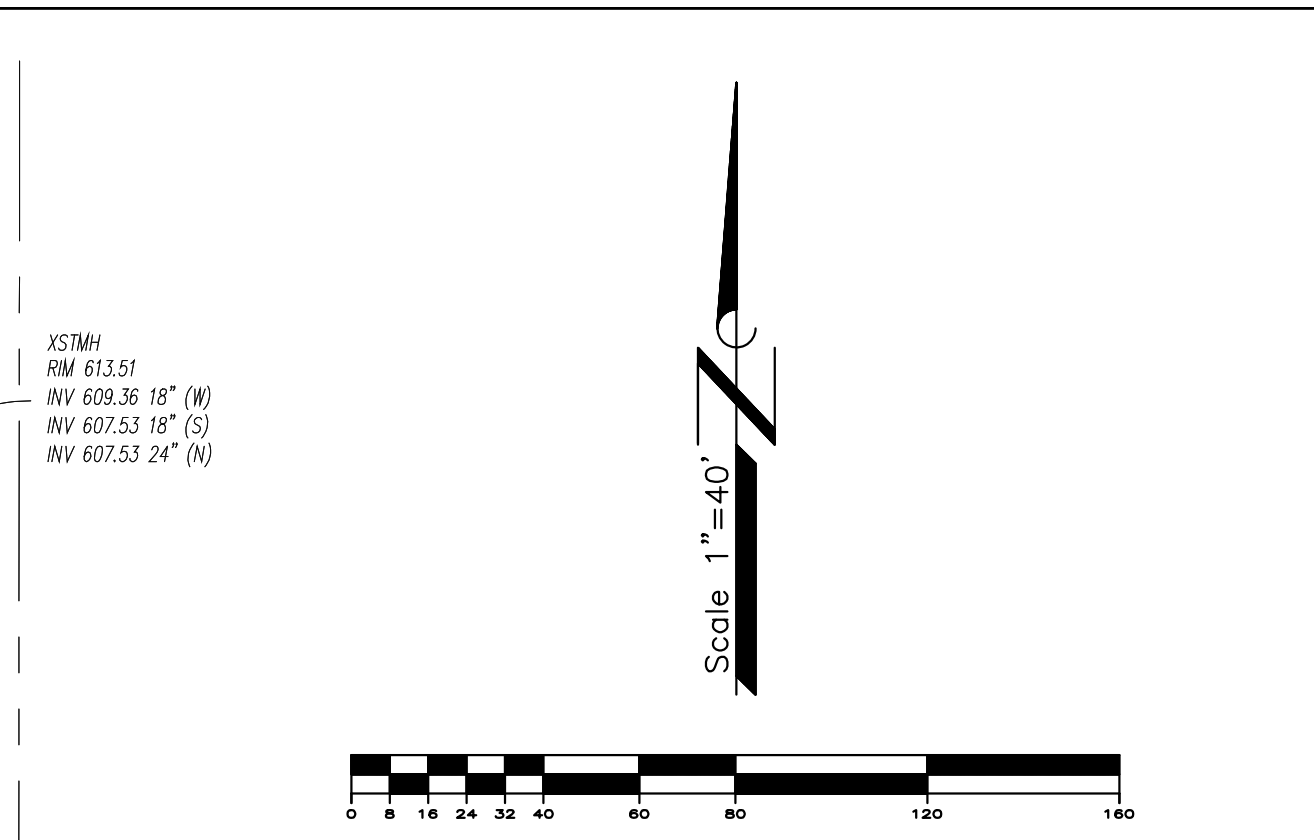
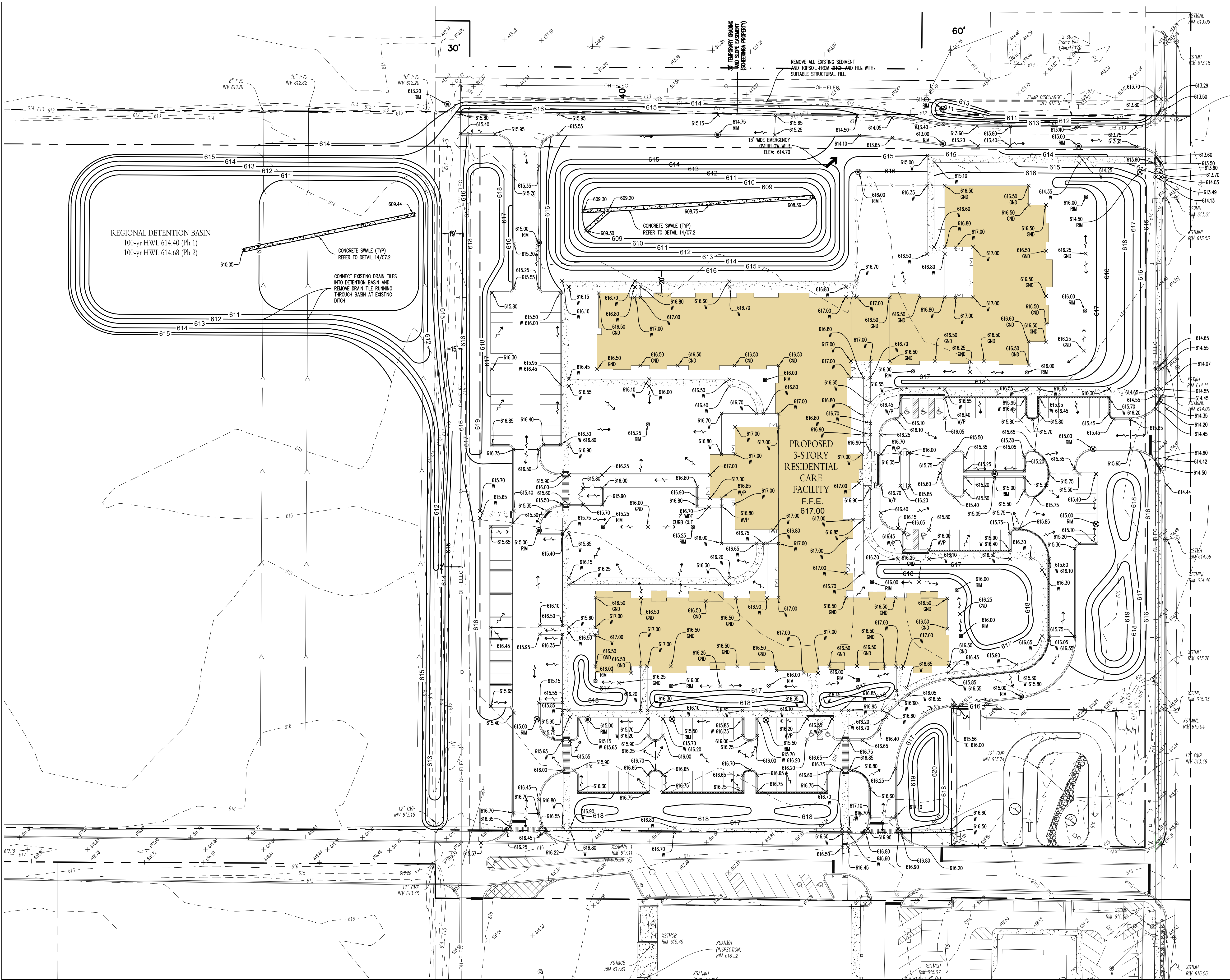
REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS

APPROVED FINAL DETAILED
PLANNED UNIT DEVELOPMENT

SENIOR LIVING - PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

Craig R. Knoche & Associates • Civil Engineers
Civil Engineers, P.C. • Surveyors
24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE: 3/18/2020
FILE: 18-003 C10
JOB NO: 18-003
SHEET NO: C1.0



LEGEND

	EXISTING	PROPOSED
PAVEMENT GRADE	+475.00	+475.00
WALK GRADE	+475.00	+475.00
BACK OF CURB GRADE	+475.00	+475.00
GROUND GRADE	+475.00	+475.00
RIM GRADE	+475.00	+475.00
STORM STRUCTURE	(Symbol: circle with dot)	(Symbol: circle with dot)
CONTOURS	-475-	-475-
EMERGENCY OVERFLOW	(Symbol: arrow pointing right)	(Symbol: arrow pointing right)
FLOW DIRECTION	(Symbol: arrow pointing right)	(Symbol: arrow pointing right)
RIDGELINES	(Symbol: dashed line)	(Symbol: dashed line)
REVERSE CURB	(Symbol: wavy line)	(Symbol: wavy line)

ALL PROPOSED GRADES ARE EDGE OF PAVEMENT UNLESS OTHERWISE NOTED.
SEE BELOW FOR TOP OF CURB ELEVATION CORRELATION.

T/CURB = (P.W.M. GRADE) + 0.42 (NORMAL PITCH CURB)
T/CURB = (P.W.M. GRADE) + 0.54 (REVERSE PITCH CURB)

- GRADING NOTES**
- GENERAL CONTRACTOR SHALL VERIFY EXISTING CONTOURS AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 - GENERAL CONTRACTOR SHALL SPREAD SPOILS FROM UTILITY CONTRACTORS WORK TO BALANCE THE SITE TO THE EXTENT POSSIBLE.
 - EROSION CONTROL MEASURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: SILT FABRIC SHALL BE PLACED ON EACH SANITARY STRUCTURE UNTIL CONSTRUCTION IS COMPLETED. FABRIC SHALL OVERLAP SANITARY MANHOLE OPENING A MINIMUM OF ONE (1) FOOT ON EACH SIDE WITH THE SOLO GRATE PLACED ON TOP OF FABRIC TO PREVENT SILT FROM ENTERING SANITARY SYSTEM. SILT FENCE AROUND PERIMETER SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETED. ALL INLET STRUCTURES SHALL BE PROTECTED WITH INLET BASKETS.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL MEASURES. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO THE START OF CONSTRUCTION AND MAINTAIN SUCH MEASURES UNTIL GRADING IS COMPLETE. PARKING LOTS IF PAVED AND VEGETATION HAS BEEN ESTABLISHED. IF THERE IS NO GENERAL CONTRACTOR, IT WILL THEN BE THE RESPONSIBILITY OF THE GRADING CONTRACTOR TO INSTALL AND MAINTAIN EROSION CONTROL MEASURES.
 - CONTRACTOR RESPONSIBLE FOR THE INSTALLATION OF THE EROSION CONTROL DEVICES SHALL MAINTAIN ALL STORM WATER POLLUTION DEVICES THROUGHOUT CONSTRUCTION AND UNTIL ALL UNPAVED OR NON-BUILDING AREAS HAVE A UNIFORM PERMANENT VEGETATIVE COVER WITH A DENSITY OF 70 PERCENT OR GREATER. MAINTENANCE INCLUDES WEEKLY INSPECTIONS OR AN INSPECTION FOLLOWING A RAINFALL OF 1/2 INCH IN A 24-HOUR PERIOD. THE CONTRACTOR MUST SUBMIT A COPY OF THE INSPECTION REPORT TO THE OWNER AND ENGINEER AT THE END OF EACH MONTH AND KEEP A COPY OF THE REPORT ON THE CONSTRUCTION SITE UNTIL THE REQUIRED VEGETATION COVER IS IN PLACE.
 - IF ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THESE DRAWINGS ARE REQUIRED TO STOP OR PREVENT EROSION OR ARE REQUIRED BY ANY AUTHORITY HAVING JURISDICTION, IT SHALL BE THE GENERAL CONTRACTORS RESPONSIBILITY TO INSTALL SUCH DEVICES. THE OWNER OR ENGINEER SHALL BE NOTIFIED OF THE ADDITIONAL WORK AND COST PRIOR TO INSTALLATION.
 - GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND ENGINEER, IN WRITING, OF ANY ADDITIONAL SOURCES OF STORM WATER POLLUTION OBSERVED DURING CONSTRUCTION AND THE ADDITIONAL COSTS REQUIRED TO PREVENT ADDITIONAL POLLUTION.
 - SEE SOIL REPORTS FOR TESTING REQUIREMENTS. THE FINAL SOILS REPORTS ARE DATED AS FOLLOWS: SOIL REPORT AND BORINGS PREPARED BY _____ DATED _____
 - ALL FILL AND BACKFILL SHALL BE PLACED IN LIFTS OF 8" OR LESS IN LOOSE THICKNESS.
 - ALL FILL AREAS SHALL BE PLACED AND COMPACTED AS STRUCTURAL FILL. AREAS TO RECEIVE FILL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 12" AND PROTECTED PRIOR TO RECEIVING FILL. SLOPES STEEPER THAN 3H:1V SHALL BE REINFORCED BEFORE PLACING FILL. THE STANDARD SPECIFICATIONS SHALL GOVERN THE GRADING AND SITE PREPARATION WITH THE EXCEPTION THAT STRUCTURAL FILL SHALL BE COMPACTED TO A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY (ASTM D-698, STANDARD PROCTOR) BELOW FOOTINGS, FOUNDATIONS, AND ALL OTHER LOCATIONS TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY (ASTM D-698, STANDARD PROCTOR). BOTH LOCATIONS SHALL HAVE AT A MOISTURE CONTENT BETWEEN -2% AND +3% OF OPTIMUM FOR LOW-PLASTICITY SOILS AND 0% AND +3% OF OPTIMUM FOR MODERATE PLASTICITY SOILS.
 - FOR PCC PAVEMENTS, THE UPPER 6" OF SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY (ASTM D-698, STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN -2% AND +3% OF OPTIMUM FOR LOW-PLASTICITY SOILS AND 0% AND +3% OF OPTIMUM FOR MODERATE PLASTICITY SOILS. SUBGRADE PREPARATION SHALL EXTEND A MINIMUM OF 2 FEET BEYOND THE BACK OF CURB.
 - FOR SIDEWALKS, THE UPPER 6" OF SUBGRADE SHALL BE COMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY (ASTM D-698, STANDARD PROCTOR) AT A MOISTURE CONTENT BETWEEN -2% AND +3% OF OPTIMUM FOR LOW-PLASTICITY SOILS AND 0% AND +3% OF OPTIMUM FOR MODERATE PLASTICITY SOILS. SIDEWALK SUBGRADES SHALL EXTEND AT LEAST 6" LATERALLY BEYOND THE EDGE OF THE NEW SIDEWALK.
 - IMPORTED MATERIAL, IF REQUIRED, SHALL BE FREE OF ORGANIC MATTER AND DEBRIS, AND SHALL BE A CLEAN, INORGANIC SILT OR LEAN CLAY WITH A LIQUID LIMIT LESS THAN 45 AND A PLASTICITY INDEX BETWEEN 10 AND 21. BELOW PAVEMENTS THE LIQUID LIMIT SHALL BE LESS THAN 50 WITH A PLASTICITY INDEX BETWEEN 10 AND 30. BORROW MATERIAL SHALL NOT CONTAIN ANY FOREIGN MATERIAL WITH A DIMENSION GREATER THAN 3".

REVISIONS

NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS
2	6/07/20	PER TOWN COMMENTS
1	6/07/20	PER TOWN COMMENTS

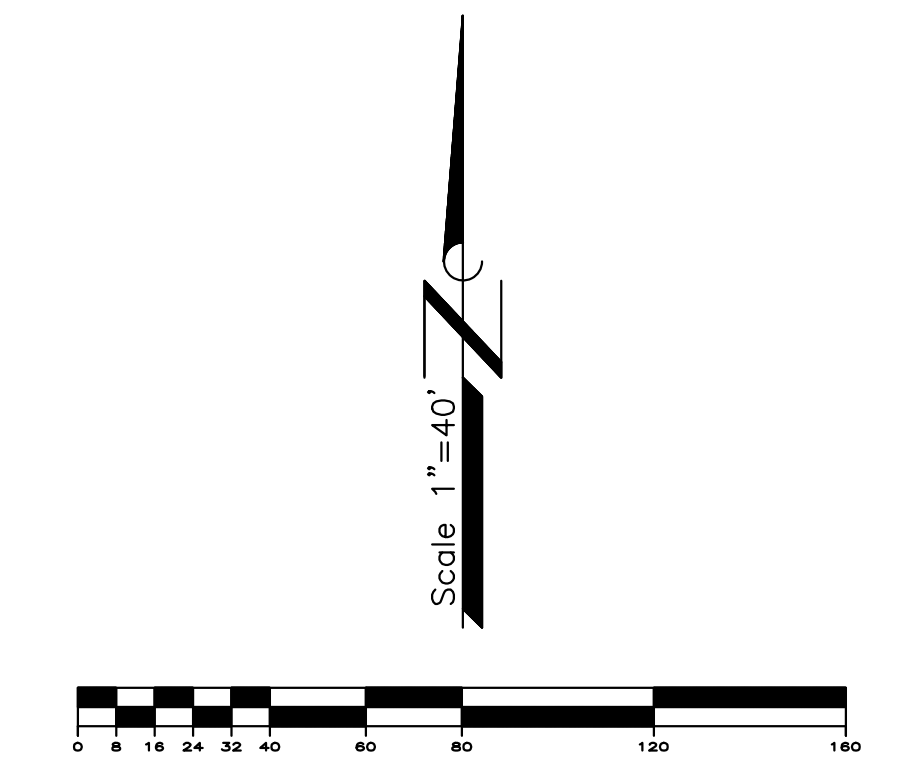
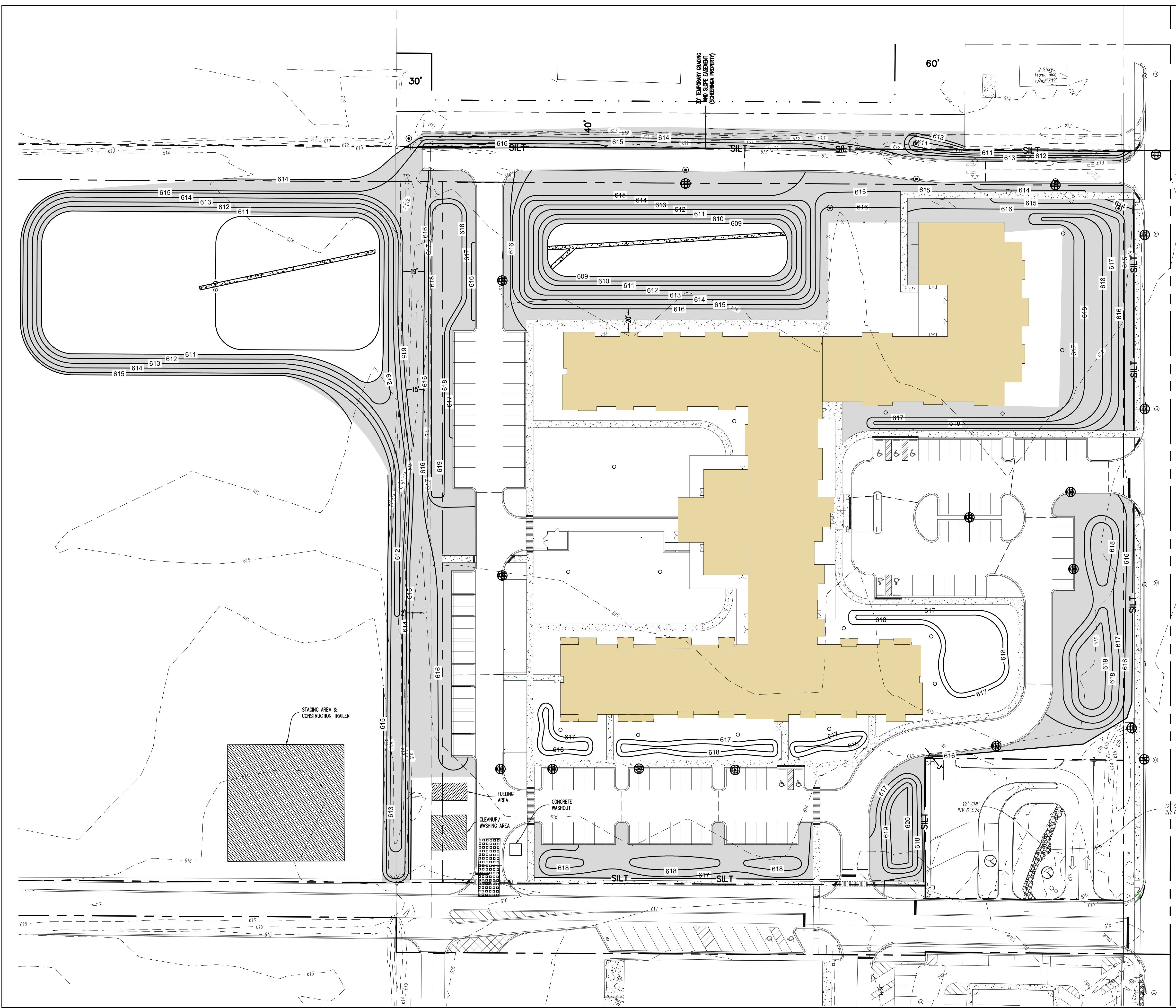
GRADING PLAN

SENIOR LIVING - PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

Craig R. Knoche & Associates • Civil Engineers
• Surveyors
• Land Planners

24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE: 3/18/2020	C2.1
FILE: 18-003 C20	
JOB NO: 18-003	



LEGEND

	24' WIDE CONSTRUCTION ENTRANCE AND ALL-WEATHER ROAD. ELEVATION OF CONSTRUCTION ENTRANCE TO MATCH PROPOSED PAVEMENT SUBGRADE ELEVATION. CONTRACTOR SHALL MAINTAIN STABILIZED ENTRANCE THROUGHOUT THE PROJECT.
	EROSION CONTROL BLANKET
	INLET BASKET
	SILT FENCE

**STORMWATER POLLUTION PREVENTION PLAN
CONTRACTOR CERTIFICATION**

STATE OF INDIANA
COUNTY OF LAKE

I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT (010) THAT AUTHORIZES THE STORMWATER DISCHARGE ASSOCIATED WITH INDUSTRIAL ACTIVITY FROM THE CONSTRUCTION SITE IDENTIFIED AS PART OF THIS CONTRACT. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR VIOLATING THIS PERMIT, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

CONTRACTOR'S SIGNATURE _____	COMPANY NAME _____
TITLE _____	ADDRESS _____
DATE _____	PHONE NUMBER _____

**STORMWATER POLLUTION PREVENTION PLAN
OWNER CERTIFICATION**

STATE OF INDIANA
COUNTY OF LAKE

IT IS THE RESPONSIBILITY OF THE LANDOWNER AND/OR GENERAL CONTRACTOR TO INFORM ANY SUBCONTRACTORS WHO MAY PERFORM WORK ON THIS PROJECT OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING THESE EROSION CONTROL PLANS AND THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FORTH BY THE LAKECSD EPA.

OWNER'S SIGNATURE _____	COMPANY NAME _____
TITLE _____	ADDRESS _____
DATE _____	PHONE NUMBER _____

REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS
2	6/07/20	PER TOWN COMMENTS

**STORMWATER POLLUTION
PREVENTION PLAN**

SENIOR LIVING – PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

12" CMP INV 613.74
12" CMP INV 613.49

Craig R. Knoche & Associates • Civil Engineers
Civil Engineers, P.C. • Surveyors
24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE: 3/18/2020	C2.2
FILE: 18-003 C20	
JOB NO: 18-003	
SHEET NO.	

SENIOR LIVING – PHASE 1 HIGHLAND, INDIANA

EROSION CONTROL NOTES

- UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS IN THE INDIANA URBAN MANUAL, CURRENT EDITION.
- THE COUNTY/MUNICIPALITY MUST BE NOTIFIED AT LEAST ONE WEEK PRIOR TO THE PRE-CONSTRUCTION MEETING, THE COMMENCEMENT OF LAND DISTURBING ACTIVITIES AND FINAL INSPECTION.
- A COPY OF THE APPROVED STORM WATER POLLUTION PREVENTION PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS (INCLUDING BUT NOT LIMITED TO ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS), A SUPPLEMENTARY STORM WATER POLLUTION PREVENTION PLAN SHALL BE SUBMITTED BY THE OWNER FOR REVIEW BY THE COUNTY/MUNICIPALITY AND INDIANA EPA.
- EROSION CONTROL MEASURES INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING: INLET BASKETS SHALL BE PLACED AND SHALL REMAIN IN PLACE AROUND EACH STORM STRUCTURE UNTIL CONSTRUCTION IS COMPLETED. A SILT FENCE AROUND PERIMETER SHALL REMAIN IN PLACE AND BE MAINTAINED UNTIL CONSTRUCTION IS COMPLETED. ALL INLET STRUCTURES SHALL BE PROTECTED WITH ADS "FLEX STORM" OR APPROVED EQUAL INLET BASKETS.
- THE CONTRACTOR IS RESPONSIBLE FOR EROSION CONTROL MEASURES. CONTRACTOR SHALL INSTALL EROSION CONTROL MEASURES PRIOR TO THE START OF LAND DISTURBING ACTIVITY AND MAINTAIN SUCH MEASURES UNTIL VEGETATION STABILIZATION IS 70% COMPLETE AND PARKING LOT IS PAVED.
- THE CONTRACTOR RESPONSIBLE FOR THE INSTALLATION OF EROSION CONTROL DEVICES SHALL MAINTAIN ALL STORM WATER POLLUTION DEVICES THROUGHOUT CONSTRUCTION AND UNTIL ALL UNFARMED OR NON-BUILDING AREAS HAVE A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OR GREATER. MAINTENANCE INCLUDES WEEKLY INSPECTIONS OR AN INSPECTION FOLLOWING A RAINFALL OF 1/2" IN A 24-HOUR PERIOD. THE CONTRACTOR MUST SUBMIT A COPY OF THE INSPECTION REPORT TO THE OWNER AND ENGINEER AT THE END OF EACH MONTH AND KEEP A COPY OF THE REPORT ON THE CONSTRUCTION SITE UNTIL THE REQUIRED VEGETATION COVER IS IN PLACE.
- IF ADDITIONAL EROSION CONTROL MEASURES NOT SHOWN ON THESE DRAWINGS ARE REQUIRED TO STOP OR PREVENT EROSION OR ARE REQUIRED BY ANY AUTHORITY HAVING JURISDICTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO INSTALL SUCH DEVICES. THE OWNER AND ENGINEER SHALL BE NOTIFIED OF THE ADDITIONAL WORK AND COST PRIOR TO INSTALLATION.
- ANY AND ALL INCIDENTS OF NON-COMPLIANCE MUST BE SUBMITTED TO LAKE COUNTY, THE OWNER AND INDIANA EPA.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER, ENGINEER AND THE COUNTY/MUNICIPALITY, IN WRITING, OF ANY ADDITIONAL SOURCES OF STORM WATER POLLUTION OBSERVED DURING CONSTRUCTION AND THE ADDITIONAL COSTS REQUIRED TO PREVENT ADDITIONAL POLLUTION.
- REFER TO LANDSCAPE PLAN FOR LOCATIONS AND SPECIFICATIONS OF SOODING AND SEEDING.
- STOCKPILES SHALL NOT EXCEED 2:1 SLOPES. STOCKPILES REMAINING IN PLACE LONGER THAN 14 DAYS SHALL BE REQUIRED TO HAVE LD.O.T. #7 SEED MIX INSTALLED. ALL STOCKPILES SHALL BE EQUIPPED WITH SILT FENCE PRIOR TO PILING OF EARTHWORK SPOLS. A TEMPORARY SLOTTION DITCH SHALL BE INSTALLED AROUND PERIMETER OF STOCKPILE WITH SILT FENCE LOCATED ON BOTH SIDES OF DITCH.
- ALL ADJACENT STREETS AND ROADWAYS SHALL BE KEPT CLEAR OF DEBRIS. DAILY INSPECTIONS AND CLEANING ARE REQUIRED AS NECESSARY. CLEANING SHALL BE DONE WHEN DEEMED NECESSARY BY AUTHORITIES TO PREVENT HAZARDS TO HEALTH OR DRINKAGE UTILITIES INCLUDING CURBS AND CUTTERS, INLETS, DITCHES ETC.
- STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF THE STABILIZATION WORK IN AN AREA.
- DURING DETERIORATION OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. DETERIORATING DIRECTLY INTO FIELD TILES OR STORM WATER STRUCTURES IS PROHIBITED.
- THE CONDITION OF THE CONSTRUCTION SITE FOR WINTER SHUTDOWN SHALL BE ADDRESSED EARLY IN THE FALL GROWING SEASON SO THAT SLOPES AND OTHER BARE EARTH AREAS MAY BE STABILIZED WITH TEMPORARY AND/OR PERMANENT VEGETATION COVER FOR PROPER EROSION AND SEDIMENT CONTROL. ALL OPEN AREAS THAT ARE TO REMAIN BARE THROUGHOUT THE WATER SHALL RECEIVE TEMPORARY EROSION CONTROL MEASURES INCLUDING TEMPORARY SEEDING, MULCHING AND/OR EROSION CONTROL BLANKET PRIOR TO THE END OF THE FALL GROWING SEASON. THE AREAS TO BE WORKED BEYOND THE END OF THE GROWING SEASON MUST INCORPORATE THE SOIL STABILIZATION MEASURES THAT DO NOT RELY ON VEGETATIVE COVER SUCH AS EROSION CONTROL BLANKET AND HEAVY MULCHING.
- STOCKPILES OF SOIL AND OTHER BUILDING MATERIALS TO REMAIN IN PLACE MORE THAN THREE (3) DAYS SHALL BE FURNISHED WITH EROSION AND SEDIMENT CONTROL MEASURES (I.E., PERIMETER SILT FENCE). STOCKPILES TO REMAIN IN PLACE FOR 14 DAYS OR MORE SHALL RECEIVE TEMPORARY SEEDING.
- COMPLETED SLOPES SHALL BE SEEDED AND MULCHED (OR BLANKETED, IF APPLICABLE) AS THE EXCAVATION PROCEEDS TO THE EXTENT CONSIDERED DESIRABLE AND PRACTICAL. PERMANENT SEEDING SHALL BE USED WHENEVER POSSIBLE. UNDER NO CIRCUMSTANCES SHALL THE CONTRACTOR PROLONG FINAL GRADING AND SHAPING SO THAT THE ENTIRE PROJECT CAN BE PERMANENTLY SILENT.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE CONTROLLING JURISDICTION.
- IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO INFORM ANY SUBCONTRACTOR(S) WHO MAY PERFORM WORK ON THIS PROJECT OF THE REQUIREMENTS IN IMPLEMENTING AND MAINTAINING THESE EROSION CONTROL PLANS AND THE NATIONAL POLLUTANT DISCHARGE DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS SET FORTH BY THE INDIANA EPA.
- ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OR NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.
- CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST TO OWNER THROUGHOUT ALL PHASES OR CONSTRUCTION.
- BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY PERMITTING AGENCY OR OWNER.
- SWPP PLAN MUST CLEARLY DELINEATE ALL STATE WATERS AS WELL AS ANY ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS. ALL AREAS MUST BE MAINTAINED ON SITE AT ALL TIMES.
- GENERAL CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
- ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
- SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLotation BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEANUP FUEL OR CHEMICAL SPILLS AND LEAKS.
- RUBBISH, TRASH, GARBAGE LITTER, OR OTHER SUCH MATERIAL SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIAL SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OR WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
- STORM WATER POLLUTION PREVENTION MEASURES AS SHOWN ON THIS PLAN ARE TO BE INITIATED IMMEDIATELY AT THE START OF CONSTRUCTION.
- THE LIMITATION ON SITE DISTURBANCE IS IN RECOGNITION OF THE NEED TO PREVENT EROSION IN PREFERENCE TO CONTROLLING SEDIMENT. SITE DISTURBANCES SHALL NOT EXCEED 20 ACRES AT ANY ONE TIME UNLESS IT IS TO BALANCE OUT AND FILL, FOR WHICH A MAXIMUM OF 40 ACRES MAY BE DISTURBED AT ANY ONE TIME. THE ADMINISTRATOR HAS CONSIDERABLE FLEXIBILITY TO VARY THE MAXIMUM AREA OF DISTURBANCE BASED ON SITE OR PROJECT SPECIFIC CONDITIONS, OR IN RECOGNITION OF A PARTICULARLY EFFECTIVE PLAN WITH AGGRESSIVE AND EFFECTIVE IMPLEMENTATION. THE AMOUNT OF AREA OPEN TO EROSION AT ANY ONE TIME POSES A RISK FOR DELIVERY OF SEDIMENT DOWNSTREAM AND THE RISK NEEDS TO BE MINIMIZED CONSISTENT WITH THE REQUIREMENTS OF GETTING THE PROJECT CONSTRUCTED.
- STABILIZATION OF DISTURBED AREAS MUST, AT A MINIMUM, BE INITIATED IMMEDIATELY WHENEVER ANY CLEARING, GRADING, EXCAVATING, OR OTHER EARTH DISTURBING ACTIVITIES HAVE PERMANENTLY CEASED ON ANY PORTION OF THE SITE, OR TEMPORARILY CEASED ON ANY PORTION OF THE SITE AND WILL NOT RESUME FOR A PERIOD EXCEEDING 14 CALENDAR DAYS. STABILIZATION OF DISTURBED AREAS MUST BE INITIATED WITHIN 1 WORKING DAY OF PERMANENT OR TEMPORARY CESSATION OF EARTH DISTURBING ACTIVITIES AND SHALL BE COMPLETED AS SOON AS POSSIBLE BUT NOT LATER THAN 14 DAYS FROM THE INITIATION OF THE STABILIZATION WORK IN AN AREA.

SOIL STABILIZATION NOTES

- TOPSOIL AND VEGETATIVE COVER - STRIP TOPSOIL AND REMOVE EXISTING VEGETATION. STOCKPILE ON-SITE (FOR REUSE) AT LOCATION DESIGNATED.
- PERMANENT SEEDING - IMMEDIATELY FOLLOWING FINISH GRADING AND TOPSOIL PLACEMENT INSTALL SEEDING OR SOO IN AREAS AS DESIGNATED ON PLANS.
- PAVED AREAS - INSTALL THE AGGREGATE BASE AS SOON AS THE CONSTRUCTION SEQUENCE TO PROVIDE REQUIRED STABILIZATION.
- SLOPE PROTECTION - PROTECT SEEDING ON STEEP SLOPES WITH MULCH, EXCELSDOR BLANKET, OR EQUAL. EROSION BLANKET SHALL BE REQUIRED ON ALL SLOPES GREATER THAN 4(H):1(V).
- ON-SITE & OFF-SITE SOIL STOCKPILE AND BORROW AREAS TO REMAIN MORE THAN 3 DAYS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE SITE MAP AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.
- SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
- DUE TO THE GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION AND SEDIMENT CONTROL MEASURES (SILT FENCES, ETC.) TO PREVENT EROSION AND POLLUTANT DISCHARGE.

SEDIMENT CONTROL NOTES

- ADJACENT PROPERTY - PROTECT ADJACENT PROPERTY FROM SEDIMENT DEPOSITION BY PRESERVING A VEGETATED BUFFER STRIP OR BY SEDIMENT BARRIERS OR FILTERS AT THE LOWER PERIMETER OF THE LOT.
- SEDIMENTATION CONTROL SHALL BE PROVIDED IN ALL AREAS AROUND THE STOCKPILE AREAS.
- STORM SEWER INLET PROTECTION - "FLEX STORM" OR APPROVED EQUAL INLET BASKETS SHALL BE PLACED IN ALL INLETS AND SILT FENCE SHALL BE INSTALLED AROUND EACH INLET.
- PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) BY RUNOFF OR VEHICLE TRACKING ONTO STATE, COUNTY, OR TOWNSHIP HIGHWAYS OR LOCAL STREETS. IF NECESSARY, STATE COUNTY OR TOWNSHIP HIGHWAYS OR LOCAL STREETS SHALL BE CLEANED DAILY AT THE END OF EACH WORK DAY OR AS REQUIRED TO KEEP MUD AND/OR OTHER DEBRIS OFF ANY HIGHWAY OR STREET.
 - IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE. ONLY USE CONSTRUCTION ENTRANCE/STAGING AREAS AS PROVIDED.
- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES TO BE CHECKED WEEKLY AND AFTER EACH RAIN. CLEAN AND RESTORE AS REQUIRED.
- ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
- DUST ON THE SITE SHALL BE CONTROLLED. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.
- REMOVAL OF CONTROL MEASURES - DISPOSE OF ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES WITH 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED.
- ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.
- UNLESS OTHERWISE INDICATED, ALL VEGETATIVE AND STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE CONSTRUCTED ACCORDING TO MINIMUM STANDARDS AND SPECIFICATIONS IN THE INDIANA URBAN MANUAL LATEST EDITION.
- A COPY OF THE APPROVED EROSION AND SEDIMENT CONTROL PLAN SHALL BE MAINTAINED ON THE SITE AT ALL TIMES.
- PRIOR TO COMMENCING LAND-DISTURBING ACTIVITIES IN AREAS OTHER THAN INDICATED ON THESE PLANS, (INCLUDING BUT NOT LIMITED TO, ADDITIONAL PHASES OF DEVELOPMENT AND OFF-SITE BORROW OR WASTE AREAS) A SUPPLEMENTARY EROSION CONTROL PLAN SHALL BE SUBMITTED TO THE OWNER FOR REVIEW BY THE SOIL CONSERVATION DISTRICT.
- THE CONTRACTOR IS RESPONSIBLE FOR INSTALLATION OF ANY ADDITIONAL EROSION CONTROL MEASURES NECESSARY TO PREVENT EROSION AND SEDIMENTATION AS DETERMINED BY THE GOVERNING SOIL AND WATER CONSERVATION DISTRICT.
- DURING DETERIORATION OPERATIONS, WATER WILL BE PUMPED INTO SEDIMENT BASINS OR SILT TRAPS. DETERIORATING DIRECTLY INTO FIELD TILES OR STORMWATER STRUCTURES IS PROHIBITED.
- CONTRACTORS OR SUBCONTRACTORS WILL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.
- THE PRIMARY PURPOSE OF ALL SOIL EROSION AND SEDIMENT CONTROL BMP'S (BEST MANAGEMENT PRACTICES) IS TO PREVENT SEDIMENT FROM LEAVING THE SITE. ALL STORMWATER DISCHARGE LOCATIONS WITH A DIRECT CONNECTION TO THE SITE SHOULD BE MONITORED CLOSELY FOR EVIDENCE OF SEDIMENT. THE VILLAGE MAY REQUEST THAT ADDITIONAL BMP'S BE INSTALLED IN THE EVENT OF OFF-SITE SEDIMENT DISCHARGE OR HIGH POTENTIAL FOR DISCHARGE.
- PRIOR TO FILING FOR NOTICE OF TERMINATION, THE SITE SHOULD BE PROPERLY STABILIZED. ALL VEGETATED AREAS SHOULD HAVE ESTABLISHED PERENNIAL VEGETATION WITH UNIFORM COVERAGE OF 70% OR GREATER.

SCHEDULE

- (1 WEEK) MOBILIZATION, INSTALL EROSION CONTROL, STRIP ANY VEGETATION
- (2 WEEKS) TOP SOIL STRIPPING AND MASS GRADING
- (2 WEEKS) INSTALL REMAINING UNDERGROUND STORM UTILITIES AND INLET PROTECTORS.
- (2 WEEKS) INSTALL SANITARY, WATER, GAS, ELECTRIC AND TELEPHONE UTILITIES.
- (1 WEEK) PREPARE AND FINE GRADE SITE.
- (2 WEEKS) INSTALL CURBS AND STONE BASE FOR PAVING.
- (2 WEEKS) CONCRETE AND ASPHALT PAVING
- (2 WEEKS) INSTALL LANDSCAPING AND REMOVE TEMPORARY EROSION CONTROL MEASURES.

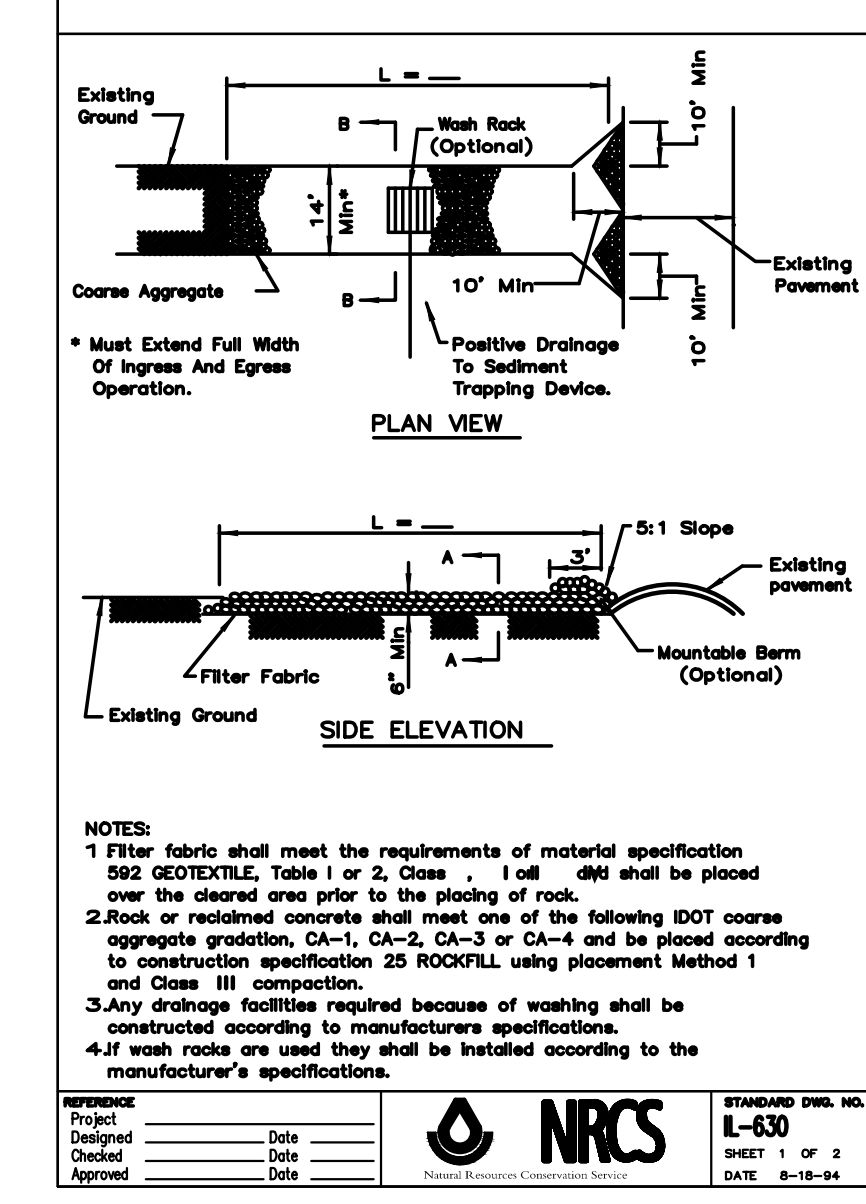
STABILIZATION TYPE	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.
PERMANENT SEEDING			A		A							
DORMANT SEEDING	B										D	
TEMPORARY SEEDING			C									
SOODING			E									
MULCHING	F											

A KENTUCKY BLUEGRASS 80 LBS/ACRE MIXED WITH PERENNIAL RYEGRASS 20 LBS/ACRE
 B NATIVE SEEDING
 C SPRING GRASS 100 LBS/ACRE
 D WHEAT OR CEREAL RYE 100 LBS/ACRE
 E SOO
 F STRAW MULCH 2 TONS/ACRE

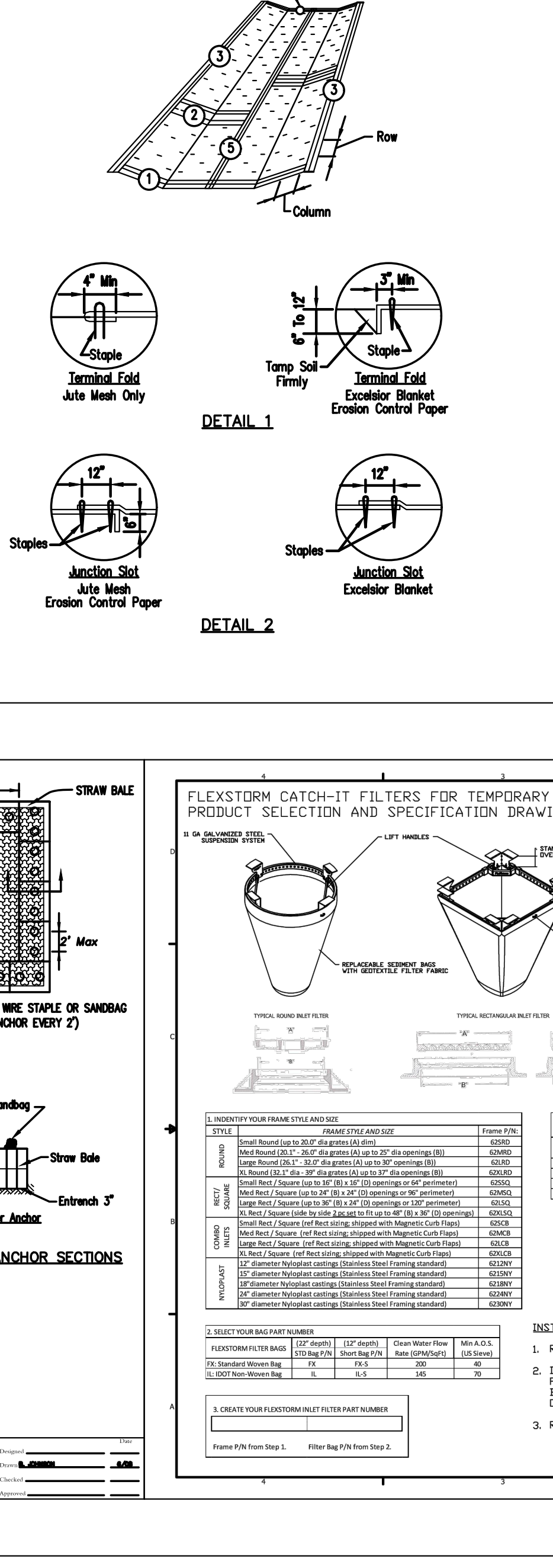
** IRRIGATION NEEDED DURING JUNE AND JULY
 ** IRRIGATION NEEDED FOR 2 TO 3 WEEKS AFTER APPLYING SOO

SOIL PROTECTION CHART

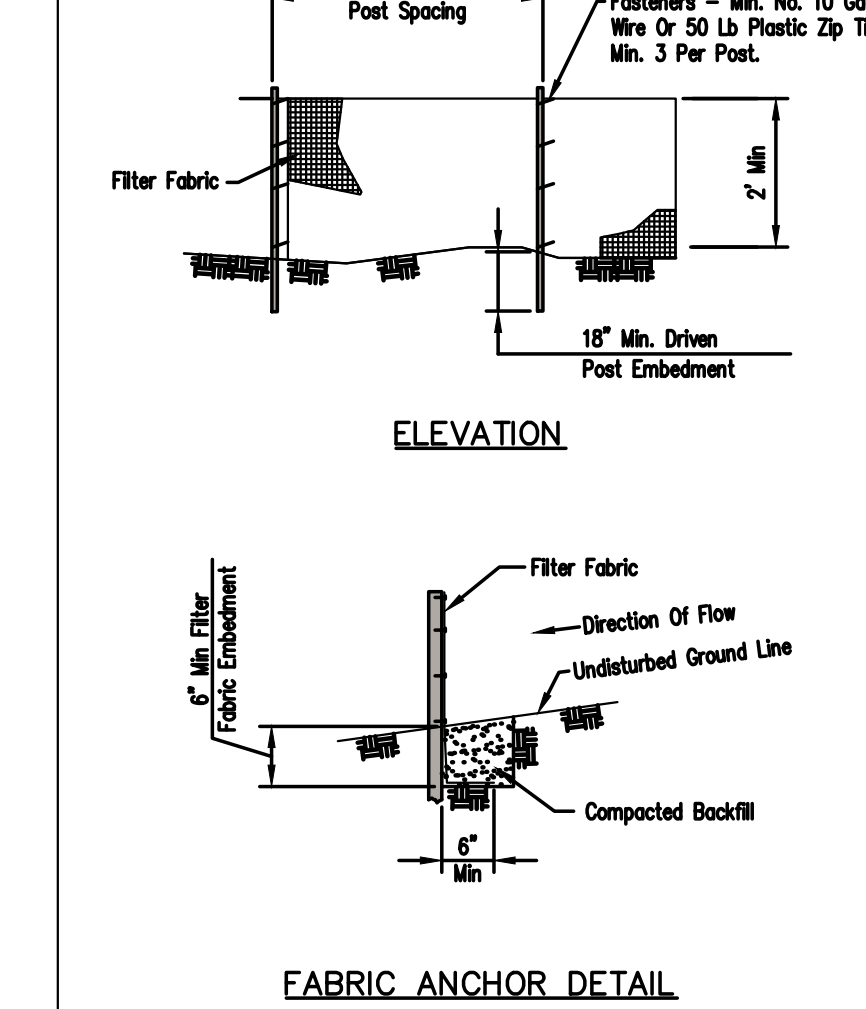
STABILIZED CONSTRUCTION ENTRANCE PLAN



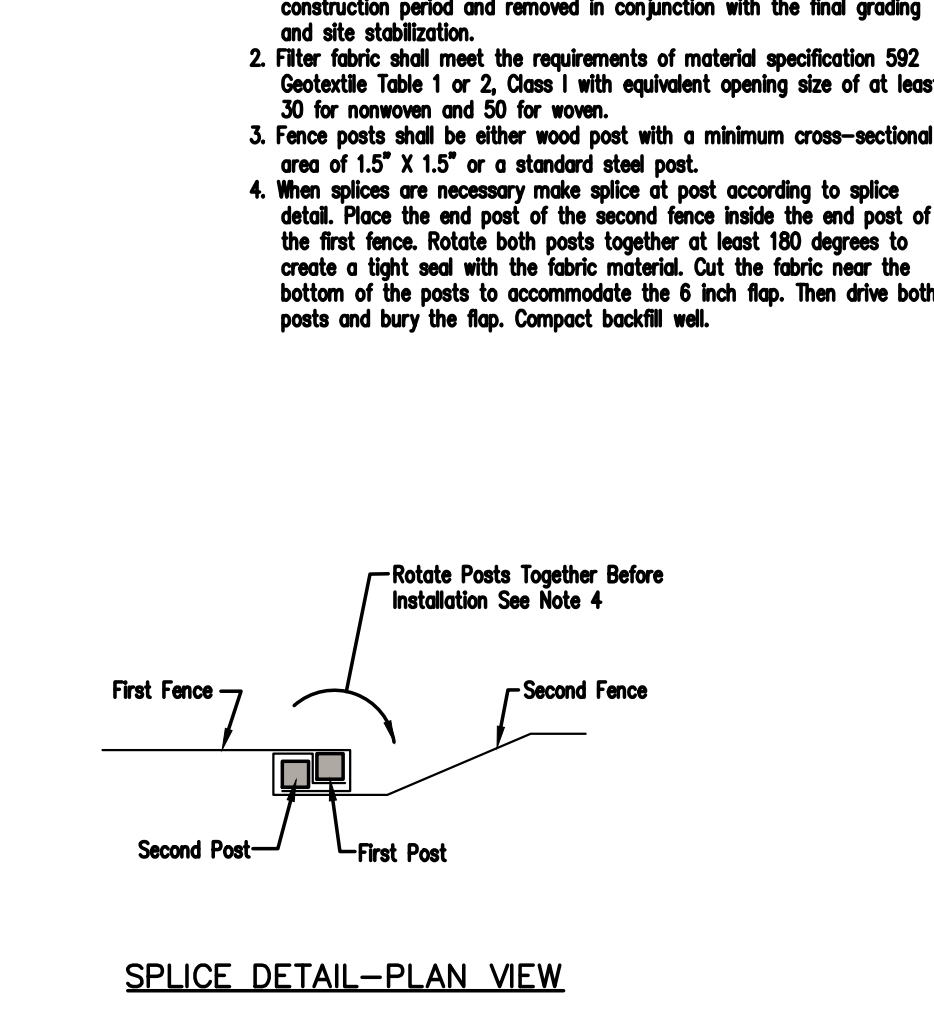
FLEXSTORM CATCH-IT FILTERS FOR TEMPORARY INLET PROTECTION



TEMPORARY CONCRETE WASHOUT FACILITY - STRAW BALE



SILT FENCE



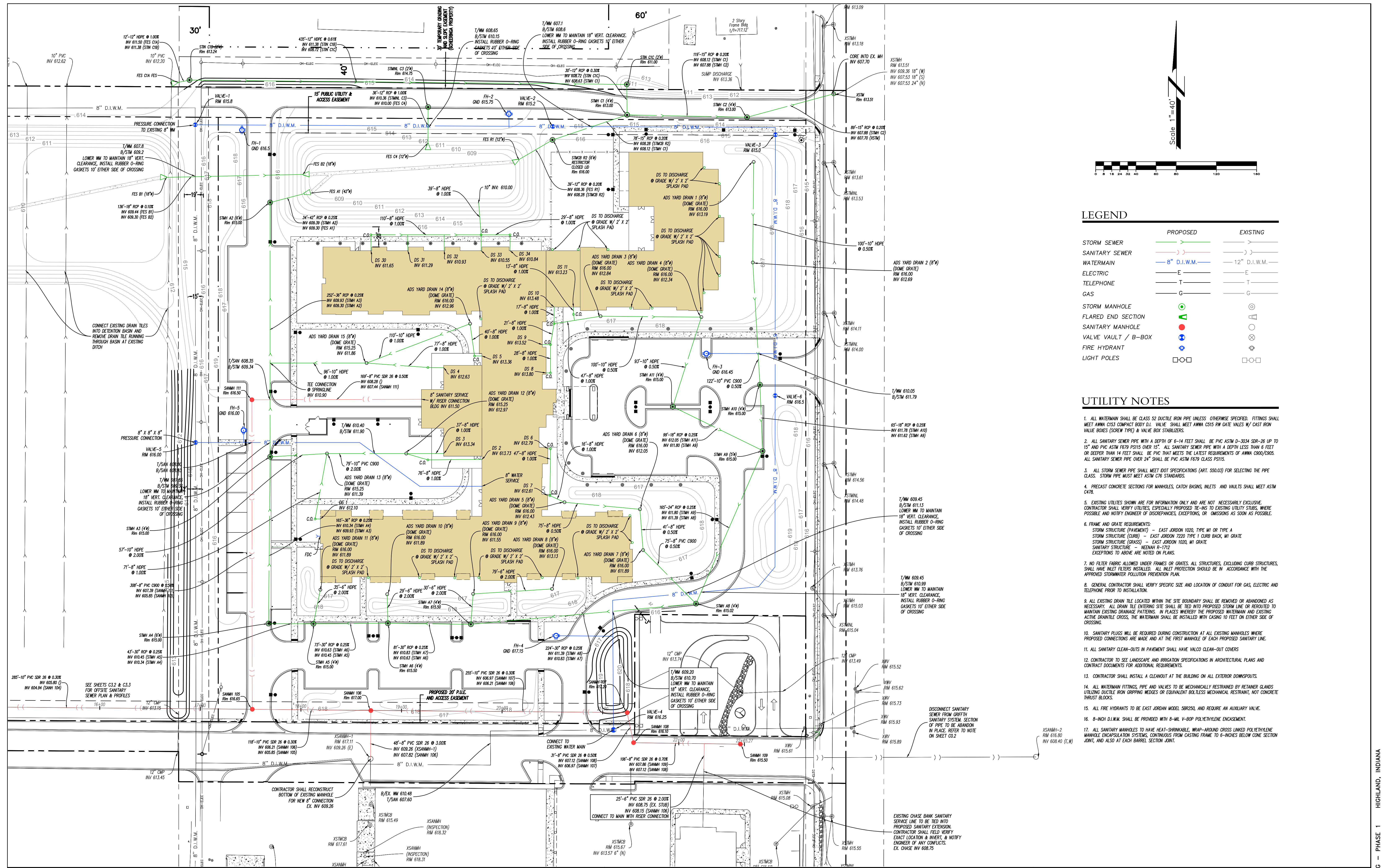
REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS

**SWPPP
DETAILS**

SENIOR LIVING - PHASE 1
 NWC CLINE AVE. & ERNIE STRACK DR.
 HIGHLAND, INDIANA

Craig R. Knoche & Associates
 Civil Engineers, P.C.
 24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE:	3/18/2020	C2.3
FILE:	18-003 C20	
JOB NO:	18-003	
SHEET NO.		



LEGEND

	PROPOSED	EXISTING
STORM SEWER		
SANITARY SEWER		
WATERMAIN		
ELECTRIC		
TELEPHONE		
GAS		
STORM MANHOLE		
FLARED END SECTION		
SANITARY MANHOLE		
VALVE VAULT / B-BOX		
FIRE HYDRANT		
LIGHT POLES		

- ### UTILITY NOTES
1. ALL WATERMAIN SHALL BE CLASS 52 DUCTILE IRON PIPE UNLESS OTHERWISE SPECIFIED. FITTINGS SHALL MEET ANMA C153 COMPACT BODY D.I. VALVE SHALL MEET ANMA C515 RIM GATE VALVES W/ CAST IRON VALVE BOXES (SCREW TYPE) & VALVE BOX STABILIZERS.
 2. ALL SANITARY SEWER PIPE WITH A DEPTH OF 6'-14 FEET SHALL BE PVC ASTM D-3034 SDR-26 UP TO 15' AND PVC ASTM F679 PS115 OVER 15'. ALL SANITARY SEWER PIPE WITH A DEPTH LESS THAN 6 FEET OR DEEPER THAN 14 FEET SHALL BE PVC THAT MEETS THE LATEST REQUIREMENTS OF ANMA C900/C905. ALL SANITARY SEWER PIPE OVER 24" SHALL BE PVC ASTM F679 CLASS PS115.
 3. ALL STORM SEWER PIPE SHALL MEET DOT SPECIFICATIONS (ART. 550.03) FOR SELECTING THE PIPE CLASS. STORM PIPE MUST MEET ASTM C76 STANDARDS.
 4. PRECAST CONCRETE SECTIONS FOR MANHOLES, CATCH BASINS, INLETS AND VAULTS SHALL MEET ASTM C478.
 5. EXISTING UTILITIES SHOWN ARE FOR INFORMATION ONLY AND ARE NOT NECESSARILY EXCLUSIVE. CONTRACTOR SHALL VERIFY UTILITIES, ESPECIALLY PROPOSED TIE-INS TO EXISTING UTILITY STUDS, WHERE POSSIBLE AND NOTIFY ENGINEER OF DISCREPANCIES, EXCEPTIONS, OR OMISSIONS AS SOON AS POSSIBLE.
 6. FRAME AND GRATE REQUIREMENTS:
 STORM STRUCTURE (PAVEMENT) - EAST JORDON 1020, TYPE M1 OR TYPE A
 STORM STRUCTURE (CURB) - EAST JORDON 7220 TYPE 1 CURB BACK, M1 GRATE
 STORM STRUCTURE (GRASS) - EAST JORDON 1020, M1 GRATE
 SANITARY STRUCTURE - NEENAH R-1712
 EXCEPTIONS TO ABOVE ARE NOTED ON PLANS.
 7. NO FILTER FABRIC ALLOWED UNDER FRAMES OR GRATES. ALL STRUCTURES, EXCLUDING CURB STRUCTURES, SHALL HAVE INLET FILTERS INSTALLED. ALL INLET PROTECTION SHOULD BE IN ACCORDANCE WITH THE APPROVED STORMWATER POLLUTION PREVENTION PLAN.
 8. GENERAL CONTRACTOR SHALL VERIFY SPECIFIC SIZE AND LOCATION OF CONDUIT FOR GAS, ELECTRIC AND TELEPHONE PRIOR TO INSTALLATION.
 9. ALL EXISTING DRAIN TILE LOCATED WITHIN THE SITE BOUNDARY SHALL BE REMOVED OR ABANDONED AS NECESSARY. ALL DRAIN TILE ENTERING SITE SHALL BE TIED INTO PROPOSED STORM LINE OR REROUTED TO MAINTAIN EXISTING DRAINAGE PATTERNS. IN PLACES WHEREBY THE PROPOSED WATERMAIN AND EXISTING ACTIVE GRANULITE CROSS, THE WATERMAIN SHALL BE INSTALLED WITH CASING 10 FEET ON EITHER SIDE OF CROSSING.
 10. SANITARY PLUGS WILL BE REQUIRED DURING CONSTRUCTION AT ALL EXISTING MANHOLES WHERE PROPOSED CONNECTIONS ARE MADE AND AT THE FIRST MANHOLE OF EACH PROPOSED SANITARY LINE.
 11. ALL SANITARY CLEAN-OUTS IN PAVEMENT SHALL HAVE VALCO CLEAN-OUT COVERS.
 12. CONTRACTOR TO SEE LANDSCAPE AND IRRIGATION SPECIFICATIONS IN ARCHITECTURAL PLANS AND CONTRACT DOCUMENTS FOR ADDITIONAL REQUIREMENTS.
 13. CONTRACTOR SHALL INSTALL A CLEANOUT AT THE BUILDING ON ALL EXTERIOR DOWNSPOUTS.
 14. ALL WATERMAIN FITTINGS, PIPE AND VALVES TO BE MECHANICALLY RESTRAINED BY RETAINER GLANDS UTILIZING DUCTILE IRON GRIPPING WEDGES OR EQUIVALENT BOLTED MECHANICAL RESTRAINT, NOT CONCRETE THRUST BLOCKS.
 15. ALL FIRE HYDRANTS TO BE EAST JORDAN MODEL SR220, AND REQUIRE AN AUXILIARY VALVE.
 16. 8-INCH D.I.W.M. SHALL BE PROVIDED WITH 8-MIL V-BOP POLYETHYLENE ENCASUREMENT.
 17. ALL SANITARY MANHOLES TO HAVE HEAT-SHINKABLE, WRAP-AROUND CROSS LINKED POLYETHYLENE MANHOLE ENCASUREMENT SYSTEM, CONTINUOUS FROM CASTING FRAME TO 6-INCHES BELOW CONE SECTION JOINT, AND ALSO AT EACH BARREL SECTION JOINT.

REVISIONS

NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS
2	8/7/20	PER TOWN COMMENTS
1	6/07/20	PER TOWN COMMENTS

UTILITY PLAN

SENIOR LIVING - PHASE 1

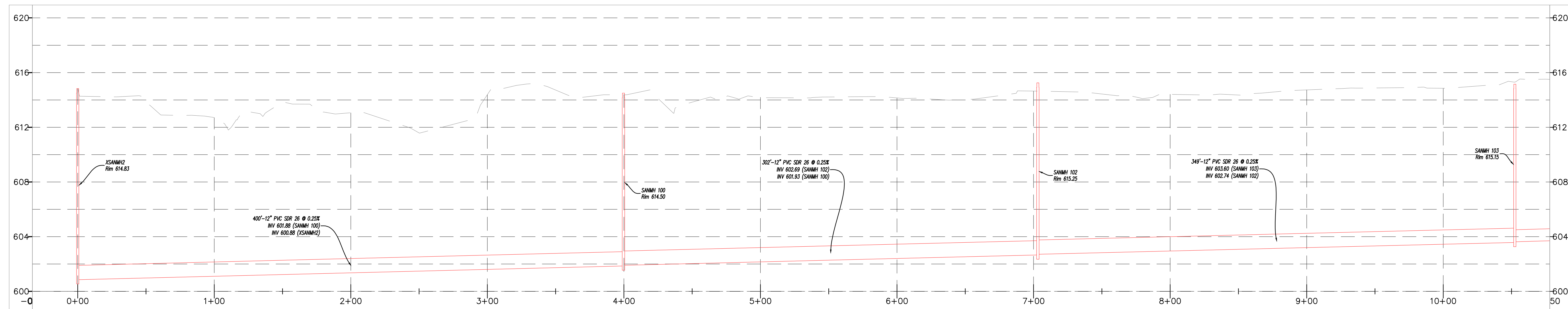
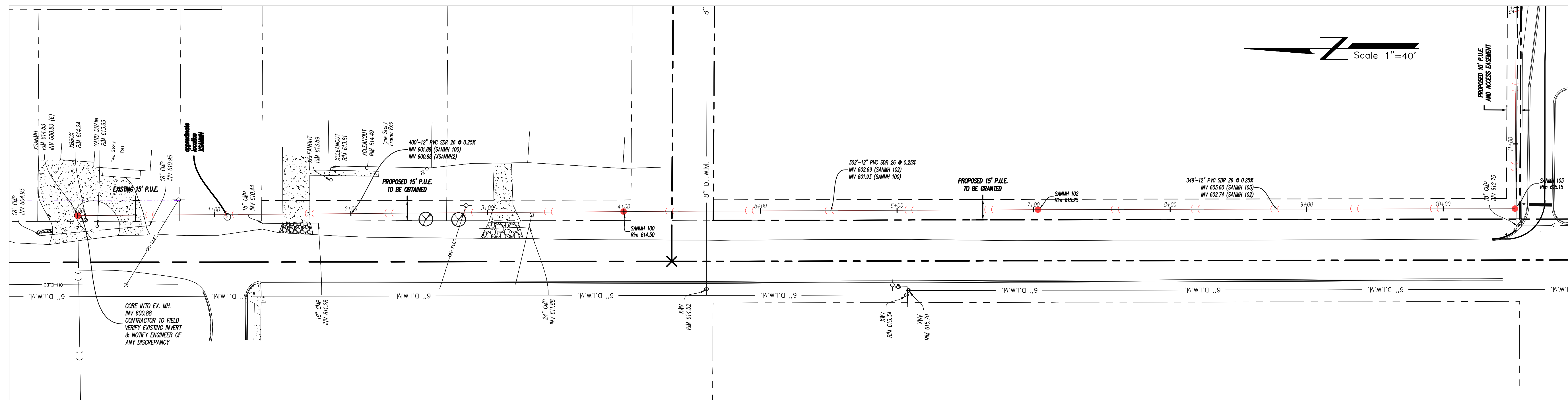
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

Craig R. Knoche & Associates • Civil Engineers
 • Surveyors
 • Land Planners

24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE: 3/18/2020
 FILE: 18-003 C30
 JOB NO: 18-003
 SHEET NO. C3.1

SEE SHEET C3.3 FOR SANITARY EXTENSION



REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS
2	8/7/20	PER TOWN COMMENTS

**SANITARY EXTENSION
PLAN & PROFILE**

SENIOR LIVING – PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

VERTICAL SCALE: 1"=4'
HORIZONTAL SCALE: 1"=40'

Craig R. Knoche & Associates • Civil Engineers
• Surveyors
• Land Planners
24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

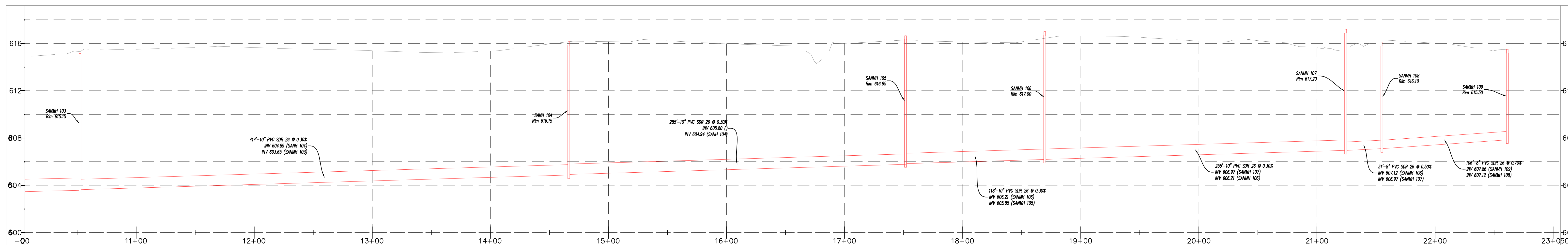
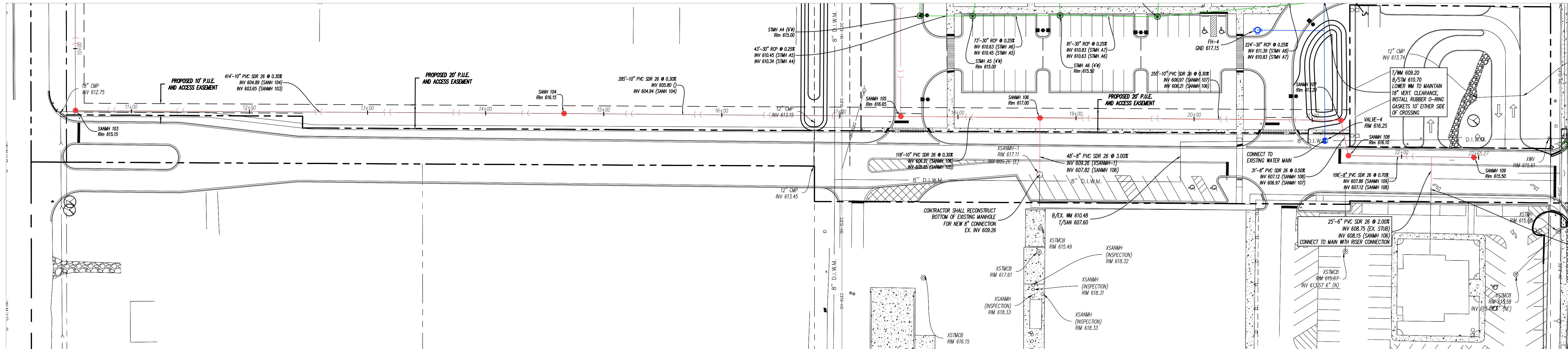
DATE: 3/18/2020	C3.2
FILE: 18-003 C30	
JOB NO: 18-003	
SHEET NO.	

SENIOR LIVING – PHASE 1 HIGHLAND, INDIANA

Scale 1"=40'

SEE SHEET C3.2 FOR SANITARY EXTENSION

SEE SHEET C3.1 FOR ONSITE



REVISIONS					
NO.	DATE	DESCRIPTION	NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS			
2	6/7/20	PER TOWN COMMENTS			

**SANITARY EXTENSION
PLAN & PROFILE**

SENIOR LIVING - PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

VERTICAL SCALE: 1"=4'
HORIZONTAL SCALE: 1"=40'

Craig R. Knoche & Associates • Civil Engineers
Civil Engineers, P.C. • Surveyors
Land Planners

24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

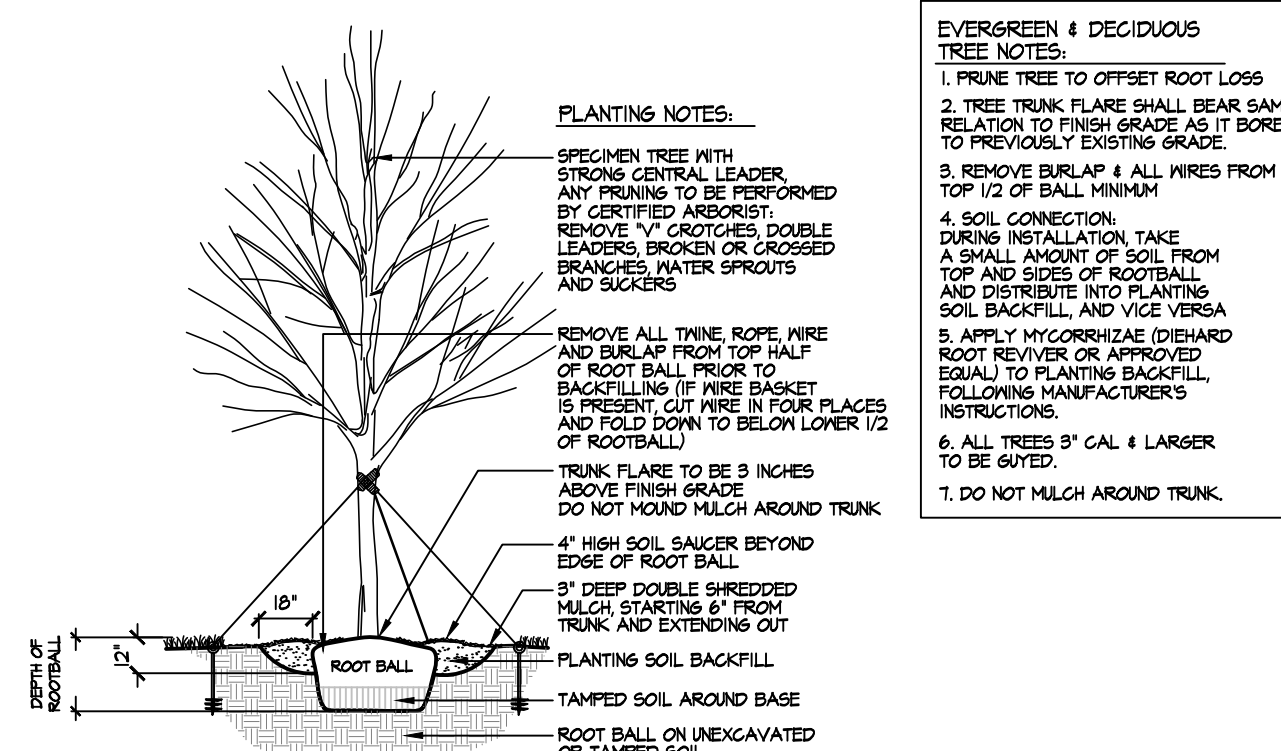
DATE: 3/18/2020
FILE: 18-003 C30
JOB NO: 18-003

C3.3
SHEET NO.

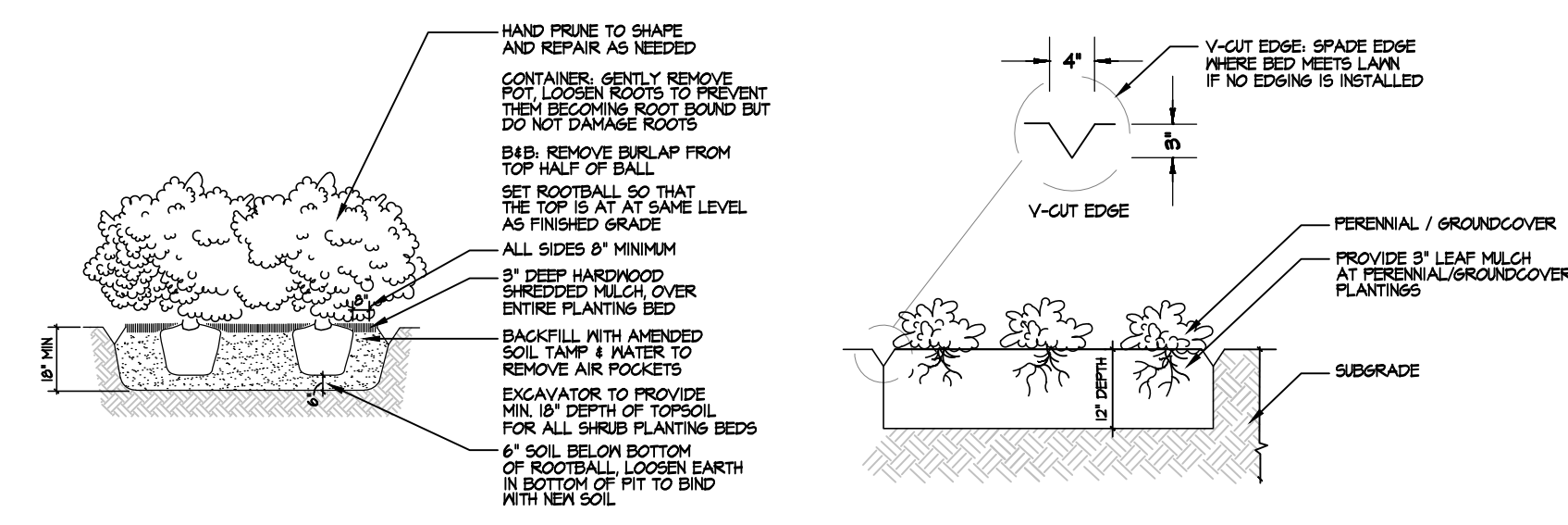
SENIOR LIVING - PHASE 1 HIGHLAND, INDIANA

REVISIONS	No.	Description	Date
	1	Review Comments	09/19/19
	2	Site Plan Revisions	03/17/20
	3	Site Plan Revisions	05/29/20
	4	Light Pole Locations	05/12/20
	5	Per Final Detailed Plans	09/16/20

Design by: KWS
 Drawn by: KWS
 Checked by: KWS
 Start date: 08.28.2019
 Project no.

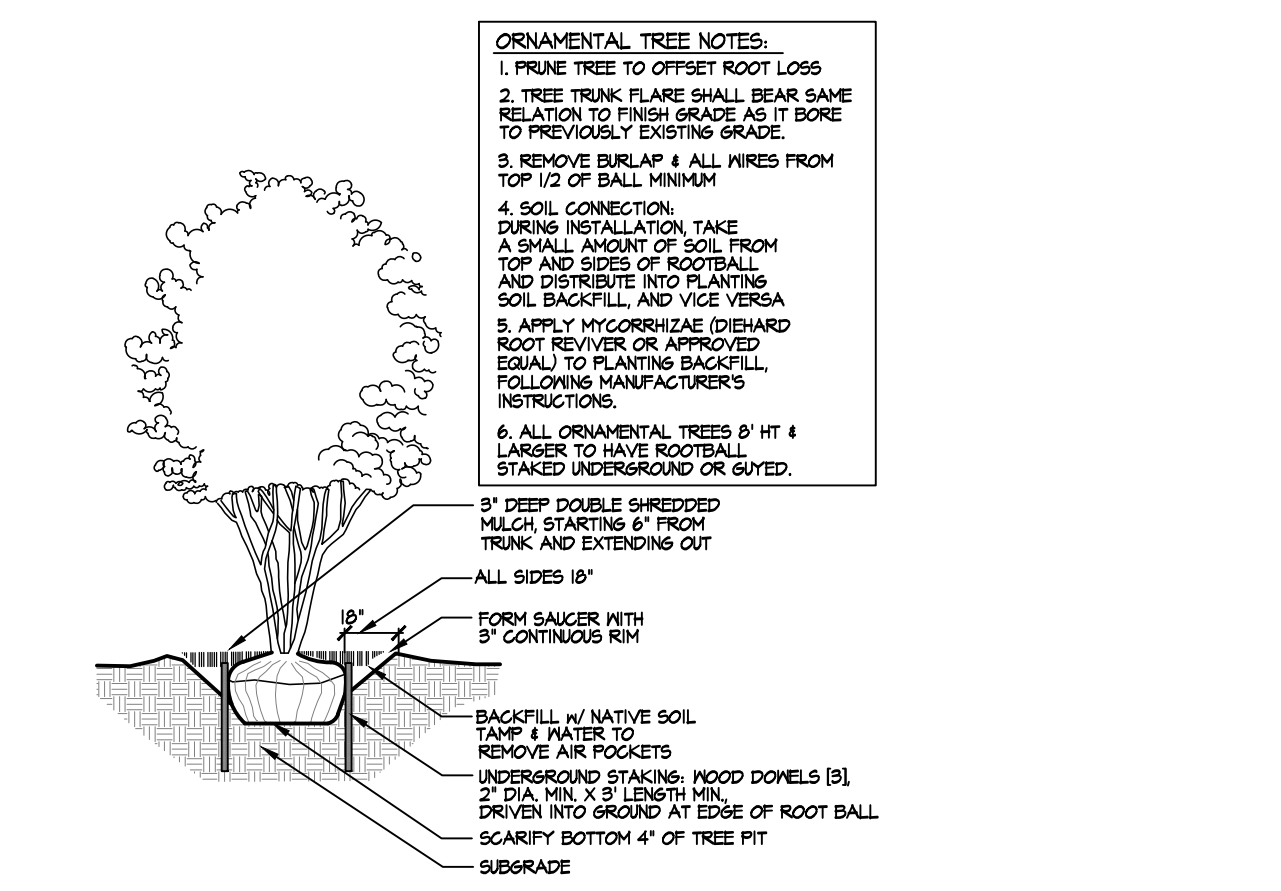


1 SHADE TREE

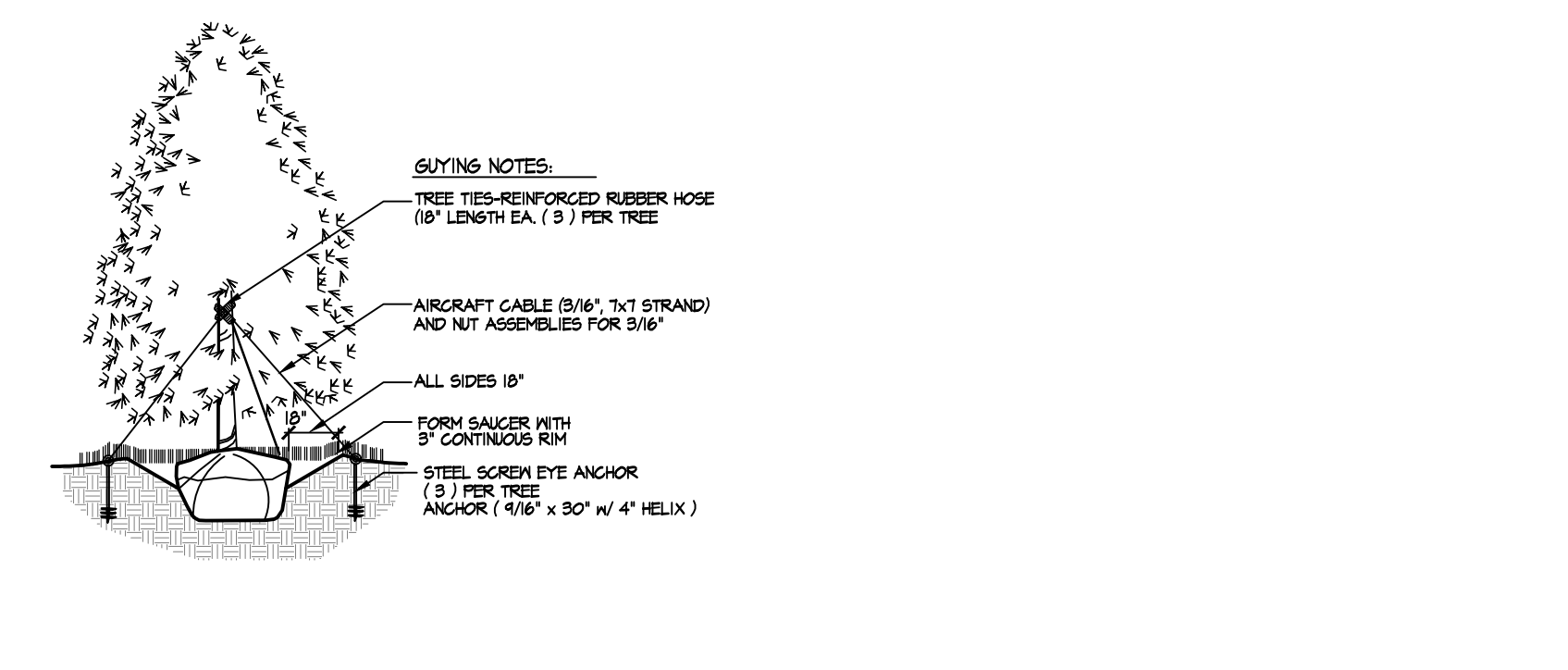


2 SHRUB PLANTING DETAIL

3 PERENNIAL PLANTING DETAIL



4 ORNAMENTAL TREE



6 EVERGREEN TREE

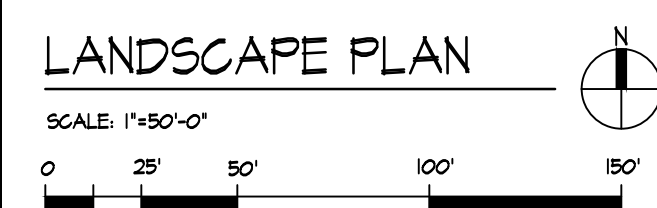
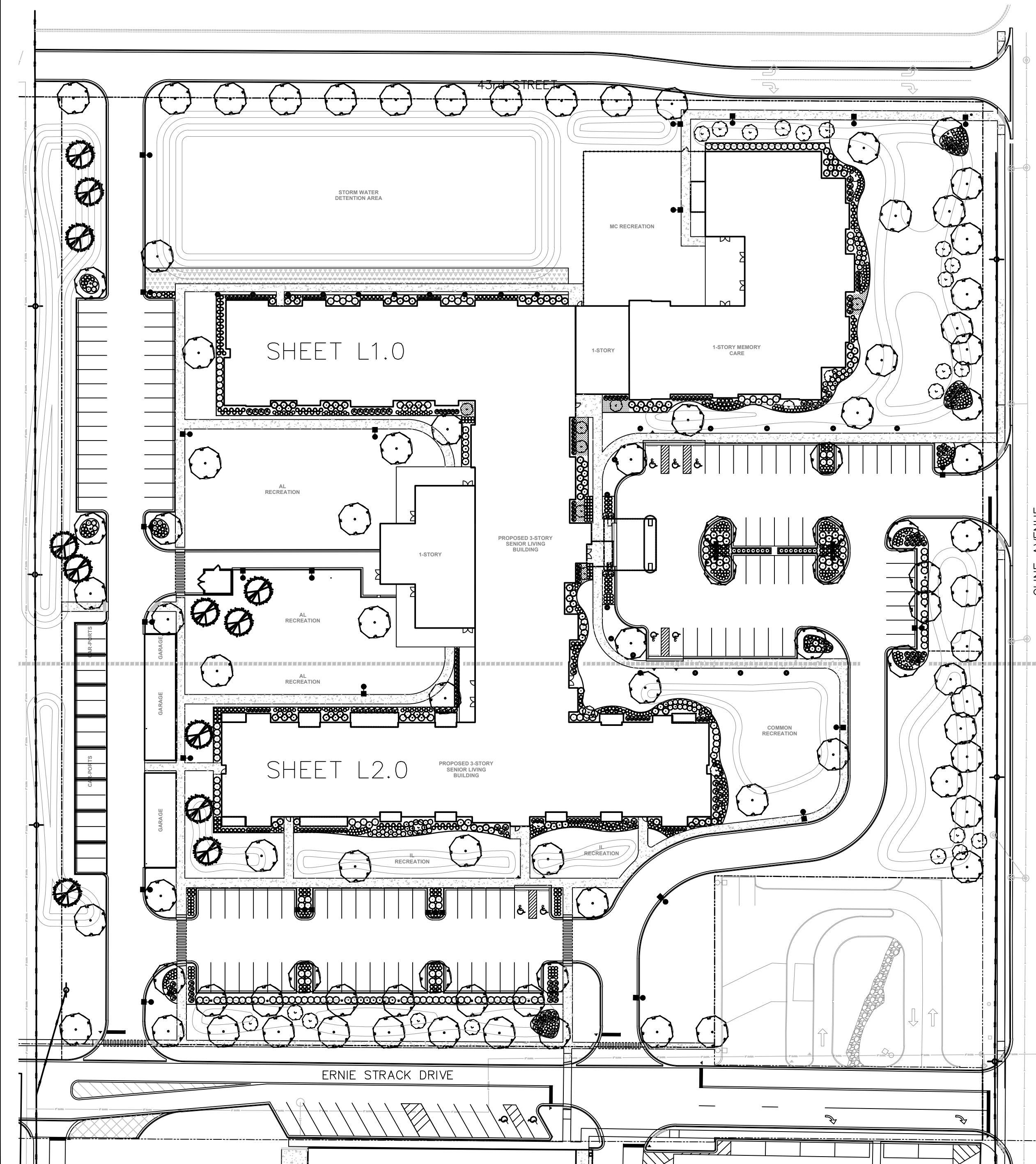
LANDSCAPE CALCULATIONS

Signs - N/A	Required	Proposed
Right-of-Way Buffering		
43rd Street (364')	6 ornamental trees 12 small shrubs	6 ornamental trees 12 small shrubs
Cline Avenue (442')	5 canopy trees 10 ornamental trees	5 canopy trees 10 ornamental trees
Ernie Strack Drive (414')	5 ornamental trees 4 small shrubs	5 ornamental trees 10 small shrubs
Parkway Trees		
43rd Street (364')	17 canopy trees	*11 canopy trees (35' o.c.)
Cline Avenue (442')	14 canopy trees	**14 canopy trees (35' o.c.)
Ernie Strack Drive (414')	12 canopy trees	*11 canopy trees (35' o.c.)
Front Yard Landscaping		
43rd Street	Meets	Proposed
Cline Avenue	Meets	
Ernie Strack Drive	Meets	
Side Yard Landscaping in Nonresidential Zones - N/A		
Transition Yard Planting - N/A		
Parkway Landscaping - See Parkway Trees (above)		
Principal Building Foundations		
Landscaping area	Required Minimum 5' width	Proposed Minimum 5' width
Parking Lot Landscaping		
Landscaping area (min. 7ft)	Required 50% of #	Proposed 1600 sq ft (10%)
15' parking spaces	(1) tree/4 lf.	2) trees
Perimeter landscaping	(1) tree/25 lf.	64 shrubs 8 trees
Interior landscaping	(1) tree/island (10) shrubs/100 sq ft island	Meets Shrubs, perennials and ornamental grasses provided
Buffer Yards - N/A		
Outdoor, Storage, Loading, Utility and Trash Collection Areas		
Landscaping area	Required To be screened	Proposed Meets

*Utility conflicts - Parkway trees shown inside ROW line, quantities reduced
 **Utility conflicts - Parkway trees shown inside ROW line

PLANT LIST

KEY	QTY.	SIZE	BOTANICAL NAME	COMMON NAME	REMARKS
SHADE TREES					
ACF	11	2"	Acer x freemanii 'Autumn Blaze'	Autumn Blaze Maple	Specimen, symmetrical
ACF	10	2.5"	Acer x freemanii 'Autumn Blaze'	Autumn Blaze Maple	Specimen, symmetrical
CEO	12	2"	Celtis occidentalis	Common Hackberry	Specimen, symmetrical
CEO	6	2.5"	Celtis occidentalis	Common Hackberry	Specimen, symmetrical
SPS	6	2"	Sinkgo biloba 'Princeton Sentry'	Princeton Sentry Sinkgo	Specimen, symmetrical
GTS	7	1"	Skujine biancanthos var. 'hermia Skujine'	Skujine Thornless Honeylocust	Specimen, symmetrical
GTS	4	2.5"	Skujine biancanthos var. 'hermia Skujine'	Skujine Thornless Honeylocust	Specimen, symmetrical
EYD	4	2"	Symonolada dioica 'Espresso'	Espresso Kentucky Coffee tree	Specimen, symmetrical
EYD	5	2.5"	Symonolada dioica 'Espresso'	Espresso Kentucky Coffee tree	Specimen, symmetrical
QUB	7	2"	Quercus bicolor	Swamp White Oak	Specimen, symmetrical
QUB	3	2.5"	Quercus bicolor	Swamp White Oak	Specimen, symmetrical
QUC	3	2"	Quercus muhlenbergii	Chinquapin Oak	Specimen, symmetrical
QUR	3	2.5"	Quercus rubra	Red Oak	Specimen, symmetrical
QUR	3	2.5"	Quercus rubra	Red Oak	Specimen, symmetrical
ORNAMENTAL TREES					
ANC	4	6"	Amananthus canadensis	Shadblow Serviceberry	Specimen, symmetrical
CCI	12	6"	Crataegus crusagalli var. 'hermia'	Thornless Cockspur Hawthorn	Specimen, symmetrical
CEK	6	6"	Cercis canadensis	Eastern Redbud	Specimen, symmetrical
MAS	3	6"	Nappalia stellata	Star Magnolia	Specimen, symmetrical
MFF	4	6"	Malva 'Prairie Fire'	Prairie Fire Crabapple	Specimen, symmetrical
EVERGREEN TREES					
ABC	4	8"	Abies concolor	Concolor Fir	Specimen, symmetrical
PIA	3	8"	Picea canadensis	Norway Spruce	Specimen, symmetrical
FIG	5	8"	Picea pungens	Colorado Green Spruce	Specimen, symmetrical
SHRUBS					
ARK	31	24"	Aronia melanocarpa UCONN#165	Low Shrub Round Chokeberry	Full branching to ground
BLX	184	24"	Buxa x microphylla 'Siencex'	Chicagoan Green Boxwood	Full branching to ground
DKO	20	24"	Diervilla '62X85544'	Kodiak Orange Diervilla	Full branching to ground
PVB	51	24"	Paraphia viridissima 'Bronzeleaf'	Bronze Dwarf Forsythia	Full branching to ground
HES	25	24"	Hydrangea macrophylla 'Ballerina'	Endless Summer Hydrangea	Full branching to ground
HYB	24	24"	Hydrangea paniculata 'Bobo'	Bobo Hydrangea	Full branching to ground
HTI	45	24"	Hydrangea arborescens 'Incrediball'	Incrediball Hydrangea	Full branching to ground
HYQ	5	24"	Hydrangea quercifolia	Oakleaf Hydrangea	Full branching to ground
JCS	82	24"	Juniper chinensis var. 'sargentii'	Sargent Juniper	Full branching to ground
RSM	23	24"	Ribes alpinum 'Green Mount'	Green Mount Alpine Currant	Full branching to ground
RHS	75	24"	Rhus aromatica 'Sro-Lov'	Gro-Lov Fragrant Sumac	Full branching to ground
SHK	10	24"	Syringa patula 'Miss Kim'	Miss Kim Lilac	Full branching to ground
SYB	30	24"	Syringa Bloomerang 'SMBLT'	Dark Purple Blooming Lilac	Full branching to ground
TMD	56	24"	Taxus x media 'Dani's Formis'	Dense Yew	Full branching to ground
VEB	34	24"	Viburnum dentatum 'Christm'	Blue Muffin Arrowwood Viburnum	Full branching to ground
LL	24	24"	Viburnum dentatum 'KLM Seventeen'	Little Joe Arrowwood Viburnum	Full branching to ground
PERENNIALS, ORNAMENTAL GRASSES AND GROUNDCOVERS					
ACH	32	#	Achillea 'Moonshine'	Moonshine Yarrow	Container
ACP	14	#	Astilbe chinensis 'Pumila'	Pumila Astilbe	Container
ALL	140	#	Allium Summer Beauty'	Summer Beauty Allium	Container
CMK	10	#	Calamagrostis acutiflora 'Karl Foerster'	Feather Reed grass	Container
EFC	1248	#	Elymus forstenii var. 'coloratus'	Purpleleaf Wintercreeper	Pots
FAN	46	#	Fanum virgatum 'Heavy Metal'	Rozanne Geranium	Container
HR	132	#	Hemerocallis 'Happy Returns'	Happy Returns Daylily	Container
HLS	102	#	Hemerocallis 'Little Grapette'	Little Grapette Daylily	Container
SAH	46	#	Salvia x superba 'Blue Hill'	Heavy Metal Skyline Grass	Container
SAL	23	#	Salvia x superba 'Blue Hill'	Blue Hill Salvia	Container
SCB	40	#	Schizachyrium scoparium	Little Bluestem	Container
SPO	86	#	Sporobolus heterolepis	Prairie Dropseed	Container
SMB	56	#	Symphoricaricum 'Wood's Blue'	Wood's Blue Aster	Container



#	DATE	INIT	DESCRIPTION
1	09.24.2019	NM	ADD SPECIFICATION SHEET SL3.1
2	03.12.2020	NM	UPDATE SITE PLAN
3	05.13.2020	CDH	ADD 2 EX. POLES AT CHASE DRIVE THRU, RELOCATE POLE 67
4	06.01.2020	CDH	REDESIGN PER ENGINEER'S COMMENTS
5	09.16.2020		PER FINAL DETAILED PLANS

PROPOSED PHOTOMETRIC PLAN

KE190830

08.30.2019

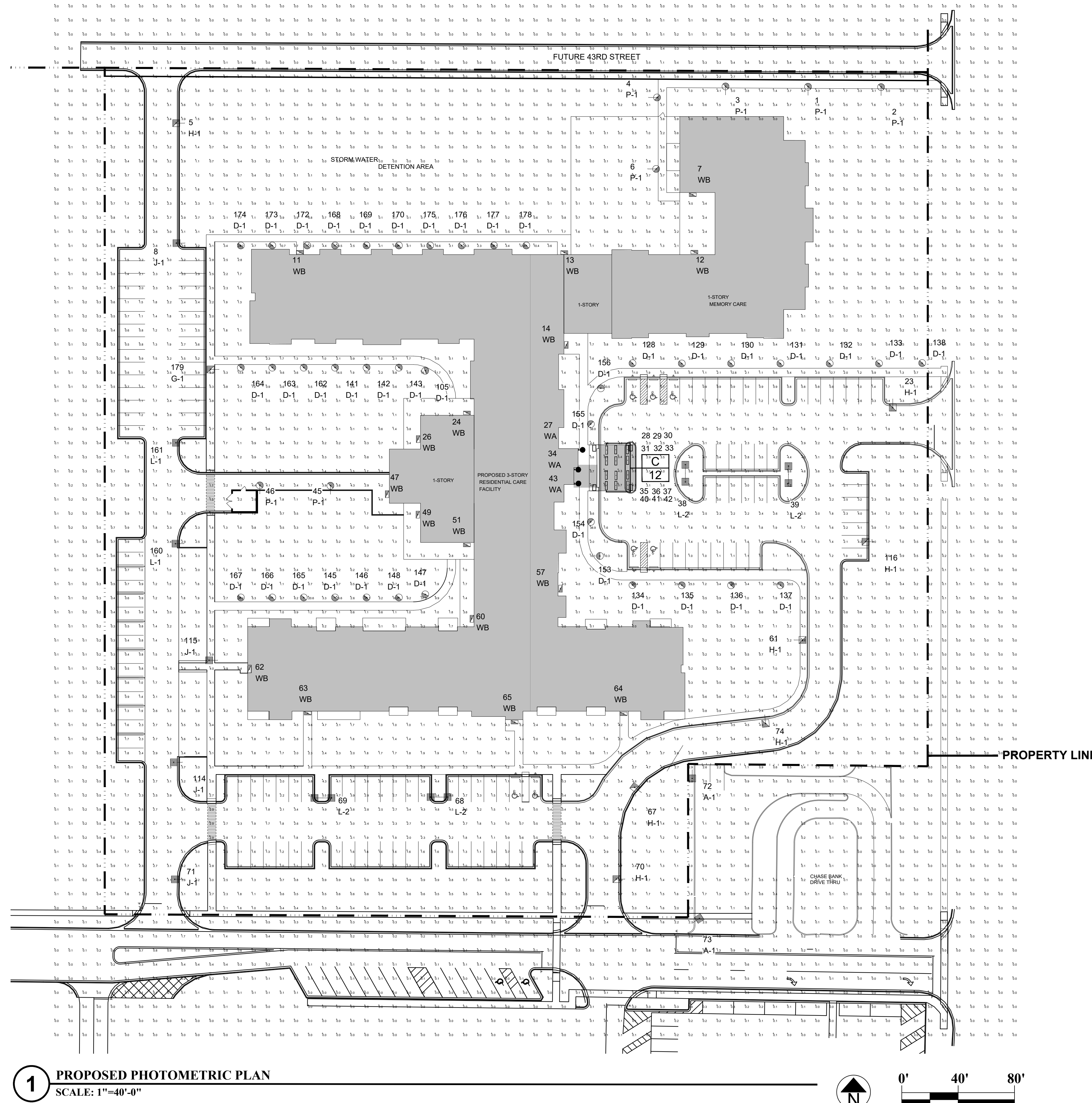
NA

N. MOLEND

N.MOLENDA

SL3.0

4



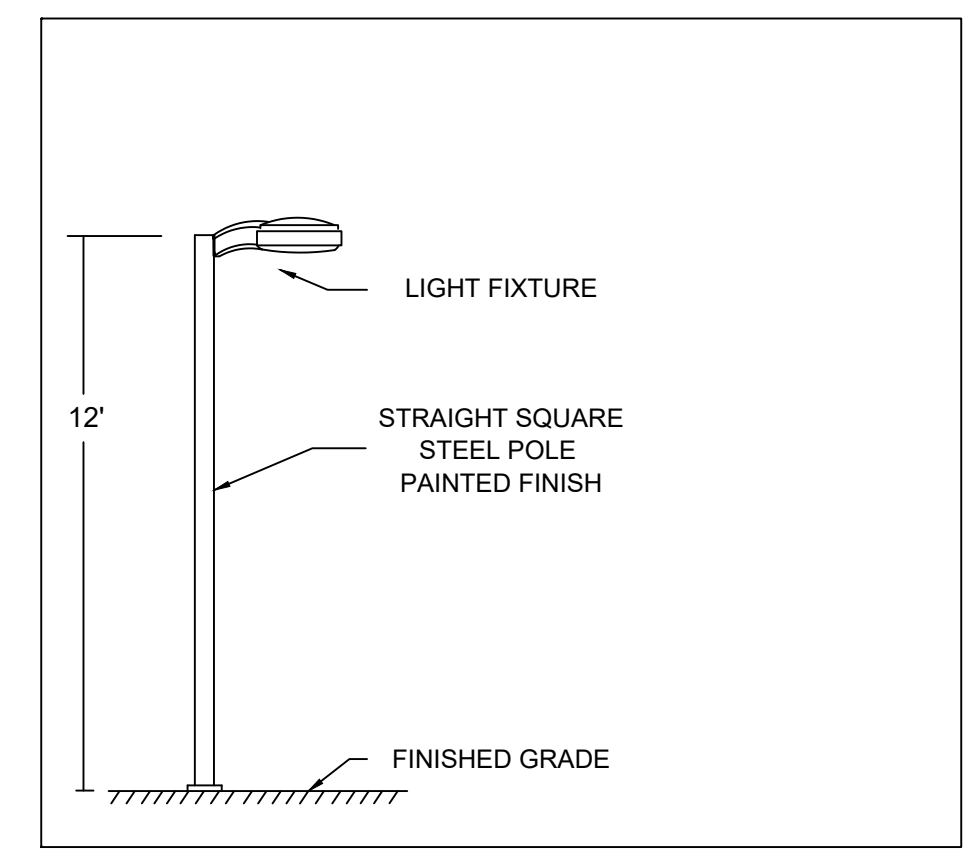
1 PROPOSED PHOTOMETRIC PLAN
SCALE: 1"=40'-0"

Symbol	Qty	Label	Arranged	LFP	Description	BUG Rating
[Symbol]	2	A-1	SINGLE	0.90	Exist Fixt Approx 100W LED TS 22' Mtg Ht, Chase Drive Thru	B4-U0-G3
[Symbol]	12	C	SINGLE	0.90	New Under Canopy 19W LED 10' Mtg. Ht. Recessed Linear 4' Pinnacle Architectural Lighting_EX3-WET-N-40-4	B1-U2-G1
[Symbol]	39	D-1	SINGLE	0.90	New Ballard 34W LED T2 3'-6" Mtg Ht (4000K/20 LED's/3756 Lumens/530mA) Visionaire ARB-1_T2_20L_C_5_4K	B1-U3-G1
[Symbol]	1	G-1	SINGLE	0.90	New Base, Pole, Fixt 167W LED T5LS CLS 22' Mtg Ht (4000K/19268 Lumens) Visionaire VSX-1-T5LS-25L-4K-CLS	B3-U3-G5
[Symbol]	7	H-1	SINGLE	0.90	New Base, Pole, Fixt 70W LED T4A 22' Mtg Ht (4000K/9599 Lumens) Visionaire_VSX-1-T4A-19L-4K-xxx	B2-U0-G2
[Symbol]	4	J-1	SINGLE	0.90	New Base, Pole, Fixt 167W LED T5LS 22' Mtg Ht (4000K/24421 Lumens) Visionaire VSX-1-T5LS-25L-4K-XXX	B5-U0-G3
[Symbol]	2	L-1	SINGLE	0.90	New Base, Pole, Fixt 102W LED T5LR 22' Mtg Ht (4000K/14884 Lumens) Visionaire_VSX-1-T5LR-15L-4K-xxx	B4-U0-G3
[Symbol]	4	L-2	BACK-BACK	0.90	New Base, Pole, Fixt 102W LED T5LR 22' Mtg Ht (4000K/14884 Lumens) Visionaire_VSX-1-T5LR-15L-4K-xxx	B4-U0-G3
[Symbol]	7	P-1	SINGLE	0.90	New Base, Pole, Fixt 46W LED T2 12' Mtg Ht (4000K/4534 Lumens) Visionaire_ARH-T2-42L-C-4K-xxx	B1-U0-G2
[Symbol]	3	WA	SINGLE	0.90	New Deco Fixt 13W LED 9' To 10' Mtg Ht (4000K/1341 Lumens) Visionaire_LSO-S_T4_20L_C_1_4K	B0-U2-G1
[Symbol]	16	WB	SINGLE	0.90	New Wall Pack 37W LED 10' To 12' Mtg Ht (4000K/4642 Lumens) Visionaire_VSC-H-T4-32L-C-4K-xxx	B1-U0-G1

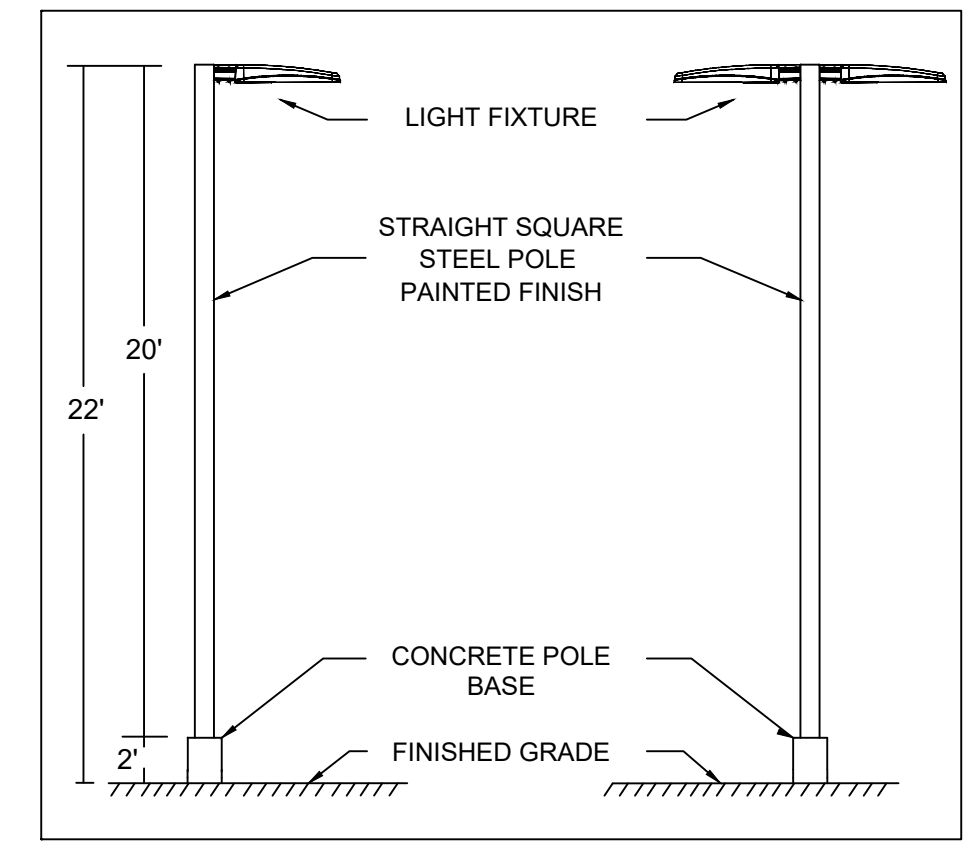
Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
Porte Cochere	4.7	5.7	3.5	1.3	1.6
Landscape	2.3	5.9	0.4	5.7	14.8
Sidewalks	3.1	12.8	0.4	7.9	32.0

LPD Area Summary			
Label	Area	Total Watts	LPD
LPDArea_Hardscape	73151	1078.6	0.015
LPDArea_Sidewalks	13659	368	0.027

GENERAL NOTES
LOCATION OF WALL MOUNT AND UNDER CANOPY FIXTURES TYPE WA, WB AND C SHALL BE COORDINATED WITH ARCHITECTURAL EXTERIOR ELEVATIONS SHEETS.

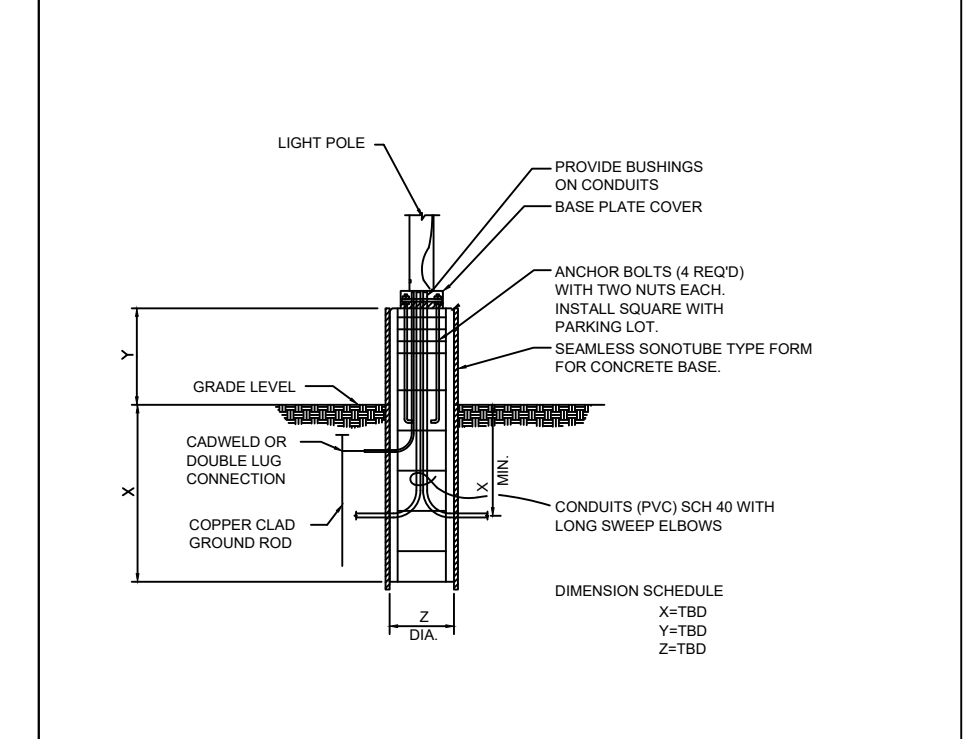


2 DECO POLE DETAIL
SCALE: NTS



3 POLE DETAIL
SCALE: NTS

**THIS POLE FOOTING DETAIL IS TYPICAL. FOR INFORMATIONAL PURPOSES ONLY. ACTUAL FOOTING SHOULD BE DESIGNED FOR THE SPECIFIC APPLICATION AND LOCATION WITH CONSIDERATION TO ACTUAL REQUIRED SEISMIC, SOIL, WIND LOAD CONDITIONS, ETC.



4 LIGHT POLE BASE DETAIL TYP.
SCALE: NTS

BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.
THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER THE CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARD LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.
FOR ADDITIONAL LIGHTING INFORMATION CONTACT:
On-Site Lighting & Survey, LLC
PH: 763.684.1548

#	DATE	INIT	DESCRIPTION
1	09.24.2019	NM	ADD SPECIFICATION SHEET S.L.3.1
2	03.12.2020	NM	UPDATE SITE PLAN
3	05.13.2020	CDH	ADD 2 XN-POLES AT CHASE DRIVE THRU. RELOCATE POLE 67
4	06.01.2020	CDH	REDESIGN PER ENGINEER'S COMMENTS
5	09.16.2020		PER FINAL DETAILED PLANS


BASED ON THE INFORMATION PROVIDED, ALL DIMENSIONS AND LUMINAIRE LOCATIONS SHOWN REPRESENT RECOMMENDED POSITIONS. THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING OR FUTURE FIELD CONDITIONS.

THE LIGHTING PATTERN REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER THE CONTROLLED CONDITIONS UTILIZING CURRENT INDUSTRY STANDARDS LAMP RATINGS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS.

FOR ADDITIONAL LIGHTING INFORMATION CONTACT:
On-Site Lighting & Survey, LLC
PH: 763.684.1548

VSX ARRAY LED Specifications

Project Name: Highland IN Senior Living
Catalog Number: VSX-1-TSLR-15L-4K-XXX-AM-XXX
Type: L-1, L-2



The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The fixture is designed to be used in public areas and is designed to provide uniform, consistent lighting. The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting.


Ordering Information

MODEL	OFFICE	LUMENS	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS	OPTIONS
VSX-1	TSLR	15L	4K	XXX	AM	XXX			

4 POLE MOUNT FIXTURE TYPE L-1, L-2 SPECIFICATION SHEETS

VSX Array LED Specifications

Project Name: Highland Senior Living
Catalog Number: VSX-1-T4A-10L-4K-XXX-AM-XXX
Type: H-1



The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting.


Ordering Information

MODEL	OFFICE	LUMENS	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS	OPTIONS
VSX-1	T4A	10L	4K	XXX	AM	XXX			

3 POLE MOUNT FIXTURE TYPE J-1 SPECIFICATION SHEETS

VSX ARRAY LED Specifications

Project Name: Highland IN Senior Living
Catalog Number: VSX-1-TSL-25L-4K-XXX-AM-XXX
Type: G-1



The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX ARRAY LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting.


Ordering Information

MODEL	OFFICE	LUMENS	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS	OPTIONS
VSX-1	TSL	25L	4K	XXX	AM	XXX			

2 POLE MOUNT FIXTURE TYPE H-1 SPECIFICATION SHEETS

VSX Array LED Specifications

Project Name: Highland Senior Living
Catalog Number: VSX-1-TSLS-25L-4K-XXX-AM-XXX
Type: G-1



The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The VSX Array LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting.


Ordering Information

MODEL	OFFICE	LUMENS	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS	OPTIONS
VSX-1	TSLS	25L	4K	XXX	AM	XXX			

1 POLE MOUNT FIXTURE TYPE G-1 SPECIFICATION SHEETS

SNTS Specifications

Project Name: Highland IN Senior Living
Catalog Number: SNTS-4S-11-20-9BC-343-S1-XX
Type: L-2



The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting.


Ordering Information

SNTS	4S	11	20	9BC	343	S1	XX
4S	11	20	9BC	343	S1	XX	

9 POLE TYPE L-2 SPECIFICATION SHEETS

SNTS Specifications

Project Name: Highland IN Senior Living
Catalog Number: SNTS-4S-11-20-9BC-343-S1-XX
Type: L-1



The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting.


Ordering Information

SNTS	4S	11	20	9BC	343	S1	XX
4S	11	20	9BC	343	S1	XX	

8 POLE TYPE L-1 SPECIFICATION SHEETS

SNTS Specifications

Project Name: Highland IN Senior Living
Catalog Number: SNTS-4S-11-20-9BC-343-S1-XX
Type: J-1



The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting.


Ordering Information

SNTS	4S	11	20	9BC	343	S1	XX
4S	11	20	9BC	343	S1	XX	

7 POLE TYPE J-1 SPECIFICATION SHEETS

SNTS Specifications

Project Name: Highland IN Senior Living
Catalog Number: SNTS-4S-11-20-9BC-343-S1-XX
Type: H-1



The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting.


Ordering Information

SNTS	4S	11	20	9BC	343	S1	XX
4S	11	20	9BC	343	S1	XX	

6 POLE TYPE H-1 SPECIFICATION SHEETS

SNTS Specifications

Project Name: Highland IN Senior Living
Catalog Number: SNTS-4S-11-20-9BC-343-S1-XX
Type: G-1



The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting.


Ordering Information

SNTS	4S	11	20	9BC	343	S1	XX
4S	11	20	9BC	343	S1	XX	

5 POLE TYPE G-1 SPECIFICATION SHEETS

SNTS Specifications

Project Name: Highland IN Senior Living
Catalog Number: SNTS-4S-11-20-9BC-343-S1-XX
Type: P-1



The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting. The SNTS Square Non Tapered Steel Pole is a heavy-duty, galvanized steel pole designed for use in public areas. The pole is designed to provide uniform, consistent lighting.


Ordering Information

SNTS	4S	11	12	9BC	343	S1	XX
4S	11	12	9BC	343	S1	XX	

11 POLE TYPE P-1 SPECIFICATION SHEETS

ARI-1 LED Specifications

Project Name: Highland IN Senior Living
Catalog Number: ARI-1-L-12-4K-3-4K-XXX-AM-XXX
Type: P-1



The ARI-1 LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The ARI-1 LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The ARI-1 LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting. The ARI-1 LED fixture offers clean, functional lighting that is suitable for use in public areas and is designed to provide uniform, consistent lighting.

Ordering Information

MODEL	OFFICE	LEDS	CURRENT	KELVIN	VOLTAGE	MOUNTING	FINISH	OPTIONS	OPTIONS
ARI-1	T1	48C	3	4K	XXX	AM	XXX		

10 POLE MOUNT FIXTURE TYPE P-1 SPECIFICATION SHEETS

GENERAL NOTES & SPECIFICATIONS

- All roadway and pavement construction shall comply with the requirements of the latest Indiana Department of Transportation "Standard Specification for Road and Bridge Construction" or latest edition, except as may be modified by the project plans and specifications.
- All underground construction shall comply with the requirements of the latest "Standard Specifications for Water and Sewer Main Construction in Indiana", Indiana municipal league, latest edition, except as may be modified by project plans and specifications.
- All work shall be in accordance with the standard specifications of the Municipality. Each Contractor shall be provided with the applicable sections of this specification in the bid package.
- All elevations shown are plus and are NAVD88 Datum.
- The Municipal building and engineering departments shall be notified at least two (2) working days prior to start construction. The contractor is responsible for notifying all jurisdictional agencies and all utility companies with facilities that may be affected by the proposed construction, and ensuring that all underground lines are located, prior to commencing construction.
- All work to meet the Municipal Supplemental Codes unless the state codes are more restrictive.
- The contractor(s) shall indemnify the owner, the engineer, and the municipality, their agents, etc and Indiana Department of Transportation. From all liability involved with the construction, installation and testing of the work on this project.
- All work shall comply with the "Indiana Stormwater Quality Manual." The contractor shall take whatever steps are necessary to control erosion on the site. Erosion control features shall be constructed concurrently with other work on the site. The contractor shall take sufficient precautions to prevent pollution of streams, lakes and reservoirs with fuels, oils, bitumens, calcium chloride or other harmful materials. He shall conduct and schedule his operations so as to avoid or minimize siltation of streams, lakes and reservoirs. Hauling will not be allowed when the work site is too wet to maintain acceptable conditions on adjacent streets. Adjacent streets and driveways shall be manually or mechanically swept periodically as may be responsible for removing sediment resulting from this project from storm sewers and drainage structures at no additional cost.
- The contractor shall be responsible for the compliance with all of the requirements of the occupational safety and health act including those requirements for open cut trenches and sheeting and bracing as required. At no time will the engineer or any of his employees be held liable, either directly or as third party participants to any litigation concerned with construction project.
- All existing field drainage tiles encountered or damaged during construction are to be restored to their original condition, properly rerouted, and/or connected to the storm sewer system. The contractor shall keep a record of all locations of field drainage tile encountered unless otherwise noted.
- Commonwealth Edison, AT&T, NiCor gas, and other utility company conduits are not necessarily shown on the drawings and must be located in the field prior to construction.
- The contractor shall field verify the existing conditions and notify Craig R. Knoche & Associates, Civil Engineers P.C. of any discrepancies prior to submitting a bid.
- Contractor will be responsible for repairing all existing pavement damaged during construction that is not specified.
- All concrete used shall be INDOT class S1.
- Subgrade preparation for all pavements shown on the drawings shall include topsoil stripping and removal of any underlying unstable/deleterious material.
- Apply prime coat uniformly over surface of compacted aggregate base at a rate of 0.40 gal/SY. Apply enough material to penetrate and seal, but not flood surface. Allow prime coat to cure for 72 hours minimum.
- It shall be the responsibility of each contractor to notify J.U.L.I.E prior to performing any excavations.
- Cable routing and specification in accordance with Municipality's ordinance.
- The contractor shall provide the municipality and Craig R. Knoche & Associates Civil Engineers, P.C. with a complete set of record drawings within 30 days of completion of the work. Drawings shall include elevations, location of other utilities, services, field files, etc.
- All property dimensions and areas are approximates and subject to change per final survey.
- All dimensions are back of curb unless otherwise noted.
- All curb radii are back of curb unless otherwise noted.
- See architectural plans for exact building dimensions.
- Contractors to verify dimensions prior to starting work and notify engineer if any discrepancies are found.
- Sidewalk around perimeter of the building shall be integral curb / walk.
- All pavement markings shall be painted traffic yellow 4" wide and 2 coats
- Contractor to provide temporary traffic control measures during construction of entrances of R.O.W. in accordance with Indiana D.O.T. Requirements.
- Contractor shall verify with local municipality or controlling jurisdiction as to the necessity for and requirements relating to the inspection by an approved on-site engineer.
- The Municipal details shall take precedence. Craig R. Knoche and Associates will not take responsibility for the accuracy of the Municipal details.
- Knoche Engineering PC shall not have control or be in charge of and shall not be responsible for the means, methods, safety, safety precautions techniques, sequence procedures or time of performance of the client, the contractor, other contractors or subcontractors performing any of the work or providing any of the services on the project

EARTHWORK NOTES & SPECIFICATIONS

- All trenched in green / landscape area shall be backfilled with earth compacted to 90%. A minimum of 6" of topsoil shall be provided in green / landscape areas. Trenches in all paved areas, curbed, and sidewalk areas shall be back filled with approved Engineering Backfill compacted as 95% modified Proctor.
- All disturbed areas shall be restored and positive drainage must be maintained.
- All landscaping must be restored to its original condition. Replacement of all black dirt, seed, trees, bushes, etc. shall be provided by the local governmental agency having jurisdiction. Guarantee shall include repair of trench settlements and guaranteed to bring trench to original grade.
- Existing drainage patterns shall be restored following construction. Positive drainage shall be maintained throughout construction.
- All existing utilities or improvements, including walk, curbs, pavements, driveways, and parkways damaged or removed during construction shall be restored to their original condition.
- See soil report for testing requirements.
- The contractor is advised that soil borings have been performed for this project. Boring logs and the soil report are available from the engineer. This report is dated _____ and was prepared by _____. The soil borings were performed by _____. The soils report and borings are a part of the of the bidding documents and is the soil reports and borings are not received with the bid set, it is the bidders responsibility to obtain and review the soil report and borings prior to submitting final bid.
- After stripping and rough grading is completed, the exposed sub grade should be proof rolled. Proof rolling may be accomplished with a fully loaded, tandem-axle dump truck or other equipment providing an equivalent sub grade loading. Unstable areas observed at this time should be improved by scarification and recompaction or by undercutting and replacement with suitable compacted fill.
- State erosion control measures must be implemented and maintained throughout construction.
- Contractor shall provide dust control during site work demolition or removal. Contractor shall control dust created from on-site construction and associated traffic using water or other approved means.
- Protect trees, plant growth, and features designated to remain as final landscaping. Construction equipment shall not travel under drip lines of trees to be protected.
- Protect benchmarks from damage or displacement.
- Remove trees and shrubs, stump, and root system to a minimum depth of 42 inches.
- Moisture Control—Where subgrade or layer of soil material must be moisture conditioned before compaction, uniformly apply water to surface of subgrade or layer of soil material. Apply water in minimum quantity as necessary to prevent free water from appearing on surface during or subsequent to compaction operations.
- Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.
- Stockpile or spread soil material that has been removed because it is too wet to permit compaction. Assisted drying by discing, harrowing or pulverizing until moisture content is reduced to a satisfactory value.

TRAFFIC CONTROL NOTES & SPECIFICATIONS

- The contractor in accordance with INDOT standards shall provide all required traffic control and signs.
- The contractor shall maintain temporary access to all roadways and driveways during construction. The contractor shall notify homeowners at least 24 hours in advance of temporary open cuts required to install utilities across driveways.

GENERAL UTILITY NOTES & SPECIFICATIONS

- Water and sewer locations taken from drawings by _____ others and must be located in the field by contractor prior to construction, including all elevations of rims and inverts.
- All sewer and water mains trenches under, crossing under or within five (5) feet of existing or proposed curb & gutter, sidewalk, or pavement shall be back filled.
- Valve Vaults and manholes frames and rings shall be set in workmanlike manner in easy-stick (or equal) bed.
- All stubs to buildings shall end 5 ft. from the building. All stubs shall be right angles to the foundation.
- Contractor shall mark the end of all stubs with a 4" x 4" wood marker extended to 3' minimum above grade. Markers shall be painted as follows: Blue - Water, Green - Sanitary, Yellow - Storm.
- Install conduit free from crimps and dents. Plug ends to prevent entry of dirt or moisture after installed
- Clean out conduit before installation of conductors.
- Conduit outside the building shall be buried minimum 36 inches below grade unless noted otherwise
- Underground conduits shall have a minimum of 2 inch spacing between conduits and be back filled and compacted to the density specified elsewhere to eliminate all air pockets. Conduits from building to fuel pumps may be clustered in the same trench with minimal separation as required by owner.
- All underground conduits shall be protected against future excavation damage by placing a plastic tape warning marking in each trench during backfill. Install tape full length of the trench.
- Contractor shall verify with local municipality or controlling jurisdiction as to the necessity for and requirements relating to the inspection by an approved on-site engineer.

GENERAL NOTES FOR SANITARY SEWER CONSTRUCTION

DESIGN STANDARDS

A. Sanitary sewer system

Sanitary sewer system shall be designed to meet Indiana Environmental Protection Agency, the Standard Specifications for Sewer and Water Main Construction in Indiana, latest edition, Metropolitan Water Reclamation District of Greater Chicago and other applicable requirements. The design shall incorporate the more stringent requirements of the following items or agency requirements:

- Each single-family lot or each building in other than single-family development shall be served with a separate sanitary sewer service.
- All structures shall include provisions for an overhead sewer system, unless otherwise approved by the Utilities Superintendent or Director of Public Works.
- Manholes are to be provided at each change in direction of flow, change in pipe size, change in slope, change in material and at each intersection. Maximum manhole spacing is three hundred feet (300). Where feasible, the sanitary sewer system shall be designed so as to provide for manholes to be installed within the R.O.W. Sanitary sewers installed within the rights-of-way shall not be placed more than eight feet from edge of pavement.
- Provide calculations to substantiate the available capacity of the receiving sewer.
- Note on the plans which sewer lines are to be public and private.
- Pipe shall be laid in approved bedding. Minimum size sewer main shall be eight inches (8"). Sanitary sewers with an invert elevation fifteen feet or greater in depth shall be ductile iron pipe. Sanitary services shall be a minimum of 4" with a minimum slope of 2.00%
- When connecting to an existing sewer main by means other than an existing "Y", "T", or an existing manhole, one or the following methods shall be used:
 - Remove an entire section of pipe and replace with a "Y" or "T" branch section. Pipe section shall be removed by breaking only the top of one bell. After the "Y" or "T" branch is inserted, concrete shall be placed over the broken area to a minimum thickness of four inches (4") and to a dimension of eight inches (8") in all directions.
 - Using pipe cutter, neatly and accurately cut out desired length of pipe for insertion of proper fitting. Use "band-seal" couplings or similar couplings, and shear rings and clamps to fasten the inserted fitting and hold it firmly in place. Mission couplings shall have the length of boot approximately equal to the pipe diameter. Follow manufacturer's recommendations for the installation.
 - Pipe penetrations into existing sanitary manholes shall be properly sized and cored and sealed with flexible watertight connections. No cut-in connection made by breaking or cutting a hole in the main and inserting the spigot end of an ordinary sewer pipe shall be permitted. No connections to manholes are permitted unless approved by the Superintendent.

8. New sanitary manholes are to be pre-cast reinforced concrete eccentric type with a minimum 48" I.D. barrel section, and monolithic bottom section; Pipe penetrations are to be sealed via the use of a cast-in-place flexible synthetic rubber pipe sleeve, which is to be fastened to the pipe with stainless steel bands. Barrel sections shall be sealed using a butyl rubber material strip and/or rubber gasket and a nine-inch (9") "MacWrap" external seal band or approved equal. Frames shall be sealed to the manhole by using either synthetic rubber seals with stainless steel bands or a heat shrinkable wrap around sleeve. Approved systems are external type chimney seals, manufactured by "Cretek" or Camusa Wrapid Seal manhole encapsulation system. Existing frames requiring adjustment will also be required to be sealed. A maximum of eight inches (8") of adjusting rings may be used. All joints between pre-cast elements, adjusting rings and manhole frames shall be set in place using butyl rubber joint sealant. Steps shall be made of steel reinforced plastic, using an approved plastic meeting ASTM D4101, Type II, Grade 49108, over a #3 grade 60, ASTM A615, reinforcing bar. Steps shall be at 16" (inch) centers.

9. Sanitary sewer manholes constructed in a flood plain must have a rim twelve inches (24") above base flood elevation and have a water-tight-lock type frame and cover, Neenah R-1916 C or approved equal. Cover must have "SANITARY" cast into the top of the cover.

10. Except as provided in #8 above, all frames and covers are to be East Jordan Iron Works Number 1050-Z1, with concealed pick holes and sealed cover. Variations in casting dimensions shall be approved by Utilities Superintendent. Manhole covers must have "SANITARY" cast into the top of the cover. Manhole covers shall be EAST JORDAN IRON WORKS, product No. 102332, catalog No. 1020A, reference No. 102089. The cover casting shall include the Municipality's logo. All casting shall be coated immediately after cleaning and machining. Coating shall be a non-toxic water base asphalt paint, complying to the AWWA C104 specification.

11. All utility and service trenches under or within two feet of paved surfaces or driving areas shall be backfilled with INDOT NO. 9 material properly compacted. Mechanically compacted backfill shall be placed in six-inch horizontal layers of thickness. Each layer shall be evenly spread, moistened (or dried, if necessary), and then tamped or rolled until 90 percent relative compaction is achieved.

INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT SPECIFICATIONS

SPECIFICATIONS FOR TESTING PROPOSED SANITARY SEWER & MANHOLES PER INDIANA'S ADMINISTRATIVE CODE, ARTICLE 3: WASTEWATER TREATMENT FACILITIES; ISSUANCE OF PERMITS; CONSTRUCTION AND PERMIT REQUIREMENTS

Manholes:

Manholes shall be air tested in accordance with ASTM C1244-93, Standard Test Method for Concrete Sewer Manholes by the Negative Air Pressure (Vacuum) Test

Deflection and leakage tests:

- A deflection test shall be performed on each flexible pipe following the elapse of thirty (30) days after the placement of the final backfill.
- No pipe shall exceed a deflection of five percent (5%) or greater.
- The diameter of the rigid ball or mandrel used for a deflection test shall be no less than ninety-five percent (95%) of the base inside diameter of the pipe to be tested dependent on what is specified in the corresponding ASTM standard. The test shall not be performed with the aid of a mechanical pulling device.
- All gravity sewer pipe shall be tested using one (1) of the following leakage test types:
 - A hydrostatic test shall be performed with a minimum of two (2) feet of positive head. The rate of exfiltration or infiltration shall not exceed two hundred (200) gallons per inch of pipe diameter per linear mile per day.
 - An air test shall conform to one (1) of the following methods:
 - ASTM C828-90, Standard Test Method for Low-Pressure Air Test of Vitrified Clay Pipe Lines, for clay pipe.
 - ASTM C 924-89, Standard Practice for Testing Concrete Pipe Sewer Lines by Low-Pressure Air Test Method, for concrete pipe.
 - ASTM F1417-92, Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low Pressure Air, for plastic pipe.
 - All force mains shall be pressure and leak tested in accordance with one (1) of the following methods:
 - AWWA standard C600-93, AWWA Standard for Installation of Ductile-Iron Water Mains and Their Appurtenances.
 - AWWA standard C602-89, AWWA Standard for Cement-Mortar Lining of Water Pipelines-4 in. (100 mm) and Larger in Place.
 - AWWA standard C603-90, AWWA Standard for Installation of Asbestos-Cement Pressure Pipe.
 - AWWA standard C605-94, AWWA Standard for Underground Installation of Polyvinyl Chloride (PVC) Pressure Pipe and Fittings for Water.
 - AWWA standard C606-87, AWWA Standard for Grooved and Shouldered Joints.
- If an AWWA standard is not available for the particular installation, the installation procedure recommended by the manufacturer shall be followed.

Excavation water pressure test water.

- All water entering a sanitary sewer project excavation, prior to construction completion, shall be removed.
- All excavation water or pressure test water shall be disposed in one (1) of the following manners:
 - Disposal to a sanitary sewer only after receiving the approval of the local sewer authority.
 - Disposal to a location other than a sanitary sewer in accordance with state and federal laws and regulations.

WATER MAIN NOTES & SPECIFICATIONS

- All water service horizontal and vertical separation from sanitary and storm sewers shall be the same as water main separations.
- Water services shall have a minimum of 5.5 feet of cover from finished grade.
- Any existing utility structures requiring modifications are to be adjusted (up to 12" total adjustment) by the contractor as part of the contract. Any adjustment of 2" or less shall use preformed rubber adjusting rings, which are 2" or less in thickness.
- All water mains shall be cement lined ductile iron pipe, class 52 conforming to AWWA C-151 with push-on or mechanical joints and shall have a minimum of 5.5 feet of cover. Water mains shall be encased in 8-mil V-Bio polyethylene film in accordance with AWWA C-105-82. Fittings shall be cement lined, tar coated cast iron with mechanical joints rated 250 PSI per AWWA C110/Ansi 21.20 (Clow, American, U.S. Pipe, or equal). Trace Wire shall be installed (see COMM Supplemental Specifications).
- All materials shall be verified with the local authority. Water services shall be type "K" copper water tube or the size shown on the plans, corporations stop, curb stop, and service box, all as required by the municipality, and all necessary labor, tools, equipment, excavations and back fill, for a complete installation as shown on the plans.
- All fire hydrants shall be East Jordan Model 5BR250. Auxiliary valve to be resilient seat wedge gate valve, with valve inlet embossed "water". All fire hydrants shall be painted in accordance with the Municipal standards.
- Water mains shall be protected in accordance with the requirements of the Indiana EPA. Where a sewer (sanitary or storm) crosses below a water main, a minimum vertical separation of 18" shall be provided between the top of the sewer pipe and the bottom of the water main pipe. When the 18" vertical separation is not provided and the water main is above the sewer (sanitary or storm), the sewer shall be constructed to water main standards for a minimum of 10 feet on each side of the water main unless otherwise noted on the drawings. When the water main crosses below the sewer (storm only), the sewer shall be constructed to water main standards for a minimum of 20 feet on each side of the water main unless otherwise noted on the drawings. If the water main crosses beneath the sewer (storm only), 18" vertical separation shall be provided in all cases. In addition, sewer pipe shall be supported in order to prevent pipe from sagging closer to the water main. Minimum water main cover is 5-1/2 feet. Minimum horizontal separation of 10' between sewers and water main shall be adhered to. Prior Indiana EPA approval is required in order to construct water main under storm or sanitary sewers.
- All horizontal and vertical separation between water main services and storm sanitary sewer shall be the same as listed in water main note 7.
- Service lines (1.5" and smaller) shall be copper water tube, type k, and soft temper for underground service conforming to ASTM B-88 and B-251 and also conforming to all Municipal requirements.
- The water main will be pressure tested according to Local Requirement
- Sterilize pipe per local jurisdictional agency requirements. Minimum water main chlorination test shall result in a chlorine water mixture of at least 50 parts per million available at each outlet where sampling can be obtained from. Test periods for the water main shall be at least 24 hours and at the end of that time the chlorine residual shall be at least 10 ppm at the sampling points. If chlorine residual is less than 10 ppm, additional application shall be made and the retention period repeated until the required 10 ppm residual is obtained. After obtaining successful test results, flush heavily chlorinated water from the main until the replacement water is the same chemical and bacteriological quality as the water source.
- There will be no 90 degree bends permitted on watermain installations.
- All fittings shall be AWWA C153 compact body ductile iron.
- Manholes used for valve vaults will be a minimum of five (5) feet in diameter measured internally.
- Contractor must install a 1" flared corp. for filling and chlorinating.

REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS

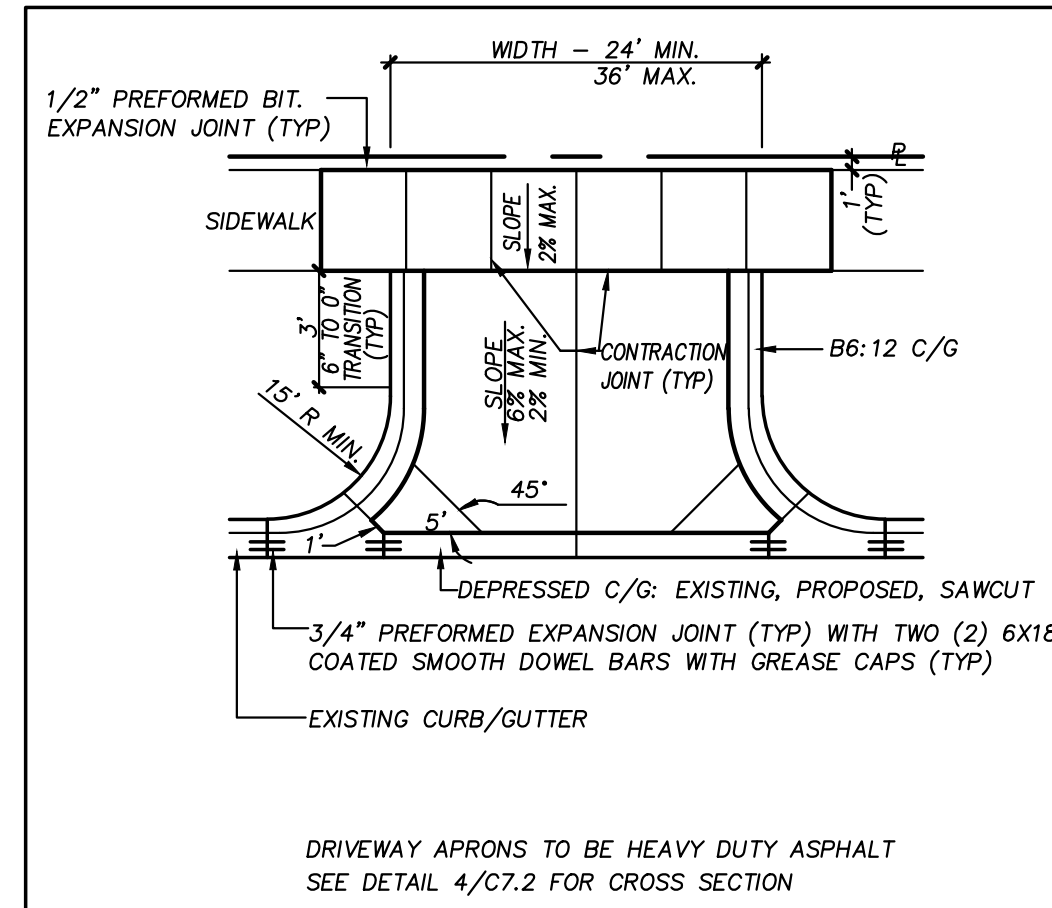
GENERAL NOTES & SPECIFICATIONS

SENIOR LIVING - PHASE 1
 NWC CLINE AVE. & ERNIE STRACK DR.
 HIGHLAND, INDIANA

Craig R. Knoche & Associates • Civil Engineers
 • Surveyors
 • Land Planners
 24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE:	3/18/2020
FILE:	18-003 C70
JOB NO:	18-003

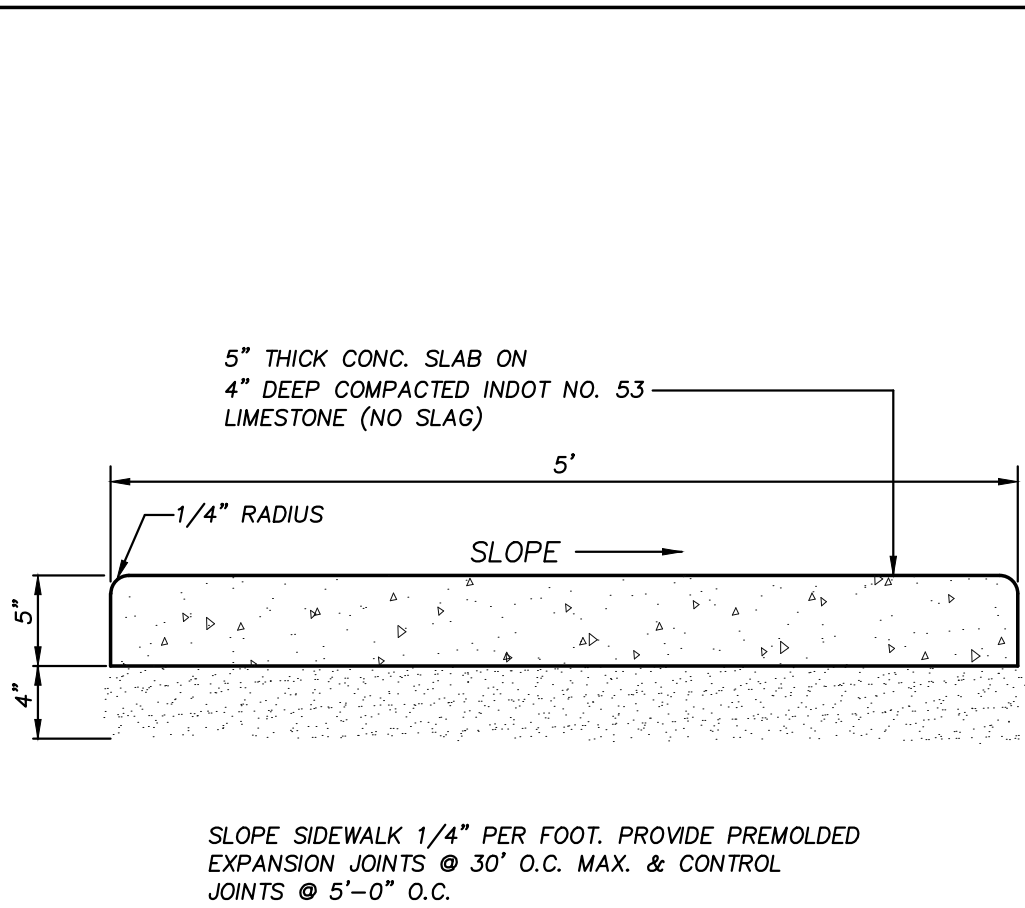
C7.1
SHEET NO.



NOTE: ALL AGGREGATE SUBBASE SHALL BE MECHANICALLY COMPACTED

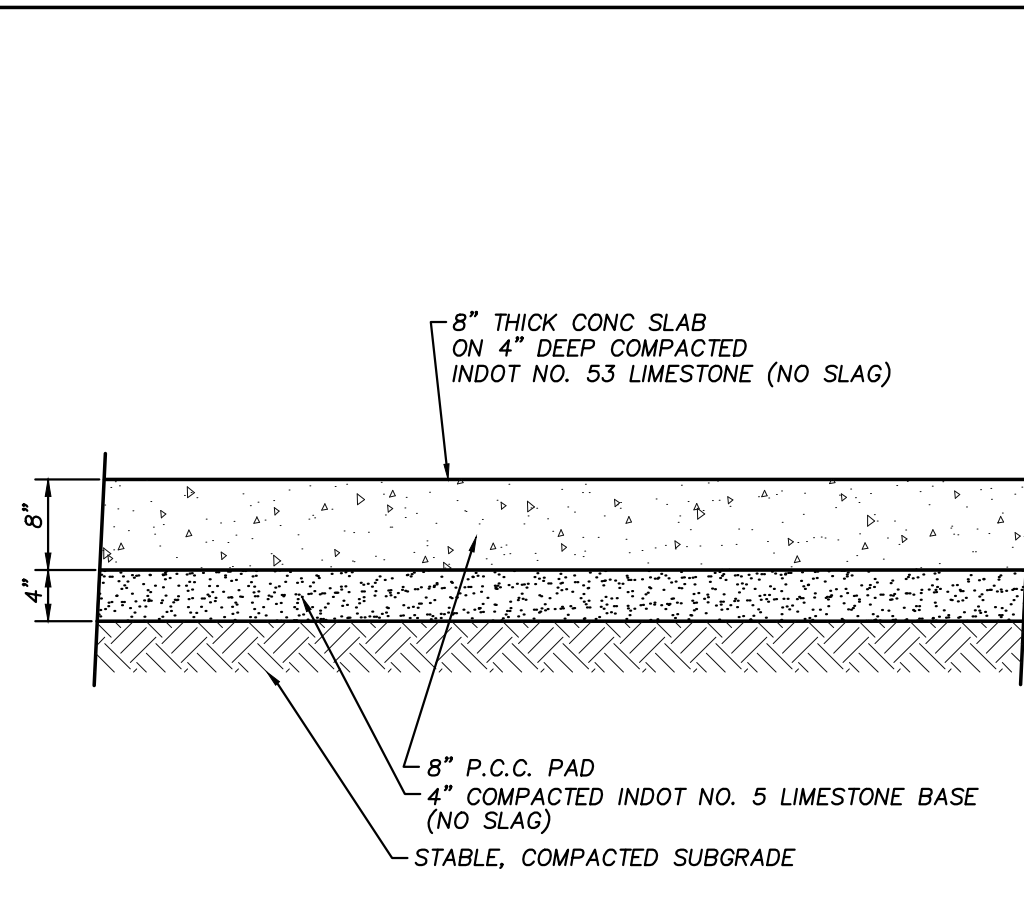
1 DETAIL - COMMERCIAL DRIVEWAY
 C7.2 NOT TO SCALE

FILE:PV-COMMERCIAL DRIVE.DWG



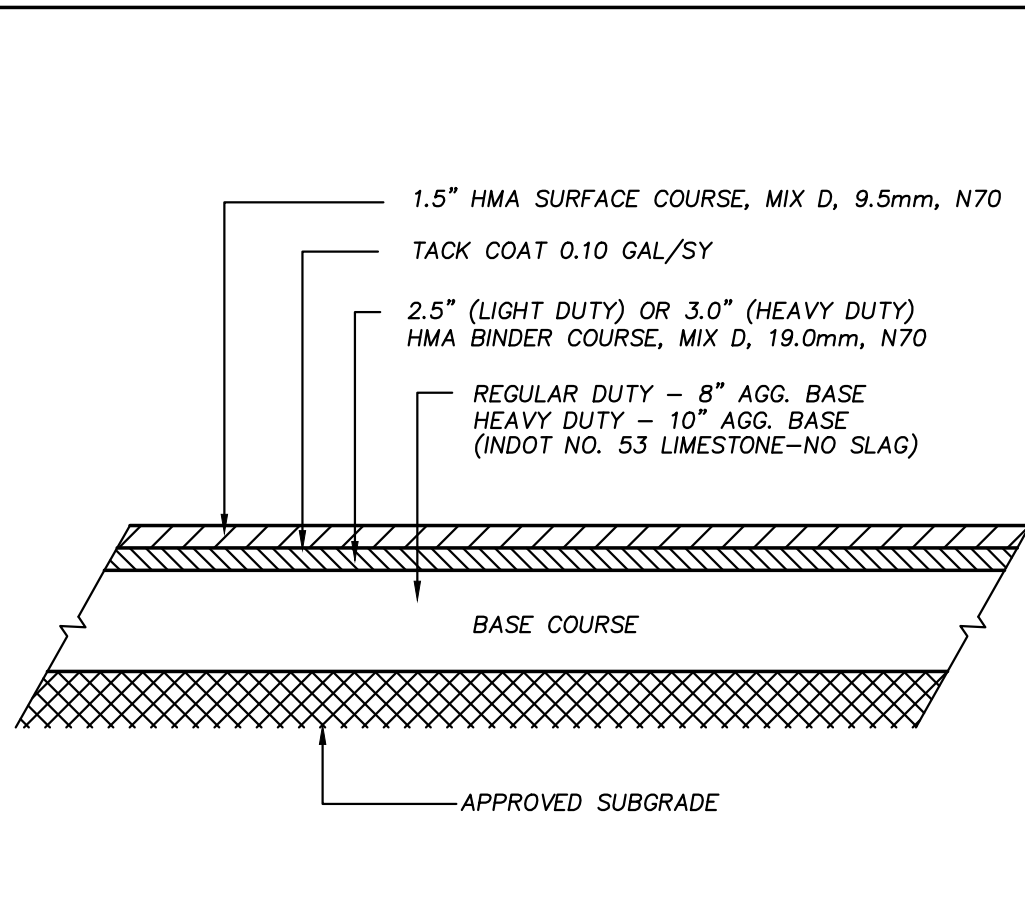
2 TYPICAL SIDEWALK SECTION
 C7.2 NOT TO SCALE

FILE:PV-SIDEWALK.DWG



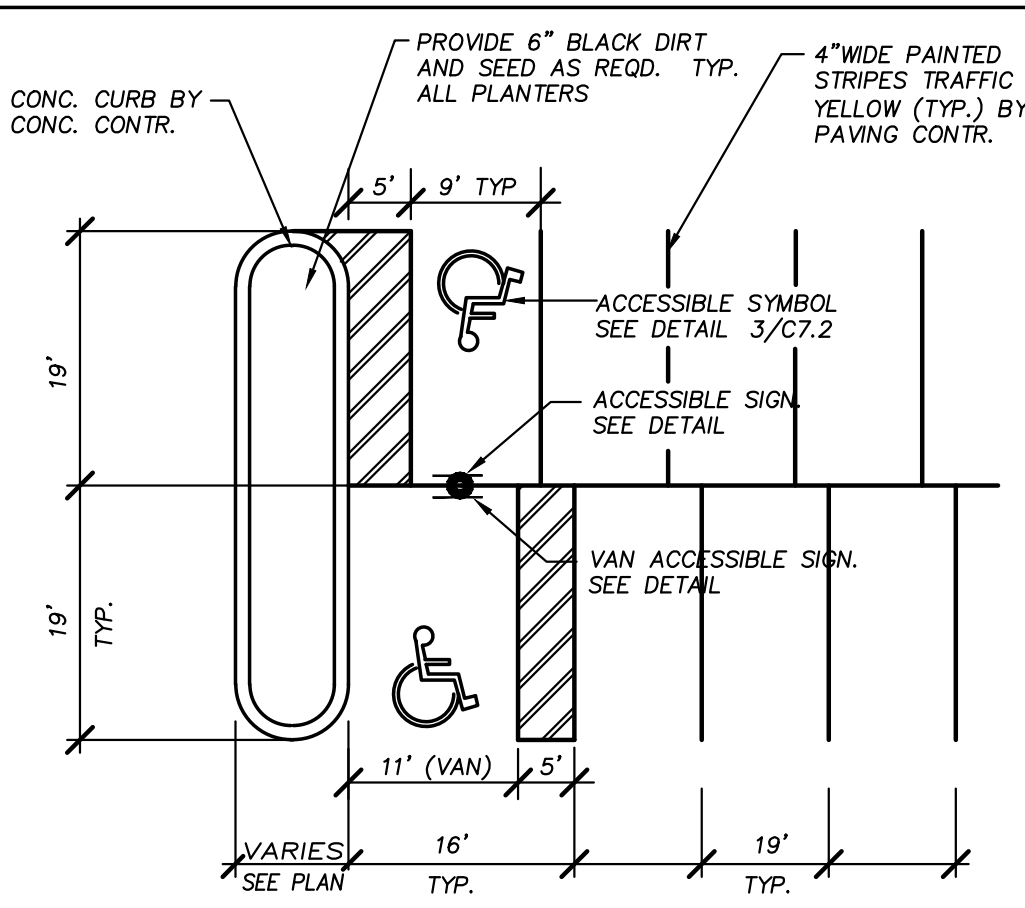
3 TYPICAL CONCRETE PAD SECTION
 C7.2 NOT TO SCALE

FILE:PV-CONCRETEPAD.DWG



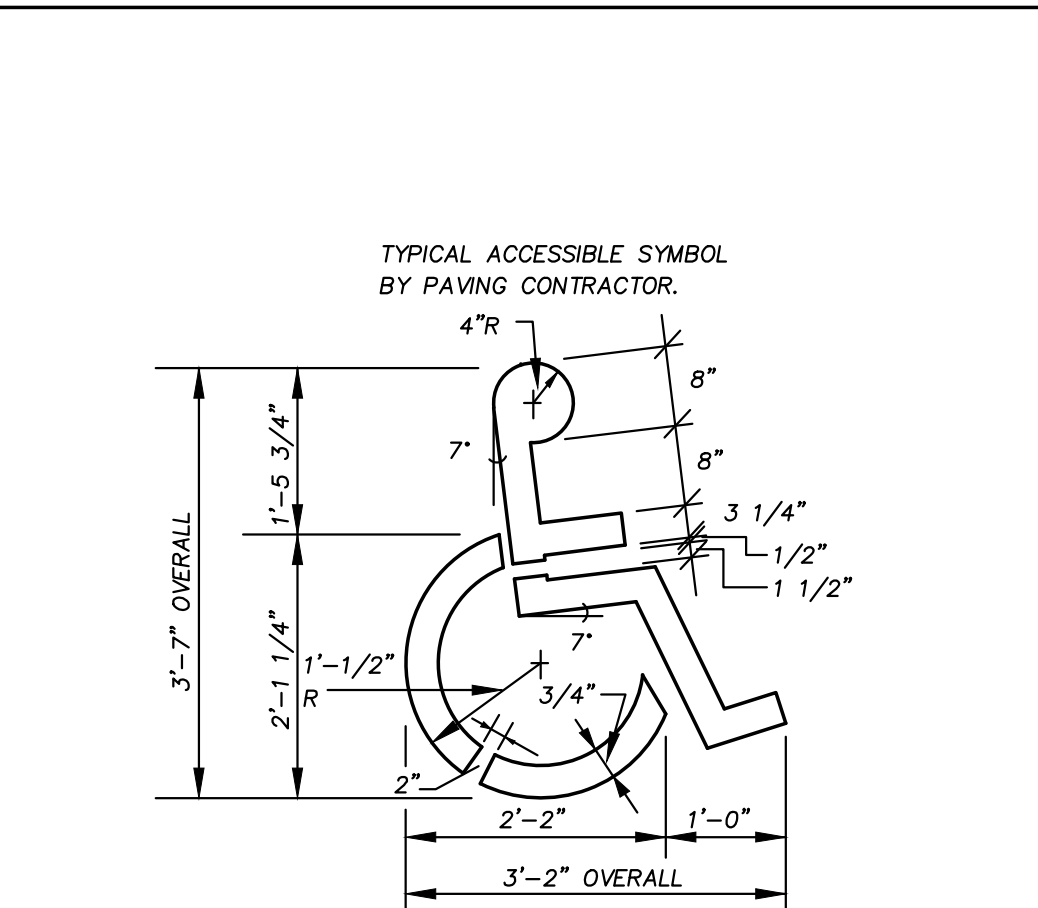
4 DETAIL - PAVEMENT SECTION
 C7.2 NOT TO SCALE

FILE:PV-PAVEMENT.DWG



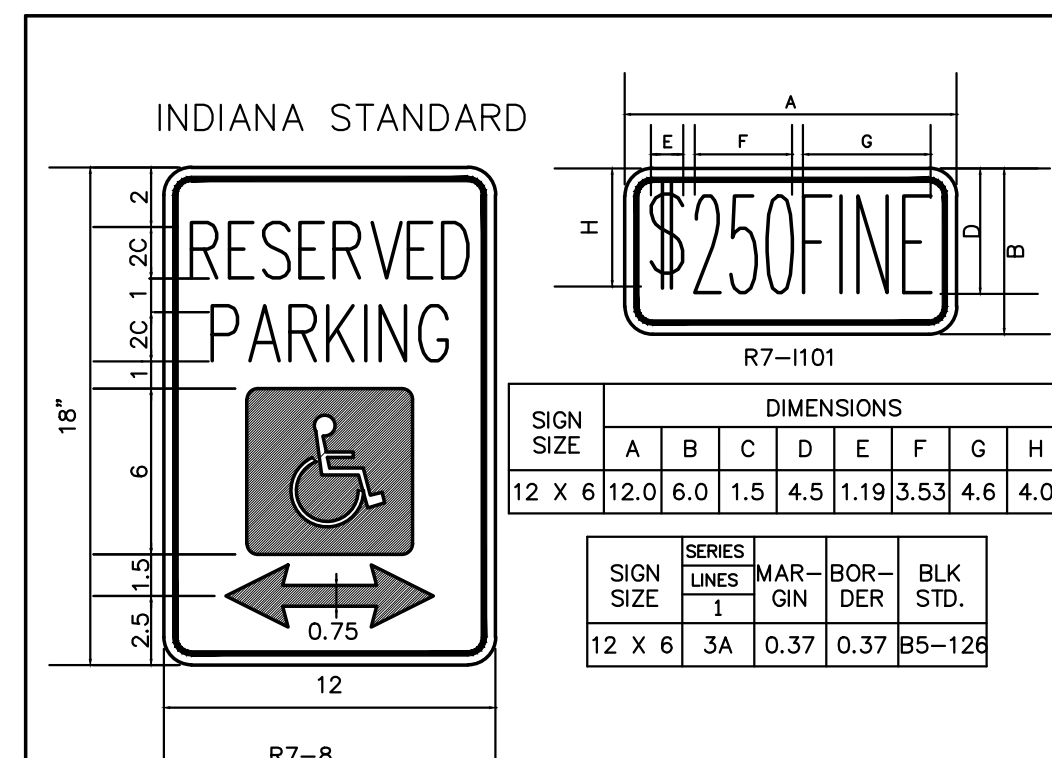
5 TYP. 90° PARKING
 C7.2 NOT TO SCALE

FILE:PM-90DPARK1.DWG



6 DETAIL-ACCESSIBLE PAVEMENT SYMBOL
 C7.2 NOT TO SCALE

FILE:PM-AC PAVEMENT SYMBOL.DWG

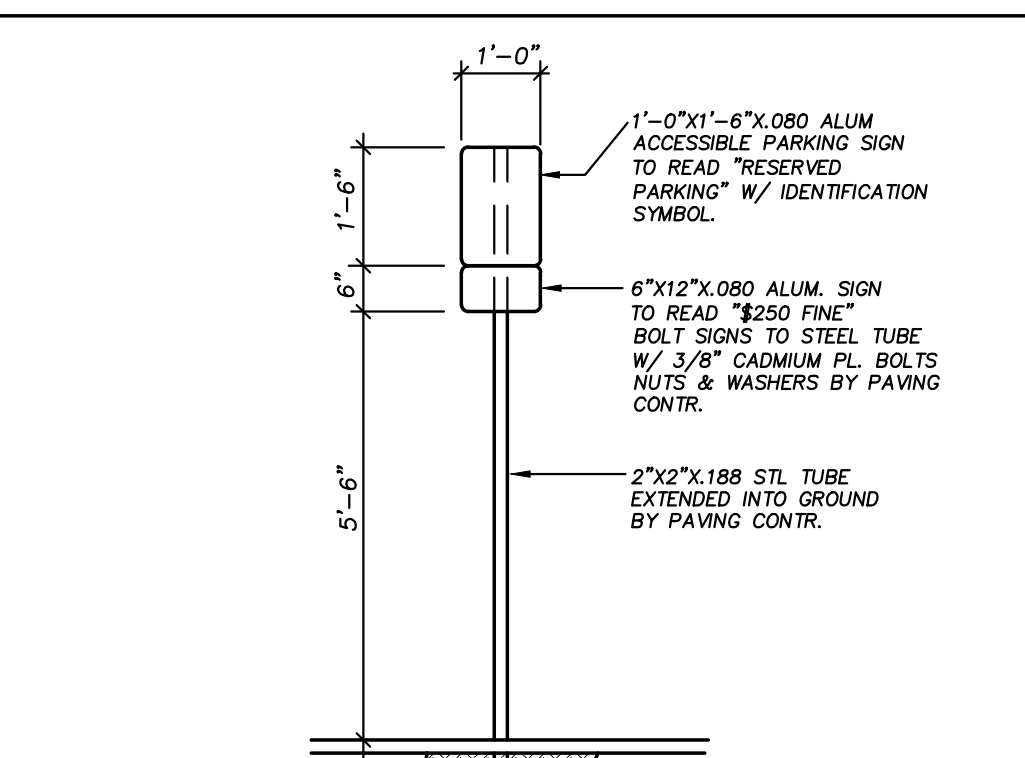


COLORS
 LEGEND AND BORDER - PANTONE 340C WHITE
 SYMBOL ON PANTONE 286 BACKGROUND
 BACKGROUND - WHITE

NOTE: OMIT ARROW WHEN THERE IS ONLY ONE ACCESSIBLE PARKING SPACE.

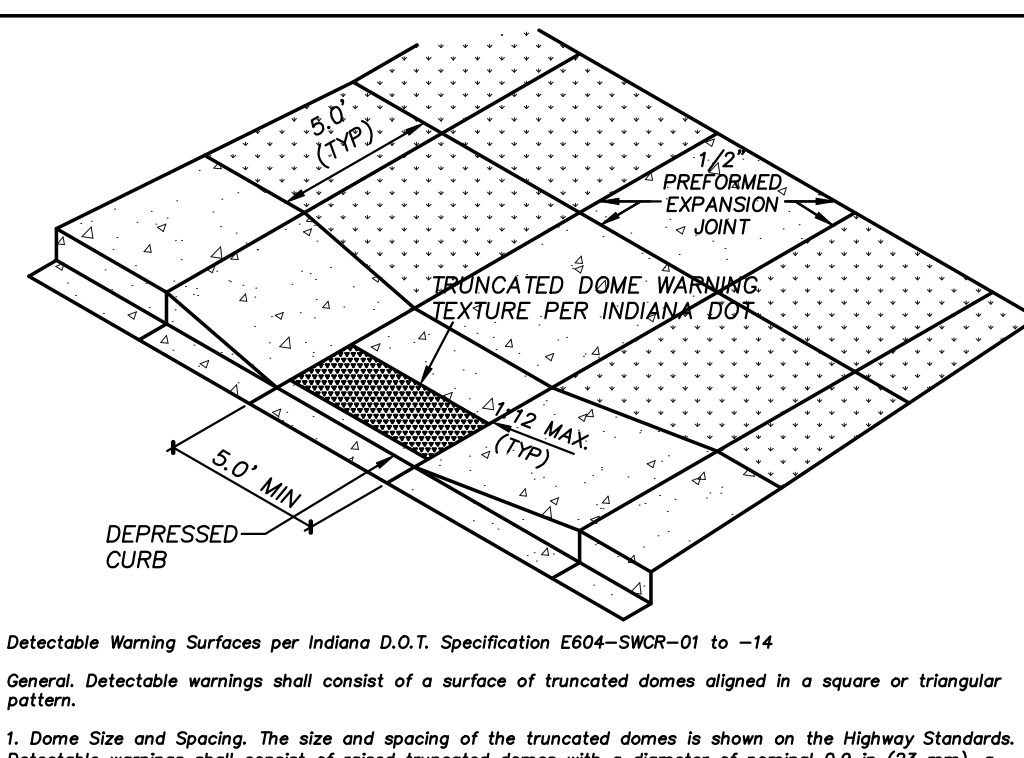
7 DETAIL - ACCESSIBLE PARKING SIGN
 C7.2 NOT TO SCALE

FILE:PM-AC SIGN.DWG



8 ACCESSIBLE SIGN
 C7.2 NOT TO SCALE

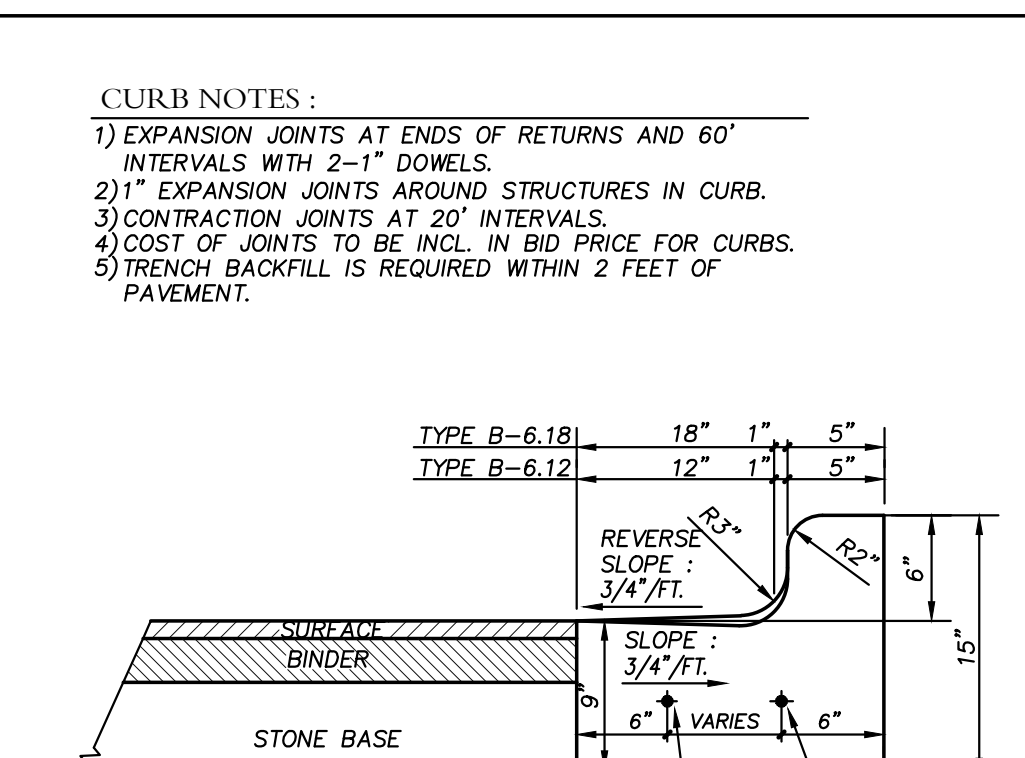
FILE:PM-AC SIGN2.DWG



Detectable Warning Surfaces per Indiana D.O.T. Specification E604-SWCR-01 to -14
 General: Detectable warnings shall consist of a surface of truncated domes aligned in a square or triangular pattern.
 1. Dome Size and Spacing. The size and spacing of the truncated domes is shown on the Highway Standards. Detectable warnings shall consist of raised truncated domes with a diameter of nominal 0.9 in (23 mm), a height of nominal 0.2 in (5 mm) and a center-to-center spacing of nominal 0.35 in (90 mm) and listed terra cotta red.
 2. Contrast: Detectable warning surfaces shall contrast visually with adjacent walking surfaces either light-on-dark or dark-on-light.
 3. Surface Size: Detectable warning surfaces extend 24 inches in the direction of travel and the full width of the walking surface of the curb ramp, landing, or blended transition. For Type B curb ramps, the flared sides are not considered part of walking surface.
 Detectable Warnings on Walking Surfaces
 The material used to provide contrast should contrast by at least 70% Contrast in percent is determined by:
 where B1 = light reflectance value (LRV) of the lighter area and B2 = light reflectance value (LRV) of the darker area. Note that in any application both white and black are never absolute; thus, B1 never equals 100 and B2 is always greater than 0.

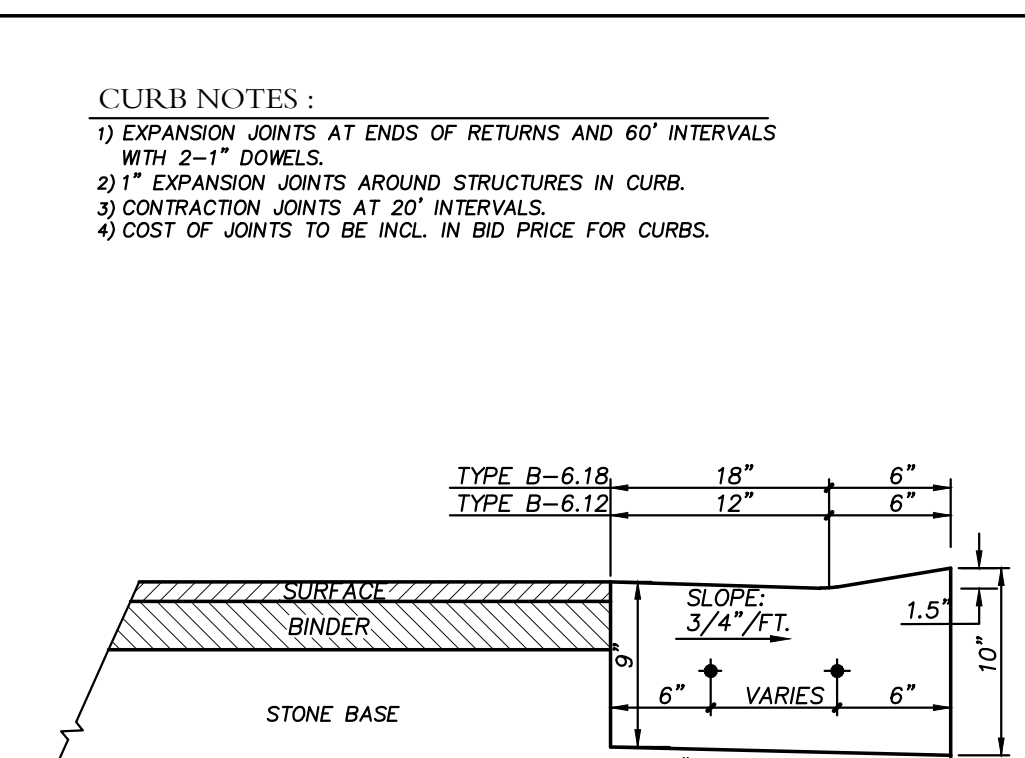
9 DETAIL - SIDEWALK RAMP
 C7.2 NOT TO SCALE

FILE:PV-RAMP5.DWG



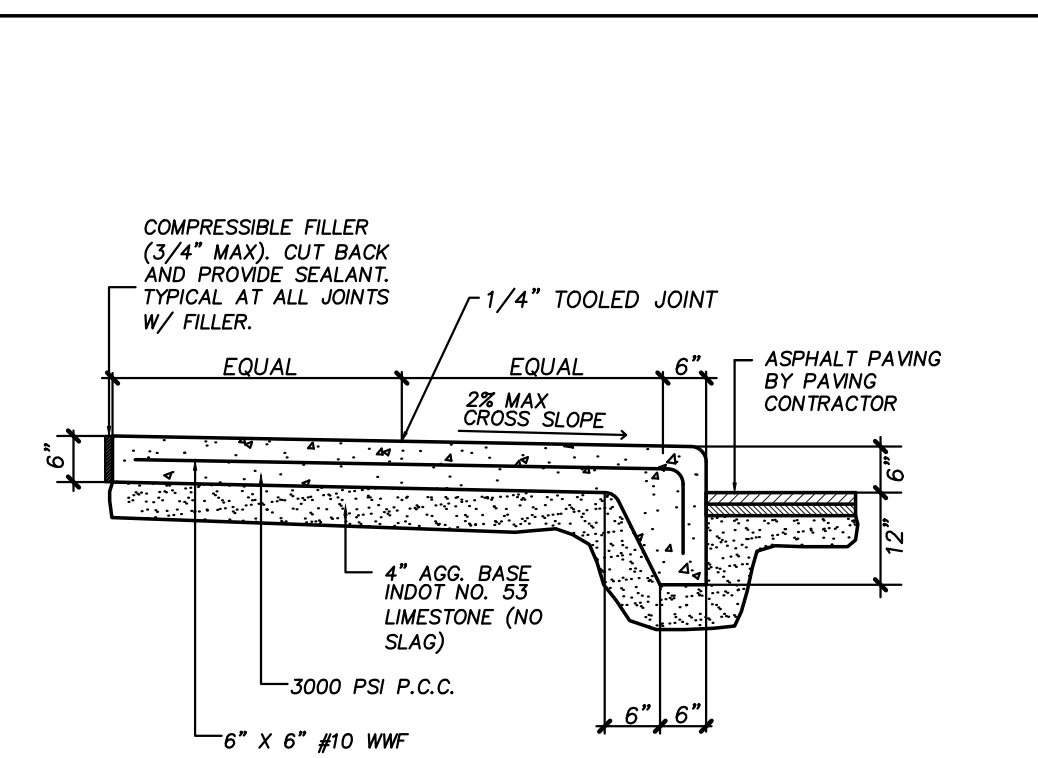
10 DETAIL - CURB AND GUTTER SECTION
 C7.2 NOT TO SCALE

FILE:PV-CURB 06-12REV.DWG



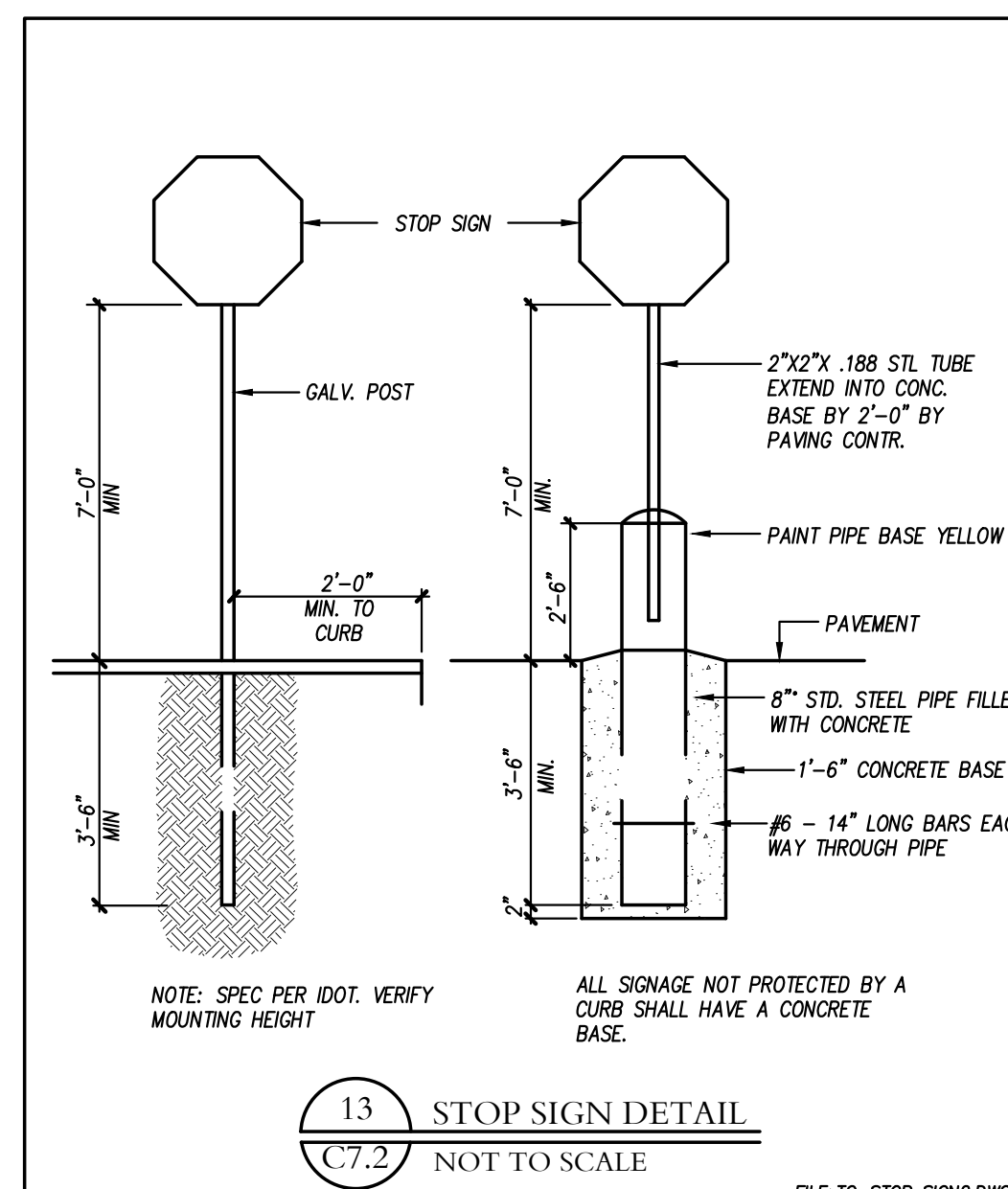
11 DETAIL - DEPRESSURED CURB & GUTTER
 C7.2 NOT TO SCALE

FILE:PV-CURB DEPRESSURED.DWG



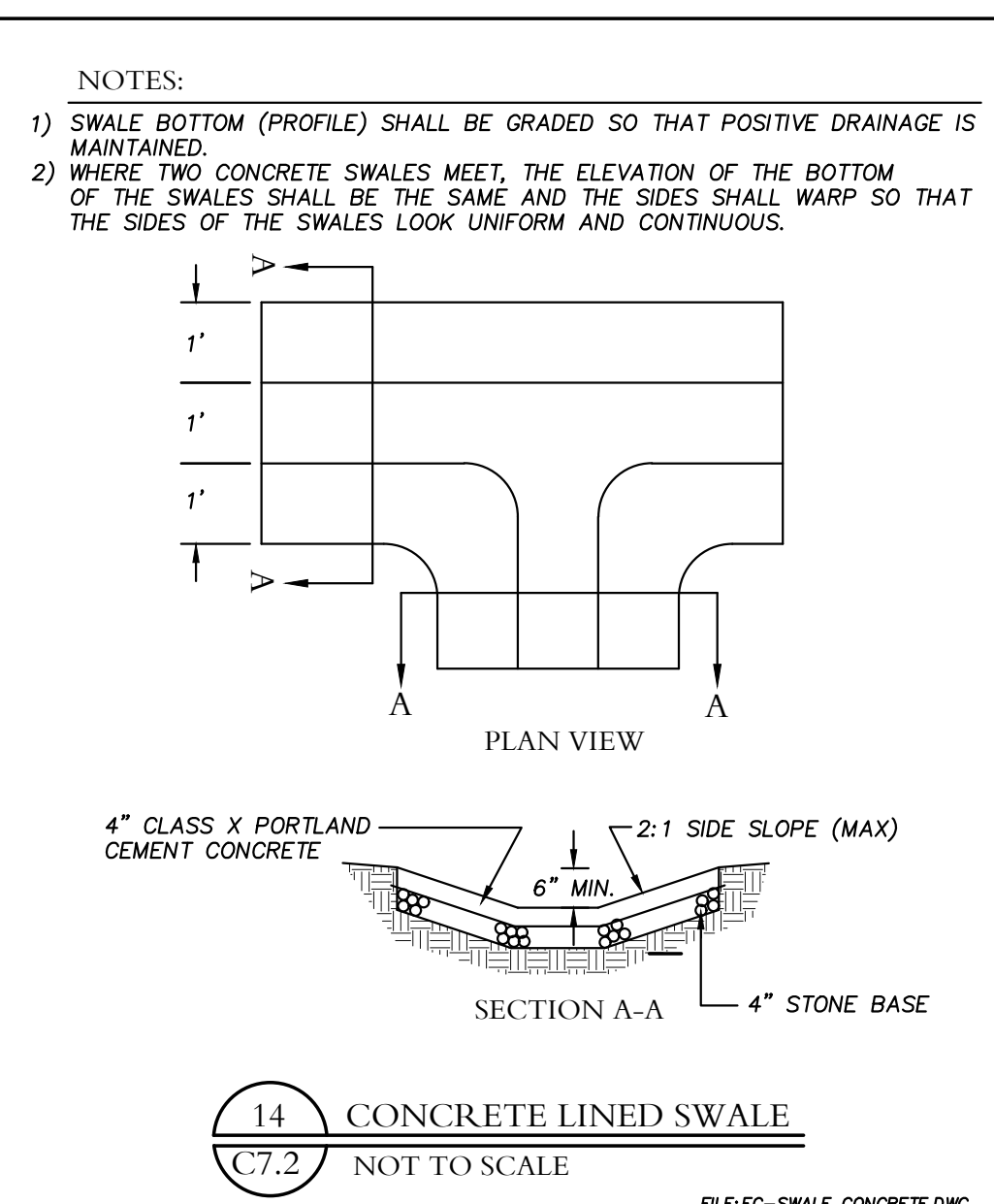
12 INTEGRAL CURB AND SIDEWALK
 C7.2 NOT TO SCALE

FILE:PV-SIDEWALK3.DWG



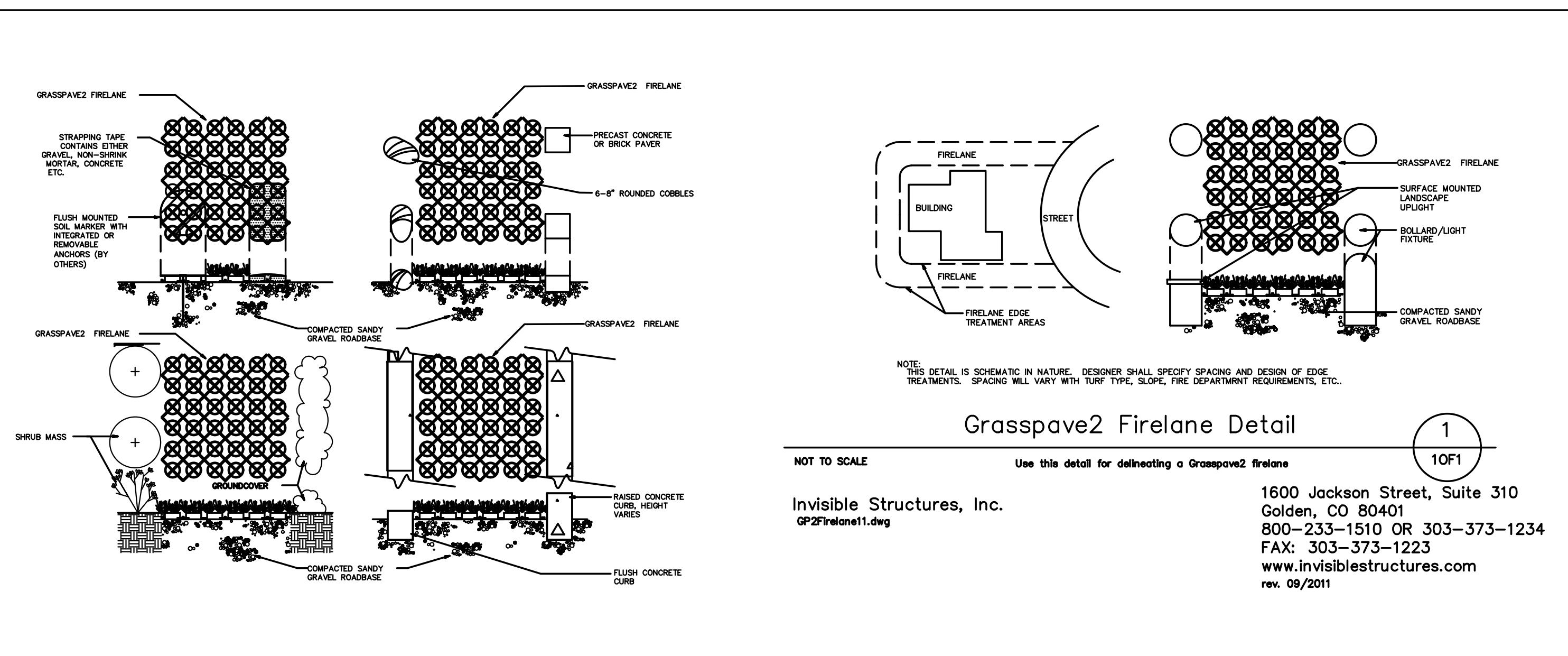
13 STOP SIGN DETAIL
 C7.2 NOT TO SCALE

FILE:TC-STOP SIGN2.DWG



14 CONCRETE LINED SWALE
 C7.2 NOT TO SCALE

FILE:EC-SWALE CONCRETE.DWG



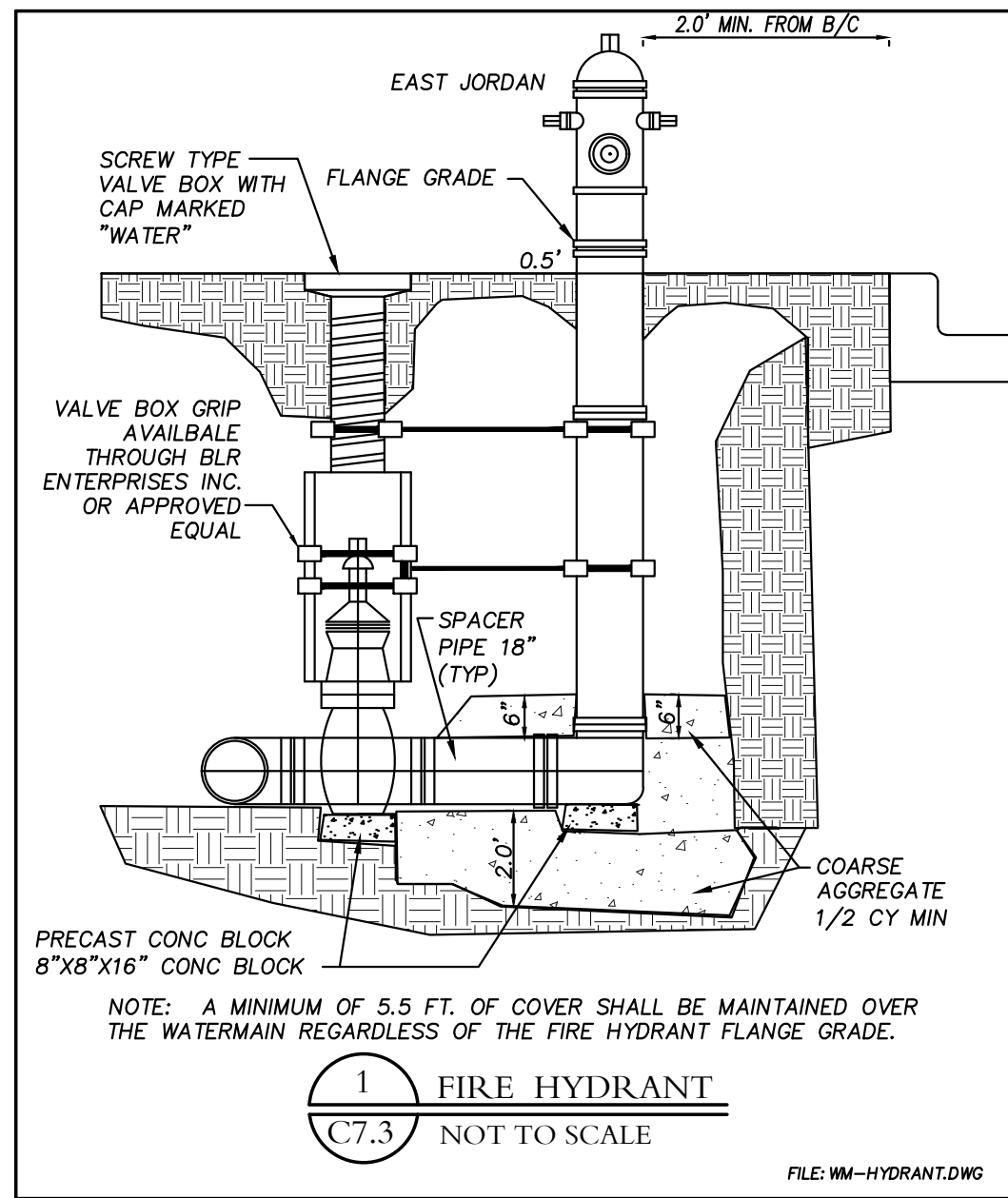
REVISIONS		
NO.	DATE	DESCRIPTION
3	9/18/20	PER FINAL DETAILED PLANS
2	8/7/20	PER TOWN COMMENTS
1		

SITE DETAILS

SENIOR LIVING - PHASE 1
 NWC CLINE AVE. & ERNIE STRACK DR.
 HIGHLAND, INDIANA

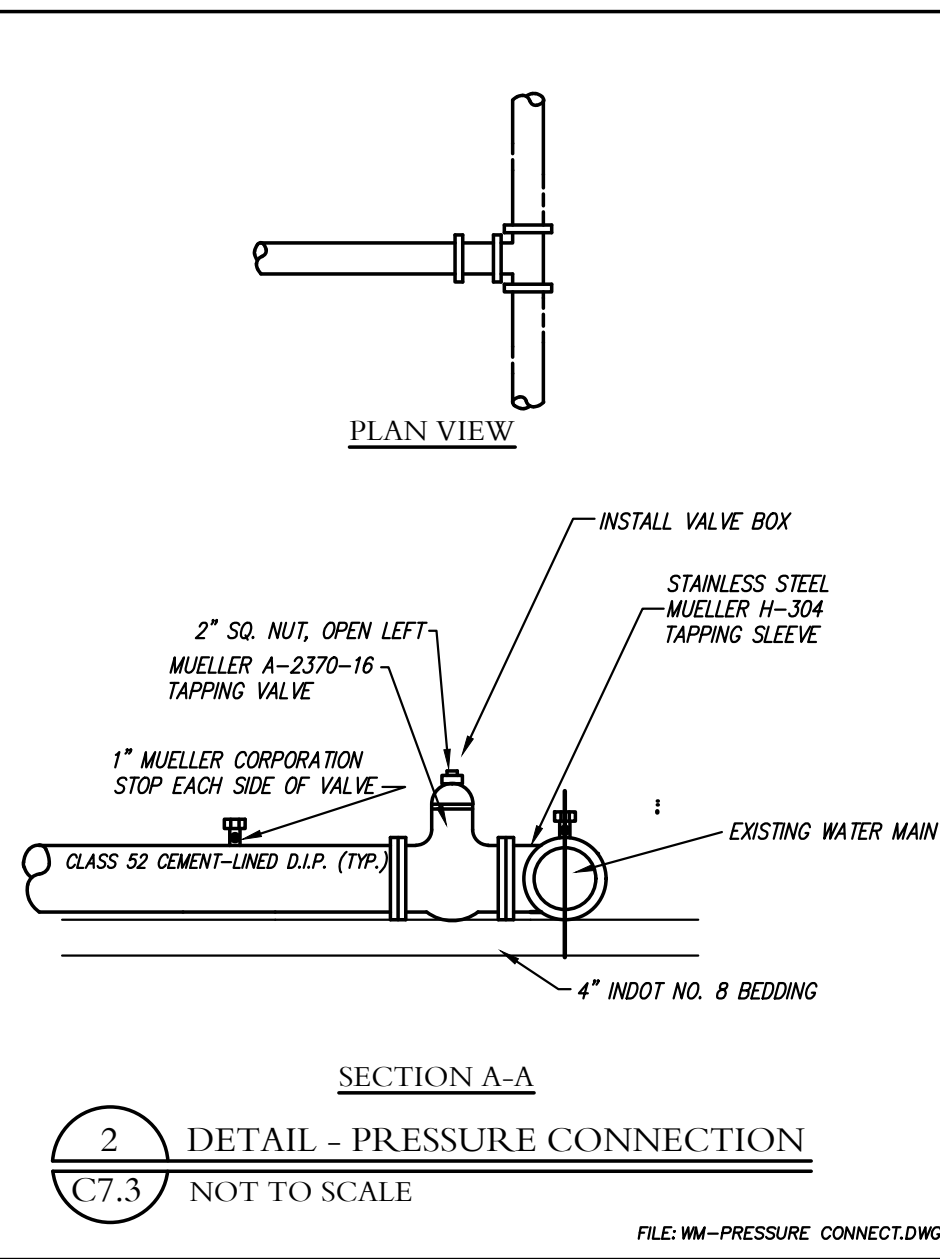
Craig R. Knoche & Associates
 Civil Engineers, P.C.
 24 N. Bennett Street • Geneva, IL 60134 • phone (830) 845-1270 • fax (830) 845-1275

DATE: 3/18/2020
 FILE: 18-003 C70
 JOB NO: 18-003
 SHEET NO. C7.2



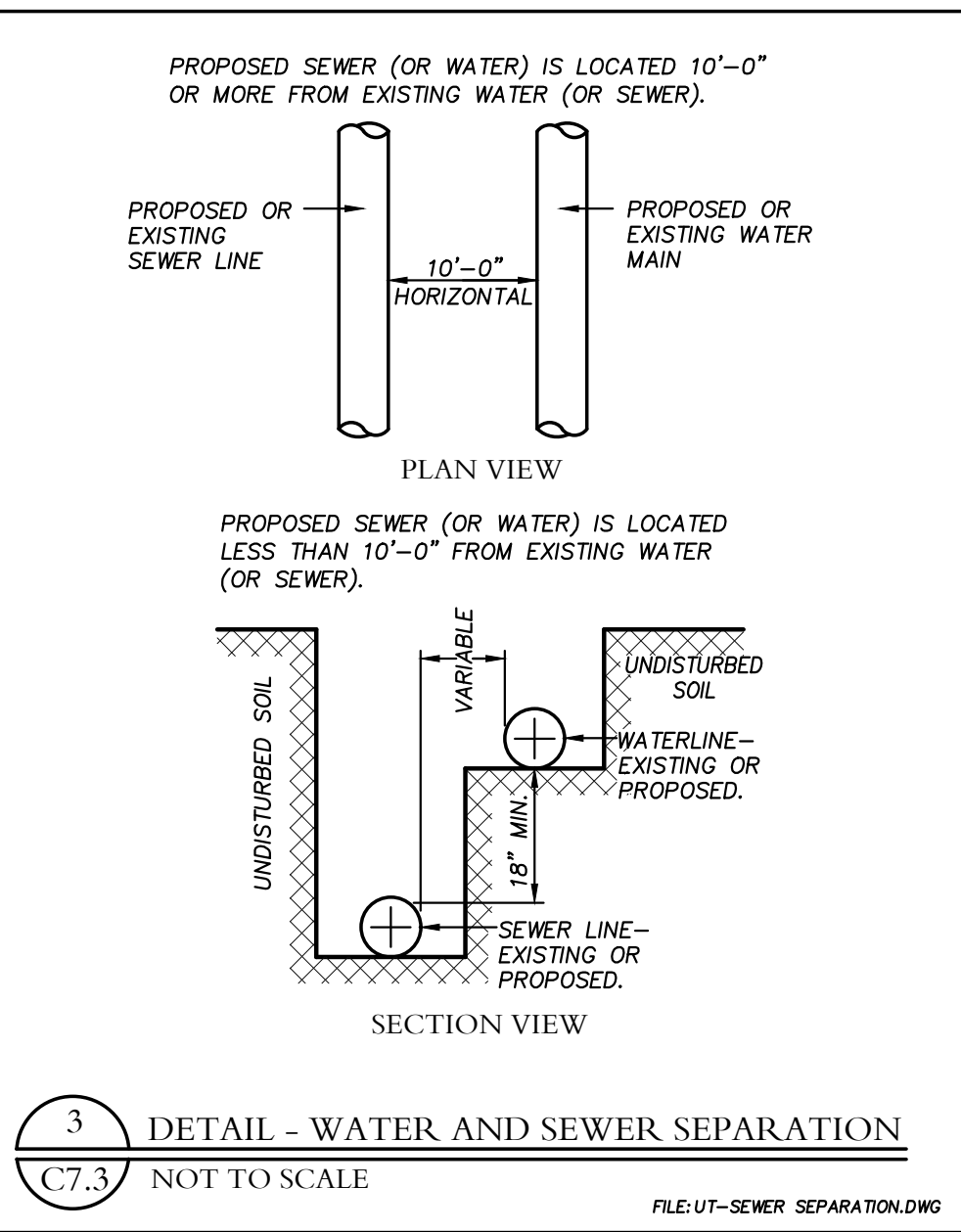
1 FIRE HYDRANT
C7.3 NOT TO SCALE

FILE:WM-HYDRANT.DWG



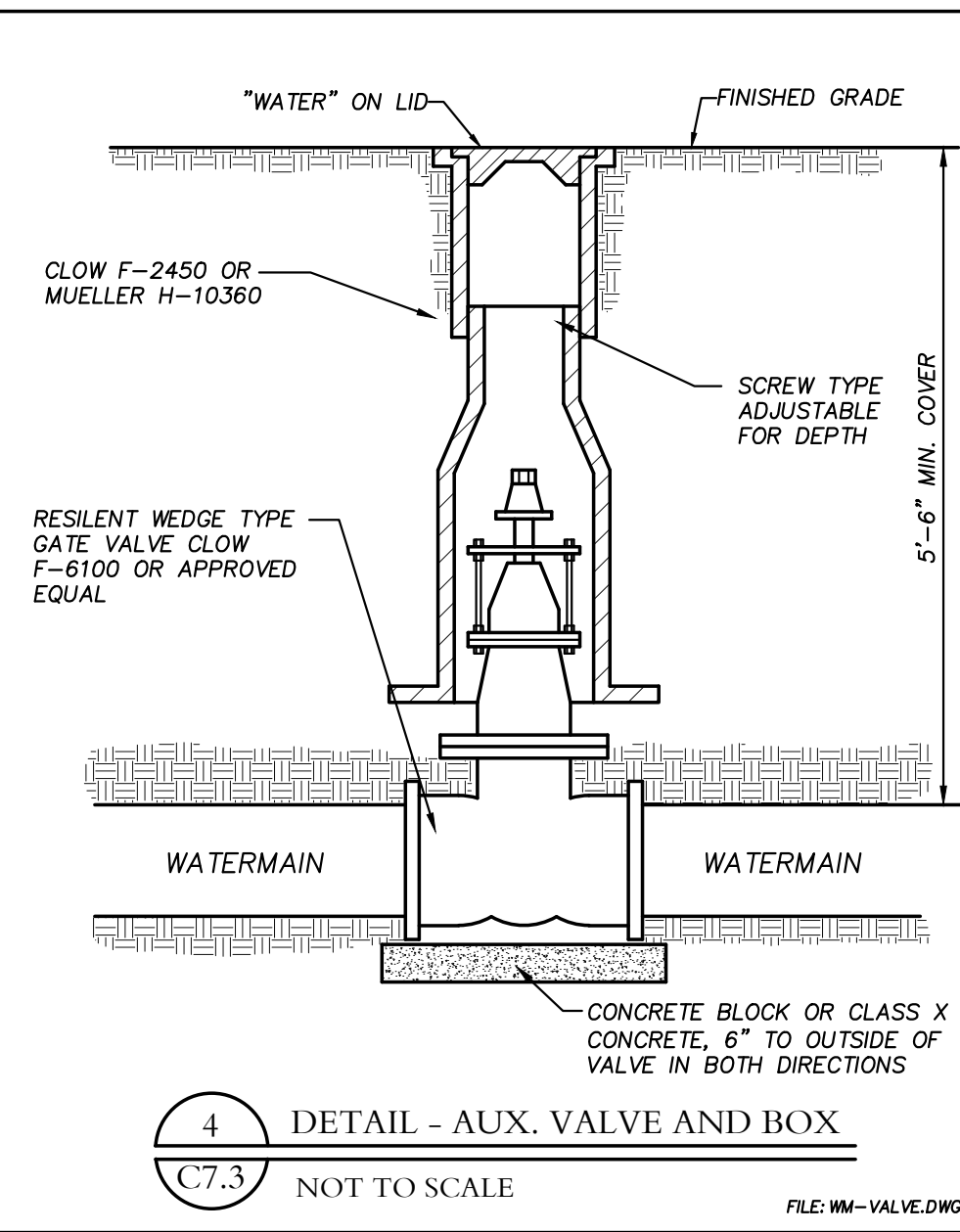
2 DETAIL - PRESSURE CONNECTION
C7.3 NOT TO SCALE

FILE:WM-PRESSURE CONNECT.DWG



3 DETAIL - WATER AND SEWER SEPARATION
C7.3 NOT TO SCALE

FILE:UT-SEWER SEPARATION.DWG



4 DETAIL - AUX. VALVE AND BOX
C7.3 NOT TO SCALE

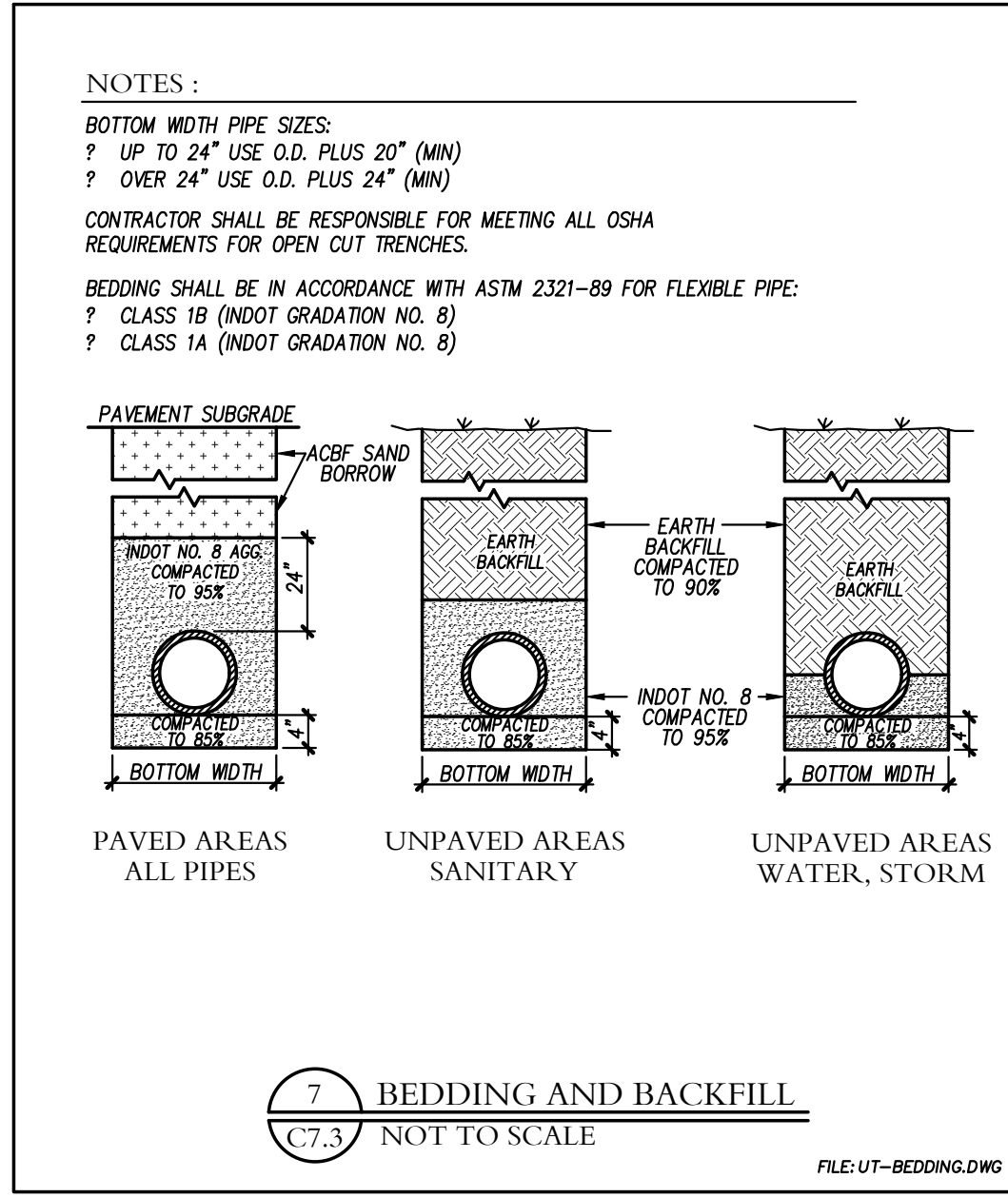
FILE:WM-VALVE.DWG

RESTRAINED PIPE LENGTH (FEET)

PIPE SIZE (INCHES)	TEE* BRANCH	90° ELBOW	45° ELBOW	22 1/2° ELBOW	11 1/4° ELBOW	DEAD ENDS
4	0	15	6	3	2	20
6	9	22	9	4	2	28
8	18	27	11	5	3	37
10	25	33	14	7	4	44
12	33	39	18	8	5	52
14	41	44	18	9	4	60
16	48	50	21	10	5	68
18	56	55	23	11	5	75
20	63	61	25	12	6	82
24	77	71	29	14	7	96
30	97	86	36	17	8	116
36	116	100	41	20	10	135

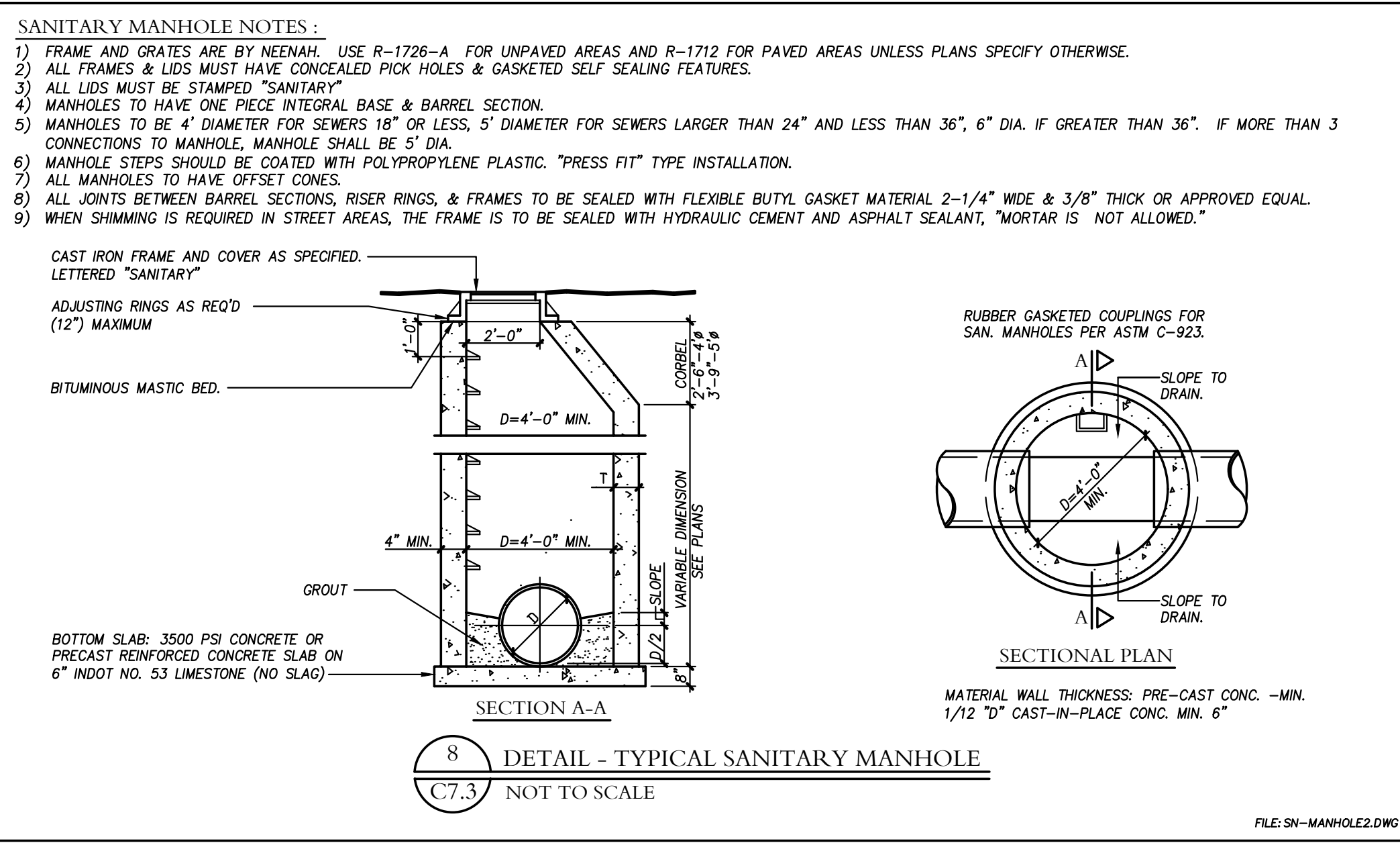
* ONE FULL LENGTH (18') OF PIPE ON BOTH SIDES OF BRANCH TO BE RESTRAINED. INCREASE ALL LENGTHS IN TABLE BY 75% FOR USE ON POLYETHYLENE WRAPPED DUCTILE IRON PIPE OR PVC PIPE. TEST PRESSURE BASED ON 150 PSI.

5 DETAIL - RESTRAINED PIPE LENGTH TABLE
C7.3 NOT TO SCALE



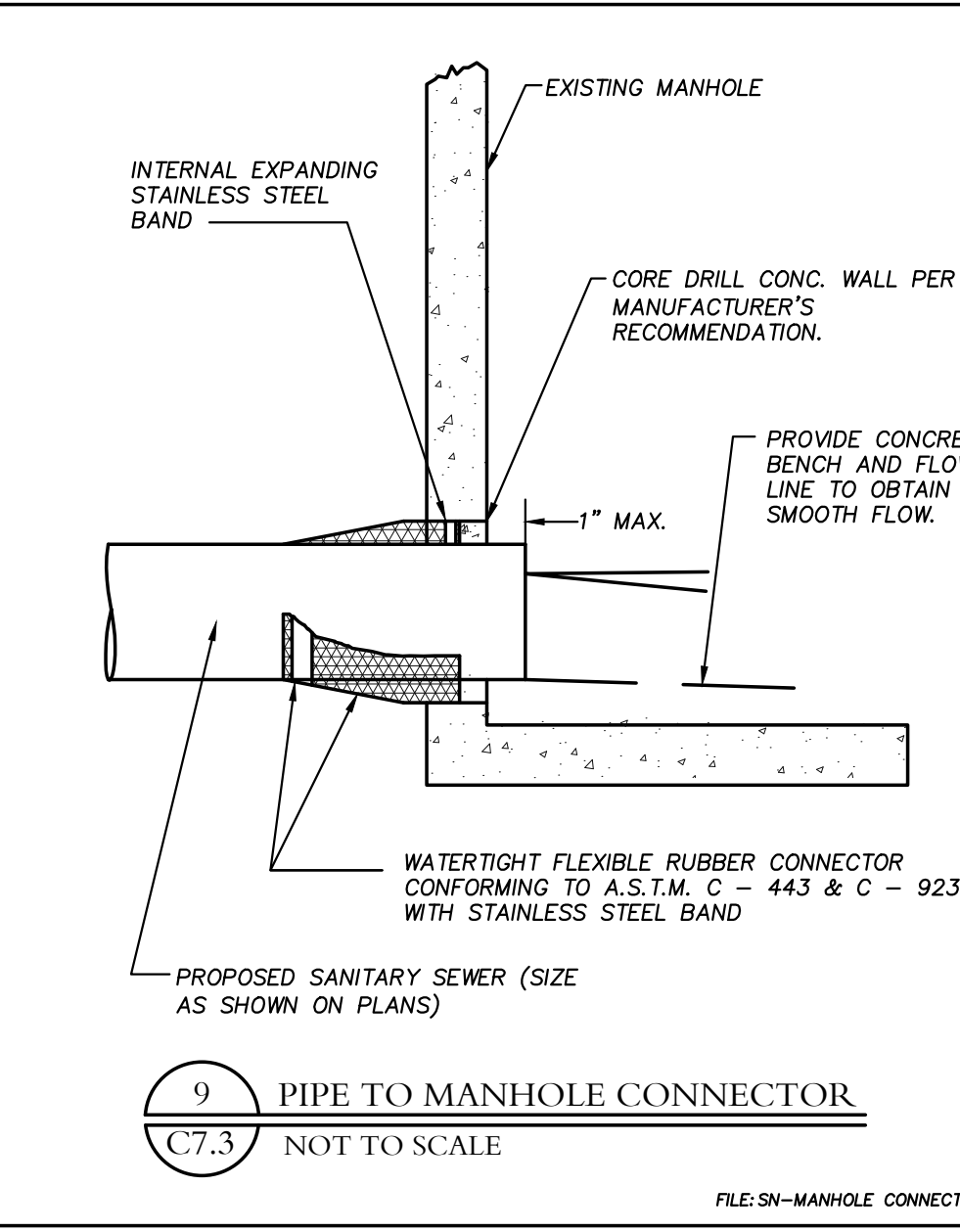
7 BEDDING AND BACKFILL
C7.3 NOT TO SCALE

FILE:UT-BEDDING.DWG



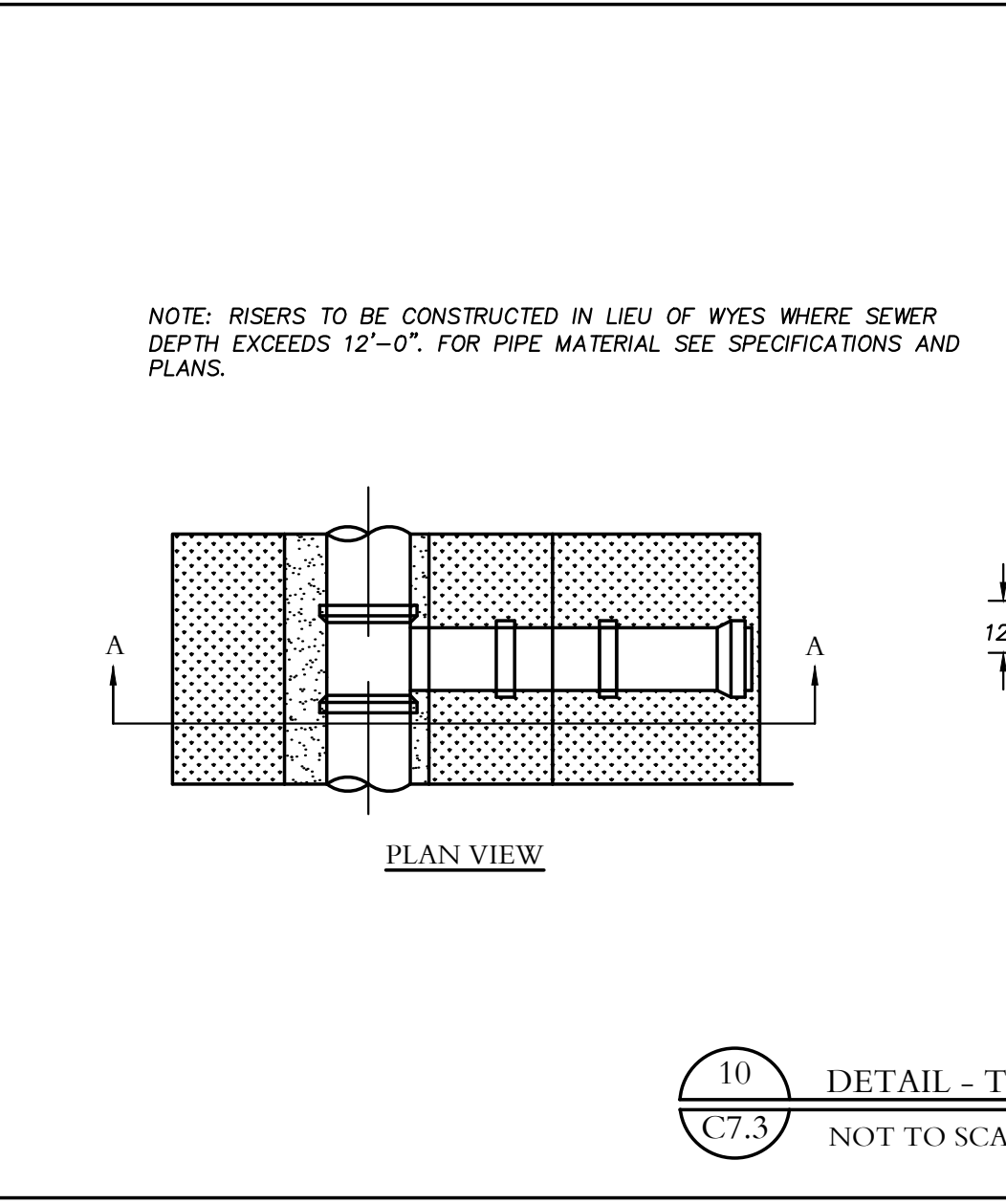
8 DETAIL - TYPICAL SANITARY MANHOLE
C7.3 NOT TO SCALE

FILE:SN-MANHOLE.DWG



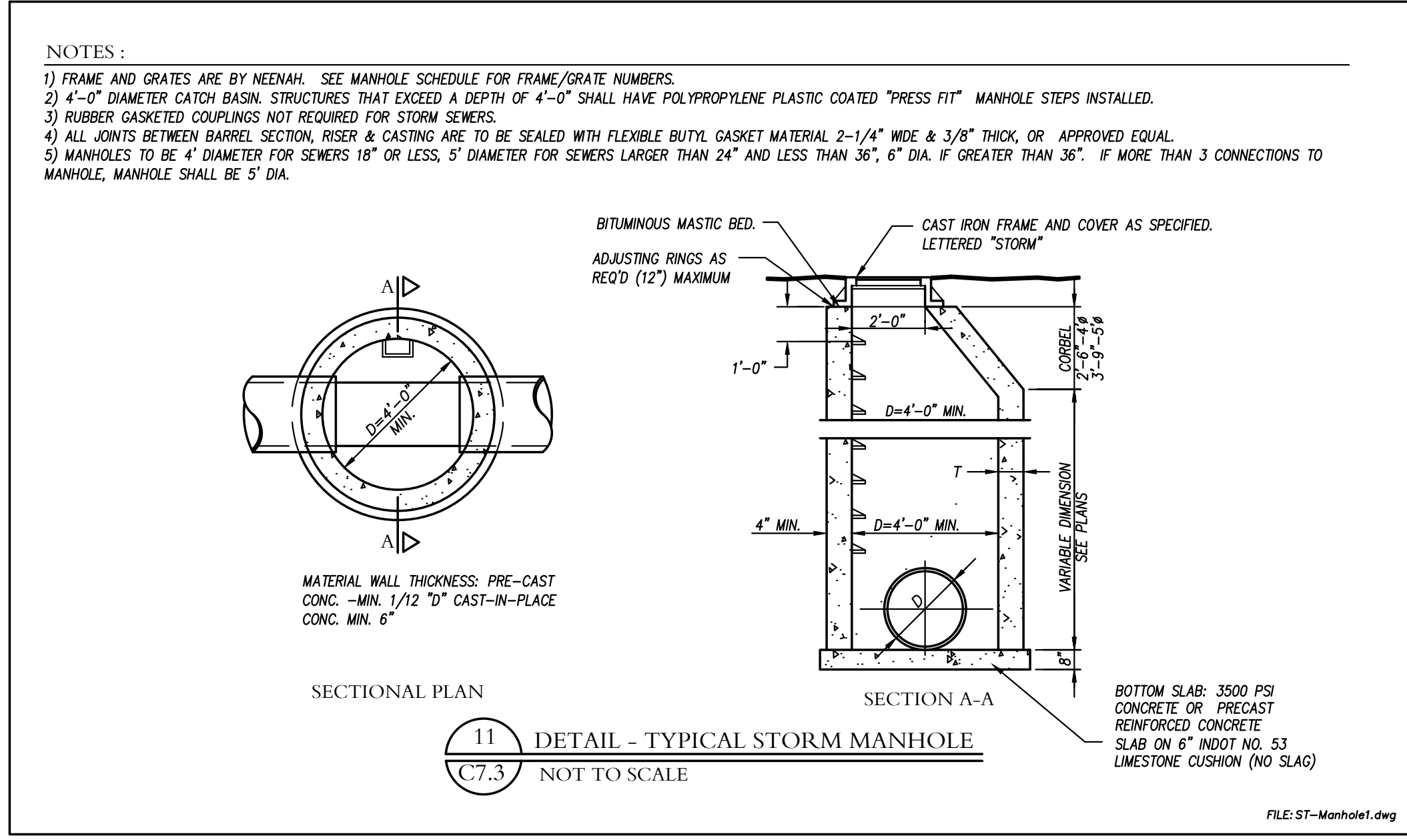
9 PIPE TO MANHOLE CONNECTOR
C7.3 NOT TO SCALE

FILE:SN-MANHOLE CONNECT.DWG



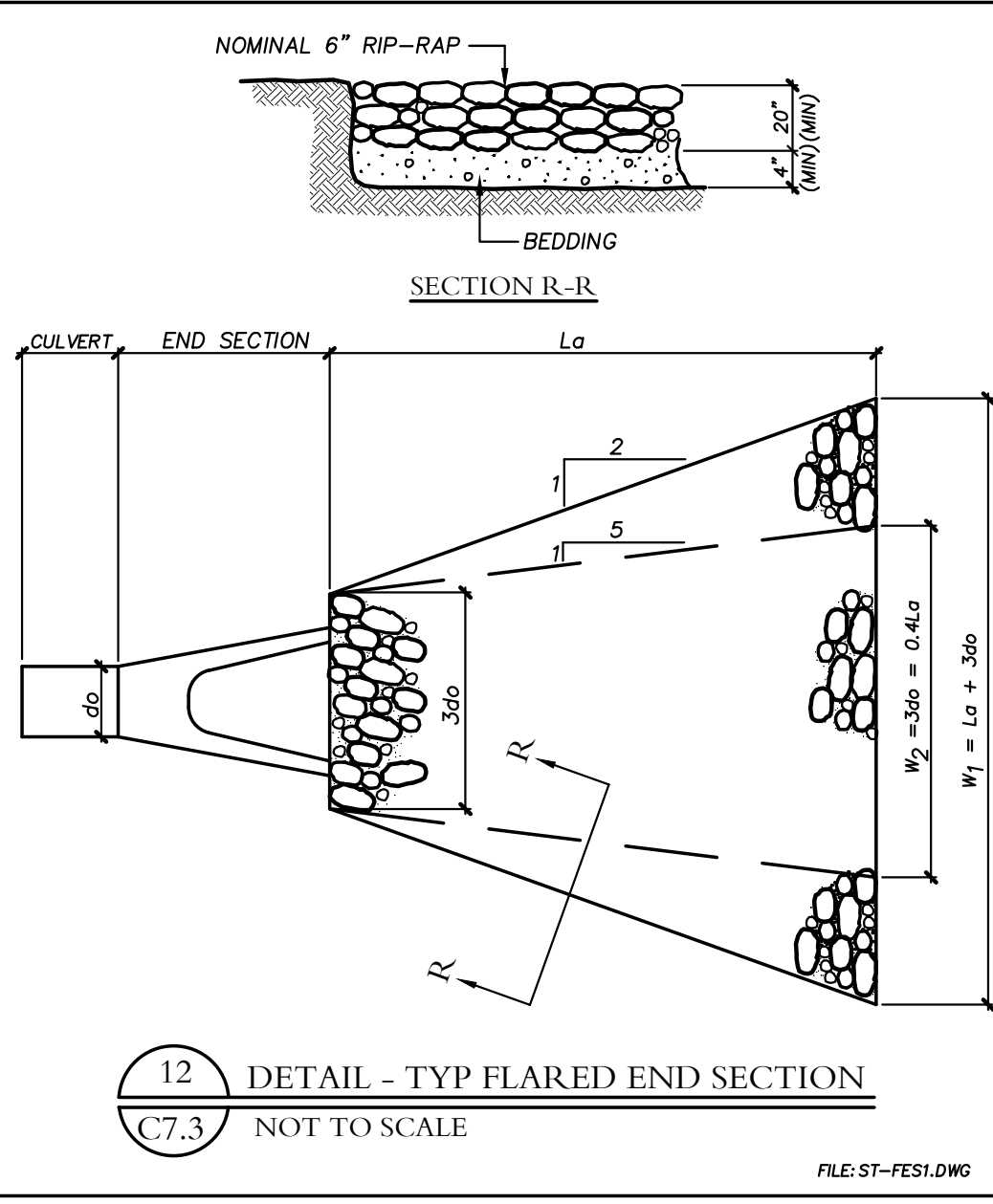
10 DETAIL - TYPICAL SERVICE RISER
C7.3 NOT TO SCALE

FILE:SN-RISER.DWG



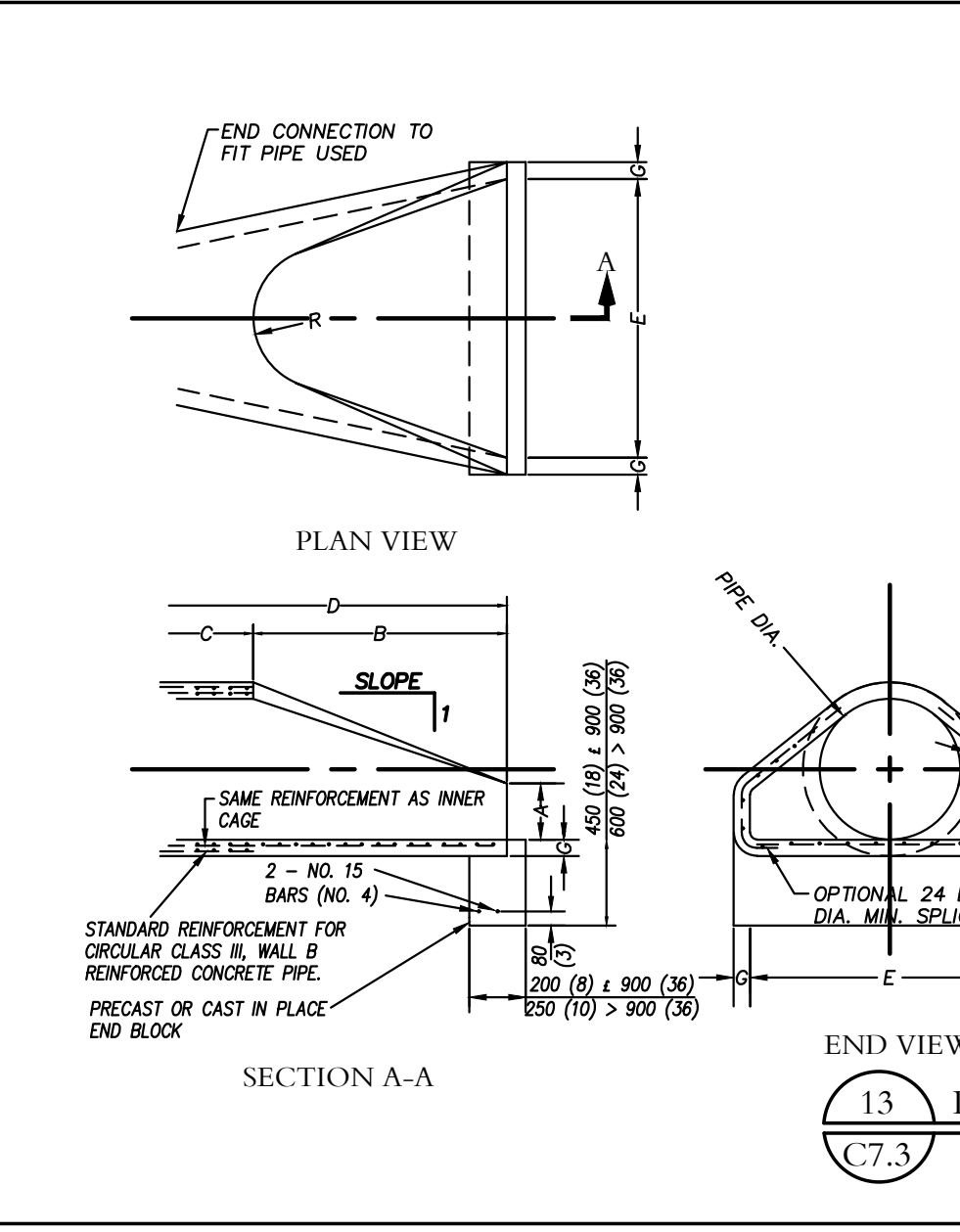
11 DETAIL - TYPICAL STORM MANHOLE
C7.3 NOT TO SCALE

FILE:ST-Manhole1.dwg

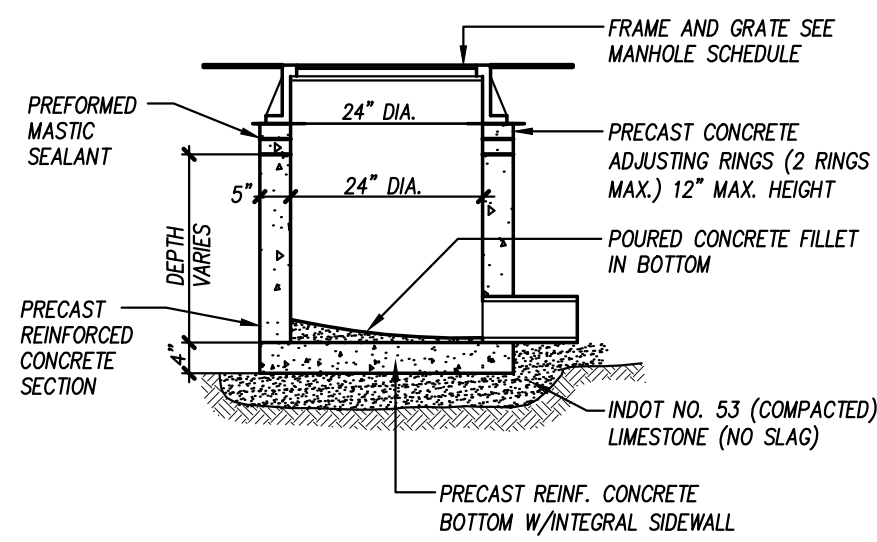


12 DETAIL - TYP FLARED END SECTION
C7.3 NOT TO SCALE

FILE:ST-FESI.DWG



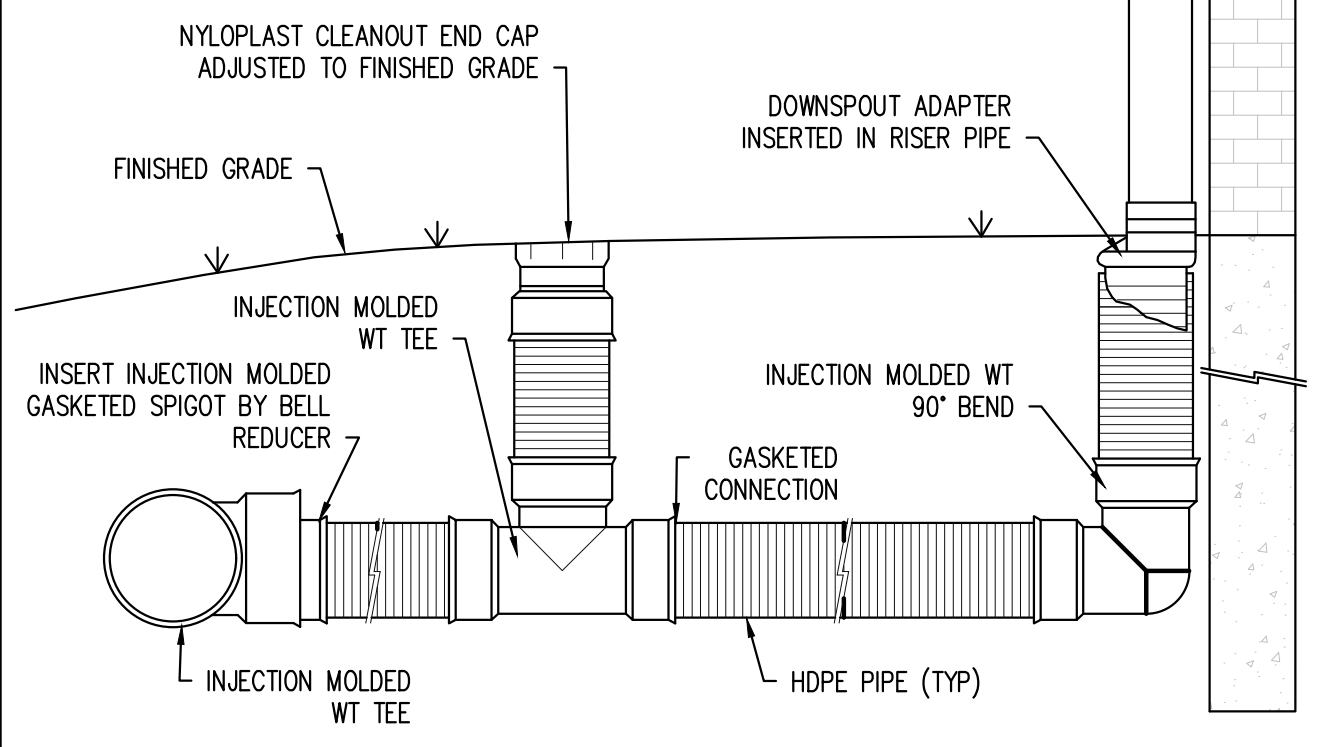
- NOTES:
- 1) APPLY A CONTINUOUS LAYER OF NON-HARDENING, PREFORMED BUTL MATERIAL (E-Z STICK OR EQUAL) TO EACH JOINT, ADJUSTING RINGS AND FRAMES TO PREVENT INFILTRATION.
 - 2) IN PAVED AREAS, PROVIDE COMPACTED INDOT NO. 8 AGGREGATE AROUND INLET TO SUBGRADE ELEVATION.
 - 3) NO MORE THAN (2) ADJUSTING RINGS SHALL BE PERMITTED, TWO INCH ADJUSTING RINGS SHALL ONLY BE USED ON ADJUSTMENTS LESS THAN THREE INCHES.
 - 4) CONCRETE FILLETS SHALL BE MADE WITH ADDITIONAL MORTAR TO PROVIDE A SMOOTH TRANSITION BETWEEN THE CASING AND ADJUSTING RING (OR TOP OF STRUCTURE).
 - 5) "DRESS-UP" INTERIOR JOINTS WITH HYDRAULIC CEMENT.



1 DETAIL - TYPICAL INLET
C7.4 NOT TO SCALE

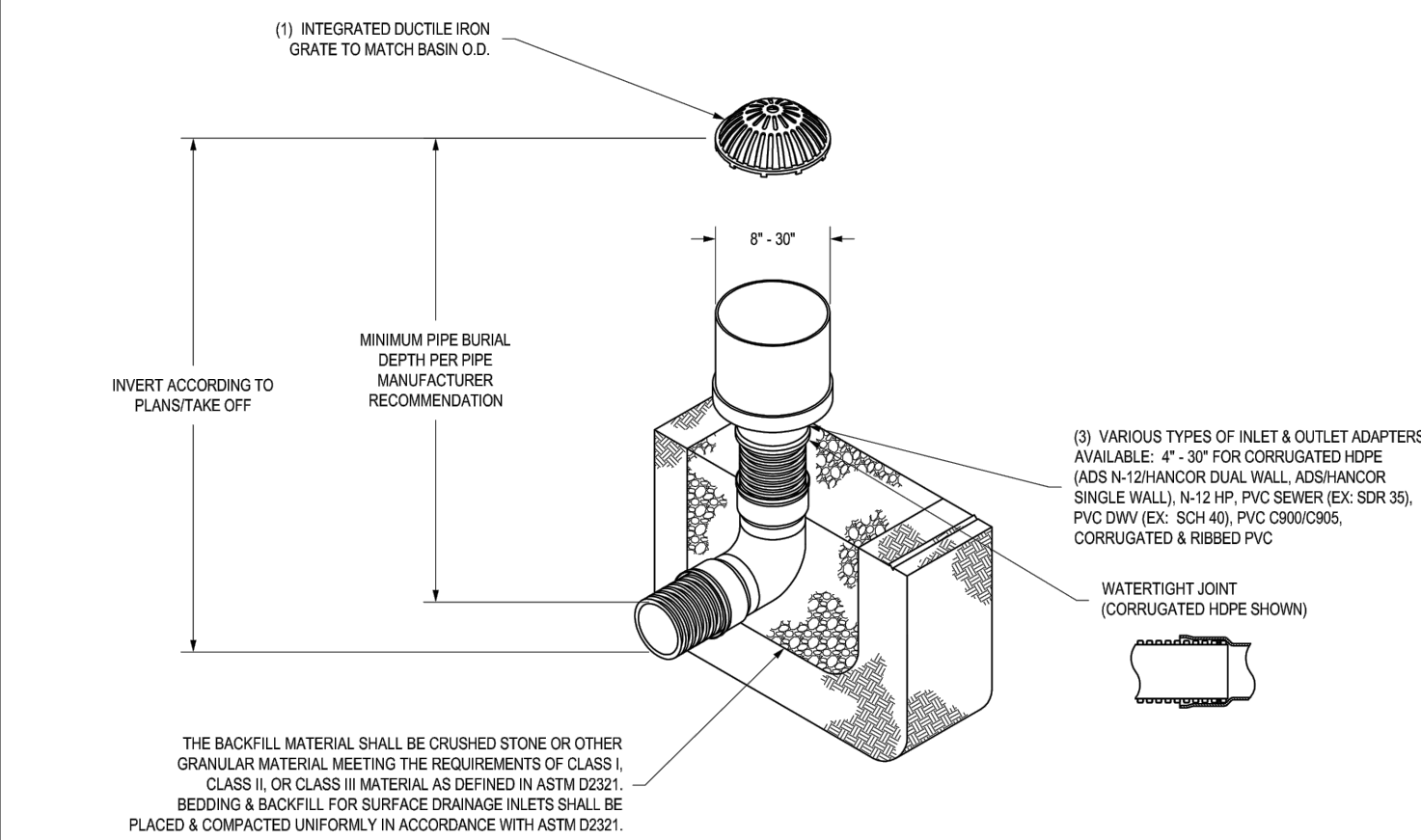
FILE:ST-INLET.DWG

- NOTES:
1. ALL FITTINGS SHALL BE ADS OR APPROVED EQUIVALENT.
 2. ALL JOINTS SHALL BE WATERTIGHT (WT).



2 DETAIL - DOWNSPOUT CONNECTION
C7.4 NOT TO SCALE

NYLOPLAST INLINE DRAIN WITH DOME GRATE

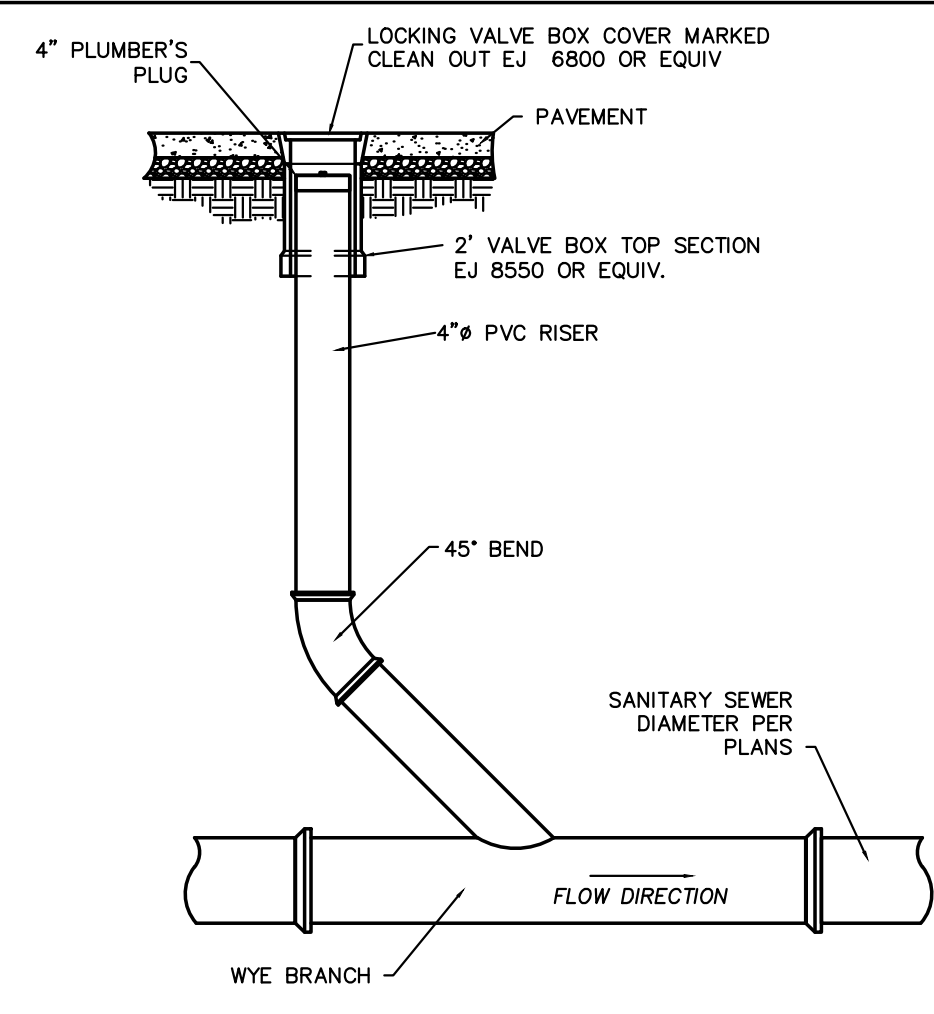


- 1 - 4" - 30" DOME GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRACE TO 50-15.
- 2 - DRAINAGE CONNECTION TUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D2151 FOR CORRUGATED PIPE AND N-12 SPAN DUAL WALL N-12 HP & PVC SEWER (N-12 HP).
- 3 - 4" - 30" DOME GRATES HAVE NO LOAD RATING.

THIS PRINT DISCLOSES SUBJECT MATTER IN WHICH I OR MY FIRM HAS PROPRIETARY RIGHTS. THE RECEIPT OR POSSESSION OF THIS PRINT DOES NOT CONFER, TRANSFER OR LICENSE THE USE OF THE DESIGN OR TECHNICAL INFORMATION SHOWN HEREIN. REPRODUCTION OF THIS PRINT OR ANY INFORMATION CONTAINED HEREIN, OR MANUFACTURE OF ANY ARTICLE OR MATERIAL FOR THE DISCLOSURE TO OTHERS IS FORBIDDEN EXCEPT BY EXPRESS WRITTEN PERMISSION FROM NYLOPLAST. 6003130000000

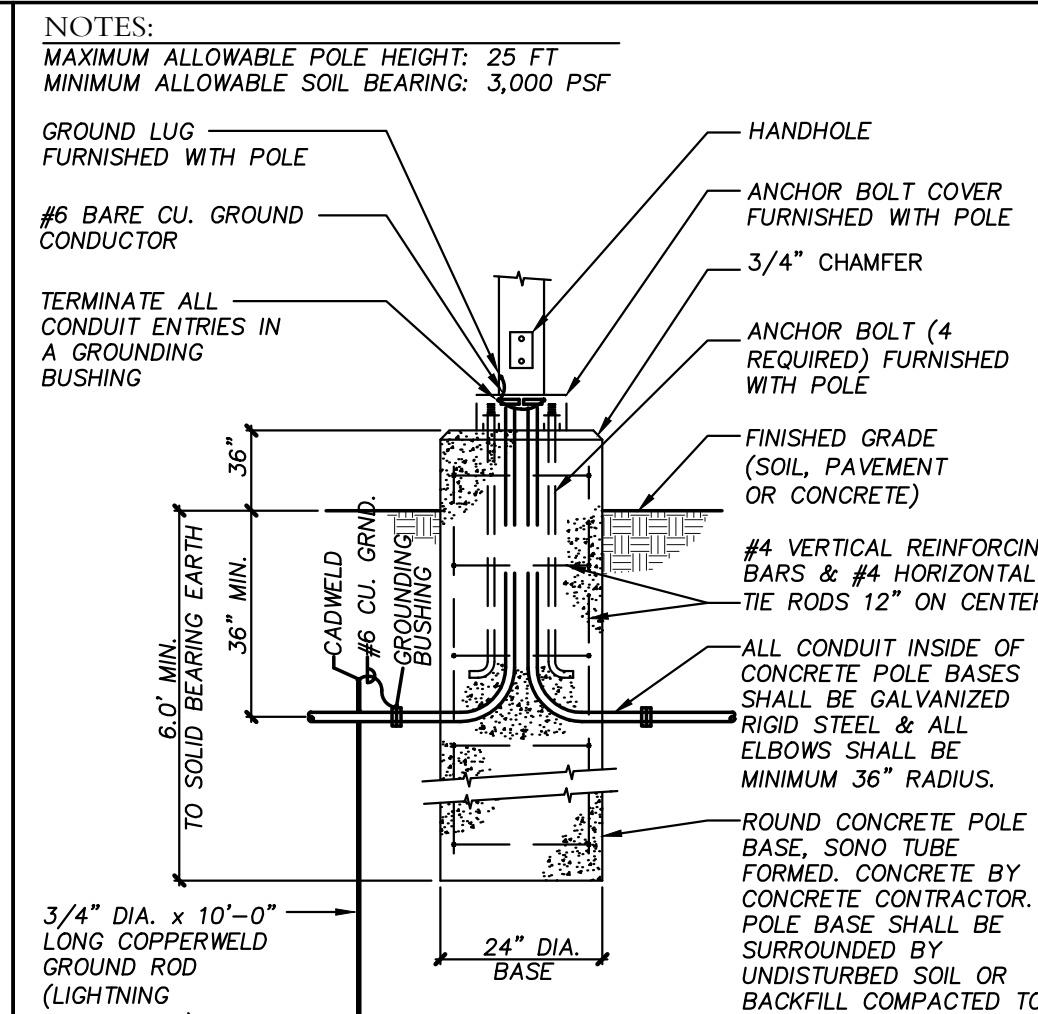
NO.	DATE	BY	DESCRIPTION
1	03-25-10	ESB	DATE
2	03-25-10	ESB	DATE
3	03-25-10	ESB	DATE

NYLOPLAST
TITLE: INLINE DRAIN WITH DOME GRATE
CHECK SPEC RETAILATION DETAIL.
DWG NO. 7003-119-007 REV. 0



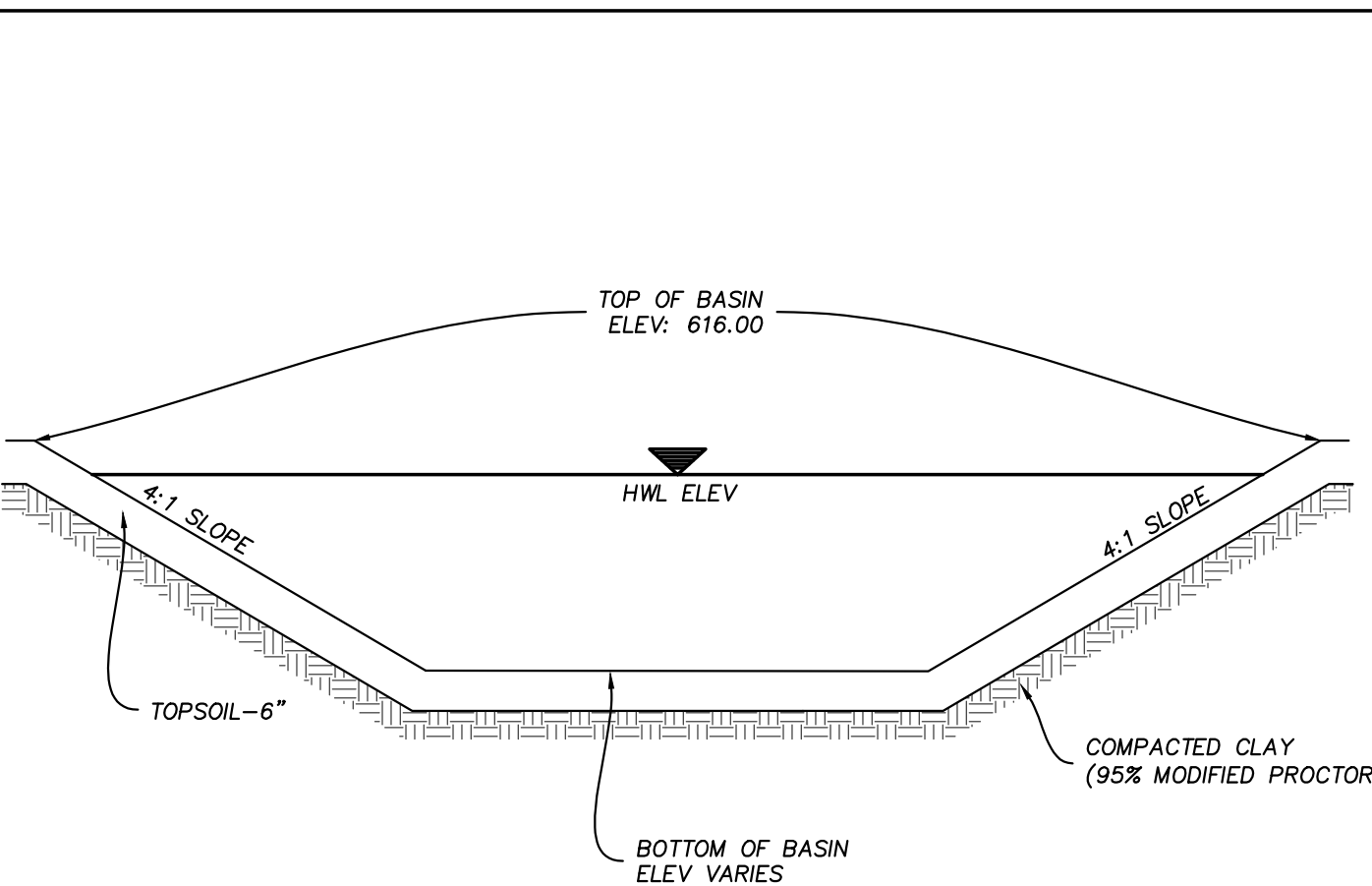
4 CLEANOUT
C7.4 NOT TO SCALE

FILE:SN-CLEANOUT.DWG



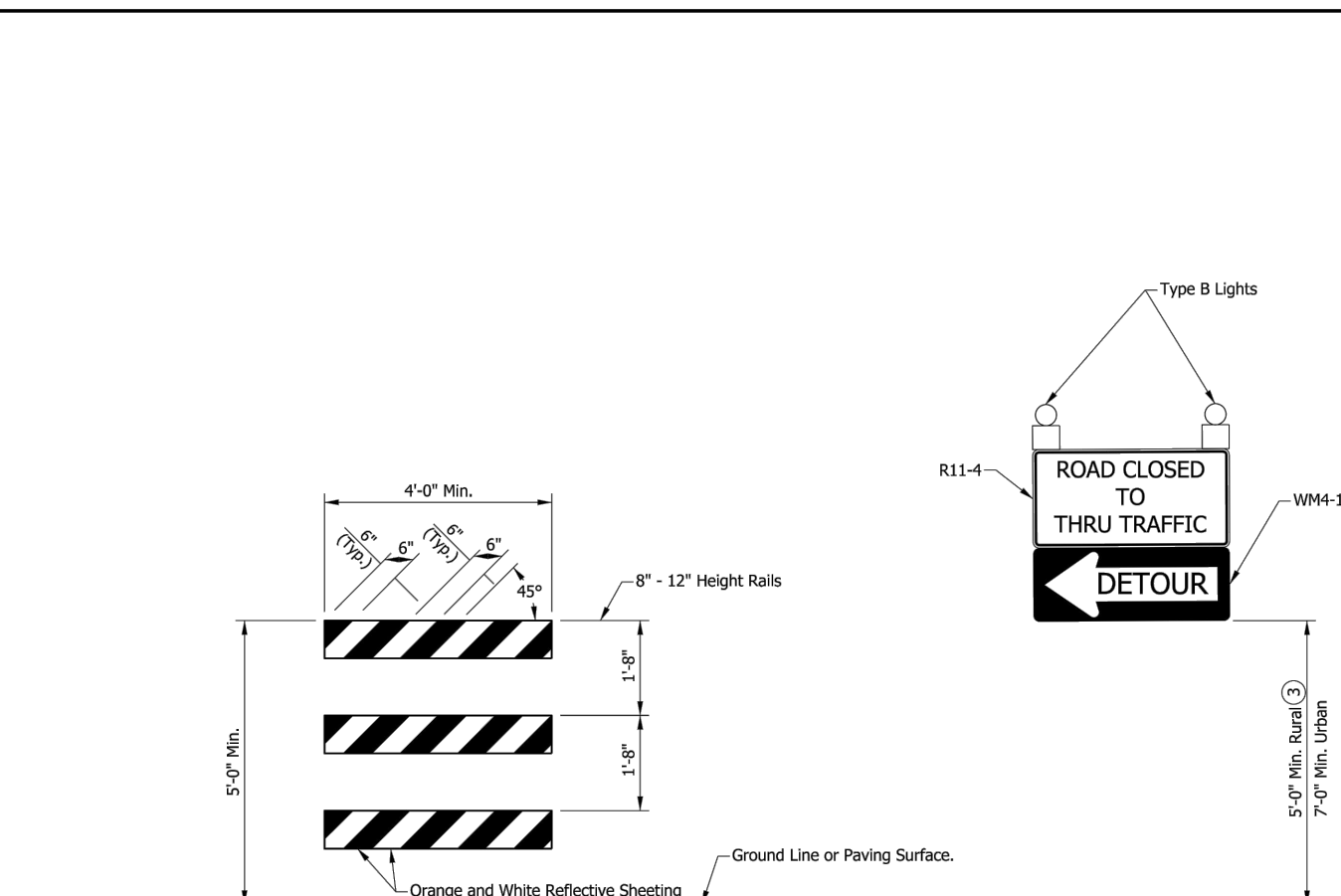
5 CONCRETE POLE BASE DETAIL
C7.4 NOT TO SCALE

FILE:LT-POLE BASE24.DWG



6 DETAIL - DETENTION BASIN
C7.4 NOT TO SCALE

FILE:ST-TRENCH DRAIN.DWG



NOTES:

1. Barricade lights, signs, and supports shall meet NCHRP 350 or MASH crash evaluation criteria.
2. The Detour Arrow sign shall be used only when a detour route has been signed.
3. The sign assembly must be above the Type III barricade.

INDIANA DEPARTMENT OF TRANSPORTATION
TYPE III BARRICADE
SEPTEMBER 2016
STANDARD DRAWING NO. E 801-TCDV-04

David H. Bernoff DESIGN STANDARDS ENGINEER No. 60900348 STATE OF INDIANA PROFESSIONAL ENGINEER	06/25/15 DATE
Mark A. Miller CHIEF ENGINEER	07/02/15 DATE

REVISIONS		
NO.	DATE	DESCRIPTION
3	9/16/20	PER FINAL DETAILED PLANS
2	8/7/20	PER TOWN COMMENTS

UTILITY DETAILS

SENIOR LIVING - PHASE 1
NWC CLINE AVE. & ERNIE STRACK DR.
HIGHLAND, INDIANA

Craig R. Knoche & Associates
Civil Engineers, P.C.
24 N. Bennett Street • Geneva, IL 60134 • phone (630) 845-1270 • fax (630) 845-1275

DATE: 3/18/2020	C7.4
FILE: 18-003 C70	
JOB NO: 18-003	